

SAFETY DATA SHEET



AccuScript High Fidelity RT-PCR System, Part Number 600180

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

1.1 Product identifier

Product name	: AccuScript High Fidelity RT-PCR System, Part Number 600180
Part No. (Kit)	: 600180
Part No.	: RNase-free Water 600164-58
	AccuScript High Fidelity RT 600089-54
	10X AccuScript RT Buffer 600089-52
	PfuUltra HF DNA polymerase 600170-51
	10X PCR buffer 600170-52
	40 mM dNTP Mix (10 mM each dNTP) 600166-55
	Oligo (dT) primer 600166-54
	Random primers 600166-56
	100 mM DTT 600089-53

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

Identified uses	
Analytical reagent.	
RNase-free Water	1.2 ml
AccuScript High Fidelity RT	0.05 ml (50 Reactions)
10X AccuScript RT Buffer	0.1 ml
PfuUltra HF DNA polymerase	0.05 ml (125 U 2.5 U/μl)
PCR buffer	1 ml
40 mM dNTP Mix (10 mM each dNTP)	0.1 ml
Oligo primer	0.03 ml (3 μg 100 ng/μl)
Random primers	0.03 ml (3 μg 100 ng/μl)
100 mM DTT	0.1 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	: RNase-free Water	Mono-constituent substance
	AccuScript High Fidelity RT	Mixture
	10X AccuScript RT Buffer	Mixture
	PfuUltra HF DNA polymerase	Mixture
	10X PCR buffer	Mixture
	40 mM dNTP Mix (10 mM each dNTP)	Mixture
	Oligo (dT) primer	Mixture
	Random primers	Mixture
	100 mM DTT	Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**10X PCR buffer**

H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2

Ingredients of unknown toxicity : 40 mM dNTP Mix (10 mM each dNTP) Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 5.7%

Ingredients of unknown ecotoxicity : 40 mM dNTP Mix (10 mM each dNTP) Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5.7%

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

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

2.2 Label elements**Hazard pictograms**

:

**Signal word**

:

RNase-free Water	No signal word.
AccuScript High Fidelity RT	No signal word.
10X AccuScript RT Buffer	No signal word.
PfuUltra HF DNA polymerase	No signal word.
10X PCR buffer	Warning
40 mM dNTP Mix (10 mM each dNTP)	No signal word.
Oligo (dT) primer	No signal word.
Random primers	No signal word.
100 mM DTT	No signal word.

Hazard statements

:

RNase-free Water	No known significant effects or critical hazards.
AccuScript High Fidelity RT	No known significant effects or critical hazards.
10X AccuScript RT Buffer	No known significant effects or critical hazards.
PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
10X PCR buffer	GHS07 - Causes serious eye irritation.
40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
Oligo (dT) primer	No known significant effects or critical hazards.
Random primers	No known significant effects or critical hazards.
100 mM DTT	No known significant effects or critical hazards.

Precautionary statements

SECTION 2: Hazards identification

Prevention	:	RNase-free Water	Not applicable.
		AccuScript High Fidelity RT	Not applicable.
		10X AccuScript RT Buffer	Not applicable.
		PfuUltra HF DNA polymerase	Not applicable.
		10X PCR buffer	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
		40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
		Oligo (dT) primer	Not applicable.
		Random primers	Not applicable.
		100 mM DTT	Not applicable.
	Response	:	RNase-free Water
		AccuScript High Fidelity RT	Not applicable.
		10X AccuScript RT Buffer	Not applicable.
		PfuUltra HF DNA polymerase	Not applicable.
		10X PCR 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.
		40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
		Oligo (dT) primer	Not applicable.
		Random primers	Not applicable.
		100 mM DTT	Not applicable.
Storage		:	RNase-free Water
		AccuScript High Fidelity RT	Not applicable.
		10X AccuScript RT Buffer	Not applicable.
		PfuUltra HF DNA polymerase	Not applicable.
		10X PCR buffer	Not applicable.
		40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
		Oligo (dT) primer	Not applicable.
		Random primers	Not applicable.
		100 mM DTT	Not applicable.
	Disposal	:	RNase-free Water
		AccuScript High Fidelity RT	Not applicable.
		10X AccuScript RT Buffer	Not applicable.
		PfuUltra HF DNA polymerase	Not applicable.
		10X PCR buffer	Not applicable.
		40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
		Oligo (dT) primer	Not applicable.
		Random primers	Not applicable.
		100 mM DTT	Not applicable.
Hazardous ingredients		:	10X AccuScript RT Buffer
		10X PCR buffer	Not applicable.
		100 mM DTT	Not applicable.

