

SAFETY DATA SHEET



QuikChange Site-Directed Mutagenesis Kit, Part Number 200518

Section 1. Identification

1.1 Product identifier

Product name : QuikChange Site-Directed Mutagenesis Kit, Part Number 200518
Part No. (Chemical Kit) : 200518
Part No. : L1-Blue supercompetent cells 200236-41
 pUC 18 DNA Control Plasmid 200231-42
 PfuTurbo DNA Polymerase 200518-57
 10X Reaction Buffer 200518-58
 Dpn I 200518-52
 Control Primer 1 (34-mer) 200518-53
 Control Primer 2 (34-mer) 200518-54
 pWS4.5 Control Template 200518-55
 dNTP Mix 200518-56

Validation date : 6/21/2017

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

Material uses : Analytical reagent.
 L1-Blue supercompetent cells 1.6 ml (8 x 0.2 ml)
 pUC 18 DNA Control Plasmid 0.1 ml (0.1 ng/μl)
 PfuTurbo DNA Polymerase 0.032 ml (80 U 2.5 U/μl)
 10X Reaction Buffer 0.5 ml
 Dpn I 0.3 ml (10 U/μl 300 U)
 Control Primer 1 (34-mer) 0.0075 ml (750 ng 100 ng/μl)
 Control Primer 2 (34-mer) 0.0075 ml (750 ng 100 ng/μl)
 pWS4.5 Control Template 0.01 ml (50 ng 5 ng/μl)
 dNTP Mix 0.03 ml

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number

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

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : L1-Blue supercompetent cells This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
 pUC 18 DNA Control Plasmid
 PfuTurbo DNA Polymerase This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 10X Reaction Buffer This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
 Dpn I This material is considered hazardous by the OSHA

Section 2. Hazards identification

| | |
|---------------------------|--|
| Control Primer 1 (34-mer) | Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product. |
| Control Primer 2 (34-mer) | While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product. |
| pWS4.5 Control Template | While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product. |
| dNTP Mix | While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product. |

Classification of the substance or mixture

L1-Blue supercompetent cells

H320 EYE IRRITATION - Category 2B

PfuTurbo DNA Polymerase

H320 EYE IRRITATION - Category 2B

10X Reaction Buffer

H319 EYE IRRITATION - Category 2A

Dpn I

H319 EYE IRRITATION - Category 2A

Ingredients of unknown toxicity

| | |
|--|---|
| <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10% |
| PfuTurbo DNA Polymerase | Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30% |
| 10X Reaction Buffer | Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 30 - 60% |
| Dpn I | Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10% |
| dNTP Mix | Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10% |
| | Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 1 - 10% |

Section 2. Hazards identification

2.2 GHS label elements

Hazard pictograms

: 10X Reaction Buffer



Dpn I



Signal word

: L1-Blue supercompetent cells
 pUC 18 DNA Control Plasmid
 PfuTurbo DNA Polymerase
 10X Reaction Buffer
 Dpn I
 Control Primer 1 (34-mer)
 Control Primer 2 (34-mer)
 pWS4.5 Control Template
 dNTP Mix

Warning
 No signal word.
 Warning
 Warning
 Warning
 No signal word.
 No signal word.
 No signal word.
 No signal word.

Hazard statements

: L1-Blue supercompetent cells
 pUC 18 DNA Control Plasmid
 PfuTurbo DNA Polymerase
 10X Reaction Buffer
 Dpn I
 Control Primer 1 (34-mer)
 Control Primer 2 (34-mer)
 pWS4.5 Control Template
 dNTP Mix

H320 - Causes eye irritation.
 No known significant effects or critical hazards.
 H320 - Causes eye irritation.
 H319 - Causes serious eye irritation.
 H319 - Causes serious eye irritation.
 No known significant effects or critical hazards.
 No known significant effects or critical hazards.
 No known significant effects or critical hazards.
 No known significant effects or critical hazards.

Precautionary statements

Prevention

: L1-Blue supercompetent cells
 pUC 18 DNA Control Plasmid
 PfuTurbo DNA Polymerase
 10X Reaction Buffer

Dpn I

Control Primer 1 (34-mer)
 Control Primer 2 (34-mer)
 pWS4.5 Control Template
 dNTP Mix

P264 - Wash hands thoroughly after handling.
 Not applicable.
 P264 - Wash hands thoroughly after handling.
 P280 - Wear eye or face protection.
 P264 - Wash hands thoroughly after handling.
 P280 - Wear eye or face protection.
 P264 - Wash hands thoroughly after handling.
 Not applicable.
 Not applicable.
 Not applicable.
 Not applicable.

