

## INDEX PAGE

Company  
Technical Phone  
Fax  
E-mail Address

GENEALL BIOTECHNOLOGY CO., LTD.  
82-2-407-0096  
82-2-407-0779  
[geneall@geneall.com](mailto:geneall@geneall.com)

The following MSDS included following products:

| <b>Cat. No</b> | <b>Product description</b>                |
|----------------|---|
| 118-006        | Exgene™ Genomic DNA micro [mini, 6preps]  |
| 118-050        | Exgene™ Genomic DNA micro [mini, 50preps] |

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BL

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

### 1.1 Product identifier

Product name Buffer BL

### 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 |
| Specific Target Organ toxicity (single exposure) | Category 3 |
| Chronic aquatic toxicity                         | Category 4 |

### 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.<br>H315 Causes skin irritation.<br>H319 Causes serious eye irritation.<br>H335 May cause respiratory irritation.<br>H413 May cause long lasting harmful effects to aquatic life.  |
| Precautionary statements |  |
| Prevention               | P261 Avoid breathing dust/fume/gas/mist/vapours/spray.<br>P264 Wash skin/hands thoroughly after handling.<br>P270 Do not eat, drink or smoke when using this product.<br>P271 Handle it only outdoors or in a well- ventilated area.<br>P273 Do not release to the environment.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection.   |
| Response                 | P301+P312 IF SWALLOWED: Consult with doctor if you feel unwell.<br>P302+P352 IF ON SKIN: Wash with soap and water.<br>P304+P340 IF INHALED: Move patients into fresh air and help them to get rest.<br>P305+P351+P338 IF IN EYES: Rinse with water attentively for several minutes. Remove contact lenses, if possible. Keep washing.<br>P312 Consult with doctor if you feel unwell.<br>P330 Rinse mouth.<br>P332+P313 If skin irritation occurs: Get medical advice/attention.<br>P337+P313 If eye irritation persists: Get medical advice/attention.<br>P362+P364 Take off contaminated clothing and wash before reuse. |
| Storage                  | P403 + P233 Keep container tightly closed and store in a well- ventilated place.<br>P405 Store it being locked up.   |

# MATERIAL SAFETY DATA SHEET

Product Name

Disposal

Buffer BL

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

## 2.3 Other Non-GHS Classification

Health=1, Flammability=1, Reactivity=0

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance name       | CAS No. | Concentration (%) |
|----------------------|---------|-------------------|
| Guanidinium chloride | 50-01-1 | 50 - 60           |

## 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 minutes.<br>Remove contact lenses, if possible. Keep washing.<br>Get medical advice/attention, if symptom persists.      |
| Following skin contact | Immediately flush the eyes and skin with water for more than 20 minutes.<br>Get medical advice/attention.<br>Take off contaminated clothing and wash before reuse. |
| Following inhalation   | If exposed or concerned: Get medical advice/attention.   |
| Following ingestion    | Get medical advice/attention, if you feel unwell. Rinse the mouth.<br>Use proper respiratory medical device and do not try artificial respiration.                 |

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

|          |                   |
|----------|-------------------|
| Symptoms | No data available |
| Risks    | No data available |

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

|                   |                   |
|-------------------|-------------------|
| Special treatment | No data available |
|-------------------|-------------------|

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

|                              |  |
|------------------------------|--|
| Suitable extinguishing media | powder fire extinguisher, dry sand or dirt |
|------------------------------|--|

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

|                                      |                   |
|--------------------------------------|-------------------|
| Specific hazards during firefighting | No data available |
|--------------------------------------|-------------------|

### 5.3 Precautions for fire-fighters

|   |  |
|---|--|
| Special protective equipment for firefighters | Wear appropriate protective apparatus.<br>Extinguish while maintaining safe distance away from fire areas. |
|---|--|

### 5.4 Further information

No information available.

## 6. ACCIDENTAL RELEASE MEASURES

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

|                      |   |
|----------------------|---|
| Personal precautions | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.<br>Immediately clean spills and see section 5.3.<br>Note the substances and conditions to avoid. |
|----------------------|---|

### 6.2 Environmental precautions

|                           |  |
|---------------------------|--|
| Environmental precautions | Avoid dispersal of spill material and runoff into waterway, sewers, drainage, or contained areas.<br>Avoid release to the environment. |
|---------------------------|--|

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

# MATERIAL SAFETY DATA SHEET

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Method for cleaning up

Soak up with inert absorbent material and place into the containers for chemical waste.  
In case of small spills, absorb with sand and non-combustible material and place in container.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Advice on safe handling

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Do NOT eat, drink or smoke when using this product.  
Empty containers may retain product residue and can be hazardous.  
Observe all precautionary measures on SDS and product labels.  
Take caution in handling and storage.  
Avoid prolonged or repeated contact with skin.

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

Requirements for storage rooms and vessels

Keep container tightly closed and store in a well- ventilated place.  
Keep away from food and drinks.

### 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

If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limits.  
Install facilities for wash and shower to use the material.

### 8.3 Personal protective equipment

Respiratory protection

Wear suitable protection for respiration tested and approved under appropriate government standards.

Suitable eye protection

Use tightly fitting safety goggles or face protection.  
Wear suitable protection for eyes tested and approved under appropriate government standards.

