SAFETY DATA SHEET

VariFlex Bacterial Protein Expression System, Part Number 240163

Section 1. Identification

Product identifier: VariFlex Bacterial Protein Expression System, Part Number 240163
Part no. (chemical kit): 240163
Part no.: pBEn-SBPa 240162-51
Streptavidin Resin 240105-51
pBEn-SBPb 240162-52
pBEn-SB Pc 240162-53

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

Material uses: Analytical reagent.

pBEn-SBPa 0.02 ml (20 µg 1 µg/µl)
Streptavidin Resin 1.25 ml
pBEn-SBPb 0.02 ml (20 µg 1 µg/µl)
pBEn-SBPc 0.02 ml

Supplier/Manufacturer: Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number (with hours of operation): CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

Streptavidin Resin
H226 FLAMMABLE LIQUIDS - Category 3
H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms: Streptavidin Resin

Signal word: pBEn-SBPa No signal word.
Streptavidin Resin WARNING
pBEn-SBPb No signal word.
pBEn-SBPc No signal word.

Hazard statements: pBEn-SBPa No known significant effects or critical hazards.
Streptavidin Resin H226 - Flammable liquid and vapour.
pBEn-SBPb H319 - Causes serious eye irritation.
pBEn-SBPc No known significant effects or critical hazards.

Precautionary statements

Date of issue/Date of revision: 22/02/2018
Date of previous issue: 25/03/2016
Version: 5
Section 2. Hazard(s) identification

**Prevention**
- **pBe-SBPa**
  - Streptavidin Resin
  - Not applicable.
  - P280 - Wear protective gloves. Wear eye or face protection.
  - P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
  - P242 - Use only non-sparking tools.
  - P243 - Take precautionary measures against static discharge.
  - P233 - Keep container tightly closed.
  - P264 - Wash hands thoroughly after handling.

**Response**
- **pBe-SBPb**
  - Not applicable.
  - pBe-SBPc
  - Not applicable.

**Storage**
- **pBe-SBPb**
  - Not applicable.
  - pBe-SBPc
  - Not applicable.

**Disposal**
- **pBe-SBPb**
  - Not applicable.
  - pBe-SBPc
  - Not applicable.

**Supplemental label elements**

**Additional warning phrases**
- **pBe-SBPb**
  - Not applicable.
  - pBe-SBPc
  - Not applicable.

**Other hazards which do not result in classification**
- **pBe-SBPb**
  - Not applicable.
  - pBe-SBPc
  - Not applicable.

Section 3. Composition and ingredient information

**Substance/mixture**
- **pBe-SBPb**
  - Streptavidin Resin
  - Mixture

**CAS number/other identifiers**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptavidin Resin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>≥10 - ≤30</td>
<td>64-17-5</td>
</tr>
</tbody>
</table>
Section 3. Composition and ingredient information

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

pBEn-SBPa
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Streptavidin Resin
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.

pBEn-SBPb
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

pBEn-SBPc
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation

pBEn-SBPa
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Streptavidin Resin
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.

pBEn-SBPb
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

pBEn-SBPc
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact

pBEn-SBPa
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Streptavidin Resin
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.

pBEn-SBPb
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

pBEn-SBPc
Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Section 4. First aid measures

Ingestion : pBEn-SBPa
Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Streptavidin Resin
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.

pBEn-SBPb
Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

pBEn-SBPc
Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

**Potential acute health effects**

**Eye contact**
- **pBEn-SBPa**
  - Streptavidin Resin: Causes serious eye irritation.
  - pBEn-SBPb: No known significant effects or critical hazards.
  - pBEn-SBPc: No known significant effects or critical hazards.

**Inhalation**
- **pBEn-SBPa**
  - Streptavidin Resin: No known significant effects or critical hazards.
  - pBEn-SBPb: No known significant effects or critical hazards.
  - pBEn-SBPc: No known significant effects or critical hazards.

