

# SAFETY DATA SHEET



GeneMorph II EZClone Domain Mutagenesis Kit, Part Number 200552

## Section 1. Identification

### 1.1 Product identifier

**Product name** : GeneMorph II EZClone Domain Mutagenesis Kit, Part Number 200552

**Part no. (chemical kit)** : 200552

**Part no.** :

EZClone Solution	200552-58
Mutazyme II	200552-51
10X Mutazyme II Reaction Buffer	200550-52
40 mM dNTP Mix (10 mM dNTP)	200552-52
2X EZClone Enzyme Mix	200552-54
Dpn I	200552-57
Positive Control Plasmid	200552-55
Positive Control Primer Mix	200552-56
1.1 kb Gel Standard	200552-53
XL10-Gold Ultracompetent cells	200315-41
XL10-Gold 2-Mercaptoethanol	200314-43
pUC 18 DNA Control Plasmid	200231-42

**Validation date** : 1/16/2023

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

**Identified uses** :

Analytical reagent.	
<input checked="" type="checkbox"/> EZClone Solution	0.03 ml
Mutazyme II	0.1 ml (25 U (2.5 U/μl))
10X Mutazyme II Reaction Buffer	0.15 ml
40 mM dNTP Mix (10 mM dNTP)	0.01 ml
2X EZClone Enzyme Mix	0.25 ml
Dpn I	0.01 ml (100 U (10 U/μl))
Positive Control Plasmid	0.021 ml (210 ng (10 ng/μl))
Positive Control Primer Mix	0.003 ml (750 ng (250 ng/μl))
1.1 kb Gel Standard	0.05 ml (50 μl (20 ng/μl))
XL10-Gold Ultracompetent cells	0.54 ml
XL10-Gold 2-Mercaptoethanol	0.05 ml
pUC 18 DNA Control Plasmid	0.01 ml (0.1 ng / μl)

### 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

<b>OSHA/HCS status</b>	: EZClone Solution  Mutazyme II  10X Mutazyme II Reaction Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). 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
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## Section 2. Hazards identification

	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.
40 mM dNTP Mix (10 mM dNTP)	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.
2X EZClone Enzyme 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.
Dpn I	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Positive Control Plasmid	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.
Positive Control Primer 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.
1.1 kb Gel Standard	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.
XL10-Gold Ultracompetent cells	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
XL10-Gold	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
2-Mercaptoethanol	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	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

#### **EZClone Solution**

H227 FLAMMABLE LIQUIDS - Category 4  
H320 EYE IRRITATION - Category 2B

#### **Mutazyme II**

H320 EYE IRRITATION - Category 2B

#### **Dpn I**

H320 EYE IRRITATION - Category 2B

#### **XL10-Gold Ultracompetent cells**

H320 EYE IRRITATION - Category 2B

#### **XL10-Gold 2-Mercaptoethanol**

## Section 2. Hazards identification

H318	SERIOUS EYE DAMAGE - Category 1						
H317	SKIN SENSITIZATION - Category 1						
H361	TOXIC TO REPRODUCTION - Category 2						
H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2						
H412	AQUATIC HAZARD (LONG-TERM) - Category 3						
	<table> <tr> <td>10X Mutazyme II Reaction Buffer</td> <td>Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 9%</td> </tr> <tr> <td>40 mM dNTP Mix (10 mM dNTP)</td> <td>Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 4.2%</td> </tr> <tr> <td>XL10-Gold Ultracompetent cells</td> <td>Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 5%</td> </tr> </table>	10X Mutazyme II Reaction Buffer	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 9%	40 mM dNTP Mix (10 mM dNTP)	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 4.2%	XL10-Gold Ultracompetent cells	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 5%
10X Mutazyme II Reaction Buffer	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 9%						
40 mM dNTP Mix (10 mM dNTP)	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 4.2%						
XL10-Gold Ultracompetent cells	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 5%						

### 2.2 GHS label elements

#### Hazard pictograms

:  XL10-Gold 2-Mercaptoethanol



#### Signal word

: EZClone Solution	Warning
Mutazyme II	Warning
10X Mutazyme II Reaction Buffer	No signal word.
40 mM dNTP Mix (10 mM dNTP)	No signal word.
2X EZClone Enzyme Mix	No signal word.
Dpn I	Warning
Positive Control Plasmid	No signal word.
Positive Control Primer Mix	No signal word.
1.1 kb Gel Standard	No signal word.
XL10-Gold Ultracompetent cells	Warning
XL10-Gold 2-Mercaptoethanol	Danger
pUC 18 DNA Control Plasmid	No signal word.

#### Hazard statements

: <input checked="" type="checkbox"/> EZClone Solution	H227 - Combustible liquid.
Mutazyme II	H320 - Causes eye irritation.
10X Mutazyme II Reaction Buffer	H320 - Causes eye irritation.
40 mM dNTP Mix (10 mM dNTP)	No known significant effects or critical hazards.
2X EZClone Enzyme Mix	No known significant effects or critical hazards.
Dpn I	No known significant effects or critical hazards.
Positive Control Plasmid	H320 - Causes eye irritation.
Positive Control Primer Mix	No known significant effects or critical hazards.
1.1 kb Gel Standard	No known significant effects or critical hazards.
XL10-Gold Ultracompetent cells	H320 - Causes eye irritation.
XL10-Gold 2-Mercaptoethanol	H317 - May cause an allergic skin reaction.
	H318 - Causes serious eye damage.
	H361 - Suspected of damaging fertility or the unborn child.
	H373 - May cause damage to organs through prolonged or repeated exposure.
	H412 - Harmful to aquatic life with long lasting effects.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

#### Precautionary statements

## Section 2. Hazards identification

<b>Prevention</b>	<p>: EZClone Solution</p> <p>Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol</p> <p>pUC 18 DNA Control Plasmid</p>	<p>P210 - Keep away from flames and hot surfaces. No smoking. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment. P260 - Do not breathe vapor. Not applicable.</p>
<b>Response</b>	<p>: EZClone Solution</p> <p>Mutazyme II</p> <p>10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I</p> <p>Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells</p> <p>XL10-Gold 2-Mercaptoethanol</p> <p>pUC 18 DNA Control Plasmid</p>	<p>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 advice or 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 advice or attention. Not applicable. Not applicable. 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 advice or attention. Not applicable. Not applicable. 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 advice or attention. P308 + P313 - IF exposed or concerned: Get medical advice or attention. P363 - Wash contaminated clothing before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention. P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor. Not applicable.</p>

## Section 2. Hazards identification

<b>Storage</b>	: EZClone Solution  Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid	P403 + P235 - Store in a well-ventilated place. Keep cool. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Disposal</b>	: EZClone Solution  Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol  pUC 18 DNA Control Plasmid	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable.
<b>Supplemental label elements</b>	: EZClone Solution Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid	None known. None known. None known. None known. None known. None known. None known. None known. None known. None known. None known. None known.
<b><u>2.3 Other hazards</u></b>		
<b>Hazards not otherwise classified</b>	: EZClone Solution Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid	None known. None known. None known. None known. None known. None known. None known. None known. None known. None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	:	EZClone Solution	Substance
		Mutazyme II	Mixture
		10X Mutazyme II Reaction Buffer	Mixture
		40 mM dNTP Mix (10 mM dNTP)	Mixture
		2X EZClone Enzyme Mix	Mixture
		Dpn I	Mixture
		Positive Control Plasmid	Mixture
		Positive Control Primer Mix	Mixture
		1.1 kb Gel Standard	Mixture
		XL10-Gold Ultracompetent cells	Mixture
		XL10-Gold 2-Mercaptoethanol	Mixture
		pUC 18 DNA Control Plasmid	Mixture

Ingredient name	%	CAS number
<b>EZClone Solution</b>		
Dimethyl sulfoxide	100	67-68-5
<b>Mutazyme II</b>		
Glycerol	≥50 - ≤75	56-81-5
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	<0.25	9036-19-5
<b>2X EZClone Enzyme Mix</b>		
Glycerol	<10	56-81-5
Polyoxyethylene octyl phenyl ether	<0.25	9002-93-1
<b>Dpn I</b>		
Glycerol	≥50 - ≤75	56-81-5
<b>XL10-Gold Ultracompetent cells</b>		
Glycerol	≥10 - ≤25	56-81-5
Dimethyl sulfoxide	≤10	67-68-5
Potassium chloride	≤3	7447-40-7
<b>XL10-Gold 2-Mercaptoethanol</b>		
2-Mercaptoethanol	≤5	60-24-2

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 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

<b>Eye contact</b>	: EZClone Solution	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
	Mutazyme II	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 Mutazyme II Reaction Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	40 mM dNTP Mix (10 mM dNTP)	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.
	2X EZClone Enzyme 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.
	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. If irritation persists, get medical attention.
	Positive 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.
	Positive Control Primer 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.
	1.1 kb Gel Standard	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	XL10-Gold Ultracompetent cells	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
	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.



