

# INDEX PAGE

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The following MSDS included following products:

Cat. No	Product description
117-101	Exgene™ Plant SV [mini, 100preps]
117-152	Exgene™ Plant SV [mini, 250preps]
117-110	Exgene™ Plant SV sample [mini, 10preps]

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer PL

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name Buffer PL

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

Use of the substance or mixture Laboratory chemicals

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

Name GENEALL BIOTECHNOLOGY CO., LTD  
 Address GeneAll Bldg., 303-7, Dongnam-ro, Songpa-gu, Seoul, 05729, Korea  
 Information contact <+82-2-407-0096  
 E-Mail (competent person) [sales@geneall.com](mailto:sales@geneall.com)  
 Emergency Telephone Number <+82-2-407-0096

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Skin corrosion/irritation Category 2  
 Serious eye damage/eye irritation Category 2A

### 2.2 Label elements

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

Hazard pictograms



Signal word Warning

Hazardous statements H315 Causes skin irritation.  
 H319: Causes serious eye irritation..

Precautionary statements

Prevention P264 Wash hands thoroughly after handling.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P302+P352: IF ON SKIN: Wash with plenty of water.  
 P332+P313: If skin irritation occurs: Get medical advice/attention.  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.  
 P337+P313: If eye irritation persists: Get medical advice/attention.

Storage

P403+P233: Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container in accordance with all applicable environmental laws and regulations.

### 2.3 Other Non-GHS Classification

None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	CAS No.	Concentration (%)
Sodium dodecyl sulfate	151-21-3	1.0 - 5.0
TCEP	51805-45-9	0.1 - 0.5

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer PL
<b>4. FIRST AID MEASURES</b>	
<b>4.1 Description of first aid measures</b>	
General informations Following eye contact	Notify doctor/physician about the substance to take necessary actions. Immediately rinse cautiously with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do, then continue rinsing. Get medical attention if irritation persists.
Following skin contact	Remove contaminated clothing.well. Wash skin with plenty of water and mild soap. If irritation or redness persists, seek medical advice.
Following inhalation	Move to an area with fresh air. Keep at rest in a position comfortable for breathing. If irritation or respiratory discomfort persists, get medical attention.
Following ingestion	Rinse mouth with water. Do not induce vomiting unless directed by medical personnel. Give small quantities of water to drink if the person is conscious. Seek medical advice if feeling unwell.
<b>5. FIRE FIGHTING MEASURES</b>	
<b>5.1 Extinguishing media</b>	
Suitable extinguishing media	Water spray, foam, dry chemical, or carbon dioxide.
<b>5.2 Special hazards arising from the substance or mixture</b>	
Specific hazards during firefighting	No data available
<b>5.3 Precautions for fire-fighters</b>	
Special protective equipment for firefighters	Wear self-contained breathing apparatus and full protective clothing. Avoid inhalation of combustion products. Cool adjacent containers with water spray if exposed to fire.
<b>5.4 Further information</b>	
No information available.	
<b>6. ACCIDENTAL RELEASE MEASURES</b>	
<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	
Personal precautions	Avoid contact with skin and eyes. Wear appropriate personal protective equipment (gloves, lab coat, safety glasses). Ensure adequate ventilation.
<b>6.2 Environmental precautions</b>	
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not allow large quantities to enter drains, surface water, or soil.
<b>6.3 Methods and material for containment and cleaning up</b>	
Method for cleaning up	For small spills: Absorb with inert material (e.g. paper towel, absorbent pad, vermiculite). Wipe up and place in a suitable, labeled waste container.  For larger spills: Contain spill with inert absorbent material. Collect in suitable containers for disposal according to local regulations.  Wash spill area with water after material pickup is complete.
<b>7. HANDLING AND STORAGE</b>	
<b>7.1 Precautions for safe handling</b>	

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer PL
Advice on safe handling	<p>Handle in accordance with good laboratory hygiene and safety practice.</p> <p>Avoid contact with skin, eyes, and clothing.</p> <p>Do not eat, drink, or smoke when using this product.</p> <p>Wash hands thoroughly after handling.</p> <p>Use in well-ventilated areas or fume hood if aerosol/mist may be generated.</p>
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	
Requirements for storage rooms and vessels	<p>Store in a tightly closed container.</p> <p>Keep in a cool, dry, well-ventilated place.</p> <p>Protect from direct sunlight and heat sources.</p> <p>Avoid storage with strong oxidizing agents or strong acids.</p> <p>Follow any temperature recommendations specific to your buffer/product (e.g. 2–8°C or room temperature as applicable).</p>
<b>7.3 Specific end use(s)</b>	
Specific end use(s)	Laboratory chemicals.
<b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>	
<b>8.1 Control parameters</b>	
	No specific occupational exposure limits established for this mixture at these concentrations, but handle as irritant laboratory chemical.
<b>8.2 Exposure controls</b>	
	<p>Use in well-ventilated areas.</p> <p>Use fume hood if there is risk of aerosol or mist formation.</p>
<b>8.3 Personal protective equipment</b>	
Respiratory protection	Normally not required under normal laboratory use; if ventilation is inadequate or aerosols may form, use an appropriate respirator.
Suitable eye protection	Safety glasses with side shields or chemical splash goggles.
Hand protection	Chemical-resistant gloves (e.g. nitrile).
Skin and body protection	Laboratory coat or appropriate protective clothing.
<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>	
<b>9.1 Information on basic physical and chemical properties</b>	
Physical state	liquid
Color	No data available
Odor	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Solubility (ies)	No data available
Vapour density	No data available
Specific gravity	No data available
Partial coefficient n-octanol/water	No data available

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer PL
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight	No data available

## 9.2 Other information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Chemical stability and possibility of hazardous reactions

Stable under recommended storage conditions.

