

SAFETY DATA SHEET



miRNA 1st-Strand cDNA Synthesis Kit, Part Number 600036

Section 1. Identification

1.1 Product identifier

Product name : miRNA 1st-Strand cDNA Synthesis Kit, Part Number 600036

Part No. (Chemical Kit) : 600036

Part No. :

E. coli Poly A Polymerase (PAP)	600035-51
E. coli Poly A Polymerase Buffer	600035-52
Manganese chloride	600035-53
10 mM rATP	200340-81
Glycogen	252003-59
10X AffinityScript RT buffer	600100-52
RT Adaptor Primer	600035-54
100 mM dNTPs	200820-55
AffinityScript RT/RNase Block Enzyme Mixture	600559-52
Universal Reverse Primer	600035-55

Validation date : 4/20/2015.

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

Material uses : Analytical reagent.

E. coli Poly A Polymerase (PAP)	0.05 ml
E. coli Poly A Polymerase Buffer	0.2 ml
Manganese chloride	0.05 ml
RT Adaptor Primer	0.05 ml
Universal Reverse Primer	0.2 ml
rATP	0.25 ml
Glycogen	0.03 ml
10X AffinityScript RT buffer	0.1 ml
Deoxynucleotide mix	0.04 ml
AffinityScript RT/RNase Block Enzyme Mixture	0.05 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 :	E. coli Poly A Polymerase (PAP)	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	E. coli Poly A Polymerase Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
	Manganese chloride	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

Section 2. Hazards identification

10 mM rATP	SDS should be retained and available for employees and other users of this product. 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.
Glycogen	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.
10X AffinityScript RT buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
RT Adaptor Primer	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.
100 mM dNTPs	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.
AffinityScript RT/RNase Block Enzyme Mixture	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Universal Reverse Primer	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

E. coli Poly A Polymerase (PAP)

H320 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

E. coli Poly A Polymerase

Buffer

H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

10X AffinityScript RT buffer

H320 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

AffinityScript RT/RNase Block

Enzyme Mixture

H320 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B

H317 SKIN SENSITIZATION - Category 1

Section 2. Hazards identification

Ingredients of unknown toxicity	: E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer	Not applicable. Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 3.9%
	Manganese chloride	Not applicable.
	10 mM rATP	Not applicable.
	Glycogen	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 2%
	10X AffinityScript RT buffer	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 7.9%
	RT Adaptor Primer	Not applicable.
	100 mM dNTPs	Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 6%
	AffinityScript RT/RNase Block Enzyme Mixture	Not applicable.
	Universal Reverse Primer	Not applicable.

2.2 GHS label elements

Hazard pictograms

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Signal word

: E. coli Poly A Polymerase (PAP)	Warning
E. coli Poly A Polymerase Buffer	Warning
Manganese chloride	No signal word.
10 mM rATP	No signal word.
Glycogen	No signal word.
10X AffinityScript RT buffer	Warning
RT Adaptor Primer	No signal word.
100 mM dNTPs	No signal word.
AffinityScript RT/RNase Block Enzyme Mixture	Warning
Universal Reverse Primer	No signal word.

Hazard statements

: E. coli Poly A Polymerase (PAP)	H320 - Causes eye irritation.
E. coli Poly A Polymerase Buffer	H319 - Causes serious eye irritation.
Manganese chloride	No known significant effects or critical hazards.
10 mM rATP	No known significant effects or critical hazards.
Glycogen	No known significant effects or critical hazards.
10X AffinityScript RT buffer	H320 - Causes eye irritation.
RT Adaptor Primer	No known significant effects or critical hazards.
100 mM dNTPs	No known significant effects or critical hazards.
AffinityScript RT/RNase Block Enzyme Mixture	H320 - Causes eye irritation.
Universal Reverse Primer	H317 - May cause an allergic skin reaction. No known significant effects or critical hazards.

Precautionary statements

General

: E. coli Poly A Polymerase (PAP)	Not applicable.
E. coli Poly A Polymerase Buffer	Not applicable.
Manganese chloride	Not applicable.
10 mM rATP	Not applicable.
Glycogen	Not applicable.
10X AffinityScript RT buffer	Not applicable.
RT Adaptor Primer	Not applicable.
100 mM dNTPs	Not applicable.
AffinityScript RT/RNase Block Enzyme Mixture	Not applicable.
Universal Reverse Primer	Not applicable.

Section 2. Hazards identification

Prevention	:	E. coli Poly A Polymerase (PAP)	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
		E. coli Poly A Polymerase Buffer	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
		Manganese chloride	Not applicable.
		10 mM rATP	Not applicable.
		Glycogen	Not applicable.
		10X AffinityScript RT buffer	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
		RT Adaptor Primer	Not applicable.
		100 mM dNTPs	Not applicable.
		AffinityScript RT/RNase Block Enzyme Mixture	P280 - Wear protective gloves. Wear eye or face protection. P261 - Avoid breathing vapor. P264 - Wash hands thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace.
		Universal Reverse Primer	Not applicable.
Response	:	E. coli Poly A Polymerase (PAP)	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.
		E. coli Poly A Polymerase Buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
		Manganese chloride	Not applicable.
		10 mM rATP	Not applicable.
		Glycogen	Not applicable.
		10X AffinityScript RT buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
		RT Adaptor Primer	Not applicable.
		100 mM dNTPs	Not applicable.
		AffinityScript RT/RNase Block Enzyme Mixture	P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. 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.
		Universal Reverse Primer	Not applicable.

