

SAFETY DATA SHEET

CRISPR Library Cloning Kit Early Access, Part Number G7556P

Section 1. Identification

1.1 Product identifier

Product name	: CRISPR Library Cloning Kit Early Access, Part Number G7556P
Part no. (chemical kit)	: G7556P
Part no.	: SureSolution 5190-9381
	SureGuide Agarose 5190-9382
	Cloning Mix 5190-9379
	10X Cloning Buffer 5190-9380
	dNTP Mix 200518-56
	ElectroTen-Blue Competent Cells 200159-41
	pUC 18 DNA Control Plasmid 200231-42
	StrataClean Resin 200480-52

Validation date : 12/19/2022

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

Identified uses	: <input checked="" type="checkbox"/> Analytical reagent.
	<input checked="" type="checkbox"/> SureSolution 0.5 ml
	SureGuide Agarose 12 g
	Cloning Mix 0.03 ml
	10X Cloning Buffer 0.2 ml
	dNTP Mix 0.03 ml
	ElectroTen-Blue Competent Cells 5 x 0.1 ml
	pUC 18 DNA Control Plasmid 0.015 ml (0.1 ng / µl)
	StrataClean Resin 0.1 ml

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number

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

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status	: SureSolution	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	SureGuide Agarose	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.
	Cloning Mix	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	10X Cloning Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	dNTP Mix	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product.

Section 2. Hazards identification

ElectroTen-Blue Competent Cells
pUC 18 DNA Control Plasmid

This SDS should be retained and available for employees and other users of this product.

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

StrataClean Resin

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

SureSolution

H227
H320

FLAMMABLE LIQUIDS - Category 4
EYE IRRITATION - Category 2B

Cloning Mix

H320

EYE IRRITATION - Category 2B

10X Cloning Buffer

H319
H412

EYE IRRITATION - Category 2A
AQUATIC HAZARD (LONG-TERM) - Category 3

ElectroTen-Blue Competent Cells

H320

EYE IRRITATION - Category 2B

2.2 GHS label elements

Hazard pictograms : 10X Cloning Buffer



Signal word

: SureSolution
SureGuide Agarose
Cloning Mix
10X Cloning Buffer
dNTP Mix
ElectroTen-Blue Competent Cells
pUC 18 DNA Control Plasmid
StrataClean Resin

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

Hazard statements

: SureSolution





SureGuide Agarose
Cloning Mix
10X Cloning Buffer

dNTP Mix
ElectroTen-Blue Competent Cells
pUC 18 DNA Control Plasmid
StrataClean Resin

H227 - Combustible liquid.
H320 - Causes eye irritation.
No known significant effects or critical hazards.
H320 - Causes eye irritation.
H319 - Causes serious eye irritation.
H412 - Harmful to aquatic life with long lasting effects.
No known significant effects or critical hazards.
H320 - Causes eye irritation.
No known significant effects or critical hazards.
No known significant effects or critical hazards.

Precautionary statements

Section 2. Hazards identification

Prevention	 SureSolution	P210 - Keep away from flames and hot surfaces. No smoking. Not applicable. Not applicable. P280 - Wear eye or face protection. P273 - Avoid release to the environment.
	SureGuide Agarose Cloning Mix 10X Cloning Buffer dNTP Mix ElectroTen-Blue Competent Cells pUC 18 DNA Control Plasmid StrataClean Resin	Not applicable. Not applicable. P280 - Wear eye or face protection. P273 - Avoid release to the environment. Not applicable. Not applicable. Not applicable. Not applicable.
Response	 SureSolution	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.
	SureGuide Agarose Cloning Mix	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.
	10X Cloning Buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
	dNTP Mix ElectroTen-Blue Competent Cells	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.
	pUC 18 DNA Control Plasmid StrataClean Resin	Not applicable. Not applicable.
Storage	 SureSolution	P403 + P235 - Store in a well-ventilated place. Keep cool.
	SureGuide Agarose Cloning Mix 10X Cloning Buffer dNTP Mix ElectroTen-Blue Competent Cells pUC 18 DNA Control Plasmid StrataClean Resin	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	 SureSolution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	SureGuide Agarose Cloning Mix 10X Cloning Buffer dNTP Mix ElectroTen-Blue Competent Cells pUC 18 DNA Control Plasmid StrataClean Resin	Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. Not applicable. Not applicable. Not applicable.

