SAFETY DATA SHEET

Agilent Technologies

Pfu DNA Polymerase, Part Number 600135

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

1.1 Product identifier

Product name : Pfu DNA Polymerase, Part Number 600135

Part No. (Kit) : 600135

Part No. :

Native Pfu DNA Polymerase	600135-81
10X Native Plus Pfu Buffer	600135-84

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

Identified uses	
Analytical reagent.	
Native Pfu DNA Polymerase	0.04 ml (100 U 2.5 U/µl)
10X Native Plus Pfu Buffer	1 ml

1.3 Details of the supplier of the safety data sheet

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

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

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition :

Native Pfu DNA Polymerase	Mixture
10X Native Plus Pfu Buffer	Mixture

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

10X Native Plus Pfu Buffer

H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

Ingredients of unknown toxicity : 10X Native Plus Pfu Buffer Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3.2%

Ingredients of unknown ecotoxicity : 10X Native Plus Pfu Buffer Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3.2%

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

SECTION 2: Hazards identification

Hazard pictograms :

Signal word	:	Native Pfu DNA Polymerase	No signal word.
		10X Native Plus Pfu Buffer	Warning
Hazard statements	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	**GHS07** -
			Causes serious eye irritation.

Precautionary statements

Prevention	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	P280 - Wear eye or face protection.
			P264 - Wash hands thoroughly after handling.
Response	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Storage	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	Not applicable.
Disposal	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	Not applicable.
Hazardous ingredients	:	10X Native Plus Pfu Buffer	Not applicable.
Supplemental label elements	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	Not applicable.

Special packaging requirements

Tactile warning of danger	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	:	Native Pfu DNA Polymerase	None known.
		10X Native Plus Pfu Buffer	None known.

SECTION 3: Composition/information on ingredients

3.1 Substances : Native Pfu DNA Polymerase Mixture
10X Native Plus Pfu Buffer Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
Native Pfu DNA Polymerase				
Glycerol	EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	CAS: 9036-19-5	≤0.3	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
10X Native Plus Pfu Buffer				
2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≤5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤2.3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411 **See Section 16 for the full text of the H statements declared above.**	[1] [5]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Native Pfu 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.

10X Native Plus Pfu 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.

Inhalation : Native Pfu DNA Polymerase: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

10X Native Plus Pfu 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.

SECTION 4: First aid measures

Skin contact	:	Native Pfu DNA Polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		10X Native Plus Pfu Buffer	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.
Ingestion	:	Native Pfu DNA Polymerase	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		10X Native Plus Pfu 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.
Protection of first-aiders	:	Native Pfu DNA Polymerase	No action shall be taken involving any personal risk or without suitable training.
		10X Native Plus Pfu Buffer	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	Causes serious eye irritation.
Inhalation	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Skin contact	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Ingestion	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	Adverse symptoms may include the following: pain or irritation watering redness

SECTION 4: First aid measures

Inhalation	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	No specific data.
Skin contact	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	No specific data.
Ingestion	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	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.
Specific treatments	:	Native Pfu DNA Polymerase	No specific treatment.
		10X Native Plus Pfu Buffer	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	Native Pfu DNA Polymerase	Use an extinguishing agent suitable for the surrounding fire.
		10X Native Plus Pfu Buffer	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	Native Pfu DNA Polymerase	None known.
		10X Native Plus Pfu Buffer	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	:	Native Pfu DNA Polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
		10X Native Plus Pfu Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	:	Native Pfu DNA Polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
		10X Native Plus Pfu Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds

5.3 Advice for firefighters

Special precautions for fire-fighters	:	Native Pfu 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.
		10X Native Plus Pfu 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.

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters	: Native Pfu DNA Polymerase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	10X Native Plus Pfu Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: Native Pfu 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.
	10X Native Plus Pfu 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.
For emergency responders	: Native Pfu 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".
	10X Native Plus Pfu 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".
6.2 Environmental precautions	: Native Pfu 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).
	10X Native Plus Pfu 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).

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	: Native Pfu DNA Polymerase	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	10X Native Plus Pfu 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.

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures	:	Native Pfu DNA Polymerase	Put on appropriate personal protective equipment (see Section 8).
		10X Native Plus Pfu Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	:	Native Pfu 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.
		10X Native Plus Pfu 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.

7.2 Conditions for safe storage, including any incompatibilities

Storage	:	Native Pfu 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.
		10X Native Plus Pfu Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations	:	Native Pfu DNA Polymerase	Industrial applications, Professional applications.
		10X Native Plus Pfu Buffer	Industrial applications, Professional applications.
Industrial sector specific solutions	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

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

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

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

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

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

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.

