

Section 2. Hazards identification

StrataClone Vector Mix amp/kan

H320 EYE IRRITATION - Category 2B

StrataClone Cloning Buffer

H319 EYE IRRITATION - Category 2A

StrataClone SoloPack

Competent Cells

H319 EYE IRRITATION - Category 2A

Ingredients of unknown toxicity

StrataClone Vector Mix amp/kan	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 30 - 60%
StrataClone Cloning Buffer	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%
StrataClone SoloPack Competent Cells	Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%
	Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 1 - 10%

2.2 GHS label elements

Hazard pictograms

StrataClone Cloning Buffer



StrataClone SoloPack Competent Cells



Signal word

StrataClone Vector Mix amp/kan	Warning
StrataClone Cloning Buffer	Warning
StrataClone Control Insert	No signal word.
StrataClone SoloPack Competent Cells	Warning
pUC 18 DNA Control Plasmid	No signal word.

Hazard statements






StrataClone Vector Mix amp/kan	H320 - Causes eye irritation.
StrataClone Cloning Buffer	H319 - Causes serious eye irritation.
StrataClone Control Insert	No known significant effects or critical hazards.
StrataClone SoloPack Competent Cells	H319 - Causes serious eye irritation.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

Precautionary statements


Prevention

StrataClone Vector Mix amp/kan	P264 - Wash hands thoroughly after handling.
StrataClone Cloning Buffer	P280 - Wear eye or face protection.
StrataClone Control Insert	P264 - Wash hands thoroughly after handling.
StrataClone SoloPack Competent Cells	Not applicable.
	P280 - Wear eye or face protection.
pUC 18 DNA Control Plasmid	P264 - Wash hands thoroughly after handling.
	Not applicable.

Section 2. Hazards identification

Response	:  StrataClone Vector Mix amp/kan	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	StrataClone 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 attention.
	StrataClone Control Insert StrataClone SoloPack 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 attention.
Storage	pUC 18 DNA Control Plasmid	Not applicable.
	:  StrataClone Vector Mix amp/kan StrataClone Cloning Buffer StrataClone Control Insert StrataClone SoloPack Competent Cells	Not applicable. Not applicable. Not applicable. Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
Disposal	:  StrataClone Vector Mix amp/kan StrataClone Cloning Buffer StrataClone Control Insert StrataClone SoloPack Competent Cells	Not applicable. Not applicable. Not applicable. Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
	Supplemental label elements	:  StrataClone Vector Mix amp/kan StrataClone Cloning Buffer StrataClone Control Insert StrataClone SoloPack Competent Cells pUC 18 DNA Control Plasmid
2.3 Other hazards		
Hazards not otherwise classified	:  StrataClone Vector Mix amp/kan StrataClone Cloning Buffer StrataClone Control Insert StrataClone SoloPack Competent Cells pUC 18 DNA Control Plasmid	None known. None known. None known. None known. None known.

Section 3. Composition/information on ingredients

Substance/mixture	:  StrataClone Vector Mix amp/kan	Mixture
	StrataClone Cloning Buffer	Mixture
	StrataClone Control Insert	Mixture
	StrataClone SoloPack Competent Cells	Mixture
	pUC 18 DNA Control Plasmid	Mixture

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
StrataClone Vector Mix amp/kan Glycerol	≥50 - ≤75	56-81-5
StrataClone Cloning Buffer Polyethylene glycol Sodium chloride	≥10 - <20 ≤3	25322-68-3 7647-14-5
StrataClone SoloPack Competent Cells Glycerol Calcium chloride (CaCl ₂), dihydrate	≥10 - ≤25 ≤3	56-81-5 10035-04-8

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

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

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	: StrataClone Vector Mix amp/kan	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.
	StrataClone 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.
	StrataClone Control Insert	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	StrataClone SoloPack 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. 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.
Inhalation	: StrataClone Vector Mix amp/kan	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.
	StrataClone Cloning Buffer	Remove victim to fresh air and keep at rest in a

Section 4. First aid measures

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.

StrataClone Control Insert

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

StrataClone SoloPack 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.