SECTION 2: Hazards identification

Supplemental label elements	:	RNase-free Water	Not applicable.
		AccuScript High Fidelity RT	Not applicable.
		10X AccuScript RT Buffer	Safety data sheet available on request.
		PfuUltra HF DNA polymerase	Not applicable.
		10X PCR buffer	Not applicable.
		40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
		Oligo (dT) primer	Not applicable.
		Random primers	Not applicable.
		100 mM DTT	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	:	RNase-free Water
		AccuScript High Fidelity RT	Not applicable.
		10X AccuScript RT Buffer	Not applicable.
		PfuUltra HF DNA polymerase	Not applicable.
		10X PCR buffer	Not applicable.
		40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
		Oligo (dT) primer	Not applicable.
		Random primers	Not applicable.
		100 mM DTT	Not applicable.

Special packaging requirements

Tactile warning of danger	:	RNase-free Water	Not applicable.
		AccuScript High Fidelity RT	Not applicable.
		10X AccuScript RT Buffer	Not applicable.
		PfuUltra HF DNA polymerase	Not applicable.
		10X PCR buffer	Not applicable.
		40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
		Oligo (dT) primer	Not applicable.
		Random primers	Not applicable.
		100 mM DTT	Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	:	RNase-free Water	None known.
		AccuScript High Fidelity RT	None known.
		10X AccuScript RT Buffer	None known.
		PfuUltra HF DNA polymerase	None known.
		10X PCR buffer	None known.
		40 mM dNTP Mix (10 mM each dNTP)	None known.
		Oligo (dT) primer	None known.
		Random primers	None known.
		100 mM DTT	None known.

SECTION 3: Composition/information on ingredients

3.1 Substances	: RNase-free Water	Mono-constituent substance
	AccuScript High Fidelity RT	Mixture
	10X AccuScript RT Buffer	Mixture
	PfuUltra HF DNA polymerase	Mixture
	10X PCR buffer	Mixture
	40 mM dNTP Mix (10 mM each dNTP)	Mixture
	Oligo (dT) primer	Mixture
	Random primers	Mixture
	100 mM DTT	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
RNase-free Water Water	EC: 231-791-2 CAS: 7732-18-5	100	Not classified.	[A]
AccuScript High Fidelity RT Glycerol	EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
10X AccuScript RT Buffer 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	<10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
PfuUltra HF DNA polymerase Glycerol	EC: 200-289-5 CAS: 56-81-5	≥50 - ≤75	Not classified.	[2]
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	CAS: 9036-19-5	≤0.3	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
10X PCR buffer 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≤5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Polyoxyethylene octyl phenyl ether	CAS: 9002-93-1	≤2.3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
100 mM DTT (R*,R*)-1,4-Dimercaptobutane-2, 3-diol	EC: 222-468-7 CAS: 3483-12-3	≤3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Chronic 3, H412 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 3: Composition/information on ingredients

[A] Constituent

[B] Impurity

[C] Stabilising additive

SECTION 4: First aid measures**4.1 Description of first aid measures****Eye contact**

: RNase-free Water

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.

AccuScript High Fidelity RT

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

10X AccuScript RT 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.

PfuUltra HF DNA polymerase

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

10X PCR 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.

40 mM dNTP Mix (10 mM each dNTP)

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.

Oligo (dT) primer

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.

Random primers

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.

100 mM DTT

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

: RNase-free Water

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

AccuScript High Fidelity RT

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

10X AccuScript RT 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.

PfuUltra HF DNA polymerase

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

10X PCR 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.

40 mM dNTP Mix (10

Remove victim to fresh air and keep at rest in a position

SECTION 4: First aid measures

mM each dNTP)	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.
Oligo (dT) primer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Random primers	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
100 mM DTT	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact

: RNase-free Water	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
AccuScript High Fidelity RT	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
10X AccuScript RT Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
PfuUltra HF DNA polymerase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
10X PCR 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.
40 mM dNTP Mix (10 mM each dNTP)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Oligo (dT) primer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Random primers	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
100 mM DTT	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion

: RNase-free Water	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.
AccuScript High Fidelity RT	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
10X AccuScript RT 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.
PfuUltra HF 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

SECTION 4: First aid measures

10X PCR buffer	induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. 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.
40 mM dNTP Mix (10 mM each dNTP)	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.
Oligo (dT) primer	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.
Random primers	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.
100 mM DTT	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 : RNase-free Water	No action shall be taken involving any personal risk or without suitable training.
AccuScript High Fidelity RT	No action shall be taken involving any personal risk or without suitable training.
10X AccuScript RT Buffer	No action shall be taken involving any personal risk or without suitable training.
PfuUltra HF DNA polymerase	No action shall be taken involving any personal risk or without suitable training.
10X PCR 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.
40 mM dNTP Mix (10 mM each dNTP)	No action shall be taken involving any personal risk or without suitable training.
Oligo (dT) primer	No action shall be taken involving any personal risk or without suitable training.
Random primers	No action shall be taken involving any personal risk or without suitable training.
100 mM DTT	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**

