

# SAFETY DATA SHEET

PCR-Script Amp Cloning Kit, Catalog #211189

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

### 1.1 Product identifier

|                       |   |                                 |           |
|-----------------------|---|---------------------------------|-----------|
| <b>Product name</b>   | : PCR-Script Amp Cloning Kit, Catalog #211189 |                                 |           |
| <b>Part No. (Kit)</b> | : 211189                                      |                                 |           |
| <b>Part No.</b>       | :   | DNA-Binding solution            | 400771-13 |
|                       |   | PCR Wash Buffer                 | 400771-16 |
|                       |   | XL10-Gold Kan r                 | 200317-44 |
|                       |   | ultracompetent cells            |           |
|                       |   | pUC18 Control Plasmid DNA       | 200231-42 |
|                       |   | Cloned Pfu DNA Polymerase       | 211190-59 |
|                       |   | Srf I                           | 211190-53 |
|                       |   | Polishing Buffer                | 211190-58 |
|                       |   | 10 mM dNTP Mix                  | 211190-57 |
|                       |   | pPCR-Script Amp SK(+)           | 211190-51 |
|                       |   | Cloning Vector (predigested)    |           |
|                       |   | PCR-Script Reaction Buffer      | 211190-55 |
|                       |   | rATP                            | 211190-56 |
|                       |   | Control PCR Insert              | 211190-52 |
|                       |   | T4 DNA Ligase                   | 211190-54 |
|                       |   | XL10-Gold 2-mercaptoethanol mix | 200314-43 |

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

| Identified uses                      |          |
|--------------------------------------|----------|
| Analytical reagent.                  |          |
| DNA-Binding solution                 | 5 ml     |
| PCR Wash Buffer                      | 10 ml    |
| XL10-Gold Kan r ultracompetent cells | 2 ml     |
| pUC18 Control Plasmid DNA            | 0.01 ml  |
| Cloned Pfu DNA Polymerase            | 0.05 ml  |
| Srf I                                | 0.05 ml  |
| Polishing Buffer                     | 0.5 ml   |
| 10 mM dNTP Mix                       | 0.05 ml  |
| pPCR-Script Amp SK(+)                | 0.05 ml  |
| Cloning Vector (predigested)         |          |
| PCR-Script Reaction Buffer           | 0.5 ml   |
| rATP                                 | 0.5 ml   |
| Control PCR Insert                   | 0.004 ml |
| T4 DNA Ligase                        | 0.05 ml  |
| XL10-Gold 2-mercaptoethanol mix      | 0.1 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

**Date of issue/Date of revision** : 23/09/2011

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

**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** :

|                                      |         |
|--------------------------------------|---------|
| DNA-Binding Solution                 | Mixture |
| PCR Wash Buffer                      | Mixture |
| XL10-Gold Kan r ultracompetent cells | Mixture |
| pUC18 Control Plasmid DNA            | Mixture |
| Cloned Pfu DNA Polymerase            | Mixture |
| Srf I                                | Mixture |
| Polishing Buffer                     | Mixture |
| 10 mM dNTP Mix                       | Mixture |
| pPCR-Script Amp SK(+)                | Mixture |
| Cloning Vector (predigested)         |         |
| PCR-Script Reaction Buffer           | Mixture |
| rATP                                 | Mixture |
| Control PCR Insert                   | Mixture |
| T4 DNA Ligase                        | Mixture |
| XL10-Gold 2-mercaptoethanol mix      | Mixture |

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

#### **DNA-Binding Solution**

H302 ACUTE TOXICITY: ORAL - Category 4  
 H412 AQUATIC TOXICITY (CHRONIC) - Category 3

#### **XL10-Gold Kan r ultracompetent cells**

H373i SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2

#### **Cloned Pfu DNA Polymerase**

H373i SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2

#### **Srf I**

H373i SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2

#### **Polishing Buffer**

H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

#### **T4 DNA Ligase**

H373i SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2

#### **XL10-Gold 2-mercaptoethanol mix**

H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 H317 SKIN SENSITIZATION - Category 1

**SECTION 2: Hazards identification**

H373o SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL [stomach] - Category 2

H412 AQUATIC TOXICITY (CHRONIC) - Category 3

|   |   |  |
|---|---|--|
| <b>Ingredients of unknown toxicity</b>    | : DNA-Binding Solution<br>PCR Wash Buffer<br>XL10-Gold Kan r ultracompetent cells<br>pUC18 Control Plasmid DNA<br>Cloned Pfu DNA Polymerase<br>Srf I<br>Polishing Buffer<br><br>10 mM dNTP Mix<br>pPCR-Script Amp SK(+)<br>Cloning Vector (predigested)<br>PCR-Script Reaction Buffer<br>rATP<br>Control PCR Insert<br>T4 DNA Ligase<br>XL10-Gold 2-mercaptoethanol mix | Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.6%<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3.2%<br>Not applicable.<br>Not applicable.<br>Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3.9%<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable.   |
| <b>Ingredients of unknown ecotoxicity</b> | : DNA-Binding Solution<br>PCR Wash Buffer<br>XL10-Gold Kan r ultracompetent cells<br>pUC18 Control Plasmid DNA<br>Cloned Pfu DNA Polymerase<br>Srf I<br>Polishing Buffer<br><br>10 mM dNTP Mix<br>pPCR-Script Amp SK(+)<br>Cloning Vector (predigested)<br>PCR-Script Reaction Buffer<br>rATP<br>Control PCR Insert<br>T4 DNA Ligase<br>XL10-Gold 2-mercaptoethanol mix | Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.6%<br>Not applicable.<br>Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5%<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3.2%<br>Not applicable.<br>Not applicable.<br>Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3.9%<br>Not applicable.<br>Not applicable.<br>Not applicable.<br>Not applicable. |

**Classification according to Directive 1999/45/EC [DPD]**

|                                      |  |
|--------------------------------------|--|
| DNA-Binding Solution                 | The product is classified as dangerous according to Directive 1999/45/EC and its amendments.     |
| PCR Wash Buffer                      | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| XL10-Gold Kan r ultracompetent cells | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| pUC18 Control Plasmid DNA            | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| Cloned Pfu DNA Polymerase            | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| Srf I                                | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| Polishing Buffer                     | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |

## SECTION 2: Hazards identification

|  |  |
|--|--|
| 10 mM dNTP Mix                                     | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| pPCR-Script Amp SK(+) Cloning Vector (predigested) | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| PCR-Script Reaction Buffer                         | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| rATP   | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| Control PCR Insert                                 | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| T4 DNA Ligase                                      | The product is not classified as dangerous according to Directive 1999/45/EC and its amendments. |
| XL10-Gold 2-mercaptoethanol mix                    | The product is classified as dangerous according to Directive 1999/45/EC and its amendments.     |

|                             |  |  |
|-----------------------------|--|--|
| <b>Classification</b>       | : DNA-Binding Solution                             | Xn; R20/21/22<br>R52/53  |
|                             | PCR Wash Buffer                                    | Not classified.  |
|                             | XL10-Gold Kan r ultracompetent cells               | Not classified.  |
|                             | pUC18 Control Plasmid DNA                          | Not classified.  |
|                             | Cloned Pfu DNA Polymerase                          | Not classified.  |
|                             | Srf I  | Not classified.  |
|                             | Polishing Buffer                                   | Not classified.  |
|                             | 10 mM dNTP Mix                                     | Not classified.  |
|                             | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Not classified.  |
|                             | PCR-Script Reaction Buffer                         | Not classified.  |
|                             | rATP   | Not classified.  |
|                             | Control PCR Insert                                 | Not classified.  |
|                             | T4 DNA Ligase                                      | Not classified.  |
|                             | XL10-Gold 2-mercaptoethanol mix                    | Xn; R21<br>Xi; R36<br>R43<br>R52/53  |
| <b>Human health hazards</b> | : DNA-Binding Solution                             | Harmful by inhalation, in contact with skin and if swallowed.                              |
|                             | PCR Wash Buffer                                    | Not applicable.  |
|                             | XL10-Gold Kan r ultracompetent cells               | Not applicable.  |
|                             | pUC18 Control Plasmid DNA                          | Not applicable.  |
|                             | Cloned Pfu DNA Polymerase                          | Not applicable.  |
|                             | Srf I  | Not applicable.  |
|                             | Polishing Buffer                                   | Not applicable.  |
|                             | 10 mM dNTP Mix                                     | Not applicable.  |
|                             | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Not applicable.  |
|                             | PCR-Script Reaction Buffer                         | Not applicable.  |
|                             | rATP   | Not applicable.  |
|                             | Control PCR Insert                                 | Not applicable.  |
|                             | T4 DNA Ligase                                      | Not applicable.  |
|                             | XL10-Gold 2-mercaptoethanol mix                    | Harmful in contact with skin. Irritating to eyes. May cause sensitisation by skin contact. |

**Environmental hazards** : DNA-Binding Solution Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

## SECTION 2: Hazards identification

|                                      |   |
|--------------------------------------|---|
| PCR Wash Buffer                      | Not applicable.   |
| XL10-Gold Kan r ultracompetent cells | Not applicable.   |
| pUC18 Control Plasmid DNA            | Not applicable.   |
| Cloned Pfu DNA Polymerase            | Not applicable.   |
| Srf I                                | Not applicable.   |
| Polishing Buffer                     | Not applicable.   |
| 10 mM dNTP Mix                       | Not applicable.   |
| pPCR-Script Amp SK(+)                | Not applicable.   |
| Cloning Vector (predigested)         |   |
| PCR-Script Reaction Buffer           | Not applicable.   |
| rATP                                 | Not applicable.   |
| Control PCR Insert                   | Not applicable.   |
| T4 DNA Ligase                        | Not applicable.   |
| XL10-Gold 2-mercaptoethanol mix      | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. |

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

#### Hazard pictograms



#### Signal word

|   |                                      |                 |
|---|--------------------------------------|-----------------|
| : | DNA-Binding Solution                 | Warning         |
|   | PCR Wash Buffer                      | No signal word. |
|   | XL10-Gold Kan r ultracompetent cells | Warning         |
|   | pUC18 Control Plasmid DNA            | No signal word. |
|   | Cloned Pfu DNA Polymerase            | Warning         |
|   | Srf I                                | Warning         |
|   | Polishing Buffer                     | Warning         |
|   | 10 mM dNTP Mix                       | No signal word. |
|   | pPCR-Script Amp SK(+)                | No signal word. |
|   | Cloning Vector (predigested)         |                 |
|   | PCR-Script Reaction Buffer           | No signal word. |
|   | rATP                                 | No signal word. |
|   | Control PCR Insert                   | No signal word. |
|   | T4 DNA Ligase                        | Warning         |
|   | XL10-Gold 2-mercaptoethanol mix      | Danger          |

#### Hazard statements

|   |                                      |  |
|---|--------------------------------------|--|
| : | DNA-Binding Solution                 | <b>GHS07</b> - Harmful if swallowed.   |
|   | PCR Wash Buffer                      | Harmful to aquatic life with long lasting effects.   |
|   | XL10-Gold Kan r ultracompetent cells | No known significant effects or critical hazards.  |
|   | pUC18 Control Plasmid DNA            | <b>GHS08</b> - May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys) |
|   | Cloned Pfu DNA Polymerase            | No known significant effects or critical hazards.  |
|   |                                      | <b>GHS08</b> - May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys) |

**SECTION 2: Hazards identification**

|                                 |   |
|---------------------------------|---|
| Srf I                           | <b>GHS08 -</b><br>May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys)   |
| Polishing Buffer                | <b>GHS07 -</b><br>Causes serious eye irritation.  |
| 10 mM dNTP Mix                  | No known significant effects or critical hazards.   |
| pPCR-Script Amp SK(+)           | No known significant effects or critical hazards.   |
| Cloning Vector (predigested)    |   |
| PCR-Script Reaction Buffer      | No known significant effects or critical hazards.   |
| rATP                            | No known significant effects or critical hazards.   |
| Control PCR Insert              | No known significant effects or critical hazards.   |
| T4 DNA Ligase                   | <b>GHS08 -</b><br>May cause damage to organs through prolonged or repeated exposure if inhaled. (kidneys)   |
| XL10-Gold 2-mercaptoethanol mix | <b>GHS05 -</b><br>Causes serious eye damage.<br><b>GHS07 -</b><br>May cause an allergic skin reaction.<br><b>GHS08 -</b><br>May cause damage to organs through prolonged or repeated exposure if swallowed. (stomach)<br>Harmful to aquatic life with long lasting effects. |

**Precautionary statements**

**Prevention**

|                                      |   |
|--------------------------------------|---|
| : DNA-Binding Solution               | Avoid release to the environment. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. |
| PCR Wash Buffer                      | Not applicable.   |
| XL10-Gold Kan r ultracompetent cells | Do not breathe vapour.  |
| pUC18 Control Plasmid DNA            | Not applicable.   |
| Cloned Pfu DNA Polymerase            | Do not breathe vapour.  |
| Srf I                                | Do not breathe vapour.  |
| Polishing Buffer                     | Wear eye or face protection. Wash hands thoroughly after handling.  |
| 10 mM dNTP Mix                       | Not applicable.   |
| pPCR-Script Amp SK(+)                | Not applicable.   |
| Cloning Vector (predigested)         |   |
| PCR-Script Reaction Buffer           | Not applicable.   |
| rATP                                 | Not applicable.   |
| Control PCR Insert                   | Not applicable.   |
| T4 DNA Ligase                        | Do not breathe vapour.  |
| XL10-Gold 2-mercaptoethanol mix      | Wear protective gloves. Wear eye or face protection. Avoid release to the environment. Do not breathe vapour.               |

**Response**

|                                      |  |
|--------------------------------------|--|
| : DNA-Binding Solution               | IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.   |
| PCR Wash Buffer                      | Not applicable.  |
| XL10-Gold Kan r ultracompetent cells | Get medical attention if you feel unwell.  |
| pUC18 Control Plasmid DNA            | Not applicable.  |
| Cloned Pfu DNA Polymerase            | Get medical attention if you feel unwell.  |
| Srf I                                | Get medical attention if you feel unwell.  |
| Polishing Buffer                     | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| 10 mM dNTP Mix                       | Not applicable.  |
| pPCR-Script Amp SK(+)                | Not applicable.  |

**SECTION 2: Hazards identification**

Cloning Vector (predigested)  
 PCR-Script Reaction Buffer  
 rATP  
 Control PCR Insert  
 T4 DNA Ligase  
 XL10-Gold 2-mercaptoethanol mix

Not applicable.  
 Not applicable.  
 Not applicable.  
 Not applicable.  
 Get medical attention if you feel unwell.  
 Get medical attention if you feel unwell. IF IN EYES: Immediately call a POISON CENTER or physician.

**Storage** :

DNA-Binding Solution  
 PCR Wash Buffer  
 XL10-Gold Kan r ultracompetent cells  
 pUC18 Control Plasmid DNA  
 Cloned Pfu DNA Polymerase  
 Srf I  
 Polishing Buffer  
 10 mM dNTP Mix  
 pPCR-Script Amp SK(+)

Not applicable.  
 Not applicable.

Cloning Vector (predigested)  
 PCR-Script Reaction Buffer  
 rATP  
 Control PCR Insert  
 T4 DNA Ligase  
 XL10-Gold 2-mercaptoethanol mix

Not applicable.  
 Not applicable.  
 Not applicable.  
 Not applicable.  
 Not applicable.  
 Not applicable.

**Disposal** :

DNA-Binding Solution  
 PCR Wash Buffer  
 XL10-Gold Kan r ultracompetent cells  
 pUC18 Control Plasmid DNA  
 Cloned Pfu DNA Polymerase  
 Srf I  
 Polishing Buffer  
 10 mM dNTP Mix  
 pPCR-Script Amp SK(+)

Not applicable.  
 Not applicable.

Cloning Vector (predigested)  
 PCR-Script Reaction Buffer  
 rATP  
 Control PCR Insert  
 T4 DNA Ligase  
 XL10-Gold 2-mercaptoethanol mix

Not applicable.  
 Not applicable.  
 Not applicable.  
 Not applicable.  
 Not applicable.  
 Not applicable.

