

SAFETY DATA SHEET

Absolutely RNA FFPE Kit, Part Number 400809

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

1.1 Product identifier

Product name	: Absolutely RNA FFPE Kit, Part Number 400809
Part No. (Kit)	: 400809
Part No.	: RNA Binding Buffer 400809-13
	1.67x High-Salt Wash Buffer 400711-14
	5x Low-Salt Wash Buffer 400711-15
	Elution Buffer 400752-16
	Beta-mercaptoethanol 400711-111
	Deoxyribonuclease I enzyme 400711-23
	Reconstitution Buffer 400711-17
	Digestion Buffer 400711-18
	Proteinase K 400809-17
	Proteinase K Digestion Buffer 400809-18
	Stratagene QPCR 750500-41
	Human Reference Total RNA
	De-paraffinization Reagent (d-limonene) 400809-15

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

Identified uses	
Analytical reagent.	
RNA Binding Buffer	35 ml
1.67x High-Salt Wash Buffer	24 ml
5x Low-Salt Wash Buffer	17 ml
Elution Buffer	3.5 ml
Beta-mercaptoethanol	0.3 ml
Deoxyribonuclease I enzyme	1 g
Reconstitution Buffer	0.3 ml
Digestion Buffer	3 ml (1.5 ml / Tube)
Proteinase K	0.5 ml
Proteinase K Digestion Buffer	5 ml
Stratagene QPCR Human Reference Total RNA	0.025 ml
De-paraffinization Reagent (d-limonene)	150 ml

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

Date of issue/Date of revision : 20/04/2015

1/59

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition	:	RNA Binding Buffer	Mixture
		1.67x High-Salt Wash Buffer	Mixture
		5x Low-Salt Wash Buffer	Mixture
		Elution Buffer	Mixture
		Beta-mercaptoethanol	Mono-constituent substance
		Deoxyribonuclease I enzyme	Mono-constituent substance
		Reconstitution Buffer	Mixture
		Digestion Buffer	Mixture
		Proteinase K	Mixture
		Proteinase K Digestion Buffer	Mixture
		Stratagene QPCR	Mixture
		Human Reference Total RNA	
		De-paraffinization Reagent (d-limonene)	Mono-constituent substance

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

RNA Binding Buffer

H302	ACUTE TOXICITY (oral) - Category 4
H332	ACUTE TOXICITY (inhalation) - Category 4
H412	LONG-TERM AQUATIC HAZARD - Category 3

1.67x High-Salt Wash Buffer

H302	ACUTE TOXICITY (oral) - Category 4
H332	ACUTE TOXICITY (inhalation) - Category 4
H412	LONG-TERM AQUATIC HAZARD - Category 3

Beta-mercaptoethanol

H301	ACUTE TOXICITY (oral) - Category 3
H310	ACUTE TOXICITY (dermal) - Category 2
H330	ACUTE TOXICITY (inhalation) - Category 2
H315	SKIN CORROSION/IRRITATION - Category 2
H318	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
H317	SKIN SENSITIZATION - Category 1
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H411	LONG-TERM AQUATIC HAZARD - Category 2

Digestion Buffer

H226	FLAMMABLE LIQUIDS - Category 3
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De-paraffinization Reagent (d-limonene)

H226	FLAMMABLE LIQUIDS - Category 3
H315	SKIN CORROSION/IRRITATION - Category 2
H317	SKIN SENSITIZATION - Category 1
H400	ACUTE AQUATIC HAZARD - Category 1
H410	LONG-TERM AQUATIC HAZARD - Category 1

Ingredients of unknown toxicity

:	RNA Binding Buffer	Not applicable.
	1.67x High-Salt Wash Buffer	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.3%
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	Not applicable.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Not applicable.

SECTION 2: Hazards identification

	Digestion Buffer	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3%
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	Stratagene QPCR Human Reference Total RNA	Not applicable.
	De-paraffinization Reagent (d-limonene)	Not applicable.
Ingredients of unknown ecotoxicity	RNA Binding Buffer	Not applicable.
	1.67x High-Salt Wash Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.3%
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	Not applicable.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 50%
	Digestion Buffer	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3%
	Proteinase K	Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 30%
	Proteinase K Digestion Buffer	Not applicable.
	Stratagene QPCR Human Reference Total RNA	Not applicable.
	De-paraffinization Reagent (d-limonene)	Not applicable.

Classification according to Directive 1999/45/EC [DPD]

RNA Binding Buffer	The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
1.67x High-Salt Wash Buffer	The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
5x Low-Salt Wash Buffer	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Elution Buffer	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Beta-mercaptoethanol	The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
Deoxyribonuclease I enzyme	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Reconstitution Buffer	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Digestion Buffer	The product is classified as dangerous according to Directive 1999/45/EC and its amendments.
Proteinase K	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Proteinase K Digestion Buffer	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
Stratagene QPCR Human Reference Total RNA	The product is not classified as dangerous according to Directive 1999/45/EC and its amendments.
De-paraffinization Reagent (d-limonene)	The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification	RNA Binding Buffer	Xn; R20/21/22 R52/53
	1.67x High-Salt Wash Buffer	Xn; R20/21/22 R52/53
	5x Low-Salt Wash Buffer	Not classified.
	Elution Buffer	Not classified.
	Beta-mercaptoethanol	T; R23/24

SECTION 2: Hazards identification

		Xn; R22
		Xi; R41, R38
		R43
		N; R51/53
	Deoxyribonuclease I enzyme	Not classified.
	Reconstitution Buffer	Not classified.
	Digestion Buffer	R10
	Proteinase K	Not classified.
	Proteinase K Digestion Buffer	Not classified.
	Stratagene QPCR Human Reference Total RNA	Not classified.
	De-paraffinization Reagent (d-limonene)	Xi; R38
		R43
		N; R50/53
Physical/chemical hazards	: RNA Binding Buffer	Not applicable.
	1.67x High-Salt Wash Buffer	Not applicable.
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	Not applicable.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Not applicable.
	Digestion Buffer	Flammable.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	Stratagene QPCR Human Reference Total RNA	Not applicable.
	De-paraffinization Reagent (d-limonene)	Not applicable.
Human health hazards	: RNA Binding Buffer	Harmful by inhalation, in contact with skin and if swallowed.
	1.67x High-Salt Wash Buffer	Harmful by inhalation, in contact with skin and if swallowed.
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	Toxic by inhalation and in contact with skin. Harmful if swallowed. Risk of serious damage to eyes. Irritating to skin. May cause sensitisation by skin contact.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Not applicable.
	Digestion Buffer	Not applicable.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	Stratagene QPCR Human Reference Total RNA	Not applicable.
	De-paraffinization Reagent (d-limonene)	Irritating to skin. May cause sensitisation by skin contact.

SECTION 2: Hazards identification

Environmental hazards	: RNA Binding Buffer	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
	1.67x High-Salt Wash Buffer	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Not applicable.
	Digestion Buffer	Not applicable.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	Stratagene QPCR	Not applicable.
	Human Reference Total RNA	
	De-paraffinization Reagent (d-limonene)	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

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

2.2 Label elements

Hazard pictograms



Signal word

: RNA Binding Buffer	Warning
1.67x High-Salt Wash Buffer	Warning
5x Low-Salt Wash Buffer	No signal word.
Elution Buffer	No signal word.
Beta-mercaptoethanol	Danger
Deoxyribonuclease I enzyme	No signal word.
Reconstitution Buffer	No signal word.
Digestion Buffer	Warning
Proteinase K	No signal word.
Proteinase K Digestion Buffer	No signal word.
Stratagene QPCR	No signal word.
Human Reference Total RNA	
De-paraffinization Reagent (d-limonene)	Warning

Hazard statements

: RNA Binding Buffer	GHS07 - Harmful if swallowed. Harmful if inhaled. Harmful to aquatic life with long lasting effects.
1.67x High-Salt Wash Buffer	GHS07 - Harmful if swallowed. Harmful if inhaled. Harmful to aquatic life with long lasting effects.
5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
Elution Buffer	No known significant effects or critical hazards.
Beta-mercaptoethanol	GHS06 - Fatal in contact with skin. Fatal if inhaled.

