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The following MSDS included following products:

Cat. No	Product description
117-226	Exgene™ Plant SV [Midi, 26preps]
117-201	Exgene™ Plant SV [Midi, 100preps]
117-204	Exgene™ Plant SV sample [Midi, 4preps]

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
 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 1

2.2 Label elements

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

Hazard pictograms



Signal word Danger

Hazardous statements H315 Causes skin irritation.
 H318 Cause severe damage on eyes.

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 soap and water.
 P305+P351+P338 If in eyes: Rinse with water attentively for several minutes.
 Remove contact lenses, if possible. Keep washing.
 P310 Get medical advice/attention.
 P332+P313 If skin irritation occurs: Get medical advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.

Storage

No data available.

Disposal

No data available.

2.3 Other Non-GHS Classification

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name

CAS No.

Concentration (%)

MATERIAL SAFETY DATA SHEET

Product Name	Buffer PL	
Sodium dodecyl sulfate	151-21-3	10-40
TCEP	51805-45-9	1-30

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 for at least 15 minutes. Get medical advice/attention.
Following skin contact	In case of skin or hair contact: Take off all contaminated clothing and wash before reuse. Rinse skin with water/Take a shower. Consult with doctor 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 with water.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical 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 inhalation of mist or gas. Evacuate people to safe areas.
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6.2 Environmental precautions

Environmental precautions	Avoid spread into waterway, sewers, drains, or confined areas. Avoid release into the environment.
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6.3 Methods and material for containment and cleaning up

Method for cleaning up	Sweep and remove with a shovel. Dispose of in a properly sealed container.
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7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	Avoid contact with eyes or skin. Avoid inhalation of vapor or mist. Avoid formation of dust and aerosols.
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MATERIAL SAFETY DATA SHEET

Product Name

Buffer PL

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 dry and 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
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

MATERIAL SAFETY DATA SHEET

Product Name	Buffer PL
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

Heat, sparks, and flames

10.3 Materials to avoid

Strong oxidizing agents.

10.4 Hazardous decomposition products

Hazardous decomposition generated from a fire : Carbon oxides, Sulfur oxides, Sodium oxide, Hydrogen chloride gas

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

Oral

Sodium dodecyl sulfate LD50 (oral) - Rat - Male and Female - 1.200 mg/kg

TCEP No data available.

Dermal

No data available.

Inhalation

No data available.

Skin corrosion/irritation

Sodium dodecyl sulfate skin - rabbit - sin irritation

TCEP No data available.

Serious eye damage/eye irritation

Sodium dodecyl sulfate eyes - rabbit - May cause severe eye damage.

TCEP No data available.

Respiratory sensitisation

Sodium dodecyl sulfate No data available.

TCEP No data available.

Skin sensitisation

No data available.

Carcinogenicity

IARC

MATERIAL SAFETY DATA SHEET

Product Name	Buffer PL
	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
<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.
12. ECOLOGICAL INFORMATION	
12.1 Toxicity	
<u>Toxicity to Fish</u>	
Sodium dodecyl sulfate	LC50 (Freshwater test) - Pimephales promelas (Fathead minnow) - 29 mg/l - 96 h (OECD Test Guideline 203)
TCEP	No data available.
<u>Toxicity to Crustacean</u>	
	No data available.
<u>Toxicity to Algae</u>	
	No data available.
12.2 Persistence and degradability	
<u>Persistence</u>	
	No data available.
<u>Degradability</u>	
Sodium dodecyl sulfate	Aerobic - Exposure time 28 days, Result: 95% - Readily biodegradable. (OECD Test Guideline 301B)
TCEP	No data available.
12.3 Bioaccumulative potential	
<u>Bioaccumulation</u>	
Sodium dodecyl sulfate	Cyprinus carpio (Common carp) - 72 h Bioconcentration factor (BCF): 3.9 - 5.3
TCEP	No data available.
<u>Biodegradability</u>	
	No data available
12.4 Mobility in soil	
	No data available
12.5 Other adverse effects	
Sodium dodecyl sulfate	Toxic to aquatic life.
TCEP	No data available.
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.	

