

# SAFETY DATA SHEET



Absolutely RNA FFPE Kit - w/o Deparaffinization Reagent, Part Number  
400811

## Section 1. Identification

<b>Product identifier</b>	: Absolutely RNA FFPE Kit - w/o Deparaffinization Reagent, Part Number 400811		
<b>Part No. (Chemical Kit)</b>	: 400811		
<b>Part No.</b>	:	RNase-Free DNase I (Lyophilized)	400711-23
		β-Mercaptoethanol	200345-21
		RNA Binding Buffer	400809-13
		1.67X High Salt Wash Buffer	400711-14
		5x Low Salt Wash Buffer	400711-15
		Elution Buffer	400752-16
		DNase Reconstitution Buffer	400711-17
		DNase Digestion Buffer	400711-18
		Proteinase K	400809-17
		Proteinase K Digestion Buffer	400809-18
		QPCR Human Reference Total RNA	750500-41

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

Analytical reagent.

RNase-Free DNase I (Lyophilized)	2600 U		
β-Mercaptoethanol	0.75 ml (750 µl)	14.33 M)	
RNA Binding Buffer	35 ml		
1.67X High Salt Wash Buffer	24 ml		
5x Low Salt Wash Buffer	17 ml		
Elution Buffer	3 ml		
DNase Reconstitution Buffer	0.3 ml		
DNase Digestion Buffer	1.5 ml		
Proteinase K	0.5 ml		
Proteinase K Digestion Buffer	5 ml		
Stratagene QPCR Human Reference Total RNA	0.025 ml (25 µg)	1 µg/µl)	

**Supplier/Manufacturer** : Agilent Technologies Australia Pty Ltd  
679 Springvale Road  
Mulgrave  
Victoria 3170, Australia  
1800 802 402

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(61)-290372994

## Section 2. Hazard(s) identification

### Classification of the substance or mixture

#### β-Mercaptoethanol

H227	FLAMMABLE LIQUIDS - Category 4
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 SENSITISATION - Category 1
H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
H411	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

#### RNA Binding Buffer

## Section 2. Hazard(s) identification

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

### DNase Digestion Buffer

H226 FLAMMABLE LIQUIDS - Category 3  
 H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

### Proteinase K Digestion Buffer

H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A

1.67X High Salt Wash Buffer Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%  
 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%  
 Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%

DNase Reconstitution Buffer Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 30 - 60%

DNase Digestion Buffer Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%  
 Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%  
 Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%


Proteinase K Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%


Proteinase K Digestion Buffer Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 1 - 10%


1.67X High Salt Wash Buffer Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.3%


DNase Digestion Buffer Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 3%


### GHS label elements Hazard pictograms

β-Mercaptoethanol 

RNA Binding Buffer 

1.67X High Salt Wash Buffer 

DNase Digestion Buffer 

Proteinase K Digestion Buffer 

## Section 2. Hazard(s) identification

<b>Signal word</b>	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol RNA Binding Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer Proteinase K Proteinase K Digestion Buffer QPCR Human Reference Total RNA	No signal word. DANGER WARNING WARNING No signal word. No signal word. No signal word. WARNING No signal word. WARNING No signal word.
<b>Hazard statements</b>	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol  RNA Binding Buffer  1.67X High Salt Wash Buffer  5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer  Proteinase K Proteinase K Digestion Buffer QPCR Human Reference Total RNA	No known significant effects or critical hazards.  H227 - Combustible liquid. H310 + H330 - Fatal in contact with skin or if inhaled. H301 - Toxic if swallowed. H318 - Causes serious eye damage. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H335 - May cause respiratory irritation. H411 - Toxic to aquatic life with long lasting effects. H302 + H332 - Harmful if swallowed or if inhaled. H412 - Harmful to aquatic life with long lasting effects. H302 + H332 - Harmful if swallowed or if inhaled. H412 - Harmful to aquatic life with long lasting effects. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. H226 - Flammable liquid and vapour. H319 - Causes serious eye irritation. No known significant effects or critical hazards. H319 - Causes serious eye irritation. No known significant effects or critical hazards.
<b><u>Precautionary statements</u></b>		
<b>Prevention</b>	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol  RNA Binding Buffer	Not applicable.  P280 - Wear protective gloves. Wear eye or face protection. P284 - Wear respiratory protection. P210 - Keep away from flames and hot surfaces. - No smoking. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P262 - Do not get in eyes, on skin, or on clothing. P260 - Do not breathe vapour. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P261 - Avoid breathing vapour. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.

## Section 2. Hazard(s) identification

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. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
5x Low Salt Wash Buffer	Not applicable.
Elution Buffer	Not applicable.
DNase Reconstitution Buffer	Not applicable.
DNase Digestion Buffer	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. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P264 - Wash hands thoroughly after handling.
Proteinase K	Not applicable.
Proteinase K Digestion Buffer	P280 - Wear eye or face protection. P264 - Wash hands thoroughly after handling.
QPCR Human Reference Total RNA	Not applicable.
RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	Not applicable.  P391 - Collect spillage. P304 + P340 + P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P330 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. P302 + P361 + P350 + P310 + P362 + P363 - IF ON SKIN: Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or physician. Take off contaminated clothing. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
RNA Binding Buffer	P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
1.67X High Salt Wash Buffer	P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
5x Low Salt Wash Buffer	Not applicable.