### 10.2 Conditions to avoid

Excessive heat, freezing (if product specification so states), and direct sunlight.  
Evaporation to dryness may increase irritation potential.

### 10.3 Materials to avoid

Strong oxidizing agents, strong acids, strong bases (depending on buffer composition).

### 10.4 Hazardous decomposition products

Hazardous decomposition generated from a fire : Carbon oxides, sulfur oxides, phosphorus oxides, and irritating fumes.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

Sodium dodecyl sulfate	Causes skin irritation. Causes eye burns.
TCEP	Causes skin burns. Causes eye burns.

### 11.2 Information on toxicological effects

Acute toxicity	At the given low concentrations, the mixture is not expected to be acutely toxic, but ingestion of larger amounts may cause irritation of the mouth, throat, and gastrointestinal tract.
Skin corrosion/irritation	Contains sodium dodecyl sulfate at irritant concentration → Causes skin irritation (redness, dryness, discomfort).
Serious eye damage/eye irritation	May cause serious eye irritation: redness, tearing, pain, and blurred vision.
Respiratory sensitisation	No data indicating strong sensitisation at these concentrations; prolonged or repeated exposure may cause irritation.
Germ cell mutagenicity / Carcinogenicity	At the low concentrations present in this mixture, no classification is expected for these endpoints; normal laboratory handling does not indicate significant risk.
STOT – single exposure	May cause transient irritation of the respiratory tract if aerosols or mists are inhaled.
STOT – repeated exposure	Prolonged or repeated skin contact may cause dryness or irritation.
Aspiration hazard	Not classified as aspiration hazard.

## 12. ECOLOGICAL INFORMATION

<b>12.1 Toxicity</b>	At low concentrations present in this mixture, the product is not expected to pose significant acute toxicity to aquatic organisms. Sodium dodecyl sulfate in higher concentrations may be harmful to aquatic life, but the diluted concentration (1–5%) in aqueous buffer reduces overall hazard.
<b>12.2 Persistence and degradability</b>	The mixture as a whole is not expected to persist in the environment.
<b>12.3 Bioaccumulative potential</b>	No data indicating significant bioaccumulation at the concentrations used. SDS has low bioaccumulation potential; TCEP shows low–moderate potential but at very low concentration.
<b>12.4 Mobility in soil</b>	The mixture is water-soluble and expected to have high mobility in soil. No major environmental hazard anticipated at the diluted levels present.

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer PL
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## 12.5 Other adverse effects

No known significant environmental hazards for this mixture.  
Avoid discharge of large quantities into drains or natural water sources.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Dispose as non-hazardous chemical waste according to local, regional, or national regulations.  
Small laboratory quantities may be diluted with water and disposed of through approved chemical disposal pathways.  
Do not dispose of large volumes into drains or surface waters.

### 13.2 Disposal considerations

Rinse container with water and dispose as laboratory plastic waste or according to local regulations.  
Empty containers may be recycled if regulations permit.

## 14. TRANSPORT INFORMATION

<b>14.1 UN number</b>	Not regulated / Not applicable
<b>14.2 UN Proper shipping name</b>	Not regulated for transport
<b>14.3 Transport hazard class(es)</b>	Not applicable
<b>14.4 Packing group</b>	Not applicable
<b>14.5 Environmental hazards</b>	Not classified as environmentally hazardous
<b>14.6 Special precautions for user</b>	No special requirements
<b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	
	Not applicable for product as supplied.

## 15. REGULATORY INFORMATION

### 15.1 Industrial Safety and Health Act

Not applicable

### 15.2 Toxic Chemicals Control Act

Not applicable

### 15.3 Safety Control of Dangerous Substances Act

Not applicable

### 15.4 Wastes Control Act

In accordance with international laws and regulations of country.

### 15.5 Other requirements in domestic and other countries

Not applicable

## 16. OTHER INFORMATION

### Issued date

2016-05-17

### Revision number

3

### Revision date

2025-11-13

### Reference

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer PD

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name	Buffer PD
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### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance or mixture	Laboratory chemicals
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### 1.3 Details of the supplier of the safety data sheet

Name	GENEALL BIOTECHNOLOGY CO., LTD
Address	GeneAll Bldg., 303-7, Dongnam-ro, Songpa-gu, Seoul, 05729, Korea
Information contact	<+82-2-407-0096
E-Mail (competent person)	<a href="mailto:sales@geneall.com">sales@geneall.com</a>
Emergency Telephone Number	<+82-2-407-0096

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

This product is NOT classified as regulated substance and NOT subject to label elements.

### 2.2 Label elements

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

Hazard pictograms	No data available
Signal word	No data available
Hazardous statements	No data available
Precautionary statements	
Prevention	No data available
Response	No data available
Storage	No data available
Disposal	No data available

### 2.3 Other Non-GHS Classification

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name

CAS No.