Section 2. Hazards identification

Storage	:	E. coli Poly A Polymerase (PAP)	Not applicable.
		E. coli Poly A Polymerase Buffer	Not applicable.
		Manganese chloride	Not applicable.
		10 mM rATP	Not applicable.
		Glycogen	Not applicable.
		10X AffinityScript RT buffer	Not applicable.
		RT Adaptor Primer	Not applicable.
		100 mM dNTPs	Not applicable.
		AffinityScript RT/RNase Block	Not applicable.
		Enzyme Mixture	Not applicable.
Disposal	:	E. coli Poly A Polymerase (PAP)	Not applicable.
		E. coli Poly A Polymerase Buffer	Not applicable.
		Manganese chloride	Not applicable.
		10 mM rATP	Not applicable.
		Glycogen	Not applicable.
		10X AffinityScript RT buffer	Not applicable.
		RT Adaptor Primer	Not applicable.
		100 mM dNTPs	Not applicable.
		AffinityScript RT/RNase Block	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		Enzyme Mixture	Not applicable.
	Universal Reverse Primer	Not applicable.	

2.3 Other hazards

Hazards not otherwise classified

:	E. coli Poly A Polymerase (PAP)	None known.
	E. coli Poly A Polymerase Buffer	None known.
	Manganese chloride	None known.
	10 mM rATP	None known.
	Glycogen	None known.
	10X AffinityScript RT buffer	None known.
	RT Adaptor Primer	None known.
	100 mM dNTPs	None known.
	AffinityScript RT/RNase Block	None known.
	Enzyme Mixture	None known.
	Universal Reverse Primer	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	E. coli Poly A Polymerase (PAP)	Mixture
		E. coli Poly A Polymerase Buffer	Mixture
		Manganese chloride	Mixture
		10 mM rATP	Mixture
		Glycogen	Mixture
		10X AffinityScript RT buffer	Mixture
		RT Adaptor Primer	Mixture
		100 mM dNTPs	Mixture
		AffinityScript RT/RNase Block	Mixture
		Enzyme Mixture	Mixture
	Universal Reverse Primer	Mixture	

Section 3. Composition/information on ingredients

Ingredient name	%	CAS number
E. coli Poly A Polymerase (PAP)		
Glycerol	30 - 60	56-81-5
Sodium chloride	1 - 5	7647-14-5
E. coli Poly A Polymerase Buffer		
Sodium chloride	5 - 10	7647-14-5
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	1 - 5	1185-53-1
10X AffinityScript RT buffer		
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	5 - 10	1185-53-1
Potassium chloride	5 - 10	7447-40-7
100 mM dNTPs		
2'-Deoxyguanosine 5'-(tetrahydrogen triphosphate)	1 - 5	2564-35-4
2'-Deoxyadenosine 5'-(tetrahydrogen triphosphate)	1 - 5	1927-31-7
AffinityScript RT/RNase Block Enzyme Mixture		
Glycerol	30 - 60	56-81-5
4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid	0.1 - 1	7365-45-9

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	: E. coli Poly A Polymerase (PAP)	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.
	E. coli Poly A Polymerase 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.
	Manganese chloride	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.
	10 mM rATP	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.
	Glycogen	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 AffinityScript RT 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. If irritation persists, get medical attention.
	RT Adaptor Primer	Immediately flush eyes with plenty of water,

Section 4. First aid measures

		occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	100 mM dNTPs	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.
	AffinityScript RT/RNase Block Enzyme Mixture	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.
	Universal Reverse 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.
Inhalation	: E. coli Poly A Polymerase (PAP)	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.
	E. coli Poly A Polymerase 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.
	Manganese chloride	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	10 mM rATP	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Glycogen	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	10X AffinityScript RT 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

Section 4. First aid measures

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.

RT Adaptor Primer

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

100 mM dNTPs

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.

AffinityScript RT/RNase Block Enzyme Mixture

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.

Universal Reverse Primer

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

Skin contact

: E. coli Poly A Polymerase (PAP)

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.

E. coli Poly A Polymerase 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.

Manganese chloride

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

10 mM rATP

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Glycogen

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

10X AffinityScript RT 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.

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	RT Adaptor Primer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	100 mM dNTPs	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	AffinityScript RT/RNase Block Enzyme Mixture	Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Universal Reverse Primer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	: E. coli Poly A Polymerase (PAP)	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.
	E. coli Poly A Polymerase Buffer	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	Manganese chloride	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.
	10 mM rATP	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

Section 4. First aid measures

Glycogen	<p>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.</p> <p>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.</p>
10X AffinityScript RT buffer	<p>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.</p>
RT Adaptor Primer	<p>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.</p>
100 mM dNTPs	<p>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.</p>
AffinityScript RT/RNase Block Enzyme Mixture	<p>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.</p>
Universal Reverse Primer	<p>Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable</p>

