

SAFETY DATA SHEET

ZAP-CMV XR Predigested Vector Kit, Part Number 239222

Section 1. Identification

Product identifier	: ZAP-CMV XR Predigested Vector Kit, Part Number 239222		
Part no. (chemical kit)	: 239222		
Part no.	: pBR322 Test Insert Digested With EcoR I and Sal I	210200-52	
	: XL1-Blue MRF' E.coli Strain	200301-81	
	: XLOLR E. coli Strain	200304-81	
	: ExAssist Interference-Resistant Helper Phage	200253-81	
	: R408 Interference-Resistant Helper Phage	200252-81	
	: Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	239222-51	
Material uses	: Analytical reagent.		
	: pBR322 Test Insert Digested With EcoR I and Sal I	10 µl (2.5 µg	0.25 µg/µl)
	: XL1-Blue MRF' E.coli Strain	500 µl	
	: XLOLR E. coli Strain	500 µl	
	: ExAssist Interference-Resistant Helper Phage	1000 µl (>1 x E10 pfu/ml)	
	: R408 Interference-Resistant Helper Phage	1000 µl	
	: Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	10 µl (10 µg	1 µg/µl)
Supplier/Manufacturer	: Agilent Technologies, Inc. 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA 800-227-9770		
Emergency telephone number (with hours of operation)	: CHEMTREC®: 1-800-424-9300		

Section 2. Hazard identification

Classification of the substance or mixture

XL1-Blue MRF' E.coli Strain
H319 EYE IRRITATION - Category 2A

XLOLR E. coli Strain
H319 EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms : XL1-Blue MRF' E.coli Strain



XLOLR E. coli Strain



Section 2. Hazard identification

Signal word	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No signal word. Warning Warning No signal word. No signal word. No signal word.
Hazard statements	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No known significant effects or critical hazards. H319 - Causes serious eye irritation. H319 - Causes serious eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<u>Precautionary statements</u>		
Prevention	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not applicable. P280 - Wear eye or face protection. P280 - Wear eye or face protection. Not applicable. Not applicable. Not applicable.
Response	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention. Not applicable. Not applicable. Not applicable.

Section 2. Hazard identification

Storage	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not applicable.
		XL1-Blue MRF' E.coli Strain	Not applicable.
		XLOLR E. coli Strain	Not applicable.
		ExAssist Interference-Resistant Helper Phage	Not applicable.
		R408 Interference-Resistant Helper Phage	Not applicable.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not applicable.
Disposal	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not applicable.
		XL1-Blue MRF' E.coli Strain	Not applicable.
		XLOLR E. coli Strain	Not applicable.
		ExAssist Interference-Resistant Helper Phage	Not applicable.
		R408 Interference-Resistant Helper Phage	Not applicable.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not applicable.
Supplemental label elements	:	pBR322 Test Insert Digested With EcoR I and Sal I	None known.
		XL1-Blue MRF' E.coli Strain	None known.
		XLOLR E. coli Strain	None known.
		ExAssist Interference-Resistant Helper Phage	None known.
		R408 Interference-Resistant Helper Phage	None known.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	None known.
Other hazards which do not result in classification	:	pBR322 Test Insert Digested With EcoR I and Sal I	None known.
		XL1-Blue MRF' E.coli Strain	None known.
		XLOLR E. coli Strain	None known.
		ExAssist Interference-Resistant Helper Phage	None known.
		R408 Interference-Resistant Helper Phage	None known.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	pBR322 Test Insert Digested With EcoR I and Sal I	Mixture
		XL1-Blue MRF' E.coli Strain	Mixture
		XLOLR E. coli Strain	Mixture
		ExAssist Interference-Resistant Helper Phage	Mixture
		R408 Interference-Resistant Helper Phage	Mixture
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Mixture

Section 3. Composition/information on ingredients

Ingredient name	% (w/w)	CAS number
XL1-Blue MRF' E.coli Strain		
Glycerol	10 - 30	56-81-5
Sodium chloride	0.1 - 1	7647-14-5
XL0LR E. coli Strain		
Glycerol	10 - 30	56-81-5
Sodium chloride	0.1 - 1	7647-14-5

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

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

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact	: pBR322 Test Insert Digested With EcoR I and Sal I	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. Continue to rinse for at least 10 minutes. Get medical attention.
	XL0LR E. coli Strain	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	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.
	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.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR 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.
Inhalation	: pBR322 Test Insert Digested With EcoR I and Sal I	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. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	XL0LR E. coli Strain	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs,

Section 4. First-aid measures

		provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	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.
	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.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: pBR322 Test Insert Digested With EcoR I and Sal I	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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	XL0LR E. coli Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	ExAssist Interference-Resistant Helper Phage	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.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: pBR322 Test Insert Digested With EcoR I and Sal I	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 dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie,

