

SAFETY DATA SHEET

Lambda ZAP II Predigested Vector Kit, Part Number 236211

Section 1. Identification

Product identifier	: Lambda ZAP II Predigested Vector Kit, Part Number 236211		
Part no. (chemical kit)	: 236211		
Part no.	: Lambda ZAP II Vector Predigested With EcoR I	236211-51	
	pRho/EcoR I Test Insert	210200-51	
	XL1-Blue MRF' E.coli Strain	200301-81	
	ExAssist Interference-Resistant Helper Phage	200253-81	
	SOLR Bacterial Strain	200298-81	
Material uses	: Analytical reagent.		
	Lambda ZAP II Vector Predigested With EcoR I	0.01 ml (10 µg	1 µg/µl)
	pRho/EcoR I Test Insert	0.01 ml (1.25 µg	0.25 µg/µl)
	XL1-Blue MRF' E.coli Strain	0.5 ml	
	ExAssist Interference-Resistant Helper Phage	1 ml (>1 x E10 pfu/ml)	
	SOLR Bacterial Strain	0.5 ml	
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

SOLR Bacterial Strain
H319 EYE IRRITATION - Category 2A

GHS label elements

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



SOLR Bacterial Strain



Section 2. Hazard identification

Signal word	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No signal word. No signal word. Warning No signal word. Warning
Hazard statements	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. H319 - Causes serious eye irritation. No known significant effects or critical hazards. H319 - Causes serious eye irritation.
<u>Precautionary statements</u>		
Prevention	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. P280 - Wear eye or face protection. Not applicable. P280 - Wear eye or face protection.
Response	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not applicable. 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. 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.
Storage	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

Section 2. Hazard identification

Supplemental label elements	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	None known. None known. None known. None known. None known.
Other hazards which do not result in classification	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	None known. None known. None known. None known. None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Mixture Mixture Mixture Mixture Mixture
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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
SOLR Bacterial 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	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. Immediately flush eyes with plenty of water,
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Section 4. First-aid measures

Inhalation	: Lambda ZAP II Vector Predigested With EcoR I	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	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	XL1-Blue MRF' E.coli Strain	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	ExAssist Interference-Resistant Helper Phage	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.
	SOLR Bacterial Strain	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	: Lambda ZAP II Vector Predigested With EcoR I	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	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.
	ExAssist Interference-Resistant Helper Phage	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.
	SOLR Bacterial Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: Lambda ZAP II Vector Predigested With EcoR 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.

Section 4. First-aid measures

pRheo/EcoR I Test Insert	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
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, belt or waistband.
ExAssist Interference-Resistant Helper Phage	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
SOLR Bacterial 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, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards.
		No known significant effects or critical hazards. Causes serious eye irritation.
		No known significant effects or critical hazards.
		Causes serious eye irritation.

Section 4. First-aid measures

Inhalation	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	ExAssist Interference- Resistant Helper Phage	No known significant effects or critical hazards.
	SOLR Bacterial Strain	No known significant effects or critical hazards.
Skin contact	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	ExAssist Interference- Resistant Helper Phage	No known significant effects or critical hazards.
	SOLR Bacterial Strain	No known significant effects or critical hazards.
Ingestion	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards.
	ExAssist Interference- Resistant Helper Phage	No known significant effects or critical hazards.
	SOLR Bacterial Strain	No known significant effects or critical hazards.
<u>Over-exposure signs/symptoms</u>		
Eye contact	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference- Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	Adverse symptoms may include the following: pain or irritation watering redness
		No specific data.
		Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference- Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	No specific data.
Skin contact	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference- Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	No specific data.
Ingestion	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain	No specific data.
	ExAssist Interference- Resistant Helper Phage	No specific data.
	SOLR Bacterial Strain	No specific data.

Section 4. First-aid measures

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

Notes to physician	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.
Protection of first-aiders	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
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Section 5. Fire-fighting measures

Unsuitable extinguishing media	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	None known. None known. None known. None known. None known.
Specific hazards arising from the chemical	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No specific data. No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
Special protective actions for fire-fighters	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters	: Lambda ZAP II Vector Predigested With EcoR I	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	pRheo/EcoR I Test Insert	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	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.
	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.
	SOLR Bacterial Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: Lambda ZAP II Vector Predigested With EcoR 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.
	pRheo/EcoR I Test Insert	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	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.
	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.
	SOLR Bacterial Strain	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders	<p>: Lambda ZAP II Vector Predigested With EcoR I</p> <p>pRheo/EcoR I Test Insert</p> <p>XL1-Blue MRF' E.coli Strain</p> <p>ExAssist Interference-Resistant Helper Phage</p> <p>SOLR Bacterial Strain</p>	<p>If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".</p> <p>If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".</p> <p>If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".</p> <p>If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".</p> <p>If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".</p>
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Environmental precautions	<p>: Lambda ZAP II Vector Predigested With EcoR I</p> <p>pRheo/EcoR I Test Insert</p> <p>XL1-Blue MRF' E.coli Strain</p> <p>ExAssist Interference-Resistant Helper Phage</p> <p>SOLR Bacterial Strain</p>	<p>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</p> <p>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</p> <p>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</p> <p>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</p> <p>Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).</p>
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Methods and materials for containment and cleaning up

Methods for cleaning up	<p>: Lambda ZAP II Vector Predigested With EcoR I</p> <p>pRheo/EcoR I Test Insert</p>	<p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p> <p>Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container.</p>
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Section 6. Accidental release measures

XL1-Blue MRF' E.coli Strain	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.
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.
SOLR Bacterial Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert	Put on appropriate personal protective equipment (see Section 8). 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 retain product residue and can be hazardous. Do not reuse container.
ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	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.

