

SAFETY DATA SHEET

LacSwitch II Inducible Mammalian Expression System, Part Number 217450

Section 1. Identification

Product identifier : LacSwitch II Inducible Mammalian Expression System, Part Number 217450

Part no. (chemical kit) : 217450

Part no. :

PTG 1 Gram	300127-61
pCMVLacI repressor vector	217450-54
pOPRSVI/MCS Vector	217450-55
pOPI3CAT Operator Vector	217450-53
XL1-Blue MR E. coli Strain	200300-81

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

Material uses : Analytical reagent.

PTG 1 Gram	1 g
pCMVLacI repressor vector	0.1 ml (100 µg 1 µg/µl)
pOPRSVI/MCS Vector	0.02 ml (20 µg 1 µg/µl)
pOPI3CAT Operator Vector	0.02 ml (20 µg 1 µg/µl)
XL1-Blue MR 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

PTG 1 Gram

H302	ACUTE TOXICITY (oral) - Category 4
H312	ACUTE TOXICITY (dermal) - Category 4
H332	ACUTE TOXICITY (inhalation) - Category 4

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

GHS label elements

Hazard pictograms : PTG 1 Gram



Signal word :

PTG 1 Gram	WARNING
pCMVLacI repressor vector	No signal word.
pOPRSVI/MCS Vector	No signal word.
pOPI3CAT Operator Vector	No signal word.
XL1-Blue MR E. coli Strain	No signal word.

Hazard statements :

PTG 1 Gram	H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.
pCMVLacI repressor vector	No known significant effects or critical hazards.
pOPRSVI/MCS Vector	No known significant effects or critical hazards.
pOPI3CAT Operator Vector	No known significant effects or critical hazards.
XL1-Blue MR E. coli Strain	No known significant effects or critical hazards.

Section 2. Hazard(s) identification

Precautionary statements

Prevention	: P T GTG 1 Gram	P280 - Wear protective gloves. Wear protective clothing. P271 - Use only outdoors or in a well-ventilated area. P261 - Avoid breathing dust. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
	pCMVLacI repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Response	: P T GTG 1 Gram	P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. P302 + P352 + P312 + P363 - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Wash contaminated clothing before reuse.
	pCMVLacI repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Storage	: P T GTG 1 Gram	Not applicable.
	pCMVLacI repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: P T GTG 1 Gram	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	pCMVLacI repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Supplemental label elements		
Additional warning phrases	: P T GTG 1 Gram	Not applicable.
	pCMVLacI repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Not applicable. Not applicable. Not applicable. Not applicable.
Other hazards which do not result in classification	: P T GTG 1 Gram	May form explosible dust-air mixture if dispersed.
	pCMVLacI repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	None known. None known. None known. None known.

Section 3. Composition and ingredient information

Substance/mixture	:	PTG 1 Gram	Substance
		pCMVLacl repressor vector	Mixture
		pOPRSVI/MCS Vector	Mixture
		pOPI3CAT Operator Vector	Mixture
		XL1-Blue MR E. coli Strain	Mixture

CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
PTG 1 Gram Isopropyl-β-D-thiogalactopyranoside	100	367-93-1
XL1-Blue MR 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	:	PTG 1 Gram	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 if irritation occurs.
		pCMVLacl repressor 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.
		pOPRSVI/MCS 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.
		pOPI3CAT Operator 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 MR 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	:	PTG 1 Gram	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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.
		pCMVLacl repressor vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Section 4. First aid measures

	pOPRSVI/MCS Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pOPI3CAT Operator Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	XL1-Blue MR 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	: IPTG 1 Gram	Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	pCMVLacl repressor vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pOPRSVI/MCS Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pOPI3CAT Operator Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	XL1-Blue MR E. coli Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: IPTG 1 Gram	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 necessary, call a poison center or physician. 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.
	pCMVLacl repressor 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.
	pOPRSVI/MCS 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.
	pOPI3CAT Operator 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

Section 4. First aid measures

XL1-Blue MR E. coli Strain

water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
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	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Harmful if inhaled. Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Harmful in contact with skin. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Harmful if swallowed. No known significant effects or critical hazards. 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	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Adverse symptoms may include the following: irritation redness No specific data. No specific data. No specific data. No specific data.
Inhalation	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Adverse symptoms may include the following: respiratory tract irritation coughing No specific data. No specific data. No specific data. No specific data.
Skin contact	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	No specific data. No specific data. No specific data. No specific data.

Section 4. First aid measures

Ingestion	: IPTG 1 Gram	No specific data.
	pCMVLacl repressor vector	No specific data.
	pOPRSVI/MCS Vector	No specific data.
	pOPI3CAT Operator Vector	No specific data.
	XL1-Blue MR E. coli Strain	No specific data.

