

# SAFETY DATA SHEET

Lambda gt11- EcoR I - CIAP -Treated - Gigapack III Cloning Kit, Part Number 234612

## Section 1. Identification

<b>Product identifier</b>	: Lambda gt11- EcoR I - CIAP -Treated - Gigapack III Cloning Kit, Part Number 234612	
<b>Part no. (chemical kit)</b>	: 234612	
<b>Part no.</b>	: Lambda gt11 Vector Digested With EcoR I	234211-51
	And Dephosphorylated	
	pRho/EcoR I Test Insert	210200-51
	Y1088 E. coli Strain	200263-81
	Y1089- E. coli Strain	200260-81
	Y1090- E. coli Strain	200281-81
	Gigapack III packaging extract	200201-41
	Wild-Type Lambda DNA c1857ind 1 Sam7	246203-51
	VCS257 E. coli Strain	200256-51
<b>Material uses</b>	: Analytical reagent.	
	Lambda gt11 Vector Digested With EcoR I	0.01 ml (10 µg 1 µg/µl)
	And Dephosphorylated	
	pRho/EcoR I Test Insert	2 x 0.005 ml (1.25 µg 0.25 µg/µl)
	Y1088 E. coli Strain	0.5 ml
	Y1089- E. coli Strain	0.5 ml
	Y1090- E. coli Strain	0.5 ml
	Gigapack III packaging extract	0.275 ml
	Wild-Type Lambda DNA c1857ind 1 Sam7	0.005 ml (1.05 µg 0.21 µg/µl)
	VCS257 E. coli Strain	1 ml
<b>Supplier/Manufacturer</b>	: Agilent Technologies, Inc. 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA 800-227-9770	
<b>Emergency telephone number (with hours of operation)</b>	: CHEMTREC®: 1-800-424-9300	

## Section 2. Hazard identification

### Classification of the substance or mixture

<b>Y1088 E. coli Strain</b> H319	EYE IRRITATION - Category 2A
<b>Y1089- E. coli Strain</b> H319	EYE IRRITATION - Category 2A
<b>Y1090- E. coli Strain</b> H319	EYE IRRITATION - Category 2A
<b>VCS257 E. coli Strain</b> H319	EYE IRRITATION - Category 2A

### GHS label elements

## Section 2. Hazard identification

**Hazard pictograms** : Y1088 E. coli Strain



Y1089r- E. coli Strain



Y1090r- E. coli Strain



VCS257 E. coli Strain



**Signal word** :

- Lambda gt11 Vector : No signal word.
- Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert : No signal word.
- Y1088 E. coli Strain : Warning
- Y1089r- E. coli Strain : Warning
- Y1090r- E. coli Strain : Warning
- Gigapack III packaging extract : No signal word.
- Wild-Type Lambda DNA c1857ind 1 Sam7 : No signal word.
- VCS257 E. coli Strain : Warning

**Hazard statements** :

- Lambda gt11 Vector : No known significant effects or critical hazards.
- Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert : No known significant effects or critical hazards.
- Y1088 E. coli Strain : H319 - Causes serious eye irritation.
- Y1089r- E. coli Strain : H319 - Causes serious eye irritation.
- Y1090r- E. coli Strain : H319 - Causes serious eye irritation.
- Gigapack III packaging extract : No known significant effects or critical hazards.
- Wild-Type Lambda DNA c1857ind 1 Sam7 : No known significant effects or critical hazards.
- VCS257 E. coli Strain : H319 - Causes serious eye irritation.

### Precautionary statements

**Prevention** :

- Lambda gt11 Vector : Not applicable.
- Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert : Not applicable.
- Y1088 E. coli Strain : P280 - Wear eye or face protection.  
P264 - Wash hands thoroughly after handling.
- Y1089r- E. coli Strain : P280 - Wear eye or face protection.  
P264 - Wash hands thoroughly after handling.
- Y1090r- E. coli Strain : P280 - Wear eye or face protection.  
P264 - Wash hands thoroughly after handling.
- Gigapack III packaging extract : Not applicable.
- Wild-Type Lambda DNA : Not applicable.