**Hazardous ingredients** : **DNA-Binding Solution**  
 Guanidinium thiocyanate

**XL10-Gold Kan r ultracompetent cells**  
 Glycerol

**Cloned Pfu DNA Polymerase**

## SECTION 2: Hazards identification

Glycerol

### Srf I

Glycerol

### Polishing Buffer

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-

### T4 DNA Ligase

Glycerol

### XL10-Gold 2-mercaptoethanol mix

Sodium chloride

2-Mercaptoethanol

#### Supplemental label elements

|                                      |  |
|--------------------------------------|--|
| : DNA-Binding Solution               | Contact with acids liberates very toxic gas. |
| PCR Wash Buffer                      | Contact with acids liberates very toxic gas. |
| XL10-Gold Kan r ultracompetent cells | Contact with acids liberates very toxic gas. |
| pUC18 Control Plasmid DNA            | Contact with acids liberates very toxic gas. |
| Cloned Pfu DNA Polymerase            | Contact with acids liberates very toxic gas. |
| Srf I                                | Contact with acids liberates very toxic gas. |
| Polishing Buffer                     | Contact with acids liberates very toxic gas. |
| 10 mM dNTP Mix                       | Contact with acids liberates very toxic gas. |
| pPCR-Script Amp SK(+)                | Contact with acids liberates very toxic gas. |
| Cloning Vector (predigested)         |  |
| PCR-Script Reaction Buffer           | Contact with acids liberates very toxic gas. |
| rATP                                 | Contact with acids liberates very toxic gas. |
| Control PCR Insert                   | Contact with acids liberates very toxic gas. |
| T4 DNA Ligase                        | Contact with acids liberates very toxic gas. |
| XL10-Gold 2-mercaptoethanol mix      | Contact with acids liberates very toxic gas. |

#### Special packaging requirements

##### Tactile warning of danger

|                                      |                 |
|--------------------------------------|-----------------|
| : DNA-Binding Solution               | Not applicable. |
| PCR Wash Buffer                      | Not applicable. |
| XL10-Gold Kan r ultracompetent cells | Not applicable. |
| pUC18 Control Plasmid DNA            | Not applicable. |
| Cloned Pfu DNA Polymerase            | Not applicable. |
| Srf I                                | Not applicable. |
| Polishing Buffer                     | Not applicable. |
| 10 mM dNTP Mix                       | Not applicable. |
| pPCR-Script Amp SK(+)                | Not applicable. |
| Cloning Vector (predigested)         |                 |
| PCR-Script Reaction Buffer           | Not applicable. |
| rATP                                 | Not applicable. |
| Control PCR Insert                   | Not applicable. |
| T4 DNA Ligase                        | Not applicable. |
| XL10-Gold 2-mercaptoethanol mix      | Not applicable. |

#### 2.3 Other hazards

##### Other hazards which do not result in classification

|                                      |                |
|--------------------------------------|----------------|
| : DNA-Binding Solution               | Not available. |
| PCR Wash Buffer                      | Not available. |
| XL10-Gold Kan r ultracompetent cells | Not available. |

**SECTION 2: Hazards identification**

|                                 |                |
|---------------------------------|----------------|
| pUC18 Control Plasmid DNA       | Not available. |
| Cloned Pfu DNA Polymerase       | Not available. |
| Srf I                           | Not available. |
| Polishing Buffer                | Not available. |
| 10 mM dNTP Mix                  | Not available. |
| pPCR-Script Amp SK(+)           | Not available. |
| Cloning Vector (predigested)    |                |
| PCR-Script Reaction Buffer      | Not available. |
| rATP                            | Not available. |
| Control PCR Insert              | Not available. |
| T4 DNA Ligase                   | Not available. |
| XL10-Gold 2-mercaptoethanol mix | Not available. |

**SECTION 3: Composition/information on ingredients**

|                          |   |                                      |         |
|--------------------------|---|--------------------------------------|---------|
| <b>Substance/mixture</b> | : | DNA-Binding Solution                 | Mixture |
|                          |   | PCR Wash Buffer                      | Mixture |
|                          |   | XL10-Gold Kan r ultracompetent cells | Mixture |
|                          |   | pUC18 Control Plasmid DNA            | Mixture |
|                          |   | Cloned Pfu DNA Polymerase            | Mixture |
|                          |   | Srf I                                | Mixture |
|                          |   | Polishing Buffer                     | Mixture |
|                          |   | 10 mM dNTP Mix                       | Mixture |
|                          |   | pPCR-Script Amp SK(+)                | Mixture |
|                          |   | Cloning Vector (predigested)         |         |
|                          |   | PCR-Script Reaction Buffer           | Mixture |
|                          |   | rATP                                 | Mixture |
|                          |   | Control PCR Insert                   | Mixture |
|                          |   | T4 DNA Ligase                        | Mixture |
|                          |   | XL10-Gold 2-mercaptoethanol mix      | Mixture |

| Product/ingredient name                                 | Identifiers   | %     | Classification                 |   | Type    |
|---|---|-------|--------------------------------|---|---------|
|   |   |       | 67/548/EEC                     | Regulation (EC) No. 1272/2008 [CLP]   |         |
| <b>DNA-Binding Solution</b><br>Guanidinium thiocyanate  | EC: 209-812-1<br>CAS: 593-84-0<br>Index: 615-004-00-3 | 35-50 | Xn; R20/21/22<br>R32<br>R52/53 | Acute Tox. 4, H302<br>Acute Tox. 4, H312<br>Acute Tox. 4, H332<br>Aquatic Chronic 3, H412 | [1]     |
| Trometamol  | EC: 201-064-4<br>CAS: 77-86-1                         | 1-5   | Xi; R36/37/38                  | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335i                             | [1]     |
| <b>XL10-Gold Kan r ultracompetent cells</b><br>Glycerol | EC: 200-289-5<br>CAS: 56-81-5                         | 10-15 | Not classified.                | STOT RE 2, H373i  | [1] [2] |
| Dimethyl sulfoxide                                      | EC: 200-664-3<br>CAS: 67-68-5                         | 5-10  | Not classified.                | STOT RE 2, H373o  | [1]     |
| Sucrose   | EC: 200-334-9<br>CAS: 57-50-1                         | 5-10  | Not classified.                | STOT RE 2, H373o  | [1] [2] |
| Potassium chloride                                      | EC: 231-211-8<br>CAS: 7447-40-7                       | 1-5   | Not classified.                | STOT RE 2, H373o  | [1]     |
| <b>Cloned Pfu DNA</b>                                   |   |       |                                |   |         |

### SECTION 3: Composition/information on ingredients

|   |                                 |       |   |   |         |
|---|---------------------------------|-------|---|---|---------|
| Polymerase  |                                 |       |   |   |         |
| Glycerol  | EC: 200-289-5<br>CAS: 56-81-5   | 50-75 | Not classified.   | STOT RE 2, H373i  | [1] [2] |
| Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-   | CAS: 9036-19-5                  | <1    | Xi; R41   | Eye Dam. 1, H318<br>Aquatic Acute 1, H400   | [1]     |
| <b>Srf I</b>  |                                 |       |   |   |         |
| Glycerol  | EC: 200-289-5<br>CAS: 56-81-5   | 50-75 | Not classified.   | STOT RE 2, H373i  | [1] [2] |
| Potassium chloride  | EC: 231-211-8<br>CAS: 7447-40-7 | 1-5   | Not classified.   | STOT RE 2, H373o  | [1]     |
| <b>Polishing Buffer</b>   |                                 |       |   |   |         |
| 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride                                 | EC: 214-684-5<br>CAS: 1185-53-1 | 1-5   | Xi; R36/37/38   | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335  | [1]     |
| Ammonium sulphate   | EC: 231-984-1<br>CAS: 7783-20-2 | <25   | N; R50  | Aquatic Acute 1, H400   | [1]     |
| Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | CAS: 9002-93-1                  | 1-2.5 | Xn; R22<br>Xi; R41<br>N; R51/53   | Acute Tox. 4, H302<br>Eye Dam. 1, H318<br>Aquatic Chronic 2, H411   | [1]     |
| <b>PCR-Script Reaction Buffer</b>   |                                 |       |   |   |         |
| 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride                                 | EC: 214-684-5<br>CAS: 1185-53-1 | 1-5   | Xi; R36/37/38   | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335  | [1]     |
| Manganese dichloride  | EC: 231-869-6<br>CAS: 7773-01-5 | 1-3   | Xn; R22   | Acute Tox. 3, H301<br>STOT RE 2, H373   | [1] [2] |
| (R*,R*)-1,4-Dimercaptobutane-2,3-diol   | EC: 222-468-7<br>CAS: 3483-12-3 | 1-3   | Xn; R22<br>Xi; R36/37/38  | Acute Tox. 4, H302<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319<br>STOT SE 3, H335  | [1]     |
| <b>T4 DNA Ligase</b>  |                                 |       |   |   |         |
| Glycerol  | EC: 200-289-5<br>CAS: 56-81-5   | 50-75 | Not classified.   | STOT RE 2, H373i  | [1] [2] |
| <b>XL10-Gold 2-mercaptoethanol mix</b>  |                                 |       |   |   |         |
| Sodium chloride   | EC: 231-598-3<br>CAS: 7647-14-5 | 10-20 | Xi; R36   | Eye Irrit. 2, H319<br>STOT RE 2, H373o  | [1]     |
| 2-Mercaptoethanol   | EC: 200-464-6<br>CAS: 60-24-2   | 3-5   | T; R24<br>Xn; R22<br>Xi; R41, R38<br>R43<br>N; R51/53                   | Acute Tox. 3, H301<br>Acute Tox. 2, H310<br>Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317<br>STOT SE 3, H335<br>Aquatic Chronic 2, H411 | [1]     |
|   |                                 |       | <b>See section 16 for the full text of the R-phrases declared above</b> | <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

### SECTION 3: Composition/information on ingredients

[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

Occupational exposure limits, if available, are listed in Section 8.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

|                    |  |  |
|--------------------|--|--|
| <b>Eye contact</b> | : DNA-Binding Solution                             | 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 if irritation occurs.   |
|                    | PCR Wash Buffer                                    | 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.  |
|                    | XL10-Gold Kan r ultracompetent cells               | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.  |
|                    | pUC18 Control Plasmid DNA                          | 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.  |
|                    | Cloned Pfu DNA Polymerase                          | 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 following exposure or if feeling unwell.  |
|                    | Srf I  | 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 following exposure or if feeling unwell.  |
|                    | Polishing Buffer                                   | 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.  |
|                    | 10 mM dNTP Mix                                     | 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.  |
|                    | pPCR-Script Amp SK(+) Cloning Vector (predigested) | 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.  |
|                    | PCR-Script Reaction Buffer                         | 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.  |
|                    | rATP   | 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.  |
|                    | Control PCR Insert                                 | 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.  |
|                    | T4 DNA Ligase                                      | 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 following exposure or if feeling unwell.  |
|                    | XL10-Gold 2-mercaptoethanol mix                    | Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. |

**SECTION 4: First aid measures**

|                   |                                      |  |
|-------------------|--------------------------------------|--|
| <b>Inhalation</b> | : DNA-Binding Solution               | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
|                   | PCR Wash Buffer                      | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.  |
|                   | XL10-Gold Kan r ultracompetent cells | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. 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.   |
|                   | pUC18 Control Plasmid DNA            | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.  |
|                   | Cloned Pfu DNA Polymerase            | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. 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.   |
|                   | Srf I                                | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. 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.   |
|                   | Polishing Buffer                     | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
|                   | 10 mM dNTP Mix                       | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.  |

**SECTION 4: First aid measures**

|   |   |
|---|---|
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested)<br>PCR-Script Reaction<br>Buffer | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.   |
| rATP  | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.   |
| Control PCR Insert  | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.   |
| T4 DNA Ligase   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. 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.  |
| XL10-Gold 2-<br>mercaptoethanol mix   | Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
| <b>Skin contact</b>   |   |
| : DNA-Binding Solution  | 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.   |
| PCR Wash Buffer   | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.  |
| XL10-Gold Kan r<br>ultracompetent cells   | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.  |
| pUC18 Control Plasmid<br>DNA  | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.  |
| Cloned Pfu DNA<br>Polymerase  | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.  |
| Srf I   | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.  |
| Polishing Buffer  | 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.   |

**SECTION 4: First aid measures**

|  |  |
|--|--|
| 10 mM dNTP Mix   | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.   |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.   |
| PCR-Script Reaction<br>Buffer                            | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.   |
| rATP   | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.   |
| Control PCR Insert                                       | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.   |
| T4 DNA Ligase  | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.   |
| XL10-Gold 2-<br>mercaptoethanol mix                      | 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. |

**Ingestion**

|   |  |
|---|--|
| : DNA-Binding Solution                  | Get medical attention immediately. 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. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |
| PCR Wash Buffer                         | 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.  |
| XL10-Gold Kan r<br>ultracompetent cells | Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. 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.                      |
| pUC18 Control Plasmid<br>DNA            | 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   |

**SECTION 4: First aid measures**

|  |  |
|--|--|
| Cloned Pfu DNA Polymerase                                | 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 following exposure or if feeling unwell. 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. |
| Srf I  | 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 following exposure or if feeling unwell. 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.  |
| Polishing Buffer   | 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.  |
| 10 mM dNTP Mix   | 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.  |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | 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.  |
| PCR-Script Reaction<br>Buffer                            | 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.  |
| rATP   | 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  |

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|                                 |  |
|---------------------------------|--|
| Control PCR Insert              | induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. 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.  |
| T4 DNA Ligase                   | 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 following exposure or if feeling unwell. 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.  |
| XL10-Gold 2-mercaptoethanol mix | Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |

**Protection of first-aiders** : DNA-Binding Solution

|  |   |
|--|---|
| PCR Wash Buffer                                    | No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |
| XL10-Gold Kan r ultracompetent cells               | No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.  |
| pUC18 Control Plasmid DNA                          | No action shall be taken involving any personal risk or without suitable training.  |
| Cloned Pfu DNA Polymerase                          | 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.  |
| Srf I  | 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.  |
| Polishing Buffer                                   | 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.  |
| 10 mM dNTP Mix                                     | No action shall be taken involving any personal risk or without suitable training.  |
| pPCR-Script Amp SK(+) Cloning Vector (predigested) | No action shall be taken involving any personal risk or without suitable training.  |
| PCR-Script Reaction Buffer                         | No action shall be taken involving any personal risk or without suitable training.  |

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|                                 |   |
|---------------------------------|---|
| rATP                            | No action shall be taken involving any personal risk or without suitable training.  |
| Control PCR Insert              | No action shall be taken involving any personal risk or without suitable training.  |
| T4 DNA Ligase                   | 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.  |
| XL10-Gold 2-mercaptoethanol mix | No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. |

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

Potential acute health effects

**Eye contact**

|                                      |   |
|--------------------------------------|---|
| : DNA-Binding Solution               | No known significant effects or critical hazards. |
| PCR Wash Buffer                      | No known significant effects or critical hazards. |
| XL10-Gold Kan r ultracompetent cells | No known significant effects or critical hazards. |
| pUC18 Control Plasmid DNA            | No known significant effects or critical hazards. |
| Cloned Pfu DNA Polymerase            | No known significant effects or critical hazards. |
| Srf I                                | No known significant effects or critical hazards. |
| Polishing Buffer                     | Causes serious eye irritation.                    |
| 10 mM dNTP Mix                       | No known significant effects or critical hazards. |
| pPCR-Script Amp SK(+)                | No known significant effects or critical hazards. |
| Cloning Vector (predigested)         |   |
| PCR-Script Reaction Buffer           | No known significant effects or critical hazards. |
| rATP                                 | No known significant effects or critical hazards. |
| Control PCR Insert                   | No known significant effects or critical hazards. |
| T4 DNA Ligase                        | No known significant effects or critical hazards. |
| XL10-Gold 2-mercaptoethanol mix      | Causes serious eye damage.                        |

