

SAFETY DATA SHEET



SureGuide Custom CRISPR Guide Library (Unamplified), Part Number G7555B

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

1.1 Product identifier

Product name : SureGuide Custom CRISPR Guide Library (Unamplified), Part Number G7555B
Part No. (Kit) : G7555B
Part No. : Custom CRISPR Guide Library (UnAmplified) 5190-9532
DMSO 600260-53
Herculase II Fusion DNA Polymerase 600675-51
5X Herculase II Reaction Buffer 600675-52
100 mM dNTP Mix (25 mM each dNTP) 200820-55

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

Identified uses	
Analytical reagent. Custom CRISPR Guide Library (UnAmplified)	10 pmol
DMSO	1 mL
Herculase II Fusion DNA Polymerase	0.04 mL (40 reactions)
5X Herculase II Reaction Buffer	1.5 mL
100 mM dNTP Mix (25 mM each dNTP)	0.04 mL

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 : Custom CRISPR Guide Library (UnAmplified) Mixture
DMSO Mono-constituent substance
Herculase II Fusion DNA Polymerase Mixture
5X Herculase II Reaction Buffer Mixture
100 mM dNTP Mix (25 mM each dNTP) Mixture

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

Not classified.

SECTION 2: Hazards identification

Ingredients of unknown toxicity	: Custom CRISPR Guide Library (UnAmplified) 100 mM dNTP Mix (25 mM each dNTP)	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 100% Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 6%
Ingredients of unknown ecotoxicity	: Custom CRISPR Guide Library (UnAmplified) 100 mM dNTP Mix (25 mM each dNTP)	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 100% Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 6%

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

Signal word	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	No signal word. No signal word. No signal word. No signal word. No signal word.
Hazard statements	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Precautionary statements		
Prevention	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Response	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Storage	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

SECTION 2: Hazards identification

Disposal	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Hazardous ingredients	: 5X Herculase II Reaction Buffer	Not applicable.
Supplemental label elements	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not applicable. Not applicable. Safety data sheet available on request. Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
Special packaging requirements		
Tactile warning of danger	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
2.3 Other hazards		
Other hazards which do not result in classification	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	None known. None known. None known. None known. None known.

SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type

SECTION 3: Composition/information on ingredients

DMSO Dimethyl sulfoxide	EC: 200-664-3 CAS: 67-68-5	100	Not classified.	[A]
Herculase II Fusion DNA Polymerase Glycerol	EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
5X Herculase II Reaction Buffer Trometamol	EC: 201-064-4 CAS: 77-86-1	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.	[1]

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
- [*] Substance
- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

: Custom CRISPR Guide Library (UnAmplified)

DMSO
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.

Herculase II Fusion DNA Polymerase
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.

5X Herculase II Reaction Buffer
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

100 mM dNTP Mix (25 mM each dNTP)
Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation

: Custom CRISPR Guide Library (UnAmplified)

DMSO
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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

5X Herculase II Reaction Buffer
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

SECTION 4: First aid measures

	100 mM dNTP Mix (25 mM each dNTP)	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	: Custom CRISPR Guide Library (UnAmplified)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	DMSO	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Herculase II Fusion DNA Polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	5X Herculase II Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	100 mM dNTP Mix (25 mM each dNTP)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: Custom CRISPR Guide Library (UnAmplified)	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.
	DMSO	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.
	Herculase II Fusion DNA Polymerase	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.
	5X Herculase II Reaction Buffer	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.
	100 mM dNTP Mix (25 mM each dNTP)	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.
Protection of first-aiders	: Custom CRISPR Guide Library (UnAmplified)	No action shall be taken involving any personal risk or without suitable training.
	DMSO	No action shall be taken involving any personal risk or without suitable training.
	Herculase II Fusion DNA Polymerase	No action shall be taken involving any personal risk or without suitable training.
	5X Herculase II Reaction Buffer	No action shall be taken involving any personal risk or without suitable training.
	100 mM dNTP Mix (25 mM each dNTP)	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

SECTION 4: First aid measures

Potential acute health effects

Eye contact	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.
Inhalation	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.
Skin contact	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.
Ingestion	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	Custom CRISPR Guide Library (UnAmplified)	No specific data.
		DMSO	No specific data.
		Herculase II Fusion DNA Polymerase	No specific data.
		5X Herculase II Reaction Buffer	No specific data.
		100 mM dNTP Mix (25 mM each dNTP)	No specific data.
Inhalation	:	Custom CRISPR Guide Library (UnAmplified)	No specific data.
		DMSO	No specific data.
		Herculase II Fusion DNA Polymerase	No specific data.
		5X Herculase II Reaction Buffer	No specific data.
		100 mM dNTP Mix (25 mM each dNTP)	No specific data.

