Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Agilent Technologies

DNA Extraction Kit, Part Number 200600

Section 1. Identification

1.1 Product identifier

Product name : DNA Extraction Kit, Part Number 200600

Part no. (chemical kit) : 200600

Part no. :

DNA Extraction RNase	200600-81
DNA Extraction Pronase	200600-82
DNA Extraction Solution 1	200600-13
DNA Extraction Solution 2	200600-14
DNA Extraction Solution 3	200600-15

Validation date : 1/20/2023

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

Identified uses : Analytical reagent.

DNA Extraction RNase	1 ml (10 mg/ml)
DNA Extraction Pronase	2 ml (225 mg/ ml)
DNA Extraction Solution 1	3X Concentration 500 ml
DNA Extraction Solution 2	420 ml
DNA Extraction Solution 3	150 ml

1.3 Details of the supplier of the safety data sheet

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

1.4 Emergency telephone number

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

Section 2. Hazards identification

2.1 Classification of the substance or mixture

OSHA/HCS status :

DNA Extraction RNase	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
DNA Extraction Pronase	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
DNA Extraction Solution 1	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
DNA Extraction Solution 2	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
DNA Extraction Solution 3	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

Section 2. Hazards identification

DNA Extraction RNase

H334 RESPIRATORY SENSITIZATION - Category 1

DNA Extraction Pronase

H315 SKIN IRRITATION - Category 2
H319 EYE IRRITATION - Category 2A
H334 RESPIRATORY SENSITIZATION - Category 1
H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

DNA Extraction Solution 1

H318 SERIOUS EYE DAMAGE - Category 1
H400 AQUATIC HAZARD (ACUTE) - Category 1
H411 AQUATIC HAZARD (LONG-TERM) - Category 2

DNA Extraction RNase	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 1%
DNA Extraction Pronase	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 22.5%
DNA Extraction Solution 1	Percentage of the mixture consisting of ingredient (s) of unknown hazards to the aquatic environment: 32%

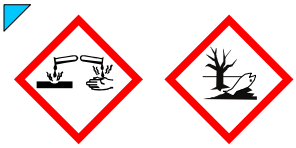
2.2 GHS label elements

Hazard pictograms :

DNA Extraction RNase

DNA Extraction Pronase

DNA Extraction Solution 1



Signal word :

DNA Extraction RNase	Danger
DNA Extraction Pronase	Danger
DNA Extraction Solution 1	Danger
DNA Extraction Solution 2	No signal word.
DNA Extraction Solution 3	No signal word.

Hazard statements :

DNA Extraction RNase	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
DNA Extraction Pronase	H315 - Causes skin irritation. H319 - Causes serious eye irritation. H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 - May cause respiratory irritation.
DNA Extraction Solution 1	H318 - Causes serious eye damage. H400 - Very toxic to aquatic life. H411 - Toxic to aquatic life with long lasting effects.
DNA Extraction Solution 2	No known significant effects or critical hazards.
DNA Extraction Solution 3	No known significant effects or critical hazards.

Precautionary statements

Section 2. Hazards identification

Prevention	:	DNA Extraction RNase	P284 - Wear respiratory protection. P261 - Avoid breathing vapor.
		DNA Extraction Pronase	P280 - Wear protective gloves. Wear eye or face protection. P284 - Wear respiratory protection. P261 - Avoid breathing vapor. P264 - Wash thoroughly after handling.
		DNA Extraction Solution 1	P280 - Wear eye or face protection. P273 - Avoid release to the environment.
		DNA Extraction Solution 2	Not applicable.
		DNA Extraction Solution 3	Not applicable.
Response	:	DNA Extraction RNase	P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
		DNA Extraction Pronase	P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor. P362 + P364 - Take off contaminated clothing and wash it before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water. 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.
		DNA Extraction Solution 1	P391 - Collect spillage. 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.
		DNA Extraction Solution 2	Not applicable.
		DNA Extraction Solution 3	Not applicable.
Storage	:	DNA Extraction RNase	Not applicable.
		DNA Extraction Pronase	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
		DNA Extraction Solution 1	Not applicable.
		DNA Extraction Solution 2	Not applicable.
		DNA Extraction Solution 3	Not applicable.
Disposal	:	DNA Extraction RNase	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		DNA Extraction Pronase	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		DNA Extraction Solution 1	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		DNA Extraction Solution 2	Not applicable.
		DNA Extraction Solution 3	Not applicable.