**Response**

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## Section 2. Hazard(s) identification

	Elution Buffer	Not applicable.
	DNase Reconstitution Buffer	Not applicable.
	DNase Digestion Buffer	P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	QPCR Human Reference Total RNA	Not applicable.
<b>Storage</b>	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	Not applicable. P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
	RNA Binding Buffer	Not applicable.
	1.67X High Salt Wash Buffer	Not applicable.
	5x Low Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	DNase Reconstitution Buffer	Not applicable.
	DNase Digestion Buffer	P403 - Store in a well-ventilated place. P235 - Keep cool.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	QPCR Human Reference Total RNA	Not applicable.
<b>Disposal</b>	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	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.
	DNase Reconstitution Buffer	Not applicable.
	DNase Digestion Buffer	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	QPCR Human Reference Total RNA	Not applicable.

### Supplemental label elements

## Section 2. Hazard(s) identification

<b>Additional warning phrases</b>	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized)	Not applicable.
	β-Mercaptoethanol	Not applicable.
	RNA Binding Buffer	Not applicable.
	1.67X High Salt Wash Buffer	Not applicable.
	5x Low Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	DNase Reconstitution Buffer	Not applicable.
	DNase Digestion Buffer	Not applicable.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	QPCR Human Reference	Not applicable.
	Total RNA	
<b>Other hazards which do not result in classification</b>	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized)	May form explosible dust-air mixture if dispersed.
	β-Mercaptoethanol	None known.
	RNA Binding Buffer	None known.
	1.67X High Salt Wash Buffer	None known.
	5x Low Salt Wash Buffer	None known.
	Elution Buffer	None known.
	DNase Reconstitution Buffer	None known.
	DNase Digestion Buffer	None known.
	Proteinase K	None known.
	Proteinase K Digestion Buffer	None known.
	QPCR Human Reference	None known.
	Total RNA	

## Section 3. Composition and ingredient information

<b>Substance/mixture</b>	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized)	Substance
	β-Mercaptoethanol	Substance
	RNA Binding Buffer	Mixture
	1.67X High Salt Wash Buffer	Mixture
	5x Low Salt Wash Buffer	Mixture
	Elution Buffer	Mixture
	DNase Reconstitution Buffer	Mixture
	DNase Digestion Buffer	Mixture
	Proteinase K	Mixture
	Proteinase K Digestion Buffer	Mixture
	QPCR Human Reference	Mixture
	Total RNA	

### CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
<input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized) Enzyme.	100	-
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	100	60-24-2
<b>RNA Binding Buffer</b> Guanidinium thiocyanate	≥30 - <55	593-84-0
<b>1.67X High Salt Wash Buffer</b> Guanidinium thiocyanate	≥30 - <55	593-84-0
<b>DNase Reconstitution Buffer</b> Glycerol	≥30 - ≤60	56-81-5

### Section 3. Composition and ingredient information

<b>DNase Digestion Buffer</b> Ethanol	≥10 - ≤30	64-17-5
<b>Proteinase K</b> Glycerol	≥30 - ≤60	56-81-5
<b>Proteinase K Digestion Buffer</b> Sodium dodecyl sulphate	<3	151-21-3

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

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

### Section 4. First aid measures

Description of necessary first aid measures

<b>Eye contact</b>	: <b>RNAse-Free DNase I (Lyophilized)</b>	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.
	<b>β-Mercaptoethanol</b>	Get medical attention immediately. Call a poison center or physician. 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.
	<b>RNA Binding Buffer</b>	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.
	<b>1.67X High Salt Wash Buffer</b>	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.
	<b>5x Low Salt Wash Buffer</b>	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.
	<b>Elution Buffer</b>	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.
	<b>DNase Reconstitution Buffer</b>	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.
	<b>DNase Digestion Buffer</b>	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.
	<b>Proteinase K</b>	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.
	<b>Proteinase K Digestion Buffer</b>	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.
	<b>QPCR Human Reference</b>	Immediately flush eyes with plenty of water,

## Section 4. First aid measures

	Total RNA	occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
<b>Inhalation</b>	: RNase-Free DNase I (Lyophilized)	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	β-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. 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. 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.
	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 adverse health effects persist or are severe. If necessary, call a poison center or physician. 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 adverse health effects persist or are severe. If necessary, call a poison center or physician. 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.
	DNase Reconstitution Buffer	Remove victim to fresh air and keep at rest in a



## Section 4. First aid measures

		position comfortable for breathing. Get medical attention if symptoms occur.
	DNase Digestion Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
	Proteinase K	Remove victim to fresh air and keep at rest in a position 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. 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.
	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.
<b>Skin contact</b>	: RNase-Free DNase I (Lyophilized)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	β-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Gently wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	RNA Binding Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	1.67X High Salt Wash Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	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.
	DNase Reconstitution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get

