Section 1. Identification

1.1 Product identifier

Product name: PathDetect pFA-CMV Plasmid, Part Number 219036
Part No. (Chemical Kit): 219036

1.4 Emergency telephone number

In case of emergency: CHEMTREC®: 1-800-424-9300

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

Material uses:
- pFA-CMV Vector (Fusion Trans-activator Plasmid): 0.01 mL (20 µg 1 µg/µl)
- XL1-Blue MRF’ E. coli Strain: 0.5 mL (500 µl)

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer: Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status:
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF’ E. coli Strain

Classification of the substance or mixture:
- XL1-Blue MRF’ E. coli Strain: H319 EYE IRRITATION - Category 2A

2.2 GHS label elements

Hazard pictograms:

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

Date of issue: 08/30/2016
Section 2. Hazards identification

**Precautionary statements**

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

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

**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.

**Supplemental label elements**
- pFA-CMV Vector (Fusion Trans-activator Plasmid) None known.
- XL1-Blue MRF' E. coli Strain None known.

2.3 Other hazards
- pFA-CMV Vector (Fusion Trans-activator Plasmid) None known.
- XL1-Blue MRF' E. coli Strain None known.

Section 3. Composition/information on ingredients

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

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>≥10 - ≤25</td>
<td>56-81-5</td>
</tr>
<tr>
<td>Glycerol</td>
<td>≤3</td>
<td>7647-14-5</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

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

Date of issue: 08/30/2016
## Section 4. First aid measures

### 4.1 Description of necessary first aid measures

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.</td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF E. coli Strain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td></td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF E. coli Strain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td></td>
<td>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.</td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF E. coli Strain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td></td>
<td>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</td>
</tr>
<tr>
<td></td>
<td>XL1-Blue MRF E. coli Strain</td>
</tr>
</tbody>
</table>
Section 4. First aid measures

### 4.2 Most important symptoms/effects, acute and delayed

**Potential acute health effects**

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

**Over-exposure signs/symptoms**

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

**Over-exposure signs/symptoms**

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
<th>Adverse symptoms may include the following: pain or irritation watering redness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>pFA-CMV Vector (Fusion Trans-activator Plasmid)</td>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

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

**Notes to physician**

<table>
<thead>
<tr>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
<th>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</th>
</tr>
</thead>
</table>

**Specific treatments**

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

**Protection of first-aiders**

<table>
<thead>
<tr>
<th>pFA-CMV Vector (Fusion Trans-activator Plasmid)</th>
<th>XL1-Blue MRF' E. coli Strain</th>
<th>No action shall be taken involving any personal risk or without suitable training.</th>
</tr>
</thead>
</table>

**See toxicological information (Section 11)**
Section 5. Fire-fighting measures

5.1 Extinguishing media

**Suitable extinguishing media**
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain
  - Use an extinguishing agent suitable for the surrounding fire.
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- 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)
- XL1-Blue MRF' E. coli Strain
  - None known.

5.2 Special hazards arising from the substance or mixture

**Specific hazards arising from the chemical**
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain
  - In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- XL1-Blue MRF' E. coli Strain
  - No specific data.

  Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
  - halogenated compounds
  - metal oxide/oxides

5.3 Advice for firefighters

**Special protective actions for fire-fighters**
- pFA-CMV Vector (Fusion Trans-activator Plasmid)
- 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)
- XL1-Blue MRF' E. coli Strain
  - Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel**
- 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. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

**For emergency personnel**
- 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. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate
Section 6. Accidental release measures

For emergency responders:
- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
- **XL1-Blue MRF’ E. coli Strain**

**6.2 Environmental precautions**
- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
- **XL1-Blue MRF’ E. coli Strain**

For spills:
- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for cleaning up:

**Methods for cleaning up**
- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
- **XL1-Blue MRF’ E. coli Strain**

**For emergency responders**:
- If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**6.3 Methods and materials for containment and cleaning up**

**For non-emergency personnel**:
- Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**For emergency responders**:
- If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**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.

**For non-emergency personnel**:
- Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

**7.1 Precautions for safe handling**

**Protective measures**
- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
- **XL1-Blue MRF’ E. coli Strain**

**Advice on general occupational hygiene**
- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**

**For non-emergency personnel**:
- Put on appropriate personal protective equipment (see Section 8).
- Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**For emergency responders**:
- 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.
Section 7. Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

- **XL1-Blue MRF’ E. coli Strain**
  - Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
  - Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

- **XL1-Blue MRF’ E. coli Strain**
  - Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Industrial applications, Professional applications.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>pFA-CMV Vector (Fusion Trans-activator Plasmid)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>XL1-Blue MRF’ E. coli Strain</strong></td>
<td></td>
</tr>
</tbody>
</table>