Section 2. Hazards identification

Supplemental label elements	: SureSolution	None known.
	SureGuide Agarose	None known.
	Cloning Mix	None known.
	10X Cloning Buffer	None known.
	dNTP Mix	None known.
	ElectroTen-Blue Competent Cells	None known.
	pUC 18 DNA Control Plasmid	None known.
	StrataClean Resin	None known.

2.3 Other hazards

Hazards not otherwise classified	: SureSolution	None known.
	SureGuide Agarose	None known.
	Cloning Mix	None known.
	10X Cloning Buffer	None known.
	dNTP Mix	None known.
	ElectroTen-Blue Competent Cells	None known.
	pUC 18 DNA Control Plasmid	None known.
	StrataClean Resin	None known.

Section 3. Composition/information on ingredients

Substance/mixture	: SureSolution	Substance
	SureGuide Agarose	Substance
	Cloning Mix	Mixture
	10X Cloning Buffer	Mixture
	dNTP Mix	Mixture
	ElectroTen-Blue Competent Cells	Mixture
	pUC 18 DNA Control Plasmid	Mixture
	StrataClean Resin	Mixture

Ingredient name	%	CAS number
SureSolution		
Dimethyl sulfoxide	100	67-68-5
SureGuide Agarose		
Agarose	100	9012-36-6
Cloning Mix		
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
10X Cloning Buffer		
Potassium chloride	≤5	7447-40-7
Ammonium sulphate	≤3	7783-20-2
Polyoxyethylene octyl phenyl ether	<2.5	9002-93-1
ElectroTen-Blue Competent Cells		
Dimethyl sulfoxide	≥10 - ≤25	67-68-5

Section 3. Composition/information on ingredients

Glycerol	≤10	56-81-5
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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

Eye contact	: SureSolution	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.
	SureGuide Agarose	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.
	Cloning Mix	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 Cloning Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
	dNTP Mix	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	ElectroTen-Blue Competent Cells	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
	pUC 18 DNA Control Plasmid	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	StrataClean Resin	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	: SureSolution	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.
	SureGuide Agarose	Remove victim to fresh air and keep at rest in a

Section 4. First aid measures

Cloning Mix

position comfortable for breathing. Get medical attention if symptoms occur. 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 Cloning Buffer

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

dNTP Mix

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

ElectroTen-Blue Competent 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. 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.

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.

StrataClean Resin

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

Section 4. First aid measures

Skin contact

: SureSolution

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.

SureGuide Agarose

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Cloning Mix

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 Cloning Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

dNTP Mix

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

ElectroTen-Blue Competent Cells

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

pUC 18 DNA Control Plasmid

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

StrataClean Resin

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion

: SureSolution

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. 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.

SureGuide Agarose

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.

Cloning Mix

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.

Section 4. First aid measures

10X Cloning Buffer

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. 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.

dNTP Mix

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. 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.

ElectroTen-Blue Competent 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.

pUC 18 DNA Control Plasmid

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. 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.

StrataClean Resin

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

Section 4. First aid measures

Eye contact	: SureSolution	Causes eye irritation.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	Causes eye irritation.
	10X Cloning Buffer	Causes serious eye irritation.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	Causes eye irritation.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Inhalation	StrataClean Resin	No known significant effects or critical hazards.
	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
Skin contact	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	StrataClean Resin	No known significant effects or critical hazards.
	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
Ingestion	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	StrataClean Resin	No known significant effects or critical hazards.
	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
Over-exposure signs/symptoms	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	StrataClean Resin	No known significant effects or critical hazards.
	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: SureSolution	Adverse symptoms may include the following: irritation watering redness
	SureGuide Agarose	No specific data.
	Cloning Mix	Adverse symptoms may include the following: irritation watering redness
	10X Cloning Buffer	Adverse symptoms may include the following: pain or irritation watering redness
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	Adverse symptoms may include the following: irritation watering redness
	pUC 18 DNA Control Plasmid	No specific data.
	StrataClean Resin	No specific data.

