

SAFETY DATA SHEET



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

Section 1. Identification

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

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

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

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
 679 Springvale Road
 Mulgrave
 Victoria 3170, Australia
 1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

DMSO
 H227 FLAMMABLE LIQUIDS - Category 4

5X Herculanase II Reaction

Buffer

H401 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 2

<input checked="" type="checkbox"/> Custom CRISPR Guide Library (UnAmplified)	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: > 60%
Herculanase II Fusion DNA Polymerase	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%
5X Herculanase II Reaction Buffer	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: 1 - 10%
100 mM dNTP Mix (25 mM each dNTP)	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: 1 - 10%
	Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
<input checked="" type="checkbox"/> 100 mM dNTP Mix (25 mM each dNTP)	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5.7%

Section 2. Hazard(s) identification

GHS label elements

Signal word	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	WARNING No signal word. No signal word. No signal word. No signal word.
Hazard statements	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	H227 - Combustible liquid. No known significant effects or critical hazards. No known significant effects or critical hazards. H401 - Toxic to aquatic life. No known significant effects or critical hazards.
Precautionary statements		
Prevention	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from flames and hot surfaces. - No smoking. Not applicable. Not applicable. P273 - Avoid release to the environment. Not applicable.
Response	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	P403 - Store in a well-ventilated place. P235 - Keep cool. Not applicable. Not applicable. Not applicable. Not applicable.
Disposal	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Section 2. Hazard(s) identification

100 mM dNTP Mix (25 mM each dNTP) Not applicable.

Supplemental label elements

Additional warning phrases :

- DMSO Not applicable.
- Custom CRISPR Guide Library (UnAmplified) 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 hazards which do not result in classification :

- DMSO None known.
- Custom CRISPR Guide Library (UnAmplified) 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 3. Composition and ingredient information

Substance/mixture :

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

CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
<input checked="" type="checkbox"/> DMSO Dimethyl sulfoxide	100	67-68-5
Herculase II Fusion DNA Polymerase Glycerol	≥30 - ≤60	56-81-5
5X Herculase II Reaction Buffer Ammonium sulphate	<2.5	7783-20-2

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.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	:  DMSO	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 if irritation occurs.
	Custom CRISPR Guide Library (UnAmplified)	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. Continue to rinse for at least 10 minutes. 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	:  DMSO	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.
	Custom CRISPR Guide Library (UnAmplified)	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. 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.
	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

Section 4. First aid measures

Skin contact

: DMSO

Custom CRISPR Guide Library (UnAmplified)

Herculase II Fusion DNA Polymerase

5X Herculase II Reaction Buffer

100 mM dNTP Mix (25 mM each dNTP)

delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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

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

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

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

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

Ingestion

: DMSO

Custom CRISPR Guide Library (UnAmplified)

Herculase II Fusion DNA Polymerase

5X Herculase II Reaction 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.

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.

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.

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

Section 4. First aid measures

100 mM dNTP Mix (25 mM each dNTP)

airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: <input checked="" type="checkbox"/> MSO Custom CRISPR Guide Library (UnAmplified) 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.
Inhalation	: <input checked="" type="checkbox"/> MSO Custom CRISPR Guide Library (UnAmplified) 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.
Skin contact	: <input checked="" type="checkbox"/> MSO Custom CRISPR Guide Library (UnAmplified) 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.
Ingestion	: <input checked="" type="checkbox"/> MSO Custom CRISPR Guide Library (UnAmplified) 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.

Over-exposure signs/symptoms

Eye contact	: <input checked="" type="checkbox"/> MSO Custom CRISPR Guide Library (UnAmplified) 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.
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Section 4. First aid measures

Inhalation	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.
Skin contact	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.
Ingestion	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.

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

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

Section 4. First aid measures

Protection of first-aiders	: <input checked="" type="checkbox"/> DMSO	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.
	Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. 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.
	100 mM dNTP Mix (25 mM each dNTP)	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media


Suitable extinguishing media	: <input checked="" type="checkbox"/> DMSO	Use dry chemical, CO ₂ , water spray (fog) or foam.
	Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
	100 mM dNTP Mix (25 mM each dNTP)	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: <input checked="" type="checkbox"/> DMSO	Do not use water jet.
	Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer	None known. None known. None known.
	100 mM dNTP Mix (25 mM each dNTP)	None known.

