

Table. Celemics\_MSDS\_cDNA\_Synthesis\_kit

Celemics MSDS_1001_5X RNA Fragmentation Buffer_English_V2	1
Celemics MSDS_1002_Primer_English_V2	7
Celemics MSDS_1003_dNTP Mixture_English_V2	13
Celemics MSDS_1004_1st Strand Synthesis Buffer 1_English_V2	19
Celemics MSDS_1005_1st Strand Synthesis Buffer 2_English_V2	25
Celemics MSDS_1006_RNase Inhibitor_English_V2	31
Celemics MSDS_1007_Reverse Transcriptase_English_V2	38
Celemics MSDS_1008_2nd Strand Synthesis 10X Buffer 1_English_V2	45
Celemics MSDS_1009_2nd Strand Synthesis Enzyme 1_English_V2	51
Celemics MSDS_1010_2nd Strand Synthesis Enzyme 2_English_V2	58
Celemics MSDS_1011_2nd Strand Synthesis Buffer 2_English_V2	65
Celemics MSDS_1012_2nd Strand Synthesis Enzyme 3_English_V2	72



## Material Safety Data Sheet

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

---

#### Identification of the substance or mixture

**Product name** : 5X RNA Fragmentation Buffer

**Product Number** : 1001

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

---

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS****Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
No information applicable	-	-	-

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES****Description of first aid measures****Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES****Extinguishing media****Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

---

## Section 6. ACCIDENTAL RELEASE MEASURES

---

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.  
Always wear recommended Personal Protective Equipment.  
Use personal protection equipment.  
See section 8 for more detail.

### Environmental precautions

No special environmental precautions required.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

---

## Section 7. HANDLING AND STORAGE

---

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### Specific end use(s)

For research use only.

---

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Control parameters

**Exposure Limits**                      Contains no substances with occupational exposure limit values.

**Engineering measures**              Ensure adequate ventilation, especially in confined areas.

### Exposure controls

#### Personal protective Equipment

##### Respiratory protection

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

##### Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### Eye protection

Tight sealing safety goggles.

##### Skin and Body protection

Wear suitable protective clothing.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

##### Environmental exposure controls

No special environmental precautions required.

---

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

State	Liquid
Color	Colourless
Odour	No information available
Odour threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Initial boiling point and boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapour pressure	No information available
Vapour density	No information available
Relative density	No information available
Water solubility	No information available
Partition coefficient: n-octanol/ water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

---

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

### Thermal decomposition

No information available.

---

## Section 11. TOXICOLOGICAL INFORMATION

---

### Information on toxicological effects

There is no evidence available indicating acute toxicity.

### Principal Routes of Exposure

<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

---

### Toxicity

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Mobility in soil** No information available

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

### Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other adverse effect** No information available

## Section 13. DISPOSAL CONSIDERATIONS

---

### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

## Section 14. TRANSPORT INFORMATION

---

### IATA/ADR/DOT-US/IMDG

Not classified as dangerous in the meaning of transport regulations.

**UN number** No information available

**UN proper shipping name** No information available

**Transport hazard class(es)** No information available

**Packing group** No information available

### Environmental hazards

No information available.

### Special precautions for user

No information available.

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

No information available.

## Section 15. REGULATORY INFORMATION

---

### Regulation under the Occupational Safety and Health Act

No information available.

**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

**Dangerous Substances Safety Management Act**

No information available.

**Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**

**Domestic act**

**Persistent organic pollutants control Act**

No information available

**Foreign Act**

**American supervision information**

No information applicable

**CERCLA**

No information applicable

**EPCRA 302**

No information applicable

**EPCRA 304**

No information applicable

**EPCRA 313**

No information applicable

**American supervision information**

No information applicable

**(Rotterdam agreement material)**

**American supervision information**

No information applicable

**(Stockholm agreement material)**

**American supervision information**

No information applicable

**(Montreal protocol material)**

**EU Classification information**

No information applicable

**(Confirmed classification results)**

**EU Classification information**

No information applicable

**(Danger expression)**

**EU Classification information**

No information applicable

**(Safety expression)**

**Section 16. OTHER INFORMATION**

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : Primer

**Product Number** : 1002

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage



No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
No information applicable	-	-	-

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES**

**Description of first aid measures**

**Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES**

**Extinguishing media**

**Suitable extinguishing media** Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media** No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

---

## Section 6. ACCIDENTAL RELEASE MEASURES

---

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.  
Always wear recommended Personal Protective Equipment.  
Use personal protection equipment.  
See section 8 for more detail.

### Environmental precautions

No special environmental precautions required.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

---

## Section 7. HANDLING AND STORAGE

---

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### Specific end use(s)

For research use only.

---

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Control parameters

**Exposure Limits**                      Contains no substances with occupational exposure limit values.

**Engineering measures**              Ensure adequate ventilation, especially in confined areas.

### Exposure controls

#### Personal protective Equipment

##### Respiratory protection

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

##### Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### Eye protection

Tight sealing safety goggles.

##### Skin and Body protection

Wear suitable protective clothing.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

##### Environmental exposure controls

No special environmental precautions required.

---

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

State	Liquid
Color	Colourless
Odour	No information available
Odour threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Initial boiling point and boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapour pressure	No information available
Vapour density	No information available
Relative density	No information available
Water solubility	No information available
Partition coefficient: n-octanol/ water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

---

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

### Thermal decomposition

No information available.

---

## Section 11. TOXICOLOGICAL INFORMATION

---

### Information on toxicological effects

There is no evidence available indicating acute toxicity.

### Principal Routes of Exposure

<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

---

### **Toxicity**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Mobility in soil** No information available

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

### **Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other adverse effect** No information available

## Section 13. DISPOSAL CONSIDERATIONS

---

### **Waste treatment methods**

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

## Section 14. TRANSPORT INFORMATION

---

### **IATA/ADR/DOT-US/IMDG**

Not classified as dangerous in the meaning of transport regulations.

**UN number** No information available

**UN proper shipping name** No information available

**Transport hazard class(es)** No information available

**Packing group** No information available

### **Environmental hazards**

No information available.

### **Special precautions for user**

No information available.

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

No information available.

## Section 15. REGULATORY INFORMATION

---

### **Regulation under the Occupational Safety and Health Act**

No information available.

**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

**Dangerous Substances Safety Management Act**

No information available.

**Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**
**Domestic act**
**Persistent organic pollutants control Act**

No information available

**Foreign Act**
**American supervision information**

No information applicable

**CERCLA**

No information applicable

**EPCRA 302**

No information applicable

**EPCRA 304**

No information applicable

**EPCRA 313**

No information applicable

**American supervision information**

No information applicable

**(Rotterdam agreement material)**
**American supervision information**

No information applicable

**(Stockholm agreement material)**
**American supervision information**

No information applicable

**(Montreal protocol material)**
**EU Classification information**

No information applicable

**(Confirmed classification results)**
**EU Classification information**

No information applicable

**(Danger expression)**
**EU Classification information**

No information applicable

**(Safety expression)**
**Section 16. OTHER INFORMATION**


---

**Reason for revision**                      **SDS sections updated**

**Revision number**                         **2**

**Revision date**                              **24-Nov-2021**

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : dNTP Mixture

**Product Number** : 1003

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS****Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
No information applicable	-	-	-

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES****Description of first aid measures****Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES****Extinguishing media****Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

---

## Section 6. ACCIDENTAL RELEASE MEASURES

---

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.  
Always wear recommended Personal Protective Equipment.  
Use personal protection equipment.  
See section 8 for more detail.

### Environmental precautions

No special environmental precautions required.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

---

## Section 7. HANDLING AND STORAGE

---

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### Specific end use(s)

For research use only.

---

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Control parameters

**Exposure Limits**                      Contains no substances with occupational exposure limit values.

**Engineering measures**              Ensure adequate ventilation, especially in confined areas.

### Exposure controls

#### Personal protective Equipment

##### Respiratory protection

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

##### Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### Eye protection

Tight sealing safety goggles.

##### Skin and Body protection

Wear suitable protective clothing.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

##### Environmental exposure controls

No special environmental precautions required.



---

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

State	Liquid
Color	Colourless
Odour	No information available
Odour threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Initial boiling point and boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapour pressure	No information available
Vapour density	No information available
Relative density	No information available
Water solubility	No information available
Partition coefficient: n-octanol/ water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

---

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

### Thermal decomposition

No information available.

---

## Section 11. TOXICOLOGICAL INFORMATION

---

### Information on toxicological effects

There is no evidence available indicating acute toxicity.

### Principal Routes of Exposure

<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

---

<b>Toxicity</b>	
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.	
<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Results of PBT and vPvB assessment</b>	
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.	
<b>Other adverse effect</b>	No information available

## Section 13. DISPOSAL CONSIDERATIONS

---

<b>Waste treatment methods</b>	
The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.	

## Section 14. TRANSPORT INFORMATION

---

<b>IATA/ADR/DOT-US/IMDG</b>	
Not classified as dangerous in the meaning of transport regulations.	
<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available
<b>Environmental hazards</b>	
No information available.	
<b>Special precautions for user</b>	
No information available.	
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	
No information available.	

## Section 15. REGULATORY INFORMATION

---

<b>Regulation under the Occupational Safety and Health Act</b>	
No information available.	

**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

**Dangerous Substances Safety Management Act**

No information available.

**Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**

**Domestic act**

**Persistent organic pollutants control Act**

No information available

**Foreign Act**

**American supervision information**

No information applicable

**CERCLA**

No information applicable

**EPCRA 302**

No information applicable

**EPCRA 304**

No information applicable

**EPCRA 313**

No information applicable

**American supervision information**

No information applicable

**(Rotterdam agreement material)**

**American supervision information**

No information applicable

**(Stockholm agreement material)**

**American supervision information**

No information applicable

**(Montreal protocol material)**

**EU Classification information**

No information applicable

**(Confirmed classification results)**

**EU Classification information**

No information applicable

**(Danger expression)**

**EU Classification information**

No information applicable

**(Safety expression)**

**Section 16. OTHER INFORMATION**

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : 1st Strand Synthesis Buffer 1

**Product Number** : 1004

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
No information applicable	-	-	-

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES**

**Description of first aid measures**

**Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES**

**Extinguishing media**

**Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

---

## Section 6. ACCIDENTAL RELEASE MEASURES

---

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.  
Always wear recommended Personal Protective Equipment.  
Use personal protection equipment.  
See section 8 for more detail.

### Environmental precautions

No special environmental precautions required.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

---

## Section 7. HANDLING AND STORAGE

---

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### Specific end use(s)

For research use only.

---

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Control parameters

**Exposure Limits**                      Contains no substances with occupational exposure limit values.

**Engineering measures**              Ensure adequate ventilation, especially in confined areas.

### Exposure controls

#### Personal protective Equipment

##### Respiratory protection

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

##### Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### Eye protection

Tight sealing safety goggles.

##### Skin and Body protection

Wear suitable protective clothing.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

##### Environmental exposure controls

No special environmental precautions required.

---

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

State	Liquid
Color	Colourless
Odour	No information available
Odour threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Initial boiling point and boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapour pressure	No information available
Vapour density	No information available
Relative density	No information available
Water solubility	No information available
Partition coefficient: n-octanol/ water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

---

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

### Thermal decomposition

No information available.

---

## Section 11. TOXICOLOGICAL INFORMATION

---

### Information on toxicological effects

There is no evidence available indicating acute toxicity.

### Principal Routes of Exposure

<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

---

<b>Toxicity</b>	
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.	
<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Results of PBT and vPvB assessment</b>	
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.	
<b>Other adverse effect</b>	No information available

## Section 13. DISPOSAL CONSIDERATIONS

---

<b>Waste treatment methods</b>	
The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.	

## Section 14. TRANSPORT INFORMATION

---

<b>IATA/ADR/DOT-US/IMDG</b>	
Not classified as dangerous in the meaning of transport regulations.	
<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available
<b>Environmental hazards</b>	
No information available.	
<b>Special precautions for user</b>	
No information available.	
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	
No information available.	

## Section 15. REGULATORY INFORMATION

---

<b>Regulation under the Occupational Safety and Health Act</b>	
No information available.	



**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

**Dangerous Substances Safety Management Act**

No information available.

**Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**

**Domestic act**

**Persistent organic pollutants control Act**

No information available

**Foreign Act**

**American supervision information**

No information applicable

**CERCLA**

No information applicable

**EPCRA 302**

No information applicable

**EPCRA 304**

No information applicable

**EPCRA 313**

No information applicable

**American supervision information**

No information applicable

**(Rotterdam agreement material)**

**American supervision information**

No information applicable

**(Stockholm agreement material)**

**American supervision information**

No information applicable

**(Montreal protocol material)**

**EU Classification information**

No information applicable

**(Confirmed classification results)**

**EU Classification information**

No information applicable

**(Danger expression)**

**EU Classification information**

No information applicable

**(Safety expression)**

**Section 16. OTHER INFORMATION**

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : 1st Strand Synthesis Buffer 2

**Product Number** : 1005

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS****Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
No information applicable	-	-	-

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES****Description of first aid measures****Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES****Extinguishing media****Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

---

## Section 6. ACCIDENTAL RELEASE MEASURES

---

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.  
Always wear recommended Personal Protective Equipment.  
Use personal protection equipment.  
See section 8 for more detail.