Section 4. First aid measures

Inhalation	: SureSolution	No specific data.
	SureGuide Agarose	No specific data.
	Cloning Mix	No specific data.
	10X Cloning Buffer	No specific data.
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
Skin contact	StrataClean Resin	No specific data.
	: SureSolution	No specific data.
	SureGuide Agarose	No specific data.
	Cloning Mix	No specific data.
	10X Cloning Buffer	No specific data.
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	No specific data.
Ingestion	pUC 18 DNA Control Plasmid	No specific data.
	StrataClean Resin	No specific data.
	: SureSolution	No specific data.
	SureGuide Agarose	No specific data.
	Cloning Mix	No specific data.
	10X Cloning Buffer	No specific data.
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	StrataClean Resin	No specific data.
		No specific data.

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

Notes to physician	: SureSolution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	SureGuide Agarose	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Cloning Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10X Cloning 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.
	dNTP Mix	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	ElectroTen-Blue Competent Cells	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.
	pUC 18 DNA Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	StrataClean Resin	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 4. First aid measures

Specific treatments	SureSolution	No specific treatment.
	SureGuide Agarose	No specific treatment.
	Cloning Mix	No specific treatment.
	10X Cloning Buffer	No specific treatment.
	dNTP Mix	No specific treatment.
	ElectroTen-Blue Competent Cells	No specific treatment.
	pUC 18 DNA Control Plasmid	No specific treatment.
Protection of first-aiders	StrataClean Resin	No specific treatment.
	SureSolution	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.
	SureGuide Agarose	No action shall be taken involving any personal risk or without suitable training.
	Cloning Mix	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	10X Cloning Buffer	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	dNTP Mix	No action shall be taken involving any personal risk or without suitable training.
	ElectroTen-Blue Competent 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.
	pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training.
	StrataClean Resin	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	SureSolution	Use dry chemical, CO ₂ , water spray (fog) or foam.
	SureGuide Agarose	Use an extinguishing agent suitable for the surrounding fire.
	Cloning Mix	Use an extinguishing agent suitable for the surrounding fire.
	10X Cloning Buffer	Use an extinguishing agent suitable for the surrounding fire.
	dNTP Mix	Use an extinguishing agent suitable for the surrounding fire.
	ElectroTen-Blue Competent Cells	Use an extinguishing agent suitable for the surrounding fire.
	pUC 18 DNA Control Plasmid	Use an extinguishing agent suitable for the surrounding fire.
	StrataClean Resin	Use an extinguishing agent suitable for the surrounding fire.

Section 5. Fire-fighting measures

Unsuitable extinguishing media	: SureSolution	Do not use water jet.
	SureGuide Agarose	None known.
	Cloning Mix	None known.
	10X Cloning Buffer	None known.
	dNTP Mix	None known.
	ElectroTen-Blue Competent Cells	None known.
	pUC 18 DNA Control Plasmid	None known.
	StrataClean Resin	None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: SureSolution	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.
		No specific fire or explosion hazard.
	SureGuide Agarose	In a fire or if heated, a pressure increase will occur and the container may burst.
	Cloning Mix	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	10X Cloning Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	dNTP Mix	In a fire or if heated, a pressure increase will occur and the container may burst.
	ElectroTen-Blue Competent Cells	In a fire or if heated, a pressure increase will occur and the container may burst.
	pUC 18 DNA Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	StrataClean Resin	In a fire or if heated, a pressure increase will occur and the container may burst.
	: SureSolution	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	SureGuide Agarose	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Cloning Mix	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	10X Cloning Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds metal oxide/oxides
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	Decomposition products may include the following materials:

Section 5. Fire-fighting measures

carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
phosphorus oxides
No specific data.
Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters

: SureSolution

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.

SureGuide Agarose

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.

Cloning 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.

10X Cloning 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.

dNTP Mix

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

ElectroTen-Blue Competent Cells

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

pUC 18 DNA Control Plasmid

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

StrataClean Resin

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

: SureSolution

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

SureGuide Agarose

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Cloning Mix

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 5. Fire-fighting measures

10X Cloning Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
dNTP Mix	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
ElectroTen-Blue Competent Cells	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
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.
StrataClean Resin	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

: SureSolution

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.

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

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

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.

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.

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.

