SAFETY DATA SHEET

Section 1. Identification

GHS product identifier : OncoScan™ Gap Fill and 1st Stage PCR
Product code : 902269

Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Supplier/Manufacturer : Affymetrix, Inc.
3420 Central Expressway
Santa Clara, CA 95051
Phone: 1-408-731-5000
website: www.affymetrix.com

Emergency telephone number : Chemtrec: +1 703 527 3887

Section 2. Hazards identification

Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap Fill Enzyme Mix</td>
<td>SKIN CORROSION/IRRITATION - Category 3</td>
</tr>
<tr>
<td></td>
<td>SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B</td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td>SKIN CORROSION/IRRITATION - Category 3</td>
</tr>
<tr>
<td></td>
<td>SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B</td>
</tr>
<tr>
<td>Exo Mix</td>
<td>SKIN CORROSION/IRRITATION - Category 3</td>
</tr>
<tr>
<td></td>
<td>SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B</td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td>SKIN CORROSION/IRRITATION - Category 3</td>
</tr>
<tr>
<td></td>
<td>SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B</td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>SKIN CORROSION/IRRITATION - Category 3</td>
</tr>
<tr>
<td></td>
<td>SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B</td>
</tr>
</tbody>
</table>

GHS label elements

Hazard pictograms : ![Warning]

Signal word : Gap Fill Enzyme Mix Warning
              SAP, Recombinant Warning
              Exo Mix Warning
              Cleavage Enzyme Warning
              Taq Polymerase Warning

Hazard statements : Gap Fill Enzyme Mix Causes mild skin irritation.
                   SAP, Recombinant Causes eye irritation.
                   Exo Mix Causes mild skin irritation.
                   Causes eye irritation.
                   Cleavage Enzyme Causes mild skin irritation.
                   Causes eye irritation.
                   Taq Polymerase Causes mild skin irritation.
                   Causes eye irritation.

Precautionary statements
OncoScan™ Gap Fill and 1st Stage PCR

Section 2. Hazards identification

**General**
- Gap Fill Enzyme Mix: Not applicable.
- SAP, Recombinant: Not applicable.
- Exo Mix: Not applicable.
- Cleavage Enzyme: Not applicable.
- Taq Polymerase: Not applicable.

**Prevention**
- Gap Fill Enzyme Mix: Wear eye or face protection. Wash hands thoroughly after handling.
- SAP, Recombinant: Wear eye or face protection. Wash hands thoroughly after handling.
- Exo Mix: Wear eye or face protection. Wash hands thoroughly after handling.
- Cleavage Enzyme: Wear eye or face protection. Wash hands thoroughly after handling.
- Taq Polymerase: Wear eye or face protection. Wash hands thoroughly after handling.

**Response**
- Gap Fill Enzyme Mix: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- SAP, Recombinant: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Exo Mix: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Cleavage Enzyme: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Taq Polymerase: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage**
- Gap Fill Enzyme Mix: Not applicable.
- SAP, Recombinant: Not applicable.
- Exo Mix: Not applicable.
- Cleavage Enzyme: Not applicable.
- Taq Polymerase: Not applicable.

**Disposal**
- Gap Fill Enzyme Mix: Not applicable.
- SAP, Recombinant: Not applicable.
- Exo Mix: Not applicable.
- Cleavage Enzyme: Not applicable.
- Taq Polymerase: Not applicable.

**Other hazards which do not result in classification**
- Not available.

Section 3. Composition/information on ingredients

**Substance/mixture**: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap Fill Enzyme Mix glycerol</td>
<td>50</td>
<td>56-81-5</td>
</tr>
<tr>
<td>SAP, Recombinant glycerol</td>
<td>50</td>
<td>56-81-5</td>
</tr>
<tr>
<td>Exo Mix glycerol</td>
<td>50</td>
<td>56-81-5</td>
</tr>
<tr>
<td>Cleavage Enzyme glycerol</td>
<td>50</td>
<td>56-81-5</td>
</tr>
<tr>
<td>Taq Polymerase glycerol</td>
<td>50</td>
<td>56-81-5</td>
</tr>
</tbody>
</table>
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

Description of necessary first aid measures

**Eye contact**

: Gap Fill Enzyme 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. If irritation persists, get medical attention.

: SAP, Recombinant  
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 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. If irritation persists, get medical attention.

: Cleavage 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.

**Inhalation**

: Gap Fill Enzyme Mix  
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.

: SAP, Recombinant  
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.

