

SAFETY DATA SHEET

ElectroTen-Blue Electroporation-Competent Cells, Part Number 200159

Section 1. Identification

1.1 Product identifier

Product name	:	ElectroTen-Blue Electroporation-Competent Cells, Part Number 200159	
Part No. (Chemical Kit)	:	200159	
Part No.	:	<input checked="" type="checkbox"/> ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	200159-41 200480-52 200231-42
Validation date	:	10/25/2017	

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

Material uses	:	<input checked="" type="checkbox"/> Analytical reagent. For Research Use Only. Not for use in diagnostic procedures.	
		<input checked="" type="checkbox"/> ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	0.5 ml (5 x 0.1 ml) 0.1 ml 0.01 ml (0.1 ng/μl)

1.3 Details of the supplier of the safety data sheet

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

In case of emergency	:	CHEMTREC®: 1-800-424-9300
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Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status	:	<input checked="" type="checkbox"/> ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	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. 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.
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Classification of the substance or mixture

ElectroTen-Blue Competent Cells

H320 EYE IRRITATION - Category 2B

Ingredients of unknown toxicity : ElectroTen-Blue Competent Cells Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%

2.2 GHS label elements

Section 2. Hazards identification

Signal word	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Warning No signal word. No signal word.
Hazard statements	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	H320 - Causes eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards.
<u>Precautionary statements</u>		
Prevention	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	P264 - Wash hands thoroughly after handling. Not applicable. Not applicable.
Response	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention. Not applicable. Not applicable.
Storage	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not applicable. Not applicable. Not applicable.
Disposal	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not applicable. Not applicable. Not applicable.
Supplemental label elements	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	None known. None known. None known.
<u>2.3 Other hazards</u>		
Hazards not otherwise classified	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	None known. None known. None known.

Section 3. Composition/information on ingredients

Substance/mixture	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Mixture Mixture Mixture
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Ingredient name	%	CAS number
ElectroTen-Blue Competent Cells		
Dimethyl sulfoxide	≥10 - ≤25	67-68-5
Glycerol	≤10	56-81-5

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	: 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.
	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.
	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	: 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.
	StrataClean Resin	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	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	: 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.
	StrataClean Resin	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	pUC 18 DNA Control Plasmid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: ElectroTen-Blue Competent Cells	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never

Section 4. First aid measures

StrataClean Resin	<p>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 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>
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

Eye contact	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Causes eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards.
Inhalation	: ElectroTen-Blue Competent Cells StrataClean Resin 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.
Skin contact	: ElectroTen-Blue Competent Cells StrataClean Resin 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.
Ingestion	: ElectroTen-Blue Competent Cells StrataClean Resin 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.

Over-exposure signs/symptoms

Eye contact	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Adverse symptoms may include the following: irritation watering redness No specific data. No specific data.
Inhalation	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	No specific data. No specific data. No specific data.
Skin contact	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	No specific data. No specific data. No specific data.
Ingestion	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	No specific data. No specific data. No specific data.

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

Section 4. First aid measures

Notes to physician	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	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. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	No specific treatment. No specific treatment. No specific treatment.
Protection of first-aiders	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	None known. None known. None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides phosphorus oxides Decomposition products may include the following materials: carbon dioxide carbon monoxide metal oxide/oxides No specific data.

Section 5. Fire-fighting measures

5.3 Advice for firefighters

Special protective actions for fire-fighters

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.
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.
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

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.
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.
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

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

Section 6. Accidental release measures

For emergency responders	: ElectroTen-Blue 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".
	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".
	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	: 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).
	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).
	pUC 18 DNA Control Plasmid	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	: 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.
	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.
	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

Section 7. Handling and storage

Protective measures	: 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.
	StrataClean Resin	Put on appropriate personal protective equipment (see Section 8).
	pUC 18 DNA Control Plasmid	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: 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.
	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.
	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	: 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.
	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.
	pUC 18 DNA Control Plasmid	Store in accordance with local regulations. Store in

Section 7. Handling and storage

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	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not applicable. Not applicable. Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ElectroTen-Blue Competent Cells Dimethyl sulfoxide Glycerol	AIHA WEEL (United States, 10/2011). 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, 6/2016). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust

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.
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Section 8. Exposure controls/personal protection