SECTION 4: First aid measures

Eye contact	:	RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	Causes serious eye irritation.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
Inhalation	:	RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	No known significant effects or critical hazards.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
Skin contact	:	RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	No known significant effects or critical hazards.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
Ingestion	:	RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	No known significant effects or critical hazards.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	:	RNase-free Water	No specific data.
		AccuScript High Fidelity RT	No specific data.
		10X AccuScript RT Buffer	No specific data.
		PfuUltra HF DNA polymerase	No specific data.
		10X PCR buffer	Adverse symptoms may include the following: pain or irritation watering

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		redness
	40 mM dNTP Mix (10 mM each dNTP)	No specific data.
	Oligo (dT) primer	No specific data.
	Random primers	No specific data.
	100 mM DTT	No specific data.
Inhalation	: RNase-free Water	No specific data.
	AccuScript High Fidelity RT	No specific data.
	10X AccuScript RT Buffer	No specific data.
	PfuUltra HF DNA polymerase	No specific data.
	10X PCR buffer	No specific data.
	40 mM dNTP Mix (10 mM each dNTP)	No specific data.
	Oligo (dT) primer	No specific data.
	Random primers	No specific data.
	100 mM DTT	No specific data.
Skin contact	: RNase-free Water	No specific data.
	AccuScript High Fidelity RT	No specific data.
	10X AccuScript RT Buffer	No specific data.
	PfuUltra HF DNA polymerase	No specific data.
	10X PCR buffer	No specific data.
	40 mM dNTP Mix (10 mM each dNTP)	No specific data.
	Oligo (dT) primer	No specific data.
	Random primers	No specific data.
	100 mM DTT	No specific data.
Ingestion	: RNase-free Water	No specific data.
	AccuScript High Fidelity RT	No specific data.
	10X AccuScript RT Buffer	No specific data.
	PfuUltra HF DNA polymerase	No specific data.
	10X PCR buffer	No specific data.
	40 mM dNTP Mix (10 mM each dNTP)	No specific data.
	Oligo (dT) primer	No specific data.
	Random primers	No specific data.
	100 mM DTT	No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: RNase-free Water	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	AccuScript High Fidelity RT	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10X AccuScript RT 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.
	PfuUltra HF DNA polymerase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10X PCR 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.
	40 mM dNTP Mix (10 mM each dNTP)	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.
	Oligo (dT) primer	Treat symptomatically. Contact poison treatment specialist

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	Random primers	immediately if large quantities have been ingested or inhaled. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	100 mM DTT	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: RNase-free Water	No specific treatment.
	AccuScript High Fidelity RT	No specific treatment.
	10X AccuScript RT Buffer	No specific treatment.
	PfuUltra HF DNA polymerase	No specific treatment.
	10X PCR buffer	No specific treatment.
	40 mM dNTP Mix (10 mM each dNTP)	No specific treatment.
	Oligo (dT) primer	No specific treatment.
	Random primers	No specific treatment.
	100 mM DTT	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	: RNase-free Water	Use an extinguishing agent suitable for the surrounding fire.
	AccuScript High Fidelity RT	Use an extinguishing agent suitable for the surrounding fire.
	10X AccuScript RT Buffer	Use an extinguishing agent suitable for the surrounding fire.
	PfuUltra HF DNA polymerase	Use an extinguishing agent suitable for the surrounding fire.
	10X PCR buffer	Use an extinguishing agent suitable for the surrounding fire.
	40 mM dNTP Mix (10 mM each dNTP)	Use an extinguishing agent suitable for the surrounding fire.
	Oligo (dT) primer	Use an extinguishing agent suitable for the surrounding fire.
	Random primers	Use an extinguishing agent suitable for the surrounding fire.
	100 mM DTT	Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media	: RNase-free Water	None known.
	AccuScript High Fidelity RT	None known.
	10X AccuScript RT Buffer	None known.
	PfuUltra HF DNA polymerase	None known.
	10X PCR buffer	None known.
	40 mM dNTP Mix (10 mM each dNTP)	None known.
	Oligo (dT) primer	None known.
	Random primers	None known.
	100 mM DTT	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: RNase-free Water	In a fire or if heated, a pressure increase will occur and the container may burst.
	AccuScript High Fidelity RT	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X AccuScript RT Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	PfuUltra HF DNA polymerase	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X PCR buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	40 mM dNTP Mix (10 mM each dNTP)	In a fire or if heated, a pressure increase will occur and the container may burst.
	Oligo (dT) primer	In a fire or if heated, a pressure increase will occur and the