## Section 4. First aid measures

<b>Inhalation</b>	: EZClone Solution	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	Mutazyme II	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 Mutazyme II Reaction Buffer	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.
	40 mM dNTP Mix (10 mM dNTP)	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.
	2X EZClone Enzyme Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	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.
	Positive Control Plasmid	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Positive Control Primer Mix	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	1.1 kb Gel Standard	Remove victim to fresh air and keep at rest in a



## Section 4. First aid measures

		position comfortable for breathing. Get medical attention if symptoms occur.
	XL10-Gold Ultracompetent cells	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention 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.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	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.
<b>Skin contact</b>	: EZClone Solution	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Mutazyme II	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 Mutazyme II Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	40 mM dNTP Mix (10 mM dNTP)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	2X EZClone Enzyme Mix	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	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.
	Positive Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Positive Control Primer Mix	Flush contaminated skin with plenty of water.

## Section 4. First aid measures

		Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	1.1 kb Gel Standard	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	XL10-Gold Ultracompetent 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.
	XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	: EZClone Solution	Wash out mouth with water. Remove dentures if any. 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.
	Mutazyme II	Wash out mouth with water. Remove dentures if any. 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 Mutazyme II Reaction Buffer	Wash out mouth with water. 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.
	40 mM dNTP Mix (10 mM dNTP)	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not

## Section 4. First aid measures

	induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
2X EZClone Enzyme Mix	Wash out mouth with water. 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.
Dpn I	Wash out mouth with water. Remove dentures if any. 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.
Positive Control Plasmid	Wash out mouth with water. 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.
Positive Control Primer Mix	Wash out mouth with water. 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.
1.1 kb Gel Standard	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
XL10-Gold Ultracompetent cells	Wash out mouth with water. Remove dentures if any. 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.
XL10-Gold 2-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the

## Section 4. First aid measures

pUC 18 DNA Control Plasmid

exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Wash out mouth with water. 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.

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

#### Potential acute health effects

##### Eye contact

: EZClone Solution  
Mutazyme II  
10X Mutazyme II Reaction Buffer  
40 mM dNTP Mix (10 mM dNTP)  
2X EZClone Enzyme Mix  
Dpn I  
Positive Control Plasmid  
Positive Control Primer Mix  
1.1 kb Gel Standard  
XL10-Gold Ultracompetent cells  
XL10-Gold 2-Mercaptoethanol  
pUC 18 DNA Control Plasmid

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

##### Inhalation

: EZClone Solution  
Mutazyme II  
10X Mutazyme II Reaction Buffer  
40 mM dNTP Mix (10 mM dNTP)  
2X EZClone Enzyme Mix  
Dpn I  
Positive Control Plasmid  
Positive Control Primer Mix  
1.1 kb Gel Standard  
XL10-Gold Ultracompetent cells  
XL10-Gold 2-Mercaptoethanol  
pUC 18 DNA Control Plasmid

No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
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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

: EZClone Solution  
Mutazyme II  
10X Mutazyme II Reaction Buffer  
40 mM dNTP Mix (10 mM dNTP)  
2X EZClone Enzyme Mix  
Dpn I  
Positive Control Plasmid  
Positive Control Primer Mix  
1.1 kb Gel Standard  
XL10-Gold Ultracompetent cells  
XL10-Gold 2-Mercaptoethanol  
pUC 18 DNA Control Plasmid

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.  
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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.  
May cause an allergic skin reaction.  
No known significant effects or critical hazards.

## Section 4. First aid measures

<b>Ingestion</b>	: EZClone Solution Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol pUC 18 DNA Control Plasmid	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. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
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### Over-exposure signs/symptoms

<b>Eye contact</b>	: EZClone Solution	Adverse symptoms may include the following: irritation watering redness
	Mutazyme II	Adverse symptoms may include the following: irritation watering redness
	10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I	No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
	Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells	No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	pUC 18 DNA Control Plasmid	No specific data.
<b>Inhalation</b>	: EZClone Solution Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol	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. No specific data. Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	pUC 18 DNA Control Plasmid	No specific data.

## Section 4. First aid measures

<b>Skin contact</b>	:	EZClone Solution	No specific data.
		Mutazyme II	No specific data.
		10X Mutazyme II Reaction Buffer	No specific data.
		40 mM dNTP Mix (10 mM dNTP)	No specific data.
		2X EZClone Enzyme Mix	No specific data.
		Dpn I	No specific data.
		Positive Control Plasmid	No specific data.
		Positive Control Primer Mix	No specific data.
		1.1 kb Gel Standard	No specific data.
		XL10-Gold Ultracompetent cells	No specific data.
		XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced fetal weight increase in fetal deaths skeletal malformations
<b>Ingestion</b>		pUC 18 DNA Control Plasmid	No specific data.
	:	EZClone Solution	No specific data.
		Mutazyme II	No specific data.
		10X Mutazyme II Reaction Buffer	No specific data.
		40 mM dNTP Mix (10 mM dNTP)	No specific data.
		2X EZClone Enzyme Mix	No specific data.
		Dpn I	No specific data.
		Positive Control Plasmid	No specific data.
		Positive Control Primer Mix	No specific data.
		1.1 kb Gel Standard	No specific data.
		XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths skeletal malformations	
	pUC 18 DNA Control Plasmid	No specific data.	

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

<b>Notes to physician</b>	:	EZClone Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Mutazyme II	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		10X Mutazyme II 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.
		40 mM dNTP Mix (10 mM dNTP)	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.
		2X EZClone Enzyme Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Dpn I	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Positive Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.



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	Positive Control Primer Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	1.1 kb Gel Standard	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL10-Gold Ultracompetent cells	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	XL10-Gold 2-Mercaptoethanol	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.
<b>Specific treatments</b>	: EZClone Solution	No specific treatment.
	Mutazyme II	No specific treatment.
	10X Mutazyme II Reaction Buffer	No specific treatment.
	40 mM dNTP Mix (10 mM dNTP)	No specific treatment.
	2X EZClone Enzyme Mix	No specific treatment.
	Dpn I	No specific treatment.
	Positive Control Plasmid	No specific treatment.
	Positive Control Primer Mix	No specific treatment.
	1.1 kb Gel Standard	No specific treatment.
	XL10-Gold Ultracompetent cells	No specific treatment.
	XL10-Gold 2-Mercaptoethanol	No specific treatment.
	pUC 18 DNA Control Plasmid	No specific treatment.
<b>Protection of first-aiders</b>	: EZClone Solution	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.
	Mutazyme II	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.
	10X Mutazyme II Reaction Buffer	No action shall be taken involving any personal risk or without suitable training.
	40 mM dNTP Mix (10 mM dNTP)	No action shall be taken involving any personal risk or without suitable training.
	2X EZClone Enzyme Mix	No action shall be taken involving any personal risk or without suitable training.
	Dpn I	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	Positive Control Plasmid	No action shall be taken involving any personal risk or without suitable training.
	Positive Control Primer Mix	No action shall be taken involving any personal risk or without suitable training.
	1.1 kb Gel Standard	No action shall be taken involving any personal risk or without suitable training.
	XL10-Gold Ultracompetent cells	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	XL10-Gold 2-Mercaptoethanol	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing



## Section 4. First aid measures

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apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. 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

EZClone Solution	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
Mutazyme II	Use an extinguishing agent suitable for the surrounding fire.
10X Mutazyme II Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire.
40 mM dNTP Mix (10 mM dNTP)	Use an extinguishing agent suitable for the surrounding fire.
2X EZClone Enzyme Mix	Use an extinguishing agent suitable for the surrounding fire.
Dpn I	Use an extinguishing agent suitable for the surrounding fire.
Positive Control Plasmid	Use an extinguishing agent suitable for the surrounding fire.
Positive Control Primer Mix	Use an extinguishing agent suitable for the surrounding fire.
1.1 kb Gel Standard	Use an extinguishing agent suitable for the surrounding fire.
XL10-Gold Ultracompetent cells	Use an extinguishing agent suitable for the surrounding fire.
XL10-Gold 2-Mercaptoethanol	Use an extinguishing agent suitable for the surrounding fire.
pUC 18 DNA Control Plasmid	Use an extinguishing agent suitable for the surrounding fire.

#### Unsuitable extinguishing media

EZClone Solution	Do not use water jet.
Mutazyme II	None known.
10X Mutazyme II Reaction Buffer	None known.
40 mM dNTP Mix (10 mM dNTP)	None known.
2X EZClone Enzyme Mix	None known.
Dpn I	None known.
Positive Control Plasmid	None known.
Positive Control Primer Mix	None known.
1.1 kb Gel Standard	None known.
XL10-Gold Ultracompetent cells	None known.
XL10-Gold 2-Mercaptoethanol	None known.
pUC 18 DNA Control Plasmid	None known.

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

#### Specific hazards arising from the chemical

EZClone Solution	Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
Mutazyme II	In a fire or if heated, a pressure increase will occur and the container may burst.

## Section 5. Fire-fighting measures

10X Mutazyme II Reaction Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
40 mM dNTP Mix (10 mM dNTP)	In a fire or if heated, a pressure increase will occur and the container may burst.
2X EZClone Enzyme Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
Dpn I	In a fire or if heated, a pressure increase will occur and the container may burst.
Positive Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.
Positive Control Primer Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
1.1 kb Gel Standard	In a fire or if heated, a pressure increase will occur and the container may burst.
XL10-Gold Ultracompetent cells	In a fire or if heated, a pressure increase will occur and the container may burst.
XL10-Gold 2-Mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
pUC 18 DNA Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b> : EZClone Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
Mutazyme II	Decomposition products may include the following materials: carbon dioxide carbon monoxide
10X Mutazyme II Reaction Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
40 mM dNTP Mix (10 mM dNTP)	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
2X EZClone Enzyme Mix	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Dpn I	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
Positive Control Plasmid	No specific data.
Positive Control Primer Mix	No specific data.
1.1 kb Gel Standard	No specific data.
XL10-Gold Ultracompetent cells	Decomposition products may include the following materials: carbon dioxide

## Section 5. Fire-fighting measures

	carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
XL10-Gold 2-Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
pUC 18 DNA Control Plasmid	No specific data.

### 5.3 Advice for firefighters

#### Special protective actions for fire-fighters

EZClone Solution	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Mutazyme II	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 Mutazyme II 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.
40 mM dNTP Mix (10 mM dNTP)	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.
2X EZClone Enzyme 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.
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.
Positive 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.
Positive Control Primer 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.
1.1 kb Gel Standard	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
XL10-Gold Ultracompetent cells	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
XL10-Gold 2-Mercaptoethanol	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

## Section 5. Fire-fighting measures

### Special protective equipment for fire-fighters

pUC 18 DNA Control Plasmid		without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	: EZClone Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Mutazyme II	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	10X Mutazyme II Reaction Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	40 mM dNTP Mix (10 mM dNTP)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	2X EZClone Enzyme Mix	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.
	Positive 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.
	Positive Control Primer Mix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	1.1 kb Gel Standard	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	XL10-Gold Ultracompetent cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	XL10-Gold 2-Mercaptoethanol	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.

## Section 6. Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

: EZClone Solution

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Mutazyme II

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 Mutazyme II 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. Put on appropriate personal protective equipment.

40 mM dNTP Mix (10 mM dNTP)

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.

2X EZClone Enzyme 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.

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.

Positive 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.

Positive Control Primer 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.

## Section 6. Accidental release measures

1.1 kb Gel Standard	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.
XL10-Gold Ultracompetent cells	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
XL10-Gold 2-Mercaptoethanol	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. Do not breathe 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.
<b>For emergency responders :</b> EZClone Solution	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".
Mutazyme II	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 Mutazyme II 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".
40 mM dNTP Mix (10 mM dNTP)	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".
2X EZClone Enzyme 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".
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".
Positive 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".
Positive Control Primer Mix	If specialized clothing is required to deal with the spillage, take note of any information in Section 8



## Section 6. Accidental release measures

	<p>1.1 kb Gel Standard</p> <p>XL10-Gold Ultracompetent cells</p> <p>XL10-Gold 2-Mercaptoethanol</p> <p>pUC 18 DNA Control Plasmid</p>	<p>on suitable and unsuitable materials. See also the information in "For non-emergency personnel". If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".</p> <p>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".</p> <p>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".</p> <p>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".</p>
<p><b>6.2 Environmental precautions</b></p>	<p>: EZClone Solution</p> <p>Mutazyme II</p> <p>10X Mutazyme II Reaction Buffer</p> <p>40 mM dNTP Mix (10 mM dNTP)</p> <p>2X EZClone Enzyme Mix</p> <p>Dpn I</p> <p>Positive Control Plasmid</p> <p>Positive Control Primer Mix</p> <p>1.1 kb Gel Standard</p>	<p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p> <p>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).</p>



## Section 6. Accidental release measures

	contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
XL10-Gold Ultracompetent 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).
XL10-Gold 2-Mercaptoethanol	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). Water polluting material. May be harmful to the environment if released in large quantities.
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).

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

**Methods for cleaning up** : EZClone Solution

	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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.
Mutazyme II	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 Mutazyme II 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.
40 mM dNTP Mix (10 mM dNTP)	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.
2X EZClone Enzyme 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.
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.

## Section 6. Accidental release measures

Positive Control Plasmid	disposal contractor. 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.
Positive Control Primer 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.
1.1 kb Gel Standard	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
XL10-Gold Ultracompetent cells	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
XL10-Gold 2-Mercaptoethanol	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.
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.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

**Protective measures** : EZClone Solution

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Mutazyme II

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or

## Section 7. Handling and storage

		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 Mutazyme II Reaction Buffer		Put on appropriate personal protective equipment (see Section 8).
40 mM dNTP Mix (10 mM dNTP)		Put on appropriate personal protective equipment (see Section 8).
2X EZClone Enzyme Mix		Put on appropriate personal protective equipment (see Section 8).
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.
Positive Control Plasmid		Put on appropriate personal protective equipment (see Section 8).
Positive Control Primer Mix		Put on appropriate personal protective equipment (see Section 8).
1.1 kb Gel Standard		Put on appropriate personal protective equipment (see Section 8).
XL10-Gold Ultracompetent 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.
XL10-Gold 2-Mercaptoethanol		Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
pUC 18 DNA Control Plasmid		Put on appropriate personal protective equipment (see Section 8).
<b>Advice on general occupational hygiene</b>	: EZClone Solution	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	Mutazyme II	Eating, drinking and smoking should be prohibited

## Section 7. Handling and storage

	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 Mutazyme II 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.
40 mM dNTP Mix (10 mM dNTP)	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.
2X EZClone Enzyme 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.
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.
Positive 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.
Positive Control Primer 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.
1.1 kb Gel Standard	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
XL10-Gold Ultracompetent cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated

## Section 7. Handling and storage

	<p>XL10-Gold 2-Mercaptoethanol</p> <p>pUC 18 DNA Control Plasmid</p>	<p>clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.</p> <p>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.</p> <p>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.</p>
<p><b>7.2 Conditions for safe storage, including any incompatibilities</b></p>	<p>: EZClone Solution</p> <p>Mutazyme II</p> <p>10X Mutazyme II Reaction Buffer</p> <p>40 mM dNTP Mix (10 mM dNTP)</p>	<p>Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.</p> <p>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.</p> <p>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.</p> <p>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</p>

## Section 7. Handling and storage

2X EZClone Enzyme Mix

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.

