

# SAFETY DATA SHEET



AdvanceBio N-glycan sample preparation kit (96 samples), Part Number 5190-8005

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

<b>Product name</b>	: AdvanceBio N-glycan sample preparation kit (96 samples), Part Number 5190-8005	
<b>Part No. (Kit)</b>	: 5190-8005	
<b>Part No.</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.
	: Reductant solution	Not available.
	: 2-AB solution	Not available.

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

Identified uses	
Analytical chemistry. Research and Development	
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
Reductant solution	0.375 ml
2-AB solution	0.375 ml

### 1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG  
Hewlett-Packard-Str. 8  
76337 Waldbronn  
Germany  
0800 603 1000

**e-mail address of person responsible for this SDS** : pdl-msds\_author@agilent.com

### 1.4 Emergency telephone number

**Emergency telephone number (with hours of operation)** : CHEMTREC®: +(44)-870-8200418

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

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

**Date of issue/Date of revision** : 09/12/2016

## SECTION 2: Hazards identification

2-AB solution Mixture

### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

#### Denaturation Solution

H318 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
 H317 SKIN SENSITISATION - Category 1  
 H412 LONG-TERM AQUATIC HAZARD - Category 3

#### Detergent Solution

H315 SKIN CORROSION/IRRITATION - Category 2  
 H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2  
 H411 LONG-TERM AQUATIC HAZARD - Category 2

#### Reductant solution

H300 ACUTE TOXICITY (oral) - Category 2  
 H311 ACUTE TOXICITY (dermal) - Category 3  
 H330 ACUTE TOXICITY (inhalation) - Category 2  
 H314 SKIN CORROSION/IRRITATION - Category 1B  
 H411 LONG-TERM AQUATIC HAZARD - Category 2

#### 2-AB solution

H314 SKIN CORROSION/IRRITATION - Category 1B  
 H317 SKIN SENSITISATION - Category 1

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

### 2.2 Label elements

#### Hazard pictograms



#### Signal word

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) No signal word.  
 5X Tris Reaction Buffer No signal word.  
 5X Phosphate Reaction Buffer No signal word.  
 Denaturation Solution Danger  
 Detergent Solution Warning  
 Reductant solution Danger  
 2-AB solution Danger

#### Hazard statements

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) No known significant effects or critical hazards.  
 5X Tris Reaction Buffer No known significant effects or critical hazards.  
 5X Phosphate Reaction Buffer No known significant effects or critical hazards.  
 Denaturation Solution **GHS05** - Causes serious eye damage.  
**GHS07** - May cause an allergic skin reaction.  
 Harmful to aquatic life with long lasting effects.  
 Detergent Solution **GHS07** - Causes skin irritation.  
 Causes serious eye irritation.  
**GHS09** - Toxic to aquatic life with long lasting effects.  
 Reductant solution **GHS06** - Fatal if swallowed.  
 Fatal if inhaled.

**SECTION 2: Hazards identification**

2-AB solution

Toxic in contact with skin.  
**GHS05** -  
 Causes severe skin burns and eye damage.  
**GHS09** -  
 Toxic to aquatic life with long lasting effects.  
**GHS05** -  
 Causes severe skin burns and eye damage.  
**GHS07** -  
 May cause an allergic skin reaction.

**Precautionary statements**

**Prevention**

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) Not applicable.  
 5X Tris Reaction Buffer Not applicable.  
 5X Phosphate Reaction Buffer Not applicable.  
 Denaturation Solution P280 - Wear protective gloves. Wear eye or face protection.  
 P273 - Avoid release to the environment.  
 Detergent Solution P280 - Wear protective gloves. Wear eye or face protection.  
 P273 - Avoid release to the environment.  
 Reductant solution P280 - Wear protective gloves. Wear eye or face protection.  
 Wear protective clothing.  
 P273 - Avoid release to the environment.  
 P260 - Do not breathe vapour.  
 2-AB solution P280 - Wear protective gloves. Wear eye or face protection.  
 Wear protective clothing.

**Response**

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) Not applicable.  
 5X Tris Reaction Buffer Not applicable.  
 5X Phosphate Reaction Buffer Not applicable.  
 Denaturation Solution P305 + P351 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Immediately call a POISON CENTER or physician.  
 Detergent Solution P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Reductant solution P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.  
 P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.  
 P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or physician.  
 P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.  
 2-AB solution P304 + P340 + P310 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.  
 P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.  
 P303 + P361 + P353 + P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER or physician.  
 P305 + P310 - IF IN EYES: Immediately call a POISON CENTER or physician.