SECTION 2: Hazards identification

	Toxic if swallowed. GHS05 - Causes serious eye damage. GHS07 - Causes skin irritation. May cause respiratory irritation. May cause an allergic skin reaction. GHS09 - Toxic to aquatic life with long lasting effects. No known significant effects or critical hazards.
Deoxyribonuclease I enzyme Reconstitution Buffer Digestion Buffer	No known significant effects or critical hazards. GHS02 - Flammable liquid and vapour.
Proteinase K Proteinase K Digestion Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards.
Stratagene QPCR Human Reference Total RNA De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards. GHS02 - Flammable liquid and vapour. GHS07 - Causes skin irritation. May cause an allergic skin reaction. GHS09 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

: RNA Binding Buffer	P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P261 - Avoid breathing vapour.
1.67x High-Salt Wash Buffer	P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P261 - Avoid breathing vapour.
5x Low-Salt Wash Buffer Elution Buffer Beta-mercaptoethanol	Not applicable. Not applicable. P280 - Wear protective gloves. Wear eye or face protection. P273 - Avoid release to the environment. P262 - Do not get in eyes, on skin, or on clothing. P260 - Do not breathe vapour.
Deoxyribonuclease I enzyme Reconstitution Buffer Digestion Buffer	Not applicable. P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
Proteinase K Proteinase K Digestion Buffer	Not applicable. Not applicable.
Stratagene QPCR Human Reference Total RNA De-paraffinization Reagent (d-limonene)	Not applicable. P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P273 - Avoid release to the environment.

SECTION 2: Hazards identification

Response	: RNA Binding Buffer	P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
	1.67x High-Salt Wash Buffer	P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or physician. P302 + P310 - IF ON SKIN: Immediately call a POISON CENTER or physician. P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Not applicable.
	Digestion Buffer	P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	Stratagene QPCR	Not applicable.
	Human Reference Total RNA	Not applicable.
	De-paraffinization Reagent (d-limonene)	P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Storage	: RNA Binding Buffer	Not applicable.
	1.67x High-Salt Wash Buffer	Not applicable.
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	P405 - Store locked up.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Not applicable.
	Digestion Buffer	P235 - Keep cool.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	Stratagene QPCR	Not applicable.
	Human Reference Total RNA	Not applicable.
	De-paraffinization Reagent (d-limonene)	P235 - Keep cool.
Disposal	: RNA Binding Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	1.67x High-Salt Wash Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	5x Low-Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	Beta-mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Deoxyribonuclease I enzyme	Not applicable.
	Reconstitution Buffer	Not applicable.
	Digestion Buffer	P501 - Dispose of contents and container in accordance

SECTION 2: Hazards identification

Proteinase K	with all local, regional, national and international regulations.
Proteinase K Digestion Buffer	Not applicable.
Stratagene QPCR Human Reference Total RNA	Not applicable.
De-paraffinization Reagent (d-limonene)	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : **RNA Binding Buffer**
Guanidinium thiocyanate

1.67x High-Salt Wash Buffer
Guanidinium thiocyanate

Beta-mercaptoethanol
Beta-mercaptoethanol

Deoxyribonuclease I enzyme
Deoxyribonuclease I enzyme

De-paraffinization Reagent (d-limonene)
De-paraffinization Reagent (d-limonene)

Supplemental label elements :

RNA Binding Buffer	Not applicable.
1.67x High-Salt Wash Buffer	Not applicable.
5x Low-Salt Wash Buffer	Not applicable.
Elution Buffer	Not applicable.
Beta-mercaptoethanol	Not applicable.
Deoxyribonuclease I enzyme	Not applicable.
Reconstitution Buffer	Not applicable.
Digestion Buffer	Not applicable.
Proteinase K	Not applicable.
Proteinase K Digestion Buffer	Not applicable.
Stratagene QPCR Human Reference Total RNA	Not applicable.
De-paraffinization Reagent (d-limonene)	Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Tactile warning of danger :

RNA Binding Buffer	Not applicable.
1.67x High-Salt Wash Buffer	Not applicable.
5x Low-Salt Wash Buffer	Not applicable.
Elution Buffer	Not applicable.
Beta-mercaptoethanol	Not applicable.
Deoxyribonuclease I enzyme	Not applicable.
Reconstitution Buffer	Not applicable.
Digestion Buffer	Not applicable.
Proteinase K	Not applicable.
Proteinase K Digestion Buffer	Not applicable.

SECTION 2: Hazards identification

Buffer
 Stratagene QPCR Human Reference Total RNA
 De-paraffinization Reagent (d-limonene)

Not applicable.
 Not applicable.

2.3 Other hazards

Other hazards which do not result in classification

RNA Binding Buffer
 1.67x High-Salt Wash Buffer
 Buffer
 5x Low-Salt Wash Buffer
 Elution Buffer
 Beta-mercaptoethanol
 Deoxyribonuclease I enzyme
 Reconstitution Buffer
 Digestion Buffer
 Proteinase K
 Proteinase K Digestion Buffer
 Buffer
 Stratagene QPCR Human Reference Total RNA
 De-paraffinization Reagent (d-limonene)

None known.
 Defatting to the skin.
 None known.
 None known.
 None known.
 None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

RNA Binding Buffer Mixture
 1.67x High-Salt Wash Buffer Mixture
 5x Low-Salt Wash Buffer Mixture
 Elution Buffer Mixture
 Beta-mercaptoethanol Mono-constituent substance
 Deoxyribonuclease I enzyme Mono-constituent substance
 Reconstitution Buffer Mixture
 Digestion Buffer Mixture
 Proteinase K Mixture
 Proteinase K Digestion Buffer Mixture
 Stratagene QPCR Human Reference Total RNA Mixture
 De-paraffinization Reagent (d-limonene) Mono-constituent substance

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
RNA Binding Buffer Guanidinium thiocyanate	EC: 209-812-1 CAS: 593-84-0 Index: 615-004-00-3	≥30 - <50	Xn; R20/21/22 R32 R52/53	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 3, H412	[1]
1.67x High-Salt Wash Buffer Guanidinium thiocyanate	EC: 209-812-1 CAS: 593-84-0 Index: 615-004-00-3	≥30 - <50	Xn; R20/21/22 R32 R52/53	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 3, H412	[1]
2-Amino-2-(hydroxymethyl)	EC: 214-684-5 CAS: 1185-53-1	≥1 - <3	Xi; R36/37/38	Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1]

SECTION 3: Composition/information on ingredients

propane-1,3-diol hydrochloride				STOT SE 3, H335	
Beta-mercaptoethanol 2-Mercaptoethanol	EC: 200-464-6 CAS: 60-24-2	100	T; R23/24 Xn; R22 Xi; R41, R38 R43 N; R51/53	Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411	[A]
Deoxyribonuclease I enzyme Enzyme	CAS: -	100	Not classified.	Not classified.	[A]
Digestion Buffer 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride	EC: 214-684-5 CAS: 1185-53-1	≥3 - <5	Xi; R36/37/38	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≥1 - <2	Xi; R36	Eye Irrit. 2, H319	[1]
Proteinase K Digestion Buffer Sodium chloride	EC: 231-598-3 CAS: 7647-14-5	≥1 - <3	Xi; R36	Eye Irrit. 2, H319	[1]
Sodium dodecyl sulphate	EC: 205-788-1 CAS: 151-21-3	≥1 - <2	F; R11 Xn; R21/22 Xi; R36/37/38 N; R50	Flam. Sol. 2, H228 Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 3, H412	[1]
Poly(oxy-1, 2-ethanediyl), .alpha.-(1,1,3, 3-tetramethylbutyl) phenyl]-.omega.-hydroxy-	CAS: 9036-19-5	≥0.1 - <0.3	Xi; R41, R38 N; R51/53	Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Chronic 2, H411	[1] [5]
De-paraffinization Reagent (d-limonene) (R)-p-Mentha-1,8-diene	EC: 227-813-5 CAS: 5989-27-5 Index: 601-029-00-7	100	R10 Xi; R38 R43 N; R50/53 See Section 16 for the full text of the R-phrases declared above.	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 See Section 16 for the full text of the H statements declared above.	[A]

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

Type

SECTION 3: Composition/information on ingredients

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern
- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: RNA Binding 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.
	1.67x High-Salt Wash 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.
	5x Low-Salt Wash Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Elution Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Beta-mercaptoethanol	Get medical attention immediately. 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. Chemical burns must be treated promptly by a physician.
	Deoxyribonuclease I enzyme	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.
	Reconstitution Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Digestion 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.
	Proteinase K	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.
	Proteinase K Digestion Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
	Stratagene QPCR Human Reference Total RNA	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.
	De-paraffinization Reagent (d-limonene)	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 if irritation occurs.

