

SAFETY DATA SHEET



ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239615

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

1.1 Product identifier

Product name	: ZAP Express Predigested Gigapack III Gold Cloning Kit, Part Number 239615
Part No. (Kit)	: 239615
Part No.	: Gigapack III packaging 200201-41 extract Wild-Type Lambda DNA 246203-51 c1857ind 1 Sam7 VCS257 E. coli Strain 200256-51 ZAP Express Vector 239212-51 Digested With BamH I CIAP Treated pBub BamH I Test Insert 239212-52 R408 Interference- 200252-81 Resistant Helper Phage ExAssist Interference- 200253-81 Resistant Helper Phage XL1-Blue MRF' E. coli 200301-81 Strain XLOLR E. coli Strain 200304-81

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

Identified uses	
Analytical reagent.	
Gigapack III packaging extract	0.275 ml (11 x 0.025 ml)
Wild-Type Lambda DNA c1857ind 1 Sam7	0.005 ml (0.21 µg/µl)
VCS257 E. coli Strain	1 ml
ZAP Express Vector Digested With BamH I CIAP Treated	0.005 ml (1 µg/µl)
pBub BamH I Test Insert	0.01 ml (0.25 µg/µl)
R408 Interference-Resistant Helper Phage	1 ml
ExAssist Interference-Resistant Helper Phage	1 ml (>1 x E10 pfu/ml)
XL1-Blue MRF' E. coli Strain	0.5 ml
XLOLR E. coli Strain	0.5 ml

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**

Product definition	:	Gigapack III packaging extract	Mixture
		Wild-Type Lambda DNA c1857ind 1 Sam7	Mixture
		VCS257 E. coli Strain	Mixture
		ZAP Express Vector Digested With BamH I CIAP Treated	Mixture
		pBub BamH I Test Insert	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

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

Not classified.

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

Signal word	:	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 Digested With BamH I CIAP Treated	No signal word.
		pBub BamH I Test Insert	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.
		XL0LR E. coli Strain	No signal word.
Hazard statements	:	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 Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
		pBub BamH I Test Insert	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.
		XL0LR E. coli Strain	No known significant effects or critical hazards.

Precautionary statements

SECTION 2: Hazards identification

Prevention	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	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.
Response	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	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.
Storage	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	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.
Disposal	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	Not applicable.
		R408 Interference-Resistant Helper Phage	Not applicable.
		ExAssist Interference-Resistant Helper Phage	Not applicable.
		XL1-Blue MRF' E. coli Strain	Not applicable.

SECTION 2: Hazards identification

	XLOLR E. coli Strain	Not applicable.
Hazardous ingredients	: No hazardous ingredient	
Supplemental label elements	: Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Safety data sheet available on request.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not applicable.
	pBub BamH I Test Insert	Not applicable.
	R408 Interference-Resistant Helper Phage	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	XL1-Blue MRF' E. coli Strain	Safety data sheet available on request.
	XLOLR E. coli Strain	Safety data sheet available on request.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not applicable.
	pBub BamH I Test Insert	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.
Special packaging requirements		
Tactile warning of danger	: Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not applicable.
	pBub BamH I Test Insert	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.
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 Digested With BamH I CIAP Treated	None known.
	pBub BamH I Test Insert	None known.

SECTION 2: Hazards identification

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures	:	Gigapack III packaging extract	Mixture
		Wild-Type Lambda DNA	Mixture
		c1857ind 1 Sam7	
		VCS257 E. coli Strain	Mixture
		ZAP Express Vector Digested With BamH I CIAP Treated	Mixture
		pBub BamH I Test Insert	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

Product/ingredient name	Identifiers	%	Classification	Type
Gigapack III packaging extract Sucrose	EC: 200-334-9 CAS: 57-50-1	≤10	Not classified.	[2]
VCS257 E. coli Strain Glycerol	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	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	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]
			See Section 16 for the full text of the H statements declared above.	

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

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 Digested With BamH I CIAP Treated	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.
	pBub BamH 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.
	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.
	Inhalation	: Gigapack III packaging extract
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 Digested With BamH I CIAP Treated		Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
pBub BamH I Test Insert		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.
XL1-Blue MRF' E. coli Strain		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.
Skin contact		: Gigapack III packaging extract
	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

SECTION 4: First aid measures

Ingestion

ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert	symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
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.
: 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 Digested With BamH I CIAP Treated	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.
pBub BamH 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.
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

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	XLOLR E. coli Strain	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. 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.
Protection of first-aiders	: 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 Digested With BamH I CIAP Treated	No action shall be taken involving any personal risk or without suitable training.
	pBub BamH I Test Insert	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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	: 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 Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
	pBub BamH I Test Insert	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.
Inhalation	: 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 Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
	pBub BamH I Test Insert	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.