Hand protection

Wear suitable gloves tested and approved under appropriate government standards.  
Inspect gloves before use.  
After use, dispose of contaminated gloves in accordance with relevant regulations and guidelines.  
Wash and dry hands thoroughly.

Skin and body protection

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|                              |                   |
|------------------------------|-------------------|
| Physical state               | liquid            |
| Color                        | Light yellow      |
| Odor                         | No data available |
| Odour Threshold              | No data available |
| pH                           | 7.0-8.0           |
| Melting point/freezing point | No data available |

# MATERIAL SAFETY DATA SHEET

| Product Name                                 | Buffer BL         |
|--|-------------------|
| 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

No pyrolysis, if stored and handled as directed.

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

### 10.2 Conditions to avoid

Heat, spark, flame

### 10.3 Materials to avoid

Strong oxidizing agents, strong bases, strong acids, metals

### 10.4 Hazardous decomposition products

Highly toxic gases can be generated by pyrolysis or combustion during burning.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

May cause irritation.

### 11.2 Information on toxicological effects

#### Acute toxicity

Oral

Harmful if swallowed.

Dermal

No data available

Inhalation

No data available

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Respiratory sensitisation

# MATERIAL SAFETY DATA SHEET

| Product Name  | Buffer BL   |
|---|---|
|   | 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>   | May cause respiratory irritation.   |
| <u>Specific target organ toxicity - repeated exposure</u> | No data available   |
| <u>Other harmful effects</u>                              | May cause long lasting harmful effects to aquatic life.   |
| <b>12. ECOLOGICAL INFORMATION</b>                         |   |
| <b>12.1 Toxicity</b>                                      | May cause long lasting harmful effects to aquatic life.   |
| <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>                              |   |
| <b>12.5 Other adverse effects</b>                         | Avoid release to the environment.   |
| <b>13. DISPOSAL CONSIDERATIONS</b>                        |   |
| <b>13.1 Waste treatment methods</b>                       | Dispose of in accordance with all applicable environmental laws and regulations.                    |
| <b>13.2 Disposal considerations</b>                       | Dispose of contents/container in accordance with all applicable environmental laws and regulations. |
| <b>14. TRANSPORT INFORMATION</b>                          |   |
| <b>14.1 UN number</b>                                     | Not classified as dangerous good  |
| <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  |

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BL

**14.5 Environmental hazards**

No data available

**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**

Not applicable

**16. OTHER INFORMATION****Issued date**

2015-01-07

**Revision number**

3

**Revision date**

2023-08-23

**Reference**Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)ECB- ESIS(European chemical Substances Information System)(<http://ecb.jrc.it/esis>)ECOTOX Database, EPA(<http://cfpub.epa.gov/ecotox>)

IUCLID Chemical Data Sheet, EC- ECB

International Chemical Safety Cards(ICSC)(<http://www.nihs.go.jp/ICSC>)TOXNET, U.S. National Library of Medicine(<http://toxnet.nlm.nih.gov>)The Chemical Database, The Department of Chemistry at the University of Akron(<http://ull.chemistry.uakron.edu/erd>)

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-

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

### 1.1 Product identifier

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Name GENEALL BIOTECHNOLOGY CO., LTD  
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 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]

Metal corrosive substances Category 4

### 2.2 Label elements

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

Hazard pictograms



Signal word Warning

Hazardous statements H312 Causes skin irritation.

Precautionary statements

Prevention P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response  
 P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P363 Take off contaminated clothing and wash before reuse.

Storage Not applicable

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

### 2.3 Other Non-GHS Classification

Ethylenediaminetetraacetic acid Health=2, Flammability=0, Reactivity=1  
 Sodium Docecyl Sulfate Health=2, Flammability=1, Reactivity=0

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance name                  | CAS No.   | Concentration (%) |
|---------------------------------|-----------|-------------------|
| Ethylenediaminetetraacetic acid | 6381-92-6 | 2.0 ~ 10          |
| Sodium Docecyl Sulfate          | 151-21-3  | 1.0 ~ 8.0         |

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer CL

## 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.

Remove contact lenses. Continue rinsing. If present and easy to do, get immediate medical advice/attention.

Following skin contact

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Get medical advice/attention if you feel unwell.

Wash contaminated clothing before reuse.

Following inhalation

If exposed or concerned: Get medical advice/attention.

Following ingestion

Do not use mouth-to-mouth resuscitation if victim ingested or inhaled. Use proper respiratory medical device.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media

Use powder fire extinguisher, dry sand or dirt or CO2

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

Specific hazards during firefighting

No information available.

### 5.3 Precautions for fire-fighters

Special protective equipment for fire-fighters

Wear appropriate protective apparatus.

Extinguish while maintaining safe distance away from fire areas.

### 5.4 Further information

No information available.

## 6. ACCIDENTAL RELEASE MEASURES

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

Personal precautions

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Immediately clean spills and see section 5.3.

Note the substances and conditions to avoid.

### 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.

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

Method for cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Keep in suitable, closed containers for disposal as hazardous material.

