

# SAFETY DATA SHEET



Lambda gt11 - EcoR I - CIAP - Treated Vector Kit, Part Number 234211

## Section 1. Identification

### 1.1 Product identifier

**Product name** : Lambda gt11 - EcoR I - CIAP - Treated Vector Kit, Part Number 234211

**Part no. (chemical kit)** : 234211

**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

**Validation date** : 4/1/2022

### 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 Dephosphorylated	0.01 ml (10 µg 1 µg/µl)
pRho/EcoR I Test Insert	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

### 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

<p><b>OSHA/HCS status</b> : Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</p>	<p>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.</p>
<p>pRho/EcoR I Test Insert</p>	<p>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.</p>
<p>Y1088 E. coli Strain</p>	<p>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</p>
<p>Y1089r- E. coli Strain</p>	<p>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</p>
<p>Y1090r- E. coli Strain</p>	<p>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</p>

### Classification of the substance or mixture

## Section 2. Hazards identification

<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

### 2.2 GHS label elements

#### Hazard pictograms

: Y1088 E. coli Strain



Y1089r- E. coli Strain



Y1090r- E. coli Strain



#### Signal word

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	No signal word.
Y1088 E. coli Strain	No signal word.
Y1089r- E. coli Strain	Warning
Y1090r- E. coli Strain	Warning

#### Hazard statements

: Lambda gt11 Vector Digested 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	H319 - Causes serious eye irritation.
Y1090r- E. coli Strain	H319 - Causes serious eye irritation.

#### Precautionary statements

##### Prevention

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	Not applicable.
Y1088 E. coli Strain	Not applicable.
Y1089r- E. coli Strain	P280 - Wear eye or face protection.
Y1090r- E. coli Strain	P280 - Wear eye or face protection.

##### Response

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	Not applicable.
Y1088 E. coli Strain	Not applicable.
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 advice or attention. P305 + P351 + P338 - IF IN EYES: Rinse

## Section 2. Hazards identification

	Y1090r- E. coli Strain	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 advice or attention. 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 advice or attention.
<b>Storage</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	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Disposal</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	Not applicable. Not applicable. Not applicable. Not applicable.
<b>Supplemental label elements</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	None known. None known. None known. None known.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</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	None known. None known. None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	Mixture Mixture Mixture Mixture
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## Section 3. Composition/information on ingredients

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

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

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified 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  pRho/EcoR I Test Insert  Y1088 E. coli Strain  Y1089r- E. coli Strain  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. Get medical attention if irritation occurs. 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. 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. 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. 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 pRho/EcoR I Test Insert  Y1088 E. coli Strain	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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

## Section 4. First aid measures

and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Y1089r- 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 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.

Y1090r- 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 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.

### Skin contact

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert

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

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

Y1088 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.

Y1089r- 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.

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.

### Ingestion

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated

Wash out mouth with water. 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. 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.

## Section 4. First aid measures

Y1088 E. coli Strain

Wash out mouth with water. Remove dentures if any. 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. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.

Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Y1090r- E. coli Strain

Wash out mouth with water. Remove dentures if any. 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

##### **Eye 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

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.

##### **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

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 4. First aid measures

<b>Skin contact</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	No known significant effects or critical hazards.  No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- 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.
<b><u>Over-exposure signs/symptoms</u></b>		
<b>Eye contact</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	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: pain or irritation watering redness
<b>Inhalation</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	No specific data.  No specific data. No specific data. No specific data.
<b>Skin contact</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	No specific data.  No specific data. No specific data. No specific data.
<b>Ingestion</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	No specific data.  No specific data. No specific data. No specific data.

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

## Section 4. First aid measures

<b>Notes to physician</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	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. 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 Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	No specific treatment.  No specific treatment. No specific treatment. No specific treatment.
<b>Protection of first-aiders</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	No action shall be taken involving any personal risk or without suitable training.  No action shall be taken involving any personal risk or without suitable training. 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. 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. 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	Use an extinguishing agent suitable for the surrounding fire.  Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
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## Section 5. Fire-fighting measures

<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	None known.  None known. None known. None known. None known.
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### 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	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  Y1089r- E. coli Strain  Y1090r- E. coli Strain	No specific data.  No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides

### 5.3 Advice for firefighters

<b>Special protective actions for fire-fighters</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated  pRho/EcoR I Test Insert  Y1088 E. coli Strain  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. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
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## Section 5. Fire-fighting measures

### Special protective equipment for fire-fighters

Y1090r- E. coli Strain		action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
pRheo/EcoR I Test Insert		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Y1088 E. coli Strain		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Y1089r- E. coli Strain		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Y1090r- E. coli Strain		Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

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

#### For non-emergency personnel

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
pRheo/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
Y1088 E. coli Strain	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Y1089r- E. coli Strain	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

