

# SAFETY DATA SHEET



pESC-HIS Yeast Epitope Tagging Vector, Part Number 217451

## Section 1. Identification

<b>Product identifier</b>	:	pESC-HIS Yeast Epitope Tagging Vector, Part Number 217451																
<b>Part No. (Chemical Kit)</b>	:	217451																
<b>Part No.</b>	:	<table border="0"> <tr> <td>pESC-HIS Vector</td> <td>217451-51</td> </tr> <tr> <td>GAL 1 Forward Primer Lyophilized</td> <td>217451-52</td> </tr> <tr> <td>GAL 1 Reverse Primer Lyophilized</td> <td>217451-53</td> </tr> <tr> <td>GAL 10 Forward Primer Lyophilized</td> <td>217451-54</td> </tr> <tr> <td>GAL 10 Reverse Primer Lyophilized</td> <td>217451-55</td> </tr> <tr> <td>YPH 499 Yeast Strain</td> <td>200257-41</td> </tr> <tr> <td>YPH 500 Yeast Strain</td> <td>200258-41</td> </tr> <tr> <td>YPH 501 Yeast Strain</td> <td>200259-41</td> </tr> </table>	pESC-HIS Vector	217451-51	GAL 1 Forward Primer Lyophilized	217451-52	GAL 1 Reverse Primer Lyophilized	217451-53	GAL 10 Forward Primer Lyophilized	217451-54	GAL 10 Reverse Primer Lyophilized	217451-55	YPH 499 Yeast Strain	200257-41	YPH 500 Yeast Strain	200258-41	YPH 501 Yeast Strain	200259-41
pESC-HIS Vector	217451-51																	
GAL 1 Forward Primer Lyophilized	217451-52																	
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GAL 10 Forward Primer Lyophilized	217451-54																	
GAL 10 Reverse Primer Lyophilized	217451-55																	
YPH 499 Yeast Strain	200257-41																	
YPH 500 Yeast Strain	200258-41																	
YPH 501 Yeast Strain	200259-41																	

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

Analytical reagent.

pESC-HIS Vector	0.02 ml (20 µg 1 µg/µl)
GAL 1 Forward Primer Lyophilized	0.0025 mg
GAL 1 Reverse Primer Lyophilized	0.0025 mg
GAL 10 Forward Primer Lyophilized	0.0025 mg
GAL 10 Reverse Primer Lyophilized	0.0025 mg
YPH 499 Yeast Strain	0.5 ml
YPH 500 Yeast Strain	0.5 ml
YPH 501 Yeast Strain	0.5 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

Not classified.

YPH 499 Yeast Strain	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2%
YPH 500 Yeast Strain	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2%
YPH 501 Yeast Strain	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2%
YPH 499 Yeast Strain	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2%
YPH 500 Yeast Strain	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2%
YPH 501 Yeast Strain	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 2%

### GHS label elements

## Section 2. Hazard(s) identification

<b>Signal word</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	No signal word. No signal word.  No signal word.  No signal word. No signal word. No signal word. No signal word. No signal word. No signal word. No signal word.
<b>Hazard statements</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	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. 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. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b><u>Precautionary statements</u></b>		
<b>Prevention</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	Not applicable. Not applicable.  Not applicable.  Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Response</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	Not applicable. Not applicable.  Not applicable.  Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Storage</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	Not applicable. Not applicable.  Not applicable.  Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

## Section 2. Hazard(s) identification

<b>Disposal</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	Not applicable. Not applicable.  Not applicable.  Not applicable.  Not applicable.  Not applicable. Not applicable. Not applicable.
<b>Supplemental label elements</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	Not applicable. Not applicable.  Not applicable.  Not applicable.  Not applicable.  Not applicable. Not applicable. Not applicable.
<b>Other hazards which do not result in classification</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	None known. None known.  None known.  None known.  None known.  None known. None known. None known.