- 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: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : 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	:	ElectroTen-Blue Competent Cells	Liquid.
		StrataClean Resin	Liquid.
		pUC 18 DNA Control Plasmid	Liquid.
Color	:	ElectroTen-Blue Competent Cells	Not available.
		StrataClean Resin	Not available.
		pUC 18 DNA Control Plasmid	Not available.
Odor	:	ElectroTen-Blue Competent Cells	Not available.
		StrataClean Resin	Not available.
		pUC 18 DNA Control Plasmid	Not available.
Odor threshold	:	ElectroTen-Blue Competent Cells	Not available.
		StrataClean Resin	Not available.
		pUC 18 DNA Control Plasmid	Not available.
pH	:	ElectroTen-Blue Competent Cells	7.5
		StrataClean Resin	7.5
		pUC 18 DNA Control Plasmid	7.5
Melting point	:	ElectroTen-Blue Competent Cells	Not available.
		StrataClean Resin	Not available.
		pUC 18 DNA Control Plasmid	0°C (32°F)
Boiling point	:	ElectroTen-Blue Competent Cells	Not available.
		StrataClean Resin	Not available.
		pUC 18 DNA Control Plasmid	100°C (212°F)
Flash point	:	ElectroTen-Blue Competent Cells	Not available.
		StrataClean Resin	Not available.
		pUC 18 DNA Control Plasmid	Not available.
Evaporation rate	:	ElectroTen-Blue Competent Cells	Not available.
		StrataClean Resin	Not available.
		pUC 18 DNA Control Plasmid	Not available.
Flammability (solid, gas)	:	ElectroTen-Blue Competent Cells	Not applicable.
		StrataClean Resin	Not applicable.
		pUC 18 DNA Control Plasmid	Not applicable.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.
Vapor pressure	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.
Vapor density	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.
Relative density	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.
Solubility	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Soluble in the following materials: cold water and hot water. Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.
Auto-ignition temperature	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.
Decomposition temperature	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.
Viscosity	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Not available. Not available. Not available.

Section 10. Stability and reactivity

10.1 Reactivity	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: ElectroTen-Blue Competent Cells StrataClean Resin pUC 18 DNA Control Plasmid	No specific data. No specific data. No specific data.

Section 10. Stability and reactivity

10.5 Incompatible materials : ElectroTen-Blue Competent Cells May react or be incompatible with oxidizing materials.
 StrataClean Resin 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 : ElectroTen-Blue Competent Cells 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.
 pUC 18 DNA Control Plasmid Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ElectroTen-Blue Competent Cells				
Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
ElectroTen-Blue Competent Cells					
Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	100 milligrams	-
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.

Section 11. Toxicological information

Teratogenicity

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 : ElectroTen-Blue Competent Cells Routes of entry anticipated: Oral, Dermal, Inhalation.
 StrataClean Resin Not available.
 pUC 18 DNA Control Plasmid Not available.

Potential acute health effects

Eye contact : ElectroTen-Blue Competent Cells Causes eye irritation.
 StrataClean Resin No known significant effects or critical hazards.
 pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Inhalation : ElectroTen-Blue Competent Cells No known significant effects or critical hazards.
 StrataClean Resin No known significant effects or critical hazards.
 pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Skin contact : ElectroTen-Blue Competent Cells No known significant effects or critical hazards.
 StrataClean Resin No known significant effects or critical hazards.
 pUC 18 DNA Control Plasmid No known significant effects or critical hazards.

Ingestion : ElectroTen-Blue Competent Cells No known significant effects or critical hazards.
 StrataClean Resin 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 : ElectroTen-Blue Competent Cells Adverse symptoms may include the following:
 irritation
 watering
 redness
 StrataClean Resin No specific data.
 pUC 18 DNA Control Plasmid No specific data.

Inhalation : ElectroTen-Blue Competent Cells No specific data.
 StrataClean Resin No specific data.
 pUC 18 DNA Control Plasmid No specific data.

Skin contact : ElectroTen-Blue Competent Cells No specific data.
 StrataClean Resin No specific data.
 pUC 18 DNA Control Plasmid No specific data.

Ingestion : ElectroTen-Blue Competent Cells No specific data.
 StrataClean Resin 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

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General	: ElectroTen-Blue Competent Cells StrataClean Resin 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.
Carcinogenicity	: ElectroTen-Blue Competent Cells StrataClean Resin 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.
Mutagenicity	: ElectroTen-Blue Competent Cells StrataClean Resin 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.
Teratogenicity	: ElectroTen-Blue Competent Cells StrataClean Resin 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.
Developmental effects	: ElectroTen-Blue Competent Cells StrataClean Resin 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.
Fertility effects	: ElectroTen-Blue Competent Cells StrataClean Resin 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.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
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 Chronic NOEC 100 µl/L Marine water	Fish - Pimephales promelas Algae - Ulva lactuca	96 hours 72 hours
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
ElectroTen-Blue Competent Cells Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

12.3 Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
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. Empty containers or liners may retain some product residues. 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 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) 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

Classification : ElectroTen-Blue Competent Cells Immediate (acute) health hazard
StrataClean Resin Not applicable.
pUC 18 DNA Control Plasmid Not applicable.

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<input checked="" type="checkbox"/> ElectroTen-Blue Competent Cells						
Dimethyl sulfoxide	≥10 - ≤25	Yes.	No.	No.	Yes.	No.
Glycerol	≤10	No.	No.	No.	Yes.	No.

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; METHANE, SULFINYLBIIS-; 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)

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.
Europe	: All components are listed or exempted.
Japan	: <input checked="" type="checkbox"/> Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
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	: 10/25/2017
Date of previous issue	: 07/31/2015.
Version	: 2

Indicates information that has changed from previously issued version.

[Notice to reader](#)

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