## Section 4. First aid measures

	DNase Digestion Buffer	medical attention if symptoms occur. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	QPCR Human Reference Total RNA	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
<b>Ingestion</b>	: RNase-Free DNase I (Lyophilized)	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.
	β-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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.
	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. If necessary, call a poison center or physician. 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

## Section 4. First aid measures

	occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. 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.
DNase Reconstitution 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.
DNase Digestion Buffer	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
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 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

## Section 4. First aid measures

QPCR Human Reference  
Total RNA

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.  
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.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

##### Eye contact

: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
β-Mercaptoethanol	Causes serious eye damage.
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.
DNase Reconstitution Buffer	No known significant effects or critical hazards.
DNase Digestion Buffer	Causes serious eye irritation.
Proteinase K	No known significant effects or critical hazards.
Proteinase K Digestion Buffer	Causes serious eye irritation.
QPCR Human Reference	No known significant effects or critical hazards.
Total RNA	

##### Inhalation

: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
β-Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
RNA Binding Buffer	Harmful if inhaled.
1.67X High Salt Wash Buffer	Harmful if inhaled.
5x Low Salt Wash Buffer	No known significant effects or critical hazards.
Elution Buffer	No known significant effects or critical hazards.
DNase Reconstitution Buffer	No known significant effects or critical hazards.
DNase 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.
QPCR Human Reference	No known significant effects or critical hazards.
Total RNA	

##### Skin contact

: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
β-Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
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.
DNase Reconstitution Buffer	No known significant effects or critical hazards.
DNase 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.
QPCR Human Reference	No known significant effects or critical hazards.
Total RNA	

## Section 4. First aid measures

<b>Ingestion</b>	:	RNAse-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		β-Mercaptoethanol	Toxic if swallowed.
		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.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase 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.
		QPCR Human Reference	No known significant effects or critical hazards.
	Total RNA		

### Over-exposure signs/symptoms

<b>Eye contact</b>	:	RNAse-Free DNase I (Lyophilized)	Adverse symptoms may include the following: irritation redness
		β-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
		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.
		DNase Reconstitution Buffer	No specific data.
		DNase Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		Proteinase K	No specific data.
		Proteinase K Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness
		QPCR Human Reference	No specific data.
	Total RNA		

<b>Inhalation</b>	:	RNAse-Free DNase I (Lyophilized)	Adverse symptoms may include the following: respiratory tract irritation coughing
		β-Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
		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.
		DNase Reconstitution Buffer	No specific data.
		DNase Digestion Buffer	No specific data.
		Proteinase K	No specific data.
		Proteinase K Digestion Buffer	No specific data.
		QPCR Human Reference	No specific data.
	Total RNA		

<b>Skin contact</b>	:	RNAse-Free DNase I (Lyophilized)	No specific data.
		β-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		RNA Binding Buffer	No specific data.
	1.67X High Salt Wash Buffer	No specific data.	

## Section 4. First aid measures

	5x Low Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	DNase Reconstitution Buffer	No specific data.
	DNase Digestion Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	QPCR Human Reference	No specific data.
	Total RNA	
<b>Ingestion</b>	: RNase-Free DNase I (Lyophilized)	No specific data.
	β-Mercaptoethanol	Adverse symptoms may include the following: stomach pains
	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.
	DNase Reconstitution Buffer	No specific data.
	DNase Digestion Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	QPCR Human Reference	No specific data.
	Total RNA	

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

<b>Notes to physician</b>	: RNase-Free DNase I (Lyophilized)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	β-Mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	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.
	DNase Reconstitution Buffer	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	DNase 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.
	QPCR Human Reference	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Total RNA	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## Section 4. First aid measures

<b>Specific treatments</b>	: RNase-Free DNase I (Lyophilized)	No specific treatment.
	β-Mercaptoethanol	No specific treatment.
	RNA Binding Buffer	No specific treatment.
	1.67X High Salt Wash Buffer	No specific treatment.
	5x Low Salt Wash Buffer	No specific treatment.
	Elution Buffer	No specific treatment.
	DNase Reconstitution Buffer	No specific treatment.
	DNase Digestion Buffer	No specific treatment.
	Proteinase K	No specific treatment.
	Proteinase K Digestion Buffer	No specific treatment.
	QPCR Human Reference	No specific treatment.
	Total RNA	
<b>Protection of first-aiders</b>	: RNase-Free DNase I (Lyophilized)	No action shall be taken involving any personal risk or without suitable training.
	β-Mercaptoethanol	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.
	RNA Binding 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.
	1.67X High Salt Wash 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.
	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 without suitable training.
	DNase Reconstitution Buffer	No action shall be taken involving any personal risk or without suitable training.
	DNase Digestion 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.
	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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	QPCR Human Reference	No action shall be taken involving any personal risk or without suitable training.
	Total RNA	

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

: RNase-Free DNase I (Lyophilized)	Use dry chemical powder.
β-Mercaptoethanol	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
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.
DNase Reconstitution Buffer	Use an extinguishing agent suitable for the surrounding fire.
DNase Digestion Buffer	Use dry chemical, CO <sub>2</sub> , 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.
QPCR Human Reference Total RNA	Use an extinguishing agent suitable for the surrounding fire.

