

# INDEX PAGE

Company GeneAll Biotechnology.  
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The following MSDS included following products;

Cat. No	Product description
322-150	Ribospin™ vRD II [50preps]
322-103	Ribospin™ vRD II [300preps]
322-108	Ribospin™ vRD II sample [8preps]

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer NVL

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

### 1.1 Product identifiers

Trade name Buffer NVL

### 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]

Acute oral toxicity Category 4

Skin corrosion/irritation Category 2

### 2.2 Label elements

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

Hazard pictograms



Signal word

Warning

H302 Harmful if swallowed.

H315 Causes skin irritation.

Precautionary statements

P264 Wash skin/hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

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

Response

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P330 – Rinse mouth.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

Storage

Disposal

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

### 2.3 Other Non- GHS Classification

No information available.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	CAS No.	Concentration (%)
GUANIDINE THIOCYANATE	593- 84- 0	60 - 70

# MATERIAL SAFETY DATA SHEET

<b>PRODUCT NAME</b>	Buffer NVL
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## 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	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.

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

Symptoms	No information available.
Risks	No information available.

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

Special treatment	No information available.
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## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media	Use powder fire extinguisher, dry sand or dirt.
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### 5.2 Special hazards arising from the substance or mixture

Special hazards arising from the substance or mixture	No information available.
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### 5.3 Precautions for fire- fighters

Special protective equipment for firefighters	Wear appropriate protective apparatus. Extinguish while maintaining safe distance away from fire areas.
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### 5.4 Further information

No information available.
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## 6. ACCIDENTAL RELEASE MEASURES

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

Personal precautions	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Make sure it is properly ventilated. Stop leak if safe to do so.
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### 6.2 Environmental precautions

Environmental precautions	Avoid dispersal of spill material and runoff into waterway, sewers, drainage, or contained areas. Avoid release to the environment.
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### 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. Do NOT wash with water
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### 6.4 Reference to other sections

For personal protection, see Section 8 of the SDS.
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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer NVL

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Precautions for safe handling

Do NOT handle until all safety precautions have been read and understood.

Wash the handling area thoroughly after handling

Take caution in opening the container.

Take caution in handling and storage.

### 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.

Close the open container cautiously to prevent leaking

Specific end use(s)

Laboratory chemicals.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

KOSHA exposure limits

No information available.

ACGIH exposure limits

No information available.

Biological Exposure Indices (BEIs)

No information available.

### 8.2 Exposure controls

Appropriate engineering 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

Personal protective equipment

Respiratory protection

Wear suitable protection tested and approved under appropriate government standards such as KOSHA. 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. 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

Characteristic odor

Odor threshold

No data available.

pH

7.0- 8.0

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.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer NVL

Upper/lower flammability or explosive limits	No data available.
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**
**10.2 Chemical stability and possibility of hazardous reactions**

No reactivity if stored and applied as directed

**10.3 Conditions to avoid**

Heat, spark, reducing substance.

**10.4 Incompatible materials**

Strong oxidizing agents, strong bases, strong acids, metals

**10.5 Hazardous decomposition products**

Guanidinium chloride

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

**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	
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	
STOT (SE)	No data available.
STOT (RE)	No data available.
Aspiration hazard	No data available.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer NVL

**11.2 Routes of exposure**

Routes of exposure

May cause irritation. Liquid can be absorbed through the mouth, skin, digestive organ

**12. ECOLOGICAL INFORMATION**
**12.1 Toxicity**

No data available.

**12.2 Persistence and degradability**

Persistence

No data available.

Degradability

No data available.

**12.3 Bioaccumulative potential**

Bioaccumulation

BCF 3.162 (L/kg wet- wt)

Biodegradability

(Cut- off value=0.3474;non- biodegradable substanc(BIOWIN6))

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

No data available.

**12.6 Other adverse effects**

No data available.

**13. DISPOSAL CONSIDERATIONS**
**13.1 Waste treatment methods**

Dispose residue and non- regenerated solution in accordance with all applicable environmental laws and regulations.