## Section 2. Hazard identification

	c1857ind 1 Sam7 VCS257 E. coli Strain	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
<b>Response</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain	Not applicable.
	Y1089r- E. coli Strain	Not applicable. 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.
	Y1090r- E. coli Strain	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.
	Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Not applicable. 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.
<b>Storage</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Disposal</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

## Section 2. Hazard identification

<b>Supplemental label elements</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain Y1088 E. coli Strain  Y1089- E. coli Strain  Y1090- E. coli Strain  Gigapack III packaging extract VCS257 E. coli Strain  <input checked="" type="checkbox"/> Gigapack III packaging extract	None known.  None known. None known. None known. None known. None known.  None known.  Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 8%
<b>Other hazards which do not result in classification</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	None known.  None known. None known. None known. None known. None known. None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Mixture  Mixture Mixture Mixture Mixture Mixture Mixture Mixture
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### Section 3. Composition/information on ingredients

Ingredient name	% (w/w)	CAS number
<b>Y1088 E. coli Strain</b> Glycerol Sodium chloride	≥10 - ≤25 ≤3	56-81-5 7647-14-5
<b>Y1089r- E. coli Strain</b> Glycerol Sodium chloride	≥10 - ≤25 ≤3	56-81-5 7647-14-5
<b>Y1090r- E. coli Strain</b> Glycerol Sodium chloride	≥10 - ≤25 ≤3	56-81-5 7647-14-5
<b>VCS257 E. coli Strain</b> Glycerol Sodium chloride	≥10 - ≤25 ≤3	56-81-5 7647-14-5

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

<b>Eye contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	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.
	pRheo/EcoR I Test Insert	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.
	Y1088 E. coli Strain	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.
	Y1089r- E. coli Strain	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.
	Y1090r- E. coli Strain	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.
	Gigapack III packaging extract	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.
	Wild-Type Lambda DNA c1857ind 1 Sam7	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.
	VCS257 E. coli Strain	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.

## Section 4. First-aid measures

### Inhalation

<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert</p>	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</p>
<p>Y1088 E. coli Strain</p>	<p>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.</p>
<p>Y1089r- E. coli Strain</p>	<p>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.</p>
<p>Y1090r- E. coli Strain</p>	<p>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.</p>
<p>Gigapack III packaging extract</p>	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</p>
<p>Wild-Type Lambda DNA c1857ind 1 Sam7</p>	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</p>
<p>VCS257 E. coli Strain</p>	<p>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.</p>

## Section 4. First-aid measures

<b>Skin contact</b>	<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert</p> <p>Y1088 E. coli Strain</p> <p>Y1089r- E. coli Strain</p> <p>Y1090r- E. coli Strain</p> <p>Gigapack III packaging extract</p> <p>Wild-Type Lambda DNA c1857ind 1 Sam7</p> <p>VCS257 E. coli Strain</p>	<p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</p> <p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</p> <p>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</p> <p>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.</p>
<b>Ingestion</b>	<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</p> <p>pRheo/EcoR I Test Insert</p> <p>Y1088 E. coli Strain</p> <p>Y1089r- E. coli Strain</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>Wash out mouth with water. Remove dentures if any.</p>

## Section 4. First-aid measures

	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.
Y1090r- E. coli Strain	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.
Gigapack III packaging extract	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.
Wild-Type Lambda DNA c1857ind 1 Sam7	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.
VCS257 E. coli Strain	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

## Section 4. First-aid measures

airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

#### Potential acute health effects

<b>Eye contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No known significant effects or critical hazards.  No known significant effects or critical hazards. Causes serious eye irritation. Causes serious eye irritation. Causes serious eye irritation. No known significant effects or critical hazards.  No known significant effects or critical hazards.  Causes serious eye irritation.
<b>Inhalation</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.
<b>Skin contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.
<b>Ingestion</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.

#### Over-exposure signs/symptoms

## Section 4. First-aid measures

<b>Eye contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain	No specific data.  No specific data. Adverse symptoms may include the following: pain or irritation watering redness	
	Y1089r- E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness	
	Y1090r- E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness	
	Gigapack III packaging extract	No specific data.	
	Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No specific data.  Adverse symptoms may include the following: pain or irritation watering redness	
<b>Inhalation</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain	No specific data.  No specific data. No specific data.	
	Y1089r- E. coli Strain	No specific data.	
	Y1090r- E. coli Strain	No specific data.	
	Gigapack III packaging extract	No specific data.	
	Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No specific data.  No specific data.	
	<b>Skin contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain	No specific data.  No specific data. No specific data. No specific data.
		Y1089r- E. coli Strain	No specific data.
Y1090r- E. coli Strain		No specific data.	
Gigapack III packaging extract		No specific data.	
Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain		No specific data.  No specific data.	
<b>Ingestion</b>		: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain	No specific data.  No specific data. No specific data. No specific data.
		Y1089r- E. coli Strain	No specific data.
	Y1090r- E. coli Strain	No specific data.	
	Gigapack III packaging extract	No specific data.	
	Wild-Type Lambda DNA	No specific data.	

