SAFETY DATA SHEET
ArcticExpress (DE3) Competent Cells, Part Number 230192

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

1.1 Product identifier
Product name: ArcticExpress (DE3) Competent Cells, Part Number 230192
Part No. (Kit): 230192
Part No.: pUC 18 DNA Control 200231-42
Plasmid
XL10-Gold 200314-43
2-Mercaptoethanol
ArcticExpress (DE3) competent cells 230192-41

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

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical chemistry.</td>
</tr>
<tr>
<td>pUC 18 DNA Control Plasmid 0.01 mL</td>
</tr>
<tr>
<td>XL10-Gold 2-Mercaptoethanol 0.05 mL</td>
</tr>
<tr>
<td>ArcticExpress (DE3) competent cells 1 ml (10x0.1ml)</td>
</tr>
</tbody>
</table>

1.3 Details of the supplier of the safety data sheet
Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000
e-mail address of person responsible for this SDS: pdl-msds_author@agilent.com

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Product definition: pUC 18 DNA Control Plasmid
XL10-Gold
2-Mercaptoethanol
ArcticExpress (DE3) competent cells
Mixture
Mixture
Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
XL10-Gold 2-Mercaptoethanol
H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
H317 SKIN SENSITISATION - Category 1
H412 LONG-TERM AQUATIC HAZARD - Category 3

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
Date of issue/Date of revision: 18/10/2016

ArcticExpress (DE3) Competent Cells, Part Number 230192

SECTION 2: Hazards identification

Hazard pictograms:

Signal word:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

No signal word.

Hazard statements:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol

No known significant effects or critical hazards.

GHS05 - Causes serious eye damage.

GHS07 - May cause an allergic skin reaction.

ArcticExpress (DE3) competent cells

No known significant effects or critical hazards.

Precautionary statements

Prevention:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Not applicable.

P280 - Wear protective gloves. Wear eye or face protection.

P273 - Avoid release to the environment.

Response:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Not applicable.

P305 + P351 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Immediately call a POISON CENTER or physician.

Storage:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Not applicable.

Disposal:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Not applicable.

P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients:
- XL10-Gold
- 2-Mercaptoethanol

Supplemental label elements:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Not applicable.

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ArcticExpress (DE3) Competent Cells, Part Number 230192

SECTION 2: Hazards identification

### Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

- **pUC 18 DNA Control Plasmid**: Not applicable.
- **XL10-Gold**: Not applicable.
- **2-Mercaptoethanol**: Not applicable.
- **ArcticExpress (DE3) competent cells**: Not applicable.

### Special packaging requirements

- **Tactile warning of danger**:
  - **pUC 18 DNA Control Plasmid**: Not applicable.
  - **XL10-Gold**: Not applicable.
  - **2-Mercaptoethanol**: Not applicable.
  - **ArcticExpress (DE3) competent cells**: Not applicable.

### 2.3 Other hazards

- **Other hazards which do not result in classification**:
  - **pUC 18 DNA Control Plasmid**: None known.
  - **XL10-Gold**: None known.
  - **2-Mercaptoethanol**: None known.
  - **ArcticExpress (DE3) competent cells**: None known.

SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

- **pUC 18 DNA Control Plasmid**: Mixture
- **XL10-Gold 2-Mercaptoethanol**: Mixture
- **ArcticExpress (DE3) competent cells**: Mixture

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Regulation (EC) No. 1272/2008 [CLP]</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>XL10-Gold 2-Mercaptoethanol</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **ArcticExpress (DE3) competent cells** |             |         |                                    |            |

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

**Date of issue/Date of revision**: 18/10/2016
SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pUC 18 DNA Control Plasmid</td>
<td>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.</td>
</tr>
<tr>
<td>XL10-Gold 2-Mercaptoethanol</td>
<td>Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.</td>
</tr>
<tr>
<td>ArcticExpress (DE3) competent cells</td>
<td>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.</td>
</tr>
</tbody>
</table>

Inhalation

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pUC 18 DNA Control Plasmid</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td>XL10-Gold 2-Mercaptoethanol</td>
<td>Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</td>
</tr>
<tr>
<td>ArcticExpress (DE3) competent cells</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
</tbody>
</table>

Skin contact

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pUC 18 DNA Control Plasmid</td>
<td>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
</tr>
<tr>
<td>XL10-Gold 2-Mercaptoethanol</td>
<td>Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.</td>
</tr>
<tr>
<td>ArcticExpress (DE3) competent cells</td>
<td>Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.</td>
</tr>
</tbody>
</table>

Ingestion

<table>
<thead>
<tr>
<th>Substance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pUC 18 DNA Control Plasmid</td>
<td>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.</td>
</tr>
</tbody>
</table>
| XL10-Gold 2-Mercaptoethanol                   | Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an
SECTION 4: First aid measures

ArcticExpress (DE3) competent cells

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.

