

# SAFETY DATA SHEET

VariFlex Bacterial Protein Expression System, Part Number 240177

## Section 1. Identification

**Product identifier** : VariFlex Bacterial Protein Expression System, Part Number 240177  
**Part no. (chemical kit)** : 240177  
**Part no.** : Streptavidin Resin 240105-51  
 pBEc-SBP-SET1 Vector 240176-51  
 pBEc-SBP-SET2 Vector 240176-52  
 pBEc-SBP-SET3 Vector 240176-53

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

**Material uses** : Analytical reagent.  
 Streptavidin Resin 1.25 ml  
 pBEc-SBP-SET1 Vector 0.02 ml  
 pBEc-SBP-SET2 Vector 0.02 ml  
 pBEc-SBP-SET3 Vector 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** :  Streptavidin Resin  
 pBEc-SBP-SET1 Vector  
 pBEc-SBP-SET2 Vector  
 pBEc-SBP-SET3 Vector  
 WARNING  
 No signal word.  
 No signal word.  
 No signal word.

**Hazard statements** :  Streptavidin Resin  
 pBEc-SBP-SET1 Vector  
 pBEc-SBP-SET2 Vector  
 pBEc-SBP-SET3 Vector  
 H226 - Flammable liquid and vapour.  
 H319 - Causes serious eye irritation.  
 No known significant effects or critical hazards.  
 No known significant effects or critical hazards.  
 No known significant effects or critical hazards.

### Precautionary statements

## Section 2. Hazard(s) identification

<b>Prevention</b>	: Streptavidin Resin	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.
	pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not applicable. Not applicable. Not applicable.
<b>Response</b>	: Streptavidin Resin	P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not applicable. Not applicable. Not applicable.
<b>Storage</b>	: Streptavidin Resin	P403 - Store in a well-ventilated place. P235 - Keep cool.
	pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not applicable. Not applicable. Not applicable.
<b>Disposal</b>	: Streptavidin Resin	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not applicable. Not applicable. Not applicable.
<b>Supplemental label elements</b>		
<b>Additional warning phrases</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Other hazards which do not result in classification</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	None known. None known. None known. None known.

## Section 3. Composition and ingredient information

<b>Substance/mixture</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Mixture Mixture Mixture Mixture
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### CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
Streptavidin Resin		
Ethanol	≥10 - ≤30	64-17-5

### 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

<b>Eye contact</b>	: 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.
	pBEc-SBP-SET1 Vector	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.
	pBEc-SBP-SET2 Vector	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.
	pBEc-SBP-SET3 Vector	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.
<b>Inhalation</b>	: 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.
	pBEc-SBP-SET1 Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pBEc-SBP-SET2 Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pBEc-SBP-SET3 Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
<b>Skin contact</b>	: 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.
	pBEc-SBP-SET1 Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pBEc-SBP-SET2 Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pBEc-SBP-SET3 Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

## Section 4. First aid measures

<b>Ingestion</b>	: 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.
	pBEc-SBP-SET1 Vector	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.
	pBEc-SBP-SET2 Vector	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.
	pBEc-SBP-SET3 Vector	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

<b>Eye contact</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Causes serious eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Inhalation</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

## Section 4. First aid measures

<b>Eye contact</b>	: Streptavidin Resin	Adverse symptoms may include the following: pain or irritation watering redness
	pBEc-SBP-SET1 Vector	No specific data.
	pBEc-SBP-SET2 Vector	No specific data.
	pBEc-SBP-SET3 Vector	No specific data.
<b>Inhalation</b>	: Streptavidin Resin	No specific data.
	pBEc-SBP-SET1 Vector	No specific data.
	pBEc-SBP-SET2 Vector	No specific data.
	pBEc-SBP-SET3 Vector	No specific data.
<b>Skin contact</b>	: Streptavidin Resin	No specific data.
	pBEc-SBP-SET1 Vector	No specific data.
	pBEc-SBP-SET2 Vector	No specific data.
	pBEc-SBP-SET3 Vector	No specific data.
<b>Ingestion</b>	: Streptavidin Resin	No specific data.
	pBEc-SBP-SET1 Vector	No specific data.
	pBEc-SBP-SET2 Vector	No specific data.
	pBEc-SBP-SET3 Vector	No specific data.

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

<b>Notes to physician</b>	: Streptavidin Resin	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pBEc-SBP-SET1 Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pBEc-SBP-SET2 Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pBEc-SBP-SET3 Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: Streptavidin Resin	No specific treatment.
	pBEc-SBP-SET1 Vector	No specific treatment.
	pBEc-SBP-SET2 Vector	No specific treatment.
	pBEc-SBP-SET3 Vector	No specific treatment.
<b>Protection of first-aiders</b>	: Streptavidin Resin	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.
	pBEc-SBP-SET1 Vector	No action shall be taken involving any personal risk or without suitable training.
	pBEc-SBP-SET2 Vector	No action shall be taken involving any personal risk or without suitable training.
	pBEc-SBP-SET3 Vector	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

<b>Suitable extinguishing media</b>	: Streptavidin Resin	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
	pBEc-SBP-SET1 Vector	Use an extinguishing agent suitable for the surrounding fire.
	pBEc-SBP-SET2 Vector	Use an extinguishing agent suitable for the surrounding fire.
	pBEc-SBP-SET3 Vector	Use an extinguishing agent suitable for the surrounding fire.