## SECTION 2: Hazards identification

<b>Storage</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. P405 - Store locked up. P405 - Store locked up.
<b>Disposal</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not applicable. Not applicable. Not applicable. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations. P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazardous ingredients</b>	: Denaturation Solution Detergent Solution Reductant solution 2-AB solution	- 2-Mercaptoethanol Not applicable. - sodium cyanotrihydroborate - acetic acid - anthranilamide
<b>Supplemental label elements</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b><u>Special packaging requirements</u></b>		
<b>Tactile warning of danger</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

### 2.3 Other hazards

## SECTION 2: Hazards identification

<b>Other hazards which do not result in classification</b>	<b>Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</b>	None known.
	<b>5X Tris Reaction Buffer</b>	None known.
	<b>5X Phosphate Reaction Buffer</b>	None known.
	<b>Denaturation Solution</b>	None known.
	<b>Detergent Solution</b>	None known.
	<b>Reductant solution</b>	Causes digestive tract burns.
	<b>2-AB solution</b>	Causes severe digestive tract burns.

## SECTION 3: Composition/information on ingredients

<b>3.1 Substances</b>	<b>Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)</b>	Mixture
	<b>5X Tris Reaction Buffer</b>	Mixture
	<b>5X Phosphate Reaction Buffer</b>	Mixture
	<b>Denaturation Solution</b>	Mixture
	<b>Detergent Solution</b>	Mixture
	<b>Reductant solution</b>	Mixture
	<b>2-AB solution</b>	Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
<b>Denaturation Solution</b> 2-Mercaptoethanol	EC: 200-464-6 CAS: 60-24-2	≤7.7	Acute Tox. 3, H301 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335	[1]
Sodium dodecyl sulphate	EC: 205-788-1 CAS: 151-21-3	≤2.2	Aquatic Chronic 2, H411 Flam. Sol. 2, H228 Acute Tox. 4, H302 Acute Tox. 3, H311 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 3, H412	[1]
<b>Detergent Solution</b> Nonylphenol, ethoxylated	EC: 500-024-6 CAS: 9016-45-9	≥10 - <25	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1] [5]
<b>Reductant solution</b> sodium cyanotrihydroborate	EC: 247-317-2 CAS: 25895-60-7	≥10 - <25	Flam. Sol. 1, H228 Acute Tox. 2, H300 Acute Tox. 2, H310 Acute Tox. 2, H330 Skin Corr. 1B, H314 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1) EUH032	[1]
<b>2-AB solution</b> acetic acid	EC: 200-580-7 CAS: 64-19-7 Index: 607-002-00-6	≥25 - ≤50	Flam. Liq. 3, H226 Skin Corr. 1A, H314	[1] [2]

### SECTION 3: Composition/information on ingredients

anthranilamide	EC: 201-851-2 CAS: 88-68-6	≥10 - <20	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT SE 3, H335  <b>See Section 16 for the full text of the H statements declared above.</b>	[1]
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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.

#### Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

[5] Substance of equivalent concern

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

##### Eye contact

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 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	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.
Detergent 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.
Reductant 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.
2-AB 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.

##### Inhalation

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 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	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a



**SECTION 4: First aid measures**

		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.
	Reductant 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. 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.
	2-AB 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. 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.
<b>Skin contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. 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

**SECTION 4: First aid measures**

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. Clean shoes thoroughly before reuse.
- Reductant 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- 2-AB 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.

**Ingestion**

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



**SECTION 4: First aid measures**

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.

Reductant 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.

2-AB 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.

**Protection of first-aiders** : Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)

No action shall be taken involving any personal risk or without suitable training.

5X Tris Reaction Buffer

No action shall be taken involving any personal risk or without suitable training.

5X Phosphate Reaction Buffer

No action shall be taken involving any personal risk or without suitable training.

Denaturation Solution

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.

Detergent Solution

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.

Reductant solution

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.

2-AB solution

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

**SECTION 4: First aid measures**

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.