Response

: L1-Blue supercompetent cells

pUC 18 DNA Control Plasmid
 PfuTurbo DNA Polymerase

10X Reaction Buffer

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Get medical attention.
 Not applicable.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Get medical attention.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove

Section 2. Hazards identification

contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Get medical attention.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P337 + P313 - If eye irritation persists: Get medical attention.

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

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

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

None known.
 None known.
 None known.
 None known.
 None known.
 None known.
 None known.
 None known.
 None known.

None known.
 None known.
 None known.
 None known.
 None known.
 None known.
 None known.
 None known.

Storage

- Dpn I
- Control Primer 1 (34-mer)
- Control Primer 2 (34-mer)
- pWS4.5 Control Template
- dNTP Mix
- L1-Blue supercompetent cells
- pUC 18 DNA Control Plasmid
- PfuTurbo DNA Polymerase
- 10X Reaction Buffer
- Dpn I
- Control Primer 1 (34-mer)
- Control Primer 2 (34-mer)
- pWS4.5 Control Template
- dNTP Mix

Disposal

- L1-Blue supercompetent cells
- pUC 18 DNA Control Plasmid
- PfuTurbo DNA Polymerase
- 10X Reaction Buffer
- Dpn I
- Control Primer 1 (34-mer)
- Control Primer 2 (34-mer)
- pWS4.5 Control Template
- dNTP Mix

Supplemental label elements

- L1-Blue supercompetent cells
- pUC 18 DNA Control Plasmid
- PfuTurbo DNA Polymerase
- 10X Reaction Buffer
- Dpn I
- Control Primer 1 (34-mer)
- Control Primer 2 (34-mer)
- pWS4.5 Control Template
- dNTP Mix

2.3 Other hazards

Hazards not otherwise classified

- L1-Blue supercompetent cells
- pUC 18 DNA Control Plasmid
- PfuTurbo DNA Polymerase
- 10X Reaction Buffer
- Dpn I
- Control Primer 1 (34-mer)
- Control Primer 2 (34-mer)
- pWS4.5 Control Template
- dNTP Mix

Section 3. Composition/information on ingredients

| | | |
|--------------------------|--|---------|
| Substance/mixture | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Mixture |
| | pUC 18 DNA Control Plasmid | Mixture |
| | PfuTurbo DNA Polymerase | Mixture |
| | 10X Reaction Buffer | Mixture |
| | Dpn I | Mixture |
| | Control Primer 1 (34-mer) | Mixture |
| | Control Primer 2 (34-mer) | Mixture |
| | pWS4.5 Control Template | Mixture |
| | dNTP Mix | Mixture |

| Ingredient name | % | CAS number |
|---|-----------|------------|
| <input checked="" type="checkbox"/> L1-Blue supercompetent cells | | |
| Glycerol | ≥10 - ≤25 | 56-81-5 |
| Dimethyl sulfoxide | ≤10 | 67-68-5 |
| Potassium chloride | ≤3 | 7447-40-7 |
| PfuTurbo DNA Polymerase | | |
| Glycerol | ≥50 - ≤75 | 56-81-5 |
| 10X Reaction Buffer | | |
| 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride | ≤5 | 1185-53-1 |
| Ammonium sulphate | ≤3 | 7783-20-2 |
| Polyoxyethylene octyl phenyl ether | ≤2.3 | 9002-93-1 |
| Dpn I | | |
| Glycerol | ≥50 - ≤75 | 56-81-5 |
| Sodium chloride | ≤3 | 7647-14-5 |
| dNTP Mix | | |
| 2'-Deoxyguanosine 5'-(tetrahydrogen triphosphate) | ≤3 | 2564-35-4 |
| 2'-Deoxyadenosine 5'-(tetrahydrogen triphosphate) | ≤3 | 1927-31-7 |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

| | | |
|--------------------|--|---|
| Eye contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent 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. If irritation persists, get medical attention. |
| | pUC 18 DNA Control Plasmid | 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. |
| | PfuTurbo 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. If irritation persists, get medical attention. |
| | 10X Reaction Buffer | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. |

Section 4. First aid measures

Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Dpn 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.


Control Primer 1 (34-mer)
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 Primer 2 (34-mer)
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.

pWS4.5 Control Template
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.

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.

Inhalation

:  L1-Blue supercompetent 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 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.

pUC 18 DNA Control Plasmid
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

PfuTurbo 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 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.

10X Reaction 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

Section 4. First aid measures

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.

Dpn 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 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.

Control Primer 1 (34-mer) Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Control Primer 2 (34-mer) Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

pWS4.5 Control Template Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

dNTP Mix Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.

Skin contact :  L1-Blue supercompetent cells

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.

pUC 18 DNA Control Plasmid Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

PfuTurbo DNA Polymerase 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.

