Conforms to HPR 2015

SAFETY DATA SHEET

Agilent Technologies

pCAL-n-EK Vector, Part Number 214310

Section 1. Identification

Product identifier : pCAL-n-EK Vector, Part Number 214310

Part no. (chemical kit) : 214310

Part no. :

pCal-n-EK	214310-51
pTC 12 Control Vector	214407-56
XL1-Blue E. coli Strain	200268-81

Material uses : Analytical reagent.

pCal-n-EK	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

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

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

XL1-Blue E. coli Strain

H319 EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms : XL1-Blue E. coli Strain

Signal word :

pCal-n-EK	No signal word.
pTC 12 Control Vector	No signal word.
XL1-Blue E. coli Strain	Warning

Hazard statements :

pCal-n-EK	No known significant effects or critical hazards.
pTC 12 Control Vector	No known significant effects or critical hazards.
XL1-Blue E. coli Strain	H319 - Causes serious eye irritation.

Precautionary statements

Prevention :

pCal-n-EK	Not applicable.
pTC 12 Control Vector	Not applicable.
XL1-Blue E. coli Strain	P280 - Wear eye or face protection.

Response :

pCal-n-EK	Not applicable.
pTC 12 Control Vector	Not applicable.
XL1-Blue E. coli Strain	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage :

pCal-n-EK	Not applicable.
pTC 12 Control Vector	Not applicable.
XL1-Blue E. coli Strain	Not applicable.

Disposal :

pCal-n-EK	Not applicable.
pTC 12 Control Vector	Not applicable.
XL1-Blue E. coli Strain	Not applicable.

Section 2. Hazard identification

Supplemental label elements :
- pCal-n-EK: None known.
- pTC 12 Control Vector: None known.
- XL1-Blue E. coli Strain: None known.

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

Section 3. Composition/information on ingredients

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

Ingredient name	% (w/w)	CAS number
XL1-Blue E. coli Strain		
Glycerol	10 - 30	56-81-5
Sodium chloride	0.1 - 1	7647-14-5

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-EK: 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. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation :
- pCal-n-EK: 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. 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.

Skin contact :
- pCal-n-EK: 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First-aid measures

Ingestion	:	pCal-n-EK	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 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	pCal-n-EK	No known significant effects or critical hazards.
		pTC 12 Control Vector	No known significant effects or critical hazards.
		XL1-Blue E. coli Strain	Causes serious eye irritation.
Inhalation	:	pCal-n-EK	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.
Skin contact	:	pCal-n-EK	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.
Ingestion	:	pCal-n-EK	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.

Over-exposure signs/symptoms

Eye contact	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	No specific data.
Skin contact	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	No specific data.
Ingestion	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	No specific data.

Section 4. First-aid measures

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

Notes to physician	:	pCal-n-EK	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 ingested or inhaled.
Specific treatments	:	pCal-n-EK	No specific treatment.
		pTC 12 Control Vector	No specific treatment.
		XL1-Blue E. coli Strain	No specific treatment.
Protection of first-aiders	:	pCal-n-EK	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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	:	pCal-n-EK	Use an extinguishing agent suitable for the surrounding fire.
		pTC 12 Control Vector	Use an extinguishing agent suitable for the surrounding fire.
		XL1-Blue E. coli Strain	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	pCal-n-EK	None known.
		pTC 12 Control Vector	None known.
		XL1-Blue E. coli Strain	None known.
Specific hazards arising from the chemical	:	pCal-n-EK	In a fire or if heated, a pressure increase will occur and the container may burst.
		pTC 12 Control Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
		XL1-Blue E. coli Strain	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
Special protective actions for fire-fighters	:	pCal-n-EK	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.
		pTC 12 Control Vector	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
		XL1-Blue 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

Section 5. Fire-fighting measures

without suitable training.

Special protective equipment for fire-fighters :

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

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.

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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel :

pCal-n-EK: 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.

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 spilled 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders :

pCal-n-EK: 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".

pTC 12 Control Vector: 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".

XL1-Blue E. coli Strain: 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".

Environmental precautions :

pCal-n-EK: 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).

pTC 12 Control Vector: 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).

XL1-Blue E. coli Strain: 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).

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

Methods for cleaning up	:	pCal-n-EK	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-EK	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). 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.
Advice on general occupational hygiene	:	pCal-n-EK	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.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities :

pCal-n-EK

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. 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 unlabeled 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
XL1-Blue E. coli Strain Glycerol	**CA Alberta Provincial (Canada, 6/2018).** 8 hrs OEL: 10 mg/m³ 8 hours. Form: Mist **CA Quebec Provincial (Canada, 7/2019).** TWAEV: 10 mg/m³ 8 hours. Form: mist **CA Saskatchewan Provincial (Canada, 7/2013).** STEL: 20 mg/m³ 15 minutes. Form: mist TWA: 10 mg/m³ 8 hours. Form: mist **CA British Columbia Provincial (Canada, 1/2020).** TWA: 3 mg/m³ 8 hours. Form: respirable mist TWA: 10 mg/m³ 8 hours. Form: total mist

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.