**4.2 Most important symptoms and effects, both acute and delayed****Potential acute health effects**

<b>Eye contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB 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. Causes serious eye damage. Causes serious eye damage.
<b>Inhalation</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB 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. Fatal if inhaled. 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 Reductant solution 2-AB 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. Causes severe burns. Toxic in contact with skin. Causes severe burns. May cause an allergic skin reaction.
<b>Ingestion</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution  2-AB 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. Fatal if swallowed. Corrosive to the digestive tract. Causes burns. Severely corrosive to the digestive tract. Causes severe burns.

**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
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**SECTION 4: First aid measures**

		watering redness
	Reductant solution	Adverse symptoms may include the following: pain watering redness
	2-AB solution	Adverse symptoms may include the following: pain watering redness
<b>Inhalation</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.
	Reductant solution	No specific data.
	2-AB solution	No specific data.
<b>Skin contact</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	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	Detergent Solution	Adverse symptoms may include the following: irritation redness
	Reductant solution	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	2-AB solution	Adverse symptoms may include the following: pain or irritation redness blistering may occur
<b>Ingestion</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	Adverse symptoms may include the following: stomach pains
	Detergent Solution	No specific data.
	Reductant solution	Adverse symptoms may include the following: stomach pains
	2-AB solution	Adverse symptoms may include the following: stomach pains

**4.3 Indication of any immediate medical attention and special treatment needed**

## SECTION 4: First aid measures

<b>Notes to physician</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution  Reductant solution  2-AB 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.  In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In 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.
<b>Specific treatments</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	No specific treatment.  No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment. No specific treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

<b>Suitable extinguishing media</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Use an extinguishing agent suitable for the surrounding fire.  Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.  Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire. Use an extinguishing agent suitable for the surrounding fire.
<b>Unsuitable extinguishing media</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	None known.  None known. None known.  None known. None known. None known. None known.

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

<b>Hazards from the substance or mixture</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer Denaturation Solution	In a fire or if heated, a pressure increase will occur and the container may burst.  In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this
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**SECTION 5: Firefighting measures**

	Detergent Solution	material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	Reductant solution	In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
	2-AB solution	In a fire or if heated, a pressure increase will occur and the container may burst.
<b>Hazardous combustion 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
	Reductant solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides
	2-AB solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides

**5.3 Advice for firefighters**

<b>Special precautions 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.
	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.
	Reductant 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.
	2-AB solution	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be

**SECTION 5: Firefighting measures**

<b>Special protective equipment for fire-fighters</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	taken involving any personal risk or without suitable training. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	Reductant solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	2-AB solution	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**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 spilt 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 spilt 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 spilt 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.



**SECTION 6: Accidental release measures**

		Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	Detergent 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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	Reductant 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 breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
	2-AB 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 breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
<b>For emergency responders</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	5X Tris Reaction Buffer	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
	5X Phosphate Reaction Buffer	If specialised 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".
	Denaturation Solution	If specialised 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".
	Detergent Solution	If specialised 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".
	Reductant solution	If specialised 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".
	2-AB solution	If specialised 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".
<b>6.2 Environmental precautions</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	5X Tris Reaction Buffer	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
	5X Phosphate Reaction	Avoid dispersal of spilled material and runoff and contact with

**SECTION 6: Accidental release measures**

Buffer	soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Denaturation Solution	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.
Detergent Solution	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
Reductant solution	Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
2-AB solution	Avoid dispersal of spilt 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 material 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.
	Reductant 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.
	2-AB 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 6: Accidental release measures

**6.4 Reference to other sections** : See Section 1 for emergency contact information.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 13 for additional waste treatment information.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution  Reductant solution  2-AB solution	Put on appropriate personal protective equipment (see Section 8).  Put on appropriate personal protective equipment (see Section 8).  Put on appropriate personal protective equipment (see Section 8). 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 vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.  Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. 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.  Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.  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 vapour 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.
<b>Advice on general occupational hygiene</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)  5X Tris Reaction Buffer	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.  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

**SECTION 7: Handling and storage**

5X Phosphate Reaction Buffer	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.
Denaturation Solution	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.
Detergent Solution	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.
Reductant solution	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.
2-AB solution	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**7.2 Conditions for safe storage, including any incompatibilities****Storage**

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	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 unlabelled containers. Use appropriate containment to avoid environmental contamination.
5X Tris Reaction Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
5X Phosphate Reaction Buffer	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.
Denaturation Solution	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and

## SECTION 7: Handling and storage

	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 unlabelled containers. Use appropriate containment to avoid environmental contamination.
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 unlabelled containers. Use appropriate containment to avoid environmental contamination.
Reductant solution	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. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.
2-AB 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 unlabelled containers. Use appropriate containment to avoid environmental contamination.