SECTION 5: Firefighting measures

	Random primers	container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
	100 mM DTT	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous combustion products	: RNase-free Water	No specific data.
	AccuScript High Fidelity RT	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	10X AccuScript RT Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	PfuUltra HF DNA polymerase	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	10X PCR buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds
	40 mM dNTP Mix (10 mM each dNTP)	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	Oligo (dT) primer	No specific data.
	Random primers 100 mM DTT	No specific data. Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides

5.3 Advice for firefighters

Special precautions for fire-fighters	: RNase-free Water	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.
	AccuScript High Fidelity RT	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 AccuScript RT 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.
	PfuUltra HF 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 PCR 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.
	40 mM dNTP Mix (10 mM each dNTP)	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.
	Oligo (dT) primer	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.
	Random primers	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters

100 mM DTT	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.
: RNase-free Water	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.
AccuScript High Fidelity RT	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
10X AccuScript RT 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.
PfuUltra HF DNA polymerase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
10X PCR 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.
40 mM dNTP Mix (10 mM each dNTP)	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.
Oligo (dT) primer	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.
Random primers	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.
100 mM DTT	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: RNase-free Water	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.
	AccuScript High Fidelity RT	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	10X AccuScript RT 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.
	PfuUltra HF DNA polymerase	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	10X PCR 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.
	40 mM dNTP Mix (10 mM each dNTP)	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.
	Oligo (dT) primer	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.
	Random primers	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.
	100 mM DTT	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	: RNase-free Water	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".
	AccuScript High Fidelity RT	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 AccuScript RT 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".
	PfuUltra HF 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-

SECTION 6: Accidental release measures

10X PCR buffer	emergency personnel". 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".
40 mM dNTP Mix (10 mM each dNTP)	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".
Oligo (dT) primer	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".
Random primers	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".
100 mM DTT	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

: RNase-free Water	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).
AccuScript High Fidelity RT	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 AccuScript RT 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).
PfuUltra HF 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 PCR 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).
40 mM dNTP Mix (10 mM each dNTP)	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).
Oligo (dT) primer	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).
Random primers	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).
100 mM DTT	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

SECTION 6: Accidental release measures

Methods for cleaning up	: RNase-free Water	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.
	AccuScript High Fidelity RT	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 AccuScript RT 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.
	PfuUltra HF 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 PCR 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.
	40 mM dNTP Mix (10 mM each dNTP)	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.
	Oligo (dT) primer	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.
	Random primers	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.
	100 mM DTT	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	: RNase-free Water	Put on appropriate personal protective equipment (see Section 8).
	AccuScript High Fidelity RT	Put on appropriate personal protective equipment (see Section 8).
	10X AccuScript RT Buffer	Put on appropriate personal protective equipment (see Section 8).
	PfuUltra HF DNA polymerase	Put on appropriate personal protective equipment (see Section 8).
	10X PCR buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the

SECTION 7: Handling and storage

Advice on general occupational hygiene

		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.
	40 mM dNTP Mix (10 mM each dNTP)	Put on appropriate personal protective equipment (see Section 8).
	Oligo (dT) primer	Put on appropriate personal protective equipment (see Section 8).
	Random primers	Put on appropriate personal protective equipment (see Section 8).
	100 mM DTT	Put on appropriate personal protective equipment (see Section 8).
	: RNase-free Water	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.
	AccuScript High Fidelity RT	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 AccuScript RT 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.
	PfuUltra HF 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 PCR 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.
	40 mM dNTP Mix (10 mM each dNTP)	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.
	Oligo (dT) primer	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.
	Random primers	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.
	100 mM DTT	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

SECTION 7: Handling and storage

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	: RNase-free Water	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.
	AccuScript High Fidelity RT	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
	10X AccuScript RT 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.
	PfuUltra HF DNA polymerase	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
	10X PCR 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.
	40 mM dNTP Mix (10 mM each dNTP)	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.
	Oligo (dT) primer	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

SECTION 7: Handling and storage

	prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Random primers	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.
100 mM DTT	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

: RNase-free Water	Industrial applications, Professional applications.
AccuScript High Fidelity RT	Industrial applications, Professional applications.
10X AccuScript RT Buffer	Industrial applications, Professional applications.
PfuUltra HF DNA polymerase	Industrial applications, Professional applications.
10X PCR buffer	Industrial applications, Professional applications.
40 mM dNTP Mix (10 mM each dNTP)	Industrial applications, Professional applications.
Oligo (dT) primer	Industrial applications, Professional applications.
Random primers	Industrial applications, Professional applications.
100 mM DTT	Industrial applications, Professional applications.

