

Material Safety Data Sheet

FavorPrep™ Circulating Nucleic Acid Extraction HE Min Kit

Cat. No.:	FACN0030	FACN0033	FACN0034
Contents	(4 preps)	(50 preps)	(100 preps)
CL Lysis Buffer	15 ml	200 ml	400 ml
CB Binding Buffer (Concentrate)	21 ml	135 ml × 2	270 ml × 2
Wash Buffer 1 (Concentrate)	0.48 ml × 2	12 ml	24 ml
Wash Buffer 2 (Concentrate)	3 ml	25 ml	50 ml
RNase-Free Water	0.5 ml	5 ml	8 ml
Proteinase K (Liquid)	1050 µl × 2	10.5 ml × 2	10.5 ml × 4

Favorgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park
No. 8-1, Yuanxi 2nd Road, Ping Tung 908126,
TAIWAN

Phone Number: +886-8-762-1829

technical@favorgen.com

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Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Section 1. IDENTIFICATION

1.1 Product Identifier

Commercial Product Name: CL Lysis Buffer

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

Product form: Laboratory chemical mixture/Lysis Buffer

Relevant identified uses: For research use only, not for diagnostic use.

Uses advised against:

1.3 Details of the supplier of the safety data sheet

Company: Favorgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park No. 8-1, Yuanxi 2nd Road, Ping Tung 908126, TAIWAN

Phone Number: +886-8-762-1829

1.4 Emergency telephone number

+886-8-762-1829

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Hazard identification Hazard classes/categories

Acute oral toxicity	Category 4
Skin burns/eye damage	Category 1
Aquatic Chronic	Category 3

GHS hazard pictograms:



GHS05



GHS07

Signal word: **WARNING**

Hazard statement(s)

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.

2.2 Label elements

According to section 1.5.2 of Annex I to CLP

GHS symbol



GHS05



GHS07

WARNING

Hazard contents

Guanidinium thiocyanate, 20~70%, CAS-No. 593-84-0

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances or 3.2 Mixtures

Chemical:	Guanidinium thiocyanate	CAS No.: 593-84-0
Concentration:	20~70%	
Classification:	H302, Acute oral Tox. 4, H314, Skin Irrit/Eye Irrit. 1, H412, 3	

Section 4. FIRST AID MEASURES

4.1 Description of first-aid measures

If inhaled

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact

After skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

If in eyes

Rinse cautiously with water for several minutes

4.2 Most important symptoms and effects, both acute and delayed

H302 - Harmful if swallowed

H314 - Causes severe skin burns and eye damage

H412 - Harmful to aquatic life

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media: water foam carbon dioxide (CO₂) dry powder; All extinguishers can be used.

5.2 Special hazards arising from the substance or mixture

None

5.3 Advice for firefighters

No specific fire or explosion hazard.

5.4 Additional Information

Section 6. ACCIDENTAL RELEASE MEASURE

6.1 Personal precautions, protective equipment, and emergency procedures

Do not breathe vapours/Ensure adequate ventilation/Avoid contact with skin, eyes or clothing/Use personal protection equipment/Regular staff training is necessary.

6.2 Environmental precautions

Do not allow mixture to enter ground water system.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material.

6.4 Reference to other sections

Section 7. HANDLING AND STORAGE

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



7.1 Precautions for safe handling

Always wear recommended Personal Protective Equipment.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

For research use only.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters: None

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

Ingredients: guanidinium thiocyanate

CAS-No.: 593-84-0

8.2 Exposure controls

Good ventilation and exhaust system in the workplace, and the floor has drainage and washing facilities, which can resist the erosion of chemicals. Must maintain the highest level of cleanliness in the workplace.

Personal protective equipment

Eye/face protection: Safety glasses. Used to prevent splash hazards. Government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Recommended to avoid contamination with these hazards.

Hand protection: Protective gloves, use for short times chemical resistant latex gloves with code EN 374-3 level 1.

