

SAFETY DATA SHEET



pCAL-n-FLAG Vector, Part Number 214311

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

1.1 Product identifier

Product name : 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

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

Material uses : Analytical reagent.
pCAL-n-FLAG Vector 0.02 ml (20 µg 1 µg/µl)
pTC 12 Control Vector 0.01 ml (10 µg 1 µg/µl)
XL1-Blue E. coli Strain 0.5 ml

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

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

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

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

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word : 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.

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SECTION 2: Hazards identification

Precautionary statements

| | | |
|---|--|---|
| Prevention | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Not applicable. |
| Response | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Not applicable. |
| Storage | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Not applicable. |
| Disposal | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Not applicable. |
| Hazardous ingredients | : XL1-Blue E. coli Strain | Not applicable. |
| Supplemental label elements | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Safety data sheet available on request. |
| Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Not applicable. |

Special packaging requirements

| | | |
|----------------------------------|--|---|
| Tactile warning of danger | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not applicable. Not applicable. Not applicable. |
|----------------------------------|--|---|

2.3 Other hazards

| | | |
|--|--|---|
| Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | This mixture does not contain any substances that are assessed to be a PBT or a vPvB. This mixture does not contain any substances that are assessed to be a PBT or a vPvB. This mixture does not contain any substances that are assessed to be a PBT or a vPvB. |
| Other hazards which do not result in classification | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | None known. None known. None known. |

SECTION 3: Composition/information on ingredients

| | | |
|-----------------------|--|-------------------------------|
| 3.1 Substances | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Mixture Mixture Mixture |
|-----------------------|--|-------------------------------|

| Product/ingredient name | Identifiers | % | Regulation (EC) No. 1272/2008 [CLP] | Type |
|---|---|-----------|-------------------------------------|------|
| <input checked="" type="checkbox"/> XL1-Blue E. coli Strain | | ≥10 - ≤25 | Not classified. | [2] |
| Glycerol | REACH #: Annex V EC: 200-289-5 CAS: 56-81-5 | | | |
| Sodium chloride | EC: 231-598-3 CAS: 7647-14-5 | ≤3 | Eye Irrit. 2, H319 | [1] |
| 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.

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SECTION 3: Composition/information on ingredients

Type

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

SECTION 4: First aid measures

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

SECTION 4: First aid measures

4.2 Most important symptoms and effects, both 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. |

4.3 Indication of any immediate medical attention and special treatment needed

| | | |
|----------------------------|--|---|
| Notes to physician | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| Specific treatments | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | No specific treatment. No specific treatment. No specific treatment. |

SECTION 5: Firefighting measures

5.1 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. |

5.2 Special hazards arising from the substance or mixture

| | | |
|--|--|---|
| Hazards from the substance or mixture | : 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. |
|--|--|---|

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SECTION 5: Firefighting measures

| | | |
|--------------------------------------|--|---|
| Hazardous combustion 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 |
|--------------------------------------|--|---|

5.3 Advice for firefighters

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

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SECTION 6: Accidental release measures

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".

6.2 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).

6.3 Methods and material for containment and cleaning up

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.

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 : 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

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SECTION 7: Handling and storage

handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

| | | |
|----------------|-------------------------|---|
| Storage | : 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 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. |
| | XL1-Blue 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. |

7.3 Specific end use(s)

| | | |
|---|--|---|
| Recommendations | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. |
| Industrial sector specific solutions | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | Not available. Not available. Not available. |

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

| Product/ingredient name | Exposure limit values |
|-------------------------------------|---|
| XL1-Blue E. coli Strain Glycerol | EH40/2005 WELs (United Kingdom (UK), 1/2020). TWA: 10 mg/m ³ 8 hours. Form: Mist |

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SECTION 8: Exposure controls/personal protection

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

DNELs/DMELs

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|---|------|-----------------------|---------------------------|--------------------|----------|
| <input checked="" type="checkbox"/> KL1-Blue E. coli Strain Sodium chloride | DNEL | Short term Oral | 126.65 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Oral | 126.65 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Dermal | 126.65 mg/kg bw/day | General population | Systemic |
| | DNEL | Long term Dermal | 126.65 mg/kg bw/day | General population | Systemic |
| | DNEL | Short term Dermal | 295.52 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Dermal | 295.52 mg/kg bw/day | Workers | Systemic |
| | DNEL | Short term Inhalation | 443.28 mg/m ³ | General population | Systemic |
| | DNEL | Long term Inhalation | 443.28 mg/m ³ | General population | Systemic |
| | DNEL | Short term Inhalation | 2068.62 mg/m ³ | Workers | Systemic |
| | DNEL | Long term Inhalation | 2068.62 mg/m ³ | Workers | Systemic |

PNECs

No PNECs available

8.2 Exposure controls

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

Individual protection measures

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

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

Skin protection

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

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

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SECTION 8: Exposure controls/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.
- 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 | : 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/freezing point | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | 0°C 0°C Not available. |
| Initial boiling point and boiling range | : pCAL-n-FLAG Vector pTC 12 Control Vector XL1-Blue E. coli Strain | 100°C 100°C 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. |
| Upper/lower flammability or explosive 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. |

