

SAFETY DATA SHEET

Lambda ZAP-CMV RI Predigested Vector Kit, Part Number 239221

Section 1. Identification

1.1 Product identifier

Product name : Lambda ZAP-CMV RI Predigested Vector Kit, Part Number 239221

Part No. (Chemical Kit) : 239221

Part No. :

<input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	200252-81
ExAssist Interference-Resistant Helper Phage	200253-81
XL1-Blue MRF' E.coli Strain	200301-81
XLOLR E. coli Strain	200304-81
pRho/EcoR I Test Insert	210200-51
Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	239221-51

Validation date : 1/23/2018

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

Material uses : Analytical reagent.

<input checked="" type="checkbox"/> 408 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
pRho/EcoR I Test Insert	0.01 ml (1.25 µg 0.25 µg/µl)
Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	0.02 ml (10 µg 1 µg/µl)

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number

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

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :	<input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	ExAssist Interference-Resistant Helper Phage	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	XL1-Blue MRF' E.coli Strain	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	XLOLR E. coli Strain	This material is considered hazardous by the OSHA

Section 2. Hazards identification

pRho/EcoR I Test Insert	Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

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

Ingredients of unknown toxicity :

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

2.2 GHS label elements

Hazard pictograms :

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

Signal word :

R408 Interference-Resistant Helper Phage	No signal word.
ExAssist Interference-Resistant Helper Phage	No signal word.
XL1-Blue MRF' E.coli Strain	Warning
XLOLR E. coli Strain	Warning
pRho/EcoR I Test Insert	No signal word.
Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No signal word.

Hazard statements :

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	H319 - Causes serious eye irritation.
XLOLR E. coli Strain	H319 - Causes serious eye irritation.
pRho/EcoR I Test Insert	No known significant effects or critical hazards.
Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.

Precautionary statements

Section 2. Hazards identification

Prevention	:	☒ 408 Interference-Resistant Helper Phage	Not applicable.
		ExAssist Interference-Resistant Helper Phage	Not applicable.
		XL1-Blue MRF' E.coli Strain	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
		XLOLR E. coli Strain	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
Response	:	pRheo/EcoR I Test Insert	Not applicable.
		Lambda ZAP-CMV-RI Vector	Not applicable.
		Digested With EcoR I And CIAP Treated	
Storage	:	☒ 408 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	:	pRheo/EcoR I Test Insert	Not applicable.
		Lambda ZAP-CMV-RI Vector	Not applicable.
		Digested With EcoR I And CIAP Treated	

Section 2. Hazards identification

Supplemental label elements	:	☒408 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.
		pRho/EcoR I Test Insert	None known.
		Lambda ZAP-CMV-RI Vector	None known.
		Digested With EcoR I And CIAP Treated	

2.3 Other hazards

Hazards not otherwise classified	:	☒408 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.
		pRho/EcoR I Test Insert	None known.
		Lambda ZAP-CMV-RI Vector	None known.
		Digested With EcoR I And CIAP Treated	

Section 3. Composition/information on ingredients

Substance/mixture	:	☒408 Interference-Resistant Helper Phage	Mixture
		ExAssist Interference-Resistant Helper Phage	Mixture
		XL1-Blue MRF' E.coli Strain	Mixture
		XL0LR E. coli Strain	Mixture
		pRho/EcoR I Test Insert	Mixture
		Lambda ZAP-CMV-RI Vector	Mixture
		Digested With EcoR I And CIAP Treated	

Ingredient name	%	CAS number
☒XL1-Blue MRF' E.coli Strain		
Glycerol	≥10 - ≤25	56-81-5
Sodium chloride	≤3	7647-14-5
XL0LR E. coli Strain		
Glycerol	≥10 - ≤25	56-81-5
Sodium chloride	≤3	7647-14-5



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

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

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

Section 4. First aid measures


4.1 Description of necessary first aid measures

Eye contact	:  408 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. 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.
	pRho/EcoR I Test Insert	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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	:  408 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. 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, 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.
	pRho/EcoR I Test Insert	Remove victim to fresh air and keep at rest in a

Section 4. First aid measures

Skin contact

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

:  408 Interference-Resistant
Helper Phage

ExAssist Interference-Resistant
Helper Phage


XL1-Blue MRF' E.coli Strain

XL0LR E. coli Strain

pRho/EcoR I Test Insert

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

Ingestion

:  408 Interference-Resistant
Helper Phage

ExAssist Interference-Resistant
Helper Phage

XL1-Blue MRF' E.coli Strain

XL0LR E. coli Strain

position comfortable for breathing. Get medical attention if symptoms occur.

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

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.

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.

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.

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.

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.

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.