Section 2. Hazards identification

Supplemental label elements :

DNA Extraction RNase	None known.
DNA Extraction Pronase	None known.
DNA Extraction Solution 1	None known.
DNA Extraction Solution 2	None known.
DNA Extraction Solution 3	None known.

2.3 Other hazards

Hazards not otherwise classified :

DNA Extraction RNase	None known.
DNA Extraction Pronase	None known.
DNA Extraction Solution 1	None known.
DNA Extraction Solution 2	None known.
DNA Extraction Solution 3	None known.

Section 3. Composition/information on ingredients

Substance/mixture :

DNA Extraction RNase	Mixture
DNA Extraction Pronase	Mixture
DNA Extraction Solution 1	Mixture
DNA Extraction Solution 2	Mixture
DNA Extraction Solution 3	Mixture

Ingredient name	%	CAS number
DNA Extraction RNase		
Nuclease, ribo-	≤3	9001-99-4
DNA Extraction Pronase		
Proteinase, Streptomyces griseus	≥10 - ≤25	9036-06-0
DNA Extraction Solution 1		
Polyoxyethylene octyl phenyl ether	≤5	9002-93-1
DNA Extraction Solution 2		
Sodium dodecyl sulphate	≤3	151-21-3

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

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

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

Section 4. First aid measures

4.1 Description of necessary first aid measures

Eye contact :

DNA Extraction RNase	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
DNA Extraction Pronase	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.

Section 4. First aid measures

		DNA Extraction Solution 1	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.
		DNA Extraction Solution 2	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.
		DNA Extraction Solution 3	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.
Inhalation	:	DNA Extraction RNase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open 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. In the event of any complaints or symptoms, avoid further exposure.
		DNA Extraction Pronase	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.
		DNA Extraction Solution 1	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

Section 4. First aid measures

			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.
		DNA Extraction Solution 2	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
		DNA Extraction Solution 3	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
Skin contact	:	DNA Extraction RNase	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.
		DNA Extraction Pronase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		DNA Extraction Solution 1	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.
		DNA Extraction Solution 2	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		DNA Extraction Solution 3	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	DNA Extraction RNase	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.
		DNA Extraction Pronase	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

Section 4. First aid measures

	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.
DNA Extraction Solution 1	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.
DNA Extraction Solution 2	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.
DNA Extraction Solution 3	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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	:	DNA Extraction RNase	No known significant effects or critical hazards.
		DNA Extraction Pronase	Causes serious eye irritation.
		DNA Extraction Solution 1	Causes serious eye damage.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	No known significant effects or critical hazards.
Inhalation	:	DNA Extraction RNase	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
		DNA Extraction Pronase	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
		DNA Extraction Solution 1	No known significant effects or critical hazards.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	No known significant effects or critical hazards.
Skin contact	:	DNA Extraction RNase	No known significant effects or critical hazards.
		DNA Extraction Pronase	Causes skin irritation.
		DNA Extraction Solution 1	No known significant effects or critical hazards.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	No known significant effects or critical hazards.
Ingestion	:	DNA Extraction RNase	No known significant effects or critical hazards.
		DNA Extraction Pronase	No known significant effects or critical hazards.
		DNA Extraction Solution 1	No known significant effects or critical hazards.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	No known significant effects or critical hazards.

