

# SAFETY DATA SHEET



ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

<b>Product name</b>	: ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614
<b>Part no. (chemical kit)</b>	: 239614
<b>Part no.</b>	: <input checked="" type="checkbox"/> Gigapack III packaging 200201-41 extract Wild-Type Lambda DNA 246203-51 c1857ind 1 Sam7 VCS257 E. coli Strain 200256-51 ZAP Express vector 239211-51 R408 Interference-Resistant Helper Phage 200252-81 ExAssist Interference-Resistant Helper Phage 200253-81 XL1-Blue MRF <sup>+</sup> E.coli Strain 200301-81 XL0LR E. coli Strain 200304-81 pRho/EcoR I Test Insert 210200-51

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

<b>Material uses</b>	: Analytical reagent.
<input checked="" type="checkbox"/> Gigapack III packaging extract	0.275 ml (11 x 0.025 ml )
Wild-Type Lambda DNA c1857ind 1 Sam7	0.005 ml (1.05 µg 0.21 µg/µl)
VCS257 E. coli Strain	1 ml
ZAP Express vector	0.01 ml
R408 Interference-Resistant Helper Phage	1 ml
ExAssist Interference-Resistant Helper Phage	1 ml ( >1 X E10 pfu/ml)
XL1-Blue MRF <sup>+</sup> E.coli Strain	0.5 ml (500 µl)
XL0LR E. coli Strain	0.5 ml (500 µl)
pRho/EcoR I Test Insert	1.25 µg (1.25 µg 0.25 µg/µl)

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

Agilent Technologies Manufacturing GmbH & Co. KG  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany  
0800 603 1000

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(44)-870-8200418

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

<b>Product definition</b>	:	Gigapack III packaging extract	Mixture
		Wild-Type Lambda DNA c1857ind 1 Sam7	Mixture
		VCS257 E. coli Strain	Mixture
		ZAP Express vector	Mixture
		R408 Interference-Resistant Helper Phage	Mixture
		ExAssist Interference-Resistant Helper Phage	Mixture
		XL1-Blue MRF' E.coli Strain	Mixture
		XLOLR E. coli Strain	Mixture
		pRheo/EcoR I Test Insert	Mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

<b>Ingredients of unknown toxicity</b>	:	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%
		XL1-Blue MRF' E.coli Strain	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
		XLOLR E. coli Strain	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%

<b>Ingredients of unknown ecotoxicity</b>	:	Gigapack III Gold-11 packaging extract	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 8%
		λc1857 Sam7 wild-type lambda control DNA	Not applicable.
		VCS257 host strain	Not applicable.
		ZAP Express vector	Not applicable.
		R408 Interference-Resistant Helper Phage	Not applicable.
		ExAssist helper phage	Not applicable.
		XL1-Blue MRF' Strain	Not applicable.
		XLOLR Strain	Not applicable.
		pRheo/EcoR I test insert	Not applicable.

See Section 16 for the full text of the H statements declared above.


See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements


<b>Signal word</b>	:	Gigapack III packaging extract	No signal word.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No signal word.
		VCS257 E. coli Strain	No signal word.
		ZAP Express vector	No signal word.
		R408 Interference-Resistant Helper Phage	No signal word.
		ExAssist Interference-Resistant Helper Phage	No signal word.
		XL1-Blue MRF' E.coli Strain	No signal word.
		XLOLR E. coli Strain	No signal word.
		pRheo/EcoR I Test Insert	No signal word.


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**SECTION 2: Hazards identification**

<b>Hazard statements</b>	:  Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
	ZAP Express vector	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.

**Precautionary statements**

<b>Prevention</b>	:  Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express vector	Not applicable.
	R408 Interference-Resistant Helper Phage	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	XL1-Blue MRF' E.coli Strain	Not applicable.
	XLOLR E. coli Strain	Not applicable.
	pRheo/EcoR I Test Insert	Not applicable.

<b>Response</b>	:  Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express vector	Not applicable.
	R408 Interference-Resistant Helper Phage	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	XL1-Blue MRF' E.coli Strain	Not applicable.
	XLOLR E. coli Strain	Not applicable.
	pRheo/EcoR I Test Insert	Not applicable.

<b>Storage</b>	:  Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express vector	Not applicable.
	R408 Interference-Resistant Helper Phage	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	XL1-Blue MRF' E.coli Strain	Not applicable.
	XLOLR E. coli Strain	Not applicable.
	pRheo/EcoR I Test Insert	Not applicable.

