

SAFETY DATA SHEET

Herculase II Fusion DNA Polymerase, 30,000 Reaction Kit, Part Number 930689

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

1.1 Product identifier

Product name	: Herculase II Fusion DNA Polymerase, 30,000 Reaction Kit, Part Number 930689		
CAS number	: DMSO	67-68-5	
	: Herculase II Fusion Enzyme 30,0000 rxn	Not applicable.	
	: Herculase II 5X Rxn Buffer	Not applicable.	
	: dNTPs 100mM	Not applicable.	
Part no. (chemical kit)	: 930689		
Part no.	: DMSO		930689-54
	: Herculase II Fusion Enzyme 30,0000 rxn		930689-51
	: Herculase II 5X Rxn Buffer		930689-52
	: dNTPs 100mM		930689-53

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

Identified uses	: Analytical reagent.		
	: DMSO		2 x 37.5 ml
	: Herculase II Fusion Enzyme 30,0000 rxn		1 x 30 ml (30,0000 reaction)
	: Herculase II 5X Rxn Buffer		9 x 50 ml
	: dNTPs 100mM		1 x 15 ml
Uses advised against	: None known.		

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Deutschland GmbH
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	: DMSO	Mono-constituent substance
	: Herculase II Fusion Enzyme 30,0000 rxn	Mixture
	: Herculase II 5X Rxn Buffer	Mixture
	: dNTPs 100mM	Mixture

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

Not classified.

SECTION 2: Hazards identification

DMSO	The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.
Herculase II Fusion Enzyme 30,0000 rxn	The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.
Herculase II 5X Rxn Buffer	The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.
dNTPs 100mM	The product is not classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Ingredients of unknown toxicity	: Herculase II Fusion Enzyme 30,0000 rxn	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 30 - 60%
	: Herculase II 5X Rxn Buffer	Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1 - 10%
	: dNTPs 100mM	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%
		Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1 - 10%
Ingredients of unknown ecotoxicity	: dNTPs 100mM	Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%
		Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 1 - 10%
		Contains 5.4% of components with unknown hazards to the aquatic environment

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	: DMSO	No signal word.
	: Herculase II Fusion Enzyme 30,0000 rxn	No signal word.
	: Herculase II 5X Rxn Buffer	No signal word.
	: dNTPs 100mM	No signal word.
Hazard statements	: DMSO	No known significant effects or critical hazards.
	: Herculase II Fusion Enzyme 30,0000 rxn	No known significant effects or critical hazards.
	: Herculase II 5X Rxn Buffer	No known significant effects or critical hazards.
	: dNTPs 100mM	No known significant effects or critical hazards.
Precautionary statements	: DMSO	Not applicable.
	: Herculase II Fusion Enzyme 30,0000 rxn	Not applicable.
	: Herculase II 5X Rxn Buffer	Not applicable.
	: dNTPs 100mM	Not applicable.
Response	: DMSO	Not applicable.
	: Herculase II Fusion Enzyme 30,0000 rxn	Not applicable.
	: Herculase II 5X Rxn Buffer	Not applicable.
	: dNTPs 100mM	Not applicable.
Storage	: DMSO	Not applicable.
	: Herculase II Fusion Enzyme 30,0000 rxn	Not applicable.
	: Herculase II 5X Rxn Buffer	Not applicable.
	: dNTPs 100mM	Not applicable.

SECTION 2: Hazards identification

Disposal	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Not applicable. Not applicable. Not applicable. Not applicable.
Supplemental label elements	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Not applicable. Not applicable. Not applicable. Not applicable.
Special packaging requirements		
Tactile warning of danger	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Not applicable. Not applicable. Not applicable. Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII	:	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;">PBT</th> <th style="width: 15%;">P</th> <th style="width: 15%;">B</th> <th style="width: 15%;">T</th> <th style="width: 15%;">vPvB</th> <th style="width: 15%;">vP</th> <th style="width: 15%;">vB</th> </tr> </thead> <tbody> <tr> <td colspan="4">DMSO</td> <td></td> <td></td> <td></td> </tr> <tr> <td>No</td> <td>N/A</td> <td>No</td> <td>No</td> <td>No</td> <td>N/A</td> <td>No</td> </tr> </tbody> </table>	PBT	P	B	T	vPvB	vP	vB	DMSO							No	N/A	No	No	No	N/A	No
PBT	P	B	T	vPvB	vP	vB																	
DMSO																							
No	N/A	No	No	No	N/A	No																	