**13.2 Disposal considerations**

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

**14. TRANSPORT INFORMATION**
**14.1 UN number**

ARD/RID

3267

IMDG

3267

IATA

3267

**14.2 UN proper shipping name**

ARD/RID

CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.(Guanidine thiocyanate)

IMDG

CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.(Guanidine thiocyanate)

IATA

CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.(Guanidine thiocyanate)

**14.3 Transport hazard class(es)**

ARD/RID

8

IMDG

8

IATA

8

**14.4 Packing group**

ARD/RID

III

IMDG

III

IATA

III

**14.5 Environmental hazards**

ARD/RID

Not applicable.

IMDG

Not applicable.

IATA

Not applicable.

**14.6 Special precautions for users**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer NVL

Emergency measures in case of fire F- A

Emergency measures in case of leaking S- B

**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	Not applicable.
Toxic Chemical Control Act	Not applicable.
Dangerous Material Safety Control Act	Not regulated as a dangerous good
Wastes Management Act	Dispose of contents/container in accordance with all applicable environmental laws and regulations.
Other requirements in domestic and other countries	Not applicable.
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.

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

2016.10.31

**Revision number**

2

**Revision date**

2023.05.23

**Reference**

Sigma Aldrich Korea ([www.sial.co.kr](http://www.sial.co.kr))  
 National Emergency Management Agency(<http://hazmat.nema.go.kr/index.jsp>)  
 lookchem  
 National Emergency Management Agency(<http://hazmat.nema.go.kr/index.jsp>)  
 Quantitative Structure Activity Relation(QSAR)  
 Registry of Toxic Effects of Chemical Substances  
 EPI Suite  
 Quantitative Structure Activity Relation(QSAR)

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 NVL

- END OF SAFETY DATA SHEET -

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RB1

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

### 1.1 Product identifiers

Trade name Buffer RB1

### 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]

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

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Precautionary statements

P264 Wash skin/hands thoroughly after handling.

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

P302 + P352 – IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P362 Take off contaminated clothing and wash before reuse.

Storage

Disposal

### 2.3 Other Non- GHS Classification

NFPA SCALE (0- 4)

Health=0, Flammability=0, Reactivity=0

## 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

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RB1

General information	Notify doctor/physician about the substance to take necessary actions.
Following eye contact	IF ON EYES: flush the eyes immediately with water for at least 15 minutes. Remove contact lenses, 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.

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

Symptoms	No information available.
Risks	No information available.

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

Special treatment	No information available.
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**5. FIRE FIGHTING MEASURES**
**5.1 Extinguishing media**

Suitable extinguishing media	Use powder fire extinguisher, dry sand or dirt.
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**5.2 Special hazards arising from the substance or mixture**

Special hazards arising from the substance or mixture	No information available.
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**5.3 Precautions for fire- fighters**

Special protective equipment for firefighters	Wear appropriate protective apparatus. Extinguish while maintaining safe distance away from fire areas.
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**5.4 Further information**

No information available.

**6. ACCIDENTAL RELEASE MEASURES**
**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions	Note the substances and conditions to avoid
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**6.2 Environmental precautions**

Environmental precautions	Avoid dispersal of spill material and runoff into waterway, sewers, drainage, or contained areas.
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**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.
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**6.4 Reference to other sections**

For personal protection, see Section 8 of the SDS.

**7. HANDLING AND STORAGE**
**7.1 Precautions for safe handling**

Precautions for safe handling	Do NOT handle until all safety precautions have been read and understood. Wash handling area thoroughly after handling. Take caution in opening the container.
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# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RB1

**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.
	Carefully reseal the opened container and keep container stand to prevent leaking.
Specific end use(s)	Laboratory chemicals.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**8.1 Control parameters**

KOSHA exposure limits	No information available.
ACGIH exposure limits	No information available.
Biological Exposure Indices (BEIs)	No information available.

**8.2 Exposure controls**

Appropriate engineering controls	Use appropriate engineering controls such as process enclosure, local exhaust ventilation, or maintaining airborne concentrations below recommended exposure limits. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling.
Personal protective equipment	
Respiratory protection	Wear suitable protection tested and approved under appropriate government standards such as KOSHA. 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. 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 odor
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	No data available.
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.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RB1

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**
**10.2 Chemical stability and possibility of hazardous reactions**

Stable under recommended storage conditions

**10.3 Conditions to avoid**

Heat, spark, reducing substance.