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

SECTION 8: Exposure controls/personal protection

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	Native Pfu DNA Polymerase	Liquid.
		10X Native Plus Pfu Buffer	Liquid.
Colour	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Odour	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Odour threshold	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
pH	:	Native Pfu DNA Polymerase	8.2
		10X Native Plus Pfu Buffer	8.8
Melting point/freezing point	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Initial boiling point and boiling range	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Flash point	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Evaporation rate	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Flammability (solid, gas)	:	Native Pfu DNA Polymerase	Not applicable.
		10X Native Plus Pfu Buffer	Not applicable.
Upper/lower flammability or explosive limits	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Vapour pressure	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.

SECTION 9: Physical and chemical properties

Vapour density	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Relative density	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Solubility(ies)	:	Native Pfu DNA Polymerase	Soluble in the following materials: cold water and hot water.
		10X Native Plus Pfu Buffer	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Auto-ignition temperature	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Decomposition temperature	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Viscosity	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Explosive properties	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.
Oxidising properties	:	Native Pfu DNA Polymerase	Not available.
		10X Native Plus Pfu Buffer	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	:	Native Pfu DNA Polymerase	No specific test data related to reactivity available for this product or its ingredients.
		10X Native Plus Pfu Buffer	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	Native Pfu DNA Polymerase	The product is stable.
		10X Native Plus Pfu Buffer	The product is stable.
10.3 Possibility of hazardous reactions	:	Native Pfu DNA Polymerase	Under normal conditions of storage and use, hazardous reactions will not occur.
		10X Native Plus Pfu Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.

SECTION 10: Stability and reactivity

10.4 Conditions to avoid	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	No specific data.
10.5 Incompatible materials	:	Native Pfu DNA Polymerase	May react or be incompatible with oxidising materials.
		10X Native Plus Pfu Buffer	May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	:	Native Pfu DNA Polymerase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		10X Native Plus Pfu Buffer	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
Native Pfu DNA Polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-

Acute toxicity estimates

Route	ATE value
10X Native Plus Pfu Buffer Oral	50000 mg/kg

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Native Pfu DNA Polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	Eyes - Severe irritant	Rabbit	-	1 Percent	-
10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

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

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

SECTION 11: Toxicological information

Not available.

Information on likely routes of exposure	:	Native Pfu DNA Polymerase	Routes of entry anticipated: Oral, Dermal, Inhalation.
		10X Native Plus Pfu Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Ingestion	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Skin contact	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Eye contact	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	No specific data.
Ingestion	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	No specific data.
Skin contact	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	No specific data.
Eye contact	:	Native Pfu DNA Polymerase	No specific data.
		10X Native Plus Pfu Buffer	Adverse symptoms may include the following: pain or irritation watering redness

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

SECTION 11: Toxicological information

General	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Carcinogenicity	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Mutagenicity	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Teratogenicity	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Developmental effects	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.
Fertility effects	:	Native Pfu DNA Polymerase	No known significant effects or critical hazards.
		10X Native Plus Pfu Buffer	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Native Pfu DNA Polymerase			
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Acute EC50 210 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 10800 µg/l Marine water	Crustaceans - Pandalus montagui - Adult	48 hours
	Acute LC50 8600 to 9800 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
10X Native Plus Pfu Buffer			
Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours

12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	-	-	Readily

12.3 Bioaccumulative potential

SECTION 12: Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Native Pfu DNA Polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	3.77	78.67	low
10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	4.86	-	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

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

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. 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

Regulatory information

ADR/RID / IMDG / IATA : Not regulated.

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

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

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

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

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
Native Pfu DNA Polymerase Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014
10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	Substance of equivalent concern for environment	Recommended	ED/169/2012	2/10/2014

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Native Pfu DNA Polymerase — Not applicable.
10X Native Plus Pfu Buffer — Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

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

SECTION 15: Regulatory information

Malaysia	:	Not determined.
New Zealand	:	All components are listed or exempted.
Philippines	:	All components are listed or exempted.
Republic of Korea	:	Not determined.
Taiwan	:	All components are listed or exempted.
Turkey	:	Not determined.
United States	:	All components are listed or exempted.

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

SECTION 16: Other information

Indicates information that has changed from previously issued version.

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

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

Classification	Justification
10X Native Plus Pfu Buffer Eye Irrit. 2, H319	 Calculation method

Full text of abbreviated H statements

Native Pfu DNA Polymerase	
H315	Causes skin irritation.
H318	Causes serious eye damage.
H411	Toxic to aquatic life with long lasting effects.
10X Native Plus Pfu Buffer	
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS]

Native Pfu DNA Polymerase	
Aquatic Chronic 2, H411	LONG-TERM AQUATIC HAZARD - Category 2
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
10X Native Plus Pfu Buffer	
Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Aquatic Chronic 2, H411	LONG-TERM AQUATIC HAZARD - Category 2
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

Date of issue/ Date of revision : 28/04/2017

Date of previous issue : 29/09/2016.

Version : 2

Notice to reader

SECTION 16: Other information

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.