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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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer	Causes eye irritation. Causes serious eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation.
Inhalation	: E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. May cause an allergic skin reaction.
Ingestion	: E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer	No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact	:	E. coli Poly A Polymerase (PAP)	Adverse symptoms may include the following: irritation watering redness
		E. coli Poly A Polymerase Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		Manganese chloride	No specific data.
		10 mM rATP	No specific data.
		Glycogen	No specific data.
		10X AffinityScript RT buffer	Adverse symptoms may include the following: irritation watering redness
		RT Adaptor Primer	No specific data.
		100 mM dNTPs	No specific data.
		AffinityScript RT/RNase Block	Adverse symptoms may include the following: irritation watering redness
		Enzyme Mixture	No specific data.
Inhalation	:	E. coli Poly A Polymerase (PAP)	No specific data.
		E. coli Poly A Polymerase Buffer	No specific data.
		Manganese chloride	No specific data.
		10 mM rATP	No specific data.
		Glycogen	No specific data.
		10X AffinityScript RT buffer	No specific data.
		RT Adaptor Primer	No specific data.
		100 mM dNTPs	No specific data.
		AffinityScript RT/RNase Block	No specific data.
		Enzyme Mixture	No specific data.
Skin contact	:	E. coli Poly A Polymerase (PAP)	No specific data.
		E. coli Poly A Polymerase Buffer	No specific data.
		Manganese chloride	No specific data.
		10 mM rATP	No specific data.
		Glycogen	No specific data.
		10X AffinityScript RT buffer	No specific data.
		RT Adaptor Primer	No specific data.
		100 mM dNTPs	No specific data.
		AffinityScript RT/RNase Block	Adverse symptoms may include the following: irritation redness
		Enzyme Mixture	No specific data.
Ingestion	:	E. coli Poly A Polymerase (PAP)	No specific data.
		E. coli Poly A Polymerase Buffer	No specific data.
		Manganese chloride	No specific data.
		10 mM rATP	No specific data.
		Glycogen	No specific data.
		10X AffinityScript RT buffer	No specific data.
		RT Adaptor Primer	No specific data.
		100 mM dNTPs	No specific data.
		AffinityScript RT/RNase Block	No specific data.
		Enzyme Mixture	No specific data.

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

Section 4. First aid measures

Notes to physician	: E. coli Poly A Polymerase (PAP)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	E. coli Poly A Polymerase 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.
	Manganese chloride	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10 mM rATP	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Glycogen	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	10X AffinityScript 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.
	RT Adaptor Primer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	100 mM dNTPs	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.
	AffinityScript RT/RNase Block Enzyme Mixture	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Universal Reverse Primer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	: E. coli Poly A Polymerase (PAP)	No specific treatment.
	E. coli Poly A Polymerase Buffer	No specific treatment.
	Manganese chloride	No specific treatment.
	10 mM rATP	No specific treatment.
	Glycogen	No specific treatment.
	10X AffinityScript RT buffer	No specific treatment.
	RT Adaptor Primer	No specific treatment.
	100 mM dNTPs	No specific treatment.
	AffinityScript RT/RNase Block Enzyme Mixture	No specific treatment.
	Universal Reverse Primer	No specific treatment.
Protection of first-aiders	: E. coli Poly A Polymerase (PAP)	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.
	E. coli Poly A Polymerase 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.
	Manganese chloride	No action shall be taken involving any personal risk or without suitable training.
	10 mM rATP	No action shall be taken involving any personal risk or without suitable training.
	Glycogen	No action shall be taken involving any personal risk or without suitable training.
	10X AffinityScript RT buffer	No action shall be taken involving any personal risk

Section 4. First aid measures

	or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
RT Adaptor Primer	No action shall be taken involving any personal risk or without suitable training.
100 mM dNTPs	No action shall be taken involving any personal risk or without suitable training.
AffinityScript RT/RNase Block Enzyme Mixture	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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Universal Reverse Primer	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	:	E. coli Poly A Polymerase (PAP)	Use an extinguishing agent suitable for the surrounding fire.
		E. coli Poly A Polymerase Buffer	Use an extinguishing agent suitable for the surrounding fire.
		Manganese chloride	Use an extinguishing agent suitable for the surrounding fire.
		10 mM rATP	Use an extinguishing agent suitable for the surrounding fire.
		Glycogen	Use an extinguishing agent suitable for the surrounding fire.
		10X AffinityScript RT buffer	Use an extinguishing agent suitable for the surrounding fire.
		RT Adaptor Primer	Use an extinguishing agent suitable for the surrounding fire.
		100 mM dNTPs	Use an extinguishing agent suitable for the surrounding fire.
		AffinityScript RT/RNase Block Enzyme Mixture	Use an extinguishing agent suitable for the surrounding fire.
		Universal Reverse Primer	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	E. coli Poly A Polymerase (PAP)	None known.
		E. coli Poly A Polymerase Buffer	None known.
		Manganese chloride	None known.
		10 mM rATP	None known.
		Glycogen	None known.
		10X AffinityScript RT buffer	None known.
		RT Adaptor Primer	None known.
		100 mM dNTPs	None known.
		AffinityScript RT/RNase Block Enzyme Mixture	None known.
		Universal Reverse Primer	None known.

5.2 Special hazards arising from the substance or mixture

Section 5. Fire-fighting measures

Specific hazards arising from the chemical	: E. coli Poly A Polymerase (PAP)	In a fire or if heated, a pressure increase will occur and the container may burst.
	E. coli Poly A Polymerase Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Manganese chloride	In a fire or if heated, a pressure increase will occur and the container may burst.
	10 mM rATP	In a fire or if heated, a pressure increase will occur and the container may burst.
	Glycogen	In a fire or if heated, a pressure increase will occur and the container may burst.
	10X AffinityScript RT buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	RT Adaptor Primer	In a fire or if heated, a pressure increase will occur and the container may burst.
	100 mM dNTPs	In a fire or if heated, a pressure increase will occur and the container may burst.
	AffinityScript RT/RNase Block Enzyme Mixture	In a fire or if heated, a pressure increase will occur and the container may burst.
	Universal Reverse Primer	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	: E. coli Poly A Polymerase (PAP)	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds metal oxide/oxides
	E. coli Poly A Polymerase Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	Manganese chloride	No specific data.
	10 mM rATP	No specific data.
	Glycogen	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	10X AffinityScript RT buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	RT Adaptor Primer	No specific data.
	100 mM dNTPs	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides phosphorus oxides
	AffinityScript RT/RNase Block Enzyme Mixture	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Universal Reverse Primer	No specific data.