## Section 3. Composition and ingredient information

<b>Substance/mixture</b>	: pESC-HIS Vector GAL 1 Forward Primer Lyophilized GAL 1 Reverse Primer Lyophilized GAL 10 Forward Primer Lyophilized GAL 10 Reverse Primer Lyophilized YPH 499 Yeast Strain YPH 500 Yeast Strain YPH 501 Yeast Strain	Mixture Mixture  Mixture  Mixture  Mixture  Mixture Mixture Mixture
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### CAS number/other identifiers

## Section 3. Composition and ingredient information

Ingredient name	% (w/w)	CAS number
YPH 499 Yeast Strain Glycerol	≥10 - ≤30	56-81-5
YPH 500 Yeast Strain Glycerol	≥10 - ≤30	56-81-5
YPH 501 Yeast Strain Glycerol	≥10 - ≤30	56-81-5

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

: pESC-HIS 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.

GAL 1 Forward Primer  
Lyophilized

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.

GAL 1 Reverse Primer  
Lyophilized

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.

GAL 10 Forward Primer  
Lyophilized

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.

GAL 10 Reverse Primer  
Lyophilized

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.

YPH 499 Yeast Strain

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.

YPH 500 Yeast Strain

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.

YPH 501 Yeast Strain

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

: pESC-HIS Vector

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

GAL 1 Forward Primer  
Lyophilized

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

GAL 1 Reverse Primer  
Lyophilized

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of

## Section 4. First aid measures

decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

GAL 10 Forward Primer  
Lyophilized

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

GAL 10 Reverse Primer  
Lyophilized

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

YPH 499 Yeast Strain

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

YPH 500 Yeast Strain

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

YPH 501 Yeast Strain

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

### Skin contact

: pESC-HIS Vector

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

GAL 1 Forward Primer  
Lyophilized

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

GAL 1 Reverse Primer  
Lyophilized

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

GAL 10 Forward Primer  
Lyophilized

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

GAL 10 Reverse Primer  
Lyophilized

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

YPH 499 Yeast Strain

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

YPH 500 Yeast Strain

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

YPH 501 Yeast Strain

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

### Ingestion

: pESC-HIS 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.

GAL 1 Forward Primer  
Lyophilized

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.

GAL 1 Reverse Primer

Wash out mouth with water. Remove victim to fresh

## Section 4. First aid measures

Lyophilized	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.
GAL 10 Forward Primer Lyophilized	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.
GAL 10 Reverse Primer Lyophilized	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.
YPH 499 Yeast Strain	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.
YPH 500 Yeast Strain	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.
YPH 501 Yeast Strain	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>	: pESC-HIS Vector	No known significant effects or critical hazards.
	GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
	GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
	YPH 499 Yeast Strain	No known significant effects or critical hazards.
	YPH 500 Yeast Strain	No known significant effects or critical hazards.
	YPH 501 Yeast Strain	No known significant effects or critical hazards.

## Section 4. First aid measures

<b>Inhalation</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 1 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
<b>Skin contact</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 1 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
<b>Ingestion</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 1 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
	YPH 499 Yeast Strain	No known significant effects or critical hazards.	
	YPH 500 Yeast Strain	No known significant effects or critical hazards.	
	YPH 501 Yeast Strain	No known significant effects or critical hazards.	

### Over-exposure signs/symptoms

<b>Eye contact</b>	:	pESC-HIS Vector	No specific data.
		GAL 1 Forward Primer	No specific data.
		Lyophilized	
		GAL 1 Reverse Primer	No specific data.
		Lyophilized	
		GAL 10 Forward Primer	No specific data.
		Lyophilized	
		GAL 10 Reverse Primer	No specific data.
		Lyophilized	
<b>Inhalation</b>	:	pESC-HIS Vector	No specific data.
		GAL 1 Forward Primer	No specific data.
		Lyophilized	
		GAL 1 Reverse Primer	No specific data.
		Lyophilized	
		GAL 10 Forward Primer	No specific data.
		Lyophilized	
		GAL 10 Reverse Primer	No specific data.
		Lyophilized	
	YPH 499 Yeast Strain	No specific data.	
	YPH 500 Yeast Strain	No specific data.	
	YPH 501 Yeast Strain	No specific data.	