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## SECTION 2: Hazards identification

<b>Disposal</b>	: <input checked="" type="checkbox"/> Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRheo/EcoR I Test Insert	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Hazardous ingredients</b>	: <input checked="" type="checkbox"/> VCS257 E. coli Strain XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain	Not applicable. Not applicable. Not applicable.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRheo/EcoR I Test Insert	Not applicable. Not applicable. Safety data sheet available on request. Not applicable. Not applicable. Not applicable. Safety data sheet available on request. Safety data sheet available on request. Not applicable.
<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	: <input checked="" type="checkbox"/> Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRheo/EcoR I Test Insert	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b><u>Special packaging requirements</u></b>		
<b>Tactile warning of danger</b>	: <input checked="" type="checkbox"/> Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

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## SECTION 2: Hazards identification

pRheo/EcoR I Test Insert Not applicable.

### 2.3 Other hazards

**Other hazards which do not result in classification** :

- Gigapack III packaging extract None known.
- Wild-Type Lambda DNA c1857ind 1 Sam7 None known.
- VCS257 E. coli Strain None known.
- ZAP Express vector None known.
- R408 Interference-Resistant Helper Phage None known.
- ExAssist Interference-Resistant Helper Phage None known.
- XL1-Blue MRF' E.coli Strain None known.
- XL0LR E. coli Strain None known.
- pRheo/EcoR I Test Insert None known.

## SECTION 3: Composition/information on ingredients

**3.1 Substances** :

- Gigapack III packaging extract Mixture
- Wild-Type Lambda DNA c1857ind 1 Sam7 Mixture
- VCS257 E. coli Strain Mixture
- ZAP Express vector Mixture
- R408 Interference-Resistant Helper Phage Mixture
- ExAssist Interference-Resistant Helper Phage Mixture
- XL1-Blue MRF' E.coli Strain Mixture
- XL0LR E. coli Strain Mixture
- pRheo/EcoR I Test Insert Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Gigapack III packaging extract Sucrose	REACH #: Annex IV EC: 200-334-9 CAS: 57-50-1	≤10	Not classified.	[2]
VCS257 E. coli Strain Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥10 - ≤25	Not classified.	[2]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]
XL1-Blue MRF' E.coli Strain Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥10 - ≤25	Not classified.	[2]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]
XL0LR E. coli Strain Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥10 - ≤25	Not classified.	[2]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]

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### SECTION 3: Composition/information on ingredients

			See Section 16 for the full text of the H statements declared above.	
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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.

#### Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### Eye contact

- :  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. Get medical attention if irritation occurs.
- ZAP Express vector  
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
- R408 Interference-Resistant Helper Phage  
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.
- ExAssist Interference-Resistant Helper Phage  
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.
- XL1-Blue MRF' 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.
- XLOLR 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.
- 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.


##### Inhalation

- :  Gigapack III packaging extract  
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- Wild-Type Lambda DNA c1857ind 1 Sam7  
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- VCS257 E. coli Strain  
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- ZAP Express vector  
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- R408 Interference-Resistant Helper Phage  
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
- ExAssist Interference-Resistant Helper Phage  
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.


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**SECTION 4: First aid measures**

**Skin contact**


XL1-Blue MRF' E.coli Strain	symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
XLOLR E. coli Strain	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.
:  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.
ZAP Express vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
R408 Interference-Resistant Helper Phage	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
ExAssist Interference-Resistant Helper Phage	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
XL1-Blue MRF' E.coli Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
XLOLR E. coli Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
pRho/EcoR I Test Insert	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion**

:  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 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.
ZAP Express vector	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.


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R408 Interference-Resistant Helper Phage	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.
ExAssist Interference-Resistant Helper Phage	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.
XL1-Blue MRF' E.coli Strain	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
XLOLR E. coli Strain	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
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.
<b>Protection of first-aiders</b> :  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.
ZAP Express vector	No action shall be taken involving any personal risk or without suitable training.
R408 Interference-Resistant Helper Phage	No action shall be taken involving any personal risk or without suitable training.
ExAssist Interference-Resistant Helper Phage	No action shall be taken involving any personal risk or without suitable training.
XL1-Blue MRF' E.coli Strain	No action shall be taken involving any personal risk or without suitable training.
XLOLR E. coli Strain	No action shall be taken involving any personal risk or without suitable training.
pRho/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training.

**4.2 Most important symptoms and effects, both acute and delayed**

Potential acute health effects

<b>Eye contact</b> :  Gigapack III packaging extract	No known significant effects or critical hazards.
Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
VCS257 E. coli Strain	No known significant effects or critical hazards.
ZAP Express vector	No known significant effects or critical hazards.
R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.