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.

Wash out mouth with water. Remove dentures if

Section 4. First aid measures

pRho/EcoR I Test Insert	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.
Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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. 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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XL0LR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards. No known significant effects or critical hazards. Causes serious eye irritation. Causes serious eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XL0LR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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.

Section 4. First aid measures

Skin contact	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data. No specific data. Adverse symptoms may include the following: pain or irritation watering redness Adverse symptoms may include the following: pain or irritation watering redness No specific data. No specific data.
Inhalation	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
Skin contact	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.

Section 4. First aid measures

Ingestion	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	XL1-Blue MRF' E.coli Strain	No specific data.
	XLOLR E. coli Strain	No specific data.
	pRheo/EcoR I Test Insert	No specific data.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data.

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



Notes to physician	: <input checked="" type="checkbox"/> 408 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.
	pRheo/EcoR I Test Insert	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: <input checked="" type="checkbox"/> 408 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.
	pRheo/EcoR I Test Insert	No specific treatment.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific treatment.
Protection of first-aiders	: <input checked="" type="checkbox"/> 408 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	XLOLR E. coli Strain	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	pRheo/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No action shall be taken involving any personal risk or without suitable training.

Section 4. First aid measures



See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	None known. None known. None known. None known. None known. None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:  408 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. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides Decomposition products may include the following materials: carbon dioxide

Section 5. Fire-fighting measures

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

pRho/EcoR I Test Insert
 Lambda ZAP-CMV-RI Vector
 Digested With EcoR I And CIAP
 Treated

5.3 Advice for firefighters

Special protective actions for fire-fighters

- : 408 Interference-Resistant Helper Phage
- ExAssist Interference-Resistant Helper Phage
- XL1-Blue MRF' E.coli Strain
- XL0LR E. coli Strain
- pRho/EcoR I Test Insert
- Lambda ZAP-CMV-RI Vector
 Digested With EcoR I And 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.

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

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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.

Special protective equipment for fire-fighters

- : 408 Interference-Resistant Helper Phage
- ExAssist Interference-Resistant Helper Phage
- XL1-Blue MRF' E.coli Strain
- XL0LR E. coli Strain
- pRho/EcoR I Test Insert
- Lambda ZAP-CMV-RI Vector
 Digested With EcoR I And 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.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.



Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:  408 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.
	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.
	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.
	XLOLR 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.
	pRho/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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	:  408 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".
	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".
	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".
	XLOLR 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

Section 6. Accidental release measures


pRheo/EcoR I Test Insert

the information in "For non-emergency personnel". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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".

6.2 Environmental precautions

:  408 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).

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).

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).

pRheo/EcoR I Test Insert

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).

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

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).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up :  408 Interference-Resistant Helper Phage

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

ExAssist Interference-Resistant Helper Phage

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

XL1-Blue MRF' E.coli Strain

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an

Section 6. Accidental release measures

XLOLR E. coli Strain	inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. 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.
pRheo/EcoR I Test Insert	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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

7.1 Precautions for safe handling

Protective measures	: 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain	Put on appropriate personal protective equipment (see Section 8). Put on appropriate personal protective equipment (see Section 8). 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.
	XLOLR 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.
	pRheo/EcoR I Test Insert	Put on appropriate personal protective equipment (see Section 8).
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: 408 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

Section 7. Handling and storage

XL1-Blue MRF' E.coli Strain

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

XL0LR E. coli Strain

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


pRho/EcoR I Test Insert

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. 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-RI Vector
Digested With EcoR I And 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.

7.2 Conditions for safe storage, including any incompatibilities

:  408 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

ExAssist Interference-Resistant Helper Phage

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have 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 7. Handling and storage

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

7.3 Specific end use(s)

Recommendations

: 408 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.
XLOLR E. coli Strain	Industrial applications, Professional applications.
pRheo/EcoR I Test Insert	Industrial applications, Professional applications.
Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Industrial applications, Professional applications.

Section 7. Handling and storage

Industrial sector specific solutions	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XL0LR E. coli Strain pRheo/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated 	<ul style="list-style-type: none"> Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
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Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
<input checked="" type="checkbox"/> XL1-Blue MRF' E.coli Strain Glycerol Sodium chloride	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p> <p>None.</p>
<input checked="" type="checkbox"/> XL0LR E. coli Strain Glycerol Sodium chloride	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust</p> <p>OSHA PEL (United States, 6/2016). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p> <p>None.</p>