**Inhalation**

|                                      |  |
|--------------------------------------|--|
| : DNA-Binding Solution               | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
| PCR Wash Buffer                      | No known significant effects or critical hazards.  |
| XL10-Gold Kan r ultracompetent cells | No known significant effects or critical hazards.  |
| pUC18 Control Plasmid DNA            | No known significant effects or critical hazards.  |
| Cloned Pfu DNA Polymerase            | No known significant effects or critical hazards.  |
| Srf I                                | No known significant effects or critical hazards.  |
| Polishing Buffer                     | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
| 10 mM dNTP Mix                       | No known significant effects or critical hazards.  |
| pPCR-Script Amp SK(+)                | No known significant effects or critical hazards.  |
| Cloning Vector (predigested)         |  |
| PCR-Script Reaction Buffer           | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
| rATP                                 | No known significant effects or critical hazards.  |
| Control PCR Insert                   | No known significant effects or critical hazards.  |
| T4 DNA Ligase                        | No known significant effects or critical hazards.  |
| XL10-Gold 2-mercaptoethanol mix      | May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.                  |

## SECTION 4: First aid measures

|                     |                  |  |   |   |
|---------------------|------------------|--|---|---|
| <b>Skin contact</b> | :                | DNA-Binding Solution                               | No known significant effects or critical hazards. |   |
|                     |                  | PCR Wash Buffer                                    | No known significant effects or critical hazards. |   |
|                     |                  | XL10-Gold Kan r ultracompetent cells               | No known significant effects or critical hazards. |   |
|                     |                  | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards. |   |
|                     |                  | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards. |   |
|                     |                  | Srf I  | No known significant effects or critical hazards. |   |
|                     |                  | Polishing Buffer                                   | No known significant effects or critical hazards. |   |
|                     |                  | 10 mM dNTP Mix                                     | No known significant effects or critical hazards. |   |
|                     |                  | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards. |   |
|                     |                  | PCR-Script Reaction Buffer                         | No known significant effects or critical hazards. |   |
|                     |                  | rATP   | No known significant effects or critical hazards. |   |
|                     |                  | Control PCR Insert                                 | No known significant effects or critical hazards. |   |
|                     |                  | T4 DNA Ligase                                      | No known significant effects or critical hazards. |   |
|                     |                  | XL10-Gold 2-mercaptoethanol mix                    | May cause an allergic skin reaction.              |   |
|                     | <b>Ingestion</b> | :  | DNA-Binding Solution                              | Harmful if swallowed.                             |
|                     |                  |  | PCR Wash Buffer                                   | No known significant effects or critical hazards. |
|                     |                  |  | XL10-Gold Kan r ultracompetent cells              | No known significant effects or critical hazards. |
|                     |                  | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards. |   |
|                     |                  | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards. |   |
|                     |                  | Srf I  | No known significant effects or critical hazards. |   |
|                     |                  | Polishing Buffer                                   | Irritating to mouth, throat and stomach.          |   |
|                     |                  | 10 mM dNTP Mix                                     | No known significant effects or critical hazards. |   |
|                     |                  | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards. |   |
|                     |                  | PCR-Script Reaction Buffer                         | No known significant effects or critical hazards. |   |
|                     |                  | rATP   | No known significant effects or critical hazards. |   |
|                     |                  | Control PCR Insert                                 | No known significant effects or critical hazards. |   |
|                     |                  | T4 DNA Ligase                                      | No known significant effects or critical hazards. |   |
|                     |                  | XL10-Gold 2-mercaptoethanol mix                    | May cause burns to mouth, throat and stomach.     |   |

### Over-exposure signs/symptoms

|                    |   |  |  |
|--------------------|---|--|--|
| <b>Eye contact</b> | : | DNA-Binding Solution                               | No specific data.  |
|                    |   | PCR Wash Buffer                                    | No specific data.  |
|                    |   | XL10-Gold Kan r ultracompetent cells               | No specific data.  |
|                    |   | pUC18 Control Plasmid DNA                          | No specific data.  |
|                    |   | Cloned Pfu DNA Polymerase                          | No specific data.  |
|                    |   | Srf I  | No specific data.  |
|                    |   | Polishing Buffer                                   | Adverse symptoms may include the following:<br>pain or irritation<br>watering<br>redness |
|                    |   | 10 mM dNTP Mix                                     | No specific data.  |
|                    |   | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No specific data.  |
|                    |   | PCR-Script Reaction Buffer                         | No specific data.  |
|                    |   | rATP   | No specific data.  |
|                    |   | Control PCR Insert                                 | No specific data.  |

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|                     |                                      |  |
|---------------------|--------------------------------------|--|
|                     | T4 DNA Ligase                        | No specific data.  |
|                     | XL10-Gold 2-mercaptoethanol mix      | Adverse symptoms may include the following:<br>pain<br>watering<br>redness                           |
| <b>Inhalation</b>   | : DNA-Binding Solution               | No specific data.  |
|                     | PCR Wash Buffer                      | No specific data.  |
|                     | XL10-Gold Kan r ultracompetent cells | No specific data.  |
|                     | pUC18 Control Plasmid DNA            | No specific data.  |
|                     | Cloned Pfu DNA Polymerase            | No specific data.  |
|                     | Srf I                                | No specific data.  |
|                     | Polishing Buffer                     | No specific data.  |
|                     | 10 mM dNTP Mix                       | No specific data.  |
|                     | pPCR-Script Amp SK(+)                | No specific data.  |
|                     | Cloning Vector (predigested)         | No specific data.  |
|                     | PCR-Script Reaction Buffer           | No specific data.  |
|                     | rATP                                 | No specific data.  |
|                     | Control PCR Insert                   | No specific data.  |
|                     | T4 DNA Ligase                        | No specific data.  |
|                     | XL10-Gold 2-mercaptoethanol mix      | No specific data.  |
| <b>Skin contact</b> | : DNA-Binding Solution               | No specific data.  |
|                     | PCR Wash Buffer                      | No specific data.  |
|                     | XL10-Gold Kan r ultracompetent cells | No specific data.  |
|                     | pUC18 Control Plasmid DNA            | No specific data.  |
|                     | Cloned Pfu DNA Polymerase            | No specific data.  |
|                     | Srf I                                | No specific data.  |
|                     | Polishing Buffer                     | No specific data.  |
|                     | 10 mM dNTP Mix                       | No specific data.  |
|                     | pPCR-Script Amp SK(+)                | No specific data.  |
|                     | Cloning Vector (predigested)         | No specific data.  |
|                     | PCR-Script Reaction Buffer           | No specific data.  |
|                     | rATP                                 | No specific data.  |
|                     | Control PCR Insert                   | No specific data.  |
|                     | T4 DNA Ligase                        | No specific data.  |
|                     | XL10-Gold 2-mercaptoethanol mix      | Adverse symptoms may include the following:<br>pain or irritation<br>redness<br>blistering may occur |
| <b>Ingestion</b>    | : DNA-Binding Solution               | No specific data.  |
|                     | PCR Wash Buffer                      | No specific data.  |
|                     | XL10-Gold Kan r ultracompetent cells | No specific data.  |
|                     | pUC18 Control Plasmid DNA            | No specific data.  |
|                     | Cloned Pfu DNA Polymerase            | No specific data.  |
|                     | Srf I                                | No specific data.  |
|                     | Polishing Buffer                     | No specific data.  |
|                     | 10 mM dNTP Mix                       | No specific data.  |
|                     | pPCR-Script Amp SK(+)                | No specific data.  |
|                     | Cloning Vector (predigested)         | No specific data.  |
|                     | PCR-Script Reaction                  | No specific data.  |

**SECTION 4: First aid measures**

|                                 |   |
|---------------------------------|---|
| Buffer                          |   |
| rATP                            | No specific data.   |
| Control PCR Insert              | No specific data.   |
| T4 DNA Ligase                   | No specific data.   |
| XL10-Gold 2-mercaptoethanol mix | Adverse symptoms may include the following: stomach pains |

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

|                           |                            |  |   |                        |
|---------------------------|----------------------------|--|---|------------------------|
| <b>Notes to physician</b> | :                          | DNA-Binding Solution                               | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |                        |
|                           |                            | PCR Wash Buffer                                    | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | XL10-Gold Kan r ultracompetent cells               | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | pUC18 Control Plasmid DNA                          | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | Cloned Pfu DNA Polymerase                          | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | Srf I  | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | Polishing Buffer                                   | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |                        |
|                           |                            | 10 mM dNTP Mix                                     | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | PCR-Script Reaction Buffer                         | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |                        |
|                           |                            | rATP   | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | Control PCR Insert                                 | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | T4 DNA Ligase                                      | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           |                            | XL10-Gold 2-mercaptoethanol mix                    | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.   |                        |
|                           | <b>Specific treatments</b> | :  | DNA-Binding Solution  | No specific treatment. |
|                           |                            |  | PCR Wash Buffer   | No specific treatment. |
|                           |                            |  | XL10-Gold Kan r ultracompetent cells  | No specific treatment. |
|                           |                            |  | pUC18 Control Plasmid DNA   | No specific treatment. |
|                           |                            |  | Cloned Pfu DNA Polymerase   | No specific treatment. |
|                           |                            |  | Srf I   | No specific treatment. |
|                           |                            | Polishing Buffer                                   | No specific treatment.  |                        |
|                           |                            | 10 mM dNTP Mix                                     | No specific treatment.  |                        |
|                           |                            | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No specific treatment.  |                        |
|                           |                            | PCR-Script Reaction Buffer                         | No specific treatment.  |                        |
|                           |                            | rATP   | No specific treatment.  |                        |
|                           |                            | Control PCR Insert                                 | No specific treatment.  |                        |
|                           |                            | T4 DNA Ligase                                      | No specific treatment.  |                        |
|                           |                            | XL10-Gold 2-mercaptoethanol mix                    | No specific treatment.  |                        |

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

|                                      |                                       |   |
|--------------------------------------|---------------------------------------|---|
| <b>Suitable extinguishing media</b>  | : DNA-Binding Solution                | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | PCR Wash Buffer                       | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | XL10-Gold Kan r ultracompetent cells  | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | pUC18 Control Plasmid                 | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | DNA                                   |   |
|                                      | Cloned Pfu DNA Polymerase             | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | Srf I                                 | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | Polishing Buffer                      | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | 10 mM dNTP Mix                        | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | pPCR-Script Amp SK(+)                 | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | Cloning Vector (predigested)          |   |
|                                      | PCR-Script Reaction Buffer            | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | rATP                                  | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | Control PCR Insert                    | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | T4 DNA Ligase                         | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | XL10-Gold 2-mercaptoethanol mix       | Use an extinguishing agent suitable for the surrounding fire. |
|                                      | <b>Unsuitable extinguishing media</b> | : DNA-Binding Solution  |
| PCR Wash Buffer                      |                                       | None known.   |
| XL10-Gold Kan r ultracompetent cells |                                       | None known.   |
| pUC18 Control Plasmid                |                                       | None known.   |
| DNA                                  |                                       |   |
| Cloned Pfu DNA Polymerase            |                                       | None known.   |
| Srf I                                |                                       | None known.   |
| Polishing Buffer                     |                                       | None known.   |
| 10 mM dNTP Mix                       |                                       | None known.   |
| pPCR-Script Amp SK(+)                |                                       | None known.   |
| Cloning Vector (predigested)         |                                       |   |
| PCR-Script Reaction Buffer           |                                       | None known.   |
| rATP                                 |                                       | None known.   |
| Control PCR Insert                   |                                       | None known.   |
| T4 DNA Ligase                        |                                       | None known.   |
| XL10-Gold 2-mercaptoethanol mix      |                                       | None known.   |

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

|  |   |   |
|--|---|---|
| <b>Hazards from the substance or mixture</b> | : DNA-Binding Solution  | 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. |
|  | PCR Wash Buffer   | In a fire or if heated, a pressure increase will occur and the container may burst.   |
|  | XL10-Gold Kan r ultracompetent cells  | In a fire or if heated, a pressure increase will occur and the container may burst.   |
|  | pUC18 Control Plasmid   | In a fire or if heated, a pressure increase will occur and the container may burst.   |
|  | DNA   |   |
|  | Cloned Pfu DNA Polymerase   | In a fire or if heated, a pressure increase will occur and the container may burst.   |
|  | Srf I   | In a fire or if heated, a pressure increase will occur and the container may burst.   |
|  | Polishing Buffer  | In a fire or if heated, a pressure increase will occur and the container may burst.   |
| 10 mM dNTP Mix                               | In a fire or if heated, a pressure increase will occur and the container may burst. |   |

**SECTION 5: Firefighting measures**

**Hazardous combustion products**

|  |   |
|--|---|
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | container may burst.<br>In a fire or if heated, a pressure increase will occur and the container may burst.   |
| PCR-Script Reaction Buffer                               | In a fire or if heated, a pressure increase will occur and the container may burst.   |
| rATP   | In a fire or if heated, a pressure increase will occur and the container may burst.   |
| Control PCR Insert                                       | In a fire or if heated, a pressure increase will occur and the container may burst.   |
| T4 DNA Ligase  | In a fire or if heated, a pressure increase will occur and the container may burst.   |
| XL10-Gold 2-mercaptoethanol mix                          | 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. |
| DNA-Binding Solution                                     | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>nitrogen oxides<br>sulfur oxides  |
| PCR Wash Buffer  | No specific data.   |
| XL10-Gold Kan r ultracompetent cells                     | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>sulfur oxides<br>halogenated compounds<br>metal oxide/oxides  |
| pUC18 Control Plasmid DNA                                | No specific data.   |
| Cloned Pfu DNA Polymerase                                | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide  |
| Srf I  | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>halogenated compounds<br>metal oxide/oxides   |
| Polishing Buffer   | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>nitrogen oxides<br>sulfur oxides<br>halogenated compounds   |
| 10 mM dNTP Mix   | No specific data.   |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | No specific data.   |
| PCR-Script Reaction Buffer                               | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>nitrogen oxides<br>sulfur oxides<br>halogenated compounds<br>metal oxide/oxides   |
| rATP   | No specific data.   |
| Control PCR Insert                                       | No specific data.   |
| T4 DNA Ligase  | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide  |
| XL10-Gold 2-mercaptoethanol mix                          | Decomposition products may include the following materials:<br>carbon dioxide<br>carbon monoxide<br>sulfur oxides<br>halogenated compounds  |

**SECTION 5: Firefighting measures**

metal oxide/oxides

**5.3 Advice for firefighters**

**Special precautions for fire-fighters**

|  |   |
|--|---|
| : DNA-Binding Solution                             | 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. |
| PCR Wash Buffer                                    | 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. |
| XL10-Gold Kan r ultracompetent cells               | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
| pUC18 Control Plasmid DNA                          | 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. |
| Cloned Pfu DNA Polymerase                          | 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. |
| Srf I  | 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. |
| Polishing Buffer                                   | 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. |
| 10 mM dNTP Mix                                     | 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. |
| pPCR-Script Amp SK(+) Cloning Vector (predigested) | 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. |
| PCR-Script Reaction Buffer                         | 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. |
| rATP   | 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. |
| Control PCR Insert                                 | 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. |
| T4 DNA Ligase                                      | 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. |
| XL10-Gold 2-mercaptoethanol mix                    | 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**

|                                      |   |
|--------------------------------------|---|
| : DNA-Binding Solution               | 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. |
| PCR Wash Buffer                      | 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. |
| XL10-Gold Kan r ultracompetent cells | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. 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. |
| pUC18 Control Plasmid                | Fire-fighters should wear appropriate protective equipment  |