Section 4. First-aid measures

XLOLR E. coli Strain	<p>belt or waistband.</p> <p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>
ExAssist Interference-Resistant Helper Phage	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p>
R408 Interference-Resistant Helper Phage	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p>
Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p>

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	<p>: pBR322 Test Insert Digested With EcoR I and Sal I</p> <p>XL1-Blue MRF' E.coli Strain</p> <p>XLOLR E. coli Strain</p> <p>ExAssist Interference-Resistant Helper Phage</p> <p>R408 Interference-Resistant Helper Phage</p> <p>Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated</p>	<p>No known significant effects or critical hazards.</p> <p>Causes serious eye irritation.</p> <p>Causes serious eye irritation.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p>
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Section 4. First-aid measures

Inhalation	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	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.
Skin contact	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	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	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	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	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data. Adverse symptoms may include the following: pain or irritation watering redness Adverse symptoms may include the following: pain or irritation watering redness No specific data. No specific data. No specific data.

Section 4. First-aid measures

Inhalation	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XLOLR E. coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.
Skin contact	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XLOLR E. coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.
Ingestion	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XLOLR E. coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.

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

Notes to physician	: pBR322 Test Insert Digested With EcoR I and Sal I	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.
	ExAssist Interference-Resistant Helper Phage	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.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 4. First-aid measures

Specific treatments	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XL0LR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.
Protection of first-aiders	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XL0LR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XL0LR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XL0LR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	None known. None known. None known. None known. None known. None known.

Section 5. Fire-fighting measures

Specific hazards arising from the chemical	: pBR322 Test Insert Digested With EcoR I and Sal I	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 container may burst.
	ExAssist Interference-Resistant Helper Phage	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.
Hazardous thermal decomposition products	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	In a fire or if heated, a pressure increase will occur and the container may burst.
	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	XLOLR E. coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	ExAssist Interference-Resistant Helper Phage	No specific data.
Special protective actions for fire-fighters	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.
	: pBR322 Test Insert Digested With EcoR I and Sal I	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	XL1-Blue MRF' E.coli Strain	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	XLOLR E. coli Strain	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	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.
	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.
	Lambda ZAP-CMV XR Vector Digested With Xho I	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No

Section 5. Fire-fighting measures

	And EcoR I CIAP Treated	action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	: pBR322 Test Insert Digested With EcoR I and Sal I	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	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.
	XL0LR 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.
	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.
	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.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR 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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: pBR322 Test Insert Digested With EcoR I and Sal I	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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 spilled material. Put on appropriate personal protective equipment.
	R408 Interference-Resistant	No action shall be taken involving any personal risk

Section 6. Accidental release measures

	Helper Phage	or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR 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 spilled material. Put on appropriate personal protective equipment.
For emergency responders	: pBR322 Test Insert Digested With EcoR I and Sal I	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	XL1-Blue MRF' E.coli Strain	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	XL0LR E. coli Strain	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	ExAssist Interference-Resistant Helper Phage	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	R408 Interference-Resistant Helper Phage	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	: pBR322 Test Insert Digested With EcoR I and Sal I	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	XL1-Blue MRF' E.coli Strain	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	XL0LR E. coli Strain	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	ExAssist Interference-Resistant Helper Phage	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	R408 Interference-Resistant Helper Phage	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 6. Accidental release measures

Lambda ZAP-CMV XR
Vector Digested With Xho I
And EcoR I CIAP Treated

Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Methods for cleaning up	:	pBR322 Test Insert Digested With EcoR I and Sal I	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		XL1-Blue MRF' E.coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		XL0LR E. coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		ExAssist Interference-Resistant Helper Phage	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		R408 Interference-Resistant Helper Phage	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	pBR322 Test Insert Digested With EcoR I and Sal I	Put on appropriate personal protective equipment (see Section 8).
		XL1-Blue MRF' E.coli Strain	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers

Section 7. Handling and storage

		retain product residue and can be hazardous. Do not reuse container.
	XL0LR E. coli Strain	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	ExAssist Interference-Resistant Helper Phage	Put on appropriate personal protective equipment (see Section 8).
	R408 Interference-Resistant Helper Phage	Put on appropriate personal protective equipment (see Section 8).
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: pBR322 Test Insert Digested With EcoR I and Sal I	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.
	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.
	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.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	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

Section 7. Handling and storage

protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

<p>Conditions for safe storage, including any incompatibilities</p>	<p>: pBR322 Test Insert Digested With EcoR I and Sal I</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
	<p>XL1-Blue MRF' E.coli Strain</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
	<p>XL0LR E. coli Strain</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
	<p>ExAssist Interference-Resistant Helper Phage</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>
	<p>R408 Interference-Resistant Helper Phage</p>	<p>Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</p>

