Conforms to Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals

SAFETY DATA SHEET

Agilent Technologies

Absolutely RNA Microprep Kit, Part Number 400805

Section 1. Identification

Product identifier : Absolutely RNA Microprep Kit, Part Number 400805

Part no. (chemical kit) : 400805

Part no. :

RNase-Free DNase I (Lyophilized)	400711-23
ß-Mercaptoethanol	200345-21
Lysis Buffer	400711-13
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

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

Identified uses : Analytical reagent.

RNase-Free DNase I (Lyophilized)	2600 U
ß-Mercaptoethanol	0.75 ml (750 µl 14.33 M)
Lysis 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

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

ß-Mercaptoethanol

H227	FLAMMABLE LIQUIDS - Category 4
H301	ACUTE TOXICITY (oral) - Category 3
H310	ACUTE TOXICITY (dermal) - Category 2
H331	ACUTE TOXICITY (inhalation) - Category 3
H315	SKIN CORROSION/IRRITATION - Category 2
H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
H317	SKIN SENSITISATION - Category 1A
H361	REPRODUCTIVE TOXICITY - Category 2
H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
H373	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
H400	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
H411	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

Lysis Buffer

H302	ACUTE TOXICITY (oral) - Category 4
H314	SKIN CORROSION/IRRITATION - Category 1C
H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1

Section 2. Hazard(s) identification

H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

1.67X High Salt Wash Buffer

H302 ACUTE TOXICITY (oral) - Category 4
H314 SKIN CORROSION/IRRITATION - Category 1C
H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

DNase Reconstitution Buffer

H320 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2B

DNase Digestion Buffer

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

GHS label elements

Hazard pictograms :

ß-Mercaptoethanol

Lysis Buffer

1.67X High Salt Wash Buffer

DNase Digestion Buffer

Signal word :

RNase-Free DNase I (Lyophilized)	No signal word.
ß-Mercaptoethanol	DANGER
Lysis Buffer	DANGER
1.67X High Salt Wash Buffer	DANGER
5x Low Salt Wash Buffer	No signal word.
Elution Buffer	No signal word.
DNase Reconstitution Buffer	WARNING
DNase Digestion Buffer	WARNING

Hazard statements :

RNase-Free DNase I (Lyophilized): No known significant effects or critical hazards.

ß-Mercaptoethanol:
H227 - Combustible liquid.
H301 + H331 - Toxic if swallowed or if inhaled.
H310 - Fatal in contact with skin.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H361 - Suspected of damaging fertility or the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure. (heart, liver) (oral)
H400 - Very toxic to aquatic life.
H411 - Toxic to aquatic life with long lasting effects.

Lysis Buffer:
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.

Section 2. Hazard(s) identification

	H412 - Harmful to aquatic life with long lasting effects.
1.67X High Salt Wash Buffer	H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects.
5x Low Salt Wash Buffer	No known significant effects or critical hazards.
Elution Buffer	No known significant effects or critical hazards.
DNase Reconstitution Buffer	H320 - Causes eye irritation.
DNase Digestion Buffer	H226 - Flammable liquid and vapour. H319 - Causes serious eye irritation.

Precautionary statements

Prevention

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	P280 - Wear protective gloves, protective clothing and eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 - Avoid release to the environment.
Lysis Buffer	P280 - Wear protective gloves, protective clothing and eye or face protection.
1.67X High Salt Wash Buffer	P280 - Wear protective gloves, protective clothing and eye or face protection.
5x Low Salt Wash Buffer	Not applicable.
Elution Buffer	Not applicable.
DNase Reconstitution Buffer	Not applicable.
DNase Digestion Buffer	P280 - Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	P391 - Collect spillage.
Lysis Buffer	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
1.67X High Salt Wash Buffer	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
5x Low Salt Wash Buffer	Not applicable.
Elution Buffer	Not applicable.
DNase Reconstitution 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 advice or attention.
DNase 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 advice or attention.

Section 2. Hazard(s) identification

Storage :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
Lysis 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.

Disposal :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Lysis 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.

Supplemental label elements

Additional warning phrases :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	Not applicable.
Lysis 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.