Section 5. Fire-fighting measures

5.3 Advice for firefighters

Special protective actions for fire-fighters

: E. coli Poly A Polymerase (PAP)	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.
E. coli Poly A Polymerase 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.
Manganese chloride	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.
10 mM rATP	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.
Glycogen	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 AffinityScript 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.
RT Adaptor 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.
100 mM dNTPs	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.
AffinityScript RT/RNase Block Enzyme Mixture	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.
Universal Reverse 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.

Special protective equipment for fire-fighters

: E. coli Poly A Polymerase (PAP)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
E. coli Poly A Polymerase Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Manganese chloride	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
10 mM rATP	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Glycogen	Fire-fighters should wear appropriate protective

Section 5. Fire-fighting measures

10X AffinityScript RT buffer	equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
RT Adaptor Primer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
100 mM dNTPs	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
AffinityScript RT/RNase Block Enzyme Mixture	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
Universal Reverse Primer	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

For non-emergency personnel

: E. coli Poly A Polymerase (PAP)

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.

E. coli Poly A Polymerase 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Manganese chloride

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.

10 mM rATP

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.

Glycogen

No action shall be taken involving any personal risk or without suitable training. Evacuate

Section 6. Accidental release measures

10X AffinityScript RT buffer	surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. 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.
RT Adaptor 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 spilled material. Put on appropriate personal protective equipment.
100 mM dNTPs	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.
AffinityScript RT/RNase Block Enzyme Mixture	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.
Universal Reverse 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 spilled material. Put on appropriate personal protective equipment.
For emergency responders : E. coli Poly A Polymerase (PAP)	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".
E. coli Poly A Polymerase 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".
Manganese chloride	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".
10 mM rATP	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".
Glycogen	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

Section 6. Accidental release measures

10X AffinityScript RT buffer	the information in "For non-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".
RT Adaptor 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".
100 mM dNTPs	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".
AffinityScript RT/RNase Block Enzyme Mixture	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".
Universal Reverse 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".
6.2 Environmental precautions	
: E. coli Poly A Polymerase (PAP)	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).
E. coli Poly A Polymerase 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).
Manganese chloride	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).
10 mM rATP	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).
Glycogen	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).
10X AffinityScript RT 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).
RT Adaptor Primer	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).
100 mM dNTPs	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 6. Accidental release measures

AffinityScript RT/RNase Block Enzyme Mixture	Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). 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).
Universal Reverse Primer	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

E. coli Poly A Polymerase (PAP)	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.
E. coli Poly A Polymerase 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.
Manganese chloride	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.
10 mM rATP	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.
Glycogen	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 AffinityScript 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.
RT Adaptor 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.
100 mM dNTPs	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.
AffinityScript RT/RNase Block Enzyme Mixture	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.
Universal Reverse 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.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	: E. coli Poly A Polymerase (PAP)	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	E. coli Poly A Polymerase Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	Manganese chloride	Put on appropriate personal protective equipment (see Section 8).
	10 mM rATP	Put on appropriate personal protective equipment (see Section 8).
	Glycogen	Put on appropriate personal protective equipment (see Section 8).
	10X AffinityScript RT buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	RT Adaptor Primer	Put on appropriate personal protective equipment (see Section 8).
	100 mM dNTPs	Put on appropriate personal protective equipment (see Section 8).
	AffinityScript RT/RNase Block Enzyme Mixture	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	Universal Reverse Primer	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	: 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.	

Section 7. Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

: E. coli Poly A Polymerase (PAP)	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.
E. coli Poly A Polymerase 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.
Manganese chloride	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.
10 mM rATP	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.
Glycogen	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.
10X AffinityScript 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

Section 7. Handling and storage

RT Adaptor Primer	<p>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.</p> <p>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.</p>
100 mM dNTPs	<p>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.</p>
AffinityScript RT/RNase Block Enzyme Mixture	<p>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.</p>
Universal Reverse Primer	<p>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.</p>

[7.3 Specific end use\(s\)](#)

Section 7. Handling and storage

Recommendations	: E. coli Poly A Polymerase (PAP)	Industrial applications, Professional applications.
	E. coli Poly A Polymerase Buffer	Industrial applications, Professional applications.
	Manganese chloride	Industrial applications, Professional applications.
	10 mM rATP	Industrial applications, Professional applications.
	Glycogen	Industrial applications, Professional applications.
	10X AffinityScript RT buffer	Industrial applications, Professional applications.
	RT Adaptor Primer	Industrial applications, Professional applications.
	100 mM dNTPs	Industrial applications, Professional applications.
	AffinityScript RT/RNase Block Enzyme Mixture	Industrial applications, Professional applications.
	Universal Reverse Primer	Industrial applications, Professional applications.
Industrial sector specific solutions	: Not applicable.	

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
E. coli Poly A Polymerase (PAP) Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust
AffinityScript RT/RNase Block Enzyme Mixture Glycerol	OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust

8.2 Exposure controls

Appropriate engineering controls	: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
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

Section 8. Exposure controls/personal protection

- 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** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	E. coli Poly A Polymerase (PAP)	Liquid.	
	E. coli Poly A Polymerase Buffer	Liquid.	
	Manganese chloride	Liquid.	
	10 mM rATP	Liquid.	
	Glycogen	Liquid.	
	10X AffinityScript RT buffer	Liquid.	
	RT Adaptor Primer	Liquid.	
	100 mM dNTPs	Liquid.	
	AffinityScript RT/RNase Block	Liquid.	
	Enzyme Mixture		
	Universal Reverse Primer	Liquid.	
	Color	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
Manganese chloride		Not available.	
10 mM rATP		Not available.	
Glycogen		Not available.	
10X AffinityScript RT buffer		Not available.	
RT Adaptor Primer		Not available.	
100 mM dNTPs		Not available.	
AffinityScript RT/RNase Block		Not available.	
Enzyme Mixture			
Universal Reverse Primer	Not available.		