Herculase II Fusion Enzyme 30,0000 rxn	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Herculase II 5X Rxn Buffer	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
dNTPs 100mM	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	None known. None known. None known. None known.
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SECTION 3: Composition/information on ingredients

3.1 Substances	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Mono-constituent substance Mixture Mixture Mixture
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SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
DMSO dimethyl sulfoxide	EC: 200-664-3 CAS: 67-68-5	100	Not classified.	-	[1]
Herculase II Fusion Enzyme 30,000 rxn glycerol	REACH #: Annex V EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	-	[1]
Herculase II 5X Rxn Buffer trometamol	EC: 201-064-4 CAS: 77-86-1	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319	-	[1]
Hexadecan- 1-ol, ethoxylated	EC: 500-014-1 CAS: 9004-95-9	<2.5	Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above.	-	[1]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type
 DMSO [1] Constituent
 Herculase II Fusion Enzyme 30,000 rxn [1] Substance with a workplace exposure limit
 Herculase II 5X Rxn Buffer [1] Substance classified with a health or environmental hazard

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

SECTION 4: First aid measures

4.1 Description of 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. Get medical attention if irritation occurs.
	Herculase II Fusion Enzyme 30,000 rxn	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 5X Rxn 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.
	dNTPs 100mM	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. Get medical attention if symptoms occur.
	Herculase II Fusion Enzyme 30,000 rxn	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Herculase II 5X Rxn 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

SECTION 4: First aid measures

		dNTPs 100mM	48 hours. 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	:	DMSO	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Herculase II Fusion Enzyme 30,0000 rxn	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Herculase II 5X Rxn Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		dNTPs 100mM	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	DMSO	Wash out mouth with water. 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 Enzyme 30,0000 rxn	Wash out mouth with water. 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 5X Rxn Buffer	Wash out mouth with water. 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.
		dNTPs 100mM	Wash out mouth with water. 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	:	DMSO	No action shall be taken involving any personal risk or without suitable training.
		Herculase II Fusion Enzyme 30,0000 rxn	No action shall be taken involving any personal risk or without suitable training.
		Herculase II 5X Rxn Buffer	No action shall be taken involving any personal risk or without suitable training.
		dNTPs 100mM	No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	:	DMSO	No known significant effects or critical hazards.
		Herculase II Fusion Enzyme 30,0000 rxn	No known significant effects or critical hazards.
		Herculase II 5X Rxn Buffer	No known significant effects or critical hazards.
		dNTPs 100mM	No known significant effects or critical hazards.

SECTION 4: First aid measures

Inhalation	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.
Inhalation	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.
Skin contact	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.
Ingestion	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. 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	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific treatment. No specific treatment. No specific treatment. No specific treatment.

SECTION 4: First aid measures

Unsuitable extinguishing media	Enzyme 30,000 rxn	Use an extinguishing agent suitable for the surrounding fire.
	Herculase II 5X Rxn	Use an extinguishing agent suitable for the surrounding fire.
	Buffer	None known.
	dNTPs 100mM	None known.
	DMSO	None known.
	Herculase II Fusion Enzyme 30,000 rxn	None known.
	Herculase II 5X Rxn Buffer	None known.
	dNTPs 100mM	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	DMSO	In a fire or if heated, a pressure increase will occur and the container may burst.
	Herculase II Fusion Enzyme 30,000 rxn	In a fire or if heated, a pressure increase will occur and the container may burst.
	Herculase II 5X Rxn Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	dNTPs 100mM	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	DMSO	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	Herculase II Fusion Enzyme 30,000 rxn	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Herculase II 5X Rxn Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
	dNTPs 100mM	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	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 Enzyme 30,000 rxn	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 5X Rxn 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.
	dNTPs 100mM	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. 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 Enzyme 30,000 rxn	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full

SECTION 5: Firefighting measures

Herculase II 5X Rxn Buffer	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. 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.
dNTPs 100mM	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	: 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 Enzyme 30,000 rxn	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 5X Rxn 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.
	dNTPs 100mM	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	: 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 Enzyme 30,000 rxn	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 5X Rxn 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".
	dNTPs 100mM	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