### Seveso Directive - Reporting thresholds (in tonnes)

#### Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
<b>Detergent Solution</b> E2: Hazardous to the aquatic environment - Chronic 2	200	500
<b>Reductant solution</b> H2: Acute toxicity 2 any route of entry or Acute toxicity 3 Inhalation route of entry E2: Hazardous to the aquatic environment - Chronic 2	50 200	200 500

### 7.3 Specific end use(s)

#### Recommendations

Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Industrial applications, Professional applications.
5X Tris Reaction Buffer	Industrial applications, Professional applications.
5X Phosphate Reaction Buffer	Industrial applications, Professional applications.
Denaturation Solution	Industrial applications, Professional applications.
Detergent Solution	Industrial applications, Professional applications.
Reductant solution	Industrial applications, Professional applications.
2-AB solution	Industrial applications, Professional applications.



## SECTION 7: Handling and storage

<b>Industrial sector specific solutions</b>	<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>	Not applicable.
	<b>Detergent Solution</b>	Not applicable.
	<b>Reductant solution</b>	Not applicable.
	<b>2-AB solution</b>	Not applicable.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Product/ingredient name	Exposure limit values
<b>2-AB solution</b> acetic acid	<b>EU OEL (Europe, 12/2009). Notes: list of indicative occupational exposure limit values</b> TWA: 10 ppm 8 hours. TWA: 25 mg/m <sup>3</sup> 8 hours.

**Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### DNELs/DMELs

No DNELs/DMELs available.

#### PNECs

No PNECs available

### 8.2 Exposure controls

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

#### 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



**SECTION 8: Exposure controls/personal 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.
- 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.

**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.
	Reductant solution	Liquid.
	2-AB solution	Liquid.
	<b>Colour</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)
5X Tris Reaction Buffer		Not available.
5X Phosphate Reaction Buffer		Colourless.
Denaturation Solution		Not available.
Detergent Solution		Not available.
Reductant solution		Colourless. Liquid.
2-AB solution		Clear.
<b>Odour</b>		: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Stench.
	Detergent Solution	Not available.
	Reductant solution	Not available.
	2-AB solution	Not available.

**SECTION 9: Physical and chemical properties**

<b>Odour 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.
	Reductant solution	Not available.
	2-AB 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.
	Reductant solution	7.5
	2-AB solution	8.8
<b>Melting point/freezing point</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	0°C
	5X Tris Reaction Buffer	0°C
	5X Phosphate Reaction Buffer	0°C
	Denaturation Solution	0°C
	Detergent Solution	Not available.
	Reductant solution	Not available.
	2-AB solution	Not available.
<b>Initial boiling point and boiling range</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	100°C
	5X Tris Reaction Buffer	100°C
	5X Phosphate Reaction Buffer	100°C
	Denaturation Solution	100°C
	Detergent Solution	Not available.
	Reductant solution	Not available.
	2-AB 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.
	Reductant solution	Not available.
	2-AB solution	Closed cup: >93.3°C
<b>Evaporation rate</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.
	Reductant solution	Not available.
	2-AB solution	Not available.

## SECTION 9: Physical and chemical properties

<b>Flammability (solid, gas)</b>	:	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.
<b>Upper/lower flammability or explosive limits</b>	:	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Vapour pressure</b>	:	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Vapour density</b>	:	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	Not available. Not available. 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 Reductant solution 2-AB solution	Not available. Not available. Not available. Not available. Not available. Not available. Not available.
<b>Solubility(ies)</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.

**SECTION 9: Physical and chemical properties**

	Reductant solution	Not available.
	2-AB solution	Not available.
<b>Partition coefficient: n-octanol/water</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.
	Reductant solution	Not available.
	2-AB solution	Not available.
<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.
	Reductant solution	Not available.
	2-AB 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.
	Reductant solution	Not available.
	2-AB 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.
	Reductant solution	Not available.
	2-AB solution	Not available.
<b>Explosive properties</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.
	Reductant solution	Not available.
	2-AB solution	Not available.
<b>Oxidising properties</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.
	Reductant solution	Not available.
	2-AB solution	Not available.