### Environmental precautions

No special environmental precautions required.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

---

## Section 7. HANDLING AND STORAGE

---

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### Specific end use(s)

For research use only.

---

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### Control parameters

**Exposure Limits**                      Contains no substances with occupational exposure limit values.

**Engineering measures**              Ensure adequate ventilation, especially in confined areas.

### Exposure controls

#### Personal protective Equipment

##### Respiratory protection

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

##### Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### Eye protection

Tight sealing safety goggles.

##### Skin and Body protection

Wear suitable protective clothing.

##### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

##### Environmental exposure controls

No special environmental precautions required.

---

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

State	Liquid
Color	Colourless
Odour	No information available
Odour threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Initial boiling point and boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapour pressure	No information available
Vapour density	No information available
Relative density	No information available
Water solubility	No information available
Partition coefficient: n-octanol/ water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

---

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

### Thermal decomposition

No information available.

---

## Section 11. TOXICOLOGICAL INFORMATION

---

### Information on toxicological effects

There is no evidence available indicating acute toxicity.

### Principal Routes of Exposure

<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

---

<b>Toxicity</b>	
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.	
<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Results of PBT and vPvB assessment</b>	
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.	
<b>Other adverse effect</b>	No information available

## Section 13. DISPOSAL CONSIDERATIONS

---

<b>Waste treatment methods</b>	
The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.	

## Section 14. TRANSPORT INFORMATION

---

<b>IATA/ADR/DOT-US/IMDG</b>	
Not classified as dangerous in the meaning of transport regulations.	
<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available
<b>Environmental hazards</b>	
No information available.	
<b>Special precautions for user</b>	
No information available.	
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	
No information available.	

## Section 15. REGULATORY INFORMATION

---

<b>Regulation under the Occupational Safety and Health Act</b>	
No information available.	

**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

**Dangerous Substances Safety Management Act**

No information available.

**Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**

**Domestic act**

**Persistent organic pollutants control Act**

No information available

**Foreign Act**

**American supervision information**

No information applicable

**CERCLA**

No information applicable

**EPCRA 302**

No information applicable

**EPCRA 304**

No information applicable

**EPCRA 313**

No information applicable

**American supervision information**

No information applicable

**(Rotterdam agreement material)**

**American supervision information**

No information applicable

**(Stockholm agreement material)**

**American supervision information**

No information applicable

**(Montreal protocol material)**

**EU Classification information**

No information applicable

**(Confirmed classification results)**

**EU Classification information**

No information applicable

**(Danger expression)**

**EU Classification information**

No information applicable

**(Safety expression)**

**Section 16. OTHER INFORMATION**

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : RNase Inhibitor

**Product Number** : 1006

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage



No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS****Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
glycerol	-	56-81-5	40-70

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES****Description of first aid measures****Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES****Extinguishing media****Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

## Section 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.  
 Always wear recommended Personal Protective Equipment.  
 Use personal protection equipment.  
 See section 8 for more detail.

### Environmental precautions

No special environmental precautions required.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

## Section 7. HANDLING AND STORAGE

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### Specific end use(s)

For research use only.

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Limits

Ingredient name	OSHA PEL	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
glycerol	15 mg/m3 5 mg/m3	-	-	-

Ingredient name	Brazil - OEL - TWAs (LTs)	Brazil - OEL - Ceilings	Brazil - OEL - Skin Designations
glycerol	15 mg/m3 5 mg/m3	-	-

**Engineering measures** Ensure adequate ventilation, especially in confined areas.

### Exposure controls

#### Personal protective Equipment

#### Respiratory protection

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

#### Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

#### Eye protection

Tight sealing safety goggles.

**Skin and Body protection**

Wear suitable protective clothing.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No special environmental precautions required.

---

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Appearance**

<b>State</b>	Liquid
<b>Color</b>	Colourless
<b>Odour</b>	No information available
<b>Odour threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	No information available
<b>Initial boiling point and boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper/lower flammability or explosive limits</b>	No information available
<b>Vapour pressure</b>	No information available
<b>Vapour density</b>	No information available
<b>Relative density</b>	No information available
<b>Water solubility</b>	No information available
<b>Partition coefficient: n-octanol/ water</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

---

## Section 10. STABILITY AND REACTIVITY

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

No information available.

**Conditions to avoid**

No information available.

**Incompatible products**

Strong acids, Strong oxidizing agents, Cyanides.

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides.

#### Thermal decomposition

No information available.

### Section 11. TOXICOLOGICAL INFORMATION

#### Information on toxicological effects

Ingredient name	Oral LD50	Dermal LD50	InhalationLC50
glycerol	= 12600 mg/kg Oral	-	>570mg/m3 (Rat)

#### Principal Routes of Exposure

<b>acute toxicity</b>	No information available
<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

### Section 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ingredient name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Microtox Data	log Pow
glycerol	-	Daphnia magna EC50>500 mg/L (24 h)	-	-	-

<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Results of PBT and vPvB assessment</b>	
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.	
<b>Other adverse effect</b>	No information available

### Section 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

### Section 14. TRANSPORT INFORMATION

**IATA/ADR/DOT-US/IMDG**

Not classified as dangerous in the meaning of transport regulations.

<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available

**Environmental hazards**

No information available.

**Special precautions for user**

No information available.

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

No information available.

**Section 15. REGULATORY INFORMATION**

Ingredient name	US TSCA
glycerol	Listed

**Regulation under the Occupational Safety and Health Act**

No information available.

**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

**Dangerous Substances Safety Management Act**

No information available.

**Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**
**Domestic act**
**Persistent organic pollutants control Act**

No information available

**Foreign Act**
**American supervision information**

No information applicable

**CERCLA**

No information applicable

**EPCRA 302**

No information applicable

**EPCRA 304**

No information applicable

**EPCRA 313**

No information applicable

**American supervision information**

No information applicable

**(Rotterdam agreement material)**
**American supervision information**

No information applicable

**(Stockholm agreement material)**
**American supervision information**

No information applicable

**(Montreal protocol material)**
**EU Classification information**

No information applicable

**(Confirmed classification results)**
**EU Classification information**

No information applicable

**(Danger expression)**

**EU Classification information  
(Safety expression)**

No information applicable

**Section 16. OTHER INFORMATION**

---

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celeemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celeemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : Reverse Transcriptase

**Product Number** : 1007

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS****Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
glycerol	-	56-81-5	40-70
Triton X-100	-	9002-93-1	=/>0.1 - <0.9

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES****Description of first aid measures****Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES****Extinguishing media****Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**



Standard procedure for chemical fires.

## Section 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.

Always wear recommended Personal Protective Equipment.

Use personal protection equipment.