SureGuide Agarose

Cloning Mix

10X Cloning Buffer

dNTP Mix

Section 6. Accidental release measures

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

ElectroTen-Blue Competent Cells

pUC 18 DNA Control Plasmid

StrataClean Resin

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

For emergency responders : SureSolution

SureGuide Agarose

Cloning Mix

10X Cloning Buffer

dNTP Mix

ElectroTen-Blue Competent Cells

pUC 18 DNA Control Plasmid

StrataClean Resin

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

Section 6. Accidental release measures

6.2 Environmental precautions

: SureSolution

SureGuide Agarose

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).

Cloning Mix

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

10X Cloning Buffer

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

dNTP Mix

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

ElectroTen-Blue Competent Cells

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

pUC 18 DNA Control Plasmid

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

StrataClean Resin

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 : SureSolution

SureGuide Agarose

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.

Cloning Mix

Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste 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

Section 6. Accidental release measures

10X Cloning Buffer

disposal container. Dispose of via a licensed waste 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.

dNTP Mix

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

ElectroTen-Blue Competent Cells

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

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.

StrataClean Resin

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

:  SureSolution

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.

SureGuide Agarose

Put on appropriate personal protective equipment (see Section 8).

Cloning Mix

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

Section 7. Handling and storage

	10X Cloning Buffer	retain product residue and can be hazardous. Do not reuse container. Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. 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.
	dNTP Mix	Put on appropriate personal protective equipment (see Section 8).
	ElectroTen-Blue Competent Cells	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8).
	StrataClean Resin	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: SureSolution	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.
	SureGuide Agarose	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.
	Cloning 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.
	10X Cloning 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.
	dNTP Mix	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

ElectroTen-Blue Competent Cells	Potentially biohazardous material. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
pUC 18 DNA Control Plasmid	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
StrataClean Resin	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
7.2 Conditions for safe storage, including any incompatibilities	<p>: SureSolution</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>SureGuide Agarose</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>Cloning Mix</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>10X Cloning Buffer</p> <p>Store in accordance with local regulations. Store in</p>

Section 7. Handling and storage

dNTP Mix

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.

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.

ElectroTen-Blue Competent Cells

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

StrataClean Resin

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\(s\)](#)

Section 7. Handling and storage

Recommendations	: SureSolution SureGuide Agarose Cloning Mix 10X Cloning Buffer dNTP Mix ElectroTen-Blue Competent Cells pUC 18 DNA Control Plasmid StrataClean Resin	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: SureSolution SureGuide Agarose Cloning Mix 10X Cloning Buffer dNTP Mix ElectroTen-Blue Competent Cells pUC 18 DNA Control Plasmid StrataClean Resin	Not available. Not available. Not available. Not available. Not available. Not available. Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
SureSolution Dimethyl sulfoxide	OARS WEEL (United States, 1/2021). TWA: 250 ppm 8 hours.
SureGuide Agarose Agarose	None.
Cloning Mix Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 5/2018). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	None.
10X Cloning Buffer Potassium chloride Ammonium sulphate Polyoxyethylene octyl phenyl ether	None. None. None.
ElectroTen-Blue Competent Cells Dimethyl sulfoxide Glycerol	OARS WEEL (United States, 1/2021). TWA: 250 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 5/2018). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust

Section 8. Exposure controls/personal protection

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

Appropriate engineering controls

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

Environmental exposure controls

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

Individual protection measures

Hygiene measures

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

Eye/face protection

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

Skin protection

Hand protection

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

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


Physical state



- | | |
|---------------------------------|------------------|
| SureSolution | Liquid. [Clear.] |
| SureGuide Agarose | Solid. |
| Cloning Mix | Liquid. |
| 10X Cloning Buffer | Liquid. |
| dNTP Mix | Liquid. |
| ElectroTen-Blue Competent Cells | Liquid. |
| pUC 18 DNA Control Plasmid | Liquid. |
| StrataClean Resin | Liquid. |