SECTION 4: First aid measures

Inhalation	: RNA Binding Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 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.
	1.67x High-Salt Wash Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 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.
	5x Low-Salt Wash Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Elution Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Beta-mercaptoethanol	Get medical attention immediately. 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. 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.
	Deoxyribonuclease I enzyme	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Reconstitution Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Digestion Buffer	Get medical attention immediately. 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. 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.
	Proteinase K	Remove victim to fresh air and keep at rest in a position

SECTION 4: First aid measures

		comfortable for breathing. Get medical attention if symptoms occur.
	Proteinase K Digestion Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Stratagene QPCR Human Reference Total RNA	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	De-paraffinization Reagent (d-limonene)	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.
Skin contact	: RNA Binding Buffer	Flush contaminated skin with plenty of 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	1.67x High-Salt Wash Buffer	Flush contaminated skin with plenty of 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	5x Low-Salt Wash Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Elution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Beta-mercaptoethanol	Get medical attention immediately. Flush contaminated skin with plenty of 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. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Deoxyribonuclease I enzyme	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Reconstitution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Digestion Buffer	Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Proteinase K	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Proteinase K Digestion Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Stratagene QPCR Human Reference Total RNA	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

SECTION 4: First aid measures

	De-paraffinization Reagent (d-limonene)	Flush contaminated skin with plenty of 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.
Ingestion	: RNA Binding 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. 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.
	1.67x High-Salt Wash 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. 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.
	5x Low-Salt Wash Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	Elution Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	Beta-mercaptoethanol	Get medical attention immediately. 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. 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.
	Deoxyribonuclease I enzyme	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not

SECTION 4: First aid measures

Reconstitution Buffer	induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. 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.
Digestion Buffer	Get medical attention immediately. 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. 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.
Proteinase K	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.
Proteinase K Digestion Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Stratagene QPCR Human Reference Total RNA	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.
De-paraffinization Reagent (d-limonene)	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.
Protection of first-aiders : RNA Binding 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.
1.67x High-Salt Wash 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.
5x Low-Salt Wash Buffer	No action shall be taken involving any personal risk or without suitable training.
Elution Buffer	No action shall be taken involving any personal risk or

SECTION 4: First aid measures

Beta-mercaptoethanol	without suitable training. No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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.
Deoxyribonuclease I enzyme Reconstitution Buffer	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training.
Digestion Buffer	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Proteinase K	No action shall be taken involving any personal risk or without suitable training.
Proteinase K Digestion Buffer	No action shall be taken involving any personal risk or without suitable training.
Stratagene QPCR Human Reference Total RNA	No action shall be taken involving any personal risk or without suitable training.
De-paraffinization Reagent (d-limonene)	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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact

: RNA Binding Buffer	No known significant effects or critical hazards.
1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.
5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
Elution Buffer	No known significant effects or critical hazards.
Beta-mercaptoethanol	Severely irritating to eyes. Risk of serious damage to eyes.
Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
Reconstitution Buffer	No known significant effects or critical hazards.
Digestion Buffer	May cause eye irritation.
Proteinase K	No known significant effects or critical hazards.
Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.

Inhalation

: RNA Binding Buffer	Harmful by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
1.67x High-Salt Wash Buffer	Harmful by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
Elution Buffer	No known significant effects or critical hazards.
Beta-mercaptoethanol	Toxic by inhalation.
Deoxyribonuclease I	No known significant effects or critical hazards.

SECTION 4: First aid measures

	enzyme	
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	Can cause central nervous system (CNS) depression. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR	
	Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.
Skin contact	: RNA Binding Buffer	Harmful in contact with skin.
	1.67x High-Salt Wash Buffer	Harmful in contact with skin.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	Toxic in contact with skin. Irritating to skin. May cause sensitisation by skin contact.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	May cause skin dryness and irritation.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR	
	Human Reference Total RNA	
	De-paraffinization Reagent (d-limonene)	Irritating to skin. May cause sensitisation by skin contact.
Ingestion	: RNA Binding Buffer	Harmful if swallowed.
	1.67x High-Salt Wash Buffer	Harmful if swallowed.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	Toxic if swallowed.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR	
	Human Reference Total RNA	
	De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: RNA Binding Buffer	No specific data.
	1.67x High-Salt Wash Buffer	No specific data.
	5x Low-Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Beta-mercaptoethanol	Adverse symptoms may include the following: pain or irritation watering redness
	Deoxyribonuclease I	No specific data.

SECTION 4: First aid measures

	enzyme	
	Reconstitution Buffer	No specific data.
	Digestion Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	Stratagene QPCR Human Reference Total RNA	No specific data.
	De-paraffinization Reagent (d-limonene)	No specific data.
Inhalation	: RNA Binding Buffer	No specific data.
	1.67x High-Salt Wash Buffer	No specific data.
	5x Low-Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Beta-mercaptoethanol	No specific data.
	Deoxyribonuclease I enzyme	No specific data.
	Reconstitution Buffer	No specific data.
	Digestion Buffer	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	Stratagene QPCR Human Reference Total RNA	No specific data.
	De-paraffinization Reagent (d-limonene)	No specific data.
Skin contact	: RNA Binding Buffer	No specific data.
	1.67x High-Salt Wash Buffer	No specific data.
	5x Low-Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Beta-mercaptoethanol	Adverse symptoms may include the following: irritation redness
	Deoxyribonuclease I enzyme	No specific data.
	Reconstitution Buffer	No specific data.
	Digestion Buffer	Adverse symptoms may include the following: irritation dryness cracking
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	Stratagene QPCR Human Reference Total RNA	No specific data.
	De-paraffinization Reagent (d-limonene)	Adverse symptoms may include the following: irritation redness

SECTION 4: First aid measures

Ingestion	: RNA Binding Buffer	No specific data.
	1.67x High-Salt Wash Buffer	No specific data.
	5x Low-Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Beta-mercaptoethanol	No specific data.
	Deoxyribonuclease I enzyme	No specific data.
	Reconstitution Buffer	No specific data.
	Digestion Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	Stratagene QPCR	No specific data.
	Human Reference Total RNA	
	De-paraffinization	No specific data.
	Reagent (d-limonene)	

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	: RNA Binding 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.
	1.67x High-Salt Wash 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.
	5x Low-Salt Wash Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Elution Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Beta-mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Deoxyribonuclease I enzyme	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Reconstitution Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Digestion 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.
	Proteinase K	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Proteinase K Digestion Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Stratagene QPCR	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Human Reference Total RNA	
	De-paraffinization	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Reagent (d-limonene)	
	Specific treatments	: RNA Binding Buffer
1.67x High-Salt Wash Buffer		No specific treatment.
5x Low-Salt Wash Buffer		No specific treatment.
Elution Buffer		No specific treatment.
Beta-mercaptoethanol		No specific treatment.
Deoxyribonuclease I enzyme		No specific treatment.
Reconstitution Buffer		No specific treatment.
Digestion Buffer		No specific treatment.
Proteinase K		No specific treatment.
Proteinase K Digestion Buffer		No specific treatment.

SECTION 4: First aid measures

Stratagene QPCR Human Reference Total RNA	No specific treatment.
De-paraffinization Reagent (d-limonene)	No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	RNA Binding Buffer	Use an extinguishing agent suitable for the surrounding fire.	
		1.67x High-Salt Wash Buffer	Use an extinguishing agent suitable for the surrounding fire.	
		5x Low-Salt Wash Buffer	Use an extinguishing agent suitable for the surrounding fire.	
		Elution Buffer	Use an extinguishing agent suitable for the surrounding fire.	
		Beta-mercaptoethanol	Use an extinguishing agent suitable for the surrounding fire.	
		Deoxyribonuclease I enzyme	Use an extinguishing agent suitable for the surrounding fire.	
		Reconstitution Buffer	Use an extinguishing agent suitable for the surrounding fire.	
		Digestion Buffer	Use dry chemical, CO ₂ , water spray (fog) or foam.	
		Proteinase K	Use an extinguishing agent suitable for the surrounding fire.	
		Proteinase K Digestion Buffer	Use an extinguishing agent suitable for the surrounding fire.	
		Stratagene QPCR Human Reference Total RNA	Use an extinguishing agent suitable for the surrounding fire.	
		De-paraffinization Reagent (d-limonene)	Use dry chemical, CO ₂ , water spray (fog) or foam.	
	Unsuitable extinguishing media	:	RNA Binding Buffer	None known.
			1.67x High-Salt Wash Buffer	None known.
		5x Low-Salt Wash Buffer	None known.	
		Elution Buffer	None known.	
		Beta-mercaptoethanol	Do not use water jet.	
		Deoxyribonuclease I enzyme	None known.	
		Reconstitution Buffer	None known.	
		Digestion Buffer	Do not use water jet.	
		Proteinase K	None known.	
		Proteinase K Digestion Buffer	None known.	
		Stratagene QPCR Human Reference Total RNA	None known.	
		De-paraffinization Reagent (d-limonene)	None known.	

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	:	RNA Binding Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
		1.67x High-Salt Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
		5x Low-Salt Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
		Elution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.