Specific hazards arising from the chemical


: <input checked="" type="checkbox"/> DMSO	Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.
Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer	No specific fire or explosion hazard.
100 mM dNTP Mix (25 mM each dNTP)	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Firefighting measures


Hazardous thermal decomposition products

:  DMSO	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
Custom CRISPR Guide Library (UnAmplified)	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus 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

Special protective actions for fire-fighters

:  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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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.
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.

Special protective equipment for fire-fighters

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

Section 5. Firefighting measures

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.
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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

:  MSO

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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.

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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.

For emergency responders

:  MSO

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".

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".

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

Section 6. Accidental release measures

100 mM dNTP Mix (25 mM each dNTP)

information in "For non-emergency personnel". 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".

Environmental precautions : DMSO

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).

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). Water polluting material. May be harmful to the environment if released in large quantities. 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).

Methods and material for containment and cleaning up

Methods for cleaning up : DMSO

Custom CRISPR Guide Library (UnAmplified)

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

Herculase II Fusion DNA Polymerase

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.

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, 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.

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

Section 6. Accidental release measures

disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

:  DMSO

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Custom CRISPR Guide Library (UnAmplified)
Herculase II Fusion DNA Polymerase
5X Herculase II Reaction Buffer

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

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

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

100 mM dNTP Mix (25 mM each dNTP)

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

Advice on general occupational hygiene

:  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.

Custom CRISPR Guide Library (UnAmplified)

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

Eating, drinking and smoking should be prohibited in

Section 7. Handling and storage

each dNTP)

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.

Conditions for safe storage, including any incompatibilities : DMSO

Storage temperature: -20°C (-4°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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. See Section 10 for incompatible materials before handling or use.

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. See Section 10 for incompatible materials before handling or use.

5X Herculase II Reaction Buffer

Storage temperature: -80°C (-112°F). Store in accordance with local regulations. Shelf life: 1 Year. 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.

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

Section 7. Handling and storage

containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

[Control parameters](#)

[Occupational exposure limits](#)

Ingredient name	Exposure limits
DMSO Dimethyl sulfoxide	DFG MAC-values list (Germany, 7/2017). Absorbed through skin. PEAK: 320 mg/m ³ , 4 times per shift, 15 minutes. TWA: 160 mg/m ³ 8 hours. PEAK: 100 ppm, 4 times per shift, 15 minutes. TWA: 50 ppm 8 hours.
Herculase II Fusion DNA Polymerase Glycerol	Safe Work Australia (Australia, 4/2018). TWA: 10 mg/m ³ 8 hours.

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

[Individual protection measures](#)

- Hygiene measures** : 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls and personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	: <input checked="" type="checkbox"/> DMSO	Liquid. [Clear.]
	Custom CRISPR Guide Library (UnAmplified)	Solid.
	Herculase II Fusion DNA Polymerase	Liquid.
	5X Herculase II Reaction Buffer	Liquid.
	100 mM dNTP Mix (25 mM each dNTP)	Liquid.
Colour	: <input checked="" type="checkbox"/> DMSO	Colourless.
	Custom CRISPR Guide Library (UnAmplified)	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.
Odour	: <input checked="" type="checkbox"/> DMSO	Odourless. [Slight]
	Custom CRISPR Guide Library (UnAmplified)	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.
Odour threshold	: <input checked="" type="checkbox"/> DMSO	Not available.
	Custom CRISPR Guide Library (UnAmplified)	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.
pH	: <input checked="" type="checkbox"/> DMSO	Not available.
	Custom CRISPR Guide Library (UnAmplified)	Not available.
	Herculase II Fusion DNA Polymerase	8.2
	5X Herculase II Reaction Buffer	9.5 to 10.5
	100 mM dNTP Mix (25 mM each dNTP)	7.5
Melting point	: <input checked="" type="checkbox"/> DMSO	18.5°C (65.3°F)
	Custom CRISPR Guide Library (UnAmplified)	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.