**SECTION 9: Physical and chemical properties****9.2 Other information**

No additional information.

**SECTION 10: Stability and reactivity**

<b>10.1 Reactivity</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution  Reductant solution  2-AB solution	No specific test data related to reactivity available for this product or its ingredients.  No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. No specific test data related to reactivity available for this product or its ingredients. 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) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	The product is stable.  The product is stable. The product is stable. The product is stable. The product is stable. The product is stable. The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution  Reductant solution  2-AB solution	Under normal conditions of storage and use, hazardous reactions will not occur.  Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous reactions will not occur. 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) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	No specific data. No specific data. No specific data. No specific data. No specific data. No specific data. No specific data.

## SECTION 10: Stability and reactivity

<b>10.5 Incompatible materials</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer 5X Phosphate Reaction Buffer Denaturation Solution Detergent Solution Reductant solution 2-AB solution	May react or be incompatible with oxidising materials.  May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.  May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials. May react or be incompatible with oxidising materials.
<b>10.6 Hazardous decomposition products</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free) 5X Tris Reaction Buffer  5X Phosphate Reaction Buffer Denaturation Solution  Detergent Solution  Reductant solution  2-AB solution	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. 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
<b>Denaturation Solution</b> 2-Mercaptoethanol	LD50 Dermal	Rabbit	200 mg/kg	-
	LD50 Oral	Rat	244 mg/kg	-
Sodium dodecyl sulphate	LD50 Dermal	Rabbit	580 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	-
<b>2-AB solution</b> acetic acid	LC50 Inhalation Vapour	Rat	11000 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	1060 mg/kg	-
	LD50 Oral	Rat	3310 mg/kg	-

#### Acute toxicity estimates

Route	ATE value
<b>5X Phosphate Reaction Buffer</b> Oral	26946.1 mg/kg
<b>Denaturation Solution</b> Oral	3300.8 mg/kg
Dermal	2596.2 mg/kg
Inhalation (vapours)	28.52 mg/l
<b>Detergent Solution</b> Oral	8717.7 mg/kg
Dermal	13309.5 mg/kg
<b>Reductant solution</b>	



## SECTION 11: Toxicological information

Oral	25 mg/kg
Dermal	250 mg/kg
Inhalation (dusts and mists)	0.25 mg/l
<b>2-AB solution</b>	
Oral	5000 mg/kg

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>Denaturation Solution</b> 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	-
	Skin - Mild irritant	Rabbit	-	24 hours 50 milligrams	-
<b>Detergent Solution</b> Nonylphenol, ethoxylated	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	-
<b>2-AB solution</b> acetic acid	Skin - Severe irritant	Rabbit	-	525 milligrams	-

### Sensitiser

**Conclusion/Summary** : Not available.

**Skin** : **N-Glycanase® (EDTA - Free)** -May cause sensitisation by skin contact.

**Respiratory** : **N-Glycanase® (EDTA - Free)** - May cause sensitisation by inhalation.

### Specific target organ toxicity (single exposure)

Product/ingredient 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>2-AB solution</b> anthranilamide	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**SECTION 11: Toxicological information**

<b>Information on likely routes of exposure</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not available.
	5X Tris Reaction Buffer	Not available.
	5X Phosphate Reaction Buffer	Not available.
	Denaturation Solution	Routes of entry anticipated: Oral, Dermal, Inhalation.
	Detergent Solution	Routes of entry anticipated: Oral, Dermal, Inhalation.
	Reductant solution	Routes of entry anticipated: Oral, Dermal, Inhalation.
	2-AB solution	Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

<b>Inhalation</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	No known significant effects or critical hazards.
	Detergent Solution	No known significant effects or critical hazards.
	Reductant solution	Fatal if inhaled.
	2-AB solution	No known significant effects or critical hazards.
<b>Ingestion</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	No known significant effects or critical hazards.
	Detergent Solution	No known significant effects or critical hazards.
	Reductant solution	Fatal if swallowed. Corrosive to the digestive tract. Causes burns.
	2-AB solution	Severely corrosive to the digestive tract. Causes severe burns.
<b>Skin contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	May cause an allergic skin reaction.
	Detergent Solution	Causes skin irritation.
	Reductant solution	Causes severe burns. Toxic in contact with skin.
	2-AB solution	Causes severe burns. May cause an allergic skin reaction.
<b>Eye contact</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	Causes serious eye damage.
	Detergent Solution	Causes serious eye irritation.
	Reductant solution	Causes serious eye damage.
	2-AB solution	Causes serious eye damage.