SECTION 6: Accidental release measures

6.2 Environmental precautions	: 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 Enzyme 30,0000 rxn	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 5X Rxn 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).
	dNTPs 100mM	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	: 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 Enzyme 30,0000 rxn	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 5X Rxn 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.
	dNTPs 100mM	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections	: See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.
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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	: DMSO	Put on appropriate personal protective equipment (see Section 8).
	Herculase II Fusion Enzyme 30,0000 rxn	Put on appropriate personal protective equipment (see Section 8).
	Herculase II 5X Rxn Buffer	Put on appropriate personal protective equipment (see Section 8).
	dNTPs 100mM	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.
	Herculase II Fusion Enzyme 30,0000 rxn	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,

SECTION 7: Handling and storage

Herculase II 5X Rxn Buffer	drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. 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.
dNTPs 100mM	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	: DMSO	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 Enzyme 30,000 rxn	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 5X Rxn Buffer	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.
	dNTPs 100mM	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.

7.3 Specific end use(s)

SECTION 7: Handling and storage

Recommendations	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
Industrial sector specific solutions	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Not available. Not available. Not available. Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
Herculase II Fusion Enzyme 30,000 rxn Glycerol	NAOSH (Ireland, 5/2021). Notes: Advisory Occupational Exposure Limit Values (OELVs) OELV: 10 mg/m ³ 8 hours. Form: mist

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : 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

Product/ingredient name	Type	Exposure	Value	Population	Effects
DMSO Dimethyl sulfoxide	DNEL	Long term Oral	1.67 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	3.13 mg/m ³	General population	Local
	DNEL	Long term Inhalation	17.67 mg/m ³	Workers	Local
	DNEL	Long term Inhalation	56 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	75 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	178 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	356 mg/kg bw/day	Workers	Systemic
Herculase II 5X Rxn Buffer Trometamol	DNEL	Long term Oral	8.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	29 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	83.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	117.5 mg/m ³	Workers	Systemic

SECTION 8: Exposure controls/personal protection

Hexadecan-1-ol, ethoxylated	DNEL	Long term Dermal	166.7 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Oral	0.75 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	1.96 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	11.1 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	37.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	105 mg/kg bw/day	Workers	Systemic

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

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

SECTION 9: Physical and chemical properties

Physical state	: DMSO	Liquid. [Clear.]
	Herculase II Fusion Enzyme 30,000 rxn	Liquid.
	Herculase II 5X Rxn Buffer	Liquid.
	dNTPs 100mM	Liquid.
Colour	: DMSO	Colourless.
	Herculase II Fusion Enzyme 30,000 rxn	Not available.
	Herculase II 5X Rxn Buffer	Not available.
	dNTPs 100mM	Not available.
Odour	: DMSO	Odourless. [Slight]
	Herculase II Fusion Enzyme 30,000 rxn	Not available.
	Herculase II 5X Rxn Buffer	Not available.
	dNTPs 100mM	Not available.
Odour threshold	: DMSO	Not available.
	Herculase II Fusion Enzyme 30,000 rxn	Not available.
	Herculase II 5X Rxn Buffer	Not available.
	dNTPs 100mM	Not available.
Melting point/freezing point	: DMSO	18.5°C
	Herculase II Fusion Enzyme 30,000 rxn	Not available.
	Herculase II 5X Rxn Buffer	Not available.
	dNTPs 100mM	Not available.
Initial boiling point and boiling range	: DMSO	189°C
	Herculase II Fusion Enzyme 30,000 rxn	Not available.
	Herculase II 5X Rxn Buffer	Not available.
	dNTPs 100mM	Not available.
Flammability	: DMSO	Not applicable.
	Herculase II Fusion Enzyme 30,000 rxn	Not applicable.
	Herculase II 5X Rxn Buffer	Not applicable.
	dNTPs 100mM	Not applicable.
Upper/lower flammability or explosive limits	: DMSO	Lower: 2.6% Upper: 28.5%
	Herculase II Fusion Enzyme 30,000 rxn	Not available.
	Herculase II 5X Rxn Buffer	Not available.
	dNTPs 100mM	Not available.
Flash point	: DMSO	Closed cup: 87°C [ASTM D 93] Open cup: 87°C
	Herculase II Fusion Enzyme 30,000 rxn	Not available.
	Herculase II 5X Rxn Buffer	Not available.
	dNTPs 100mM	Not available.