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Skin contact	:	Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E. coli Strain XLOLR E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	:	Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E. coli Strain XLOLR E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<u>Over-exposure signs/symptoms</u>			
Eye contact	:	Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E. coli Strain XLOLR E. coli Strain	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. No specific data.
Inhalation	:	Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E. coli	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.

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	Strain	
	XLOLR E. coli Strain	No specific data.
Skin contact	: 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.
	Digested With BamH I CIAP Treated	
	pBub BamH I Test Insert	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.
Ingestion	: 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.
	Digested With BamH I CIAP Treated	
	pBub BamH I Test Insert	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.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: Gigapack III packaging extract	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	VCS257 E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	ZAP Express Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Digested With BamH I CIAP Treated	
	pBub BamH I Test Insert	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	R408 Interference-Resistant Helper Phage	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	ExAssist Interference-Resistant Helper Phage	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL1-Blue MRF' E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XLOLR E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: 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.
	Digested With BamH I CIAP Treated	

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pBub BamH I Test Insert	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.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: 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 Digested With BamH I CIAP Treated	Use an extinguishing agent suitable for the surrounding fire.
	pBub BamH I Test Insert	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.
	Unsuitable extinguishing media	: Gigapack III packaging extract
Wild-Type Lambda DNA c1857ind 1 Sam7		None known.
VCS257 E. coli Strain		None known.
ZAP Express Vector Digested With BamH I CIAP Treated		None known.
pBub BamH I Test Insert		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.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: 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 Digested With BamH I CIAP Treated	In a fire or if heated, a pressure increase will occur and the container may burst.
	pBub BamH I Test Insert	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.
	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

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Hazardous combustion products

: Gigapack III packaging extract

container may burst.

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
No specific data.

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

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides
No specific data.

ZAP Express Vector Digested With BamH I
CIAP Treated

No specific data.

pBub BamH I Test Insert
R408 Interference-Resistant Helper Phage
ExAssist Interference-Resistant Helper Phage
XL1-Blue MRF' E. coli Strain

No specific data.

No specific data.

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides

XL0LR E. coli Strain

Decomposition products may include the following materials:

carbon dioxide
carbon monoxide
halogenated compounds
metal oxide/oxides

5.3 Advice for firefighters

Special precautions for fire-fighters

: 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 Digested With BamH I
CIAP Treated

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.

pBub BamH 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.

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.

XL0LR 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.

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters	: Gigapack III packaging extract	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. 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 Digested With BamH I CIAP Treated	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.
	pBub BamH 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.
	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.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

SECTION 6: Accidental release measures

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 Digested With BamH I CIAP Treated	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.
	pBub BamH 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.
	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.
	For emergency responders	: Gigapack III packaging extract
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 Digested With BamH I CIAP Treated		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".
pBub BamH 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-

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".

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 Digested With BamH I CIAP Treated	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).
pBub BamH 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).
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).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : 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,

SECTION 6: Accidental release measures

VCS257 E. coli Strain	<p>or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p> <p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p>
ZAP Express Vector Digested With BamH I CIAP Treated	<p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p>
pBub BamH I Test Insert	<p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p>
R408 Interference- Resistant Helper Phage	<p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p>
ExAssist Interference- Resistant Helper Phage	<p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p>
XL1-Blue MRF' E. coli Strain	<p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p>
XLOLR E. coli Strain	<p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p>

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

Protective measures	<p>: Gigapack III packaging extract Put on appropriate personal protective equipment (see Section 8).</p> <p>Wild-Type Lambda DNA c1857ind 1 Sam7 Put on appropriate personal protective equipment (see Section 8).</p> <p>VCS257 E. coli Strain Put on appropriate personal protective equipment (see Section 8).</p> <p>ZAP Express Vector Digested With BamH I CIAP Treated Put on appropriate personal protective equipment (see Section 8).</p> <p>pBub BamH I Test Insert Put on appropriate personal protective equipment (see Section 8).</p> <p>R408 Interference-Resistant Helper Phage Put on appropriate personal protective equipment (see Section 8).</p> <p>ExAssist Interference-Resistant Helper Phage Put on appropriate personal protective equipment (see Section 8).</p> <p>XL1-Blue MRF' E. coli Strain Put on appropriate personal protective equipment (see Section 8).</p> <p>XLOLR E. coli Strain Put on appropriate personal protective equipment (see Section 8).</p>
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SECTION 7: Handling and storage**Advice on general occupational hygiene**

: Gigapack III packaging extract

Section 8).

