

SAFETY DATA SHEET

Absolutely RNA Microprep Kit, Part Number 400805

Section 1. Identification

Product identifier	: Absolutely RNA Microprep Kit, Part Number 400805		
Part no. (chemical kit)	: 400805		
Part no.	: RNase-Free DNase I (Lyophilized)	400711-23	
	: β -Mercaptoethanol	200345-21	
	: Lysis Buffer	400711-13	
	: 1.67X High Salt Wash Buffer	400711-14	
	: 5x Low Salt Wash Buffer	400711-15	
	: Elution Buffer	400752-16	
	: DNase Reconstitution Buffer	400711-17	
	: DNase Digestion Buffer	400711-18	

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

Identified uses	: <input checked="" type="checkbox"/> Analytical reagent.		
	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized)	2600 U	
	: β -Mercaptoethanol	0.75 ml (750 μ l	14.33 M)
	: Lysis Buffer	35 ml	
	: 1.67X High Salt Wash Buffer	24 ml	
	: 5x Low Salt Wash Buffer	17 ml	
	: Elution Buffer	3 ml	
	: DNase Reconstitution Buffer	0.3 ml	
	: DNase Digestion Buffer	1.5 ml	

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

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

RNase-Free DNase I
(Lyophilized)

COMBUSTIBLE DUSTS - Category 1

β -Mercaptoethanol

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

Section 2. Hazard identification

Lysis Buffer

H302 ACUTE TOXICITY (oral) - Category 4
 H314 SKIN CORROSION - Category 1C
 H318 SERIOUS EYE DAMAGE - Category 1
 Health Hazards Not Otherwise Classified - Category 1
 H412 AQUATIC HAZARD (LONG-TERM) - Category 3

1.67X High Salt Wash Buffer

H302 ACUTE TOXICITY (oral) - Category 4
 H314 SKIN CORROSION - Category 1C
 H318 SERIOUS EYE DAMAGE - Category 1
 Health Hazards Not Otherwise Classified - Category 1
 H412 AQUATIC HAZARD (LONG-TERM) - Category 3

DNase Reconstitution Buffer

H320 EYE IRRITATION - Category 2B

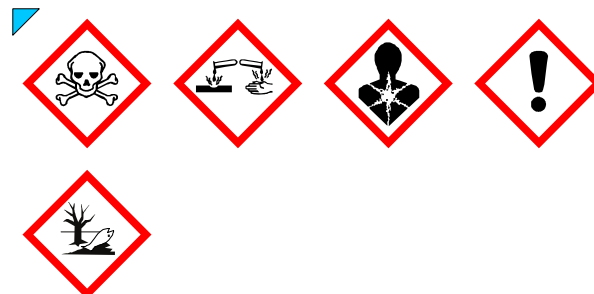
DNase Digestion Buffer

H226 FLAMMABLE LIQUIDS - Category 3
 H319 EYE IRRITATION - Category 2A
 Health Hazards Not Otherwise Classified - Category 1

GHS label elements

Hazard pictograms

: -Mercaptoethanol



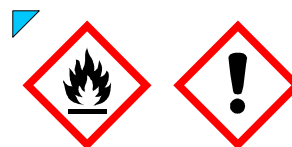
Lysis Buffer



1.67X High Salt Wash Buffer



DNase Digestion Buffer



Signal word

: RNase-Free DNase I (Lyophilized)	Warning
β -Mercaptoethanol	Danger
Lysis Buffer	Danger
1.67X High Salt Wash Buffer	Danger
5x Low Salt Wash Buffer	No signal word.
Elution Buffer	No signal word.
DNase Reconstitution Buffer	Warning
DNase Digestion Buffer	Danger