Other hazards which do not result in classification :

RNase-Free DNase I (Lyophilized)	May form combustible dust concentrations in air.
ß-Mercaptoethanol	None known.
Lysis Buffer	Causes digestive tract burns.
1.67X High Salt Wash Buffer	Causes digestive tract burns.
5x Low Salt Wash Buffer	None known.
Elution Buffer	None known.
DNase Reconstitution Buffer	None known.
DNase Digestion Buffer	None known.

Section 3. Composition and ingredient information

Substance/mixture :

RNase-Free DNase I (Lyophilized)	Substance
ß-Mercaptoethanol	Substance
Lysis 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

CAS number/other identifiers

Section 3. Composition and ingredient information

Ingredient name	% (w/w)	CAS number
RNase-Free DNase I (Lyophilized)		
Enzyme.	100	-
ß-Mercaptoethanol		
ß-Mercaptoethanol	100	60-24-2
Lysis Buffer		
Guanidinium thiocyanate	≥30 - <55	593-84-0
1.67X High Salt Wash Buffer		
Guanidinium thiocyanate	≥30 - <55	593-84-0
DNase Reconstitution Buffer		
Glycerol	≥30 - ≤60	56-81-5
DNase Digestion Buffer		
Ethanol	≥10 - ≤30	64-17-5

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

The total concentration of ingredients in this product, reported or not in this section, is 100%.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact :

RNase-Free DNase I (Lyophilized): 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.

ß-Mercaptoethanol: 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.

Lysis Buffer: 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.

1.67X High Salt Wash Buffer: 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

Section 4. First aid measures

			physician.
		5x Low Salt Wash Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		Elution Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		DNase Reconstitution Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
		DNase Digestion Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	:	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.
		ß-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.
		Lysis Buffer	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. 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	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

Section 4. First aid measures

		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 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.
	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.
Skin contact :	RNase-Free DNase I (Lyophilized)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	ß-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.
	Lysis Buffer	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	1.67X High Salt Wash Buffer	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with

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			water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. 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 medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		DNase 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.
Ingestion	:	RNase-Free DNase I (Lyophilized)	Wash out mouth with water. 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.
		ß-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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.
		Lysis Buffer	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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.
		1.67X High Salt Wash Buffer	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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

Section 4. First aid measures

	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. 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. 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 dentures if any. 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.
DNase Digestion Buffer	Wash out mouth with water. Remove dentures if any. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact :

RNase-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
ß-Mercaptoethanol	Causes serious eye damage.
Lysis Buffer	Causes serious eye damage.
1.67X High Salt Wash Buffer	Causes serious eye damage.
5x Low Salt Wash Buffer	No known significant effects or critical hazards.
Elution Buffer	No known significant effects or critical hazards.
DNase Reconstitution Buffer	Causes eye irritation.
DNase Digestion Buffer	Causes serious eye irritation.

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Inhalation

RNase-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
ß-Mercaptoethanol	Toxic if inhaled. May cause respiratory irritation.
Lysis 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.

Skin contact

RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
ß-Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Lysis Buffer	Causes severe burns.
1.67X High Salt Wash Buffer	Causes severe burns.
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.

Ingestion

RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
ß-Mercaptoethanol	Toxic if swallowed.
Lysis Buffer	Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
1.67X High Salt Wash Buffer	Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
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.

Over-exposure signs/symptoms

Eye contact

RNase-Free DNase I (Lyophilized)	Adverse symptoms may include the following: irritation redness
ß-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
Lysis Buffer	Adverse symptoms may include the following: pain watering redness
1.67X High Salt Wash Buffer	Adverse symptoms may include the following: pain watering redness
5x Low Salt Wash Buffer	No specific data.
Elution Buffer	No specific data.
DNase Reconstitution Buffer	Adverse symptoms may include the following: irritation watering redness
DNase Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness

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Inhalation	:	RNase-Free DNase I (Lyophilized)	Adverse symptoms may include the following: respiratory tract irritation coughing
		ß-Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing reduced foetal weight increase in foetal deaths skeletal malformations
		Lysis 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.
Skin contact	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced foetal weight increase in foetal deaths skeletal malformations
		Lysis Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		1.67X High Salt Wash Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		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.
Ingestion	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: stomach pains reduced foetal weight increase in foetal deaths skeletal malformations
		Lysis Buffer	Adverse symptoms may include the following: stomach pains
		1.67X High Salt Wash Buffer	Adverse symptoms may include the following: stomach pains
		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.