Industrial sector specific solutions

: RNase-free Water	Not applicable.
AccuScript High Fidelity RT	Not applicable.
10X AccuScript RT Buffer	Not applicable.
PfuUltra HF DNA polymerase	Not applicable.
10X PCR buffer	Not applicable.
40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
Oligo (dT) primer	Not applicable.
Random primers	Not applicable.
100 mM DTT	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

SECTION 8: Exposure controls/personal protection

Product/ingredient name	Exposure limit values
AccuScript High Fidelity RT Glycerol	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 10 mg/m ³ 8 hours. Form: Mist
PfuUltra HF 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

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

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

Individual protection measures

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

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

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

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

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

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

SECTION 8: Exposure controls/personal protection

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

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**Appearance

Physical state	:	RNase-free Water	Liquid.
		AccuScript High Fidelity RT	Liquid.
		10X AccuScript RT Buffer	Liquid.
		PfuUltra HF DNA polymerase	Liquid.
		10X PCR buffer	Liquid.
		40 mM dNTP Mix (10 mM each dNTP)	Liquid.
		Oligo (dT) primer	Liquid.
		Random primers	Liquid.
		100 mM DTT	Liquid.
Colour	:	RNase-free Water	Colourless.
		AccuScript High Fidelity RT	Not available.
		10X AccuScript RT Buffer	Not available.
		PfuUltra HF DNA polymerase	Not available.
		10X PCR buffer	Not available.
		40 mM dNTP Mix (10 mM each dNTP)	Not available.
		Oligo (dT) primer	Not available.
		Random primers	Not available.
		100 mM DTT	Not available.
Odour	:	RNase-free Water	Odourless.
		AccuScript High Fidelity RT	Not available.
		10X AccuScript RT Buffer	Not available.
		PfuUltra HF DNA polymerase	Not available.
		10X PCR buffer	Not available.
		40 mM dNTP Mix (10 mM each dNTP)	Not available.
		Oligo (dT) primer	Not available.
		Random primers	Not available.
		100 mM DTT	Not available.
Odour threshold	:	RNase-free Water	Not available.
		AccuScript High Fidelity RT	Not available.
		10X AccuScript RT Buffer	Not available.
		PfuUltra HF DNA polymerase	Not available.
		10X PCR buffer	Not available.
		40 mM dNTP Mix (10 mM each dNTP)	Not available.
		Oligo (dT) primer	Not available.
		Random primers	Not available.
		100 mM DTT	Not available.

SECTION 9: Physical and chemical properties

pH	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	8
	10X AccuScript RT Buffer	8.3
	PfuUltra HF DNA polymerase	8.2
	10X PCR buffer	8.8
	40 mM dNTP Mix (10 mM each dNTP)	7.5
	Oligo (dT) primer	7.5
	Random primers	7.5
	100 mM DTT	Not available.
	Melting point/freezing point	: RNase-free Water
AccuScript High Fidelity RT		Not available.
10X AccuScript RT Buffer		Not available.
PfuUltra HF DNA polymerase		Not available.
10X PCR buffer		Not available.
40 mM dNTP Mix (10 mM each dNTP)		Not available.
Oligo (dT) primer		0°C
Random primers		0°C
100 mM DTT		0°C
Initial boiling point and boiling range		: RNase-free Water
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	100°C
	Random primers	100°C
	100 mM DTT	100°C
	Flash point	: RNase-free Water
AccuScript High Fidelity RT		Not available.
10X AccuScript RT Buffer		Not available.
PfuUltra HF DNA polymerase		Not available.
10X PCR buffer		Not available.
40 mM dNTP Mix (10 mM each dNTP)		Not available.
Oligo (dT) primer		Not available.
Random primers		Not available.
100 mM DTT		Not available.
Evaporation rate		: RNase-free Water
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.

SECTION 9: Physical and chemical properties

	Random primers	Not available.
	100 mM DTT	Not available.
Flammability (solid, gas)	: RNase-free Water	Not applicable.
	AccuScript High Fidelity RT	Not applicable.
	10X AccuScript RT Buffer	Not applicable.
	PfuUltra HF DNA polymerase	Not applicable.
	10X PCR buffer	Not applicable.
	40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
	Oligo (dT) primer	Not applicable.
	Random primers	Not applicable.
	100 mM DTT	Not applicable.
Upper/lower flammability or explosive limits	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.
Vapour pressure	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.
Vapour density	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.
Relative density	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.

