

# SAFETY DATA SHEET

XL2-Blue Ultracompetent Cells, Part Number 200150

## Section 1. Identification

### 1.1 Product identifier

<b>Product name</b>	: XL2-Blue Ultracompetent Cells, Part Number 200150		
<b>Part no. (chemical kit)</b>	: 200150		
<b>Part no.</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	200150-41	
	pUC 18 DNA Control Plasmid	200231-42	
	2-Mercaptoethanol For Ultra Comp Cells	210210-43	
<b>Validation date</b>	: 11/7/2018		

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

<b>Material uses</b>	: Analytical reagent.		
	<input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	1 ml (10 x 0.1 mL)	
	pUC 18 DNA Control Plasmid	0.01 ml (0.1 ng/µl)	
	2-Mercaptoethanol For Ultra Comp Cells	0.025 ml (1.22 M 25 µl)	

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

<b>Supplier/Manufacturer</b>	: Agilent Technologies, Inc. 5301 Stevens Creek Blvd Santa Clara, CA 95051, USA 800-227-9770
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### 1.4 Emergency telephone number

<b>In case of emergency</b>	: CHEMTREC®: 1-800-424-9300
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## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

<b>OSHA/HCS status</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	pUC 18 DNA Control Plasmid	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
	2-Mercaptoethanol For Ultra Comp Cells	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

<input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	H320	EYE IRRITATION - Category 2B
2-Mercaptoethanol For Ultra Comp Cells	H312	ACUTE TOXICITY (dermal) - Category 4
	H318	SERIOUS EYE DAMAGE - Category 1
	H317	SKIN SENSITIZATION - Category 1
	H412	AQUATIC HAZARD (LONG-TERM) - Category 3

## Section 2. Hazards identification

**Ingredients of unknown toxicity** :  XL2-Blue Ultracompetent Cells  
 2-Mercaptoethanol For Ultra Comp Cells

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%  
 Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%

### 2.2 GHS label elements

#### Hazard pictograms

:  2-Mercaptoethanol For Ultra Comp Cells



#### Signal word

:  XL2-Blue Ultracompetent Cells  
 pUC 18 DNA Control Plasmid  
 2-Mercaptoethanol For Ultra Comp Cells

Warning  
 No signal word.  
 Danger

#### Hazard statements

:  XL2-Blue Ultracompetent Cells  
 pUC 18 DNA Control Plasmid  
 2-Mercaptoethanol For Ultra Comp Cells

H320 - Causes eye irritation.  
 No known significant effects or critical hazards.  
 H312 - Harmful in contact with skin.

H318 - Causes serious eye damage.  
 H317 - May cause an allergic skin reaction.  
 H412 - Harmful to aquatic life with long lasting effects.

#### Precautionary statements

##### Prevention

:  XL2-Blue Ultracompetent Cells  
 pUC 18 DNA Control Plasmid  
 2-Mercaptoethanol For Ultra Comp Cells

P264 - Wash hands thoroughly after handling.  
 Not applicable.  
 P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.  
 P273 - Avoid release to the environment.  
 P261 - Avoid breathing vapor.  
 P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.

##### Response

:  XL2-Blue Ultracompetent Cells  
 pUC 18 DNA Control Plasmid  
 2-Mercaptoethanol For Ultra Comp Cells

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P337 + P313 - If eye irritation persists: Get medical attention.  
 Not applicable.  
 P302 + P352 + P312 + P363 - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Wash contaminated clothing before reuse.  
 P333 + P313 - If skin irritation or rash occurs: Get medical attention.  
 P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

##### Storage

:  XL2-Blue Ultracompetent Cells  
 pUC 18 DNA Control Plasmid  
 2-Mercaptoethanol For Ultra Comp Cells

Not applicable.  
 Not applicable.  
 Not applicable.

## Section 2. Hazards identification

<b>Disposal</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	None known. None known. None known.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	None known. None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Mixture Mixture Mixture
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Ingredient name	%	CAS number
<input checked="" type="checkbox"/> <b>XL2-Blue Ultracompetent Cells</b>		
Glycerol	≥10 - ≤25	56-81-5
Dimethyl sulfoxide	≤10	67-68-5
Potassium chloride	≤3	7447-40-7
<b>2-Mercaptoethanol For Ultra Comp Cells</b>		
2-Mercaptoethanol	<10	60-24-2
Sodium chloride	≤8.8	7647-14-5

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"/> XL2-Blue Ultracompetent Cells	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. If irritation persists, get medical attention.
	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.
	2-Mercaptoethanol For Ultra Comp Cells	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.

