

# SAFETY DATA SHEET

AdvanceBio N-glycan deglycosylation kit (96 samples), Part Number 5190-8006

## Section 1. Identification

### 1.1 Product identifier

**Product name** : AdvanceBio N-glycan deglycosylation kit (96 samples), Part Number 5190-8006

**Part no. (chemical kit)** : 5190-8006

**Part no.** : Peptide -N-Glycosidase F (PNGaseF) Not available.  
 (EDTA - Free)  
 5X Tris Reaction Buffer Not available.  
 5X Phosphate Reaction Buffer Not available.  
 Denaturation Solution Not available.  
 Detergent Solution Not available.

**Validation date** : 4/26/2018

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

**Material uses** :  Reagents and Standards for Analytical Chemistry Laboratory Use

<input checked="" type="checkbox"/> Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	0.04 ml
5X Tris Reaction Buffer	1 ml
5X Phosphate Reaction Buffer	1 ml
Denaturation Solution	0.2 ml
Detergent Solution	0.2 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

<b>OSHA/HCS status</b> : <input checked="" type="checkbox"/> Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	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.
5X Tris Reaction Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.
5X Phosphate Reaction Buffer	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

## Section 2. Hazards identification

Denaturation Solution	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Detergent Solution	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### Classification of the substance or mixture

#### **Denaturation Solution**

H318	SERIOUS EYE DAMAGE - Category 1
H317	SKIN SENSITIZATION - Category 1

#### **Detergent Solution**

H315	SKIN IRRITATION - Category 2
H319	EYE IRRITATION - Category 2A

<b>Ingredients of unknown toxicity</b>	<b>5X Phosphate Reaction Buffer</b>	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
	Denaturation Solution	Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
	Detergent Solution	Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 10 - 30%

### 2.2 GHS label elements

#### **Hazard pictograms**

**Denaturation Solution**



**Detergent Solution**



#### **Signal word**

<b>Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</b>	No signal word.
<b>5X Tris Reaction Buffer</b>	No signal word.
<b>5X Phosphate Reaction Buffer</b>	No signal word.
<b>Denaturation Solution</b>	Danger
<b>Detergent Solution</b>	Warning

#### **Hazard statements**

<b>Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</b>	No known significant effects or critical hazards.
<b>5X Tris Reaction Buffer</b>	No known significant effects or critical hazards.
<b>5X Phosphate Reaction Buffer</b>	No known significant effects or critical hazards.
<b>Denaturation Solution</b>	H318 - Causes serious eye damage.
	H317 - May cause an allergic skin reaction.
<b>Detergent Solution</b>	H319 - Causes serious eye irritation.
	H315 - Causes skin irritation.

### Precautionary statements

#### **Prevention**

<b>Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</b>	Not applicable.
<b>5X Tris Reaction Buffer</b>	Not applicable.
<b>5X Phosphate Reaction Buffer</b>	Not applicable.
<b>Denaturation Solution</b>	P280 - Wear protective gloves. Wear eye or face protection.
	P261 - Avoid breathing vapor.
	P272 (OSHA) - Contaminated work clothing must not be allowed out of the workplace.
<b>Detergent Solution</b>	P280 - Wear protective gloves. Wear eye or face protection.

## Section 2. Hazards identification

<b>Response</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> </ul>	<p>P264 - Wash hands thoroughly after handling.</p> <p>Not applicable.</p>
	Detergent Solution	<p>Not applicable.</p> <p>Not applicable.</p> <p>P302 + P352 + P363 - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.</p> <p>P333 + P313 - If skin irritation or rash occurs: Get medical attention.</p> <p>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.</p> <p>P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse.</p> <p>P332 + P313 - If skin irritation occurs: Get medical attention.</p> <p>P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P337 + P313 - If eye irritation persists: Get medical attention.</p>
<b>Storage</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p>
<b>Disposal</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> </ul>	<p>Not applicable.</p> <p>Not applicable.</p> <p>Not applicable.</p> <p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
	Detergent Solution	Not applicable.
<b>Supplemental label elements</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p>
<b><u>2.3 Other hazards</u></b>		
<b>Hazards not otherwise classified</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p> <p>None known.</p>