Respiratory protection: Not necessary, if the workplace is well-ventilated.

Personal Hygiene: Wash hands before breaks and at the end of work. Handle in accordance with good industrial hygiene and safety practice.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: liquid/Color: clear/Odor: characteristic/pH: 7.0~8.0

9.2 Other information

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

Decompositions are not observed during the expiration period under recommended conditions.

10.2 Chemical stability

Decompositions are not observed during the expiration period under recommended conditions.

10.3 Possibility of hazardous reactions

Note: Thiocyanates can develop poisonous gas in contact with strong acids. Keep away from oxidizing agents, and acidic or alkaline.

10.4 Conditions to avoid

Not necessary

10.5 Incompatible materials

Note: Avoid contact with strong acids or alkaline.

10.6 Hazardous decomposition products

Decompositions are not observed during the expiration period under recommended conditions.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed

Chemical Name	Oral LD50 (Rat)	Dermal LD50 (Rabbit)	Inhalation LC50 (Rat)
Guanidinium thiocyanate CAS No.: 593-84-0	1,578 mg/kg	2,926 mg/kg	29.26 mg/l Exposure time: 4 h/ vapor

Skin corrosion/irritation

Skin irritation

Serious eye damage/irritation

Causes eye damage

Respiratory or skin sensitization

Not Classified

Germ cell mutagenicity

Not Classified

Carcinogenicity

Not Classified

Reproductive toxicity

Not Classified

Specific target organ toxicity (STOT) – single exposure

Not Classified

Specific target organ toxicity (STOT) – repeated exposure

Not Classified

Aspiration hazard

Not Classified

11.2 Information on other hazards

No data available

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Following information is valid for pure substances.

Guanidinium thiocyanate

CAS No.: 593-84-0LC50

Toxicity to fish:

LC50 (Poecilia reticulata (guppy)): 89.1 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 (Daphnia): 42.4 mg/l

Exposure time: 48 h

Toxicity to fish (Chronic toxicity):

NOEC (Poecilia reticulata (guppy)): 25 mg/l

Exposure time: 96 d

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No additional data available.

Section 13. DISPOSAL CONSIDERATIONS

Refer to local regulations.

13.1 Waste treatment methods

Dispose of contents/container in accordance with local regulation.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IMDG: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: No

IMDG Marine pollutant: No

IATA-DGR: No

14.6 Special precautions for user

None

14.7 Maritime transport in bulk according to IMO instruments

Not Applicable.

Further information

Not classified as dangerous in transport regulations.

Section 15. REGULATIONS INFORMATION

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

Look for your country-specific regulations.

15.2 Chemical safety assessment

Not necessary

Section 16. OTHER INFORMATION

16.1 List of R, H and P phrases

Full text of H-Statements referred to under sections 2 and 3.

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

Only for professional/research user.

Section 1. IDENTIFICATION

1.1 Product Identifier

Commercial Product Name: CB Binding Buffer

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

Product form: Laboratory chemical mixture/Lysis Buffer

Relevant identified uses: For research use only, not for diagnostic use.

Uses advised against:

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



1.3 Details of the supplier of the safety data sheet

Company: Favourgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park No. 8-1, Yuanxi 2nd Road, Ping Tung 908126, TAIWAN

Phone Number: +886-8-762-1829

1.4 Emergency telephone number

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Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Hazard identification Hazard classes/categories

Acute oral toxicity	Category 4
Skin burns/eye damage	Category 1
Aquatic Chronic	Category 3

GHS hazard pictograms:



GHS05



GHS07

Signal word: **DANGER**

Hazard statement(s)

H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330	Rinse mouth.