SECTION 4: First aid measures

Skin contact	:	Custom CRISPR Guide Library (UnAmplified)	No specific data.
		DMSO	No specific data.
		Herculase II Fusion DNA Polymerase	No specific data.
		5X Herculase II Reaction Buffer	No specific data.
		100 mM dNTP Mix (25 mM each dNTP)	No specific data.
Ingestion	:	Custom CRISPR Guide Library (UnAmplified)	No specific data.
		DMSO	No specific data.
		Herculase II Fusion DNA Polymerase	No specific data.
		5X Herculase II Reaction Buffer	No specific data.
		100 mM dNTP Mix (25 mM each dNTP)	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	Custom CRISPR Guide Library (UnAmplified)	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.
		DMSO	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Herculase II Fusion DNA Polymerase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		5X Herculase II Reaction Buffer	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
		100 mM dNTP Mix (25 mM each dNTP)	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	:	Custom CRISPR Guide Library (UnAmplified)	No specific treatment.
		DMSO	No specific treatment.
		Herculase II Fusion DNA Polymerase	No specific treatment.
		5X Herculase II Reaction Buffer	No specific treatment.
		100 mM dNTP Mix (25 mM each dNTP)	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Custom CRISPR Guide Library (UnAmplified)	Use an extinguishing agent suitable for the surrounding fire.
		DMSO	Use an extinguishing agent suitable for the surrounding fire.
		Herculase II Fusion DNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
		5X Herculase II Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire.
		100 mM dNTP Mix (25 mM each dNTP)	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	Custom CRISPR Guide Library (UnAmplified)	None known.
		DMSO	None known.
		Herculase II Fusion DNA Polymerase	None known.
		5X Herculase II Reaction Buffer	None known.
		100 mM dNTP Mix (25 mM each dNTP)	None known.

SECTION 5: Firefighting measures

mM each dNTP)

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: Custom CRISPR Guide Library (UnAmplified) DMSO	No specific fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst.
	Herculase II Fusion DNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
	5X Herculase II Reaction Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	100 mM dNTP Mix (25 mM each dNTP)	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: Custom CRISPR Guide Library (UnAmplified)	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	DMSO	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	Herculase II Fusion DNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	5X Herculase II Reaction Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
	100 mM dNTP Mix (25 mM each dNTP)	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides

5.3 Advice for firefighters

Special precautions for fire-fighters	: Custom CRISPR Guide Library (UnAmplified)	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.
	DMSO	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.
	Herculase II Fusion DNA Polymerase	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.
	5X Herculase II Reaction Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	100 mM dNTP Mix (25 mM each dNTP)	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters	: Custom CRISPR Guide Library (UnAmplified)	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.
	DMSO	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.
	Herculase II Fusion DNA Polymerase	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.
	5X Herculase II Reaction Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. 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.
	100 mM dNTP Mix (25 mM each dNTP)	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.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel	: Custom CRISPR Guide Library (UnAmplified)	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.
	DMSO	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.
	Herculase II Fusion DNA Polymerase	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.
	5X Herculase II Reaction Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	100 mM dNTP Mix (25 mM each dNTP)	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

SECTION 6: Accidental release measures

For emergency responders	: Custom CRISPR Guide Library (UnAmplified)	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".
	DMSO	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".
	Herculase II Fusion DNA Polymerase	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".
	5X Herculase II Reaction 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".
	100 mM dNTP Mix (25 mM each dNTP)	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".