Section 9. Physical and chemical properties

Odor	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	Not available.
Odor threshold	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	Not available.
pH	:	E. coli Poly A Polymerase (PAP)	8
		E. coli Poly A Polymerase Buffer	8
		Manganese chloride	Not available.
		10 mM rATP	7
		Glycogen	Not available.
		10X AffinityScript RT buffer	8.3
		RT Adaptor Primer	7.5
		100 mM dNTPs	7.5
		AffinityScript RT/RNase Block	8
		Enzyme Mixture	
		Universal Reverse Primer	Not available.
Melting point	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	0°C (32°F)
		10 mM rATP	0°C (32°F)
		Glycogen	0°C (32°F)
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	0°C (32°F)
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	0°C (32°F)
Boiling point	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	100°C (212°F)
		10 mM rATP	100°C (212°F)
		Glycogen	100°C (212°F)
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	100°C (212°F)
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	100°C (212°F)

Section 9. Physical and chemical properties

Flash point	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	Not available.
	Evaporation rate	:	E. coli Poly A Polymerase (PAP)
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	Not available.
Flammability (solid, gas)		:	E. coli Poly A Polymerase (PAP)
		E. coli Poly A Polymerase Buffer	Not applicable.
		Manganese chloride	Not applicable.
		10 mM rATP	Not applicable.
		Glycogen	Not applicable.
		10X AffinityScript RT buffer	Not applicable.
		RT Adaptor Primer	Not applicable.
		100 mM dNTPs	Not applicable.
		AffinityScript RT/RNase Block	Not applicable.
		Enzyme Mixture	
		Universal Reverse Primer	Not applicable.
	Lower and upper explosive (flammable) limits	:	E. coli Poly A Polymerase (PAP)
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	Not available.
Vapor pressure		:	E. coli Poly A Polymerase (PAP)
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	
		Universal Reverse Primer	Not available.
	Vapor density	:	

Section 9. Physical and chemical properties

	E. coli Poly A Polymerase (PAP)	Not available.
	E. coli Poly A Polymerase Buffer	Not available.
	Manganese chloride	Not available.
	10 mM rATP	Not available.
	Glycogen	Not available.
	10X AffinityScript RT buffer	Not available.
	RT Adaptor Primer	Not available.
	100 mM dNTPs	Not available.
	AffinityScript RT/RNase Block	Not available.
	Enzyme Mixture	
	Universal Reverse Primer	Not available.
Relative density	: E. coli Poly A Polymerase (PAP)	Not available.
	E. coli Poly A Polymerase Buffer	Not available.
	Manganese chloride	Not available.
	10 mM rATP	Not available.
	Glycogen	Not available.
	10X AffinityScript RT buffer	Not available.
	RT Adaptor Primer	Not available.
	100 mM dNTPs	Not available.
	AffinityScript RT/RNase Block	Not available.
	Enzyme Mixture	
	Universal Reverse Primer	Not available.
Solubility	: E. coli Poly A Polymerase (PAP)	Soluble in the following materials: cold water and hot water.
	E. coli Poly A Polymerase Buffer	Easily soluble in the following materials: cold water and hot water.
	Manganese chloride	Easily soluble in the following materials: cold water and hot water.
	10 mM rATP	Easily soluble in the following materials: cold water and hot water.
	Glycogen	Easily soluble in the following materials: cold water and hot water.
	10X AffinityScript RT buffer	Easily soluble in the following materials: cold water and hot water.
	RT Adaptor Primer	Easily soluble in the following materials: cold water and hot water.
	100 mM dNTPs	Easily soluble in the following materials: cold water and hot water.
	AffinityScript RT/RNase Block	Soluble in the following materials: cold water and hot water.
	Enzyme Mixture	
	Universal Reverse Primer	Easily soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: E. coli Poly A Polymerase (PAP)	Not available.
	E. coli Poly A Polymerase Buffer	Not available.
	Manganese chloride	Not available.
	10 mM rATP	Not available.
	Glycogen	Not available.
	10X AffinityScript RT buffer	Not available.
	RT Adaptor Primer	Not available.
	100 mM dNTPs	Not available.
	AffinityScript RT/RNase Block	Not available.
	Enzyme Mixture	
	Universal Reverse Primer	Not available.

Section 9. Physical and chemical properties

Auto-ignition temperature	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	Not available.
	Universal Reverse Primer	Not available.	
Decomposition temperature	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	Not available.
	Universal Reverse Primer	Not available.	
Viscosity	:	E. coli Poly A Polymerase (PAP)	Not available.
		E. coli Poly A Polymerase Buffer	Not available.
		Manganese chloride	Not available.
		10 mM rATP	Not available.
		Glycogen	Not available.
		10X AffinityScript RT buffer	Not available.
		RT Adaptor Primer	Not available.
		100 mM dNTPs	Not available.
		AffinityScript RT/RNase Block	Not available.
		Enzyme Mixture	Not available.
	Universal Reverse Primer	Not available.	

Section 10. Stability and reactivity

10.1 Reactivity	:	E. coli Poly A Polymerase (PAP)	No specific test data related to reactivity available for this product or its ingredients.
		E. coli Poly A Polymerase Buffer	No specific test data related to reactivity available for this product or its ingredients.
		Manganese chloride	No specific test data related to reactivity available for this product or its ingredients.
		10 mM rATP	No specific test data related to reactivity available for this product or its ingredients.
		Glycogen	No specific test data related to reactivity available for this product or its ingredients.
		10X AffinityScript RT buffer	No specific test data related to reactivity available for this product or its ingredients.
		RT Adaptor Primer	No specific test data related to reactivity available for this product or its ingredients.
		100 mM dNTPs	No specific test data related to reactivity available for this product or its ingredients.
		AffinityScript RT/RNase Block	No specific test data related to reactivity available for this product or its ingredients.
		Enzyme Mixture	No specific test data related to reactivity available for this product or its ingredients.
		Universal Reverse Primer	No specific test data related to reactivity available for this product or its ingredients.