Section 4. First aid measures

Over-exposure signs/symptoms

Eye contact	:	DNA Extraction RNase	No specific data.
		DNA Extraction Pronase	Adverse symptoms may include the following: pain or irritation watering redness
		DNA Extraction Solution 1	Adverse symptoms may include the following: pain watering redness
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.
Inhalation	:	DNA Extraction RNase	Adverse symptoms may include the following: wheezing and breathing difficulties asthma
		DNA Extraction Pronase	Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma
		DNA Extraction Solution 1	No specific data.
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.
Skin contact	:	DNA Extraction RNase	No specific data.
		DNA Extraction Pronase	Adverse symptoms may include the following: irritation redness
		DNA Extraction Solution 1	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.
Ingestion	:	DNA Extraction RNase	No specific data.
		DNA Extraction Pronase	No specific data.
		DNA Extraction Solution 1	Adverse symptoms may include the following: stomach pains
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.

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

Notes to physician	:	DNA Extraction RNase	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.
		DNA Extraction Pronase	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		DNA Extraction Solution 1	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		DNA Extraction Solution 2	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
		DNA Extraction Solution 3	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 4. First aid measures

Specific treatments	:	DNA Extraction RNase	No specific treatment.
		DNA Extraction Pronase	No specific treatment.
		DNA Extraction Solution 1	No specific treatment.
		DNA Extraction Solution 2	No specific treatment.
		DNA Extraction Solution 3	No specific treatment.
Protection of first-aiders	:	DNA Extraction RNase	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.
		DNA Extraction Pronase	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.
		DNA Extraction Solution 1	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.
		DNA Extraction Solution 2	No action shall be taken involving any personal risk or without suitable training.
		DNA Extraction Solution 3	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media	:	DNA Extraction RNase	Use an extinguishing agent suitable for the surrounding fire.
		DNA Extraction Pronase	Use an extinguishing agent suitable for the surrounding fire.
		DNA Extraction Solution 1	Use an extinguishing agent suitable for the surrounding fire.
		DNA Extraction Solution 2	Use an extinguishing agent suitable for the surrounding fire.
		DNA Extraction Solution 3	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	:	DNA Extraction RNase	None known.
		DNA Extraction Pronase	None known.
		DNA Extraction Solution 1	None known.
		DNA Extraction Solution 2	None known.
		DNA Extraction Solution 3	None known.

5.2 Special hazards arising from the substance or mixture

Section 5. Fire-fighting measures

Specific hazards arising from the chemical :	DNA Extraction RNase	In a fire or if heated, a pressure increase will occur and the container may burst.
	DNA Extraction Pronase	In a fire or if heated, a pressure increase will occur and the container may burst.
	DNA Extraction Solution 1	In a fire or if heated, a pressure increase will occur and the container may burst. 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.
	DNA Extraction Solution 2	In a fire or if heated, a pressure increase will occur and the container may burst.
	DNA Extraction Solution 3	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products :	DNA Extraction RNase	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
	DNA Extraction Pronase	No specific data.
	DNA Extraction Solution 1	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	DNA Extraction Solution 2	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides metal oxide/oxides
	DNA Extraction Solution 3	Decomposition products may include the following materials: halogenated compounds metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters :	DNA Extraction RNase	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.
	DNA Extraction Pronase	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.
	DNA Extraction Solution 1	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.
	DNA Extraction Solution 2	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.
	DNA Extraction Solution 3	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.

Section 5. Fire-fighting measures

Special protective equipment for fire-fighters	:	DNA Extraction RNase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		DNA Extraction Pronase	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		DNA Extraction Solution 1	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		DNA Extraction Solution 2	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		DNA Extraction Solution 3	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	DNA Extraction RNase	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.
		DNA Extraction Pronase	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.
		DNA Extraction Solution 1	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.
		DNA Extraction Solution 2	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.
		DNA Extraction Solution 3	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and

Section 6. Accidental release measures

		unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
For emergency responders :	DNA Extraction RNase	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".
	DNA Extraction Pronase	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".
	DNA Extraction Solution 1	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".
	DNA Extraction Solution 2	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".
	DNA Extraction Solution 3	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".
6.2 Environmental precautions :	DNA Extraction RNase	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).
	DNA Extraction Pronase	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).
	DNA Extraction Solution 1	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.
	DNA Extraction Solution 2	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).
	DNA Extraction Solution 3	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up	:	DNA Extraction RNase	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.
		DNA Extraction Pronase	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.
		DNA Extraction Solution 1	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.
		DNA Extraction Solution 2	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.
		DNA Extraction Solution 3	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures	:	DNA Extraction RNase	Put on appropriate personal protective equipment (see Section 8). Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
		DNA Extraction Pronase	Put on appropriate personal protective equipment (see Section 8). Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