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.

Skin contact

:  StrataClone Vector Mix amp/kan

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.

StrataClone 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.

StrataClone Control Insert

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

StrataClone SoloPack 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.

Ingestion

:  StrataClone Vector Mix amp/kan

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting

Section 4. First aid measures

StrataClone Cloning Buffer	<p>occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p> <p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>
StrataClone Control Insert	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p>
StrataClone SoloPack Competent Cells	<p>Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.</p>
pUC 18 DNA Control Plasmid	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.</p>

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

Section 4. First aid measures

Eye contact	:	StrataClone Vector Mix amp/kan	Causes eye irritation.
		StrataClone Cloning Buffer	Causes serious eye irritation.
		StrataClone Control Insert	No known significant effects or critical hazards.
		StrataClone SoloPack Competent Cells	Causes serious eye irritation.
		pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Inhalation	:	StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
		StrataClone Cloning Buffer	No known significant effects or critical hazards.
		StrataClone Control Insert	No known significant effects or critical hazards.
		StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
		pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Skin contact	:	StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
		StrataClone Cloning Buffer	No known significant effects or critical hazards.
		StrataClone Control Insert	No known significant effects or critical hazards.
		StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
		pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Ingestion	:	StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
		StrataClone Cloning Buffer	No known significant effects or critical hazards.
		StrataClone Control Insert	No known significant effects or critical hazards.
		StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
		pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
<u>Over-exposure signs/symptoms</u>			
Eye contact	:	StrataClone Vector Mix amp/kan	Adverse symptoms may include the following: irritation watering redness
		StrataClone Cloning Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		StrataClone Control Insert	No specific data.
		StrataClone SoloPack Competent Cells	Adverse symptoms may include the following: pain or irritation watering redness
		pUC 18 DNA Control Plasmid	No specific data.
Inhalation	:	StrataClone Vector Mix amp/kan	No specific data.
		StrataClone Cloning Buffer	No specific data.
		StrataClone Control Insert	No specific data.
		StrataClone SoloPack Competent Cells	No specific data.
		pUC 18 DNA Control Plasmid	No specific data.
Skin contact	:	StrataClone Vector Mix amp/kan	No specific data.
		StrataClone Cloning Buffer	No specific data.
		StrataClone Control Insert	No specific data.
		StrataClone SoloPack Competent Cells	No specific data.
		pUC 18 DNA Control Plasmid	No specific data.

Section 4. First aid measures

Ingestion	: StrataClone Vector Mix amp/kan	No specific data.
	StrataClone Cloning Buffer	No specific data.
	StrataClone Control Insert	No specific data.
	StrataClone SoloPack Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.

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



Notes to physician	: StrataClone Vector Mix amp/kan	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	StrataClone Cloning Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	StrataClone Control Insert	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	StrataClone SoloPack Competent Cells	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	pUC 18 DNA Control Plasmid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: StrataClone Vector Mix amp/kan	No specific treatment.
	StrataClone Cloning Buffer	No specific treatment.
	StrataClone Control Insert	No specific treatment.
	StrataClone SoloPack Competent Cells	No specific treatment.
	pUC 18 DNA Control Plasmid	No specific treatment.
Protection of first-aiders	: StrataClone Vector Mix amp/kan	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.
	StrataClone 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.
	StrataClone Control Insert	No action shall be taken involving any personal risk or without suitable training.
	StrataClone SoloPack 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.

See toxicological information (Section 11)



