SAFETY DATA SHEET

Agilent Technologies

SureGuide Cas9 Programmable Nuclease Kit - 100 Reactions, Part Number 5190-7716

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Product name : SureGuide Cas9 Programmable Nuclease Kit - 100 Reactions, Part Number 5190-7716

Part no. (chemical kit) : 5190-7716

Part no. :

RNase Free Water	740000-42
Control DNA Target	5190-7536
10X Cas9 Digestion Buffer	5190-7540
Cas9 Nuclease	5190-7541
Control gRNA	5190-7539

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

Material uses : Analytical reagent.

RNase Free Water	1.5 ml
Control DNA Target	0.02 ml (20 µl 50 ng/ µl)
10X Cas9 Digestion Buffer	0.22 ml
Cas9 Nuclease	0.1 ml (100 reactions)
Control gRNA	0.01 ml (10 µl 1 µM)

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition :

RNase Free Water	Mono-constituent substance
Control DNA Target	Mixture
10X Cas9 Digestion Buffer	Mixture
Cas9 Nuclease	Mixture
Control gRNA	Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

10X Cas9 Digestion Buffer

H315	SKIN CORROSION/IRRITATION - Category 2
H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

SECTION 2: Hazards identification

Ingredients of unknown toxicity	:	10X Cas9 Digestion Buffer	Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 10 - 30% 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: 10 - 30%
		Cas9 Nuclease	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: 30 - 60%
Ingredients of unknown ecotoxicity	:	10X Cas9 Digestion Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 15.8%

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms : 10X Cas9 Digestion Buffer

Signal word	:	RNase Free Water	No signal word.
		Control DNA Target	No signal word.
		10X Cas9 Digestion Buffer	Warning
		Cas9 Nuclease	No signal word.
		Control gRNA	No signal word.
Hazard statements	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	H319 - Causes serious eye irritation. H315 - Causes skin irritation.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.

Precautionary statements

Prevention	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion Buffer	P280 - Wear protective gloves. Wear eye or face protection. P264 - Wash hands thoroughly after handling.
		Cas9 Nuclease	Not applicable.
		Control gRNA	Not applicable.
Response	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion 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.
		Cas9 Nuclease	Not applicable.
		Control gRNA	Not applicable.
Storage	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion Buffer	Not applicable.
		Cas9 Nuclease	Not applicable.
		Control gRNA	Not applicable.

SECTION 2: Hazards identification

Disposal	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion Buffer	Not applicable.
		Cas9 Nuclease	Not applicable.
		Control gRNA	Not applicable.
Hazardous ingredients	:	10X Cas9 Digestion Buffer	Not applicable.
Supplemental label elements	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion Buffer	Not applicable.
		Cas9 Nuclease	Contains 2-mercaptoethanol. May produce an allergic reaction. Safety data sheet available on request.
		Control gRNA	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion Buffer	Not applicable.
		Cas9 Nuclease	Not applicable.
		Control gRNA	Not applicable.
Special packaging requirements			
Tactile warning of danger	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion Buffer	Not applicable.
		Cas9 Nuclease	Not applicable.
		Control gRNA	Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	:	RNase Free Water	None known.
		Control DNA Target	None known.
		10X Cas9 Digestion Buffer	None known.
		Cas9 Nuclease	None known.
		Control gRNA	None known.

SECTION 3: Composition/information on ingredients

3.1 Substances	:	RNase Free Water	Mono-constituent substance
		Control DNA Target	Mixture
		10X Cas9 Digestion Buffer	Mixture
		Cas9 Nuclease	Mixture
		Control gRNA	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
RNase Free Water				
Water	REACH #: Annex IV EC: 231-791-2 CAS: 7732-18-5	100	Not classified.	[A]
10X Cas9 Digestion Buffer				
2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≥10 - <20	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≤3	Eye Irrit. 2, H319	[1]

SECTION 3: Composition/information on ingredients

Cas9 Nuclease Glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified. **See Section 16 for the full text of the H statements declared above.**	[2]

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.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern
[6] Additional disclosure due to company policy
[A] Constituent
[B] Impurity
[C] Stabilising additive