Section 8. Exposure controls/personal protection

Individual protection measures

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

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

Skin protection

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

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

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

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

Section 9. Physical and chemical properties

Appearance

Physical state :	pCal-n-EK	Liquid.
	pTC 12 Control Vector	Liquid.
	XL1-Blue E. coli Strain	Liquid.
Color :	pCal-n-EK	Not available.
	pTC 12 Control Vector	Not available.
	XL1-Blue E. coli Strain	Not available.
Odor :	pCal-n-EK	Not available.
	pTC 12 Control Vector	Not available.
	XL1-Blue E. coli Strain	Not available.
Odor threshold :	pCal-n-EK	Not available.
	pTC 12 Control Vector	Not available.
	XL1-Blue E. coli Strain	Not available.
pH :	pCal-n-EK	7.5
	pTC 12 Control Vector	7.5
	XL1-Blue E. coli Strain	7.5
Melting point :	pCal-n-EK	0°C (32°F)
	pTC 12 Control Vector	0°C (32°F)
	XL1-Blue E. coli Strain	Not available.
Boiling point :	pCal-n-EK	100°C (212°F)
	pTC 12 Control Vector	100°C (212°F)
	XL1-Blue E. coli Strain	Not available.
Flash point :	pCal-n-EK	Not available.
	pTC 12 Control Vector	Not available.
	XL1-Blue E. coli Strain	Not available.
Evaporation rate :	pCal-n-EK	Not available.
	pTC 12 Control Vector	Not available.
	XL1-Blue E. coli Strain	Not available.
Flammability (solid, gas) :	pCal-n-EK	Not applicable.
	pTC 12 Control Vector	Not applicable.
	XL1-Blue E. coli Strain	Not applicable.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	:	pCal-n-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.
Vapor pressure	:	pCal-n-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.
Vapor density	:	pCal-n-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.
Relative density	:	pCal-n-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.
Solubility	:	pCal-n-EK	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-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.
Auto-ignition temperature	:	pCal-n-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.
Decomposition temperature	:	pCal-n-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.
Viscosity	:	pCal-n-EK	Not available.
		pTC 12 Control Vector	Not available.
		XL1-Blue E. coli Strain	Not available.

Section 10. Stability and reactivity

Reactivity	:	pCal-n-EK	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.
Chemical stability	:	pCal-n-EK	The product is stable.
		pTC 12 Control Vector	The product is stable.
		XL1-Blue E. coli Strain	The product is stable.
Possibility of hazardous reactions	:	pCal-n-EK	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.
Conditions to avoid	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	No specific data.
Incompatible materials	:	pCal-n-EK	May react or be incompatible with oxidizing materials.
		pTC 12 Control Vector	May react or be incompatible with oxidizing materials.
		XL1-Blue E. coli Strain	May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

Hazardous decomposition products :

pCal-n-EK	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
pTC 12 Control Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
XL1-Blue E. coli Strain	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	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Irritation/Corrosion

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

Sensitization

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 the likely routes of exposure :

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

Potential acute health effects

Eye contact :

pCal-n-EK	No known significant effects or critical hazards.
pTC 12 Control Vector	No known significant effects or critical hazards.
XL1-Blue E. coli Strain	Causes serious eye irritation.

Section 11. Toxicological information

Inhalation	:	pCal-n-EK	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.
Skin contact	:	pCal-n-EK	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.
Ingestion	:	pCal-n-EK	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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	No specific data.
Skin contact	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	No specific data.
Ingestion	:	pCal-n-EK	No specific data.
		pTC 12 Control Vector	No specific data.
		XL1-Blue E. coli Strain	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	:	pCal-n-EK	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.
Carcinogenicity	:	pCal-n-EK	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.
Mutagenicity	:	pCal-n-EK	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.
Reproductive toxicity	:	pCal-n-EK	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.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
XL1-Blue E. coli Strain					
XL1-Blue E. coli Strain	300000	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Sodium chloride	3000	N/A	N/A	N/A	N/A

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
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

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	-	-

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 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. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

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 IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : 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 : All components are active or exempted.

Viet Nam : Not determined.

Section 16. Other information

History

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

Date of previous issue : 09/25/2018

Version : 6

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HPR = Hazardous Products Regulations
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)
N/A = Not available
UN = United Nations

Procedure used to derive the classification

Classification	Justification
XL1-Blue E. coli Strain EYE IRRITATION - Category 2A	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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