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

Section 8. Exposure controls/personal protection

8.1 Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XL1-Blue MRF’ E. coli Strain</strong></td>
<td><strong>OSHA PEL 1989 (United States, 3/1989).</strong></td>
</tr>
<tr>
<td>Glycerol</td>
<td>TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hours. Form: Total dust</td>
</tr>
<tr>
<td><strong>OSHA PEL (United States, 2/2013).</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 15 mg/m³ 8 hours. Form: Total dust</td>
</tr>
<tr>
<td><strong>Sodium chloride</strong></td>
<td>None.</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Date of issue: 08/30/2016
Section 8. Exposure controls/personal protection

**Appropriate engineering controls**
Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

**Individual protection measures**

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

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

**Skin protection**

**Hand protection**
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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

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

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

Section 9. Physical and chemical properties

**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.

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

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

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

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

Date of issue: 08/30/2016
### 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><strong>Melting point</strong></td>
<td>0°C (32°F)</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>100°C (212°F)</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not available.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Lower and upper explosive (flammable) limits</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 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.

**Date of issue:** 08/30/2016
**Section 10. Stability and reactivity**

**10.3 Possibility of hazardous reactions**

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
  - Under normal conditions of storage and use, hazardous reactions will not occur.
- **XL1-Blue MRF' E. coli Strain**
  - Under normal conditions of storage and use, hazardous reactions will not occur.

**10.4 Conditions to avoid**

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
  - No specific data.
- **XL1-Blue MRF' E. coli Strain**
  - No specific data.

**10.5 Incompatible materials**

- **pFA-CMV Vector (Fusion Trans-activator Plasmid)**
  - May react or be incompatible with oxidizing materials.
- **XL1-Blue MRF' E. coli Strain**
  - May react or be incompatible with oxidizing materials.

**10.6 Hazardous decomposition products**

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

**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><strong>XL1-Blue MRF' E. coli Strain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3000 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

**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><strong>XL1-Blue MRF' E. coli Strain</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 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>
<tr>
<td>Sodium chloride</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></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>

**Sensitization**

Not available.

**Mutagenicity**

Not available.

**Carcinogenicity**

Not available.

**Reproductive toxicity**

Not available.

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PathDetect pFA-CMV Plasmid, Part Number 219036

Section 11. Toxicological information

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
- : pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF' E. coli Strain
  - Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

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

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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact
- : pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF' E. coli Strain
  - Adverse symptoms may include the following:
    - pain or irritation
    - watering
    - redness

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.

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

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Short term exposure

Potential immediate effects
- : Not available.

Potential delayed effects
- : Not available.
Section 11. Toxicological information

Potential immediate effects: Not available.
Potential delayed effects: Not available.
Potential chronic health effects:

- **General**: No known significant effects or critical hazards.
  - pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF’ E. coli Strain

- **Carcinogenicity**: No known significant effects or critical hazards.
  - pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF’ E. coli Strain

- **Mutagenicity**: No known significant effects or critical hazards.
  - pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF’ E. coli Strain

- **Teratogenicity**: No known significant effects or critical hazards.
  - pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF’ E. coli Strain

- **Developmental effects**: No known significant effects or critical hazards.
  - pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF’ E. coli Strain

- **Fertility effects**: No known significant effects or critical hazards.
  - pFA-CMV Vector (Fusion Trans-activator Plasmid)
  - XL1-Blue MRF’ E. coli Strain

**Numerical measures of toxicity**

**Acute toxicity estimates**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF’ E. coli Strain</td>
<td>300000 mg/kg</td>
</tr>
</tbody>
</table>

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>XL1-Blue MRF’ E. coli Strain</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerol</td>
<td>Acute LC50 54000 mg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td>Sodium chloride</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

Not available.

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Section 12. Ecological information

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF' E. coli Strain</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Glycerol</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information

DOT / IMDG / IATA: Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations: United States inventory (TSCA 8b): All components are listed or exempted.
Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed

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Section 15. Regulatory information

Clean Air Act Section 602
Class I Substances : Not listed
Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed
DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312
Classification : Immediate (acute) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF’ E. coli Strain</td>
<td>≥10 - ≤25%</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

State regulations

Massachusetts : The following components are listed: GLYCERINE MIST
New York : None of the components are listed.
New Jersey : The following components are listed: GLYCEIRN; 1,2,3-PROPANETRIOL
Pennsylvania : The following components are listed: 1,2,3-PROPANETRIOL

California Prop. 65
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL1-Blue MRF’ E. coli Strain</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Tetracycline</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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Section 15. Regulatory information

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list
- Australia: All components are listed or exempted.
- Canada inventory: Not determined.
- China: All components are listed or exempted.
- Europe: 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.

Section 16. Other information

History
- Date of issue: 08/30/2016
- Date of previous issue: 08/28/2014
- Version: 4

Notice to reader
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