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	:	RNase Free Water	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		Control DNA Target	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.
		10X Cas9 Digestion 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.
		Cas9 Nuclease	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		Control gRNA	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	:	RNase Free Water	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		Control DNA Target	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		10X Cas9 Digestion Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		Cas9 Nuclease	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if

SECTION 4: First aid measures

			symptoms occur.
		Control gRNA	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	:	RNase Free Water	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Control DNA Target	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		10X Cas9 Digestion Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		Cas9 Nuclease	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Control gRNA	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	RNase Free Water	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.
		Control DNA Target	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.
		10X Cas9 Digestion Buffer	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting 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.
		Cas9 Nuclease	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.
		Control gRNA	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.

SECTION 4: First aid measures

Protection of first-aiders	:	RNase Free Water	No action shall be taken involving any personal risk or without suitable training.
		Control DNA Target	No action shall be taken involving any personal risk or without suitable training.
		10X Cas9 Digestion 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.
		Cas9 Nuclease	No action shall be taken involving any personal risk or without suitable training.
		Control gRNA	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	Causes serious eye irritation.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.
Inhalation	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.
Skin contact	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	Causes skin irritation.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.
Ingestion	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	RNase Free Water	No specific data.
		Control DNA Target	No specific data.
		10X Cas9 Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		Cas9 Nuclease	No specific data.
		Control gRNA	No specific data.
Inhalation	:	RNase Free Water	No specific data.
		Control DNA Target	No specific data.
		10X Cas9 Digestion Buffer	No specific data.
		Cas9 Nuclease	No specific data.
		Control gRNA	No specific data.

SECTION 4: First aid measures

Skin contact	:	RNase Free Water	No specific data.
		Control DNA Target	No specific data.
		10X Cas9 Digestion Buffer	Adverse symptoms may include the following: irritation redness
		Cas9 Nuclease	No specific data.
		Control gRNA	No specific data.
Ingestion	:	RNase Free Water	No specific data.
		Control DNA Target	No specific data.
		10X Cas9 Digestion Buffer	No specific data.
		Cas9 Nuclease	No specific data.
		Control gRNA	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	RNase Free Water	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Control DNA Target	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		10X Cas9 Digestion Buffer	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		Cas9 Nuclease	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Control gRNA	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	:	RNase Free Water	No specific treatment.
		Control DNA Target	No specific treatment.
		10X Cas9 Digestion Buffer	No specific treatment.
		Cas9 Nuclease	No specific treatment.
		Control gRNA	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	RNase Free Water	Use an extinguishing agent suitable for the surrounding fire.
		Control DNA Target	Use an extinguishing agent suitable for the surrounding fire.
		10X Cas9 Digestion Buffer	Use an extinguishing agent suitable for the surrounding fire.
		Cas9 Nuclease	Use an extinguishing agent suitable for the surrounding fire.
		Control gRNA	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	RNase Free Water	None known.
		Control DNA Target	None known.
		10X Cas9 Digestion Buffer	None known.
		Cas9 Nuclease	None known.
		Control gRNA	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	:	RNase Free Water	In a fire or if heated, a pressure increase will occur and the container may burst.
		Control DNA Target	In a fire or if heated, a pressure increase will occur and the container may burst.
		10X Cas9 Digestion Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
		Cas9 Nuclease	In a fire or if heated, a pressure increase will occur and the container may burst.

SECTION 5: Firefighting measures

	Control gRNA	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products :	RNase Free Water	No specific data.
	Control DNA Target	No specific data.
	10X Cas9 Digestion Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	Cas9 Nuclease	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	Control gRNA	No specific data.

