Conforms to Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals

SAFETY DATA SHEET

ExAssist Interference-Resistant Helper Phage with XOLR strain, Part Number 211203

Section 1. Identification

Product identifier : ExAssist Interference-Resistant Helper Phage with XOLR strain, Part Number 211203

Part No. (Chemical Kit) : 211203

Part No. : XOLR E. coli Strain 200304-81
          XL1-Blue MRF’ E.coli Strain 200301-81
          ExAssist Interference-Resistant Helper Phage 200253-81

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

Analytical reagent.

XOLR E. coli Strain 0.5 ml
XL1-Blue MRF’ E.coli Strain 0.5 ml
ExAssist Interference-Resistant Helper Phage 1 ml >1 X E10 pfu/ml

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
                        679 Springvale Road
                        Mulgrave
                        Victoria 3170, Australia
                        1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

Not classified.

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

GHS label elements

Signal word : XOLR E. coli Strain No signal word.
              XL1-Blue MRF’ E.coli Strain No signal word.
              ExAssist Interference-Resistant Helper Phage No signal word.

Hazard statements : XOLR E. coli Strain No known significant effects or critical hazards.
                    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.

Precautionary statements

Prevention : XOLR E. coli Strain Not applicable.
             XL1-Blue MRF’ E.coli Strain Not applicable.
             ExAssist Interference-Resistant Helper Phage Not applicable.

Response : XOLR E. coli Strain Not applicable.
           XL1-Blue MRF’ E.coli Strain Not applicable.
           ExAssist Interference-Resistant Helper Phage Not applicable.

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Date of previous issue : 21/01/2016
Version : 6
Section 2. Hazard(s) identification

Storage: XLOLR E. coli Strain Not applicable. XL1-Blue MRF' E.coli Strain Not applicable. ExAssist Interference-Resistant Helper Phage Not applicable.

Disposal: XLOLR E. coli Strain Not applicable. XL1-Blue MRF' E.coli Strain Not applicable. ExAssist Interference-Resistant Helper Phage Not applicable.

Supplemental label elements: XLOLR E. coli Strain Not applicable. XL1-Blue MRF' E.coli Strain Not applicable. ExAssist Interference-Resistant Helper Phage Not applicable.

Other hazards which do not result in classification: XLOLR E. coli Strain None known. XL1-Blue MRF' E.coli Strain None known. ExAssist Interference-Resistant Helper Phage None known.

Section 3. Composition and ingredient information

Substance/mixture: XLOLR E. coli Strain Mixture XL1-Blue MRF' E.coli Strain Mixture ExAssist Interference-Resistant Helper Phage Mixture

CAS number/other identifiers

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLOLR E. coli Strain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>≥10 - ≤30</td>
<td>56-81-5</td>
</tr>
<tr>
<td>XL1-Blue MRF' E.coli Strain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>≥10 - ≤30</td>
<td>56-81-5</td>
</tr>
</tbody>
</table>

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: XLOLR E. coli Strain
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

XL1-Blue MRF' E.coli Strain
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

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.

Inhalation: XLOLR E. coli Strain
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

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. Get medical attention if symptoms occur.
# Section 4. First aid measures

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>ExAssist Interference-Resistant Helper Phage with XOLR strain, Part Number 211203</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLOLR E. coli Strain</td>
<td>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.</td>
</tr>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
<td>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.</td>
</tr>
<tr>
<td>ExAssist Interference-Resistant Helper Phage</td>
<td>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.</td>
</tr>
</tbody>
</table>

## Ingestion

| XLOLR E. coli Strain | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |
| XL1-Blue MRF’ E.coli Strain | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |
| 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. |

## Most important symptoms/effects, acute and delayed

### Potential acute health effects

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>XLOLR E. coli Strain</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
<tr>
<td>ExAssist Interference-Resistant Helper Phage</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td>XLOLR E. coli Strain</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
<tr>
<td>ExAssist Interference-Resistant Helper Phage</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
<tr>
<td>Skin contact</td>
<td>XLOLR E. coli Strain</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
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<td></td>
</tr>
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<td>ExAssist Interference-Resistant Helper Phage</td>
<td>No known significant effects or critical hazards.</td>
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<td>Ingestion</td>
<td>XLOLR E. coli Strain</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
<tr>
<td>ExAssist Interference-Resistant Helper Phage</td>
<td>No known significant effects or critical hazards.</td>
<td></td>
</tr>
</tbody>
</table>