: Exo Mix  
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
Section 4. First aid measures

Gap Fill Enzyme Mix

- 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 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.

- Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. Wash clothing before reuse. Clean shoes thoroughly before reuse.

- Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Skin contact

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ingestion</th>
<th>Skin contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap Fill Enzyme Mix</td>
<td>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</td>
<td>Gap Fill Enzyme Mix</td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exo Mix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 4. First aid measures

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.

**SAP, Recombinant**
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 Mix**
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.

**Cleavage 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.

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

#### Potential acute health effects

<table>
<thead>
<tr>
<th>Component</th>
<th>Eye contact</th>
<th>Inhalation</th>
<th>Skin contact</th>
<th>Ingestion</th>
<th>Over-exposure signs/symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye contact</td>
</tr>
<tr>
<td>Gap Fill Enzyme Mix</td>
<td>Causes eye irritation.</td>
<td>No known significant effects or critical hazards.</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td>Causes eye irritation.</td>
<td>No known significant effects or critical hazards.</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>Exo Mix</td>
<td>Causes eye irritation.</td>
<td>No known significant effects or critical hazards.</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td>Causes eye irritation.</td>
<td>No known significant effects or critical hazards.</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>Causes eye irritation.</td>
<td>No known significant effects or critical hazards.</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Inhalation</td>
</tr>
<tr>
<td>Gap Fill Enzyme Mix</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Exo Mix</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin contact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ingestion</td>
</tr>
<tr>
<td>Gap Fill Enzyme Mix</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
</tr>
<tr>
<td>Exo Mix</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>Causes mild skin irritation.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
<td>Irritating to mouth, throat and stomach.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Over-exposure signs/symptoms</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Gap Fill Enzyme Mix</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>Exo Mix</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
<td>Adverse symptoms may include the following: pain or irritation, watering, redness</td>
</tr>
</tbody>
</table>
Section 4. First aid measures

Protection of first-aiders:
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.

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

Specific treatments:
- Gap Fill Enzyme Mix: No specific treatment.
- SAP, Recombinant: No specific treatment.
- Exo Mix: No specific treatment.
- Cleavage Enzyme: No specific treatment.
- Taq Polymerase: No specific treatment.

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

Ingestion:
- Gap Fill Enzyme Mix: No specific data.
- SAP, Recombinant: No specific data.
- Exo Mix: No specific data.
- Cleavage Enzyme: No specific data.
- Taq Polymerase: No specific data.

Irritation/redness:
See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media:

Suitable extinguishing media:
- Gap Fill Enzyme Mix: Use an extinguishing agent suitable for the surrounding fire.
- SAP, Recombinant: Use an extinguishing agent suitable for the surrounding fire.
- Exo Mix: Use an extinguishing agent suitable for the surrounding fire.
- Cleavage Enzyme: Use an extinguishing agent suitable for the surrounding fire.
- Taq Polymerase: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media:
- Gap Fill Enzyme Mix: None known.
- SAP, Recombinant: None known.
- Exo Mix: None known.
- Cleavage Enzyme: None known.
- Taq Polymerase: None known.

Specific hazards arising from the chemical:
- Gap Fill Enzyme Mix: In a fire or if heated, a pressure increase will occur and the container may burst.
- SAP, Recombinant: In a fire or if heated, a pressure increase will occur and the container may burst.
- Exo Mix: In a fire or if heated, a pressure increase will occur and the container may burst.
- Cleavage Enzyme: In a fire or if heated, a pressure increase will occur and the container may burst.
- Taq Polymerase: In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products:
- Gap Fill Enzyme Mix: Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
- SAP, Recombinant: Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
- Exo Mix: Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
Section 5. Fire-fighting measures

Special protective actions for fire-fighters:

<table>
<thead>
<tr>
<th>Enzyme Mix</th>
<th>Decomposition products may include the following materials:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap Fill Enzyme Mix</td>
<td>carbon dioxide, carbon monoxide</td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td>carbon dioxide, carbon monoxide</td>
</tr>
<tr>
<td>Exo Mix</td>
<td>carbon dioxide, carbon monoxide</td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td>carbon dioxide, carbon monoxide</td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>carbon dioxide, carbon monoxide</td>
</tr>
</tbody>
</table>

Special protective equipment for fire-fighters:

<table>
<thead>
<tr>
<th>Enzyme Mix</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>Gap Fill Enzyme 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>
</tr>
<tr>
<td>SAP, Recombinant</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>
</tr>
<tr>
<td>Exo 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>
</tr>
<tr>
<td>Cleavage 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>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</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. Avoid breathing 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".
Section 6. Accidental release measures

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: Gap Fill Enzyme Mix
Put on appropriate personal protective equipment (see Section 8). 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. 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.