## Section 4. First-aid measures

c1857ind 1 Sam7  
VCS257 E. coli Strain                      No specific data.

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

**Notes to physician**

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Y1088 E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Y1089r- E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Y1090r- E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Gigapack III packaging extract	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Wild-Type Lambda DNA c1857ind 1 Sam7	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
VCS257 E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	No specific treatment.
Y1088 E. coli Strain	No specific treatment.
Y1089r- E. coli Strain	No specific treatment.
Y1090r- E. coli Strain	No specific treatment.
Gigapack III packaging extract	No specific treatment.
Wild-Type Lambda DNA c1857ind 1 Sam7	No specific treatment.
VCS257 E. coli Strain	No specific treatment.

**Protection of first-aiders**

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.
Y1088 E. coli Strain	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.
Y1089r- E. coli Strain	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.
Y1090r- E. coli Strain	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.
Gigapack III packaging	No action shall be taken involving any personal risk

## Section 4. First-aid measures

extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	or without suitable training. No action shall be taken involving any personal risk or without suitable training. 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.
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See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

#### Suitable extinguishing media

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert  Y1088 E. coli Strain  Y1089r- E. coli Strain  Y1090r- E. coli Strain  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Use an extinguishing agent suitable for the surrounding fire.  Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
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#### Unsuitable extinguishing media

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	None known.  None known. None known. None known. None known. None known. None known. None known.
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#### Specific hazards arising from the chemical

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert  Y1088 E. coli Strain  Y1089r- E. coli Strain  Y1090r- E. coli Strain  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7	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. 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. In a fire or if heated, a pressure increase will occur and the container may burst.
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## Section 5. Fire-fighting measures

<b>Hazardous thermal decomposition products</b>	<p>VCS257 E. coli Strain</p> <p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain</p>	<p>In a fire or if heated, a pressure increase will occur and the container may burst.</p> <p>No specific data.</p> <p>No specific data.</p> <p>Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides</p>
	<p>Y1089r- E. coli Strain</p>	<p>Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides</p>
	<p>Y1090r- E. coli Strain</p>	<p>Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides</p>
	<p>Gigapack III packaging extract</p>	<p>Decomposition products may include the following materials: carbon dioxide carbon monoxide</p>
	<p>Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain</p>	<p>No specific data.</p> <p>Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides</p>
<b>Special protective actions for fire-fighters</b>	<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</p> <p>pRheo/EcoR I Test Insert</p>	<p>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.</p> <p>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.</p>
	<p>Y1088 E. coli Strain</p>	<p>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.</p>
	<p>Y1089r- E. coli Strain</p>	<p>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.</p>
	<p>Y1090r- E. coli Strain</p>	<p>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.</p>
	<p>Gigapack III packaging</p>	<p>Promptly isolate the scene by removing all persons</p>

## Section 5. Fire-fighting measures

	extract	from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	Wild-Type Lambda DNA c1857ind 1 Sam7	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.
	VCS257 E. coli 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>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	pRho/EcoR I Test Insert	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Y1088 E. coli Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Y1089r- E. coli Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Y1090r- E. coli Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Gigapack III packaging extract	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	VCS257 E. coli 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>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	pRho/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

## Section 6. Accidental release measures

Y1088 E. coli 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Y1089r- E. coli 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Y1090r- E. coli 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Gigapack III packaging extract	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Wild-Type Lambda DNA c1857ind 1 Sam7	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
VCS257 E. coli 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders</b> : Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	If specialized 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".
pRho/EcoR I Test Insert	If specialized 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".
Y1088 E. coli Strain	If specialized 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".
Y1089r- E. coli Strain	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the