In case of small spills, absorb with sand and non-combustible material and place in container.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

# MATERIAL SAFETY DATA SHEET

| Product Name            | Buffer CL  |
|-------------------------|--|
| Advice on safe handling | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.<br>Do NOT eat, drink or smoke when using this product.<br>Empty containers may retain product residue and can be hazardous.<br>Observe all precautionary measures on SDS and product labels.<br>Take caution in handling and storage.<br>Avoid prolonged or repeated contact with skin. |

## 7.2 Conditions for safe storage, including any incompatibilities

|  |   |
|--|---|
| Requirements for storage rooms and vessels | Store in a well-ventilated place. Keep container tightly closed.<br>Do NOT expose at over 50 degree/ Keep Away from direct sun light. |
|--|---|

## 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

If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limits.  
Storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

### 8.3 Personal protective equipment

|                          |  |
|--------------------------|--|
| Respiratory protection   | Wear suitable protection tested and approved under appropriate government standards such as KOSHA.<br>Select protective gear according to the physical and chemical properties of the exposed material.                            |
| Suitable eye protection  | Wear chemical-resistant eye and face protection tested and approved under appropriate government standards such as KOSHA.  |
| Hand protection          | Wear suitable gloves tested and approved under appropriate government standards such as KOSHA. Check gloves before use.<br>Dispose of gloves after use according to relevant regulations and GLP standards.<br>Wash and dry hands. |
| Skin and body protection | Wear suitable chemical-resistant clothing.<br>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                        | 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 |



# MATERIAL SAFETY DATA SHEET

| Product Name  | Buffer CL  |
|---|--|
| <u>Skin corrosion/irritation</u>                          |  |
| Ethylenediaminetetraacetic acid                           | Skin irritation test results using rabbit<br>Moderate irritant                               |
| Sodium Docecyl Sulfate                                    | 250mg/24 hours on skin - minor corrosion/irritation  |
| <u>Serious eye damage/eye irritation</u>                  |  |
| Ethylenediaminetetraacetic acid                           | Eye irritation test in rabbits showed slight<br>irritation to the conjunctiva and no corneal |
| Sodium Docecyl Sulfate                                    | 10mg/24 hours - Rabbit average irritation  |
| <u>Respiratory sensitisation</u>                          |  |
|   | No data available.   |
| <u>Skin sensitisation</u>                                 |  |
|   | No data available.   |
| <u>Carcinogenicity</u>                                    |  |
| IARC  | No data available.   |
| OSHA  | No data available.   |
| ACGIH   | No data available.   |
| NTP   | No data available.   |
| EU CLP  | 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

#### Toxicity to Fish

|                                 |                                     |
|---------------------------------|-------------------------------------|
| Ethylenediaminetetraacetic acid | LC50 41 mg/l 96 hr                  |
| Sodium Docecyl Sulfate          | LC50 1.31mg/l 96 hr Cyprinus carpio |

#### Toxicity to Crustacean

|                                 |                                 |
|---------------------------------|---------------------------------|
| Ethylenediaminetetraacetic acid | LC50 113 mg/l 96 hr             |
| Sodium Docecyl Sulfate          | LC50 6 mg/l 96 hr Daphnia magna |

#### Toxicity to Algae

|                                 |  |
|---------------------------------|--|
| Ethylenediaminetetraacetic acid | LC50 6 mg/l 72 hr                      |
| Sodium Docecyl Sulfate          | EC50 1.2mg/l 96hr Skeletonema costatum |

### 12.2 Persistence and degradability

# MATERIAL SAFETY DATA SHEET

| Product Name  | Buffer CL          |
|---|--------------------|
| <u>Persistence</u>  |                    |
| Ethylenediaminetetraacetic acid   | No data available. |
| Sodium Docecyl Sulfate  | log Kow 1.60       |
| <u>Degradability</u>  |                    |
|   | No data available  |
| <b>12.3 Bioaccumulative potential</b>   |                    |
| <u>Bioaccumulation</u>  |                    |
| Ethylenediaminetetraacetic acid   | BCF 123            |
| Sodium Docecyl Sulfate  | BCF 2.1 ~ 7.1      |
| <u>Biodegradability</u>   |                    |
| Ethylenediaminetetraacetic acid   | No data available  |
| Sodium Docecyl Sulfate  | 100(%) 28days      |
| <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 in accordance with all applicable environmental laws and regulations.                    |                    |
| <b>13.2 Disposal considerations</b>   |                    |
| Dispose of contents/container in accordance with all applicable environmental laws and regulations. |                    |
| <b>14. TRANSPORT INFORMATION</b>  |                    |
| <b>14.1 UN number</b>   |                    |
| ARD/RID   |                    |
| Ethylenediaminetetraacetic acid   | Not applicable     |
| Sodium Docecyl Sulfate  | No UN number       |
| <b>14.2 UN Proper shipping name</b>   |                    |
| Ethylenediaminetetraacetic acid   | Not applicable     |
| Sodium Docecyl Sulfate  | Not applicable     |
| <b>14.3 Transport hazard class(es)</b>  |                    |
| Ethylenediaminetetraacetic acid   | Not applicable     |
| Sodium Docecyl Sulfate  | Not applicable     |
| <b>14.4 Packing group</b>   |                    |
| ARD/RID   |                    |
| Ethylenediaminetetraacetic acid   | Not applicable     |
| Sodium Docecyl Sulfate  | Not applicable     |
| <b>14.5 Environmental hazards</b>   |                    |
| ARD/RID   |                    |
|   | No data available  |
| IMDG  |                    |
|   | No data available  |
| IATA  |                    |
|   | No data available  |
| <b>14.6 Special precautions for user</b>  |                    |
| Ethylenediaminetetraacetic acid   | No data available  |
| Sodium Docecyl Sulfate  | 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 CL

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

In accordance with international laws and regulations of country.