Section 2. Hazard identification

Hazard statements	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	May form combustible dust concentrations in air. H227 - Combustible liquid. H301 + H331 - Toxic if swallowed or if inhaled. H310 - Fatal in contact with skin. H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H318 - Causes serious eye damage. H335 - May cause respiratory irritation. H361 - Suspected of damaging fertility or the unborn child. H373 - May cause damage to organs through prolonged or repeated exposure. (heart, liver) (oral) H400 - Very toxic to aquatic life. H411 - Toxic to aquatic life with long lasting effects.
	Lysis Buffer	H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects. Causes respiratory tract burns. Causes digestive tract burns.
	1.67X High Salt Wash Buffer	H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H412 - Harmful to aquatic life with long lasting effects. Causes respiratory tract burns. Causes digestive tract burns.
	5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	No known significant effects or critical hazards. No known significant effects or critical hazards. H320 - Causes eye irritation. H226 - Flammable liquid and vapor. H319 - Causes serious eye irritation. Prolonged or repeated contact may dry skin and cause irritation.

Precautionary statements

Prevention

: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	Not applicable. P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P273 - Avoid release to the environment. 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 thoroughly after handling.
Lysis Buffer	P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment. P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling.
1.67X High Salt Wash Buffer	P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment. P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling.
5x Low Salt Wash Buffer Elution Buffer	Not applicable. Not applicable.

Section 2. Hazard identification

	DNase Reconstitution Buffer DNase Digestion Buffer	Not applicable. P280 - Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol	Not applicable. P391 - Collect spillage. P308 + P313 - IF exposed or concerned: Get medical advice or attention. P304 + P340, P311 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor. P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. P361 + P364 - Take off immediately all contaminated clothing and wash it before reuse. P302 + P310, P352 - IF ON SKIN: Immediately call a POISON CENTER or doctor. Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice or 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 doctor.
	Lysis Buffer	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. P363 - Wash contaminated clothing before reuse. 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 doctor.
	1.67X High Salt Wash Buffer	P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor. P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. P363 - Wash contaminated clothing before reuse. 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 doctor.
	5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer	Not applicable. Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

Section 2. Hazard identification

		DNase Digestion Buffer	lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.
Storage	:	<p>RNase-Free DNase I (Lyophilized) β-Mercaptoethanol</p> <p>Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer</p>	<p>Not applicable.</p> <p>P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p>
Disposal	:	<p>RNase-Free DNase I (Lyophilized) β-Mercaptoethanol</p> <p>Lysis Buffer</p> <p>1.67X High Salt Wash Buffer</p> <p>5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer</p>	<p>Not applicable.</p> <p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p> <p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p> <p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
Supplemental label elements	:	<p>RNase-Free DNase I (Lyophilized)</p> <p>β-Mercaptoethanol Lysis Buffer</p> <p>1.67X High Salt Wash Buffer</p> <p>5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer</p>	<p>Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.</p> <p>None known.</p> <p>Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.</p> <p>Keep container tightly closed. Do not breathe vapor or spray. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p> <p>Avoid contact with skin and clothing. Wash thoroughly after handling.</p>
Other hazards which do not result in classification	:	<p>RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer</p>	<p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p>

Section 3. Composition/information on ingredients

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

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

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

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

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact	:	RNase-Free DNase I (Lyophilized)	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		β-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a

Section 4. First-aid measures

	Lysis Buffer	<p>physician. Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.</p>
	1.67X High Salt Wash Buffer	<p>Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.</p>
	5x Low Salt Wash Buffer	<p>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.</p>
	Elution Buffer	<p>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.</p>
	DNase Reconstitution Buffer	<p>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.</p>
	DNase Digestion Buffer	<p>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.</p>
<p>Inhalation</p>	<p>: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol</p>	<p>Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.</p>
	Lysis Buffer	<p>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</p>

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

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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.
	β-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Gently wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Lysis Buffer	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	1.67X High Salt Wash Buffer	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	5x Low Salt Wash Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Elution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	DNase Reconstitution Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	DNase Digestion Buffer	Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: RNase-Free DNase I (Lyophilized)	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.
	β-Mercaptoethanol	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an