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

<b>Inhalation</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 11: Toxicological information**

	Reductant solution	No specific data.
	2-AB solution	No specific data.
<b>Ingestion</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	Adverse symptoms may include the following: stomach pains
	Detergent Solution	No specific data.
	Reductant solution	Adverse symptoms may include the following: stomach pains
	2-AB solution	Adverse symptoms may include the following: stomach pains
<b>Skin contact</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	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	Detergent Solution	Adverse symptoms may include the following: irritation redness
	Reductant solution	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	2-AB solution	Adverse symptoms may include the following: pain or irritation redness blistering may occur
<b>Eye contact</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	Adverse symptoms may include the following: pain watering redness
	Detergent Solution	Adverse symptoms may include the following: pain or irritation watering redness
	Reductant solution	Adverse symptoms may include the following: pain watering redness
	2-AB solution	Adverse symptoms may include the following: pain watering redness

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Short term exposure**

**Potential immediate effects** : Not available.

**SECTION 11: Toxicological information**

**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>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	Detergent Solution	No known significant effects or critical hazards.
	Reductant solution	No known significant effects or critical hazards.
	2-AB solution	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
<b>Carcinogenicity</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	No known significant effects or critical hazards.
	Detergent Solution	No known significant effects or critical hazards.
	Reductant solution	No known significant effects or critical hazards.
	2-AB solution	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	No known significant effects or critical hazards.
	Detergent Solution	No known significant effects or critical hazards.
	Reductant solution	No known significant effects or critical hazards.
	2-AB solution	No known significant effects or critical hazards.
<b>Teratogenicity</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	No known significant effects or critical hazards.
	Detergent Solution	No known significant effects or critical hazards.
	Reductant solution	No known significant effects or critical hazards.
	2-AB solution	No known significant effects or critical hazards.
<b>Developmental effects</b>	: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
	5X Tris Reaction Buffer	No known significant effects or critical hazards.
	5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
	Denaturation Solution	No known significant effects or critical hazards.
	Detergent Solution	No known significant effects or critical hazards.
	Reductant solution	No known significant effects or critical hazards.
	2-AB solution	No known significant effects or critical hazards.

## SECTION 11: Toxicological information

<b>Fertility effects</b>	:	Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	No known significant effects or critical hazards.
		5X Tris Reaction Buffer	No known significant effects or critical hazards.
		5X Phosphate Reaction Buffer	No known significant effects or critical hazards.
		Denaturation Solution	No known significant effects or critical hazards.
		Detergent Solution	No known significant effects or critical hazards.
		Reductant solution	No known significant effects or critical hazards.
		2-AB solution	No known significant effects or critical hazards.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<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
	Chronic NOEC >1357 µg/l Fresh water	Fish - Pimephales promelas	42 days
<b>Detergent Solution</b> Nonylphenol, ethoxylated	Acute EC50 12 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 1.23 mg/l Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 0.148 mg/l Fresh water	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
<b>2-AB solution</b> acetic acid	Acute EC50 73400 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 65000 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
anthranilamide	Acute LC50 32 mg/l Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 75000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Acute LC50 395000 µg/l Fresh water	Fish - Pimephales promelas	96 hours

### 12.2 Persistence and degradability

Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>Denaturation Solution</b> Sodium dodecyl sulphate	-	-	Readily
<b>2-AB solution</b> acetic acid	-	-	Readily

### 12.3 Bioaccumulative potential

**SECTION 12: Ecological information**

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
<b>Denaturation Solution</b>			
2-Mercaptoethanol	-0.056	-	low
Sodium dodecyl sulphate	-2.03	-	low
<b>2-AB solution</b>			
acetic acid	-0.17	3.16	low
anthranilamide	0.35	-	low

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility** : Not available.

**12.5 Results of PBT and vPvB assessment**

**PBT** : Not applicable.

**vPvB** : Not applicable.

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

**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Product**

**Methods of disposal** : The generation of waste should be avoided or minimised 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.

**Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.

**Packaging**

**Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

**Special precautions** : 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

**SECTION 14: Transport information****Regulatory information**

**ADR/RID / IMDG / IATA** : Not regulated.

**Additional information** : **Remarks**  
De minimis quantities

**14.6 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.

**14.7 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

#### EU Regulation (EC) No. 1907/2006 (REACH)

##### Annex XIV - List of substances subject to authorisation

###### Annex XIV

None of the components are listed.

###### Substances of very high concern

Ingredient name	Intrinsic property	Status	Reference number	Date of revision
<b>Detergent Solution</b> Nonylphenol, ethoxylated	Substance of equivalent concern for environment	Recommended	ED/69/2013	7/1/2015

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles**

: Peptide -N-Glycosidase F (PNGaseF) (EDTA - Free)	Not applicable.
5X Tris Reaction Buffer	Not applicable.
5X Phosphate Reaction Buffer	Not applicable.
Denaturation Solution	Not applicable.
Detergent Solution	Not applicable.
Reductant solution	Not applicable.
2-AB solution	Not applicable.

#### Other EU regulations

**Europe inventory** : Not determined.

**Industrial emissions (integrated pollution prevention and control) - Air** : Listed

#### Ozone depleting substances (1005/2009/EU)

Not listed.

#### Prior Informed Consent (PIC) (649/2012/EU)

Ingredient name	Annex	Status
<b>Detergent Solution</b> Nonylphenol ethoxylates (C <sub>2</sub> H <sub>4</sub> O) <sub>n</sub> C <sub>15</sub> H <sub>24</sub> O	Annex I - Part 1	Listed
-	Annex I - Part 2	Listed

#### Seveso Directive

This product is controlled under the Seveso Directive.

##### Danger criteria

Category
<b>Detergent Solution</b> E2: Hazardous to the aquatic environment - Chronic 2
<b>Reductant solution</b> H2: Acute toxicity 2 any route of entry or Acute toxicity 3 Inhalation route of entry E2: Hazardous to the aquatic environment - Chronic 2

#### 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.

## SECTION 15: Regulatory information

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

Not listed.

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

Not listed.

### [International lists](#)

#### [National inventory](#)

<b>Australia</b>	: Not determined.
<b>Canada</b>	: Not determined.
<b>China</b>	: Not determined.
<b>Japan</b>	: <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>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.

**15.2 Chemical safety assessment** : This product contains substances for which Chemical Safety Assessments might still be required.

## SECTION 16: Other information

 Indicates information that has changed from previously issued version.

**Abbreviations and acronyms** : ATE = Acute Toxicity Estimate  
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
DNEL = Derived No Effect Level  
EUH statement = CLP-specific Hazard statement  
PNEC = Predicted No Effect Concentration  
RRN = REACH Registration Number

### [Procedure used to derive the classification according to Regulation \(EC\) No. 1272/2008 \[CLP/GHS\]](#)

Classification	Justification
<b>Denaturation Solution</b> Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 3, H412	Calculation method Calculation method Calculation method
<b>Detergent Solution</b> Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 2, H411	Calculation method Calculation method Calculation method
<b>Reductant solution</b> Acute Tox. 2, H300 Acute Tox. 3, H311 Acute Tox. 2, H330 Skin Corr. 1B, H314 Aquatic Chronic 2, H411	Calculation method Calculation method Calculation method Calculation method Calculation method
<b>2-AB solution</b> Skin Corr. 1B, H314 Skin Sens. 1, H317	Calculation method Calculation method

### [Full text of abbreviated H statements](#)

## SECTION 16: Other information

### Denaturation Solution

H228  
H301  
H302  
H310  
H311  
H315  
H317  
H318  
H330  
H335  
H400  
H411  
H412

Flammable solid.  
Toxic if swallowed.  
Harmful if swallowed.  
Fatal in contact with skin.  
Toxic in contact with skin.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
Fatal if inhaled.  
May cause respiratory irritation.  
Very toxic to aquatic life.  
Toxic to aquatic life with long lasting effects.  
Harmful to aquatic life with long lasting effects.

### Detergent Solution

H302  
H312  
H315  
H319  
H400  
H410  
H411

Harmful if swallowed.  
Harmful in contact with skin.  
Causes skin irritation.  
Causes serious eye irritation.  
Very toxic to aquatic life.  
Very toxic to aquatic life with long lasting effects.  
Toxic to aquatic life with long lasting effects.