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	:	Peptide -N-Glycosidase F (PNGaseF) Mixture (EDTA - Free)
		5X Tris Reaction Buffer Mixture
		5X Phosphate Reaction Buffer Mixture
		Denaturation Solution Mixture
		Detergent Solution Mixture

Ingredient name	%	CAS number
<b>5X Phosphate Reaction Buffer</b> Disodium hydrogenorthophosphate	≤3	7558-79-4
<b>Denaturation Solution</b> 2-Mercaptoethanol	≤7.7	60-24-2
Sodium dodecyl sulphate	≤2.2	151-21-3
<b>Detergent Solution</b> Nonylphenol, ethoxylated	≥10 - <20	9016-45-9

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>	:	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	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.
		5X Tris Reaction Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		5X Phosphate Reaction Buffer	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
		Denaturation Solution	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.
		Detergent Solution	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

<b>Inhalation</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	5X Tris Reaction Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	5X Phosphate Reaction Buffer	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Denaturation Solution	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.
	Detergent Solution	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.
<b>Skin contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	5X Tris Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	5X Phosphate Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
	Denaturation Solution	Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Detergent Solution	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.

## Section 4. First aid measures

### Ingestion

: Peptide -N-Glycosidase F  
(PNGaseF) (EDTA - Free)

Clean shoes thoroughly before reuse.

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.

5X Tris Reaction Buffer

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

5X Phosphate Reaction Buffer

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

Denaturation Solution

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. 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.

Detergent Solution

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

## Section 4. First aid measures

<b>Eye contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	No known significant effects or critical hazards.  No known significant effects or critical hazards. No known significant effects or critical hazards. Causes serious eye damage. Causes serious eye irritation.
<b>Inhalation</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	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>Skin contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	No known significant effects or critical hazards.  No known significant effects or critical hazards. No known significant effects or critical hazards. May cause an allergic skin reaction. Causes skin irritation.
<b>Ingestion</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	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

<b>Eye contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution	No specific data.  No specific data. No specific data. Adverse symptoms may include the following: pain watering redness Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	No specific data.  No specific data. No specific data. No specific data. No specific data.
<b>Skin contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution	No specific data.  No specific data. Adverse symptoms may include the following: pain or irritation redness blistering may occur Adverse symptoms may include the following: irritation redness

## Section 4. First aid measures

<b>Ingestion</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution	No specific data.  No specific data. No specific data. Adverse symptoms may include the following: stomach pains No specific data.
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### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

<b>Notes to physician</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)  5X Tris Reaction Buffer  5X Phosphate Reaction Buffer  Denaturation Solution  Detergent Solution	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.  Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
<b>Specific treatments</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	No specific treatment.  No specific treatment. No specific treatment. No specific treatment. No specific treatment.
<b>Protection of first-aiders</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer  Denaturation Solution  Detergent Solution	No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. No action shall be taken involving any personal risk or without suitable training. 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. 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>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Use an extinguishing agent suitable for the surrounding fire.
	5X Tris Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire.
	5X Phosphate Reaction Buffer	Use an extinguishing agent suitable for the surrounding fire.
	Denaturation Solution	Use an extinguishing agent suitable for the surrounding fire.
	Detergent Solution	Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	None known.
	5X Tris Reaction Buffer	None known.
	5X Phosphate Reaction Buffer	None known.
	Denaturation Solution	None known.
	Detergent Solution	None known.