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.

Positive Control Plasmid

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

Positive Control Primer 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.

1.1 kb Gel Standard

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.



## Section 7. Handling and storage

XL10-Gold Ultracompetent cells	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
XL10-Gold 2-Mercaptoethanol	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
pUC 18 DNA Control Plasmid	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in 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

: EZClone Solution	Industrial applications, Professional applications.
Mutazyme II	Industrial applications, Professional applications.
10X Mutazyme II Reaction Buffer	Industrial applications, Professional applications.
40 mM dNTP Mix (10 mM dNTP)	Industrial applications, Professional applications.
2X EZClone Enzyme Mix	Industrial applications, Professional applications.
Dpn I	Industrial applications, Professional applications.
Positive Control Plasmid	Industrial applications, Professional applications.
Positive Control Primer Mix	Industrial applications, Professional applications.
1.1 kb Gel Standard	Industrial applications, Professional applications.
XL10-Gold Ultracompetent cells	Industrial applications, Professional applications.
XL10-Gold 2-Mercaptoethanol	Industrial applications, Professional applications.
pUC 18 DNA Control Plasmid	Industrial applications, Professional applications.

#### Industrial sector specific solutions

: EZClone Solution	Not available.
Mutazyme II	Not available.
10X Mutazyme II Reaction Buffer	Not available.
40 mM dNTP Mix (10 mM dNTP)	Not available.
2X EZClone Enzyme Mix	Not available.
Dpn I	Not available.
Positive Control Plasmid	Not available.
Positive Control Primer Mix	Not available.
1.1 kb Gel Standard	Not available.
XL10-Gold Ultracompetent cells	Not available.



## Section 7. Handling and storage

XL10-Gold 2-Mercaptoethanol  
pUC 18 DNA Control Plasmid

Not available.  
Not available.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>EZClone Solution</b> Dimethyl sulfoxide	<b>OARS WEEL (United States, 1/2021).</b> TWA: 250 ppm 8 hours.
<b>Mutazyme II</b> Glycerol	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	<b>TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust</b> <b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust None.
<b>2X EZClone Enzyme Mix</b> Glycerol	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust
Polyoxyethylene octyl phenyl ether	<b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust None.
<b>Dpn I</b> Glycerol	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust
<b>XL10-Gold Ultracompetent cells</b> Glycerol	<b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust
Dimethyl sulfoxide	<b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 10 mg/m <sup>3</sup> 8 hours. Form: Total dust <b>OSHA PEL (United States, 5/2018).</b> TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction TWA: 15 mg/m <sup>3</sup> 8 hours. Form: Total dust
Potassium chloride	<b>OARS WEEL (United States, 1/2021).</b> TWA: 250 ppm 8 hours.
	None.

## Section 8. Exposure controls/personal protection

**XL10-Gold 2-Mercaptoethanol**  
2-Mercaptoethanol

**OARS WEEL (United States, 1/2021).**  
**Absorbed through skin.**  
TWA: 0.2 ppm 8 hours.

### Biological exposure indices

No exposure indices known.

### 8.2 Exposure controls

#### Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

#### Environmental exposure controls

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

### Individual protection measures

#### Hygiene measures

: Handle as biohazard material (Biosafety level 1). Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

#### 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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

<b>Physical state</b>	:	EZClone Solution	Liquid. [Clear.]
		Mutazyme II	Liquid.
		10X Mutazyme II Reaction Buffer	Liquid.
		40 mM dNTP Mix (10 mM dNTP)	Liquid.
		2X EZClone Enzyme Mix	Liquid.
		Dpn I	Liquid.
		Positive Control Plasmid	Liquid.
		Positive Control Primer Mix	Liquid.
		1.1 kb Gel Standard	Liquid.
		XL10-Gold Ultracompetent cells	Liquid.
		XL10-Gold 2-Mercaptoethanol	Liquid.
		pUC 18 DNA Control Plasmid	Liquid.
	<b>Color</b>	:	EZClone Solution
		Mutazyme II	Not available.
		10X Mutazyme II Reaction Buffer	Not available.
		40 mM dNTP Mix (10 mM dNTP)	Not available.
		2X EZClone Enzyme Mix	Not available.
		Dpn I	Not available.
		Positive Control Plasmid	Not available.
		Positive Control Primer Mix	Not available.
		1.1 kb Gel Standard	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.
<b>Odor</b>		:	EZClone Solution
		Mutazyme II	Not available.
		10X Mutazyme II Reaction Buffer	Not available.
		40 mM dNTP Mix (10 mM dNTP)	Not available.
		2X EZClone Enzyme Mix	Not available.
		Dpn I	Not available.
		Positive Control Plasmid	Not available.
		Positive Control Primer Mix	Not available.
		1.1 kb Gel Standard	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.
	<b>Odor threshold</b>	:	EZClone Solution
		Mutazyme II	Not available.
		10X Mutazyme II Reaction Buffer	Not available.
		40 mM dNTP Mix (10 mM dNTP)	Not available.
		2X EZClone Enzyme Mix	Not available.
		Dpn I	Not available.
		Positive Control Plasmid	Not available.
		Positive Control Primer Mix	Not available.
		1.1 kb Gel Standard	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.
<b>pH</b>		:	

## Section 9. Physical and chemical properties and safety characteristics

	EZClone Solution	Not available.
	Mutazyme II	8
	10X Mutazyme II Reaction Buffer	8.5
	40 mM dNTP Mix (10 mM dNTP)	7.5
	2X EZClone Enzyme Mix	8.8
	Dpn I	7.5
	Positive Control Plasmid	7.5
	Positive Control Primer Mix	7.5
	1.1 kb Gel Standard	7.5
	XL10-Gold Ultracompetent cells	6.4
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	7.5
<b>Melting point/freezing point</b>	: EZClone Solution	18.5°C (65.3°F)
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	0°C (32°F)
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	0°C (32°F)
	Positive Control Primer Mix	0°C (32°F)
	1.1 kb Gel Standard	0°C (32°F)
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	0°C (32°F)
<b>Boiling point, initial boiling point, and boiling range</b>	: EZClone Solution	189°C (372.2°F)
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	100°C (212°F)
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	100°C (212°F)
	Positive Control Primer Mix	100°C (212°F)
	1.1 kb Gel Standard	100°C (212°F)
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	100°C (212°F)
<b>Flash point</b>	: EZClone Solution	Closed cup: 61 to 93.3°C (141.8 to 199.9°F) [ASTM D 93] Open cup: 87°C (188.6°F)
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	Not available.
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	Not available.
	Positive Control Primer Mix	Not available.
	1.1 kb Gel Standard	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.

## Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
<b>Mutazyme II</b>						
Glycerol				177	350.6	
<b>10X Mutazyme II Reaction Buffer</b>						
Sorbitan monolaurate, ethoxylated	275	527		290	554	
<b>2X EZClone Enzyme Mix</b>						
Glycerol				177	350.6	
<b>Dpn I</b>						
Glycerol				177	350.6	
<b>XL10-Gold Ultracompetent cells</b>						
Dimethyl sulfoxide	87	188.6	ASTM D 93	87	188.6	
Glycerol				177	350.6	
<b>XL10-Gold 2-Mercaptoethanol</b>						
2-Mercaptoethanol	74	165.2		74	165.2	

### Evaporation rate

EZClone Solution	0.026 (butyl acetate = 1)
Mutazyme II	Not available.
10X Mutazyme II Reaction Buffer	Not available.
40 mM dNTP Mix (10 mM dNTP)	Not available.
2X EZClone Enzyme Mix	Not available.
Dpn I	Not available.
Positive Control Plasmid	Not available.
Positive Control Primer Mix	Not available.
1.1 kb Gel Standard	Not available.
XL10-Gold Ultracompetent cells	Not available.
XL10-Gold 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	Not available.

### Flammability

EZClone Solution	Not applicable.
Mutazyme II	Not applicable.
10X Mutazyme II Reaction Buffer	Not applicable.
40 mM dNTP Mix (10 mM dNTP)	Not applicable.
2X EZClone Enzyme Mix	Not applicable.
Dpn I	Not applicable.
Positive Control Plasmid	Not applicable.
Positive Control Primer Mix	Not applicable.

## Section 9. Physical and chemical properties and safety characteristics

	1.1 kb Gel Standard	Not applicable.
	XL10-Gold Ultracompetent cells	Not applicable.
	XL10-Gold 2-Mercaptoethanol	Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
<b>Lower and upper explosion limit/flammability limit</b>	: EZClone Solution	Lower: 2.6% Upper: 28.5%
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	Not available.
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	Not available.
	Positive Control Primer Mix	Not available.
	1.1 kb Gel Standard	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.
<b>Vapor pressure</b>	: EZClone Solution	0.056 kPa (0.42 mm Hg) [EU A.4]
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	Not available.
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	Not available.
	Positive Control Primer Mix	Not available.
	1.1 kb Gel Standard	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
<b>Mutazyme II</b>						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
<b>10X Mutazyme II Reaction Buffer</b>						
water	23.8	3.2		92.258	12.3	
Sorbitan monolaurate, ethoxylated	<1	<0.13				
<b>40 mM dNTP Mix (10 mM dNTP)</b>						
water	23.8	3.2		92.258	12.3	
<b>2X EZClone Enzyme Mix</b>						
water	23.8	3.2		92.258	12.3	

## Section 9. Physical and chemical properties and safety characteristics

Glycerol	0.000075	0.00001		0.0025	0.00033
<b>Dpn I</b>					
water	23.8	3.2		92.258	12.3
Glycerol	0.000075	0.00001		0.0025	0.00033
<b>Positive Control Plasmid</b>					
water	23.8	3.2		92.258	12.3
<b>Positive Control Primer Mix</b>					
water	23.8	3.2		92.258	12.3
<b>1.1 kb Gel Standard</b>					
water	23.8	3.2		92.258	12.3
<b>XL10-Gold Ultracompetent cells</b>					
water	23.8	3.2		92.258	12.3
Dimethyl sulfoxide	0.42	0.056	EU A.4		
<b>XL10-Gold 2-Mercaptoethanol</b>					
water	23.8	3.2		92.258	12.3
2-Mercaptoethanol	0.98	0.13			
<b>pUC 18 DNA Control Plasmid</b>					
water	23.8	3.2		92.258	12.3

<b>Relative vapor density</b>	:	EZClone Solution	2.7 [Air = 1]
		Mutazyme II	Not available.
		10X Mutazyme II Reaction Buffer	Not available.
		40 mM dNTP Mix (10 mM dNTP)	Not available.
		2X EZClone Enzyme Mix	Not available.
		Dpn I	Not available.
		Positive Control Plasmid	Not available.
		Positive Control Primer Mix	Not available.
		1.1 kb Gel Standard	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.



## Section 9. Physical and chemical properties and safety characteristics

<b>Relative density</b>	:	EZClone Solution	1.1
		Mutazyme II	Not available.
		10X Mutazyme II Reaction Buffer	Not available.
		40 mM dNTP Mix (10 mM dNTP)	Not available.
		2X EZClone Enzyme Mix	Not available.
		Dpn I	Not available.
		Positive Control Plasmid	Not available.
		Positive Control Primer Mix	Not available.
		1.1 kb Gel Standard	Not available.
		XL10-Gold Ultracompetent cells	Not available.
		XL10-Gold 2-Mercaptoethanol	Not available.
		pUC 18 DNA Control Plasmid	Not available.

<b>Solubility(ies)</b>	:	<b>Media</b>	<b>Result</b>
		<b>EZClone Solution</b>	
		water	Soluble
		<b>Mutazyme II</b>	
		water	Soluble
		<b>10X Mutazyme II Reaction Buffer</b>	
		water	Soluble
		<b>40 mM dNTP Mix (10 mM dNTP)</b>	
		water	Soluble
		<b>2X EZClone Enzyme Mix</b>	
		water	Soluble
		<b>Dpn I</b>	
		water	Soluble
		<b>Positive Control Plasmid</b>	
		water	Soluble
	<b>Positive Control Primer Mix</b>		
	water	Soluble	
	<b>1.1 kb Gel Standard</b>		
	water	Soluble	
	<b>XL10-Gold Ultracompetent cells</b>		
	water	Soluble	
	<b>XL10-Gold 2-Mercaptoethanol</b>		
	water	Soluble	
	<b>pUC 18 DNA Control Plasmid</b>		
	water	Soluble	

<b>Partition coefficient: n-octanol/water</b>	:	EZClone Solution	-1.35
		Mutazyme II	Not applicable.
		10X Mutazyme II Reaction Buffer	Not applicable.
		40 mM dNTP Mix (10 mM dNTP)	Not applicable.
		2X EZClone Enzyme Mix	Not applicable.
		Dpn I	Not applicable.
		Positive Control Plasmid	Not applicable.
		Positive Control Primer Mix	Not applicable.
		1.1 kb Gel Standard	Not applicable.
		XL10-Gold Ultracompetent cells	Not applicable.
		XL10-Gold 2-Mercaptoethanol	Not applicable.
		pUC 18 DNA Control Plasmid	Not applicable.

## Section 9. Physical and chemical properties and safety characteristics

<b>Auto-ignition temperature</b>	EZClone Solution	300 to 302°C (572 to 575.6°F)
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	Not available.
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	Not available.
	Positive Control Primer Mix	Not available.
	1.1 kb Gel Standard	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.

Ingredient name	°C	°F	Method
<b>Mutazyme II</b>			
Glycerol	370	698	
<b>2X EZClone Enzyme Mix</b>			
Glycerol	370	698	
<b>Dpn I</b>			
Glycerol	370	698	
<b>XL10-Gold Ultracompetent cells</b>			
Dimethyl sulfoxide	300 to 302	572 to 575.6	
Glycerol	370	698	
<b>XL10-Gold 2-Mercaptoethanol</b>			
2-Mercaptoethanol	295	563	

<b>Decomposition temperature</b>	EZClone Solution	140 to 189°C (284 to 372.2°F)
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	Not available.
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	Not available.
	Positive Control Primer Mix	Not available.
	1.1 kb Gel Standard	Not available.
	XL10-Gold Ultracompetent cells	Not available.
	XL10-Gold 2-Mercaptoethanol	Not available.
	pUC 18 DNA Control Plasmid	Not available.

<b>Viscosity</b>	EZClone Solution	Dynamic: 2.14 mPa·s (2.14 cP)
	Mutazyme II	Not available.
	10X Mutazyme II Reaction Buffer	Not available.
	40 mM dNTP Mix (10 mM dNTP)	Not available.
	2X EZClone Enzyme Mix	Not available.
	Dpn I	Not available.
	Positive Control Plasmid	Not available.
	Positive Control Primer Mix	Not available.

