Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Agilent Technologies

SureStart Taq DNA Polymerase, Part Number 600280

Section 1. Identification

1.1 Product identifier

Product name : SureStart Taq DNA Polymerase, Part Number 600280

Part no. (chemical kit) : 600280

Part no. : SureStart Taq DNA polymerase 600280-51
SureStart Taq 10X Reaction Buffer 600280-52

Validation date : 7/31/2019

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

Material 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

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status : SureStart Taq DNA polymerase
SureStart Taq 10X Reaction Buffer

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

SureStart Taq DNA polymerase

H320 EYE IRRITATION - Category 2B
H412 AQUATIC HAZARD (LONG-TERM) - Category 3

Ingredients of unknown toxicity :

SureStart Taq DNA polymerase — Percentage of the mixture consisting of ingredient (s) of unknown acute inhalation toxicity: 30 - 60%

SureStart Taq 10X Reaction Buffer — Percentage of the mixture consisting of ingredient (s) of unknown acute dermal toxicity: 1 - 10%
Percentage of the mixture consisting of ingredient (s) of unknown acute inhalation toxicity: 1 - 10%
Percentage of the mixture consisting of ingredient (s) of unknown acute oral toxicity: 1 - 10%

SureStart Taq 10X Reaction Buffer — Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 1.6%

2.2 GHS label elements

Section 2. Hazards identification

Signal word	:	SureStart Taq DNA polymerase	Warning
		SureStart Taq 10X Reaction Buffer	No signal word.
Hazard statements	:	SureStart Taq DNA polymerase	H320 - Causes eye irritation. H412 - Harmful to aquatic life with long lasting effects.
		SureStart Taq 10X Reaction Buffer	No known significant effects or critical hazards.
Precautionary statements			
Prevention	:	SureStart Taq DNA polymerase	P273 - Avoid release to the environment. P264 - Wash hands thoroughly after handling.
		SureStart Taq 10X Reaction Buffer	Not applicable.
Response	:	SureStart Taq 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 attention.
		SureStart Taq 10X Reaction Buffer	Not applicable.
Storage	:	SureStart Taq DNA polymerase	Not applicable.
		SureStart Taq 10X Reaction Buffer	Not applicable.
Disposal	:	SureStart Taq DNA polymerase	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		SureStart Taq 10X Reaction Buffer	Not applicable.
Supplemental label elements	:	SureStart Taq DNA polymerase	None known.
		SureStart Taq 10X Reaction Buffer	None known.
2.3 Other hazards			
Hazards not otherwise classified	:	SureStart Taq DNA polymerase	None known.
		SureStart Taq 10X Reaction Buffer	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	SureStart Taq DNA polymerase	Mixture
		SureStart Taq 10X Reaction Buffer	Mixture

Ingredient name	%	CAS number
SureStart Taq DNA polymerase		
Glycerol	≥50 - ≤75	56-81-5
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	<1	9036-19-5
SureStart Taq 10X Reaction Buffer		
Potassium chloride	≤5	7447-40-7
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	≤2.9	1185-53-1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

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

Section 4. First aid measures

4.1 Description of necessary 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. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
		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. 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.
		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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		SureStart Taq 10X Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	SureStart Taq DNA polymerase	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.
		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

Section 4. First aid measures

quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	SureStart Taq DNA polymerase	Causes eye irritation.
		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	Adverse symptoms may include the following: irritation watering redness
		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 immediate medical attention and special treatment needed, if necessary

Notes to physician	:	SureStart Taq DNA polymerase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		SureStart Taq 10X Reaction Buffer	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	No specific treatment.
		SureStart Taq 10X Reaction Buffer	No specific treatment.
Protection of first-aiders	:	SureStart Taq DNA polymerase	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.
		SureStart Taq 10X Reaction Buffer	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

Special protective actions for fire-fighters	:	SureStart Taq 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.
		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.
Special protective equipment for fire-fighters	:	SureStart Taq 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.
		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.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Section 6. Accidental release measures

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 spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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 spilled material. Put on appropriate personal protective equipment.
For emergency responders	:	SureStart Taq DNA polymerase	If specialized 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 specialized 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 spilled 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.
		SureStart Taq 10X Reaction Buffer	Avoid dispersal of spilled 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 materials 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.

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). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor 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.
		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 Reaction Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

Recommendations	:	SureStart Taq DNA polymerase	Industrial applications, Professional applications.
		SureStart Taq 10X Reaction Buffer	Industrial applications, Professional applications.
Industrial sector specific solutions	:	SureStart Taq DNA polymerase	Not applicable.
		SureStart Taq 10X Reaction Buffer	Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
SureStart Taq DNA polymerase	
Glycerol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	None.
SureStart Taq 10X Reaction Buffer	
Potassium chloride	None.
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	None.

