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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 ER/A-Tailing Enzyme Mix
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 (CO₂). 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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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 : 10X ERA Buffer
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 (CO₂). 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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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 : WGS Ligase
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 (%)
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 (CO₂). 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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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
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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 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 5X Rapid Ligase Buffer
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 (%)
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 (CO₂). 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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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 : Pre Capture PCR Forward Primer
Product Number : 2027
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 2.1
Date of issue : 14/March/2023

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	2.1
Revision date	14-Mar-2023

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 : Methyl Adapter
Product Number : 2070
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 2.1
Date of issue : 14/March/2023

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	2.1
Revision date	14-Mar-2023

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 : Methyl enhancer
Product Number : 3008
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 2.1
Date of issue : 14/March/2023

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	2.1
Revision date	14-Mar-2023

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 : Hyb Buffer
Product Number : 4007
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 3.1
Date of issue : 14/March/2023

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 (%)
Sulfuric acid monododecyl ester sodium salt	dodecyl sulphate sodium salt	151-21-3	>= 1 - < 2.5

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	3.1
Revision date	14-Mar-2023

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 : Wash Buffer #1
Product Number : 4001
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 3.1
Date of issue : 14/March/2023

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	3.1
Revision date	14-Mar-2023

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 : Wash Buffer #2
Product Number : 4002
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 3.1
Date of issue : 14/March/2023

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	3.1
Revision date	14-Mar-2023

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 : Wash Buffer #3
Product Number : 4003
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 3.1
Date of issue : 14/March/2023

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	3.1
Revision date	14-Mar-2023

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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 : CeleMag Clean-up Bead
Product Number : CMCB
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 2.1
Date of issue : 14/March/2023

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 (CO₂). 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
Molecular weight	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_x), 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_x), 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

Skin corrosion/irritation	No information available
Serious eye damage/irritation	No information available
Respiratory or skin sensitization	No information available
Specific target organ toxicity (STOT) - single exposure	No information available
Specific target organ toxicity (STOT) - repeated exposure	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

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 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.

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	MSDS updated
Revision number	2.1
Revision date	14-Mar-2023

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 : CLM Polymerase
Product Number : CMPF
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 : +82-2-6746-8067
Fax : +82-2-6746-8073
E-mail address : Support@celemics.com
Version : 2.1
Date of issue : 14/March/2023

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	50 - 60

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 (CO₂). 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

occupational exposure limit

- Glycerol

Glycerin TWA : 10mg/m³ (KR OEL)

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

- Glycerol

Appearance

State

Liquid

Color

Colourless

Odour

Odorless

Odour threshold

No information available

pH

5.5 - 8

Melting point/freezing point

18.17 °C

Initial boiling point and boiling range

290 °C(760 mmHg)

Flash point

199 °C at ca.1013.0 hPa - Pensky-Martens closed cup

Evaporation rate

No information available

Flammability (solid, gas)

No information available

Upper/lower flammability or explosive limits

19 / 2.7 %

Vapour pressure

0.003 mmHg (50°C)

Water solubility

1000000 mg/l (25°C)

Vapour density

1.261 g/ml (20°C)

Relative density

3.17

Partition coefficient: n-octanol/ water

-1.75 (log Pow, 25°C)(Log Kow)

Autoignition temperature

370 °C

Decomposition temperature

290 °C

Viscosity

1412 mPa S at 20°C

Molecular weight

92.09

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

- Glycerol

acute toxicity

Toxicity level measurement

LD50 Oral 27,000.00 mg/kg Rat

※Remarks: ECHA

LD50 Dermal 45 ml/kg Guinea pig

※Remarks: ECHA

LC50 Inhalation > 2.75 mg/L / 4Hr

※Remarks: ECHA

Principal Routes of Exposure

Skin corrosion/irritation

Skin - Rabbit - No skin irritation - 24 h

※Remarks: ECHA

Serious eye damage/irritation

Eyes - Rabbit - No eye irritation

※Remarks: ECHA

Respiratory or skin sensitization

No information available

Specific target organ toxicity (STOT) - single exposure

No information available

Specific target organ toxicity (STOT) - repeated exposure

No information available

Carcinogenicity

No information available

Germ cell mutagenicity

in vitro - Bacterial reverse mutation test: negative (regardless of *S. typhimurium* TA1535, TA1537, TA98, TA100, metabolic system)

Reproductive toxicity

Glycerin was exposed to male and female rats through oral gastrointestinal nutrition over two generations, and as a result, there was no effect on growth, reproduction, and reproductive function through the second generation. did not affect the progeny developmental toxicity of female mice administered glycerin, rat.

Aspiration hazard

No information available

Section 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

-Glycerol

Toxicity to fish

LC50 54000 mg/l 96 hr *Oncorhynchus mykiss*

Toxicity to daphnia and other aquatic invertebrates

LC50 1955 mg/l 48 hr *Daphnia magna*

Toxicity to bacteria

EC3 > 10000 mg/l 8day *Scenedesmus quadricauda*

Elimination information (persistence and degradability)

Persistence

-1.75 log Kow

(log Pow, 25°C)

Degradability

No information available

Bioaccumulative potential

Bioaccumulation

3 BCF

Biodegradation

Aerobic – Exposure time 2d

Result: 90% - Readily biodegradable

Mobility in soil

No information available

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

No information available.

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

Section 16. OTHER INFORMATION

Reason for revision	MSDS updated
Revision number	2.1
Revision date	14-Mar-2023

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End of Safety Data Sheet