SECTION 5: Firefighting measures

Beta-mercaptoethanol	In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Deoxyribonuclease I enzyme	No specific fire or explosion hazard.
Reconstitution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Digestion Buffer	Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
Proteinase K	In a fire or if heated, a pressure increase will occur and the container may burst.
Proteinase K Digestion Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Stratagene QPCR Human Reference Total RNA	In a fire or if heated, a pressure increase will occur and the container may burst.
De-paraffinization Reagent (d-limonene)	Flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous combustion products	
: RNA Binding Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides
1.67x High-Salt Wash Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides halogenated compounds
5x Low-Salt Wash Buffer	No specific data.
Elution Buffer	No specific data.
Beta-mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
Deoxyribonuclease I enzyme	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Reconstitution Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Digestion Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
Proteinase K	Decomposition products may include the following materials: carbon dioxide carbon monoxide
Proteinase K Digestion	Decomposition products may include the following materials:

SECTION 5: Firefighting measures

Buffer	carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
Stratagene QPCR Human Reference Total RNA	No specific data.
De-paraffinization Reagent (d-limonene)	Decomposition products may include the following materials: carbon dioxide carbon monoxide

5.3 Advice for firefighters

Special precautions for fire-fighters

: RNA Binding 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.
1.67x High-Salt Wash 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.
5x Low-Salt Wash 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.
Elution 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.
Beta-mercaptoethanol	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.
Deoxyribonuclease I enzyme	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.
Reconstitution 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.
Digestion 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Proteinase K	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.
Proteinase K Digestion 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.
Stratagene QPCR Human Reference Total RNA	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.
De-paraffinization Reagent (d-limonene)	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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

: RNA Binding Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
1.67x High-Salt Wash Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full

SECTION 5: Firefighting measures

	face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
5x Low-Salt Wash Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Elution Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Beta-mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Deoxyribonuclease I enzyme	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Reconstitution Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Digestion Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Proteinase K	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Proteinase K Digestion Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Stratagene QPCR Human Reference Total RNA	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
De-paraffinization Reagent (d-limonene)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves)

SECTION 5: Firefighting measures

conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel	: RNA Binding Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	1.67x High-Salt Wash Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	5x Low-Salt Wash Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	Elution Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	Beta-mercaptoethanol	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	Deoxyribonuclease I enzyme	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	Reconstitution Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	Digestion Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	Proteinase K	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	Proteinase K Digestion	No action shall be taken involving any personal risk or

SECTION 6: Accidental release measures

	Buffer	without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	Stratagene QPCR Human Reference Total RNA	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.
	De-paraffinization Reagent (d-limonene)	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	: RNA Binding 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".
	1.67x High-Salt Wash 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".
	5x Low-Salt Wash 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".
	Elution 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".
	Beta-mercaptoethanol	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".
	Deoxyribonuclease I enzyme	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".
	Reconstitution 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".
	Digestion 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".
	Proteinase K	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".
	Proteinase K Digestion 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".
	Stratagene QPCR Human Reference Total RNA	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".

SECTION 6: Accidental release measures

De-paraffinization Reagent (d-limonene)	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".
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6.2 Environmental precautions

: RNA Binding Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.
1.67x High-Salt Wash Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.
5x Low-Salt Wash Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Elution Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Beta-mercaptoethanol	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
Deoxyribonuclease I enzyme	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Reconstitution Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Digestion Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Proteinase K	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Proteinase K Digestion Buffer	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Stratagene QPCR Human Reference Total RNA	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
De-paraffinization Reagent (d-limonene)	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

6.3 Methods and material for containment and cleaning up

SECTION 6: Accidental release measures

Methods for cleaning up : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Protective measures	: RNA Binding Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
	1.67x High-Salt Wash Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
	5x Low-Salt Wash Buffer	Put on appropriate personal protective equipment (see Section 8).
	Elution Buffer	Put on appropriate personal protective equipment (see Section 8).
	Beta-mercaptoethanol	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 breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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.
	Deoxyribonuclease I enzyme	Put on appropriate personal protective equipment (see Section 8).
	Reconstitution Buffer	Put on appropriate personal protective equipment (see Section 8).
	Digestion Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain

SECTION 7: Handling and storage

<p>Proteinase K</p> <p>Proteinase K Digestion Buffer</p> <p>Stratagene QPCR Human Reference Total RNA</p> <p>De-paraffinization Reagent (d-limonene)</p>	<p>product residue and can be hazardous. Do not reuse container.</p> <p>Put on appropriate personal protective equipment (see Section 8).</p> <p>Put on appropriate personal protective equipment (see Section 8).</p> <p>Put on appropriate personal protective equipment (see Section 8).</p> <p>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 vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.</p>
<p>Advice on general occupational hygiene</p>	<p>: RNA Binding Buffer</p> <p>1.67x High-Salt Wash Buffer</p> <p>5x Low-Salt Wash Buffer</p> <p>Elution Buffer</p> <p>Beta-mercaptoethanol</p> <p>Deoxyribonuclease I enzyme</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>

SECTION 7: Handling and storage

Reconstitution Buffer	Section 8 for additional information on hygiene measures. 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.
Digestion Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Proteinase K	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.
Proteinase K Digestion Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Stratagene QPCR Human Reference Total RNA	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.
De-paraffinization Reagent (d-limonene)	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

: RNA Binding Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
1.67x High-Salt Wash Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
5x Low-Salt Wash 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

SECTION 7: Handling and storage

	prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Elution Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Beta-mercaptoethanol	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. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Deoxyribonuclease I enzyme	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Reconstitution Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Digestion Buffer	Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Proteinase K	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Proteinase K Digestion 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 7: Handling and storage

Stratagene QPCR Human Reference Total RNA	Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
De-paraffinization Reagent (d-limonene)	Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Seveso II Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
Beta-mercaptoethanol		
H2: Acute toxicity 2 any route of entry or Acute toxicity 3 Inhalation/Dermal route of entry	50	200
E2: Hazardous to the aquatic environment - Chronic 2	200	500
C2: Toxic	50	200
C9ii: Toxic for the environment	200	500
Digestion Buffer		
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b	5000	50000
C6: Flammable (R10)	5000	50000
De-paraffinization Reagent (d-limonene)		
P5c: Flammable liquids 2 and 3 not falling under P5a or P5b	5000	50000
E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1	100	200
C9j: Very toxic for the environment	100	200

7.3 Specific end use(s)

Recommendations	: RNA Binding Buffer 1.67x High-Salt Wash Buffer 5x Low-Salt Wash Buffer Elution Buffer Beta-mercaptoethanol Deoxyribonuclease I enzyme Reconstitution Buffer Digestion Buffer Proteinase K Proteinase K Digestion Buffer	Industrial applications, Professional applications. Industrial applications, Professional applications.
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SECTION 7: Handling and storage

Stratagene QPCR	Industrial applications, Professional applications.
Human Reference Total RNA	
De-paraffinization Reagent (d-limonene)	Industrial applications, Professional applications.

Industrial sector specific solutions : Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Recommended monitoring procedures

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

DNELs/DMELs

No DNELs available.

PNECs

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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.

SECTION 8: Exposure controls/personal protection

- 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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- 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.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	:	RNA Binding Buffer	Liquid.	
		1.67x High-Salt Wash Buffer	Liquid.	
		5x Low-Salt Wash Buffer	Liquid.	
		Elution Buffer	Liquid.	
		Beta-mercaptoethanol	Liquid.	
		Deoxyribonuclease I enzyme	Solid. [lyophilised]	
		Reconstitution Buffer	Liquid.	
		Digestion Buffer	Liquid.	
		Proteinase K	Liquid.	
		Proteinase K Digestion Buffer	Liquid.	
		Stratagene QPCR Human Reference Total RNA	Liquid.	
		De-paraffinization Reagent (d-limonene)	Liquid. [Oily liquid.]	
	Colour	:	RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
			5x Low-Salt Wash Buffer	Not available.
		Elution Buffer	Not available.	
		Beta-mercaptoethanol	Not available.	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Not available.	
		Stratagene QPCR Human Reference Total RNA	Not available.	
		De-paraffinization Reagent (d-limonene)	White to yellowish.	

SECTION 9: Physical and chemical properties

Odour	: RNA Binding Buffer	Not available.	
	1.67x High-Salt Wash Buffer	Not available.	
	5x Low-Salt Wash Buffer	Not available.	
	Elution Buffer	Not available.	
	Beta-mercaptoethanol	Not available.	
	Deoxyribonuclease I enzyme	Not available.	
	Reconstitution Buffer	Not available.	
	Digestion Buffer	Not available.	
	Proteinase K	Not available.	
	Proteinase K Digestion Buffer	Not available.	
	Stratagene QPCR Human Reference Total RNA	Not available.	
	De-paraffinization Reagent (d-limonene)	Not available.	
	Odour threshold	: RNA Binding Buffer	Not available.
		1.67x High-Salt Wash Buffer	Not available.
		5x Low-Salt Wash Buffer	Not available.
		Elution Buffer	Not available.
Beta-mercaptoethanol		Not available.	
Deoxyribonuclease I enzyme		Not available.	
Reconstitution Buffer		Not available.	
Digestion Buffer		Not available.	
Proteinase K		Not available.	
Proteinase K Digestion Buffer		Not available.	
Stratagene QPCR Human Reference Total RNA		Not available.	
De-paraffinization Reagent (d-limonene)		Not available.	
pH		: RNA Binding Buffer	7
		1.67x High-Salt Wash Buffer	6.4
		5x Low-Salt Wash Buffer	7
		Elution Buffer	7.5
	Beta-mercaptoethanol	Not available.	
	Deoxyribonuclease I enzyme	Not available.	
	Reconstitution Buffer	7.5	
	Digestion Buffer	7	
	Proteinase K	Not available.	
	Proteinase K Digestion Buffer	Not available.	
	Stratagene QPCR Human Reference Total RNA	Not available.	
	De-paraffinization Reagent (d-limonene)	Not available.	