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

Notes to physician	:	RNase-Free DNase I (Lyophilized)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		ß-Mercaptoethanol	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		Lysis Buffer	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed

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		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.
Specific treatments :	RNase-Free DNase I (Lyophilized)	No specific treatment.
	ß-Mercaptoethanol	No specific treatment.
	Lysis 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.
Protection of first-aiders :	RNase-Free DNase I (Lyophilized)	No action shall be taken involving any personal risk or without suitable training.
	ß-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.
	Lysis 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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
	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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
	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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
	DNase Digestion Buffer	No action shall be taken involving any personal risk

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or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media :

RNase-Free DNase I (Lyophilized)	Use dry chemical powder.
ß-Mercaptoethanol	Use dry chemical, CO_2, water spray (fog) or foam.
Lysis 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_2, water spray (fog) or foam.

Unsuitable extinguishing media :

RNase-Free DNase I (Lyophilized)	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
ß-Mercaptoethanol	Do not use water jet.
Lysis 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.

Specific hazards arising from the chemical :

RNase-Free DNase I (Lyophilized)	May form explosible dust-air mixture if dispersed.
ß-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 very toxic to aquatic life. 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.
Lysis Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
1.67X High Salt Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
5x Low Salt Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
Elution Buffer	In a fire or if heated, a pressure increase will occur

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		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.
Hazardous thermal decomposition products :	RNase-Free DNase I (Lyophilized)	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	ß-Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	Lysis 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
Special protective actions for fire-fighters :	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.
	ß-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.
	Lysis 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.

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	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.
Special protective equipment for fire-fighters :	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.
	ß-Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Lysis Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	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.
Hazchem code :	RNase-Free DNase I (Lyophilized)	Not available.
	ß-Mercaptoethanol	2X
	Lysis Buffer	Not available.
	1.67X High Salt Wash Buffer	2X
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	•3Y

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.
		ß-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 breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
		Lysis 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. Do not breathe 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. Do not breathe 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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

Section 6. Accidental release measures

		ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders :	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".
	ß-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".
	Lysis 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".
Environmental precautions :	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).
	ß-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.
	Lysis 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.
	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,

Section 6. Accidental release measures

		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).

Methods and material for containment and cleaning up

Methods for cleaning up :	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.
	ß-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.
	Lysis 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.
	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-

Section 6. Accidental release measures

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 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.

ß-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. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. 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.

Lysis Buffer

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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 get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible

Section 7. Handling and storage

		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). 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.
	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 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.
Advice on general occupational hygiene :	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.
	ß-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.
	Lysis 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

Section 7. Handling and storage

		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 before entering eating areas. See also Section 8 for additional information on hygiene measures.
	DNase 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.
Conditions for safe storage, including any incompatibilities :	RNase-Free DNase I (Lyophilized)	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 oxidising 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.
	ß-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. Store locked up. Eliminate all ignition sources. Separate from oxidising 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.
	Lysis 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. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	1.67X High Salt Wash Buffer	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. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. 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 oxidising 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.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
DNase Reconstitution Buffer Glycerol	**Safe Work Australia (Australia, 10/2022).** TWA: 10 mg/m³ 8 hours.
DNase Digestion Buffer Ethanol	**Safe Work Australia (Australia, 10/2022).** TWA: 1880 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.

Biological exposure indices

No exposure indices known.

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.

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

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. 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.

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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	:	RNase-Free DNase I (Lyophilized)	Solid.
		ß-Mercaptoethanol	Liquid.
		Lysis 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.
Colour	:	RNase-Free DNase I (Lyophilized)	Not available.
		ß-Mercaptoethanol	Colourless.
		Lysis 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.
Odour	:	RNase-Free DNase I (Lyophilized)	Not available.
		ß-Mercaptoethanol	Characteristic.
		Lysis 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.
Odour threshold	:	RNase-Free DNase I (Lyophilized)	Not available.
		ß-Mercaptoethanol	Not available.
		Lysis 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.
pH	:	RNase-Free DNase I (Lyophilized)	Not available.
		ß-Mercaptoethanol	Not available.
		Lysis Buffer	Not available.
		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
Melting point/freezing point	:	RNase-Free DNase I (Lyophilized)	Not available.
		ß-Mercaptoethanol	-100°C (-148°F)
		Lysis 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.