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Lysis Buffer	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. Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
1.67X High Salt Wash Buffer	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
5x Low Salt Wash Buffer	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
Elution Buffer	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
DNase Reconstitution Buffer	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
DNase Digestion Buffer	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed

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person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

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

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	DNase Digestion Buffer	No known significant effects or critical hazards.	
Over-exposure signs/symptoms			
Eye contact	: RNase-Free DNase I (Lyophilized)	Adverse symptoms may include the following: irritation redness	
	β-Mercaptoethanol	Adverse symptoms may include the following: pain watering redness	
	Lysis Buffer	Adverse symptoms may include the following: pain watering redness	
	1.67X High Salt Wash Buffer	Adverse symptoms may include the following: pain watering redness	
	5x Low Salt Wash Buffer	No specific data.	
	Elution Buffer	No specific data.	
	DNase Reconstitution Buffer	Adverse symptoms may include the following: irritation watering redness	
	DNase Digestion Buffer	Adverse symptoms may include the following: pain or irritation watering redness	
	Inhalation	: RNase-Free DNase I (Lyophilized)	Adverse symptoms may include the following: respiratory tract irritation coughing
		β-Mercaptoethanol	Adverse symptoms may include the following: respiratory tract irritation coughing reduced fetal weight increase in fetal deaths skeletal malformations
Lysis Buffer		Adverse symptoms may include the following: respiratory tract irritation coughing	
1.67X High Salt Wash Buffer		Adverse symptoms may include the following: respiratory tract irritation coughing	
5x Low Salt Wash Buffer		No specific data.	
Elution Buffer		No specific data.	
DNase Reconstitution Buffer		No specific data.	
DNase Digestion Buffer		No specific data.	
Skin contact		: RNase-Free DNase I (Lyophilized)	No specific data.
		β-Mercaptoethanol	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced fetal weight increase in fetal deaths skeletal malformations
	Lysis Buffer	Adverse symptoms may include the following:	

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		pain or irritation redness blistering may occur
	1.67X High Salt Wash Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	5x Low Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	DNase Reconstitution Buffer	No specific data.
	DNase Digestion Buffer	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	: RNase-Free DNase I (Lyophilized)	No specific data.
	β-Mercaptoethanol	Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths skeletal malformations
	Lysis Buffer	Adverse symptoms may include the following: stomach pains
	1.67X High Salt Wash Buffer	Adverse symptoms may include the following: stomach pains
	5x Low Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	DNase Reconstitution Buffer	No specific data.
	DNase Digestion Buffer	No specific data.

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

Notes to physician	: RNase-Free DNase I (Lyophilized)	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	β-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	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.

Section 4. First-aid measures

Specific treatments	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.
Protection of first-aiders	: <input checked="" type="checkbox"/> RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. 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. 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. 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. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. 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. 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Section 5. Fire-fighting measures

Suitable extinguishing media	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	Use dry chemical powder. Use dry chemical, CO ₂ , water spray (fog) or foam. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture. Do not use water jet. None known. None known. None known. None known. None known. Do not use water jet.
Specific hazards arising from the chemical	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	May form explosible dust-air mixture if dispersed. Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The 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. This material is very toxic to aquatic life. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may

Section 5. Fire-fighting measures

Hazardous thermal decomposition products	: RNase-Free DNase I (Lyophilized)	burst, with the risk of a subsequent explosion. Decomposition products may include the following materials: carbon dioxide carbon monoxide
	β-Mercaptoethanol	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	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
Special protective actions for fire-fighters	DNase Digestion Buffer	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
	: RNase-Free DNase I (Lyophilized)	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
	β-Mercaptoethanol	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
	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

Section 5. Fire-fighting measures

	Elution Buffer	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.
	β-Mercaptoethanol	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Lysis Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	1.67X High Salt Wash Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	5x Low Salt Wash Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Elution Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	DNase Reconstitution Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	DNase Digestion Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	: RNase-Free DNase I (Lyophilized)	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Put on appropriate personal protective equipment.
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Section 6. Accidental release measures

β-Mercaptoethanol	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through 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. Do not breathe 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. Do not breathe 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 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.