Concentration (%)

No hazardous substance

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

General informations	Notify doctor/physician about the substance to take necessary actions.
Following eye contact	In case of contact with eyes, flush the eyes with water for at least 15 minutes. Remove contact lenses, if possible. Immediately seek medical advice/attention.
Following skin contact	In case of contact with skin or hair, take off contaminated clothing. Rinse skin with water/Take a shower. Consult with doctor if you feel unwell.
Following inhalation	Move to an area with fresh air. If breathing has stopped, perform artificial respiration.
Following ingestion	In case of ingestion, rinse mouth. Do NOT induce vomiting.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media	Water spray, alcohol-resistant foam, dry chemicals or carbon dioxide
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### 5.2 Special hazards arising from the substance or mixture

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer PD
Specific hazards during firefighting	No data available
<b>5.3 Precautions for fire-fighters</b>	
Special protective equipment for firefighters	Wear self-contained breathing apparatus when fighting fire.
<b>5.4 Further information</b>	
No data available	
<b>6. ACCIDENTAL RELEASE MEASURES</b>	
<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	
Personal precautions	Wear appropriate protective apparatus. Ensure proper ventilation. Avoid breathing mist or gas. Evacuate people to safe areas.
<b>6.2 Environmental precautions</b>	
Environmental precautions	Avoid spread into waterway, sewers, drains, or confined areas. Do not release to the environment.
<b>6.3 Methods and material for containment and cleaning up</b>	
Method for cleaning up	Keep in suitable, closed containers for disposal.
<b>7. HANDLING AND STORAGE</b>	
<b>7.1 Precautions for safe handling</b>	
Advice on safe handling	Avoid contact with the eyes and skin. Avoid inhalation of mist or vapor. Avoid formation of dust and aerosols.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	
Requirements for storage rooms and vessels	Store in a cool place. Keep container tightly closed and store in a well-ventilated place.
<b>7.3 Specific end use(s)</b>	
Specific end use(s)	Laboratory chemicals.
<b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>	
<b>8.1 Control parameters</b>	
	Does not contain substances concerning exposure limits.
<b>8.2 Exposure controls</b>	
	No data available
<b>8.3 Personal protective equipment</b>	
Respiratory protection	Wear respiratory protection, according to the physical and chemical properties of the exposed material which has been tested and approved under appropriate government standard.
Suitable eye protection	Use tightly fitting safety goggles or face protection. Use eye protection such as face shields or safety glasses certified under appropriate government standard.
Hand protection	Wear suitable gloves tested and approved under appropriate government standards. Test gloves before use. Dispose of contaminated gloves in accordance with all applicable environmental laws and regulations. Wash and dry hands.
Skin and body protection	Wear suitable chemical-resistant clothing. Choose protective tools according to the concentration and amount of material in the work area.
<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>	
<b>9.1 Information on basic physical and chemical properties</b>	
Physical state	liquid
Color	No data available
Odor	No data available

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer PD
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Solubility (ies)	No data available
Vapour density	No data available
Specific gravity	No data available
Partial coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight	No data available

## 9.2 Other information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Chemical stability and possibility of hazardous reactions

Stable in the recommended storage conditions.

### 10.2 Conditions to avoid

No data available

### 10.3 Materials to avoid

No data available

### 10.4 Hazardous decomposition products

No data available

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

No data available

### 11.2 Information on toxicological effects

#### Acute toxicity

Oral

No data available

Dermal

No data available

Inhalation

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory sensitisation

No data available

#### Skin sensitisation

No data available

#### Carcinogenicity

No data available

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer PD
<u>Genotoxicity</u>	No data available
<u>Reproductive toxicity</u>	No data available
<u>Specific target organ toxicity - single exposure</u>	No data available
<u>Specific target organ toxicity - repeated exposure</u>	No data available
<u>Other harmful effects</u>	No data available
<b>12. ECOLOGICAL INFORMATION</b>	
<b>12.1 Toxicity</b>	
<u>Toxicity to Fish</u>	No data available
<u>Toxicity to Crustacean</u>	No data available
<u>Toxicity to Algae</u>	No data available
<b>12.2 Persistence and degradability</b>	
<u>Persistence</u>	No data available
<u>Degradability</u>	No data available
<b>12.3 Bioaccumulative potential</b>	
<u>Bioaccumulation</u>	No data available
<u>Biodegradability</u>	No data available
<b>12.4 Mobility in soil</b>	No data available
<b>12.5 Other adverse effects</b>	No data available
<b>13. DISPOSAL CONSIDERATIONS</b>	
<b>13.1 Waste treatment methods</b>	
Dispose of residues and non-recyclable solutions through a government-approved waste disposal company.	
<b>13.2 Disposal considerations</b>	
Dispose of in accordance with all applicable environmental laws and regulations.	
<b>14. TRANSPORT INFORMATION</b>	
<b>14.1 UN number</b>	This product is NOT categorized under UN number
<b>14.2 UN Proper shipping name</b>	Not applicable
<b>14.3 Transport hazard class(es)</b>	Not applicable
<b>14.4 Packing group</b>	Not applicable
<b>14.5 Environmental hazards</b>	No data available
<b>14.6 Special precautions for user</b>	No data available
<b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer PD

Not applicable for product as supplied.

## 15. REGULATORY INFORMATION

### 15.1 Industrial Safety and Health Act

Not applicable

### 15.2 Toxic Chemicals Control Act

Not applicable

### 15.3 Safety Control of Dangerous Substances Act

Not applicable

### 15.4 Wastes Control Act

Dispose of as hazardous waste in compliance with local and national regulations.

### 15.5 Other requirements in domestic and other countries

Not applicable

## 16. OTHER INFORMATION

**Issued date**

2016-10-31

**Revision number**

2

**Revision date**

2024-05-07

**Reference**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- END OF SAFETY DATA SHEET -

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BD

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name Buffer BD

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

Use of the substance or mixture Laboratory chemicals

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

Name GENEALL BIOTECHNOLOGY CO., LTD  
 Address GeneAll Bldg., 303-7, Dongnam-ro, Songpa-gu, Seoul, 05729, Korea  
 Information contact <+82-2-407-0096  
 E-Mail (competent person) [sales@geneall.com](mailto:sales@geneall.com)  
 Emergency Telephone Number <+82-2-407-0096

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Acute oral toxicity Category 4  
 Skin corrosion/irritation Category 2  
 Serious eye damage/eye irritation Category 2  
 Chronic aquatic toxicity Category 3

### 2.2 Label elements

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

Hazard pictograms



Signal word

Warning

Hazardous statements

H302 Harmful if swallowed.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H412 May cause long lasting harmful effects to aquatic life.