6.2 Environmental precautions

: Custom CRISPR Guide Library (UnAmplified)	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).
DMSO	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).
Herculase II Fusion DNA Polymerase	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).
5X Herculase II Reaction 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).
100 mM dNTP Mix (25 mM each dNTP)	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	: Custom CRISPR Guide Library (UnAmplified)	Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
	DMSO	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.
	Herculase II Fusion DNA Polymerase	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.
	5X Herculase II Reaction Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	100 mM dNTP Mix (25 mM each dNTP)	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively,

SECTION 6: Accidental release measures

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	: Custom CRISPR Guide Library (UnAmplified)	Put on appropriate personal protective equipment (see Section 8).
	DMSO	Put on appropriate personal protective equipment (see Section 8).
	Herculase II Fusion DNA Polymerase	Put on appropriate personal protective equipment (see Section 8).
	5X Herculase II Reaction Buffer	Put on appropriate personal protective equipment (see Section 8).
	100 mM dNTP Mix (25 mM each dNTP)	Put on appropriate personal protective equipment (see Section 8).
	Advice on general occupational hygiene	: Custom CRISPR Guide Library (UnAmplified)
DMSO		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.
Herculase II Fusion DNA Polymerase		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.
5X Herculase II Reaction Buffer		Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
100 mM dNTP Mix (25 mM each dNTP)		Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage	: Custom CRISPR Guide Library (UnAmplified)	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.
	DMSO	Storage temperature: -20°C (-4°F). Store in accordance

SECTION 7: Handling and storage

	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.
Herculase II Fusion DNA Polymerase	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.
5X Herculase II Reaction 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.
100 mM dNTP Mix (25 mM each dNTP)	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.

7.3 Specific end use(s)

Recommendations

: Custom CRISPR Guide Library (UnAmplified)	Industrial applications, Professional applications.
DMSO	Industrial applications, Professional applications.
Herculase II Fusion DNA Polymerase	Industrial applications, Professional applications.
5X Herculase II Reaction Buffer	Industrial applications, Professional applications.
100 mM dNTP Mix (25 mM each dNTP)	Industrial applications, Professional applications.

Industrial sector specific solutions

: Custom CRISPR Guide Library (UnAmplified)	Not applicable.
DMSO	Not applicable.
Herculase II Fusion DNA Polymerase	Not applicable.
5X Herculase II Reaction Buffer	Not applicable.
100 mM dNTP Mix (25 mM each dNTP)	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Herculase II Fusion DNA Polymerase Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 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.

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	: Custom CRISPR Guide Library (UnAmplified)	Solid.
	DMSO	Liquid. [Clear.]
	Herculase II Fusion	Liquid.
	DNA Polymerase	
	5X Herculase II	Liquid.
	Reaction Buffer	
	100 mM dNTP Mix (25 mM each dNTP)	Liquid.
Colour	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	Colourless.
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
	100 mM dNTP Mix (25 mM each dNTP)	Not available.
Odour	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	Odourless. [Slight]
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
	100 mM dNTP Mix (25 mM each dNTP)	Not available.
Odour threshold	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	Not available.
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
	100 mM dNTP Mix (25 mM each dNTP)	Not available.
pH	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	Not available.
	Herculase II Fusion	8.2
	DNA Polymerase	
	5X Herculase II	10
	Reaction Buffer	
	100 mM dNTP Mix (25 mM each dNTP)	7.5
Melting point/freezing point	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	18.5°C
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
	100 mM dNTP Mix (25 mM each dNTP)	Not available.

SECTION 9: Physical and chemical properties

Initial boiling point and boiling range	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not available. 189°C Not available. Not available. Not available. Not available.
Flash point	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not available. Open cup: 87°C Not available. Not available. Not available. Not available.
Evaporation rate	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not available. 0.026 (butyl acetate = 1) Not available. Not available. Not available.
Flammability (solid, gas)	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not available. Not applicable. Not applicable. Not applicable. Not applicable.
Upper/lower flammability or explosive limits	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not available. Lower: 2.6% Upper: 28.5% Not available. Not available. Not available.
Vapour pressure	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not available. 0.056 kPa [room temperature] Not available. Not available. Not available.