### Over-exposure signs/symptoms

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>XLOLR E. coli Strain</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
<td>No specific data.</td>
<td></td>
</tr>
<tr>
<td>ExAssist Interference-Resistant Helper Phage</td>
<td>No specific data.</td>
<td></td>
</tr>
<tr>
<td>Inhalation</td>
<td>XLOLR E. coli Strain</td>
<td>No specific data.</td>
</tr>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
<td>No specific data.</td>
<td></td>
</tr>
<tr>
<td>ExAssist Interference-Resistant Helper Phage</td>
<td>No specific data.</td>
<td></td>
</tr>
</tbody>
</table>
Section 4. First aid measures

**Skin contact**
- XLOLR E. coli Strain: No specific data.
- XL1-Blue MRF' E.coli Strain: No specific data.
- ExAssist Interference-Resistant Helper Phage: No specific data.

**Ingestion**
- XLOLR E. coli Strain: No specific data.
- XL1-Blue MRF' E.coli Strain: No specific data.
- ExAssist Interference-Resistant Helper Phage: No specific data.

**Protection of first-aiders**
- XLOLR E. coli Strain: 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.
- ExAssist Interference-Resistant Helper Phage: No action shall be taken involving any personal risk or without suitable training.

**Notes to physician**
- XLOLR E. coli Strain: 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.
- ExAssist Interference-Resistant Helper Phage: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**
- XLOLR E. coli Strain: No specific treatment.
- XL1-Blue MRF' E.coli Strain: No specific treatment.
- ExAssist Interference-Resistant Helper Phage: No specific treatment.

**Protection of first-aiders**
- XLOLR E. coli Strain: 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.
- ExAssist Interference-Resistant Helper Phage: No action shall be taken involving any personal risk or without suitable training.

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

**Suitable extinguishing media**
- XLOLR E. coli Strain: Use an extinguishing agent suitable for the surrounding fire.
- XL1-Blue MRF' E.coli Strain: Use an extinguishing agent suitable for the surrounding fire.
- ExAssist Interference-Resistant Helper Phage: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**
- XLOLR E. coli Strain: None known.
- XL1-Blue MRF' E.coli Strain: None known.
- ExAssist Interference-Resistant Helper Phage: None known.

**Specific hazards arising from the chemical**
- XLOLR E. coli Strain: In a fire or if heated, a pressure increase will occur and the container may burst.
- XL1-Blue MRF' E.coli Strain: In a fire or if heated, a pressure increase will occur and the container may burst.
- ExAssist Interference-Resistant Helper Phage: In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**
- XLOLR E. coli Strain: Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
  - halogenated compounds
  - metal oxide/oxides
- XL1-Blue MRF' E.coli Strain: Decomposition products may include the following materials:

See toxicological information (Section 11)

Section 5. Firefighting measures

**Extinguishing media**

**Suitable extinguishing media**
- XLOLR E. coli Strain: Use an extinguishing agent suitable for the surrounding fire.
- XL1-Blue MRF' E.coli Strain: Use an extinguishing agent suitable for the surrounding fire.
- ExAssist Interference-Resistant Helper Phage: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**
- XLOLR E. coli Strain: None known.
- XL1-Blue MRF' E.coli Strain: None known.
- ExAssist Interference-Resistant Helper Phage: None known.

**Date of issue/Date of revision**: 21/08/2017  **Date of previous issue**: 21/01/2016  **Version**: 6
Section 5. Firefighting measures

Special protective actions for fire-fighters:
- **ExAssist Interference-Resistant Helper Phage**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- **XLOLR E. coli Strain**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- **XL1-Blue MRF' E. coli Strain**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters:
- **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.
- **XLOLR E. coli Strain**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- **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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

**For non-emergency personnel**:
- **ExAssist Interference-Resistant Helper Phage**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
- **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 spilt material. Put on appropriate personal protective equipment.
- **XL1-Blue MRF' E. coli Strain**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

**For emergency responders**:
- **ExAssist Interference-Resistant Helper Phage**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- **XLOLR E. coli Strain**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- **XL1-Blue MRF' E. coli Strain**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Section 6. Accidental release measures

Resistant Helper Phage spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: XLOLR E. coli Strain Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

XL1-Blue MRF’ E.coli Strain Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

ExAssist Interference-Resistant Helper Phage Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

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

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

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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: XLOLR E. coli Strain Put on appropriate personal protective equipment (see Section 8).

