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

1.1 Product identifier

Product name: PathDetect pFA-CMV Plasmid, Part Number 219036
Part No. (Kit): 219036
Part No. (Kit): pFA-CMV Vector (Fusion Trans-activator Plasmid) 219036-51
Part No. (Kit): XL1-Blue MRF' E. coli 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>0.01 mL (20 μg)</th>
<th>1 μg/µl</th>
<th>0.5 mL (500 μl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XL1-Blue MRF' E. coli Strain</td>
<td></td>
<td></td>
<td></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: pFA-CMV Vector (Fusion Trans-activator Plasmid) Mixture
Product definition: XL1-Blue MRF' E. coli Strain Mixture

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

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: pFA-CMV Vector (Fusion Trans-activator Plasmid) No signal word.
Signal word: XL1-Blue MRF' E. coli Strain No signal word.

Date of issue/Date of revision: 30/08/2016
## SECTION 2: Hazards identification

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

### Precautionary statements

**Prevention**: pFA-CMV Vector (Fusion Trans-activator Plasmid) Not applicable.  
XL1-Blue MRF' E. coli Strain Not applicable.

**Response**: pFA-CMV Vector (Fusion Trans-activator Plasmid) Not applicable.  
XL1-Blue MRF' E. coli Strain Not applicable.

**Storage**: pFA-CMV Vector (Fusion Trans-activator Plasmid) Not applicable.  
XL1-Blue MRF' E. coli Strain Not applicable.

**Disposal**: pFA-CMV Vector (Fusion Trans-activator Plasmid) Not applicable.  
XL1-Blue MRF' E. coli Strain Not applicable.

### Hazardous ingredients

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)** 
  - XL1-Blue MRF' E. coli Strain Not applicable.

- **XL1-Blue MRF' E. coli Strain** Not applicable.

### Supplemental label elements

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)** 
  - XL1-Blue MRF' E. coli Strain Safety data sheet available on request.

- **XL1-Blue MRF' E. coli Strain** Not applicable.

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

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)** 
  - XL1-Blue MRF' E. coli Strain Not applicable.

- **XL1-Blue MRF' E. coli Strain** Not applicable.

### Special packaging requirements

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)** 
  - XL1-Blue MRF' E. coli Strain Not applicable.

- **XL1-Blue MRF' E. coli Strain** Not applicable.

### 2.3 Other hazards

**Other hazards which do not result in classification**: pFA-CMV Vector (Fusion Trans-activator Plasmid) None known.  
XL1-Blue MRF' E. coli Strain None known.
SECTION 3: Composition/information on ingredients

3.2 Mixtures

pFA-CMV Vector (Fusion Trans-activator Plasmid) Mixture
XL1-Blue MRF' E. coli Strain Mixture

<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></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.

Type
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[5] Substance of equivalent concern

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

pFA-CMV Vector (Fusion Trans-activator Plasmid)<br>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

pFA-CMV Vector (Fusion Trans-activator Plasmid)<br>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

pFA-CMV Vector (Fusion Trans-activator Plasmid)<br>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

pFA-CMV Vector (Fusion Trans-activator Plasmid)<br>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.
SECTION 4: First aid measures

Protection of first-aiders:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- 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:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No known significant effects or critical hazards.

Inhalation:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No known significant effects or critical hazards.

Skin contact:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No known significant effects or critical hazards.

Ingestion:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No known significant effects or critical hazards.

Over-exposure signs/symptoms:

Eye contact:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No specific data.

Inhalation:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No specific data.

Skin contact:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No specific data.

Ingestion:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
## SECTION 4: First aid measures

| Specific treatments | pFA-CMV Vector (Fusion Trans-activator Plasmid) | No specific treatment. |
| XL1-Blue MRF' E. coli Strain | No specific treatment. |

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

| Suitable extinguishing media | pFA-CMV Vector (Fusion Trans-activator Plasmid) | Use an extinguishing agent suitable for the surrounding fire. |
| XL1-Blue MRF' E. coli Strain | Use an extinguishing agent suitable for the surrounding fire. |

| Unsuitable extinguishing media | pFA-CMV Vector (Fusion Trans-activator Plasmid) | None known. |
| XL1-Blue MRF' E. coli Strain | None known. |

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

| Hazards from the substance or mixture | pFA-CMV Vector (Fusion Trans-activator Plasmid) | 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. |

| Hazardous combustion products | pFA-CMV Vector (Fusion Trans-activator Plasmid) | Decomposition products may include the following materials: |
| XL1-Blue MRF' E. coli Strain | carbon dioxide |
| carbon monoxide |
| halogenated compounds |
| metal oxide/oxides |

### 5.3 Advice for firefighters

#### Special precautions for fire-fighters

| pFA-CMV Vector (Fusion Trans-activator Plasmid) | 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

| pFA-CMV Vector (Fusion Trans-activator Plasmid) | 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. |