**SECTION 5: Firefighting measures**

|  |   |
|--|---|
| DNA  | 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.  |
| Cloned Pfu DNA Polymerase                                | 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. |
| Srf I  | 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. |
| Polishing Buffer   | 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. |
| 10 mM dNTP Mix   | 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. |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | 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. |
| PCR-Script Reaction Buffer                               | 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. |
| rATP   | 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. |
| Control PCR Insert                                       | 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. |
| T4 DNA Ligase  | 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. |
| XL10-Gold 2-<br>mercaptoethanol mix                      | 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> | : DNA-Binding Solution                             | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
|                                    | PCR Wash Buffer                                    | 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.   |
|                                    | XL10-Gold Kan r ultracompetent cells               | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
|                                    | pUC18 Control Plasmid DNA                          | 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.   |
|                                    | Cloned Pfu DNA Polymerase                          | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
|                                    | Srf I  | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
|                                    | Polishing Buffer                                   | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
|                                    | 10 mM dNTP Mix                                     | 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.   |
|                                    | pPCR-Script Amp SK(+) Cloning Vector (predigested) | 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.   |
|                                    | PCR-Script Reaction Buffer                         | 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.   |
|                                    | rATP   | 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  |

**SECTION 6: Accidental release measures**

**For emergency responders**

|  |   |
|--|---|
| Control PCR Insert                                 | 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 spilt material. Put on appropriate personal protective equipment.  |
| T4 DNA Ligase                                      | 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| XL10-Gold 2-mercaptoethanol mix                    | 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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.  |
| : DNA-Binding Solution                             | 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".   |
| PCR Wash Buffer                                    | 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".   |
| XL10-Gold Kan r ultracompetent cells               | 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".   |
| pUC18 Control Plasmid DNA                          | 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".   |
| Cloned Pfu DNA Polymerase                          | 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".   |
| Srf I  | 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".   |
| Polishing Buffer                                   | 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".   |
| 10 mM dNTP Mix                                     | 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".   |
| pPCR-Script Amp SK(+) Cloning Vector (predigested) | 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".   |
| PCR-Script Reaction Buffer                         | 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".   |
| rATP   | 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".   |
| Control PCR Insert                                 | If specialised clothing is required to deal with the spillage,  |

**SECTION 6: Accidental release measures**

|                                      |  |  |
|--------------------------------------|--|--|
|                                      |  | take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".   |
|                                      | T4 DNA Ligase                                      | 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".  |
|                                      | XL10-Gold 2-mercaptoethanol mix                    | 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".  |
| <b>6.2 Environmental precautions</b> | : DNA-Binding Solution                             | 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). Water polluting material. May be harmful to the environment if released in large quantities. |
|                                      | PCR Wash Buffer                                    | 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).  |
|                                      | XL10-Gold Kan r ultracompetent 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).  |
|                                      | pUC18 Control Plasmid DNA                          | 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).  |
|                                      | Cloned Pfu DNA Polymerase                          | 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).  |
|                                      | Srf I  | 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).  |
|                                      | Polishing Buffer                                   | 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).  |
|                                      | 10 mM dNTP Mix                                     | 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).  |
|                                      | pPCR-Script Amp SK(+) Cloning Vector (predigested) | 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).  |
|                                      | PCR-Script Reaction Buffer                         | 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).  |
|                                      | rATP   | 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).  |
|                                      | Control PCR Insert                                 | 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).  |
|                                      | T4 DNA Ligase                                      | 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  |

**SECTION 6: Accidental release measures**

|                                 |   |
|---------------------------------|---|
| XL10-Gold 2-mercaptoethanol mix | (sewers, waterways, soil or air).<br>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). Water polluting material. May be harmful to the environment if released in large quantities. |
|---------------------------------|---|

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

|   |   |
|---|---|
| <b>Methods for cleaning up</b> : DNA-Binding Solution | 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. |
| PCR Wash Buffer                                       | 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. |
| XL10-Gold Kan r ultracompetent cells                  | Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. |
| pUC18 Control Plasmid DNA                             | 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. |
| Cloned Pfu DNA Polymerase                             | 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. |
| Srf I   | 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. |
| Polishing Buffer                                      | 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. |
| 10 mM dNTP Mix  | 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. |
| pPCR-Script Amp SK(+) Cloning Vector (predigested)    | 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. |
| PCR-Script Reaction Buffer                            | 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. |
| rATP  | 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 6: Accidental release measures**

|                                 |   |
|---------------------------------|---|
| Control PCR Insert              | 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. |
| T4 DNA Ligase                   | 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. |
| XL10-Gold 2-mercaptoethanol mix | 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.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

|                            |                                      |  |
|----------------------------|--------------------------------------|--|
| <b>Protective measures</b> | : DNA-Binding Solution               | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container. |
|                            | PCR Wash Buffer                      | Put on appropriate personal protective equipment (see Section 8).  |
|                            | XL10-Gold Kan r ultracompetent cells | Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.  |
|                            | pUC18 Control Plasmid DNA            | Put on appropriate personal protective equipment (see Section 8).  |
|                            | Cloned Pfu DNA Polymerase            | Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.  |
|                            | Srf I                                | Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.  |
|                            | Polishing Buffer                     | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour 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.   |

## SECTION 7: Handling and storage

|  |   |
|--|---|
| 10 mM dNTP Mix   | Put on appropriate personal protective equipment (see Section 8).   |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested)             | Put on appropriate personal protective equipment (see Section 8).   |
| PCR-Script Reaction<br>Buffer  | Put on appropriate personal protective equipment (see Section 8).   |
| rATP   | Put on appropriate personal protective equipment (see Section 8).   |
| Control PCR Insert   | Put on appropriate personal protective equipment (see Section 8).   |
| T4 DNA Ligase  | Put on appropriate personal protective equipment (see Section 8). Do not breathe vapour or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.   |
| XL10-Gold 2-<br>mercaptoethanol mix                                  | Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| <b>Advice on general occupational hygiene</b> : DNA-Binding Solution | 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.   |
| PCR Wash Buffer  | 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.   |
| XL10-Gold Kan r<br>ultracompetent cells                              | 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.  |
| pUC18 Control Plasmid<br>DNA   | 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.   |
| Cloned Pfu DNA<br>Polymerase   | 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.   |
| Srf I  | 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  |

**SECTION 7: Handling and storage**

|  |   |
|--|---|
| Polishing Buffer   | equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.<br>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. |
| 10 mM dNTP Mix   | 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.   |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | 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.   |
| PCR-Script Reaction<br>Buffer                            | 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.   |
| rATP   | 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.   |
| Control PCR Insert                                       | 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.   |
| T4 DNA Ligase  | 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.   |
| XL10-Gold 2-<br>mercaptoethanol mix                      | 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**

: DNA-Binding Solution

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. Separate from acids. 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.

PCR Wash Buffer

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

**SECTION 7: Handling and storage**

|  |   |
|--|---|
|  | 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.   |
| XL10-Gold Kan r ultracompetent 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. |
| pUC18 Control Plasmid DNA                                | 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. |
| Cloned Pfu DNA Polymerase                                | 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. |
| Srf I  | 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. |
| Polishing Buffer   | 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. |
| 10 mM dNTP Mix   | 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. |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | 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   |

## SECTION 7: Handling and storage

|                                 |  |
|---------------------------------|--|
|                                 | appropriate containment to avoid environmental contamination.  |
| PCR-Script Reaction Buffer      | 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.                  |
| rATP                            | 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.                  |
| Control PCR Insert              | 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.                  |
| T4 DNA Ligase                   | 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.                  |
| XL10-Gold 2-mercaptoethanol mix | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers 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. |

### 7.3 Specific end use(s)

#### Recommendations

|  |   |
|--|---|
| : DNA-Binding Solution                                   | Industrial applications, Professional applications. |
| PCR Wash Buffer  | Industrial applications, Professional applications. |
| XL10-Gold Kan r ultracompetent cells                     | Industrial applications, Professional applications. |
| pUC18 Control Plasmid DNA                                | Industrial applications, Professional applications. |
| Cloned Pfu DNA Polymerase                                | Industrial applications, Professional applications. |
| Srf I  | Industrial applications, Professional applications. |
| Polishing Buffer   | Industrial applications, Professional applications. |
| 10 mM dNTP Mix   | Industrial applications, Professional applications. |
| pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Industrial applications.                            |

## SECTION 7: Handling and storage

|                                 |   |
|---------------------------------|---|
| PCR-Script Reaction Buffer      | Industrial applications, Professional applications. |
| rATP                            | Industrial applications, Professional applications. |
| Control PCR Insert              | Industrial applications.                            |
| T4 DNA Ligase                   | Industrial applications, Professional applications. |
| XL10-Gold 2-mercaptoethanol mix | Industrial applications, Professional applications. |

**Industrial sector specific solutions** : Not applicable.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

| Product/ingredient name                                   | Exposure limit values  |
|---|--|
| <b>XL10-Gold Kan r ultracompetent cells</b><br>Glycerol   | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hour(s). Form: Inhalable fraction |
| Sucrose   | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hour(s).                          |
| <b>Cloned Pfu DNA Polymerase</b><br>Glycerol              | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hour(s). Form: Inhalable fraction |
| <b>Srf I</b><br>Glycerol                                  | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hour(s). Form: Inhalable fraction |
| <b>PCR-Script Reaction Buffer</b><br>Manganese dichloride | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 0.2 mg/m <sup>3</sup> , (as Mn) 8 hour(s).               |
| <b>T4 DNA Ligase</b><br>Glycerol                          | <b>ACGIH TLV (United States, 2/2010).</b><br>TWA: 10 mg/m <sup>3</sup> 8 hour(s). Form: Inhalable fraction |

**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 European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

#### Derived effect levels

No DNELs available.

#### Predicted effect concentrations

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. Engineering controls may be required to control the primary or secondary risks associated with this product.

#### Individual protection measures

**SECTION 8: Exposure controls/personal protection**

- Hygiene measures** : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
- 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** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- 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** :
- |                                      |         |
|--------------------------------------|---------|
| DNA-Binding Solution                 | Liquid. |
| PCR Wash Buffer                      | Liquid. |
| XL10-Gold Kan r ultracompetent cells | Liquid. |
| pUC18 Control Plasmid DNA            | Liquid. |
| Cloned Pfu DNA Polymerase            | Liquid. |
| Srf I                                | Liquid. |
| Polishing Buffer                     | Liquid. |
| 10 mM dNTP Mix                       | Liquid. |
| pPCR-Script Amp SK(+)                | Liquid. |
| Cloning Vector (predigested)         | Liquid. |
| PCR-Script Reaction Buffer           | Liquid. |
| rATP                                 | Liquid. |
| Control PCR Insert                   | Liquid. |
| T4 DNA Ligase                        | Liquid. |
| XL10-Gold 2-mercaptoethanol mix      | Liquid. |
- Colour** :
- |                                      |                |
|--------------------------------------|----------------|
| DNA-Binding Solution                 | Not available. |
| PCR Wash Buffer                      | Not available. |
| XL10-Gold Kan r ultracompetent cells | Not available. |
| pUC18 Control Plasmid DNA            | Not available. |
| Cloned Pfu DNA Polymerase            | Not available. |

**SECTION 9: Physical and chemical properties**

|                        |                                      |                |
|------------------------|--------------------------------------|----------------|
|                        | Srf I                                | Not available. |
|                        | Polishing Buffer                     | Not available. |
|                        | 10 mM dNTP Mix                       | Not available. |
|                        | pPCR-Script Amp SK(+)                | Not available. |
|                        | Cloning Vector (predigested)         |                |
|                        | PCR-Script Reaction Buffer           | Not available. |
|                        | rATP                                 | Not available. |
|                        | Control PCR Insert                   | Not available. |
|                        | T4 DNA Ligase                        | Not available. |
|                        | XL10-Gold 2-mercaptoethanol mix      | Not available. |
| <b>Odour</b>           | : DNA-Binding Solution               | Not available. |
|                        | PCR Wash Buffer                      | Not available. |
|                        | XL10-Gold Kan r ultracompetent cells | Not available. |
|                        | pUC18 Control Plasmid DNA            | Not available. |
|                        | Cloned Pfu DNA Polymerase            | Not available. |
|                        | Srf I                                | Not available. |
|                        | Polishing Buffer                     | Not available. |
|                        | 10 mM dNTP Mix                       | Not available. |
|                        | pPCR-Script Amp SK(+)                | Not available. |
|                        | Cloning Vector (predigested)         |                |
|                        | PCR-Script Reaction Buffer           | Not available. |
|                        | rATP                                 | Not available. |
|                        | Control PCR Insert                   | Not available. |
|                        | T4 DNA Ligase                        | Not available. |
|                        | XL10-Gold 2-mercaptoethanol mix      | Not available. |
| <b>Odour threshold</b> | : DNA-Binding Solution               | Not available. |
|                        | PCR Wash Buffer                      | Not available. |
|                        | XL10-Gold Kan r ultracompetent cells | Not available. |
|                        | pUC18 Control Plasmid DNA            | Not available. |
|                        | Cloned Pfu DNA Polymerase            | Not available. |
|                        | Srf I                                | Not available. |
|                        | Polishing Buffer                     | Not available. |
|                        | 10 mM dNTP Mix                       | Not available. |
|                        | pPCR-Script Amp SK(+)                | Not available. |
|                        | Cloning Vector (predigested)         |                |
|                        | PCR-Script Reaction Buffer           | Not available. |
|                        | rATP                                 | Not available. |
|                        | Control PCR Insert                   | Not available. |
|                        | T4 DNA Ligase                        | Not available. |
|                        | XL10-Gold 2-mercaptoethanol mix      | Not available. |
| <b>pH</b>              | : DNA-Binding solution               | 6.4            |
|                        | PCR Wash Buffer                      | 6.4            |
|                        | XL10-Gold Kan r ultracompetent cells | 6.4            |
|                        | pUC18 Control Plasmid DNA            | 7.5            |
|                        | Cloned Pfu DNA Polymerase            | 8.2            |
|                        | Srf I                                | 7.5            |

**SECTION 9: Physical and chemical properties**

|  |                                      |                |
|--|--------------------------------------|----------------|
|  | Polishing Buffer                     | 8.8            |
|  | 10 mM dNTP Mix                       | Not available. |
|  | pPCR-Script Amp SK(+)                | 7.5            |
|  | Cloning Vector (predigested)         |                |
|  | PCR-Script Reaction Buffer           | 7.5            |
|  | rATP                                 | 7              |
|  | Control PCR Insert                   | 7 to 9         |
|  | T4 DNA Ligase                        | 7.5            |
|  | XL10-Gold 2-mercaptoethanol mix      | Not available. |
| <b>Melting point/freezing point</b>            | : DNA-Binding solution               | Not available. |
|  | PCR Wash Buffer                      | 0°C            |
|  | XL10-Gold Kan r ultracompetent cells | Not available. |
|  | pUC18 Control Plasmid DNA            | 0°C            |
|  | Cloned Pfu DNA Polymerase            | Not available. |
|  | Srf I                                | Not available. |
|  | Polishing Buffer                     | Not available. |
|  | 10 mM dNTP Mix                       | 0°C            |
|  | pPCR-Script Amp SK(+)                | 0°C            |
|  | Cloning Vector (predigested)         |                |
|  | PCR-Script Reaction Buffer           | Not available. |
|  | rATP                                 | 0°C            |
|  | Control PCR Insert                   | 0°C            |
|  | T4 DNA Ligase                        | Not available. |
|  | XL10-Gold 2-mercaptoethanol mix      | Not available. |
| <b>Initial boiling point and boiling range</b> | : DNA-Binding solution               | Not available. |
|  | PCR Wash Buffer                      | 100°C          |
|  | XL10-Gold Kan r ultracompetent cells | Not available. |
|  | pUC18 Control Plasmid DNA            | 100°C          |
|  | Cloned Pfu DNA Polymerase            | Not available. |
|  | Srf I                                | Not available. |
|  | Polishing Buffer                     | Not available. |
|  | 10 mM dNTP Mix                       | 100°C          |
|  | pPCR-Script Amp SK(+)                | 100°C          |
|  | Cloning Vector (predigested)         |                |
|  | PCR-Script Reaction Buffer           | Not available. |
|  | rATP                                 | 100°C          |
|  | Control PCR Insert                   | 100°C          |
|  | T4 DNA Ligase                        | Not available. |
|  | XL10-Gold 2-mercaptoethanol mix      | Not available. |
| <b>Flash point</b>                             | : DNA-Binding Solution               | Not available. |
|  | PCR Wash Buffer                      | Not available. |
|  | XL10-Gold Kan r ultracompetent cells | Not available. |
|  | pUC18 Control Plasmid DNA            | Not available. |
|  | Cloned Pfu DNA Polymerase            | Not available. |
|  | Srf I                                | Not available. |
|  | Polishing Buffer                     | Not available. |