## Section 6. Accidental release measures

	<p>Y1090r- 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.</p>
<p><b>For emergency responders :</b></p>	<p>Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</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>pRho/EcoR I Test Insert</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>Y1088 E. coli Strain</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>Y1089r- E. coli Strain</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>Y1090r- E. coli Strain</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>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>pRho/EcoR I Test Insert</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>Y1088 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>Y1089r- 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>Y1090r- 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>

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

## Section 6. Accidental release measures

<b>Methods for cleaning up</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	pRho/EcoR I Test Insert	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Y1088 E. coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Y1089r- E. coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Y1090r- E. coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	Put on appropriate personal protective equipment (see Section 8).
	Y1088 E. coli Strain	Put on appropriate personal protective equipment (see Section 8). 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.
	Y1089r- E. coli Strain	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	Y1090r- E. coli Strain	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept

## Section 7. Handling and storage

### Advice on general occupational hygiene

: 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

tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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, 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.

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

pRho/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 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

## Section 7. Handling and storage

Y1088 E. coli Strain

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.

### 7.3 Specific end use(s)

#### Recommendations

: 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

Industrial applications, Professional applications.

Industrial applications, Professional applications.

Industrial applications, Professional applications.

Industrial applications, Professional applications.

Industrial applications, Professional applications.

#### Industrial sector specific solutions

: 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

Not available.

Not available.

Not available.

Not available.

Not available.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>Y1088 E. coli Strain</b> Glycerol  Sodium chloride	<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, 5/2018).</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.
<b>Y1089r- E. coli Strain</b> Glycerol  Sodium chloride	<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, 5/2018).</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.
<b>Y1090r- E. coli Strain</b> Glycerol  Sodium chloride	<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, 5/2018).</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.

### 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.

## Section 8. Exposure controls/personal protection

### 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.

**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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

<b>Physical state</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	Liquid.  Liquid. Liquid. Liquid. Liquid.
<b>Color</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	Not available.  Not available. Not available. Not available. Not available.
<b>Odor</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	Not available.  Not available. Not available. Not available. Not available.
<b>Odor threshold</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	Not available.  Not available. Not available. Not available. Not available.
<b>pH</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	7.5  7.5 7 7 7

## Section 9. Physical and chemical properties and safety characteristics

**Melting point/freezing point** : Lambda gt11 Vector Digested With EcoR I And Dephosphorylated 0°C (32°F)  
 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.

**Boiling point, initial boiling point, and boiling range** : Lambda gt11 Vector Digested With EcoR I And Dephosphorylated 100°C (212°F)  
 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.

**Flash point** :

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
<b>Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</b>						
Edetic acid	>100	>212	DIN 51758			
<b>pRho/EcoR I Test Insert</b>						
Edetic acid	>100	>212	DIN 51758			
<b>Y1088 E. coli Strain</b>						
Glycerol				177	350.6	
<b>Y1089r- E. coli Strain</b>						
Glycerol				177	350.6	
<b>Y1090r- E. coli Strain</b>						
Glycerol				177	350.6	

**Evaporation rate** : Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Not available.  
 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.

**Flammability** : 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.

**Lower and upper explosion limit/flammability limit** : Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Not available.  
 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.

## Section 9. Physical and chemical properties and safety characteristics

### Vapor pressure

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
<b>Lambda gt11 Vector Digested With EcoR I And Dephosphorylated</b>						
water	23.8	3.2		92.258	12.3	
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	0.000027	0.0000036		0.000007501	0.000001	
<b>pRheo/EcoR I Test Insert</b>						
water	23.8	3.2		92.258	12.3	
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	0.000027	0.0000036		0.000007501	0.000001	
<b>Y1088 E. coli Strain</b>						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
<b>Y1089r- E. coli Strain</b>						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
<b>Y1090r- E. coli Strain</b>						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	

### Relative vapor density

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Not available.  
 pRheo/EcoR I Test Insert Not available.  
 Y1088 E. coli Strain Not available.  
 Y1089r- E. coli Strain Not available.  
 Y1090r- E. coli Strain Not available.

### Relative density

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Not available.  
 pRheo/EcoR I Test Insert Not available.  
 Y1088 E. coli Strain Not available.  
 Y1089r- E. coli Strain Not available.  
 Y1090r- E. coli Strain Not available.

### Solubility

: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Easily soluble in the following materials: cold water and hot water.  
 pRheo/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

## Section 9. Physical and chemical properties and safety characteristics

**Partition coefficient: n-octanol/water** :  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated and hot water.  
 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.

**Auto-ignition temperature** :

Ingredient name	°C	°F	Method
<input checked="" type="checkbox"/> Lambda gt11 Vector Digested With EcoR I And Dephosphorylated			
Edetic acid	>400	>752	VDI 2263
<b>pRho/EcoR I Test Insert</b>			
Edetic acid	>400	>752	VDI 2263
<b>Y1088 E. coli Strain</b>			
Glycerol	370	698	
<b>Y1089r- E. coli Strain</b>			
Glycerol	370	698	
<b>Y1090r- E. coli Strain</b>			
Glycerol	370	698	

**Decomposition temperature** :  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Not available.  
 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.

