SAFETY DATA SHEET
pBluescript II SK(-) Phagemid, Part Number 212206

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

1.1 Product identifier
Product name: pBluescript II SK(-) Phagemid, Part Number 212206
Part No. (Kit): 212206
Part No. (Kit): pBluescript II SK(-) Phagemid 212206-51
Part No. (Kit): XL1-Blue MRF' Strain 200301-81

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

<table>
<thead>
<tr>
<th>Identified uses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pBluescript II SK(-) Phagemid</td>
<td>0.02 ml</td>
</tr>
<tr>
<td>XL1-Blue MRF' Strain</td>
<td>0.5 ml</td>
</tr>
</tbody>
</table>

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-msds_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: pBluescript II SK(-) Phagemid
Product definition: XL1-Blue MRF' Strain
Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.

Ingredients of unknown ecotoxicity: Not applicable.

Classification according to Directive 1999/45/EC [DPD]
pBluescript II SK(-) Phagemid The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
XL1-Blue MRF' Strain The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Classification: Not classified.

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See Section 11 for more detailed information on health effects and symptoms.
SECTION 2: Hazards identification

2.2 Label elements

| Signal word | :pBluescript II SK(-) Phagemid | No signal word. |
| Phagemid XL1-Blue MRF' Strain | No signal word. |

| Hazard statements | :pBluescript II SK(-) Phagemid | No known significant effects or critical hazards. |
| Phagemid XL1-Blue MRF' Strain | No known significant effects or critical hazards. |

| Precautionary statements |
| :pBluescript II SK(-) Phagemid | Not applicable. |
| Phagemid XL1-Blue MRF' Strain | Not applicable. |

| Prevention |
| :pBluescript II SK(-) Phagemid | Not applicable. |
| Phagemid XL1-Blue MRF' Strain | Not applicable. |

| Response |
| :pBluescript II SK(-) Phagemid | Not applicable. |
| Phagemid XL1-Blue MRF' Strain | Not applicable. |

| Storage |
| :pBluescript II SK(-) Phagemid | Not applicable. |
| Phagemid XL1-Blue MRF' Strain | Not applicable. |

| Disposal |
| :pBluescript II SK(-) Phagemid | Not applicable. |
| Phagemid XL1-Blue MRF' Strain | Not applicable. |

| Hazardous ingredients : No hazardous ingredient |
| Supplemental label elements |
| :pBluescript II SK(-) Phagemid | Not applicable. |
| Phagemid XL1-Blue MRF' Strain | Not applicable. |

| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles |
| Special packaging requirements |
| :pBluescript II SK(-) Phagemid | Not applicable. |
| Phagemid XL1-Blue MRF' Strain | Not applicable. |

2.3 Other hazards

| Other hazards which do not result in classification | :pBluescript II SK(-) Phagemid | Not available. |
| Phagemid XL1-Blue MRF' Strain | Not available. |

SECTION 3: Composition/information on ingredients

3.2 Mixtures

| Product/ingredient name | : XL1-Blue MRF' Strain | pBluescript II SK(-) Phagemid | Mixture |
| Mixture |

| Identifiers | % | Classification | Regulation (EC) No. 1272/2008 [CLP] |
| EC: 231-598-3 | ≥1 - <3 | Xi; R36 | Eye Irrit. 2, H319 |
| CAS: 7647-14-5 | | See Section 16 for the full text of the R-phrases declared above. |

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2/14
SECTION 3: Composition/information on ingredients

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.

Type

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

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

- **pBluescript II SK(-) Phagemid**
  - 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' 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

- **pBluescript II SK(-) Phagemid**
  - Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

- **XL1-Blue MRF' Strain**
  - Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact

- **pBluescript II SK(-) Phagemid**
  - Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

- **XL1-Blue MRF' Strain**
  - Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion

- **pBluescript II SK(-) Phagemid**
  - 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' 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

- **pBluescript II SK(-) Phagemid**
  - No action shall be taken involving any personal risk or without suitable training.

- **XL1-Blue MRF' 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

- **pBluescript II SK(-) Phagemid**
  - No known significant effects or critical hazards.

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

Inhalation

- **pBluescript II SK(-) Phagemid**
  - No known significant effects or critical hazards.