SECTION 9: Physical and chemical properties

Vapour density	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	2.7 [Air = 1]
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
Relative density	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	1.1
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
Solubility(ies)	: Custom CRISPR Guide Library (UnAmplified)	Soluble in the following materials: cold water and hot water.
	DMSO	Easily soluble in the following materials: cold water and hot water.
	Herculase II Fusion	Soluble in the following materials: cold water and hot water.
	DNA Polymerase	
	5X Herculase II	Easily soluble in the following materials: cold water and hot water.
	Reaction Buffer	
Partition coefficient: n-octanol/water	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	-1.35
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
Auto-ignition temperature	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	300 to 302°C
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
Decomposition temperature	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	140 to 189°C
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
Viscosity	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	Dynamic (room temperature): 2.14 mPa·s
	Herculase II Fusion	Not available.
	DNA Polymerase	
	5X Herculase II	Not available.
	Reaction Buffer	
	100 mM dNTP Mix (25 mM each dNTP)	Not available.

SECTION 9: Physical and chemical properties

		mM each dNTP)
Explosive properties	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	Not available.
	Herculase II Fusion DNA Polymerase	Not available.
	5X Herculase II Reaction Buffer	Not available.
	100 mM dNTP Mix (25 mM each dNTP)	Not available.
Oxidising properties	: Custom CRISPR Guide Library (UnAmplified)	Not available.
	DMSO	Not available.
	Herculase II Fusion DNA Polymerase	Not available.
	5X Herculase II Reaction Buffer	Not available.
	100 mM dNTP Mix (25 mM each dNTP)	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: Custom CRISPR Guide Library (UnAmplified)	No specific test data related to reactivity available for this product or its ingredients.
	DMSO	No specific test data related to reactivity available for this product or its ingredients.
	Herculase II Fusion DNA Polymerase	No specific test data related to reactivity available for this product or its ingredients.
	5X Herculase II Reaction Buffer	No specific test data related to reactivity available for this product or its ingredients.
	100 mM dNTP Mix (25 mM each dNTP)	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: Custom CRISPR Guide Library (UnAmplified)	The product is stable.
	DMSO	The product is stable.
	Herculase II Fusion DNA Polymerase	The product is stable.
	5X Herculase II Reaction Buffer	The product is stable.
	100 mM dNTP Mix (25 mM each dNTP)	The product is stable.
10.3 Possibility of hazardous reactions	: Custom CRISPR Guide Library (UnAmplified)	Under normal conditions of storage and use, hazardous reactions will not occur.
	DMSO	Under normal conditions of storage and use, hazardous reactions will not occur.
	Herculase II Fusion DNA Polymerase	Under normal conditions of storage and use, hazardous reactions will not occur.
	5X Herculase II Reaction Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	100 mM dNTP Mix (25 mM each dNTP)	Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 10: Stability and reactivity

10.4 Conditions to avoid	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	No specific data. No specific data. No specific data. No specific data. No specific data.
10.5 Incompatible materials	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: Custom CRISPR Guide Library (UnAmplified) DMSO Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. 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
DMSO Dimethyl sulfoxide	LD50 Dermal	Rat	40000 mg/kg	-
	LD50 Oral	Rat	14500 mg/kg	-
5X Herculase II Reaction Buffer Trometamol	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
DMSO 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	-
5X Herculase II Reaction Buffer Trometamol	Skin - Moderate irritant	Rabbit	-	25 Percent	-
	Skin - Severe irritant	Rabbit	-	500 milligrams	-

SECTION 11: Toxicological information**Sensitiser**

Conclusion/Summary	:	Not available.
Information on likely routes of exposure	:	Custom CRISPR Guide Library (UnAmplified) Not available. DMSO Routes of entry anticipated: Oral, Dermal, Inhalation. Herculase II Fusion DNA Polymerase Routes of entry anticipated: Oral, Dermal, Inhalation. 5X Herculase II Reaction Buffer Routes of entry anticipated: Oral, Dermal, Inhalation. 100 mM dNTP Mix (25 mM each dNTP) Not available.