See section 8 for more detail.

### Environmental precautions

No special environmental precautions required.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material.

### Reference to other sections

See section 8 for more information.

## Section 7. HANDLING AND STORAGE

### Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### Specific end use(s)

For research use only.

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Limits

Ingredient name	OSHA PEL	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
glycerol	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup>	-	-	-
Triton X-100	-	-	-	-

Ingredient name	Brazil - OEL - TWAs (LTs)	Brazil - OEL - Ceilings	Brazil - OEL - Skin Designations
glycerol	-	-	-
Triton X-100	-	-	-

**Engineering measures**      Ensure adequate ventilation, especially in confined areas.

### Exposure controls

#### Personal protective Equipment

#### Respiratory protection

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

**Hand protection**

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

**Eye protection**

Tight sealing safety goggles.

**Skin and Body protection**

Wear suitable protective clothing.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No special environmental precautions required.

---

**Section 9. PHYSICAL AND CHEMICAL PROPERTIES**

---

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

<b>State</b>	Liquid
<b>Color</b>	Colourless
<b>Odour</b>	No information available
<b>Odour threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	No information available
<b>Initial boiling point and boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper/lower flammability or explosive limits</b>	No information available
<b>Vapour pressure</b>	No information available
<b>Vapour density</b>	No information available
<b>Relative density</b>	No information available
<b>Water solubility</b>	No information available
<b>Partition coefficient: n-octanol/ water</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

---

**Section 10. STABILITY AND REACTIVITY**

---

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

No information available.

**Conditions to avoid**

No information available.

**Incompatible products**

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides.

### Thermal decomposition

No information available.

## Section 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects

Ingredient name	Oral LD50	Dermal LD50	InhalationLC50
glycerol	= 12600 mg/kg Oral	> 10 g/kg(Rabbit	>570mg/m3 (Rat)
Triton X-100	= 1800 mg/kg (Rat)	-	-

### Principal Routes of Exposure

<b>acute toxicity</b>	No information available
<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

### Ecotoxicity

The environmental impact of this product has not been fully investigated.

Ingredient name	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates	Toxicity to fish	Microtox Data	log Pow
glycerol	-	-	-	-	logPow-1.76
Triton X-100	-	-	-	-	-

<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Results of PBT and vPvB assessment</b>	
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.	
<b>Other adverse effect</b>	No information available

## Section 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

**Section 14. TRANSPORT INFORMATION**

**IATA/ADR/DOT-US/IMDG**

Not classified as dangerous in the meaning of transport regulations.

<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available

**Environmental hazards**

No information available.

**Special precautions for user**

No information available.

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

No information available.

**Section 15. REGULATORY INFORMATION**

Ingredient name	US TSCA
glycerol	Listed
Triton X-100	Listed

**Regulation under the Occupational Safety and Health Act**

No information available.

**Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

**Dangerous Substances Safety Management Act**

No information available.

**Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**

**Domestic act**

**Persistent organic pollutants control Act**

No information available

**Foreign Act**

**American supervision information**

No information applicable

**CERCLA**

No information applicable

**EPCRA 302**

No information applicable

**EPCRA 304**

No information applicable

**EPCRA 313**

No information applicable

**American supervision information**

No information applicable

<b>(Rotterdam agreement material)</b> <b>American supervision information</b>	No information applicable
<b>(Stockholm agreement material)</b> <b>American supervision information</b>	No information applicable
<b>(Montreal protocol material)</b> <b>EU Classification information</b>	No information applicable
<b>(Confirmed classification results)</b> <b>EU Classification information</b>	No information applicable
<b>(Danger expression)</b> <b>EU Classification information</b>	No information applicable
<b>(Safety expression)</b>	No information applicable

---

**Section 16. OTHER INFORMATION**

---

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : 2nd Strand Synthesis 10X Buffer 1

**Product Number** : 1008

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS****Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
Potassium Chloride	-	7447-40-7	3 - 7

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES****Description of first aid measures****Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES****Extinguishing media****Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

---

## **Section 6. ACCIDENTAL RELEASE MEASURES**

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

Ensure adequate ventilation.  
Always wear recommended Personal Protective Equipment.  
Use personal protection equipment.  
See section 8 for more detail.

### **Environmental precautions**

No special environmental precautions required.

### **Methods and materials for containment and cleaning up**

Soak up with inert absorbent material.

### **Reference to other sections**

See section 8 for more information.

---

## **Section 7. HANDLING AND STORAGE**

### **Precautions for safe handling**

Use personal protective equipment as required. No special handling advices are necessary.

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

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

### **Specific end use(s)**

For research use only.

---

## **Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **Control parameters**

#### **Exposure Guidelines**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering measures**      Ensure adequate ventilation, especially in confined areas.

### **Exposure controls**

#### **Personal protective Equipment**

##### **Respiratory protection**

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

##### **Hand protection**

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### **Eye protection**

Tight sealing safety goggles.

##### **Skin and Body protection**

Wear suitable protective clothing.

##### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

##### **Environmental exposure controls**

No special environmental precautions required.



---

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

<b>State</b>	Liquid
<b>Color</b>	Colourless
<b>Odour</b>	Mild
<b>Odour threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	No information available
<b>Initial boiling point and boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper/lower flammability or explosive limits</b>	No information available
<b>Vapour pressure</b>	No information available
<b>Vapour density</b>	No information available
<b>Relative density</b>	No information available
<b>Water solubility</b>	No information available
<b>Partition coefficient: n-octanol/ water</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

---

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

### Thermal decomposition

No information available.

---

## Section 11. TOXICOLOGICAL INFORMATION

---

### Information on toxicological effects

Ingredient name	Oral LD50	Dermal LD50	InhalationLC50
Potassium Chloride	= 2600 mg/kg ( Rat )	-	-

### Principal Routes of Exposure

<b>acute toxicity</b>	No information available
<b>Skin corrosion/irritation</b>	Mild
<b>Serious eye damage/irritation</b>	Mild
<b>Respiratory or skin sensitization</b>	No information available
Target organ effects	Kidneys, Eyes, Skin, Respiratory system.
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	No information available
9.422% of the mixture consists of components(s) of unknown hazards to the aquatic environment.	
<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Results of PBT and vPvB assessment</b>	
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.	
<b>Other adverse effect</b>	No information available

## Section 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

## Section 14. TRANSPORT INFORMATION

<b>DOT</b>	Not regulated
------------	---------------

## Section 15. REGULATORY INFORMATION

### Regulation under the Occupational Safety and Health Act

No information available.

### Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

No information available.

### Dangerous Substances Safety Management Act

No information available.

### Wastes Control Act

Follow article 13 of the act to dispose the product waste.