**10.4 Incompatible materials**

Strong oxidizing agents, strong bases, strong acids, metals

**10.5 Hazardous decomposition products**

Guanidinium chloride

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

**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	
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	
STOT (SE)	No data available.
STOT (RE)	No data available.
Aspiration hazard	No data available.

**11.2 Routes of exposure**

Routes of exposure May cause irritation.

**12. ECOLOGICAL INFORMATION**
**12.1 Toxicity**

No data available.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RB1

**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 Results of PBT and vPvB assessment**

No data available.

**12.6 Other adverse effects**

No data available.

**13. DISPOSAL CONSIDERATIONS**
**13.1 Waste treatment methods**

Dispose in accordance with all applicable environmental laws and regulations.

**13.2 Disposal considerations**

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

**14. TRANSPORT INFORMATION**
**14.1 UN number**

ARD/RID Not regulated as a dangerous good

IMDG Not regulated as a dangerous good

IATA Not regulated as a dangerous good

**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**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RB1

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	In accordance with all applicable wastes management laws and regulations.
Other requirements in domestic and other countries	Not applicable.
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.

## 16. OTHER INFORMATION

**Issued date**

2016.10.31

**Revision number**

3

**Revision date**

2023.05.23

**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  
 IUCLID  
 ECHA, HSDB

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 -

# SAFETY DATA SHEET

Product Name

Buffer RBW

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

### 1.1 Product identifier

Product name Buffer RBW

### 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 B/D, 303-7, Dongnam-ro, Songpa-gu, Seoul, Korea  
Information contact <+82-2-407-0096  
E-Mail (competent person) sales@geneall.com  
Emergency Telephone Number <+82-2-407-0096

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Acute oral toxicity Category 4  
Skin corrosion/irritation Category 2  
Serious eye damage/eye irritation Category 2  
Specific target organ systemic toxicity (single exposure) Category 3

### 2.2 Label elements

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

Hazard pictograms



Signal word

Warning

Hazard statements

H302 Harmful if swallowed.  
H315 Cause 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 Use only outdoors or in a well-ventilated area.

Response

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 IF SWALLOWED: 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.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER or doctor/physician 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 Store in a well-ventilated place. Keep container tightly closed.

Disposal

P405 Store locked up.

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

### 2.3 Other Non-GHS Classification

NFPA SCALE (0-4)

No information available.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	Mixture		
	Substance name	CAS No.	Concentration (%)
	Guanidium 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 inhalation

If exposed to large amounts of dust or fume, remove with clean air. In case of coughing or other symptoms, get medical advice/attention.

Following skin contact

In case of contact with affected area, immediately flush skin or eyes with water for at least 20 minutes.

If skin irritation occurs, get medical advice/attention.

Take off contaminated clothing and wash before reuse.

Following eye contact

Immediately flush the eyes with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists, get medical advice/attention.

Following ingestion

Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

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

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

Symptoms

No information available.

Risks

Harmful if swallowed.

Causes serious eye damage.

Causes severe burns.

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

Special treatment

No information available.

## 5. FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

Suitable extinguishing media

Use powder fire extinguisher, dry sand or dirt.

### 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 firefighters

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.  
Stop leak if safe to do so.  
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.

#### 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.

### 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.  
Take caution in opening the container.

#### 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 information available.

ACGIH exposure limits

No information available.

Biological Exposure Indices (BEIs)

No information available.

#### 8.2 Exposure controls

Appropriate engineering controls

Use appropriate engineering controls such as process enclosure, local exhaust ventilation, or maintaining airborne concentrations below recommended exposure limits.  
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling.

#### Personal protective equipment

Respiratory protection

Wear suitable protection tested and approved under appropriate government standards such as KOSHA. 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. 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 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
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
Explosive properties	No data available
Oxidizing properties	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

### 10.4 Conditions to avoid

Heat, spark, reducing substance.