**SECTION 9: Physical and chemical properties**

|   |   |  |
|---|---|--|
|   | 10 mM dNTP Mix  | Not available.                         |
|   | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested)    | [Product does not sustain combustion.] |
|   | PCR-Script Reaction<br>Buffer                               | Not available.                         |
|   | rATP  | Not available.                         |
|   | Control PCR Insert  | [Product does not sustain combustion.] |
|   | T4 DNA Ligase   | Not available.                         |
|   | XL10-Gold 2-<br>mercaptoethanol mix                         | Not available.                         |
| <b>Evaporation rate</b>                                 | : DNA-Binding Solution                                      | Not available.                         |
|   | PCR Wash Buffer   | Not available.                         |
|   | XL10-Gold Kan r<br>ultracompetent cells                     | Not available.                         |
|   | pUC18 Control Plasmid<br>DNA                                | Not available.                         |
|   | Cloned Pfu DNA<br>Polymerase                                | Not available.                         |
|   | Srf I   | Not available.                         |
|   | Polishing Buffer  | Not available.                         |
|   | 10 mM dNTP Mix  | Not available.                         |
|   | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested)    | Not available.                         |
|   | PCR-Script Reaction<br>Buffer                               | Not available.                         |
|   | rATP  | Not available.                         |
|   | Control PCR Insert  | Not available.                         |
|   | T4 DNA Ligase   | Not available.                         |
|   | XL10-Gold 2-<br>mercaptoethanol mix                         | Not available.                         |
| <b>Flammability (solid, gas)</b>                        | : DNA-Binding Solution                                      | Not available.                         |
|   | PCR Wash Buffer   | Not available.                         |
|   | XL10-Gold Kan r<br>ultracompetent cells                     | Not available.                         |
|   | pUC18 Control Plasmid<br>DNA                                | Not available.                         |
|   | Cloned Pfu DNA<br>Polymerase                                | Not available.                         |
|   | Srf I   | Not available.                         |
|   | Polishing Buffer  | Not available.                         |
|   | 10 mM dNTP Mix  | Not available.                         |
|   | pPCR-Script Amp<br>SK(+)<br>Cloning Vector<br>(predigested) | Not available.                         |
|   | PCR-Script Reaction<br>Buffer                               | Not available.                         |
|   | rATP  | Not available.                         |
|   | Control PCR Insert  | Not available.                         |
|   | T4 DNA Ligase   | Not available.                         |
|   | XL10-Gold 2-<br>mercaptoethanol mix                         | Not available.                         |
| <b>Upper/lower flammability or<br/>explosive limits</b> | : DNA-Binding Solution                                      | Not available.                         |
|   | PCR Wash Buffer   | Not available.                         |
|   | XL10-Gold Kan r<br>ultracompetent cells                     | Not available.                         |
|   | pUC18 Control Plasmid<br>DNA                                | Not available.                         |
|   | Cloned Pfu DNA<br>Polymerase                                | Not available.                         |
|   | Srf I   | Not available.                         |
|   | Polishing Buffer  | Not available.                         |

**SECTION 9: Physical and chemical properties**

|                         |  |                |
|-------------------------|--|----------------|
|                         | 10 mM dNTP Mix   | Not available. |
|                         | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Not available. |
|                         | PCR-Script Reaction<br>Buffer                            | Not available. |
|                         | rATP   | Not available. |
|                         | Control PCR Insert                                       | Not available. |
|                         | T4 DNA Ligase  | Not available. |
|                         | XL10-Gold 2-<br>mercaptoethanol mix                      | Not available. |
| <b>Vapour pressure</b>  | : DNA-Binding Solution                                   | Not available. |
|                         | PCR Wash Buffer  | Not available. |
|                         | XL10-Gold Kan r<br>ultracompetent cells                  | Not available. |
|                         | pUC18 Control Plasmid<br>DNA                             | Not available. |
|                         | Cloned Pfu DNA<br>Polymerase                             | Not available. |
|                         | Srf I  | Not available. |
|                         | Polishing Buffer   | Not available. |
|                         | 10 mM dNTP Mix   | Not available. |
|                         | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Not available. |
|                         | PCR-Script Reaction<br>Buffer                            | Not available. |
|                         | rATP   | Not available. |
|                         | Control PCR Insert                                       | Not available. |
|                         | T4 DNA Ligase  | Not available. |
|                         | XL10-Gold 2-<br>mercaptoethanol mix                      | Not available. |
| <b>Vapour density</b>   | : DNA-Binding Solution                                   | Not available. |
|                         | PCR Wash Buffer  | Not available. |
|                         | XL10-Gold Kan r<br>ultracompetent cells                  | Not available. |
|                         | pUC18 Control Plasmid<br>DNA                             | Not available. |
|                         | Cloned Pfu DNA<br>Polymerase                             | Not available. |
|                         | Srf I  | Not available. |
|                         | Polishing Buffer   | Not available. |
|                         | 10 mM dNTP Mix   | Not available. |
|                         | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Not available. |
|                         | PCR-Script Reaction<br>Buffer                            | Not available. |
|                         | rATP   | Not available. |
|                         | Control PCR Insert                                       | Not available. |
|                         | T4 DNA Ligase  | Not available. |
|                         | XL10-Gold 2-<br>mercaptoethanol mix                      | Not available. |
| <b>Relative density</b> | : DNA-Binding Solution                                   | Not available. |
|                         | PCR Wash Buffer  | Not available. |
|                         | XL10-Gold Kan r<br>ultracompetent cells                  | Not available. |
|                         | pUC18 Control Plasmid<br>DNA                             | Not available. |
|                         | Cloned Pfu DNA<br>Polymerase                             | Not available. |
|                         | Srf I  | Not available. |
|                         | Polishing Buffer   | Not available. |

**SECTION 9: Physical and chemical properties**

|   |  |  |
|---|--|--|
|   | 10 mM dNTP Mix   | Not available.   |
|   | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Not available.   |
|   | PCR-Script Reaction<br>Buffer                            | Not available.   |
|   | rATP   | Not available.   |
|   | Control PCR Insert                                       | Not available.   |
|   | T4 DNA Ligase  | Not available.   |
|   | XL10-Gold 2-<br>mercaptoethanol mix                      | Not available.   |
| <b>Solubility(ies)</b>                        | : DNA-Binding Solution                                   | Soluble in the following materials: cold water and hot water.        |
|   | PCR Wash Buffer  | Easily soluble in the following materials: cold water and hot water. |
|   | XL10-Gold Kan r<br>ultracompetent cells                  | Easily soluble in the following materials: cold water and hot water. |
|   | pUC18 Control Plasmid<br>DNA                             | Easily soluble in the following materials: cold water and hot water. |
|   | Cloned Pfu DNA<br>Polymerase                             | Soluble in the following materials: cold water and hot water.        |
|   | Srf I  | Soluble in the following materials: cold water and hot water.        |
|   | Polishing Buffer   | Easily soluble in the following materials: cold water and hot water. |
|   | 10 mM dNTP Mix   | Easily soluble in the following materials: cold water and hot water. |
|   | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Easily soluble in the following materials: cold water and hot water. |
|   | PCR-Script Reaction<br>Buffer                            | Easily soluble in the following materials: cold water and hot water. |
|   | rATP   | Easily soluble in the following materials: cold water and hot water. |
|   | Control PCR Insert                                       | Easily soluble in the following materials: cold water and hot water. |
|   | T4 DNA Ligase  | Soluble in the following materials: cold water and hot water.        |
|   | XL10-Gold 2-<br>mercaptoethanol mix                      | Easily soluble in the following materials: cold water and hot water. |
| <b>Partition coefficient: n-octanol/water</b> | : DNA-Binding Solution                                   | Not available.   |
|   | PCR Wash Buffer  | Not available.   |
|   | XL10-Gold Kan r<br>ultracompetent cells                  | Not available.   |
|   | pUC18 Control Plasmid<br>DNA                             | Not available.   |
|   | Cloned Pfu DNA<br>Polymerase                             | Not available.   |
|   | Srf I  | Not available.   |
|   | Polishing Buffer   | Not available.   |
|   | 10 mM dNTP Mix   | Not available.   |
|   | pPCR-Script Amp SK(+)<br>Cloning Vector<br>(predigested) | Not available.   |
|   | PCR-Script Reaction<br>Buffer                            | Not available.   |
|   | rATP   | Not available.   |
|   | Control PCR Insert                                       | Not available.   |
|   | T4 DNA Ligase  | Not available.   |
|   | XL10-Gold 2-<br>mercaptoethanol mix                      | Not available.   |

**SECTION 9: Physical and chemical properties**

|                                  |                                  |  |                                      |                |
|----------------------------------|----------------------------------|--|--------------------------------------|----------------|
| <b>Auto-ignition temperature</b> | :                                | DNA-Binding Solution                               | Not available.                       |                |
|                                  |                                  | PCR Wash Buffer                                    | Not available.                       |                |
|                                  |                                  | XL10-Gold Kan r ultracompetent cells               | Not available.                       |                |
|                                  |                                  | pUC18 Control Plasmid DNA                          | Not available.                       |                |
|                                  |                                  | Cloned Pfu DNA Polymerase                          | Not available.                       |                |
|                                  |                                  | Srf I  | Not available.                       |                |
|                                  |                                  | Polishing Buffer                                   | Not available.                       |                |
|                                  |                                  | 10 mM dNTP Mix                                     | Not available.                       |                |
|                                  |                                  | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Not available.                       |                |
|                                  |                                  | PCR-Script Reaction Buffer                         | Not available.                       |                |
|                                  |                                  | rATP   | Not available.                       |                |
|                                  |                                  | Control PCR Insert                                 | Not available.                       |                |
|                                  |                                  | T4 DNA Ligase                                      | Not available.                       |                |
|                                  |                                  | XL10-Gold 2-mercaptoethanol mix                    | Not available.                       |                |
|                                  | <b>Decomposition temperature</b> | :  | DNA-Binding Solution                 | Not available. |
|                                  |                                  |  | PCR Wash Buffer                      | Not available. |
|                                  |                                  |  | XL10-Gold Kan r ultracompetent cells | Not available. |
|                                  |                                  | pUC18 Control Plasmid DNA                          | Not available.                       |                |
|                                  |                                  | Cloned Pfu DNA Polymerase                          | Not available.                       |                |
|                                  |                                  | Srf I  | Not available.                       |                |
|                                  |                                  | Polishing Buffer                                   | Not available.                       |                |
|                                  |                                  | 10 mM dNTP Mix                                     | Not available.                       |                |
|                                  |                                  | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Not available.                       |                |
|                                  |                                  | PCR-Script Reaction Buffer                         | Not available.                       |                |
|                                  |                                  | rATP   | Not available.                       |                |
|                                  |                                  | Control PCR Insert                                 | Not available.                       |                |
|                                  |                                  | T4 DNA Ligase                                      | Not available.                       |                |
|                                  |                                  | XL10-Gold 2-mercaptoethanol mix                    | Not available.                       |                |
| <b>Viscosity</b>                 |                                  | :  | DNA-Binding Solution                 | Not available. |
|                                  |                                  |  | PCR Wash Buffer                      | Not available. |
|                                  |                                  |  | XL10-Gold Kan r ultracompetent cells | Not available. |
|                                  |                                  | pUC18 Control Plasmid DNA                          | Not available.                       |                |
|                                  |                                  | Cloned Pfu DNA Polymerase                          | Not available.                       |                |
|                                  |                                  | Srf I  | Not available.                       |                |
|                                  |                                  | Polishing Buffer                                   | Not available.                       |                |
|                                  |                                  | 10 mM dNTP Mix                                     | Not available.                       |                |
|                                  |                                  | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Not available.                       |                |
|                                  |                                  | PCR-Script Reaction Buffer                         | Not available.                       |                |
|                                  |                                  | rATP   | Not available.                       |                |
|                                  |                                  | Control PCR Insert                                 | Not available.                       |                |
|                                  |                                  | T4 DNA Ligase                                      | Not available.                       |                |
|                                  |                                  | XL10-Gold 2-mercaptoethanol mix                    | Not available.                       |                |

**SECTION 9: Physical and chemical properties**

|                             |   |  |                |
|-----------------------------|---|--|----------------|
| <b>Explosive properties</b> | : | DNA-Binding Solution                               | Not available. |
|                             |   | PCR Wash Buffer                                    | Not available. |
|                             |   | XL10-Gold Kan r ultracompetent cells               | Not available. |
|                             |   | pUC18 Control Plasmid DNA                          | Not available. |
|                             |   | Cloned Pfu DNA Polymerase                          | Not available. |
|                             |   | Srf I  | Not available. |
|                             |   | Polishing Buffer                                   | Not available. |
|                             |   | 10 mM dNTP Mix                                     | Not available. |
|                             |   | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Not available. |
|                             |   | PCR-Script Reaction Buffer                         | Not available. |
|                             |   | rATP   | Not available. |
|                             |   | Control PCR Insert                                 | Not available. |
|                             |   | T4 DNA Ligase                                      | Not available. |
|                             |   | XL10-Gold 2-mercaptoethanol mix                    | Not available. |

**9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

|                        |   |  |  |
|------------------------|---|--|--|
| <b>10.1 Reactivity</b> | : | DNA-Binding Solution                               | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | PCR Wash Buffer                                    | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | XL10-Gold Kan r ultracompetent cells               | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | pUC18 Control Plasmid DNA                          | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | Cloned Pfu DNA Polymerase                          | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | Srf I  | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | Polishing Buffer                                   | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | 10 mM dNTP Mix                                     | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | PCR-Script Reaction Buffer                         | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | rATP   | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | Control PCR Insert                                 | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | T4 DNA Ligase                                      | No specific test data related to reactivity available for this product or its ingredients. |
|                        |   | XL10-Gold 2-mercaptoethanol mix                    | No specific test data related to reactivity available for this product or its ingredients. |

## SECTION 10: Stability and reactivity

|  |   |  |   |
|--|---|--|---|
| <b>10.2 Chemical stability</b>                 | : | DNA-Binding Solution                               | The product is stable.  |
|  |   | PCR Wash Buffer                                    | The product is stable.  |
|  |   | XL10-Gold Kan r ultracompetent cells               | The product is stable.  |
|  |   | pUC18 Control Plasmid DNA                          | The product is stable.  |
|  |   | Cloned Pfu DNA Polymerase                          | The product is stable.  |
|  |   | Srf I  | The product is stable.  |
|  |   | Polishing Buffer                                   | The product is stable.  |
|  |   | 10 mM dNTP Mix                                     | The product is stable.  |
|  |   | pPCR-Script Amp SK(+) Cloning Vector (predigested) | The product is stable.  |
|  |   | PCR-Script Reaction Buffer                         | The product is stable.  |
|  |   | rATP   | The product is stable.  |
|  |   | Control PCR Insert                                 | The product is stable.  |
|  |   | T4 DNA Ligase                                      | The product is stable.  |
|  |   | XL10-Gold 2-mercaptoethanol mix                    | The product is stable.  |
|  |   |  |   |
| <b>10.3 Possibility of hazardous reactions</b> | : | DNA-Binding Solution                               | Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following:<br>contact with acids<br>Reactions may include the following:<br>liberation of toxic gas |
|  |   | PCR Wash Buffer                                    | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | XL10-Gold Kan r ultracompetent cells               | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | pUC18 Control Plasmid DNA                          | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | Cloned Pfu DNA Polymerase                          | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | Srf I  | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | Polishing Buffer                                   | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | 10 mM dNTP Mix                                     | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | pPCR-Script Amp SK(+) Cloning Vector (predigested) | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | PCR-Script Reaction Buffer                         | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | rATP   | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | Control PCR Insert                                 | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | T4 DNA Ligase                                      | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   | XL10-Gold 2-mercaptoethanol mix                    | Under normal conditions of storage and use, hazardous reactions will not occur.   |
|  |   |  |   |
| <b>10.4 Conditions to avoid</b>                | : | DNA-Binding Solution                               | No specific data.   |
|  |   | PCR Wash Buffer                                    | No specific data.   |
|  |   | XL10-Gold Kan r ultracompetent cells               | No specific data.   |
|  |   | pUC18 Control Plasmid DNA                          | No specific data.   |
|  |   | Cloned Pfu DNA Polymerase                          | No specific data.   |