Section 10. Stability and reactivity

10.2 Chemical stability	<ul style="list-style-type: none"> : E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer 	<ul style="list-style-type: none"> 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. The product is stable.
10.3 Possibility of hazardous reactions	<ul style="list-style-type: none"> : E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer 	<ul style="list-style-type: none"> 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. 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	<ul style="list-style-type: none"> : E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer 	<ul style="list-style-type: none"> 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. No specific data. No specific data.
10.5 Incompatible materials	<ul style="list-style-type: none"> : E. coli Poly A Polymerase (PAP) E. coli Poly A Polymerase Buffer Manganese chloride 10 mM rATP Glycogen 10X AffinityScript RT buffer RT Adaptor Primer 100 mM dNTPs AffinityScript RT/RNase Block Enzyme Mixture Universal Reverse Primer 	<ul style="list-style-type: none"> 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. No specific data. No specific data.

Section 10. Stability and reactivity

10.6 Hazardous decomposition products	:	E. coli Poly A Polymerase (PAP)	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		E. coli Poly A Polymerase Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Manganese chloride	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		10 mM rATP	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Glycogen	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		10X AffinityScript RT buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		RT Adaptor Primer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		100 mM dNTPs	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		AffinityScript RT/RNase Block Enzyme Mixture	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
		Universal Reverse Primer	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
E. coli Poly A Polymerase (PAP)				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
Sodium chloride	LC50 Inhalation Dusts and mists	Rat	>42 g/m ³	1 hours
	LD50 Oral	Rat	3000 mg/kg	-
E. coli Poly A Polymerase Buffer				
Sodium chloride	LC50 Inhalation Dusts and mists	Rat	>42 g/m ³	1 hours
	LD50 Oral	Rat	3000 mg/kg	-
10X AffinityScript RT buffer				
Potassium chloride	LD50 Oral	Rat	2600 mg/kg	-
AffinityScript RT/RNase Block Enzyme Mixture				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
E. coli Poly A Polymerase (PAP)					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
E. coli Poly A Polymerase Buffer					
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
10X AffinityScript RT buffer					
Potassium chloride	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
AffinityScript RT/RNase Block Enzyme Mixture					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
E. coli Poly A Polymerase Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
10X AffinityScript RT buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation

Section 11. Toxicological information

AffinityScript RT/RNase Block Enzyme Mixture
4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid

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

: E. coli Poly A Polymerase (PAP)

Routes of entry anticipated: Oral, Dermal, Inhalation.

E. coli Poly A Polymerase Buffer

Routes of entry anticipated: Oral, Dermal, Inhalation.

Manganese chloride

Not available.

10 mM rATP

Not available.

Glycogen

Not available.

10X AffinityScript RT buffer

Routes of entry anticipated: Oral, Dermal, Inhalation.

RT Adaptor Primer

Not available.

100 mM dNTPs

Routes of entry anticipated: Oral, Dermal, Inhalation.

AffinityScript RT/RNase Block Enzyme Mixture

Routes of entry anticipated: Oral, Dermal, Inhalation.

Universal Reverse Primer

Not available.

Potential acute health effects

Eye contact

: E. coli Poly A Polymerase (PAP)

Causes eye irritation.

E. coli Poly A Polymerase Buffer

Causes serious eye irritation.

Manganese chloride

No known significant effects or critical hazards.

10 mM rATP

No known significant effects or critical hazards.

Glycogen

No known significant effects or critical hazards.

10X AffinityScript RT buffer

Causes eye irritation.

RT Adaptor Primer

No known significant effects or critical hazards.

100 mM dNTPs

No known significant effects or critical hazards.

AffinityScript RT/RNase Block Enzyme Mixture

Causes eye irritation.

Universal Reverse Primer

No known significant effects or critical hazards.

Inhalation

: E. coli Poly A Polymerase (PAP)

No known significant effects or critical hazards.

E. coli Poly A Polymerase Buffer

No known significant effects or critical hazards.

Manganese chloride

No known significant effects or critical hazards.

10 mM rATP

No known significant effects or critical hazards.

Glycogen

No known significant effects or critical hazards.

10X AffinityScript RT buffer

No known significant effects or critical hazards.

RT Adaptor Primer

No known significant effects or critical hazards.

100 mM dNTPs

No known significant effects or critical hazards.

AffinityScript RT/RNase Block Enzyme Mixture

No known significant effects or critical hazards.

Universal Reverse Primer

No known significant effects or critical hazards.

Skin contact

: E. coli Poly A Polymerase (PAP)

No known significant effects or critical hazards.

E. coli Poly A Polymerase Buffer

No known significant effects or critical hazards.

Manganese chloride

No known significant effects or critical hazards.

10 mM rATP

No known significant effects or critical hazards.

Glycogen

No known significant effects or critical hazards.

10X AffinityScript RT buffer

No known significant effects or critical hazards.

RT Adaptor Primer

No known significant effects or critical hazards.

100 mM dNTPs

No known significant effects or critical hazards.

