SAFETY DATA SHEET

OncoScan™ 2nd Stage PCR and Post PCR Processing

Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>OncoScan™ 2nd Stage PCR and Post PCR Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
<td>902270</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 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

- Taq Polymerase: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Hae III Enzyme: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Exo I Enzyme: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Hybridization Mix: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

- Taq Polymerase: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
- Hae III Enzyme: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
- Exo I Enzyme: SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
- Hybridization Mix: ACUTE TOXICITY (oral) - Category 3
  ACUTE TOXICITY (dermal) - Category 3
  SKIN CORROSION/IRRITATION - Category 2
  SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
  SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

GHS label elements

Hazard pictograms

Signal word

- Taq Polymerase: Warning
- Hae III Enzyme: Warning
- Exo I Enzyme: Warning
- Hybridization Mix: Danger

Hazard statements

- Taq Polymerase: Causes eye irritation.
- Hae III Enzyme: Causes eye irritation.
- Exo I Enzyme: Causes eye irritation.
- Hybridization Mix: Toxic if swallowed or in contact with skin.
  Causes serious eye irritation.
  Causes skin irritation.
  May cause respiratory irritation.

Precautionary statements

General

- Taq Polymerase: Not applicable.
- Hae III Enzyme: Not applicable.
- Exo I Enzyme: Not applicable.
- Hybridization Mix: Not applicable.
### Section 2. Hazards identification

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Taq Polymerase</th>
<th>Wear eye or face protection. Wash hands thoroughly after handling.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hae III Enzyme</td>
<td>Wear eye or face protection. Wash hands thoroughly after handling.</td>
<td></td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Wear eye or face protection. Wash hands thoroughly after handling.</td>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response</th>
<th>Taq Polymerase</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hae III Enzyme</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. IF ON SKIN: Take off immediately all contaminated clothing. Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical attention. 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.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage</th>
<th>Taq Polymerase</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hae III Enzyme</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Store locked up.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disposal</th>
<th>Taq Polymerase</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hae III Enzyme</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Dispose of contents and container in accordance with all local, regional, national and international regulations.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplemental label elements</th>
<th>Taq Polymerase</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hae III Enzyme</td>
<td>None known.</td>
<td></td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>None known.</td>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>None known.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazards not otherwise classified</th>
<th>Taq Polymerase</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hae III Enzyme</td>
<td>None known.</td>
<td></td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>None known.</td>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>None known.</td>
<td></td>
</tr>
</tbody>
</table>
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>Taq Polymerase</td>
<td>25 - 50</td>
<td>56-81-5</td>
</tr>
<tr>
<td></td>
<td>glycerol</td>
<td></td>
<td>56-81-5</td>
</tr>
<tr>
<td></td>
<td>Hae III Enzyme</td>
<td>25 - 50</td>
<td>56-81-5</td>
</tr>
<tr>
<td></td>
<td>glycerol</td>
<td></td>
<td>56-81-5</td>
</tr>
<tr>
<td></td>
<td>Exo I Enzyme</td>
<td>25 - 50</td>
<td>56-81-5</td>
</tr>
<tr>
<td></td>
<td>glycerol</td>
<td></td>
<td>56-81-5</td>
</tr>
<tr>
<td></td>
<td>Hybridization Mix</td>
<td>25 - 50</td>
<td>75-57-0</td>
</tr>
<tr>
<td></td>
<td>tetramethylammonium chloride</td>
<td></td>
<td>75-57-0</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:**

- **Taq 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.
- **Hae III Enzyme:** 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.
- **Exo I Enzyme:** 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.
- **Hybridization Mix:** 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.

**Inhalation:**

- **Taq 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.
- **Hae III Enzyme:** 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.
Section 4. First aid measures

Exo I Enzyme
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.

Hybridization Mix
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Ingestion</th>
<th>Taq Polymerase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq Polymerase</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>
<td></td>
</tr>
<tr>
<td>Hae III 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>
<td></td>
</tr>
<tr>
<td>Exo I 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>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.</td>
<td></td>
</tr>
</tbody>
</table>

Ingestion

Taq 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. 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.
Section 4. First aid measures

Hae III 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.

Exo I 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.