**SECTION 10: Stability and reactivity**

|  |                                      |  |
|--|--------------------------------------|--|
|  | Srf I                                | No specific data.  |
|  | Polishing Buffer                     | No specific data.  |
|  | 10 mM dNTP Mix                       | No specific data.  |
|  | pPCR-Script Amp SK(+)                | No specific data.  |
|  | Cloning Vector (predigested)         |  |
|  | PCR-Script Reaction Buffer           | No specific data.  |
|  | rATP                                 | No specific data.  |
|  | Control PCR Insert                   | No specific data.  |
|  | T4 DNA Ligase                        | No specific data.  |
|  | XL10-Gold 2-mercaptoethanol mix      | No specific data.  |
| <b>10.5 Incompatible materials</b>           | : DNA-Binding Solution               | No specific data.  |
|  | PCR Wash Buffer                      | No specific data.  |
|  | XL10-Gold Kan r ultracompetent cells | No specific data.  |
|  | pUC18 Control Plasmid DNA            | No specific data.  |
|  | Cloned Pfu DNA Polymerase            | No specific data.  |
|  | Srf I                                | No specific data.  |
|  | Polishing Buffer                     | No specific data.  |
|  | 10 mM dNTP Mix                       | No specific data.  |
|  | pPCR-Script Amp SK(+)                | No specific data.  |
|  | Cloning Vector (predigested)         |  |
|  | PCR-Script Reaction Buffer           | No specific data.  |
|  | rATP                                 | No specific data.  |
|  | Control PCR Insert                   | No specific data.  |
|  | T4 DNA Ligase                        | No specific data.  |
|  | XL10-Gold 2-mercaptoethanol mix      | No specific data.  |
| <b>10.6 Hazardous decomposition products</b> | : DNA-Binding Solution               | Contact with acids liberates very toxic gas.   |
|  | PCR Wash Buffer                      | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | XL10-Gold Kan r ultracompetent cells | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | pUC18 Control Plasmid DNA            | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | Cloned Pfu DNA Polymerase            | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | Srf I                                | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | Polishing Buffer                     | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | 10 mM dNTP Mix                       | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | pPCR-Script Amp SK(+)                | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | Cloning Vector (predigested)         |  |
|  | PCR-Script Reaction Buffer           | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | rATP                                 | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | Control PCR Insert                   | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | T4 DNA Ligase                        | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
|  | XL10-Gold 2-mercaptoethanol mix      | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

**SECTION 10: Stability and reactivity**

**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**

Acute toxicity

| Product/ingredient name   | Result                          | Species | Dose                 | Exposure |
|---|---------------------------------|---------|----------------------|----------|
| <b>XL10-Gold Kan r ultracompetent cells</b>   |                                 |         |                      |          |
| Glycerol  | LD50 Oral                       | Rat     | 12600 mg/kg          | -        |
| Dimethyl sulfoxide  | LD50 Dermal                     | Rat     | 40000 mg/kg          | -        |
|   | LD50 Oral                       | Rat     | 14500 mg/kg          | -        |
| Sucrose   | LD50 Oral                       | Rat     | 29700 mg/kg          | -        |
| Potassium chloride  | LD50 Oral                       | Rat     | 2600 mg/kg           | -        |
| <b>Cloned Pfu DNA Polymerase</b>  |                                 |         |                      |          |
| Glycerol  | LD50 Oral                       | Rat     | 12600 mg/kg          | -        |
| Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-   | LD50 Oral                       | Rat     | 2800 mg/kg           | -        |
| <b>Srf I</b>  |                                 |         |                      |          |
| Glycerol  | LD50 Oral                       | Rat     | 12600 mg/kg          | -        |
| Potassium chloride  | LD50 Oral                       | Rat     | 2600 mg/kg           | -        |
| <b>Polishing Buffer</b>   |                                 |         |                      |          |
| Ammonium sulphate   | LD50 Oral                       | Rat     | 2840 mg/kg           | -        |
| Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | LD50 Oral                       | Rat     | 1800 mg/kg           | -        |
| <b>PCR-Script Reaction Buffer</b>   |                                 |         |                      |          |
| Manganese dichloride  | LD50 Oral                       | Rat     | 250 mg/kg            | -        |
| <b>T4 DNA Ligase</b>  |                                 |         |                      |          |
| Glycerol  | LD50 Oral                       | Rat     | 12600 mg/kg          | -        |
| <b>XL10-Gold 2-mercaptoethanol mix</b>  |                                 |         |                      |          |
| Sodium chloride   | LC50 Inhalation Dusts and mists | Rat     | >42 g/m <sup>3</sup> | 1 hours  |
|   | LD50 Oral                       | Rat     | 3000 mg/kg           | -        |
| 2-Mercaptoethanol   | LD50 Dermal                     | Rabbit  | 200 mg/kg            | -        |
|   | LD50 Oral                       | Rat     | 244 mg/kg            | -        |

Acute toxicity estimates

| Route                                  | ATE value    |
|--|--------------|
| <b>DNA-Binding Solution</b>            |              |
| Oral                                   | 1057.1 mg/kg |
| Dermal                                 | 2325.6 mg/kg |
| Inhalation (vapours)                   | 23.26 mg/l   |
| <b>Polishing Buffer</b>                |              |
| Oral                                   | 180000 mg/kg |
| <b>PCR-Script Reaction Buffer</b>      |              |
| Oral                                   | 8438.8 mg/kg |
| <b>XL10-Gold 2-mercaptoethanol mix</b> |              |
| Oral                                   | 5545.5 mg/kg |
| Dermal                                 | 4545.5 mg/kg |

## SECTION 11: Toxicological information

### Irritation/Corrosion

| Product/ingredient name   | Result   | Species                              | Score            | Exposure   | Observation      |
|---|--|--------------------------------------|------------------|--|------------------|
| <b>DNA-Binding Solution</b><br>Trometamol   | Skin - Moderate irritant<br>Skin - Severe irritant   | Rabbit<br>Rabbit                     | -<br>-           | 25 Percent<br>500<br>milligrams  | -<br>-           |
| <b>XL10-Gold Kan r ultracompetent cells</b><br>Glycerol   | Eyes - Mild irritant<br>Skin - Mild irritant   | Rabbit<br>Rabbit                     | -<br>-           | 24 hours 500<br>milligrams<br>24 hours 500<br>milligrams   | -<br>-           |
| Dimethyl sulfoxide  | Eyes - Mild irritant<br>Eyes - Mild irritant<br>Skin - Mild irritant<br>Skin - Mild irritant | Rabbit<br>Rabbit<br>Rabbit<br>Rabbit | -<br>-<br>-<br>- | 24 hours 500<br>milligrams<br>100<br>milligrams<br>24 hours 500<br>milligrams<br>100<br>milligrams | -<br>-<br>-<br>- |
| Potassium chloride  | Eyes - Mild irritant   | Rabbit                               | -                | 24 hours 500<br>milligrams   | -                |
| <b>Cloned Pfu DNA Polymerase</b><br>Glycerol  | Eyes - Mild irritant<br>Skin - Mild irritant   | Rabbit<br>Rabbit                     | -<br>-           | 24 hours 500<br>milligrams<br>24 hours 500<br>milligrams   | -<br>-           |
| Poly(oxy-1,2-ethanediyl),<br>.alpha.-[(1,1,3,3-<br>tetramethylbutyl)phenyl]-<br>.omega.-hydroxy-                              | Eyes - Severe irritant   | Rabbit                               | -                | 1 Percent  | -                |
| <b>Srf I</b><br>Glycerol  | Eyes - Mild irritant<br>Skin - Mild irritant   | Rabbit<br>Rabbit                     | -<br>-           | 24 hours 500<br>milligrams<br>24 hours 500<br>milligrams   | -<br>-           |
| Potassium chloride  | Eyes - Mild irritant   | Rabbit                               | -                | 24 hours 500<br>milligrams   | -                |
| <b>Polishing Buffer</b><br>Poly(oxy-1,2-ethanediyl),<br>.alpha.-[4-(1,1,3,3-<br>tetramethylbutyl)phenyl]-<br>.omega.-hydroxy- | Eyes - Moderate irritant<br>Skin - Mild irritant   | Rabbit<br>Rabbit                     | -<br>-           | 24 hours 10<br>microliters<br>24 hours 500<br>microliters  | -<br>-           |
| <b>T4 DNA Ligase</b><br>Glycerol  | Eyes - Mild irritant<br>Skin - Mild irritant   | Rabbit<br>Rabbit                     | -<br>-           | 24 hours 500<br>milligrams<br>24 hours 500<br>milligrams   | -<br>-           |
| <b>XL10-Gold 2-mercaptoethanol mix</b><br>Sodium chloride   | Eyes - Moderate irritant<br>Eyes - Moderate irritant<br>Skin - Mild irritant                 | Rabbit<br>Rabbit<br>Rabbit           | -<br>-<br>-      | 24 hours 100<br>milligrams<br>10 milligrams<br>24 hours 500<br>milligrams                          | -<br>-<br>-      |

## SECTION 11: Toxicological information

|                   |                        |        |   |              |   |
|-------------------|------------------------|--------|---|--------------|---|
| 2-Mercaptoethanol | Eyes - Severe irritant | Rabbit | - | 2 milligrams | - |
|-------------------|------------------------|--------|---|--------------|---|

### Sensitiser

**Conclusion/Summary** : Not available.

### Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

### Specific target organ toxicity (single exposure)

| Product/ingredient name  | Category   | Route of exposure | Target organs                |
|--|------------|-------------------|------------------------------|
| <b>DNA-Binding Solution</b><br>Trometamol  | Category 3 | Inhalation        | Respiratory tract irritation |
| <b>Polishing Buffer</b><br>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride           | Category 3 | Not determined    | Respiratory tract irritation |
| <b>PCR-Script Reaction Buffer</b><br>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride | Category 3 | Not determined    | Respiratory tract irritation |
| (R*,R*)-1,4-Dimercaptobutane-2,3-diol  | Category 3 | Not determined    | Respiratory tract irritation |
| <b>XL10-Gold 2-mercaptoethanol mix</b><br>2-Mercaptoethanol                                  | Category 3 | Not determined    | Respiratory tract irritation |

### Specific target organ toxicity (repeated exposure)

| Product/ingredient name                                   | Category   | Route of exposure | Target organs                |
|---|------------|-------------------|------------------------------|
| <b>XL10-Gold Kan r ultracompetent cells</b><br>Glycerol   | Category 2 | Inhalation        | kidneys                      |
| Dimethyl sulfoxide  | Category 2 | Oral              | kidneys and liver            |
| Sucrose   | Category 2 | Oral              | gastrointestinal tract       |
| Potassium chloride  | Category 2 | Oral              | gastrointestinal tract       |
| <b>Cloned Pfu DNA Polymerase</b><br>Glycerol              | Category 2 | Inhalation        | kidneys                      |
| <b>Srf I</b><br>Glycerol                                  | Category 2 | Inhalation        | kidneys                      |
| Potassium chloride  | Category 2 | Oral              | gastrointestinal tract       |
| <b>PCR-Script Reaction Buffer</b><br>Manganese dichloride | Category 2 | Not determined    | central nervous system (CNS) |
| <b>T4 DNA Ligase</b><br>Glycerol                          | Category 2 | Inhalation        | kidneys                      |
| <b>XL10-Gold 2-mercaptoethanol mix</b><br>Sodium chloride | Category 2 | Oral              | stomach                      |

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

**SECTION 11: Toxicological information****Potential acute health effects**

|                     |  |  |
|---------------------|--|--|
| <b>Inhalation</b>   | : DNA-Binding Solution                             | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
|                     | PCR Wash Buffer                                    | No known significant effects or critical hazards.  |
|                     | XL10-Gold Kan r ultracompetent cells               | No known significant effects or critical hazards.  |
|                     | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards.  |
|                     | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards.  |
|                     | Srf I  | No known significant effects or critical hazards.  |
|                     | Polishing Buffer                                   | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
|                     | 10 mM dNTP Mix                                     | No known significant effects or critical hazards.  |
|                     | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards.  |
|                     | PCR-Script Reaction Buffer                         | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
|                     | rATP   | No known significant effects or critical hazards.  |
|                     | Control PCR Insert                                 | No known significant effects or critical hazards.  |
|                     | T4 DNA Ligase                                      | No known significant effects or critical hazards.  |
|                     | XL10-Gold 2-mercaptoethanol mix                    | May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.                  |
| <b>Ingestion</b>    | : DNA-Binding Solution                             | Harmful if swallowed.  |
|                     | PCR Wash Buffer                                    | No known significant effects or critical hazards.  |
|                     | XL10-Gold Kan r ultracompetent cells               | No known significant effects or critical hazards.  |
|                     | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards.  |
|                     | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards.  |
|                     | Srf I  | No known significant effects or critical hazards.  |
|                     | Polishing Buffer                                   | Irritating to mouth, throat and stomach.   |
|                     | 10 mM dNTP Mix                                     | No known significant effects or critical hazards.  |
|                     | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards.  |
|                     | PCR-Script Reaction Buffer                         | No known significant effects or critical hazards.  |
|                     | rATP   | No known significant effects or critical hazards.  |
|                     | Control PCR Insert                                 | No known significant effects or critical hazards.  |
|                     | T4 DNA Ligase                                      | No known significant effects or critical hazards.  |
|                     | XL10-Gold 2-mercaptoethanol mix                    | May cause burns to mouth, throat and stomach.  |
| <b>Skin contact</b> | : DNA-Binding Solution                             | No known significant effects or critical hazards.  |
|                     | PCR Wash Buffer                                    | No known significant effects or critical hazards.  |
|                     | XL10-Gold Kan r ultracompetent cells               | No known significant effects or critical hazards.  |
|                     | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards.  |
|                     | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards.  |
|                     | Srf I  | No known significant effects or critical hazards.  |
|                     | Polishing Buffer                                   | No known significant effects or critical hazards.  |
|                     | 10 mM dNTP Mix                                     | No known significant effects or critical hazards.  |
|                     | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards.  |
|                     | PCR-Script Reaction Buffer                         | No known significant effects or critical hazards.  |
|                     | rATP   | No known significant effects or critical hazards.  |
|                     | Control PCR Insert                                 | No known significant effects or critical hazards.  |
|                     | T4 DNA Ligase                                      | No known significant effects or critical hazards.  |

## SECTION 11: Toxicological information

|                                 |                                      |   |
|---------------------------------|--------------------------------------|---|
|                                 | XL10-Gold 2-mercaptoethanol mix      | May cause an allergic skin reaction.              |
| <b>Eye contact</b>              | : DNA-Binding Solution               | No known significant effects or critical hazards. |
|                                 | PCR Wash Buffer                      | No known significant effects or critical hazards. |
|                                 | XL10-Gold Kan r ultracompetent cells | No known significant effects or critical hazards. |
|                                 | pUC18 Control Plasmid DNA            | No known significant effects or critical hazards. |
|                                 | Cloned Pfu DNA Polymerase            | No known significant effects or critical hazards. |
|                                 | Srf I                                | No known significant effects or critical hazards. |
|                                 | Polishing Buffer                     | Causes serious eye irritation.                    |
|                                 | 10 mM dNTP Mix                       | No known significant effects or critical hazards. |
|                                 | pPCR-Script Amp SK(+)                | No known significant effects or critical hazards. |
|                                 | Cloning Vector (predigested)         |   |
|                                 | PCR-Script Reaction Buffer           | No known significant effects or critical hazards. |
|                                 | rATP                                 | No known significant effects or critical hazards. |
|                                 | Control PCR Insert                   | No known significant effects or critical hazards. |
|                                 | T4 DNA Ligase                        | No known significant effects or critical hazards. |
| XL10-Gold 2-mercaptoethanol mix | Causes serious eye damage.           |   |

