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

1.1 Product identifier
Product name: pCMV-Script Vector, Part Number 212220
Part no. (chemical kit): 212220
Part no. (chemical kit)

1.2 Relevant identified uses of the substance or mixture and uses advised against
Material uses: pCMV-Script vector
XL1-Blue MRF’ E.coli Strain

1.3 Details of the supplier of the safety data sheet
Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000
e-mail address of person responsible for this SDS: pdl-mlds_author@agilent.com

1.4 Emergency telephone number
Emergency telephone number (with hours of operation): CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Product definition: pCMV-Script vector
XL1-Blue MRF’ E.coli Strain

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.

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

See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements
Signal word: pCMV-Script vector
XL1-Blue MRF’ E.coli Strain
No signal word.

Hazard statements: pCMV-Script vector
XL1-Blue MRF’ E.coli Strain
No known significant effects or critical hazards.

Date of issue/Date of revision: 26/03/2018
SECTION 2: Hazards identification

Prevention: pCMV-Script vector Not applicable. XL1-Blue MRF’ E.coli Strain Not applicable.
Response: pCMV-Script vector Not applicable. XL1-Blue MRF’ E.coli Strain Not applicable.
Storage: pCMV-Script vector Not applicable. XL1-Blue MRF’ E.coli Strain Not applicable.
Disposal: pCMV-Script vector Not applicable. XL1-Blue MRF’ E.coli Strain Not applicable.

Hazardous ingredients: XL1-Blue MRF’ E.coli Strain Not applicable.

Supplemental label elements: pCMV-Script vector Not applicable. XL1-Blue MRF’ E.coli Strain Safety data sheet available on request.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: pCMV-Script vector Not applicable. XL1-Blue MRF’ E.coli Strain Not applicable.

Special packaging requirements:
- Tactile warning of danger: pCMV-Script vector Not applicable. XL1-Blue MRF’ E.coli Strain Not applicable.

2.3 Other hazards which do not result in classification:
- Other hazards: XL1-Blue MRF’ E.coli Strain None known.

SECTION 3: Composition/information on ingredients

3.1 Substances:

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>EC: 231-598-3 CAS: 7647-14-5</td>
<td>≤3</td>
<td>Eye Irrit. 2, H319</td>
<td>[1]</td>
</tr>
</tbody>
</table>

See Section 16 for the full text of the H statements declared above.

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

Date of issue/Date of revision: 26/03/2018
SECTION 3: Composition/information on ingredients

1. Substance classified with a health or environmental hazard
2. Substance with a workplace exposure limit
3. Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
4. Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
5. Substance of equivalent concern
6. Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : pCMV-Script vector
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.

Inhalation : pCMV-Script vector
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.

Skin contact : pCMV-Script vector
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.

Ingestion : pCMV-Script vector
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.

Protection of first-aiders : pCMV-Script vector
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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : pCMV-Script vector
XL1-Blue MRF’ E.coli Strain
No known significant effects or critical hazards.

Inhalation : pCMV-Script vector
XL1-Blue MRF’ E.coli Strain
No known significant effects or critical hazards.

Skin contact : pCMV-Script vector
XL1-Blue MRF’ E.coli Strain
No known significant effects or critical hazards.

Ingestion : pCMV-Script vector
XL1-Blue MRF’ E.coli Strain
No known significant effects or critical hazards.

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### SECTION 4: First aid measures

#### Over-exposure signs/symptoms

**Eye contact:** pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
No specific data.

**Inhalation:** pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
No specific data.

**Skin contact:** pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
No specific data.

**Ingestion:** pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
No specific data.

#### Specific treatments

**Over-exposure signs/symptoms**

**Skin contact:**  
No specific data.

**Inhalation:**  
No specific data.

**Ingestion:**  
No specific data.

**Eye contact:**  
No specific data.

#### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician**

pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**

pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
No specific treatment.

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media**

pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**

pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
None known.

#### 5.2 Special hazards arising from the substance or mixture

**Hazardous combustion products**

pCMV-Script vector, XL1-Blue MRF’ E.coli Strain  
Decomposition products may include the following materials:

- carbon dioxide
- carbon monoxide
- halogenated compounds
- metal oxide/oxides

**In a fire or if heated, a pressure increase will occur and the container may burst.**

#### 5.3 Advice for firefighters

**Special precautions for fire-fighters**

pCMV-Script vector, 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.

**Suitable extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**

None known.

**Hazardous combustion products**

No specific data.

**In a fire or if heated, a pressure increase will occur and the container may burst.**

Decomposition products may include the following materials:

- carbon dioxide
- carbon monoxide
- halogenated compounds
- metal oxide/oxides

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
SECTION 5: Firefighting measures

**Special protective equipment for fire-fighters**

- **pCMV-Script vector**
  - Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

- **XL1-Blue MRF' E.coli Strain**
  - Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**SECTION 6: Accidental release measures**

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

- **pCMV-Script vector**
  - 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

- **pCMV-Script vector**
  - 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".

### 6.2 Environmental precautions

- **pCMV-Script vector**
  - 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).

### 6.3 Methods and material for containment and cleaning up

#### Methods for cleaning up

- **pCMV-Script vector**
  - 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.

### 6.4 Reference to other sections

- See Section 1 for emergency contact information.
- See Section 8 for information on appropriate personal protective equipment.
- See Section 13 for additional waste treatment information.

