

# SAFETY DATA SHEET

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

## Section 1. Identification

### 1.1 Product identifier

**Product name** : Lambda gt11- EcoR I - CIAP -Treated - Gigapack III Cloning Kit, Part Number 234612

**Part No. (Chemical Kit)** : 234612

**Part No.** :  Lambda gt11 Vector Digested With EcoR I 234211-51  
 And Dephosphorylated  
 pRho/EcoR I Test Insert 210200-51  
 Y1088 E. coli Strain 200263-81  
 Y1089r- E. coli Strain 200260-81  
 Y1090r- 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

**Validation date** : 12/21/2017

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

**Material uses** :  Analytical reagent.

Lambda gt11 Vector Digested With EcoR I And 0.01 ml (10 µg 1 µg/µl)  
 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  
 Y1089r- E. coli Strain 0.5 ml  
 Y1090r- 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

### 1.3 Details of the supplier of the safety data sheet

**Supplier/Manufacturer** : Agilent Technologies, Inc.  
 5301 Stevens Creek Blvd  
 Santa Clara, CA 95051, USA  
 800-227-9770

### 1.4 Emergency telephone number

**In case of emergency** : CHEMTREC®: 1-800-424-9300

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

**OSHA/HCS status** :  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

pRho/EcoR I Test Insert

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

## Section 2. Hazards identification

Y1088 E. coli Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Y1089r- E. coli Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Y1090r- E. coli Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Gigapack III packaging extract	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Wild-Type Lambda DNA c1857ind 1 Sam7	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
VCS257 E. coli Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

<b>Y1088 E. coli Strain</b> H319	EYE IRRITATION - Category 2A
<b>Y1089r- E. coli Strain</b> H319	EYE IRRITATION - Category 2A
<b>Y1090r- E. coli Strain</b> H319	EYE IRRITATION - Category 2A
<b>VCS257 E. coli Strain</b> H319	EYE IRRITATION - Category 2A

<b>Ingredients of unknown toxicity</b>	<b>:</b> Y1088 E. coli Strain	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%
	Y1089r- E. coli Strain	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%
	Y1090r- E. coli Strain	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%
	Gigapack III packaging extract	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
	VCS257 E. coli Strain	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%

### 2.2 GHS label elements

## Section 2. Hazards identification

### Hazard pictograms

:  Y1088 E. coli Strain



Y1089r- E. coli Strain



Y1090r- E. coli Strain



VCS257 E. coli Strain



### Signal word

:  Lambda gt11 Vector Digested

No signal word.

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

No signal word.

1 Sam7

VCS257 E. coli Strain

Warning

### Hazard statements

:  Lambda gt11 Vector Digested

No known significant effects or critical hazards.

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

No known significant effects or critical hazards.

1 Sam7

VCS257 E. coli Strain

H319 - Causes serious eye irritation.

### Precautionary statements

#### Prevention

:  Lambda gt11 Vector Digested

Not applicable.

With EcoR I And

Dephosphorylated

pRheo/EcoR I Test Insert

Not applicable.

Y1088 E. coli Strain

P280 - Wear eye or face protection.

Y1089r- E. coli Strain

P264 - Wash hands thoroughly after handling.

P280 - Wear eye or face protection.

Y1090r- E. coli Strain

P264 - Wash hands thoroughly after handling.

P280 - Wear eye or face protection.

Gigapack III packaging extract

P264 - Wash hands thoroughly after handling.

Not applicable.

Wild-Type Lambda DNA c1857ind

Not applicable.

1 Sam7

VCS257 E. coli Strain

P280 - Wear eye or face protection.

P264 - Wash hands thoroughly after handling.

## Section 2. Hazards identification

<b>Response</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	Not applicable.
	pRho/EcoR I Test Insert	Not applicable.
	Y1088 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.
	Y1089r- 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.
	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.
<b>Storage</b>	Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind	Not applicable.
	1 Sam7	
	VCS257 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.
	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	Not applicable.
<b>Disposal</b>	pRho/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 extract	Not applicable.
	Wild-Type Lambda DNA c1857ind	Not applicable.
	1 Sam7	
	VCS257 E. coli Strain	Not applicable.
	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	Not applicable.
	pRho/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 extract	Not applicable.	
Wild-Type Lambda DNA c1857ind	Not applicable.	
1 Sam7		
VCS257 E. coli Strain	Not applicable.	

