



## Section 2. Hazards identification

### 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
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### DNA Extraction Solution 3

H319	EYE IRRITATION - Category 2A
<b>Ingredients of unknown toxicity</b>	: DNA Extraction RNase Percentage of the mixture consisting of ingredient (s) of unknown toxicity: 1%
	: DNA Extraction Pronase Not applicable.
	: DNA Extraction Solution 1 Not applicable.
	: DNA Extraction Solution 2 Not applicable.
	: DNA Extraction Solution 3 Not applicable.

## 2.2 GHS label elements

### Hazard pictograms



### Signal word

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

### Hazard statements

: DNA Extraction RNase	No known significant effects or critical hazards.
: DNA Extraction Pronase	H319 - Causes serious eye irritation.
	H315 - Causes skin irritation.
	<b>GHS SYMBOL - Health hazard - Exclamation mark -</b>
	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
	H335 - May cause respiratory irritation.
: DNA Extraction Solution 1	<b>GHS SYMBOL - Corrosion -</b>
: DNA Extraction Solution 2	H318 - Causes serious eye damage.
: DNA Extraction Solution 3	No known significant effects or critical hazards.
	<b>GHS SYMBOL - Exclamation mark -</b>
	H319 - Causes serious eye irritation.

## Precautionary statements

### Prevention

: DNA Extraction RNase	Not applicable.
: DNA Extraction Pronase	P280 - Wear protective gloves. Wear eye or face protection.
	P284 - Wear respiratory protection.
	P271 - Use only outdoors or in a well-ventilated area.
	P261 - Avoid breathing vapor.
	P264 - Wash hands thoroughly after handling.
: DNA Extraction Solution 1	P280 - Wear eye or face protection.
: DNA Extraction Solution 2	Not applicable.
: DNA Extraction Solution 3	P280 - Wear eye or face protection.
	P264 - Wash hands thoroughly after handling.

## Section 2. Hazards identification

<b>Response</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase	Not applicable. P304 + P341 (OSHA) + P312 - IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or physician. P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. P332 + P313 - If skin irritation occurs: Get medical 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 attention. P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Not applicable. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical attention.
	DNA Extraction Solution 1	
	DNA Extraction Solution 2 DNA Extraction Solution 3	
<b>Storage</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	Not applicable. P405 - Store locked up. Not applicable. Not applicable. Not applicable.
<b>Disposal</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase	Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	Not applicable. Not applicable. Not applicable.
<b>Supplemental label elements</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	None known. None known. None known. None known. None known.
<b><u>2.3 Other hazards</u></b>		
<b>Hazards not otherwise classified</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	None known. None known. None known. None known. None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	:	☑ 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 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
DNA Extraction Solution 3 Sodium chloride	≥25 - ≤50	7647-14-5

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

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

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

## Section 4. First aid measures

### 4.1 Description of necessary first aid measures

<b>Eye contact</b>	:	☑ DNA Extraction RNase	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 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.
		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. Continue to rinse for at least 10 minutes. Get medical attention.

## Section 4. First aid measures

### Inhalation

: DNA Extraction RNase

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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

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 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. 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.

## Section 4. First aid measures

<b>Skin contact</b>	: DNA Extraction RNase	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	: DNA Extraction RNase	Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
	DNA Extraction Pronase	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	DNA Extraction Solution 1	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.

## Section 4. First aid measures

DNA Extraction Solution 2

DNA Extraction Solution 3

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. Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

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

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

#### Potential acute health effects

##### Eye contact

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

No known significant effects or critical hazards.  
Causes serious eye irritation.  
Causes serious eye damage.  
No known significant effects or critical hazards.  
Causes serious eye irritation.

##### Inhalation

: DNA Extraction RNase  
DNA Extraction Pronase

No known significant effects or critical hazards.  
May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.

##### Skin contact

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

No known significant effects or critical hazards.  
Causes skin irritation.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.  
No known significant effects or critical hazards.