ArcticExpress (DE3) competent cells

Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Protection of first-aiders

ArcticExpress (DE3) competent cells

No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Material</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>pUC 18 DNA Control Plasmid</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>XL10-Gold</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>2-Mercaptoethanol</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>ArcticExpress (DE3) competent cells</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

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

| Ingestion | pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| | XL10-Gold | No known significant effects or critical hazards. |
| | 2-Mercaptoethanol | No known significant effects or critical hazards. |
| | ArcticExpress (DE3) competent cells | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

Eye contact: pUC 18 DNA Control Plasmid
XL10-Gold
2-Mercaptoethanol
ArcticExpress (DE3) competent cells

No specific data.

Adverse symptoms may include the following:

- pain
- watering
- redness

No specific data.
### SECTION 4: First aid measures

#### Inhalation
- **pUC 18 DNA Control Plasmid**
- **XL10-Gold**
- **2-Mercaptoethanol**
- **ArcticExpress (DE3) competent cells**
  - Notes to physician: No specific data.
  - Specific treatments: No specific data.

#### Skin contact
- **pUC 18 DNA Control Plasmid**
- **XL10-Gold**
- **2-Mercaptoethanol**
- **ArcticExpress (DE3) competent cells**
  - Notes to physician: Adverse symptoms may include the following:
    - pain or irritation
    - redness
    - blistering may occur
  - Specific treatments: No specific data.

#### Ingestion
- **pUC 18 DNA Control Plasmid**
- **XL10-Gold**
- **2-Mercaptoethanol**
- **ArcticExpress (DE3) competent cells**
  - Notes to physician: No specific data.
  - Specific treatments: No specific data.

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

<table>
<thead>
<tr>
<th>Notes to physician</th>
<th>pUC 18 DNA Control Plasmid</th>
<th>XL10-Gold</th>
<th>2-Mercaptoethanol</th>
<th>ArcticExpress (DE3) competent cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
<td>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
<td>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
<td></td>
</tr>
</tbody>
</table>

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>pUC 18 DNA Control Plasmid</th>
<th>XL10-Gold</th>
<th>2-Mercaptoethanol</th>
<th>ArcticExpress (DE3) competent cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unsuitable extinguishing media</th>
<th>pUC 18 DNA Control Plasmid</th>
<th>XL10-Gold</th>
<th>2-Mercaptoethanol</th>
<th>ArcticExpress (DE3) competent cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>None known.</td>
<td>None known.</td>
<td>None known.</td>
<td>None known.</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Hazards from the substance or mixture</th>
<th>pUC 18 DNA Control Plasmid</th>
<th>XL10-Gold</th>
<th>2-Mercaptoethanol</th>
<th>ArcticExpress (DE3) competent cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td>In a fire or if heated, a pressure increase will occur and the container may burst.</td>
<td></td>
</tr>
</tbody>
</table>

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SECTION 5: Firefighting measures

Hazardous combustion products:

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- sulfur oxides
- halogenated compounds
- metal oxide/oxides

5.3 Advice for firefighters:

Special precautions for fire-fighters:

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

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.

Special protective equipment for fire-fighters:

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

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SECTION 6: Accidental release measures

6.2 Environmental precautions

Competent cells

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

6.3 Methods and material for containment and cleaning up

Methods for cleaning up

Competent cells

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections

See Section 1 for emergency contact information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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## SECTION 7: Handling and storage

<table>
<thead>
<tr>
<th>Protective measures</th>
<th>Storage</th>
<th>Advice on general occupational hygiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>pUC 18 DNA Control Plasmid</td>
<td>Put on appropriate personal protective equipment (see Section 8).</td>
<td>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.</td>
</tr>
<tr>
<td>XL10-Gold 2-Mercaptoethanol</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>ArcticExpress (DE3) competent cells</td>
<td>Put on appropriate personal protective equipment (see Section 8).</td>
<td></td>
</tr>
</tbody>
</table>

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

- **Storage**: pUC 18 DNA Control Plasmid
  - Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

- **Storage**: XL10-Gold 2-Mercaptoethanol
  - Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. 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.