		DNA Extraction Solution 1	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. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
		DNA Extraction Solution 2	Put on appropriate personal protective equipment (see Section 8).
		DNA Extraction Solution 3	Put on appropriate personal protective equipment (see Section 8).
Advice on general occupational hygiene	:	DNA Extraction RNase	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.
		DNA Extraction Pronase	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.
		DNA Extraction Solution 1	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.
		DNA Extraction Solution 2	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.
		DNA Extraction Solution 3	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
7.2 Conditions for safe storage, including any incompatibilities	:	DNA Extraction RNase	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

Section 7. Handling and storage

	containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
DNA Extraction Pronase	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.
DNA Extraction Solution 1	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.
DNA Extraction Solution 2	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.
DNA Extraction Solution 3	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.

7.3 Specific end use(s)

Recommendations :

DNA Extraction RNase	Industrial applications, Professional applications.
DNA Extraction Pronase	Industrial applications, Professional applications.
DNA Extraction Solution 1	Industrial applications, Professional applications.
DNA Extraction Solution 2	Industrial applications, Professional applications.
DNA Extraction Solution 3	Industrial applications, Professional applications.

Section 7. Handling and storage

Industrial sector specific solutions :

DNA Extraction RNase	Not available.
DNA Extraction Pronase	Not available.
DNA Extraction Solution 1	Not available.
DNA Extraction Solution 2	Not available.
DNA Extraction Solution 3	Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
DNA Extraction RNase Nuclease, ribo-	None.
DNA Extraction Pronase Proteinase, Streptomyces griseus	None.
DNA Extraction Solution 1 Polyoxyethylene octyl phenyl ether	None.
DNA Extraction Solution 2 Sodium dodecyl sulphate	None.

Biological exposure indices

No exposure indices known.

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, 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. 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: safety glasses with side-shields.

Skin protection

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

Section 8. Exposure controls/personal protection

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

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

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

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

Physical state :	DNA Extraction RNase	Liquid.
	DNA Extraction Pronase	Liquid.
	DNA Extraction Solution 1	Liquid.
	DNA Extraction Solution 2	Liquid.
	DNA Extraction Solution 3	Liquid.
Color :	DNA Extraction RNase	Not available.
	DNA Extraction Pronase	Not available.
	DNA Extraction Solution 1	Not available.
	DNA Extraction Solution 2	Not available.
	DNA Extraction Solution 3	Not available.
Odor :	DNA Extraction RNase	Not available.
	DNA Extraction Pronase	Not available.
	DNA Extraction Solution 1	Not available.
	DNA Extraction Solution 2	Not available.
	DNA Extraction Solution 3	Not available.
Odor threshold :	DNA Extraction RNase	Not available.
	DNA Extraction Pronase	Not available.
	DNA Extraction Solution 1	Not available.
	DNA Extraction Solution 2	Not available.
	DNA Extraction Solution 3	Not available.
pH :	DNA Extraction RNase	7.5
	DNA Extraction Pronase	Not available.
	DNA Extraction Solution 1	7.6
	DNA Extraction Solution 2	8
	DNA Extraction Solution 3	Not available.
Melting point/freezing point :	DNA Extraction RNase	0°C (32°F)
	DNA Extraction Pronase	Not available.
	DNA Extraction Solution 1	Not available.
	DNA Extraction Solution 2	0°C (32°F)
	DNA Extraction Solution 3	Not available.
Boiling point, initial boiling point, and boiling range :	DNA Extraction RNase	100°C (212°F)
	DNA Extraction Pronase	Not available.
	DNA Extraction Solution 1	Not available.
	DNA Extraction Solution 2	100°C (212°F)
	DNA Extraction Solution 3	Not available.
Flash point :		