Section 6. Accidental release measures

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".
	β-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".
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).
	β-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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
	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). Water polluting material. May be harmful to the environment if released in large quantities.
	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). Water polluting material. May be harmful to the environment if released in large quantities.
	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

Section 6. Accidental release measures

Elution Buffer	caused environmental pollution (sewers, waterways, soil or air). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
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).

Methods and materials for containment and cleaning up

Methods for cleaning up	: RNase-Free DNase I (Lyophilized)	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
	β-Mercaptoethanol	Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Lysis Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	1.67X High Salt Wash Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	5x Low Salt Wash Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Elution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	DNase Reconstitution Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste

Section 6. Accidental release measures

DNase Digestion Buffer

disposal container. Dispose of via a licensed waste disposal contractor.

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

Precautions for safe handling

Protective measures

: RNase-Free DNase I (Lyophilized)

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

β-Mercaptoethanol

Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not reuse container.

Lysis Buffer

Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator

Section 7. Handling and storage

		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 get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
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 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. 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.
	β-Mercaptoethanol	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
	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

Section 7. Handling and storage

1.67X High Salt Wash Buffer	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.

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

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from 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. See Section 10 for incompatible materials before handling or use.

β -Mercaptoethanol

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly

Section 7. Handling and storage

Lysis Buffer

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. See Section 10 for incompatible materials before handling or use. Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

1.67X High Salt Wash Buffer

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

5x Low Salt Wash Buffer

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Elution Buffer

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

DNase Reconstitution Buffer

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

Section 7. Handling and storage

DNase Digestion Buffer

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

Section 8. Exposure controls/personal protection

[Control parameters](#)

[Occupational exposure limits](#)

Ingredient name	Exposure limits
β-Mercaptoethanol β-Mercaptoethanol	OARS WEEL (United States, 4/2022). Absorbed through skin. TWA: 0.2 ppm 8 hours.
DNase Reconstitution Buffer Glycerol	CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 10 mg/m ³ 8 hours. Form: Mist CA Quebec Provincial (Canada, 6/2022). TWAEV: 10 mg/m ³ 8 hours. Form: mist CA Saskatchewan Provincial (Canada, 7/2013). STEL: 20 mg/m ³ 15 minutes. Form: mist TWA: 10 mg/m ³ 8 hours. Form: mist CA British Columbia Provincial (Canada, 6/2022). TWA: 3 mg/m ³ 8 hours. Form: respirable mist TWA: 10 mg/m ³ 8 hours. Form: total mist
DNase Digestion Buffer Ethanol	CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 1000 ppm 8 hours. 8 hrs OEL: 1880 mg/m ³ 8 hours. CA British Columbia Provincial (Canada, 6/2022). STEL: 1000 ppm 15 minutes. CA Ontario Provincial (Canada, 6/2019). STEL: 1000 ppm 15 minutes. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 1250 ppm 15 minutes. TWA: 1000 ppm 8 hours. CA Quebec Provincial (Canada, 6/2022). STEV: 1000 ppm 15 minutes.

[Biological exposure indices](#)

Section 8. Exposure controls/personal protection

None known.

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

Individual protection measures

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

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

Skin protection

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

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

Section 9. Physical and chemical properties and safety characteristics

Physical state	: RNase-Free DNase I (Lyophilized)	Solid.
	β-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.
	β-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.
	β-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.
	β-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.
	β-Mercaptoethanol	Not available.
	Lysis Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	6.4
	Elution Buffer	7.5
	DNase Reconstitution Buffer	7.5
	DNase Digestion Buffer	7
Melting point/freezing point	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	-100°C (-148°F)
	Lysis Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	0°C (32°F)
	Elution Buffer	0°C (32°F)
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.