## Section 2. Hazards identification

<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> 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	None known. None known. None known. None known. None known. None known. None known.
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### 2.3 Other hazards

<b>Hazards not otherwise classified</b>	: <input checked="" type="checkbox"/> 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	None known. None known. None known. None known. None known. None known. None known.
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## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: <input checked="" type="checkbox"/> 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	Mixture Mixture Mixture Mixture Mixture Mixture Mixture
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Ingredient name	%	CAS number
<input checked="" type="checkbox"/> <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

Any concentration shown as a range is to protect confidentiality or is due to batch variation.



## Section 3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### 4.1 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.
	pRho/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.
<b>Inhalation</b>	:  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pRho/EcoR I Test Insert	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Y1088 E. coli Strain	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

## Section 4. First aid measures

	<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>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>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>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>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</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>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><b>Skin contact</b></p>	<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>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</p>

## Section 4. First aid measures

		medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Y1090r- E. coli Strain	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.
	Gigapack III packaging extract	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	VCS257 E. coli Strain	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.
<b>Ingestion</b>	: <b>λ</b> Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	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.
	pRho/EcoR I Test Insert	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.
	Y1088 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.
	Y1089r- 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



## Section 4. First aid measures

Y1090r- E. coli Strain

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.

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

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

#### Potential acute health effects

## Section 4. First aid measures

<b>Eye contact</b>	: <b>Λ</b> ambda 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. 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>	: <b>Λ</b> ambda 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.  No known significant effects or critical hazards.
<b>Skin contact</b>	: <b>Λ</b> ambda 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>Ingestion</b>	: <b>Λ</b> ambda 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.

### Over-exposure signs/symptoms

<b>Eye contact</b>	: <b>Λ</b> ambda 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	No specific data.  No specific data. Adverse symptoms may include the following: pain or irritation watering redness Adverse symptoms may include the following: pain or irritation watering redness Adverse symptoms may include the following:
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## Section 4. First aid measures

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

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

<b>Notes to physician</b>	: Lambda gt11 Vector Digested	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	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.
	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.



## Section 4. First aid measures

	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.
<b>Specific treatments</b>	: 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.
<b>Protection of first-aiders</b>	: 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.
	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 extract	No action shall be taken involving any personal risk or without suitable training.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No action shall be taken involving any personal risk or without suitable training.
	VCS257 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.



See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</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	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.
<b>Unsuitable extinguishing media</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	None known.  None known. None known. None known. None known. None known. None known.

### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</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	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. In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</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. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds

## Section 5. Fire-fighting measures

Y1089r- E. coli Strain	metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
Y1090r- E. coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
Gigapack III packaging extract	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
VCS257 E. coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides

### 5.3 Advice for firefighters

#### Special protective actions for fire-fighters

<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>
Y1088 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.
Y1089r- 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.
Y1090r- 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.
Gigapack III packaging extract	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.
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

## Section 5. Fire-fighting measures

### Special protective equipment for fire-fighters

<p>: <input checked="" type="checkbox"/> 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>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>without suitable training.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p> <p>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</p>
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## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel


<p>: <input checked="" type="checkbox"/> 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>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.</p> <p>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.</p> <p>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.</p> <p>No action shall be taken involving any personal</p>
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## Section 6. Accidental release measures

	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 information in "For non-emergency personnel".
Y1090r- 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".
Gigapack III packaging extract	If specialized clothing is required to deal with the



## Section 6. Accidental release measures

	<p>Wild-Type Lambda DNA c1857ind 1 Sam7</p> <p>VCS257 E. coli Strain</p>	<p>spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the 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".</p> <p>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".</p>
<p><b>6.2 Environmental precautions</b></p>	<p>:  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</p> <p>pRho/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>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p>

### 6.3 Methods and materials for containment and cleaning up



## Section 6. Accidental release measures

<b>Methods for cleaning up</b>	:	<p> <input checked="" type="checkbox"/> 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                 </p>	<p>                     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.                 </p> <p>                     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.                 </p> <p>                     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.                 </p> <p>                     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.                 </p> <p>                     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.                 </p> <p>                     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.                 </p> <p>                     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.                 </p> <p>                     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.                 </p>
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## Section 7. Handling and storage

### 7.1 Precautions for safe handling


## Section 7. Handling and storage

<b>Protective measures</b>	<p>:  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/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>Put on appropriate personal protective equipment (see Section 8).</p> <p>Put on appropriate personal protective equipment (see Section 8).</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Put on appropriate personal protective equipment (see Section 8).</p> <p>Put on appropriate personal protective equipment (see Section 8).</p> <p>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.</p>
<b>Advice on general occupational hygiene</b>	<p>:  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</p> <p>pRho/EcoR I Test Insert</p> <p>Y1088 E. coli Strain</p>	<p>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. 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. 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,</p>

## Section 7. Handling and storage

Y1089r- E. coli Strain	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.

