

# SAFETY DATA SHEET



BL21-CodonPlus (DE3)-RIL Competent Cells, Part Number 230245

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

### 1.1 Product identifier

**Product name** : BL21-CodonPlus (DE3)-RIL Competent Cells, Part Number 230245  
**Part no. (chemical kit)** : 230245  
**Part no.** : pUC 18 DNA Control 200231-42  
Plasmid  
XL10-Gold 200314-43  
2-Mercaptoethanol  
BL21-CodonPlus (DE3)- 230245-41  
RIL competent cells

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

**Material uses** : Analytical reagent.  
pUC 18 DNA Control Plasmid 10 µl (0.1 ng/µl)  
XL10-Gold 2-Mercaptoethanol 50 µl  
BL21-CodonPlus (DE3)-RIL competent cells 1000 µl (10 x 100 µl)

### 1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany  
0800 603 1000

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(44)-870-8200418

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Product definition** : pUC 18 DNA Control Mixture  
Plasmid  
XL10-Gold Mixture  
2-Mercaptoethanol  
BL21-CodonPlus (DE3)- Mixture  
RIL competent cells

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

##### XL10-Gold 2-Mercaptoethanol

H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
H317 SKIN SENSITISATION - Category 1  
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

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**SECTION 2: Hazards identification**

<b>Ingredients of unknown toxicity</b>	: <input checked="" type="checkbox"/> XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30% Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%
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See Section 16 for the full text of the H statements declared above.

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

**2.2 Label elements**

<b>Hazard pictograms</b>	: <input checked="" type="checkbox"/> XL10-Gold 2-Mercaptoethanol	
<b>Signal word</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	No signal word.  Danger  No signal word.
<b>Hazard statements</b>	: <input checked="" type="checkbox"/> pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol  BL21-CodonPlus (DE3)- RIL competent cells	No known significant effects or critical hazards.  H318 - Causes serious eye damage.  H317 - May cause an allergic skin reaction. H412 - Harmful to aquatic life with long lasting effects. No known significant effects or critical hazards.
<b><u>Precautionary statements</u></b>		
<b>Prevention</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol  BL21-CodonPlus (DE3)- RIL competent cells	Not applicable.  P280 - Wear protective gloves. Wear eye or face protection.  P273 - Avoid release to the environment. Not applicable.
<b>Response</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol  BL21-CodonPlus (DE3)- RIL competent cells	Not applicable.  P305 + P351 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Immediately call a POISON CENTER or physician. Not applicable.
<b>Storage</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not applicable.  Not applicable.  Not applicable.
<b>Disposal</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not applicable.  P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable.

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**SECTION 2: Hazards identification**

<b>Hazardous ingredients</b>	: <input checked="" type="checkbox"/> XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	- 2-Mercaptoethanol Not applicable.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not applicable. Not applicable. Safety data sheet available on request.
<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not applicable. Not applicable. Not applicable.
<b><u>Special packaging requirements</u></b>		
<b>Tactile warning of danger</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not applicable. Not applicable. Not applicable.

**2.3 Other hazards**

<b>Other hazards which do not result in classification</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	None known. None known. None known.
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**SECTION 3: Composition/information on ingredients**

<b>3.1 Substances</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)-RIL competent cells	Mixture Mixture Mixture
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Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
<input checked="" type="checkbox"/> <b>XL10-Gold 2-Mercaptoethanol</b> Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≥10 - ≤25	Eye Irrit. 2, H319	[1]
2-Mercaptoethanol	EC: 200-464-6 CAS: 60-24-2	≤5	Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411	[1]
<b>BL21-CodonPlus (DE3)-RIL competent cells</b> Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥10 - ≤25	Not classified.	[2]
Dimethyl sulfoxide	EC: 200-664-3 CAS: 67-68-5	≤10	Aquatic Chronic 3, H412	[1]

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**SECTION 3: Composition/information on ingredients**

Sucrose	REACH #: Annex IV EC: 200-334-9 CAS: 57-50-1	≤10	Not classified.  <b>See Section 16 for the full text of the H statements declared above.</b>	[2]
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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.

