

SAFETY DATA SHEET



pCAL-n-FLAG Vector, Part Number 214311

Section 1. Identification

Product identifier : pCAL-n-FLAG Vector, Part Number 214311
Part no. (chemical kit) : 214311
Part no. : pCAL-n-FLAG Vector 214311-51
 pTC 12 Control Vector 214407-56
 XL1-Blue E. coli Strain 200268-81

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

Material uses : Analytical reagent.
 pCAL-n-FLAG Vector 0.02 ml
 pTC 12 Control Vector 0.01 ml (10 µg 1 µg/µl)
 XL1-Blue E. coli Strain 0.5 ml

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

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

Section 2. Hazard(s) identification

Classification of the substance or mixture

Not classified.

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

GHS label elements

Signal word : pCAL-n-FLAG Vector No signal word.
 pTC 12 Control Vector No signal word.
 XL1-Blue E. coli Strain No signal word.

Hazard statements : pCAL-n-FLAG Vector No known significant effects or critical hazards.
 pTC 12 Control Vector No known significant effects or critical hazards.
 XL1-Blue E. coli Strain No known significant effects or critical hazards.

Precautionary statements

Prevention : pCAL-n-FLAG Vector Not applicable.
 pTC 12 Control Vector Not applicable.
 XL1-Blue E. coli Strain Not applicable.

Response : pCAL-n-FLAG Vector Not applicable.
 pTC 12 Control Vector Not applicable.
 XL1-Blue E. coli Strain Not applicable.

Storage : pCAL-n-FLAG Vector Not applicable.
 pTC 12 Control Vector Not applicable.
 XL1-Blue E. coli Strain Not applicable.

Disposal : pCAL-n-FLAG Vector Not applicable.
 pTC 12 Control Vector Not applicable.
 XL1-Blue E. coli Strain Not applicable.

Supplemental label elements

Section 2. Hazard(s) identification

Additional warning phrases : pCAL-n-FLAG Vector Not applicable.
 pTC 12 Control Vector Not applicable.
 XL1-Blue E. coli Strain Not applicable.

Other hazards which do not result in classification : pCAL-n-FLAG Vector None known.
 pTC 12 Control Vector None known.
 XL1-Blue E. coli Strain None known.

Section 3. Composition and ingredient information

Substance/mixture : pCAL-n-FLAG Vector Mixture
 pTC 12 Control Vector Mixture
 XL1-Blue E. coli Strain Mixture

CAS number/other identifiers

| Ingredient name | % (w/w) | CAS number |
|-------------------------|-----------|------------|
| XL1-Blue E. coli Strain | | |
| Glycerol | ≥10 - ≤30 | 56-81-5 |

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

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : pCAL-n-FLAG Vector Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
 pTC 12 Control Vector Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
 XL1-Blue 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 : pCAL-n-FLAG Vector Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
 pTC 12 Control Vector Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
 XL1-Blue 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 : pCAL-n-FLAG Vector Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
 pTC 12 Control Vector Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
 XL1-Blue E. coli Strain Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Section 4. First aid measures

| | | |
|------------------|-------------------------|---|
| Ingestion | : pCAL-n-FLAG Vector | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |
| | pTC 12 Control Vector | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |
| | XL1-Blue 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. |

Most important symptoms/effects, acute and delayed

Potential acute health effects

| | | |
|---------------------|--|---|
| Eye contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Inhalation | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Skin contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Ingestion | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

Over-exposure signs/symptoms

| | | |
|---------------------|--|---|
| Eye contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |
| Inhalation | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |
| Skin contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |
| Ingestion | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |

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

| | | |
|---------------------------|-------------------------|---|
| Notes to physician | : pCAL-n-FLAG Vector | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | pTC 12 Control Vector | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | XL1-Blue E. coli Strain | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been |

Section 4. First aid measures

| | | |
|-----------------------------------|--|--|
| Specific treatments | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | ingested or inhaled. No specific treatment. No specific treatment. No specific treatment. |
| Protection of first-aiders | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. |

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

| | | |
|---|--|---|
| Suitable extinguishing media | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | None known. None known. None known. |
| Specific hazards arising from the chemical | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. |
| Hazardous thermal decomposition products | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides |
| Special protective actions for fire-fighters | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue 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. 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. 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 | : pCAL-n-FLAG Vector pTC 12 Control Vector | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive |

Section 5. Firefighting measures

XL1-Blue E. coli Strain

pressure mode.
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: pCAL-n-FLAG Vector

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

pTC 12 Control Vector

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

XL1-Blue 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

: pCAL-n-FLAG Vector

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

pTC 12 Control Vector

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

XL1-Blue 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".

Environmental precautions

: pCAL-n-FLAG Vector

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

pTC 12 Control Vector

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

XL1-Blue 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).

