Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Agilent Technologies

Absolutely RNA Microprep Kit, Part Number 400805

Section 1. Identification

1.1 Product identifier

Product name : 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

Validation date : 9/14/2016

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

Material 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	3ml	
DNase Reconstitution Buffer	0.3 ml	
DNase Digestion Buffer	1.5 ml	

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :

RNase-Free DNase I (Lyophilized)	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
ß-Mercaptoethanol	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Lysis Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
1.67X High Salt Wash Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
5x Low Salt Wash Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this SDS contains valuable information critical to

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	the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
Elution Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910. 1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
DNase Reconstitution Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
DNase Digestion Buffer	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

β-Mercaptoethanol

H227	FLAMMABLE LIQUIDS - Category 4
H301	ACUTE TOXICITY (oral) - Category 3
H310	ACUTE TOXICITY (dermal) - Category 2
H330	ACUTE TOXICITY (inhalation) - Category 2
H315	SKIN IRRITATION - Category 2
H318	SERIOUS EYE DAMAGE - Category 1
H317	SKIN SENSITIZATION - Category 1
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Lysis Buffer

H302	ACUTE TOXICITY (oral) - Category 4
H332	ACUTE TOXICITY (inhalation) - Category 4

1.67X High Salt Wash Buffer

H302	ACUTE TOXICITY (oral) - Category 4
H332	ACUTE TOXICITY (inhalation) - Category 4

DNase Reconstitution Buffer

H320	EYE IRRITATION - Category 2B

DNase Digestion Buffer

H226	FLAMMABLE LIQUIDS - Category 3
H319	EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H373	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2

Ingredients of unknown toxicity : 1.67X High Salt Wash Buffer — Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 1.3%

2.2 GHS label elements

Hazard pictograms :

Signal word :

Section 2. Hazards identification

		RNase-Free DNase I (Lyophilized)	No signal word.
		ß-Mercaptoethanol	Danger
		Lysis Buffer	Warning
		1.67X High Salt Wash Buffer	Warning
		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. GHS SYMBOL - **Skull and crossbones** - **Corrosion** - **Exclamation mark** - H310 + H330 - Fatal in contact with skin or if inhaled. H301 - Toxic if swallowed. H318 - Causes serious eye damage. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H335 - May cause respiratory irritation.
		Lysis Buffer	GHS SYMBOL - **Exclamation mark** - H302 + H332 - Harmful if swallowed or if inhaled.
		1.67X High Salt Wash Buffer	GHS SYMBOL - **Exclamation mark** - H302 + H332 - Harmful if swallowed or if inhaled.
		5x Low Salt Wash Buffer	No known significant effects or critical hazards.
		Elution Buffer	No known significant effects or critical hazards.
		DNase Reconstitution Buffer	H320 - Causes eye irritation.
		DNase Digestion Buffer	GHS SYMBOL - **Flame** - **Exclamation mark** - **Health hazard** - H226 - Flammable liquid and vapor. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation. H336 - May cause drowsiness or dizziness. H373 - May cause damage to organs through prolonged or repeated exposure. (liver)

Precautionary statements

Prevention	:	RNase-Free DNase I (Lyophilized)	Not applicable.
		ß-Mercaptoethanol	P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P284 - Wear respiratory protection. P210 - Keep away from flames and hot surfaces. - No smoking. P271 - Use only outdoors or in a well-ventilated area. P262 - Do not get in eyes, on skin, or on clothing. P260 - Do not breathe vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling. P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
		Lysis Buffer	P271 - Use only outdoors or in a well-ventilated area. P261 - Avoid breathing vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
		1.67X High Salt Wash Buffer	P271 - Use only outdoors or in a well-ventilated area.

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			P261 - Avoid breathing vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash hands thoroughly after handling.
		5x Low Salt Wash Buffer	Not applicable.
		Elution Buffer	Not applicable.
		DNase Reconstitution Buffer	P264 - Wash hands thoroughly after handling.
		DNase Digestion Buffer	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling.
Response	:	RNase-Free DNase I (Lyophilized)	Not applicable.
		ß-Mercaptoethanol	P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. P301 + P310 + P330 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. P302 + P361+P364 + P352 + P310 + P363 - IF ON SKIN: Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of soap and water. Immediately call a POISON CENTER or physician. Wash contaminated clothing before reuse. P333 + P313 - If skin irritation or rash occurs: Get medical attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
		Lysis Buffer	P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
		1.67X High Salt Wash Buffer	P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
		5x Low Salt Wash Buffer	Not applicable.
		Elution Buffer	Not applicable.