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Closed cup °C	Closed cup °F	Closed cup Method	Open cup °C	Open cup °F	Open cup Method
DNA Extraction Solution 1						
Polyoxyethylene octyl phenyl ether	>109.85	>229.7				
DNA Extraction Solution 2						
Sodium dodecyl sulphate	170	338				

Evaporation rate :

DNA Extraction RNase	Not available.
DNA Extraction Pronase	Not available.
DNA Extraction Solution 1	Not available.
DNA Extraction Solution 2	Not available.
DNA Extraction Solution 3	Not available.

Flammability :

DNA Extraction RNase	Not applicable.
DNA Extraction Pronase	Not applicable.
DNA Extraction Solution 1	Not applicable.
DNA Extraction Solution 2	Not applicable.
DNA Extraction Solution 3	Not applicable.

Lower and upper explosion limit/flammability limit :

DNA Extraction RNase	Not available.
DNA Extraction Pronase	Not available.
DNA Extraction Solution 1	Not available.
DNA Extraction Solution 2	Not available.
DNA Extraction Solution 3	Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20˚C mm Hg	Vapor Pressure at 20˚C kPa	Vapor Pressure at 20˚C Method	Vapor pressure at 50˚C mm Hg	Vapor pressure at 50˚C kPa	Vapor pressure at 50˚C Method
DNA Extraction RNase						
water	23.8	3.2		92.258	12.3	
DNA Extraction Pronase						
water	23.8	3.2		92.258	12.3	
DNA Extraction Solution 1						
water	23.8	3.2		92.258	12.3	
Polyoxyethylene octyl phenyl ether	0.997581	0.13				
DNA Extraction Solution 2						
water	23.8	3.2		92.258	12.3	

Section 9. Physical and chemical properties and safety characteristics

Sodium dodecyl sulphate	≤0.0013501	≤0.00018				
DNA Extraction Solution 3						
water	23.8	3.2		92.258	12.3	

Relative vapor density :

DNA Extraction RNase	Not available.
DNA Extraction Pronase	Not available.
DNA Extraction Solution 1	Not available.
DNA Extraction Solution 2	Not available.
DNA Extraction Solution 3	Not available.

Relative density :

DNA Extraction RNase	Not available.
DNA Extraction Pronase	Not available.
DNA Extraction Solution 1	Not available.
DNA Extraction Solution 2	Not available.
DNA Extraction Solution 3	Not available.

Solubility(ies) :

Media	Result
DNA Extraction RNase	
water	Soluble
DNA Extraction Pronase	
water	Soluble
DNA Extraction Solution 1	
water	Soluble
DNA Extraction Solution 2	
water	Soluble
DNA Extraction Solution 3	
water	Soluble

Partition coefficient: n-octanol/water :

DNA Extraction RNase	Not applicable.
DNA Extraction Pronase	Not applicable.
DNA Extraction Solution 1	Not applicable.
DNA Extraction Solution 2	Not applicable.
DNA Extraction Solution 3	Not applicable.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
DNA Extraction Solution 2			
Sodium dodecyl sulphate	310.5	590.9	VDI 2263

Decomposition temperature :

DNA Extraction RNase	Not available.
DNA Extraction Pronase	Not available.
DNA Extraction Solution 1	Not available.
DNA Extraction Solution 2	Not available.
DNA Extraction Solution 3	Not available.

Viscosity :

DNA Extraction RNase	Not available.
DNA Extraction Pronase	Not available.
DNA Extraction Solution 1	Not available.
DNA Extraction Solution 2	Not available.
DNA Extraction Solution 3	Not available.