Section 9. Physical and chemical properties and safety characteristics

Color	SureSolution	Blue.
	SureGuide Agarose	Not available.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Odor	StrataClean Resin	Not available.
	SureSolution	Odorless. [Slight]
	SureGuide Agarose	Not available.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
	ElectroTen-Blue Competent Cells	Not available.
Odor threshold	pUC 18 DNA Control Plasmid	Not available.
	StrataClean Resin	Not available.
	SureSolution	Not available.
	SureGuide Agarose	Not available.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
pH	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	StrataClean Resin	Not available.
	SureSolution	Not available.
	SureGuide Agarose	Not available.
	Cloning Mix	8.2
	10X Cloning Buffer	8.8
Melting point/freezing point	dNTP Mix	7.5
	ElectroTen-Blue Competent Cells	7.5
	pUC 18 DNA Control Plasmid	7.5
	StrataClean Resin	7.5
	SureSolution	18.5°C (65.3°F)
	SureGuide Agarose	Not available.
	Cloning Mix	Not available.
Boiling point, initial boiling point, and boiling range	10X Cloning Buffer	Not available.
	dNTP Mix	0°C (32°F)
	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	0°C (32°F)
	StrataClean Resin	Not available.
	SureSolution	189°C (372.2°F)
	SureGuide Agarose	Not available.
Flash point	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	100°C (212°F)
	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	100°C (212°F)
	StrataClean Resin	Not available.
	SureSolution	Closed cup: 87°C (188.6°F) [ASTM D 93] Open cup: 87°C (188.6°F)
	SureGuide Agarose	Not applicable.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	StrataClean Resin	Not available.

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
 Cloning Mix						
Glycerol				177	350.6	
10X Cloning Buffer						
Polyoxyethylene octyl phenyl ether	251	483.8				
ElectroTen-Blue Competent Cells						
Dimethyl sulfoxide	87	188.6	ASTM D 93	87	188.6	
Glycerol				177	350.6	

Evaporation rate	: SureSolution	0.026 (butyl acetate = 1)
	SureGuide Agarose	Not available.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Flammability	StrataClean Resin	Not available.
	: SureSolution	Not applicable.
	SureGuide Agarose	Not applicable.
	Cloning Mix	Not applicable.
	10X Cloning Buffer	Not applicable.
	dNTP Mix	Not applicable.
	ElectroTen-Blue Competent Cells	Not applicable.
Lower and upper explosion limit/flammability limit	pUC 18 DNA Control Plasmid	Not applicable.
	StrataClean Resin	Not applicable.
	:  SureSolution	Lower: 2.6% Upper: 28.5%
	SureGuide Agarose	Not applicable.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
Vapor pressure	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	StrataClean Resin	Not available.
	:  SureSolution	0.056 kPa (0.42 mm Hg) [EU A.4]
	SureGuide Agarose	Not available.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	StrataClean Resin	Not available.

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Cloning Mix						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
10X Cloning Buffer						
water	23.8	3.2		92.258	12.3	
Polyoxyethylene octyl phenyl ether	0.997581	0.13				
dNTP Mix						
water	23.8	3.2		92.258	12.3	
ElectroTen-Blue Competent Cells						
water	23.8	3.2		92.258	12.3	
Dimethyl sulfoxide	0.42	0.056	EU A.4			
pUC 18 DNA Control Plasmid						
water	23.8	3.2		92.258	12.3	
StrataClean Resin						
water	23.8	3.2		92.258	12.3	




Relative vapor density :

SureSolution	2.7 [Air = 1]
SureGuide Agarose	Not applicable.
Cloning Mix	Not available.
10X Cloning Buffer	Not available.
dNTP Mix	Not available.
ElectroTen-Blue Competent Cells	Not available.
pUC 18 DNA Control Plasmid	Not available.
StrataClean Resin	Not available.


Relative density :

SureSolution	1.1
SureGuide Agarose	Not available.
Cloning Mix	Not available.
10X Cloning Buffer	Not available.
dNTP Mix	Not available.
ElectroTen-Blue Competent Cells	Not available.
pUC 18 DNA Control Plasmid	Not available.
StrataClean Resin	Not available.