SECTION 9: Physical and chemical properties

Ingredient name	Closed cup		Open cup	
	°C	Method	°C	Method
Herculase II Fusion Enzyme 30,000 rxn				
glycerol	-	-	177	-

Auto-ignition temperature : DMSO 300 to 302°C

Ingredient name	°C	Method
Herculase II Fusion Enzyme 30,000 rxn		
glycerol	370	-

Decomposition temperature : DMSO 140 to 189°C
Herculase II Fusion Enzyme 30,000 rxn Not available.

Herculase II 5X Rxn Buffer Not available.

dNTPs 100mM Not available.

pH : DMSO Not available.
Herculase II Fusion Enzyme 30,000 rxn 8.2

Herculase II 5X Rxn Buffer 9.5 to 10.5

dNTPs 100mM 7.5

Viscosity : DMSO Dynamic: 2.14 mPa·s
Herculase II Fusion Enzyme 30,000 rxn Not available.

Herculase II 5X Rxn Buffer Not available.

dNTPs 100mM Not available.

Media	Result
DMSO	
water	Soluble
Herculase II Fusion Enzyme 30,000 rxn	
water	Soluble
Herculase II 5X Rxn Buffer	
water	Soluble
dNTPs 100mM	
water	Soluble

Partition coefficient: n-octanol/water : DMSO -1.35
Herculase II Fusion Enzyme 30,000 rxn Not applicable.

Herculase II 5X Rxn Buffer Not applicable.

dNTPs 100mM Not applicable.

Vapour pressure : DMSO 0.056 kPa (0.42 mm Hg) [EU A.4]

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Herculase II Fusion Enzyme 30,000 rxn						
water	17.5	2.3	-	92.258	12.3	-
glycerol	0.000075	0.00001	-	0.0025	0.00033	-

SECTION 9: Physical and chemical properties

Herculase II 5X Rxn Buffer							
water	17.5	2.3	-	-	92.258	12.3	-
trometamol	<0.00075006	<0.0001	-	-	-	-	-
dNTPs 100mM							
water	17.5	2.3	-	-	92.258	12.3	-

Evaporation rate : DMSO 0.026 (butyl acetate = 1)
 Herculase II Fusion Enzyme 30,0000 rxn Not available.
 Herculase II 5X Rxn Buffer Not available.
 dNTPs 100mM Not available.

Relative density : DMSO 1.1
 Herculase II Fusion Enzyme 30,0000 rxn Not available.
 Herculase II 5X Rxn Buffer Not available.
 dNTPs 100mM Not available.

Vapour density : DMSO 2.7 [Air = 1]
 Herculase II Fusion Enzyme 30,0000 rxn Not available.
 Herculase II 5X Rxn Buffer Not available.
 dNTPs 100mM Not available.

Explosive properties : DMSO Not available.
 Herculase II Fusion Enzyme 30,0000 rxn Not available.
 Herculase II 5X Rxn Buffer Not available.
 dNTPs 100mM Not available.

Oxidising properties : DMSO Not available.
 Herculase II Fusion Enzyme 30,0000 rxn Not available.
 Herculase II 5X Rxn Buffer Not available.
 dNTPs 100mM Not available.

Particle characteristics

Median particle size : DMSO Not applicable.
 Herculase II Fusion Enzyme 30,0000 rxn Not applicable.
 Herculase II 5X Rxn Buffer Not applicable.
 dNTPs 100mM Not applicable.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	The product is stable. The product is stable. Shelf life: 1 Year. Shelf life: 1 Year.
10.3 Possibility of hazardous reactions	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.
10.5 Incompatible materials	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	: DMSO Herculase II Fusion Enzyme 30,0000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	-
Herculase II 5X Rxn Buffer Trometamol Hexadecan-1-ol, ethoxylated	LD50 Dermal	Rat	>5000 mg/kg	-
	LD50 Oral	Rat	2500 mg/kg	-

SECTION 11: Toxicological information

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
DMSO Dimethyl sulfoxide	14500	40000	N/A	N/A	N/A
Herculase II 5X Rxn Buffer Hexadecan-1-ol, ethoxylated	2500	N/A	N/A	N/A	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
DMSO Dimethyl sulfoxide	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
Herculase II 5X Rxn Buffer Trometamol	Skin - Moderate irritant	Rabbit	-	25 %	-
	Skin - Severe irritant	Rabbit	-	500 mg	-

Sensitiser

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

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

DMSO	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Herculase II Fusion Enzyme 30,000 rxn	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Herculase II 5X Rxn Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
dNTPs 100mM	Not available.