### 10.5 Incompatible materials

Strong oxidizing agents, strong bases, strong acids, metals

### 10.6 Hazardous decomposition products

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

## 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/eye irritation No data available.

Respiratory sensitisation	No data available.
Skin sensitiation	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)	Produces irritation to the respiratory system.
STOT (RE)	No data available.
Aspiration hazard	Produces irritation to the respiratory system.

## 11.2 Routes of exposure

May cause irritation.

## 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 Persistnece 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

### 12.5 Results of PBT and vPvB assessment

### 12.6 Other adverse effects

## 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 No.

ARD/RID	Not regulated as a dangerous good
IMDG	Not regulated as a dangerous good
IATA	Not regulated as a dangerous good

### 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 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 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.
Controlled Hazardous Substances	No data available.
Other requirements in domestic and other countries	In accordance with international laws and regulations of country.

### 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 RNW

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

### 1.1 Product identifiers

Trade name Buffer RNW

### 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 (%)

No hazardous substance.

## 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.

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 victim 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**

Buffer RNW

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

Symptoms No information available.  
Risks No information available.

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

Special treatment No information available.

**5. FIRE FIGHTING MEASURES**
**5.1 Extinguishing media**

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

**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.  
Inhalation of substance may be hazardous.

**5.3 Precautions for fire- fighters**

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.

**5.4 Further information**

No information available.

**6. ACCIDENTAL RELEASE MEASURES**
**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions Do NOT handle damaged containers or spill without appropriate protection.  
Avoid contact with the eyes, skin, and clothing.

**6.2 Environmental precautions**

Environmental precautions Do NOT directly release into the environment.

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

Method for cleaning up Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For personal protection, see Section 8 of the SDS.

**7. HANDLING AND STORAGE**
**7.1 Precautions for safe handling**

Precautions for safe handling Avoid prolonged or repeated contact with skin.  
Avoid contact with the eyes, skin, and clothing.

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

Requirements for storage rooms and vessels Keep the container tightly sealed.  
Keep cool. Protect from 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 information available.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RNW

ACGIH exposure limits No information available.

Biological Exposure Indices (BEIs) No information available.

**8.2 Exposure controls**

Appropriate engineering controls No information available.

Personal protective equipment

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	Liquid
Color	Colorless
Odor	No data available.
Odor threshold	No data available.
pH	7 - 8
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**

No reactivity if stored and applied as directed.

Stable at ambient conditions.

**10.2 Chemical stability**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RNW

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

**10.3 Possibility of hazardous reactions**

May evolve corrosive/toxic fumes when heated.

**10.4 Conditions to avoid**

No data available.

**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.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RNW

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 Results of PBT and vPvB assessment**

No data available.

**12.6 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**

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.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Buffer RNW

Dangerous Material Safety Control Act	No data available.
Wastes Management Act	No data available.
Other requirements in domestic and other countries	Dispose of as hazardous waste in compliance with local and national regulations.
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**

2016.10.28

**Revision number**

2

**Revision date**

2023.05.28

**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 -

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Nuclease- Free Water

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

### 1.1 Product identifiers

Trade name Nuclease- Free Water

### 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.

Concent-  
ration (%)

No hazardous substance.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

General information	No information available.
Following eye contact	No information available.
Following skin contact	No information available.
Following inhalation	If victim is not breathing, perform cardiopulmonary resuscitation (CPR).
Following ingestion	No information available.

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

Symptoms No information available.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Nuclease- Free Water

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

Special treatment No information available.

**5. FIRE FIGHTING MEASURES**
**5.1 Extinguishing media**

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

**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 self- contained breathing apparatus when fighting fire.

**5.4 Further information**

No information available.

**6. ACCIDENTAL RELEASE MEASURES**
**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions No data available.

**6.2 Environmental precautions**

Environmental precautions No data available.

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

Method for cleaning up Clean up with suitable absorbent (cloth, fleece).

**6.4 Reference to other sections**

For personal protection, see Section 8 of the SDS.

**7. HANDLING AND STORAGE**
**7.1 Precautions for safe handling**

Precautions for safe handling No data available.

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

Requirements for storage rooms and vessels No special storage required.

**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 information available.

ACGIH exposure limits No information available.

Biological Exposure Indices (BEIs) No information available.