Section 9. Physical and chemical properties

Boiling point	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	189°C (372.2°F) Not available. Not available. Not available. Not available.
Flash point	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Closed cup: 87°C (188.6°F) Open cup: 87°C (188.6°F) Not available. Not available. Not available. Not available.
Evaporation rate	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	0.026 (butyl acetate = 1) Not available. Not available. Not available. Not available.
Flammability (solid, gas)	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Not applicable. Not available. Not applicable. Not applicable. Not applicable.
Lower and upper explosive (flammable) limits	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	Lower: 2.6% Upper: 28.5% Not available. Not available. Not available.
Vapour pressure	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)	0.056 kPa (0.42 mm Hg) [room temperature] Not available. Not available. Not available. Not available.
Vapour density	:	

Section 9. Physical and chemical properties

		☒ DMSO	2.7 [Air = 1]
		Custom CRISPR Guide Library (UnAmplified)	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.
Relative density	:	☒ DMSO	1.1
		Custom CRISPR Guide Library (UnAmplified)	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.
Solubility	:	☒ DMSO	Easily soluble in the following materials: cold water and hot water.
		Custom CRISPR Guide Library (UnAmplified)	Soluble in the following materials: cold water and hot water.
		Herculase II Fusion DNA Polymerase	Soluble in the following materials: cold water and hot water.
		5X Herculase II Reaction Buffer	Easily soluble in the following materials: cold water and hot water.
		100 mM dNTP Mix (25 mM each dNTP)	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	☒ DMSO	-1.35
		Custom CRISPR Guide Library (UnAmplified)	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.
Auto-ignition temperature	:	☒ DMSO	300 to 302°C (572 to 575.6°F)
		Custom CRISPR Guide Library (UnAmplified)	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.
Decomposition temperature	:	☒ DMSO	140 to 189°C (284 to 372.2°F)
		Custom CRISPR Guide Library (UnAmplified)	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.
Viscosity	:	☒ DMSO	Dynamic (room temperature): 2.14 mPa·s (2.14 cP)
		Custom CRISPR Guide Library (UnAmplified)	Not available.
		Herculase II Fusion DNA Polymerase	Not available.
		5X Herculase II Reaction Buffer	Not available.

Section 9. Physical and chemical properties

100 mM dNTP Mix (25 mM each dNTP) Not available.

Section 10. Stability and reactivity

Reactivity	<p>: <input checked="" type="checkbox"/> DMSO</p> <p>Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)</p>	<p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p> <p>No specific test data related to reactivity available for this product or its ingredients.</p>
Chemical stability	<p>: <input checked="" type="checkbox"/> DMSO</p> <p>Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)</p>	<p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p> <p>The product is stable.</p>
Possibility of hazardous reactions	<p>: <input checked="" type="checkbox"/> DMSO</p> <p>Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)</p>	<p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p> <p>Under normal conditions of storage and use, hazardous reactions will not occur.</p>
Conditions to avoid	<p>: <input checked="" type="checkbox"/> DMSO</p> <p>Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)</p>	<p>Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p>
Incompatible materials	<p>: <input checked="" type="checkbox"/> DMSO</p> <p>Custom CRISPR Guide Library (UnAmplified) Herculase II Fusion DNA Polymerase 5X Herculase II Reaction Buffer 100 mM dNTP Mix (25 mM each dNTP)</p>	<p>Reactive or incompatible with the following materials: oxidizing materials</p> <p>May react or be incompatible with oxidising materials.</p> <p>May react or be incompatible with oxidising materials.</p> <p>May react or be incompatible with oxidising materials.</p> <p>May react or be incompatible with oxidising materials.</p>

Section 10. Stability and reactivity

Hazardous decomposition products	: <input checked="" type="checkbox"/> DMSO	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Custom CRISPR Guide Library (UnAmplified)	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Herculase II Fusion DNA Polymerase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	5X Herculase II Reaction Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	100 mM dNTP Mix (25 mM each dNTP)	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<input checked="" type="checkbox"/> DMSO Dimethyl sulfoxide	LD50 Dermal LD50 Oral	Rat Rat	40000 mg/kg 14500 mg/kg	- -
Herculase II Fusion DNA Polymerase Glycerol	LD50 Oral	Rat	12600 mg/kg	-
5X Herculase II Reaction Buffer Ammonium sulphate	LD50 Oral	Rat	2840 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	-
Herculase II Fusion DNA Polymerase Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on likely routes of exposure	: <input checked="" type="checkbox"/> DMSO	Routes of entry anticipated: Oral, Dermal, Inhalation.
	Custom CRISPR Guide Library (UnAmplified)	Not available.
	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