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

Skin contact

- **pBluescript II SK(-) Phagemid**
  - No known significant effects or critical hazards.

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

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### SECTION 4: First aid measures

#### Ingestion
- **pBluescript II SK(-) Phagemid**
- No known significant effects or critical hazards.
- **XL1-Blue MRF’ Strain**
- No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### Inhalation

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### Skin contact

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### Ingestion

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### Eye contact

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

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

#### Notes to physician

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### Specific treatments

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>No specific treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>Use an extinguishing agent suitable for the surrounding fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### Unsuitable extinguishing media

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>In a fire or if heated, a pressure increase will occur and the container may burst.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### Hazardous combustion products

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>Decomposition products may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds, metal oxide/oxides</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

#### 5.3 Advice for firefighters

<table>
<thead>
<tr>
<th></th>
<th>pBluescript II SK(-)</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phagemid</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF’ Strain</td>
<td></td>
</tr>
</tbody>
</table>

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### SECTION 5: Firefighting measures

| Special protective equipment for fire-fighters | pBluescript II SK(-) Phagemid | 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' 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 | pBluescript II SK(-) Phagemid | 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 spill material. Put on appropriate personal protective equipment. |
| XL1-Blue MRF' 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 spill material. Put on appropriate personal protective equipment. |

| For emergency responders | pBluescript II SK(-) Phagemid | 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' 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

| pBluescript II SK(-) Phagemid | Avoid dispersal of spill 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' Strain | Avoid dispersal of spill 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 | 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. |
SECTION 7: Handling and storage

7.1 Precautions for safe handling

**Protective measures:** pBluescript II SK(-) Phagemid, XL1-Blue MRF' Strain

Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene:**
- pBluescript II SK(-) Phagemid
  - 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' 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.

7.2 Conditions for safe storage, including any incompatibilities

**pBluescript II SK(-) Phagemid**
- 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.

**XL1-Blue MRF' 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.

7.3 Specific end use(s)

**Recommendations:** pBluescript II SK(-) Phagemid, XL1-Blue MRF' Strain

Industrial applications, Professional applications.

**Industrial sector specific solutions:** Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

**Occupational exposure limits**

No exposure limit value known.

**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

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SECTION 8: Exposure controls/personal protection

methods for the determination of hazardous substances will also be required.

**DNELs/DMELs**
No DNELs available.

**PNECs**
No PNECs available.

8.2 Exposure controls

**Appropriate engineering controls**
Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**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. 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**
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

**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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

**Appearance**

**Physical state**
pBluescript II SK(-) Phagemid  Liquid.
XL1-Blue MRF' Strain  Liquid.

**Colour**
pBluescript II SK(-) Not available.
Phagemid  Not available.
XL1-Blue MRF' Strain  Not available.
SECTION 9: Physical and chemical properties

**Odour**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Odour threshold**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**pH**
- pBluescript II SK(-) Phagemid: 7.5
- XL1-Blue MRF' Strain: Not available.

**Melting point/freezing point**
- pBluescript II SK(-) Phagemid: 0°C
- XL1-Blue MRF' Strain: Not available.

**Initial boiling point and boiling range**
- pBluescript II SK(-) Phagemid: 100°C
- XL1-Blue MRF' Strain: Not available.

**Flash point**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Evaporation rate**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Flammability (solid, gas)**
- pBluescript II SK(-) Phagemid: Not applicable.
- XL1-Blue MRF' Strain: Not applicable.

**Upper/lower flammability or explosive limits**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Vapour pressure**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Vapour density**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Relative density**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' 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**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Auto-ignition temperature**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Decomposition temperature**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Viscosity**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Explosive properties**
- pBluescript II SK(-) Phagemid: Not available.
- XL1-Blue MRF' Strain: Not available.

**Oxidising properties**
- Not available.

9.2 Other information

**Date of issue/Date of revision**
- 30/06/2015

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - Europe
SECTION 9: Physical and chemical properties

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity: pBluescript II SK(-) Phagemid
Phagemid
XL1-Blue MRF’ Strain
No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability: pBluescript II SK(-) Phagemid
Phagemid
XL1-Blue MRF’ Strain
The product is stable.