Section 9. Physical and chemical properties and safety characteristics

Boiling point, initial boiling point, and boiling range :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	157°C (314.6°F)
Lysis 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.

Flash point :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	Closed cup: 74°C (165.2°F) Open cup: 74°C (165.2°F)
Lysis 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)

	Closed cup			Open cup		
Ingredient name	**°C**	**°F**	**Method**	**°C**	**°F**	**Method**
DNase Reconstitution Buffer						
Glycerol				177	350.6	

Evaporation rate :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	Not available.
Lysis 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.

Flammability :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	Not applicable.
Lysis 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.

Lower and upper explosion limit/flammability limit :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	Lower: 2.3% Upper: 18%
Lysis 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 and safety characteristics

Vapour pressure :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	0.13 kPa (0.98 mm Hg)
Lysis 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.

Ingredient name	Vapour Pressure at 20˚C			Vapour pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Lysis Buffer						
water	17.5	2.3		92.258	12.3	
Guanidinium thiocyanate	<0.000001	<0.00000013	EU A.4			
1.67X High Salt Wash Buffer						
water	17.5	2.3		92.258	12.3	
Guanidinium thiocyanate	<0.000001	<0.00000013	EU A.4			
5x Low Salt Wash Buffer						
water	17.5	2.3		92.258	12.3	
Elution Buffer						
water	17.5	2.3		92.258	12.3	
DNase Reconstitution Buffer						
water	17.5	2.3		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
DNase Digestion Buffer						
Ethanol	42.95	5.7				
water	17.5	2.3		92.258	12.3	

Section 9. Physical and chemical properties and safety characteristics

Relative vapour density :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	2.7 [Air = 1]
Lysis 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.

Relative density :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	1.1
Lysis 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.

Solubility(ies) :

Media	Result
RNase-Free DNase I (Lyophilized)	
water	Soluble
ß-Mercaptoethanol	
water	Soluble
Lysis Buffer	
water	Soluble
1.67X High Salt Wash Buffer	
water	Soluble
5x Low Salt Wash Buffer	
water	Soluble
Elution Buffer	
water	Soluble
DNase Reconstitution Buffer	
water	Soluble
DNase Digestion Buffer	
water	Soluble

Partition coefficient: n-octanol/water :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	-0.056
Lysis 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.

Auto-ignition temperature :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	295°C (563°F)
Lysis 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 and safety characteristics

Ingredient name	°C	°F	Method
DNase Reconstitution Buffer			
Glycerol	370	698	
DNase Digestion Buffer			
Ethanol	455	851	DIN 51794

Decomposition temperature :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	Not available.
Lysis 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.

Viscosity :

RNase-Free DNase I (Lyophilized)	Not applicable.
ß-Mercaptoethanol	Dynamic: 3.43 mPa·s (3.43 cP)
Lysis 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.

Particle characteristics

Median particle size :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	Not applicable.
Lysis 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.

Section 10. Stability and reactivity

Reactivity :

RNase-Free DNase I (Lyophilized)	No specific test data related to reactivity available for this product or its ingredients.
ß-Mercaptoethanol	No specific test data related to reactivity available for this product or its ingredients.
Lysis Buffer	No specific test data related to reactivity available for this product or its ingredients.
1.67X High Salt Wash Buffer	No specific test data related to reactivity available for this product or its ingredients.
5x Low Salt Wash Buffer	No specific test data related to reactivity available for this product or its ingredients.
Elution Buffer	No specific test data related to reactivity available for this product or its ingredients.
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.

Section 10. Stability and reactivity

Chemical stability	: RNase-Free DNase I (Lyophilized)	The product is stable.
	ß-Mercaptoethanol	The product is stable.
	Lysis 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.
Possibility of hazardous reactions	: RNase-Free DNase I (Lyophilized)	Under normal conditions of storage and use, hazardous reactions will not occur.
	ß-Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
	Lysis 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.
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.
	ß-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. Do not allow vapour to accumulate in low or confined areas.
	Lysis 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.
Incompatible materials	: RNase-Free DNase I (Lyophilized)	Reactive or incompatible with the following materials: oxidising materials
	ß-Mercaptoethanol	Reactive or incompatible with the following materials: oxidising materials
	Lysis 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: oxidising materials