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	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Inhalation</b>	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
	ZAP Express vector	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Skin contact</b>	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
	ZAP Express vector	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Ingestion</b>	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
	ZAP Express vector	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.

**Over-exposure signs/symptoms**


<b>Eye contact</b>	: Gigapack III packaging extract	No specific data.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
	VCS257 E. coli Strain	No specific data.
	ZAP Express vector	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XLOLR E. coli Strain	No specific data.
	pRheo/EcoR I Test Insert	No specific data.

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<b>Inhalation</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRheo/EcoR I Test Insert	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
<b>Skin contact</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRheo/EcoR I Test Insert	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
<b>Ingestion</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRheo/EcoR I Test Insert	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.

**4.3 Indication of any immediate medical attention and special treatment needed**

<b>Notes to physician</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain  ZAP Express vector  R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRheo/EcoR I Test Insert	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. 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. 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.
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**SECTION 4: First aid measures**

		immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	:  Gigapack III packaging extract	No specific treatment.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No specific treatment.
	VCS257 E. coli Strain	No specific treatment.
	ZAP Express vector	No specific treatment.
	R408 Interference-Resistant Helper Phage	No specific treatment.
	ExAssist Interference-Resistant Helper Phage	No specific treatment.
	XL1-Blue MRF' E.coli Strain	No specific treatment.
	XLOLR E. coli Strain	No specific treatment.
	pRho/EcoR I Test Insert	No specific treatment.


**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

<b>Suitable extinguishing media</b>	:  Gigapack III packaging extract	Use an extinguishing agent suitable for the surrounding fire.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Use an extinguishing agent suitable for the surrounding fire.
	VCS257 E. coli Strain	Use an extinguishing agent suitable for the surrounding fire.
	ZAP Express vector	Use an extinguishing agent suitable for the surrounding fire.
	R408 Interference-Resistant Helper Phage	Use an extinguishing agent suitable for the surrounding fire.
	ExAssist Interference-Resistant Helper Phage	Use an extinguishing agent suitable for the surrounding fire.
	XL1-Blue MRF' E.coli Strain	Use an extinguishing agent suitable for the surrounding fire.
	XLOLR E. coli Strain	Use an extinguishing agent suitable for the surrounding fire.
	pRho/EcoR I Test Insert	Use an extinguishing agent suitable for the surrounding fire.

<b>Unsuitable extinguishing media</b>	:  Gigapack III packaging extract	None known.
	Wild-Type Lambda DNA c1857ind 1 Sam7	None known.
	VCS257 E. coli Strain	None known.
	ZAP Express vector	None known.
	R408 Interference-Resistant Helper Phage	None known.
	ExAssist Interference-Resistant Helper Phage	None known.
	XL1-Blue MRF' E.coli Strain	None known.
	XLOLR E. coli Strain	None known.
	pRho/EcoR I Test Insert	None known.

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

<b>Hazards from the substance or mixture</b>	:  Gigapack III packaging extract	In a fire or if heated, a pressure increase will occur and the container may burst.
	Wild-Type Lambda DNA c1857ind 1 Sam7	In a fire or if heated, a pressure increase will occur and the container may burst.
	VCS257 E. coli Strain	In a fire or if heated, a pressure increase will occur and the container may burst.
	ZAP Express vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	R408 Interference-Resistant Helper Phage	In a fire or if heated, a pressure increase will occur and the container may burst.
	ExAssist Interference-Resistant Helper Phage	In a fire or if heated, a pressure increase will occur and the container may burst.

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**SECTION 5: Firefighting measures**


	XL1-Blue MRF' E.coli Strain	In a fire or if heated, a pressure increase will occur and the container may burst.
	XLOLR E. coli Strain	In a fire or if heated, a pressure increase will occur and the container may burst.
	pRho/EcoR I Test Insert	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous combustion products</b>	: 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
	ZAP Express vector	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	XL1-Blue MRF' E.coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	XLOLR E. coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	pRho/EcoR I Test Insert	No specific data.

**5.3 Advice for firefighters**

<b>Special precautions for fire-fighters</b>	: 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 without suitable training.
	ZAP Express vector	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	R408 Interference-Resistant Helper Phage	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.
	ExAssist Interference-Resistant Helper Phage	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.
	XL1-Blue MRF' 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.
	XLOLR 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.
	pRho/EcoR I Test Insert	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.