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 Digested With BamH I CIAP Treated

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.

pBub BamH I Test Insert

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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.

SECTION 7: Handling and storage**7.2 Conditions for safe storage, including any incompatibilities**

: 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.
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.
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.
ZAP Express Vector Digested With BamH I CIAP Treated	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.
pBub BamH 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.
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.
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 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.
XL1-Blue MRF' E. coli	Store in accordance with local regulations. Store in original

SECTION 7: Handling and storage

Strain	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.
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.

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 Digested With BamH I CIAP Treated	Industrial applications, Professional applications.
		pBub BamH I Test Insert	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.
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 Digested With BamH I CIAP Treated	Not applicable.
		pBub BamH I Test Insert	Not applicable.
		R408 Interference-Resistant Helper Phage	Not applicable.
		ExAssist Interference-Resistant Helper Phage	Not applicable.
		XL1-Blue MRF' E. coli Strain	Not applicable.
		XL0LR E. coli Strain	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
Gigapack III packaging extract Sucrose	EH40/2005 WELs (United Kingdom (UK), 12/2011). STEL: 20 mg/m ³ 15 minutes. TWA: 10 mg/m ³ 8 hours.
VCS257 E. coli Strain Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
XL1-Blue MRF' E. coli Strain Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
XLOLR E. coli Strain Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 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). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

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

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.

SECTION 8: Exposure controls/personal protection

- 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

- | | | | |
|-----------------------|---------------|--|--------------------------------|
| Physical state | : | Gigapack III packaging extract | Liquid. |
| | | Wild-Type Lambda DNA c1857ind 1 Sam7 | Liquid. |
| | | VCS257 E. coli Strain | Liquid. |
| | | ZAP Express Vector | Liquid. |
| | | Digested With BamH I | |
| | | CIAP Treated | |
| | | pBub BamH I Test | Liquid. |
| | | Insert | |
| | | R408 Interference-Resistant Helper Phage | Liquid. |
| | | ExAssist Interference-Resistant Helper Phage | Liquid. |
| | | XL1-Blue MRF' E. coli Strain | Liquid. |
| | | XLOLR E. coli Strain | Liquid. |
| | Colour | : | Gigapack III packaging extract |
| | | Wild-Type Lambda DNA c1857ind 1 Sam7 | Not available. |
| | | VCS257 E. coli Strain | Not available. |
| | | ZAP Express Vector | Not available. |
| | | Digested With BamH I | |
| | | CIAP Treated | |
| | | pBub BamH I Test | Not available. |
| | | Insert | |
| | | 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. |
| Odour | | : | Gigapack III packaging extract |
| | | Wild-Type Lambda DNA c1857ind 1 Sam7 | Not available. |
| | | VCS257 E. coli Strain | Not available. |
| | | ZAP Express Vector | Not available. |
| | | Digested With BamH I | |
| | | CIAP Treated | |
| | | pBub BamH I Test | Not available. |
| | | Insert | |
| | | R408 Interference-Resistant Helper Phage | Not available. |
| | | ExAssist Interference- | Not available. |

SECTION 9: Physical and chemical properties

	Resistant Helper Phage	
	XL1-Blue MRF' E. coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
Odour threshold	: 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.
	Digested With BamH I CIAP Treated	
	pBub BamH I Test Insert	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.
pH	: Gigapack III packaging extract	8
	Wild-Type Lambda DNA c1857ind 1 Sam7	7
	VCS257 E. coli Strain	7
	ZAP Express Vector	7.5
	Digested With BamH I CIAP Treated	
	pBub BamH I Test Insert	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
Melting point/freezing point	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	0°C
	VCS257 E. coli Strain	Not available.
	ZAP Express Vector	0°C
	Digested With BamH I CIAP Treated	
	pBub BamH I Test Insert	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.
Initial boiling point and boiling range	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	100°C
	VCS257 E. coli Strain	Not available.
	ZAP Express Vector	100°C
	Digested With BamH I CIAP Treated	

SECTION 9: Physical and chemical properties

	pBub BamH I Test	100°C
	Insert	
	R408 Interference-Resistant Helper Phage	100°C
	ExAssist Interference-Resistant Helper Phage	100°C
	XL1-Blue MRF' E. coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
Flash point	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not available.
	pBub BamH I Test	Not available.
	Insert	
	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.
Evaporation rate	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not available.
	pBub BamH I Test	Not available.
	Insert	
	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.
Flammability (solid, gas)	: Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not applicable.
	pBub BamH I Test	Not applicable.
	Insert	
	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.