### Regulations of other domestic and international Act

#### Domestic act

#### Persistent organic pollutants control Act

No information available

#### Foreign Act

**American supervision information** No information applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**EPCRA 302** No information applicable

**EPCRA 304** No information applicable

**EPCRA 313** No information applicable

**American supervision information** No information applicable

**(Rotterdam agreement material)**

**American supervision information** No information applicable

**(Stockholm agreement material)**

**American supervision information** No information applicable

**(Montreal protocol material)**

**EU Classification information** No information applicable

**(Confirmed classification results)**

**EU Classification information** No information applicable

**(Danger expression)**

**EU Classification information** No information applicable

**(Safety expression)**

**Section 16. OTHER INFORMATION**

---

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : 2nd Strand Synthesis Enzyme 1

**Product Number** : 1009

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

#### **Disposal**

No information available.

#### **Other hazards**

No information available.

### **Section 3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Substances/Mixtures**

<b>Ingredient name</b>	<b>Usual name</b>	<b>Cas No.</b>	<b>Amount (%)</b>
Glycerol	-	56-81-5	30 - 60
Potassium Chloride	-	7447-40-7	0.1 - 1
Tris-HCl	-	1185-53-1	0.1 - 1
Bovine Serum Albumin	-	9048-46-8	<0.1
Ethylenediamine tetraacetic acid	-	60-00-4	<0.1
Dithiothreitol	-	3483-12-3	<0.1

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

### **Section 4. FIRST AID MEASURES**

#### **Description of first aid measures**

##### **Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

##### **Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

##### **Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

##### **Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

### **Section 5. FIRE-FIGHTING MEASURES**

#### **Extinguishing media**

##### **Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

##### **Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

**Section 6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

Always wear recommended Personal Protective Equipment.

Use personal protection equipment.

See section 8 for more detail.

**Environmental precautions**

No special environmental precautions required.

**Methods and materials for containment and cleaning up**

Soak up with inert absorbent material.

**Reference to other sections**

See section 8 for more information.

**Section 7. HANDLING AND STORAGE**

**Precautions for safe handling**

Use personal protective equipment as required. No special handling advices are necessary.

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

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Specific end use(s)**

For research use only.

**Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Ingredient name	Korea	ACGIH TLV
Glycerol	TWA: 10 mg/m3	-

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering measures** Ensure adequate ventilation, especially in confined areas.

**Exposure controls**

**Personal protective Equipment**

**Respiratory protection**

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

**Hand protection**

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

**Eye protection**

Tight sealing safety goggles.

**Skin and Body protection**

Wear suitable protective clothing.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No special environmental precautions required.

---

**Section 9. PHYSICAL AND CHEMICAL PROPERTIES**

---

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

<b>State</b>	Liquid
<b>Color</b>	Colourless
<b>Odour</b>	No information available
<b>Odour threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	No information available
<b>Initial boiling point and boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper/lower flammability or explosive limits</b>	No information available
<b>Vapour pressure</b>	No information available
<b>Vapour density</b>	No information available
<b>Relative density</b>	No information available
<b>Water solubility</b>	No information available
<b>Partition coefficient: n-octanol/ water</b>	No information available
<b>Autoignition temperature</b>	392.8 ° C / 739 ° F
<b>Decomposition temperature</b>	No information available
<b>Viscosity</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

---

**Section 10. STABILITY AND REACTIVITY**

---

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

No information available.

**Conditions to avoid**

No information available.

**Incompatible products**

Strong acids, Strong oxidizing agents, Cyanides.

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides.

#### Thermal decomposition

No information available.

### Section 11. TOXICOLOGICAL INFORMATION

#### Information on toxicological effects

##### acute toxicity

##### Toxicity level measurement

The following figures are calculated based on Chapter 3.1 of the GHS document

Estimates of acute toxicity (oral)	25,200.00 mg/kg
ATEmix (transdermal)	20,000.00 mg/kg
Ingredient information	No information available

Ingredient name	Oral LD50	Dermal LD50	InhalationLC50
Glycerol	= 2600 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 570 mg/m3 ( Rat ) 1 h
Potassium Chloride	= 2600 mg/kg ( Rat )	-	-
Ethylenediamine tetraacetic acid	> 2000 mg/kg ( Rat )	-	-

#### Principal Routes of Exposure

acute toxicity	No information available
Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Target organ effects	No information available
Carcinogenicity	No information available
Germ cell mutagenicity	No information available
Reproductive toxicity	No information available
Aspiration hazard	No information available

### Section 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

Percentage of unknown hazard 0% of the mixture consists of ingredients of unknown hazard to the aquatic environment

Ingredient name	Algae/Aquatic Plants	Pisces	Microbial toxicity	shellfish
glycerol	-	LC50: 51 - 57mL/L (96h, Oncorhynchus mykiss) -	-	EC50: >500mg/L (24h, Daphnia magna)
Potassium Chloride	EC50: =2500mg/L (72h, Desmodemus subspicatus)	LC50: 750 - 1020mg/L (96h, Pimephales promelas) LC50: =1060mg/L (96h, Lepomis macrochirus)	-	EC50: =83mg/L (48h, Daphnia magna) EC50: =825mg/L (48h, Daphnia magna)



Ethylenediamine tetraacetic acid	EC50: =1.01mg/L (72h, Desmodemus subspicatus)	LC50: 44.2 - 76.5mg/L (96h, Pimephales promelas) LC50: 34 - 62mg/L (96h, Lepomis macrochirus)	EC50: =113mg/L (48h, Daphnia magna)
----------------------------------	---	--	-------------------------------------

<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available

Ingredient name	Partition coefficient
glycerol	-1.76

#### Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

<b>Other adverse effect</b>	No information available
-----------------------------	--------------------------

### Section 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

### Section 14. TRANSPORT INFORMATION

#### IATA/ADR/DOT-US/IMDG

Not classified as dangerous in the meaning of transport regulations.

<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available

#### Environmental hazards

No information available.

#### Special precautions for user

No information available.

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

No information available.

### Section 15. REGULATORY INFORMATION

#### Regulation under the Occupational Safety and Health Act

No information available.

#### Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

No information available.

#### Dangerous Substances Safety Management Act

No information available.

#### Wastes Control Act

Follow article 13 of the act to dispose the product waste.