## SECTION 5: Firefighting measures

### Special protective equipment for fire-fighters

:  Gigapack III packaging extract

vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Wild-Type Lambda DNA c1857ind 1 Sam7

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

VCS257 E. coli Strain

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

ZAP Express vector

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

R408 Interference-Resistant Helper Phage

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

ExAssist Interference-Resistant Helper Phage

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

XL1-Blue MRF' 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

XLOLR 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.


pRho/EcoR I Test Insert

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.


## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

:  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 spilt 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 spilt 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 spilt material. Put on appropriate personal protective equipment.
ZAP Express vector	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
R408 Interference-Resistant Helper Phage	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
ExAssist Interference-Resistant Helper Phage	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
XL1-Blue MRF' 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 spilt material. Put on appropriate personal protective equipment.
XL0LR 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 spilt material. Put on appropriate personal protective equipment.
pRho/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

#### For emergency responders


:  Gigapack III packaging extract	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Wild-Type Lambda DNA c1857ind 1 Sam7	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
VCS257 E. coli Strain	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
ZAP Express vector	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-

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**SECTION 6: Accidental release measures**

R408 Interference-Resistant Helper Phage	emergency personnel". If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
ExAssist Interference-Resistant Helper Phage	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
XL1-Blue MRF' E.coli Strain	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
XL0LR E. coli Strain	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
pRho/EcoR I Test Insert	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**6.2 Environmental precautions**

:  Gigapack III packaging extract	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Wild-Type Lambda DNA c1857ind 1 Sam7	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
VCS257 E. coli Strain	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
ZAP Express vector	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
R408 Interference-Resistant Helper Phage	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
ExAssist Interference-Resistant Helper Phage	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
XL1-Blue MRF' E.coli Strain	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
XL0LR E. coli Strain	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
pRho/EcoR I Test Insert	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**6.3 Methods and material for containment and cleaning up**

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## SECTION 6: Accidental release measures

<b>Methods for cleaning up</b>	: Gigapack III packaging extract	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	VCS257 E. coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	ZAP Express vector	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	R408 Interference-Resistant Helper Phage	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.
	ExAssist Interference-Resistant Helper Phage	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.
	XL1-Blue MRF' 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.
	XL0LR 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.
	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.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling


<b>Protective measures</b>	: Gigapack III packaging extract	Put on appropriate personal protective equipment (see Section 8).
	Wild-Type Lambda DNA c1857ind 1 Sam7	Put on appropriate personal protective equipment (see Section 8).
	VCS257 E. coli Strain	Put on appropriate personal protective equipment (see Section 8).
	ZAP Express vector	Put on appropriate personal protective equipment (see Section 8).
	R408 Interference-	Put on appropriate personal protective equipment (see



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## SECTION 7: Handling and storage

### Advice on general occupational hygiene

Resistant Helper Phage	Section 8).
ExAssist Interference-Resistant Helper Phage	Put on appropriate personal protective equipment (see Section 8).
XL1-Blue MRF' E.coli Strain	Put on appropriate personal protective equipment (see Section 8).
XL0LR E. coli Strain	Put on appropriate personal protective equipment (see Section 8).
pRho/EcoR I Test Insert	Put on appropriate personal protective equipment (see Section 8).
:  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.
ZAP Express vector	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
R408 Interference-Resistant Helper Phage	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.
ExAssist Interference-Resistant Helper Phage	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.
XL1-Blue MRF' 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.
XL0LR 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.
pRho/EcoR I Test Insert	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

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## SECTION 7: Handling and storage

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

#### Storage

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 unlabelled 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
VCS257 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
ZAP Express vector	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
R408 Interference-Resistant Helper Phage	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
ExAssist Interference-Resistant Helper Phage	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


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## SECTION 7: Handling and storage


XL1-Blue MRF' E.coli Strain	been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
XL0LR 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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 unlabelled 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

:  Gigapack III packaging extract	Industrial applications, Professional applications.
Wild-Type Lambda DNA c1857ind 1 Sam7	Industrial applications, Professional applications.
VCS257 E. coli Strain	Industrial applications, Professional applications.
ZAP Express vector	Industrial applications, Professional applications.
R408 Interference-Resistant Helper Phage	Industrial applications, Professional applications.
ExAssist Interference-Resistant Helper Phage	Industrial applications, Professional applications.
XL1-Blue MRF' E.coli Strain	Industrial applications, Professional applications.
XL0LR E. coli Strain	Industrial applications, Professional applications.
pRho/EcoR I Test Insert	Industrial applications, Professional applications.

#### Industrial sector specific solutions

:  Gigapack III packaging extract	Not applicable.
Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
VCS257 E. coli Strain	Not applicable.
ZAP Express vector	Not applicable.
R408 Interference-Resistant Helper Phage	Not applicable.
ExAssist Interference-Resistant Helper Phage	Not applicable.