## Section 4. First aid measures

<b>Skin contact</b>	:	pESC-HIS Vector	No specific data.		
		GAL 1 Forward Primer Lyophilized	No specific data.		
		GAL 1 Reverse Primer Lyophilized	No specific data.		
		GAL 10 Forward Primer Lyophilized	No specific data.		
		GAL 10 Reverse Primer Lyophilized	No specific data.		
		YPH 499 Yeast Strain	No specific data.		
		YPH 500 Yeast Strain	No specific data.		
		YPH 501 Yeast Strain	No specific data.		
		<b>Ingestion</b>	:	pESC-HIS Vector	No specific data.
				GAL 1 Forward Primer Lyophilized	No specific data.
GAL 1 Reverse Primer Lyophilized	No specific data.				
GAL 10 Forward Primer Lyophilized	No specific data.				
GAL 10 Reverse Primer Lyophilized	No specific data.				
YPH 499 Yeast Strain	No specific data.				
YPH 500 Yeast Strain	No specific data.				
YPH 501 Yeast Strain	No specific data.				

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

<b>Notes to physician</b>	:	pESC-HIS Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		GAL 1 Forward Primer Lyophilized	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		GAL 1 Reverse Primer Lyophilized	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		GAL 10 Forward Primer Lyophilized	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		GAL 10 Reverse Primer Lyophilized	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		YPH 499 Yeast Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		YPH 500 Yeast Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		YPH 501 Yeast Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	:	pESC-HIS Vector	No specific treatment.
		GAL 1 Forward Primer Lyophilized	No specific treatment.
		GAL 1 Reverse Primer Lyophilized	No specific treatment.
		GAL 10 Forward Primer Lyophilized	No specific treatment.
		GAL 10 Reverse Primer	No specific treatment.



## Section 4. First aid measures

	Lyophilized	No specific treatment.
	YPH 499 Yeast Strain	No specific treatment.
	YPH 500 Yeast Strain	No specific treatment.
	YPH 501 Yeast Strain	No specific treatment.
<b>Protection of first-aiders</b>	: pESC-HIS Vector	No action shall be taken involving any personal risk or without suitable training.
	GAL 1 Forward Primer	No action shall be taken involving any personal risk or without suitable training.
	Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	GAL 1 Reverse Primer	No action shall be taken involving any personal risk or without suitable training.
	Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	GAL 10 Forward Primer	No action shall be taken involving any personal risk or without suitable training.
	Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	GAL 10 Reverse Primer	No action shall be taken involving any personal risk or without suitable training.
	Lyophilized	No action shall be taken involving any personal risk or without suitable training.
	YPH 499 Yeast Strain	No action shall be taken involving any personal risk or without suitable training.
	YPH 500 Yeast Strain	No action shall be taken involving any personal risk or without suitable training.
	YPH 501 Yeast Strain	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>	: pESC-HIS Vector	Use an extinguishing agent suitable for the surrounding fire.
	GAL 1 Forward Primer	Use an extinguishing agent suitable for the surrounding fire.
	Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	GAL 1 Reverse Primer	Use an extinguishing agent suitable for the surrounding fire.
	Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	GAL 10 Forward Primer	Use an extinguishing agent suitable for the surrounding fire.
	Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	GAL 10 Reverse Primer	Use an extinguishing agent suitable for the surrounding fire.
	Lyophilized	Use an extinguishing agent suitable for the surrounding fire.
	YPH 499 Yeast Strain	Use an extinguishing agent suitable for the surrounding fire.
	YPH 500 Yeast Strain	Use an extinguishing agent suitable for the surrounding fire.
	YPH 501 Yeast Strain	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: pESC-HIS Vector	None known.
	GAL 1 Forward Primer	None known.
	Lyophilized	None known.
	GAL 1 Reverse Primer	None known.
	Lyophilized	None known.
	GAL 10 Forward Primer	None known.
	Lyophilized	None known.
	GAL 10 Reverse Primer	None known.
	Lyophilized	None known.
	YPH 499 Yeast Strain	None known.
	YPH 500 Yeast Strain	None known.
	YPH 501 Yeast Strain	None known.