Section 9. Physical and chemical properties and safety characteristics

Boiling point, initial boiling point, and boiling range : RNase-Free DNase I (Lyophilized) Not available.
 β-Mercaptoethanol 157°C (314.6°F)
 Lysis Buffer Not available.
 1.67X High Salt Wash Buffer Not available.
 5x Low Salt Wash Buffer 100°C (212°F)
 Elution Buffer 100°C (212°F)
 DNase Reconstitution Buffer Not available.
 DNase Digestion Buffer Not available.

Flash point : RNase-Free DNase I (Lyophilized) Not applicable.
 β-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)

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

Evaporation rate : RNase-Free DNase I (Lyophilized) Not available.
 β-Mercaptoethanol Not available.
 Lysis Buffer Not available.
 1.67X High Salt Wash Buffer Not available.
 5x Low Salt Wash Buffer Not available.
 Elution Buffer Not available.
 DNase Reconstitution Buffer Not available.
 DNase Digestion Buffer Not available.

Flammability : RNase-Free DNase I (Lyophilized) Not available.
 β-Mercaptoethanol Not applicable.
 Lysis Buffer Not applicable.
 1.67X High Salt Wash Buffer Not applicable.
 5x Low Salt Wash Buffer Not applicable.
 Elution Buffer Not applicable.
 DNase Reconstitution Buffer Not applicable.
 DNase Digestion Buffer Not applicable.

Lower and upper explosion limit/flammability limit : RNase-Free DNase I (Lyophilized) Not applicable.
 β-Mercaptoethanol Lower: 2.3%
 Upper: 18%
 Lysis Buffer Not available.
 1.67X High Salt Wash Buffer Not available.
 5x Low Salt Wash Buffer Not available.
 Elution Buffer Not available.
 DNase Reconstitution Buffer Not available.
 DNase Digestion Buffer Not available.

Section 9. Physical and chemical properties and safety characteristics

Vapor pressure	: RNase-Free DNase I (Lyophilized)	Not available.
	β-Mercaptoethanol	0.13 kPa (0.98 mm Hg)
	Lysis Buffer	Not available.
	1.67X High Salt Wash Buffer	Not available.
	5x Low Salt Wash Buffer	Not available.
	Elution Buffer	Not available.
	DNase Reconstitution Buffer	Not available.
	DNase Digestion Buffer	Not available.

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
LYsis Buffer						
water	17.5	2.3		92.258	12.3	
salts of thiocyanic acid	<0.000001	<0.00000013	EU A.4			
1.67X High Salt Wash Buffer						
water	17.5	2.3		92.258	12.3	
salts of thiocyanic acid	<0.000001	<0.00000013	EU A.4			
5x Low Salt Wash Buffer						
water	17.5	2.3		92.258	12.3	
Elution Buffer						
water	17.5	2.3		92.258	12.3	
DNase Reconstitution Buffer						
water	17.5	2.3		92.258	12.3	
Glycerol	0.000075	0.00001		0.0025	0.00033	
DNase Digestion Buffer						
Ethanol	42.95	5.7				
water	17.5	2.3		92.258	12.3	

Section 9. Physical and chemical properties and safety characteristics

Relative vapor density : RNase-Free DNase I (Lyophilized) Not applicable.
 β-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.
 β-Mercaptoethanol 1.1
 Lysis Buffer Not available.
 1.67X High Salt Wash Buffer Not available.
 5x Low Salt Wash Buffer Not available.
 Elution Buffer Not available.
 DNase Reconstitution Buffer Not available.
 DNase Digestion Buffer Not available.

Solubility(ies) :

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

Partition coefficient: n-octanol/water : RNase-Free DNase I (Lyophilized) Not applicable.
 β-Mercaptoethanol -0.056
 Lysis Buffer Not applicable.
 1.67X High Salt Wash Buffer Not applicable.
 5x Low Salt Wash Buffer Not applicable.
 Elution Buffer Not applicable.
 DNase Reconstitution Buffer Not applicable.
 DNase Digestion Buffer Not applicable.