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		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 attention.
		DNase Digestion Buffer	P314 - Get medical attention if you feel unwell. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
Storage	:	RNase-Free DNase I (Lyophilized)	Not applicable.
		ß-Mercaptoethanol	P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
		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	P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
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	:	RNase-Free DNase I (Lyophilized)	None known.
		ß-Mercaptoethanol	None known.
		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	None known.

2.3 Other hazards

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Hazards not otherwise classified	:	RNase-Free DNase I (Lyophilized)	None known.
		ß-Mercaptoethanol	None known.
		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	None known.

Section 3. Composition/information on ingredients

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

Ingredient name	%	CAS number
RNase-Free DNase I (Lyophilized)		
RNase-Free DNase I (Lyophilized)	100	-
ß-Mercaptoethanol		
2-Mercaptoethanol	100	60-24-2
Lysis Buffer		
Guanidinium thiocyanate	≥25 - ≤50	593-84-0
1.67X High Salt Wash Buffer		
Guanidinium thiocyanate	≥25 - ≤50	593-84-0
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	≤3	1185-53-1
DNase Reconstitution Buffer		
Glycerol	≥50 - ≤75	56-81-5
DNase Digestion Buffer		
Ethanol	≥25 - ≤50	64-17-5
Sodium chloride	≤3	7647-14-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact	:	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

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			lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
		Lysis 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 if irritation occurs.
		1.67X High Salt Wash Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
		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	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse

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	health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
1.67X High Salt Wash Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
5x Low Salt Wash Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Elution Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
DNase Reconstitution Buffer	Remove victim to fresh air and keep at rest in a 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 it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open

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			airway. Loosen tight clothing such as a collar, tie, belt or waistband.
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	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		1.67X High Salt Wash Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		5x Low Salt Wash Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		Elution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		DNase Reconstitution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get 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. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	:	RNase-Free DNase I (Lyophilized)	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		ß-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be

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	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	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
1.67X High Salt Wash Buffer	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
5x Low Salt Wash Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Elution Buffer	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
DNase Reconstitution Buffer	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting

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

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		ß-Mercaptoethanol	Causes serious eye damage.
		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	Causes eye irritation.
		DNase Digestion Buffer	Causes serious eye irritation.
Inhalation	:	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		ß-Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
		Lysis Buffer	Harmful if inhaled.
		1.67X High Salt Wash Buffer	Harmful if inhaled.
		5x Low Salt Wash Buffer	No known significant effects or critical hazards.
		Elution Buffer	No known significant effects or critical hazards.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase Digestion Buffer	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
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	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.

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Ingestion	:	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		ß-Mercaptoethanol	Toxic if swallowed.
		Lysis Buffer	Harmful if swallowed.
		1.67X High Salt Wash Buffer	Harmful if swallowed.
		5x Low Salt Wash Buffer	No known significant effects or critical hazards.
		Elution Buffer	No known significant effects or critical hazards.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase Digestion Buffer	Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
		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	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)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
		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	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
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
		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.

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Ingestion	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: stomach pains
		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.

4.3 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 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	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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

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	appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
1.67X High Salt Wash Buffer	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
5x Low Salt Wash Buffer	No action shall be taken involving any personal risk or without suitable training.
Elution Buffer	No action shall be taken involving any personal risk or without suitable training.
DNase Reconstitution Buffer	No action shall be taken involving any personal risk or without suitable training. 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 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	RNase-Free DNase I (Lyophilized)	Use an extinguishing agent suitable for the surrounding fire.
		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)	None known.
		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.

5.2 Special hazards arising from the substance or mixture

Section 5. Fire-fighting measures

Specific hazards arising from the chemical :	RNase-Free DNase I (Lyophilized)	No specific fire or explosion hazard.
	ß-Mercaptoethanol	Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
	Lysis Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	1.67X High Salt Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	5x Low Salt Wash Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Elution Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	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 vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
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 halogenated compounds metal oxide/oxides

Section 5. Fire-fighting measures

5.3 Advice for firefighters

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.
	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.
	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

Section 5. Fire-fighting measures

	(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.