### Reductant solution

H228  
H300  
H310  
H311  
H314  
H330  
H400  
H410  
H411

Flammable solid.  
Fatal if swallowed.  
Fatal in contact with skin.  
Toxic in contact with skin.  
Causes severe skin burns and eye damage.  
Fatal if inhaled.  
Very toxic to aquatic life.  
Very toxic to aquatic life with long lasting effects.  
Toxic to aquatic life with long lasting effects.

### 2-AB solution

H226  
H302  
H314  
H315  
H317  
H319  
H335

Flammable liquid and vapour.  
Harmful if swallowed.  
Causes severe skin burns and eye damage.  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause respiratory irritation.

### [Full text of classifications \[CLP/GHS\]](#)

#### Denaturation Solution

Acute Tox. 2, H310  
Acute Tox. 2, H330  
Acute Tox. 3, H301  
Acute Tox. 3, H311  
Acute Tox. 4, H302  
Aquatic Acute 1, H400  
Aquatic Chronic 2, H411  
Aquatic Chronic 3, H412  
Eye Dam. 1, H318  
Flam. Sol. 2, H228  
Skin Irrit. 2, H315  
Skin Sens. 1, H317  
STOT SE 3, H335

ACUTE TOXICITY (dermal) - Category 2  
ACUTE TOXICITY (inhalation) - Category 2  
ACUTE TOXICITY (oral) - Category 3  
ACUTE TOXICITY (dermal) - Category 3  
ACUTE TOXICITY (oral) - Category 4  
ACUTE AQUATIC HAZARD - Category 1  
LONG-TERM AQUATIC HAZARD - Category 2  
LONG-TERM AQUATIC HAZARD - Category 3  
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
FLAMMABLE SOLIDS - Category 2  
SKIN CORROSION/IRRITATION - Category 2  
SKIN SENSITISATION - Category 1  
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE  
(Respiratory tract irritation) - Category 3

#### Detergent Solution

Acute Tox. 4, H302  
Acute Tox. 4, H312

ACUTE TOXICITY (oral) - Category 4  
ACUTE TOXICITY (dermal) - Category 4

**SECTION 16: Other information**

<p>Aquatic Acute 1, H400                  Aquatic Chronic 1, H410                  Aquatic Chronic 2, H411                  Eye Irrit. 2, H319                  Skin Irrit. 2, H315</p>	<p>ACUTE AQUATIC HAZARD - Category 1                  LONG-TERM AQUATIC HAZARD - Category 1                  LONG-TERM AQUATIC HAZARD - Category 2                  SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2                  SKIN CORROSION/IRRITATION - Category 2</p>
<p><b>Reductant solution</b>                  Acute Tox. 2, H300                  Acute Tox. 2, H310                  Acute Tox. 2, H330                  Acute Tox. 3, H311                  Aquatic Acute 1, H400                  Aquatic Chronic 1, H410                  Aquatic Chronic 2, H411                  EUH032                  Flam. Sol. 1, H228                  Skin Corr. 1B, H314</p>	<p>ACUTE TOXICITY (oral) - Category 2                  ACUTE TOXICITY (dermal) - Category 2                  ACUTE TOXICITY (inhalation) - Category 2                  ACUTE TOXICITY (dermal) - Category 3                  ACUTE AQUATIC HAZARD - Category 1                  LONG-TERM AQUATIC HAZARD - Category 1                  LONG-TERM AQUATIC HAZARD - Category 2                  Contact with acids liberates very toxic gas.                  FLAMMABLE SOLIDS - Category 1                  SKIN CORROSION/IRRITATION - Category 1B</p>
<p><b>2-AB solution</b>                  Acute Tox. 4, H302                  Eye Irrit. 2, H319                  Flam. Liq. 3, H226                  Skin Corr. 1A, H314                  Skin Corr. 1B, H314                  Skin Irrit. 2, H315                  Skin Sens. 1, H317                  STOT SE 3, H335</p>	<p>ACUTE TOXICITY (oral) - Category 4                  SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2                  FLAMMABLE LIQUIDS - Category 3                  SKIN CORROSION/IRRITATION - Category 1A                  SKIN CORROSION/IRRITATION - Category 1B                  SKIN CORROSION/IRRITATION - Category 2                  SKIN SENSITISATION - Category 1                  SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE                  (Respiratory tract irritation) - Category 3</p>

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