**Skin contact**
- **pBEn-SBPa**
  - Streptavidin Resin: No known significant effects or critical hazards.
  - pBEn-SBPb: No known significant effects or critical hazards.
  - pBEn-SBPc: No known significant effects or critical hazards.

**Ingestion**
- **pBEn-SBPa**
  - Streptavidin Resin: No known significant effects or critical hazards.
  - pBEn-SBPb: No known significant effects or critical hazards.
  - pBEn-SBPc: No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

Date of issue/Date of revision : 22/02/2018
Date of previous issue : 25/03/2016
Version : 5
Section 4. First aid measures

**Eye contact**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPa</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>No specific data.</td>
<td>Adverse symptoms may include the following:</td>
<td>pain or irritation</td>
<td>watering</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inhalation**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Skin contact**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Ingestion**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Notes to physician**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>Treat symptomatically.</td>
<td>Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
<td>Treat symptomatically.</td>
<td>Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>Treat symptomatically.</td>
<td>Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
</tr>
</tbody>
</table>

**Specific treatments**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
</table>

**Protection of first-aiders**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
</tr>
</tbody>
</table>

See toxicological information (Section 11)

Section 5. Firefighting measures

**Extinguishing media**

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extinguishing agent</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td>Use dry chemical, CO₂, water spray (fog) or foam.</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extinguishing agent</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
</tr>
</tbody>
</table>

Date of issue: 22/02/2018  Date of previous issue: 25/03/2016  Version: 5/18
### Section 5. Firefighting measures

<table>
<thead>
<tr>
<th>Unsuitable extinguishing media</th>
<th>pBEn-SBPa</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Streptavidin Resin</td>
<td>Do not use water jet.</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>None known.</td>
<td></td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>None known.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specific hazards arising from the chemical</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous thermal decomposition products</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>Decomposition products may include the following materials:</td>
</tr>
<tr>
<td></td>
<td>carbon dioxide</td>
</tr>
<tr>
<td></td>
<td>carbon monoxide</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>No specific data.</td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special protective actions for fire-fighters</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>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.</td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Special protective equipment for fire-fighters</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></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>Streptavidin Resin</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>pBEn-SBPb</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>pBEn-SBPc</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>

<table>
<thead>
<tr>
<th>Hazchem code</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>*2Y</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>Not available.</td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

<table>
<thead>
<tr>
<th>Material</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>pBEn-SBPa</td>
<td>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 spill material. Put on appropriate personal protective equipment.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>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 spill material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>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 spill material. Put on appropriate personal protective equipment.</td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>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 spill material. Put on appropriate personal protective equipment.</td>
</tr>
</tbody>
</table>

#### For emergency responders

<table>
<thead>
<tr>
<th>Material</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>pBEn-SBPa</td>
<td>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 &quot;For non-emergency personnel&quot;.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>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 &quot;For non-emergency personnel&quot;.</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>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 &quot;For non-emergency personnel&quot;.</td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>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 &quot;For non-emergency personnel&quot;.</td>
</tr>
</tbody>
</table>

#### Environmental precautions

<table>
<thead>
<tr>
<th>Material</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>pBEn-SBPa</td>
<td>Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
<tr>
<td>pBEn-SBPc</td>
<td>Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</td>
</tr>
</tbody>
</table>
Section 6. Accidental release measures

Methods and material for containment and cleaning up

Methods for cleaning up: pBEn-SBPa
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.

Streptavidin Resin
Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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.

pBEn-SBPb
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.

pBEn-SBPc
Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: pBEn-SBPa
Put on appropriate personal protective equipment (see Section 8).

Streptavidin Resin
Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

pBEn-SBPc
Put on appropriate personal protective equipment (see Section 8).
## Section 7. Handling and storage

### Advice on general occupational hygiene

<table>
<thead>
<tr>
<th>Material</th>
<th>Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>pBEn-SBPa</td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
</tr>
<tr>
<td>pBEn-SB Pc</td>
<td>Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</td>
</tr>
</tbody>
</table>

### Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Material</th>
<th>Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>pBEn-SBPa</td>
<td>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</td>
</tr>
<tr>
<td>Streptavidin Resin</td>
<td>Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</td>
</tr>
<tr>
<td>pBEn-SBPb</td>
<td>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

Incompatible materials before handling or use.