## Section 5. Firefighting measures

<b>Specific hazards arising from the chemical</b>	: pESC-HIS Vector	In a fire or if heated, a pressure increase will occur and the container may burst. No specific fire or explosion hazard.	
	GAL 1 Forward Primer Lyophilized	No specific fire or explosion hazard.	
	GAL 1 Reverse Primer Lyophilized	No specific fire or explosion hazard.	
	GAL 10 Forward Primer Lyophilized	No specific fire or explosion hazard.	
	GAL 10 Reverse Primer Lyophilized	No specific fire or explosion hazard.	
	YPH 499 Yeast Strain	In a fire or if heated, a pressure increase will occur and the container may burst.	
	YPH 500 Yeast Strain	In a fire or if heated, a pressure increase will occur and the container may burst.	
<b>Hazardous thermal decomposition products</b>	: pESC-HIS Vector	No specific data.	
	GAL 1 Forward Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides	
	GAL 1 Reverse Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides	
	GAL 10 Forward Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides	
	GAL 10 Reverse Primer Lyophilized	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides	
	YPH 499 Yeast Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide	
	YPH 500 Yeast Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide	
	YPH 501 Yeast Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide	
	<b>Special protective actions for fire-fighters</b>	: pESC-HIS 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.
		GAL 1 Forward Primer Lyophilized	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.
GAL 1 Reverse Primer		Promptly isolate the scene by removing all persons	

## Section 5. Firefighting measures

Lyophilized		from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
GAL 10 Forward Primer Lyophilized		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.
GAL 10 Reverse Primer Lyophilized		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.
YPH 499 Yeast Strain		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.
YPH 500 Yeast Strain		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.
YPH 501 Yeast Strain		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>	: pESC-HIS Vector	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 1 Forward Primer Lyophilized		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 1 Reverse Primer Lyophilized		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 10 Forward Primer Lyophilized		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
GAL 10 Reverse Primer Lyophilized		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
YPH 499 Yeast Strain		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
YPH 500 Yeast Strain		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
YPH 501 Yeast Strain		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	: pESC-HIS 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.
	GAL 1 Forward Primer Lyophilized	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.
	GAL 1 Reverse Primer Lyophilized	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.
	GAL 10 Forward Primer Lyophilized	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.
	GAL 10 Reverse Primer Lyophilized	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.
	YPH 499 Yeast Strain	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.
	YPH 500 Yeast Strain	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.
	YPH 501 Yeast Strain	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>	: pESC-HIS 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".
	GAL 1 Forward Primer Lyophilized	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".
	GAL 1 Reverse Primer Lyophilized	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".
	GAL 10 Forward Primer Lyophilized	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

## Section 6. Accidental release measures

GAL 10 Reverse Primer  
Lyophilized

suitable and unsuitable materials. See also the information in "For non-emergency personnel". 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".

YPH 499 Yeast Strain

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".

YPH 500 Yeast Strain

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".

YPH 501 Yeast Strain

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### Environmental precautions : pESC-HIS 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).

GAL 1 Forward Primer  
Lyophilized

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).

GAL 1 Reverse Primer  
Lyophilized

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).

GAL 10 Forward Primer  
Lyophilized

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).

GAL 10 Reverse Primer  
Lyophilized

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).

YPH 499 Yeast Strain

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).

YPH 500 Yeast Strain

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).

YPH 501 Yeast Strain

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).

### Methods and material for containment and cleaning up

## Section 6. Accidental release measures

<b>Methods for cleaning up</b>	: pESC-HIS 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.
	GAL 1 Forward Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
	GAL 1 Reverse Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
	GAL 10 Forward Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
	GAL 10 Reverse Primer Lyophilized	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
	YPH 499 Yeast Strain	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.
	YPH 500 Yeast Strain	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.
	YPH 501 Yeast Strain	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

<b>Protective measures</b>	: pESC-HIS Vector	Put on appropriate personal protective equipment (see Section 8).
	GAL 1 Forward Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
	GAL 1 Reverse Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
	GAL 10 Forward Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
	GAL 10 Reverse Primer Lyophilized	Put on appropriate personal protective equipment (see Section 8).
	YPH 499 Yeast Strain	Put on appropriate personal protective equipment (see Section 8).
	YPH 500 Yeast Strain	Put on appropriate personal protective equipment (see Section 8).
	YPH 501 Yeast Strain	Put on appropriate personal protective equipment (see Section 8).

## Section 7. Handling and storage

### Advice on general occupational hygiene

: pESC-HIS 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.