Section 6. Accidental release measures

6.1 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 spilled material. 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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor 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 spilled material. Avoid breathing vapor 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 spilled material. Avoid breathing vapor 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 spilled 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 spilled material. Put on

Section 6. Accidental release measures

		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 spilled material. Avoid breathing vapor 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 spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders :	RNase-Free DNase I (Lyophilized)	If specialized 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 specialized 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 specialized 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 specialized 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 specialized 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 specialized 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 specialized 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 specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

6.2 Environmental precautions	:	RNase-Free DNase I (Lyophilized)	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		ß-Mercaptoethanol	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		Lysis Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		1.67X High Salt Wash Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		5x Low Salt Wash Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		Elution Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		DNase Reconstitution Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
		DNase Digestion Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	:	RNase-Free DNase I (Lyophilized)	Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled 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

Section 6. Accidental release measures

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

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	:	RNase-Free DNase I (Lyophilized)	Put on appropriate personal protective equipment (see Section 8).
		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. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. 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 ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or

Section 7. Handling and storage

		mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	1.67X High Salt Wash Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	5x Low Salt Wash Buffer	Put on appropriate personal protective equipment (see Section 8).
	Elution Buffer	Put on appropriate personal protective equipment (see Section 8).
	DNase Reconstitution Buffer	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
	DNase Digestion Buffer	Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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

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		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 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.
7.2 Conditions for safe storage, including any incompatibilities	: RNase-Free DNase I (Lyophilized)	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
	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

Section 7. Handling and storage

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

Section 7. Handling and storage

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 oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations	:	RNase-Free DNase I (Lyophilized)	Industrial applications, Professional applications.
		ß-Mercaptoethanol	Industrial applications, Professional applications.
		Lysis Buffer	Industrial applications, Professional applications.
		1.67X High Salt Wash Buffer	Industrial applications, Professional applications.
		5x Low Salt Wash Buffer	Industrial applications, Professional applications.
		Elution Buffer	Industrial applications, Professional applications.
		DNase Reconstitution Buffer	Industrial applications, Professional applications.
		DNase Digestion Buffer	Industrial applications, Professional applications.
Industrial sector specific solutions	:	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.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
RNase-Free DNase I (Lyophilized)	
RNase-Free DNase I (Lyophilized)	None.
ß-Mercaptoethanol	
2-Mercaptoethanol	**AIHA WEEL (United States, 10/2011).** **Absorbed through skin.** TWA: 0.2 ppm 8 hours.
Lysis Buffer	
Guanidinium thiocyanate	None.
1.67X High Salt Wash Buffer	
Guanidinium thiocyanate	None.
2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	None.
DNase Reconstitution Buffer	
Glycerol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 2/2013).**

Section 8. Exposure controls/personal protection

	TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
DNase Digestion Buffer	
Ethanol	**ACGIH TLV (United States, 3/2016).** STEL: 1000 ppm 15 minutes. **OSHA PEL 1989 (United States, 3/1989).** TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 1000 ppm 10 hours. TWA: 1900 mg/m³ 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 1000 ppm 8 hours. TWA: 1900 mg/m³ 8 hours.
Sodium chloride	None.

8.2 Exposure controls

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

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

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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

Skin protection

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

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Section 8. Exposure controls/personal protection

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

9.1 Information on basic physical and chemical properties

Appearance

Physical state	: RNase-Free DNase I (Lyophilized)	Solid. [lyophilized]
	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.
Color	: RNase-Free DNase I (Lyophilized)	Not available.
	ß-Mercaptoethanol	Colorless.
	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.
Odor	: 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.
Odor 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	6.4
	5x Low Salt Wash Buffer	7
	Elution Buffer	7.5
	DNase Reconstitution Buffer	7.5
	DNase Digestion Buffer	7

Section 9. Physical and chemical properties

Melting 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.
Boiling point	:	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 available.
		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)
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 (solid, gas)	:	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.
Lower and upper explosive (flammable) limits	:	RNase-Free DNase I (Lyophilized)	Not available.
		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

Vapor pressure	:	RNase-Free DNase I (Lyophilized)	Not available.
		ß-Mercaptoethanol	0.13 kPa (0.98 mm Hg) [room temperature]
		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.
Vapor density	:	RNase-Free DNase I (Lyophilized)	Not available.
		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	:	RNase-Free DNase I (Lyophilized)	Easily soluble in the following materials: cold water and hot water.
		ß-Mercaptoethanol	Easily soluble in the following materials: cold water and hot water.
		Lysis Buffer	Not available.
		1.67X High Salt Wash Buffer	Soluble in the following materials: cold water and hot water.
		5x Low Salt Wash Buffer	Easily soluble in the following materials: cold water and hot water.
		Elution Buffer	Easily soluble in the following materials: cold water and hot water.
		DNase Reconstitution Buffer	Soluble in the following materials: cold water and hot water.
		DNase Digestion Buffer	Soluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	:	RNase-Free DNase I (Lyophilized)	Not available.
		ß-Mercaptoethanol	-0.056
		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.
Auto-ignition temperature	:	RNase-Free DNase I (Lyophilized)	Not available.
		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

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 available.
	ß-Mercaptoethanol	Dynamic (room temperature): 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.