Potential acute health effects

Inhalation	:	Custom CRISPR Guide Library (UnAmplified) No known significant effects or critical hazards. DMSO No known significant effects or critical hazards. Herculase II Fusion DNA Polymerase No known significant effects or critical hazards. 5X Herculase II Reaction Buffer No known significant effects or critical hazards. 100 mM dNTP Mix (25 mM each dNTP) No known significant effects or critical hazards.
Ingestion	:	Custom CRISPR Guide Library (UnAmplified) No known significant effects or critical hazards. DMSO No known significant effects or critical hazards. Herculase II Fusion DNA Polymerase No known significant effects or critical hazards. 5X Herculase II Reaction Buffer No known significant effects or critical hazards. 100 mM dNTP Mix (25 mM each dNTP) No known significant effects or critical hazards.
Skin contact	:	Custom CRISPR Guide Library (UnAmplified) No known significant effects or critical hazards. DMSO No known significant effects or critical hazards. Herculase II Fusion DNA Polymerase No known significant effects or critical hazards. 5X Herculase II Reaction Buffer No known significant effects or critical hazards. 100 mM dNTP Mix (25 mM each dNTP) No known significant effects or critical hazards.
Eye contact	:	Custom CRISPR Guide Library (UnAmplified) No known significant effects or critical hazards. DMSO No known significant effects or critical hazards. Herculase II Fusion DNA Polymerase No known significant effects or critical hazards. 5X Herculase II Reaction Buffer No known significant effects or critical hazards. 100 mM dNTP Mix (25 mM each dNTP) No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	Custom CRISPR Guide Library (UnAmplified) No specific data. DMSO No specific data. Herculase II Fusion DNA Polymerase No specific data. 5X Herculase II Reaction Buffer No specific data. 100 mM dNTP Mix (25 mM each dNTP) No specific data.
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SECTION 11: Toxicological information

Ingestion	:	Custom CRISPR Guide Library (UnAmplified)	No specific data.
		DMSO	No specific data.
		Herculase II Fusion DNA Polymerase	No specific data.
		5X Herculase II Reaction Buffer	No specific data.
		100 mM dNTP Mix (25 mM each dNTP)	No specific data.
Skin contact	:	Custom CRISPR Guide Library (UnAmplified)	No specific data.
		DMSO	No specific data.
		Herculase II Fusion DNA Polymerase	No specific data.
		5X Herculase II Reaction Buffer	No specific data.
		100 mM dNTP Mix (25 mM each dNTP)	No specific data.
Eye contact	:	Custom CRISPR Guide Library (UnAmplified)	No specific data.
		DMSO	No specific data.
		Herculase II Fusion DNA Polymerase	No specific data.
		5X Herculase II Reaction Buffer	No specific data.
		100 mM dNTP Mix (25 mM each dNTP)	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	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.
Carcinogenicity	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Mutagenicity	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.
Teratogenicity	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.
Developmental effects	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.
Fertility effects	:	Custom CRISPR Guide Library (UnAmplified)	No known significant effects or critical hazards.
		DMSO	No known significant effects or critical hazards.
		Herculase II Fusion DNA Polymerase	No known significant effects or critical hazards.
		5X Herculase II Reaction Buffer	No known significant effects or critical hazards.
		100 mM dNTP Mix (25 mM each dNTP)	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
DMSO Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 100 µl/L Marine water	Algae - Ulva lactuca	72 hours
5X Herculase II Reaction Buffer Trometamol	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

SECTION 12: Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
DMSO Dimethyl sulfoxide	-1.35	3.16	low
5X Herculase II Reaction Buffer Trometamol	-1.56	-	low

12.4 Mobility in soil

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

Mobility : Not available.

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**Regulatory 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	: Custom CRISPR Guide Library (UnAmplified)	Not applicable.
	DMSO	Not applicable.
	Herculase II Fusion DNA Polymerase	Not applicable.
	5X Herculase II Reaction Buffer	Not applicable.
	100 mM dNTP Mix (25 mM each dNTP)	Not applicable.

Other EU regulations

Europe inventory : Not determined.

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Ozone depleting substances (1005/2009/EU)

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.

International lists

National inventory

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Japan	: Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: Not determined.

SECTION 15: Regulatory information

Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Turkey	: Not determined.
United States	: 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]

Classification	Justification
Not classified.	

Full text of abbreviated H statements

5X Herculase II Reaction Buffer H315 H319 H335	Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.
--	--

Full text of classifications [CLP/GHS]

5X Herculase II Reaction 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
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Date of issue/ Date of revision : 14/09/2016

Date of previous issue : No previous validation.

Version : 1

Notice to reader

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