## 16. OTHER INFORMATION

### Issued date

2016-07-23

### Revision number

2

### Revision date

2024-08-12

### Reference

Corporate Solution From Thomson Micromedex  
ECB-ESIS  
ECOTOX  
IUCLID Chemical Data Sheet  
International Chemical Safety Cards (ICSC)  
TOXNET, U.S. National Library of Medicine  
The Chemical Database, The Department of Chemistry at the University of Akron  
Industrial poisoning handbook, Shin Kwang Publishing Co.  
Hazardous materials information management system, National Emergency Management  
Chemicals information system, National Institute of Environmental Research

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 TW

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

### 1.1 Product identifier

Product name Buffer TW

### 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 TW                                  |
|--------------------------|--|
| 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   | No data available |
| Odour Threshold                              | No data available |
| pH   | 7-8               |
| 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

# MATERIAL SAFETY DATA SHEET

| Product Name  | Buffer TW          |
|---|--------------------|
| <u>Acute toxicity</u>                                     |                    |
| 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  |

# MATERIAL SAFETY DATA SHEET

| Product Name | Buffer TW |
|--------------|-----------|
|--------------|-----------|

**12.5 Other adverse effects** No data available

## 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

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

Designated waste

### 15.5 Other requirements in domestic and other countries

Not applicable

## 16. OTHER INFORMATION

### Issued date

2016-10-31

### Revision number

1

### Revision date

2023-08-22

### 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.

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BW

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

### 1.1 Product identifier

Product name Buffer BW

### 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  
 Specific Target Organ toxicity (single exposure) 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.  
 H335 May cause respiratory irritation.

Precautionary statements

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P264 Wash skin/hands thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P271 Handle it only outdoors or in a well-ventilated area.  
 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.  
 P304+P340 IF INHALED: Move patients into fresh air and help them to get rest.  
 P305+P351+P338 IF IN EYES: Rinse with water attentively for several minutes.  
 Remove contact lenses, if possible. Keep washing.  
 P312 Consult with doctor if you feel unwell.  
 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.  
 P405 Store it being locked up.

Disposal

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

### 2.3 Other Non-GHS Classification

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BW

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance name       | CAS No. | Concentration (%) |
|----------------------|---------|-------------------|
| Guanidinium chloride | 50-01-1 | 70 - 80           |

## 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 minutes.<br>Remove contact lenses, if possible. Keep washing.<br>Get medical advice/attention, if symptom persists.                 |
| Following skin contact | Immediately flush the eyes and skin with water for more than 20 minutes.<br>Get medical advice/attention. Take off contaminated clothing and wash before reuse.               |
| Following inhalation   | If exposed to excessive dust or fumes, remove them with clean air.<br>Seek medical attention if you experience coughing or other symptoms.                                    |
| Following ingestion    | Rinse your mouth immediately.<br>Call a POISON CENTER or doctor/physician if you feel unwell.<br>Use proper respiratory medical device and do not try artificial respiration. |

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

|          |                   |
|----------|-------------------|
| Symptoms | No data available |
| Risks    | No data available |

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

|                   |                   |
|-------------------|-------------------|
| Special treatment | No data available |
|-------------------|-------------------|

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

|                              |  |
|------------------------------|--|
| Suitable extinguishing media | powder fire extinguisher, dry sand or dirt |
|------------------------------|--|

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

|                                      |                   |
|--------------------------------------|-------------------|
| Specific hazards during firefighting | No data available |
|--------------------------------------|-------------------|

### 5.3 Precautions for fire-fighters

|   |  |
|---|--|
| Special protective equipment for firefighters | Wear appropriate protective apparatus.<br>Extinguish while maintaining safe distance away from fire areas. |
|---|--|

### 5.4 Further information

No data available

## 6. ACCIDENTAL RELEASE MEASURES

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

|                      |  |
|----------------------|--|
| Personal precautions | Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.<br>Immediately clean spills and see section 5.3. Note the substances and conditions to avoid.<br>If not dangerous, stop the leak.<br>Note the substances and conditions to avoid. |
|----------------------|--|

### 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

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BW

Method for cleaning up

Soak up with inert absorbent material and place into the containers for chemical waste.  
Keep in suitable, closed containers for disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Advice on safe handling

Do NOT eat, drink or smoke when using this product.  
Empty containers may retain product residue and can be hazardous.  
Observe all precautionary measures on SDS and product labels.  
Take caution in handling and storage.  
Carefully remove the cap.

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

Requirements for storage rooms and vessels

Store in a well-ventilated area. Keep the container tightly sealed.

### 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

Use appropriate engineering controls such as process enclosure, local exhaust ventilation, or maintaining airborne concentrations below recommended exposure limits.  
Emergency eye wash stations and safety showers should be readily available near the area of use.