10X Reaction 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.

Dpn I 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

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|------------------|--|---|
| | Control Primer 1 (34-mer) | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | Control Primer 2 (34-mer) | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | pWS4.5 Control Template | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| | dNTP Mix | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion | : <input checked="" type="checkbox"/> L1-Blue supercompetent 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 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. |
| | pUC 18 DNA Control Plasmid | 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. |
| | PfuTurbo DNA Polymerase | 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. |
| | 10X Reaction 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 |

Section 4. First aid measures

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|---------------------------|--|
| Dpn I | <p>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.</p> <p>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.</p> |
| Control Primer 1 (34-mer) | <p>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.</p> |
| Control Primer 2 (34-mer) | <p>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.</p> |
| pWS4.5 Control Template | <p>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.</p> |
| dNTP Mix | <p>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.</p> |

[4.2 Most important symptoms/effects, acute and delayed](#) [Potential acute health effects](#)

Section 4. First aid measures

| | | |
|---------------------|--|--|
| Eye contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Causes eye irritation. No known significant effects or critical hazards. Causes eye irritation. Causes serious eye irritation. Causes serious eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Inhalation | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Skin contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Ingestion | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

Over-exposure signs/symptoms

| | | |
|--------------------|--|--|
| Eye contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template | Adverse symptoms may include the following: irritation watering redness No specific data. Adverse symptoms may include the following: irritation watering redness Adverse symptoms may include the following: pain or irritation watering redness Adverse symptoms may include the following: pain or irritation watering redness No specific data. No specific data. No specific data. |
|--------------------|--|--|

Section 4. First aid measures

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|---------------------|--|-------------------|
| | dNTP Mix | No specific data. |
| Inhalation | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | No specific data. |
| | pUC 18 DNA Control Plasmid | No specific data. |
| | PfuTurbo DNA Polymerase | No specific data. |
| | 10X Reaction Buffer | No specific data. |
| | Dpn I | No specific data. |
| | Control Primer 1 (34-mer) | No specific data. |
| | Control Primer 2 (34-mer) | No specific data. |
| | pWS4.5 Control Template | No specific data. |
| | dNTP Mix | No specific data. |
| Skin contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | No specific data. |
| | pUC 18 DNA Control Plasmid | No specific data. |
| | PfuTurbo DNA Polymerase | No specific data. |
| | 10X Reaction Buffer | No specific data. |
| | Dpn I | No specific data. |
| | Control Primer 1 (34-mer) | No specific data. |
| | Control Primer 2 (34-mer) | No specific data. |
| | pWS4.5 Control Template | No specific data. |
| | dNTP Mix | No specific data. |
| Ingestion | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | No specific data. |
| | pUC 18 DNA Control Plasmid | No specific data. |
| | PfuTurbo DNA Polymerase | No specific data. |
| | 10X Reaction Buffer | No specific data. |
| | Dpn I | No specific data. |
| | Control Primer 1 (34-mer) | No specific data. |
| | Control Primer 2 (34-mer) | No specific data. |
| | pWS4.5 Control Template | No specific data. |
| | dNTP Mix | No specific data. |

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

| | | |
|---------------------------|--|---|
| Notes to physician | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | pUC 18 DNA Control Plasmid | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | PfuTurbo DNA Polymerase | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | 10X 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. |
| | Dpn I | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Control Primer 1 (34-mer) | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | Control Primer 2 (34-mer) | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | pWS4.5 Control Template | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| | dNTP Mix | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed |

Section 4. First aid measures

| | | |
|-----------------------------------|--|--|
| Specific treatments | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | person may need to be kept under medical surveillance for 48 hours. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. |
| Protection of first-aiders | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | 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. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. 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. 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. 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. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. |

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

| | | |
|-------------------------------------|--|--|
| Suitable extinguishing media | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template | Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. |
|-------------------------------------|--|--|

Section 5. Fire-fighting measures

| | | |
|--|--|--|
| | dNTP Mix | surrounding fire. Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | None known. None known. None known. None known. None known. None known. None known. None known. |
| 5.2 Special hazards arising from the substance or mixture | | |
| Specific hazards arising from the chemical | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. |
| Hazardous thermal decomposition products | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I | Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides |

Section 5. Fire-fighting measures

| | |
|---------------------------|--|
| Control Primer 1 (34-mer) | No specific data. |
| Control Primer 2 (34-mer) | No specific data. |
| pWS4.5 Control Template | No specific data. |
| dNTP Mix | Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides |

5.3 Advice for firefighters

Special protective actions for fire-fighters

| | |
|--|---|
| : <input checked="" type="checkbox"/> L1-Blue supercompetent 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. |
| pUC 18 DNA Control Plasmid | 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. |
| PfuTurbo 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. |
| 10X 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. |
| Dpn 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. |
| Control Primer 1 (34-mer) | 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 Primer 2 (34-mer) | 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. |
| pWS4.5 Control Template | 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. |
| 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. |

Special protective equipment for fire-fighters


| | |
|--|---|
| : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| pUC 18 DNA Control Plasmid | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| PfuTurbo DNA Polymerase | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive |

Section 5. Fire-fighting measures

| | |
|---------------------------|---|
| 10X Reaction Buffer | pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| Dpn I | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| Control Primer 1 (34-mer) | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| Control Primer 2 (34-mer) | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| pWS4.5 Control Template | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |
| 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. |

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

| | | |
|------------------------------------|--|--|
| For non-emergency personnel | :  L1-Blue supercompetent 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | pUC 18 DNA Control Plasmid | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. |
| | PfuTurbo 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| | 10X 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 spilled material. Avoid breathing vapor or mist. Provide adequate |

Section 6. Accidental release measures

ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Dpn 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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Control Primer 1 (34-mer)
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

Control Primer 2 (34-mer)
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

pWS4.5 Control Template
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

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 spilled material. Put on appropriate personal protective equipment.

For emergency responders : L1-Blue supercompetent cells

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

pUC 18 DNA Control Plasmid
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

PfuTurbo DNA Polymerase
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

10X Reaction Buffer
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Dpn I
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Control Primer 1 (34-mer)
If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also

Section 6. Accidental release measures

6.2 Environmental precautions

| | |
|---------------------------------------|---|
| Control Primer 2 (34-mer) | the information in "For non-emergency personnel". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| pWS4.5 Control Template | If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| dNTP Mix | If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| ⓧ L1-Blue supercompetent cells | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| pUC 18 DNA Control Plasmid | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| PfuTurbo DNA Polymerase | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| 10X Reaction Buffer | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| Dpn I | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| Control Primer 1 (34-mer) | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| Control Primer 2 (34-mer) | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| pWS4.5 Control Template | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |
| dNTP Mix | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |

Section 6. Accidental release measures

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : L1-Blue supercompetent cells

pUC 18 DNA Control Plasmid

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.

PfuTurbo 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.

10X 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.

Dpn 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.

Control Primer 1 (34-mer)

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.

Control Primer 2 (34-mer)

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.

pWS4.5 Control Template



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.

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.

Section 7. Handling and storage

7.1 Precautions for safe handling

| | | |
|---|--|--|
| Protective measures | :  L1-Blue supercompetent cells | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| | pUC 18 DNA Control Plasmid | Put on appropriate personal protective equipment (see Section 8). |
| | PfuTurbo DNA Polymerase | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| | 10X Reaction Buffer | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| | Dpn I | Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |
| | Control Primer 1 (34-mer) | Put on appropriate personal protective equipment (see Section 8). |
| | Control Primer 2 (34-mer) | Put on appropriate personal protective equipment (see Section 8). |
| | pWS4.5 Control Template | Put on appropriate personal protective equipment (see Section 8). |
| | dNTP Mix | Put on appropriate personal protective equipment (see Section 8). |
| Advice on general occupational hygiene | :  L1-Blue supercompetent 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. |
| | pUC 18 DNA Control Plasmid | 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. |

Section 7. Handling and storage

| | |
|---------------------------|---|
| PfuTurbo DNA 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. |
| 10X Reaction 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. |
| Dpn 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 equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. |
| Control Primer 1 (34-mer) | 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 Primer 2 (34-mer) | 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. |
| pWS4.5 Control Template | 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. |
| 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. |

7.2 Conditions for safe storage, including any incompatibilities

:  L1-Blue supercompetent 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 unlabeled containers. Use appropriate containment to avoid

Section 7. Handling and storage

| | |
|----------------------------|---|
| pUC 18 DNA Control Plasmid | environmental contamination. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. |
| PfuTurbo 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. |
| 10X 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. |
| Dpn 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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. |
| Control Primer 1 (34-mer) | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use. |
| Control Primer 2 (34-mer) | Store in accordance with local regulations. Store in original container protected from direct sunlight in a |

Section 7. Handling and storage

pWS4.5 Control Template

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

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

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 unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations

- : L1-Blue supercompetent cells
 - pUC 18 DNA Control Plasmid
 - PfuTurbo DNA Polymerase
 - 10X Reaction Buffer
 - Dpn I
 - Control Primer 1 (34-mer)
 - Control Primer 2 (34-mer)
 - pWS4.5 Control Template
 - dNTP Mix
- Industrial applications, Professional applications.
 Industrial applications, Professional applications.
 Industrial applications, Professional applications.
 Industrial applications, Professional applications.
 Industrial applications, Professional applications.
 Industrial applications, Professional applications.
 Industrial applications, Professional applications.
 Industrial applications, Professional applications.