#### Unsuitable extinguishing media

: RNase-Free DNase I (Lyophilized)	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
β-Mercaptoethanol	Do not use water jet.
RNA Binding Buffer	None known.
1.67X High Salt Wash Buffer	None known.
5x Low Salt Wash Buffer	None known.
Elution Buffer	None known.
DNase Reconstitution Buffer	None known.
DNase Digestion Buffer	Do not use water jet.
Proteinase K	None known.
Proteinase K Digestion Buffer	None known.
QPCR Human Reference Total RNA	None known.

#### Specific hazards arising from the chemical

: RNase-Free DNase I (Lyophilized)	May form explosible dust-air mixture if dispersed.
β-Mercaptoethanol	Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. 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.
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



## Section 5. Firefighting measures

	Elution Buffer	and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst.
	DNase Reconstitution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	DNase Digestion Buffer	Flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
	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.
	QPCR Human Reference Total RNA	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	: RNase-Free DNase I (Lyophilized)	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	β-Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	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.
	DNase Reconstitution Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	DNase 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 Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides halogenated compounds metal oxide/oxides
	QPCR Human Reference Total RNA	No specific data.

## Section 5. Firefighting measures

<b>Special protective actions for fire-fighters</b>	: RNase-Free DNase I (Lyophilized)	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.
	β-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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
	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.
	DNase 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.
	DNase 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.
	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.
<b>Special protective equipment for fire-fighters</b>	: RNase-Free DNase I (Lyophilized)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	β-Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	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.

## Section 5. Firefighting measures

1.67X High 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.
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.
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.
DNase 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.
DNase 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.
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.
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.
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.

### Hazchem code

: RNase-Free DNase I (Lyophilized)	Not available.
β-Mercaptoethanol	2X
RNA Binding Buffer	Not available.
1.67X High Salt Wash Buffer	Not available.
5x Low Salt Wash Buffer	Not available.
Elution Buffer	Not available.
DNase Reconstitution Buffer	Not available.
DNase Digestion Buffer	•3Y
Proteinase K	Not available.
Proteinase K Digestion Buffer	Not available.
QPCR Human Reference Total RNA	Not available.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

: RNase-Free DNase I (Lyophilized)	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 dust. Put on appropriate personal protective equipment.
β-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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not

## Section 6. Accidental release measures

	breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
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.
DNase 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.
DNase 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 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.
QPCR Human Reference	No action shall be taken involving any personal risk

## Section 6. Accidental release measures

Total RNA	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.
<b>For emergency responders</b> : RNase-Free DNase I (Lyophilized)	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".
β-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".
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".
DNase 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".
DNase 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".
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".
<b>Environmental precautions</b> : RNase-Free DNase I (Lyophilized)	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).
β-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. Collect spillage.
RNA Binding Buffer	Avoid dispersal of spilt material and runoff and

## Section 6. Accidental release measures

	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.
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. May be harmful to the environment if released in large quantities.
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).
DNase 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).
DNase 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).
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).

### Methods and material for containment and cleaning up

<b>Methods for cleaning up</b>	:	RNase-Free DNase I (Lyophilized)	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
		β-Mercaptoethanol	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.
		RNA Binding Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an

## Section 6. Accidental release measures

	inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
1.67X High Salt Wash Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
5x Low Salt Wash Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Elution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
DNase Reconstitution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
DNase Digestion Buffer	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.
Proteinase K	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Proteinase K Digestion Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
QPCR Human Reference Total RNA	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

#### Protective measures

: RNase-Free DNase I (Lyophilized)

Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should

## Section 7. Handling and storage

	be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
$\beta$ -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. 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. Empty containers retain product residue and can be hazardous. Do not reuse container.
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).
DNase Reconstitution Buffer	Put on appropriate personal protective equipment (see Section 8).
DNase 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



## Section 7. Handling and storage

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.

Proteinase K	Put on appropriate personal protective equipment (see Section 8).
Proteinase K 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. 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.
QPCR Human Reference Total RNA	Put on appropriate personal protective equipment (see Section 8).
RNase-Free DNase I (Lyophilized)	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.
β-Mercaptoethanol	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.
RNA Binding 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.
1.67X High Salt Wash 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.
5x Low Salt Wash 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.
Elution 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.
DNase Reconstitution 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

**Advice on general occupational hygiene**

:

## Section 7. Handling and storage

DNase Digestion Buffer	before entering eating areas. See also 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.
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.
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.