SECTION 9: Physical and chemical properties

Upper/lower flammability or explosive limits	:	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.		
		Digested With BamH I			
		CIAP Treated			
		pBub BamH I Test	Not available.		
		Insert			
		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.		
		Vapour pressure	:	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.				
Digested With BamH I					
CIAP Treated					
pBub BamH I Test	Not available.				
Insert					
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.				
Vapour density	:			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.		
		Digested With BamH I			
		CIAP Treated			
		pBub BamH I Test	Not available.		
		Insert			
		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.		
		Relative density	:	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.				
Digested With BamH I					
CIAP Treated					
pBub BamH I Test	Not available.				
Insert					
R408 Interference-Resistant Helper Phage	Not available.				

SECTION 9: Physical and chemical properties

	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E. coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
Solubility(ies)	: 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 Digested With BamH I CIAP Treated	Easily soluble in the following materials: cold water and hot water.
	pBub BamH I Test Insert	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.
Partition coefficient: n-octanol/water	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not available.
	pBub BamH I Test Insert	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.
Auto-ignition temperature	: Gigapack III packaging extract	Not available.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not available.
	VCS257 E. coli Strain	Not available.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not available.
	pBub BamH I Test Insert	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.

SECTION 9: Physical and chemical properties

Decomposition temperature	: 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.	
	Digested With BamH I CIAP Treated		
	pBub BamH I Test Insert	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.	
	Viscosity	: 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.
Digested With BamH I CIAP Treated			
pBub BamH I Test Insert		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.	
Explosive properties		: 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.
	Digested With BamH I CIAP Treated		
	pBub BamH I Test Insert	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.	
	Oxidising properties	: 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.
Digested With BamH I CIAP Treated			
pBub BamH I Test Insert		Not available.	
R408 Interference-Resistant Helper Phage		Not available.	
ExAssist Interference-		Not available.	

SECTION 9: Physical and chemical properties

Resistant Helper Phage	
XL1-Blue MRF' E. coli Strain	Not available.
XLOLR E. coli Strain	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	<ul style="list-style-type: none"> : Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E. coli Strain XLOLR E. coli Strain 	<ul style="list-style-type: none"> 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.
10.2 Chemical stability	<ul style="list-style-type: none"> : Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E. coli Strain XLOLR E. coli Strain 	<ul style="list-style-type: none"> 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.
10.3 Possibility of hazardous reactions	<ul style="list-style-type: none"> : Gigapack III packaging extract Wild-Type Lambda DNA c1857ind 1 Sam7 VCS257 E. coli Strain ZAP Express Vector Digested With BamH I CIAP Treated pBub BamH I Test Insert R408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E. coli 	<ul style="list-style-type: none"> 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.

SECTION 10: Stability and reactivity

Strain reactions will not occur.
 XLOLR E. coli Strain Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : 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 Digested With BamH I CIAP Treated No specific data.
 pBub BamH I Test Insert 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.

10.5 Incompatible materials : Gigapack III packaging extract May react or be incompatible with oxidising materials.
 Wild-Type Lambda DNA c1857ind 1 Sam7 May react or be incompatible with oxidising materials.
 VCS257 E. coli Strain May react or be incompatible with oxidising materials.
 ZAP Express Vector Digested With BamH I CIAP Treated May react or be incompatible with oxidising materials.
 pBub BamH I Test Insert R408 Interference-Resistant Helper Phage May react or be incompatible with oxidising materials.
 ExAssist Interference-Resistant Helper Phage May react or be incompatible with oxidising materials.
 XL1-Blue MRF' E. coli Strain May react or be incompatible with oxidising materials.
 XLOLR E. coli Strain May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products : Gigapack III packaging extract Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 Wild-Type Lambda DNA c1857ind 1 Sam7 Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 VCS257 E. coli Strain Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 ZAP Express Vector Digested With BamH I CIAP Treated Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 pBub BamH I Test Insert Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 R408 Interference-Resistant Helper Phage Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 ExAssist Interference-Resistant Helper Phage Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 XL1-Blue MRF' E. coli Strain Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 XLOLR E. coli Strain Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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	-
XL0LR E. coli Strain Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Acute toxicity estimates

Not available.