Precautionary statements

Prevention

P264 Wash hands thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P273 Do not release to the environment.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301+P312 IF SWALLOWED: Consult with doctor if you feel unwell.  
 P302+P352 IF ON SKIN: Wash with soap and water.  
 P305+P351+P338 IF IN EYES: Rinse with water attentively for several minutes.  
 Remove contact lenses, if possible. Keep washing.  
 P330 Rinse mouth.  
 P332+P313 If skin irritation occurs: Get medical advice/attention.  
 P337+P313 If eye irritation persists: Get medical advice/attention.  
 P362 Take off contaminated clothing and wash before reuse.

Storage

P403 + P233 Keep container tightly closed and store in a well-ventilated place.

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer BD
Disposal	P501 Dispose of contents/container to in accordance with all applicable environmental laws and regulations.

## 2.3 Other Non-GHS Classification

No information available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	CAS No.	Concentration (%)
Guanidine hydrochloride	50-01-01	20 ~ 30
Triton X-100	9002-93-1	1.0 ~ 10

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

General informations	Notify doctor/physician about the substance to take necessary actions.
Following eye contact	Flush the eyes with water for 15 minutes. Remove contact lenses, if possible. Get medical advice/attention.
Following skin contact	Take off contaminated clothing and wash before reuse. Flush the skin with water and take a shower. Get medical advice/attention, if you feel unwell.
Following inhalation	Move to an area with fresh air.
Following ingestion	Do not give any food to an unconscious person. Rinse the mouth.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media	Water spray, alcohol-resistant foam, dry chemicals or carbon dioxide
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### 5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	No data available
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### 5.3 Precautions for fire-fighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus (SCBA), if necessary during fire fighting.
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### 5.4 Further information

No information available

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear appropriate protective apparatus. Ensure adequate ventilation. Avoid breathing mist or gas. Evacuate people to safe areas.
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### 6.2 Environmental precautions

Environmental precautions	Avoid dispersal of spill material and runoff into waterway, sewers, drainage, or contained areas. Avoid release to the environment.
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# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BD

## 6.3 Methods and material for containment and cleaning up

Method for cleaning up

Soak up with inert absorbent material and place into the containers for chemical waste.  
Keep container tightly closed and store in a dry and well-ventilated place.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Advice on safe handling

Avoid contact with eyes or skin.  
Avoid inhalation of mist or vapor.  
Avoid formation of dust and aerosols.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store in a cool place.  
Keep container tightly closed and store in a well-ventilated place.

### 7.3 Specific end use(s)

Specific end use(s)

Laboratory chemicals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Does not contain substances concerning exposure limits.

### 8.2 Exposure controls

No data available

### 8.3 Personal protective equipment

Respiratory protection

Wear respiratory protection, according to the physical and chemical properties of the exposed material which has been tested and approved under appropriate government standard.

Suitable eye protection

Use tightly fitting safety goggles or face protection.  
Use eye protection such as face shields or safety glasses certified under appropriate government standard.

Hand protection

Wear suitable gloves tested and approved under appropriate government standards.  
Test gloves before use.  
Dispose of contaminated gloves in accordance with all applicable environmental laws and regulations.  
Wash and dry hands.

Skin and body protection

Wear suitable chemical-resistant clothing.  
Choose protective tools according to the concentration and amount of material in the work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state

liquid

Color

No data available

Odor

No data available

Odour Threshold

No data available

pH

No data available

Melting point/freezing point

No data available

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer BD
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (soild, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Solubility (ies)	No data available
Vapour density	No data available
Specific gravity	No data available
Partial coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight	No data available

## 9.2 Other information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Chemical stability and possibility of hazardous reactions

Stable in the recommended storage conditions.

### 10.2 Conditions to avoid

No data available

### 10.3 Materials to avoid

Strong oxidizing agents, strong bases, strong acids

### 10.4 Hazardous decomposition products

Hazardous decomposition generated from a fire : Carbon Monoxide, Hydrogen Chloride gas, Nitrogen Oxides

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

Guanidine hydrochloride

Harmful if inhaled or swallowed.  
May be harmful if absorbed through skin.  
Cause skin irritation.  
Cause severe eye irritation.

Triton X-100

Cause skin irritation.  
Cause eye burn.

