

# SAFETY DATA SHEET



pDual GC Expression Vector , Part Number 214503

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

### 1.1 Product identifier

**Product name** : pDual GC Expression Vector , Part Number 214503  
**Part no. (chemical kit)** : 214503  
**Part no.** : pDual GC Expression 214503-51  
Vector  
XL1-Blue MRF' E.coli 200301-81  
Strain

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

**Material uses** : Analytical reagent.  
pDual GC Expression Vector 0.02 ml (20 µg 1 µg/µl)  
XL1-Blue MRF' E.coli Strain 0.5 ml

### 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** :  pDual GC Expression Mixture  
Vector  
XL1-Blue MRF' E.coli Mixture  
Strain

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

Not classified.

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

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

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

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## SECTION 2: Hazards identification

<b>Hazard statements</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
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### Precautionary statements

<b>Prevention</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not applicable. Not applicable.
<b>Response</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not applicable. Not applicable.
<b>Storage</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not applicable. Not applicable.
<b>Disposal</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not applicable. Not applicable.
<b>Hazardous ingredients</b>	: XL1-Blue MRF' E.coli Strain	Not applicable.
<b>Supplemental label elements</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	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>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not applicable. Not applicable.

### Special packaging requirements

<b>Tactile warning of danger</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not applicable. Not applicable.
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### 2.3 Other hazards

<b>Other hazards which do not result in classification</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	None known. None known.
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## SECTION 3: Composition/information on ingredients

<b>3.1 Substances</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Mixture Mixture
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### SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
XL1-Blue MRF' E.coli Strain	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5 EC: 231-598-3 CAS: 7647-14-5	≥10 - ≤25	Not classified.	[2]
Glycerol				
Sodium chloride		≤3	Eye Irrit. 2, H319	[1]
			<b>See Section 16 for the full text of the H statements declared above.</b>	

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>	: pDual GC 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 MRF' E.coli Strain	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>	: pDual GC Expression Vector	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	: XL1-Blue MRF' E.coli Strain	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>	: pDual GC Expression Vector	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	: XL1-Blue MRF' E.coli Strain	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	: pDual GC Expression Vector	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.
	: XL1-Blue MRF' 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.
<b>Protection of first-aiders</b>	: pDual GC Expression Vector	No action shall be taken involving any personal risk or without suitable training.
	: XL1-Blue MRF' E.coli Strain	No action shall be taken involving any personal risk or without suitable training.

## SECTION 4: First aid measures

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

#### Potential acute health effects

<b>Eye contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Inhalation</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

<b>Eye contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.
<b>Inhalation</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.
<b>Skin contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.
<b>Ingestion</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.

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

<b>Notes to physician</b>	: pDual GC Expression Vector XL1-Blue MRF' 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 GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific treatment. No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
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## SECTION 5: Firefighting measures

<b>Unsuitable extinguishing media</b>	: pDual GC Expression Vector	None known.
	XL1-Blue MRF' E.coli Strain	None known.

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

<b>Hazards from the substance or mixture</b>	: pDual GC Expression Vector	In a fire or if heated, a pressure increase will occur and the container may burst.
	XL1-Blue MRF' E.coli Strain	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous combustion products</b>	: pDual GC Expression Vector	No specific data.
	XL1-Blue MRF' E.coli Strain	Decomposition products may include the following materials:  carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides

### 5.3 Advice for firefighters

<b>Special precautions for fire-fighters</b>	: pDual GC Expression Vector	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.
	XL1-Blue MRF' 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.
<b>Special protective equipment for fire-fighters</b>	: pDual GC Expression Vector	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.
	XL1-Blue MRF' 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. 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

<b>For non-emergency personnel</b>	: pDual GC Expression Vector	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.
	XL1-Blue MRF' 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 spilt material. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	: pDual GC Expression Vector	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".
	XL1-Blue MRF' E.coli Strain	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-

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## SECTION 6: Accidental release measures

emergency personnel".

<b>6.2 Environmental precautions</b>	: pDual GC Expression Vector	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).
	XL1-Blue MRF' E.coli Strain	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

<b>Methods for cleaning up</b>	: pDual GC 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 MRF' 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.