Section 10. Stability and reactivity

10.1 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.
10.2 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.
10.3 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,

Section 10. Stability and reactivity

		hazardous reactions will not occur.
	DNase Digestion Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid :	RNase-Free DNase I (Lyophilized)	No specific data.
	ß-Mercaptoethanol	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor 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 pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
10.5 Incompatible materials :	RNase-Free DNase I (Lyophilized)	May react or be incompatible with oxidizing materials.
	ß-Mercaptoethanol	Reactive or incompatible with the following materials: oxidizing materials
	Lysis Buffer	May react or be incompatible with oxidizing materials.
	1.67X High Salt Wash Buffer	May react or be incompatible with oxidizing materials.
	5x Low Salt Wash Buffer	May react or be incompatible with oxidizing materials.
	Elution Buffer	May react or be incompatible with oxidizing materials.
	DNase Reconstitution Buffer	May react or be incompatible with oxidizing materials.
	DNase Digestion Buffer	Reactive or incompatible with the following materials: oxidizing materials
10.6 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,

Section 10. Stability and reactivity

	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

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
β-Mercaptoethanol				
2-Mercaptoethanol	LD50 Dermal	Rabbit	200 mg/kg	-
	LD50 Oral	Rat	244 mg/kg	-
DNase Reconstitution Buffer				
Glycerol	LD50 Oral	Rat	12600 mg/kg	-
DNase Digestion Buffer				
Ethanol	LC50 Inhalation Vapor	Rat	124700 mg/m³	4 hours
	LD50 Oral	Rat	7 g/kg	-
Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
β-Mercaptoethanol					
2-Mercaptoethanol	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
DNase Reconstitution Buffer					
Glycerol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
DNase Digestion Buffer					
Ethanol	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
Sodium chloride	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

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Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
DNase Digestion Buffer Ethanol	-	1	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
ß-Mercaptoethanol 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation
1.67X High Salt Wash Buffer 2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Category 3	Not applicable.	Respiratory tract irritation
DNase Digestion Buffer Ethanol	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
DNase Digestion Buffer Ethanol	Category 2	Not determined	liver

Aspiration hazard

Not available.

Information on the likely routes of exposure :

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

Potential acute health effects

Section 11. Toxicological information

Eye contact	:	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		ß-Mercaptoethanol	Causes serious eye damage.
		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	Causes eye irritation.
		DNase Digestion Buffer	Causes serious eye irritation.
Inhalation	:	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		ß-Mercaptoethanol	Fatal if inhaled. May cause respiratory irritation.
		Lysis Buffer	Harmful if inhaled.
		1.67X High Salt Wash Buffer	Harmful if inhaled.
		5x Low Salt Wash Buffer	No known significant effects or critical hazards.
		Elution Buffer	No known significant effects or critical hazards.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase Digestion Buffer	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness. May cause respiratory irritation.
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	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.
Ingestion	:	RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
		ß-Mercaptoethanol	Toxic if swallowed.
		Lysis Buffer	Harmful if swallowed.
		1.67X High Salt Wash Buffer	Harmful if swallowed.
		5x Low Salt Wash Buffer	No known significant effects or critical hazards.
		Elution Buffer	No known significant effects or critical hazards.
		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase Digestion Buffer	Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness
		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	Adverse symptoms may include the following: irritation watering redness
		DNase Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness

Section 11. Toxicological information

Inhalation	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing
		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	Adverse symptoms may include the following: respiratory tract irritation coughing nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
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
		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.
Ingestion	:	RNase-Free DNase I (Lyophilized)	No specific data.
		ß-Mercaptoethanol	Adverse symptoms may include the following: stomach pains
		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.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