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

Notes to physician	: IPTG 1 Gram	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pCMVLacl repressor vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pOPRSVI/MCS Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pOPI3CAT Operator Vector	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL1-Blue MR E. coli Strain	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: IPTG 1 Gram	No specific treatment.
	pCMVLacl repressor vector	No specific treatment.
	pOPRSVI/MCS Vector	No specific treatment.
	pOPI3CAT Operator Vector	No specific treatment.
	XL1-Blue MR E. coli Strain	No specific treatment.
Protection of first-aiders	: IPTG 1 Gram	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
	pCMVLacl repressor vector	No action shall be taken involving any personal risk or without suitable training.
	pOPRSVI/MCS Vector	No action shall be taken involving any personal risk or without suitable training.
	pOPI3CAT Operator Vector	No action shall be taken involving any personal risk or without suitable training.
	XL1-Blue MR E. coli Strain	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	: IPTG 1 Gram	Use dry chemical powder.
	pCMVLacl repressor vector	Use an extinguishing agent suitable for the surrounding fire.
	pOPRSVI/MCS Vector	Use an extinguishing agent suitable for the surrounding fire.
	pOPI3CAT Operator Vector	Use an extinguishing agent suitable for the surrounding fire.
	XL1-Blue MR E. coli Strain	Use an extinguishing agent suitable for the surrounding fire.

Section 5. Firefighting measures

Unsuitable extinguishing media	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture. None known. None known. None known. None known.
Specific hazards arising from the chemical	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	May form explosible dust-air mixture if dispersed. 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. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR E. coli Strain	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides No specific data. No specific data. No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide
Special protective actions for fire-fighters	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS Vector pOPI3CAT Operator Vector XL1-Blue MR 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. 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. 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	: IPTG 1 Gram pCMVLacl repressor vector pOPRSVI/MCS 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 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

pOPI3CAT Operator Vector	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.
XL1-Blue MR 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	:  PTG 1 Gram	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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
pCMVLacI repressor 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.
pOPRSVI/MCS 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.
pOPI3CAT Operator 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 MR 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	:  PTG 1 Gram	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".
pCMVLacI repressor 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".
pOPRSVI/MCS 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".
pOPI3CAT Operator 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 MR E. coli Strain		If specialised clothing is required to deal with the

Section 6. Accidental release measures

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 : PTG 1 Gram

pCMVLacl repressor 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).
pOPRSVI/MCS 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).
pOPI3CAT Operator 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 MR 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

Methods for cleaning up : PTG 1 Gram

pCMVLacl repressor vector	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
pOPRSVI/MCS 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.
pOPI3CAT Operator 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 MR 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 :  PTG 1 Gram

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

pCMVLacl repressor vector Put on appropriate personal protective equipment (see Section 8).

pOPRSVI/MCS Vector Put on appropriate personal protective equipment (see Section 8).

pOPI3CAT Operator Vector Put on appropriate personal protective equipment (see Section 8).

XL1-Blue MR E. coli Strain Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene :  PTG 1 Gram

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.

pCMVLacl repressor 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.

pOPRSVI/MCS 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.

pOPI3CAT Operator 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 MR 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

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities :  PTG 1 Gram

protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.

pCMVLacI repressor 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.

pOPRSVI/MCS 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.

pOPI3CAT Operator 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 MR 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.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
XL1-Blue MR 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.
- 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** :
- | | |
|----------------------------|---------|
| PTG 1 Gram | Solid. |
| pCMVLacl repressor vector | Liquid. |
| pOPRSVI/MCS Vector | Liquid. |
| pOPI3CAT Operator Vector | Liquid. |
| XL1-Blue MR E. coli Strain | Liquid. |
- Colour** :
- | | |
|----------------------------|----------------|
| PTG 1 Gram | Off-white. |
| pCMVLacl repressor vector | Not available. |
| pOPRSVI/MCS Vector | Not available. |
| pOPI3CAT Operator Vector | Not available. |
| XL1-Blue MR E. coli Strain | Not available. |

Section 9. Physical and chemical properties

Odour	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
Odour threshold	XL1-Blue MR E. coli Strain	Not available.
	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
pH	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	7.5
Melting point	pOPRSVI/MCS Vector	7.5
	pOPI3CAT Operator Vector	7.5
	XL1-Blue MR E. coli Strain	7
	: PTG 1 Gram	>109°C (>228.2°F)
Boiling point	pCMVLacl repressor vector	0°C (32°F)
	pOPRSVI/MCS Vector	0°C (32°F)
	pOPI3CAT Operator Vector	0°C (32°F)
	XL1-Blue MR E. coli Strain	Not available.
Flash point	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	100°C (212°F)
	pOPRSVI/MCS Vector	100°C (212°F)
	pOPI3CAT Operator Vector	100°C (212°F)
Evaporation rate	XL1-Blue MR E. coli Strain	Not available.
	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
Flammability (solid, gas)	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not applicable.
Lower and upper explosive (flammable) limits	pOPRSVI/MCS Vector	Not applicable.
	pOPI3CAT Operator Vector	Not applicable.
	XL1-Blue MR E. coli Strain	Not applicable.
	: PTG 1 Gram	Not available.
Vapour pressure	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
Vapour density	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
Relative density	XL1-Blue MR E. coli Strain	Not available.
	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
	: PTG 1 Gram	Not available.