**Conditions for safe storage, including any incompatibilities** : RNase-Free DNase I (Lyophilized)

β-Mercaptoethanol	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. See Section 10 for incompatible materials before handling or use.
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

## Section 7. Handling and storage

	must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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. See Section 10 for incompatible materials before handling or use.
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 prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
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. See Section 10 for incompatible materials before handling or use.
DNase 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. See Section 10 for incompatible materials before handling or use.
DNase 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. See Section 10 for incompatible materials before handling or use.
Proteinase K	Store in accordance with local regulations. Store in

## Section 7. Handling and storage

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. See Section 10 for incompatible materials before handling or use.

**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 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. See Section 10 for incompatible materials before handling or use.

**QPCR Human Reference Total RNA** 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. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

<b>Ingredient name</b>	<b>Exposure limits</b>
<b>DNase Reconstitution Buffer</b> Glycerol	<b>Safe Work Australia (Australia, 1/2014).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.
<b>DNase Digestion Buffer</b> Ethanol	<b>Safe Work Australia (Australia, 1/2014).</b> TWA: 1880 mg/m <sup>3</sup> 8 hours. TWA: 1000 ppm 8 hours.
<b>Proteinase K</b> Glycerol	<b>Safe Work Australia (Australia, 1/2014).</b> TWA: 10 mg/m <sup>3</sup> 8 hours.

**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.

**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 8. Exposure controls and personal protection

### 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.
- 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.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** :
- |                                  |                      |
|----------------------------------|----------------------|
| RNase-Free DNase I (Lyophilized) | Solid. [lyophilised] |
| β-Mercaptoethanol                | Liquid.              |
| RNA Binding Buffer               | Liquid.              |
| 1.67X High Salt Wash Buffer      | Liquid.              |
| 5x Low Salt Wash Buffer          | Liquid.              |
| Elution Buffer                   | Liquid.              |
| DNase Reconstitution Buffer      | Liquid.              |
| DNase Digestion Buffer           | Liquid.              |
| Proteinase K                     | Liquid.              |
| Proteinase K Digestion Buffer    | Liquid.              |
| QPCR Human Reference             | Liquid.              |
| Total RNA                        |                      |
- Colour** :
- |                                  |                |
|----------------------------------|----------------|
| RNase-Free DNase I (Lyophilized) | Not available. |
| β-Mercaptoethanol                | Colourless.    |
| RNA Binding Buffer               | Not available. |
| 1.67X High Salt Wash Buffer      | Not available. |
| 5x Low Salt Wash Buffer          | Not available. |
| Elution Buffer                   | Not available. |
| DNase Reconstitution Buffer      | Not available. |
| DNase Digestion Buffer           | Not available. |

## Section 9. Physical and chemical properties

	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Odour</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Characteristic.
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Odour threshold</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Not available.
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>pH</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Not available.
	RNA Binding Buffer	7
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	6.4
	Elution Buffer	7.5
	DNase Reconstitution Buffer	7.5
	DNase Digestion Buffer	7
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	7.5
	QPCR Human Reference	Not available.
	Total RNA	
<b>Melting point</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	-100°C (-148°F)
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	0°C (32°F)
	Elution Buffer	0°C (32°F)
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	0°C (32°F)
	QPCR Human Reference	0°C (32°F)
	Total RNA	

## Section 9. Physical and chemical properties

<b>Boiling point</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	157°C (314.6°F)
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	100°C (212°F)
	Elution Buffer	100°C (212°F)
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	100°C (212°F)
	QPCR Human Reference	100°C (212°F)
	Total RNA	
<b>Flash point</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Closed cup: 74°C (165.2°F) Open cup: 74°C (165.2°F)
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Closed cup: 23 to 37.8°C (73.4 to 100°F)
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Evaporation rate</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Not available.
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Flammability (solid, gas)</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Not applicable.
	RNA Binding Buffer	Not applicable.
	1.67X High Salt Wash Buffer	Not applicable.
	5x Low Salt Wash Buffer	Not applicable.
	Elution Buffer	Not applicable.
	DNase Reconstitution Buffer	Not applicable.
	DNase Digestion Buffer	Not applicable.
	Proteinase K	Not applicable.
	Proteinase K Digestion Buffer	Not applicable.
	QPCR Human Reference	Not applicable.
	Total RNA	
<b>Lower and upper explosive (flammable) limits</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Lower: 2.3% Upper: 18%
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.

## Section 9. Physical and chemical properties

	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Vapour pressure</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	0.13 kPa (0.98 mm Hg) [room 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.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Vapour density</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	2.7 [Air = 1]
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Relative density</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	1.1
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
	Total RNA	
<b>Solubility</b>	: RNase-Free DNase I (Lyophilized)	Easily soluble in the following materials: cold water and hot water.
	β-Mercaptoethanol	Easily soluble in the following materials: cold water and hot water.
	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.
	DNase Reconstitution Buffer	Soluble in the following materials: cold water and hot water.
	DNase 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.
	QPCR Human Reference	Easily soluble in the following materials: cold water and hot water.
	Total RNA	



## Section 9. Physical and chemical properties

<b>Partition coefficient: n-octanol/water</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	-0.056
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
<b>Auto-ignition temperature</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	295°C (563°F)
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
<b>Decomposition temperature</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Not available.
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.
<b>Viscosity</b>	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	Dynamic (room temperature): 3.43 mPa·s (3.43 cP)
	RNA Binding Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.
	Proteinase K	Not available.
	Proteinase K Digestion Buffer	Not available.
	QPCR Human Reference	Not available.