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

Section 11. Toxicological information

		DNase Reconstitution Buffer	No known significant effects or critical hazards.
		DNase Digestion Buffer	May cause damage to organs through prolonged or repeated exposure.
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.
Teratogenicity	:	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.
Developmental effects	:	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.
Fertility effects	:	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.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Lysis Buffer	
Oral	1057.1 mg/kg
Dermal	2325.6 mg/kg
Inhalation (dusts and mists)	3.171 mg/l
1.67X High Salt Wash Buffer	
Oral	1282.1 mg/kg
Dermal	2820.5 mg/kg
Inhalation (dusts and mists)	3.846 mg/l

Section 11. Toxicological information

DNase Digestion Buffer Oral	 258620.7 mg/kg

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

12.1 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 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	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
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
Sodium chloride	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days
	Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks

12.2 Persistence and degradability

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

12.3 Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
ß-Mercaptoethanol			
2-Mercaptoethanol	-0.056	-	low
DNase Reconstitution Buffer			
Glycerol	-1.76	-	low
DNase Digestion Buffer			
Ethanol	-0.35	0.5	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

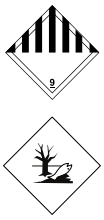
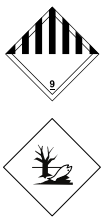
Section 14. Transport information

Additional information :

Special provisions
251, 340

Remarks
Excepted Quantity

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT	UN3316	Chemical kits	9	II		**Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 10 kg **Cargo aircraft** Quantity limitation: 10 kg **Special provisions** 15
TDG	UN3316	CHEMICAL KIT. Marine pollutant (2-Mercaptoethanol)	9	II		Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail. **Passenger Carrying Road or Rail Index** 10 **Special provisions** 65, 141
Mexico	UN3316	EQUIPO QUIMICO	9	II		**Special provisions** 251, 340
IMDG	UN3316	CHEMICAL KIT. Marine pollutant (2-Mercaptoethanol)	9	II		The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-A, _S-P_ **Special provisions** 251, 340

Section 14. Transport information

IATA	UN3316	Chemical kit	9	II		The environmentally hazardous substance mark may appear if required by other transportation regulations. **Passenger and Cargo Aircraft** Quantity limitation: 10 kg Packaging instructions: 960 **Cargo Aircraft Only** Quantity limitation: 10 kg Packaging instructions: 960 **Limited Quantities - Passenger Aircraft** Quantity limitation: 1 kg Packaging instructions: Y960 **Special provisions** A44, A163 **Remarks** Excepted Quantity

PG* : Packing group

Section 15. Regulatory information

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

U.S. Federal regulations : **TSCA 8(a) PAIR**: octamethylcyclotetrasiloxane

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

Section 15. Regulatory information

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
β-Mercaptoethanol						
2-Mercaptoethanol	100	Yes.	No.	No.	Yes.	No.
Lysis Buffer						
Guanidinium thiocyanate	≥25 - ≤50	No.	No.	No.	Yes.	No.
1.67X High Salt Wash Buffer						
Guanidinium thiocyanate	≥25 - ≤50	No.	No.	No.	Yes.	No.
2-Amino-2-(hydroxymethyl)propane-1, 3-diol hydrochloride	≤3	No.	No.	No.	Yes.	No.
DNase Reconstitution Buffer						
Glycerol	≥50 - ≤75	No.	No.	No.	Yes.	No.
DNase Digestion Buffer						
Ethanol	≥25 - ≤50	Yes.	No.	No.	Yes.	Yes.
Sodium chloride	≤3	No.	No.	No.	Yes.	No.

State regulations

Massachusetts : The following components are listed: 2-MERCAPTOETHANOL; ETHYL ALCOHOL; DENATURED ALCOHOL; GLYCERINE MIST

New York : None of the components are listed.

New Jersey : The following components are listed: THIOGLYCOL; 2-MERCAPTOETHANOL; ETHYL ALCOHOL; ALCOHOL; GLYCERIN; 1,2,3-PROPANETRIOL

Pennsylvania : The following components are listed: ETHANOL, 2-MERCAPTO-; DENATURED ALCOHOL; ETHANOL; 1,2,3-PROPANETRIOL

California Prop. 65

No products were found.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

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

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Section 15. Regulatory information

Australia : Not determined.

Canada inventory : Not determined.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : **Japan inventory (ENCS)**: Not determined.
Japan inventory (ISHL): Not determined.

Malaysia : Not determined.

New Zealand : Not determined.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : All components are listed or exempted.

Turkey : Not determined.

Section 16. Other information

History

Date of issue : 09/14/2016

Date of previous issue : 06/03/2016.

Version : 6.1

Indicates information that has changed from previously issued version.

Notice to reader

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