Section 9. Physical and chemical properties and safety characteristics

Solubility(ies)	Media	Result		
	 SureSolution			
	water			
	SureGuide Agarose			
	water			
	Cloning Mix			
	water			
	10X Cloning Buffer			
	water			
	dNTP Mix			
	water			
	ElectroTen-Blue Competent Cells			
	water			
	pUC 18 DNA Control Plasmid			
	water			
	StrataClean Resin			
	water			
Partition coefficient: n-octanol/water	 SureSolution	-1.35		
	SureGuide Agarose	Not applicable.		
	Cloning Mix	Not applicable.		
	10X Cloning Buffer	Not applicable.		
	dNTP Mix	Not applicable.		
	ElectroTen-Blue Competent Cells	Not applicable.		
	pUC 18 DNA Control Plasmid	Not applicable.		
	StrataClean Resin	Not applicable.		
Auto-ignition temperature	 SureSolution	300 to 302°C (572 to 575.6°F)		
	SureGuide Agarose	Not applicable.		
	Cloning Mix	Not available.		
	10X Cloning Buffer	Not available.		
	dNTP Mix	Not available.		
	ElectroTen-Blue Competent Cells	Not available.		
	pUC 18 DNA Control Plasmid	Not available.		
	StrataClean Resin	Not available.		
	Cloning Mix			
	Glycerol	370	698	
Decomposition temperature	ElectroTen-Blue Competent Cells			
	Dimethyl sulfoxide	300 to 302	572 to 575.6	
	Glycerol	370	698	
	SureSolution	140 to 189°C (284 to 372.2°F)		
	SureGuide Agarose	Not available.		
	Cloning Mix	Not available.		
	10X Cloning Buffer	Not available.		
	dNTP Mix	Not available.		
	ElectroTen-Blue Competent Cells	Not available.		
	pUC 18 DNA Control Plasmid	Not available.		
	StrataClean Resin	Not available.		




Section 9. Physical and chemical properties and safety characteristics

Viscosity	 SureSolution	Dynamic: 2.14 mPa·s (2.14 cP)
	SureGuide Agarose	Not applicable.
	Cloning Mix	Not available.
	10X Cloning Buffer	Not available.
	dNTP Mix	Not available.
	ElectroTen-Blue Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
	StrataClean Resin	Not available.

Particle characteristics

Median particle size	 SureSolution	Not applicable.
	SureGuide Agarose	Not available.
	Cloning Mix	Not applicable.
	10X Cloning Buffer	Not applicable.
	dNTP Mix	Not applicable.
	ElectroTen-Blue Competent Cells	Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
	StrataClean Resin	Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity	 SureSolution	No specific test data related to reactivity available for this product or its ingredients.
	SureGuide Agarose	No specific test data related to reactivity available for this product or its ingredients.
	Cloning Mix	No specific test data related to reactivity available for this product or its ingredients.
	10X Cloning Buffer	No specific test data related to reactivity available for this product or its ingredients.
	dNTP Mix	No specific test data related to reactivity available for this product or its ingredients.
	ElectroTen-Blue Competent Cells	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.
	StrataClean Resin	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	 SureSolution	The product is stable.
	SureGuide Agarose	The product is stable.
	Cloning Mix	The product is stable.
	10X Cloning Buffer	The product is stable.
	dNTP Mix	The product is stable.
	ElectroTen-Blue Competent Cells	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.
	StrataClean Resin	The product is stable.
10.3 Possibility of hazardous reactions	 SureSolution	Under normal conditions of storage and use, hazardous reactions will not occur.
	SureGuide Agarose	Under normal conditions of storage and use, hazardous reactions will not occur.
	Cloning Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
	10X Cloning Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	dNTP Mix	Under normal conditions of storage and use, hazardous reactions will not occur.
	ElectroTen-Blue Competent Cells	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.