Industrial sector specific solutions

- : L1-Blue supercompetent cells
 - pUC 18 DNA Control Plasmid
 - PfuTurbo DNA Polymerase
 - 10X Reaction Buffer
 - Dpn I
 - Control Primer 1 (34-mer)
 - Control Primer 2 (34-mer)
 - pWS4.5 Control Template
 - dNTP Mix
- Not applicable.
 Not applicable.
 Not applicable.
 Not applicable.
 Not applicable.
 Not applicable.
 Not applicable.
 Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|---|---|
| XL1-Blue supercompetent cells Glycerol | OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust |
| | OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust |
| Dimethyl sulfoxide | AIHA WEEL (United States, 10/2011). TWA: 250 ppm 8 hours. |
| Potassium chloride | None. |
| PfuTurbo DNA Polymerase Glycerol | OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust |
| | OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust |
| 10X Reaction Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride | None. |
| Ammonium sulphate | None. |
| Polyoxyethylene octyl phenyl ether | None. |
| Dpn I Glycerol | OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust |
| | OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust |
| Sodium chloride | None. |
| dNTP Mix 2'-Deoxyguanosine 5'-(tetrahydrogen triphosphate) | None. |
| 2'-Deoxyadenosine 5'-(tetrahydrogen triphosphate) | None. |

8.2 Exposure controls

Appropriate engineering controls

: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls

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

Section 8. Exposure controls/personal protection

Individual protection measures

- Hygiene measures** : Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- | | | | | | |
|---------------------------|----------------|--|---------|--|----------------|
| Physical state | : | <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Liquid. | | |
| | | pUC 18 DNA Control Plasmid | Liquid. | | |
| | | PfuTurbo DNA Polymerase | Liquid. | | |
| | | 10X Reaction Buffer | Liquid. | | |
| | | Dpn I | Liquid. | | |
| | | Control Primer 1 (34-mer) | Liquid. | | |
| | | Control Primer 2 (34-mer) | Liquid. | | |
| | | pWS4.5 Control Template | Liquid. | | |
| | | dNTP Mix | Liquid. | | |
| | | Color | : | <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Not available. |
| | | | | pUC 18 DNA Control Plasmid | Not available. |
| | | | | PfuTurbo DNA Polymerase | Not available. |
| 10X Reaction Buffer | Not available. | | | | |
| Dpn I | Not available. | | | | |
| Control Primer 1 (34-mer) | Not available. | | | | |
| Control Primer 2 (34-mer) | Not available. | | | | |
| pWS4.5 Control Template | Not available. | | | | |
| dNTP Mix | Not available. | | | | |

Section 9. Physical and chemical properties

| | | |
|-----------------------|--|--|
| Odor | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Odor threshold | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| pH | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | 6.4 7.5 Not available. 8.8 Not available. 7.5 7.5 7.5 7.5 |
| Melting point | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. 0°C (32°F) Not available. Not available. Not available. 0°C (32°F) 0°C (32°F) 0°C (32°F) 0°C (32°F) Not available. |
| Boiling point | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. 100°C (212°F) Not available. Not available. Not available. 100°C (212°F) 100°C (212°F) 100°C (212°F) Not available. |
| Flash point | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |

Section 9. Physical and chemical properties

| | | |
|---|--|---|
| Evaporation rate | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Flammability (solid, gas) | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. |
| Lower and upper explosive (flammable) limits | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Vapor pressure | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Vapor density | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Relative density | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |

Section 9. Physical and chemical properties

| | | |
|---|--|---|
| Solubility | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. |
| Partition coefficient: n-octanol/water | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Auto-ignition temperature | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Decomposition temperature | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |
| Viscosity | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Not available. Not available. Not available. Not available. Not available. Not available. Not available. Not available. |

Section 10. Stability and reactivity

| | | |
|--|--|--|
| 10.1 Reactivity | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | <ul style="list-style-type: none"> No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. |
| 10.2 Chemical stability | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | <ul style="list-style-type: none"> The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. |
| 10.3 Possibility of hazardous reactions | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | <ul style="list-style-type: none"> Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. |
| 10.4 Conditions to avoid | <ul style="list-style-type: none"> <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | <ul style="list-style-type: none"> No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. |