## Section 9. Physical and chemical properties and safety characteristics

1.1 kb Gel Standard	Not available.
XL10-Gold Ultracompetent cells	Not available.
XL10-Gold 2-Mercaptoethanol	Not available.
pUC 18 DNA Control Plasmid	Not available.

### Particle characteristics

#### Median particle size

EZClone Solution	Not applicable.
Mutazyme II	Not applicable.
10X Mutazyme II Reaction Buffer	Not applicable.
40 mM dNTP Mix (10 mM dNTP)	Not applicable.
2X EZClone Enzyme Mix	Not applicable.
Dpn I	Not applicable.
Positive Control Plasmid	Not applicable.
Positive Control Primer Mix	Not applicable.
1.1 kb Gel Standard	Not applicable.
XL10-Gold Ultracompetent cells	Not applicable.
XL10-Gold 2-Mercaptoethanol	Not applicable.
pUC 18 DNA Control Plasmid	Not applicable.

## Section 10. Stability and reactivity

### 10.1 Reactivity

EZClone Solution	No specific test data related to reactivity available for this product or its ingredients.
Mutazyme II	No specific test data related to reactivity available for this product or its ingredients.
10X Mutazyme II Reaction Buffer	No specific test data related to reactivity available for this product or its ingredients.
40 mM dNTP Mix (10 mM dNTP)	No specific test data related to reactivity available for this product or its ingredients.
2X EZClone Enzyme Mix	No specific test data related to reactivity available for this product or its ingredients.
Dpn I	No specific test data related to reactivity available for this product or its ingredients.
Positive Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.
Positive Control Primer Mix	No specific test data related to reactivity available for this product or its ingredients.
1.1 kb Gel Standard	No specific test data related to reactivity available for this product or its ingredients.
XL10-Gold Ultracompetent cells	No specific test data related to reactivity available for this product or its ingredients.
XL10-Gold 2-Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
pUC 18 DNA Control Plasmid	No specific test data related to reactivity available for this product or its ingredients.

### 10.2 Chemical stability

EZClone Solution	The product is stable.
Mutazyme II	The product is stable.
10X Mutazyme II Reaction Buffer	The product is stable.
40 mM dNTP Mix (10 mM dNTP)	The product is stable.
2X EZClone Enzyme Mix	The product is stable.
Dpn I	The product is stable.
Positive Control Plasmid	The product is stable.
Positive Control Primer Mix	The product is stable.
1.1 kb Gel Standard	The product is stable.
XL10-Gold Ultracompetent cells	The product is stable.
XL10-Gold 2-Mercaptoethanol	The product is stable.
pUC 18 DNA Control Plasmid	The product is stable.

## Section 10. Stability and reactivity

### 10.3 Possibility of hazardous reactions

EZClone Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
Mutazyme II	Under normal conditions of storage and use, hazardous reactions will not occur.
10X Mutazyme II Reaction Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
40 mM dNTP Mix (10 mM dNTP)	Under normal conditions of storage and use, hazardous reactions will not occur.
2X EZClone Enzyme Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
Dpn I	Under normal conditions of storage and use, hazardous reactions will not occur.
Positive Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.
Positive Control Primer Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
1.1 kb Gel Standard	Under normal conditions of storage and use, hazardous reactions will not occur.
XL10-Gold Ultracompetent cells	Under normal conditions of storage and use, hazardous reactions will not occur.
XL10-Gold 2-Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur.

### 10.4 Conditions to avoid

EZClone Solution	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Mutazyme II	No specific data.
10X Mutazyme II Reaction Buffer	No specific data.
40 mM dNTP Mix (10 mM dNTP)	No specific data.
2X EZClone Enzyme Mix	No specific data.
Dpn I	No specific data.
Positive Control Plasmid	No specific data.
Positive Control Primer Mix	No specific data.
1.1 kb Gel Standard	No specific data.
XL10-Gold Ultracompetent cells	No specific data.
XL10-Gold 2-Mercaptoethanol	No specific data.
pUC 18 DNA Control Plasmid	No specific data.

### 10.5 Incompatible materials

EZClone Solution	Reactive or incompatible with the following materials: oxidizing materials
Mutazyme II	May react or be incompatible with oxidizing materials.
10X Mutazyme II Reaction Buffer	May react or be incompatible with oxidizing materials.
40 mM dNTP Mix (10 mM dNTP)	May react or be incompatible with oxidizing materials.
2X EZClone Enzyme Mix	May react or be incompatible with oxidizing materials.
Dpn I	May react or be incompatible with oxidizing materials.
Positive Control Plasmid	May react or be incompatible with oxidizing materials.
Positive Control Primer Mix	May react or be incompatible with oxidizing materials.

## Section 10. Stability and reactivity

1.1 kb Gel Standard		May react or be incompatible with oxidizing materials.
XL10-Gold Ultracompetent cells		May react or be incompatible with oxidizing materials.
XL10-Gold 2-Mercaptoethanol		May react or be incompatible with oxidizing materials.
pUC 18 DNA Control Plasmid		May react or be incompatible with oxidizing materials.
<b>10.6 Hazardous decomposition products</b>	<b>:</b>	
EZClone Solution		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Mutazyme II		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
10X Mutazyme II Reaction Buffer		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
40 mM dNTP Mix (10 mM dNTP)		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
2X EZClone Enzyme Mix		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.
Positive Control Plasmid		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Positive Control Primer Mix		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
1.1 kb Gel Standard		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
XL10-Gold Ultracompetent cells		Under normal conditions of storage and use, hazardous decomposition products should not be produced.
XL10-Gold 2-Mercaptoethanol		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.

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>EZClone Solution</b> Dimethyl sulfoxide	LD50 Dermal LD50 Oral	Rat Rat	40000 mg/kg 14500 mg/kg	- -
<b>Mutazyme II</b> Glycerol Poly(oxy-1,2-ethanediyl), . alpha.-[	LD50 Oral LD50 Oral	Rat Rat	12600 mg/kg 2800 mg/kg	- -

## Section 11. Toxicological information

(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-				
<b>2X EZClone Enzyme Mix</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-
<b>Dpn I</b>				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
<b>XL10-Gold Ultracompetent cells</b>				
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	-
<b>XL10-Gold 2-Mercaptoethanol</b>				
2-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>EZClone Solution</b>					
Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
<b>Mutazyme II</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	Eyes - Severe irritant	Rabbit	-	1 %	-
<b>2X EZClone Enzyme Mix</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Polyoxyethylene octyl phenyl ether	Skin - Mild irritant	Rabbit	-	24 hours 500 uL	-
<b>Dpn I</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
<b>XL10-Gold Ultracompetent cells</b>					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500	-

## Section 11. Toxicological information

Dimethyl sulfoxide	Skin - Mild irritant	Rabbit	-	mg 24 hours 500	-
	Eyes - Mild irritant	Rabbit	-	mg 100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
Potassium chloride	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
<b>XL10-Gold 2-Mercaptoethanol</b> 2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 mg	-

### Sensitization

Not available.

### Mutagenicity

**Conclusion/Summary** : Not available.

### Carcinogenicity

**Conclusion/Summary** : Not available.

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<b>XL10-Gold 2-Mercaptoethanol</b> 2-Mercaptoethanol	Category 3	-	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
<b>XL10-Gold 2-Mercaptoethanol</b> 2-Mercaptoethanol	Category 2	oral	heart, liver

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

: EZClone Solution

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Mutazyme II

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

10X Mutazyme II Reaction Buffer

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

40 mM dNTP Mix (10 mM dNTP)

Not available.

2X EZClone Enzyme Mix

Not available.

Dpn I

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Positive Control Plasmid

Not available.

Positive Control Primer Mix

Not available.

1.1 kb Gel Standard

Not available.



## Section 11. Toxicological information

XL10-Gold Ultracompetent cells	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
XL10-Gold 2-Mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
pUC 18 DNA Control Plasmid	Not available.