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

<b>Specific hazards arising from the chemical</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	In a fire or if heated, a pressure increase will occur and the container may burst.
	5X Tris Reaction Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	5X Phosphate Reaction Buffer	In a fire or if heated, a pressure increase will occur and the container may burst.
	Denaturation Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
	Detergent Solution	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous thermal decomposition products</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No specific data.
	5X Tris Reaction Buffer	No specific data.
	5X Phosphate Reaction Buffer	Decomposition products may include the following materials: phosphorus oxides metal oxide/oxides
	Denaturation Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides metal oxide/oxides
	Detergent Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide

### 5.3 Advice for firefighters

<b>Special protective actions for fire-fighters</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	5X Tris Reaction Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

## Section 5. Fire-fighting measures

	5X Phosphate Reaction Buffer	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
	Denaturation Solution	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.
	Detergent Solution	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.
<b>Special protective equipment for fire-fighters</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	5X Tris Reaction Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	5X Phosphate Reaction Buffer	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Denaturation Solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Detergent Solution	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

<b>For non-emergency personnel</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	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.
	5X Tris Reaction Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	5X Phosphate Reaction Buffer	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.
	Denaturation Solution	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

## Section 6. Accidental release measures

	Detergent Solution	<p>breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.</p> <p>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.</p>
<b>For emergency responders</b>	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	<p>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".</p>
	5X Tris Reaction Buffer	<p>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".</p>
	5X Phosphate Reaction Buffer	<p>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".</p>
	Denaturation Solution	<p>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".</p>
	Detergent Solution	<p>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".</p>
<b>6.2 Environmental precautions</b>	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	<p>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).</p>
	5X Tris Reaction Buffer	<p>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).</p>
	5X Phosphate Reaction Buffer	<p>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).</p>
	Denaturation Solution	<p>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).</p>
	Detergent Solution	<p>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,</p>

## Section 6. Accidental release measures

waterways, soil or air).

### 6.3 Methods and materials for containment and cleaning up

<b>Methods for cleaning up</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	5X Tris Reaction Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	5X Phosphate Reaction Buffer	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
	Denaturation Solution	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.
	Detergent Solution	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

<b>Protective measures</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Put on appropriate personal protective equipment (see Section 8).
	5X Tris Reaction Buffer	Put on appropriate personal protective equipment (see Section 8).
	5X Phosphate Reaction Buffer	Put on appropriate personal protective equipment (see Section 8).
	Denaturation Solution	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. 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.
	Detergent Solution	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with

## Section 7. Handling and storage

<p><b>Advice on general occupational hygiene</b></p>	<p>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</p> <p>5X Tris Reaction Buffer</p> <p>5X Phosphate Reaction Buffer</p> <p>Denaturation Solution</p> <p>Detergent Solution</p>	<p>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.</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>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>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</p> <p>5X Tris Reaction Buffer</p>	<p>Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). 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.</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</p>

## Section 7. Handling and storage

5X Phosphate Reaction Buffer	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. 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.
Denaturation Solution	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.
Detergent Solution	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

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications. Industrial applications, Professional applications.
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#### Industrial sector specific solutions

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not applicable. Not applicable. Not applicable. Not applicable.
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## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>5X Phosphate Reaction Buffer</b> Disodium hydrogenorthophosphate	None.
<b>Denaturation Solution</b> 2-Mercaptoethanol	<b>AIHA WEEL (United States, 10/2011).</b> <b>Absorbed through skin.</b> TWA: 0.2 ppm 8 hours.
Sodium dodecyl sulphate	None.
<b>Detergent Solution</b> Nonylphenol, ethoxylated	None.

### 8.2 Exposure controls

#### Appropriate engineering controls

: 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. 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.