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Lambda ZAP-CMV XR
Vector Digested With Xho I
And EcoR 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

[Control parameters](#)

[Occupational exposure limits](#)

Ingredient name	Exposure limits
<p>XL1-Blue MRF' E.coli Strain Glycerol</p>	<p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 10 mg/m³ 8 hours. Form: Mist CA Quebec Provincial (Canada, 7/2019). TWAEV: 10 mg/m³ 8 hours. Form: mist CA Saskatchewan Provincial (Canada, 7/2013). STEL: 20 mg/m³ 15 minutes. Form: mist TWA: 10 mg/m³ 8 hours. Form: mist CA Ontario Provincial (Canada, 6/2019). TWA: 10 mg/m³ 8 hours. Form: mist CA British Columbia Provincial (Canada, 10/2019). TWA: 3 mg/m³ 8 hours. Form: respirable mist TWA: 10 mg/m³ 8 hours. Form: total mist</p>
<p>XL0LR E. coli Strain Glycerol</p>	<p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 10 mg/m³ 8 hours. Form: Mist CA Quebec Provincial (Canada, 7/2019). TWAEV: 10 mg/m³ 8 hours. Form: mist CA Saskatchewan Provincial (Canada, 7/2013). STEL: 20 mg/m³ 15 minutes. Form: mist TWA: 10 mg/m³ 8 hours. Form: mist CA Ontario Provincial (Canada, 6/2019). TWA: 10 mg/m³ 8 hours. Form: mist CA British Columbia Provincial (Canada, 10/2019). TWA: 3 mg/m³ 8 hours. Form: respirable mist TWA: 10 mg/m³ 8 hours. Form: total mist</p>

[Appropriate engineering controls](#)

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

Section 8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state :

pBR322 Test Insert Digested With EcoR I and Sal I	Liquid.
XL1-Blue MRF' E.coli Strain	Liquid.
XL0LR E. coli Strain	Liquid.
ExAssist Interference-Resistant Helper Phage	Liquid.
R408 Interference-Resistant Helper Phage	Liquid.
Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Liquid.

Section 9. Physical and chemical properties

Color	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Odor	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Odor threshold	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
pH	:	pBR322 Test Insert Digested With EcoR I and Sal I	7.5
		XL1-Blue MRF' E.coli Strain	7
		XLOLR E. coli Strain	7
		ExAssist Interference-Resistant Helper Phage	7.5
		R408 Interference-Resistant Helper Phage	7.5
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	7.5
Melting point	:	pBR322 Test Insert Digested With EcoR I and Sal I	0°C (32°F)
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	0°C (32°F)
		R408 Interference-Resistant Helper Phage	0°C (32°F)
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	0°C (32°F)

Section 9. Physical and chemical properties

Boiling point	: pBR322 Test Insert Digested With EcoR I and Sal I	100°C (212°F)
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	100°C (212°F)
	R408 Interference-Resistant Helper Phage	100°C (212°F)
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	100°C (212°F)
Flash point	: pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Evaporation rate	: pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Flammability (solid, gas)	: pBR322 Test Insert Digested With EcoR I and Sal I	Not applicable.
	XL1-Blue MRF' E.coli Strain	Not applicable.
	XLOLR E. coli Strain	Not applicable.
	ExAssist Interference-Resistant Helper Phage	Not applicable.
	R408 Interference-Resistant Helper Phage	Not applicable.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not applicable.
Lower and upper explosive (flammable) limits	: pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.

Section 9. Physical and chemical properties

Vapor pressure	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Vapor density	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Relative density	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Solubility	:	pBR322 Test Insert Digested With EcoR I and Sal I	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.
		ExAssist Interference-Resistant Helper Phage	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.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
		XL1-Blue MRF' E.coli Strain	Not available.
		XLOLR E. coli Strain	Not available.
		ExAssist Interference-Resistant Helper Phage	Not available.
		R408 Interference-Resistant Helper Phage	Not available.
		Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.

Section 9. Physical and chemical properties

Auto-ignition temperature	: pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Decomposition temperature	: pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.
Viscosity	: pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	R408 Interference-Resistant Helper Phage	Not available.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.

Section 10. Stability and reactivity

Reactivity	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific test data related to reactivity available for this product or its ingredients.
	XL1-Blue MRF' E.coli Strain	No specific test data related to reactivity available for this product or its ingredients.
	XLOLR E. coli Strain	No specific test data related to reactivity available for this product or its ingredients.
	ExAssist Interference-Resistant Helper Phage	No specific test data related to reactivity available for this product or its ingredients.
	R408 Interference-Resistant Helper Phage	No specific test data related to reactivity available for this product or its ingredients.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: pBR322 Test Insert Digested With EcoR I and Sal I	The product is stable.
	XL1-Blue MRF' E.coli Strain	The product is stable.
	XLOLR E. coli Strain	The product is stable.
	ExAssist Interference-Resistant Helper Phage	The product is stable.
	R408 Interference-Resistant Helper Phage	The product is stable.