**Regulations of other domestic and international Act**

**Domestic act**

**Persistent organic pollutants control Act** No information available

**Foreign Act**

**American supervision information** No information applicable

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**EPCRA 302** No information applicable

**EPCRA 304** No information applicable

**EPCRA 313** No information applicable

**American supervision information** No information applicable

**(Rotterdam agreement material)**

**American supervision information** No information applicable

**(Stockholm agreement material)**

**American supervision information** No information applicable

**(Montreal protocol material)**

**EU Classification information** No information applicable

**(Confirmed classification results)**

**EU Classification information** No information applicable

**(Danger expression)**

**EU Classification information** No information applicable

**(Safety expression)**

**Section 16. OTHER INFORMATION**

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : 2nd Strand Synthesis Enzyme 2  
**Product Number** : 1010  
**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.  
19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea  
Telephone : +82-2-6746-8064  
Fax : +82-2-6746-8073  
E-mail address : Sales@celemics.com  
Version : 2  
Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Unknown acute toxicity**    50 % of the mixture consists of ingredient(s) of unknown toxicity  
0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity  
0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity  
50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)  
50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)  
50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

---

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substances**

Not applicable

**Mixtures**

The product contains no substances which at their given concentration, are considered to be

---

**Section 4. FIRST AID MEASURES**

**Description of first aid measures**

**Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

---

**Section 5. FIRE-FIGHTING MEASURES**

**Extinguishing media**

**Suitable extinguishing media**    Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**    No information available.

**Specific hazards arising from the substance or mixture**

Not known.

#### **Advice for fire-fighters**

Standard procedure for chemical fires.

### **Section 6. ACCIDENTAL RELEASE MEASURES**

---

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

Ensure adequate ventilation.

Always wear recommended Personal Protective Equipment.

Use personal protection equipment.

See section 8 for more detail.

#### **Environmental precautions**

No special environmental precautions required.

#### **Methods and materials for containment and cleaning up**

Soak up with inert absorbent material.

#### **Reference to other sections**

See section 8 for more information.

### **Section 7. HANDLING AND STORAGE**

---

#### **Precautions for safe handling**

Use personal protective equipment as required. No special handling advices are necessary.

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

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

#### **Specific end use(s)**

For research use only.

### **Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

---

#### **Control parameters**

**Exposure Limits**                      Contains no substances with occupational exposure limit values.

**Engineering measures**              Ensure adequate ventilation, especially in confined areas.

#### **Exposure controls**

##### **Personal protective Equipment**

##### **Respiratory protection**

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

##### **Hand protection**

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

##### **Eye protection**

Tight sealing safety goggles.

##### **Skin and Body protection**

Wear suitable protective clothing.

##### **Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

No special environmental precautions required.

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

<b>State</b>	Liquid
<b>Color</b>	Colourless
<b>Odour</b>	Mild
<b>Odour threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	No information available
<b>Initial boiling point and boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper/lower flammability or explosive limits</b>	No information available
<b>Vapour pressure</b>	No information available
<b>Vapour density</b>	No information available
<b>Relative density</b>	No information available
<b>Water solubility</b>	No information available
<b>Partition coefficient: n-octanol/ water</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides.

### Thermal decomposition

No information available.

## Section 11. TOXICOLOGICAL INFORMATION

---

### Information on likely routes of exposure

#### Product Information

<b>Inhalation</b>	Specific test data for the substance or mixture is not available.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available.

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

<b>Symptoms</b>	No information available.
-----------------	---------------------------

#### Acute toxicity

#### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 25,200.00 mg/kg

ATEmix (dermal) 20,000.00 mg/kg

**Unknown acute toxicity** 50 % of the mixture consists of ingredient(s) of unknown toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)

50 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

#### Principal Routes of Exposure

<b>Skin corrosion/irritation</b>	No information available
<b>Serious eye damage/irritation</b>	No information available
<b>Respiratory or skin sensitization</b>	No information available
<b>Specific target organ toxicity (STOT) - single exposure</b>	No information available
<b>Specific target organ toxicity (STOT) - repeated exposure</b>	No information available
<b>Carcinogenicity</b>	No information available
<b>Germ cell mutagenicity</b>	No information available
<b>Reproductive toxicity</b>	No information available
<b>Aspiration hazard</b>	No information available

## Section 12. ECOLOGICAL INFORMATION

#### Toxicity

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

**Mobility in soil** No information available

**Persistence and degradability** No information available

**Bioaccumulative potential** No information available

#### Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other adverse effect** No information available

## Section 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal

technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

#### Section 14. TRANSPORT INFORMATION

---

##### **IATA/ADR/DOT-US/IMDG**

Not classified as dangerous in the meaning of transport regulations.

<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available

##### **Environmental hazards**

No information available.

##### **Special precautions for user**

No information available.

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

No information available.

#### Section 15. REGULATORY INFORMATION

---

##### **Regulation under the Occupational Safety and Health Act**

No information available.

##### **Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act**

No information available.

##### **Dangerous Substances Safety Management Act**

No information available.

##### **Wastes Control Act**

Follow article 13 of the act to dispose the product waste.

##### **Regulations of other domestic and international Act**

##### **Domestic act**

##### **Persistent organic pollutants control Act**

No information available

##### **Foreign Act**

##### **American supervision information**

No information applicable

##### **CERCLA**

No information applicable

##### **EPCRA 302**

No information applicable

##### **EPCRA 304**

No information applicable

##### **EPCRA 313**

No information applicable

##### **American supervision information**

No information applicable

##### **(Rotterdam agreement material)**

##### **American supervision information**

No information applicable

##### **(Stockholm agreement material)**

##### **American supervision information**

No information applicable

##### **(Montreal protocol material)**

##### **EU Classification information**

No information applicable

##### **(Confirmed classification results)**

##### **EU Classification information**

No information applicable

##### **(Danger expression)**



**EU Classification information  
(Safety expression)**

No information applicable

**Section 16. OTHER INFORMATION**

---

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celeemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celeemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**



## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : 2nd Strand Synthesis Buffer 2

**Product Number** : 1011

**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.

19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea

Telephone : +82-2-6746-8064

Fax : +82-2-6746-8073

E-mail address : Sales@celemics.com

Version : 2

Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

#### **Disposal**

No information available.

#### **Other hazards**

No information available.

### **Section 3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### **Substances/Mixtures**

<b>Ingredient name</b>	<b>Usual name</b>	<b>Cas No.</b>	<b>Amount (%)</b>
Glycerol	-	56-81-5	30 - 60
Potassium Chloride	-	7447-40-7	0.1 - 1
Tris-HCl	-	1185-53-1	0.1 - 1
Ethylenediamine tetraacetic acid	-	60-00-4	<0.1
Dithiothreitol	-	3483-12-3	<0.1

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

### **Section 4. FIRST AID MEASURES**

#### **Description of first aid measures**

##### **Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

##### **Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

##### **Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

##### **Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

### **Section 5. FIRE-FIGHTING MEASURES**

#### **Extinguishing media**

##### **Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

##### **Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

**Section 6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

Always wear recommended Personal Protective Equipment.

Use personal protection equipment.

See section 8 for more detail.

**Environmental precautions**

No special environmental precautions required.