##### Ingestion

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

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.  
No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

## Section 4. First aid measures

<b>Eye contact</b>	: 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	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: DNA Extraction RNase	No specific data.
	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.
<b>Skin contact</b>	: 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.
<b>Ingestion</b>	: 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

<b>Notes to physician</b>	: 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

<b>Specific treatments</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase  DNA Extraction Pronase   DNA Extraction Solution 1   DNA Extraction Solution 2  DNA Extraction Solution 3	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. 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. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	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.
<b>Unsuitable extinguishing media</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	None known. None known. None known. None known. None known.

### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2	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
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## Section 5. Fire-fighting measures

### Hazardous thermal decomposition products

DNA Extraction Solution 3

: DNA Extraction RNase

and the container may burst.

In a fire or if heated, a pressure increase will occur and the container may burst.

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide  
nitrogen oxides

No specific data.

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide

Decomposition products may include the following materials:

carbon dioxide  
carbon monoxide  
sulfur oxides  
metal oxide/oxides

Decomposition products may include the following materials:

halogenated compounds  
metal oxide/oxides

DNA Extraction Pronase  
DNA Extraction Solution 1

DNA Extraction Solution 2

DNA Extraction Solution 3

### 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.

#### 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

## Section 5. Fire-fighting measures

DNA Extraction Solution 3

equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.  
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. 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 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.

**For emergency responders** : DNA Extraction RNase

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".  
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".  
If specialized clothing is required to deal with the

DNA Extraction Solution 1

## Section 6. Accidental release measures

spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". 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

DNA Extraction Solution 3

### 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).

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

**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

## Section 6. Accidental release measures


DNA Extraction Solution 3	<p>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.</p> <p>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.</p>
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## Section 7. Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	:  DNA Extraction RNase	Put on appropriate personal protective equipment (see Section 8).
	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.
	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. 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). 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.
<b>Advice on general occupational hygiene</b>	:  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

## Section 7. Handling and storage

	<p>DNA Extraction Solution 1</p> <p>DNA Extraction Solution 2</p> <p>DNA Extraction Solution 3</p>	<p>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. 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.</p> <p>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.</p> <p>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.</p>
<p><b>7.2 Conditions for safe storage, including any incompatibilities</b></p>	<p>:  DNA Extraction RNase</p> <p>DNA Extraction Pronase</p> <p>DNA Extraction Solution 1</p> <p>DNA Extraction Solution 2</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>Store in accordance with local regulations. Store in</p>

## Section 7. Handling and storage

### DNA Extraction Solution 3

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.

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.

### 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.

#### Industrial sector specific solutions

☑ 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 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
☑ DNA Extraction Pronase Proteinase, Streptomyces griseus	None.
DNA Extraction Solution 1 Polyoxyethylene octyl phenyl ether	None.
DNA Extraction Solution 2 Sodium dodecyl sulphate	None.
DNA Extraction Solution 3 Sodium chloride	None.

### 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.

## Section 8. Exposure controls/personal protection

- 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

### 9.1 Information on basic physical and chemical properties

#### Appearance

<b>Physical state</b>	<input checked="" type="checkbox"/> DNA Extraction RNase	Liquid.
	DNA Extraction Pronase	Liquid.
	DNA Extraction Solution 1	Liquid.
	DNA Extraction Solution 2	Liquid.
	DNA Extraction Solution 3	Liquid.
<b>Color</b>	<input checked="" type="checkbox"/> 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.
<b>Odor</b>	<input checked="" type="checkbox"/> 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 9. Physical and chemical properties

<b>Odor threshold</b>	: 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.
<b>pH</b>	: 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.
<b>Melting point</b>	: 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.
<b>Boiling point</b>	: 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.
<b>Flash point</b>	: 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.
<b>Evaporation rate</b>	: 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.
<b>Flammability (solid, gas)</b>	: 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.
<b>Lower and upper explosive (flammable) limits</b>	: 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.
<b>Vapor pressure</b>	: 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.
<b>Vapor density</b>	: 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.
<b>Relative density</b>	: 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 9. Physical and chemical properties

