

SAFETY DATA SHEET



SureStart Taq DNA Polymerase, Part Number 600280

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

1.1 Product identifier

Product name	:	SureStart Taq DNA Polymerase, Part Number 600280
Part No. (Kit)	:	600280
Part No.	:	SureStart Taq DNA polymerase 600280-51
		SureStart Taq 10X Reaction Buffer 600280-52

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

Identified uses

Analytical reagent.	
SureStart Taq DNA polymerase	0.02 ml (100 U 5 U/μl)
SureStart Taq 10X Reaction 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	:	SureStart Taq DNA polymerase Mixture
		SureStart Taq 10X Reaction Buffer Mixture

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

Not classified.

Ingredients of unknown toxicity	:	SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60% Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10% Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%
Ingredients of unknown ecotoxicity	:	SureStart Taq 10X Reaction Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.6%

See Section 16 for the full text of the H statements declared above.

Date of issue/Date of revision : 18/05/2017

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SECTION 2: Hazards identification

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	No signal word. No signal word.
Hazard statements	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards.

Precautionary statements

Prevention	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Not applicable.
Response	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Not applicable.
Storage	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Not applicable.
Disposal	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Not applicable.
Hazardous ingredients	: SureStart Taq 10X Reaction Buffer	Not applicable.
Supplemental label elements	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Safety data sheet available on request.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Not applicable.

Special packaging requirements

Tactile warning of danger	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Not applicable.
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2.3 Other hazards

Other hazards which do not result in classification	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	None known. None known.
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SECTION 3: Composition/information on ingredients

3.1 Substances : SureStart Taq DNA polymerase Mixture
 SureStart Taq 10X Reaction Mixture
 Buffer

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
SureStart Taq 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	<1	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
SureStart Taq 10X Reaction Buffer 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≤3	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 See Section 16 for the full text of the H statements declared above.	[1]

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	: SureStart Taq 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.
	SureStart Taq 10X Reaction Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation	: SureStart Taq DNA polymerase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	SureStart Taq 10X Reaction Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	: SureStart Taq DNA polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	SureStart Taq 10X Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

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SECTION 4: First aid measures

Ingestion	: SureStart Taq 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.
	SureStart Taq 10X Reaction Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Protection of first-aiders	: SureStart Taq DNA polymerase	No action shall be taken involving any personal risk or without suitable training.
	SureStart Taq 10X Reaction Buffer	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	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.
Inhalation	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.
Skin contact	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.
Ingestion	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction Buffer	No specific data.
Inhalation	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction Buffer	No specific data.
Skin contact	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction Buffer	No specific data.
Ingestion	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction Buffer	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

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SECTION 4: First aid measures

Notes to physician	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction 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	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	No specific treatment. No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	None known. None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides

5.3 Advice for firefighters

Special precautions for fire-fighters	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. 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	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. 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.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: SureStart Taq 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.
	SureStart Taq 10X Reaction Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
For emergency responders	: SureStart Taq 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".
	SureStart Taq 10X Reaction Buffer	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: SureStart Taq 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).
SureStart Taq 10X Reaction Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

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

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	: SureStart Taq DNA polymerase	Put on appropriate personal protective equipment (see Section 8).
	SureStart Taq 10X Reaction Buffer	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: SureStart Taq 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.
	SureStart Taq 10X	Eating, drinking and smoking should be prohibited in areas

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SECTION 7: Handling and storage

Reaction Buffer

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

: SureStart Taq 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.

SureStart Taq 10X Reaction Buffer

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

7.3 Specific end use(s)

Recommendations

: SureStart Taq DNA polymerase
SureStart Taq 10X Reaction Buffer

Industrial applications, Professional applications.
Industrial applications, Professional applications.