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

|                              |                                      |                                      |                   |
|------------------------------|--------------------------------------|--------------------------------------|-------------------|
| <b>Inhalation</b>            | : DNA-Binding Solution               | No specific data.                    |                   |
|                              | PCR Wash Buffer                      | No specific data.                    |                   |
|                              | XL10-Gold Kan r ultracompetent cells | No specific data.                    |                   |
|                              | pUC18 Control Plasmid DNA            | No specific data.                    |                   |
|                              | Cloned Pfu DNA Polymerase            | No specific data.                    |                   |
|                              | Srf I                                | No specific data.                    |                   |
|                              | Polishing Buffer                     | No specific data.                    |                   |
|                              | 10 mM dNTP Mix                       | No specific data.                    |                   |
|                              | pPCR-Script Amp SK(+)                | No specific data.                    |                   |
|                              | Cloning Vector (predigested)         |                                      |                   |
|                              | PCR-Script Reaction Buffer           | No specific data.                    |                   |
|                              | rATP                                 | No specific data.                    |                   |
|                              | Control PCR Insert                   | No specific data.                    |                   |
|                              | T4 DNA Ligase                        | No specific data.                    |                   |
|                              | XL10-Gold 2-mercaptoethanol mix      | No specific data.                    |                   |
|                              | <b>Ingestion</b>                     | : DNA-Binding Solution               | No specific data. |
|                              |                                      | PCR Wash Buffer                      | No specific data. |
|                              |                                      | XL10-Gold Kan r ultracompetent cells | No specific data. |
|                              |                                      | pUC18 Control Plasmid DNA            | No specific data. |
| Cloned Pfu DNA Polymerase    |                                      | No specific data.                    |                   |
| Srf I                        |                                      | No specific data.                    |                   |
| Polishing Buffer             |                                      | No specific data.                    |                   |
| 10 mM dNTP Mix               |                                      | No specific data.                    |                   |
| pPCR-Script Amp SK(+)        |                                      | No specific data.                    |                   |
| Cloning Vector (predigested) |                                      |                                      |                   |
| PCR-Script Reaction Buffer   |                                      | No specific data.                    |                   |
| rATP                         |                                      | No specific data.                    |                   |
| Control PCR Insert           |                                      | No specific data.                    |                   |
| T4 DNA Ligase                |                                      | No specific data.                    |                   |



**SECTION 11: Toxicological information****Potential chronic health effects**

|                                 |   |   |
|---------------------------------|---|---|
| <b>General</b>                  | : DNA-Binding Solution                            | No known significant effects or critical hazards.   |
|                                 | PCR Wash Buffer                                   | No known significant effects or critical hazards.   |
|                                 | XL10-Gold Kan r ultracompetent cells              | May cause damage to organs through prolonged or repeated exposure if inhaled.   |
|                                 | pUC18 Control Plasmid DNA                         | No known significant effects or critical hazards.   |
|                                 | Cloned Pfu DNA Polymerase                         | May cause damage to organs through prolonged or repeated exposure if inhaled.   |
|                                 | Srf I   | May cause damage to organs through prolonged or repeated exposure if inhaled.   |
|                                 | Polishing Buffer                                  | No known significant effects or critical hazards.   |
|                                 | 10 mM dNTP Mix                                    | No known significant effects or critical hazards.   |
|                                 | pPCR-Script Amp SK(+)                             | No known significant effects or critical hazards.   |
|                                 | Cloning Vector (predigested)                      |   |
|                                 | PCR-Script Reaction Buffer                        | No known significant effects or critical hazards.   |
|                                 | rATP  | No known significant effects or critical hazards.   |
|                                 | Control PCR Insert                                | No known significant effects or critical hazards.   |
|                                 | T4 DNA Ligase                                     | May cause damage to organs through prolonged or repeated exposure if inhaled.   |
| <b>Carcinogenicity</b>          | XL10-Gold 2-mercaptoethanol mix                   | May cause damage to organs through prolonged or repeated exposure if swallowed. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. |
|                                 | : DNA-Binding Solution                            | No known significant effects or critical hazards.   |
|                                 | PCR Wash Buffer                                   | No known significant effects or critical hazards.   |
|                                 | XL10-Gold Kan r ultracompetent cells              | No known significant effects or critical hazards.   |
|                                 | pUC18 Control Plasmid DNA                         | No known significant effects or critical hazards.   |
|                                 | Cloned Pfu DNA Polymerase                         | No known significant effects or critical hazards.   |
|                                 | Srf I   | No known significant effects or critical hazards.   |
|                                 | Polishing Buffer                                  | No known significant effects or critical hazards.   |
|                                 | 10 mM dNTP Mix                                    | No known significant effects or critical hazards.   |
|                                 | pPCR-Script Amp SK(+)                             | No known significant effects or critical hazards.   |
|                                 | Cloning Vector (predigested)                      |   |
|                                 | PCR-Script Reaction Buffer                        | No known significant effects or critical hazards.   |
|                                 | rATP  | No known significant effects or critical hazards.   |
|                                 | Control PCR Insert                                | No known significant effects or critical hazards.   |
| T4 DNA Ligase                   | No known significant effects or critical hazards. |   |
| XL10-Gold 2-mercaptoethanol mix | No known significant effects or critical hazards. |   |
| <b>Mutagenicity</b>             | : DNA-Binding Solution                            | No known significant effects or critical hazards.   |
|                                 | PCR Wash Buffer                                   | No known significant effects or critical hazards.   |
|                                 | XL10-Gold Kan r ultracompetent cells              | No known significant effects or critical hazards.   |
|                                 | pUC18 Control Plasmid DNA                         | No known significant effects or critical hazards.   |
|                                 | Cloned Pfu DNA Polymerase                         | No known significant effects or critical hazards.   |
|                                 | Srf I   | No known significant effects or critical hazards.   |
|                                 | Polishing Buffer                                  | No known significant effects or critical hazards.   |
|                                 | 10 mM dNTP Mix                                    | No known significant effects or critical hazards.   |
|                                 | pPCR-Script Amp SK(+)                             | No known significant effects or critical hazards.   |
|                                 | Cloning Vector (predigested)                      |   |
|                                 | PCR-Script Reaction Buffer                        | No known significant effects or critical hazards.   |
|                                 | rATP  | No known significant effects or critical hazards.   |

**SECTION 11: Toxicological information**

|                              |  |   |
|------------------------------|--|---|
|                              | Control PCR Insert                                 | No known significant effects or critical hazards. |
|                              | T4 DNA Ligase                                      | No known significant effects or critical hazards. |
|                              | XL10-Gold 2-mercaptoethanol mix                    | No known significant effects or critical hazards. |
| <b>Teratogenicity</b>        | : DNA-Binding Solution                             | No known significant effects or critical hazards. |
|                              | PCR Wash Buffer                                    | No known significant effects or critical hazards. |
|                              | XL10-Gold Kan r ultracompetent cells               | No known significant effects or critical hazards. |
|                              | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards. |
|                              | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards. |
|                              | Srf I  | No known significant effects or critical hazards. |
|                              | Polishing Buffer                                   | No known significant effects or critical hazards. |
|                              | 10 mM dNTP Mix                                     | No known significant effects or critical hazards. |
|                              | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards. |
|                              | PCR-Script Reaction Buffer                         | No known significant effects or critical hazards. |
|                              | rATP   | No known significant effects or critical hazards. |
|                              | Control PCR Insert                                 | No known significant effects or critical hazards. |
|                              | T4 DNA Ligase                                      | No known significant effects or critical hazards. |
|                              | XL10-Gold 2-mercaptoethanol mix                    | No known significant effects or critical hazards. |
| <b>Developmental effects</b> | : DNA-Binding Solution                             | No known significant effects or critical hazards. |
|                              | PCR Wash Buffer                                    | No known significant effects or critical hazards. |
|                              | XL10-Gold Kan r ultracompetent cells               | No known significant effects or critical hazards. |
|                              | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards. |
|                              | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards. |
|                              | Srf I  | No known significant effects or critical hazards. |
|                              | Polishing Buffer                                   | No known significant effects or critical hazards. |
|                              | 10 mM dNTP Mix                                     | No known significant effects or critical hazards. |
|                              | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards. |
|                              | PCR-Script Reaction Buffer                         | No known significant effects or critical hazards. |
|                              | rATP   | No known significant effects or critical hazards. |
|                              | Control PCR Insert                                 | No known significant effects or critical hazards. |
|                              | T4 DNA Ligase                                      | No known significant effects or critical hazards. |
|                              | XL10-Gold 2-mercaptoethanol mix                    | No known significant effects or critical hazards. |
| <b>Fertility effects</b>     | : DNA-Binding Solution                             | No known significant effects or critical hazards. |
|                              | PCR Wash Buffer                                    | No known significant effects or critical hazards. |
|                              | XL10-Gold Kan r ultracompetent cells               | No known significant effects or critical hazards. |
|                              | pUC18 Control Plasmid DNA                          | No known significant effects or critical hazards. |
|                              | Cloned Pfu DNA Polymerase                          | No known significant effects or critical hazards. |
|                              | Srf I  | No known significant effects or critical hazards. |
|                              | Polishing Buffer                                   | No known significant effects or critical hazards. |
|                              | 10 mM dNTP Mix                                     | No known significant effects or critical hazards. |
|                              | pPCR-Script Amp SK(+) Cloning Vector (predigested) | No known significant effects or critical hazards. |
|                              | PCR-Script Reaction Buffer                         | No known significant effects or critical hazards. |
|                              | rATP   | No known significant effects or critical hazards. |
|                              | Control PCR Insert                                 | No known significant effects or critical hazards. |

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|                                 |   |
|---------------------------------|---|
| T4 DNA Ligase                   | No known significant effects or critical hazards. |
| XL10-Gold 2-mercaptoethanol mix | No known significant effects or critical hazards. |

### Toxicokinetics

#### **Absorption**

|                                      |                |
|--------------------------------------|----------------|
| : DNA-Binding Solution               | Not available. |
| PCR Wash Buffer                      | Not available. |
| XL10-Gold Kan r ultracompetent cells | Not available. |
| pUC18 Control Plasmid DNA            | Not available. |
| Cloned Pfu DNA Polymerase            | Not available. |
| Srf I                                | Not available. |
| Polishing Buffer                     | Not available. |
| 10 mM dNTP Mix                       | Not available. |
| pPCR-Script Amp SK(+)                | Not available. |
| Cloning Vector (predigested)         |                |
| PCR-Script Reaction Buffer           | Not available. |
| rATP                                 | Not available. |
| Control PCR Insert                   | Not available. |
| T4 DNA Ligase                        | Not available. |
| XL10-Gold 2-mercaptoethanol mix      | Not available. |

#### **Distribution**

|                                      |                |
|--------------------------------------|----------------|
| : DNA-Binding Solution               | Not available. |
| PCR Wash Buffer                      | Not available. |
| XL10-Gold Kan r ultracompetent cells | Not available. |
| pUC18 Control Plasmid DNA            | Not available. |
| Cloned Pfu DNA Polymerase            | Not available. |
| Srf I                                | Not available. |
| Polishing Buffer                     | Not available. |
| 10 mM dNTP Mix                       | Not available. |
| pPCR-Script Amp SK(+)                | Not available. |
| Cloning Vector (predigested)         |                |
| PCR-Script Reaction Buffer           | Not available. |
| rATP                                 | Not available. |
| Control PCR Insert                   | Not available. |
| T4 DNA Ligase                        | Not available. |
| XL10-Gold 2-mercaptoethanol mix      | Not available. |

#### **Metabolism**

|                                      |                |
|--------------------------------------|----------------|
| : DNA-Binding Solution               | Not available. |
| PCR Wash Buffer                      | Not available. |
| XL10-Gold Kan r ultracompetent cells | Not available. |
| pUC18 Control Plasmid DNA            | Not available. |
| Cloned Pfu DNA Polymerase            | Not available. |
| Srf I                                | Not available. |
| Polishing Buffer                     | Not available. |
| 10 mM dNTP Mix                       | Not available. |
| pPCR-Script Amp SK(+)                | Not available. |
| Cloning Vector (predigested)         |                |
| PCR-Script Reaction Buffer           | Not available. |
| rATP                                 | Not available. |

## SECTION 11: Toxicological information

|                    |                                      |                |
|--------------------|--------------------------------------|----------------|
|                    | Control PCR Insert                   | Not available. |
|                    | T4 DNA Ligase                        | Not available. |
|                    | XL10-Gold 2-mercaptoethanol mix      | Not available. |
| <b>Elimination</b> | : DNA-Binding Solution               | Not available. |
|                    | PCR Wash Buffer                      | Not available. |
|                    | XL10-Gold Kan r ultracompetent cells | Not available. |
|                    | pUC18 Control Plasmid DNA            | Not available. |
|                    | Cloned Pfu DNA Polymerase            | Not available. |
|                    | Srf I                                | Not available. |
|                    | Polishing Buffer                     | Not available. |
|                    | 10 mM dNTP Mix                       | Not available. |
|                    | pPCR-Script Amp SK(+)                | Not available. |
|                    | Cloning Vector (predigested)         |                |
|                    | PCR-Script Reaction Buffer           | Not available. |
|                    | rATP                                 | Not available. |
|                    | Control PCR Insert                   | Not available. |
|                    | T4 DNA Ligase                        | Not available. |
|                    | XL10-Gold 2-mercaptoethanol mix      | Not available. |

**Other information** : Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

| Product/ingredient name   | Result                                   | Species  | Exposure |
|---|--|--|----------|
| <b>XL10-Gold Kan r ultracompetent cells</b>   |  |  |          |
| Glycerol  | Acute LC50 54 to 57 ml/L Fresh water     | Fish - Oncorhynchus mykiss - 0.9 g                         | 96 hours |
| Dimethyl sulfoxide  | Acute LC50 25000 ppm Fresh water         | Daphnia - Daphnia magna - Neonate - <24 hours              | 48 hours |
|   | Acute LC50 34000000 ug/L Fresh water     | Fish - Pimephales promelas - 31 days - 15.8 mm - 0.062 g   | 96 hours |
|   | Chronic NOEC <0.1 g/L Fresh water        | Fish - Danio rerio - Embryo - 4 to 6 hours                 | 30 days  |
| Potassium chloride  | Acute EC50 1337000 ug/L Fresh water      | Algae - Navicula seminulum                                 | 96 hours |
|   | Acute EC50 83000 ug/L Fresh water        | Daphnia - Daphnia magna - 12 hours                         | 48 hours |
|   | Acute LC50 16.5 mg/L Fresh water         | Crustaceans - Diaphanosoma brachyurum - Neonate - 24 hours | 48 hours |
|   | Acute LC50 435000 ug/L Fresh water       | Fish - Gambusia affinis - Adult                            | 96 hours |
| <b>Cloned Pfu DNA Polymerase</b>  |  |  |          |
| Glycerol  | Acute LC50 54 to 57 ml/L Fresh water     | Fish - Oncorhynchus mykiss - 0.9 g                         | 96 hours |
| Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | Acute EC50 210 ug/L Fresh water          | Algae - Pseudokirchneriella subcapitata                    | 96 hours |
|   | Acute LC50 10800 ug/L Marine water       | Crustaceans - Pandalus montagui - Adult                    | 48 hours |
|   | Acute LC50 8600 to 9800 ug/L Fresh water | Daphnia - Daphnia magna - Neonate - <24 hours              | 48 hours |
|   | Acute LC50 7200 ug/L Fresh water         | Fish - Oncorhynchus mykiss - 5 to 6 cm                     | 96 hours |