Date of issue/Date of revision: 30/08/2016
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - 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:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - 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:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - 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:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - 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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Protective measures:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - Put on appropriate personal protective equipment (see Section 8).
- XL1-Blue MRF' E. coli Strain
  - Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - 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
SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Storage</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</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.</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.</td>
<td></td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>Industrial applications, Professional applications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial sector specific solutions</td>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>Industrial applications, Professional applications.</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

### Occupational exposure limits

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF' E. coli Strain Glycerol</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m³ 8 hours. Form: Mist</td>
</tr>
</tbody>
</table>

**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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

**DNELs/DMELs**: No DNELs/DMELs available.

**PNECs**: No PNECs available.

8.2 Exposure controls

<table>
<thead>
<tr>
<th>Date of issue/Date of revision</th>
<th>30/08/2016</th>
</tr>
</thead>
</table>
SECTION 8: Exposure controls/personal protection

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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state: pFA-CMV Vector (Fusion Trans-activator Plasmid) Liquid. XL1-Blue MRF' E. coli Strain Liquid.

Colour: pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available. XL1-Blue MRF' E. coli Strain Not available.

Odour: pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available. XL1-Blue MRF' E. coli Strain Not available.

Odour threshold: pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available. XL1-Blue MRF' E. coli Strain Not available.
SECTION 9: Physical and chemical properties

**pH**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) 7.5
- XL1-Blue MRF' E. coli Strain 7

**Melting point/freezing point**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) 0°C
- XL1-Blue MRF' E. coli Strain Not available.

**Initial boiling point and boiling range**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) 100°C
- XL1-Blue MRF' E. coli Strain Not available.

**Flash point**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.
- XL1-Blue MRF' E. coli Strain Not available.

**Evaporation rate**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.
- XL1-Blue MRF' E. coli Strain Not available.

**Flammability (solid, gas)**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) Not applicable.
- XL1-Blue MRF' E. coli Strain Not applicable.

**Upper/lower flammability or explosive limits**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.
- XL1-Blue MRF' E. coli Strain Not available.

**Vapour pressure**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.
- XL1-Blue MRF' E. coli Strain Not available.

**Vapour density**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.
- XL1-Blue MRF' E. coli Strain Not available.

**Relative density**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) 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.
### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF’ E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<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

<table>
<thead>
<tr>
<th>Subsection</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF’ E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Reactivity</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>10.2 Chemical stability</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>10.3 Possibility of hazardous reactions</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>10.4 Conditions to avoid</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>10.5 Incompatible materials</td>
<td>May react or be incompatible with oxidising materials.</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
</tbody>
</table>
PathDetect pFA-CMV Plasmid, Part Number 219036

SECTION 10: Stability and reactivity

10.6 Hazardous decomposition products

<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>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Strain</td>
<td>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' 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.

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>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>Not available.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>Routes of entry anticipated: Oral, Dermal, Inhalation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Potential acute health effects

Inhalation : pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.

Ingestion : pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.

Skin contact : pFA-CMV Vector (Fusion Trans-activator Plasmid) Not available.
## SECTION 11: Toxicological information

### Eye contact

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

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

#### Inhalation

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
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</tbody>
</table>

#### Ingestion

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

#### Skin contact

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

#### Eye contact

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No specific data.</td>
<td>No specific data.</td>
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</tbody>
</table>

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

#### Short term exposure

<table>
<thead>
<tr>
<th>Potential immediate effects</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### Long term exposure

<table>
<thead>
<tr>
<th>Potential immediate effects</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Potential chronic health effects

#### General

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

#### Carcinogenicity

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

#### Mutagenicity

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
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</table>

#### Teratogenicity

<table>
<thead>
<tr>
<th>Description</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>
SECTION 11: Toxicological information

Developmental effects: pFA-CMV Vector (Fusion Trans-activator Plasmid)
No known significant effects or critical hazards.

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

Fertility effects: pFA-CMV Vector (Fusion Trans-activator Plasmid)
No known significant effects or critical hazards.

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

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 2430000 μg/l Fresh water</td>
<td>Algae - Navicula seminulum</td>
<td>96 hours</td>
</tr>
<tr>
<td>Sodium chloride</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
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 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 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 - List of substances subject to authorisation

Annex XIV

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

None of the components are listed.

Other EU regulations

Europe inventory: All components are listed or exempted.

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

Date of issue/Date of revision: 30/08/2016
SECTION 15: Regulatory information

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.

International lists

National inventory

Australia : All components are listed or exempted.
Canada : Not determined.
China : All components are listed or exempted.
Japan : Japan inventory (ENCS): Not determined.
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.
Turkey : Not determined.
United States : All components are listed or exempted.

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 : 30/08/2016
Date of previous issue : No previous validation.

Date of issue/Date of revision : 30/08/2016
SECTION 16: Other information

Notice to reader

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