## Section 10. Stability and reactivity

<b>Reactivity</b>	: RNase-Free DNase I (Lyophilized)	No specific test data related to reactivity available for this product or its ingredients.
	β-Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
	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.

## Section 10. Stability and reactivity

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.
DNase Reconstitution Buffer	No specific test data related to reactivity available for this product or its ingredients.
DNase 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.
QPCR Human Reference Total RNA	No specific test data related to reactivity available for this product or its ingredients.

### Chemical stability

: RNase-Free DNase I (Lyophilized)	The product is stable.
β-Mercaptoethanol	The product is stable.
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.
DNase Reconstitution Buffer	The product is stable.
DNase Digestion Buffer	The product is stable.
Proteinase K	The product is stable.
Proteinase K Digestion Buffer	The product is stable.
QPCR Human Reference Total RNA	The product is stable.

### Possibility of hazardous reactions

: RNase-Free DNase I (Lyophilized)	Under normal conditions of storage and use, hazardous reactions will not occur.
β-Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
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.
DNase Reconstitution Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
DNase Digestion Buffer	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.
QPCR Human Reference Total RNA	Under normal conditions of storage and use, hazardous reactions will not occur.

### Conditions to avoid

: RNase-Free DNase I (Lyophilized)	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
β-Mercaptoethanol	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.

## Section 10. Stability and reactivity

		Do not allow vapour to accumulate in low or confined areas.
	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.
	DNase Reconstitution Buffer	No specific data.
	DNase 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.
	QPCR Human Reference Total RNA	No specific data.
<b>Incompatible materials</b>	: RNase-Free DNase I (Lyophilized)	Reactive or incompatible with the following materials:
	β-Mercaptoethanol	oxidizing materials Reactive or incompatible with the following materials: oxidizing materials
	RNA Binding Buffer	May react or be incompatible with oxidising materials.
	1.67X High Salt Wash Buffer	May react or be incompatible with oxidising materials.
	5x Low Salt Wash Buffer	May react or be incompatible with oxidising materials.
	Elution Buffer	May react or be incompatible with oxidising materials.
	DNase Reconstitution Buffer	May react or be incompatible with oxidising materials.
	DNase Digestion Buffer	Reactive or incompatible with the following materials: oxidizing materials
	Proteinase K	May react or be incompatible with oxidising materials.
	Proteinase K Digestion Buffer	May react or be incompatible with oxidising materials.
	QPCR Human Reference Total RNA	May react or be incompatible with oxidising materials.
<b>Hazardous decomposition products</b>	: RNase-Free DNase I (Lyophilized)	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	β-Mercaptoethanol	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	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.
	DNase Reconstitution Buffer	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
	DNase 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.

## Section 10. Stability and reactivity

QPCR Human Reference  
Total RNA

Under normal conditions of storage and use,  
hazardous decomposition products should not be  
produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-
<b>DNase Reconstitution Buffer</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-
<b>DNase Digestion Buffer</b> Ethanol	LC50 Inhalation Vapour LD50 Oral	Rat Rat	124700 mg/m <sup>3</sup> 7 g/kg	4 hours -
<b>Proteinase K</b> Glycerol	LD50 Oral	Rat	12600 mg/kg	-
<b>Proteinase K Digestion Buffer</b> Sodium dodecyl sulphate	LD50 Oral	Rat	1288 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
<b>DNase Reconstitution Buffer</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>DNase Digestion Buffer</b> Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.06666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
<b>Proteinase K</b> Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>Proteinase K Digestion Buffer</b> Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250	-

## Section 11. Toxicological information

	Eyes - Moderate irritant	Rabbit	-	Micrograms 24 hours 100	-
	Eyes - Moderate irritant	Rabbit	-	milligrams 10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25	-
				milligrams	
	Skin - Moderate irritant	Mouse	-	24 hours 25	-
				milligrams	
	Skin - Mild irritant	Rabbit	-	24 hours 50	-
				milligrams	
	Skin - Moderate irritant	Rabbit	-	24 hours 25	-
				milligrams	

### Sensitisation

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation
<b>Proteinase K Digestion Buffer</b> Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on likely routes of exposure

β-Nase-Free DNase I (Lyophilized)	Not available.
β-Mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation.
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.
DNase Reconstitution Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
DNase Digestion Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
Proteinase K	Routes of entry anticipated: Oral, Dermal, Inhalation.
Proteinase K Digestion Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation.
QPCR Human Reference	Not available.
Total RNA	

