

SAFETY DATA SHEET

Pfu DNA Polymerase, Part Number 600136


Section 1. Identification


Product identifier : Pfu DNA Polymerase, Part Number 600136

Part no. (chemical kit) : 600136

Part no. : Native Pfu DNA Polymerase 600136-81
10X Native Plus Pfu Buffer 600135-84

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

Identified uses :  Analytical reagent.


 Native Pfu DNA Polymerase 0.2 ml (500 U 2.5 U/μl)
10X Native Plus Pfu Buffer 2 x 1 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

 Native Pfu DNA Polymerase
H320

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2B


10X Native Plus Pfu Buffer
H319
H412


SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

GHS label elements


Hazard pictograms :  10X Native Plus Pfu Buffer



Signal word :  Native Pfu DNA Polymerase WARNING
10X Native Plus Pfu Buffer WARNING

Hazard statements :  Native Pfu DNA Polymerase H320 - Causes eye irritation.
10X Native Plus Pfu Buffer H319 - Causes serious eye irritation.
H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention :  Native Pfu DNA Polymerase Not applicable.
10X Native Plus Pfu Buffer P280 - Wear eye or face protection.
P273 - Avoid release to the environment.

Section 2. Hazard(s) identification

Response	: Native Pfu DNA Polymerase	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
	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. P337 + P313 - If eye irritation persists: Get medical advice or attention.
Storage	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	Not applicable. Not applicable.
Disposal	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements		
Additional warning phrases	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	Not applicable. Not applicable.
Other hazards which do not result in classification	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	None known. None known.

Section 3. Composition and ingredient information

Substance/mixture	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	Mixture Mixture
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CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
Native Pfu DNA Polymerase		
Glycerol	≥30 - ≤60	56-81-5
10X Native Plus Pfu Buffer		
Polyoxyethylene octyl phenyl ether	<2.5	9002-93-1

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

The total concentration of ingredients in this product, reported or not in this section, is 100%.

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


Section 4. First aid measures

Description of necessary 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. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
	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.

Section 4. First aid measures


Inhalation

- :  Native Pfu DNA Polymerase 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.
- 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.

Skin contact

- :  Native Pfu DNA Polymerase 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.
- 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 dentures if any. 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.
- 10X Native Plus Pfu Buffer Wash out mouth with water. Remove dentures if any. 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.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

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

Over-exposure signs/symptoms

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

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

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 10X Native Plus Pfu Buffer	No specific treatment. No specific treatment.
Protection of first-aiders	: Native Pfu DNA Polymerase 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. 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.


See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media


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

Section 5. Firefighting measures

Specific hazards arising from the chemical	 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. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition 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
Special protective actions 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.
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.
	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.


Section 6. Accidental release measures

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

Section 6. Accidental release measures

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".


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

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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:  Native Pfu DNA Polymerase	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.
	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. 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.
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

Section 7. Handling and storage

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

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. 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
Native Pfu DNA Polymerase Glycerol	Safe Work Australia (Australia, 12/2019). TWA: 10 mg/m ³ 8 hours.

Biological exposure indices

No exposure indices known.

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.

Section 8. Exposure controls and personal protection

- 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 9. Physical and chemical properties and safety characteristics

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

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.
- Boiling point, initial boiling point, and boiling range** : Native Pfu DNA Polymerase Not available.
10X Native Plus Pfu Buffer Not available.

Flash point


Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
Native Pfu DNA Polymerase						
Glycerol				177	350.6	
10X Native Plus Pfu Buffer						
Polyoxyethylene octyl phenyl ether	251	483.8				

Section 9. Physical and chemical properties and safety characteristics

Evaporation rate : Native Pfu DNA Polymerase Not available.
10X Native Plus Pfu Buffer Not available.


Flammability : Native Pfu DNA Polymerase Not applicable.
10X Native Plus Pfu Buffer Not applicable.

Lower and upper explosion limit/flammability limit : Native Pfu DNA Polymerase Not available.
10X Native Plus Pfu Buffer Not available.


Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
 Native Pfu DNA Polymerase						
water	23.8	3.2		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
10X Native Plus Pfu Buffer						
water	23.8	3.2		92.258	12.3	
Polyoxyethylene octyl phenyl ether	0.997581	0.13				

Relative 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.

Media	Result
 Native Pfu DNA Polymerase	
water	Soluble
10X Native Plus Pfu Buffer	
water	Soluble

Partition coefficient: n-octanol/water : Native Pfu DNA Polymerase Not applicable.
10X Native Plus Pfu Buffer Not applicable.

Ingredient name	°C	°F	Method
 Native Pfu DNA Polymerase			
Glycerol	370	698	

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.

Particle characteristics

Median particle size : Native Pfu DNA Polymerase Not applicable.
10X Native Plus Pfu Buffer Not applicable.


Section 10. Stability and reactivity

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.
Chemical stability	: Native Pfu DNA Polymerase	The product is stable.
	10X Native Plus Pfu Buffer	The product is stable.
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.
Conditions to avoid	: Native Pfu DNA Polymerase	No specific data.
	10X Native Plus Pfu Buffer	No specific data.
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.
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

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
 Native Pfu DNA Polymerase Glycerol	LD50 Oral	Rat	12600 mg/kg	-
10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
 Native Pfu DNA Polymerase Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	Skin - Mild irritant	Rabbit	-	24 hours 500 uL	-

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Section 11. Toxicological information

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 : Native Pfu DNA Polymerase Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
10X Native Plus Pfu Buffer Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact : Native Pfu DNA Polymerase Causes eye irritation.
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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Native Pfu DNA Polymerase Adverse symptoms may include the following:
irritation
watering
redness
10X Native Plus Pfu Buffer Adverse symptoms may include the following:
pain or irritation
watering
redness

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.

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 10X Native Plus Pfu Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards.
Carcinogenicity	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards.
Mutagenicity	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards.
Reproductive toxicity	: Native Pfu DNA Polymerase 10X Native Plus Pfu Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards.


Numerical measures of toxicity

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)
 Native Pfu DNA Polymerase Glycerol	12600	N/A	N/A	N/A	N/A
10X Native Plus Pfu Buffer 10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	180000.0 1800	N/A N/A	N/A N/A	N/A N/A	N/A N/A


Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
 Native Pfu DNA Polymerase Glycerol	Acute LC50 54000 mg/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

Persistence and degradability

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

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

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	LogP _{ow}	BCF	Potential
Native Pfu DNA Polymerase Glycerol	-1.76	-	low
10X Native Plus Pfu Buffer Polyoxyethylene octyl phenyl ether	4.86	-	high

Mobility in soil

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

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 IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Section 15. Regulatory information

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

[Inventory list](#)

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Eurasian Economic Union	: Russian Federation inventory : All components are listed or exempted.
Japan	: Japan inventory (CSCL) : Not determined. Japan inventory (ISHL) : 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.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: All components are active or exempted.
Viet Nam	: All components are listed or exempted.

Section 16. Any other relevant information

[History](#)

[Date of issue/Date of revision](#) : 31/01/2023

[Date of previous issue](#) : 04/05/2022

[Version](#) : 8

[Key to abbreviations](#)

: ADG = Australian Dangerous Goods
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
 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)
 N/A = Not available
 SUSMP = Standard Uniform Schedule of Medicine and Poisons
 UN = United Nations

[Procedure used to derive the classification](#)

Classification	Justification
Native Pfu DNA Polymerase SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2B	Calculation method
10X Native Plus Pfu Buffer SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method Calculation method

[Indicates information that has changed from previously issued version.](#)

[Notice to reader](#)

Section 16. Any other relevant 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.