Industrial sector specific solutions

: SureStart Taq DNA polymerase
SureStart Taq 10X Reaction Buffer

Not applicable.
Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
SureStart Taq DNA polymerase Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist

Recommended monitoring procedures

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

DNELs/DMELs

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SECTION 8: Exposure controls/personal protection

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

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

Individual protection measures

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

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

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: SureStart Taq DNA polymerase	Liquid.
	SureStart Taq 10X Reaction Buffer	Liquid.
Colour	: SureStart Taq DNA polymerase	Not available.
	SureStart Taq 10X Reaction Buffer	Not available.
Odour	: SureStart Taq DNA polymerase	Not available.
	SureStart Taq 10X Reaction Buffer	Not available.

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SECTION 9: Physical and chemical properties

Odour threshold	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
pH	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	8 8.3
Melting point/freezing point	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Initial boiling point and boiling range	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Flash point	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Evaporation rate	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Flammability (solid, gas)	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not applicable. Not applicable.
Upper/lower flammability or explosive limits	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Vapour pressure	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Vapour density	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Relative density	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Solubility(ies)	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Auto-ignition temperature	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.

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SECTION 9: Physical and chemical properties

Decomposition temperature	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Viscosity	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Explosive properties	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.
Oxidising properties	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	Not available. Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	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	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	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	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	No specific data. No specific data.
10.5 Incompatible materials	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
10.6 Hazardous decomposition products	: SureStart Taq DNA polymerase SureStart Taq 10X Reaction Buffer	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.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
SureStart Taq 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

Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
SureStart Taq DNA polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	Eyes - Severe irritant	Rabbit	-	1%	-

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
SureStart Taq 10X Reaction 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

Not available.

Information on likely routes of exposure : SureStart Taq DNA polymerase Routes of entry anticipated: Oral, Dermal, Inhalation.
SureStart Taq 10X Reaction Buffer Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation : SureStart Taq DNA polymerase No known significant effects or critical hazards.
SureStart Taq 10X Reaction Buffer No known significant effects or critical hazards.

Ingestion : SureStart Taq DNA polymerase No known significant effects or critical hazards.
SureStart Taq 10X Reaction Buffer No known significant effects or critical hazards.

Skin contact : SureStart Taq DNA polymerase No known significant effects or critical hazards.
SureStart Taq 10X Reaction Buffer No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Eye contact	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction Buffer	No specific data.

Ingestion	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction Buffer	No specific data.

Skin contact	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction Buffer	No specific data.

Eye contact	: SureStart Taq DNA polymerase	No specific data.
	SureStart Taq 10X Reaction 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

General	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

Carcinogenicity	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

Mutagenicity	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

Teratogenicity	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

Developmental effects	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

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SECTION 11: Toxicological information

Fertility effects	: SureStart Taq DNA polymerase	No known significant effects or critical hazards.
	SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
SureStart Taq 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

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
SureStart Taq DNA polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	3.77	78.67	low

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

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SECTION 13: Disposal considerations

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 : 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
SureStart Taq 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

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : SureStart Taq DNA polymerase Not applicable.
SureStart Taq 10X Reaction Buffer Not applicable.

Other EU regulations

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.

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SECTION 15: Regulatory information

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
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.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: All components are listed or exempted.
Viet Nam	: Not determined.

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

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

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

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

Classification	Justification
Not classified.	

Full text of abbreviated H statements

SureStart Taq DNA Polymerase, Part Number 600280

SECTION 16: Other information

SureStart Taq DNA polymerase

H315
H318
H411

Causes skin irritation.
Causes serious eye damage.
Toxic to aquatic life with long lasting effects.

SureStart Taq 10X Reaction Buffer

H315
H319
H335

Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.

[Full text of classifications \[CLP/GHS\]](#)

SureStart Taq DNA polymerase

Aquatic Chronic 2, H411
Eye Dam. 1, H318
Skin Irrit. 2, H315

LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
SKIN CORROSION/IRRITATION - Category 2

SureStart Taq 10X Reaction Buffer

Eye Irrit. 2, H319
Skin Irrit. 2, H315
STOT SE 3, H335

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
SKIN CORROSION/IRRITATION - Category 2
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE
(Respiratory tract irritation) - Category 3

Date of issue/ Date of revision : 18/05/2017

Date of previous issue : No previous validation.

Version : 1

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