Section 10. Stability and reactivity

| | | |
|--|--|--|
| 10.5 Incompatible materials | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | May react or be incompatible with oxidizing materials. |
| | pUC 18 DNA Control Plasmid | May react or be incompatible with oxidizing materials. |
| | PfuTurbo DNA Polymerase | May react or be incompatible with oxidizing materials. |
| | 10X Reaction Buffer | May react or be incompatible with oxidizing materials. |
| | Dpn I | May react or be incompatible with oxidizing materials. |
| | Control Primer 1 (34-mer) | May react or be incompatible with oxidizing materials. |
| | Control Primer 2 (34-mer) | May react or be incompatible with oxidizing materials. |
| | pWS4.5 Control Template | May react or be incompatible with oxidizing materials. |
| | dNTP Mix | May react or be incompatible with oxidizing materials. |
| | | |
| 10.6 Hazardous decomposition products | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | pUC 18 DNA Control Plasmid | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | PfuTurbo DNA Polymerase | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | 10X Reaction Buffer | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | Dpn I | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | Control Primer 1 (34-mer) | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | Control Primer 2 (34-mer) | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | pWS4.5 Control Template | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| | dNTP Mix | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

| Product/ingredient name | Result | Species | Dose | Exposure |
|--------------------------------------|-------------|---------|-------------|----------|
| XL1-Blue supercompetent cells | | | | |
| Glycerol | LD50 Oral | Rat | 12600 mg/kg | - |
| Dimethyl sulfoxide | LD50 Dermal | Rat | 40000 mg/kg | - |
| | LD50 Oral | Rat | 14500 mg/kg | - |
| Potassium chloride | LD50 Oral | Rat | 2600 mg/kg | - |
| PfuTurbo DNA Polymerase | | | | |
| Glycerol | LD50 Oral | Rat | 12600 mg/kg | - |
| 10X Reaction Buffer | | | | |
| Ammonium sulphate | LD50 Oral | Rat | 2840 mg/kg | - |
| Polyoxyethylene octyl phenyl ether | LD50 Oral | Rat | 1800 mg/kg | - |
| Dpn I | | | | |
| Glycerol | LD50 Oral | Rat | 12600 mg/kg | - |
| Sodium chloride | LD50 Oral | Rat | 3000 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--------------------------------------|--------------------------|---------|-------|--------------------------|-------------|
| XL1-Blue supercompetent cells | | | | | |
| Glycerol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| Dimethyl sulfoxide | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Eyes - Mild irritant | Rabbit | - | 100 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 100 milligrams | - |
| Potassium chloride | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| PfuTurbo DNA Polymerase | | | | | |
| Glycerol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| 10X Reaction Buffer | | | | | |
| Polyoxyethylene octyl phenyl ether | Eyes - Moderate irritant | Rabbit | - | 24 hours 10 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 microliters | - |
| Dpn I | | | | | |
| Glycerol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| Sodium chloride | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 | - |

Section 11. Toxicological information

| | | | | | |
|--|--|------------------|--------|---|--------|
| | Eyes - Moderate irritant Skin - Mild irritant | Rabbit Rabbit | - - | milligrams 10 milligrams 24 hours 500 milligrams | - - |
|--|--|------------------|--------|---|--------|

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|---|------------|-------------------|------------------------------|
| 10X Reaction Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride | Category 3 | Not applicable. | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

L1-Blue supercompetent cells
 pUC 18 DNA Control Plasmid
 PfuTurbo DNA Polymerase
 10X Reaction Buffer
 Dpn I
 Control Primer 1 (34-mer)
 Control Primer 2 (34-mer)
 pWS4.5 Control Template
 dNTP Mix

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

Potential acute health effects

Eye contact

L1-Blue supercompetent cells
 pUC 18 DNA Control Plasmid
 PfuTurbo DNA Polymerase
 10X Reaction Buffer
 Dpn I
 Control Primer 1 (34-mer)
 Control Primer 2 (34-mer)
 pWS4.5 Control Template
 dNTP Mix

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

Section 11. Toxicological information

| | | |
|---------------------|--|---|
| Inhalation | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Skin contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Ingestion | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

Symptoms related to the physical, chemical and toxicological characteristics

| | | |
|--------------------|---|---|
| Eye contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | Adverse symptoms may include the following: irritation watering redness |
| | pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase | No specific data. Adverse symptoms may include the following: irritation watering redness |
| | 10X Reaction Buffer | Adverse symptoms may include the following: pain or irritation watering redness |
| | Dpn I | Adverse symptoms may include the following: pain or irritation watering redness |
| | Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No specific data. No specific data. No specific data. No specific data. |
| Inhalation | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) | No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. |