### 7.2 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.
pRheo/EcoR I Test Insert	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

## Section 7. Handling and storage

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

## Section 7. Handling and storage

VCS257 E. coli Strain

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.

### 7.3 Specific end use(s)

#### Recommendations

<ul style="list-style-type: none"> <li>• Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</li> <li>pRho/EcoR I Test Insert</li> <li>Y1088 E. coli Strain</li> <li>Y1089r- E. coli Strain</li> <li>Y1090r- E. coli Strain</li> <li>Gigapack III packaging extract</li> <li>Wild-Type Lambda DNA c1857ind</li> <li>1 Sam7</li> <li>VCS257 E. coli Strain</li> </ul>	<ul style="list-style-type: none"> <li>Industrial applications, Professional applications.</li> <li>Industrial applications, Professional applications.</li> <li>Industrial applications, Professional applications.</li> <li>Industrial applications, Professional applications.</li> <li>Industrial applications, Professional applications.</li> <li>Industrial applications, Professional applications.</li> <li>Industrial applications, Professional applications.</li> </ul>
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#### Industrial sector specific solutions

<ul style="list-style-type: none"> <li>• Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</li> <li>pRho/EcoR I Test Insert</li> <li>Y1088 E. coli Strain</li> <li>Y1089r- E. coli Strain</li> <li>Y1090r- E. coli Strain</li> <li>Gigapack III packaging extract</li> <li>Wild-Type Lambda DNA c1857ind</li> <li>1 Sam7</li> <li>VCS257 E. coli Strain</li> </ul>	<ul style="list-style-type: none"> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> <li>Not applicable.</li> </ul>
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## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<ul style="list-style-type: none"> <li>• Y1088 E. coli Strain</li> <li>Glycerol</li> </ul>	<p><b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction</p> <p>TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust</p> <p><b>OSHA PEL (United States, 6/2016).</b> TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction</p> <p>TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust</p>
<ul style="list-style-type: none"> <li>Sodium chloride</li> </ul>	None.
<ul style="list-style-type: none"> <li>• Y1089r- E. coli Strain</li> <li>Glycerol</li> </ul>	<b>OSHA PEL 1989 (United States, 3/1989).</b>

## Section 8. Exposure controls/personal protection

<p>Sodium chloride</p>	<p>TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust  <b>OSHA PEL (United States, 6/2016).</b>                  TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust                  None.</p>
<p><b>Y1090r- E. coli Strain</b>                  Glycerol</p>	<p><b>OSHA PEL 1989 (United States, 3/1989).</b>                  TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust  <b>OSHA PEL (United States, 6/2016).</b>                  TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust                  None.</p>
<p>Sodium chloride</p> <p><b>VCS257 E. coli Strain</b>                  Glycerol</p>	<p><b>OSHA PEL 1989 (United States, 3/1989).</b>                  TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust  <b>OSHA PEL (United States, 6/2016).</b>                  TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust                  None.</p>
<p>Sodium chloride</p>	<p>TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust  <b>OSHA PEL (United States, 6/2016).</b>                  TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction                  TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust                  None.</p>

### 8.2 Exposure controls

#### 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

##### Hand protection

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

## Section 8. Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** :  
 Lambda gt11 Vector Digested Liquid.  
 With EcoR I And  
 Dephosphorylated  
 pRho/EcoR I Test Insert Liquid.  
 Y1088 E. coli Strain Liquid.  
 Y1089r- E. coli Strain Liquid.  
 Y1090r- E. coli Strain Liquid.  
 Gigapack III packaging extract Liquid.  
 Wild-Type Lambda DNA c1857ind Liquid.  
 1 Sam7  
 VCS257 E. coli Strain Liquid.
- Color** :  
 Lambda gt11 Vector Digested Not available.  
 With EcoR I And  
 Dephosphorylated  
 pRho/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 extract Not available.  
 Wild-Type Lambda DNA c1857ind Not available.  
 1 Sam7  
 VCS257 E. coli Strain Not available.
- Odor** :  
 Lambda gt11 Vector Digested Not available.  
 With EcoR I And  
 Dephosphorylated  
 pRho/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 extract Not available.  
 Wild-Type Lambda DNA c1857ind Not available.  
 1 Sam7  
 VCS257 E. coli Strain Not available.
- Odor threshold** :  
 Lambda gt11 Vector Digested Not available.  
 With EcoR I And  
 Dephosphorylated  
 pRho/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 extract Not available.  
 Wild-Type Lambda DNA c1857ind Not available.