Type

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

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

<b>Eye contact</b>	: 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.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.
	BL21-CodonPlus (DE3)-RIL 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.
<b>Inhalation</b>	: 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.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. 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. 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.
	BL21-CodonPlus (DE3)-RIL competent cells	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>	: pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before

## SECTION 4: First aid measures

	BL21-CodonPlus (DE3)-RIL competent cells	reuse. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	: 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.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a 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.
	BL21-CodonPlus (DE3)-RIL 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.
<b>Protection of first-aiders</b>	: pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training.
	XL10-Gold 2-Mercaptoethanol	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.
	BL21-CodonPlus (DE3)-RIL competent cells	No action shall be taken involving any personal risk or without suitable training.

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

#### Potential acute health effects

<b>Eye contact</b>	: pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	Causes serious eye damage.
	BL21-CodonPlus (DE3)-RIL competent cells	No known significant effects or critical hazards.
<b>Inhalation</b>	: pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	BL21-CodonPlus (DE3)-RIL competent cells	No known significant effects or critical hazards.

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**SECTION 4: First aid measures**

**Skin contact** : pUC 18 DNA Control Plasmid No known significant effects or critical hazards.  
 XL10-Gold May cause an allergic skin reaction.  
 2-Mercaptoethanol  
 BL21-CodonPlus (DE3)-RIL competent cells No known significant effects or critical hazards.

**Ingestion** : pUC 18 DNA Control Plasmid No known significant effects or critical hazards.  
 XL10-Gold No known significant effects or critical hazards.  
 2-Mercaptoethanol  
 BL21-CodonPlus (DE3)-RIL competent cells No known significant effects or critical hazards.

**Over-exposure signs/symptoms**

**Eye contact** : pUC 18 DNA Control Plasmid No specific data.  
 XL10-Gold Adverse symptoms may include the following:  
 2-Mercaptoethanol  
 pain  
 watering  
 redness  
 BL21-CodonPlus (DE3)-RIL competent cells No specific data.

**Inhalation** : pUC 18 DNA Control Plasmid No specific data.  
 XL10-Gold No specific data.  
 2-Mercaptoethanol  
 BL21-CodonPlus (DE3)-RIL competent cells No specific data.

**Skin contact** : pUC 18 DNA Control Plasmid No specific data.  
 XL10-Gold Adverse symptoms may include the following:  
 2-Mercaptoethanol  
 pain or irritation  
 redness  
 blistering may occur  
 BL21-CodonPlus (DE3)-RIL competent cells No specific data.

**Ingestion** : pUC 18 DNA Control Plasmid No specific data.  
 XL10-Gold Adverse symptoms may include the following:  
 2-Mercaptoethanol  
 stomach pains  
 BL21-CodonPlus (DE3)-RIL competent cells No specific data.

**4.3 Indication of any immediate medical attention and special treatment needed**

**Notes to physician** : pUC 18 DNA Control Plasmid Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  
 XL10-Gold Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  
 2-Mercaptoethanol  
 BL21-CodonPlus (DE3)-RIL competent cells Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : pUC 18 DNA Control Plasmid No specific treatment.  
 XL10-Gold No specific treatment.  
 2-Mercaptoethanol  
 BL21-CodonPlus (DE3)-RIL competent cells No specific treatment.



## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: pUC 18 DNA Control Plasmid	Use an extinguishing agent suitable for the surrounding fire.
	XL10-Gold	Use an extinguishing agent suitable for the surrounding fire.
	2-Mercaptoethanol	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	BL21-CodonPlus (DE3)-RIL competent cells	Use an extinguishing agent suitable for the surrounding fire.
	: pUC 18 DNA Control Plasmid	None known.
	XL10-Gold	None known.
	2-Mercaptoethanol	None known.
	BL21-CodonPlus (DE3)-RIL competent cells	None known.