### 11.2 Information on toxicological effects

Acute toxicity

Oral

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer BD
Guanidine hydrochloride	LD50 (oral) - Rat - 475 mg/kg LD50 (oral) - Mouse - 571 mg/kg LD50 (inhalation) - Rat - 4h - 3,181 mg/l
Triton X-100	No data available.
<b>Dermal</b>	
Guanidine hydrochloride	No data available.
Triton X-100	No data available.
<b>Inhalation</b>	
Guanidine hydrochloride	LD50 (inhalation) - Rat - 4h - 3,181 mg/l
Triton X-100	No data available.
<b><u>Skin corrosion/irritation</u></b>	
Guanidine hydrochloride	skin - rabbit - skin irritation
Triton X-100	No data available.
<b><u>Serious eye damage/eye irritation</u></b>	
Guanidine hydrochloride	eye - rabbit - eye irritation
Triton X-100	No data available.
<b><u>Respiratory sensitisation</u></b>	
	No data available.
<b><u>Skin sensitisation</u></b>	
	No data available.
<b><u>Carcinogenicity</u></b>	
IARC	According to IARC, none of the components present in this product at concentrations of 0.1% or more have been identified as probable, possible, or confirmed human carcinogens.
<b><u>Genotoxicity</u></b>	
	No data available.
<b><u>Reproductive toxicity</u></b>	
	No data available.
<b><u>Specific target organ toxicity - single exposure</u></b>	
	No data available.
<b><u>Specific target organ toxicity - repeated exposure</u></b>	
	No data available.
<b><u>Other harmful effects</u></b>	
	No data available.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

#### Toxicity to Fish

Guanidine hydrochloride	LC50 - Leuciscus idus (Golden orfe) - 1.759 mg/l
Triton X-100	No data available.

#### Toxicity to Crustacean

No data available.

#### Toxicity to Algae

No data available.

### 12.2 Persistence and degradability

#### Persistence

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer BD
	No data available.
<u>Degradability</u>	
Guanidine hydrochloride	Result: - Not readily biodegradable.
Triton X-100	No data available.
<b>12.3 Bioaccumulative potential</b>	
<u>Bioaccumulation</u>	No data available.
<u>Biodegradability</u>	No data available.
<b>12.4 Mobility in soil</b>	No data available
<b>12.5 Other adverse effects</b>	May cause long lasting harmful effects to aquatic life.

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Dispose of residues and non-recyclable solutions through a government-approved waste disposal company.

### 13.2 Disposal considerations

Dispose of contents/container in accordance with all applicable environmental laws and regulations.

## 14. TRANSPORT INFORMATION

### 14.1 UN number

This product is NOT categorized under UN number

### 14.2 UN Proper shipping name

Not applicable

### 14.3 Transport hazard class(es)

Not applicable

### 14.4 Packing group

Not applicable

### 14.5 Environmental hazards

Not applicable

### 14.6 Special precautions for user

Not applicable

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

## 15. REGULATORY INFORMATION

### 15.1 Industrial Safety and Health Act

Not applicable

### 15.2 Toxic Chemicals Control Act

Not applicable

### 15.3 Safety Control of Dangerous Substances Act

Not applicable

### 15.4 Wastes Control Act

In accordance with international laws and regulations of country.

### 15.5 Other requirements in domestic and other countries

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BD

Not applicable

## 16. OTHER INFORMATION

**Issued date**

2016-10-28

**Revision number**

2

**Revision date**

2024-05-08

**Reference**

Sigma-Aldrich

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- END OF SAFETY DATA SHEET-

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer CW

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name Buffer CW

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

Use of the substance or mixture Laboratory chemicals

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

Name GENEALL BIOTECHNOLOGY CO., LTD  
 Address GeneAll Bldg., 303-7, Dongnam-ro, Songpa-gu, Seoul, 05729, Korea  
 Information contact <+82-2-407-0096  
 E-Mail (competent person) [sales@geneall.com](mailto:sales@geneall.com)  
 Emergency Telephone Number <+82-2-407-0096

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

This product is NOT classified as regulated substance and NOT subject to label elements.

### 2.2 Label elements

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

Hazard pictograms No data available  
 Signal word No data available  
 Hazardous statements No data available  
 Precautionary statements  
 Prevention No data available  
 Response No data available  
 Storage No data available  
 Disposal No data available

### 2.3 Other Non-GHS Classification

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	CAS No.	Concentration (%)
Sodium Azide	26628-22-8	0.02 - 0.05

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

General informations Notify doctor/physician about the substance to take necessary actions.  
 Following eye contact In case of contact with eyes, flush the eyes with water for at least 15 minutes.  
 Remove contact lenses, if possible.  
 Immediately seek medical advice/attention.  
 Following skin contact In case of contact with skin or hair, take off contaminated clothing.  
 Rinse skin with water/Take a shower.  
 Consult with doctor if you feel unwell.  
 Following inhalation Move to an area with fresh air.  
 If breathing has stopped, perform artificial respiration.  
 Seek medical advice/attention.



# MATERIAL SAFETY DATA SHEET

Product Name	Buffer CW
Respiratory protection	Wear respiratory protection, according to the physical and chemical properties of the exposed material which has been tested and approved under appropriate government standard.
Suitable eye protection	Use tightly fitting safety goggles or face protection. Use eye protection such as face shields or safety glasses certified under appropriate government standard.
Hand protection	Wear suitable gloves tested and approved under appropriate government standards. Test gloves before use. Dispose of contaminated gloves in accordance with all applicable environmental laws and regulations. Wash and dry hands.
Skin and body protection	Wear suitable chemical-resistant clothing. Choose protective tools according to the concentration and amount of material in the work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	No data available
Odor	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	No data available
Solubility (ies)	No data available
Vapour density	No data available
Specific gravity	No data available
Partial coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight	No data available

### 9.2 Other information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Chemical stability and possibility of hazardous reactions

Stable in the recommended storage conditions.