**8.2 Exposure controls**

Appropriate engineering controls No information available.

Personal protective equipment

Respiratory protection No information available.

Suitable eye protection No information available.

Hand protection No information available.

Skin and body protection No information available.

**9.1 Information on basic physical and chemical properties**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Nuclease- Free Water

Physical state	Liquid
Color	Colorless.
Odor	No data available.
Odor threshold	No data available.
pH	5~ 6
Melting point/freezing point	0 °C
Initial boiling point/boiling range	100 °C
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	18.02 g/mol
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**

No reactivity if stored and applied as directed.

Stable at ambient conditions.

**10.2 Chemical stability**

No reactivity if stored and applied as directed.

**10.3 Possibility of hazardous reactions**

No data available.

**10.4 Conditions to avoid**

No data available.

**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.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Nuclease- Free Water

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.

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

No data available.

**12.6 Other adverse effects**

No data available.

**13. DISPOSAL CONSIDERATIONS**
**13.1 Waste treatment methods**

This substance can be disposed of as waste water after neutralization, 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**

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Nuclease- Free Water

**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	No data available.
IMDG	No data available.
IATA	No data available.

**14.3 Transport hazard class(es)**

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

**14.4 Packing group**

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

**14.5 Environmental hazards**

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

**14.6 Special precautions for users**

Emergency Schedule (EmS) - Fire	NOT dangerous goods.
Emergency Schedule (EmS) - Spillage	NOT dangerous goods.

**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	NOT controlled substance.
Toxic Chemical Control Act	NOT controlled substance.
Dangerous Material Safety Control Act	NOT controlled substance.
Wastes Management Act	NOT controlled substance.
Other requirements in domestic and other countries	In accordance with international laws and regulations of country.
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.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Nuclease- Free Water

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**

2

**Revision date**

2023.05.29

**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 -

# 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.

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

Special treatment

No information available.

**5. FIRE FIGHTING MEASURES**
**5.1 Extinguishing media**

Suitable extinguishing media

Small fire: dry sand, dry chemical, alcohol- resistant foam, water spray, regular foam, carbon dioxide (suitable extinguishing media)

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

Specific hazards during firefighting

Inhalation of substance may be hazardous.

**5.3 Precautions for fire- fighters**

Special protective equipment for firefighters

Wear self- contained breathing apparatus when fighting fire.

**5.4 Further information**

No information available.

**6. ACCIDENTAL RELEASE MEASURES**
**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions

Avoid dust formation and inhalation.

Avoid contact with the eyes, skin, and clothing.

**6.2 Methods and material for containment and cleaning up**

Method for cleaning up

Keep cool. Keep container tightly closed. Store in a dry and well- ventilated place. Store in a closed container for disposal

**6.3 Reference to other sections**

For personal protection, see Section 8 of the SDS.

**7. HANDLING AND STORAGE**
**7.1 Precautions for safe handling**

Precautions for safe handling

Install a suitable exhaust system where dust may accumulate

Take precautionary measures for fire prevention

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

Requirements for storage rooms and vessels

Keep cool. Protect from sunlight.

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

**7.3 Specific end use(s)**

Specific end use(s)

Laboratory chemicals.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**8.1 Control parameters**

KOSHA exposure limits

No information available.

ACGIH exposure limits

No information available.

Biological Exposure Indices (BEIs)

No information available.

**8.2 Exposure controls**

Appropriate engineering controls

No information available.

Personal protective equipment

Respiratory protection

No information available.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Carrier RNA

Suitable eye protection  
Hand protection  
Skin and body protection

Wear chemical- resistant eye and face protection.  
Wear suitable chemical- resistant gloves.  
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.

### 10.5 Incompatible materials

No data available.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Carrier RNA

**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.

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

No data available.

**12.6 Other adverse effects**

No data available.

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Carrier RNA

## 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.

Other requirements in domestic and other countries

Domestic regulations

Persistent Organic Pollutants Regulation

Not applicable.

International regulations

# MATERIAL SAFETY DATA SHEET

**PRODUCT NAME**

Carrier RNA

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**

2

**Revision date**

2023.05.27

**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 -