Hybridization Mix
Get medical attention immediately. Call a poison center or physician. 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. 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.

<table>
<thead>
<tr>
<th>Potential acute health effects</th>
<th>Taq Polymerase</th>
<th>Hae III Enzyme</th>
<th>Exo I Enzyme</th>
<th>Hybridization Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye contact</td>
<td>Causes eye irritation.</td>
<td>Causes eye irritation.</td>
<td>Causes eye irritation.</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact
Taq Polymerase: Causes eye irritation.
Hae III Enzyme: Causes eye irritation.
Exo I Enzyme: Causes eye irritation.
Hybridization Mix: Causes serious eye irritation.

Inhalation
Taq Polymerase: No known significant effects or critical hazards.
Hae III Enzyme: No known significant effects or critical hazards.
Exo I Enzyme: No known significant effects or critical hazards.
Hybridization Mix: May cause respiratory irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
## Section 4. First aid measures

### Skin contact
- Taq Polymerase: No known significant effects or critical hazards.
- Hae III Enzyme: No known significant effects or critical hazards.
- Exo I Enzyme: No known significant effects or critical hazards.
- Hybridization Mix: Toxic in contact with skin. Causes skin irritation.

### Ingestion
- Taq Polymerase: May be irritating to mouth, throat and stomach.
- Hae III Enzyme: May be irritating to mouth, throat and stomach.
- Exo I Enzyme: May be irritating to mouth, throat and stomach.
- Hybridization Mix: Toxic if swallowed. Irritating to mouth, throat and stomach.

### Over-exposure signs/symptoms

#### Eye contact
- Taq Polymerase: Adverse symptoms may include the following:
  - irritation
  - watering
  - redness
- Hae III Enzyme: Adverse symptoms may include the following:
  - irritation
  - watering
  - redness
- Exo I Enzyme: Adverse symptoms may include the following:
  - irritation
  - watering
  - redness
- Hybridization Mix: Adverse symptoms may include the following:
  - pain or irritation
  - watering
  - redness

#### Inhalation
- Taq Polymerase: No specific data.
- Hae III Enzyme: No specific data.
- Exo I Enzyme: No specific data.
- Hybridization Mix: Adverse symptoms may include the following:
  - respiratory tract irritation
  - coughing

#### Skin contact
- Taq Polymerase: No specific data.
- Hae III Enzyme: No specific data.
- Exo I Enzyme: No specific data.
- Hybridization Mix: Adverse symptoms may include the following:
  - irritation
  - redness

#### Ingestion
- Taq Polymerase: No specific data.
- Hae III Enzyme: No specific data.
- Exo I Enzyme: No specific data.
- Hybridization Mix: No specific data.

#### Indication of immediate medical attention and special treatment needed, if necessary
- Notes to physician: 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: No specific treatment.
- Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)
# Section 5. Fire-fighting measures

## Extinguishing media

**Suitable extinguishing media**
- Taq Polymerase: Use an extinguishing agent suitable for the surrounding fire.
- Hae III Enzyme: Use an extinguishing agent suitable for the surrounding fire.
- Exo I Enzyme: Use an extinguishing agent suitable for the surrounding fire.
- Hybridization Mix: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**
- Taq Polymerase: None known.
- Hae III Enzyme: None known.
- Exo I Enzyme: None known.
- Hybridization Mix: None known.

## Specific hazards arising from the chemical

- Taq Polymerase: In a fire or if heated, a pressure increase will occur and the container may burst.
- Hae III Enzyme: In a fire or if heated, a pressure increase will occur and the container may burst.
- Exo I Enzyme: In a fire or if heated, a pressure increase will occur and the container may burst.
- Hybridization Mix: In a fire or if heated, a pressure increase will occur and the container may burst.

