

# SAFETY DATA SHEET

pDual Expression Vector - 100 micrograms, Part Number 214502

## Section 1. Identification

### 1.1 Product identifier

**Product name** : pDual Expression Vector - 100 micrograms, Part Number 214502  
**Part no. (chemical kit)** : 214502  
**Part no.** : pDual Expression Vector 214502-51  
 XL1-Blue E. coli Strain 200268-81  
**Validation date** : 9/25/2018

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

**Material uses** : Analytical reagent.  
 pDual Expression Vector 0.1 ml (100 µg 1 µg/µl)  
 XL1-Blue E. coli Strain 0.5 ml

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

**Supplier/Manufacturer** : Agilent Technologies, Inc.  
 5301 Stevens Creek Blvd  
 Santa Clara, CA 95051, USA  
 800-227-9770

### 1.4 Emergency telephone number

**In case of emergency** : CHEMTREC®: 1-800-424-9300

## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

**OSHA/HCS status** : pDual Expression Vector  
 XL1-Blue E. coli Strain

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.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

**XL1-Blue E. coli Strain**  
 H319 EYE IRRITATION - Category 2A

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

### 2.2 GHS label elements

**Hazard pictograms** :  XL1-Blue E. coli Strain



**Signal word** : pDual Expression Vector  
 XL1-Blue E. coli Strain  
 No signal word.  
 Warning

**Hazard statements** : pDual Expression Vector  
 XL1-Blue E. coli Strain  
 No known significant effects or critical hazards.  
 H319 - Causes serious eye irritation.

## Section 2. Hazards identification

### Precautionary statements

<b>Prevention</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not applicable. P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
<b>Response</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not applicable. 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.
<b>Storage</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not applicable. Not applicable.
<b>Disposal</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not applicable. Not applicable.
<b>Supplemental label elements</b>	: pDual Expression Vector XL1-Blue E. coli Strain	None known. None known.
<b>2.3 Other hazards</b>		
<b>Hazards not otherwise classified</b>	: pDual Expression Vector XL1-Blue E. coli Strain	None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Mixture Mixture
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Ingredient name	%	CAS number
<b>XL1-Blue E. coli Strain</b>		
Glycerol	≥10 - ≤25	56-81-5
Sodium chloride	≤3	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>	: pDual Expression Vector	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	XL1-Blue E. coli Strain	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

## Section 4. First aid measures

<b>Inhalation</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.
<b>Skin contact</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. Wash out mouth with water. Remove 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 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.

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

#### Potential acute health effects

<b>Eye contact</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. Causes serious eye irritation.
<b>Inhalation</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.

## Section 4. First aid measures

<b>Ingestion</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b><u>Over-exposure signs/symptoms</u></b>		
<b>Eye contact</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. No specific data.
<b>Skin contact</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. No specific data.
<b>Ingestion</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. No specific data.

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

<b>Notes to physician</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	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>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: pDual Expression Vector XL1-Blue E. coli Strain	None known. None known.

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

<b>Specific hazards arising from the chemical</b>	: pDual Expression Vector XL1-Blue E. coli Strain	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.
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## Section 5. Fire-fighting measures

<b>Hazardous thermal decomposition products</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
<b>5.3 Advice for firefighters</b>		
<b>Special protective actions for fire-fighters</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.  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>	: pDual Expression Vector  XL1-Blue E. coli Strain	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.  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>	: pDual Expression Vector  XL1-Blue E. coli Strain	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.  No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	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".  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

<b>6.2 Environmental precautions</b>	: pDual Expression Vector	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).
	XL1-Blue E. coli Strain	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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

<b>Methods for cleaning up</b>	: pDual Expression Vector	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	XL1-Blue E. coli Strain	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: pDual Expression Vector	Put on appropriate personal protective equipment (see Section 8).
	XL1-Blue E. coli Strain	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.
<b>Advice on general occupational hygiene</b>	: pDual Expression Vector	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	XL1-Blue E. coli Strain	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and 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** :

## Section 7. Handling and storage

pDual Expression Vector

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

XL1-Blue E. coli Strain

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in 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>	: pDual Expression Vector XL1-Blue E. coli Strain	Industrial applications, Professional applications. Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not applicable. Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
XL1-Blue E. coli Strain	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust <b>OSHA PEL (United States, 6/2016).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust None.
Glycerol	
Sodium chloride	

### 8.2 Exposure controls

<b>Appropriate engineering controls</b>	: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
<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. 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.