Section 11. Toxicological information

	AffinityScript RT/RNase Block Enzyme Mixture	May cause an allergic skin reaction.
	Universal Reverse Primer	No known significant effects or critical hazards.
Ingestion	: E. coli Poly A Polymerase (PAP)	No known significant effects or critical hazards.
	E. coli Poly A Polymerase Buffer	No known significant effects or critical hazards.
	Manganese chloride	No known significant effects or critical hazards.
	10 mM rATP	No known significant effects or critical hazards.
	Glycogen	No known significant effects or critical hazards.
	10X AffinityScript RT buffer	No known significant effects or critical hazards.
	RT Adaptor Primer	No known significant effects or critical hazards.
	100 mM dNTPs	No known significant effects or critical hazards.
	AffinityScript RT/RNase Block Enzyme Mixture	No known significant effects or critical hazards.
	Universal Reverse Primer	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: E. coli Poly A Polymerase (PAP)	Adverse symptoms may include the following: irritation watering redness
	E. coli Poly A Polymerase Buffer	Adverse symptoms may include the following: pain or irritation watering redness
	Manganese chloride	No specific data.
	10 mM rATP	No specific data.
	Glycogen	No specific data.
	10X AffinityScript RT buffer	Adverse symptoms may include the following: irritation watering redness
	RT Adaptor Primer	No specific data.
	100 mM dNTPs	No specific data.
	AffinityScript RT/RNase Block Enzyme Mixture	Adverse symptoms may include the following: irritation watering redness
	Universal Reverse Primer	No specific data.
Inhalation	: E. coli Poly A Polymerase (PAP)	No specific data.
	E. coli Poly A Polymerase Buffer	No specific data.
	Manganese chloride	No specific data.
	10 mM rATP	No specific data.
	Glycogen	No specific data.
	10X AffinityScript RT buffer	No specific data.
	RT Adaptor Primer	No specific data.
	100 mM dNTPs	No specific data.
	AffinityScript RT/RNase Block Enzyme Mixture	No specific data.
	Universal Reverse Primer	No specific data.
Skin contact	: E. coli Poly A Polymerase (PAP)	No specific data.
	E. coli Poly A Polymerase Buffer	No specific data.
	Manganese chloride	No specific data.
	10 mM rATP	No specific data.
	Glycogen	No specific data.
	10X AffinityScript RT buffer	No specific data.
	RT Adaptor Primer	No specific data.
	100 mM dNTPs	No specific data.

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	AffinityScript RT/RNase Block Enzyme Mixture	Adverse symptoms may include the following: irritation redness
	Universal Reverse Primer	No specific data.
Ingestion	: E. coli Poly A Polymerase (PAP)	No specific data.
	E. coli Poly A Polymerase Buffer	No specific data.
	Manganese chloride	No specific data.
	10 mM rATP	No specific data.
	Glycogen	No specific data.
	10X AffinityScript RT buffer	No specific data.
	RT Adaptor Primer	No specific data.
	100 mM dNTPs	No specific data.
	AffinityScript RT/RNase Block Enzyme Mixture	No specific data.
	Universal Reverse Primer	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	: E. coli Poly A Polymerase (PAP)	No known significant effects or critical hazards.
	E. coli Poly A Polymerase Buffer	No known significant effects or critical hazards.
	Manganese chloride	No known significant effects or critical hazards.
	10 mM rATP	No known significant effects or critical hazards.
	Glycogen	No known significant effects or critical hazards.
	10X AffinityScript RT buffer	No known significant effects or critical hazards.
	RT Adaptor Primer	No known significant effects or critical hazards.
	100 mM dNTPs	No known significant effects or critical hazards.
	AffinityScript RT/RNase Block Enzyme Mixture	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	Universal Reverse Primer	No known significant effects or critical hazards.
Carcinogenicity	: E. coli Poly A Polymerase (PAP)	No known significant effects or critical hazards.
	E. coli Poly A Polymerase Buffer	No known significant effects or critical hazards.
	Manganese chloride	No known significant effects or critical hazards.
	10 mM rATP	No known significant effects or critical hazards.
	Glycogen	No known significant effects or critical hazards.
	10X AffinityScript RT buffer	No known significant effects or critical hazards.
	RT Adaptor Primer	No known significant effects or critical hazards.
	100 mM dNTPs	No known significant effects or critical hazards.
	AffinityScript RT/RNase Block Enzyme Mixture	No known significant effects or critical hazards.
	Universal Reverse Primer	No known significant effects or critical hazards.