### 10.2 Conditions to avoid

No data available

### 10.3 Materials to avoid

No data available

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer CW

## 10.4 Hazardous decomposition products

No data available

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

No data available

### 11.2 Information on toxicological effects

#### Acute toxicity

Oral

No data available

Dermal

No data available

Inhalation

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory sensitisation

No data available

#### Skin sensitisation

No data available

#### Carcinogenicity

No data available

#### Genotoxicity

No data available

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

#### Other harmful effects

No data available

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

#### Toxicity to Fish

No data available

#### Toxicity to Crustacean

No data available

#### Toxicity to Algae

No data available

### 12.2 Persistence and degradability

#### Persistence

No data available

#### Degradability

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer CW
	No data available
<b>12.3 Bioaccumulative potential</b>	
<u>Bioaccumulation</u>	No data available
<u>Biodegradability</u>	No data available
<b>12.4 Mobility in soil</b>	No data available
<b>12.5 Other adverse effects</b>	No data available
<b>13. DISPOSAL CONSIDERATIONS</b>	
<b>13.1 Waste treatment methods</b>	
Dispose of residues and non-recyclable solutions through a government-approved waste disposal company.	
<b>13.2 Disposal considerations</b>	
Dispose of in accordance with all applicable environmental laws and regulations.	
<b>14. TRANSPORT INFORMATION</b>	
<b>14.1 UN number</b>	
	This product is NOT categorized under UN number
<b>14.2 UN Proper shipping name</b>	
	Not applicable
<b>14.3 Transport hazard class(es)</b>	
	Not applicable
<b>14.4 Packing group</b>	
	Not applicable
<b>14.5 Environmental hazards</b>	
	No data available
<b>14.6 Special precautions for user</b>	
	No data available
<b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	
	Not applicable for product as supplied.
<b>15. REGULATORY INFORMATION</b>	
<b>15.1 Industrial Safety and Health Act</b>	
	Not applicable
<b>15.2 Toxic Chemicals Control Act</b>	
	Not applicable
<b>15.3 Safety Control of Dangerous Substances Act</b>	
	Not applicable
<b>15.4 Wastes Control Act</b>	
	Dispose of as hazardous waste in compliance with local and national regulations.
<b>15.5 Other requirements in domestic and other countries</b>	
	Not applicable
<b>16. OTHER INFORMATION</b>	
<b>Issued date</b>	
2016-10-28	
<b>Revision number</b>	

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer CW
2 <b>Revision date</b> 2024-05-08 <b>Reference</b>	

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- END OF SAFETY DATA SHEET -

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name Buffer AE

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

Use of the substance or mixture Laboratory chemicals

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

Name GENEALL BIOTECHNOLOGY CO., LTD  
 Address GeneAll Bldg., 303-7, Dongnam-ro, Songpa-gu, Seoul, 05729, Korea  
 Information contact <+82-2-407-0096  
 E-Mail (competent person) [sales@geneall.com](mailto:sales@geneall.com)  
 Emergency Telephone Number <+82-2-407-0096

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

This product is NOT classified as regulated substance and NOT subject to label elements.

### 2.2 Label elements

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

Hazard pictograms No data available  
 Signal word No data available  
 Hazardous statements No data available  
 Precautionary statements  
 Prevention No data available  
 Response No data available  
 Storage No data available  
 Disposal No data available

### 2.3 Other Non-GHS Classification

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	CAS No.	Concentration (%)
No hazard substance		

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

General informations Notify doctor/physician about the substance to take necessary actions.  
 Following eye contact Immediately flush the eyes with water over 20 minutes.  
 Immediately get medical advice/attention.  
 Following skin contact In case of contact with substance, flush the skin immediately with water for at least 20 minutes.  
 Remove contaminated clothing and footwear and isolate contaminated areas.  
 Following inhalation Move in fresh air.  
 Get medical advice/attention, if you feel unwell.  
 Following ingestion Rinse the mouth. Do not try vomiting.  
 Get medical advice/attention, if you feel unwell.

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media

Small fire: dry sand, dry chemical, alcohol- resistant foam, water spray, regular foam, carbon dioxide

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

Specific hazards during firefighting

Inhalation or vapor or contact with substance may cause contamination and result in hazardous effects.

### 5.3 Precautions for fire-fighters

Special protective equipment for firefighters

Wear appropriate protective apparatus. Leak may cause contamination.  
Move the containers from fire, if not dangerous.

### 5.4 Further information

No information available.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid contact without proper protective apparatus.  
Avoid contact with eyes, skin, clothing.

### 6.2 Environmental precautions

Environmental precautions

Avoid release to the environment.

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

Method for cleaning up

Dispose it after store in proper sealed containers.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Advice on safe handling

Avoid prolonged or repeated contact with skin.  
Avoid contact with eyes, skin and clothing.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Store sealed.  
Maintain at low temperatures and avoid direct sunlight.

### 7.3 Specific end use(s)

Specific end use(s)

Laboratory chemicals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

KOSHA exposure limits

No data available

ACGIH exposure limits

No data available

Biological Exposure Indices (BEIs)

No data available

### 8.2 Exposure controls

No information available.

### 8.3 Personal protective equipment

Respiratory protection

No information available.

Suitable eye protection

Wear suitable protection for eyes.

Hand protection

Wear suitable chemical-resistant gloves.

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

Skin and body protection

Wear suitable chemical-resistant clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colorless
Odor	Distinctive odor
Odour Threshold	No data available
pH	8-9
Melting point/freezing point	No data available
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	-/-
Vapour pressure	No data available
Solubility (ies)	No data available
Vapour density	No data available
Specific gravity	No data available
Partial coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight	No data available

### 9.2 Other information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Chemical stability and possibility of hazardous reactions

Stable in the recommended storage conditions.

Stable under normal pressure and room temperature condition.

Non- flammable : this material does not burn but may evolve corrosive/toxic fumes when heated.