## Section 9. Physical and chemical properties

	1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>pH</b>	: <input checked="" type="checkbox"/> Lambda gt11 Vector Digested	7.5
	With EcoR I And	
	Dephosphorylated	
	pRho/EcoR I Test Insert	7.5
	Y1088 E. coli Strain	7
	Y1089r- E. coli Strain	7
	Y1090r- E. coli Strain	7
	Gigapack III packaging extract	8
	Wild-Type Lambda DNA c1857ind	7
	1 Sam7	
	VCS257 E. coli Strain	7
<b>Melting point</b>	: <input checked="" type="checkbox"/> Lambda gt11 Vector Digested	0°C (32°F)
	With EcoR I And	
	Dephosphorylated	
	pRho/EcoR I Test Insert	0°C (32°F)
	Y1088 E. coli Strain	Not available.
	Y1089r- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	0°C (32°F)
	1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Boiling point</b>	: <input checked="" type="checkbox"/> Lambda gt11 Vector Digested	100°C (212°F)
	With EcoR I And	
	Dephosphorylated	
	pRho/EcoR I Test Insert	100°C (212°F)
	Y1088 E. coli Strain	Not available.
	Y1089r- E. coli Strain	Not available.
	Y1090r- E. coli Strain	Not available.
	Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind	100°C (212°F)
	1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Flash point</b>	: <input checked="" type="checkbox"/> Lambda gt11 Vector Digested	Not available.
	With EcoR I And	
	Dephosphorylated	
	pRho/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 extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.
<b>Evaporation rate</b>	: <input checked="" type="checkbox"/> Lambda gt11 Vector Digested	Not available.
	With EcoR I And	
	Dephosphorylated	
	pRho/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 extract	Not available.
	Wild-Type Lambda DNA c1857ind	Not available.
	1 Sam7	
	VCS257 E. coli Strain	Not available.

## Section 9. Physical and chemical properties

<b>Flammability (solid, gas)</b>	: <input checked="" type="checkbox"/> 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 applicable.  Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: <input checked="" type="checkbox"/> 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. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Vapor pressure</b>	: <input checked="" type="checkbox"/> 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. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Vapor density</b>	: <input checked="" type="checkbox"/> 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. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Relative density</b>	: <input checked="" type="checkbox"/> 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. Not available. Not available. Not available. Not available. Not available. Not available.

## Section 9. Physical and chemical properties

<b>Solubility</b>	:	☑ Lambda gt11 Vector Digested With EcoR I And 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.
		Y1089r- 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 extract	Easily soluble in the following materials: cold water and hot water.
		Wild-Type Lambda DNA c1857ind 1 Sam7	Easily soluble in the following materials: cold water 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 Digested With EcoR I And Dephosphorylated pRho/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 extract	Not available.
		Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
		VCS257 E. coli Strain	Not available.
<b>Auto-ignition temperature</b>	:	☑ Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/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 extract	Not available.
		Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
		VCS257 E. coli Strain	Not available.
<b>Decomposition temperature</b>	:	☑ Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/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 extract	Not available.
		Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
		VCS257 E. coli Strain	Not available.
<b>Viscosity</b>	:	☑ Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/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 extract	Not available.

## Section 9. Physical and chemical properties

Wild-Type Lambda DNA c1857ind 1 Sam7  
 VCS257 E. coli Strain

Not available.  
 Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: <input checked="" type="checkbox"/> 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 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>10.2 Chemical stability</b>	: <input checked="" type="checkbox"/> 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	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.
<b>10.3 Possibility of hazardous reactions</b>	: <input checked="" type="checkbox"/> 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	Under normal conditions of storage and use, hazardous reactions will not occur.  Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

## Section 10. Stability and reactivity

<b>10.4 Conditions to avoid</b>	<p> <input checked="" type="checkbox"/> 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         </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>10.5 Incompatible materials</b>	<p> <input checked="" type="checkbox"/> 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         </p>	<p>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> <p>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> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p>
<b>10.6 Hazardous decomposition products</b>	<p> <input checked="" type="checkbox"/> 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         </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> <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 11. Toxicological information

### 11.1 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 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>Y1089r- E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>Y1090r- E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>VCS257 E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500	-

## Section 11. Toxicological information

Sodium chloride	Skin - Mild irritant	Rabbit	-	milligrams 24 hours 500	-
	Eyes - Moderate irritant	Rabbit	-	milligrams 24 hours 100	-
	Eyes - Moderate irritant	Rabbit	-	milligrams 10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

: 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.

