



## Section 2. Hazards identification

<b>Hazard statements</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b><u>Precautionary statements</u></b>		
<b>Prevention</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Not applicable. Not applicable.
<b>Response</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Not applicable. Not applicable.
<b>Storage</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Not applicable. Not applicable.
<b>Disposal</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Not applicable. Not applicable.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	None known. None known.
<b><u>2.3 Other hazards</u></b>		
<b>Hazards not otherwise classified</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Mixture Mixture
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Ingredient name	%	CAS number
<input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells Glycerol	<10	56-81-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**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

### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells  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. 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.
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## Section 4. First aid measures

<b>Inhalation</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells  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. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells  pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells  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. 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.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

<b>Eye contact</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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

<b>Eye contact</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No specific data. No specific data.

## Section 4. First aid measures

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

<b>Notes to physician</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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.
<b>Specific treatments</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	No specific treatment.  No specific treatment.
<b>Protection of first-aiders</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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.
<b>Unsuitable extinguishing media</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	None known.  None known.

### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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.
<b>Hazardous thermal decomposition products</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells  pUC 18 DNA Control Plasmid	Decomposition products may include the following materials: carbon dioxide carbon monoxide No specific data.

### 5.3 Advice for firefighters

<b>Special protective actions for fire-fighters</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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.
<b>Special protective equipment for fire-fighters</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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

## Section 5. Fire-fighting measures

pressure mode.

## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells	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.
	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 spilled material. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells	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".
	pUC 18 DNA Control Plasmid	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".

### 6.2 Environmental precautions

: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells	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).
pUC 18 DNA Control Plasmid	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).

### 6.3 Methods and materials for containment and cleaning up

<b>Methods for cleaning up</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' 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

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8). Put on appropriate personal protective equipment (see Section 8).
<b>Advice on general occupational hygiene</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells  pUC 18 DNA Control Plasmid	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. 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.

### 7.2 Conditions for safe storage, including any incompatibilities

: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells  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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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### 7.3 Specific end use(s)

<b>Recommendations</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Industrial applications, Professional applications. Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	: <input checked="" type="checkbox"/> L1-Blue MRF' electroporation competent cells pUC 18 DNA Control Plasmid	Not applicable. Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
XL1-Blue MRF' electroporation competent cells Glycerol	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust <b>OSHA PEL (United States, 6/2016).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust

### 8.2 Exposure controls

#### 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

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Liquid.
	pUC 18 DNA Control Plasmid	Liquid.
<b>Color</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Odor</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Odor threshold</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>pH</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	7.5
<b>Melting point</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	0°C (32°F)
<b>Boiling point</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	100°C (212°F)
<b>Flash point</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Evaporation rate</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Flammability (solid, gas)</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Vapor pressure</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Vapor density</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Relative density</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Solubility</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' 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.
<b>Partition coefficient: n-octanol/water</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.



## Section 9. Physical and chemical properties

<b>Auto-ignition temperature</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Decomposition temperature</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Viscosity</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' 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.
<b>10.2 Chemical stability</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
	pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
<b>10.5 Incompatible materials</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	May react or be incompatible with oxidizing materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidizing materials.
<b>10.6 Hazardous decomposition products</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
XL1-Blue MRF' electroporation competent cells				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
XL1-Blue MRF' electroporation competent cells Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams 24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-		-

### Sensitization

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

Not available.

**Information on the likely routes of exposure** :  XL1-Blue MRF' electroporation competent cells Not available.  
 pUC 18 DNA Control Plasmid Not available.

### Potential acute health effects

**Eye contact** :  XL1-Blue MRF' electroporation competent cells No known significant effects or critical hazards.  
 pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

**Inhalation** :  XL1-Blue MRF' electroporation competent cells No known significant effects or critical hazards.  
 pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

**Skin contact** :  XL1-Blue MRF' electroporation competent cells No known significant effects or critical hazards.  
 pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

**Ingestion** :  XL1-Blue MRF' 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** :  XL1-Blue MRF' electroporation competent cells No specific data.  
 pUC 18 DNA Control Plasmid No specific data.

## Section 11. Toxicological information

<b>Inhalation</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No specific data.
	pUC 18 DNA Control Plasmid	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

<b>General</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
<b>Teratogenicity</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
<b>Developmental effects</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
<b>Fertility effects</b>	: <input checked="" type="checkbox"/> XL1-Blue MRF' 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

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
XL1-Blue MRF' electroporation competent cells Glycerol	-1.76	-	low

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

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

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

**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.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

## Section 13. Disposal considerations

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

## Section 14. Transport information

**DOT / TDG / Mexico / 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 Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**U.S. Federal regulations** : TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
Clean Water Act (CWA) 311: Edetic acid

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** :  XL1-Blue MRF' electroporation competent cells Not applicable.  
 pUC 18 DNA Control Plasmid Not applicable.

#### Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<input checked="" type="checkbox"/> XL1-Blue MRF' electroporation competent cells Glycerol	<10	No.	No.	No.	Yes.	No.

### State regulations

## Section 15. Regulatory information

<b>Massachusetts</b>	: The following components are listed: GLYCERINE MIST
<b>New York</b>	: None of the components are listed.
<b>New Jersey</b>	: The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL
<b>Pennsylvania</b>	: The following components are listed: 1,2,3-PROPANETRIOL

### 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

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

## Section 16. Other information

### History

<b>Date of issue</b>	: 09/26/2017
<b>Date of previous issue</b>	: 07/31/2015.
<b>Version</b>	: 2

Indicates information that has changed from previously issued version.

### Notice to reader

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