SECTION 9: Physical and chemical properties

Melting point/freezing point	:	RNA Binding Buffer	Not available.	
		1.67x High-Salt Wash Buffer	Not available.	
		5x Low-Salt Wash Buffer	0°C	
		Elution Buffer	0°C	
		Beta-mercaptoethanol	-100°C	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	0°C	
		Stratagene QPCR Human Reference Total RNA	0°C	
		De-paraffinization Reagent (d-limonene)	-78.35°C	
	Initial boiling point and boiling range	:	RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
			5x Low-Salt Wash Buffer	100°C
			Elution Buffer	100°C
		Beta-mercaptoethanol	157°C	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	100°C	
		Stratagene QPCR Human Reference Total RNA	100°C	
		De-paraffinization Reagent (d-limonene)	154.44°C	
Flash point		:	RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
			5x Low-Salt Wash Buffer	Not available.
			Elution Buffer	Not available.
		Beta-mercaptoethanol	Closed cup: 74°C	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Closed cup: 23 to 37.8°C	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Not available.	
		Stratagene QPCR Human Reference Total RNA	Not available.	
		De-paraffinization Reagent (d-limonene)	Not available.	

SECTION 9: Physical and chemical properties

Evaporation rate	:	RNA Binding Buffer	Not available.		
		1.67x High-Salt Wash Buffer	Not available.		
		5x Low-Salt Wash Buffer	Not available.		
		Elution Buffer	Not available.		
		Beta-mercaptoethanol	Not available.		
		Deoxyribonuclease I enzyme	Not available.		
		Reconstitution Buffer	Not available.		
		Digestion Buffer	Not available.		
		Proteinase K	Not available.		
		Proteinase K Digestion Buffer	Not available.		
		Stratagene QPCR Human Reference Total RNA	Not available.		
		De-paraffinization Reagent (d-limonene)	<1 (Water = 1 = 1)		
		Flammability (solid, gas)	:	RNA Binding Buffer	Not applicable.
				1.67x High-Salt Wash Buffer	Not applicable.
				5x Low-Salt Wash Buffer	Not applicable.
Elution Buffer	Not applicable.				
Beta-mercaptoethanol	Not applicable.				
Deoxyribonuclease I enzyme	Not applicable.				
Reconstitution Buffer	Not applicable.				
Digestion Buffer	Not applicable.				
Proteinase K	Not applicable.				
Proteinase K Digestion Buffer	Not applicable.				
Stratagene QPCR Human Reference Total RNA	Not applicable.				
De-paraffinization Reagent (d-limonene)	Not applicable.				
Upper/lower flammability or explosive limits	:			RNA Binding Buffer	Not available.
				1.67x High-Salt Wash Buffer	Not available.
				5x Low-Salt Wash Buffer	Not available.
		Elution Buffer	Not available.		
		Beta-mercaptoethanol	Lower: 2.3% Upper: 18%		
		Deoxyribonuclease I enzyme	Not available.		
		Reconstitution Buffer	Not available.		
		Digestion Buffer	Not available.		
		Proteinase K	Not available.		
		Proteinase K Digestion Buffer	Not available.		
		Stratagene QPCR Human Reference Total RNA	Not available.		
		De-paraffinization Reagent (d-limonene)	Not available.		

SECTION 9: Physical and chemical properties

Vapour pressure	: RNA Binding Buffer	Not available.	
	1.67x High-Salt Wash Buffer	Not available.	
	5x Low-Salt Wash Buffer	Not available.	
	Elution Buffer	Not available.	
	Beta-mercaptoethanol	0.13 kPa [room temperature]	
	Deoxyribonuclease I enzyme	Not available.	
	Reconstitution Buffer	Not available.	
	Digestion Buffer	Not available.	
	Proteinase K	Not available.	
	Proteinase K Digestion Buffer	Not available.	
	Stratagene QPCR Human Reference Total RNA	Not available.	
	De-paraffinization Reagent (d-limonene)	0.27 kPa [room temperature]	
	Vapour density	: RNA Binding Buffer	Not available.
		1.67x High-Salt Wash Buffer	Not available.
		5x Low-Salt Wash Buffer	Not available.
		Elution Buffer	Not available.
Beta-mercaptoethanol		2.7 [Air = 1]	
Deoxyribonuclease I enzyme		Not available.	
Reconstitution Buffer		Not available.	
Digestion Buffer		Not available.	
Proteinase K		Not available.	
Proteinase K Digestion Buffer		Not available.	
Stratagene QPCR Human Reference Total RNA		Not available.	
De-paraffinization Reagent (d-limonene)		0.012 [Air = 1]	
Relative density		: RNA Binding Buffer	Not available.
		1.67x High-Salt Wash Buffer	Not available.
		5x Low-Salt Wash Buffer	Not available.
		Elution Buffer	Not available.
	Beta-mercaptoethanol	1.1	
	Deoxyribonuclease I enzyme	Not available.	
	Reconstitution Buffer	Not available.	
	Digestion Buffer	Not available.	
	Proteinase K	Not available.	
	Proteinase K Digestion Buffer	Not available.	
	Stratagene QPCR Human Reference Total RNA	Not available.	
	De-paraffinization Reagent (d-limonene)	Not available.	

SECTION 9: Physical and chemical properties

Solubility(ies)	:	RNA Binding Buffer	Not available.	
		1.67x High-Salt Wash Buffer	Soluble in the following materials: cold water and hot water.	
		5x Low-Salt Wash Buffer	Easily soluble in the following materials: cold water and hot water.	
		Elution Buffer	Easily soluble in the following materials: cold water and hot water.	
		Beta-mercaptoethanol	Easily soluble in the following materials: cold water and hot water.	
		Deoxyribonuclease I enzyme	Easily soluble in the following materials: cold water and hot water.	
		Reconstitution Buffer	Soluble in the following materials: cold water and hot water.	
		Digestion Buffer	Soluble in the following materials: cold water and hot water.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Easily soluble in the following materials: cold water and hot water.	
		Stratagene QPCR Human Reference Total RNA	Easily soluble in the following materials: cold water and hot water.	
		De-paraffinization Reagent (d-limonene)	Insoluble in the following materials: cold water and hot water.	
	Partition coefficient: n-octanol/water	:	RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
			5x Low-Salt Wash Buffer	Not available.
			Elution Buffer	Not available.
		Beta-mercaptoethanol	Not available.	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Not available.	
		Stratagene QPCR Human Reference Total RNA	Not available.	
		De-paraffinization Reagent (d-limonene)	Not available.	
Auto-ignition temperature		:	RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
			5x Low-Salt Wash Buffer	Not available.
			Elution Buffer	Not available.
		Beta-mercaptoethanol	Not available.	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Not available.	
		Stratagene QPCR Human Reference Total RNA	Not available.	
		De-paraffinization Reagent (d-limonene)	Not available.	

SECTION 9: Physical and chemical properties

Decomposition temperature	:	RNA Binding Buffer	Not available.		
		1.67x High-Salt Wash Buffer	Not available.		
		5x Low-Salt Wash Buffer	Not available.		
		Elution Buffer	Not available.		
		Beta-mercaptoethanol	Not available.		
		Deoxyribonuclease I enzyme	Not available.		
		Reconstitution Buffer	Not available.		
		Digestion Buffer	Not available.		
		Proteinase K	Not available.		
		Proteinase K Digestion Buffer	Not available.		
		Stratagene QPCR Human Reference Total RNA	Not available.		
		De-paraffinization Reagent (d-limonene)	Not available.		
		Viscosity	:	RNA Binding Buffer	Not available.
				1.67x High-Salt Wash Buffer	Not available.
				5x Low-Salt Wash Buffer	Not available.
				Elution Buffer	Not available.
				Beta-mercaptoethanol	Not available.
Deoxyribonuclease I enzyme	Not available.				
Reconstitution Buffer	Not available.				
Digestion Buffer	Not available.				
Proteinase K	Not available.				
Proteinase K Digestion Buffer	Not available.				
Stratagene QPCR Human Reference Total RNA	Not available.				
De-paraffinization Reagent (d-limonene)	Not available.				
Explosive properties	:			RNA Binding Buffer	Not available.
				1.67x High-Salt Wash Buffer	Not available.
				5x Low-Salt Wash Buffer	Not available.
				Elution Buffer	Not available.
				Beta-mercaptoethanol	Not available.
		Deoxyribonuclease I enzyme	Not available.		
		Reconstitution Buffer	Not available.		
		Digestion Buffer	Not available.		
		Proteinase K	Not available.		
		Proteinase K Digestion Buffer	Not available.		
		Stratagene QPCR Human Reference Total RNA	Not available.		
		De-paraffinization Reagent (d-limonene)	Not available.		
		Oxidising properties	:	Not available.	