GAL 1 Forward Primer  
Lyophilized

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.

GAL 1 Reverse Primer  
Lyophilized

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.

GAL 10 Forward Primer  
Lyophilized

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.

GAL 10 Reverse Primer  
Lyophilized

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.

YPH 499 Yeast Strain

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.

YPH 500 Yeast Strain

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.

YPH 501 Yeast Strain

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.

## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : pESC-HIS Vector

GAL 1 Forward Primer  
Lyophilized

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.

GAL 1 Reverse Primer  
Lyophilized

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.

GAL 10 Forward Primer  
Lyophilized

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.

GAL 10 Reverse Primer  
Lyophilized

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.

YPH 499 Yeast Strain

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.

YPH 500 Yeast Strain

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.

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from



## Section 7. Handling and storage

YPH 501 Yeast Strain

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.

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.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>YPH 499 Yeast Strain</b> Glycerol	<b>Safe Work Australia (Australia, 1/2014).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.
<b>YPH 500 Yeast Strain</b> Glycerol	<b>Safe Work Australia (Australia, 1/2014).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.
<b>YPH 501 Yeast Strain</b> Glycerol	<b>Safe Work Australia (Australia, 1/2014).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.

#### Appropriate engineering controls

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

#### 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

##### Hand protection

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

## Section 8. Exposure controls and personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : 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>	:	pESC-HIS Vector	Liquid.		
		GAL 1 Forward Primer Lyophilized	Solid.		
		GAL 1 Reverse Primer Lyophilized	Solid.		
		GAL 10 Forward Primer Lyophilized	Solid.		
		GAL 10 Reverse Primer Lyophilized	Solid.		
		YPH 499 Yeast Strain	Liquid.		
		YPH 500 Yeast Strain	Liquid.		
		YPH 501 Yeast Strain	Liquid.		
		<b>Colour</b>	:	pESC-HIS Vector	Not available.
				GAL 1 Forward Primer Lyophilized	Not available.
GAL 1 Reverse Primer Lyophilized	Not available.				
GAL 10 Forward Primer Lyophilized	Not available.				
GAL 10 Reverse Primer Lyophilized	Not available.				
YPH 499 Yeast Strain	Not available.				
YPH 500 Yeast Strain	Not available.				
YPH 501 Yeast Strain	Not available.				
<b>Odour</b>	:			pESC-HIS Vector	Not available.
				GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.		
		GAL 10 Forward Primer Lyophilized	Not available.		
		GAL 10 Reverse Primer Lyophilized	Not available.		
		YPH 499 Yeast Strain	Not available.		
		YPH 500 Yeast Strain	Not available.		
		YPH 501 Yeast Strain	Not available.		
		<b>Odour threshold</b>	:	pESC-HIS Vector	Not available.
				GAL 1 Forward Primer Lyophilized	Not available.
GAL 1 Reverse Primer Lyophilized	Not available.				
GAL 10 Forward Primer Lyophilized	Not available.				
GAL 10 Reverse Primer Lyophilized	Not available.				
YPH 499 Yeast Strain	Not available.				
YPH 500 Yeast Strain	Not available.				
YPH 501 Yeast Strain	Not available.				

## Section 9. Physical and chemical properties

<b>pH</b>	:	pESC-HIS Vector	7.5
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
	<b>Melting point</b>	:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
<b>Boiling point</b>		:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
	<b>Flash point</b>	:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
<b>Evaporation rate</b>		:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.