## Section 6. Accidental release measures

Y1090r- E. coli Strain	information in "For non-emergency personnel". If specialized 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".
Gigapack III packaging extract	If specialized 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".
Wild-Type Lambda DNA c1857ind 1 Sam7	If specialized 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".
VCS257 E. coli Strain	If specialized 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>	:	Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		pRheo/EcoR I Test Insert	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		Y1088 E. coli Strain	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		Y1089r- E. coli Strain	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		Y1090r- E. coli Strain	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		Gigapack III packaging extract	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		Wild-Type Lambda DNA c1857ind 1 Sam7	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		VCS257 E. coli Strain	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

## Section 6. Accidental release measures

### Methods and materials for containment and cleaning up

<b>Methods for cleaning up</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	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.
	pRheo/EcoR I Test Insert	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.
	Y1088 E. coli 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.
	Y1089r- E. coli 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.
	Y1090r- E. coli 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.
	Gigapack III packaging extract	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.
	Wild-Type Lambda DNA c1857ind 1 Sam7	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.
	VCS257 E. coli 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>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert	Put on appropriate personal protective equipment (see Section 8).
	Y1088 E. coli Strain	Put on appropriate personal protective equipment (see Section 8). Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	Y1089- E. coli Strain	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	Y1090- E. coli Strain	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	Gigapack III packaging extract	Put on appropriate personal protective equipment (see Section 8).
	Wild-Type Lambda DNA c1857ind 1 Sam7	Put on appropriate personal protective equipment (see Section 8).
	VCS257 E. coli Strain	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
<b>Advice on general occupational hygiene</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	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.
	pRheo/EcoR I Test Insert	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.
	Y1088 E. coli Strain	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this

## Section 7. Handling and storage

Y1089r- E. coli Strain	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. Potentially biohazardous material. 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.
Y1090r- E. coli Strain	Potentially biohazardous material. 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.
Gigapack III packaging extract	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.
Wild-Type Lambda DNA c1857ind 1 Sam7	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.
VCS257 E. coli Strain	Potentially biohazardous material. 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** : Lambda gt11 Vector Digested With EcoR I And Dephosphorylated

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

pRheo/EcoR I Test Insert

## Section 7. Handling and storage

Y1088 E. coli Strain	<p>incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Y1089r- E. coli Strain	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Y1090r- E. coli Strain	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Gigapack III packaging extract	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
Wild-Type Lambda DNA c1857ind 1 Sam7	<p>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</p>

## Section 7. Handling and storage

VCS257 E. coli Strain

prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### [Control parameters](#)

### [Occupational exposure limits](#)

Ingredient name	Exposure limits
<p><b>Y1088 E. coli Strain</b> Glycerol</p>	<p><b>CA Alberta Provincial (Canada, 6/2018).</b> 8 hrs OEL: 10 mg/m<sup>3</sup> 8 hours. Form: Mist  <b>CA Quebec Provincial (Canada, 1/2014).</b> TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  <b>CA Saskatchewan Provincial (Canada, 7/2013).</b> STEL: 20 mg/m<sup>3</sup> 15 minutes. Form: mist TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  <b>CA Ontario Provincial (Canada, 1/2018).</b> TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  <b>CA British Columbia Provincial (Canada, 5/2019).</b> TWA: 3 mg/m<sup>3</sup> 8 hours. Form: respirable mist TWA: 10 mg/m<sup>3</sup> 8 hours. Form: total mist</p>
<p><b>Y1089r- E. coli Strain</b> Glycerol</p>	<p><b>CA Alberta Provincial (Canada, 6/2018).</b> 8 hrs OEL: 10 mg/m<sup>3</sup> 8 hours. Form: Mist  <b>CA Quebec Provincial (Canada, 1/2014).</b> TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  <b>CA Saskatchewan Provincial (Canada, 7/2013).</b> STEL: 20 mg/m<sup>3</sup> 15 minutes. Form: mist TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  <b>CA Ontario Provincial (Canada, 1/2018).</b> TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  <b>CA British Columbia Provincial (Canada, 5/2019).</b> TWA: 3 mg/m<sup>3</sup> 8 hours. Form: respirable mist TWA: 10 mg/m<sup>3</sup> 8 hours. Form: total mist</p>