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

Section 8. Exposure controls and personal protection

### Control parameters

### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptavidin Resin</td>
<td>Safe Work Australia (Australia, 1/2014).</td>
</tr>
<tr>
<td>Ethanol</td>
<td>TWA: 1880 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 1000 ppm 8 hours.</td>
</tr>
</tbody>
</table>

### Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### 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: safety glasses with side-shields.

#### Skin 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.

#### Hand 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
## Section 8. Exposure controls and personal protection

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

**Respiratory protection**: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Appearance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colour</strong></td>
<td>pBEn-SBPa Not available. Streptavidin Resin Not available. pBEn-SBPb Not available. pBEn-SBPc Not available.</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>pBEn-SBPa Not available. Streptavidin Resin Not available. pBEn-SBPb Not available. pBEn-SBPc Not available.</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>pBEn-SBPa Not available. Streptavidin Resin Not available. pBEn-SBPb Not available. pBEn-SBPc Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>pBEn-SBPa 7.5 Streptavidin Resin 7.5 pBEn-SBPb 7.5 pBEn-SBPc 7.5</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>pBEn-SBPa 0°C (32°F) Streptavidin Resin Not available. pBEn-SBPb 0°C (32°F) pBEn-SBPc 0°C (32°F)</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>pBEn-SBPa 100°C (212°F) Streptavidin Resin Not available. pBEn-SBPb 100°C (212°F) pBEn-SBPc 100°C (212°F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>pBEn-SBPa Not available. Streptavidin Resin Closed cup: 37.8 to 61°C (100 to 141.8°F) pBEn-SBPb Not available. pBEn-SBPc Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>pBEn-SBPa Not available. Streptavidin Resin Not available. pBEn-SBPb Not available. pBEn-SBPc Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>pBEn-SBPa Not applicable. Streptavidin Resin Not applicable. pBEn-SBPb Not applicable. pBEn-SBPc Not applicable.</td>
</tr>
<tr>
<td><strong>Lower and upper explosive (flammable) limits</strong></td>
<td>pBEn-SBPa Not available. Streptavidin Resin Not available. pBEn-SBPb Not available. pBEn-SBPc Not available.</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>pBEn-SBPa Not available. Streptavidin Resin Not available. pBEn-SBPb Not available. pBEn-SBPc Not available.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>:</td>
</tr>
</tbody>
</table>
### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPa</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility</td>
<td>pBEn-SBPa</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Streptavidin Resin</td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>pBEn-SBPa</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>pBEn-SBPa</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>pBEn-SBPa</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>pBEn-SBPa</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>pBEn-SBPa</td>
<td>Not available.</td>
<td>Streptavidin Resin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>pBEn-SBPa</td>
<td>Not available.</td>
<td>Streptavidin Resin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>pBEn-SBPa</td>
<td>Not available.</td>
<td>Streptavidin Resin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>pBEn-SBPa</td>
<td>Not available.</td>
<td>Streptavidin Resin</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPa</th>
<th>pBEn-SBPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</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>
</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>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

**Conditions to avoid**

- **pBEn-SBPa**
  - Streptavidin Resin
  - Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

- **pBEn-SBPs**
  - No specific data.

- **pBEn-SBPs**
  - No specific data.

**Incompatible materials**

- **pBEn-SBPa**
  - Streptavidin Resin
  - May react or be incompatible with oxidising materials.

- **pBEn-SBPs**
  - May react or be incompatible with oxidising materials.

- **pBEn-SBPs**
  - May react or be incompatible with oxidising materials.