Irritation/Corrosion

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

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

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 Digested With BamH I CIAP Treated	Not available.
pBub BamH I Test Insert	Not available.

SECTION 11: Toxicological information

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

Potential acute health effects

Inhalation	:	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 Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
		pBub BamH I Test Insert	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.
Ingestion	:	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 Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
		pBub BamH I Test Insert	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.
Skin contact	:	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 Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
		pBub BamH I Test Insert	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.

SECTION 11: Toxicological information

Eye contact	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	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.		

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	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.		

Ingestion	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	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.		

Skin contact	:	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.
		Digested With BamH I	
		CIAP Treated	
		pBub BamH I Test Insert	No specific data.
		R408 Interference-Resistant Helper Phage	No specific data.
		ExAssist Interference-Resistant Helper Phage	No specific data.
		XL1-Blue MRF' E. coli	No specific data.

SECTION 11: Toxicological information

	Strain	
	XLOLR E. coli Strain	No specific data.
Eye contact	: 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.
	Digested With BamH I	
	CIAP Treated	
	pBub BamH I Test Insert	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.

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

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: 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.
	Digested With BamH I	
	CIAP Treated	
	pBub BamH I Test Insert	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.
Carcinogenicity	: 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.
	Digested With BamH I	
	CIAP Treated	
	pBub BamH I Test Insert	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.

SECTION 11: Toxicological information

Mutagenicity	:	XLOLR E. coli Strain	No known significant effects or critical hazards.
	:	Gigapack III packaging extract	No known significant effects or critical hazards.
	:	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	:	VCS257 E. coli Strain	No known significant effects or critical hazards.
	:	ZAP Express Vector Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
	:	pBub BamH I Test Insert	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.
Teratogenicity	:	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 Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
	:	pBub BamH I Test Insert	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.
	Developmental effects	:	Gigapack III packaging extract
:		Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
:		VCS257 E. coli Strain	No known significant effects or critical hazards.
:		ZAP Express Vector Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
:		pBub BamH I Test Insert	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.
Fertility effects		:	Gigapack III packaging extract
	:	Wild-Type Lambda DNA c1857ind 1 Sam7	No known significant effects or critical hazards.
	:	VCS257 E. coli Strain	No known significant effects or critical hazards.
	:	ZAP Express Vector Digested With BamH I CIAP Treated	No known significant effects or critical hazards.
	:	pBub BamH I Test Insert	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	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Strain
XLOLR E. coli Strain 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 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 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 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 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
XLOLR E. coli Strain Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 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

12.2 Persistence and degradability

Not available.

SECTION 12: Ecological information

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.

European waste catalogue (EWC)

Waste code	Waste designation
XL1-Blue MRF' E. coli Strain 18 02 03	wastes whose collection and disposal is not subject to special requirements in order to prevent infection

Packaging

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

Regulatory 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.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	Gigapack III packaging extract	Not applicable.
	Wild-Type Lambda DNA c1857ind 1 Sam7	Not applicable.
	VCS257 E. coli Strain	Not applicable.
	ZAP Express Vector Digested With BamH I CIAP Treated	Not applicable.
	pBub BamH I Test Insert	Not applicable.
	R408 Interference-Resistant Helper Phage	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	XL1-Blue MRF' E. coli Strain	Not applicable.
	XL1-Blue MRF' E. coli Strain	Not applicable.
	XL1-Blue MRF' E. coli Strain	Not applicable.
	XL1-Blue MRF' E. coli Strain	Not applicable.
	XL1-Blue MRF' E. coli Strain	Not applicable.
	XL1-Blue MRF' E. coli Strain	Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: Not determined.
Republic of Korea	: Not determined.

SECTION 15: Regulatory information

- Taiwan** : All components are listed or exempted.
Turkey : Not determined.
United States : All components are listed or exempted.

- 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** : **VCS257 E. coli Strain**
 H319 Causes serious eye irritation.
- XL1-Blue MRF' E. coli Strain**
 H319 Causes serious eye irritation.
- XLOLR E. coli Strain**
 H319 Causes serious eye irritation.
- Full text of classifications [CLP/GHS]** : **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
- Date of issue/ Date of revision** : 27/04/2016
- Date of previous issue** : No previous validation.
- Version** : 1

Notice to reader

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