Section 10. Stability and reactivity

	StrataClean Resin	hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: SureSolution	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.
	SureGuide Agarose	No specific data.
	Cloning Mix	No specific data.
	10X Cloning Buffer	No specific data.
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	StrataClean Resin	No specific data.
10.5 Incompatible materials	: SureSolution	Reactive or incompatible with the following materials: oxidizing materials
	SureGuide Agarose	May react or be incompatible with oxidizing materials.
	Cloning Mix	May react or be incompatible with oxidizing materials.
	10X Cloning Buffer	May react or be incompatible with oxidizing materials.
	dNTP Mix	May react or be incompatible with oxidizing materials.
	ElectroTen-Blue Competent Cells	May react or be incompatible with oxidizing materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidizing materials.
	StrataClean Resin	May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	: SureSolution	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	SureGuide Agarose	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Cloning Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	10X Cloning Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	dNTP Mix	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	ElectroTen-Blue Competent Cells	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	StrataClean Resin	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
SureSolution Dimethyl sulfoxide	LD50 Dermal LD50 Oral	Rat Rat	40000 mg/kg 14500 mg/kg	- -
Cloning Mix Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-
10X Cloning Buffer Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
Ammonium sulphate	LD50 Oral	Rat	2840 mg/kg	-
Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-
ElectroTen-Blue Competent Cells Dimethyl sulfoxide	LD50 Dermal LD50 Oral	Rat Rat	40000 mg/kg 14500 mg/kg	- -
Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
SureSolution Dimethyl sulfoxide	Eyes - Mild irritant Eyes - Mild irritant	Rabbit Rabbit	- -	100 mg 24 hours 500 mg	- -
	Skin - Mild irritant Skin - Mild irritant	Rabbit Rabbit	- -	100 mg 24 hours 500 mg	- -
Cloning Mix 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 %	-
10X Cloning Buffer Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
Polyoxyethylene octyl phenyl ether	Skin - Mild irritant	Rabbit	-	24 hours 500 uL	-
ElectroTen-Blue Competent Cells Dimethyl sulfoxide	Eyes - Mild irritant Eyes - Mild irritant	Rabbit Rabbit	- -	100 mg 24 hours 500 mg	- -

Section 11. Toxicological information

Glycerol	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 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)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: SureSolution

SureGuide Agarose Cloning Mix

10X Cloning Buffer

dNTP Mix
ElectroTen-Blue Competent Cells

pUC 18 DNA Control Plasmid

StrataClean Resin

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

Not available.

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

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

Not available.

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

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

Not available.

Potential acute health effects

Eye contact

: SureSolution

SureGuide Agarose Cloning Mix

10X Cloning Buffer

dNTP Mix
ElectroTen-Blue Competent Cells

pUC 18 DNA Control Plasmid

StrataClean Resin

Causes eye irritation.

No known significant effects or critical hazards.

Causes eye irritation.

Causes serious eye irritation.

No known significant effects or critical hazards.

Causes eye irritation.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Section 11. Toxicological information

Inhalation	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Skin contact	StrataClean Resin	No known significant effects or critical hazards.
	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
Ingestion	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	StrataClean Resin	No known significant effects or critical hazards.
	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	StrataClean Resin	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: SureSolution	Adverse symptoms may include the following: irritation watering redness
	SureGuide Agarose	No specific data.
	Cloning Mix	Adverse symptoms may include the following: irritation watering redness
	10X Cloning Buffer	Adverse symptoms may include the following: pain or irritation watering redness
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	Adverse symptoms may include the following: irritation watering redness
	pUC 18 DNA Control Plasmid	No specific data.
	StrataClean Resin	No specific data.
	Inhalation	
	: SureSolution	No specific data.
	SureGuide Agarose	No specific data.
	Cloning Mix	No specific data.
	10X Cloning Buffer	No specific data.
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	StrataClean Resin	No specific data.

Section 11. Toxicological information

Skin contact	: SureSolution	No specific data.
	SureGuide Agarose	No specific data.
	Cloning Mix	No specific data.
	10X Cloning Buffer	No specific data.
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
Ingestion	: SureSolution	No specific data.
	SureGuide Agarose	No specific data.
	Cloning Mix	No specific data.
	10X Cloning Buffer	No specific data.
	dNTP Mix	No specific data.
	ElectroTen-Blue Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
	StrataClean Resin	No specific data.

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Carcinogenicity	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Mutagenicity	: SureSolution	No known significant effects or critical hazards.
	SureGuide Agarose	No known significant effects or critical hazards.
	Cloning Mix	No known significant effects or critical hazards.
	10X Cloning Buffer	No known significant effects or critical hazards.
	dNTP Mix	No known significant effects or critical hazards.
	ElectroTen-Blue Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
	StrataClean Resin	No known significant effects or critical hazards.