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|   |  |  |          |
|---|--|--|----------|
| <b>Srf I</b><br>Glycerol  | Acute LC50 54 to 57 ml/L Fresh water         | Fish - Oncorhynchus mykiss - 0.9 g                         | 96 hours |
|   | Potassium chloride                           | Algae - Navicula seminulum                                 | 96 hours |
|   | Acute EC50 1337000 ug/L Fresh water          | Daphnia - Daphnia magna - 12 hours                         | 48 hours |
|   | Acute EC50 83000 ug/L Fresh water            | Crustaceans - Diaphanosoma brachyurum - Neonate - 24 hours | 48 hours |
| <b>Polishing Buffer</b><br>Ammonium sulphate  | Acute LC50 16.5 mg/L Fresh water             | Fish - Gambusia affinis - Adult                            | 96 hours |
|   | Acute LC50 435000 ug/L Fresh water           |  |          |
|   | Acute EC50 59000 ug/L Fresh water            | Crustaceans - Ceriodaphnia dubia - Neonate - <24 hours     | 48 hours |
|   | Acute LC50 14000 to 15000 ug/L Fresh water   | Daphnia - Daphnia magna - Young - <=24 hours               | 48 hours |
| Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | Acute LC50 68 ug/L Fresh water               | Fish - Oncorhynchus gorboscha - Alevin                     | 96 hours |
|   | Chronic NOEC 143 ug/L Marine water           | Fish - Salmo salar - Post-smolt - 225 g                    | 5 weeks  |
|   | Acute LC50 5.85 mg/L Fresh water             | Crustaceans - Ceriodaphnia rigaudi - Neonate - 24 hours    | 48 hours |
|   | Acute LC50 11.2 mg/L Fresh water             | Daphnia - Daphnia magna - Neonate - 24 hours               | 48 hours |
| <b>PCR-Script Reaction Buffer</b><br>Manganese dichloride                               | Acute LC50 2800 to 3200 ug/L Fresh water     | Fish - Lepomis macrochirus - 1 g                           | 96 hours |
|   | Acute EC50 4700 ug/L Fresh water             | Daphnia - Daphnia magna - Neonate                          | 48 hours |
|   | Acute LC50 51800 ug/L Marine water           | Crustaceans - Artemia sp. - Nauplii                        | 48 hours |
|   | Acute LC50 220 ppm Marine water              | Fish - Lates calcarifer - Fry - 11 mm                      | 96 hours |
| (R*,R*)-1,4-Dimercaptobutane-2,3-diol   | Chronic NOEC 510 ug/L Fresh water            | Fish - Salmo trutta - Eyed stage, eyed embryo              | 62 days  |
|   | Acute LC50 27000 to 30000 ug/L Fresh water   | Daphnia - Daphnia magna - <24 hours                        | 48 hours |
| <b>T4 DNA Ligase</b><br>Glycerol  | Acute LC50 54 to 57 ml/L Fresh water         | Fish - Oncorhynchus mykiss - 0.9 g                         | 96 hours |
|   |  |  |          |
| <b>XL10-Gold 2-mercaptoethanol mix</b><br>Sodium chloride                               | Acute EC50 2430000 ug/L Fresh water          | Algae - Navicula seminulum                                 | 96 hours |
|   | Acute EC50 402600 to 469200 ug/L Fresh water | Daphnia - Daphnia magna                                    | 48 hours |
|   | Acute LC50 1042 mg/L Fresh water             | Crustaceans - Ceriodaphnia dubia - <24 hours               | 48 hours |
|   | Acute LC50 1000000 ug/L Fresh water          | Fish - Morone saxatilis - Larvae                           | 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

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
|                         |                   |            |                  |

## SECTION 12: Ecological information

|   |   |   |         |
|---|---|---|---------|
| <b>Polishing Buffer</b><br>Poly(oxy-1,2-ethanediyl),<br>.alpha.-[4-(1,1,3,3-<br>tetramethylbutyl)phenyl]-<br>.omega.-hydroxy- | - | - | Readily |
|---|---|---|---------|

### 12.3 Bioaccumulative potential

| Product/ingredient name  | LogP <sub>ow</sub> | BCF | Potential |
|--|--------------------|-----|-----------|
| <b>DNA-Binding Solution</b><br>Trometamol  | -1.56              | -   | low       |
| <b>XL10-Gold Kan r<br/>ultracompetent cells</b><br>Glycerol  | -1.76              | -   | low       |
| Dimethyl sulfoxide   | -1.35              | -   | low       |
| Sucrose  | -3.67              | -   | low       |
| <b>Cloned Pfu DNA<br/>Polymerase</b><br>Glycerol   | -1.76              | -   | low       |
| <b>Srf I</b><br>Glycerol   | -1.76              | -   | low       |
| <b>Polishing Buffer</b><br>Ammonium sulphate   | -5.1               | -   | low       |
| Poly(oxy-1,2-ethanediyl),<br>.alpha.-[4-(1,1,3,3-<br>tetramethylbutyl)phenyl]-<br>.omega.-hydroxy- | 4.86               | -   | high      |
| <b>T4 DNA Ligase</b><br>Glycerol   | -1.76              | -   | low       |
| <b>XL10-Gold 2-<br/>mercaptoethanol mix</b><br>2-Mercaptoethanol                                   | -0.3               | -   | low       |

### 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. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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.

## SECTION 13: Disposal considerations

- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.
- 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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## SECTION 14: Transport information

### Regulatory information

**ADR/RID / IMDG / IATA** : Not regulated.

**14.7 Transport in bulk according to Annex II of MARPOL 73/78 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

###### 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** : Not applicable.

##### Other EU regulations

**Europe inventory** : At least one component is not listed.

**Black List Chemicals** : Not listed

**Priority List Chemicals** : Not listed

**Integrated pollution prevention and control list (IPPC) - Air** : Not listed

**Integrated pollution prevention and control list (IPPC) - Water** : Not listed

**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]

**SECTION 16: Other information**

| Classification  | Justification  |
|---|--|
| <b>DNA-Binding Solution</b><br>Acute Tox. 4, H302<br>Aquatic Chronic 3, H412  | Calculation method<br>Calculation method   |
| <b>XL10-Gold Kan r ultracompetent cells</b><br>STOT RE 2, H373i   | Calculation method   |
| <b>Cloned Pfu DNA Polymerase</b><br>STOT RE 2, H373i  | Calculation method   |
| <b>Srf I</b><br>STOT RE 2, H373i  | Calculation method   |
| <b>Polishing Buffer</b><br>Eye Irrit. 2, H319   | Calculation method   |
| <b>T4 DNA Ligase</b><br>STOT RE 2, H373i  | Calculation method   |
| <b>XL10-Gold 2-mercaptoethanol mix</b><br>Eye Dam. 1, H318<br>Skin Sens. 1, H317<br>STOT RE 2, H373o<br>Aquatic Chronic 3, H412 | Calculation method<br>Calculation method<br>Calculation method<br>Calculation method |

|  |  |
|--|--|
| <p><b>Full text of abbreviated H statements</b></p> <p><b>DNA-Binding Solution</b></p> <p>H302<br/>H312<br/>H315<br/>H319<br/>H332<br/>H335i<br/>H412</p> <p><b>XL10-Gold Kan r ultracompetent cells</b></p> <p>H373i<br/>H373o</p> <p><b>Cloned Pfu DNA Polymerase</b></p> <p>H318<br/>H373i<br/>H400</p> <p><b>Srf I</b></p> <p>H373i<br/>H373o</p> <p><b>Polishing Buffer</b></p> <p>H302<br/>H315<br/>H318<br/>H319<br/>H335<br/>H400<br/>H411</p> | <p>Harmful if swallowed.<br/>Harmful in contact with skin.<br/>Causes skin irritation.<br/>Causes serious eye irritation.<br/>Harmful if inhaled.<br/>May cause respiratory irritation.<br/>Harmful to aquatic life with long lasting effects.</p> <p>May cause damage to organs through prolonged or repeated exposure if inhaled.<br/>May cause damage to organs through prolonged or repeated exposure if swallowed.</p> <p>Causes serious eye damage.<br/>May cause damage to organs through prolonged or repeated exposure if inhaled.<br/>Very toxic to aquatic life.</p> <p>May cause damage to organs through prolonged or repeated exposure if inhaled.<br/>May cause damage to organs through prolonged or repeated exposure if swallowed.</p> <p>Harmful if swallowed.<br/>Causes skin irritation.<br/>Causes serious eye damage.<br/>Causes serious eye irritation.<br/>May cause respiratory irritation.<br/>Very toxic to aquatic life.<br/>Toxic to aquatic life with long lasting effects.</p> |
|--|--|

**SECTION 16: Other information**

**PCR-Script Reaction**

**Buffer**

|      |  |
|------|--|
| H301 | Toxic if swallowed.  |
| H302 | Harmful if swallowed.  |
| H315 | Causes skin irritation.  |
| H319 | Causes serious eye irritation.                                     |
| H335 | May cause respiratory irritation.                                  |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

**T4 DNA Ligase**

|       |   |
|-------|---|
| H373i | May cause damage to organs through prolonged or repeated exposure if inhaled. |
|-------|---|

**XL10-Gold 2-mercaptoethanol mix**

|       |   |
|-------|---|
| 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.  |
| H335  | May cause respiratory irritation.   |
| H373o | May cause damage to organs through prolonged or repeated exposure if swallowed. |
| H411  | Toxic to aquatic life with long lasting effects.                                |
| H412  | Harmful to aquatic life with long lasting effects.                              |

Full text of classifications [CLP/GHS]

**DNA-Binding Solution**

|                         |  |
|-------------------------|--|
| Acute Tox. 4, H302      | ACUTE TOXICITY: ORAL - Category 4  |
| Acute Tox. 4, H312      | ACUTE TOXICITY: SKIN - Category 4  |
| Acute Tox. 4, H332      | ACUTE TOXICITY: INHALATION - Category 4  |
| Aquatic Chronic 3, H412 | AQUATIC TOXICITY (CHRONIC) - Category 3  |
| Eye Irrit. 2, H319      | SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  |
| Skin Irrit. 2, H315     | SKIN CORROSION/IRRITATION - Category 2   |
| STOT SE 3, H335i        | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): INHALATION [Respiratory tract irritation] - Category 3 |

**XL10-Gold Kan r ultracompetent cells**

|                  |   |
|------------------|---|
| STOT RE 2, H373i | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2     |
| STOT RE 2, H373o | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL [kidneys and liver] - Category 2 |

**Cloned Pfu DNA Polymerase**

|                       |   |
|-----------------------|---|
| Aquatic Acute 1, H400 | AQUATIC TOXICITY (ACUTE) - Category 1   |
| Eye Dam. 1, H318      | SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1                                       |
| STOT RE 2, H373i      | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2 |

**Srf I**

|                  |  |
|------------------|--|
| STOT RE 2, H373i | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2          |
| STOT RE 2, H373o | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL [gastrointestinal tract] - Category 2 |

**Polishing Buffer**

|                         |   |
|-------------------------|---|
| Acute Tox. 4, H302      | ACUTE TOXICITY: ORAL - Category 4               |
| Aquatic Acute 1, H400   | AQUATIC TOXICITY (ACUTE) - Category 1           |
| Aquatic Chronic 2, H411 | AQUATIC TOXICITY (CHRONIC) - Category 2         |
| Eye Dam. 1, H318        | SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 |
| Eye Irrit. 2, H319      | SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 |

**SECTION 16: Other information**

Skin Irrit. 2, H315  
STOT SE 3, H335

SKIN CORROSION/IRRITATION - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3

**PCR-Script Reaction Buffer**

Acute Tox. 3, H301  
Acute Tox. 4, H302  
Eye Irrit. 2, H319  
Skin Irrit. 2, H315  
STOT RE 2, H373

ACUTE TOXICITY: ORAL - Category 3  
ACUTE TOXICITY: ORAL - Category 4  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
SKIN CORROSION/IRRITATION - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) [central nervous system (CNS)] - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3

STOT SE 3, H335

**T4 DNA Ligase**

STOT RE 2, H373i

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): INHALATION [kidneys] - Category 2

**XL10-Gold 2-mercaptoethanol mix**

Acute Tox. 2, H310  
Acute Tox. 3, H301  
Aquatic Chronic 2, H411  
Aquatic Chronic 3, H412  
Eye Dam. 1, H318  
Eye Irrit. 2, H319  
Skin Irrit. 2, H315  
Skin Sens. 1, H317  
STOT RE 2, H373o

ACUTE TOXICITY: SKIN - Category 2  
ACUTE TOXICITY: ORAL - Category 3  
AQUATIC TOXICITY (CHRONIC) - Category 2  
AQUATIC TOXICITY (CHRONIC) - Category 3  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
SKIN CORROSION/IRRITATION - Category 2  
SKIN SENSITIZATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL [stomach] - Category 2  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] - Category 3  
R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.  
R36/37/38- Irritating to eyes, respiratory system and skin.  
R32- Contact with acids liberates very toxic gas.  
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

STOT SE 3, H335

**Full text of abbreviated R phrases**

: DNA-Binding Solution

PCR Wash Buffer  
XL10-Gold Kan r ultracompetent cells  
pUC18 Control Plasmid DNA  
Cloned Pfu DNA Polymerase  
Srf I  
Polishing Buffer

Not applicable.  
Not applicable.  
Not applicable.  
R41- Risk of serious damage to eyes.  
Not applicable.  
R22- Harmful if swallowed.  
R41- Risk of serious damage to eyes.  
R36/37/38- Irritating to eyes, respiratory system and skin.  
R50- Very toxic to aquatic organisms.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
Not applicable.  
Not applicable.  
R22- Harmful if swallowed.  
R36/37/38- Irritating to eyes, respiratory system and skin.  
Not applicable.  
Not applicable.  
Not applicable.  
R24- Toxic in contact with skin.  
R21- Harmful in contact with skin.  
R22- Harmful if swallowed.  
R41- Risk of serious damage to eyes.

10 mM dNTP Mix  
pPCR-Script Amp SK(+)  
Cloning Vector (predigested)  
PCR-Script Reaction Buffer  
rATP  
Control PCR Insert  
T4 DNA Ligase  
XL10-Gold 2-mercaptoethanol mix

**SECTION 16: Other information**

R36- Irritating to eyes.  
 R38- Irritating to skin.  
 R43- May cause sensitisation by skin contact.  
 R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
 R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

|   |                                      |                                   |
|---|--------------------------------------|-----------------------------------|
| <b>Full text of classifications [DSD/DPD]</b> | : DNA-Binding Solution               | Xn - Harmful                      |
|   | PCR Wash Buffer                      | Xi - Irritant                     |
|   | XL10-Gold Kan r ultracompetent cells | Not applicable.                   |
|   | pUC18 Control Plasmid DNA            | Not applicable.                   |
|   | Cloned Pfu DNA Polymerase            | Not applicable.                   |
|   | Srf I                                | Xi - Irritant                     |
|   | Polishing Buffer                     | Not applicable.                   |
|   | 10 mM dNTP Mix                       | Xn - Harmful                      |
|   | pPCR-Script Amp SK(+)                | Xi - Irritant                     |
|   | Cloning Vector (predigested)         | N - Dangerous for the environment |
|   | PCR-Script Reaction Buffer           | Not applicable.                   |
|   | rATP                                 | Xi - Irritant                     |
|   | Control PCR Insert                   | Not applicable.                   |
|   | T4 DNA Ligase                        | Not applicable.                   |
|   | XL10-Gold 2-mercaptoethanol mix      | T - Toxic                         |
|   |                                      | Xn - Harmful                      |
|   |                                      | Xi - Irritant                     |
|   |                                      | N - Dangerous for the environment |

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