SECTION 9: Physical and chemical properties

	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.
Solubility(ies)	: RNase-free Water	Easily soluble in the following materials: cold water and hot water.
	AccuScript High Fidelity RT	Soluble in the following materials: cold water and hot water.
	10X AccuScript RT Buffer	Easily soluble in the following materials: cold water and hot water.
	PfuUltra HF DNA polymerase	Soluble in the following materials: cold water and hot water.
	10X PCR buffer	Easily soluble in the following materials: cold water and hot water.
	40 mM dNTP Mix (10 mM each dNTP)	Easily soluble in the following materials: cold water and hot water.
	Oligo (dT) primer	Easily soluble in the following materials: cold water and hot water.
	Random primers	Easily soluble in the following materials: cold water and hot water.
	100 mM DTT	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.
Auto-ignition temperature	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.
Decomposition temperature	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.

SECTION 9: Physical and chemical properties

Viscosity	: RNase-free Water	Not available.
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.
	Explosive properties	: RNase-free Water
AccuScript High Fidelity RT		Not available.
10X AccuScript RT Buffer		Not available.
PfuUltra HF DNA polymerase		Not available.
10X PCR buffer		Not available.
40 mM dNTP Mix (10 mM each dNTP)		Not available.
Oligo (dT) primer		Not available.
Random primers		Not available.
100 mM DTT		Not available.
Oxidising properties		: RNase-free Water
	AccuScript High Fidelity RT	Not available.
	10X AccuScript RT Buffer	Not available.
	PfuUltra HF DNA polymerase	Not available.
	10X PCR buffer	Not available.
	40 mM dNTP Mix (10 mM each dNTP)	Not available.
	Oligo (dT) primer	Not available.
	Random primers	Not available.
	100 mM DTT	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: RNase-free Water	No specific test data related to reactivity available for this product or its ingredients.
	AccuScript High Fidelity RT	No specific test data related to reactivity available for this product or its ingredients.
	10X AccuScript RT Buffer	No specific test data related to reactivity available for this product or its ingredients.
	PfuUltra HF DNA polymerase	No specific test data related to reactivity available for this product or its ingredients.
	10X PCR buffer	No specific test data related to reactivity available for this product or its ingredients.
	40 mM dNTP Mix (10 mM each dNTP)	No specific test data related to reactivity available for this product or its ingredients.
	Oligo (dT) primer	No specific test data related to reactivity available for this product or its ingredients.
	Random primers	No specific test data related to reactivity available for this product or its ingredients.
	100 mM DTT	No specific test data related to reactivity available for this product or its ingredients.

SECTION 10: Stability and reactivity

10.2 Chemical stability	: RNase-free Water AccuScript High Fidelity RT 10X AccuScript RT Buffer PfuUltra HF DNA polymerase 10X PCR buffer 40 mM dNTP Mix (10 mM each dNTP) Oligo (dT) primer Random primers 100 mM DTT	The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
10.3 Possibility of hazardous reactions	: RNase-free Water AccuScript High Fidelity RT 10X AccuScript RT Buffer PfuUltra HF DNA polymerase 10X PCR buffer 40 mM dNTP Mix (10 mM each dNTP) Oligo (dT) primer Random primers 100 mM DTT	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: RNase-free Water AccuScript High Fidelity RT 10X AccuScript RT Buffer PfuUltra HF DNA polymerase 10X PCR buffer 40 mM dNTP Mix (10 mM each dNTP) Oligo (dT) primer Random primers 100 mM DTT	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.
10.5 Incompatible materials	: RNase-free Water AccuScript High Fidelity RT 10X AccuScript RT Buffer PfuUltra HF DNA polymerase 10X PCR buffer 40 mM dNTP Mix (10 mM each dNTP) Oligo (dT) primer Random primers 100 mM DTT	May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.

SECTION 10: Stability and reactivity

10.6 Hazardous decomposition products	: RNase-free Water AccuScript High Fidelity RT 10X AccuScript RT Buffer PfuUltra HF DNA polymerase 10X PCR buffer 40 mM dNTP Mix (10 mM each dNTP) Oligo (dT) primer Random primers 100 mM DTT	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. 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
PfuUltra HF DNA polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-

Acute toxicity estimates

Route	ATE value
10X PCR buffer Oral	50000 mg/kg
100 mM DTT Oral	33333.3 mg/kg

Irritation/Corrosion

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

Sensitiser

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

SECTION 11: Toxicological information

Product/ingredient name	Category	Route of exposure	Target organs
10X AccuScript RT Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
10X PCR buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
100 mM DTT (R*,R*)-1,4-Dimercaptobutane-2,3-diol	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