**Hazardous decomposition products**

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

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

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

- **pBEn-SBPs**
  - 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><strong>Streptavidin Resin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>124700 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7 g/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><strong>Streptavidin Resin</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.066666667 minutes 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>400 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

### Sensitisation

Not available.

### Mutagenicity

**Conclusion/Summary**

Not available.

### Carcinogenicity

**Conclusion/Summary**

Not available.

### Reproductive toxicity

**Conclusion/Summary**

Not available.

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**Date of previous issue**: 25/03/2016  
**Version**: 5  
**Page**: 13/18
Section 11. Toxicological information

Teratogenicity

Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on likely routes of exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin contact</td>
<td>pBEn-SBPa</td>
<td>No known significant effects or critical hazards.</td>
<td>Streptavidin Resin</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Streptavidin Resin</td>
<td>Causes serious eye irritation.</td>
<td>pBEn-SBPb</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>pBEn-SBPb</td>
<td>No known significant effects or critical hazards.</td>
<td>pBEn-SBPc</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>pBEn-SBPa</td>
<td>No known significant effects or critical hazards.</td>
<td>Streptavidin Resin</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Streptavidin Resin</td>
<td>No known significant effects or critical hazards.</td>
<td>pBEn-SBPb</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>pBEn-SBPb</td>
<td>No known significant effects or critical hazards.</td>
<td>pBEn-SBPc</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>pBEn-SBPa</td>
<td>No known significant effects or critical hazards.</td>
<td>Streptavidin Resin</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Streptavidin Resin</td>
<td>No known significant effects or critical hazards.</td>
<td>pBEn-SBPb</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>pBEn-SBPb</td>
<td>No known significant effects or critical hazards.</td>
<td>pBEn-SBPc</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

Potential acute health effects

Eye contact:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>Adverse symptoms may include the following: pain or irritation</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Streptavidin Resin</td>
<td>watering</td>
<td>pBEn-SBPb</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>pBEn-SBPb</td>
<td>No specific data.</td>
<td>pBEn-SBPc</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Inhalation:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Skin contact:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Ingestion:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>Adverse symptoms may include the following: pain or irritation</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>Streptavidin Resin</td>
<td>watering</td>
<td>pBEn-SBPb</td>
<td>No specific data.</td>
</tr>
<tr>
<td></td>
<td>pBEn-SBPb</td>
<td>No specific data.</td>
<td>pBEn-SBPc</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Inhalation:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Skin contact:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Ingestion:

<table>
<thead>
<tr>
<th>Route</th>
<th>pBEn-SBPa</th>
<th>Streptavidin Resin</th>
<th>pBEn-SBPb</th>
<th>pBEn-SBPc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure
Section 11. Toxicological information

### Potential immediate effects
- pBEn-SBPa: No known significant effects or critical hazards.
- Streptavidin Resin: No known significant effects or critical hazards.
- pBEn-SBPb: No known significant effects or critical hazards.
- pBEn-SBPc: No known significant effects or critical hazards.

### Potential delayed effects
- pBEn-SBPa: Not available.
- Streptavidin Resin: Not available.
- pBEn-SBPb: Not available.
- pBEn-SBPc: Not available.

### Long term exposure

#### Potential immediate effects
- pBEn-SBPa: Not available.
- Streptavidin Resin: Not available.
- pBEn-SBPb: Not available.
- pBEn-SBPc: Not available.

#### Potential delayed effects
- pBEn-SBPa: Not available.
- Streptavidin Resin: Not available.
- pBEn-SBPb: Not available.
- pBEn-SBPc: Not available.

### General

#### Carcinogenicity
- pBEn-SBPa: No known significant effects or critical hazards.
- Streptavidin Resin: No known significant effects or critical hazards.
- pBEn-SBPb: No known significant effects or critical hazards.
- pBEn-SBPc: No known significant effects or critical hazards.