Section 11. Toxicological information

Mutagenicity	:	E. coli Poly A Polymerase (PAP)	No known significant effects or critical hazards.
		E. coli Poly A Polymerase Buffer	No known significant effects or critical hazards.
		Manganese chloride	No known significant effects or critical hazards.
		10 mM rATP	No known significant effects or critical hazards.
		Glycogen	No known significant effects or critical hazards.
		10X AffinityScript RT buffer	No known significant effects or critical hazards.
		RT Adaptor Primer	No known significant effects or critical hazards.
		100 mM dNTPs	No known significant effects or critical hazards.
		AffinityScript RT/RNase Block	No known significant effects or critical hazards.
		Enzyme Mixture	No known significant effects or critical hazards.
Teratogenicity	:	Universal Reverse Primer	No known significant effects or critical hazards.
		E. coli Poly A Polymerase (PAP)	No known significant effects or critical hazards.
		E. coli Poly A Polymerase Buffer	No known significant effects or critical hazards.
		Manganese chloride	No known significant effects or critical hazards.
		10 mM rATP	No known significant effects or critical hazards.
		Glycogen	No known significant effects or critical hazards.
		10X AffinityScript RT buffer	No known significant effects or critical hazards.
		RT Adaptor Primer	No known significant effects or critical hazards.
		100 mM dNTPs	No known significant effects or critical hazards.
		AffinityScript RT/RNase Block	No known significant effects or critical hazards.
Developmental effects	:	Enzyme Mixture	No known significant effects or critical hazards.
		Universal Reverse Primer	No known significant effects or critical hazards.
		E. coli Poly A Polymerase (PAP)	No known significant effects or critical hazards.
		E. coli Poly A Polymerase Buffer	No known significant effects or critical hazards.
		Manganese chloride	No known significant effects or critical hazards.
		10 mM rATP	No known significant effects or critical hazards.
		Glycogen	No known significant effects or critical hazards.
		10X AffinityScript RT buffer	No known significant effects or critical hazards.
		RT Adaptor Primer	No known significant effects or critical hazards.
		100 mM dNTPs	No known significant effects or critical hazards.
Fertility effects	:	AffinityScript RT/RNase Block	No known significant effects or critical hazards.
		Enzyme Mixture	No known significant effects or critical hazards.
		Universal Reverse Primer	No known significant effects or critical hazards.
		E. coli Poly A Polymerase (PAP)	No known significant effects or critical hazards.
		E. coli Poly A Polymerase Buffer	No known significant effects or critical hazards.
		Manganese chloride	No known significant effects or critical hazards.
		10 mM rATP	No known significant effects or critical hazards.
		Glycogen	No known significant effects or critical hazards.
		10X AffinityScript RT buffer	No known significant effects or critical hazards.
		RT Adaptor Primer	No known significant effects or critical hazards.
	100 mM dNTPs	No known significant effects or critical hazards.	
	AffinityScript RT/RNase Block	No known significant effects or critical hazards.	
	Enzyme Mixture	No known significant effects or critical hazards.	
	Universal Reverse Primer	No known significant effects or critical hazards.	

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
E. coli Poly A Polymerase (PAP) Oral	103448.3 mg/kg
E. coli Poly A Polymerase Buffer Oral	41095.9 mg/kg
10X AffinityScript RT buffer Oral	46428.6 mg/kg

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Other information	: E. coli Poly A Polymerase (PAP)	Not available.
	E. coli Poly A Polymerase Buffer	Not available.
	Manganese chloride	Not available.
	10 mM rATP	Not available.
	Glycogen	Not available.
	10X AffinityScript RT buffer	Not available.
	RT Adaptor Primer	Not available.
	100 mM dNTPs	Not available.
	AffinityScript RT/RNase Block	Not available.
	Enzyme Mixture	Not available.
	Universal Reverse Primer	Not available.

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
E. coli Poly A Polymerase (PAP) Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
E. coli Poly A Polymerase Buffer Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm ³ Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks
10X AffinityScript RT 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 83000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
	Acute LC50 880000 µg/l Fresh water	Fish - Pimephales promelas	96 hours

Section 12. Ecological information

12.2 Persistence and degradability

Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
E. coli Poly A Polymerase (PAP) Glycerol	-1.76	-	low
AffinityScript RT/RNase Block Enzyme Mixture Glycerol	-1.76	-	low
4-(2-Hydroxyethyl)piperazin-1-ylethanesulphonic acid	-4.07	-	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.

RCRA classification :

E. coli Poly A Polymerase (PAP)	Not available.
E. coli Poly A Polymerase Buffer	Not available.
Manganese chloride	Not available.
10 mM rATP	Not available.
Glycogen	Not available.
10X AffinityScript RT buffer	Not available.
RT Adaptor Primer	Not available.
100 mM dNTPs	Not available.
AffinityScript RT/RNase Block Enzyme Mixture	Not available.
Universal Reverse Primer	Not available.

Section 13. Disposal considerations

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

Regulatory information

DOT / IMDG / IATA : Not regulated.

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-
United States inventory (TSCA 8b): All components are listed or exempted.
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 : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
E. coli Poly A Polymerase (PAP)						
Glycerol	30 - 60	No.	No.	No.	Yes.	No.
Sodium chloride	1 - 5	No.	No.	No.	Yes.	No.
E. coli Poly A Polymerase Buffer						
Sodium chloride	5 - 10	No.	No.	No.	Yes.	No.
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	1 - 5	No.	No.	No.	Yes.	No.
10X AffinityScript RT buffer						
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	5 - 10	No.	No.	No.	Yes.	No.
Potassium chloride	5 - 10	No.	No.	No.	Yes.	No.
100 mM dNTPs						
2'-Deoxyguanosine 5'-(tetrahydrogen triphosphate)	1 - 5	No.	No.	No.	Yes.	No.
2'-Deoxyadenosine 5'-(tetrahydrogen triphosphate)	1 - 5	No.	No.	No.	Yes.	No.
AffinityScript RT/RNase Block Enzyme Mixture						
Glycerol	30 - 60	No.	No.	No.	Yes.	No.
4-(2-Hydroxyethyl)piperazine-1-ylethanesulphonic acid	0.1 - 1	Yes.	No.	No.	Yes.	No.

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**

No products were found.

- Canada inventory** : All components are listed or exempted.

International regulations

- International lists** :
- Australia inventory (AICS)**: Not determined.
 - China inventory (IECSC)**: Not determined.
 - Japan inventory**: Not determined.
 - Korea inventory**: Not determined.
 - Malaysia Inventory (EHS Register)**: Not determined.
 - New Zealand Inventory of Chemicals (NZIoC)**: Not determined.
 - Philippines inventory (PICCS)**: Not determined.
 - Taiwan inventory (CSNN)**: Not determined.

- Chemical Weapons Convention List Schedule I Chemicals** : Not listed

- Chemical Weapons Convention List Schedule II Chemicals** : Not listed

Section 15. Regulatory information

Chemical Weapons : Not listed
Convention List Schedule
III Chemicals

Section 16. Other information

History

Date of issue : 4/20/2015.
Date of previous issue : No previous validation.
Version : 1

Indicates information that has changed from previously issued version.

Notice to reader

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