**Methods and materials for containment and cleaning up**

Soak up with inert absorbent material.

**Reference to other sections**

See section 8 for more information.

**Section 7. HANDLING AND STORAGE**

**Precautions for safe handling**

Use personal protective equipment as required. No special handling advices are necessary.

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

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Specific end use(s)**

For research use only.

**Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Ingredient name	Korea	ACGIH TLV
Glycerol	TWA: 10 mg/m <sup>3</sup>	-

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering measures**      Ensure adequate ventilation, especially in confined areas.

**Exposure controls**

**Personal protective Equipment**

**Respiratory protection**

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

**Hand protection**

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

**Eye protection**

Tight sealing safety goggles.

**Skin and Body protection**

Wear suitable protective clothing.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

No special environmental precautions required.

---

**Section 9. PHYSICAL AND CHEMICAL PROPERTIES**

---

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

<b>State</b>	Liquid
<b>Color</b>	Colourless
<b>Odour</b>	No information available
<b>Odour threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	No information available
<b>Initial boiling point and boiling range</b>	No information available
<b>Flash point</b>	No information available
<b>Evaporation rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Upper/lower flammability or explosive limits</b>	No information available
<b>Vapour pressure</b>	No information available
<b>Vapour density</b>	No information available
<b>Relative density</b>	No information available
<b>Water solubility</b>	No information available
<b>Partition coefficient: n-octanol/ water</b>	No information available
<b>Autoignition temperature</b>	392.8 ° C / 739 ° F
<b>Decomposition temperature</b>	No information available
<b>Viscosity</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available

---

**Section 10. STABILITY AND REACTIVITY**

---

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

No information available.

**Conditions to avoid**

No information available.

**Incompatible products**

Strong acids, Strong oxidizing agents, Cyanides.

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides.

#### Thermal decomposition

No information available.

### Section 11. TOXICOLOGICAL INFORMATION

#### Information on toxicological effects

##### acute toxicity

##### Toxicity level measurement

The following figures are calculated based on Chapter 3.1 of the GHS document

Estimates of acute toxicity (oral) **25,200.00 mg/kg**

ATEmix (transdermal) **20,000.00 mg/kg**

Ingredient information No information available

Ingredient name	Oral LD50	Dermal LD50	InhalationLC50
Glycerol	= 2600 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 570 mg/m3 ( Rat ) 1 h
Potassium Chloride	= 2600 mg/kg ( Rat )	-	-
Ethylenediamine tetraacetic acid	> 2000 mg/kg ( Rat )	-	-

#### Principal Routes of Exposure

acute toxicity	No information available
Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Target organ effects	No information available
Carcinogenicity	No information available
Germ cell mutagenicity	No information available
Reproductive toxicity	No information available
Aspiration hazard	No information available

### Section 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

Percentage of unknown hazard 0% of the mixture consists of ingredients of unknown hazard to the aquatic environment

Ingredient name	Algae/Aquatic Plants	Pisces	Microbial toxicity	shellfish
glycerol	-	LC50: 51 - 57mL/L (96h, Oncorhynchus mykiss) -	-	EC50: >500mg/L (24h, Daphnia magna)
Potassium Chloride	EC50: =2500mg/L (72h, Desmodesmus subspicatus)	LC50: 750 - 1020mg/L (96h, Pimephales promelas) LC50: =1060mg/L (96h, Lepomis macrochirus)	-	EC50: =83mg/L (48h, Daphnia magna) EC50: =825mg/L (48h, Daphnia magna)
Ethylenediamine tetraacetic acid	EC50: =1.01mg/L (72h, Desmodesmus subspicatus)	LC50: 44.2 - 76.5mg/L (96h, Pimephales promelas) LC50: 34 - 62mg/L (96h,	-	EC50: =113mg/L (48h, Daphnia magna)

Lepomis macrochirus)

<b>Mobility in soil</b>	No information available
<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available

Ingredient name	Partition coefficient
glycerol	-1.76

#### Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Other adverse effect** No information available

### Section 13. DISPOSAL CONSIDERATIONS

#### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in accordance with approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

### Section 14. TRANSPORT INFORMATION

#### IATA/ADR/DOT-US/IMDG

Not classified as dangerous in the meaning of transport regulations.

<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available

#### Environmental hazards

No information available.

#### Special precautions for user

No information available.

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

No information available.

### Section 15. REGULATORY INFORMATION

#### Regulation under the Occupational Safety and Health Act

No information available.

#### Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

No information available.

#### Dangerous Substances Safety Management Act

No information available.

#### Wastes Control Act

Follow article 13 of the act to dispose the product waste.

#### Regulations of other domestic and international Act

**Domestic act**

<b>Persistent organic pollutants control Act</b>	No information available
<b>Foreign Act</b>	
<b>American supervision information</b>	No information applicable
<b>CERCLA</b>	
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.	
<b>EPCRA 302</b>	No information applicable
<b>EPCRA 304</b>	No information applicable
<b>EPCRA 313</b>	No information applicable
<b>American supervision information</b>	No information applicable
<b>(Rotterdam agreement material)</b>	
<b>American supervision information</b>	No information applicable
<b>(Stockholm agreement material)</b>	
<b>American supervision information</b>	No information applicable
<b>(Montreal protocol material)</b>	
<b>EU Classification information</b>	No information applicable
<b>(Confirmed classification results)</b>	
<b>EU Classification information</b>	No information applicable
<b>(Danger expression)</b>	
<b>EU Classification information</b>	No information applicable
<b>(Safety expression)</b>	

#### Section 16. OTHER INFORMATION

---

<b>Reason for revision</b>	<b>SDS sections updated</b>
<b>Revision number</b>	<b>2</b>
<b>Revision date</b>	<b>24-Nov-2021</b>

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celeemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celeemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**





## Material Safety Data Sheet

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

#### Identification of the substance or mixture

**Product name** : 2nd Strand Synthesis Enzyme 3  
**Product Number** : 1012  
**Brand** : Celemics

#### Recommended use of the chemical and restrictions on use

Identified uses : For research use only. Not for pharmaceutical, household or other uses

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

Company : Celemics. Inc.  
19F, Bldg. A, BYC Highcity, 131, Gasandigital 1-ro, Geumcheon-gu, Seoul, 153-718, Korea  
Telephone : +82-2-6746-8064  
Fax : +82-2-6746-8073  
E-mail address : Sales@celemics.com  
Version : 2  
Date of issue : 23/November/2021

### Section 2. HAZARDS IDENTIFICATION

#### GHS - Classification

#### Signal word

None.

#### Hazard pictograms

None.

#### Hazard Statements

No information available.

#### Precautionary Statements

##### Prevention

No information available.

##### Response

No information available.

##### Storage

No information available.