9.2 Other information

Date of issue/Date of revision : 20/04/2015

SECTION 9: Physical and chemical properties

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: <input checked="" type="checkbox"/> RNA Binding Buffer	No specific test data related to reactivity available for this product or its ingredients.
	1.67x High-Salt Wash Buffer	No specific test data related to reactivity available for this product or its ingredients.
	5x Low-Salt Wash Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Elution Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Beta-mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
	Deoxyribonuclease I enzyme	No specific test data related to reactivity available for this product or its ingredients.
	Reconstitution Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Digestion Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Proteinase K	No specific test data related to reactivity available for this product or its ingredients.
	Proteinase K Digestion Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Stratagene QPCR Human Reference Total RNA	No specific test data related to reactivity available for this product or its ingredients.
	De-paraffinization Reagent (d-limonene)	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: <input checked="" type="checkbox"/> RNA Binding Buffer	The product is stable.
	1.67x High-Salt Wash Buffer	The product is stable.
	5x Low-Salt Wash Buffer	The product is stable.
	Elution Buffer	The product is stable.
	Beta-mercaptoethanol	The product is stable.
	Deoxyribonuclease I enzyme	The product is stable.
	Reconstitution Buffer	The product is stable.
	Digestion Buffer	The product is stable.
	Proteinase K	The product is stable.
	Proteinase K Digestion Buffer	The product is stable.
	Stratagene QPCR Human Reference Total RNA	The product is stable.
	De-paraffinization Reagent (d-limonene)	The product is stable.
10.3 Possibility of hazardous reactions	: <input checked="" type="checkbox"/> RNA Binding Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	1.67x High-Salt Wash Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	5x Low-Salt Wash Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Elution Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Beta-mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
	Deoxyribonuclease I enzyme	Under normal conditions of storage and use, hazardous reactions will not occur.
	Reconstitution Buffer	Under normal conditions of storage and use, hazardous

SECTION 10: Stability and reactivity

Digestion Buffer	reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
Proteinase K	Under normal conditions of storage and use, hazardous reactions will not occur.
Proteinase K Digestion Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
Stratagene QPCR Human Reference Total RNA	Under normal conditions of storage and use, hazardous reactions will not occur.
De-paraffinization Reagent (d-limonene)	Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

: RNA Binding Buffer	No specific data.
1.67x High-Salt Wash Buffer	No specific data.
5x Low-Salt Wash Buffer	No specific data.
Elution Buffer	No specific data.
Beta-mercaptoethanol	No specific data.
Deoxyribonuclease I enzyme	No specific data.
Reconstitution Buffer	No specific data.
Digestion Buffer	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Proteinase K	No specific data.
Proteinase K Digestion Buffer	No specific data.
Stratagene QPCR Human Reference Total RNA	No specific data.
De-paraffinization Reagent (d-limonene)	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials

: RNA Binding Buffer	No specific data.
1.67x High-Salt Wash Buffer	No specific data.
5x Low-Salt Wash Buffer	No specific data.
Elution Buffer	No specific data.
Beta-mercaptoethanol	No specific data.
Deoxyribonuclease I enzyme	No specific data.
Reconstitution Buffer	No specific data.
Digestion Buffer	Reactive or incompatible with the following materials: oxidizing materials
Proteinase K	No specific data.
Proteinase K Digestion Buffer	No specific data.
Stratagene QPCR Human Reference Total RNA	No specific data.
De-paraffinization Reagent (d-limonene)	Reactive or incompatible with the following materials: oxidizing materials

SECTION 10: Stability and reactivity

10.6 Hazardous decomposition products	: RNA Binding Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	1.67x High-Salt Wash Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	5x Low-Salt Wash Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Elution Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Beta-mercaptoethanol	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Deoxyribonuclease I enzyme	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Reconstitution Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Digestion Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Proteinase K	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Proteinase K Digestion Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	Stratagene QPCR Human Reference Total RNA	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	De-paraffinization Reagent (d-limonene)	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	
Beta-mercaptoethanol 2-Mercaptoethanol	LD50 Dermal	Rabbit	200 mg/kg	-	
	LD50 Oral	Rat	244 mg/kg	-	
Digestion Buffer Sodium chloride	LC50 Inhalation Dusts and mists	Rat	>42 g/m ³	1 hours	
	LD50 Oral	Rat	3000 mg/kg	-	
Proteinase K Digestion Buffer Sodium chloride	LC50 Inhalation Dusts and mists	Rat	>42 g/m ³	1 hours	
	LD50 Oral	Rat	3000 mg/kg	-	
	Sodium dodecyl sulphate	LD50 Dermal	Rabbit	580 mg/kg	-
		LD50 Oral	Rat	1288 mg/kg	-
Poly(oxy-1,2-ethanediyl), .alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy-	LD50 Oral	Rat	2800 mg/kg	-	
De-paraffinization Reagent (d-limonene) (R)-p-Mentha-1,8-diene	LD50 Dermal	Rabbit	>5000 mg/kg	-	
	LD50 Oral	Rat	4400 mg/kg	-	

Acute toxicity estimates

SECTION 11: Toxicological information

Route	ATE value
RNA Binding Buffer Oral Dermal Inhalation (dusts and mists)	1057.1 mg/kg 2325.6 mg/kg 3.171 mg/l
1.67x High-Salt Wash Buffer Oral Dermal Inhalation (dusts and mists)	1282.1 mg/kg 2820.5 mg/kg 3.846 mg/l
Beta-mercaptoethanol Oral Dermal Inhalation (vapours)	244 mg/kg 200 mg/kg 2 mg/l
Digestion Buffer Oral	192307.7 mg/kg
Proteinase K Digestion Buffer Oral Dermal	129572.8 mg/kg 58348 mg/kg

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Beta-mercaptoethanol 2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
Digestion 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	-
Proteinase K Digestion 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	-
Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250 Micrograms	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 milligrams	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 milligrams	-
Poly(oxy-1,2-ethanediyl), . alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-. omega.-hydroxy-	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 25 milligrams	-
	Eyes - Severe irritant	Rabbit	-	1 Percent	-
De-paraffinization Reagent					

SECTION 11: Toxicological information

(d-limonene) (R)-p-Mentha-1,8-diene	Skin - Mild irritant	Rabbit	-	24 hours 10 Percent	-
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Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
1.67x High-Salt Wash Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
Beta-mercaptoethanol 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation
Digestion Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
Proteinase K Digestion Buffer Sodium dodecyl sulphate	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

RNA Binding Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
1.67x High-Salt Wash Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
5x Low-Salt Wash Buffer	Not available.
Elution Buffer	Not available.
Beta-mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation.
Deoxyribonuclease I enzyme	Not available.
Reconstitution Buffer	Not available.
Digestion Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Proteinase K	Not available.
Proteinase K Digestion Buffer	Not available.
Stratagene QPCR Human	Not available.
Reference Total RNA	Not available.
De-paraffinization Reagent (d-limonene)	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation

RNA Binding Buffer	Harmful by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
1.67x High-Salt Wash Buffer	Harmful by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
Elution Buffer	No known significant effects or critical hazards.

SECTION 11: Toxicological information

	Beta-mercaptoethanol	Toxic by inhalation.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	Can cause central nervous system (CNS) depression. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.
Ingestion	: RNA Binding Buffer	Harmful if swallowed.
	1.67x High-Salt Wash Buffer	Harmful if swallowed.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	Toxic if swallowed.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.
Skin contact	: RNA Binding Buffer	Harmful in contact with skin.
	1.67x High-Salt Wash Buffer	Harmful in contact with skin.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	Toxic in contact with skin. Irritating to skin. May cause sensitisation by skin contact.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	May cause skin dryness and irritation.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	Irritating to skin. May cause sensitisation by skin contact.
Eye contact	: RNA Binding Buffer	No known significant effects or critical hazards.
	1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	Severely irritating to eyes. Risk of serious damage to eyes.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	May cause eye irritation.