<b>Solubility</b>	:	☑ DNA Extraction RNase	Easily soluble in the following materials: cold water and hot water.
		DNA Extraction Pronase	Soluble in the following materials: cold water and hot water.
		DNA Extraction Solution 1	Not available.
		DNA Extraction Solution 2	Easily soluble in the following materials: cold water and hot water.
		DNA Extraction Solution 3	Not available.
<b>Partition coefficient: n-octanol/water</b>	:	☑ 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.
<b>Auto-ignition temperature</b>	:	☑ 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.
<b>Decomposition temperature</b>	:	☑ 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.
<b>Viscosity</b>	:	☑ 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 10. Stability and reactivity

<b>10.1 Reactivity</b>	:	☑ 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.
<b>10.2 Chemical stability</b>	:	☑ 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.
<b>10.3 Possibility of hazardous reactions</b>	:	☑ 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.

## Section 10. Stability and reactivity

hazardous reactions will not occur.

<b>10.4 Conditions to avoid</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	No specific data. No specific data. No specific data. No specific data. No specific data.
<b>10.5 Incompatible materials</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase  DNA Extraction Pronase  DNA Extraction Solution 1  DNA Extraction Solution 2  DNA Extraction Solution 3	May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials. May react or be incompatible with oxidizing materials.
<b>10.6 Hazardous decomposition products</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase  DNA Extraction Pronase  DNA Extraction Solution 1  DNA Extraction Solution 2  DNA Extraction Solution 3	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. Under normal conditions of storage and use, hazardous decomposition products should not be produced. 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
<input checked="" type="checkbox"/> DNA Extraction Pronase Proteinase, Streptomyces griseus	LD50 Oral	Rat	3290 mg/kg	-
<b>DNA Extraction Solution 2</b> Sodium dodecyl sulphate	LD50 Dermal LD50 Oral	Rabbit Rat	580 mg/kg 1288 mg/kg	- -
<b>DNA Extraction Solution 3</b> Sodium chloride	LD50 Oral	Rat	3000 mg/kg	-

#### Irritation/Corrosion

## Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>DNA Extraction Solution 1</b> Polyoxyethylene octyl phenyl ether	Eyes - Moderate irritant	Rabbit	-	24 hours 10 microliters	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 microliters	-
<b>DNA Extraction Solution 2</b> Sodium dodecyl sulphate	Eyes - Mild irritant	Rabbit	-	250 Micrograms	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Skin - Mild irritant	Guinea pig	-	24 hours 25 milligrams	-
	Skin - Moderate irritant	Mouse	-	24 hours 25 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
<b>DNA Extraction Solution 3</b> Sodium chloride	Skin - Moderate irritant	Rabbit	-	24 hours 25 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant Skin - Mild irritant	Rabbit Rabbit	- -	10 milligrams 24 hours 500 milligrams	- -

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<b>DNA Extraction Pronase</b> Proteinase, Streptomyces griseus	Category 3	Not applicable.	Respiratory tract irritation
<b>DNA Extraction Solution 2</b> Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

## Section 11. Toxicological information

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

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

### 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	Causes serious eye irritation.

#### Inhalation

: DNA Extraction RNase	No known significant effects or critical hazards.
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.

### 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	Adverse symptoms may include the following: pain or irritation watering redness

## Section 11. Toxicological information

<b>Inhalation</b>	: DNA Extraction RNase	No specific data.
	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.
<b>Skin contact</b>	: DNA Extraction Solution 2	No specific data.
	DNA Extraction Solution 3	No specific data.
	: DNA Extraction RNase	No specific data.
<b>Ingestion</b>	: 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.
	: 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

<b>General</b>	: DNA Extraction RNase	No known significant effects or critical hazards.
	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.
<b>Carcinogenicity</b>	: DNA Extraction Solution 2	No known significant effects or critical hazards.
	DNA Extraction Solution 3	No known significant effects or critical hazards.
	: 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.
<b>Mutagenicity</b>	: DNA Extraction Solution 3	No known significant effects or critical hazards.
	: 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