## Section 8. Exposure controls/personal protection

**Y1090r- E. coli Strain**  
Glycerol

**CA Alberta Provincial (Canada, 6/2018).**  
8 hrs OEL: 10 mg/m<sup>3</sup> 8 hours. Form: Mist  
**CA Quebec Provincial (Canada, 1/2014).**  
TWAEV: 10 mg/m<sup>3</sup> 8 hours. Form: mist  
**CA Saskatchewan Provincial (Canada, 7/2013).**  
STEL: 20 mg/m<sup>3</sup> 15 minutes. Form: mist  
TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  
**CA Ontario Provincial (Canada, 1/2018).**  
TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  
**CA British Columbia Provincial (Canada, 5/2019).**  
TWA: 3 mg/m<sup>3</sup> 8 hours. Form: respirable mist  
TWA: 10 mg/m<sup>3</sup> 8 hours. Form: total mist

**VCS257 E. coli Strain**  
Glycerol

**CA Alberta Provincial (Canada, 6/2018).**  
8 hrs OEL: 10 mg/m<sup>3</sup> 8 hours. Form: Mist  
**CA Quebec Provincial (Canada, 1/2014).**  
TWAEV: 10 mg/m<sup>3</sup> 8 hours. Form: mist  
**CA Saskatchewan Provincial (Canada, 7/2013).**  
STEL: 20 mg/m<sup>3</sup> 15 minutes. Form: mist  
TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  
**CA Ontario Provincial (Canada, 1/2018).**  
TWA: 10 mg/m<sup>3</sup> 8 hours. Form: mist  
**CA British Columbia Provincial (Canada, 5/2019).**  
TWA: 3 mg/m<sup>3</sup> 8 hours. Form: respirable mist  
TWA: 10 mg/m<sup>3</sup> 8 hours. Form: total mist

**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**

: Handle as biohazard material (Biosafety level 1). 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**

## Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : 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>	<ul style="list-style-type: none"> <li>: Lambda gt11 Vector Liquid.</li> <li>Digested With EcoR I And Dephosphorylated</li> <li>pRheo/EcoR I Test Insert Liquid.</li> <li>Y1088 E. coli Strain Liquid.</li> <li>Y1089r- E. coli Strain Liquid.</li> <li>Y1090r- E. coli Strain Liquid.</li> <li>Gigapack III packaging extract Liquid.</li> <li>Wild-Type Lambda DNA c1857ind 1 Sam7 Liquid.</li> <li>VCS257 E. coli Strain Liquid.</li> </ul>
<b>Color</b>	<ul style="list-style-type: none"> <li>: Lambda gt11 Vector Not available.</li> <li>Digested With EcoR I And Dephosphorylated</li> <li>pRheo/EcoR I Test Insert Not available.</li> <li>Y1088 E. coli Strain Not available.</li> <li>Y1089r- E. coli Strain Not available.</li> <li>Y1090r- E. coli Strain Not available.</li> <li>Gigapack III packaging extract Not available.</li> <li>Wild-Type Lambda DNA c1857ind 1 Sam7 Not available.</li> <li>VCS257 E. coli Strain Not available.</li> </ul>
<b>Odor</b>	<ul style="list-style-type: none"> <li>: Lambda gt11 Vector Not available.</li> <li>Digested With EcoR I And Dephosphorylated</li> <li>pRheo/EcoR I Test Insert Not available.</li> <li>Y1088 E. coli Strain Not available.</li> <li>Y1089r- E. coli Strain Not available.</li> <li>Y1090r- E. coli Strain Not available.</li> <li>Gigapack III packaging extract Not available.</li> <li>Wild-Type Lambda DNA c1857ind 1 Sam7 Not available.</li> <li>VCS257 E. coli Strain Not available.</li> </ul>

## Section 9. Physical and chemical properties

<b>Odor threshold</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Not available.  Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>pH</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	7.5  7.5 7 7 7 8 7 7
<b>Melting point</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	0°C (32°F)  0°C (32°F) Not available. Not available. Not available. Not available. 0°C (32°F) Not available.
<b>Boiling point</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	100°C (212°F)  100°C (212°F) Not available. Not available. Not available. Not available. 100°C (212°F) Not available.
<b>Flash point</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA	Not available.  Not available. Not available. Not available. Not available. Not available.