### 8.3 Personal protective equipment

Respiratory protection

Wear suitable protection for respiration tested and approved under appropriate government standards.  
Select protective gear according to the physical and chemical properties of the exposed material.

Suitable eye protection

Wear suitable protection for eyes tested and approved under appropriate government standards.

Hand protection

Wear suitable gloves tested and approved under appropriate government standards.  
Wash and dry hands. Check gloves before use.  
Dispose of gloves after use according to relevant regulations and GLP standards.  
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                        | Colorless         |
| Odor                         | No data available |
| Odour Threshold              | No data available |
| pH                           | 7.0-8.0           |
| Melting point/freezing point | No data available |
| Boiling point/boiling range  | No data available |
| Flash point                  | No data available |

# MATERIAL SAFETY DATA SHEET

| Product Name                                 | Buffer BW         |
|--|-------------------|
| 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                    | Not determined    |
| 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

Heat, spark, reducing substance

### 10.3 Materials to avoid

Strong oxidizing agents, strong bases, strong acids, metals

### 10.4 Hazardous decomposition products

Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Routes of exposure

No data available

### 11.2 Information on toxicological effects

#### Acute toxicity

Oral

Harmful if swallowed.

Dermal

No data available

Inhalation

No data available

#### Skin corrosion/irritation

Causes skin irritation.

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Respiratory sensitisation

No data available

#### Skin sensitisation

# MATERIAL SAFETY DATA SHEET

| Product Name   | Buffer BW                         |
|--|-----------------------------------|
|  | 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>                        | May cause respiratory irritation. |
| <u>Other harmful effects</u>   | No data available                 |
|  | 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 in accordance with all applicable environmental laws and regulations. |                                   |
| <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>  |                                   |
| Not regulated as a dangerous good  |                                   |
| <b>14.2 UN Proper shipping name</b>  |                                   |
| Not applicable   |                                   |

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer BW

**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**

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**

2015-01-07

**Revision number**

3

**Revision date**

2023-05-27

**Reference**

Corporate Solution From Thomson Micromedex  
 ECB-ESIS (European Chemical Substances Information System)  
 ECOTOX Database, EPA  
 IUCLID Chemical Data Sheet  
 International Chemical Safety Cards (ICSC)  
 TOXNET, U.S. National Library of Medicine  
 The Chemical Database, The Department of Chemistry at the University of Akron  
 Industrial poisoning handbook, Shin Kwang Publishing Co.  
 Hazardous materials information management system, National Emergency Management  
 Chemicals information system, National Institute of Environmental Research

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 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.

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

## 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.   |
| 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

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

## 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

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.

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

## 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

## 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.

# MATERIAL SAFETY DATA SHEET

Product Name

Buffer AE

## 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.

- END OF SAFETY DATA SHEET -

# MATERIAL SAFETY DATA SHEET

Product Name

Proteinase K

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

### 1.1 Product identifier

Product name Proteinase K

### 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]

Respiratory sensitization Category 1  
 Skin corrosion/irritation Category 2  
 Serious eye damage/eye irritation Category 2

### 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.  
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P264 Wash skin/hands thoroughly after handling.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P284 Wear respiratory protection.

Response

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
 P332+P313 If skin irritation occurs: Get medical advice/ attention.  
 P337+P313 If eye irritation persists: Get medical advice/ attention.  
 P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.  
 P362+P364 Take off contaminated clothing and wash before reuse.

Storage

No data available.

Disposal

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

### 2.3 Other Non-GHS Classification

None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

# MATERIAL SAFETY DATA SHEET

| Product Name   | Proteinase K |                   |  |
|----------------|--------------|-------------------|--|
| Substance name | CAS No.      | Concentration (%) |  |
| Proteinase K   | 39450-01-6   | 100               |  |

## 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.<br>Remove contact lenses. Continue rinsing. If present and easy to do, get immediate medical advice/attention. |
| Following skin contact | In case of skin contact: Take off immediately all contaminated clothing.<br>Rinse skin with water/ shower.  |
| Following inhalation   | After inhalation: fresh air. Call in physician.   |
| Following ingestion    | After swallowing: immediately make victim drink water (two glasses at most).<br>Consult with physician.   |

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

|                              |  |
|------------------------------|--|
| Suitable extinguishing media | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
|------------------------------|--|

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

|                                      |   |
|--------------------------------------|---|
| Specific hazards during firefighting | Nature of decomposition products not known. |
|--------------------------------------|---|

### 5.3 Precautions for fire-fighters

|   |  |
|---|--|
| Special protective equipment for firefighters | Stay in danger area only with self-contained breathing apparatus.<br>Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. |
|---|--|

### 5.4 Further information

No information available.

## 6. ACCIDENTAL RELEASE MEASURES

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

|                      |   |
|----------------------|---|
| Personal precautions | Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation.<br>Evacuate the danger area, observe emergency procedures, consult with an expert. |
|----------------------|---|

### 6.2 Environmental precautions

|                           |                   |
|---------------------------|-------------------|
| Environmental precautions | Prevent the leak. |
|---------------------------|-------------------|

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

|                        |   |
|------------------------|---|
| Method for cleaning up | Cover drains. Collect, bind, and pump off spills.<br>Observe possible material restrictions (see sections 7 and 10).<br>Take up carefully. Dispose of properly. Clean up affected area. |
|------------------------|---|

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

|                         |   |
|-------------------------|---|
| Advice on safe handling | Do not inhale substance/mixture. Immediately change contaminated clothing.<br>Take caution in handling and storage. Apply preventive skin protection. |
|-------------------------|---|

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

# MATERIAL SAFETY DATA SHEET

| Product Name | Proteinase K |
|--------------|--------------|
|--------------|--------------|

Requirements for storage rooms and vessels

Tightly closed.  
Keep locked up or in an area accessible only to those qualified or authorized.  
Store at +2°C to +8°C.