- : RNase-free Water Not available.
- AccuScript High Fidelity RT Routes of entry anticipated: Oral, Dermal, Inhalation.
- 10X AccuScript RT Buffer Routes of entry anticipated: Oral, Dermal, Inhalation.
- PfuUltra HF DNA polymerase Not available.
- 10X PCR buffer Not available.
- 40 mM dNTP Mix (10 mM each dNTP) Not available.
- Oligo (dT) primer Not available.
- Random primers Not available.
- 100 mM DTT Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation

- : RNase-free Water No known significant effects or critical hazards.
- AccuScript High Fidelity RT No known significant effects or critical hazards.
- 10X AccuScript RT Buffer No known significant effects or critical hazards.
- PfuUltra HF DNA polymerase No known significant effects or critical hazards.
- 10X PCR buffer No known significant effects or critical hazards.
- 40 mM dNTP Mix (10 mM each dNTP) No known significant effects or critical hazards.
- Oligo (dT) primer No known significant effects or critical hazards.
- Random primers No known significant effects or critical hazards.
- 100 mM DTT No known significant effects or critical hazards.

Ingestion

- : RNase-free Water No known significant effects or critical hazards.
- AccuScript High Fidelity RT No known significant effects or critical hazards.
- 10X AccuScript RT Buffer No known significant effects or critical hazards.
- PfuUltra HF DNA polymerase No known significant effects or critical hazards.
- 10X PCR buffer No known significant effects or critical hazards.
- 40 mM dNTP Mix (10 mM each dNTP) No known significant effects or critical hazards.
- Oligo (dT) primer No known significant effects or critical hazards.
- Random primers No known significant effects or critical hazards.
- 100 mM DTT No known significant effects or critical hazards.

SECTION 11: Toxicological information

Skin contact	:	RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	No known significant effects or critical hazards.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
		Random primers	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
	Eye contact	:	RNase-free Water
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	Causes serious eye irritation.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
		Random primers	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	RNase-free Water	No specific data.
		AccuScript High Fidelity RT	No specific data.
		10X AccuScript RT Buffer	No specific data.
		PfuUltra HF DNA polymerase	No specific data.
		10X PCR buffer	No specific data.
		40 mM dNTP Mix (10 mM each dNTP)	No specific data.
		Oligo (dT) primer	No specific data.
		Random primers	No specific data.
		100 mM DTT	No specific data.
	Ingestion	:	RNase-free Water
		AccuScript High Fidelity RT	No specific data.
		10X AccuScript RT Buffer	No specific data.
		PfuUltra HF DNA polymerase	No specific data.
		10X PCR buffer	No specific data.
		40 mM dNTP Mix (10 mM each dNTP)	No specific data.
		Oligo (dT) primer	No specific data.
		Random primers	No specific data.
		100 mM DTT	No specific data.
Skin contact		:	RNase-free Water
		AccuScript High Fidelity RT	No specific data.
		10X AccuScript RT Buffer	No specific data.
		PfuUltra HF DNA polymerase	No specific data.
		10X PCR buffer	No specific data.
		40 mM dNTP Mix (10 mM each dNTP)	No specific data.

SECTION 11: Toxicological information

	Oligo (dT) primer	No specific data.
	Random primers	No specific data.
	100 mM DTT	No specific data.
Eye contact	: RNase-free Water	No specific data.
	AccuScript High Fidelity RT	No specific data.
	10X AccuScript RT Buffer	No specific data.
	PfuUltra HF DNA polymerase	No specific data.
	10X PCR buffer	Adverse symptoms may include the following: pain or irritation watering redness
	40 mM dNTP Mix (10 mM each dNTP)	No specific data.
	Oligo (dT) primer	No specific data.
	Random primers	No specific data.
	100 mM DTT	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	: RNase-free Water	No known significant effects or critical hazards.
	AccuScript High Fidelity RT	No known significant effects or critical hazards.
	10X AccuScript RT Buffer	No known significant effects or critical hazards.
	PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
	10X PCR buffer	No known significant effects or critical hazards.
	40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
	Oligo (dT) primer	No known significant effects or critical hazards.
	Random primers	No known significant effects or critical hazards.
	100 mM DTT	No known significant effects or critical hazards.
Carcinogenicity	: RNase-free Water	No known significant effects or critical hazards.
	AccuScript High Fidelity RT	No known significant effects or critical hazards.
	10X AccuScript RT Buffer	No known significant effects or critical hazards.
	PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
	10X PCR buffer	No known significant effects or critical hazards.
	40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
	Oligo (dT) primer	No known significant effects or critical hazards.
	Random primers	No known significant effects or critical hazards.
	100 mM DTT	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Mutagenicity	:	RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	No known significant effects or critical hazards.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
Teratogenicity	:	Random primers	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
		RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
		PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	No known significant effects or critical hazards.
Developmental effects	:	40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
		Random primers	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
		RNase-free Water	No known significant effects or critical hazards.
		AccuScript High Fidelity RT	No known significant effects or critical hazards.
		10X AccuScript RT Buffer	No known significant effects or critical hazards.
Fertility effects	:	PfuUltra HF DNA polymerase	No known significant effects or critical hazards.
		10X PCR buffer	No known significant effects or critical hazards.
		40 mM dNTP Mix (10 mM each dNTP)	No known significant effects or critical hazards.
		Oligo (dT) primer	No known significant effects or critical hazards.
		Random primers	No known significant effects or critical hazards.
		100 mM DTT	No known significant effects or critical hazards.
		RNase-free Water	No known significant effects or critical hazards.