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## SECTION 7: Handling and storage

XL1-Blue MRF' E.coli Strain Not applicable.  
 XLOLR E. coli Strain Not applicable.  
 pRho/EcoR I Test Insert Not applicable.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
Gigapack III packaging extract Sucrose	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> STEL: 20 mg/m <sup>3</sup> 15 minutes. TWA: 10 mg/m <sup>3</sup> 8 hours.
VCS257 E. coli Strain Glycerol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist
XL1-Blue MRF' E.coli Strain Glycerol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist
XLOLR E. coli Strain Glycerol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist

#### Recommended monitoring procedures

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

No DNELs/DMELs available.

#### PNECs

No PNECs available

### 8.2 Exposure controls

#### Appropriate engineering controls

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

#### Individual protection measures

##### Hygiene measures

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

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## SECTION 8: Exposure controls/personal protection

- 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.
- 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.
- 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	:	Gigapack III packaging extract	Liquid.
		Wild-Type Lambda	Liquid.
		DNA c1857ind 1 Sam7	
		VCS257 E. coli Strain	Liquid.
		ZAP Express vector	Liquid.
		R408 Interference-Resistant Helper Phage	Liquid.
		ExAssist Interference-Resistant Helper Phage	Liquid.
		XL1-Blue MRF' E.coli Strain	Liquid.
		XLOLR E. coli Strain	Liquid.
		pRho/EcoR I Test Insert	Liquid.
<b>Colour</b>	:	Gigapack III packaging extract	Not available.
		Wild-Type Lambda	Not available.
		DNA c1857ind 1 Sam7	
		VCS257 E. coli Strain	Not available.
		ZAP Express vector	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		pRho/EcoR I Test Insert	Not available.

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## SECTION 9: Physical and chemical properties

<b>Odour</b>	:	Gigapack III packaging extract	Not available.
		Wild-Type Lambda	Not available.
		DNA c1857ind 1 Sam7	
		VCS257 E. coli Strain	Not available.
		ZAP Express vector	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		pRho/EcoR I Test Insert	Not available.
	<b>Odour threshold</b>	:	Gigapack III packaging extract
		Wild-Type Lambda	Not available.
		DNA c1857ind 1 Sam7	
		VCS257 E. coli Strain	Not available.
		ZAP Express vector	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		pRho/EcoR I Test Insert	Not available.
<b>pH</b>		:	Gigapack III packaging extract
		Wild-Type Lambda	7
		DNA c1857ind 1 Sam7	
		VCS257 E. coli Strain	7
		ZAP Express vector	7.5
		R408 Interference-Resistant Helper Phage	7.5
		ExAssist Interference-Resistant Helper Phage	7.5
		XL1-Blue MRF' E.coli Strain	7
		XLOLR E. coli Strain	7
		pRho/EcoR I Test Insert	7.5
	<b>Melting point/freezing point</b>	:	Gigapack III packaging extract
		Wild-Type Lambda	0°C
		DNA c1857ind 1 Sam7	
		VCS257 E. coli Strain	Not available.
		ZAP Express vector	0°C
		R408 Interference-Resistant Helper Phage	0°C
		ExAssist Interference-Resistant Helper Phage	0°C
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		pRho/EcoR I Test Insert	0°C

ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614





## SECTION 9: Physical and chemical properties

<b>Initial boiling point and boiling range</b>	:	<ul style="list-style-type: none"> <li>Gigapack III packaging extract Not available.</li> <li>Wild-Type Lambda 100°C</li> <li>DNA c1857ind 1 Sam7</li> <li>VCS257 E. coli Strain Not available.</li> <li>ZAP Express vector 100°C</li> <li>R408 Interference-Resistant Helper Phage 100°C</li> <li>ExAssist Interference-Resistant Helper Phage 100°C</li> <li>XL1-Blue MRF' E.coli Strain Not available.</li> <li>XLOLR E. coli Strain Not available.</li> <li>pRheo/EcoR I Test Insert 100°C</li> </ul>
<b>Flash point</b>	:	<ul style="list-style-type: none"> <li>Gigapack III packaging extract Not available.</li> <li>Wild-Type Lambda Not available.</li> <li>DNA c1857ind 1 Sam7</li> <li>VCS257 E. coli Strain Not available.</li> <li>ZAP Express vector Not available.</li> <li>R408 Interference-Resistant Helper Phage Not available.</li> <li>ExAssist Interference-Resistant Helper Phage Not available.</li> <li>XL1-Blue MRF' E.coli Strain Not available.</li> <li>XLOLR E. coli Strain Not available.</li> <li>pRheo/EcoR I Test Insert Not available.</li> </ul>
<b>Evaporation rate</b>	:	<ul style="list-style-type: none"> <li>Gigapack III packaging extract Not available.</li> <li>Wild-Type Lambda Not available.</li> <li>DNA c1857ind 1 Sam7</li> <li>VCS257 E. coli Strain Not available.</li> <li>ZAP Express vector Not available.</li> <li>R408 Interference-Resistant Helper Phage Not available.</li> <li>ExAssist Interference-Resistant Helper Phage Not available.</li> <li>XL1-Blue MRF' E.coli Strain Not available.</li> <li>XLOLR E. coli Strain Not available.</li> <li>pRheo/EcoR I Test Insert Not available.</li> </ul>
<b>Flammability (solid, gas)</b>	:	<ul style="list-style-type: none"> <li>Gigapack III packaging extract Not applicable.</li> <li>Wild-Type Lambda Not applicable.</li> <li>DNA c1857ind 1 Sam7</li> <li>VCS257 E. coli Strain Not applicable.</li> <li>ZAP Express vector Not applicable.</li> <li>R408 Interference-Resistant Helper Phage Not applicable.</li> <li>ExAssist Interference-Resistant Helper Phage Not applicable.</li> <li>XL1-Blue MRF' E.coli Strain Not applicable.</li> <li>XLOLR E. coli Strain Not applicable.</li> <li>pRheo/EcoR I Test Not applicable.</li> </ul>

ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614

## SECTION 9: Physical and chemical properties

Insert

<b>Upper/lower flammability or explosive limits</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Vapour pressure</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Vapour density</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Relative density</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available.






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## SECTION 9: Physical and chemical properties

	Insert	
<b>Solubility(ies)</b>	: 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.
	ZAP Express vector	Easily soluble in the following materials: cold water and hot water.
	R408 Interference-Resistant Helper Phage	Easily soluble in the following materials: cold water and hot water.
	ExAssist Interference-Resistant Helper Phage	Easily soluble in the following materials: cold water and hot water.
	XL1-Blue MRF' E.coli Strain	Soluble in the following materials: cold water and hot water.
	XLOLR E. coli Strain	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.
<b>Partition coefficient: n-octanol/water</b>	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express vector	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRheo/EcoR I Test Insert	Not available.
<b>Auto-ignition temperature</b>	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express vector	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRheo/EcoR I Test Insert	Not available.
<b>Decomposition temperature</b>	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express vector	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.

ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614




## SECTION 9: Physical and chemical properties

	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test	Not available.
	Insert	
<b>Viscosity</b>	:  Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express vector	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test	Not available.
	Insert	
<b>Explosive properties</b>	:  Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express vector	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test	Not available.
	Insert	
<b>Oxidising properties</b>	:  Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express vector	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test	Not available.
	Insert	

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain  ZAP Express vector  R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain  pRho/EcoR I Test Insert	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. 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>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert	The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain  ZAP Express vector  R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain  pRho/EcoR I Test Insert	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. 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>	:  Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express vector R408 Interference-	No specific data. No specific data. No specific data. No specific data. No specific data.

ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614

## SECTION 10: Stability and reactivity

Resistant Helper Phage  
ExAssist Interference-Resistant Helper Phage  
XL1-Blue MRF' E.coli Strain  
XLOLR E. coli Strain  
pRho/EcoR I Test Insert

No specific data.  
No specific data.  
No specific data.  
No specific data.

### 10.5 Incompatible materials

: Gigapack III packaging extract  
Wild-Type Lambda DNA c1857ind 1 Sam7  
VCS257 E. coli Strain  
ZAP Express vector  
R408 Interference-Resistant Helper Phage  
ExAssist Interference-Resistant Helper Phage  
XL1-Blue MRF' E.coli Strain  
XLOLR E. coli Strain  
pRho/EcoR I Test Insert

May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.  
May react or be incompatible with oxidising materials.

### 10.6 Hazardous decomposition products

: Gigapack III packaging extract  
Wild-Type Lambda DNA c1857ind 1 Sam7  
VCS257 E. coli Strain  
ZAP Express vector  
R408 Interference-Resistant Helper Phage  
ExAssist Interference-Resistant Helper Phage  
XL1-Blue MRF' E.coli Strain  
XLOLR E. coli Strain  
pRho/EcoR I Test Insert

Under normal conditions of storage and use, hazardous decomposition products should not be produced.  
Under normal conditions of storage and use, hazardous decomposition products should not be produced.  
Under normal conditions of storage and use, hazardous decomposition products should not be produced.  
Under normal conditions of storage and use, hazardous decomposition products should not be produced.  
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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
VCS257 E. coli Strain Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
XL1-Blue MRF' E.coli Strain Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
XLOLR E. coli Strain Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

#### Acute toxicity estimates

Not available.