#### Mutagenicity
- pBEn-SBPa: No known significant effects or critical hazards.
- Streptavidin Resin: No known significant effects or critical hazards.
- pBEn-SBPb: No known significant effects or critical hazards.
- pBEn-SBPc: No known significant effects or critical hazards.

#### Teratogenicity
- pBEn-SBPa: No known significant effects or critical hazards.
- Streptavidin Resin: No known significant effects or critical hazards.
- pBEn-SBPb: No known significant effects or critical hazards.
- pBEn-SBPc: No known significant effects or critical hazards.

#### Developmental effects
- pBEn-SBPa: No known significant effects or critical hazards.
- Streptavidin Resin: No known significant effects or critical hazards.
- pBEn-SBPb: No known significant effects or critical hazards.
- pBEn-SBPc: No known significant effects or critical hazards.

#### Fertility effects
- pBEn-SBPa: No known significant effects or critical hazards.
- Streptavidin Resin: No known significant effects or critical hazards.
- pBEn-SBPb: No known significant effects or critical hazards.
- pBEn-SBPc: No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates
Not available.

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>Streptavidin Resin</td>
<td>Acute EC50 17.921 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Acute EC50 2000 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 25500 μg/l Marine water</td>
<td>Crustaceans - Artemia franciscana - Larvae</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 42000 μg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 4.995 mg/l Marine water</td>
<td>Algae - Ulva pertusa</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100 ul/L Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.375 ul/L Fresh water</td>
<td>Fish - Gambusia holbrooki - Larvae</td>
<td>12 weeks</td>
</tr>
</tbody>
</table>

### Persistence and degradability

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Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptavidin Resin</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Ethanol</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

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>Streptavidin Resin</td>
<td>-0.35</td>
<td>0.5</td>
<td>low</td>
</tr>
<tr>
<td>Ethanol</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mobility in soil

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

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>ADG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN3316</td>
<td>UN3316</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>CHEMICAL KIT</td>
<td>CHEMICAL KIT</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Remarks: Excepted Quantity

ADG : Hazchem code 2Z
Special provisions 251, 340

IMDG : Emergency schedules F-A, _S-P_
Special provisions 251, 340

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Special precautions for user : **Transport within user's premises**: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

Section 15. Regulatory information

**Standard Uniform Schedule of Medicine and Poisons**
Not regulated.

**Model Work Health and Safety Regulations - Scheduled Substances**
No listed substance

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**
Not listed.

**Montreal Protocol (Annexes A, B, C, E)**
Not listed.

**Stockholm Convention on Persistent Organic Pollutants**
Not listed.

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

**UNECE Aarhus Protocol on POPs and Heavy Metals**
Not listed.

**Inventory list**

**Australia**
All components are listed or exempted.

**Canada**
All components are listed or exempted.

**China**
All components are listed or exempted.

**Europe**
All components are listed or exempted.

**Japan**
**Japan inventory (ENCS)**: All components are listed or exempted.
**Japan inventory (ISHL)**: All components are listed or exempted.

**Malaysia**
Not determined.

**New Zealand**
All components are listed or exempted.

**Philippines**
All components are listed or exempted.

**Republic of Korea**
All components are listed or exempted.

**Taiwan**
All components are listed or exempted.

**Thailand**
Not determined.

**Turkey**
Not determined.

**United States**
All components are listed or exempted.

**Viet Nam**
Not determined.
VariFlex Bacterial Protein Expression System, Part Number 240163

Section 16. Any other relevant information

History

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| Date of previous issue         | 25/03/2016 |
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Key to abbreviations

- ADG = Australian Dangerous Goods
- 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
- NOHSC = National Occupational Health and Safety Commission
- SUSMP = Standard Uniform Schedule of Medicine and Poisons
- UN = United Nations

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streptavidin Resin</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Flam. Liq. 3, H226</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Irrit. 2A, H319</td>
<td></td>
</tr>
</tbody>
</table>

References

- Not available.

\[\text{\textbullet} \] Indicates information that has changed from previously issued version.

Notice to reader

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