## Section 9. Physical and chemical properties

	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Evaporation rate</b>	: Lambda gt11 Vector	Not available.
	Digested With EcoR I And	
	Dephosphorylated	
	pRheo/EcoR I Test Insert	Not available.
	Y1088 E. coli Strain	Not available.
	Y1089r- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging	Not available.
	extract	
	Wild-Type Lambda DNA	Not available.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Flammability (solid, gas)</b>	: Lambda gt11 Vector	Not applicable.
	Digested With EcoR I And	
	Dephosphorylated	
	pRheo/EcoR I Test Insert	Not applicable.
	Y1088 E. coli Strain	Not applicable.
	Y1089r- E. coli Strain	Not applicable.
	Y1090r- E. coli Strain	Not applicable.
	Gigapack III packaging	Not applicable.
	extract	
	Wild-Type Lambda DNA	Not applicable.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: Lambda gt11 Vector	Not available.
	Digested With EcoR I And	
	Dephosphorylated	
	pRheo/EcoR I Test Insert	Not available.
	Y1088 E. coli Strain	Not available.
	Y1089r- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging	Not available.
	extract	
	Wild-Type Lambda DNA	Not available.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Vapor pressure</b>	: Lambda gt11 Vector	Not available.
	Digested With EcoR I And	
	Dephosphorylated	
	pRheo/EcoR I Test Insert	Not available.
	Y1088 E. coli Strain	Not available.
	Y1089r- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging	Not available.
	extract	
	Wild-Type Lambda DNA	Not available.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Vapor density</b>	: Lambda gt11 Vector	Not available.
	Digested With EcoR I And	
	Dephosphorylated	
	pRheo/EcoR I Test Insert	Not available.
	Y1088 E. coli Strain	Not available.
	Y1089r- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging	Not available.

## Section 9. Physical and chemical properties

	extract	
	Wild-Type Lambda DNA	Not available.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Relative density</b>	: Lambda gt11 Vector	Not available.
	Digested With EcoR I And	
	Dephosphorylated	
	pRho/EcoR I Test Insert	Not available.
	Y1088 E. coli Strain	Not available.
	Y1089- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging	Not available.
	extract	
	Wild-Type Lambda DNA	Not available.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Solubility</b>	: Lambda gt11 Vector	Easily soluble in the following materials: cold water
	Digested With EcoR I And	and hot water.
	Dephosphorylated	
	pRho/EcoR I Test Insert	Easily soluble in the following materials: cold water
		and hot water.
	Y1088 E. coli Strain	Easily soluble in the following materials: cold water
		and hot water.
	Y1089- E. coli Strain	Easily soluble in the following materials: cold water
		and hot water.
	Y1090r- E. coli Strain	Easily soluble in the following materials: cold water
		and hot water.
	Gigapack III packaging	Easily soluble in the following materials: cold water
	extract	and hot water.
	Wild-Type Lambda DNA	Easily soluble in the following materials: cold water
	c1857ind 1 Sam7	and hot water.
	VCS257 E. coli Strain	Easily soluble in the following materials: cold water
		and hot water.
<b>Partition coefficient: n-octanol/water</b>	: Lambda gt11 Vector	Not available.
	Digested With EcoR I And	
	Dephosphorylated	
	pRho/EcoR I Test Insert	Not available.
	Y1088 E. coli Strain	Not available.
	Y1089- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging	Not available.
	extract	
	Wild-Type Lambda DNA	Not available.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Auto-ignition temperature</b>	: Lambda gt11 Vector	Not available.
	Digested With EcoR I And	
	Dephosphorylated	
	pRho/EcoR I Test Insert	Not available.
	Y1088 E. coli Strain	Not available.
	Y1089- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging	Not available.
	extract	
	Wild-Type Lambda DNA	Not available.
	c1857ind 1 Sam7	
	VCS257 E. coli Strain	Not available.

## Section 9. Physical and chemical properties

<b>Decomposition temperature</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Not available.  Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Viscosity</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Not available.  Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.

## Section 10. Stability and reactivity

<b>Reactivity</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert  Y1088 E. coli Strain  Y1089r- E. coli Strain  Y1090r- E. coli Strain  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No specific test data related to reactivity available for this product or its ingredients.  No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	The product is stable.  The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.