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SECTION 9: Physical and chemical properties

| | | |
|---|-------------------------|--|
| Solubility(ies) | : pCAL-n-FLAG Vector | Easily soluble in the following materials: cold water and hot water. |
| | pTC 12 Control Vector | Easily soluble in the following materials: cold water and hot water. |
| | XL1-Blue E. coli Strain | Easily soluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/water | : pCAL-n-FLAG Vector | Not available. |
| | pTC 12 Control Vector | Not available. |
| | XL1-Blue E. coli Strain | Not available. |
| Auto-ignition temperature | : pCAL-n-FLAG Vector | Not available. |
| | pTC 12 Control Vector | Not available. |
| | XL1-Blue E. coli Strain | Not available. |
| Decomposition temperature | : pCAL-n-FLAG Vector | Not available. |
| | pTC 12 Control Vector | Not available. |
| | XL1-Blue E. coli Strain | Not available. |
| Viscosity | : pCAL-n-FLAG Vector | Not available. |
| | pTC 12 Control Vector | Not available. |
| | XL1-Blue E. coli Strain | Not available. |
| Explosive properties | : pCAL-n-FLAG Vector | Not available. |
| | pTC 12 Control Vector | Not available. |
| | XL1-Blue E. coli Strain | Not available. |
| Oxidising properties | : pCAL-n-FLAG Vector | Not available. |
| | pTC 12 Control Vector | Not available. |
| | XL1-Blue E. coli Strain | Not available. |

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

| | | |
|--|-------------------------|--|
| 10.1 Reactivity | : pCAL-n-FLAG Vector | No specific test data related to reactivity available for this product or its ingredients. |
| | pTC 12 Control Vector | No specific test data related to reactivity available for this product or its ingredients. |
| | XL1-Blue E. coli Strain | No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability | : pCAL-n-FLAG Vector | The product is stable. |
| | pTC 12 Control Vector | The product is stable. |
| | XL1-Blue E. coli Strain | The product is stable. |
| 10.3 Possibility of hazardous reactions | : pCAL-n-FLAG Vector | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | pTC 12 Control Vector | Under normal conditions of storage and use, hazardous reactions will not occur. |
| | XL1-Blue E. coli Strain | Under normal conditions of storage and use, hazardous reactions will not occur. |
| 10.4 Conditions to avoid | : pCAL-n-FLAG Vector | No specific data. |
| | pTC 12 Control Vector | No specific data. |
| | XL1-Blue E. coli Strain | No specific data. |
| 10.5 Incompatible materials | : pCAL-n-FLAG Vector | May react or be incompatible with oxidising materials. |
| | pTC 12 Control Vector | May react or be incompatible with oxidising materials. |
| | XL1-Blue E. coli Strain | May react or be incompatible with oxidising materials. |

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SECTION 10: Stability and reactivity

| | | |
|--|--|--|
| 10.6 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

11.1 Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|-----------|---------|------------|----------|
| XL1-Blue E. coli Strain Sodium chloride | LD50 Oral | Rat | 3000 mg/kg | - |

Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|--|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| XL1-Blue E. coli Strain Sodium chloride | 3000 | N/A | N/A | N/A | N/A |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--|--------------------------|---------|-------|-----------------|-------------|
| XL1-Blue E. coli Strain Sodium chloride | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 mg | - |
| | Eyes - Moderate irritant | Rabbit | - | 10 mg | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 mg | - |

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure

: pCAL-n-FLAG Vector Not available.
pTC 12 Control Vector Not available.
XL1-Blue E. coli Strain Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : 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.

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SECTION 11: Toxicological information

| | | |
|---------------------|--|---|
| 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. |
| 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. |
| 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. |

Symptoms related to the physical, chemical and toxicological characteristics

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

SECTION 12: Ecological information

12.1 Toxicity

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SECTION 12: Ecological information

| Product/ingredient name | Result | Species | Exposure |
|---|-------------------------------------|---|----------|
| <input checked="" type="checkbox"/> L1-Blue E. coli Strain Sodium chloride | Acute EC50 4.74 g/L Fresh water | Algae - Chlamydomonas reinhardtii | 96 hours |
| | Acute EC50 519.6 mg/l Fresh water | Crustaceans - Cypris subglobosa | 48 hours |
| | Acute IC50 6.87 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Acute LC50 1000000 µg/l Fresh water | Fish - Morone saxatilis - Larvae | 96 hours |
| | Chronic LC10 781 mg/l Fresh water | Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) | 3 weeks |
| | Chronic NOEC 6 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Chronic NOEC 0.314 g/L Fresh water | Daphnia - Daphnia pulex | 21 days |
| Chronic NOEC 100 mg/l Fresh water | Fish - Gambusia holbrooki - Adult | 8 weeks | |

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

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

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.

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SECTION 14: Transport information

| | ADR/RID | IMDG | IATA |
|---------------------------------|----------------|----------------|----------------|
| 14.1 UN number | Not regulated. | Not regulated. | Not regulated. |
| 14.2 UN proper shipping name | - | - | - |
| 14.3 Transport hazard class(es) | - | - | - |
| 14.4 Packing group | - | - | - |
| 14.5 Environmental hazards | No. | No. | No. |

Additional information

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 IMO instruments : 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

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

Other EU regulations

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

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SECTION 15: Regulatory information

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

| | |
|-----------------------------------|---|
| Abbreviations and acronyms | : ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration RRN = REACH Registration Number vPvB = Very Persistent and Very Bioaccumulative |
|-----------------------------------|---|

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

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

Full text of abbreviated H statements

| | |
|--|--------------------------------|
| XL1-Blue E. coli Strain H319 | Causes serious eye irritation. |
|--|--------------------------------|

Full text of classifications [CLP/GHS]

| | |
|--|--|
| <input checked="" type="checkbox"/> XL1-Blue E. coli Strain Eye Irrit. 2 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 |
|--|--|

Date of issue/ Date of revision : 22/03/2021

Date of previous issue : 25/09/2018

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SECTION 16: Other information

Version : 3

Notice to reader

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