## Section 4. First aid measures

<b>Inhalation</b>	:  XL2-Blue Ultracompetent Cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	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.
	2-Mercaptoethanol For Ultra Comp Cells	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.
<b>Skin contact</b>	:  XL2-Blue Ultracompetent Cells	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	2-Mercaptoethanol For Ultra Comp Cells	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 reuse.
<b>Ingestion</b>	:  XL2-Blue Ultracompetent Cells	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if

## Section 4. First aid measures

pUC 18 DNA Control Plasmid

2-Mercaptoethanol For Ultra  
Comp Cells

adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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.

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.

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

#### Potential acute health effects

<b>Eye contact</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Causes eye irritation. No known significant effects or critical hazards. Causes serious eye damage.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. Harmful in contact with skin. May cause an allergic skin reaction.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

## Section 4. First aid measures

<b>Eye contact</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells  pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Adverse symptoms may include the following: irritation watering redness No specific data. Adverse symptoms may include the following:  pain watering redness
<b>Inhalation</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No specific data. No specific data. No specific data.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No specific data. No specific data. Adverse symptoms may include the following:  pain or irritation redness blistering may occur
<b>Ingestion</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No specific data. No specific data. Adverse symptoms may include the following:  stomach pains

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

<b>Notes to physician</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells  pUC 18 DNA Control Plasmid  2-Mercaptoethanol For Ultra Comp Cells	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. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No specific treatment. No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells  pUC 18 DNA Control Plasmid  2-Mercaptoethanol For Ultra Comp Cells	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. 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. 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.

## Section 4. First aid measures

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells  pUC 18 DNA Control Plasmid  2-Mercaptoethanol For Ultra Comp Cells	Use an extinguishing agent suitable for the surrounding fire. 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"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	None known. 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"/> L2-Blue Ultracompetent Cells  pUC 18 DNA Control Plasmid  2-Mercaptoethanol For Ultra Comp Cells	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. 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.
<b>Hazardous thermal decomposition products</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells    pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides No specific data. 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 protective actions for fire-fighters</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells  pUC 18 DNA Control Plasmid  2-Mercaptoethanol For Ultra Comp 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. 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.
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## Section 5. Fire-fighting measures

<b>Special protective equipment for fire-fighters</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	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.
	2-Mercaptoethanol For Ultra Comp Cells	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

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

<b>For non-emergency personnel</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
	2-Mercaptoethanol For Ultra Comp 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. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent 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".
	2-Mercaptoethanol For Ultra Comp 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".



## Section 6. Accidental release measures

### 6.2 Environmental precautions

:  L2-Blue Ultracompetent 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).

2-Mercaptoethanol For Ultra Comp 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). Water polluting material. May be harmful to the environment if released in large quantities.

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

#### Methods for cleaning up

:  L2-Blue Ultracompetent 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.

2-Mercaptoethanol For Ultra Comp 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.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

#### Protective measures

:  L2-Blue Ultracompetent Cells

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

pUC 18 DNA Control Plasmid

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

2-Mercaptoethanol For Ultra Comp Cells

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 vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material

## Section 7. Handling and storage

<p><b>Advice on general occupational hygiene</b></p>	<p>: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells</p>	<p>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.</p>
	<p>pUC 18 DNA Control Plasmid</p>	<p>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.</p>
	<p>2-Mercaptoethanol For Ultra Comp Cells</p>	<p>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.</p>
<p><b>7.2 Conditions for safe storage, including any incompatibilities</b></p>	<p>: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells</p>	
	<p>pUC 18 DNA Control Plasmid</p>	<p>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.</p>
	<p>2-Mercaptoethanol For Ultra Comp Cells</p>	<p>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</p>

## Section 7. Handling and storage

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.

### 7.3 Specific end use(s)

<b>Recommendations</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not applicable. Not applicable. Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<input checked="" type="checkbox"/> XL2-Blue Ultracompetent 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
Dimethyl sulfoxide	<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
Potassium chloride	<b>AIHA WEEL (United States, 10/2011).</b> TWA: 250 ppm 8 hours. None.
<b>2-Mercaptoethanol For Ultra Comp Cells</b> 2-Mercaptoethanol	<b>AIHA WEEL (United States, 10/2011).</b> <b>Absorbed through skin.</b> TWA: 0.2 ppm 8 hours.
Sodium chloride	None.

### 8.2 Exposure controls

<b>Appropriate engineering controls</b>	: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
<b>Environmental exposure controls</b>	: 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

## Section 8. Exposure controls/personal protection

- 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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.