Auto-ignition temperature : RNase-Free DNase I (Lyophilized) Not applicable.
 β-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.

Section 9. Physical and chemical properties and safety characteristics

DNase Digestion Buffer Not available.

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

Decomposition temperature : RNase-Free DNase I (Lyophilized) Not available.
 β-Mercaptoethanol Not available.
 Lysis Buffer Not available.
 1.67X High Salt Wash Buffer Not available.
 5x Low Salt Wash Buffer Not available.
 Elution Buffer Not available.
 DNase Reconstitution Buffer Not available.
 DNase Digestion Buffer Not available.

Viscosity : RNase-Free DNase I (Lyophilized) Not applicable.
 β-Mercaptoethanol Dynamic: 3.43 mPa·s (3.43 cP)
 Lysis Buffer Not available.
 1.67X High Salt Wash Buffer Not available.
 5x Low Salt Wash Buffer Not available.
 Elution Buffer Not available.
 DNase Reconstitution Buffer Not available.
 DNase Digestion Buffer Not available.

Particle characteristics

Median particle size : RNase-Free DNase I (Lyophilized) Not available.
 β-Mercaptoethanol Not applicable.
 Lysis Buffer Not applicable.
 1.67X High Salt Wash Buffer Not applicable.
 5x Low Salt Wash Buffer Not applicable.
 Elution Buffer Not applicable.
 DNase Reconstitution Buffer Not applicable.
 DNase Digestion Buffer Not applicable.

Section 10. Stability and reactivity

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

Section 10. Stability and reactivity

Chemical stability	: RNase-Free DNase I (Lyophilized)	The product is stable.
	β-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 DNase Digestion Buffer	The product is stable. The product is stable.
Possibility of hazardous reactions	: RNase-Free DNase I (Lyophilized)	Under normal conditions of storage and use, hazardous reactions will not occur.
	β-Mercaptoethanol	Under normal conditions of storage and use, hazardous reactions will not occur.
	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 DNase Digestion Buffer	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: RNase-Free DNase I (Lyophilized)	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.
	β-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 DNase Digestion Buffer	No specific data. 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.
Incompatible materials	: RNase-Free DNase I (Lyophilized)	Reactive or incompatible with the following materials: oxidizing materials
	β-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.

Section 10. Stability and reactivity

<p>Hazardous decomposition products</p>	<p>: RNase-Free DNase I (Lyophilized)</p> <p>β-Mercaptoethanol</p> <p>Lysis Buffer</p> <p>1.67X High Salt Wash Buffer</p> <p>5x Low Salt Wash Buffer</p> <p>Elution Buffer</p> <p>DNase Reconstitution Buffer</p> <p>DNase Digestion Buffer</p>	<p>May react or be incompatible with oxidizing materials.</p> <p>Reactive or incompatible with the following materials: oxidizing materials</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p>
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Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
β-Mercaptoethanol β-Mercaptoethanol	LD50 Oral	Rat	244 mg/kg	-
Lysis Buffer Guanidinium thiocyanate	LC50 Inhalation Dusts and mists LD50 Oral	Rat - Female Rat - Male, Female	3.181 mg/l 593 mg/kg	4 hours -
1.67X High Salt Wash Buffer Guanidinium thiocyanate	LC50 Inhalation Dusts and mists LD50 Oral	Rat - Female Rat - Male, Female	3.181 mg/l 593 mg/kg	4 hours -
DNase Reconstitution Buffer Glycerol	LD50 Oral	Rat	12600 mg/kg	-
DNase Digestion Buffer Ethanol	LC50 Inhalation Vapor LD50 Oral	Rat Rat	124700 mg/m ³ 7 g/kg	4 hours -

Irritation/Corrosion

Section 11. Toxicological information

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

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	IARC	NTP	ACGIH
DNase Digestion Buffer Ethanol	1	-	A3

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

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

Specific target organ toxicity (repeated exposure)