Section 9. Physical and chemical properties

Solubility	: PTG 1 Gram	Easily soluble in the following materials: cold water and hot water.
	pCMVLacl repressor vector	Easily soluble in the following materials: cold water and hot water.
	pOPRSVI/MCS Vector	Easily soluble in the following materials: cold water and hot water.
	pOPI3CAT Operator Vector	Easily soluble in the following materials: cold water and hot water.
	XL1-Blue MR E. coli Strain	Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: PTG 1 Gram	-1.26
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
Auto-ignition temperature	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
Decomposition temperature	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.
Viscosity	: PTG 1 Gram	Not available.
	pCMVLacl repressor vector	Not available.
	pOPRSVI/MCS Vector	Not available.
	pOPI3CAT Operator Vector	Not available.
	XL1-Blue MR E. coli Strain	Not available.

Section 10. Stability and reactivity

Reactivity	: PTG 1 Gram	No specific test data related to reactivity available for this product or its ingredients.
	pCMVLacl repressor vector	No specific test data related to reactivity available for this product or its ingredients.
	pOPRSVI/MCS Vector	No specific test data related to reactivity available for this product or its ingredients.
	pOPI3CAT Operator Vector	No specific test data related to reactivity available for this product or its ingredients.
	XL1-Blue MR E. coli Strain	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: PTG 1 Gram	The product is stable.
	pCMVLacl repressor vector	The product is stable.
	pOPRSVI/MCS Vector	The product is stable.
	pOPI3CAT Operator Vector	The product is stable.
	XL1-Blue MR E. coli Strain	The product is stable.
Possibility of hazardous reactions	: PTG 1 Gram	Under normal conditions of storage and use, hazardous reactions will not occur.
	pCMVLacl repressor vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pOPRSVI/MCS Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	pOPI3CAT Operator Vector	Under normal conditions of storage and use, hazardous reactions will not occur.
	XL1-Blue MR E. coli Strain	Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid	: IPTG 1 Gram	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
	pCMVLacl repressor vector	No specific data.
	pOPRSVI/MCS Vector	No specific data.
	pOPI3CAT Operator Vector	No specific data.
	XL1-Blue MR E. coli Strain	No specific data.
Incompatible materials	: IPTG 1 Gram	Reactive or incompatible with the following materials: oxidizing materials
	pCMVLacl repressor vector	May react or be incompatible with oxidising materials.
	pOPRSVI/MCS Vector	May react or be incompatible with oxidising materials.
	pOPI3CAT Operator Vector	May react or be incompatible with oxidising materials.
	XL1-Blue MR E. coli Strain	May react or be incompatible with oxidising materials.
Hazardous decomposition products	: IPTG 1 Gram	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pCMVLacl repressor vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pOPRSVI/MCS Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pOPI3CAT Operator Vector	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	XL1-Blue MR 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 MR E. coli Strain Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
XL1-Blue MR 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.

Section 11. Toxicological information

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 : **PTG 1 Gram** Not available.
 pCMVLacl repressor vector Not available.
 pOPRSVI/MCS Vector Not available.
 pOPI3CAT Operator Vector Not available.
 XL1-Blue MR E. coli Strain Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : **PTG 1 Gram** Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
 pCMVLacl repressor vector No known significant effects or critical hazards.
 pOPRSVI/MCS Vector No known significant effects or critical hazards.
 pOPI3CAT Operator Vector No known significant effects or critical hazards.
 XL1-Blue MR E. coli Strain No known significant effects or critical hazards.

Inhalation : **PTG 1 Gram** Harmful if inhaled. Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
 pCMVLacl repressor vector No known significant effects or critical hazards.
 pOPRSVI/MCS Vector No known significant effects or critical hazards.
 pOPI3CAT Operator Vector No known significant effects or critical hazards.
 XL1-Blue MR E. coli Strain No known significant effects or critical hazards.

Skin contact : **PTG 1 Gram** Harmful in contact with skin.
 pCMVLacl repressor vector No known significant effects or critical hazards.
 pOPRSVI/MCS Vector No known significant effects or critical hazards.
 pOPI3CAT Operator Vector No known significant effects or critical hazards.
 XL1-Blue MR E. coli Strain No known significant effects or critical hazards.