MATERIAL SAFETY DATA SHEET

Product Name

Buffer PL

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

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

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

2016-10-28

Revision number

2

Revision date

2024-05-09

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 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)	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 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
5.3 Precautions for fire-fighters	
Special protective equipment for firefighters	Wear self-contained breathing apparatus when fighting fire.
5.4 Further information	
No data available	
6. ACCIDENTAL RELEASE MEASURES	
6.1 Personal precautions, protective equipment and emergency procedures	
Personal precautions	Wear appropriate protective apparatus. Ensure proper ventilation. Avoid breathing mist or gas. Evacuate people to safe areas.
6.2 Environmental precautions	
Environmental precautions	Avoid spread into waterway, sewers, drains, or confined areas. Do not release to the environment.
6.3 Methods and material for containment and cleaning up	
Method for cleaning up	Keep in suitable, closed containers for disposal.
7. HANDLING AND STORAGE	
7.1 Precautions for safe handling	
Advice on safe handling	Avoid contact with the eyes and 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

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
	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
12. ECOLOGICAL INFORMATION	
12.1 Toxicity	
<u>Toxicity to Fish</u>	No data available
<u>Toxicity to Crustacean</u>	No data available
<u>Toxicity to Algae</u>	No data available
12.2 Persistence and degradability	
<u>Persistence</u>	No data available
<u>Degradability</u>	No data available
12.3 Bioaccumulative potential	
<u>Bioaccumulation</u>	No data available
<u>Biodegradability</u>	No data available
12.4 Mobility in soil	No data available
12.5 Other adverse effects	No data available
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 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	
	No data available
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	

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
 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	1~10

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.
Dermal	
Guanidine hydrochloride	No data available.
Triton X-100	No data available.
Inhalation	
Guanidine hydrochloride	LD50 (inhalation) - Rat - 4h - 3,181 mg/l
Triton X-100	No data available.
<u>Skin corrosion/irritation</u>	
Guanidine hydrochloride	skin - rabbit - skin irritation
Triton X-100	No data available.
<u>Serious eye damage/eye irritation</u>	
Guanidine hydrochloride	eye - rabbit - eye irritation
Triton X-100	No data available.
<u>Respiratory sensitisation</u>	
	No data available.
<u>Skin sensitisation</u>	
	No data available.
<u>Carcinogenicity</u>	
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.
<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.

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.
12.3 Bioaccumulative potential	
<u>Bioaccumulation</u>	No data available.
<u>Biodegradability</u>	No data available.
12.4 Mobility in soil	No data available
12.5 Other adverse effects	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
 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
12.3 Bioaccumulative potential	
<u>Bioaccumulation</u>	No data available
<u>Biodegradability</u>	No data available
12.4 Mobility in soil	No data available
12.5 Other adverse effects	No data available
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 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	No data available
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	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	2016-10-28
Revision number	

MATERIAL SAFETY DATA SHEET

Product Name	Buffer CW
2 Revision date 2024-05-08 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 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
 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 advcie/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.
12. ECOLOGICAL INFORMATION	
12.1 Toxicity	
<u>Toxicity to Fish</u>	No data available.
<u>Toxicity to Crustacean</u>	No data available.
<u>Toxicity to Algae</u>	No data available.
12.2 Persistnece and degradability	
<u>Persistence</u>	No data available.
<u>Degradability</u>	No data available
12.3 Bioaccumulative potential	
<u>Bioaccumulation</u>	No data available
<u>Biodegradability</u>	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

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
 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
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5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting

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.

5.3 Precautions for fire-fighters

Special protective equipment for firefighters

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.

5.4 Further information

No information available.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

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.

6.2 Environmental precautions

Environmental precautions

Avoid spread into waterway, sewers, drains, or confined areas.

6.3 Methods and material for containment and cleaning up

Method for cleaning up

(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.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling

Be aware of the substances and conditions to avoid.
Wash thoroughly after handling.
Work with reference to section 8.
Be cautious of high temperatures.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.
Store in a cool, dry place.
Be aware of the substances and conditions to avoid.

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

MATERIAL SAFETY DATA SHEET

Product Name

RNase A

Use appropriate engineering controls and local exhaust ventilation below recommended exposure limits.

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.
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
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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 -