### Potential acute health effects

#### Eye contact

<ul style="list-style-type: none"> <li>: EZClone Solution</li> <li>Mutazyme II</li> <li>10X Mutazyme II Reaction Buffer</li> <li>40 mM dNTP Mix (10 mM dNTP)</li> <li>2X EZClone Enzyme Mix</li> <li>Dpn I</li> <li>Positive Control Plasmid</li> <li>Positive Control Primer Mix</li> <li>1.1 kb Gel Standard</li> <li>XL10-Gold Ultracompetent cells</li> <li>XL10-Gold 2-Mercaptoethanol</li> <li>pUC 18 DNA Control Plasmid</li> </ul>	<ul style="list-style-type: none"> <li>Causes eye irritation.</li> <li>Causes eye irritation.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Causes eye irritation.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Causes eye irritation.</li> <li>Causes serious eye damage.</li> <li>No known significant effects or critical hazards.</li> </ul>
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#### Inhalation

<ul style="list-style-type: none"> <li>: EZClone Solution</li> <li>Mutazyme II</li> <li>10X Mutazyme II Reaction Buffer</li> <li>40 mM dNTP Mix (10 mM dNTP)</li> <li>2X EZClone Enzyme Mix</li> <li>Dpn I</li> <li>Positive Control Plasmid</li> <li>Positive Control Primer Mix</li> <li>1.1 kb Gel Standard</li> <li>XL10-Gold Ultracompetent cells</li> <li>XL10-Gold 2-Mercaptoethanol</li> <li>pUC 18 DNA Control Plasmid</li> </ul>	<ul style="list-style-type: none"> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>
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#### Skin contact

<ul style="list-style-type: none"> <li>: EZClone Solution</li> <li>Mutazyme II</li> <li>10X Mutazyme II Reaction Buffer</li> <li>40 mM dNTP Mix (10 mM dNTP)</li> <li>2X EZClone Enzyme Mix</li> <li>Dpn I</li> <li>Positive Control Plasmid</li> <li>Positive Control Primer Mix</li> <li>1.1 kb Gel Standard</li> <li>XL10-Gold Ultracompetent cells</li> <li>XL10-Gold 2-Mercaptoethanol</li> <li>pUC 18 DNA Control Plasmid</li> </ul>	<ul style="list-style-type: none"> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>May cause an allergic skin reaction.</li> <li>No known significant effects or critical hazards.</li> </ul>
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#### Ingestion

<ul style="list-style-type: none"> <li>: EZClone Solution</li> <li>Mutazyme II</li> <li>10X Mutazyme II Reaction Buffer</li> <li>40 mM dNTP Mix (10 mM dNTP)</li> <li>2X EZClone Enzyme Mix</li> <li>Dpn I</li> <li>Positive Control Plasmid</li> <li>Positive Control Primer Mix</li> <li>1.1 kb Gel Standard</li> <li>XL10-Gold Ultracompetent cells</li> <li>XL10-Gold 2-Mercaptoethanol</li> <li>pUC 18 DNA Control Plasmid</li> </ul>	<ul style="list-style-type: none"> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>
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### Symptoms related to the physical, chemical and toxicological characteristics

## Section 11. Toxicological information

<b>Eye contact</b>	: EZClone Solution	Adverse symptoms may include the following: irritation watering redness
	Mutazyme II	Adverse symptoms may include the following: irritation watering redness
	10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I	No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
	Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells	No specific data. No specific data. No specific data. Adverse symptoms may include the following: irritation watering redness
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	pUC 18 DNA Control Plasmid	No specific data.
<b>Inhalation</b>	: EZClone Solution	No specific data.
	Mutazyme II	No specific data.
	10X Mutazyme II Reaction Buffer	No specific data.
	40 mM dNTP Mix (10 mM dNTP)	No specific data.
	2X EZClone Enzyme Mix	No specific data.
	Dpn I	No specific data.
	Positive Control Plasmid	No specific data.
	Positive Control Primer Mix	No specific data.
	1.1 kb Gel Standard	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
	pUC 18 DNA Control Plasmid	No specific data.
<b>Skin contact</b>	: EZClone Solution	No specific data.
	Mutazyme II	No specific data.
	10X Mutazyme II Reaction Buffer	No specific data.
	40 mM dNTP Mix (10 mM dNTP)	No specific data.
	2X EZClone Enzyme Mix	No specific data.
	Dpn I	No specific data.
	Positive Control Plasmid	No specific data.
	Positive Control Primer Mix	No specific data.
	1.1 kb Gel Standard	No specific data.
	XL10-Gold Ultracompetent cells	No specific data.
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced fetal weight increase in fetal deaths skeletal malformations

## Section 11. Toxicological information

	pUC 18 DNA Control Plasmid	No specific data.	
<b>Ingestion</b>	: EZClone Solution	No specific data.	
	Mutazyme II	No specific data.	
	10X Mutazyme II Reaction Buffer	No specific data.	
	40 mM dNTP Mix (10 mM dNTP)	No specific data.	
	2X EZClone Enzyme Mix	No specific data.	
	Dpn I	No specific data.	
	Positive Control Plasmid	No specific data.	
	Positive Control Primer Mix	No specific data.	
	1.1 kb Gel Standard	No specific data.	
	XL10-Gold Ultracompetent cells	No specific data.	
	XL10-Gold 2-Mercaptoethanol	Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths skeletal malformations	
		pUC 18 DNA Control Plasmid	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

<b>General</b>	: EZClone Solution	No known significant effects or critical hazards.	
	Mutazyme II	No known significant effects or critical hazards.	
	10X Mutazyme II Reaction Buffer	No known significant effects or critical hazards.	
	40 mM dNTP Mix (10 mM dNTP)	No known significant effects or critical hazards.	
	2X EZClone Enzyme Mix	No known significant effects or critical hazards.	
	Dpn I	No known significant effects or critical hazards.	
	Positive Control Plasmid	No known significant effects or critical hazards.	
	Positive Control Primer Mix	No known significant effects or critical hazards.	
	1.1 kb Gel Standard	No known significant effects or critical hazards.	
	XL10-Gold Ultracompetent cells	No known significant effects or critical hazards.	
	XL10-Gold 2-Mercaptoethanol	May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.	
		pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	<b>Carcinogenicity</b>	: EZClone Solution	No known significant effects or critical hazards.
Mutazyme II		No known significant effects or critical hazards.	
10X Mutazyme II Reaction Buffer		No known significant effects or critical hazards.	
40 mM dNTP Mix (10 mM dNTP)		No known significant effects or critical hazards.	
2X EZClone Enzyme Mix		No known significant effects or critical hazards.	
Dpn I		No known significant effects or critical hazards.	
Positive Control Plasmid		No known significant effects or critical hazards.	
Positive Control Primer Mix		No known significant effects or critical hazards.	
1.1 kb Gel Standard		No known significant effects or critical hazards.	
XL10-Gold Ultracompetent cells		No known significant effects or critical hazards.	
XL10-Gold 2-Mercaptoethanol		No known significant effects or critical hazards.	
		pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

## Section 11. Toxicological information

<b>Mutagenicity</b>	<ul style="list-style-type: none"> <li>: EZClone Solution</li> <li>Mutazyme II</li> <li>10X Mutazyme II Reaction Buffer</li> <li>40 mM dNTP Mix (10 mM dNTP)</li> <li>2X EZClone Enzyme Mix</li> <li>Dpn I</li> <li>Positive Control Plasmid</li> <li>Positive Control Primer Mix</li> <li>1.1 kb Gel Standard</li> <li>XL10-Gold Ultracompetent cells</li> <li>XL10-Gold 2-Mercaptoethanol</li> <li>pUC 18 DNA Control Plasmid</li> </ul>	<ul style="list-style-type: none"> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> </ul>
<b>Reproductive toxicity</b>	<ul style="list-style-type: none"> <li>: EZClone Solution</li> <li>Mutazyme II</li> <li>10X Mutazyme II Reaction Buffer</li> <li>40 mM dNTP Mix (10 mM dNTP)</li> <li>2X EZClone Enzyme Mix</li> <li>Dpn I</li> <li>Positive Control Plasmid</li> <li>Positive Control Primer Mix</li> <li>1.1 kb Gel Standard</li> <li>XL10-Gold Ultracompetent cells</li> <li>XL10-Gold 2-Mercaptoethanol</li> <li>pUC 18 DNA Control Plasmid</li> </ul>	<ul style="list-style-type: none"> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>No known significant effects or critical hazards.</li> <li>Suspected of damaging fertility or the unborn child.</li> <li>No known significant effects or critical hazards.</li> </ul>