## Section 9. Physical and chemical properties

<b>Flammability (solid, gas)</b>	: pESC-HIS Vector	Not applicable.
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not applicable.
	YPH 500 Yeast Strain	Not applicable.
	YPH 501 Yeast Strain	Not applicable.
	<b>Lower and upper explosive (flammable) limits</b>	: pESC-HIS Vector
GAL 1 Forward Primer Lyophilized		Not available.
GAL 1 Reverse Primer Lyophilized		Not available.
GAL 10 Forward Primer Lyophilized		Not available.
GAL 10 Reverse Primer Lyophilized		Not available.
YPH 499 Yeast Strain		Not available.
YPH 500 Yeast Strain		Not available.
YPH 501 Yeast Strain		Not available.
<b>Vapour pressure</b>		: pESC-HIS Vector
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not available.
	YPH 500 Yeast Strain	Not available.
	YPH 501 Yeast Strain	Not available.
	<b>Vapour density</b>	: pESC-HIS Vector
GAL 1 Forward Primer Lyophilized		Not available.
GAL 1 Reverse Primer Lyophilized		Not available.
GAL 10 Forward Primer Lyophilized		Not available.
GAL 10 Reverse Primer Lyophilized		Not available.
YPH 499 Yeast Strain		Not available.
YPH 500 Yeast Strain		Not available.
YPH 501 Yeast Strain		Not available.
<b>Relative density</b>		: pESC-HIS Vector
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Not available.
	YPH 500 Yeast Strain	Not available.
	YPH 501 Yeast Strain	Not available.

## Section 9. Physical and chemical properties

<b>Solubility</b>	:	pESC-HIS Vector	Easily soluble in the following materials: cold water and hot water.
		GAL 1 Forward Primer Lyophilized	Soluble in the following materials: cold water and hot water.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Soluble in the following materials: cold water and hot water.
		GAL 10 Reverse Primer Lyophilized	Soluble in the following materials: cold water and hot water.
		YPH 499 Yeast Strain	Soluble in the following materials: cold water and hot water.
		YPH 500 Yeast Strain	Soluble in the following materials: cold water and hot water.
		YPH 501 Yeast Strain	Soluble in the following materials: cold water and hot water.
	<b>Partition coefficient: n-octanol/water</b>	:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
<b>Auto-ignition temperature</b>		:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
	<b>Decomposition temperature</b>	:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.
<b>Viscosity</b>		:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	Not available.
		GAL 1 Reverse Primer Lyophilized	Not available.
		GAL 10 Forward Primer Lyophilized	Not available.
		GAL 10 Reverse Primer Lyophilized	Not available.
		YPH 499 Yeast Strain	Not available.
		YPH 500 Yeast Strain	Not available.
		YPH 501 Yeast Strain	Not available.

## Section 9. Physical and chemical properties

YPH 501 Yeast Strain

Not available.

## Section 10. Stability and reactivity

<b>Reactivity</b>	: pESC-HIS Vector	No specific test data related to reactivity available for this product or its ingredients.
	GAL 1 Forward Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
	GAL 1 Reverse Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
	GAL 10 Forward Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
	GAL 10 Reverse Primer Lyophilized	No specific test data related to reactivity available for this product or its ingredients.
	YPH 499 Yeast Strain	No specific test data related to reactivity available for this product or its ingredients.
	YPH 500 Yeast Strain	No specific test data related to reactivity available for this product or its ingredients.
	YPH 501 Yeast Strain	No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: pESC-HIS Vector	The product is stable.
	GAL 1 Forward Primer Lyophilized	The product is stable.
	GAL 1 Reverse Primer Lyophilized	The product is stable.
	GAL 10 Forward Primer Lyophilized	The product is stable.
	GAL 10 Reverse Primer Lyophilized	The product is stable.
	YPH 499 Yeast Strain	The product is stable.
	YPH 500 Yeast Strain	The product is stable.
	YPH 501 Yeast Strain	The product is stable.
<b>Possibility of hazardous reactions</b>	: pESC-HIS Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	GAL 1 Forward Primer Lyophilized	Under normal conditions of storage and use, hazardous reactions will not occur.
	GAL 1 Reverse Primer Lyophilized	Under normal conditions of storage and use, hazardous reactions will not occur.
	GAL 10 Forward Primer Lyophilized	Under normal conditions of storage and use, hazardous reactions will not occur.
	GAL 10 Reverse Primer Lyophilized	Under normal conditions of storage and use, hazardous reactions will not occur.
	YPH 499 Yeast Strain	Under normal conditions of storage and use, hazardous reactions will not occur.
	YPH 500 Yeast Strain	Under normal conditions of storage and use, hazardous reactions will not occur.
	YPH 501 Yeast Strain	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: pESC-HIS Vector	No specific data.
	GAL 1 Forward Primer Lyophilized	No specific data.
	GAL 1 Reverse Primer Lyophilized	No specific data.
	GAL 10 Forward Primer Lyophilized	No specific data.
	GAL 10 Reverse Primer Lyophilized	No specific data.
	YPH 499 Yeast Strain	No specific data.
	YPH 500 Yeast Strain	No specific data.