8.2 Exposure controls

Appropriate engineering controls

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

Environmental exposure controls

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

Individual protection measures

Hygiene measures

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

Section 8. Exposure controls/personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- | | | | |
|-----------------------|---|----------------------------------------------|----------------|
| Physical state | : | ☑408 Interference-Resistant Helper Phage | Liquid. |
| | | ExAssist Interference-Resistant Helper Phage | Liquid. |
| | | XL1-Blue MRF' E.coli Strain | Liquid. |
| | | XL0LR E. coli Strain | Liquid. |
| | | pRho/EcoR I Test Insert | Liquid. |
| | | Lambda ZAP-CMV-RI Vector | Liquid. |
| | | Digested With EcoR I And CIAP Treated | |
| Color | : | ☑408 Interference-Resistant Helper Phage | Not available. |
| | | ExAssist Interference-Resistant Helper Phage | Not available. |
| | | XL1-Blue MRF' E.coli Strain | Not available. |
| | | XL0LR E. coli Strain | Not available. |
| | | pRho/EcoR I Test Insert | Not available. |
| | | Lambda ZAP-CMV-RI Vector | Not available. |
| | | Digested With EcoR I And CIAP Treated | |
| Odor | : | ☑408 Interference-Resistant Helper Phage | Not available. |
| | | ExAssist Interference-Resistant Helper Phage | Not available. |
| | | XL1-Blue MRF' E.coli Strain | Not available. |
| | | XL0LR E. coli Strain | Not available. |
| | | pRho/EcoR I Test Insert | Not available. |
| | | Lambda ZAP-CMV-RI Vector | Not available. |
| | | Digested With EcoR I And CIAP Treated | |





Section 9. Physical and chemical properties

Odor threshold	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test Insert	Not available.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available.
pH	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	7.5
	ExAssist Interference-Resistant Helper Phage	7.5
	XL1-Blue MRF' E.coli Strain	7
	XLOLR E. coli Strain	7
	pRho/EcoR I Test Insert	7.5
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	7
Melting point	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	0°C (32°F)
	ExAssist Interference-Resistant Helper Phage	0°C (32°F)
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test Insert	0°C (32°F)
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	0°C (32°F)
Boiling point	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	100°C (212°F)
	ExAssist Interference-Resistant Helper Phage	100°C (212°F)
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test Insert	100°C (212°F)
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	100°C (212°F)
Flash point	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test Insert	Not available.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available.
Evaporation rate	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	XLOLR E. coli Strain	Not available.
	pRho/EcoR I Test Insert	Not available.
	Lambda ZAP-CMV-RI Vector	Not available.





Section 9. Physical and chemical properties

		Digested With EcoR I And CIAP Treated	
Flammability (solid, gas)	:	<input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	:	<input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.
Vapor pressure	:	<input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.
Vapor density	:	<input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.
Relative density	:	<input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.

Section 9. Physical and chemical properties

Solubility	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.
Auto-ignition temperature	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.
Decomposition temperature	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.
Viscosity	:  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	Not available. Not available. Not available. Not available. Not available. Not available.

Section 10. Stability and reactivity

10.1 Reactivity	<ul style="list-style-type: none"> :  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated 	<p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p>
10.2 Chemical stability	<ul style="list-style-type: none"> :  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated 	<p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p>
10.3 Possibility of hazardous reactions	<ul style="list-style-type: none"> :  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated 	<p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p>
10.4 Conditions to avoid	<ul style="list-style-type: none"> :  408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated 	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p>

Section 10. Stability and reactivity

10.5 Incompatible materials	☒ 408 Interference-Resistant Helper Phage	May react or be incompatible with oxidizing materials.
	ExAssist Interference-Resistant Helper Phage	May react or be incompatible with oxidizing materials.
	XL1-Blue MRF' E.coli Strain	May react or be incompatible with oxidizing materials.
	XLOLR E. coli Strain	May react or be incompatible with oxidizing materials.
	pRho/EcoR I Test Insert	May react or be incompatible with oxidizing materials.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products	☒ 408 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.
	pRho/EcoR I Test Insert	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	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
☒ XL1-Blue MRF' E.coli Strain	Glycerol	Rat	12600 mg/kg	-
	Sodium chloride	Rat	3000 mg/kg	-
XLOLR E. coli Strain	Glycerol	Rat	12600 mg/kg	-
	Sodium chloride	Rat	3000 mg/kg	-

Irritation/Corrosion

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

Section 11. Toxicological information

				milligrams	
XL0LR E. coli Strain Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 milligrams 24 hours 500 milligrams	- -

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure




: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	Not available.
ExAssist Interference-Resistant Helper Phage	Not available.
XL1-Blue MRF' E.coli Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.
XL0LR E. coli Strain	Routes of entry anticipated: Oral, Dermal, Inhalation.
pRheo/EcoR I Test Insert	Not available.
Lambda ZAP-CMV-RI Vector	Not available.
Digested With EcoR I And CIAP Treated	

Potential acute health effects


Eye contact

: <input checked="" type="checkbox"/> 408 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	Causes serious eye irritation.
XL0LR E. coli Strain	Causes serious eye irritation.
pRheo/EcoR I Test Insert	No known significant effects or critical hazards.