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
<b>EZClone Solution</b> Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
<b>Mutazyme II</b> Glycerol	12600	N/A	N/A	N/A	N/A
Poly(oxy-1,2-ethanediyl), .alpha.-[ (1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	500	N/A	N/A	N/A	N/A
<b>2X EZClone Enzyme Mix</b> Glycerol	12600	N/A	N/A	N/A	N/A
Polyoxyethylene octyl phenyl ether	1800	N/A	N/A	N/A	N/A
<b>Dpn I</b> Dpn I	130434.8	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
<b>XL10-Gold Ultracompetent cells</b> XL10-Gold Ultracompetent cells	136842.1	N/A	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A
Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
Potassium chloride	2600	N/A	N/A	N/A	N/A
<b>XL10-Gold 2-Mercaptoethanol</b> XL10-Gold 2-Mercaptoethanol	4615.5	4545.5	N/A	60.7	N/A
2-Mercaptoethanol	244	200	N/A	3	N/A

## Section 11. Toxicological information

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>EZClone Solution</b> Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 ul/L Marine water	Algae - Ulva lactuca	72 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days
<b>Mutazyme II</b> Glycerol Poly(oxy-1,2-ethanediyl), . alpha.-[ (1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 210 µg/l Fresh water	Algae - Selenastrum sp.	96 hours
	Acute LC50 10800 µg/l Marine water	Crustaceans - Pandalus montagui - Adult	48 hours
	Acute LC50 8600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
<b>2X EZClone Enzyme Mix</b> Glycerol Polyoxyethylene octyl phenyl ether	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	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
<b>Dpn I</b> Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
<b>XL10-Gold Ultracompetent cells</b> Glycerol Dimethyl sulfoxide	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 ul/L Marine water	Algae - Ulva lactuca	72 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days
Potassium chloride	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 83000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 509.65 mg/l Fresh water	Fish - Danio rerio	96 hours

### 12.2 Persistence and degradability

## Section 12. Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
<b>EZClone Solution</b> Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
<b>Mutazyme II</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>2X EZClone Enzyme Mix</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>Dpn I</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>XL10-Gold Ultracompetent cells</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
<b>XL10-Gold 2-Mercaptoethanol</b> 2-Mercaptoethanol	OECD 310 Ready Biodegradability - CO <sub>2</sub> in Sealed Vessels (Headspace Test)	69 % - Not readily - 60 days	20 mg/l	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>EZClone Solution</b> Dimethyl sulfoxide	-	-	Not readily
<b>2X EZClone Enzyme Mix</b> Polyoxyethylene octyl phenyl ether	-	-	Readily
<b>XL10-Gold Ultracompetent cells</b> Dimethyl sulfoxide	-	-	Not readily

## Section 12. Ecological information

Potassium chloride	-	-	Readily
<b>XL10-Gold 2-Mercaptoethanol</b>			
2-Mercaptoethanol	-	-	Not readily

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>EZClone Solution</b>			
Dimethyl sulfoxide	-1.35	3.16	low
<b>Mutazyme II</b>			
Glycerol	-1.76	-	low
Poly(oxy-1,2-ethanediyl), . alpha.-[ (1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	2.7	78.67	low
<b>2X EZClone Enzyme Mix</b>			
Glycerol	-1.76	-	low
Polyoxyethylene octyl phenyl ether	4.86	-	high
<b>Dpn I</b>			
Glycerol	-1.76	-	low
<b>XL10-Gold Ultracompetent cells</b>			
Glycerol	-1.76	-	low
Dimethyl sulfoxide	-1.35	3.16	low
Potassium chloride	-0.46	-	low
<b>XL10-Gold 2-Mercaptoethanol</b>			
2-Mercaptoethanol	-0.056	-	low

### 12.4 Mobility in soil

**Soil/water partition  
coefficient (K<sub>oc</sub>)** : 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. Vapor from product residues may create a highly flammable or explosive atmosphere



## Section 13. Disposal considerations

inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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

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

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

## Section 14. Transport information

**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 IMO instruments** : 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

<b>Classification</b>	:  EZClone Solution	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B EYE IRRITATION - Category 2B Not applicable. Not applicable. Not applicable. EYE IRRITATION - Category 2B Not applicable. Not applicable. Not applicable. EYE IRRITATION - Category 2B SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 Not applicable.
	Mutazyme II 10X Mutazyme II Reaction Buffer 40 mM dNTP Mix (10 mM dNTP) 2X EZClone Enzyme Mix Dpn I Positive Control Plasmid Positive Control Primer Mix 1.1 kb Gel Standard XL10-Gold Ultracompetent cells XL10-Gold 2-Mercaptoethanol	
	pUC 18 DNA Control Plasmid	

### Composition/information on ingredients

Name	%	Classification
<b>EZClone Solution</b>		
Dimethyl sulfoxide	100	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B
<b>Mutazyme II</b>		
Glycerol	≥50 - ≤75	EYE IRRITATION - Category 2B
<b>2X EZClone Enzyme Mix</b>		
Glycerol	<10	EYE IRRITATION - Category 2B
<b>Dpn I</b>		
Glycerol	≥50 - ≤75	EYE IRRITATION - Category 2B
<b>XL10-Gold Ultracompetent cells</b>		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2B
Dimethyl sulfoxide	≤10	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B
Sucrose	≤10	COMBUSTIBLE DUSTS
Potassium chloride	≤3	EYE IRRITATION - Category 2B
<b>XL10-Gold 2-Mercaptoethanol</b>		
2-Mercaptoethanol	≤5	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 3 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1A TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

### State regulations

<b>Massachusetts</b>	: The following components are listed: GLYCERINE MIST
<b>New York</b>	: None of the components are listed.
<b>New Jersey</b>	:  The following components are listed: GLYCERIN; DIMETHYL SULFOXIDE
<b>Pennsylvania</b>	: The following components are listed: 1,2,3-PROPANETRIOL
<b>California Prop. 65</b>	

This product does not require a Safe Harbor warning under California Prop. 65.

### International regulations

#### [Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

## Section 15. Regulatory information

Not listed.

### [Montreal Protocol](#)

Not listed.

### [Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

### [Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

### [UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

### [Inventory list](#)

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Eurasian Economic Union</b>	: <b>Russian Federation inventory</b> : Not determined.
<b>Japan</b>	: <b>Japan inventory (CSCL)</b> : Not determined. <b>Japan inventory (ISHL)</b> : Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: All components are active or exempted.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

### [Procedure used to derive the classification](#)

Classification	Justification
<b>EZClone Solution</b> FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B	On basis of test data On basis of test data
<b>Mutazyme II</b> EYE IRRITATION - Category 2B	Calculation method
<b>Dpn I</b> EYE IRRITATION - Category 2B	Calculation method
<b>XL10-Gold Ultracompetent cells</b> EYE IRRITATION - Category 2B	Calculation method
<b>XL10-Gold 2-Mercaptoethanol</b> SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method Calculation method Calculation method Calculation method Calculation method

### [History](#)

## Section 16. Other information

<b>Date of issue</b>	: 01/16/2023
<b>Date of previous issue</b>	: 03/19/2021
<b>Version</b>	: 7
<b>Key to abbreviations</b>	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available UN = United Nations

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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