Methods and material for containment and cleaning up

Section 6. Accidental release measures

| | | |
|--------------------------------|-------------------------|---|
| Methods for cleaning up | : pCAL-n-FLAG Vector | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
| | pTC 12 Control Vector | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
| | XL1-Blue 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. |

Section 7. Handling and storage

Precautions for safe handling

| | | |
|---|-------------------------|--|
| Protective measures | : pCAL-n-FLAG Vector | Put on appropriate personal protective equipment (see Section 8). |
| | pTC 12 Control Vector | Put on appropriate personal protective equipment (see Section 8). |
| | XL1-Blue E. coli Strain | Put on appropriate personal protective equipment (see Section 8). |
| Advice on general occupational hygiene | : pCAL-n-FLAG Vector | 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. |
| | pTC 12 Control Vector | 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 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. |

Conditions for safe storage, including any incompatibilities

| | |
|-----------------------|---|
| : pCAL-n-FLAG Vector | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. |
| pTC 12 Control Vector | Store in accordance with local regulations. Store in |

Section 7. Handling and storage

XL1-Blue E. coli Strain

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

Section 8. Exposure controls and personal protection

[Control parameters](#)

[Occupational exposure limits](#)

| Ingredient name | Exposure limits |
|-------------------------------------|---|
| XL1-Blue E. coli Strain Glycerol | Safe Work Australia (Australia, 1/2014). TWA: 10 mg/m ³ 8 hours. |

- 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: 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.

Section 8. Exposure controls and personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

| | | |
|---|--|---|
| Physical state | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Liquid. Liquid. Liquid. |
| Colour | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Odour | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Odour threshold | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| pH | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | 7.5 7.5 7.5 |
| Melting point | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | 0°C (32°F) 0°C (32°F) Not available. |
| Boiling point | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | 100°C (212°F) 100°C (212°F) Not available. |
| Flash point | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Evaporation rate | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Flammability (solid, gas) | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Not applicable. |
| Lower and upper explosive (flammable) limits | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Vapour pressure | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Vapour density | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Relative density | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Solubility | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. |

Section 9. Physical and chemical properties

| | | |
|---|--|--|
| Partition coefficient: n-octanol/water | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Auto-ignition temperature | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Decomposition temperature | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |
| Viscosity | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |

Section 10. Stability and reactivity

| | | |
|---|--|--|
| Reactivity | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | The product is stable. The product is stable. The product is stable. |
| Possibility of hazardous reactions | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |
| Incompatible materials | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. |
| Hazardous decomposition products | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------------------|-----------|---------|-------------|----------|
| XL1-Blue E. coli Strain Glycerol | LD50 Oral | Rat | 12600 mg/kg | - |

Irritation/Corrosion

Section 11. Toxicological information

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------------------|----------------------|---------|-------|-------------------------|-------------|
| XL1-Blue E. coli Strain Glycerol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure : pCAL-n-FLAG Vector
pTC 12 Control Vector
XL1-Blue E. coli Strain

Not available.
Not available.
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

| | | |
|---------------------|--|---|
| Eye contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Inhalation | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Skin contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Ingestion | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

Symptoms related to the physical, chemical and toxicological characteristics

| | | |
|---------------------|--|---|
| Eye contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |
| Inhalation | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |
| Skin contact | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |

Section 11. Toxicological information

| | | |
|------------------|--|---|
| Ingestion | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific data. No specific data. No specific data. |
|------------------|--|---|

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| | | |
|------------------------------|--|---|
| General | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Carcinogenicity | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Mutagenicity | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Teratogenicity | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Developmental effects | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Fertility effects | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------------------|-----------------------------------|----------------------------|----------|
| XL1-Blue E. coli Strain Glycerol | Acute LC50 54000 mg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |

Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|-------------------------------------|--|----------------|------|----------|
| XL1-Blue E. coli Strain Glycerol | 301D Ready Biodegradability - Closed Bottle Test | 93 % - 30 days | - | - |

Section 12. Ecological information

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------------------|--------------------|-----|-----------|
| XL1-Blue E. coli Strain Glycerol | -1.76 | - | low |

Mobility in soil

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

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

Section 13. Disposal considerations

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

Section 14. Transport information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code .

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.

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

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Section 15. Regulatory information

Not listed.

Inventory list

| | |
|--------------------------|--|
| Australia | : All components are listed or exempted. |
| Canada | : Not determined. |
| China | : All components are listed or exempted. |
| Europe | : All components are listed or exempted. |
| Japan | : <input checked="" type="checkbox"/> Japan inventory (ENCS) : All components are listed or exempted. Japan inventory (ISHL) : All components are listed or exempted. |
| Malaysia | : Not determined. |
| New Zealand | : All components are listed or exempted. |
| Philippines | : Not determined. |
| Republic of Korea | : All components are listed or exempted. |
| Taiwan | : All components are listed or exempted. |
| Thailand | : <input checked="" type="checkbox"/> Not determined. |
| Turkey | : Not determined. |
| United States | : All components are listed or exempted. |
| Viet Nam | : <input checked="" type="checkbox"/> Not determined. |

Section 16. Any other relevant information

History

| | |
|---------------------------------------|--------------|
| Date of issue/Date of revision | : 25/09/2018 |
| Date of previous issue | : 27/03/2017 |
| Version | : 5 |

| | |
|-----------------------------|---|
| Key to abbreviations | : ADG = Australian Dangerous Goods ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC = National Occupational Health and Safety Commission SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations |
|-----------------------------|---|

Procedure used to derive the classification

| Classification | Justification |
|-----------------|---------------|
| Not classified. | |

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.