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

<b>Hazards from the substance or mixture</b>	: pUC 18 DNA Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.
	XL10-Gold	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	2-Mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous combustion products</b>	BL21-CodonPlus (DE3)-RIL competent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
	: pUC 18 DNA Control Plasmid	No specific data.
	XL10-Gold	Decomposition products may include the following materials:
	2-Mercaptoethanol	carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
	BL21-CodonPlus (DE3)-RIL competent cells	Decomposition products may include the following materials:  carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides

### 5.3 Advice for firefighters

<b>Special precautions for fire-fighters</b>	: 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.
	XL10-Gold	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.
	2-Mercaptoethanol	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>	BL21-CodonPlus (DE3)-RIL competent cells	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.
	: 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	XL10-Gold	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full
	2-Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full

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face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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

## SECTION 6: Accidental release measures

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

**For non-emergency personnel**

: 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.

XL10-Gold  
2-Mercaptoethanol

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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

BL21-CodonPlus (DE3)-  
RIL 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 spilt material. Put on appropriate personal protective equipment.

**For emergency responders**

: 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".

XL10-Gold  
2-Mercaptoethanol

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".

BL21-CodonPlus (DE3)-  
RIL competent cells

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**6.2 Environmental precautions**

: 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).

XL10-Gold  
2-Mercaptoethanol

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). Water polluting material. May be harmful to the environment if released in large quantities.

BL21-CodonPlus (DE3)-  
RIL competent cells

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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

**Date of issue/Date of revision** : 18/11/2018

8/22



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**SECTION 6: Accidental release measures**

<b>Methods for cleaning up</b>	: 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.
	XL10-Gold 2-Mercaptoethanol	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.
	BL21-CodonPlus (DE3)- RIL 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.

**6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

**SECTION 7: Handling and storage**

**7.1 Precautions for safe handling**

<b>Protective measures</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol	Put on appropriate personal protective equipment (see Section 8). Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	BL21-CodonPlus (DE3)- RIL competent cells	Put on appropriate personal protective equipment (see Section 8).
<b>Advice on general occupational hygiene</b>	: 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.
	XL10-Gold 2-Mercaptoethanol	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.
	BL21-CodonPlus (DE3)- RIL 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.

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

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**SECTION 7: Handling and storage**

<b>Storage</b>	: 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.
	XL10-Gold 2-Mercaptoethanol	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. Store locked up. 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.
	BL21-CodonPlus (DE3)-RIL 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.

**7.3 Specific end use(s)**

<b>Recommendations</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)-RIL competent cells	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)-RIL competent cells	Not applicable. Not applicable. Not applicable.

**SECTION 8: Exposure controls/personal protection**

**8.1 Control parameters**

**Occupational exposure limits**

Product/ingredient name	Exposure limit values
BL21-CodonPlus (DE3)-RIL competent cells	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist <b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> STEL: 20 mg/m <sup>3</sup> 15 minutes. TWA: 10 mg/m <sup>3</sup> 8 hours.
Glycerol	
Sucrose	

## SECTION 8: Exposure controls/personal protection

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

### DNELs/DMELs

No DNELs/DMELs available.

### PNECs

No PNECs available

## 8.2 Exposure controls

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

### Individual protection measures

**Hygiene measures** : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. 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: chemical splash goggles.

