

SAFETY DATA SHEET



pDual Expression Vector - 20 micrograms, Part Number 214501

Section 1. Identification

1.1 Product identifier

Product name : pDual Expression Vector - 20 micrograms, Part Number 214501
Part No. (Chemical Kit) : 214501
Part No. : pDual expression vector 214501-51
 XL1-Blue E. coli Strain 200268-81
Validation date : 3/24/2017

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

Material uses : Analytical reagent.
 pDual expression vector 0.02 ml
 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 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.
 XL1-Blue E. coli Strain 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

2.2 GHS label elements

Hazard pictograms : 

Signal word : pDual expression vector No signal word.
 XL1-Blue E. coli Strain Warning

Hazard statements : pDual expression vector No known significant effects or critical hazards.
 XL1-Blue E. coli Strain GHS SYMBOL - **Exclamation mark** -
 H319 - Causes serious eye irritation.

Precautionary statements

Section 2. Hazards identification

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

Section 3. Composition/information on ingredients

| | | |
|--------------------------|--|--------------------|
| Substance/mixture | : pDual expression vector XL1-Blue E. coli Strain | Mixture Mixture |
|--------------------------|--|--------------------|

| Ingredient name | % | CAS number |
|-------------------------|-----------|------------|
| XL1-Blue E. coli Strain | | |
| 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

| | | |
|--------------------|---------------------------|--|
| Eye contact | : 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. |
| Inhalation | : pDual 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 E. coli Strain | 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 |

Section 4. First aid measures

Skin contact : pDual expression vector

XL1-Blue E. coli Strain

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.

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.

Ingestion : 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

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.

Over-exposure signs/symptoms

Eye contact : pDual expression vector
XL1-Blue E. coli Strain

No specific data. Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 4. First aid measures

| | | |
|---------------------|--|--|
| Inhalation | : pDual expression vector XL1-Blue E. coli Strain | No specific data. No specific data. |
| Skin contact | : pDual expression vector XL1-Blue E. coli Strain | No specific data. No specific data. |
| Ingestion | : 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

| | | |
|-----------------------------------|--|--|
| Notes to physician | : 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. |
| Specific treatments | : pDual expression vector XL1-Blue E. coli Strain | No specific treatment. No specific treatment. |
| Protection of first-aiders | : 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

| | | |
|---------------------------------------|--|--|
| Suitable extinguishing media | : 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. |
| Unsuitable extinguishing media | : pDual expression vector XL1-Blue E. coli Strain | None known. None known. |

5.2 Special hazards arising from the substance or mixture

| | | |
|---|--|--|
| Specific hazards arising from the chemical | : 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. |
| Hazardous thermal decomposition products | : 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 |

5.3 Advice for firefighters

Section 5. Fire-fighting measures

| | | |
|---|--|--|
| Special protective actions for fire-fighters | : 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. |
| Special protective equipment for fire-fighters | : 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

| | | |
|------------------------------------|--|---|
| For non-emergency personnel | : 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. |
| For emergency responders | : 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". |

6.2 Environmental precautions

| | |
|--|--|
| : pDual expression vector 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). 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

Section 6. Accidental release measures

| | | |
|--------------------------------|---------------------------|---|
| Methods for cleaning up | : 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

| | | |
|---|---------------------------|--|
| Protective measures | : 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. |
| Advice on general occupational hygiene | : 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

| | |
|---------------------------|--|
| : 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. |
| 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 |

Section 7. Handling and storage

opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

| | | |
|---|--|--|
| Recommendations | : pDual expression vector XL1-Blue E. coli Strain | Industrial applications, Professional applications. Industrial applications, Professional applications. |
| Industrial sector specific solutions | : 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 | OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust None. |
| Glycerol | |
| | |
| Sodium chloride | |

8.2 Exposure controls

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: 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.

Section 8. Exposure controls/personal protection

- 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

| | | |
|---|--|---|
| Physical state | : pDual expression vector XL1-Blue E. coli Strain | Liquid. Liquid. |
| Color | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Odor | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Odor threshold | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| pH | : pDual expression vector XL1-Blue E. coli Strain | 7.5 7.5 |
| Melting point | : pDual expression vector XL1-Blue E. coli Strain | 0°C (32°F) Not available. |
| Boiling point | : pDual expression vector XL1-Blue E. coli Strain | 100°C (212°F) Not available. |
| Flash point | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Evaporation rate | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Flammability (solid, gas) | : pDual expression vector XL1-Blue E. coli Strain | Not applicable. Not applicable. |
| Lower and upper explosive (flammable) limits | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Vapor pressure | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Vapor density | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Relative density | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Solubility | : 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. |
| Partition coefficient: n-octanol/water | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Auto-ignition temperature | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |
| Decomposition temperature | : pDual expression vector XL1-Blue E. coli Strain | Not available. Not available. |

Section 9. Physical and chemical properties

Viscosity : pDual expression vector Not available.
XL1-Blue E. coli Strain Not available.