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.

### Potential acute health effects

#### Eye contact

: 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

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.

## Section 11. Toxicological information

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

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

<b>Eye contact</b>	: Lambda gt11 Vector Digested	No specific data.
	With EcoR I And	
	Dephosphorylated	
	pRho/EcoR I Test Insert	No specific data.
	Y1088 E. coli Strain	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	No specific data.
	1 Sam7	
	VCS257 E. coli Strain	Adverse symptoms may include the following: pain or irritation



## Section 11. Toxicological information

watering  
redness  
No specific data.

**Inhalation** : 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 specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.

**Skin contact** : 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 specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.

**Ingestion** : 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 specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.  
No specific data.

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

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

**General** : 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

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.

## Section 11. Toxicological information

	1 Sam7	
	VCS257 E. coli Strain	No known significant effects or critical hazards.
<b>Carcinogenicity</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	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
<b>Mutagenicity</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	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
<b>Teratogenicity</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	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
<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	No known significant effects or critical hazards.
	VCS257 E. coli Strain	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	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.

## Section 11. Toxicological information

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
<b>Y1088 E. coli Strain</b> Oral	300000 mg/kg
<b>Y1089r- E. coli Strain</b> Oral	300000 mg/kg
<b>Y1090r- E. coli Strain</b> Oral	300000 mg/kg
<b>VCS257 E. coli Strain</b> Oral	300000 mg/kg

## Section 12. Ecological information

### 12.1 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 EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
<b>Y1089r- E. coli Strain</b> Glycerol Sodium chloride	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
	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 EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
<b>Y1090r- E. coli Strain</b> Glycerol Sodium chloride	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	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
	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	

## Section 12. Ecological information

<b>VCS257 E. coli Strain</b> Glycerol Sodium chloride	Acute EC50 519.6 mg/l Fresh water Acute EC50 402600 µg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	48 hours 48 hours 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
	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 Acute EC50 402600 µg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	48 hours 48 hours 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	

### 12.2 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.

### 12.3 Bioaccumulative potential

## Section 12. Ecological information

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

### 12.4 Mobility in soil

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

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

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

**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.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## Section 14. Transport information

DOT / TDG / Mexico / 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

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**U.S. Federal regulations** : TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
 Clean Water Act (CWA) 311: Edetic acid

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

#### SARA 302/304

##### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

#### SARA 311/312

**Classification** :  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Not applicable.  
 pRho/EcoR I Test Insert Not applicable.  
 Y1088 E. coli Strain EYE IRRITATION - Category 2A  
 Y1089r- E. coli Strain EYE IRRITATION - Category 2A  
 Y1090r- E. coli Strain EYE IRRITATION - Category 2A  
 Gigapack III packaging extract Not applicable.  
 Wild-Type Lambda DNA c1857ind Not applicable.  
 1 Sam7  
 VCS257 E. coli Strain EYE IRRITATION - Category 2A

##### Composition/information on ingredients

Name	%	Classification
<b>Y1088 E. coli Strain</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Sodium chloride	≤3	EYE IRRITATION - Category 2A
<b>Y1089r- E. coli Strain</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Sodium chloride	≤3	EYE IRRITATION - Category 2A
<b>Y1090r- E. coli Strain</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Sodium chloride	≤3	EYE IRRITATION - Category 2A
<b>Gigapack III packaging extract</b>		
Sucrose	≤10	COMBUSTIBLE DUSTS
<b>VCS257 E. coli Strain</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Sodium chloride	≤3	EYE IRRITATION - Category 2A

## Section 15. Regulatory information

### State regulations

- Massachusetts** : The following components are listed: GLYCERINE MIST; SUCROSE DUST
- New York** : None of the components are listed.
- New Jersey** : The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL
- Pennsylvania** : The following components are listed: 1,2,3-PROPANETRIOL; .ALPHA.-D-GLUCOPYRANOSIDE, .BETA.-D-FRUCTOFURANOSYL

### International regulations

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

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

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

## Section 16. Other information

### History

- Date of issue** : 12/21/2017
- Date of previous issue** : 04/20/2015.
- Version** : 2

Indicates information that has changed from previously issued version.

### Notice to reader

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