Section 5. Fire-fighting measures

5.1 Extinguishing media


Section 5. Fire-fighting measures

Suitable extinguishing media	:  StrataClone Vector Mix amp/kan	Use an extinguishing agent suitable for the surrounding fire.
	StrataClone Cloning Buffer	Use an extinguishing agent suitable for the surrounding fire.
	StrataClone Control Insert	Use an extinguishing agent suitable for the surrounding fire.
	StrataClone SoloPack 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.
Unsuitable extinguishing media	:  StrataClone Vector Mix amp/kan	None known.
	StrataClone Cloning Buffer	None known.
	StrataClone Control Insert	None known.
	StrataClone SoloPack Competent Cells	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	:  StrataClone Vector Mix amp/kan	In a fire or if heated, a pressure increase will occur and the container may burst.
	StrataClone Cloning Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	StrataClone Control Insert	In a fire or if heated, a pressure increase will occur and the container may burst.
	StrataClone SoloPack 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	:  StrataClone Vector Mix amp/kan	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	StrataClone Cloning Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	StrataClone Control Insert	No specific data.
	StrataClone SoloPack Competent Cells	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	pUC 18 DNA Control Plasmid	No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters	:  StrataClone Vector Mix amp/kan	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.
	StrataClone 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.

Section 5. Fire-fighting measures

	StrataClone Control Insert	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	StrataClone SoloPack 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.
Special protective equipment for fire-fighters	: StrataClone Vector Mix amp/kan	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	StrataClone 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.
	StrataClone Control Insert	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	StrataClone SoloPack 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.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: StrataClone Vector Mix amp/kan	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.
	StrataClone Cloning Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	StrataClone Control Insert	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

Section 6. Accidental release measures

	StrataClone SoloPack Competent Cells	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.
	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.
For emergency responders :	StrataClone Vector Mix amp/kan	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".
	StrataClone Cloning 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".
	StrataClone Control Insert	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".
	StrataClone SoloPack Competent Cells	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	pUC 18 DNA Control Plasmid	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
6.2 Environmental precautions	StrataClone Vector Mix amp/kan	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).
	StrataClone 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).
	StrataClone Control Insert	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).
	StrataClone SoloPack 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

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).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : StrataClone Vector Mix amp/kan

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.

StrataClone Cloning 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.

StrataClone Control Insert

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

StrataClone SoloPack 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.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures : StrataClone Vector Mix amp/kan

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.

StrataClone Cloning Buffer

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

StrataClone Control Insert

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

Section 7. Handling and storage

	StrataClone SoloPack 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.
Advice on general occupational hygiene	:  StrataClone Vector Mix amp/kan	Put on appropriate personal protective equipment (see Section 8). 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.
	StrataClone 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.
	StrataClone Control Insert	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	StrataClone SoloPack 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.
7.2 Conditions for safe storage, including any incompatibilities	:  StrataClone Vector Mix amp/kan	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

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

7.3 Specific end use(s)

Recommendations

StrataClone Vector Mix amp/kan	Industrial applications, Professional applications.
StrataClone Cloning Buffer	Industrial applications, Professional applications.
StrataClone Control Insert	Industrial applications, Professional applications.
StrataClone SoloPack Competent Cells	Industrial applications, Professional applications.
pUC 18 DNA Control Plasmid	Industrial applications, Professional applications.

Industrial sector specific solutions

StrataClone Vector Mix amp/kan	Not applicable.
StrataClone Cloning Buffer	Not applicable.
StrataClone Control Insert	Not applicable.
StrataClone SoloPack Competent Cells	Not applicable.
pUC 18 DNA Control Plasmid	Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
StrataClone Vector Mix amp/kan Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust
StrataClone Cloning Buffer Polyethylene glycol Sodium chloride	AIHA WEEL (United States, 10/2011). TWA: 10 mg/m ³ 8 hours. Form: Aerosol None.
StrataClone SoloPack Competent Cells Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust
Calcium chloride (CaCl ₂), dihydrate	None.