2.2 Label elements

According to section 1.5.2 of Annex I to CLP

GHS symbol



GHS05



GHS07

DANGER

Hazard contents

Guanidinium thiocyanate, 20~50%, CAS-No. 593-84-0

2.3 Other hazards

Not applicable

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances or 3.2 Mixtures

Chemical:	Guanidinium thiocyanate
Concentration:	20~50%
Classification:	H302, Acute oral Tox. 4, H314, Skin Irrit/Eye Irrit. 1, H412, 3

CAS No.: 593-84-0

Section 4. FIRST AID MEASURES

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



4.1 Description of first-aid measures

If inhaled

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact

After skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

If in eyes

Rinse cautiously with water for several minutes

4.2 Most important symptoms and effects, both acute and delayed

H302 - Harmful if swallowed.

H314 - Causes severe skin burns and eye damage.

H412 - Harmful to aquatic life.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing media: water foam carbon dioxide (CO₂) dry powder; All extinguishers can be used.

5.2 Special hazards arising from the substance or mixture

None.

5.3 Advice for firefighters

No specific fire or explosion hazard.

5.4 Additional Information

Section 6. ACCIDENTAL RELEASE MEASURE

6.1 Personal precautions, protective equipment, and emergency procedures

Do not breathe vapours/Ensure adequate ventilation/Avoid contact with skin, eyes or clothing/Use personal protection equipment/Regular staff training is necessary.

6.2 Environmental precautions

Do not allow mixture to enter ground water system.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material.

6.4 Reference to other sections

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Always wear recommended Personal Protective Equipment.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

For research use only.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



8.1 Control parameters: None

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

Ingredients: guanidinium thiocyanate

CAS-No.: 593-84-0

8.2 Exposure controls

Good ventilation and exhaust system in the workplace, and the floor has drainage and washing facilities, which can resist the erosion of chemicals. Must maintain the highest level of cleanliness in the workplace.

Personal protective equipment

Eye/face protection: Safety glasses. Used to prevent splash hazards. Government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Recommended to avoid contamination with these hazards.

Hand protection: Protective gloves, use for short times chemical resistant latex gloves with code EN 374-3 level 1.

Respiratory protection: Not necessary, if the workplace is well-ventilated.

Personal Hygiene: Wash hands before breaks and at the end of work. Handle in accordance with good industrial hygiene and safety practice.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: liquid/Color: clear/Odor: odorless/pH: 7.0~7.5

9.2 Other information

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

Decompositions are not observed during the expiration period under recommended conditions.

10.2 Chemical stability

Decompositions are not observed during the expiration period under recommended conditions.

10.3 Possibility of hazardous reactions

Note: Thiocyanates can develop poisonous gas in contact with strong acids. Keep away from oxidizing agents, and acidic or alkaline.

10.4 Conditions to avoid

Not necessary.

10.5 Incompatible materials

Note: Avoid contact with strong acids or alkaline.

10.6 Hazardous decomposition products

Decompositions are not observed during the expiration period under recommended conditions.

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed

Chemical Name	Oral LD50 (Rat)	Dermal LD50 (Rabbit)	Inhalation LC50 (Rat)
Guanidinium thiocyanate CAS No.: 593-84-0	1,578 mg/kg	2,926 mg/kg	29.26 mg/l Exposure time: 4 h/ vapor

Skin corrosion/irritation

Skin irritation

Serious eye damage/irritation

Causes eye damage

Respiratory or skin sensitization

Not Classified

Germ cell mutagenicity

Not Classified

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Carcinogenicity	Not Classified
Reproductive toxicity	Not Classified
Specific target organ toxicity (STOT) – single exposure	Not Classified
Specific target organ toxicity (STOT) – repeated exposure	Not Classified
Aspiration hazard	Not Classified

11.2 Information on other hazards

No data available.

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Following information is valid for pure substances.

Guanidinium thiocyanate

CAS No.: 593-84-0LC50

leuciscus idus/96h: 1759 mg/L

WGK (DE): 1 WGK No.: 0788

Storage class (VCI): 12

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No additional data available.

Section 13. DISPOSAL CONSIDERATIONS

Refer to local regulations.