### Potential acute health effects

## Section 11. Toxicological information

<b>Eye contact</b>	:	RNAse-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
		β-Mercaptoethanol	Causes serious eye damage.
		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.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase Digestion Buffer	Causes serious eye irritation.
		Proteinase K	No known significant effects or critical hazards.
		Proteinase K Digestion Buffer	Causes serious eye irritation.
		QPCR Human Reference Total RNA	No known significant effects or critical hazards.
<b>Inhalation</b>	:	RNAse-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
		β-Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
		RNA Binding Buffer	Harmful if inhaled.
		1.67X High Salt Wash Buffer	Harmful if inhaled.
		5x Low Salt Wash Buffer	No known significant effects or critical hazards.
		Elution Buffer	No known significant effects or critical hazards.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase 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.
		QPCR Human Reference Total RNA	No known significant effects or critical hazards.
<b>Skin contact</b>	:	RNAse-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		β-Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
		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.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase 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.
		QPCR Human Reference Total RNA	No known significant effects or critical hazards.
<b>Ingestion</b>	:	RNAse-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		β-Mercaptoethanol	Toxic if swallowed.
		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.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase 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.
		QPCR Human Reference Total RNA	No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

## Section 11. Toxicological information

<b>Eye contact</b>	:	RNAse-Free DNase I (Lyophilized)	Adverse symptoms may include the following: irritation redness		
		β-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness		
		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.		
		DNase Reconstitution Buffer	No specific data.		
		DNase Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness		
		Proteinase K	No specific data.		
		Proteinase K Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness		
		QPCR Human Reference Total RNA	No specific data.		
		<b>Inhalation</b>	:	RNAse-Free DNase I (Lyophilized)	Adverse symptoms may include the following: respiratory tract irritation coughing
				β-Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
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.				
DNase Reconstitution Buffer	No specific data.				
DNase Digestion Buffer	No specific data.				
Proteinase K	No specific data.				
Proteinase K Digestion Buffer	No specific data.				
QPCR Human Reference Total RNA	No specific data.				
<b>Skin contact</b>	:			RNAse-Free DNase I (Lyophilized)	No specific data.
				β-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		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.		
		DNase Reconstitution Buffer	No specific data.		
		DNase Digestion Buffer	No specific data.		
		Proteinase K	No specific data.		
		Proteinase K Digestion Buffer	No specific data.		
		QPCR Human Reference Total RNA	No specific data.		

## Section 11. Toxicological information

<b>Ingestion</b>	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	No specific data. Adverse symptoms may include the following: stomach pains
	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.
	DNase Reconstitution Buffer	No specific data.
	DNase Digestion Buffer	No specific data.
	Proteinase K	No specific data.
	Proteinase K Digestion Buffer	No specific data.
	QPCR Human Reference	No specific data.
	Total RNA	

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

<b>General</b>	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	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.
	DNase Reconstitution Buffer	No known significant effects or critical hazards.
	DNase 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.
	QPCR Human Reference	No known significant effects or critical hazards.
	Total RNA	

<b>Carcinogenicity</b>	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	No known significant effects or critical hazards.
	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.
	DNase Reconstitution Buffer	No known significant effects or critical hazards.
	DNase 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.
	QPCR Human Reference	No known significant effects or critical hazards.
	Total RNA	



## Section 11. Toxicological information

<b>Mutagenicity</b>	: RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	β-Mercaptoethanol	No known significant effects or critical hazards.
	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.
	DNase Reconstitution Buffer	No known significant effects or critical hazards.
	DNase 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.
	QPCR Human Reference	No known significant effects or critical hazards.
	Total RNA	
	<b>Teratogenicity</b>	: RNase-Free DNase I (Lyophilized)
β-Mercaptoethanol		No known significant effects or critical hazards.
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.
DNase Reconstitution Buffer		No known significant effects or critical hazards.
DNase 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.
QPCR Human Reference		No known significant effects or critical hazards.
Total RNA		
<b>Developmental effects</b>		: RNase-Free DNase I (Lyophilized)
	β-Mercaptoethanol	No known significant effects or critical hazards.
	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.
	DNase Reconstitution Buffer	No known significant effects or critical hazards.
	DNase 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.
	QPCR Human Reference	No known significant effects or critical hazards.
	Total RNA	
	<b>Fertility effects</b>	: RNase-Free DNase I (Lyophilized)
β-Mercaptoethanol		No known significant effects or critical hazards.
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.
DNase Reconstitution Buffer		No known significant effects or critical hazards.
DNase 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.
QPCR Human Reference		No known significant effects or critical hazards.
Total RNA		

### Numerical measures of toxicity

#### Acute toxicity estimates

## Section 11. Toxicological information

Route	ATE value
<b>RNA Binding Buffer</b> Oral Dermal Inhalation (dusts and mists)	1057.1 mg/kg 2325.6 mg/kg 3.171 mg/l
<b>1.67X High Salt Wash Buffer</b> Oral Dermal Inhalation (dusts and mists)	1282.1 mg/kg 2820.5 mg/kg 3.846 mg/l
<b>Proteinase K Digestion Buffer</b> Oral Dermal	129572.8 mg/kg 30180 mg/kg