## Hazardous thermal decomposition products

- Taq Polymerase: Decomposition products may include the following materials:
  - Carbon dioxide
  - Carbon monoxide
- Hae III Enzyme: Decomposition products may include the following materials:
  - Carbon dioxide
  - Carbon monoxide
- Exo I Enzyme: Decomposition products may include the following materials:
  - Carbon dioxide
  - Carbon monoxide
- Hybridization Mix: Decomposition products may include the following materials:
  - Carbon dioxide
  - Carbon monoxide
  - Nitrogen oxides
  - Halogenated compounds

## Special protective actions for fire-fighters

- Taq 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.
- Hae III 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.
- Exo I 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.
- Hybridization Mix: 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.
Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Special protective equipment for fire-fighters</th>
<th>Taq Polymerase</th>
<th>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hae III Enzyme</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
<td></td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
<td></td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
<td></td>
</tr>
</tbody>
</table>

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. Do not breathe vapor or mist.
- Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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

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. Approach release from upwind. 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. Contaminated absorbent material may pose the same hazard as the spilled product. 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

| Taq Polymerase | 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. |
| Hae III 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 |
Section 7. Handling and storage

### Advice on general occupational hygiene

**Taq Polymerase**
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Hae III 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.

**Exo I 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.

**Hybridization Mix**
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.

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### Conditions for safe storage, including any incompatibilities

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

**Hae III 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
Section 7. Handling and storage

Exo I Enzyme
store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
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.

Hybridization Mix
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. Store locked up. 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 8. Exposure controls/personal protection

Control parameters

Ingredient name | Exposure limits
---|---
Taq Polymerase
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
TWA: 10 mg/m³ 8 hours. Form: Total dust
OSHA PEL (United States, 2/2013).
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
TWA: 15 mg/m³ 8 hours. Form: Total dust

Hae III Enzyme
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
TWA: 10 mg/m³ 8 hours. Form: Total dust
OSHA PEL (United States, 2/2013).
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
TWA: 15 mg/m³ 8 hours. Form: Total dust

Exo I Enzyme
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
TWA: 10 mg/m³ 8 hours. Form: Total dust
OSHA PEL (United States, 2/2013).
TWA: 5 mg/m³ 8 hours. Form: Respirable fraction
TWA: 15 mg/m³ 8 hours. Form: Total dust

Appropriate engineering controls
Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Section 8. Exposure controls/personal protection

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.

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: 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

<table>
<thead>
<tr>
<th>Product</th>
<th>Physical state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq Polymerase</td>
<td>Liquid</td>
</tr>
<tr>
<td>Hae III Enzyme</td>
<td>Liquid</td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Liquid</td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Liquid</td>
</tr>
</tbody>
</table>

Color

<table>
<thead>
<tr>
<th>Product</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq Polymerase</td>
<td>Not available</td>
</tr>
<tr>
<td>Hae III Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Odor

<table>
<thead>
<tr>
<th>Product</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq Polymerase</td>
<td>Not available</td>
</tr>
<tr>
<td>Hae III Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Flash point

<table>
<thead>
<tr>
<th>Product</th>
<th>Flash point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq Polymerase</td>
<td>Not available</td>
</tr>
<tr>
<td>Hae III Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Auto-ignition temperature

<table>
<thead>
<tr>
<th>Product</th>
<th>Auto-ignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq Polymerase</td>
<td>Not available</td>
</tr>
<tr>
<td>Hae III Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Flammable limits

<table>
<thead>
<tr>
<th>Product</th>
<th>Flammable limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taq Polymerase</td>
<td>Not available</td>
</tr>
<tr>
<td>Hae III Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Exo I Enzyme</td>
<td>Not available</td>
</tr>
<tr>
<td>Hybridization Mix</td>
<td>Not available</td>
</tr>
</tbody>
</table>
## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Taq Polymerase</th>
<th>Hae III Enzyme</th>
<th>Exo I Enzyme</th>
<th>Hybridization Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular weight</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Boiling/condensation point</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Physical/chemical properties</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>properties comments</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

Reactivity:
- Taq Polymerase: No specific test data related to reactivity available for this product or its ingredients.
- Hae III Enzyme: No specific test data related to reactivity available for this product or its ingredients.
- Exo I Enzyme: No specific test data related to reactivity available for this product or its ingredients.
- Hybridization Mix: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability:
- Taq Polymerase: The product is stable.
- Hae III Enzyme: The product is stable.
- Exo I Enzyme: The product is stable.
- Hybridization Mix: The product is stable.