## Section 10. Stability and reactivity

<b>Possibility of hazardous reactions</b>	<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert</p> <p>Y1088 E. coli Strain</p> <p>Y1089r- E. coli Strain</p> <p>Y1090r- E. coli Strain</p> <p>Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain</p>	<p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p>
<b>Conditions to avoid</b>	<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain</p>	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p>
<b>Incompatible materials</b>	<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain</p>	<p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p>
<b>Hazardous decomposition products</b>	<p>: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert</p> <p>Y1088 E. coli Strain</p> <p>Y1089r- E. coli Strain</p> <p>Y1090r- E. coli Strain</p>	<p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p>

## Section 10. Stability and reactivity

Gigapack III packaging extract	hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Wild-Type Lambda DNA c1857ind 1 Sam7	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
VCS257 E. coli 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
<b>Y1088 E. coli Strain</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
<b>Y1089r- E. coli Strain</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
<b>Y1090r- E. coli Strain</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
<b>VCS257 E. coli Strain</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>Y1088 E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
<b>Y1089r- E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-

## Section 11. Toxicological information

<b>Y1090r- E. coli Strain</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 mg 24 hours 500 mg	- -
<b>VCS257 E. coli Strain</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 mg 24 hours 500 mg	- -

### Sensitization

Not available.

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### 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 the likely routes of exposure</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	Not available.  Not available. Routes of entry anticipated: Oral, Dermal, Inhalation. Routes of entry anticipated: Oral, Dermal, Inhalation. Routes of entry anticipated: Oral, Dermal, Inhalation. Not available.  Not available.  Routes of entry anticipated: Oral, Dermal, Inhalation.
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### Potential acute health effects

## Section 11. Toxicological information

<b>Eye contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain	No known significant effects or critical hazards.  No known significant effects or critical hazards. Causes serious eye irritation. Causes serious eye irritation. Causes serious eye irritation. No known significant effects or critical hazards.  No known significant effects or critical hazards.  Causes serious eye irritation.
<b>Inhalation</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.
<b>Skin contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.
<b>Ingestion</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089- E. coli Strain Y1090- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.

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

<b>Eye contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain	No specific data.  No specific data. Adverse symptoms may include the following: pain or irritation watering
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## Section 11. Toxicological information

	Y1089r- E. coli Strain	redness Adverse symptoms may include the following: pain or irritation watering redness
	Y1090r- E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
	Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
	VCS257 E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert	No specific data.
	Y1088 E. coli Strain	No specific data.
	Y1089r- E. coli Strain	No specific data.
	Y1090r- E. coli Strain	No specific data.
	Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
	VCS257 E. coli Strain	No specific data.
<b>Skin contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert	No specific data.
	Y1088 E. coli Strain	No specific data.
	Y1089r- E. coli Strain	No specific data.
	Y1090r- E. coli Strain	No specific data.
	Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
	VCS257 E. coli Strain	No specific data.
<b>Ingestion</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert	No specific data.
	Y1088 E. coli Strain	No specific data.
	Y1089r- E. coli Strain	No specific data.
	Y1090r- E. coli Strain	No specific data.
	Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
	VCS257 E. coli Strain	No specific data.

### Delayed and immediate effects and also 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

**General** : Lambda gt11 Vector No known significant effects or critical hazards.

Digested With EcoR I And Dephosphorylated

pRheo/EcoR I Test Insert No known significant effects or critical hazards.

Y1088 E. coli Strain No known significant effects or critical hazards.

Y1089- E. coli Strain No known significant effects or critical hazards.

Y1090- E. coli Strain No known significant effects or critical hazards.

Gigapack III packaging extract No known significant effects or critical hazards.

Wild-Type Lambda DNA No known significant effects or critical hazards.

c1857ind 1 Sam7

VCS257 E. coli Strain No known significant effects or critical hazards.

**Carcinogenicity** : Lambda gt11 Vector No known significant effects or critical hazards.

Digested With EcoR I And Dephosphorylated

pRheo/EcoR I Test Insert No known significant effects or critical hazards.

Y1088 E. coli Strain No known significant effects or critical hazards.

Y1089- E. coli Strain No known significant effects or critical hazards.

Y1090- E. coli Strain No known significant effects or critical hazards.

Gigapack III packaging extract No known significant effects or critical hazards.

Wild-Type Lambda DNA No known significant effects or critical hazards.

c1857ind 1 Sam7

VCS257 E. coli Strain No known significant effects or critical hazards.

**Mutagenicity** : Lambda gt11 Vector No known significant effects or critical hazards.

Digested With EcoR I And Dephosphorylated

pRheo/EcoR I Test Insert No known significant effects or critical hazards.

Y1088 E. coli Strain No known significant effects or critical hazards.