8.2 Exposure controls

Appropriate engineering controls


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

Environmental exposure controls

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

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

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	StrataClone Vector Mix amp/kan	Liquid.
		StrataClone Cloning Buffer	Liquid.
		StrataClone Control Insert	Liquid.
		StrataClone SoloPack Competent Cells	Liquid.
		pUC 18 DNA Control Plasmid	Liquid.
Color	:	StrataClone Vector Mix amp/kan	Not available.
		StrataClone Cloning Buffer	Not available.
		StrataClone Control Insert	Not available.
		StrataClone SoloPack Competent Cells	Not available.
		pUC 18 DNA Control Plasmid	Not available.
Odor	:	StrataClone Vector Mix amp/kan	Not available.
		StrataClone Cloning Buffer	Not available.
		StrataClone Control Insert	Not available.
		StrataClone SoloPack Competent Cells	Not available.
		pUC 18 DNA Control Plasmid	Not available.
Odor threshold	:	StrataClone Vector Mix amp/kan	Not available.
		StrataClone Cloning Buffer	Not available.
		StrataClone Control Insert	Not available.
		StrataClone SoloPack Competent Cells	Not available.
		pUC 18 DNA Control Plasmid	Not available.
pH	:	StrataClone Vector Mix amp/kan	Not available.
		StrataClone Cloning Buffer	Not available.
		StrataClone Control Insert	Not available.
		StrataClone SoloPack Competent Cells	Not available.
		pUC 18 DNA Control Plasmid	7.5

Section 9. Physical and chemical properties

Melting point	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	0°C (32°F)
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	0°C (32°F)
Boiling point	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	100°C (212°F)
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	100°C (212°F)
Flash point	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Evaporation rate	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Flammability (solid, gas)	: StrataClone Vector Mix amp/kan	Not applicable.
	StrataClone Cloning Buffer	Not applicable.
	StrataClone Control Insert	Not applicable.
	StrataClone SoloPack Competent Cells	Not applicable.
	pUC 18 DNA Control Plasmid	Not applicable.
Lower and upper explosive (flammable) limits	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Vapor pressure	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Vapor density	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Relative density	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.

Section 9. Physical and chemical properties

Solubility	: StrataClone Vector Mix amp/kan	Soluble in the following materials: cold water and hot water.
	StrataClone Cloning Buffer	Soluble in the following materials: cold water and hot water.
	StrataClone Control Insert	Easily soluble in the following materials: cold water and hot water.
	StrataClone SoloPack Competent Cells	Soluble in the following materials: cold water and hot water.
	pUC 18 DNA Control Plasmid	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Auto-ignition temperature	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Decomposition temperature	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.
Viscosity	: StrataClone Vector Mix amp/kan	Not available.
	StrataClone Cloning Buffer	Not available.
	StrataClone Control Insert	Not available.
	StrataClone SoloPack Competent Cells	Not available.
	pUC 18 DNA Control Plasmid	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: StrataClone Vector Mix amp/kan	No specific test data related to reactivity available for this product or its ingredients.
	StrataClone Cloning Buffer	No specific test data related to reactivity available for this product or its ingredients.
	StrataClone Control Insert	No specific test data related to reactivity available for this product or its ingredients.
	StrataClone SoloPack 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.
10.2 Chemical stability	: StrataClone Vector Mix amp/kan	The product is stable.
	StrataClone Cloning Buffer	The product is stable.
	StrataClone Control Insert	The product is stable.
	StrataClone SoloPack Competent Cells	The product is stable.
	pUC 18 DNA Control Plasmid	The product is stable.

Section 10. Stability and reactivity

10.3 Possibility of hazardous reactions	: StrataClone Vector Mix amp/kan	Under normal conditions of storage and use, hazardous reactions will not occur.
	StrataClone Cloning Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	StrataClone Control Insert	Under normal conditions of storage and use, hazardous reactions will not occur.
	StrataClone SoloPack 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.
10.4 Conditions to avoid	: StrataClone Vector Mix amp/kan	No specific data.
	StrataClone Cloning Buffer	No specific data.
	StrataClone Control Insert	No specific data.
	StrataClone SoloPack Competent Cells	No specific data.
	pUC 18 DNA Control Plasmid	No specific data.
10.5 Incompatible materials	: StrataClone Vector Mix amp/kan	May react or be incompatible with oxidizing materials.
	StrataClone Cloning Buffer	May react or be incompatible with oxidizing materials.
	StrataClone Control Insert	May react or be incompatible with oxidizing materials.
	StrataClone SoloPack Competent Cells	May react or be incompatible with oxidizing materials.
	pUC 18 DNA Control Plasmid	May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	: StrataClone Vector Mix amp/kan	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	StrataClone Cloning Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	StrataClone Control Insert	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	StrataClone SoloPack 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.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
StrataClone Vector Mix amp/kan Glycerol	LD50 Oral	Rat	12600 mg/kg	-
StrataClone Cloning Buffer Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-
StrataClone SoloPack Competent Cells Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
StrataClone Vector Mix amp/kan Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
StrataClone Cloning Buffer Polyethylene glycol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 milligrams 24 hours 500 milligrams	- -
StrataClone SoloPack Competent Cells Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
StrataClone Cloning Buffer Polyethylene glycol	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