## Section 8. Exposure controls/personal protection

**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>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Liquid. [Clear.]
	5X Tris Reaction Buffer	Liquid.
	5X Phosphate Reaction Buffer	Liquid.
	Denaturation Solution	Liquid. [Clear.]
	Detergent Solution	Liquid.
<b>Color</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Colorless.
	Denaturation Solution	Not available.
	Detergent Solution	Not available.
<b>Odor</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Stench.
	Detergent Solution	Not available.
<b>Odor threshold</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Not available.
	Detergent Solution	Not available.
<b>pH</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	7.5
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	7.5
	Denaturation Solution	Not available.
	Detergent Solution	Not available.
<b>Melting point</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	0°C (32°F)
	5X Tris Reaction Buffer	0°C (32°F)
	5X Phosphate Reaction Buffer	0°C (32°F)
	Denaturation Solution	0°C (32°F)
	Detergent Solution	Not available.
<b>Boiling point</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	100°C (212°F)
	5X Tris Reaction Buffer	100°C (212°F)
	5X Phosphate Reaction Buffer	100°C (212°F)
	Denaturation Solution	100°C (212°F)
	Detergent Solution	Not available.
<b>Flash point</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Not available.
	Detergent Solution	Not available.



## Section 9. Physical and chemical properties

<b>Evaporation rate</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not available. Not available. Not available. Not available. Not available.
<b>Flammability (solid, gas)</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not available. Not available. Not available. Not available. Not available.
<b>Vapor pressure</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not available. Not available. Not available. Not available. Not available.
<b>Vapor density</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not available. Not available. Not available. Not available. Not available.
<b>Relative density</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not available. Not available. Not available. Not available. Not available.
<b>Solubility</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer  Denaturation Solution  Detergent Solution	Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water. Easily soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	Not available. Not available. Not available. Not available. Not available.

## Section 9. Physical and chemical properties

<b>Auto-ignition temperature</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Not available.
	Detergent Solution	Not available.
<b>Decomposition temperature</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Not available.
	Detergent Solution	Not available.
<b>Viscosity</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Not available.
	Detergent Solution	Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No specific test data related to reactivity available for this product or its ingredients.
	5X Tris Reaction Buffer	No specific test data related to reactivity available for this product or its ingredients.
	5X Phosphate Reaction Buffer	No specific test data related to reactivity available for this product or its ingredients.
	Denaturation Solution	No specific test data related to reactivity available for this product or its ingredients.
	Detergent Solution	No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	The product is stable.
	5X Tris Reaction Buffer	The product is stable.
	5X Phosphate Reaction Buffer	The product is stable.
	Denaturation Solution	The product is stable.
	Detergent Solution	The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Under normal conditions of storage and use, hazardous reactions will not occur.
	5X Tris Reaction Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	5X Phosphate Reaction Buffer	Under normal conditions of storage and use, hazardous reactions will not occur.
	Denaturation Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
	Detergent Solution	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No specific data.
	5X Tris Reaction Buffer	No specific data.
	5X Phosphate Reaction Buffer	No specific data.
	Denaturation Solution	No specific data.
	Detergent Solution	No specific data.

## Section 10. Stability and reactivity

<b>10.5 Incompatible materials</b>	<p><b>Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</b> 5X Tris Reaction Buffer</p> <p>5X Phosphate Reaction Buffer</p> <p>Denaturation Solution</p> <p>Detergent Solution</p>	<p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p> <p>May react or be incompatible with oxidizing materials.</p>
<b>10.6 Hazardous decomposition products</b>	<p><b>Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</b></p> <p>5X Tris Reaction Buffer</p> <p>5X Phosphate Reaction Buffer</p> <p>Denaturation Solution</p> <p>Detergent Solution</p>	<p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p> <p>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</p>

## Section 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
<b>5X Phosphate Reaction Buffer</b> Disodium hydrogenorthophosphate	LD50 Oral	Rat	17000 mg/kg	-
<b>Denaturation Solution</b> 2-Mercaptoethanol	LD50 Dermal	Rabbit	167.1 mg/kg	-
Sodium dodecyl sulphate	LD50 Oral	Rat	244 mg/kg	-
	LD50 Oral	Rat	1288 mg/kg	-
<b>Detergent Solution</b> Nonylphenol, ethoxylated	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1310 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>5X Phosphate Reaction Buffer</b> Disodium hydrogenorthophosphate	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
<b>Denaturation Solution</b>					

## Section 11. Toxicological information

2-Mercaptoethanol Sodium dodecyl sulphate	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
	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	-
<b>Detergent Solution</b> Nonylphenol, ethoxylated	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 25 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Eyes - Severe irritant	Guinea pig	-	20 milligrams	-
	Eyes - Severe irritant	Mouse	-	20 milligrams	-

### Sensitization

Not available.