### 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**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.

**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.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: pUC 18 DNA Control	Liquid.
	Plasmid	
	XL10-Gold	Liquid.
	2-Mercaptoethanol	
<b>Colour</b>	BL21-CodonPlus (DE3)- RIL competent cells	Liquid.
	: pUC 18 DNA Control	Not available.
	Plasmid	
	XL10-Gold	Not available.
<b>Odour</b>	2-Mercaptoethanol	
	BL21-CodonPlus (DE3)- RIL competent cells	Not available.
	: pUC 18 DNA Control	Not available.
	Plasmid	
<b>Odour threshold</b>	XL10-Gold	Not available.
	2-Mercaptoethanol	
	BL21-CodonPlus (DE3)- RIL competent cells	Not available.
	: pUC 18 DNA Control	Not available.
<b>pH</b>	Plasmid	
	XL10-Gold	Not available.
	2-Mercaptoethanol	
	BL21-CodonPlus (DE3)- RIL competent cells	6.4
<b>Melting point/freezing point</b>	: pUC 18 DNA Control	0°C
	Plasmid	
	XL10-Gold	Not available.
	2-Mercaptoethanol	
<b>Initial boiling point and boiling range</b>	BL21-CodonPlus (DE3)- RIL competent cells	Not available.
	: pUC 18 DNA Control	100°C
	Plasmid	
	XL10-Gold	Not available.
<b>Flash point</b>	2-Mercaptoethanol	
	BL21-CodonPlus (DE3)- RIL competent cells	Not available.
	: pUC 18 DNA Control	Not available.
	Plasmid	
<b>Evaporation rate</b>	XL10-Gold	Not available.
	2-Mercaptoethanol	
	BL21-CodonPlus (DE3)- RIL competent cells	Not available.
	: pUC 18 DNA Control	Not available.

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## SECTION 9: Physical and chemical properties

<b>Flammability (solid, gas)</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- -RIL competent cells	Not applicable. Not applicable. Not applicable.
<b>Upper/lower flammability or explosive limits</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not available. Not available. Not available.
<b>Vapour pressure</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not available. Not available. Not available.
<b>Vapour density</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not available. Not available. Not available.
<b>Relative density</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not available. Not available. Not available.
<b>Solubility(ies)</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not available. Not available. Not available.
<b>Auto-ignition temperature</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not available. Not available. Not available.
<b>Decomposition temperature</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	Not available. Not available. Not available.

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## SECTION 9: Physical and chemical properties

<b>Viscosity</b>	: pUC 18 DNA Control	Not available.
	Plasmid	
	XL10-Gold	Not available.
	2-Mercaptoethanol	
<b>Explosive properties</b>	BL21-CodonPlus (DE3)-	Not available.
	RIL competent cells	
	: pUC 18 DNA Control	Not available.
	Plasmid	
	XL10-Gold	Not available.
	2-Mercaptoethanol	
	BL21-CodonPlus (DE3)-	Not available.
	RIL competent cells	
<b>Oxidising properties</b>	: pUC 18 DNA Control	Not available.
	Plasmid	
	XL10-Gold	Not available.
	2-Mercaptoethanol	
	BL21-CodonPlus (DE3)-	Not available.
	RIL competent cells	

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	: pUC 18 DNA Control	No specific test data related to reactivity available for this product or its ingredients.	
	Plasmid		
	XL10-Gold	No specific test data related to reactivity available for this product or its ingredients.	
	2-Mercaptoethanol		
	BL21-CodonPlus (DE3)-	No specific test data related to reactivity available for this product or its ingredients.	
	RIL competent cells		
<b>10.2 Chemical stability</b>	: pUC 18 DNA Control	The product is stable.	
	Plasmid		
	XL10-Gold	The product is stable.	
	2-Mercaptoethanol		
	BL21-CodonPlus (DE3)-	The product is stable.	
	RIL competent cells		
	<b>10.3 Possibility of hazardous reactions</b>	: pUC 18 DNA Control	Under normal conditions of storage and use, hazardous reactions will not occur.
		Plasmid	
XL10-Gold		Under normal conditions of storage and use, hazardous reactions will not occur.	
2-Mercaptoethanol			
BL21-CodonPlus (DE3)-		Under normal conditions of storage and use, hazardous reactions will not occur.	
	RIL competent cells		
<b>10.4 Conditions to avoid</b>	: pUC 18 DNA Control	No specific data.	
	Plasmid		
	XL10-Gold	No specific data.	
	2-Mercaptoethanol		
	BL21-CodonPlus (DE3)-	No specific data.	
	RIL competent cells		
	<b>10.5 Incompatible materials</b>	: pUC 18 DNA Control	May react or be incompatible with oxidising materials.
		Plasmid	
XL10-Gold		May react or be incompatible with oxidising materials.	
2-Mercaptoethanol			
BL21-CodonPlus (DE3)-		May react or be incompatible with oxidising materials.	
	RIL competent cells		