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells	Liquid.
	: <input checked="" type="checkbox"/> pUC 18 DNA Control Plasmid	Liquid.
	: <input checked="" type="checkbox"/> 2-Mercaptoethanol For Ultra Comp Cells	Liquid.
<b>Color</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells	Not available.
	: <input checked="" type="checkbox"/> pUC 18 DNA Control Plasmid	Not available.
	: <input checked="" type="checkbox"/> 2-Mercaptoethanol For Ultra Comp Cells	Not available.
<b>Odor</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells	Not available.
	: <input checked="" type="checkbox"/> pUC 18 DNA Control Plasmid	Not available.
	: <input checked="" type="checkbox"/> 2-Mercaptoethanol For Ultra Comp Cells	Not available.
<b>Odor threshold</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells	Not available.
	: <input checked="" type="checkbox"/> pUC 18 DNA Control Plasmid	Not available.
	: <input checked="" type="checkbox"/> 2-Mercaptoethanol For Ultra Comp Cells	Not available.
<b>pH</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells	6.4
	: <input checked="" type="checkbox"/> pUC 18 DNA Control Plasmid	7.5
	: <input checked="" type="checkbox"/> 2-Mercaptoethanol For Ultra Comp Cells	Not available.

## Section 9. Physical and chemical properties

<b>Melting point</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. 0°C (32°F) Not available.
<b>Boiling point</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. 100°C (212°F) Not available.
<b>Flash point</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Evaporation rate</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Flammability (solid, gas)</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not applicable. Not applicable. Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Vapor pressure</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Vapor density</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Relative density</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Solubility</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells  pUC 18 DNA Control Plasmid  2-Mercaptoethanol For Ultra Comp Cells	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>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Auto-ignition temperature</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.
<b>Decomposition temperature</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Not available. Not available. Not available.

## Section 9. Physical and chemical properties

<b>Viscosity</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	2-Mercaptoethanol For Ultra Comp Cells	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent 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.
	2-Mercaptoethanol For Ultra Comp Cells	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.
	2-Mercaptoethanol For Ultra Comp Cells	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent 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.
	2-Mercaptoethanol For Ultra Comp Cells	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	2-Mercaptoethanol For Ultra Comp Cells	No specific data.
<b>10.5 Incompatible materials</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	May react or be incompatible with oxidizing materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidizing materials.
	2-Mercaptoethanol For Ultra Comp Cells	May react or be incompatible with oxidizing materials.
<b>10.6 Hazardous decomposition products</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent 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.
	2-Mercaptoethanol For Ultra Comp Cells	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

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
<b>XL2-Blue Ultracompetent Cells</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
<b>2-Mercaptoethanol For Ultra Comp Cells</b>				
2-Mercaptoethanol	LD50 Dermal	Rabbit	167.1 mg/kg	-
	LD50 Oral	Rat	244 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>XL2-Blue Ultracompetent Cells</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
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	-
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>2-Mercaptoethanol For Ultra Comp Cells</b>					
2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

### Sensitization

Not available.

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)



## Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
<input checked="" type="checkbox"/> 2-Mercaptoethanol For Ultra Comp Cells 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

<b>Information on the likely routes of exposure</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Routes of entry anticipated: Oral, Dermal, Inhalation. Not available. Routes of entry anticipated: Oral, Dermal, Inhalation.
<b><u>Potential acute health effects</u></b>		
<b>Eye contact</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Causes eye irritation. No known significant effects or critical hazards. Causes serious eye damage.
<b>Inhalation</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. Harmful in contact with skin. May cause an allergic skin reaction.
<b>Ingestion</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

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

<b>Eye contact</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	Adverse symptoms may include the following: irritation watering redness No specific data. Adverse symptoms may include the following:  pain watering redness
<b>Inhalation</b>	: <input checked="" type="checkbox"/> L2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No specific data. No specific data. No specific data.

## Section 11. Toxicological information

<b>Skin contact</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No specific data. No specific data. Adverse symptoms may include the following:  pain or irritation redness blistering may occur
<b>Ingestion</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No specific data. No specific data. Adverse symptoms may include the following:  stomach pains

### 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"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Teratogenicity</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp 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>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp 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>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells pUC 18 DNA Control Plasmid 2-Mercaptoethanol For Ultra Comp Cells	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

## Section 11. Toxicological information

Route	ATE value
<b>XL2-Blue Ultracompetent Cells</b> Oral	136842.1 mg/kg
<b>2-Mercaptoethanol For Ultra Comp Cells</b> Oral	2417.3 mg/kg
Dermal	1758.9 mg/kg
Inhalation (vapors)	21.05 mg/l