10.3 Possibility of hazardous reactions: pBluescript II SK(-) Phagemid
Phagemid
XL1-Blue MRF’ Strain
Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid: pBluescript II SK(-) Phagemid
Phagemid
XL1-Blue MRF’ Strain
No specific data.

10.5 Incompatible materials: pBluescript II SK(-) Phagemid
Phagemid
XL1-Blue MRF’ Strain
May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products: pBluescript II SK(-) Phagemid
Phagemid
XL1-Blue MRF’ Strain
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’ Strain</td>
<td>LC50 Inhalation Duffs</td>
<td>Rat</td>
<td>&gt;42 g/m³</td>
<td>1 hours</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>and mists LD50 Oral</td>
<td>Rat</td>
<td>3000 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

Acute toxicity estimates

Not available.

Irritation/Corrosion

<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’ Strain</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100</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</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitiser

Conclusion/Summary: Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

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Not available.

Potential chronic health effects

Inhalation

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Ingestion

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Skin contact

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Eye contact

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Carcinogenicity

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Mutagenicity

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No specific data.

Ingestion

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No specific data.

Skin contact

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No specific data.

Eye contact

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No specific data.

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

Short term exposure

Potential immediate effects

Not available.

Potential delayed effects

Not available.

Long term exposure

Potential immediate effects

Not available.

Potential delayed effects

Not available.

Potential chronic health effects

General

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Carcinogenicity

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

Mutagenicity

pBluescript II SK(-) Phagemid
XL1-Blue MRF' Strain
No known significant effects or critical hazards.

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**Teratogenicity**
- **pBluescript II SK(-) Phagemid**
  - No known significant effects or critical hazards.
- **XL1-Blue MRF' Strain**
  - No known significant effects or critical hazards.

**Developmental effects**
- **pBluescript II SK(-) Phagemid**
  - No known significant effects or critical hazards.
- **XL1-Blue MRF' Strain**
  - No known significant effects or critical hazards.

**Fertility effects**
- **pBluescript II SK(-) Phagemid**
  - No known significant effects or critical hazards.
- **XL1-Blue MRF' Strain**
  - No known significant effects or critical hazards.

**Toxicokinetics**

**Absorption**
- **pBluescript II SK(-) Phagemid**
  - Not available.
- **XL1-Blue MRF' Strain**
  - Not available.

**Distribution**
- **pBluescript II SK(-) Phagemid**
  - Not available.
- **XL1-Blue MRF' Strain**
  - Not available.

**Metabolism**
- **pBluescript II SK(-) Phagemid**
  - Not available.
- **XL1-Blue MRF' Strain**
  - Not available.

**Elimination**
- **pBluescript II SK(-) Phagemid**
  - Not available.
- **XL1-Blue MRF' Strain**
  - Not available.

**Other information**
- **pBluescript II SK(-) Phagemid**
  - Not available.
- **XL1-Blue MRF' Strain**
  - 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><strong>Sodium chloride</strong></td>
<td>Acute EC50 2430000 μg/l Fresh water</td>
<td>Algae - Navicula seminulum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 28.85 mg/dm3 Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>72 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 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 1661 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 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>Daphnia - Daphnia pulex</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>

**12.2 Persistence and degradability**

**Conclusion/Summary**
- Not available.

**12.3 Bioaccumulative potential**
- Not available.

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)**
- Not available.

**Mobility**
- Not available.

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**SECTION 12: Ecological information**

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** : The classification of the product may meet the criteria for a hazardous waste.

**European waste catalogue (EWC)**

<table>
<thead>
<tr>
<th>Waste code</th>
<th>Waste designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF Strain 18 02 03</td>
<td>wastes whose collection and disposal is not subject to special requirements in order to prevent infection</td>
</tr>
</tbody>
</table>

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

**SECTION 14: Transport information**

**Regulatory 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 73/78 and the IBC Code : Not available.

**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**: None of the components are listed.

**Substances of very high concern**

None of the components are listed.

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SECTION 15: Regulatory information

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

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso II Directive

This product is not controlled under the Seveso II 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 Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia : All components are listed or exempted.
Canada : Not determined.
China : All components are listed or exempted.
Japan : 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.
United States : Not determined.

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>

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