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## SECTION 10: Stability and reactivity

<b>10.6 Hazardous decomposition products</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)-RIL competent cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.
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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>XL10-Gold</b> <b>2-Mercaptoethanol</b> Sodium chloride 2-Mercaptoethanol	LD50 Oral	Rat	3000 mg/kg	-
	LD50 Dermal	Rabbit	167.1 mg/kg	-
	LD50 Oral	Rat	244 mg/kg	-
<b>BL21-CodonPlus (DE3)-RIL competent cells</b> Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-

#### Acute toxicity estimates

Route	ATE value
<b>XL10-Gold 2-Mercaptoethanol</b> Oral Dermal Inhalation (vapours)	5545.5 mg/kg 3797.7 mg/kg 40.5 mg/l

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>XL10-Gold</b> <b>2-Mercaptoethanol</b> Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
<b>BL21-CodonPlus (DE3)-RIL competent cells</b> Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-

#### Sensitiser

**Conclusion/Summary** : Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

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## SECTION 11: Toxicological information

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on likely routes of exposure

: pUC 18 DNA Control Plasmid Not available.  
 XL10-Gold 2-Mercaptoethanol Routes of entry anticipated: Oral, Dermal, Inhalation.  
 BL21-CodonPlus (DE3)-RIL competent cells Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

**Inhalation** : pUC 18 DNA Control Plasmid No known significant effects or critical hazards.  
 XL10-Gold 2-Mercaptoethanol No known significant effects or critical hazards.  
 BL21-CodonPlus (DE3)-RIL competent cells No known significant effects or critical hazards.

**Ingestion** : pUC 18 DNA Control Plasmid No known significant effects or critical hazards.  
 XL10-Gold 2-Mercaptoethanol No known significant effects or critical hazards.  
 BL21-CodonPlus (DE3)-RIL competent cells No known significant effects or critical hazards.

**Skin contact** : pUC 18 DNA Control Plasmid No known significant effects or critical hazards.  
 XL10-Gold 2-Mercaptoethanol May cause an allergic skin reaction.  
 BL21-CodonPlus (DE3)-RIL competent cells No known significant effects or critical hazards.

**Eye contact** : pUC 18 DNA Control Plasmid No known significant effects or critical hazards.  
 XL10-Gold 2-Mercaptoethanol Causes serious eye damage.  
 BL21-CodonPlus (DE3)-RIL competent cells No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Inhalation** : pUC 18 DNA Control Plasmid No specific data.  
 XL10-Gold 2-Mercaptoethanol No specific data.  
 BL21-CodonPlus (DE3)-RIL competent cells No specific data.

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## SECTION 11: Toxicological information

<b>Ingestion</b>	: pUC 18 DNA Control Plasmid	No specific data.
	: XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: stomach pains
<b>Skin contact</b>	: BL21-CodonPlus (DE3)-RIL competent cells	No specific data.
	: pUC 18 DNA Control Plasmid	No specific data.
<b>Eye contact</b>	: XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	: BL21-CodonPlus (DE3)-RIL competent cells	No specific data.
<b>Eye contact</b>	: pUC 18 DNA Control Plasmid	No specific data.
	: XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
<b>Eye contact</b>	: BL21-CodonPlus (DE3)-RIL competent cells	No specific data.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

#### Long term exposure

<b>Potential immediate effects</b>	: Not available.
<b>Potential delayed effects</b>	: Not available.

### Potential chronic health effects

<b>General</b>	: pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	: XL10-Gold 2-Mercaptoethanol	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	: BL21-CodonPlus (DE3)-RIL competent cells	No known significant effects or critical hazards.
	: pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: XL10-Gold 2-Mercaptoethanol	No known significant effects or critical hazards.
	: BL21-CodonPlus (DE3)-RIL competent cells	No known significant effects or critical hazards.