**Date of issue/Date of revision**: 26/03/2018
SECTION 7: Handling and storage

7.1 Precautions for safe handling

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>pCMV-Script vector</th>
<th>XL1-Blue MRF' E.coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put on appropriate personal protective equipment (see Section 8).</td>
<td>Put on appropriate personal protective equipment (see Section 8).</td>
<td></td>
</tr>
</tbody>
</table>

Advice on general occupational hygiene:

<table>
<thead>
<tr>
<th>pCMV-Script vector</th>
<th>XL1-Blue MRF' E.coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>

7.2 Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Storage</th>
<th>pCMV-Script vector</th>
<th>XL1-Blue MRF' E.coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>pCMV-Script vector</th>
<th>XL1-Blue MRF' E.coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial applications, Professional applications.</td>
<td>Industrial applications, Professional applications.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Industrial sector specific solutions</th>
<th>pCMV-Script vector</th>
<th>XL1-Blue MRF' E.coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Occupational exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>XL1-Blue MRF' E.coli Strain</td>
</tr>
</tbody>
</table>

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SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

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

Individual protection measures

Hygiene measures

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

Eye/face protection

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

Skin protection

Hand protection

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

Body protection

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

Other skin protection

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

Respiratory protection

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

Environmental exposure controls

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

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

- **Physical state**
  - pCMV-Script vector: Liquid.
  - XL1-Blue MRF' E.coli Strain: Liquid.

- **Colour**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Odour**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Odour threshold**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **pH**
  - pCMV-Script vector: 7.5
  - XL1-Blue MRF' E.coli Strain: 7

- **Melting point/freezing point**
  - pCMV-Script vector: 0°C
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Initial boiling point and boiling range**
  - pCMV-Script vector: 100°C
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Flash point**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Evaporation rate**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Flammability (solid, gas)**
  - pCMV-Script vector: Not applicable.
  - XL1-Blue MRF' E.coli Strain: Not applicable.

- **Upper/lower flammability or explosive limits**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Vapour pressure**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Vapour density**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Relative density**
  - pCMV-Script vector: Not available.
  - XL1-Blue MRF' E.coli Strain: Not available.

- **Solubility(ies)**
  - 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**
  - Not available.

- **Auto-ignition temperature**
  - Not available.
SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>pCMV-Script vector</th>
<th>XL1-Blue MRF’ E.coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability
The product is stable.

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid
No specific data.

10.5 Incompatible materials
May react or be incompatible with oxidising materials.

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

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<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>XL1-Blue MRF’ E.coli</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Strain Sodium chloride</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Acute toxicity estimates
Not available.

Irritation/Corrosion

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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>XL1-Blue MRF’ E.coli Strain</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sensitiser**

Conclusion/Summary: 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 likely routes of exposure:

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

**Inhalation**

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

No known significant effects or critical hazards.

**Ingestion**

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

No known significant effects or critical hazards.

**Skin contact**

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

No known significant effects or critical hazards.

**Eye contact**

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Inhalation**

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

No specific data.

**Ingestion**

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

No specific data.

**Skin contact**

- pCMV-Script vector
- XL1-Blue MRF’ E.coli Strain

No specific data.
SECTION 11: Toxicological information

**Potential chronic health effects**

**pCMV-Script vector**
No known significant effects or critical hazards.

**XL1-Blue MRF' E.coli Strain**
No known significant effects or critical hazards.

**General**
No known significant effects or critical hazards.

**Carcinogenicity**
No known significant effects or critical hazards.

**Mutagenicity**
No known significant effects or critical hazards.

**Teratogenicity**
No known significant effects or critical hazards.

**Developmental effects**
No known significant effects or critical hazards.

**Fertility effects**
No known significant effects or critical hazards.

**Other information**
Not available.

SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF' E.coli Strain</td>
<td>Acute EC50 4.74 g/L Fresh water</td>
<td>Algae - Chlamydomonas reinhardtii</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 519.6 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosa</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 402600 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute IC50 6.87 g/L Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1000000 µg/l Fresh water</td>
<td>Fish - Morone saxatilis - Larvae</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic LC10 781 mg/l Fresh water</td>
<td>Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>3 weeks</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 6 g/L Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.314 g/L Fresh water</td>
<td>Fish - Gambusia holbrooki - Adult</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100 mg/l Fresh water</td>
<td>Fish - Gambusia holbrooki - Adult</td>
<td>8 weeks</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 26/03/2018
SECTION 12: Ecological information

12.2 Persistence and degradability
Not available.

12.3 Bioaccumulative potential
Not available.

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID / IMDG / IATA : Not regulated.

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

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

Date of issue/Date of revision : 26/03/2018 12/14
SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Not applicable.

Other EU regulations

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

Date of issue/Date of revision: 26/03/2018
SECTION 15: Regulatory information

15.2 Chemical safety assessment

This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms:
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

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

Full text of abbreviated H statements

**XL1-Blue MRF’ E.coli Strain**

H319

Causes serious eye irritation.

Full text of classifications [CLP/GHS]

**XL1-Blue MRF’ E.coli Strain**

Eye Irrit. 2, H319

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

Date of issue/Date of revision: 26/03/2018

Date of previous issue: 15/07/2016

Version: 2

Notice to reader

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