#### Irritation/Corrosion

Date of issue/Date of revision : 27/08/2018

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## SECTION 11: Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>VCS257 E. coli Strain</b> 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>XL1-Blue MRF' E.coli Strain</b> 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>XL0LR E. coli Strain</b> Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

### Sensitiser

**Conclusion/Summary** : 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.

### Information on likely routes of exposure

**Gigapack III packaging extract** : Not available.

**Wild-Type Lambda DNA c1857ind 1 Sam7** : Not available.

**VCS257 E. coli Strain** : Routes of entry anticipated: Oral, Dermal, Inhalation.

**ZAP Express vector** : Not available.

**R408 Interference-Resistant Helper Phage** : Not available.

**ExAssist Interference-Resistant Helper Phage** : Not available.

**XL1-Blue MRF' E.coli Strain** : Routes of entry anticipated: Oral, Dermal, Inhalation.

**XL0LR E. coli Strain** : Routes of entry anticipated: Oral, Dermal, Inhalation.

**pRheo/EcoR I Test Insert** : Not available.

### Potential acute health effects

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## SECTION 11: Toxicological information

<b>Inhalation</b>	:	Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		XLOLR E. coli Strain	No known significant effects or critical hazards.
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Ingestion</b>	:	Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		XLOLR E. coli Strain	No known significant effects or critical hazards.
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Skin contact</b>	:	Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		XLOLR E. coli Strain	No known significant effects or critical hazards.
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Eye contact</b>	:	Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		XLOLR E. coli Strain	No known significant effects or critical hazards.
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.

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

ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614

## SECTION 11: Toxicological information

<b>Inhalation</b>	:	Gigapack III packaging extract	No specific data.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
		VCS257 E. coli Strain	No specific data.
		ZAP Express vector	No specific data.
		R408 Interference-Resistant Helper Phage	No specific data.
		ExAssist Interference-Resistant Helper Phage	No specific data.
		XL1-Blue MRF' E.coli Strain	No specific data.
		XLOLR E. coli Strain	No specific data.
		pRho/EcoR I Test Insert	No specific data.
	<b>Ingestion</b>	:	Gigapack III packaging extract
		Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
		VCS257 E. coli Strain	No specific data.
		ZAP Express vector	No specific data.
		R408 Interference-Resistant Helper Phage	No specific data.
		ExAssist Interference-Resistant Helper Phage	No specific data.
		XL1-Blue MRF' E.coli Strain	No specific data.
		XLOLR E. coli Strain	No specific data.
		pRho/EcoR I Test Insert	No specific data.
<b>Skin contact</b>		:	Gigapack III packaging extract
		Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
		VCS257 E. coli Strain	No specific data.
		ZAP Express vector	No specific data.
		R408 Interference-Resistant Helper Phage	No specific data.
		ExAssist Interference-Resistant Helper Phage	No specific data.
		XL1-Blue MRF' E.coli Strain	No specific data.
		XLOLR E. coli Strain	No specific data.
		pRho/EcoR I Test Insert	No specific data.
	<b>Eye contact</b>	:	Gigapack III packaging extract
		Wild-Type Lambda DNA c1857ind 1 Sam7	No specific data.
		VCS257 E. coli Strain	No specific data.
		ZAP Express vector	No specific data.
		R408 Interference-Resistant Helper Phage	No specific data.
		ExAssist Interference-Resistant Helper Phage	No specific data.
		XL1-Blue MRF' E.coli Strain	No specific data.
		XLOLR E. coli Strain	No specific data.
		pRho/EcoR I Test Insert	No specific data.

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

#### Short term exposure

**Potential immediate effects** : Not available.

ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239614

## SECTION 11: Toxicological information

**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>	:	☑ Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		XLOLR E. coli Strain	No known significant effects or critical hazards.
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	:	☑ Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		XLOLR E. coli Strain	No known significant effects or critical hazards.
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Mutagenicity</b>	:	☑ Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
		XLOLR E. coli Strain	No known significant effects or critical hazards.
		pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Teratogenicity</b>	:	☑ Gigapack III packaging extract	No known significant effects or critical hazards.
		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
		VCS257 E. coli Strain	No known significant effects or critical hazards.
		ZAP Express vector	No known significant effects or critical hazards.
		R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
		ExAssist Interference-	No known significant effects or critical hazards.