Section 11. Toxicological information

| | | |
|---------------------|--|-------------------|
| | pWS4.5 Control Template | No specific data. |
| | dNTP Mix | No specific data. |
| Skin contact | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | No specific data. |
| | pUC 18 DNA Control Plasmid | No specific data. |
| | PfuTurbo DNA Polymerase | No specific data. |
| | 10X Reaction Buffer | No specific data. |
| | Dpn I | No specific data. |
| | Control Primer 1 (34-mer) | No specific data. |
| | Control Primer 2 (34-mer) | No specific data. |
| | pWS4.5 Control Template | No specific data. |
| | dNTP Mix | No specific data. |
| Ingestion | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | No specific data. |
| | pUC 18 DNA Control Plasmid | No specific data. |
| | PfuTurbo DNA Polymerase | No specific data. |
| | 10X Reaction Buffer | No specific data. |
| | Dpn I | No specific data. |
| | Control Primer 1 (34-mer) | No specific data. |
| | Control Primer 2 (34-mer) | No specific data. |
| | pWS4.5 Control Template | No specific data. |
| | dNTP Mix | No specific data. |

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

| | | |
|------------------------|--|---|
| General | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | No known significant effects or critical hazards. |
| | pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| | PfuTurbo DNA Polymerase | No known significant effects or critical hazards. |
| | 10X Reaction Buffer | No known significant effects or critical hazards. |
| | Dpn I | No known significant effects or critical hazards. |
| | Control Primer 1 (34-mer) | No known significant effects or critical hazards. |
| | Control Primer 2 (34-mer) | No known significant effects or critical hazards. |
| | pWS4.5 Control Template | No known significant effects or critical hazards. |
| | dNTP Mix | No known significant effects or critical hazards. |
| Carcinogenicity | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells | No known significant effects or critical hazards. |
| | pUC 18 DNA Control Plasmid | No known significant effects or critical hazards. |
| | PfuTurbo DNA Polymerase | No known significant effects or critical hazards. |
| | 10X Reaction Buffer | No known significant effects or critical hazards. |
| | Dpn I | No known significant effects or critical hazards. |
| | Control Primer 1 (34-mer) | No known significant effects or critical hazards. |
| | Control Primer 2 (34-mer) | No known significant effects or critical hazards. |
| | pWS4.5 Control Template | No known significant effects or critical hazards. |
| | dNTP Mix | No known significant effects or critical hazards. |

Section 11. Toxicological information

| | | |
|------------------------------|--|---|
| Mutagenicity | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Teratogenicity | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Developmental effects | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |
| Fertility effects | : <input checked="" type="checkbox"/> L1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. |

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|--|----------------|
| <input checked="" type="checkbox"/> L1-Blue supercompetent cells Oral | 136842.1 mg/kg |
| 10X Reaction Buffer Oral | 98687.3 mg/kg |
| Dpn I Oral | 130435.3 mg/kg |

Section 12. Ecological information

12.1 Toxicity

| Product/ingredient name | Result | Species | Exposure |
|--------------------------------------|--|---|----------|
| XL1-Blue supercompetent cells | | | |
| Glycerol | Acute LC50 54000 mg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| Dimethyl sulfoxide | Acute LC50 25000 ppm Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| Potassium chloride | Acute LC50 34000000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Chronic NOEC 100 µl/L Marine water | Algae - Ulva lactuca | 72 hours |
| | Acute EC50 1337000 µg/l Fresh water | Algae - Navicula seminulum | 96 hours |
| | Acute EC50 9.24 g/L Fresh water | Algae - Desmodesmus subspicatus | 72 hours |
| | Acute EC50 141460 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 12.92 mg/l Fresh water | Crustaceans - Pseudosida ramosa - Neonate | 48 hours |
| | Acute LC50 880000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| PfuTurbo DNA Polymerase | | | |
| Glycerol | Acute LC50 54000 mg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| 10X Reaction Buffer | | | |
| Ammonium sulphate | Acute LC50 2.6 mg/l Fresh water | Crustaceans - Ceriodaphnia dubia - Young | 48 hours |
| | Acute LC50 14000 to 15000 µg/l Fresh water | Daphnia - Daphnia magna - Young | 48 hours |
| | Acute LC50 68 µg/l Fresh water | Fish - Oncorhynchus gorbuscha - Alevin | 96 hours |
| | Chronic NOEC 7.5 mg/l Marine water | Algae - Phaeodactylum tricornutum - Exponential growth phase | 96 hours |
| | Chronic NOEC 143 µg/l Marine water | Fish - Salmo salar - Post-smolt | 5 weeks |
| Polyoxyethylene octyl phenyl ether | Acute LC50 5.85 mg/l Fresh water | Crustaceans - Ceriodaphnia rigaudi - Neonate | 48 hours |
| | Acute LC50 11.2 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 4500 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| Dpn I | | | |
| Glycerol | Acute LC50 54000 mg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| Sodium chloride | Acute EC50 4.74 g/L Fresh water | Algae - Chlamydomonas reinhardtii | 96 hours |
| | Acute EC50 519.6 mg/l Fresh water | Crustaceans - Cypris subglobosa | 48 hours |
| | Acute IC50 6.87 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Acute LC50 1.56 g/L Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 1000000 µg/l Fresh water | Fish - Morone saxatilis - Larvae | 96 hours |
| | Chronic LC10 781 mg/l Fresh water | Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) | 3 weeks |
| | Chronic NOEC 6 g/L Fresh water | Aquatic plants - Lemna minor | 96 hours |
| | Chronic NOEC 0.314 g/L Fresh water | Daphnia - Daphnia pulex | 21 days |
| | Chronic NOEC 100 mg/l Fresh water | Fish - Gambusia holbrooki - Adult | 8 weeks |