SECTION 11: Toxicological information

Proteinase K	No known significant effects or critical hazards.
Proteinase K Digestion Buffer	No known significant effects or critical hazards.
Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	RNA Binding Buffer	No specific data.	
		1.67x High-Salt Wash Buffer	No specific data.	
		5x Low-Salt Wash Buffer	No specific data.	
		Elution Buffer	No specific data.	
		Beta-mercaptoethanol	No specific data.	
		Deoxyribonuclease I enzyme	No specific data.	
		Reconstitution Buffer	No specific data.	
		Digestion Buffer	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness	
		Proteinase K	No specific data.	
		Proteinase K Digestion Buffer	No specific data.	
		Stratagene QPCR Human Reference Total RNA	No specific data.	
		De-paraffinization Reagent (d-limonene)	No specific data.	
	Ingestion	:	RNA Binding Buffer	No specific data.
			1.67x High-Salt Wash Buffer	No specific data.
		5x Low-Salt Wash Buffer	No specific data.	
		Elution Buffer	No specific data.	
		Beta-mercaptoethanol	No specific data.	
		Deoxyribonuclease I enzyme	No specific data.	
		Reconstitution Buffer	No specific data.	
		Digestion Buffer	No specific data.	
		Proteinase K	No specific data.	
		Proteinase K Digestion Buffer	No specific data.	
		Stratagene QPCR Human Reference Total RNA	No specific data.	
		De-paraffinization Reagent (d-limonene)	No specific data.	
Skin contact		:	RNA Binding Buffer	No specific data.
			1.67x High-Salt Wash Buffer	No specific data.
		5x Low-Salt Wash Buffer	No specific data.	
		Elution Buffer	No specific data.	
		Beta-mercaptoethanol	Adverse symptoms may include the following: irritation redness	
		Deoxyribonuclease I enzyme	No specific data.	
		Reconstitution Buffer	No specific data.	

SECTION 11: Toxicological information

	Digestion Buffer	Adverse symptoms may include the following: irritation dryness cracking
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	Stratagene QPCR	No specific data.
	Human Reference Total RNA	
	De-paraffinization Reagent (d-limonene)	Adverse symptoms may include the following: irritation redness
Eye contact	: RNA Binding Buffer	No specific data.
	1.67x High-Salt Wash Buffer	No specific data.
	5x Low-Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	Beta-mercaptoethanol	Adverse symptoms may include the following: pain or irritation watering redness
	Deoxyribonuclease I enzyme	No specific data.
	Reconstitution Buffer	No specific data.
	Digestion Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	Stratagene QPCR	No specific data.
	Human Reference Total RNA	
	De-paraffinization Reagent (d-limonene)	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	: RNA Binding Buffer	No known significant effects or critical hazards.
	1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
	Proteinase K	No known significant effects or critical hazards.

SECTION 11: Toxicological information

	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	: RNA Binding Buffer	No known significant effects or critical hazards.
	1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	No known significant effects or critical hazards.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.
Mutagenicity	: RNA Binding Buffer	No known significant effects or critical hazards.
	1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	No known significant effects or critical hazards.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.
Teratogenicity	: RNA Binding Buffer	No known significant effects or critical hazards.
	1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.
	5x Low-Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	Beta-mercaptoethanol	No known significant effects or critical hazards.
	Deoxyribonuclease I enzyme	No known significant effects or critical hazards.
	Reconstitution Buffer	No known significant effects or critical hazards.
	Digestion Buffer	No known significant effects or critical hazards.
	Proteinase K	No known significant effects or critical hazards.
	Proteinase K Digestion Buffer	No known significant effects or critical hazards.
	Stratagene QPCR Human Reference Total RNA	No known significant effects or critical hazards.
	De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.

SECTION 11: Toxicological information

Developmental effects	:	<input checked="" type="checkbox"/> RNA Binding Buffer	No known significant effects or critical hazards.		
		1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.		
		5x Low-Salt Wash Buffer	No known significant effects or critical hazards.		
		Elution Buffer	No known significant effects or critical hazards.		
		Beta-mercaptoethanol	No known significant effects or critical hazards.		
		Deoxyribonuclease I enzyme	No known significant effects or critical hazards.		
		Reconstitution Buffer	No known significant effects or critical hazards.		
		Digestion Buffer	No known significant effects or critical hazards.		
		Proteinase K	No known significant effects or critical hazards.		
		Proteinase K Digestion Buffer	No known significant effects or critical hazards.		
		Stratagene QPCR	No known significant effects or critical hazards.		
		Human Reference Total RNA			
		De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.		
		Fertility effects	:	<input checked="" type="checkbox"/> RNA Binding Buffer	No known significant effects or critical hazards.
				1.67x High-Salt Wash Buffer	No known significant effects or critical hazards.
5x Low-Salt Wash Buffer	No known significant effects or critical hazards.				
Elution Buffer	No known significant effects or critical hazards.				
Beta-mercaptoethanol	No known significant effects or critical hazards.				
Deoxyribonuclease I enzyme	No known significant effects or critical hazards.				
Reconstitution Buffer	No known significant effects or critical hazards.				
Digestion Buffer	No known significant effects or critical hazards.				
Proteinase K	No known significant effects or critical hazards.				
Proteinase K Digestion Buffer	No known significant effects or critical hazards.				
Stratagene QPCR	No known significant effects or critical hazards.				
Human Reference Total RNA					
De-paraffinization Reagent (d-limonene)	No known significant effects or critical hazards.				
Toxicokinetics	:			<input checked="" type="checkbox"/> RNA Binding Buffer	Not available.
				1.67x High-Salt Wash Buffer	Not available.
		5x Low-Salt Wash Buffer	Not available.		
		Elution Buffer	Not available.		
		Beta-mercaptoethanol	Not available.		
		Deoxyribonuclease I enzyme	Not available.		
		Reconstitution Buffer	Not available.		
		Digestion Buffer	Not available.		
		Proteinase K	Not available.		
		Proteinase K Digestion Buffer	Not available.		
		Stratagene QPCR	Not available.		
		Human Reference Total RNA			
		De-paraffinization Reagent (d-limonene)	Not available.		
		Absorption	:	<input checked="" type="checkbox"/> RNA Binding Buffer	Not available.
				1.67x High-Salt Wash Buffer	Not available.
5x Low-Salt Wash Buffer	Not available.				
Elution Buffer	Not available.				
Beta-mercaptoethanol	Not available.				
Deoxyribonuclease I enzyme	Not available.				
Reconstitution Buffer	Not available.				
Digestion Buffer	Not available.				
Proteinase K	Not available.				
Proteinase K Digestion Buffer	Not available.				
Stratagene QPCR	Not available.				
Human Reference Total RNA					
De-paraffinization Reagent (d-limonene)	Not available.				

SECTION 11: Toxicological information

Distribution	:	<input checked="" type="checkbox"/> RNA Binding Buffer	Not available.	
		1.67x High-Salt Wash Buffer	Not available.	
		5x Low-Salt Wash Buffer	Not available.	
		Elution Buffer	Not available.	
		Beta-mercaptoethanol	Not available.	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Not available.	
		Stratagene QPCR	Not available.	
		Human Reference Total RNA		
		De-paraffinization Reagent (d-limonene)	Not available.	
	Metabolism	:	<input checked="" type="checkbox"/> RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
		5x Low-Salt Wash Buffer	Not available.	
		Elution Buffer	Not available.	
		Beta-mercaptoethanol	Not available.	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Not available.	
		Stratagene QPCR	Not available.	
		Human Reference Total RNA		
		De-paraffinization Reagent (d-limonene)	Not available.	
Elimination		:	<input checked="" type="checkbox"/> RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
		5x Low-Salt Wash Buffer	Not available.	
		Elution Buffer	Not available.	
		Beta-mercaptoethanol	Not available.	
		Deoxyribonuclease I enzyme	Not available.	
		Reconstitution Buffer	Not available.	
		Digestion Buffer	Not available.	
		Proteinase K	Not available.	
		Proteinase K Digestion Buffer	Not available.	
		Stratagene QPCR	Not available.	
		Human Reference Total RNA		
		De-paraffinization Reagent (d-limonene)	Not available.	
	Other information	:	<input checked="" type="checkbox"/> RNA Binding Buffer	Not available.
			1.67x High-Salt Wash Buffer	Not available.
		5x Low-Salt Wash Buffer	Not available.	
		Elution Buffer	Not available.	
		Beta-mercaptoethanol	Not available.	
		Deoxyribonuclease I enzyme	Not available.	