## Section 10. Stability and reactivity

YPH 501 Yeast Strain No specific data.

**Incompatible materials** :

- pESC-HIS Vector May react or be incompatible with oxidising materials.
- GAL 1 Forward Primer Lyophilized May react or be incompatible with oxidising materials.
- GAL 1 Reverse Primer Lyophilized May react or be incompatible with oxidising materials.
- GAL 10 Forward Primer Lyophilized May react or be incompatible with oxidising materials.
- GAL 10 Reverse Primer Lyophilized May react or be incompatible with oxidising materials.
- YPH 499 Yeast Strain May react or be incompatible with oxidising materials.
- YPH 500 Yeast Strain May react or be incompatible with oxidising materials.
- YPH 501 Yeast Strain May react or be incompatible with oxidising materials.

**Hazardous decomposition products** :

- pESC-HIS Vector Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- GAL 1 Forward Primer Lyophilized Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- GAL 1 Reverse Primer Lyophilized Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- GAL 10 Forward Primer Lyophilized Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- GAL 10 Reverse Primer Lyophilized Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- YPH 499 Yeast Strain Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- YPH 500 Yeast Strain Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- YPH 501 Yeast Strain 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
YPH 499 Yeast Strain Glycerol	LD50 Oral	Rat	12600 mg/kg	-
YPH 500 Yeast Strain Glycerol	LD50 Oral	Rat	12600 mg/kg	-
YPH 501 Yeast Strain Glycerol	LD50 Oral	Rat	12600 mg/kg	-

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>YPH 499 Yeast Strain</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>YPH 500 Yeast Strain</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>YPH 501 Yeast Strain</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

### Sensitisation

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

<b>Information on likely routes of exposure</b>	<b>pESC-HIS Vector</b>	Not available.
	GAL 1 Forward Primer Lyophilized	Not available.
	GAL 1 Reverse Primer Lyophilized	Not available.
	GAL 10 Forward Primer Lyophilized	Not available.
	GAL 10 Reverse Primer Lyophilized	Not available.
	YPH 499 Yeast Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.
YPH 500 Yeast Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.	
YPH 501 Yeast Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.	

### Potential acute health effects



## Section 11. Toxicological information

<b>Eye contact</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 1 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
<b>Inhalation</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 1 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
<b>Skin contact</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 1 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
<b>Ingestion</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 1 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Forward Primer	No known significant effects or critical hazards.
		Lyophilized	
		GAL 10 Reverse Primer	No known significant effects or critical hazards.
		Lyophilized	
	YPH 499 Yeast Strain	No known significant effects or critical hazards.	
	YPH 500 Yeast Strain	No known significant effects or critical hazards.	
	YPH 501 Yeast Strain	No known significant effects or critical hazards.	

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

<b>Eye contact</b>	:	pESC-HIS Vector	No specific data.
		GAL 1 Forward Primer	No specific data.
		Lyophilized	
		GAL 1 Reverse Primer	No specific data.
		Lyophilized	
		GAL 10 Forward Primer	No specific data.
		Lyophilized	
		GAL 10 Reverse Primer	No specific data.
		Lyophilized	
	YPH 499 Yeast Strain	No specific data.	
	YPH 500 Yeast Strain	No specific data.	
	YPH 501 Yeast Strain	No specific data.	