XL1-Blue MRF’ E.coli Strain Put on appropriate personal protective equipment (see Section 8).

ExAssist Interference-Resistant Helper Phage Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: XLOLR 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.

XL1-Blue MRF’ E.coli Strain Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and
Section 7. Handling and storage

ExAssist Interference-Resistant Helper Phage

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

Conditions for safe storage, including any incompatibilities:

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

- 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLOLR E. coli Strain</td>
<td>Safe Work Australia (Australia, 1/2014).</td>
</tr>
<tr>
<td>Glycerol</td>
<td>TWA: 10 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>XL1-Blue MRF’ E.coli Strain</td>
<td>Safe Work Australia (Australia, 1/2014).</td>
</tr>
<tr>
<td>Glycerol</td>
<td>TWA: 10 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Section 8. Exposure controls and personal protection

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

Individual protection measures

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

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

Appearance

Physical state: XLOLR E. coli Strain Liquid.
XL1-Blue MRF' E.coli Strain Liquid.
ExAssist Interference-Resistant Helper Phage Liquid.

Colour: XLOLR E. coli Strain Not available.
XL1-Blue MRF' E.coli Strain Not available.
ExAssist Interference-Resistant Helper Phage Not available.

Odour: XLOLR E. coli Strain Not available.
XL1-Blue MRF' E.coli Strain Not available.
ExAssist Interference-Resistant Helper Phage Not available.

Odour threshold: XLOLR E. coli Strain Not available.
XL1-Blue MRF' E.coli Strain Not available.
ExAssist Interference-Resistant Helper Phage Not available.

pH: XLOLR E. coli Strain 7
XL1-Blue MRF' E.coli Strain 7
ExAssist Interference-Resistant Helper Phage 7.5

Melting point: XLOLR E. coli Strain Not available.
XL1-Blue MRF' E.coli Strain Not available.
ExAssist Interference-Resistant Helper Phage 0°C (32°F)
## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>XLOLR E. coli Strain</th>
<th>XL1-Blue MRF’ E.coli Strain</th>
<th>ExAssist Interference-Resistant Helper Phage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling point</td>
<td>Not available.</td>
<td>Not available.</td>
<td>100°C (212°F)</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour density</td>
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<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
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<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in the following materials: cold water and hot water.</td>
<td>Soluble in the following materials: cold water and hot water.</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 10. Stability and reactivity

Reactivity:
- **XLOLR E. coli Strain**
  - No specific test data related to reactivity available for this product or its ingredients.
- **XL1-Blue MRF’ E.coli Strain**
  - No specific test data related to reactivity available for this product or its ingredients.
- **ExAssist Interference-Resistant Helper Phage**
  - No specific test data related to reactivity available for this product or its ingredients.

Chemical stability:
- **XLOLR E. coli Strain**
  - The product is stable.
- **XL1-Blue MRF’ E.coli Strain**
  - The product is stable.
- **ExAssist Interference-Resistant Helper Phage**
  - The product is stable.

Possibility of hazardous reactions:
- **XLOLR E. coli Strain**
  - Under normal conditions of storage and use, hazardous reactions will not occur.
- **XL1-Blue MRF’ E.coli Strain**
  - Under normal conditions of storage and use, hazardous reactions will not occur.
- **ExAssist Interference-Resistant Helper Phage**
  - Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid:
- **XLOLR E. coli Strain**
  - No specific data.
- **XL1-Blue MRF’ E.coli Strain**
  - No specific data.
- **ExAssist Interference-Resistant Helper Phage**
  - No specific data.

Incompatible materials:
- **XLOLR E. coli Strain**
  - May react or be incompatible with oxidising materials.
- **XL1-Blue MRF’ E.coli Strain**
  - May react or be incompatible with oxidising materials.
- **ExAssist Interference-Resistant Helper Phage**
  - May react or be incompatible with oxidising materials.