Possibility of hazardous reactions:
- Taq Polymerase: Under normal conditions of storage and use, hazardous reactions will not occur.
- Hae III Enzyme: Under normal conditions of storage and use, hazardous reactions will not occur.
- Exo I Enzyme: Under normal conditions of storage and use, hazardous reactions will not occur.
- Hybridization Mix: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid:
- Taq Polymerase: No specific data.
- Hae III Enzyme: No specific data.
- Exo I Enzyme: No specific data.
- Hybridization Mix: No specific data.

Incompatible materials:
- Taq Polymerase: No specific data.
- Hae III Enzyme: No specific data.
- Exo I Enzyme: No specific data.
- Hybridization Mix: No specific data.

Hazardous decomposition products:
- Taq Polymerase: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hae III Enzyme: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Exo I Enzyme: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hybridization Mix: 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>Taq Polymerase glycerol</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>Hae III Enzyme glycerol</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>Exo I Enzyme glycerol</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>Hybridization Mix</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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>tetramethylammonium chloride</td>
<td>LD50 Oral 50 mg/kg</td>
<td>Rat</td>
<td>-</td>
<td>-</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>Taq Polymerase 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>
<tr>
<td>Hae III 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>
<tr>
<td>Exo I 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>Hybridization Mix</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>tetramethylammonium chloride</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:
Section 11. Toxicological information

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 :
Potential delayed effects :

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

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybridization Mix</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>102.1 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>612.4 mg/kg</td>
</tr>
</tbody>
</table>

Interactive effects :

Other information :

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>Hybridization Mix</td>
<td>Acute LC50 462000 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td>tetramethylammonium chloride</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Persistence and degradability
Not available.

Bioaccumulative potential
### Section 12. Ecological information

<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>Taq Polymerase glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Hae III Enzyme glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Exo I Enzyme 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>Taq Polymerase</th>
<th>Hae III Enzyme</th>
<th>Exo I Enzyme</th>
<th>Hybridization Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**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. 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.

### Section 14. Transport information

<table>
<thead>
<tr>
<th></th>
<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 number</td>
<td>UN2810</td>
<td>UN2810</td>
<td>UN2810</td>
<td>UN2810</td>
<td>UN2810</td>
<td>UN2810</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Toxic liquid, organic, n.o.s. (Tetramethyl Ammonium Chloride Solution) (tetramethylammonium chloride)</td>
<td>Toxic liquid, organic, n.o.s. (Tetramethyl Ammonium Chloride Solution) (tetramethylammonium chloride)</td>
<td>Toxic liquid, organic, n.o.s. (Tetramethyl Ammonium Chloride Solution) (tetramethylammonium chloride)</td>
<td>Toxic liquid, organic, n.o.s. (Tetramethyl Ammonium Chloride Solution) (tetramethylammonium chloride)</td>
<td>Toxic liquid, organic, n.o.s. (Tetramethyl Ammonium Chloride Solution) (tetramethylammonium chloride)</td>
<td></td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>
Section 14. Transport information

**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**
- **Clean Water Act (CWA) 311 (edetic acid)**: Not listed
- **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**
    - **Classification**: 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>Hybridization Mix</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

State regulations
Section 15. Regulatory information

Massachusetts : None of the components are listed.
New York : None of the components are listed.
New Jersey : None of the components are listed.
Pennsylvania : None of the components are listed.

California Prop. 65

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

<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>Taq Polymerase</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Poly(oxy-1,2-ethanediyl), α-[4-(1,1,3,3-tetramethylbutyl)phenyl]-ω-hydroxy-

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)

Taq Polymerase Not controlled under WHMIS (Canada).
Hae III Enzyme Not controlled under WHMIS (Canada).
Exo I Enzyme Not controlled under WHMIS (Canada).
Hybridization Mix Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists

Canadian NPRI : None of the components are listed.
CEPA Toxic substances : None of the components are listed.
Canada inventory : Not determined.

Section 16. Other information

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

Health 0
Flammability 0
Physical hazards 0

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

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

Flammability 0
Health 3
Instability/Reactivity 0
Special

History
## Section 16. Other information

<table>
<thead>
<tr>
<th>Date of issue/Date of revision</th>
<th>03/10/2015.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of previous issue</td>
<td>No previous validation.</td>
</tr>
<tr>
<td>Version</td>
<td>1</td>
</tr>
</tbody>
</table>

### 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.*

**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.