- **Storage**: ArcticExpress (DE3) competent cells
  - Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
SECTION 7: Handling and storage

7.3 Specific end use(s)

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>pUC 18 DNA Control Plasmid</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>XL10-Gold</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>2-Mercaptoethanol</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>ArcticExpress (DE3) competent cells</td>
<td>Industrial applications, Professional applications.</td>
</tr>
<tr>
<td>pUC 18 DNA Control Plasmid</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>XL10-Gold</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>2-Mercaptoethanol</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>ArcticExpress (DE3) competent cells</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ArcticExpress (DE3) competent cells</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m³ 8 hours. Form: Mist</td>
</tr>
<tr>
<td>Glycerol</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m³ 8 hours. Form: Mist</td>
</tr>
<tr>
<td>Sucrose</td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m³ 8 hours. Form: Mist</td>
</tr>
</tbody>
</table>

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

Individual protection measures

Hygiene measures: Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
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: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Hand protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. This should be done according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Colour:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Odour:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Odour threshold:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

pH:
- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

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### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>pUC 18 DNA Control Plasmid</th>
<th>XL10-Gold</th>
<th>2-Mercaptoethanol</th>
<th>ArcticExpress (DE3) competent cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/freezing point</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not applicable.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapour density</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not available.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td></td>
<td></td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision : 18/10/2016
Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II - United Kingdom (UK)

ArcticExpress (DE3) Competent Cells, Part Number 230192

SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>pUC 18 DNA Control Plasmid</th>
<th>Not available.</th>
<th>XL10-Gold 2-Mercaptoethanol ArcticExpress (DE3) competent cells</th>
<th>Not available.</th>
<th>ArcticExpress (DE3) competent cells</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-ignition temperature</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxidising properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

| 10.1 Reactivity                   | pUC 18 DNA Control Plasmid | No specific test data related to reactivity available for this product or its ingredients. | XL10-Gold 2-Mercaptoethanol ArcticExpress (DE3) competent cells | No specific test data related to reactivity available for this product or its ingredients. | ArcticExpress (DE3) competent cells | No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability           | pUC 18 DNA Control Plasmid | The product is stable. | XL10-Gold 2-Mercaptoethanol ArcticExpress (DE3) competent cells | The product is stable. | ArcticExpress (DE3) competent cells | The product is stable. |
| 10.3 Possibility of hazardous reactions | pUC 18 DNA Control Plasmid | Under normal conditions of storage and use, hazardous reactions will not occur. | XL10-Gold 2-Mercaptoethanol ArcticExpress (DE3) competent cells | Under normal conditions of storage and use, hazardous reactions will not occur. | ArcticExpress (DE3) competent cells | Under normal conditions of storage and use, hazardous reactions will not occur. |

Date of issue/Date of revision: 18/10/2016
SECTION 10: Stability and reactivity

10.4 Conditions to avoid

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

No specific data.

10.5 Incompatible materials

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
</table>
| XL10-Gold 2-Mercaptoethanol
Sodium chloride | LD50 Oral | Rat     | 3000 mg/kg | -        |
| 2-Mercaptoethanol      | LD50 Dermal | Rabbit | 200 mg/kg  | -        |
|                        | LD50 Oral  | Rat     | 244 mg/kg  | -        |

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL10-Gold 2-Mercaptoethanol</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>5545.5 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>4545.5 mg/kg</td>
</tr>
<tr>
<td>Inhalation (vapours)</td>
<td>45.45 mg/l</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
</table>
| XL10-Gold 2-Mercaptoethanol
Sodium chloride | Eyes - Moderate irritant    | Rabbit | -     | 24 hours 100 milligrams | -          |
|                        | Eyes - Moderate irritant    | Rabbit | -     | 10 milligrams       | -          |
|                        | Skin - Mild irritant        | Rabbit | -     | 24 hours 500 milligrams | -          |
| 2-Mercaptoethanol      | Eyes - Severe irritant      | Rabbit | -     | 2 milligrams         | -          |

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
</table>
| XL10-Gold 2-Mercaptoethanol
2-Mercaptoethanol      | Category 3 | Not applicable. | Respiratory tract irritation |
### SECTION 11: Toxicological information

#### Specific target organ toxicity (repeated exposure)
Not available.

#### Aspiration hazard
Not available.

| Information on likely routes of exposure | pUC 18 DNA Control Plasmid | Not available. |
| XL10-Gold | Routes of entry anticipated: Oral, Dermal, Inhalation. |
| 2-Mercaptoethanol | ArcticExpress (DE3) competent cells |

#### Potential acute health effects

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

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

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

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

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

##### Inhalation:
- pUC 18 DNA Control Plasmid: No specific data.
- XL10-Gold: No specific data.
- 2-Mercaptoethanol: No specific data.
- ArcticExpress (DE3) competent cells: No specific data.