Hazardous decomposition products:
- **XLOLR E. coli Strain**
  - 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.
- **ExAssist Interference-Resistant Helper Phage**
  - Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XLOLR E. coli Strain</strong></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Glycerol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>XL1-Blue MRF’ E.coli Strain</strong></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Glycerol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Irritation/Corrosion

Date of issue/Date of revision: 21/08/2017
Date of previous issue: 21/01/2016
Version: 6
## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XLOLR E. coli Strain</strong></td>
<td>Glycerol Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Glycerol Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td><strong>XL1-Blue MRF’ E.coli Strain</strong></td>
<td>Glycerol Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Glycerol Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sensitisation**
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 likely routes of exposure

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Routes of entry anticipated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XLOLR E. coli Strain</strong></td>
<td>Oral, Dermal, Inhalation.</td>
</tr>
<tr>
<td><strong>XL1-Blue MRF’ E.coli Strain</strong></td>
<td>Oral, Dermal, Inhalation.</td>
</tr>
<tr>
<td><strong>ExAssist Interference-Resistant Helper Phage</strong></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Potential acute health effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye contact</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Skin contact</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: XLOLR E. coli Strain No specific data.
XL1-Blue MRF’ E.coli Strain No specific data.
ExAssist Interference-Resistant Helper Phage No specific data.

Inhalation: XLOLR E. coli Strain No specific data.
XL1-Blue MRF’ E.coli Strain No specific data.
ExAssist Interference-Resistant Helper Phage No specific data.

Skin contact: XLOLR E. coli Strain No specific data.
XL1-Blue MRF’ E.coli Strain No specific data.
ExAssist Interference-Resistant Helper Phage No specific data.

Ingestion: XLOLR E. coli Strain No specific data.
XL1-Blue MRF’ E.coli Strain No specific data.
ExAssist Interference-Resistant Helper Phage No specific data.

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

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.
Potential chronic health effects: Not available.

General: XLOLR E. coli Strain No known significant effects or critical hazards.
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.

Carcinogenicity: XLOLR E. coli Strain No known significant effects or critical hazards.
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.

Mutagenicity: XLOLR E. coli Strain No known significant effects or critical hazards.
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.

Teratogenicity: XLOLR E. coli Strain No known significant effects or critical hazards.
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.

Developmental effects: XLOLR E. coli Strain No known significant effects or critical hazards.
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.

Fertility effects: XLOLR E. coli Strain No known significant effects or critical hazards.
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.

Numerical measures of toxicity

Acute toxicity estimates
Section 11. Toxicological information

Not available.

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLOLR E. coli Strain Glycerol</td>
<td>Acute LC50 54000 mg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td>XL1-Blue MRF' E.coli Strain</td>
<td>Acute LC50 54000 mg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLOLR E. coli Strain Glycerol</td>
<td>301D Ready Biodegradability - Closed Bottle Test</td>
<td>93 % - 30 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>XL1-Blue MRF' E.coli Strain</td>
<td>301D Ready Biodegradability - Closed Bottle Test</td>
<td>93 % - 30 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>XLOLR E. coli Strain Glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>XL1-Blue MRF' E.coli Strain</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

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 minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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
Section 13. Disposal considerations

retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>ADG / IMDG / IATA</th>
<th>: Not regulated as Dangerous Goods according to the ADG Code.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special precautions for user</td>
<td>: 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.</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of Marpol and the IBC Code</td>
<td>: Not available.</td>
</tr>
</tbody>
</table>

Section 15. Regulatory information

**Standard Uniform Schedule of Medicine and Poisons**

5

**Model Work Health and Safety Regulations - Scheduled Substances**

No listed substance

**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**

<table>
<thead>
<tr>
<th>Country</th>
<th>: Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Canada</td>
<td>Not determined.</td>
</tr>
<tr>
<td>China</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Europe</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Japan</td>
<td>Japan inventory (ENCS): All components are listed or exempted.</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Not determined.</td>
</tr>
<tr>
<td>New Zealand</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Philippines</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Taiwan</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Thailand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Turkey</td>
<td>Not determined.</td>
</tr>
<tr>
<td>United States</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Viet Nam</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

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Section 16. Any other relevant information

History

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| Version | 6 |

Key to abbreviations

- ADG = Australian Dangerous Goods
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- NOHSC = National Occupational Health and Safety Commission
- SUSMP = Standard Uniform Schedule of Medicine and Poisons
- UN = United Nations

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified.</td>
<td></td>
</tr>
</tbody>
</table>

References

- Not available.

Indicates information that has changed from previously issued version.

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