Particle characteristics

Section 9. Physical and chemical properties and safety characteristics

Median particle size	:	DNA Extraction RNase	Not applicable.
		DNA Extraction Pronase	Not applicable.
		DNA Extraction Solution 1	Not applicable.
		DNA Extraction Solution 2	Not applicable.
		DNA Extraction Solution 3	Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity	:	DNA Extraction RNase	No specific test data related to reactivity available for this product or its ingredients.
		DNA Extraction Pronase	No specific test data related to reactivity available for this product or its ingredients.
		DNA Extraction Solution 1	No specific test data related to reactivity available for this product or its ingredients.
		DNA Extraction Solution 2	No specific test data related to reactivity available for this product or its ingredients.
		DNA Extraction Solution 3	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	:	DNA Extraction RNase	The product is stable.
		DNA Extraction Pronase	The product is stable.
		DNA Extraction Solution 1	The product is stable.
		DNA Extraction Solution 2	The product is stable.
		DNA Extraction Solution 3	The product is stable.
10.3 Possibility of hazardous reactions	:	DNA Extraction RNase	Under normal conditions of storage and use, hazardous reactions will not occur.
		DNA Extraction Pronase	Under normal conditions of storage and use, hazardous reactions will not occur.
		DNA Extraction Solution 1	Under normal conditions of storage and use, hazardous reactions will not occur.
		DNA Extraction Solution 2	Under normal conditions of storage and use, hazardous reactions will not occur.
		DNA Extraction Solution 3	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	:	DNA Extraction RNase	No specific data.
		DNA Extraction Pronase	No specific data.
		DNA Extraction Solution 1	No specific data.
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.
10.5 Incompatible materials	:	DNA Extraction RNase	May react or be incompatible with oxidizing materials.
		DNA Extraction Pronase	May react or be incompatible with oxidizing materials.
		DNA Extraction Solution 1	May react or be incompatible with oxidizing materials.
		DNA Extraction Solution 2	May react or be incompatible with oxidizing materials.
		DNA Extraction Solution 3	May react or be incompatible with oxidizing materials.

Section 10. Stability and reactivity

10.6 Hazardous decomposition products :

DNA Extraction RNase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA Extraction Pronase	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA Extraction Solution 1	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA Extraction Solution 2	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
DNA Extraction Solution 3	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
DNA Extraction Pronase				
Proteinase, Streptomyces griseus	LD50 Oral	Rat	3290 mg/kg	-
DNA Extraction Solution 1				
Polyoxyethylene octyl phenyl ether	LD50 Oral	Rat	1800 mg/kg	-
DNA Extraction Solution 2				
Sodium dodecyl sulphate	LD50 Oral	Rat	1288 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
DNA Extraction Solution 1					
Polyoxyethylene octyl phenyl ether	Skin - Mild irritant	Rabbit	-	24 hours 500 uL	-
DNA Extraction Solution 2					
Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250 ug	-
	Eyes - Moderate irritant	Rabbit	-	10 mg	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 mg	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 25 mg	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Section 11. Toxicological information

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
DNA Extraction Pronase Proteinase, Streptomyces griseus	Category 3	-	Respiratory tract irritation
DNA Extraction Solution 2 Sodium dodecyl sulphate	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure :

DNA Extraction RNase	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
DNA Extraction Pronase	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
DNA Extraction Solution 1	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
DNA Extraction Solution 2	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
DNA Extraction Solution 3	Not available.

Potential acute health effects

Eye contact :

DNA Extraction RNase	No known significant effects or critical hazards.
DNA Extraction Pronase	Causes serious eye irritation.
DNA Extraction Solution 1	Causes serious eye damage.
DNA Extraction Solution 2	No known significant effects or critical hazards.
DNA Extraction Solution 3	No known significant effects or critical hazards.

Inhalation :

DNA Extraction RNase	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
DNA Extraction Pronase	May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
DNA Extraction Solution 1	No known significant effects or critical hazards.
DNA Extraction Solution 2	No known significant effects or critical hazards.
DNA Extraction Solution 3	No known significant effects or critical hazards.

Skin contact :

DNA Extraction RNase	No known significant effects or critical hazards.
DNA Extraction Pronase	Causes skin irritation.
DNA Extraction Solution 1	No known significant effects or critical hazards.
DNA Extraction Solution 2	No known significant effects or critical hazards.
DNA Extraction Solution 3	No known significant effects or critical hazards.