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<b>Inhalation</b>	:	pESC-HIS Vector	No specific data.
		GAL 1 Forward Primer Lyophilized	No specific data.
		GAL 1 Reverse Primer Lyophilized	No specific data.
		GAL 10 Forward Primer Lyophilized	No specific data.
		GAL 10 Reverse Primer Lyophilized	No specific data.
		YPH 499 Yeast Strain	No specific data.
		YPH 500 Yeast Strain	No specific data.
		YPH 501 Yeast Strain	No specific data.
	<b>Skin contact</b>	:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	No specific data.
		GAL 1 Reverse Primer Lyophilized	No specific data.
		GAL 10 Forward Primer Lyophilized	No specific data.
		GAL 10 Reverse Primer Lyophilized	No specific data.
		YPH 499 Yeast Strain	No specific data.
		YPH 500 Yeast Strain	No specific data.
		YPH 501 Yeast Strain	No specific data.
<b>Ingestion</b>		:	pESC-HIS Vector
		GAL 1 Forward Primer Lyophilized	No specific data.
		GAL 1 Reverse Primer Lyophilized	No specific data.
		GAL 10 Forward Primer Lyophilized	No specific data.
		GAL 10 Reverse Primer Lyophilized	No specific data.
		YPH 499 Yeast Strain	No specific data.
		YPH 500 Yeast Strain	No specific data.
		YPH 501 Yeast Strain	No specific data.

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

<b>General</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		YPH 499 Yeast Strain	No known significant effects or critical hazards.
		YPH 500 Yeast Strain	No known significant effects or critical hazards.

## Section 11. Toxicological information

<b>Carcinogenicity</b>	:	YPH 501 Yeast Strain	No known significant effects or critical hazards.
		pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		YPH 499 Yeast Strain	No known significant effects or critical hazards.
		YPH 500 Yeast Strain	No known significant effects or critical hazards.
		YPH 501 Yeast Strain	No known significant effects or critical hazards.
<b>Mutagenicity</b>	:	pESC-HIS Vector	No known significant effects or critical hazards.
		GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		YPH 499 Yeast Strain	No known significant effects or critical hazards.
		YPH 500 Yeast Strain	No known significant effects or critical hazards.
		YPH 501 Yeast Strain	No known significant effects or critical hazards.
		<b>Teratogenicity</b>	:
GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.		
GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.		
GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.		
GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.		
YPH 499 Yeast Strain	No known significant effects or critical hazards.		
YPH 500 Yeast Strain	No known significant effects or critical hazards.		
YPH 501 Yeast Strain	No known significant effects or critical hazards.		
<b>Developmental effects</b>	:		
		GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.
		GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.
		YPH 499 Yeast Strain	No known significant effects or critical hazards.
		YPH 500 Yeast Strain	No known significant effects or critical hazards.
		YPH 501 Yeast Strain	No known significant effects or critical hazards.
		<b>Fertility effects</b>	:
GAL 1 Forward Primer Lyophilized	No known significant effects or critical hazards.		
GAL 1 Reverse Primer Lyophilized	No known significant effects or critical hazards.		
GAL 10 Forward Primer Lyophilized	No known significant effects or critical hazards.		
GAL 10 Reverse Primer Lyophilized	No known significant effects or critical hazards.		
YPH 499 Yeast Strain	No known significant effects or critical hazards.		
YPH 500 Yeast Strain	No known significant effects or critical hazards.		
YPH 501 Yeast Strain	No known significant effects or critical hazards.		

## Section 11. Toxicological information

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
YPH 499 Yeast Strain Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
YPH 500 Yeast Strain Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
YPH 501 Yeast Strain Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
YPH 499 Yeast Strain Glycerol	-1.76	-	low
YPH 500 Yeast Strain Glycerol	-1.76	-	low
YPH 501 Yeast Strain Glycerol	-1.76	-	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. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

### Regulatory information

**ADG / IMDG / IATA** : Not regulated as Dangerous Goods according to the ADG Code .

**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

**Australia inventory (AICS)** : Not determined.

### 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.

### International lists

#### National inventory

- Canada** : Not determined.  
**China** : Not determined.  
**Europe** : All components are listed or exempted.  
**Japan** :  **Japan inventory (ENCS):** Not determined.  
**Japan inventory (ISHL):** Not determined.  
**Malaysia** : Not determined.  
**New Zealand** : All components are listed or exempted.  
**Philippines** : Not determined.  
**Republic of Korea** : Not determined.  
**Taiwan** : All components are listed or exempted.  
**Turkey** :  Not determined.  
**United States** : Not determined.

## Section 16. Any other relevant information

### History

**Date of issue/Date of revision** : 30/03/2017

**Date of previous issue** : 21/04/2015.

**Version** : 3

### 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
Not classified.	

**References** : Not available.

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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