**Disposal**

No information available.

**Other hazards**

No information available.

**Section 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substances/Mixtures**

Ingredient name	Usual name	Cas No.	Amount (%)
Tris-HCl	-	1185-53-1	0.1 - 1
Magnesium Chlorid	-	7786-30-3	1-5
Dithiothreitol	-	3483-12-3	1-5
Adenosine 5'-triphosphate	-	56-65-5	0.1 - 1

There are no additional ingredients present which at their given concentration, are considered to be hazardous to health.

**Section 4. FIRST AID MEASURES**

**Description of first aid measures**

**Skin contact**

Rinse with plenty of water. Immediate medical attention is not required.

**Eye contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Rinse mouth with water. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

**Inhalation**

If breathed in, move person into fresh air. If not breathing, give artificial respiration or oxygen by trained personnel.

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

No information available.

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

None.

**Section 5. FIRE-FIGHTING MEASURES**

**Extinguishing media**

**Suitable extinguishing media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

**Unsuitable extinguishing media**

No information available.

**Specific hazards arising from the substance or mixture**

Not known.

**Advice for fire-fighters**

Standard procedure for chemical fires.

---

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

Ensure adequate ventilation.

Always wear recommended Personal Protective Equipment.

Use personal protection equipment.

See section 8 for more detail.

**Environmental precautions**

No special environmental precautions required.

**Methods and materials for containment and cleaning up**

Soak up with inert absorbent material.

**Reference to other sections**

See section 8 for more information.

---

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

Use personal protective equipment as required. No special handling advices are necessary.

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

Keep in a dry, cool and well-ventilated place. Keep in properly labeled containers.

**Specific end use(s)**

For research use only.

---

**Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters****Exposure Guidelines**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering measures**      Ensure adequate ventilation, especially in confined areas.

**Exposure controls****Personal protective Equipment****Respiratory protection**

Respiratory protection not required. Use appropriate respirators and components according to known or anticipated exposure levels if a risk assessment indicates this is necessary.

**Hand protection**

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

**Eye protection**

Tight sealing safety goggles.

**Skin and Body protection**

Wear suitable protective clothing.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

### Environmental exposure controls

No special environmental precautions required.

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

---

### Information on basic physical and chemical properties

#### Appearance

State	Liquid
Color	Colourless
Odour	No information available
Odour threshold	No information available
pH	No information available
Melting point/freezing point	No information available
Initial boiling point and boiling range	No information available
Flash point	No information available
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper/lower flammability or explosive limits	No information available
Vapour pressure	No information available
Vapour density	No information available
Relative density	No information available
Water solubility	No information available
Partition coefficient: n-octanol/ water	No information available
Autoignition temperature	392.8 ° C / 739 ° F
Decomposition temperature	No information available
Viscosity	No information available
Explosive properties	No information available
Oxidizing properties	No information available

## Section 10. STABILITY AND REACTIVITY

---

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

No information available.

### Conditions to avoid

No information available.

### Incompatible products

Strong acids, Strong oxidizing agents, Cyanides.

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides, Hydrogen cyanide (hydrocyanic acid), Ammonia.

Other decomposition products - No information available.

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

### Thermal decomposition

No information available.

## Section 11. TOXICOLOGICAL INFORMATION

### Information on toxicological effects

#### acute toxicity

#### Toxicity level measurement

The following figures are calculated based on Chapter 3.1 of the GHS document

Estimates of acute toxicity (oral)	25,200.00 mg/kg
ATEmix (transdermal)	20,000.00 mg/kg
Ingredient information	No information available

Ingredient name	Oral LD50	Dermal LD50	InhalationLC50
Magnesium Chloride	= 2800 mg/kg ( Rat )	-	-

### Principal Routes of Exposure

acute toxicity	No information available
Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Target organ effects	No information available
Carcinogenicity	No information available
Germ cell mutagenicity	No information available
Reproductive toxicity	No information available
Aspiration hazard	No information available

## Section 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Percentage of unknown hazard 0% of the mixture consists of ingredients of unknown hazard to the aquatic environment

Ingredient name	Algae/Aquatic Plants	Pisces	Microbial toxicity	shellfish
Magnesium Chloride	EC50: >82.7mg/L (72h, Pseudokirchneriella subcapitata)	LC50: =4210mg/L (96h, Gambusia affinis) LC50: 1970 - 3880mg/L (96h, Pimephales promelas)	-	EC50: =140mg/L (48h, Daphnia magna) EC50: =1400mg/L (24h, Daphnia magna)

Mobility in soil	No information available
Persistence and degradability	No information available
Bioaccumulative potential	No information available
Results of PBT and vPvB assessment	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
Other adverse effect	No information available

## Section 13. DISPOSAL CONSIDERATIONS

### Waste treatment methods

The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations.

#### Section 14. TRANSPORT INFORMATION

##### IATA/ADR/DOT-US/IMDG

Not classified as dangerous in the meaning of transport regulations.

<b>UN number</b>	No information available
<b>UN proper shipping name</b>	No information available
<b>Transport hazard class(es)</b>	No information available
<b>Packing group</b>	No information available

##### Environmental hazards

No information available.

##### Special precautions for user

No information available.

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

No information available.

#### Section 15. REGULATORY INFORMATION

##### Regulation under the Occupational Safety and Health Act

No information available.

##### Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

No information available.

##### Dangerous Substances Safety Management Act

No information available.

##### Wastes Control Act

Follow article 13 of the act to dispose the product waste.

##### Regulations of other domestic and international Act

##### Domestic act

##### Persistent organic pollutants control Act

No information available

##### Foreign Act

##### American supervision information

No information applicable

##### CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

##### EPCRA 302

No information applicable

##### EPCRA 304

No information applicable

##### EPCRA 313

No information applicable

##### American supervision information

No information applicable

##### (Rotterdam agreement material)

##### American supervision information

No information applicable

##### (Stockholm agreement material)

##### American supervision information

No information applicable

(Montreal protocol material)

EU Classification information

No information applicable

(Confirmed classification results)

EU Classification information

No information applicable

(Danger expression)

EU Classification information

No information applicable

(Safety expression)

#### Section 16. OTHER INFORMATION

---

Reason for revision	SDS sections updated
Revision number	2
Revision date	24-Nov-2021

**For research use only. Not for use in diagnostic procedures.**

The information presented above is based on Celeemics' state of knowledge at the time of preparation. The information shall not be taken as being all inclusive, and is to be used only as a guide. The information in this MSDS does not represent any guarantee of the properties or fitness for any particular purpose. Since personnel handling this material must make independent determinations of the actual methods and volume, Celeemics, Inc. shall not be held liable for any damages resulting from handling or contact with this product.

**End of Safety Data Sheet**