<b>Other information</b>	:	RNAse-Free DNase I (Lyophilized)	Not available.
		β-Mercaptoethanol	Not available.
		RNA Binding Buffer	Not available.
		1.67X High Salt Wash Buffer	Not available.
		5x Low Salt Wash Buffer	Not available.
		Elution Buffer	Not available.
		DNase Reconstitution Buffer	Not available.
		DNase Digestion Buffer	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
		Proteinase K	Not available.
		Proteinase K Digestion Buffer	Not available.
		QPCR Human Reference	Not available.
		Total RNA	

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
<b>DNase Reconstitution Buffer</b> Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
<b>DNase Digestion Buffer</b> Ethanol	Acute EC50 17.921 mg/l Marine water Acute EC50 2000 µg/l Fresh water Acute LC50 25500 µg/l Marine water	Algae - Ulva pertusa Daphnia - Daphnia magna Crustaceans - Artemia franciscana - Larvae	96 hours 48 hours 48 hours
	Acute LC50 42000 µg/l Fresh water Chronic NOEC 4.995 mg/l Marine water Chronic NOEC 100 ul/L Fresh water	Fish - Oncorhynchus mykiss Algae - Ulva pertusa Daphnia - Daphnia magna - Neonate	4 days 96 hours 21 days
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
<b>Proteinase K</b> Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
<b>Proteinase K Digestion Buffer</b> Sodium dodecyl sulphate	Acute EC50 1200 µg/l Marine water Acute LC50 900 µg/l Marine water Acute LC50 1400 µg/l Fresh water	Algae - Skeletonema costatum Crustaceans - Artemia salina - Adult Daphnia - Daphnia pulex -	96 hours 48 hours 48 hours

## Section 12. Ecological information

	Acute LC50 590 µg/l Fresh water Chronic NOEC 1.25 mg/l Marine water Chronic NOEC 1 mg/l Fresh water	Neonate Fish - <i>Cirrhinus mrigala</i> - Larvae Algae - <i>Ulva fasciata</i> - Zoea Crustaceans - <i>Pseudosida ramosa</i> - Neonate	96 hours 96 hours 21 days
	Chronic NOEC 3.2 mg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	21 days
	Chronic NOEC >1357 µg/l Fresh water	Fish - <i>Pimephales promelas</i>	42 days

### Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<b>DNase Reconstitution Buffer</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
<b>Proteinase K</b> Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>DNase Digestion Buffer</b> Ethanol	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>β-Mercaptoethanol</b> 2-Mercaptoethanol	-0.056	-	low
<b>DNase Reconstitution Buffer</b> Glycerol	-1.76	-	low
<b>DNase Digestion Buffer</b> Ethanol	-0.35	0.5	low
<b>Proteinase K</b> Glycerol	-1.76	-	low
<b>Proteinase K Digestion Buffer</b> Sodium dodecyl sulphate	-2.03	-	low

### Mobility in soil





**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

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

## Section 13. Disposal considerations

**Disposal methods** : 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. 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

	ADG	IMDG	IATA
<b>UN number</b>	UN3316	UN3316	UN3316
<b>UN proper shipping name</b>	CHEMICAL KIT	CHEMICAL KIT	chemical kit
<b>Transport hazard class(es)</b>	9 	9  	9 
<b>Packing group</b>	II	II	II
<b>Environmental hazards</b>	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.

### Additional information

**Remarks:** Excepted Quantity

- ADG** : **Hazchem code** 2Z  
**Special provisions** 251, 340
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.  
**Emergency schedules** F-A, \_S-P\_  
**Special provisions** 251, 340
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.  
**Quantity limitation** Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960. Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 1 kg. Packaging instructions: Y960.  
**Special provisions** A44, A163

**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.

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

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

6

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Europe</b>	: All components are listed or exempted.
<b>Japan</b>	: <input checked="" type="checkbox"/> <b>Japan inventory (ENCS)</b> : Not determined. <b>Japan inventory (ISHL)</b> : All components are listed or exempted.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: All components are listed or exempted.
<b>Thailand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: All components are listed or exempted.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> Not determined.

## Section 16. Any other relevant information

### History

**Date of issue/Date of revision** : 23/01/2018

**Date of previous issue** : 14/09/2016.

**Version** : 7

### Key to abbreviations

ADG = Australian Dangerous Goods  
 ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 NOHSC = National Occupational Health and Safety Commission

## Section 16. Any other relevant information

SUSMP = Standard Uniform Schedule of Medicine and Poisons  
 UN = United Nations

### Procedure used to derive the classification

Classification	Justification
<b>β-Mercaptoethanol</b> Flam. Liq. 4, H227 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	On basis of test data On basis of test data On basis of test data On basis of test data Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment
<b>RNA Binding Buffer</b> Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method
<b>1.67X High Salt Wash Buffer</b> Acute Tox. 4, H302 Acute Tox. 4, H332 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method
<b>DNase Digestion Buffer</b> Flam. Liq. 3, H226 Eye Irrit. 2A, H319	On basis of test data Calculation method
<b>Proteinase K Digestion Buffer</b> Eye Irrit. 2A, H319	Calculation method

**References** : Not available.

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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