### Conclusion/Summary

#### **Skin**

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) - May cause sensitization by skin contact.

#### **Respiratory**

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) - May cause sensitization by inhalation.

### Mutagenicity

#### **Conclusion/Summary**

: Not available.

### Carcinogenicity

#### **Conclusion/Summary**

: Not available.

### Reproductive toxicity

#### **Conclusion/Summary**

: Not available.

### Teratogenicity

#### **Conclusion/Summary**

: Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
<b>Denaturation Solution</b> 2-Mercaptoethanol	Category 3	Not applicable.	Respiratory tract irritation
Sodium dodecyl sulphate	Category 3	Not applicable.	Respiratory tract irritation
<b>Detergent Solution</b> Nonylphenol, ethoxylated	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

## Section 11. Toxicological information

Not available.

<b>Information on the likely routes of exposure</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li>   <li>Detergent Solution</li> </ul>	<p>Not available.</p> <p>Not available.</p> <p>Not available.</p> <p>Routes of entry anticipated: Oral, Dermal, Inhalation.</p> <p>Routes of entry anticipated: Oral, Dermal, Inhalation.</p>
<b><u>Potential acute health effects</u></b>		
<b>Eye contact</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>Causes serious eye damage.</p> <p>Causes serious eye irritation.</p>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p>
<b>Skin contact</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>May cause an allergic skin reaction.</p> <p>Causes skin irritation.</p>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p>

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Eye contact</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li>   <li>Detergent Solution</li> </ul>	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>Adverse symptoms may include the following: pain watering redness</p> <p>Adverse symptoms may include the following: pain or irritation watering redness</p>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p>

## Section 11. Toxicological information

<b>Skin contact</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li>   <li>Detergent Solution</li> </ul>	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>Adverse symptoms may include the following: pain or irritation redness blistering may occur</p> <p>Adverse symptoms may include the following: irritation redness</p>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li>   <li>Detergent Solution</li> </ul>	<p>No specific data.</p> <p>No specific data.</p> <p>No specific data.</p> <p>Adverse symptoms may include the following: stomach pains</p> <p>No specific data.</p>

### 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>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li>   <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.</p> <p>No known significant effects or critical hazards.</p>
<b>Carcinogenicity</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p>
<b>Mutagenicity</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p>
<b>Teratogenicity</b>	<ul style="list-style-type: none"> <li>: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</li> <li>5X Tris Reaction Buffer</li> <li>5X Phosphate Reaction Buffer</li> <li>Denaturation Solution</li> <li>Detergent Solution</li> </ul>	<p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p> <p>No known significant effects or critical hazards.</p>

## Section 11. Toxicological information

<b>Developmental effects</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	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>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution	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
<b>Denaturation Solution</b>	
Oral	3300.8 mg/kg
Dermal	2382.9 mg/kg
Inhalation (vapors)	28.52 mg/l
Inhalation (dusts and mists)	74.85 mg/l
<b>Detergent Solution</b>	
Oral	8717.7 mg/kg
Dermal	13309.5 mg/kg

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>5X Phosphate Reaction Buffer</b> Disodium hydrogenorthophosphate	Acute LC50 3580000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
<b>Denaturation Solution</b> 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
<b>Detergent Solution</b> Nonylphenol, ethoxylated	Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days
	Acute EC50 12 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 1.23 mg/l Marine water	Crustaceans - Americamysis	48 hours