Section 10. Stability and reactivity

Hazardous decomposition products :

RNase-Free DNase I (Lyophilized)	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
ß-Mercaptoethanol	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Lysis 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.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ß-Mercaptoethanol				
ß-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-
Lysis Buffer				
Guanidinium thiocyanate	LC50 Inhalation Dusts and mists	Rat - Female	3.181 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	593 mg/kg	-
1.67X High Salt Wash Buffer				
Guanidinium thiocyanate	LC50 Inhalation Dusts and mists	Rat - Female	3.181 mg/l	4 hours
	LD50 Oral	Rat - Male, Female	593 mg/kg	-
DNase Reconstitution Buffer				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
DNase Digestion Buffer				
Ethanol	LC50 Inhalation Vapour	Rat	124700 mg/m³	4 hours
	LD50 Oral	Rat	7 g/kg	-

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
ß-Mercaptoethanol					
ß-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 mg	-
DNase Reconstitution Buffer					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
DNase Digestion Buffer					
Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	100 uL	-

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
ß-Mercaptoethanol			
ß-Mercaptoethanol	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ß-Mercaptoethanol			
ß-Mercaptoethanol	Category 2	oral	heart, liver

Aspiration hazard

Not available.

Information on likely routes of exposure :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
Lysis Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
1.67X High Salt Wash Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
5x Low Salt Wash Buffer	Not available.
Elution Buffer	Not available.
DNase Reconstitution Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Section 11. Toxicological information

	DNase Digestion Buffer	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	: RNase-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
	ß-Mercaptoethanol	Causes serious eye damage.
	Lysis Buffer	Causes serious eye damage.
	1.67X High Salt Wash Buffer	Causes serious eye damage.
	5x Low Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	DNase Reconstitution Buffer	Causes eye irritation.
	DNase Digestion Buffer	Causes serious eye irritation.
Inhalation	: RNase-Free DNase I (Lyophilized)	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
	ß-Mercaptoethanol	Toxic if inhaled. May cause respiratory irritation.
	Lysis 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.
Skin contact	: RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	ß-Mercaptoethanol	Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
	Lysis Buffer	Causes severe burns.
	1.67X High Salt Wash Buffer	Causes severe burns.
	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.
Ingestion	: RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	ß-Mercaptoethanol	Toxic if swallowed.
	Lysis Buffer	Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
	1.67X High Salt Wash Buffer	Harmful if swallowed. Corrosive to the digestive tract. Causes burns.
	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.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	: RNase-Free DNase I (Lyophilized)	Adverse symptoms may include the following: irritation redness
	ß-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
	Lysis Buffer	Adverse symptoms may include the following: pain watering redness
	1.67X High Salt Wash Buffer	Adverse symptoms may include the following: pain watering

Section 11. Toxicological information

			redness
		5x Low Salt Wash Buffer	No specific data.
		Elution Buffer	No specific data.
		DNase Reconstitution Buffer	Adverse symptoms may include the following: irritation watering redness
		DNase Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	:	RNase-Free DNase I (Lyophilized)	Adverse symptoms may include the following: respiratory tract irritation coughing
		ß-Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing reduced foetal weight increase in foetal deaths skeletal malformations
		Lysis 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.
Skin contact	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced foetal weight increase in foetal deaths skeletal malformations
		Lysis Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		1.67X High Salt Wash Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		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.
Ingestion	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: stomach pains reduced foetal weight increase in foetal deaths skeletal malformations
		Lysis Buffer	Adverse symptoms may include the following: stomach pains
		1.67X High Salt Wash Buffer	Adverse symptoms may include the following: stomach pains
		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.

Section 11. Toxicological information

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

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General :	RNase-Free DNase I (Lyophilized)	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	ß-Mercaptoethanol	May cause damage to organs through prolonged or repeated exposure if swallowed. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	Lysis 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.
Carcinogenicity :	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	ß-Mercaptoethanol	No known significant effects or critical hazards.
	Lysis 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.
Mutagenicity :	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	ß-Mercaptoethanol	No known significant effects or critical hazards.
	Lysis 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.
Reproductive toxicity :	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	ß-Mercaptoethanol	Suspected of damaging fertility or the unborn child.
	Lysis 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.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
ß-Mercaptoethanol					
ß-Mercaptoethanol	244	200	N/A	3	N/A
Lysis Buffer					
Lysis Buffer	1253.7	2325.6	N/A	N/A	6.7
Guanidinium thiocyanate	593	1100	N/A	N/A	3.181
1.67X High Salt Wash Buffer					
1.67X High Salt Wash Buffer	1520.5	2820.5	N/A	N/A	8.2
Guanidinium thiocyanate	593	1100	N/A	N/A	3.181
DNase Reconstitution Buffer					
Glycerol	12600	N/A	N/A	N/A	N/A
DNase Digestion Buffer					
Ethanol	7000	N/A	N/A	124.7	N/A