StrataClone Vector Mix amp/kan	Routes of entry anticipated: Oral, Dermal, Inhalation.
StrataClone Cloning Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
StrataClone Control Insert	Not available.
StrataClone SoloPack Competent Cells	Routes of entry anticipated: Oral, Dermal, Inhalation.
pUC 18 DNA Control Plasmid	Not available.

Potential acute health effects

Eye contact

StrataClone Vector Mix amp/kan	Causes eye irritation.
StrataClone Cloning Buffer	Causes serious eye irritation.
StrataClone Control Insert	No known significant effects or critical hazards.
StrataClone SoloPack Competent Cells	Causes serious eye irritation.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

Inhalation

StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
StrataClone Cloning Buffer	No known significant effects or critical hazards.
StrataClone Control Insert	No known significant effects or critical hazards.
StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

Skin contact

StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
StrataClone Cloning Buffer	No known significant effects or critical hazards.
StrataClone Control Insert	No known significant effects or critical hazards.
StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

Ingestion

StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
StrataClone Cloning Buffer	No known significant effects or critical hazards.
StrataClone Control Insert	No known significant effects or critical hazards.
StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact

StrataClone Vector Mix amp/kan	Adverse symptoms may include the following: irritation watering redness
StrataClone Cloning Buffer	Adverse symptoms may include the following: pain or irritation watering

Section 11. Toxicological information

	StrataClone Control Insert	redness
	StrataClone SoloPack Competent Cells	No specific data.
		Adverse symptoms may include the following:
		pain or irritation
		watering
		redness
Inhalation	pUC 18 DNA Control Plasmid	No specific data.
	: StrataClone Vector Mix amp/kan	No specific data.
	StrataClone Cloning Buffer	No specific data.
	StrataClone Control Insert	No specific data.
	StrataClone SoloPack Competent Cells	No specific data.
Skin contact	pUC 18 DNA Control Plasmid	No specific data.
	: StrataClone Vector Mix amp/kan	No specific data.
	StrataClone Cloning Buffer	No specific data.
	StrataClone Control Insert	No specific data.
	StrataClone SoloPack Competent Cells	No specific data.
Ingestion	pUC 18 DNA Control Plasmid	No specific data.
	: StrataClone Vector Mix amp/kan	No specific data.
	StrataClone Cloning Buffer	No specific data.
	StrataClone Control Insert	No specific data.
	StrataClone SoloPack Competent Cells	No specific data.
	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

General	: StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
	StrataClone Cloning Buffer	No known significant effects or critical hazards.
	StrataClone Control Insert	No known significant effects or critical hazards.
	StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Carcinogenicity	: StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
	StrataClone Cloning Buffer	No known significant effects or critical hazards.
	StrataClone Control Insert	No known significant effects or critical hazards.
	StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.
Mutagenicity	: StrataClone Vector Mix amp/kan	No known significant effects or critical hazards.
	StrataClone Cloning Buffer	No known significant effects or critical hazards.
	StrataClone Control Insert	No known significant effects or critical hazards.
	StrataClone SoloPack Competent Cells	No known significant effects or critical hazards.
	pUC 18 DNA Control Plasmid	No known significant effects or critical hazards.