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>XL2-Blue Ultracompetent Cells</b> Glycerol Dimethyl sulfoxide	Acute LC50 54000 mg/l Fresh water Acute EC50 18299 µg/l Marine water Acute LC50 37.437 mg/l Marine water Acute LC50 25000 ppm Fresh water	Fish - Oncorhynchus mykiss Algae - Nitzschia pungens Crustaceans - Artemia sp. Daphnia - Daphnia magna - Neonate	96 hours 96 hours 48 hours 48 hours
Potassium chloride	Acute LC50 34000000 µg/l Fresh water Chronic NOEC 3323 µg/l Marine water Acute EC50 1337000 µg/l Fresh water Acute EC50 9.24 g/L Fresh water  Acute EC50 141460 µg/l Fresh water Acute LC50 12.92 mg/l Fresh water  Acute LC50 880 mg/l Fresh water	Fish - Pimephales promelas Algae - Nitzschia pungens Algae - Navicula seminulum Algae - Desmodesmus subspicatus Daphnia - Daphnia magna Crustaceans - Pseudosida ramosa - Neonate Fish - Pimephales promelas	96 hours 96 hours 96 hours 72 hours 48 hours 48 hours 96 hours
<b>2-Mercaptoethanol For Ultra Comp Cells</b> Sodium chloride	Acute EC50 4.74 g/L Fresh water  Acute EC50 519.6 mg/l Fresh water Acute EC50 402600 µg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water  Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Algae - Chlamydomonas reinhardtii Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks 96 hours 21 days 8 weeks

### 12.2 Persistence and degradability

## Section 12. Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
<input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>2-Mercaptoethanol For Ultra Comp Cells</b> 2-Mercaptoethanol	OECD 310 Ready Biodegradability - CO <sub>2</sub> in Sealed Vessels (Headspace Test)	69 % - Inherent - 60 days	20 mg/l	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells Potassium chloride	-	-	Readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells Glycerol	-1.76	-	low
Dimethyl sulfoxide	-1.35	3.16	low
Potassium chloride	-0.46	-	low
<b>2-Mercaptoethanol For Ultra Comp Cells</b> 2-Mercaptoethanol	-0.056	-	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. 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 spilled material and runoff and contact with soil, waterways, drains

## Section 13. Disposal considerations

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.

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)** : 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

## Section 15. Regulatory information

<b>Classification</b>	: <input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells	EYE IRRITATION - Category 2B
	pUC 18 DNA Control Plasmid	Not applicable.
	2-Mercaptoethanol For Ultra Comp Cells	ACUTE TOXICITY (dermal) - Category 4
		SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1

### Composition/information on ingredients

Name	%	Classification
<input checked="" type="checkbox"/> XL2-Blue Ultracompetent Cells		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Dimethyl sulfoxide	≤10	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2A
Sucrose	≤10	COMBUSTIBLE DUSTS
Potassium chloride	≤3	EYE IRRITATION - Category 2A
<b>2-Mercaptoethanol For Ultra Comp Cells</b>		
2-Mercaptoethanol	<10	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Sodium chloride	≤8.8	EYE IRRITATION - Category 2A

### State regulations

<b>Massachusetts</b>	: The following components are listed: SUCROSE DUST; GLYCERINE MIST; 2-MERCAPTOETHANOL
<b>New York</b>	: None of the components are listed.
<b>New Jersey</b>	: The following components are listed: DIMETHYL SULFOXIDE; METHANE, SULFINYLBIS-; GLYCERIN; 1,2,3-PROPANETRIOL; THIOGLYCOL; 2-MERCAPTOETHANOL
<b>Pennsylvania</b>	: The following components are listed: .ALPHA.-D-GLUCOPYRANOSIDE, .BETA.-D-FRUCTOFURANOSYL; 1,2,3-PROPANETRIOL; ETHANOL, 2-MERCAPTO-

### 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>	: Not determined.

## Section 15. Regulatory information

<b>Europe</b>	: All components are listed or exempted.
<b>Japan</b>	: <input checked="" type="checkbox"/> <b>Japan inventory (ENCS)</b> : Not determined. <b>Japan inventory (ISHL)</b> : All components are listed or exempted.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<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>	: 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>	: 11/07/2018
<b>Date of previous issue</b>	: 10/17/2016
<b>Version</b>	: 5

### Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> <b>XL2-Blue Ultracompetent Cells</b> EYE IRRITATION - Category 2B	Calculation method
<b>2-Mercaptoethanol For Ultra Comp Cells</b> ACUTE TOXICITY (dermal) - Category 4	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

Indicates information that has changed from previously issued version.

### Notice to reader

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