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## SECTION 11: Toxicological information

	Resistant Helper Phage	
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Developmental effects</b>	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
	ZAP Express vector	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.
<b>Fertility effects</b>	: Gigapack III packaging extract	No known significant effects or critical hazards.
	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	VCS257 E. coli Strain	No known significant effects or critical hazards.
	ZAP Express vector	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XLOLR E. coli Strain	No known significant effects or critical hazards.
	pRheo/EcoR I Test Insert	No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
VCS257 E. coli Strain Sodium chloride	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
	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
	XL1-Blue MRF' E.coli Strain Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii
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

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## SECTION 12: Ecological information

<b>XLOLR E. coli Strain</b> Sodium chloride	Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	Fish - <i>Morone saxatilis</i> - Larvae Crustaceans - <i>Hyalella azteca</i> - Juvenile (Fledgling, Hatchling, Weanling)	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 - <i>Lemna minor</i> Daphnia - <i>Daphnia pulex</i> Fish - <i>Gambusia holbrooki</i> - Adult	96 hours 21 days 8 weeks
	Acute EC50 4.74 g/L Fresh water	Algae - <i>Chlamydomonas reinhardtii</i>	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - <i>Cypris subglobosa</i>	48 hours
	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	Daphnia - <i>Daphnia magna</i> Aquatic plants - <i>Lemna minor</i> Fish - <i>Morone saxatilis</i> - Larvae Crustaceans - <i>Hyalella azteca</i> - Juvenile (Fledgling, Hatchling, Weanling)	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 - <i>Lemna minor</i> Daphnia - <i>Daphnia pulex</i> Fish - <i>Gambusia holbrooki</i> - Adult	96 hours 21 days 8 weeks	

### 12.2 Persistence and degradability

Not available.

### 12.3 Bioaccumulative potential

Not available.

### 12.4 Mobility in soil

**Soil/water partition coefficient ( $K_{oc}$ )** : Not available.

**Mobility** : Not available.

### 12.5 Results of PBT and vPvB assessment

**PBT** : Not applicable.

**vPvB** : Not applicable.

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

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

#### Packaging

**Date of issue/Date of revision** : 27/08/2018

34/37

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## SECTION 13: Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

**ADR/RID / IMDG / IATA** : Not regulated.

**14.6 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.

**14.7 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**  
**EU Regulation (EC) No. 1907/2006 (REACH)**

**Annex XIV - List of substances subject to authorisation**

**Annex XIV**

None of the components are listed.

**Substances of very high concern**

None of the components are listed.

<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	<b>☑ Gigapack III packaging extract</b>	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express vector	Not applicable.
	R408 Interference-Resistant Helper Phage	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	XL1-Blue MRF <sup>+</sup> E.coli Strain	Not applicable.
	XL0LR E. coli Strain	Not applicable.
	pRheo/EcoR I Test Insert	Not applicable.

**Other EU regulations**

**Ozone depleting substances (1005/2009/EU)**

Not listed.

**Prior Informed Consent (PIC) (649/2012/EU)**

Not listed.

**Seveso Directive**

This product is not controlled under the Seveso Directive.

**International regulations**

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

Not listed.

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

Not listed.

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## SECTION 15: Regulatory information

### 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

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Europe</b>	: All components are listed or exempted.
<b>Japan</b>	: <b>Japan inventory (ENCS)</b> : Not determined. <b>Japan inventory (ISHL)</b> : Not determined.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: All components are listed or exempted.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> Not determined.

### **15.2 Chemical safety assessment**

: This product contains substances for which Chemical Safety Assessments might still be required.

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

### **Abbreviations and acronyms**

: ATE = Acute Toxicity Estimate  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
DNEL = Derived No Effect Level  
EUH statement = CLP-specific Hazard statement  
PNEC = Predicted No Effect Concentration  
RRN = REACH Registration Number

### Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Not classified.	

### Full text of abbreviated H statements

<input checked="" type="checkbox"/> <b>CS257 E. coli Strain</b> H319	Causes serious eye irritation.
<b>XL1-Blue MRF' E.coli Strain</b> H319	Causes serious eye irritation.
<b>XLOLR E. coli Strain</b> H319	Causes serious eye irritation.

### Full text of classifications [CLP/GHS]

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## SECTION 16: Other information

**VCS257 E. coli Strain**

Eye Irrit. 2, H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

**XL1-Blue MRF' E.coli Strain**

Eye Irrit. 2, H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

**XLOLR E. coli Strain**

Eye Irrit. 2, H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

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