Section 11. Toxicological information

Teratogenicity	: <input checked="" type="checkbox"/> StrataClone Vector Mix amp/kan StrataClone Cloning Buffer StrataClone Control Insert StrataClone SoloPack Competent Cells 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.
Developmental effects	: <input checked="" type="checkbox"/> StrataClone Vector Mix amp/kan StrataClone Cloning Buffer StrataClone Control Insert StrataClone SoloPack Competent Cells 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.
Fertility effects	: <input checked="" type="checkbox"/> StrataClone Vector Mix amp/kan StrataClone Cloning Buffer StrataClone Control Insert StrataClone SoloPack Competent Cells 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.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
<input checked="" type="checkbox"/> StrataClone Cloning Buffer Oral	122950.8 mg/kg

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> StrataClone Vector Mix amp/kan Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
StrataClone Cloning Buffer Polyethylene glycol Sodium chloride	Acute LC50 >1000000 µg/l Fresh water Acute EC50 4.74 g/L Fresh water Acute EC50 519.6 mg/l Fresh water Acute EC50 402600 µg/l Fresh water Acute IC50 6.87 g/L Fresh water Acute LC50 1000000 µg/l Fresh water Chronic LC10 781 mg/l Fresh water Chronic NOEC 6 g/L Fresh water Chronic NOEC 0.314 g/L Fresh water Chronic NOEC 100 mg/l Fresh water	Fish - Salmo salar - Parr Algae - Chlamydomonas reinhardtii Crustaceans - Cypris subglobosa Daphnia - Daphnia magna Aquatic plants - Lemna minor Fish - Morone saxatilis - Larvae Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) Aquatic plants - Lemna minor Daphnia - Daphnia pulex Fish - Gambusia holbrooki - Adult	96 hours 96 hours 48 hours 48 hours 96 hours 96 hours 3 weeks 96 hours 21 days 8 weeks
StrataClone SoloPack Competent Cells Glycerol Calcium chloride (CaCl ₂), dihydrate	Acute LC50 54000 mg/l Fresh water Acute EC50 2900 mg/l Fresh water	Fish - Oncorhynchus mykiss Algae	96 hours 72 hours

Section 12. Ecological information

	Acute NOEC 2000 mg/l Fresh water	Daphnia	48 hours
--	----------------------------------	---------	----------

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
StrataClone Vector Mix amp/kan Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
StrataClone SoloPack Competent Cells Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
StrataClone Vector Mix amp/kan Glycerol	-1.76	-	low
StrataClone Cloning Buffer Polyethylene glycol	-	3.2	low
StrataClone SoloPack Competent Cells Glycerol	-1.76	-	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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

Section 13. Disposal considerations

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

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

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

Section 14. Transport information

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

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

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

Section 15. Regulatory information

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

U.S. Federal regulations : **TSCA 8(a) PAIR:** Polyoxyethylene octyl phenyl ether
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 311: Edetic acid; Potassium hydroxide

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

Classification	:	StrataClone Vector Mix amp/kan	EYE IRRITATION - Category 2B
		StrataClone Cloning Buffer	EYE IRRITATION - Category 2A
		StrataClone Control Insert	Not applicable.
		StrataClone SoloPack Competent Cells	EYE IRRITATION - Category 2A
		pUC 18 DNA Control Plasmid	Not applicable.

Section 15. Regulatory information

Composition/information on ingredients

Name	%	Classification
StrataClone Vector Mix amp/kan		
Glycerol	≥50 - ≤75	EYE IRRITATION - Category 2A
StrataClone Cloning Buffer		
Polyethylene glycol	≥10 - <20	EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Sodium chloride	≤3	EYE IRRITATION - Category 2A
StrataClone SoloPack Competent Cells		
Glycerol	≥10 - ≤25	EYE IRRITATION - Category 2A
Calcium chloride (CaCl ₂), dihydrate	≤3	EYE IRRITATION - Category 2A

State regulations

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

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

Section 15. Regulatory information

Turkey	:	<input checked="" type="checkbox"/> Not determined.
United States	:	All components are listed or exempted.
Viet Nam	:	<input checked="" type="checkbox"/> Not determined.

Section 16. Other information

History

Date of issue	:	12/31/2017
Date of previous issue	:	10/27/2015.
Version	:	2

Indicates information that has changed from previously issued version.

Notice to reader

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.