<b>Teratogenicity</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	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. No known significant effects or critical hazards.
<b>Developmental effects</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	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. No known significant effects or critical hazards.
<b>Fertility effects</b>	: <input checked="" type="checkbox"/> DNA Extraction RNase DNA Extraction Pronase DNA Extraction Solution 1 DNA Extraction Solution 2 DNA Extraction Solution 3	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. No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
<input checked="" type="checkbox"/> DNA Extraction Pronase Oral	14622.2 mg/kg
DNA Extraction Solution 1 Oral	16666.7 mg/kg
DNA Extraction Solution 2 Oral Dermal	64400 mg/kg 29000 mg/kg
DNA Extraction Solution 3 Oral	8571.4 mg/kg

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> 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	

## Section 12. Ecological information

<b>DNA Extraction Solution 3</b> Sodium chloride	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
	Acute EC50 2430000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 28.85 mg/dm <sup>3</sup> Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 519.6 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute IC50 6.87 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 1661 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Morone saxatilis - Larvae	96 hours
	Chronic LC10 781 mg/l Fresh water	Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling)	3 weeks
	Chronic NOEC 6 g/L Fresh water	Aquatic plants - Lemna minor	96 hours
Chronic NOEC 0.314 g/L Fresh water	Daphnia - Daphnia pulex	21 days	
Chronic NOEC 100 mg/l Fresh water	Fish - Gambusia holbrooki - Adult	8 weeks	

### 12.2 Persistence and degradability

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

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>DNA Extraction Solution 1</b> Polyoxyethylene octyl phenyl ether	4.86	-	high
<b>DNA Extraction Solution 2</b> Sodium dodecyl sulphate	-2.03	-	low

### 12.4 Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : 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



## Section 13. Disposal considerations

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

### Regulatory information

DOT / IMDG / IATA : Not regulated.

## 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  
**United States inventory (TSCA 8b)**: At least one component is not listed.  
**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		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
DNA Extraction Solution 1 Sodium azide	≤0.1	Yes.	500	-	1000	-

**SARA 304 RQ** : 8333333.3 lbs / 3783333.3 kg

### SARA 311/312

**Classification** : Immediate (acute) health hazard

#### Composition/information on ingredients

## Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
<b>DNA Extraction Pronase</b> Proteinase, Streptomyces griseus	≥10 - ≤25	Yes.	No.	No.	Yes.	No.
<b>DNA Extraction Solution 1</b> Polyoxyethylene octyl phenyl ether	≤5	No.	No.	No.	Yes.	No.
<b>DNA Extraction Solution 2</b> Sodium dodecyl sulphate	≤3	Yes.	No.	No.	Yes.	No.
<b>DNA Extraction Solution 3</b> Sodium chloride	≥25 - ≤50	No.	No.	No.	Yes.	No.

### 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

No products were found.

### Canada inventory

: Not determined.

### International regulations

#### International lists

: **Australia inventory (AICS)**: Not determined.  
**China inventory (IECSC)**: All components are listed or exempted.  
**Japan inventory (ENCS)**: Not determined.  
**Japan inventory (ISHL)**: Not determined.  
**Korea inventory**: Not determined.  
**Malaysia Inventory (EHS Register)**: Not determined.  
**New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.  
**Philippines inventory (PICCS)**: Not determined.  
**Taiwan Chemical Substances Inventory (TCSI)**: All components are listed or exempted.  
**Turkey inventory**: Not determined.

#### Chemical Weapons

: Not listed

#### Convention List Schedule I Chemicals

#### Chemical Weapons

: Not listed

#### Convention List Schedule II Chemicals

#### Chemical Weapons

: Not listed

#### Convention List Schedule III Chemicals

## Section 16. Other information

### History

**Date of issue** : 02/29/2016

**Date of previous issue** : 05/23/2014.

**Version** : 3

✔ Indicates information that has changed from previously issued version.

### Notice to reader

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