Y1089- E. coli Strain No known significant effects or critical hazards.

Y1090- E. coli Strain No known significant effects or critical hazards.

Gigapack III packaging extract No known significant effects or critical hazards.

Wild-Type Lambda DNA No known significant effects or critical hazards.

c1857ind 1 Sam7

VCS257 E. coli Strain No known significant effects or critical hazards.

**Teratogenicity** : Lambda gt11 Vector No known significant effects or critical hazards.

Digested With EcoR I And Dephosphorylated

pRheo/EcoR I Test Insert No known significant effects or critical hazards.

Y1088 E. coli Strain No known significant effects or critical hazards.

Y1089- E. coli Strain No known significant effects or critical hazards.

Y1090- E. coli Strain No known significant effects or critical hazards.

Gigapack III packaging extract No known significant effects or critical hazards.

Wild-Type Lambda DNA No known significant effects or critical hazards.

c1857ind 1 Sam7

VCS257 E. coli Strain No known significant effects or critical hazards.

## Section 11. Toxicological information

<b>Developmental effects</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.
<b>Fertility effects</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli 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.

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
<b>Y1088 E. coli Strain</b>					
Y1088 E. coli Strain	300000	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A
<b>Y1089r- E. coli Strain</b>					
Y1089r- E. coli Strain	300000	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A
<b>Y1090r- E. coli Strain</b>					
Y1090r- E. coli Strain	300000	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A
<b>VCS257 E. coli Strain</b>					
VCS257 E. coli Strain	300000	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
<b>Y1088 E. coli Strain</b> Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	96 hours 3 weeks
<b>Y1089r- E. coli Strain</b> Glycerol Sodium chloride	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks
	Acute LC50 54000 mg/l Fresh water Acute EC50 4.74 g/L Fresh water	Fish - Oncorhynchus mykiss Algae - Chlamydomonas reinhardtii	96 hours 96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	96 hours 96 hours 3 weeks
	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks
<b>Y1090r- E. coli Strain</b> Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water Acute EC50 4.74 g/L Fresh water	Fish - Oncorhynchus mykiss Algae - Chlamydomonas reinhardtii	96 hours 96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	96 hours 96 hours 3 weeks
	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks
<b>VCS257 E. coli Strain</b> Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water Acute EC50 4.74 g/L Fresh water	Fish - Oncorhynchus mykiss Algae - Chlamydomonas reinhardtii	96 hours 96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water	Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae	96 hours 96 hours

## Section 12. Ecological information

	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<b>Y1088 E. coli Strain</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>Y1089r- E. coli Strain</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>Y1090r- E. coli Strain</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>VCS257 E. coli Strain</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

**Conclusion/Summary** : Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>Y1088 E. coli Strain</b> Glycerol	-1.76	-	low
<b>Y1089r- E. coli Strain</b> Glycerol	-1.76	-	low
<b>Y1090r- E. coli Strain</b> Glycerol	-1.76	-	low
<b>VCS257 E. coli Strain</b> Glycerol	-1.76	-	low

### Mobility in soil

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

## Section 12. Ecological information

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

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

**TDG / IMDG / IATA** : Not regulated.

**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

### Canadian lists

**Canadian NPRI** : None of the components are listed.

**CEPA Toxic substances** : None of the components are listed.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

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** : Not determined.

**Canada** : Not determined.

**China** : Not determined.

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

## Section 15. Regulatory information

<b>Japan</b>	: <b>Japan inventory (ENCS):</b> Not determined. <b>Japan inventory (ISHL):</b> Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: All components are listed or exempted.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

### History

<b>Date of issue/Date of revision</b>	: 01/06/2020
<b>Date of previous issue</b>	: 12/21/2017
<b>Version</b>	: 4
<b>Key to abbreviations</b>	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals HPR = Hazardous Products Regulations 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) N/A = Not available UN = United Nations

### Procedure used to derive the classification

Classification	Justification
<b>Y1088 E. coli Strain</b> EYE IRRITATION - Category 2A	Calculation method
<b>Y1089r- E. coli Strain</b> EYE IRRITATION - Category 2A	Calculation method
<b>Y1090r- E. coli Strain</b> EYE IRRITATION - Category 2A	Calculation method
<b>VCS257 E. coli Strain</b> EYE IRRITATION - Category 2A	Calculation method

**References** : Not available.

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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