Section 11. Toxicological information

	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.
Inhalation	:  408 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.
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.
Skin contact	:  408 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.
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.
Ingestion	:  408 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.
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:  408 Interference-Resistant Helper Phage	No specific data.
	ExAssist Interference-Resistant Helper Phage	No specific data.
	XL1-Blue MRF' E.coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
	XLOLR E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
	pRho/EcoR I Test Insert	No specific data.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data.

Section 11. Toxicological information

Inhalation	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
Skin contact	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
Ingestion	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage ExAssist Interference-Resistant Helper Phage XL1-Blue MRF' E.coli Strain XLOLR E. coli Strain pRho/EcoR I Test Insert Lambda ZAP-CMV-RI Vector Digested With EcoR I And 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.
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Section 11. Toxicological information

Carcinogenicity	: <input checked="" type="checkbox"/> 408 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.
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
Mutagenicity	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> 408 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.
Teratogenicity	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> 408 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.
Developmental effects	XL0LR E. coli Strain	No known significant effects or critical hazards.
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.
	ExAssist Interference-Resistant Helper Phage	No known significant effects or critical hazards.
Fertility effects	XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	XL0LR E. coli Strain	No known significant effects or critical hazards.
	pRho/EcoR I Test Insert	No known significant effects or critical hazards.
	Lambda ZAP-CMV-RI Vector Digested With EcoR I And CIAP Treated	No known significant effects or critical hazards.
	: <input checked="" type="checkbox"/> 408 Interference-Resistant Helper Phage	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
<input checked="" type="checkbox"/> XL1-Blue MRF' E.coli Strain Oral	300000 mg/kg
XLOLR E. coli Strain Oral	300000 mg/kg

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> XL1-Blue MRF' E.coli Strain Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water Acute EC50 4.74 g/L Fresh water Acute EC50 519.6 mg/l Fresh water Acute EC50 402600 µg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Fish - Oncorhynchus mykiss Algae - Chlamydomonas reinhardtii Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks 96 hours 21 days 8 weeks
XLOLR E. coli Strain Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water Acute EC50 4.74 g/L Fresh water Acute EC50 519.6 mg/l Fresh water Acute EC50 402600 µg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Fish - Oncorhynchus mykiss Algae - Chlamydomonas reinhardtii Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks 96 hours 21 days 8 weeks

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<input checked="" type="checkbox"/> XL1-Blue MRF' E.coli Strain Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
XLOLR E. coli Strain Glycerol	301D Ready Biodegradability -	93 % - 30 days	-	-

Section 12. Ecological information

	Closed Bottle Test			
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12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
<input checked="" type="checkbox"/> XL1-Blue MRF' E.coli Strain Glycerol	-1.76	-	low
<input type="checkbox"/> XL0LR E. coli Strain Glycerol	-1.76	-	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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

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

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

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

Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

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

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

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

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

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

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification :

☒408 Interference-Resistant Helper Phage	Not applicable.
ExAssist Interference-Resistant Helper Phage	Not applicable.
XL1-Blue MRF' E.coli Strain	EYE IRRITATION - Category 2A
XL0LR E. coli Strain	EYE IRRITATION - Category 2A
pRho/EcoR I Test Insert	Not applicable.
Lambda ZAP-CMV-RI Vector	Not applicable.
Digested With EcoR I And CIAP Treated	

Composition/information on ingredients

Name	%	Classification
XL1-Blue MRF' E.coli Strain		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Sodium chloride	≤3	EYE IRRITATION - Category 2A
XL0LR E. coli Strain		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Sodium chloride	≤3	EYE IRRITATION - Category 2A

State regulations

Massachusetts : The following components are listed: GLYCERINE MIST

New York : None of the components are listed.

New Jersey : The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL

Pennsylvania : The following components are listed: 1,2,3-PROPANETRIOL

California Prop. 65

⚠ WARNING: This product can expose you to Tetracycline, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 15. Regulatory information

Ingredient name	No significant risk level	Maximum acceptable dosage level
<input checked="" type="checkbox"/> XL1-Blue MRF' E.coli Strain Tetracycline	-	-
XLOLR E. coli Strain Tetracycline	-	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

Section 16. Other information

History

Date of issue : 01/23/2018

Date of previous issue : 10/28/2015.

Version : 5

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

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