5.3 Advice for firefighters

Special precautions for fire-fighters :	RNase Free Water	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	Control DNA Target	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	10X Cas9 Digestion 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.
	Cas9 Nuclease	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	Control gRNA	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 :	RNase Free Water	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Control DNA Target	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	10X Cas9 Digestion Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Cas9 Nuclease	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Control gRNA	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for

SECTION 5: Firefighting measures

fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	RNase Free Water	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 spilt material. Put on appropriate personal protective equipment.
		Control DNA Target	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 spilt material. Put on appropriate personal protective equipment.
		10X Cas9 Digestion 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 spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
		Cas9 Nuclease	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 spilt material. Put on appropriate personal protective equipment.
		Control gRNA	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 spilt material. Put on appropriate personal protective equipment.
For emergency responders	:	RNase Free Water	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
		Control DNA Target	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
		10X Cas9 Digestion Buffer	If specialised 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".
		Cas9 Nuclease	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
		Control gRNA	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

SECTION 6: Accidental release measures

6.2 Environmental precautions

RNase Free Water	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Control DNA Target	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
10X Cas9 Digestion Buffer	Avoid dispersal of spilt 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).
Cas9 Nuclease	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Control gRNA	Avoid dispersal of spilt 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 material for containment and cleaning up

Methods for cleaning up

RNase Free Water	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Control DNA Target	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
10X Cas9 Digestion 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.
Cas9 Nuclease	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Control gRNA	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.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	:	RNase Free Water	Put on appropriate personal protective equipment (see Section 8).
		Control DNA Target	Put on appropriate personal protective equipment (see Section 8).
		10X Cas9 Digestion Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour 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.
		Cas9 Nuclease	Put on appropriate personal protective equipment (see Section 8).
		Control gRNA	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:	RNase Free Water	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		Control DNA Target	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		10X Cas9 Digestion 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.
		Cas9 Nuclease	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
		Control gRNA	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

Storage	:	RNase Free Water	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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
		Control DNA Target	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and

SECTION 7: Handling and storage

	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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
10X Cas9 Digestion 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Cas9 Nuclease	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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Control gRNA	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 unlabelled 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	: RNase Free Water	Industrial applications, Professional applications.
	Control DNA Target	Industrial applications, Professional applications.
	10X Cas9 Digestion Buffer	Industrial applications, Professional applications.
	Cas9 Nuclease	Industrial applications, Professional applications.
	Control gRNA	Industrial applications, Professional applications.
Industrial sector specific solutions	: RNase Free Water	Not applicable.
	Control DNA Target	Not applicable.
	10X Cas9 Digestion Buffer	Not applicable.
	Cas9 Nuclease	Not applicable.
	Control gRNA	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Cas9 Nuclease Glycerol	**EH40/2005 WELs (United Kingdom (UK), 12/2011).** TWA: 10 mg/m³ 8 hours. Form: Mist

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

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

Individual protection measures

Hygiene measures : 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: 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 8: Exposure controls/personal protection

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: RNase Free Water	Liquid.
	Control DNA Target	Liquid.
	10X Cas9 Digestion Buffer	Liquid.
	Cas9 Nuclease	Liquid.
	Control gRNA	Liquid.
Colour	: RNase Free Water	Colourless.
	Control DNA Target	Not available.
	10X Cas9 Digestion Buffer	Not available.
	Cas9 Nuclease	Not available.
	Control gRNA	Not available.
Odour	: RNase Free Water	Odourless.
	Control DNA Target	Not available.
	10X Cas9 Digestion Buffer	Not available.
	Cas9 Nuclease	Not available.
	Control gRNA	Not available.
Odour threshold	: RNase Free Water	Not available.
	Control DNA Target	Not available.
	10X Cas9 Digestion Buffer	Not available.
	Cas9 Nuclease	Not available.
	Control gRNA	Not available.
pH	: RNase Free Water	7
	Control DNA Target	8
	10X Cas9 Digestion Buffer	7
	Cas9 Nuclease	7
	Control gRNA	7
Melting point/freezing point	: RNase Free Water	0°C
	Control DNA Target	0°C
	10X Cas9 Digestion Buffer	Not available.
	Cas9 Nuclease	Not available.
	Control gRNA	0°C
Initial boiling point and boiling range	: RNase Free Water	100°C
	Control DNA Target	100°C
	10X Cas9 Digestion Buffer	Not available.
	Cas9 Nuclease	Not available.
	Control gRNA	100°C
Flash point	: RNase Free Water	Not applicable.
	Control DNA Target	Not available.
	10X Cas9 Digestion Buffer	Not available.
	Cas9 Nuclease	Not available.
	Control gRNA	Not available.