## Section 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Liquid. Liquid.
<b>Color</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Odor</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Odor threshold</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>pH</b>	: pDual Expression Vector XL1-Blue E. coli Strain	7.5 7.5
<b>Melting point</b>	: pDual Expression Vector XL1-Blue E. coli Strain	0°C (32°F) Not available.
<b>Boiling point</b>	: pDual Expression Vector XL1-Blue E. coli Strain	100°C (212°F) Not available.
<b>Flash point</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Evaporation rate</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Flammability (solid, gas)</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not applicable. Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.



## Section 9. Physical and chemical properties

<b>Vapor pressure</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Vapor density</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Relative density</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Solubility</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	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>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Auto-ignition temperature</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Decomposition temperature</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.
<b>Viscosity</b>	: pDual Expression Vector XL1-Blue E. coli Strain	Not available. Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: pDual Expression Vector XL1-Blue E. coli Strain	The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. No specific data.
<b>10.5 Incompatible materials</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
<b>10.6 Hazardous decomposition products</b>	: pDual Expression Vector  XL1-Blue E. coli Strain	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>XL1-Blue E. coli Strain</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>XL1-Blue E. coli Strain</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 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)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : pDual Expression Vector  
XL1-Blue E. coli Strain

Not available.  
Routes of entry anticipated: Oral, Dermal, Inhalation.

#### Potential acute health effects

**Eye contact** : pDual Expression Vector  
XL1-Blue E. coli Strain

No known significant effects or critical hazards.  
Causes serious eye irritation.

**Inhalation** : pDual Expression Vector  
XL1-Blue E. coli Strain

No known significant effects or critical hazards.  
No known significant effects or critical hazards.

**Skin contact** : pDual Expression Vector  
XL1-Blue E. coli Strain

No known significant effects or critical hazards.  
No known significant effects or critical hazards.

**Ingestion** : pDual Expression Vector  
XL1-Blue E. coli Strain

No known significant effects or critical hazards.  
No known significant effects or critical hazards.

## Section 11. Toxicological information

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

<b>Eye contact</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. No specific data.
<b>Skin contact</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. No specific data.
<b>Ingestion</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No specific data. No specific data.

### Delayed and immediate effects and also 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>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Mutagenicity</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Teratogenicity</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Developmental effects</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Fertility effects</b>	: pDual Expression Vector XL1-Blue E. coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
XL1-Blue E. coli Strain Oral	300000 mg/kg

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>XL1-Blue E. coli Strain</b> Glycerol Sodium chloride	Acute LC50 54000 mg/l Fresh water 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	Fish - Oncorhynchus mykiss 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 96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks  96 hours 21 days 8 weeks

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<b>XL1-Blue E. coli Strain</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>XL1-Blue E. coli Strain</b> Glycerol	-1.76	-	low

### 12.4 Mobility in soil

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

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

## Section 13. Disposal considerations

### 13.1 Waste treatment methods

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. 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 and sewers.

## Section 13. Disposal considerations

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)** : Not listed

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

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

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

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

#### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

#### SARA 311/312

**Classification** : pDual Expression Vector  
XL1-Blue E. coli Strain  
Not applicable.  
EYE IRRITATION - Category 2A

#### Composition/information on ingredients


## Section 15. Regulatory information

Name	%	Classification
<input checked="" type="checkbox"/> <b>XL1-Blue E. coli Strain</b> Glycerol Sodium chloride	≥10 - ≤25 ≤3	EYE IRRITATION - Category 2A EYE IRRITATION - Category 2A

### State regulations

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

### California Prop. 65

 **WARNING:** This product can expose you to Tetracycline, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
<input checked="" type="checkbox"/> <b>XL1-Blue E. coli Strain</b> Tetracycline	-	-

### 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** : Not determined.
- China** : All components are listed or exempted.
- Europe** : All components are listed or exempted.
- Japan** :  **Japan inventory (ENCS):** All components are listed or exempted.  
**Japan inventory (ISHL):** All components are listed or exempted.
- Malaysia** : Not determined.
- New Zealand** : All components are listed or exempted.
- Philippines** : Not determined.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Thailand** :  Not determined.
- Turkey** : Not determined.
- United States** : All components are listed or exempted.

## Section 15. Regulatory information

**Viet Nam** :  Not determined.

## Section 16. Other information

### History

**Date of issue** : 09/25/2018

**Date of previous issue** : 03/24/2017

**Version** : 5

### Procedure used to derive the classification

Classification	Justification
XL1-Blue E. coli Strain EYE IRRITATION - Category 2A	Calculation method

Indicates information that has changed from previously issued version.

### Notice to reader

**Disclaimer:** The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.