SECTION 11: Toxicological information

Reconstitution Buffer	Not available.
Digestion Buffer	Not available.
Proteinase K	Not available.
Proteinase K Digestion Buffer	Not available.
Stratagene QPCR	Not available.
Human Reference Total RNA	
De-paraffinization Reagent (d-limonene)	Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
Digestion Buffer Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm3 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
Proteinase K Digestion Buffer Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm3 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
Sodium dodecyl sulphate	Acute EC50 1200 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute LC50 900 µg/l Marine water	Crustaceans - Artemia salina - Adult	48 hours
	Acute LC50 1400 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 590 µg/l Fresh water	Fish - Cirrhinus mrigala - Larvae	96 hours
	Chronic NOEC 1.25 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Chronic NOEC 1 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	21 days
	Chronic NOEC 3.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
Poly(oxy-1,2-ethanediyl), .	Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days
	Acute EC50 210 µg/l Fresh water	Algae - Pseudokirchneriella	96 hours

SECTION 12: Ecological information

alpha.-[(1,1,3,3-tetramethylbutyl)phenyl]-omega.-hydroxy-	Acute LC50 10800 µg/l Marine water	subcapitata	
	Acute LC50 8600 to 9800 µg/l Fresh water	Crustaceans - Pandalus montagui - Adult	48 hours
De-paraffinization Reagent (d-limonene) (R)-p-Mentha-1,8-diene	Acute LC50 7200 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
		Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 421 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 688 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours

12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Proteinase K Digestion Buffer Sodium dodecyl sulphate	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Beta-mercaptoethanol 2-Mercaptoethanol	-0.056	-	low
Proteinase K Digestion Buffer Sodium dodecyl sulphate	-2.03	-	low
	3.77	78.67	low
De-paraffinization Reagent (d-limonene) (R)-p-Mentha-1,8-diene	4.38	1022	high

12.4 Mobility in soil

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

12.5 Results of PBT and vPvB assessment

- PBT** : Not applicable.
- vPvB** : Not applicable.

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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

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

Packaging

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

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Additional information : **Special provisions**
251, 340

	ADR/RID	IMDG	IATA
14.1 UN number	UN3316	UN3316	UN3316
14.2 UN proper shipping name	CHEMICAL KIT	<input checked="" type="checkbox"/> CHEMICAL KIT. Marine pollutant ((R)-p-Mentha-1,8-diene, 2-Mercaptoethanol)	Chemical kit
14.3 Transport hazard class(es)	9  	9  	9 
14.4 Packing group	II	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14.5 Environmental hazards	Yes.	Yes.	<input checked="" type="checkbox"/> No.
Additional information	<input checked="" type="checkbox"/> The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. <u>Hazard identification number</u> 90 <u>Limited quantity</u> See SP 251 <u>Special provisions</u> 251, 340	<input checked="" type="checkbox"/> The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <u>Emergency schedules (EmS)</u> F-A, S-P <u>Special provisions</u> 251, 340	<input checked="" type="checkbox"/> The environmentally hazardous substance mark may appear if required by other transportation regulations. <u>Passenger and Cargo Aircraft</u> Quantity limitation: 10 kg Packaging instructions: 960 <u>Cargo Aircraft Only</u> Quantity limitation: 10 kg Packaging instructions: 960 <u>Limited Quantities - Passenger Aircraft</u>

Absolutely RNA FFPE Kit, Part Number 400809

SECTION 14: Transport information

	Tunnel code (E)	Quantity limitation: 1 kg Packaging instructions: Y960 Special provisions A44, A163 Remarks Excepted Quantity
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14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

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

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

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
<input checked="" type="checkbox"/> Proteinase K Digestion Buffer 4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]; 4-tert-Octylphenol ethoxylates	Substance of equivalent concern for environment	Recommended	ED/169/2012	11/6/2013

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : At least one component is not listed.

Integrated pollution prevention and control list (IPPC) - Air : Listed

Seveso II Directive

This product is controlled under the Seveso II Directive.

Danger criteria

Date of issue/Date of revision : 20/04/2015

54/59

SECTION 15: Regulatory information

Category

Beta-mercaptoethanol

H2: Acute toxicity 2 any route of entry or Acute toxicity 3 Inhalation/Dermal route of entry

E2: Hazardous to the aquatic environment - Chronic 2

C2: Toxic

C9ii: Toxic for the environment

Digestion Buffer

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b

C6: Flammable (R10)

De-paraffinization Reagent (d-limonene)

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b

E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

C9i: Very toxic for the environment

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia	: At least one component is not listed.
Canada	: Not determined.
China	: <input checked="" type="checkbox"/> At least one component is not listed.
Japan	: Not determined.
Malaysia	: <input checked="" type="checkbox"/> Not determined.
New Zealand	: <input checked="" type="checkbox"/> Not determined.
Philippines	: <input checked="" type="checkbox"/> Not determined.
Republic of Korea	: <input checked="" type="checkbox"/> Not determined.
Taiwan	: <input checked="" type="checkbox"/> Not determined.
United States	: At least one component is not listed.

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

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

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

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

Date of issue/Date of revision : 20/04/2015

SECTION 16: Other information

Classification	Justification
RNA Binding Buffer Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method
1.67x High-Salt Wash Buffer Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method
Beta-mercaptoethanol Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 2, H411	Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method
Digestion Buffer Flam. Liq. 3, H226	On basis of test data
De-paraffinization Reagent (d-limonene) Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	Expert judgment Calculation method Calculation method Calculation method Calculation method

<p>Full text of abbreviated H statements</p>	<p>RNA Binding Buffer H302 Harmful if swallowed. H312 Harmful in contact with skin. H332 Harmful if inhaled. H412 Harmful to aquatic life with long lasting effects.</p> <p>1.67x High-Salt Wash Buffer H302 Harmful if swallowed. H312 Harmful in contact with skin. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H412 Harmful to aquatic life with long lasting effects.</p> <p>Beta-mercaptoethanol H301 Toxic if swallowed. H310 Fatal in contact with skin. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H330 Fatal if inhaled. H335 May cause respiratory irritation. H411 Toxic to aquatic life with long lasting effects.</p> <p>Digestion Buffer H226 Flammable liquid and vapour. H315 Causes skin irritation. H319 Causes serious eye irritation.</p>
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SECTION 16: Other information

H335 May cause respiratory irritation.

Proteinase K Digestion**Buffer**

H228 Flammable solid.
 H302 (oral) Harmful if swallowed.
 H311 (dermal) Toxic in contact with skin.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H335 May cause respiratory irritation.
 H400 Very toxic to aquatic life.
 H411 Toxic to aquatic life with long lasting effects.
 H412 Harmful to aquatic life with long lasting effects.

De-paraffinization**Reagent (d-limonene)**

H226 Flammable liquid and vapour.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

Full text of classifications
 [CLP/GHS]

RNA Binding Buffer

Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
 Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4
 Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
 Aquatic Chronic 3, H412 LONG-TERM AQUATIC HAZARD - Category 3

1.67x High-Salt Wash**Buffer**

Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
 Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4
 Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
 Aquatic Chronic 3, H412 LONG-TERM AQUATIC HAZARD - Category 3
 Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
 STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Beta-mercaptoethanol

Acute Tox. 2, H310 ACUTE TOXICITY (dermal) - Category 2
 Acute Tox. 2, H330 ACUTE TOXICITY (inhalation) - Category 2
 Acute Tox. 3, H301 ACUTE TOXICITY (oral) - Category 3
 Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2
 Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
 Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1
 STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Digestion Buffer

Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
 Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3
 Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
 STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Proteinase K Digestion**Buffer**

Acute Tox. 3, H311 ACUTE TOXICITY (dermal) - Category 3
 Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4

SECTION 16: Other information

Aquatic Acute 1, H400	ACUTE AQUATIC HAZARD - Category 1
Aquatic Chronic 2, H411	LONG-TERM AQUATIC HAZARD - Category 2
Aquatic Chronic 3, H412	LONG-TERM AQUATIC HAZARD - Category 3
Eye Dam. 1, H318	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Flam. Sol. 2, H228	FLAMMABLE SOLIDS - Category 2
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3, H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

De-paraffinization Reagent (d-limonene)

Aquatic Acute 1, H400	ACUTE AQUATIC HAZARD - Category 1
Aquatic Chronic 1, H410	LONG-TERM AQUATIC HAZARD - Category 1
Flam. Liq. 3, H226	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1

Full text of abbreviated R phrases

RNA Binding Buffer	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R32- Contact with acids liberates very toxic gas. R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
1.67x High-Salt Wash Buffer	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R32- Contact with acids liberates very toxic gas. R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
5x Low-Salt Wash Buffer	Not applicable.
Elution Buffer	Not applicable.
Beta-mercaptoethanol	R23/24- Toxic by inhalation and in contact with skin. R22- Harmful if swallowed. R41- Risk of serious damage to eyes. R38- Irritating to skin. R43- May cause sensitisation by skin contact. R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Deoxyribonuclease I enzyme	Not applicable.
Reconstitution Buffer	Not applicable.
Digestion Buffer	R10- Flammable. R36- Irritating to eyes. R36/37/38- Irritating to eyes, respiratory system and skin.
Proteinase K	Not applicable.
Proteinase K Digestion Buffer	R11- Highly flammable. R21/22- Harmful in contact with skin and if swallowed. R41- Risk of serious damage to eyes. R36- Irritating to eyes. R38- Irritating to skin. R36/37/38- Irritating to eyes, respiratory system and skin. R50- Very toxic to aquatic organisms. R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Stratagene QPCR Human Reference Total RNA	Not applicable.
De-paraffinization Reagent (d-limonene)	R10- Flammable. R38- Irritating to skin. R43- May cause sensitisation by skin contact. R50/53- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