12.2 Persistence and degradability

Section 12. Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|-------------------|------------|------------------|
| XL1-Blue supercompetent cells Potassium chloride | - | - | Readily |
| 10X Reaction Buffer Ammonium sulphate | - | - | Readily |
| Polyoxyethylene octyl phenyl ether | - | - | Readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--|--------------------|------|-----------|
| XL1-Blue supercompetent cells Glycerol | -1.76 | - | low |
| Dimethyl sulfoxide | -1.35 | 3.16 | low |
| Potassium chloride | -0.46 | - | low |
| PfuTurbo DNA Polymerase Glycerol | -1.76 | - | low |
| 10X Reaction Buffer Ammonium sulphate | -5.1 | - | low |
| Polyoxyethylene octyl phenyl ether | 4.86 | - | high |
| Dpn I Glycerol | -1.76 | - | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 13. Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

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

U.S. Federal regulations : **TSCA 8(a) PAIR:** Polyoxyethylene octyl phenyl ether; Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Section 15. Regulatory information

| | | |
|-----------------------|---|---|
| Classification | : <input checked="" type="checkbox"/> XL1-Blue supercompetent cells pUC 18 DNA Control Plasmid PfuTurbo DNA Polymerase 10X Reaction Buffer Dpn I Control Primer 1 (34-mer) Control Primer 2 (34-mer) pWS4.5 Control Template dNTP Mix | Immediate (acute) health hazard Not applicable. Immediate (acute) health hazard Immediate (acute) health hazard Immediate (acute) health hazard Not applicable. Not applicable. Not applicable. Not applicable. |
|-----------------------|---|---|

Composition/information on ingredients

| Name | % | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|--|-----------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> XL1-Blue supercompetent cells | | | | | | |
| Glycerol | ≥10 - ≤25 | No. | No. | No. | Yes. | No. |
| Dimethyl sulfoxide | ≤10 | Yes. | No. | No. | Yes. | No. |
| Potassium chloride | ≤3 | No. | No. | No. | Yes. | No. |
| PfuTurbo DNA Polymerase | | | | | | |
| Glycerol | ≥50 - ≤75 | No. | No. | No. | Yes. | No. |
| 10X Reaction Buffer | | | | | | |
| 2-Amino-2-(hydroxymethyl)propane-1, 3-diol hydrochloride | ≤5 | No. | No. | No. | Yes. | No. |
| Ammonium sulphate | ≤3 | No. | No. | No. | Yes. | No. |
| Polyoxyethylene octyl phenyl ether | ≤2.3 | No. | No. | No. | Yes. | No. |
| Dpn I | | | | | | |
| Glycerol | ≥50 - ≤75 | No. | No. | No. | Yes. | No. |
| Sodium chloride | ≤3 | No. | No. | No. | Yes. | No. |
| dNTP Mix | | | | | | |
| 2'-Deoxyguanosine 5'-(tetrahydrogen triphosphate) | ≤3 | No. | No. | No. | Yes. | No. |
| 2'-Deoxyadenosine 5'-(tetrahydrogen triphosphate) | ≤3 | No. | No. | No. | Yes. | No. |

SARA 313

| | Product name | CAS number | % |
|--|---|------------|----|
| Form R - Reporting requirements | <input checked="" type="checkbox"/> 10X Reaction Buffer Ammonium sulphate | 7783-20-2 | ≤3 |
| Supplier notification | <input checked="" type="checkbox"/> 10X Reaction Buffer Ammonium sulphate | 7783-20-2 | ≤3 |

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

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

California Prop. 65

Not available.

Section 15. Regulatory information

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

Section 16. Other information

History

Date of issue : 06/21/2017

Date of previous issue : 10/22/2014.

Version : 5

Indicates information that has changed from previously issued version.

Notice to reader

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