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## SECTION 11: Toxicological information

<b>Teratogenicity</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	No known significant effects or critical hazards.  No known significant effects or critical hazards.  No known significant effects or critical hazards.
<b>Developmental effects</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	No known significant effects or critical hazards.  No known significant effects or critical hazards.  No known significant effects or critical hazards.
<b>Fertility effects</b>	: pUC 18 DNA Control Plasmid XL10-Gold 2-Mercaptoethanol BL21-CodonPlus (DE3)- RIL competent cells	No known significant effects or critical hazards.  No known significant effects or critical hazards.  No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
XL10-Gold 2-Mercaptoethanol Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402600 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
	BL21-CodonPlus (DE3)- RIL competent cells Dimethyl sulfoxide	Acute EC50 18299 µg/l Marine water	Algae - Nitzschia pungens
Acute LC50 37.437 mg/l Marine water		Crustaceans - Artemia sp.	48 hours
Acute LC50 25000 ppm Fresh water		Daphnia - Daphnia magna - Neonate	48 hours
Acute LC50 34000000 µg/l Fresh water		Fish - Pimephales promelas	96 hours
Chronic NOEC 3323 µg/l Marine water		Algae - Nitzschia pungens	96 hours

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace)	69 % - Inherent - 60 days	20 mg/l	-

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## SECTION 12: Ecological information

	Test)			
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### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<input checked="" type="checkbox"/> XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol	-0.056	-	low
BL21-CodonPlus (DE3)- RIL competent cells Dimethyl sulfoxide	-1.35	3.16	low

### 12.4 Mobility in soil

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

Mobility : Not available.

### 12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

#### Packaging

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. 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

ADR/RID / IMDG / IATA : Not regulated.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

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## SECTION 15: Regulatory information

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

#### EU Regulation (EC) No. 1907/2006 (REACH)

##### Annex XIV - List of substances subject to authorisation

###### Annex XIV

None of the components are listed.

###### Substances of very high concern

None of the components are listed.

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** : pUC 18 DNA Control Plasmid Not applicable.  
XL10-Gold Not applicable.  
2-Mercaptoethanol  
BL21-CodonPlus (DE3)-RIL competent cells Not applicable.

##### Other EU regulations

**Industrial emissions (integrated pollution prevention and control) - Air** : Listed

##### Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

##### Seveso Directive

This product is not controlled under the Seveso Directive.

##### International regulations

##### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

##### Montreal Protocol (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** : Not determined.  
**Europe** : All components are listed or exempted.  
**Japan** : **Japan inventory (ENCS)**: Not determined.  
**Japan inventory (ISHL)**: All components are listed or exempted.  
**Malaysia** : Not determined.  
**New Zealand** : Not determined.  
**Philippines** : Not determined.  
**Republic of Korea** : All components are listed or exempted.



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## SECTION 15: Regulatory information

<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: All components are listed or exempted.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> Not determined.

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

## SECTION 16: Other information

Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 DNEL = Derived No Effect Level  
 EUH statement = CLP-specific Hazard statement  
 PNEC = Predicted No Effect Concentration  
 RRN = REACH Registration Number

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

Classification	Justification
<b>XL10-Gold 2-Mercaptoethanol</b> Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method

### Full text of abbreviated H statements

<b>XL10-Gold 2-Mercaptoethanol</b> H301 H310 H315 H317 H318 H319 H330 H335 H411 H412	Toxic if swallowed. Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Causes serious eye irritation. Fatal if inhaled. May cause respiratory irritation. Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.
<b>BL21-CodonPlus (DE3)-RIL competent cells</b> H412	Harmful to aquatic life with long lasting effects.

### Full text of classifications [CLP/GHS]

<b>XL10-Gold 2-Mercaptoethanol</b> Acute Tox. 2, H310 Acute Tox. 2, H330 Acute Tox. 3, H301 Aquatic Chronic 2, H411 Aquatic Chronic 3, H412 Eye Dam. 1, H318 Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335	ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 ACUTE TOXICITY (oral) - Category 3 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SKIN SENSITISATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
<b>BL21-CodonPlus (DE3)-RIL competent cells</b> Aquatic Chronic 3, H412	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

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## **SECTION 16: Other information**

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**Version** : 2

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