Ingestion :

DNA Extraction RNase	No known significant effects or critical hazards.
DNA Extraction Pronase	No known significant effects or critical hazards.
DNA Extraction Solution 1	No known significant effects or critical hazards.
DNA Extraction Solution 2	No known significant effects or critical hazards.
DNA Extraction Solution 3	No known significant effects or critical hazards.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	:	DNA Extraction RNase	No specific data.
		DNA Extraction Pronase	Adverse symptoms may include the following: pain or irritation watering redness
		DNA Extraction Solution 1	Adverse symptoms may include the following: pain watering redness
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.
Inhalation	:	DNA Extraction RNase	Adverse symptoms may include the following: wheezing and breathing difficulties asthma
		DNA Extraction Pronase	Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma
		DNA Extraction Solution 1	No specific data.
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.
Skin contact	:	DNA Extraction RNase	No specific data.
		DNA Extraction Pronase	Adverse symptoms may include the following: irritation redness
		DNA Extraction Solution 1	Adverse symptoms may include the following: pain or irritation redness blistering may occur
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	No specific data.
Ingestion	:	DNA Extraction RNase	No specific data.
		DNA Extraction Pronase	No specific data.
		DNA Extraction Solution 1	Adverse symptoms may include the following: stomach pains
		DNA Extraction Solution 2	No specific data.
		DNA Extraction Solution 3	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

Section 11. Toxicological information

General	:	DNA Extraction RNase	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
		DNA Extraction Pronase	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
		DNA Extraction Solution 1	No known significant effects or critical hazards.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	No known significant effects or critical hazards.
Carcinogenicity	:	DNA Extraction RNase	No known significant effects or critical hazards.
		DNA Extraction Pronase	No known significant effects or critical hazards.
		DNA Extraction Solution 1	No known significant effects or critical hazards.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	No known significant effects or critical hazards.
Mutagenicity	:	DNA Extraction RNase	No known significant effects or critical hazards.
		DNA Extraction Pronase	No known significant effects or critical hazards.
		DNA Extraction Solution 1	No known significant effects or critical hazards.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	No known significant effects or critical hazards.
Reproductive toxicity	:	DNA Extraction RNase	No known significant effects or critical hazards.
		DNA Extraction Pronase	No known significant effects or critical hazards.
		DNA Extraction Solution 1	No known significant effects or critical hazards.
		DNA Extraction Solution 2	No known significant effects or critical hazards.
		DNA Extraction Solution 3	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)
DNA Extraction Pronase					
DNA Extraction Pronase	14622.2	N/A	N/A	N/A	N/A
Proteinase, Streptomyces griseus	3290	N/A	N/A	N/A	N/A
DNA Extraction Solution 1					
DNA Extraction Solution 1	60000.0	N/A	N/A	N/A	N/A
Polyoxyethylene octyl phenyl ether	1800	N/A	N/A	N/A	N/A
DNA Extraction Solution 2					
DNA Extraction Solution 2	64400.0	N/A	N/A	N/A	75.0
Sodium dodecyl sulphate	1288	N/A	N/A	N/A	1.5
DNA Extraction Solution 3					
DNA Extraction Solution 3	8571.4	N/A	N/A	N/A	N/A

Section 12. Ecological information

12.1 Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
DNA Extraction Solution 1			
Polyoxyethylene octyl phenyl ether	Acute LC50 5.85 mg/l Fresh water	Crustaceans - Ceriodaphnia rigaudi - Neonate	48 hours
	Acute LC50 11.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 4500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
DNA Extraction Solution 2			
Sodium dodecyl sulphate	Acute EC50 1200 µg/l Marine water	Algae - Skeletonema costatum	96 hours
	Acute LC50 900 µg/l Marine water	Crustaceans - Artemia salina - Adult	48 hours
	Acute LC50 1400 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 590 µg/l Fresh water	Fish - Cirrhinus mrigala - Larvae	96 hours
	Chronic NOEC 1.25 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Chronic NOEC 1 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	21 days
	Chronic NOEC 3.2 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
DNA Extraction Solution 2				
Sodium dodecyl sulphate	OECD 301B Ready Biodegradability - CO_2 Evolution Test	95 % - Readily - 28 days	20 mg/l	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
DNA Extraction Solution 1			
Polyoxyethylene octyl phenyl ether	-	-	Readily
DNA Extraction Solution 2			
Sodium dodecyl sulphate	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
DNA Extraction Solution 1			
Polyoxyethylene octyl phenyl ether	4.86	-	high
DNA Extraction Solution 2			
Sodium dodecyl sulphate	-2.03	-	low