SECTION 9: Physical and chemical properties

Evaporation rate	:	RNase Free Water	Not available.
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Flammability (solid, gas)	:	RNase Free Water	Not applicable.
		Control DNA Target	Not applicable.
		10X Cas9 Digestion Buffer	Not applicable.
		Cas9 Nuclease	Not applicable.
		Control gRNA	Not applicable.
Upper/lower flammability or explosive limits	:	RNase Free Water	Not available.
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Vapour pressure	:	RNase Free Water	3.2 kPa [room temperature]
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Vapour density	:	RNase Free Water	0.62 [Air = 1]
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Relative density	:	RNase Free Water	1
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Solubility(ies)	:	RNase Free Water	Easily soluble in the following materials: cold water and hot water.
		Control DNA Target	Easily soluble in the following materials: cold water and hot water.
		10X Cas9 Digestion Buffer	Soluble in the following materials: cold water and hot water.
		Cas9 Nuclease	Soluble in the following materials: cold water and hot water.
		Control gRNA	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	RNase Free Water	-1.38
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Auto-ignition temperature	:	RNase Free Water	Not applicable.
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.

SECTION 9: Physical and chemical properties

Decomposition temperature	:	RNase Free Water	Not available.
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Viscosity	:	RNase Free Water	Not available.
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Explosive properties	:	RNase Free Water	Not available.
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.
Oxidising properties	:	RNase Free Water	Not available.
		Control DNA Target	Not available.
		10X Cas9 Digestion Buffer	Not available.
		Cas9 Nuclease	Not available.
		Control gRNA	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	RNase Free Water	No specific test data related to reactivity available for this product or its ingredients.
		Control DNA Target	No specific test data related to reactivity available for this product or its ingredients.
		10X Cas9 Digestion Buffer	No specific test data related to reactivity available for this product or its ingredients.
		Cas9 Nuclease	No specific test data related to reactivity available for this product or its ingredients.
		Control gRNA	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	RNase Free Water	The product is stable.
		Control DNA Target	The product is stable.
		10X Cas9 Digestion Buffer	The product is stable.
		Cas9 Nuclease	The product is stable.
		Control gRNA	The product is stable.
10.3 Possibility of hazardous reactions	:	RNase Free Water	Under normal conditions of storage and use, hazardous reactions will not occur.
		Control DNA Target	Under normal conditions of storage and use, hazardous reactions will not occur.
		10X Cas9 Digestion Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
		Cas9 Nuclease	Under normal conditions of storage and use, hazardous reactions will not occur.
		Control gRNA	Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 10: Stability and reactivity

10.4 Conditions to avoid :

RNase Free Water	No specific data.
Control DNA Target	No specific data.
10X Cas9 Digestion Buffer	No specific data.
Cas9 Nuclease	No specific data.
Control gRNA	No specific data.

10.5 Incompatible materials :

RNase Free Water	May react or be incompatible with oxidising materials.
Control DNA Target	May react or be incompatible with oxidising materials.
10X Cas9 Digestion Buffer	May react or be incompatible with oxidising materials.
Cas9 Nuclease	May react or be incompatible with oxidising materials.
Control gRNA	May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products :

RNase Free Water	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Control DNA Target	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
10X Cas9 Digestion Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Cas9 Nuclease	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Control gRNA	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
10X Cas9 Digestion Buffer				
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Acute toxicity estimates

Route	ATE value
Cas9 Nuclease	
Oral	152500 mg/kg
Dermal	104437.5 mg/kg
Inhalation (vapours)	580.8 mg/l

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
10X Cas9 Digestion Buffer					
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

SECTION 11: Toxicological information

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
10X Cas9 Digestion Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure :

RNase Free Water	Not available.
Control DNA Target	Not available.
10X Cas9 Digestion Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Cas9 Nuclease	Routes of entry anticipated: Oral, Dermal, Inhalation.
Control gRNA	Not available.