**Viscosity** :  Lambda gt11 Vector Digested With EcoR I And Dephosphorylated Not available.  
 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.

**Particle characteristics**

**Median particle size** :  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.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</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	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>	: 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	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>	: 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	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.
<b>10.4 Conditions to avoid</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	No specific data.  No specific data. No specific data. No specific data.
<b>10.5 Incompatible materials</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	May react or be incompatible with oxidizing materials.  May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.

## Section 10. Stability and reactivity

<b>10.6 Hazardous decomposition products</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Y1088 E. coli Strain	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Y1089r- E. coli Strain	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Y1090r- E. coli Strain	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 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	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>Y1088 E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
<b>Y1089r- E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
<b>Y1090r- E. coli Strain</b>					

## Section 11. Toxicological information

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

### Sensitization

Not available.

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

<b>Information on the likely routes of exposure</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain	Not available.
	Y1089r- E. coli Strain	Not available. Routes of entry anticipated: Oral, Dermal, Inhalation.
	Y1090r- E. coli Strain	Routes of entry anticipated: Oral, Dermal, Inhalation. Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

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

## Section 11. Toxicological information

<b>Skin contact</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	No known significant effects or critical hazards.  No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- 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.

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

<b>Eye contact</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRho/EcoR I Test Insert Y1088 E. coli Strain  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: pain or irritation watering redness
<b>Inhalation</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	No specific data.  No specific data. No specific data. No specific data.
<b>Skin contact</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	No specific data.  No specific data. No specific data. No specific data.
<b>Ingestion</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	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

## Section 11. Toxicological information

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

<b>General</b>	: 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	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: 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	No known significant effects or critical hazards. No known significant effects or critical hazards. 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	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Reproductive toxicity</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	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

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

## Section 11. Toxicological information

Sodium chloride	3000	N/A	N/A	N/A	N/A
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## 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 Acute EC50 2430000 µg/l Fresh water Acute EC50 519.6 mg/l Fresh water Acute EC50 402.6 mg/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  Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Fish - Oncorhynchus mykiss Algae - Navicula seminulum Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks  96 hours 21 days 8 weeks
<b>Y1089r- E. coli Strain</b> Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water Acute EC50 2430000 µg/l Fresh water Acute EC50 519.6 mg/l Fresh water Acute EC50 402.6 mg/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  Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Fish - Oncorhynchus mykiss Algae - Navicula seminulum Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks  96 hours 21 days 8 weeks
<b>Y1090r- E. coli Strain</b> Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water Acute EC50 2430000 µg/l Fresh water Acute EC50 519.6 mg/l Fresh water Acute EC50 402.6 mg/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  Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Fish - Oncorhynchus mykiss Algae - Navicula seminulum Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks  96 hours 21 days 8 weeks

### 12.2 Persistence and degradability

## Section 12. Ecological information

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	-	-

### 12.3 Bioaccumulative potential

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

### 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.

## Section 13. Disposal considerations

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 IMO instruments** : 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

<b>Classification</b>	: Lambda gt11 Vector Digested With EcoR I And Dephosphorylated pRheo/EcoR I Test Insert Y1088 E. coli Strain Y1089r- E. coli Strain Y1090r- E. coli Strain	Not applicable. Not applicable. EYE IRRITATION - Category 2A EYE IRRITATION - Category 2A EYE IRRITATION - Category 2A
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##### Composition/information on ingredients

## Section 15. Regulatory information

Name	%	Classification
<b>Y1088 E. coli Strain</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2B
Sodium chloride	≤3	EYE IRRITATION - Category 2A
<b>Y1089r- E. coli Strain</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2B
Sodium chloride	≤3	EYE IRRITATION - Category 2A
<b>Y1090r- E. coli Strain</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2B
Sodium chloride	≤3	EYE IRRITATION - Category 2A

### State regulations

- Massachusetts** : The following components are listed: GLYCERINE MIST
- 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
- California Prop. 65**

This product does not require a Safe Harbor warning under California Prop. 65.

### International regulations

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

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

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

Not listed.

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

Not listed.

### Inventory list

- Australia** : Not determined.
- Canada** : Not determined.
- China** : All components are listed or exempted.
- Europe** : All components are listed or exempted.
- Japan** : **Japan inventory (CSCL)**: Not determined.  
**Japan inventory (ISHL)**: All components are listed or exempted.
- 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 active or exempted.
- Viet Nam** : Not determined.

## Section 16. Other information

### Procedure used to derive the classification

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

### History

**Date of issue** : 04/01/2022

**Date of previous issue** : 08/20/2019

**Version** : 6

**Key to abbreviations** :

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- UN = United Nations

📌 Indicates information that has changed from previously issued version.

### Notice to reader

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