## Section 12. Ecological information

	Acute LC50 0.148 mg/l Fresh water	bahia Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1300 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Chronic NOEC 8 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Chronic NOEC 35 µg/l Fresh water	Fish - Oryzias latipes - Fry	100 days

### 12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
<b>Denaturation Solution</b> 2-Mercaptoethanol	OECD 310 Ready Biodegradability - CO <sub>2</sub> in Sealed Vessels (Headspace Test)	69 % - Inherent - 60 days	20 mg/l	-

### 12.3 Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>5X Phosphate Reaction Buffer</b> Disodium hydrogenorthophosphate	-5.8	-	low
<b>Denaturation Solution</b> 2-Mercaptoethanol	-0.056	-	low
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 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.



## Section 13. Disposal considerations

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 / TDG / Mexico / IMDG / IATA** : Not regulated.

**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 Annex II of MARPOL and the IBC Code** : 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 5(a)2 final significant new use rules:** Nonylphenol, ethoxylated  
**TSCA 8(a) PAIR:** Nonylphenol, ethoxylated  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**TSCA 12(b) one-time export:** Nonylphenol, ethoxylated  
**Clean Water Act (CWA) 311:** Disodium hydrogenorthophosphate

**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)
<b>5X Phosphate Reaction Buffer</b> Sodium azide	≤0.3	Yes.	500	-	1000	-

## Section 15. Regulatory information

**SARA 304 RQ** : 4990020 lbs / 2265469.1 kg

**SARA 311/312**

**Classification** : Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) Not applicable.  
 5X Tris Reaction Buffer Not applicable.  
 5X Phosphate Reaction Buffer Not applicable.  
 Denaturation Solution SERIOUS EYE DAMAGE - Category 1  
 SKIN SENSITIZATION - Category 1  
 SKIN IRRITATION - Category 2  
 Detergent Solution EYE IRRITATION - Category 2A

**Composition/information on ingredients**

Name	%	Classification
<b>5X Phosphate Reaction Buffer</b> Disodium hydrogenorthophosphate	≤3	EYE IRRITATION - Category 2A
<b>Denaturation Solution</b> 2-Mercaptoethanol	≤7.7	FLAMMABLE LIQUIDS - Category 4 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 2 ACUTE TOXICITY (inhalation) - Category 2 SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Sodium dodecyl sulphate	≤2.2	FLAMMABLE SOLIDS - Category 2 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
<b>Detergent Solution</b> Nonylphenol, ethoxylated	≥10 - <20	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

**State regulations**

**Massachusetts** : The following components are listed: 2-MERCAPTOETHANOL  
**New York** : None of the components are listed.  
**New Jersey** : The following components are listed: THIOGLYCOL; 2-MERCAPTOETHANOL  
**Pennsylvania** : The following components are listed: ETHANOL, 2-MERCAPTO-

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

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

Not listed.

**Stockholm Convention on Persistent Organic Pollutants**

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

## Section 15. Regulatory information

### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### Inventory list

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Europe</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Japan</b>	: <input checked="" type="checkbox"/> <b>Japan inventory (ENCS)</b> : Not determined. <b>Japan inventory (ISHL)</b> : Not determined.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: Not determined.
<b>Philippines</b>	: Not determined.
<b>Republic of Korea</b>	: Not determined.
<b>Taiwan</b>	: Not determined.
<b>Thailand</b>	: <input checked="" type="checkbox"/> Not determined.
<b>Turkey</b>	: <input checked="" type="checkbox"/> Not determined.
<b>United States</b>	: Not determined.
<b>Viet Nam</b>	: <input checked="" type="checkbox"/> Not determined.

## Section 16. Other information

### History

**Date of issue** : 04/26/2018

**Date of previous issue** : 11/20/2014

**Version** : 2

### Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> <b>Denaturation Solution</b> SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1	Calculation method Calculation method
<b>Detergent Solution</b> SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A	Calculation method Calculation method

Indicates information that has changed from previously issued version.

### Notice to reader

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