Eye contact	: <input checked="" type="checkbox"/> DMSO	No known significant effects or critical hazards.
	Custom CRISPR Guide Library (UnAmplified)	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	: <input checked="" type="checkbox"/> DMSO	No known significant effects or critical hazards.
	Custom CRISPR Guide Library (UnAmplified)	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	: <input checked="" type="checkbox"/> DMSO	No known significant effects or critical hazards.
	Custom CRISPR Guide Library (UnAmplified)	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	: <input checked="" type="checkbox"/> DMSO	No known significant effects or critical hazards.
	Custom CRISPR Guide Library (UnAmplified)	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

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: DMSO	No specific data.
	Custom CRISPR Guide Library (UnAmplified)	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	: DMSO	No specific data.
	Custom CRISPR Guide Library (UnAmplified)	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	: DMSO	No specific data.
	Custom CRISPR Guide Library (UnAmplified)	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	: DMSO	No specific data.
	Custom CRISPR Guide Library (UnAmplified)	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	: DMSO	No known significant effects or critical hazards.
	Custom CRISPR Guide Library (UnAmplified)	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

Carcinogenicity	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.
Mutagenicity	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.
Teratogenicity	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.
Developmental effects	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.
Fertility effects	: <input checked="" type="checkbox"/> DMSO Custom CRISPR Guide Library (UnAmplified) 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.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

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 3323 µg/l Marine water	Algae - Nitzschia pungens	96 hours
Herculase II Fusion DNA Polymerase Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
5X Herculase II Reaction Buffer Ammonium sulphate	Acute LC50 2.6 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Young	48 hours
	Acute LC50 14000 µg/l Fresh water	Daphnia - Daphnia magna - Young	48 hours
	Acute LC50 68 µg/l Fresh water	Fish - Oncorhynchus gorbuscha - Alevin	96 hours
	Chronic NOEC 7.5 mg/l Marine water	Algae - Phaeodactylum tricornutum - Exponential growth phase	96 hours
	Chronic NOEC 143 µg/l Marine water	Fish - Salmo salar - Post-smolt	5 weeks

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Herculase II Fusion DNA Polymerase Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
5X Herculase II Reaction Buffer Ammonium sulphate	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
DMSO Dimethyl sulfoxide	-1.35	3.16	low
Herculase II Fusion DNA Polymerase Glycerol	-1.76	-	low
5X Herculase II Reaction Buffer Ammonium sulphate	-5.1	-	low

Mobility in soil

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

Section 12. Ecological information

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

Section 13. Disposal considerations

Disposal methods : 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

ADG / IMDG / IATA : Not regulated as Dangerous Goods according to the ADG Code .

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

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

Section 15. Regulatory information

Standard Uniform Schedule of Medicine and Poisons

6

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

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	: Not determined.
Japan	: Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
Malaysia	: Not determined.

Section 15. Regulatory information

New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: <input checked="" type="checkbox"/> Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: <input checked="" type="checkbox"/> Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision	: 21/11/2018
Date of previous issue	: 14/09/2016
Version	: 2

Key to abbreviations

: ADG = Australian Dangerous Goods
: ATE = Acute Toxicity Estimate
: BCF = Bioconcentration Factor
: GHS = Globally Harmonized System of Classification and Labelling of Chemicals
: IATA = International Air Transport Association
: IBC = Intermediate Bulk Container
: IMDG = International Maritime Dangerous Goods
: LogPow = logarithm of the octanol/water partition coefficient
: MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
: NOHSC = National Occupational Health and Safety Commission
: SUSMP = Standard Uniform Schedule of Medicine and Poisons
: UN = United Nations

Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> DMSO Flam. Liq. 4, H227	On basis of test data
5X Herculase II Reaction Buffer Aquatic Acute 2, H401	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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