Precautions for safe handling: SAP, Recombinant
Put on appropriate personal protective equipment (see Section 8). 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. 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.

Precautions for safe handling: Exo Mix
Put on appropriate personal protective equipment (see Section 8). 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. 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.

Precautions for safe handling: Cleavage Enzyme
Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands...
Section 7. Handling and storage

and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. 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.

Taq Polymerase

Put on appropriate personal protective equipment (see Section 8). 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. 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.

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 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap Fill Enzyme Mix</td>
<td>ACGIH TLV (United States, 2/2010). TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction</td>
</tr>
<tr>
<td>glycerol</td>
<td></td>
</tr>
<tr>
<td>SAP, Recombinant</td>
<td>ACGIH TLV (United States, 2/2010). TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction</td>
</tr>
<tr>
<td>glycerol</td>
<td></td>
</tr>
<tr>
<td>Exo Mix</td>
<td>ACGIH TLV (United States, 2/2010). TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction</td>
</tr>
<tr>
<td>glycerol</td>
<td></td>
</tr>
<tr>
<td>Cleavage Enzyme</td>
<td>ACGIH TLV (United States, 2/2010). TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction</td>
</tr>
<tr>
<td>glycerol</td>
<td></td>
</tr>
<tr>
<td>Taq Polymerase</td>
<td>ACGIH TLV (United States, 2/2010). TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction</td>
</tr>
<tr>
<td>glycerol</td>
<td></td>
</tr>
</tbody>
</table>
Section 8. Exposure controls/personal protection

**Recommended monitoring procedures**
If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

**Appropriate engineering controls**
No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**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.

**Skin protection**

**Hand protection**
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection**
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**
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.

**Thermal hazards**
Not applicable.

Section 9. Physical and chemical properties

**Appearance**

**Physical state**
Gap Fill Enzyme Mix: Liquid.
SAP, Recombinant: Liquid.
Exo Mix: Liquid.
Cleavage Enzyme: Liquid.
Taq Polymerase: Liquid.

**Color**
Gap Fill Enzyme Mix: Not available.
SAP, Recombinant: Not available.
Exo Mix: Not available.
Cleavage Enzyme: Not available.
Taq Polymerase: Not available.

**Odor**
Gap Fill Enzyme Mix: Not available.
SAP, Recombinant: Not available.
Exo Mix: Not available.
Cleavage Enzyme: Not available.
Taq Polymerase: Not available.

**Odor threshold**
Not available.

**pH**

### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Gap Fill Enzyme Mix</th>
<th>SAP, Recombinant</th>
<th>Exo Mix</th>
<th>Cleavage Enzyme</th>
<th>Taq Polymerase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melting point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Burning time</strong></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Lower and upper explosive</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Gap Fill Enzyme Mix</th>
<th>SAP, Recombinant</th>
<th>Exo Mix</th>
<th>Cleavage Enzyme</th>
<th>Taq Polymerase</th>
</tr>
</thead>
</table>

### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Gap Fill Enzyme Mix</th>
<th>SAP, Recombinant</th>
<th>Exo Mix</th>
<th>Cleavage Enzyme</th>
<th>Taq Polymerase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
<td>No specific data</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

Hazardous decomposition products

- Gap Fill Enzyme Mix: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- SAP, Recombinant: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Exo Mix: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Cleavage Enzyme: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Taq Polymerase: 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>Gap Fill Enzyme Mix</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>SAP, Recombinant</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 Mix</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>Cleavage Enzyme</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>Taq 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>
</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>Gap Fill Enzyme Mix</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>SAP, Recombinant</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 Mix</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>Cleavage Enzyme</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Taq Polymerase glycerol</th>
<th>Skin - Mild irritant</th>
<th>Rabbit</th>
<th>-</th>
<th>milligrams 24 hours 500 milligrams</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</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)**
Not available.

**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**
- Gap Fill Enzyme Mix: Causes eye irritation.
- SAP, Recombinant: Causes eye irritation.
- Exo Mix: Causes eye irritation.
- Cleavage Enzyme: Causes eye irritation.
- Taq Polymerase: Causes eye irritation.