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

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on the likely routes of exposure	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	Not available. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes. Not available. Not available. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes. Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
 Potential acute health effects		
Eye contact	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes. Causes serious eye damage. Causes serious eye damage. Causes serious eye damage. No known significant effects or critical hazards. No known significant effects or critical hazards. Causes eye irritation. Causes serious eye irritation.
Inhalation	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. Toxic if inhaled. May cause respiratory irritation. Corrosive to the respiratory system. Corrosive to the respiratory system. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.
Skin contact	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	No known significant effects or critical hazards. Fatal in contact with skin. Causes skin irritation. May cause an allergic skin reaction. Causes severe burns. Causes severe burns. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards. Defatting to the skin. May cause skin dryness and irritation.
Ingestion	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer	No known significant effects or critical hazards. Toxic if swallowed. May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. May cause burns to mouth, throat and stomach. Harmful if swallowed. Corrosive to the digestive tract. Causes burns. No known significant effects or critical hazards. No known significant effects or critical hazards. No known significant effects or critical hazards.

Section 11. Toxicological information

DNase Digestion Buffer No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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

Section 11. Toxicological information

	Lysis Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	1.67X High Salt Wash Buffer	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	5x Low Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	DNase Reconstitution Buffer	No specific data.
	DNase Digestion Buffer	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	: RNase-Free DNase I (Lyophilized)	No specific data.
	β-Mercaptoethanol	Adverse symptoms may include the following: stomach pains reduced fetal weight increase in fetal deaths skeletal malformations
	Lysis Buffer	Adverse symptoms may include the following: stomach pains
	1.67X High Salt Wash Buffer	Adverse symptoms may include the following: stomach pains
	5x Low Salt Wash Buffer	No specific data.
	Elution Buffer	No specific data.
	DNase Reconstitution Buffer	No specific data.
	DNase Digestion Buffer	No specific data.

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)	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. May cause damage to organs through prolonged or repeated exposure if swallowed. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	β-Mercaptoethanol	
	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	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Section 11. Toxicological information

Carcinogenicity	: RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	β-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.
	β-Mercaptoethanol	No known significant effects or critical hazards.
	Lysis Buffer	No known significant effects or critical hazards.
	1.67X High Salt Wash Buffer	No known significant effects or critical hazards.
	5x Low Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	DNase Reconstitution Buffer	No known significant effects or critical hazards.
	DNase Digestion Buffer	No known significant effects or critical hazards.
Reproductive toxicity	: RNase-Free DNase I (Lyophilized)	No known significant effects or critical hazards.
	β-Mercaptoethanol	Suspected of damaging fertility or the unborn child.
	Lysis Buffer	No known significant effects or critical hazards.
	1.67X High Salt Wash Buffer	No known significant effects or critical hazards.
	5x Low Salt Wash Buffer	No known significant effects or critical hazards.
	Elution Buffer	No known significant effects or critical hazards.
	DNase Reconstitution Buffer	No known significant effects or critical hazards.
	DNase Digestion Buffer	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
β-Mercaptoethanol β-Mercaptoethanol	244	200	N/A	3	N/A
Lysis Buffer Lysis Buffer	1253.7	2325.6	N/A	N/A	6.7
Guanidinium thiocyanate	593	1100	N/A	N/A	3.181
1.67X High Salt Wash Buffer 1.67X High Salt Wash Buffer	1520.5	2820.5	N/A	N/A	8.2
Guanidinium thiocyanate	593	1100	N/A	N/A	3.181
DNase Reconstitution Buffer Glycerol	12600	N/A	N/A	N/A	N/A
DNase Digestion Buffer DNase Digestion Buffer	258620.7	N/A	N/A	N/A	N/A
Ethanol	7000	N/A	N/A	124.7	N/A

Section 11. Toxicological information

Other information	: RNase-Free DNase I (Lyophilized) β-Mercaptoethanol Lysis Buffer 1.67X High Salt Wash Buffer 5x Low Salt Wash Buffer Elution Buffer DNase Reconstitution Buffer DNase Digestion Buffer	Not available. Not available. Not available. Not available. Not available. Not available. Not available. Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
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Section 12. Ecological information