8.2 Exposure controls

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

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

Individual protection measures

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

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

Section 8. Exposure controls/personal protection

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

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	SureStart Taq DNA polymerase	Liquid.
		SureStart Taq 10X Reaction Buffer	Liquid.
Color	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Odor	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Odor threshold	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
pH	:	SureStart Taq DNA polymerase	8
		SureStart Taq 10X Reaction Buffer	8.3
Melting point	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Boiling point	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Flash point	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Evaporation rate	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Flammability (solid, gas)	:	SureStart Taq DNA polymerase	Not applicable.
		SureStart Taq 10X Reaction Buffer	Not applicable.
Lower and upper explosive (flammable) limits	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Vapor pressure	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Vapor density	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Relative density	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Solubility	:	SureStart Taq DNA polymerase	Easily soluble in the following materials: cold water and hot water.
		SureStart Taq 10X Reaction Buffer	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Auto-ignition temperature	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Decomposition temperature	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.
Viscosity	:	SureStart Taq DNA polymerase	Not available.
		SureStart Taq 10X Reaction Buffer	Not available.

Section 10. Stability and reactivity

10.1 Reactivity	:	SureStart Taq DNA polymerase	No specific test data related to reactivity available for this product or its ingredients.
		SureStart Taq 10X Reaction Buffer	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	SureStart Taq DNA polymerase	The product is stable.
		SureStart Taq 10X Reaction Buffer	The product is stable.
10.3 Possibility of hazardous reactions	:	SureStart Taq DNA polymerase	Under normal conditions of storage and use, hazardous reactions will not occur.
		SureStart Taq 10X Reaction Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	SureStart Taq DNA polymerase	No specific data.
		SureStart Taq 10X Reaction Buffer	No specific data.
10.5 Incompatible materials	:	SureStart Taq DNA polymerase	May react or be incompatible with oxidizing materials.
		SureStart Taq 10X Reaction Buffer	May react or be incompatible with oxidizing materials.
10.6 Hazardous decomposition products	:	SureStart Taq DNA polymerase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		SureStart Taq 10X Reaction 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
SureStart Taq DNA polymerase				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-
SureStart Taq 10X Reaction Buffer				
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
SureStart Taq DNA polymerase					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	Eyes - Severe irritant	Rabbit	-	1 Percent	-
SureStart Taq 10X Reaction Buffer					
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

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 the 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

Eye contact :
- SureStart Taq DNA polymerase — Causes eye irritation.
- 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.

Section 11. Toxicological information

Ingestion	:	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

Eye contact	:	SureStart Taq DNA polymerase	Adverse symptoms may include the following: irritation watering redness
		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.

Delayed and immediate effects and also 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.
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.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)

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SureStart Taq DNA polymerase					
Glycerol	12600	N/A	N/A	N/A	N/A
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	2800	N/A	N/A	N/A	N/A
SureStart Taq 10X Reaction Buffer					
SureStart Taq 10X Reaction Buffer	70270.3	N/A	N/A	N/A	N/A
Potassium chloride	2600	N/A	N/A	N/A	N/A

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
SureStart Taq DNA polymerase			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
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 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
SureStart Taq 10X Reaction Buffer			
Potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 141.46 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 12.92 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 880 mg/l Fresh water	Fish - Pimephales promelas	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
SureStart Taq DNA polymerase				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
SureStart Taq 10X Reaction Buffer			
Potassium chloride	-	-	Readily

12.3 Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
SureStart Taq DNA polymerase			
Glycerol	-1.76	-	low
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	3.77	78.67	low
SureStart Taq 10X Reaction Buffer			
Potassium chloride	-0.46	-	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized 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 spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

DOT / TDG / Mexico / IMDG / IATA : Not regulated.

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.

Section 14. Transport information

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

U.S. Federal regulations : **TSCA 8(a) PAIR**: Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification :

SureStart Taq DNA polymerase	EYE IRRITATION - Category 2B
SureStart Taq 10X Reaction Buffer	Not applicable.

Composition/information on ingredients

Name	%	Classification
SureStart Taq DNA polymerase		
Glycerol	≥50 - ≤75	EYE IRRITATION - Category 2A
SureStart Taq 10X Reaction Buffer		
Potassium chloride	≤5	EYE IRRITATION - Category 2A
2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	≤2.9	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

State regulations

Massachusetts : The following components are listed: GLYCERINE MIST

New York : None of the components are listed.

New Jersey : The following components are listed: GLYCERIN; 1,2,3-PROPANETRIOL

Pennsylvania : The following components are listed: 1,2,3-PROPANETRIOL

California Prop. 65

Section 15. Regulatory information

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	:	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.
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.

Section 16. Other information

History

Date of issue	:	07/31/2019
Date of previous issue	:	05/18/2017
Version	:	5
Key to abbreviations	:	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 UN = United Nations

Procedure used to derive the classification

Section 16. Other information

Classification	Justification
SureStart Taq DNA polymerase	
EYE IRRITATION - Category 2B	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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