**Inhalation**
- Gap Fill Enzyme Mix: No known significant effects or critical hazards.
- SAP, Recombinant: No known significant effects or critical hazards.
- Exo Mix: No known significant effects or critical hazards.
- Cleavage Enzyme: No known significant effects or critical hazards.
- Taq Polymerase: No known significant effects or critical hazards.

**Skin contact**
- Gap Fill Enzyme Mix: Causes mild skin irritation.
- SAP, Recombinant: Causes mild skin irritation.
- Exo Mix: Causes mild skin irritation.
- Cleavage Enzyme: Causes mild skin irritation.
- Taq Polymerase: Causes mild skin irritation.

**Ingestion**
- Gap Fill Enzyme Mix: Irritating to mouth, throat and stomach.
- SAP, Recombinant: Irritating to mouth, throat and stomach.
- Exo Mix: Irritating to mouth, throat and stomach.
- Cleavage Enzyme: Irritating to mouth, throat and stomach.
- Taq Polymerase: Irritating to mouth, throat and stomach.

**Symptoms related to the physical, chemical and toxicological characteristics**
Section 11. Toxicological information

**Eye contact**
- **Gap Fill Enzyme Mix**: Adverse symptoms may include the following: pain or irritation, watering, redness.
- **SAP, Recombinant**: Adverse symptoms may include the following: pain or irritation, watering, redness.
- **Exo Mix**: Adverse symptoms may include the following: pain or irritation, watering, redness.
- **Cleavage Enzyme**: Adverse symptoms may include the following: pain or irritation, watering, redness.
- **Taq Polymerase**: Adverse symptoms may include the following: pain or irritation, watering, redness.

**Inhalation**
- **Gap Fill Enzyme Mix**: No specific data.
- **SAP, Recombinant**: No specific data.
- **Exo Mix**: No specific data.
- **Cleavage Enzyme**: No specific data.
- **Taq Polymerase**: No specific data.

**Skin contact**
- **Gap Fill Enzyme Mix**: Adverse symptoms may include the following: irritation, redness.
- **SAP, Recombinant**: Adverse symptoms may include the following: irritation, redness.
- **Exo Mix**: Adverse symptoms may include the following: irritation, redness.
- **Cleavage Enzyme**: Adverse symptoms may include the following: irritation, redness.
- **Taq Polymerase**: Adverse symptoms may include the following: irritation, redness.

**Ingestion**
- **Gap Fill Enzyme Mix**: No specific data.
- **SAP, Recombinant**: No specific data.
- **Exo Mix**: No specific data.
- **Cleavage Enzyme**: No specific data.
- **Taq Polymerase**: No specific data.

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

#### Short term exposure

**Potential immediate effects**
- **Gap Fill Enzyme Mix**: Not available.
- **SAP, Recombinant**: Not available.
- **Exo Mix**: Not available.
- **Cleavage Enzyme**: Not available.
- **Taq Polymerase**: Not available.

**Potential delayed effects**
- **Gap Fill Enzyme Mix**: Not available.
- **SAP, Recombinant**: Not available.
- **Exo Mix**: Not available.
- **Cleavage Enzyme**: Not available.
- **Taq Polymerase**: Not available.

#### Long term exposure

**Potential immediate effects**
- **Gap Fill Enzyme Mix**: Not available.
- **SAP, Recombinant**: Not available.
- **Exo Mix**: Not available.
- **Cleavage Enzyme**: Not available.
- **Taq Polymerase**: Not available.

**Potential delayed effects**
- **Gap Fill Enzyme Mix**: Not available.
- **SAP, Recombinant**: Not available.
- **Exo Mix**: Not available.
- **Cleavage Enzyme**: Not available.
- **Taq Polymerase**: Not available.

### Potential chronic health effects
Section 11. Toxicological information

Not available.

### General
- Gap Fill Enzyme Mix: No known significant effects or critical hazards.
- SAP, Recombinant: No known significant effects or critical hazards.
- Exo Mix: No known significant effects or critical hazards.
- Cleavage Enzyme: No known significant effects or critical hazards.
- Taq Polymerase: No known significant effects or critical hazards.

### Carcinogenicity
- Gap Fill Enzyme Mix: No known significant effects or critical hazards.
- SAP, Recombinant: No known significant effects or critical hazards.
- Exo Mix: No known significant effects or critical hazards.
- Cleavage Enzyme: No known significant effects or critical hazards.
- Taq Polymerase: No known significant effects or critical hazards.