## Section 5. Firefighting measures

<b>Unsuitable extinguishing media</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Do not use water jet. None known. None known. None known.
<b>Specific hazards arising from the chemical</b>	: Streptavidin Resin  pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	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. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	: Streptavidin Resin  pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Decomposition products may include the following materials: carbon dioxide carbon monoxide No specific data. No specific data. No specific data.
<b>Special protective actions for fire-fighters</b>	: Streptavidin Resin  pBEc-SBP-SET1 Vector  pBEc-SBP-SET2 Vector  pBEc-SBP-SET3 Vector	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. 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. 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. 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.
<b>Special protective equipment for fire-fighters</b>	: Streptavidin Resin  pBEc-SBP-SET1 Vector  pBEc-SBP-SET2 Vector  pBEc-SBP-SET3 Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
<b>Hazchem code</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	•2Y Not available. Not available. Not available.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	: Streptavidin Resin	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 spilt 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.
	pBEc-SBP-SET1 Vector	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 spilt material. Put on appropriate personal protective equipment.
	pBEc-SBP-SET2 Vector	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 spilt material. Put on appropriate personal protective equipment.
	pBEc-SBP-SET3 Vector	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 spilt material. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	: Streptavidin Resin	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".
	pBEc-SBP-SET1 Vector	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".
	pBEc-SBP-SET2 Vector	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".
	pBEc-SBP-SET3 Vector	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".
<b>Environmental precautions</b>	: Streptavidin Resin	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).
	pBEc-SBP-SET1 Vector	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).
	pBEc-SBP-SET2 Vector	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).
	pBEc-SBP-SET3 Vector	Avoid dispersal of spilt material and runoff and

## Section 6. Accidental release measures

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 material for containment and cleaning up

**Methods for cleaning up** : Streptavidin Resin

pBEc-SBP-SET1 Vector

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.

pBEc-SBP-SET2 Vector

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.

pBEc-SBP-SET3 Vector

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.

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** : Streptavidin Resin

pBEc-SBP-SET1 Vector

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.

pBEc-SBP-SET2 Vector

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

pBEc-SBP-SET3 Vector

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

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



## Section 7. Handling and storage

### Advice on general occupational hygiene

: Streptavidin Resin

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.

pBEc-SBP-SET1 Vector

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.

pBEc-SBP-SET2 Vector

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.

pBEc-SBP-SET3 Vector

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

### Conditions for safe storage, including any incompatibilities

: Streptavidin Resin

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.

pBEc-SBP-SET1 Vector

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.

pBEc-SBP-SET2 Vector

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

## Section 7. Handling and storage

pBEc-SBP-SET3 Vector

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

Ingredient name	Exposure limits
Streptavidin Resin Ethanol	<b>Safe Work Australia (Australia, 1/2014).</b> TWA: 1880 mg/m <sup>3</sup> 8 hours. TWA: 1000 ppm 8 hours.

- 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: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. 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

### Appearance

<b>Physical state</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Liquid. Liquid. Liquid. Liquid.
<b>Colour</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. Not available. Not available. Not available.
<b>Odour</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. Not available. Not available. Not available.
<b>Odour threshold</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. Not available. Not available. Not available.
<b>pH</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	7.5 7.5 7.5 7.5
<b>Melting point</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. 0°C (32°F) 0°C (32°F) 0°C (32°F)
<b>Boiling point</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. 100°C (212°F) 100°C (212°F) 100°C (212°F)
<b>Flash point</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Closed cup: 37.8 to 61°C (100 to 141.8°F) Not available. Not available. Not available.
<b>Evaporation rate</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. Not available. Not available. Not available.
<b>Flammability (solid, gas)</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. Not available. Not available. Not available.
<b>Vapour pressure</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Not available. Not available. Not available. Not available.
<b>Vapour density</b>	:	