12.4 Mobility in soil

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

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

Section 13. Disposal considerations

13.1 Waste treatment methods

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

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

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

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

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Proteinase, Streptomyces griseus)	SUBSTANCIA LIQUIDA POTENCIALMENTE PELIGROSA PARA EL MEDIO AMBIENTE, N.E.P. (Proteinase, Streptomyces griseus)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Proteinase, Streptomyces griseus)	Environmentally hazardous substance, liquid, n. o.s. (Proteinase, Streptomyces griseus)
Transport hazard class(es)	-	9 	9 	9 	9 
Packing group	-	III	III	III	III
Environmental hazards	No.	Yes.	Yes.	Yes.	Yes.

Additional information

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
Explosive Limit and Limited Quantity Index 5
Special provisions 16, 99

Section 14. Transport information

Mexico Classification : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Special provisions 274, 331, 335

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335, 969

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964.
Special provisions A97, A158, A197, A215

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

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

U.S. Federal regulations : **TSCA 8(a) PAIR**: Polyoxyethylene octyl phenyl ether
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 311: Edetic acid; Sodium hydroxide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ (lbs)	SARA 302 TPQ (gallons)	SARA 304 RQ (lbs)	SARA 304 RQ (gallons)
DNA Extraction Solution 1 Sodium azide	<0.1	Yes.	500	-	1000	-

SARA 304 RQ : 8333333.3 lbs / 3783333.3 kg

SARA 311/312

Section 15. Regulatory information

Classification :

DNA Extraction RNase	RESPIRATORY SENSITIZATION - Category 1
DNA Extraction Pronase	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
DNA Extraction Solution 1	SERIOUS EYE DAMAGE - Category 1
DNA Extraction Solution 2	Not applicable.
DNA Extraction Solution 3	Not applicable.

Composition/information on ingredients

Name	%	Classification
DNA Extraction RNase		
Nuclease, ribo-	≤3	COMBUSTIBLE DUSTS RESPIRATORY SENSITIZATION - Category 1
DNA Extraction Pronase		
Proteinase, Streptomyces griseus	≥10 - ≤25	COMBUSTIBLE DUSTS SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
DNA Extraction Solution 1		
Sucrose	≥25 - ≤50	COMBUSTIBLE DUSTS
Polyoxyethylene octyl phenyl ether	≤5	ACUTE TOXICITY (oral) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1
DNA Extraction Solution 2		
Sodium dodecyl sulphate	≤3	FLAMMABLE SOLIDS - Category 2 COMBUSTIBLE DUSTS ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

State regulations

Massachusetts : The following components are listed: SUCROSE DUST

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : The following components are listed: .ALPHA.-D-GLUCOPYRANOSIDE, .BETA.-D-FRUCTOFURANOSYL

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Section 15. Regulatory information

Not listed.

Inventory list

Australia : Not determined.

Canada : Not determined.

China : All components are listed or exempted.

Eurasian Economic Union : **Russian Federation inventory**: All components are listed or exempted.

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

New Zealand : All components are listed or exempted.

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 : All components are listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
DNA Extraction RNase	
RESPIRATORY SENSITIZATION - Category 1	Calculation method
DNA Extraction Pronase	
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
DNA Extraction Solution 1	
SERIOUS EYE DAMAGE - Category 1	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

History

Date of issue : 01/20/2023

Date of previous issue : 02/24/2021

Version : 7

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

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.