## 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

Immediately change contaminated clothing.  
Apply preventive skin protection. Wash hands and face after working with substance.

### 8.3 Personal protective equipment

Respiratory protection

For nuisance exposures, use type P95 (US) or type P1 (EU EN 143) particle respirator.  
For higher level protection, use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges.  
Use respirators and components tested and approved.

Suitable eye protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hand protection

Wear suitable gloves tested and approved under appropriate government standards such as KOSHA.  
Check gloves before use.  
Dispose of gloves after use according to relevant 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  | white or clear    |
| Odor   | No odor           |
| 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 |

# MATERIAL SAFETY DATA SHEET

| Product Name                        | Proteinase K      |
|-------------------------------------|-------------------|
| 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 recommended storage conditions.  
Stable under normal pressure and room temperature condition.

### 10.2 Conditions to avoid

No data available.

### 10.3 Materials to avoid

Strong oxidizing agents.

### 10.4 Hazardous decomposition products

In the event of fire: see section 5.

## 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

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Skin corrosion/irritation

No data available.

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Skin sensitisation

Causes skin irritation.

#### Carcinogenicity

IARC

identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No data available.

ACGIH

# MATERIAL SAFETY DATA SHEET

| Product Name  | Proteinase K       |
|---|--------------------|
| NTP   | No data available. |
| EU CLP  | 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  |
| <b>13. DISPOSAL CONSIDERATIONS</b>  |                    |
| <b>13.1 Waste treatment methods</b>   |                    |
| Dispose of in accordance with all applicable environmental laws and regulations.                    |                    |
| <b>13.2 Disposal considerations</b>   |                    |
| Dispose of contents/container in accordance with all applicable environmental laws and regulations. |                    |
| <b>14. TRANSPORT INFORMATION</b>  |                    |
| <b>14.1 UN number</b>   |                    |
| Not regulated as a dangerous good   |                    |
| <b>14.2 UN Proper shipping name</b>   |                    |

# MATERIAL SAFETY DATA SHEET

| Product Name   | Proteinase K                            |
|--|---|
|  | 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>  | Not applicable                          |
| <b>14.6 Special precautions for user</b>   | Not applicable                          |
| <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

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

No data available

### 15.5 Other requirements in domestic and other countries

In accordance with international laws and regulations of country.

## 16. OTHER INFORMATION

### Issued date

2015-05-24

### Revision number

2

### Revision date

2024-06-07

### Reference

Corporate Solution From Thomson Micromedex  
 ECB-ESIS  
 ECOTOX  
 IUCLID Chemical Data Sheet  
 International Chemical Safety Cards (ICSC)  
 TOXNET, U.S. National Library of Medicine  
 The Chemical Database, The Department of Chemistry at the University of Akron  
 Industrial poisoning handbook, Shin Kwang Publishing Co.  
 Hazardous materials information management system, National Emergency Management  
 Chemicals information system, National Institute of Environmental Research

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

PK Storage Buffer

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

### 1.1 Product identifier

Product name PK Storage Buffer

### 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 information available.  
 Signal word No information available.  
 Hazardous statements No information available.  
 Precautionary statements  
 Prevention No information available.  
 Response No information available.  
 Storage No information available.  
 Disposal No information available.

### 2.3 Other Non-GHS Classification

No data available

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance name | CAS No. | Concentration (%) |
|----------------|---------|-------------------|
| Glycerol       | 56-81-5 | 20-55             |

## 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.  
 Following inhalation Remove the person into fresh air. If experiencing symptoms, get medical advice/attention.  
 Following ingestion In case of ingestion, rinse mouth. Do NOT induce vomiting. If exposed or concerned, get medical advice/attention.

# MATERIAL SAFETY DATA SHEET

| Product Name  | PK Storage Buffer  |
|---|--|
| <b>5. FIRE FIGHTING MEASURES</b>  |  |
| <b>5.1 Extinguishing media</b><br>Suitable extinguishing media  | Small fire: dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, carbon dioxide (suitable extinguishing media)             |
| <b>5.2 Special hazards arising from the substance or mixture</b><br>Specific hazards during firefighting              | Inhalation or vapor or contact with substance may cause contamination and result in hazardous effects. Inhalation of substance may be hazardous. |
| <b>5.3 Precautions for fire-fighters</b><br>Special protective equipment for firefighters                             | Wear self-contained breathing apparatus when fighting fire. Spills may cause contamination. If safe to do, remove container from fire area.      |
| <b>5.4 Further information</b><br>No information available.   |  |
| <b>6. ACCIDENTAL RELEASE MEASURES</b>   |  |
| <b>6.1 Personal precautions, protective equipment and emergency procedures</b><br>Personal precautions                | Do NOT handle damaged containers or spill without appropriate protection. Avoid contact with the eyes, skin, and clothing.                       |
| <b>6.2 Environmental precautions</b><br>Environmental precautions   | Do NOT directly release into the environment.  |
| <b>6.3 Methods and material for containment and cleaning up</b><br>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><br>Advice on safe handling   | Avoid prolonged or repeated contact with skin. Avoid contact with the eyes, skin, and clothing.  |
| <b>7.2 Conditions for safe storage, including any incompatibilities</b><br>Requirements for storage rooms and vessels | Keep the container tightly sealed. Keep cool. Protect from sunlight.   |
| <b>7.3 Specific end use(s)</b><br>Specific end use(s)   | Laboratory chemicals.  |
| <b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b>   |  |
| <b>8.1 Control parameters</b><br>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>  | No information available.  |
| <b>8.3 Personal protective equipment</b><br>Respiratory protection  | No information available.  |