SECTION 12: Ecological information**12.1 Toxicity**

SECTION 12: Ecological information

Product/ingredient name	Result	Species	Exposure
PfuUltra HF DNA polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]- omega.-hydroxy-	Acute EC50 210 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 10800 µg/l Marine water	Crustaceans - Pandalus montagui - Adult	48 hours
	Acute LC50 8600 to 9800 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
10X PCR 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
100 mM DTT (R*,R*)-1, 4-Dimercaptobutane-2,3-diol	Acute LC50 27000 to 30000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
RNase-free Water Water	-	100 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
RNase-free Water Water	-	-	Readily
10X PCR buffer Polyoxyethylene octyl phenyl ether	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
RNase-free Water Water	-1.38	-	low
PfuUltra HF DNA polymerase Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3, 3-tetramethylbutyl)phenyl]- omega.-hydroxy-	3.77	78.67	low
10X PCR buffer Polyoxyethylene octyl phenyl ether	4.86	-	high

12.4 Mobility in soil

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

Mobility : Not available.

SECTION 12: Ecological information

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.
vPvB : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

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

Packaging

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

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory information

ADR/RID / IMDG / IATA : Not regulated.

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

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

SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

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

Date of issue/Date of revision : 27/10/2016

SECTION 15: Regulatory information

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: RNase-free Water	Not applicable.
	AccuScript High Fidelity RT	Not applicable.
	10X AccuScript RT Buffer	Not applicable.
	PfuUltra HF DNA polymerase	Not applicable.
	10X PCR buffer	Not applicable.
	40 mM dNTP Mix (10 mM each dNTP)	Not applicable.
	Oligo (dT) primer	Not applicable.
	Random primers	Not applicable.
	100 mM DTT	Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.

Ozone depleting substances (1005/2009/EU)

Not listed.

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

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

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

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

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

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

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

Classification	Justification
10X PCR buffer Eye Irrit. 2, H319	Calculation method

Full text of abbreviated H statements

<p>10X AccuScript RT Buffer H315 H319 H335</p> <p>PfuUltra HF DNA polymerase H315 H318 H411</p> <p>10X PCR buffer H302 H315 H318 H319 H335 H411</p> <p>100 mM DTT H302 H315 H319 H335 H412</p>	<p>Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.</p> <p>Causes skin irritation. Causes serious eye damage. Toxic to aquatic life with long lasting effects.</p> <p>Harmful if swallowed. Causes skin irritation. Causes serious eye damage. Causes serious eye irritation. May cause respiratory irritation. Toxic to aquatic life with long lasting effects.</p> <p>Harmful if swallowed. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. Harmful to aquatic life with long lasting effects.</p>
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Full text of classifications [CLP/GHS]

<p>10X AccuScript RT Buffer Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335</p> <p>PfuUltra HF DNA polymerase Aquatic Chronic 2, H411 Eye Dam. 1, H318 Skin Irrit. 2, H315</p> <p>10X PCR buffer Acute Tox. 4, H302 Aquatic Chronic 2, H411 Eye Dam. 1, H318 Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335</p> <p>100 mM DTT Acute Tox. 4, H302</p>	<p>SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3</p> <p>LONG-TERM AQUATIC HAZARD - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SKIN CORROSION/IRRITATION - Category 2</p> <p>ACUTE TOXICITY (oral) - Category 4 LONG-TERM AQUATIC HAZARD - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3</p> <p>ACUTE TOXICITY (oral) - Category 4</p>
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SECTION 16: Other information

Aquatic Chronic 3, H412 Eye Irrit. 2, H319 Skin Irrit. 2, H315 STOT SE 3, H335	LONG-TERM AQUATIC HAZARD - Category 3 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2 SKIN CORROSION/IRRITATION - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
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Date of issue/ Date of revision : 27/10/2016

Date of previous issue : No previous validation.

Version : 1

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