### 10.2 Conditions to avoid

No data available

### 10.3 Materials to avoid

No data available

### 10.4 Hazardous decomposition products

No data available

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

No data available

### 11.2 Information on toxicological effects

Acute toxicity

# MATERIAL SAFETY DATA SHEET

Product Name	Buffer AE
Oral	No data available.
Dermal	No data available.
Inhalation	No data available.
<u>Skin corrosion/irritation</u>	No data available.
<u>Serious eye damage/eye irritation</u>	No data available.
<u>Respiratory sensitisation</u>	No data available.
<u>Skin sensitisation</u>	No data available.
<u>Carcinogenicity</u>	No data available.
<u>Genotoxicity</u>	No data available.
<u>Reproductive toxicity</u>	No data available.
<u>Specific target organ toxicity - single exposure</u>	No data available.
<u>Specific target organ toxicity - repeated exposure</u>	No data available.
<u>Other harmful effects</u>	No data available.
<b>12. ECOLOGICAL INFORMATION</b>	
<b>12.1 Toxicity</b>	
<u>Toxicity to Fish</u>	No data available.
<u>Toxicity to Crustacean</u>	No data available.
<u>Toxicity to Algae</u>	No data available.
<b>12.2 Persistnece and degradability</b>	
<u>Persistence</u>	No data available.
<u>Degradability</u>	No data available
<b>12.3 Bioaccumulative potential</b>	
<u>Bioaccumulation</u>	No data available
<u>Biodegradability</u>	No data available
<b>12.4 Mobility in soil</b>	No data available
<b>12.5 Other adverse effects</b>	No data available

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Dispose of in accordance with all applicable environmental laws and regulations.

### 13.2 Disposal considerations

Dispose of in accordance with all applicable environmental laws and regulations.

## 14. TRANSPORT INFORMATION

### 14.1 UN number

This product is NOT categorized under UN number

### 14.2 UN Proper shipping name

Not applicable

### 14.3 Transport hazard class(es)

Not applicable

### 14.4 Packing group

Not applicable

### 14.5 Environmental hazards

Not applicable

### 14.6 Special precautions for user

Not applicable

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

## 15. REGULATORY INFORMATION

### 15.1 Industrial Safety and Health Act

Not applicable

### 15.2 Toxic Chemicals Control Act

Not applicable

### 15.3 Safety Control of Dangerous Substances Act

Not applicable

### 15.4 Wastes Control Act

Designated waste

### 15.5 Other requirements in domestic and other countries

Not applicable

## 16. OTHER INFORMATION

### Issued date

2016-10-28

### Revision number

1

### Revision date

2023-08-21

### Reference

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

# MATERIAL SAFETY DATA SHEET

Product Name

RNase A

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

Product name RNase A

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

Use of the substance or mixture Laboratory chemicals

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

Name GENEALL BIOTECHNOLOGY CO., LTD  
 Address GeneAll Bldg., 303-7, Dongnam-ro, Songpa-gu, Seoul, 05729, Korea  
 Information contact <+82-2-407-0096  
 E-Mail (competent person) [sales@geneall.com](mailto:sales@geneall.com)  
 Emergency Telephone Number <+82-2-407-0096

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

This product is NOT classified as regulated substance and NOT subject to label elements.

### 2.2 Label elements

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

Hazard pictograms No data available  
 Signal word No data available  
 Hazardous statements No data available  
 Precautionary statements  
 Prevention No data available  
 Response No data available  
 Storage No data available  
 Disposal No data available

### 2.3 Other Non-GHS Classification

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	CAS No.	Concentration (%)
RIBONUCLEASE A TYPE I	9001-99-4	2-10

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

General informations Notify doctor/physician about the substance to take necessary actions.  
 Following eye contact In case of contact with substance, flush the eyes immediately with water for at least 20 minutes. Immediately seek medical advice/attention.  
 Following skin contact In case of contact with substance, flush the skin immediately with water for at least 20 minutes. Remove contaminated clothing and footwear and isolate contaminated areas. Take off contaminated clothing and wash before reuse. Get an immediate medical treatment.  
 Following inhalation Get an immediate medical treatment. Move to an area with fresh air. Try artificial respiration, if not breathe. Provide oxygen, if it is hard to breathe.  
 Following ingestion Do not give any food to an unconscious person. Get an immediate medical treatment.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media Small fire: dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, carbon dioxide (suitable extinguishing media)  
 Large fire: Use water spray/mist, general foam (suitable extinguishing media)