# MATERIAL SAFETY DATA SHEET

| Product Name             | PK Storage Buffer                                |
|--------------------------|--|
| Suitable eye protection  | Wear chemical-resistant eye and face protection. |
| Hand protection          | Wear suitable chemical-resistant gloves.         |
| 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   | No data available |
| Odour Threshold                              | No data available |
| pH   | 7-8               |
| 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 recommended storage conditions.  
Stable under normal pressure and room temperature condition.

### 10.2 Conditions to avoid

Heat/Spark/Flame - no smoking

### 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

# MATERIAL SAFETY DATA SHEET

| Product Name | PK Storage Buffer |
|--------------|-------------------|
|--------------|-------------------|

## 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

# MATERIAL SAFETY DATA SHEET

| Product Name   | PK Storage Buffer |
|--|-------------------|
| <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 in accordance with all applicable environmental laws and regulations.     |                   |
| <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>  |                   |
| Not applicable   |                   |
| <b>14.6 Special precautions for user</b>   |                   |
| Not applicable   |                   |
| <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>   |                   |
| No data available  |                   |
| <b>15.2 Toxic Chemicals Control Act</b>  |                   |
| No data available  |                   |
| <b>15.3 Safety Control of Dangerous Substances Act</b>                               |                   |
| No data available  |                   |
| <b>15.4 Wastes Control Act</b>   |                   |
| Not applicable   |                   |
| <b>15.5 Other requirements in domestic and other countries</b>                       |                   |
| In accordance with international laws and regulations of country.                    |                   |
| <b>16. OTHER INFORMATION</b>   |                   |
| <b>Issued date</b>   |                   |
| 2016-10-28   |                   |
| <b>Revision number</b>   |                   |
| 1  |                   |
| <b>Revision date</b>   |                   |
| 2024-06-08   |                   |
| <b>Reference</b>   |                   |

# MATERIAL SAFETY DATA SHEET

| Product Name | PK Storage Buffer |
|--------------|-------------------|
|--------------|-------------------|

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

Carrier RNA

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

### 1.1 Product identifiers

Trade name Carrier RNA

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

Identified uses Laboratory chemicals

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

Company GeneAll Biotechnology Co., Ltd.

Address geneall B/D, 303-7, Dongnam-ro, Songpa-gu, Seoul, Korea

### 1.4 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 information available.

Signal word No information available.

Hazard statements No information available.

#### Precautionary statements

Prevention No information available.

Response No information available.

Storage No information available.

Disposal No information available.

### 2.3 Other hazards

NFPA classification No information available.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name

CAS No.

Concentration (%)

Carrier RNA

26763-19-9

99%

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

General information 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.

Following skin contact Immediately seek medical advice/attention.

Following inhalation 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 ingestion Remove the victim into fresh air.

If exposed or concerned, get medical advice/attention.

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

# MATERIAL SAFETY DATA SHEET

| PRODUCT NAME  | Carrier RNA  |
|---|--|
| Symptoms  | No information available.  |
| Risks   | No information available.  |
| <b>4.3 Indication of any immediate medical attention and special treatment needed</b> |  |
| Special treatment   | No information available.  |
| <b>5. FIRE FIGHTING MEASURES</b>  |  |
| <b>5.1 Extinguishing media</b>  |  |
| Suitable extinguishing media  | Small fire: dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, carbon dioxide (suitable extinguishing media) |
| <b>5.2 Special hazards arising from the substance or mixture</b>                      |  |
| Specific hazards during firefighting  | Inhalation of substance may be hazardous.  |
| <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 information available.   |  |
| <b>6. ACCIDENTAL RELEASE MEASURES</b>   |  |
| <b>6.1 Personal precautions, protective equipment and emergency procedures</b>        |  |
| Personal precautions  | Avoid dust formation and inhalation.<br>Avoid contact with the eyes, skin, and clothing.   |
| <b>6.2 Methods and material for containment and cleaning up</b>                       |  |
| Method for cleaning up  | Keep cool. Keep container tightly closed. Store in a dry and well-ventilated place.<br>Store in a closed container for disposal      |
| <b>6.3 Reference to other sections</b>  |  |
| For personal protection, see Section 8 of the SDS.                                    |  |
| <b>7. HANDLING AND STORAGE</b>  |  |
| <b>7.1 Precautions for safe handling</b>  |  |
| Precautions for safe handling   | Install a suitable exhaust system where dust may accumulate<br>Take precautionary measures for fire prevention                       |
| <b>7.2 Conditions for safe storage, including any incompatibilities</b>               |  |
| Requirements for storage rooms and vessels  | Keep cool. Protect from sunlight.<br>Keep container tightly closed. Store in a dry and 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>   |  |
| KOSHA exposure limits   | No information available.  |
| ACGIH exposure limits   | No information available.  |
| Biological Exposure Indices (BEIs)  | No information available.  |
| <b>8.2 Exposure controls</b>  |  |
| Appropriate engineering controls  | No information available.  |
| Personal protective equipment   |  |