### Mutagenicity
- Gap Fill Enzyme Mix: No known significant effects or critical hazards.
- SAP, Recombinant: No known significant effects or critical hazards.
- Exo Mix: No known significant effects or critical hazards.
- Cleavage Enzyme: No known significant effects or critical hazards.
- Taq Polymerase: No known significant effects or critical hazards.

### Teratogenicity
- Gap Fill Enzyme Mix: No known significant effects or critical hazards.
- SAP, Recombinant: No known significant effects or critical hazards.
- Exo Mix: No known significant effects or critical hazards.
- Cleavage Enzyme: No known significant effects or critical hazards.
- Taq Polymerase: No known significant effects or critical hazards.

### Developmental effects
- Gap Fill Enzyme Mix: No known significant effects or critical hazards.
- SAP, Recombinant: No known significant effects or critical hazards.
- Exo Mix: No known significant effects or critical hazards.
- Cleavage Enzyme: No known significant effects or critical hazards.
- Taq Polymerase: No known significant effects or critical hazards.

### Fertility effects
- Gap Fill Enzyme Mix: No known significant effects or critical hazards.
- SAP, Recombinant: No known significant effects or critical hazards.
- Exo Mix: No known significant effects or critical hazards.
- Cleavage Enzyme: No known significant effects or critical hazards.
- Taq Polymerase: No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

### 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>Gap Fill Enzyme Mix glycerol</td>
<td>Acute LC50 54 ml/L Fresh water</td>
<td>Fish - Oncorhynchus mykiss - 0.9 g</td>
<td>96 hours</td>
</tr>
<tr>
<td>SAP, Recombinant glycerol</td>
<td>Acute LC50 54 ml/L Fresh water</td>
<td>Fish - Oncorhynchus mykiss - 0.9 g</td>
<td>96 hours</td>
</tr>
<tr>
<td>Exo glycerol</td>
<td>Acute LC50 54 ml/L Fresh water</td>
<td>Fish - Oncorhynchus mykiss - 0.9 g</td>
<td>96 hours</td>
</tr>
<tr>
<td>Cleavage Enzyme glycerol</td>
<td>Acute LC50 54 ml/L Fresh water</td>
<td>Fish - Oncorhynchus mykiss - 0.9 g</td>
<td>96 hours</td>
</tr>
<tr>
<td>Taq Polymerase glycerol</td>
<td>Acute LC50 54 ml/L Fresh water</td>
<td>Fish - Oncorhynchus mykiss - 0.9 g</td>
<td>96 hours</td>
</tr>
</tbody>
</table>
OncoScan™ Gap Fill and 1st Stage PCR

Section 12. Ecological information

Perspective 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>Gap Fill Enzyme Mix glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>SAP, Recombinant glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Exo Mix glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Cleavage Enzyme glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Taq Polymerase glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Persistence and degradability

Not available.

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>: Gap Fill Enzyme Mix Not available.</td>
<td>Gap Fill Enzyme Mix Not available.</td>
</tr>
<tr>
<td>SAP, Recombinant Not available.</td>
<td>SAP, Recombinant Not available.</td>
</tr>
<tr>
<td>Exo Mix Not available.</td>
<td>Exo Mix Not available.</td>
</tr>
<tr>
<td>Cleavage Enzyme Not available.</td>
<td>Cleavage Enzyme Not available.</td>
</tr>
<tr>
<td>Taq Polymerase Not available.</td>
<td>Taq Polymerase Not available.</td>
</tr>
</tbody>
</table>

Other adverse effects

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Other adverse effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gap Fill Enzyme Mix glycerol</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>SAP, Recombinant glycerol</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Exo Mix glycerol</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Cleavage Enzyme glycerol</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Taq Polymerase glycerol</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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>UN number</th>
<th>UN proper shipping name</th>
<th>Transport hazard class(es)</th>
<th>Packing group</th>
<th>Environmental hazards</th>
<th>Special precautions for user</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>-</td>
<td>No.</td>
<td>Not available.</td>
<td>-</td>
</tr>
<tr>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>-</td>
<td>No.</td>
<td>Not available.</td>
<td>-</td>
</tr>
<tr>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>-</td>
<td>No.</td>
<td>Not available.</td>
<td>-</td>
</tr>
</tbody>
</table>

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product: No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

History
Date of issue/Date of revision: 8/16/2013.
Date of previous issue: No previous validation.
Version: 1
Key to abbreviations: ADN/ADNR = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
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
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
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.