# MATERIAL SAFETY DATA SHEET

Product Name	RNase A
<b>5.2 Special hazards arising from the substance or mixture</b>	
Specific hazards during firefighting	<p>Can be ignited by heat, sparks, or flames.            If heated, containers may explode.            Some may combust but does not ignite easily.            Can produce irritant and toxic gases in case of fire.            Inhalation of the substance may be harmful.            Some liquids may produce vapors that can cause dizziness or asphyxiation.</p>
<b>5.3 Precautions for fire-fighters</b>	
Special protective equipment for firefighters	<p>Move containers from fire area if it's not dangerous.            Some may be transported at high temperatures.            Spills may cause contamination. Contact may cause burns to skin and eyes.            Dig a ditch for the disposal of the fire fighting water and keep the material from dispersing.            In case of tank fire:            Cool the container with plenty of water even after the fire is extinguished.            If there's a high-pitched sound or the tank changes color, leave immediately.            Keep away from the tank covered in flames.</p>
<b>5.4 Further information</b>	
No information available.	
<b>6. ACCIDENTAL RELEASE MEASURES</b>	
<b>6.1 Personal precautions, protective equipment and emergency procedures</b>	
Personal precautions	<p>Remove all ignition sources. Stop the leak, if it's not dangerous.            Be aware of the substances and conditions to avoid.            Ventilate the contaminated area.            Do not touch the exposed material. Prevent dust formation.</p>
<b>6.2 Environmental precautions</b>	
Environmental precautions	Avoid spread into waterway, sewers, drains, or confined areas.
<b>6.3 Methods and material for containment and cleaning up</b>	
Method for cleaning up	<p>(small leaks) Wash the contaminated area with plenty of water.            (small leaks) Absorb it with sand or an inert material and place it into a container.            (large leaks) Make a ditch keeping distance from the leaks.            Use a clean shovel to place the spilled material into a clean, dry container.            Loosely close the container and move it away from the spill area.            Cover with plastic sheet to prevent spread and keep dry.</p>
<b>7. HANDLING AND STORAGE</b>	
<b>7.1 Precautions for safe handling</b>	
Advice on safe handling	<p>Be aware of the substances and conditions to avoid.            Wash thoroughly after handling.            Work with reference to section 8.            Be cautious of high temperatures.</p>
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	
Requirements for storage rooms and vessels	<p>Keep container tightly closed.            Store in a cool, dry place.            Be aware of the substances and conditions to avoid.</p>
<b>7.3 Specific end use(s)</b>	
Specific end use(s)	Laboratory chemicals.
<b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>	
<b>8.1 Control parameters</b>	
KOSHA exposure limits	No data available
ACGIH exposure limits	No data available
Biological Exposure Indices (BEIs)	No data available
<b>8.2 Exposure controls</b>	

# MATERIAL SAFETY DATA SHEET

Product Name	RNase A
	Use appropriate engineering controls and local exhaust ventilation below recommended exposure limits.
<b>8.3 Personal protective equipment</b>	
Respiratory protection	Wear respiratory protection, according to the physical and chemical properties of the exposed material which has been tested and approved under appropriate government standard. Proper protective apparatus for respiration such like Face filter dust mask, air filter dust mask, electric fan attached dust mask is recommended. If oxygen levels are insufficient (<19.6%), wear supplied-air respirators or self-contained breathing apparatus.
Suitable eye protection	Wear protective goggles that are breathable to safeguard your eyes against particulate matter that may cause eye irritation or other health hazards.
Hand protection	Wear suitable chemical-resistant gloves, considering physical and chemical properties of chemical substances.
Skin and body protection	Wear suitable chemical-resistant clothing, considering physical and chemical properties of chemical substances.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	colorless
Odor	No data available
Odour Threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point/boiling range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	-/-
Vapour pressure	No data available
Solubility (ies)	No data available
Vapour density	No data available
Specific gravity	No data available
Partial coefficient n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Molecular weight	No data available

### 9.2 Other information

No data available

## 10. STABILITY AND REACTIVITY

### 10.1 Chemical stability and possibility of hazardous reactions

Stable under ambient temperature and pressure conditions.  
If heated, containers may explode.  
Some may combust but does not ignite easily.  
Can produce irritant and toxic gases in case of fire.  
Inhalation of the substance may be harmful.  
Some liquids may produce vapors that can cause dizziness or asphyxiation.

### 10.2 Conditions to avoid

Ignition sources such as heat, sparks, and flames

### 10.3 Materials to avoid

flammable material, irritant/toxic gas

### 10.4 Hazardous decomposition products

# MATERIAL SAFETY DATA SHEET

Product Name	RNase A
--------------	---------

No data available

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

No data available

### 11.2 Information on toxicological effects

#### Acute toxicity

Oral

No data available.

Dermal

No data available.

Inhalation

No data available.

#### Skin corrosion/irritation

No data available.

#### Serious eye damage/eye irritation

No data available.

#### Respiratory sensitisation

No data available.

#### Skin sensitisation

No data available.

#### Carcinogenicity

No data available.

#### Genotoxicity

No data available.

#### Reproductive toxicity

No data available.

#### Specific target organ toxicity - single exposure

No data available.

#### Specific target organ toxicity - repeated exposure

No data available.

#### Other harmful effects

No data available.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

#### Toxicity to Fish

No data available.

#### Toxicity to Crustacean

No data available.

#### Toxicity to Algae

No data available.

### 12.2 Persistence and degradability

#### Persistence

No data available.

#### Degradability

No data available

### 12.3 Bioaccumulative potential

#### Bioaccumulation

No data available

#### Biodegradability

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Other adverse effects

No data available

# MATERIAL SAFETY DATA SHEET

Product Name

RNase A

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

Dispose of in accordance with all applicable environmental laws and regulations.

### 13.2 Disposal considerations

Dispose of in accordance with all applicable environmental laws and regulations.

## 14. TRANSPORT INFORMATION

### 14.1 UN number

This product is NOT categorized under UN number

### 14.2 UN Proper shipping name

Not applicable

### 14.3 Transport hazard class(es)

Not applicable

### 14.4 Packing group

Not applicable

### 14.5 Environmental hazards

No data available

### 14.6 Special precautions for user

For personal protection see section 8.

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

## 15. REGULATORY INFORMATION

### 15.1 Industrial Safety and Health Act

No data available

### 15.2 Toxic Chemicals Control Act

No data available

### 15.3 Safety Control of Dangerous Substances Act

No data available

### 15.4 Wastes Control Act

Dispose of as hazardous waste in compliance with local and national regulations.

### 15.5 Other requirements in domestic and other countries

Not applicable

## 16. OTHER INFORMATION

### Issued date

2016-02-12

### Revision number

2

### Revision date

2023-05-22

### Reference

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- END OF SAFETY DATA SHEET -