




Section 2. Hazard(s) identification

Other hazards which do not result in classification :  G1 electroporation-competent cells None known.
pUC 18 DNA Control Plasmid None known.

Section 3. Composition and ingredient information

Substance/mixture :  G1 electroporation-competent cells Mixture
pUC 18 DNA Control Plasmid Mixture

CAS number/other identifiers





Ingredient name	% (w/w)	CAS number
 G1 electroporation-competent cells		
Glycerol	≤10	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	:  G1 electroporation-competent cells	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.
	pUC 18 DNA Control Plasmid	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	:  G1 electroporation-competent cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	pUC 18 DNA Control Plasmid	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	:  G1 electroporation-competent cells	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:  G1 electroporation-competent cells	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.
	pUC 18 DNA Control Plasmid	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

Section 4. First aid measures

Potential acute health effects

Eye contact	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
Ingestion	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Inhalation	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Skin contact	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
Ingestion	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.

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

Notes to physician	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	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	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No specific treatment. No specific treatment.
Protection of first-aiders	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.





See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media




Suitable extinguishing media	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	None known. None known.

Section 5. Firefighting measures

Specific hazards arising from the chemical	:  G1 electroporation-competent cells pUC 18 DNA Control Plasmid	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	:  G1 electroporation-competent cells pUC 18 DNA Control Plasmid	Decomposition products may include the following materials: carbon dioxide carbon monoxide No specific data.
Special protective actions for fire-fighters	:  G1 electroporation-competent cells pUC 18 DNA Control Plasmid	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	:  G1 electroporation-competent cells pUC 18 DNA Control Plasmid	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.


Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:  G1 electroporation-competent cells pUC 18 DNA Control Plasmid	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	:  G1 electroporation-competent cells pUC 18 DNA Control Plasmid	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".
Environmental precautions	:  G1 electroporation-competent cells pUC 18 DNA Control Plasmid	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). 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).




Section 6. Accidental release measures

Methods and material for containment and cleaning up

Methods for cleaning up	:  G1 electroporation-competent cells	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.
	pUC 18 DNA Control Plasmid	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	:  G1 electroporation-competent cells	Put on appropriate personal protective equipment (see Section 8).
	pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:  G1 electroporation-competent cells	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.
	pUC 18 DNA Control Plasmid	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:  G1 electroporation-competent cells	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.
	pUC 18 DNA Control Plasmid	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in 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
TG1 electroporation-competent cells 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** : 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** : TG1 electroporation-competent cells Liquid.
pUC 18 DNA Control Plasmid Liquid.
- Colour** : TG1 electroporation-competent cells Not available.
pUC 18 DNA Control Plasmid Not available.
- Odour** : TG1 electroporation-competent cells Not available.
pUC 18 DNA Control Plasmid Not available.
- Odour threshold** : TG1 electroporation-competent cells Not available.
pUC 18 DNA Control Plasmid Not available.
- pH** :

Section 9. Physical and chemical properties

		<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid 7.5</p>
Melting point	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid 0°C (32°F)</p>
Boiling point	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid 100°C (212°F)</p>
Flash point	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Evaporation rate	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Flammability (solid, gas)	:	<p>☒ G1 electroporation-competent cells Not applicable. pUC 18 DNA Control Plasmid Not applicable.</p>
Lower and upper explosive (flammable) limits	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Vapour pressure	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Vapour density	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Relative density	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Solubility	:	<p>☒ G1 electroporation-competent cells Easily soluble in the following materials: cold water and hot water. pUC 18 DNA Control Plasmid Easily soluble in the following materials: cold water and hot water.</p>
Partition coefficient: n-octanol/water	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Auto-ignition temperature	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Decomposition temperature	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>
Viscosity	:	<p>☒ G1 electroporation-competent cells Not available. pUC 18 DNA Control Plasmid Not available.</p>

Section 10. Stability and reactivity

Reactivity	:	<p>☒ G1 electroporation-competent cells No specific test data related to reactivity available for this product or its ingredients. pUC 18 DNA Control Plasmid No specific test data related to reactivity available for this product or its ingredients.</p>
Chemical stability	:	<p>☒ G1 electroporation-competent cells The product is stable. pUC 18 DNA Control Plasmid The product is stable.</p>

Section 10. Stability and reactivity

Possibility of hazardous reactions	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
		Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	No specific data.
		No specific data.
Incompatible materials	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	May react or be incompatible with oxidising materials.
		May react or be incompatible with oxidising materials.
Hazardous decomposition products	: TG1 electroporation-competent cells pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
TG1 electroporation-competent cells Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
TG1 electroporation-competent cells Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitisation

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Section 11. Toxicological information

Not available.

Information on likely routes of exposure : TG1 electroporation-competent cells Not available.
pUC 18 DNA Control Plasmid Not available.

Potential acute health effects

Eye contact : TG1 electroporation-competent cells No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Inhalation : TG1 electroporation-competent cells No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Skin contact : TG1 electroporation-competent cells No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Ingestion : TG1 electroporation-competent cells No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : TG1 electroporation-competent cells No specific data.
pUC 18 DNA Control Plasmid No specific data.

Inhalation : TG1 electroporation-competent cells No specific data.
pUC 18 DNA Control Plasmid No specific data.

Skin contact : TG1 electroporation-competent cells No specific data.
pUC 18 DNA Control Plasmid No specific data.

Ingestion : TG1 electroporation-competent cells No specific data.
pUC 18 DNA Control Plasmid 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

Not available.

General : TG1 electroporation-competent cells No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Carcinogenicity : TG1 electroporation-competent cells No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Mutagenicity : TG1 electroporation-competent cells No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Section 11. Toxicological information

Teratogenicity	: TG1 electroporation-competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Developmental effects	: TG1 electroporation-competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Fertility effects	: TG1 electroporation-competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
TG1 electroporation-competent cells Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
TG1 electroporation-competent cells Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
TG1 electroporation-competent cells 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

Section 13. Disposal considerations

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	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: <input checked="" type="checkbox"/> Japan inventory (ENCS): All components are listed or exempted. Japan inventory (ISHL): All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: <input checked="" type="checkbox"/> 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 : 29/12/2017
Date of previous issue : 27/10/2015.
Version : 4

Key to abbreviations

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

Procedure used to derive the classification

Classification	Justification
Not classified.	

References : Not available.

✔ Indicates information that has changed from previously issued version.

Notice to reader

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