Section 10. Stability and reactivity

10.1 Reactivity : pDual expression vector No specific test data related to reactivity available for this product or its ingredients.
XL1-Blue E. coli Strain No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : pDual expression vector The product is stable.
XL1-Blue E. coli Strain The product is stable.

10.3 Possibility of hazardous reactions : pDual expression vector Under normal conditions of storage and use, hazardous reactions will not occur.
XL1-Blue E. coli Strain Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : pDual expression vector No specific data.
XL1-Blue E. coli Strain No specific data.

10.5 Incompatible materials : pDual expression vector May react or be incompatible with oxidizing materials.
XL1-Blue E. coli Strain May react or be incompatible with oxidizing materials.

10.6 Hazardous decomposition products : pDual expression vector Under normal conditions of storage and use, hazardous decomposition products should not be produced.
XL1-Blue E. coli Strain 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 E. coli Strain | | | | |
| 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 |
|--------------------------------|--------------------------|---------|-------|-------------------------|-------------|
| XL1-Blue E. coli Strain | | | | | |
| 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

Section 11. Toxicological information

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

| | | |
|---|--|---|
| Information on the likely routes of exposure | : 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. |

Symptoms related to the physical, chemical and toxicological characteristics

| | | |
|---------------------|--|---|
| Eye contact | : pDual expression vector XL1-Blue E. coli Strain | No specific data. Adverse symptoms may include the following: pain or irritation watering redness |
| Inhalation | : pDual expression vector XL1-Blue E. coli Strain | No specific data. No specific data. |
| Skin contact | : pDual expression vector XL1-Blue E. coli Strain | No specific data. No specific data. |
| Ingestion | : 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

| | |
|------------------------------------|------------------|
| Potential immediate effects | : Not available. |
| Potential delayed effects | : Not available. |

Section 11. Toxicological information

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| | | |
|------------------------------|--|--|
| General | : pDual expression vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Carcinogenicity | : pDual expression vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Mutagenicity | : pDual expression vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Teratogenicity | : pDual expression vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Developmental effects | : pDual expression vector XL1-Blue E. coli Strain | No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Fertility effects | : 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 | 300000.3 mg/kg |

Section 12. Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|--|---|---|----------|
| XL1-Blue E. coli Strain Glycerol Sodium chloride | Acute LC50 54000 mg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| | Acute EC50 2430000 µg/l Fresh water | Algae - Navicula seminulum | 96 hours |
| | Acute EC50 28.85 mg/dm ³ Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute EC50 519.6 mg/l Fresh water | Crustaceans - Cypris subglobosa | 48 hours |
| | Acute IC50 6.87 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Acute LC50 1.56 g/L Fresh water | Daphnia - Daphnia magna | 48 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 | |

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Section 12. Ecological information

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------------------|--------------------|-----|-----------|
| XL1-Blue E. coli Strain Glycerol | -1.76 | - | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : 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.

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

Regulatory information

DOT / IMDG / IATA : Not regulated.

Section 15. Regulatory information

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

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
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

Section 15. Regulatory information

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 : Immediate (acute) health hazard

Composition/information on ingredients

| Name | % | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|--------------------------------|-----------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| XL1-Blue E. coli Strain | | | | | | |
| Glycerol | ≥10 - ≤25 | No. | No. | No. | Yes. | No. |
| Sodium chloride | ≤3 | No. | No. | No. | Yes. | No. |

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 contains a chemical known to the State of California to cause birth defects or other reproductive harm.

| Ingredient name | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|--|--------|--------------|---------------------------|---------------------------------|
| XL1-Blue E. coli Strain Tetracycline | No. | Yes. | No. | No. |

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

Section 15. Regulatory information

| | |
|--------------------------|---|
| Australia | : All components are listed or exempted. |
| Canada inventory | : Not determined. |
| China | : All components are listed or exempted. |
| Europe | : All components are listed or exempted. |
| Japan | : Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : All components are listed or exempted. |
| Malaysia | : Not determined. |
| New Zealand | : 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. |
| Turkey | : Not determined. |

Section 16. Other information

History

| | |
|-------------------------------|---------------|
| Date of issue | : 03/24/2017 |
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| Version | : 4 |

✔ Indicates information that has changed from previously issued version.

Notice to reader

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