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

##### Skin contact:
- pUC 18 DNA Control Plasmid: No specific data.
- XL10-Gold: Adverse symptoms may include the following:
  - pain or irritation
  - redness
  - blistering may occur
- 2-Mercaptoethanol: No specific data.
- ArcticExpress (DE3) competent cells: No specific data.
## SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>pUC 18 DNA Control Plasmid</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>XL10-Gold</td>
<td>Adverse symptoms may include the following:</td>
</tr>
<tr>
<td></td>
<td>2-Mercaptoethanol</td>
<td>pain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>watering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>redness</td>
</tr>
<tr>
<td></td>
<td>ArcticExpress (DE3) competent cells</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

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

#### Short term exposure

<table>
<thead>
<tr>
<th>Potential immediate effects</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential delayed effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### Long term exposure

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

#### Potential chronic health effects

##### General

| pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| XL10-Gold                  | Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. |
| 2-Mercaptoethanol          | No known significant effects or critical hazards. |
| ArcticExpress (DE3) competent cells | |

##### Carcinogenicity

| pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| XL10-Gold                  | No known significant effects or critical hazards. |
| 2-Mercaptoethanol          | No known significant effects or critical hazards. |
| ArcticExpress (DE3) competent cells | |

##### Mutagenicity

| pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| XL10-Gold                  | No known significant effects or critical hazards. |
| 2-Mercaptoethanol          | No known significant effects or critical hazards. |
| ArcticExpress (DE3) competent cells | |

##### Teratogenicity

| pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| XL10-Gold                  | No known significant effects or critical hazards. |
| 2-Mercaptoethanol          | No known significant effects or critical hazards. |
| ArcticExpress (DE3) competent cells | |

##### Developmental effects

| pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| XL10-Gold                  | No known significant effects or critical hazards. |
| 2-Mercaptoethanol          | No known significant effects or critical hazards. |
| ArcticExpress (DE3) competent cells | |

##### Fertility effects

| pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| XL10-Gold                  | No known significant effects or critical hazards. |
| 2-Mercaptoethanol          | No known significant effects or critical hazards. |
| ArcticExpress (DE3) competent cells | |

### Eye contact

- pUC 18 DNA Control Plasmid
- XL10-Gold
- 2-Mercaptoethanol
- ArcticExpress (DE3) competent cells

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

- **Potential chronic health effects**
  - **General**
    - pUC 18 DNA Control Plasmid
    - XL10-Gold
    - 2-Mercaptoethanol
    - ArcticExpress (DE3) competent cells
  - **Carcinogenicity**
    - pUC 18 DNA Control Plasmid
    - XL10-Gold
    - 2-Mercaptoethanol
    - ArcticExpress (DE3) competent cells
  - **Mutagenicity**
    - pUC 18 DNA Control Plasmid
    - XL10-Gold
    - 2-Mercaptoethanol
    - ArcticExpress (DE3) competent cells
  - **Teratogenicity**
    - pUC 18 DNA Control Plasmid
    - XL10-Gold
    - 2-Mercaptoethanol
    - ArcticExpress (DE3) competent cells
  - **Developmental effects**
    - pUC 18 DNA Control Plasmid
    - XL10-Gold
    - 2-Mercaptoethanol
    - ArcticExpress (DE3) competent cells
  - **Fertility effects**
    - pUC 18 DNA Control Plasmid
    - XL10-Gold
    - 2-Mercaptoethanol
    - ArcticExpress (DE3) competent cells

### Date of issue/Date of revision

- 18/10/2016
SECTION 12: Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL10-Gold 2-Mercaptoethanol Sodium chloride</td>
<td>Acute EC50 2430000 µg/l Fresh water Acute EC50 519.6 mg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1661 mg/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</td>
<td>Algae - Navicula seminulum Crustaceans - Cypris subglobosa Aquatic plants - Lemna minor Daphnia - Daphnia magna Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult</td>
<td>96 hours 48 hours 96 hours 48 hours 96 hours 3 weeks 96 hours 21 days 8 weeks</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL10-Gold 2-Mercaptoethanol 2-Mercaptoethanol</td>
<td>-0.056</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient ($K_{OC}$) : 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

Packaging

Methods of disposal : The classification of the product may meet the criteria for a hazardous waste. 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.
SECTION 13: Disposal considerations

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory 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

Europe inventory: All components are listed or exempted.

Industrial emissions (integrated pollution prevention and control) - Air
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.

Other EU regulations

Date of issue/Date of revision: 18/10/2016
SECTION 15: Regulatory information

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**
Not listed.

**International lists**

**National inventory**

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

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]**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>XL10-Gold 2-Mercaptoethanol</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Eye Dam. 1, H318</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Skin Sens. 1, H317</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 3, H412</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

**Full text of abbreviated H statements**

**XL10-Gold 2-Mercaptoethanol**
- H301: Toxic if swallowed.
- H310: Fatal in contact with skin.
- H315: Causes skin irritation.
- H317: May cause an allergic skin reaction.
- H318: Causes serious eye damage.
- H319: Causes serious eye irritation.
- H330: Fatal if inhaled.
- H335: May cause respiratory irritation.
- H411: Toxic to aquatic life with long lasting effects.
- H412: Harmful to aquatic life with long lasting effects.

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

Date of issue/Date of revision: 18/10/2016
SECTION 16: Other information

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

Date of issue/Date of revision: 18/10/2016
Date of previous issue: No previous validation.
Version: 1

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