# MATERIAL SAFETY DATA SHEET

| PRODUCT NAME             | Carrier RNA                                      |
|--------------------------|--|
| Respiratory protection   | No information available.                        |
| Suitable eye protection  | Wear chemical-resistant eye and face protection. |
| Hand protection          | Wear suitable chemical-resistant gloves.         |
| 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                               | Solid                |
| Color  | White or ivory color |
| Odor   | No data available.   |
| Odor threshold                               | No data available.   |
| pH   | No data available.   |
| Melting point/freezing point                 | No data available.   |
| Initial 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 | -/-                  |
| Vapor pressure                               | No data available.   |
| Solubility(ies)                              | No data available.   |
| Vapor 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.   |
| Explosive properties                         | No data available.   |
| Oxidizing properties                         | No data available.   |

### 9.2 Other safety information

No data available.

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Stable under recommended storage conditions

### 10.2 Chemical stability

Stable under recommended storage conditions

### 10.3 Possibility of hazardous reactions

Stable under recommended storage conditions

### 10.4 Conditions to avoid

No data available.

# MATERIAL SAFETY DATA SHEET

PRODUCT NAME

Carrier RNA

## 10.5 Incompatible materials

No data available.

## 10.6 Hazardous decomposition products

No data available.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 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/irritation No data available.

Respiratory sensitisation No data available.

Skin sensitisation No data available.

Carcinogenicity

KOSHA No data available.

Korean Ministry of Employment and Labor No data available.

IARC No data available.

OSHA No data available.

ACGIH No data available.

NTP No data available.

EU CLP No data available.

Germ cell mutagenicity No data available.

Reproductive toxicity No data available.

STOT (SE) No data available.

STOT (RE) No data available.

Aspiration hazard No data available.

### 11.2 Routes of exposure

No data available.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Toxicity to Fish No data available.

Toxicity to Crustacea 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.

# MATERIAL SAFETY DATA SHEET

|              |             |
|--------------|-------------|
| PRODUCT NAME | Carrier RNA |
|--------------|-------------|

|  |                    |
|--|--------------------|
| <b>12.4 Mobility in soil</b>                   | No data available. |
| <b>12.5 Results of PBT and vPvB assessment</b> | No data available. |
| <b>12.6 Other adverse effects</b>              | No data available. |

## 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

|         |   |
|---------|---|
| ARD/RID | This product is NOT categorized under UN number |
| IMDG    | This product is NOT categorized under UN number |
| IATA    | This product is NOT categorized under UN number |

### 14.2 UN proper shipping name

|         |                 |
|---------|-----------------|
| ARD/RID | Not applicable. |
| IMDG    | Not applicable. |
| IATA    | Not applicable. |

### 14.3 Transport hazard class(es)

|         |                 |
|---------|-----------------|
| ARD/RID | Not applicable. |
| IMDG    | Not applicable. |
| IATA    | Not applicable. |

### 14.4 Packing group

|         |                 |
|---------|-----------------|
| ARD/RID | Not applicable. |
| IMDG    | Not applicable. |
| IATA    | Not applicable. |

### 14.5 Environmental hazards

|         |                    |
|---------|--------------------|
| ARD/RID | No data available. |
| IMDG    | No data available. |
| IATA    | No data available. |

### 14.6 Special precautions for users

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 Safety, health and environmental regulations/legislation specific for the substance or mixture

|   |  |
|---|--|
| The Industrial Safety and Health Law in Korea | No data available.   |
| Toxic Chemical Control Act                    | No data available.   |
| Dangerous Material Safety Control Act         | No data available.   |
| Wastes Management Act                         | Dispose of as hazardous waste in compliance with local and national regulations. |

# MATERIAL SAFETY DATA SHEET

PRODUCT NAME

Carrier RNA

Other requirements in domestic and other countries

Domestic regulations

Persistent Organic Pollutants Regulation Not applicable.

International regulations

US OSHA Hazards Not applicable.

US CERCLA/Superfund Not applicable.

US EPCRA Section 302 Not applicable.

US EPCRA Section 304 Not applicable.

US EPCRA Section 313 Not applicable.

US Rotterdam Convention (PICs) Not applicable.

US Stockholm Convention (POPs) Not applicable.

US Montreal Protocol (ODSs) Not applicable.

EU Classification ((EC) No. 1272/2008) Not applicable.

EU Classification (Hazard Statements) Not applicable.

EU Classification (Safety Statements) Not applicable.

## 16. OTHER INFORMATION

**Issued date**

2016.10.31

**Revision number**

1

**Revision date**

2025.05.25

**Reference**

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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 -