## Section 9. Physical and chemical properties

	Streptavidin Resin	Not available.
	pBEc-SBP-SET1 Vector	Not available.
	pBEc-SBP-SET2 Vector	Not available.
	pBEc-SBP-SET3 Vector	Not available.
<b>Relative density</b>	: Streptavidin Resin	Not available.
	pBEc-SBP-SET1 Vector	Not available.
	pBEc-SBP-SET2 Vector	Not available.
	pBEc-SBP-SET3 Vector	Not available.
<b>Solubility</b>	: Streptavidin Resin	Soluble in the following materials: cold water and hot water.
	pBEc-SBP-SET1 Vector	Easily soluble in the following materials: cold water and hot water.
	pBEc-SBP-SET2 Vector	Easily soluble in the following materials: cold water and hot water.
	pBEc-SBP-SET3 Vector	Easily soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: Streptavidin Resin	Not available.
	pBEc-SBP-SET1 Vector	Not available.
	pBEc-SBP-SET2 Vector	Not available.
	pBEc-SBP-SET3 Vector	Not available.
<b>Auto-ignition temperature</b>	: Streptavidin Resin	Not available.
	pBEc-SBP-SET1 Vector	Not available.
	pBEc-SBP-SET2 Vector	Not available.
	pBEc-SBP-SET3 Vector	Not available.
<b>Decomposition temperature</b>	: Streptavidin Resin	Not available.
	pBEc-SBP-SET1 Vector	Not available.
	pBEc-SBP-SET2 Vector	Not available.
	pBEc-SBP-SET3 Vector	Not available.
<b>Viscosity</b>	: Streptavidin Resin	Not available.
	pBEc-SBP-SET1 Vector	Not available.
	pBEc-SBP-SET2 Vector	Not available.
	pBEc-SBP-SET3 Vector	Not available.

## Section 10. Stability and reactivity

<b>Reactivity</b>	: Streptavidin Resin	No specific test data related to reactivity available for this product or its ingredients.
	pBEc-SBP-SET1 Vector	No specific test data related to reactivity available for this product or its ingredients.
	pBEc-SBP-SET2 Vector	No specific test data related to reactivity available for this product or its ingredients.
	pBEc-SBP-SET3 Vector	No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: Streptavidin Resin	The product is stable.
	pBEc-SBP-SET1 Vector	The product is stable.
	pBEc-SBP-SET2 Vector	The product is stable.
	pBEc-SBP-SET3 Vector	The product is stable.
<b>Possibility of hazardous reactions</b>	: Streptavidin Resin	Under normal conditions of storage and use, hazardous reactions will not occur.
	pBEc-SBP-SET1 Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pBEc-SBP-SET2 Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pBEc-SBP-SET3 Vector	Under normal conditions of storage and use, hazardous reactions will not occur.

## Section 10. Stability and reactivity

<b>Conditions to avoid</b>	: Streptavidin Resin  pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	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. No specific data. No specific data. No specific data.
<b>Incompatible materials</b>	: Streptavidin Resin  pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Reactive or incompatible with the following materials: oxidizing materials May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
<b>Hazardous decomposition products</b>	: Streptavidin Resin  pBEc-SBP-SET1 Vector  pBEc-SBP-SET2 Vector  pBEc-SBP-SET3 Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Streptavidin Resin Ethanol	LC50 Inhalation Vapour	Rat	124700 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Rat	7 g/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Streptavidin Resin Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-

#### Sensitisation

Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

## 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.

<b>Information on likely routes of exposure</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Routes of entry anticipated: Oral, Dermal, Inhalation. Not available. Not available. Not available.
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### Potential acute health effects

<b>Eye contact</b>	: <input checked="" type="checkbox"/> Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Causes serious eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Inhalation</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

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

<b>Eye contact</b>	: <input checked="" type="checkbox"/> Streptavidin Resin  pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	Adverse symptoms may include the following: pain or irritation watering redness No specific data. No specific data. No specific data.
<b>Inhalation</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No specific data. No specific data. No specific data. No specific data.
<b>Skin contact</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No specific data. No specific data. No specific data. No specific data.
<b>Ingestion</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No specific data. No specific data. No specific data. No specific data.

### 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** : Not available.

**Potential delayed effects** : Not available.

### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

<b>General</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Teratogenicity</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Developmental effects</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Fertility effects</b>	: Streptavidin Resin pBEc-SBP-SET1 Vector pBEc-SBP-SET2 Vector pBEc-SBP-SET3 Vector	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

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

### Persistence and degradability

## Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Streptavidin Resin Ethanol	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Streptavidin Resin Ethanol	-0.35	0.5	low

### 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

	ADG	IMDG	IATA
UN number	UN3316	UN3316	UN3316
UN proper shipping name	CHEMICAL KIT	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9 	9 
Packing group	II	II	II
Environmental hazards	No.	No.	No.

### Additional information

Remarks: Excepted Quantity

ADG : Hazchem code 2Z  
Special provisions 251, 340

IMDG : Emergency schedules F-A, \_S-P\_  
Special provisions 251, 340



## Section 14. Transport information

**IATA** : **Quantity limitation** Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960. Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 1 kg. Packaging instructions: Y960.  
**Special provisions** A44, A163

**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.

## Section 16. Any other relevant information

### History

Date of issue/Date of revision : 22/02/2018

revision

Date of previous issue : 28/03/2016

Version : 5

### 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  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 NOHSC = National Occupational Health and Safety Commission  
 SUSMP = Standard Uniform Schedule of Medicine and Poisons  
 UN = United Nations

### Procedure used to derive the classification

Classification	Justification
Streptavidin Resin Flam. Liq. 3, H226 Eye Irrit. 2A, H319	On basis of test data Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

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