Section 11. Toxicological information

Reproductive toxicity	: SureSolution SureGuide Agarose Cloning Mix 10X Cloning Buffer dNTP Mix ElectroTen-Blue Competent Cells pUC 18 DNA Control Plasmid StrataClean Resin	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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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)
SureSolution Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
Cloning Mix 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
10X Cloning Buffer 10X Cloning Buffer	41044.5	N/A	N/A	N/A	N/A
Potassium chloride	2600	N/A	N/A	N/A	N/A
Ammonium sulphate	2840	N/A	N/A	N/A	N/A
Polyoxyethylene octyl phenyl ether	1800	N/A	N/A	N/A	N/A
ElectroTen-Blue Competent Cells Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
Glycerol	12600	N/A	N/A	N/A	N/A

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
SureSolution 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 µl/L Marine water	Algae - Ulva lactuca	72 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days
Cloning Mix Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	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 -	48 hours

Section 12. Ecological information

10X Cloning Buffer Potassium chloride	Acute LC50 7200 µg/l Fresh water	Neonate Fish - Oncorhynchus mykiss	96 hours
	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
Ammonium sulphate	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
	Chronic NOEC 7.5 mg/l Marine water	Algae - Phaeodactylum tricornutum - Exponential growth phase	96 hours
		Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 4500 µg/l Fresh water		
ElectroTen-Blue Competent Cells 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 µl/L Marine water	Algae - Ulva lactuca	72 hours
	Chronic NOEC 100 µl/L Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	21 days
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
SureSolution Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
Cloning Mix Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
ElectroTen-Blue Competent Cells Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
SureSolution Dimethyl sulfoxide	-	-	Not readily
10X Cloning Buffer Potassium chloride	-	-	Readily
Ammonium sulphate	-	-	Readily
Polyoxyethylene octyl phenyl ether	-	-	Readily
ElectroTen-Blue Competent Cells Dimethyl sulfoxide	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
SureSolution Dimethyl sulfoxide	-1.35	3.16	low
Cloning Mix Glycerol	-1.76	-	low
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	2.7	78.67	low
10X Cloning Buffer Potassium chloride	-0.46	-	low
Ammonium sulphate	-5.1	-	low
Polyoxyethylene octyl phenyl ether	4.86	-	high
ElectroTen-Blue Competent Cells Dimethyl sulfoxide	-1.35	3.16	low
Glycerol	-1.76	-	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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

Section 13. Disposal considerations

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) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Section 15. Regulatory information

Classification	: SureSolution	FLAMMABLE LIQUIDS - Category 4
	SureGuide Agarose	EYE IRRITATION - Category 2B
	Cloning Mix	Not applicable.
	10X Cloning Buffer	EYE IRRITATION - Category 2B
	dNTP Mix	EYE IRRITATION - Category 2A
	ElectroTen-Blue Competent Cells	Not applicable.
	pUC 18 DNA Control Plasmid	EYE IRRITATION - Category 2B
	StrataClean Resin	Not applicable.
		Not applicable.

Composition/information on ingredients

Name	%	Classification
SureSolution		
Dimethyl sulfoxide	100	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B
Cloning Mix		
Glycerol	≥50 - ≤75	EYE IRRITATION - Category 2B
10X Cloning Buffer		
Potassium chloride	≤5	EYE IRRITATION - Category 2B
Ammonium sulphate	≤3	EYE IRRITATION - Category 2A
Polyoxyethylene octyl phenyl ether	<2.5	ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1
ElectroTen-Blue Competent Cells		
Dimethyl sulfoxide	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B
Glycerol	≤10	EYE IRRITATION - Category 2B

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	10X Cloning Buffer Ammonium sulphate	7783-20-2	≤3
Supplier notification	10X Cloning Buffer Ammonium sulphate	7783-20-2	≤3

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

State regulations

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

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

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Section 15. Regulatory information

Not listed.

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

Not listed.

[Inventory list](#)

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

Section 16. Other information

[Procedure used to derive the classification](#)

Classification	Justification
SureSolution FLAMMABLE LIQUIDS - Category 4 EYE IRRITATION - Category 2B	On basis of test data On basis of test data
Cloning Mix EYE IRRITATION - Category 2B	Calculation method
10X Cloning Buffer EYE IRRITATION - Category 2A AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method Calculation method
ElectroTen-Blue Competent Cells EYE IRRITATION - Category 2B	Calculation method

[History](#)

Date of issue	: 12/19/2022
Date of previous issue	: 05/06/2020
Version	: 4
Key to abbreviations	: 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

Section 16. Other information

✔ Indicates information that has changed from previously issued version.

[Notice to reader](#)

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