Ingestion : **PTG 1 Gram** Harmful if swallowed.
 pCMVLacl repressor vector No known significant effects or critical hazards.
 pOPRSVI/MCS Vector No known significant effects or critical hazards.
 pOPI3CAT Operator Vector No known significant effects or critical hazards.
 XL1-Blue MR E. coli Strain No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : **PTG 1 Gram** Adverse symptoms may include the following:
 irritation
 redness
 pCMVLacl repressor vector No specific data.
 pOPRSVI/MCS Vector No specific data.
 pOPI3CAT Operator Vector No specific data.
 XL1-Blue MR E. coli Strain No specific data.

Inhalation : **PTG 1 Gram** Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
 pCMVLacl repressor vector No specific data.
 pOPRSVI/MCS Vector No specific data.
 pOPI3CAT Operator Vector No specific data.
 XL1-Blue MR E. coli Strain No specific data.

Section 11. Toxicological information

Skin contact	:	PTG 1 Gram	No specific data.
		pCMVLacl repressor vector	No specific data.
		pOPRSVI/MCS Vector	No specific data.
		pOPI3CAT Operator Vector	No specific data.
		XL1-Blue MR E. coli Strain	No specific data.
Ingestion	:	PTG 1 Gram	No specific data.
		pCMVLacl repressor vector	No specific data.
		pOPRSVI/MCS Vector	No specific data.
		pOPI3CAT Operator Vector	No specific data.
		XL1-Blue MR E. coli Strain	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	:	PTG 1 Gram	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
		pCMVLacl repressor vector	No known significant effects or critical hazards.
		pOPRSVI/MCS Vector	No known significant effects or critical hazards.
		pOPI3CAT Operator Vector	No known significant effects or critical hazards.
		XL1-Blue MR E. coli Strain	No known significant effects or critical hazards.
Carcinogenicity	:	PTG 1 Gram	No known significant effects or critical hazards.
		pCMVLacl repressor vector	No known significant effects or critical hazards.
		pOPRSVI/MCS Vector	No known significant effects or critical hazards.
		pOPI3CAT Operator Vector	No known significant effects or critical hazards.
		XL1-Blue MR E. coli Strain	No known significant effects or critical hazards.
Mutagenicity	:	PTG 1 Gram	No known significant effects or critical hazards.
		pCMVLacl repressor vector	No known significant effects or critical hazards.
		pOPRSVI/MCS Vector	No known significant effects or critical hazards.
		pOPI3CAT Operator Vector	No known significant effects or critical hazards.
		XL1-Blue MR E. coli Strain	No known significant effects or critical hazards.
Teratogenicity	:	PTG 1 Gram	No known significant effects or critical hazards.
		pCMVLacl repressor vector	No known significant effects or critical hazards.
		pOPRSVI/MCS Vector	No known significant effects or critical hazards.
		pOPI3CAT Operator Vector	No known significant effects or critical hazards.
		XL1-Blue MR E. coli Strain	No known significant effects or critical hazards.
Developmental effects	:	PTG 1 Gram	No known significant effects or critical hazards.
		pCMVLacl repressor vector	No known significant effects or critical hazards.
		pOPRSVI/MCS Vector	No known significant effects or critical hazards.
		pOPI3CAT Operator Vector	No known significant effects or critical hazards.
		XL1-Blue MR E. coli Strain	No known significant effects or critical hazards.
Fertility effects	:	PTG 1 Gram	No known significant effects or critical hazards.
		pCMVLacl repressor vector	No known significant effects or critical hazards.
		pOPRSVI/MCS Vector	No known significant effects or critical hazards.
		pOPI3CAT Operator Vector	No known significant effects or critical hazards.
		XL1-Blue MR E. coli Strain	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 11. Toxicological information

Section 12. Ecological information

Toxicity

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

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
IPTG 1 Gram Isopropyl-β-D-thiogalactopyranoside	-1.26	-	low
XL1-Blue MR 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

Not listed.

Inventory list

Australia	: Not determined.
Canada	: <input checked="" type="checkbox"/> Not determined.
China	: All components are listed or exempted.
Europe	: Not determined.
Japan	: Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
Malaysia	: Not determined.
New Zealand	: <input checked="" type="checkbox"/> Not determined.
Philippines	: Not determined.
Republic of Korea	: <input checked="" type="checkbox"/> Not determined.
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 : 23/03/2018

Date of previous issue : 11/05/2016

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

Section 16. Any other relevant information

SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
PTG 1 Gram Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332	Expert judgment Expert judgment On basis of test data

References : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

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