Other information :

RNase-Free DNase I (Lyophilized)	Not available.
ß-Mercaptoethanol	Not available.
Lysis 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.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
DNase Reconstitution Buffer			
Glycerol	Acute LC50 54000 mg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
DNase Digestion Buffer			
Ethanol	Acute EC50 3306 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 1074 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute EC50 9.3 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 11000000 µg/l Marine water	Fish - Alburnus alburnus	96 hours
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 100 ul/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days

Persistence and degradability

Section 12. Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
ß-Mercaptoethanol				
ß-Mercaptoethanol	OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)	69 % - Not readily - 60 days	20 mg/l	-
Lysis Buffer				
Guanidinium thiocyanate	OECD 302B Inherent Biodegradability: Zahn-Wellens/ EMPA Test	46 % - Inherent - 28 days	-	-
1.67X High Salt Wash Buffer				
Guanidinium thiocyanate	OECD 302B Inherent Biodegradability: Zahn-Wellens/ EMPA Test	46 % - Inherent - 28 days	-	-
DNase Reconstitution Buffer				
Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
ß-Mercaptoethanol			
ß-Mercaptoethanol	-	-	Not readily
Lysis Buffer			
Guanidinium thiocyanate	-	-	Inherent
1.67X High Salt Wash Buffer			
Guanidinium thiocyanate	-	-	Inherent
DNase Digestion Buffer			
Ethanol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
ß-Mercaptoethanol			
ß-Mercaptoethanol	-0.056	-	low
Lysis Buffer			
Guanidinium thiocyanate	<-1.7	-	low
1.67X High Salt Wash Buffer			
Guanidinium thiocyanate	<-1.7	-	low
DNase Reconstitution Buffer			

Section 12. Ecological information

Glycerol	-1.76	-	low
DNase Digestion Buffer			
Ethanol	-0.35	0.5	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	ADG	IMDG	IATA
UN number	UN3316	UN3316	UN3316
UN proper shipping name	CHEMICAL KIT	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9 	9 
Packing group	II		
Environmental hazards	No.	No.	No.

Additional information

Remarks: Excepted Quantity

ADG : **Hazchem code** 2Z
Special provisions 251, 340

IMDG : **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

Section 14. Transport information

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 IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines 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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.

Canada : Not determined.

China : Not determined.

Eurasian Economic Union : **Russian Federation inventory**: Not determined.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): All components are listed or exempted.

New Zealand : Not determined.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : All components are listed or exempted.

Thailand : Not determined.

Turkey : Not determined.

United States : All components are active or exempted.

Viet Nam : Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 11/06/2023

Date of previous issue : 16/11/2020

Version : 9

Section 16. Any other relevant information

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
ß-Mercaptoethanol	
FLAMMABLE LIQUIDS - Category 4	On basis of test data
ACUTE TOXICITY (oral) - Category 3	On basis of test data
ACUTE TOXICITY (dermal) - Category 2	On basis of test data
ACUTE TOXICITY (inhalation) - Category 3	On basis of test data
SKIN CORROSION/IRRITATION - Category 2	Expert judgment
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Expert judgment
SKIN SENSITISATION - Category 1A	Expert judgment
REPRODUCTIVE TOXICITY - Category 2	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2	Expert judgment
SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1	Expert judgment
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2	Expert judgment
Lysis Buffer	
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 1C	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method
1.67X High Salt Wash Buffer	
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 1C	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3	Calculation method
DNase Reconstitution Buffer	
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2B	Calculation method
DNase Digestion Buffer	
FLAMMABLE LIQUIDS - Category 3	On basis of test data
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A	Calculation method

Indicates information that has changed from previously issued version.

Notice to reader

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