<b>6.4 Reference to other sections</b>	: 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.
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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: pDual GC Expression Vector	Put on appropriate personal protective equipment (see Section 8).
	XL1-Blue MRF' E.coli Strain	Put on appropriate personal protective equipment (see Section 8).
<b>Advice on general occupational hygiene</b>	: pDual GC 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 MRF' 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

<b>Storage</b>	: pDual GC 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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## SECTION 7: Handling and storage

XL1-Blue MRF' 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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### 7.3 Specific end use(s)

<b>Recommendations</b>	: pDual GC Expression Vector	Industrial applications, Professional applications.
	: XL1-Blue MRF' E.coli Strain	Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	: pDual GC Expression Vector	Not applicable.
	: XL1-Blue MRF' E.coli Strain	Not applicable.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
XL1-Blue MRF' E.coli Strain Glycerol	<b>EH40/2005 WELs (United Kingdom (UK), 12/2011).</b> TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Mist

**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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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## SECTION 8: Exposure controls/personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- 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.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	: pDual GC Expression Vector	Liquid.
	XL1-Blue MRF' E.coli Strain	Liquid.
<b>Colour</b>	: pDual GC Expression Vector	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
<b>Odour</b>	: pDual GC Expression Vector	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
<b>Odour threshold</b>	: pDual GC Expression Vector	Not available.
	XL1-Blue MRF' E.coli Strain	Not available.
<b>pH</b>	: pDual GC Expression Vector	7.5
	XL1-Blue MRF' E.coli Strain	7
<b>Melting point/freezing point</b>	: pDual GC Expression Vector	0°C
	XL1-Blue MRF' E.coli Strain	Not available.
<b>Initial boiling point and boiling range</b>	: pDual GC Expression Vector	100°C
	XL1-Blue MRF' E.coli Strain	Not available.



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## SECTION 9: Physical and chemical properties

<b>Flash point</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Evaporation rate</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Flammability (solid, gas)</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not applicable. Not applicable.
<b>Upper/lower flammability or explosive limits</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Vapour pressure</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Vapour density</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Relative density</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Solubility(ies)</b>	: pDual GC Expression Vector XL1-Blue MRF' 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 GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Auto-ignition temperature</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Decomposition temperature</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Viscosity</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Explosive properties</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.
<b>Oxidising properties</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	Not available. Not available.

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## SECTION 9: Physical and chemical properties

### 9.2 Other information

No additional information.

## SECTION 10: Stability and reactivity

<b>10.1 Reactivity</b>	: pDual GC Expression Vector XL1-Blue MRF' 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 GC Expression Vector XL1-Blue MRF' E.coli Strain	The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: pDual GC Expression Vector XL1-Blue MRF' 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 GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.
<b>10.5 Incompatible materials</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
<b>10.6 Hazardous decomposition products</b>	: pDual GC Expression Vector XL1-Blue MRF' 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
XL1-Blue MRF' E.coli Strain Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

#### Acute toxicity estimates

Not available.

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
XL1-Blue MRF' E.coli Strain Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

#### Sensitiser

**Conclusion/Summary** : Not available.

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## SECTION 11: Toxicological information

### 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 likely routes of exposure

: pDual GC Expression Vector  
XL1-Blue MRF' E.coli Strain

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

### Potential acute health effects

<b>Inhalation</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Ingestion</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Skin contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.
<b>Eye contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No known significant effects or critical hazards. No known significant effects or critical hazards.

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

<b>Inhalation</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.
<b>Ingestion</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.
<b>Skin contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.
<b>Eye contact</b>	: pDual GC Expression Vector XL1-Blue MRF' E.coli Strain	No specific data. No specific data.

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

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## SECTION 11: Toxicological information

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

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## SECTION 12: Ecological information

### 12.2 Persistence and degradability

Not available.

### 12.3 Bioaccumulative potential

Not available.

### 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** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

#### 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. 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.

## 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** : pDual GC Expression Vector Not applicable.  
XL1-Blue MRF<sup>+</sup> E.coli Strain Not applicable.

#### Other EU regulations

##### 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

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



*pDual GC Expression Vector , Part Number 214503*

## SECTION 15: Regulatory information

**Viet Nam** :  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
Not classified.	

### Full text of abbreviated H statements

XL1-Blue MRF' E.coli Strain H319	Causes serious eye irritation.
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### Full text of classifications [CLP/GHS]

XL1-Blue MRF' E.coli Strain Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
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**Date of previous issue** : 24/03/2017

**Version** : 2

### Notice to reader

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