Advice on general occupational hygiene

: Lambda ZAP II Vector Predigested With EcoR 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.
pRheo/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

Section 7. Handling and storage

	<p>XL1-Blue MRF' E.coli Strain</p>	<p>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.</p>
	<p>ExAssist Interference-Resistant Helper Phage</p>	<p>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.</p>
	<p>SOLR Bacterial Strain</p>	<p>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.</p>
<p>Conditions for safe storage, including any incompatibilities</p>	<p>: Lambda ZAP II Vector Predigested With EcoR 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>pRho/EcoR I Test Insert</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>

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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.

SOLR Bacterial 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.

Section 8. Exposure controls/personal protection

[Control parameters](#)

[Occupational exposure limits](#)

Ingredient name	Exposure limits
<p><input checked="" type="checkbox"/> L1-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>SOLR Bacterial 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</p>

Section 8. Exposure controls/personal protection

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

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- Individual protection measures**
- Hygiene measures** : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: 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** :
- | | |
|--|---------|
| Lambda ZAP II Vector | Liquid. |
| Predigested With EcoR I | |
| pRho/EcoR I Test Insert | Liquid. |
| XL1-Blue MRF' E.coli Strain | Liquid. |
| ExAssist Interference-Resistant Helper Phage | Liquid. |
| SOLR Bacterial Strain | Liquid. |

Section 9. Physical and chemical properties

Color	: Lambda ZAP II Vector	Not available.
	Predigested With EcoR I	
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
Odor	SOLR Bacterial Strain	Not available.
	: Lambda ZAP II Vector	Not available.
	Predigested With EcoR I	
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
Odor threshold	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.
	: Lambda ZAP II Vector	Not available.
	Predigested With EcoR I	
	pRheo/EcoR I Test Insert	Not available.
pH	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.
	: Lambda ZAP II Vector	7.5
	Predigested With EcoR I	
Melting point	pRheo/EcoR I Test Insert	7.5
	XL1-Blue MRF' E.coli Strain	7
	ExAssist Interference-Resistant Helper Phage	7.5
	SOLR Bacterial Strain	7
	: Lambda ZAP II Vector	0°C (32°F)
Boiling point	Predigested With EcoR I	
	pRheo/EcoR I Test Insert	0°C (32°F)
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	0°C (32°F)
	SOLR Bacterial Strain	Not available.
Flash point	: Lambda ZAP II Vector	100°C (212°F)
	Predigested With EcoR I	
	pRheo/EcoR I Test Insert	100°C (212°F)
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	100°C (212°F)
Evaporation rate	SOLR Bacterial Strain	Not available.
	: Lambda ZAP II Vector	Not available.
	Predigested With EcoR I	
	pRheo/EcoR I Test Insert	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
	ExAssist Interference-Resistant Helper Phage	Not available.
	SOLR Bacterial Strain	Not available.

Section 9. Physical and chemical properties

Flammability (solid, gas)	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Vapor pressure	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Vapor density	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Relative density	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Solubility	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	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. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.

Section 9. Physical and chemical properties

Auto-ignition temperature	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Decomposition temperature	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.
Viscosity	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Not available. Not available. Not available. Not available. Not available.

Section 10. Stability and reactivity

Reactivity	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
Possibility of hazardous reactions	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	No specific data. No specific data. No specific data. No specific data. No specific data.
Incompatible materials	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
Hazardous decomposition products	: Lambda ZAP II Vector Predigested With EcoR I pRheo/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain	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 11. Toxicological information

Information on toxicological effects

Acute toxicity

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

Section 11. Toxicological information

SOLR Bacterial Strain	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
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.

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

: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain

Not available.
Not available.
Routes of entry anticipated: Oral, Dermal, Inhalation.
Not available.
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact

: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference-Resistant Helper Phage SOLR Bacterial Strain

No known significant effects or critical hazards.
No known significant effects or critical hazards.
Causes serious eye irritation.
No known significant effects or critical hazards.
Causes serious eye irritation.

Section 11. Toxicological information

Inhalation	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No specific data. No specific data. Adverse symptoms may include the following: pain or irritation watering redness No specific data. Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No specific data. No specific data. No specific data. No specific data. No specific data.
Skin contact	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No specific data. No specific data. No specific data. No specific data. No specific data.
Ingestion	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No specific data. No specific data. No specific data. No specific data. No specific data.

Section 11. Toxicological information

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	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Reproductive toxicity	: Lambda ZAP II Vector Predigested With EcoR I pRho/EcoR I Test Insert XL1-Blue MRF' E.coli Strain ExAssist Interference- Resistant Helper Phage SOLR Bacterial Strain	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

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
SOLR Bacterial Strain					
SOLR Bacterial Strain	300000	N/A	N/A	N/A	N/A

Section 11. Toxicological information

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 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 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 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 96 hours 96 hours 3 weeks 96 hours 21 days 8 weeks
SOLR Bacterial 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 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 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 96 hours 96 hours 3 weeks 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	-	-
SOLR Bacterial Strain Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Section 12. Ecological information

Bioaccumulative potential

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

Section 15. Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : All components are listed or exempted.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: <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 : 10/15/2020

Date of previous issue : 08/23/2018

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
<input checked="" type="checkbox"/> L1-Blue MRF' E.coli Strain EYE IRRITATION - Category 2A	Calculation method
SOLR Bacterial Strain EYE IRRITATION - Category 2A	Calculation method

References : Not available.

Section 16. Other information

✔ Indicates information that has changed from previously issued version.

[Notice to reader](#)

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