Toxicity

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

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
β-Mercaptoethanol β-Mercaptoethanol	OECD 310 Ready Biodegradability - CO ₂ in Sealed Vessels (Headspace Test)	69 % - Not readily - 60 days	20 mg/l	-
Lysis Buffer Guanidinium thiocyanate	OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test	46 % - Inherent - 28 days	-	-
1.67X High Salt Wash Buffer Guanidinium thiocyanate	OECD 302B Inherent Biodegradability: Zahn-Wellens/EMPA Test	46 % - Inherent - 28 days	-	-

Section 12. Ecological information

DNase Reconstitution Buffer Glycerol	301D Ready Biodegradability - Closed Bottle Test	93 % - 30 days	-	-
Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability	
β-Mercaptoethanol β-Mercaptoethanol	-	-	Not readily	
Lysis Buffer Guanidinium thiocyanate	-	-	Inherent	
1.67X High Salt Wash Buffer Guanidinium thiocyanate	-	-	Inherent	
DNase Digestion Buffer Ethanol	-	-	Readily	

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
β-Mercaptoethanol β-Mercaptoethanol	-0.056	-	low
Lysis Buffer Guanidinium thiocyanate	<-1.7	-	low
1.67X High Salt Wash Buffer Guanidinium thiocyanate	<-1.7	-	low
DNase Reconstitution Buffer Glycerol	-1.76	-	low
DNase Digestion Buffer Ethanol	-0.35	0.5	low

Mobility in soil

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

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






Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or 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

Section 13. Disposal considerations

container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

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

Proof of classification statement : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).

Additional information

Remarks: Excepted Quantity


TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).
Passenger Carrying Road or Rail Index 10
Special provisions 65, 141

IMDG

: **Emergency schedules** F-A, _S-P_
Special provisions 251, 340

IATA

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

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: ethanol
CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Section 15. Regulatory information

Not listed.

[Montreal Protocol](#)

Not listed.

[Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

[Rotterdam Convention on Prior Informed Consent \(PIC\)](#)

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

[Inventory list](#)

Australia	: Not determined.
Canada	: Not determined.
China	: Not determined.
Eurasian Economic Union	: Russian Federation inventory : Not determined.
Japan	: Japan inventory (CSCL) : Not determined. Japan inventory (ISHL) : All components are listed or exempted.
New Zealand	: Not determined.
Philippines	: Not determined.
Republic of Korea	: Not determined.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: All components are active or exempted.
Viet Nam	: Not determined.

Section 16. Other information

[History](#)

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Version : 9

[Key to abbreviations](#)

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 HPR = Hazardous Products Regulations
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 N/A = Not available
 UN = United Nations

[Procedure used to derive the classification](#)

Section 16. Other information

Classification	Justification
RNase-Free DNase I (Lyophilized) COMBUSTIBLE DUSTS - Category 1	On basis of test data
β-Mercaptoethanol FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 3 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1A TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 AQUATIC HAZARD (ACUTE) - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 2	On basis of test data On basis of test data On basis of test data On basis of test data Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment Expert judgment
Lysis Buffer ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 Health Hazards Not Otherwise Classified - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method Calculation method Calculation method Calculation method Calculation method
1.67X High Salt Wash Buffer ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION - Category 1C SERIOUS EYE DAMAGE - Category 1 Health Hazards Not Otherwise Classified - Category 1 AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method Calculation method Calculation method Calculation method Calculation method
DNase Reconstitution Buffer EYE IRRITATION - Category 2B	Calculation method
DNase Digestion Buffer FLAMMABLE LIQUIDS - Category 3 EYE IRRITATION - Category 2A Health Hazards Not Otherwise Classified - Category 1	On basis of test data Calculation method Calculation method

 Indicates information that has changed from previously issued version.

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