Section 10. Stability and reactivity

	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	The product is stable.
Possibility of hazardous reactions	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	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.
Conditions to avoid	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
Incompatible materials	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
Hazardous decomposition products	: pBR322 Test Insert Digested With EcoR I and Sal I XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain ExAssist Interference-Resistant Helper Phage R408 Interference-Resistant Helper Phage	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 10. Stability and reactivity

Lambda ZAP-CMV XR
Vector Digested With Xho I
And EcoR I CIAP Treated

produced.
Under normal conditions of storage and use,
hazardous decomposition products should not be
produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
XL1-Blue MRF⁺ E.coli Strain				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
XL0LR E. coli Strain				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Irritation/Corrosion

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

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: pBR322 Test Insert Digested With EcoR I and Sal I	Not available.
XL1-Blue MRF' E.coli Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.
XL0LR E. coli Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.
ExAssist Interference-Resistant Helper Phage	Not available.
R408 Interference-Resistant Helper Phage	Not available.
Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	Not available.

Potential acute health effects

Eye contact

: pBR322 Test Insert Digested With EcoR I and Sal I	No known significant effects or critical hazards.
XL1-Blue MRF' E.coli Strain	Causes serious eye irritation.
XL0LR E. coli Strain	Causes serious eye irritation.
ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No known significant effects or critical hazards.

Inhalation

: pBR322 Test Insert Digested With EcoR I and Sal I	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.
ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No known significant effects or critical hazards.

Skin contact

: pBR322 Test Insert Digested With EcoR I and Sal I	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.
ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No known significant effects or critical hazards.

Section 11. Toxicological information

Ingestion	: pBR322 Test Insert Digested With EcoR I and Sal I	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.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
	XL0LR E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
	ExAssist Interference-Resistant Helper Phage	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.
Inhalation	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XL0LR E. coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.
Skin contact	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XL0LR E. coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.

Section 11. Toxicological information

Ingestion	: pBR322 Test Insert Digested With EcoR I and Sal I	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XL0LR E. coli Strain	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	R408 Interference-Resistant Helper Phage	No specific data.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General : pBR322 Test Insert Digested With EcoR I and Sal I 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.
 ExAssist Interference-Resistant Helper Phage No known significant effects or critical hazards.
 R408 Interference-Resistant Helper Phage No known significant effects or critical hazards.
 Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated No known significant effects or critical hazards.

Carcinogenicity : pBR322 Test Insert Digested With EcoR I and Sal I 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.
 ExAssist Interference-Resistant Helper Phage No known significant effects or critical hazards.
 R408 Interference-Resistant Helper Phage No known significant effects or critical hazards.
 Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated No known significant effects or critical hazards.

Mutagenicity : pBR322 Test Insert Digested With EcoR I and Sal I 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.
 ExAssist Interference-Resistant Helper Phage No known significant effects or critical hazards.
 R408 Interference-Resistant Helper Phage No known significant effects or critical hazards.
 Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated No known significant effects or critical hazards.

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Reproductive toxicity	: pBR322 Test Insert Digested With EcoR I and Sal I	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.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	R408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	Lambda ZAP-CMV XR Vector Digested With Xho I And EcoR I CIAP Treated	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
XL1-Blue MRF' E.coli Strain					
XL1-Blue MRF' E.coli Strain	300000	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A
XL0LR E. coli Strain					
XL0LR E. coli Strain	300000	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
XL1-Blue MRF' E.coli Strain			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
XL0LR E. coli Strain			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris	48 hours

Section 12. Ecological information

	Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water	subglobosa Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	96 hours 96 hours 3 weeks
	Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 21 days 8 weeks

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
XL1-Blue MRF' E.coli Strain Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
XL0LR E. coli Strain Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
XL1-Blue MRF' E.coli Strain Glycerol	-1.76	-	low
XL0LR E. coli Strain Glycerol	-1.76	-	low

Mobility in soil

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

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

Section 13. Disposal considerations

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

Section 13. Disposal considerations

material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

Section 16. Other information

History

Date of issue/Date of revision : 11/04/2020
Date of previous issue : 08/27/2018
Version : 6

Key to abbreviations

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

Procedure used to derive the classification

Classification	Justification
XL1-Blue MRF' E.coli Strain EYE IRRITATION - Category 2A	Calculation method
XL0LR E. coli Strain EYE IRRITATION - Category 2A	Calculation method

References : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

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