Potential acute health effects

Inhalation	DMSO	No known significant effects or critical hazards.
	Herculase II Fusion Enzyme 30,000 rxn	No known significant effects or critical hazards.
	Herculase II 5X Rxn Buffer	No known significant effects or critical hazards.
	dNTPs 100mM	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Ingestion	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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.
Eye contact	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.
Ingestion	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.
Skin contact	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. No specific data.
Eye contact	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	No specific data. No specific data. No specific data. 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

Conclusion/Summary : Not available.

SECTION 11: Toxicological information

General	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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.
Carcinogenicity	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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.
Reproductive toxicity	: DMSO Herculase II Fusion Enzyme 30,000 rxn Herculase II 5X Rxn Buffer dNTPs 100mM	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.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
DMSO Dimethyl sulfoxide	Acute LC50 25000 ppm Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 34000000 µg/l Fresh water	Fish - <i>Pimephales promelas</i>	96 hours
	Chronic NOEC 100 ul/L Marine water	Algae - <i>Ulva lactuca</i>	72 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - <i>Daphnia magna</i> - Juvenile (Fledgling, Hatchling, Weanling)	21 days
Herculase II 5X Rxn Buffer Trometamol	Acute EC50 >980 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 520 mg/l Fresh water	Daphnia	48 hours
Hexadecan-1-ol, ethoxylated	Acute LC50 330000 to 1000000 µg/l Marine water	Crustaceans - <i>Crangon crangon</i> - Adult	48 hours

12.2 Persistence and degradability

SECTION 12: Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
DMSO Dimethyl sulfoxide	OECD 301D Ready Biodegradability - Closed Bottle Test	31 % - Not readily - 28 days	-	-
Herculase II 5X Rxn Buffer Trometamol	OECD 301F Ready Biodegradability - Manometric Respirometry Test	97.1 % - Readily - 28 days	30 mg/l	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
DMSO Dimethyl sulfoxide	-	-	Not readily
Herculase II 5X Rxn Buffer Trometamol	-	-	Readily
Hexadecan-1-ol, ethoxylated	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
DMSO Dimethyl sulfoxide	-1.35	3.16	Low
Herculase II 5X Rxn Buffer Trometamol	-2.31	-	Low
Hexadecan-1-ol, ethoxylated	>6.06	-	High

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
DMSO Dimethyl sulfoxide	No	N/A	No	No	No	N/A	No

12.6 Endocrine disrupting properties

Not available.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

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

Packaging

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

Special precautions : This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number or ID number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-
14.3 Transport hazard class(es)	-	-	-
14.4 Packing group	-	-	-
14.5 Environmental hazards	No.	No.	No.

Additional information

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 IMO instruments : 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.

SECTION 15: Regulatory information

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

No listed substance

Label	:	DMSO	Not applicable.
		Herculase II Fusion Enzyme	Not applicable.
		30,000 rxn	
		Herculase II 5X Rxn Buffer	Not applicable.
		dNTPs 100mM	Not applicable.

Other EU regulations

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.

Persistent Organic Pollutants

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

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.
Eurasian Economic Union	:	Russian Federation inventory: Not determined.
Japan	:	Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.
New Zealand	:	Not determined.
Philippines	:	Not determined.
Republic of Korea	:	Not determined.
Taiwan	:	All components are listed or exempted.
Thailand	:	Not determined.
Turkey	:	Not determined.
United States	:	Not determined.
Viet Nam	:	Not determined.

SECTION 15: Regulatory information

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]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 vPvB = Very Persistent and Very Bioaccumulative

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

Herculase II 5X Rxn Buffer H315 H319 H411	Causes skin irritation. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.
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Full text of classifications [CLP/GHS]

Herculase II 5X Rxn Buffer Aquatic Chronic 2 Eye Irrit. 2 Skin Irrit. 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2
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Date of issue/ Date of revision : 30/04/2024

Date of previous issue : No previous validation

Version : 1

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