Potential acute health effects

Inhalation :

RNase Free Water	No known significant effects or critical hazards.
Control DNA Target	No known significant effects or critical hazards.
10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
Cas9 Nuclease	No known significant effects or critical hazards.
Control gRNA	No known significant effects or critical hazards.

Ingestion :

RNase Free Water	No known significant effects or critical hazards.
Control DNA Target	No known significant effects or critical hazards.
10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
Cas9 Nuclease	No known significant effects or critical hazards.
Control gRNA	No known significant effects or critical hazards.

Skin contact :

RNase Free Water	No known significant effects or critical hazards.
Control DNA Target	No known significant effects or critical hazards.
10X Cas9 Digestion Buffer	Causes skin irritation.
Cas9 Nuclease	No known significant effects or critical hazards.
Control gRNA	No known significant effects or critical hazards.

Eye contact :

RNase Free Water	No known significant effects or critical hazards.
Control DNA Target	No known significant effects or critical hazards.
10X Cas9 Digestion Buffer	Causes serious eye irritation.
Cas9 Nuclease	No known significant effects or critical hazards.
Control gRNA	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation :

RNase Free Water	No specific data.
Control DNA Target	No specific data.
10X Cas9 Digestion Buffer	No specific data.
Cas9 Nuclease	No specific data.
Control gRNA	No specific data.

SECTION 11: Toxicological information

Ingestion	:	RNase Free Water	No specific data.
		Control DNA Target	No specific data.
		10X Cas9 Digestion Buffer	No specific data.
		Cas9 Nuclease	No specific data.
		Control gRNA	No specific data.
Skin contact	:	RNase Free Water	No specific data.
		Control DNA Target	No specific data.
		10X Cas9 Digestion Buffer	Adverse symptoms may include the following: irritation redness
		Cas9 Nuclease	No specific data.
		Control gRNA	No specific data.
Eye contact	:	RNase Free Water	No specific data.
		Control DNA Target	No specific data.
		10X Cas9 Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		Cas9 Nuclease	No specific data.
		Control gRNA	No specific data.

Delayed and immediate effects as well as 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	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.
Carcinogenicity	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.
Mutagenicity	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Teratogenicity	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.
Developmental effects	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.
Fertility effects	:	RNase Free Water	No known significant effects or critical hazards.
		Control DNA Target	No known significant effects or critical hazards.
		10X Cas9 Digestion Buffer	No known significant effects or critical hazards.
		Cas9 Nuclease	No known significant effects or critical hazards.
		Control gRNA	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
10X Cas9 Digestion Buffer			
Sodium chloride	Acute EC50 4.74 g/L Fresh water	Algae - Chlamydomonas reinhardtii	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 402.6 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks

12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
RNase Free Water			
Water	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
RNase Free Water			
Water	-1.38	-	low

12.4 Mobility in soil

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

Mobility : Not available.

SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised 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.

Hazardous waste : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID / IMDG / IATA : Not regulated.

14.6 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.

14.7 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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles :

RNase Free Water	Not applicable.
Control DNA Target	Not applicable.
10X Cas9 Digestion Buffer	Not applicable.
Cas9 Nuclease	Not applicable.
Control gRNA	Not applicable.

Other EU regulations

Ozone depleting substances (1005/2009/EU)

SECTION 15: Regulatory information

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	:	Not determined.
Canada	:	Not determined.
China	:	Not determined.
Europe	:	All components are listed or exempted.
Japan	:	**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	:	Not determined.
Turkey	:	Not determined.
United States	:	All components are listed or exempted.
Viet Nam	:	Not determined.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

SECTION 16: Other information

Classification	Justification
10X Cas9 Digestion Buffer Skin Irrit. 2, H315 Eye Irrit. 2, H319	 Calculation method Calculation method

Full text of abbreviated H statements

10X Cas9 Digestion Buffer H315 H319 H335	 Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

Full text of classifications [CLP/GHS]

10X Cas9 Digestion Buffer Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335	 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

Date of issue/ Date of revision : 16/11/2018

Date of previous issue : 14/10/2016

Version : 2

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.