13.1 Waste treatment methods

Dispose of contents/container in accordance with local regulation.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IMDG: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: No

IMDG Marine pollutant: No

IATA-DGR: No

14.6 Special precautions for user

None.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



14.7 Maritime transport in bulk according to IMO instruments

Not Applicable.

Further information

Not classified as dangerous in transport regulations.

Section 15. REGULATIONS INFORMATION

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

Look for your country-specific regulations.

15.2 Chemical safety assessment

Not necessary.

Section 16. OTHER INFORMATION

16.1 List of R, H and P phrases

Full text of H-Statements referred to under sections 2 and 3.

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

Only for professional/research user.

Section 1. IDENTIFICATION

1.1 Product Identifier

Commercial Product Name: Wash Buffer 1

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

Product form: Laboratory chemical mixture

Relevant identified uses: For research use only, not for diagnostic use.

Uses advised against:

1.3 Details of the supplier of the safety data sheet

Company: Favorgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park No. 8-1, Yuanxi 2nd Road, Ping Tung 908126, TAIWAN

Phone Number: +886-8-762-1829

1.4 Emergency telephone number

+886-8-762-1829

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Hazard identification Hazard classes/categories

Acute oral toxicity	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2

GHS hazard pictograms:



GHS07

Signal word: **WARNING**

Hazard statement(s)

H302

Harmful if swallowed

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



H315	Causes skin irritation
H319	Causes serious eye irritation
H412	Harmful to aquatic life with long lasting effects
Precautionary statement(s)	
P264	Wash hands thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/ eye protection/ face protection
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352	IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P330	Rinse mouth
P332 + P313	If skin irritation occurs: Get medical advice/attention

2.2 Label elements

According to section 1.5.2 of Annex I to CLP

GHS symbol



GHS07

WARNING

Hazard contents

Guanidine hydrochloride, 36~50%, CAS-No. 50-01-1

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances or 3.2 Mixtures

Chemical:	Guanidine hydrochloride	CAS No.: 50-01-1
Concentration:	36~<50%	
Classification:	H302, Acute oral Tox. 4, H315, Skin Irrit. 2, H319, Eye Irrit. 2	

Section 4. FIRST AID MEASURES

4.1 Description of first-aid measures

If inhaled

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

In case of skin contact

After skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H412 - Harmful to aquatic life

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



All extinguishers can be used.

5.2 Special hazards arising from the substance or mixture

None known.

5.3 Advice for firefighters

No specific fire or explosion hazard.

5.4 Additional Information

Section 6. ACCIDENTAL RELEASE MEASURE

6.1 Personal precautions, protective equipment, and emergency procedures

Do not breathe vapours/Ensure adequate ventilation/Avoid contact with skin, eyes or clothing/Use personal protection equipment/Regular staff training is necessary.

6.2 Environmental precautions

Do not allow mixture to enter ground water system.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material.

6.4 Reference to other sections

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Always wear recommended Personal Protective Equipment.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

For research use only.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters: None

Chemical: Guanidine hydrochloride
NIOSH: not listed
OSHA: not listed

CAS No.: 50-01-1

8.2 Exposure controls

Good ventilation and exhaust system in the workplace, and the floor has drainage and washing facilities, which can resist the erosion of chemicals. Must maintain the highest level of cleanliness in the workplace.

Personal protective equipment

Eye/face protection: Safety glasses. Used to prevent splash hazards. Government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Recommended to avoid contamination with these hazards.

Hand protection: Protective gloves, use for short times chemical resistant latex gloves with code EN 374-3 level 1.

Respiratory protection: Not necessary, if the workplace is well-ventilated.

Personal Hygiene: Wash hands before breaks and at the end of work. Handle in accordance with good industrial hygiene and safety practice.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: liquid/Color: clear/Odor: odorless/pH: 6.0~7.0

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



9.2 Other information

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

Note: Can form very reactive substances with oxidizing agents

10.4 Conditions to avoid

Not necessary

10.5 Incompatible materials

Note: Avoid contact with strong acids or alkalines.

10.6 Hazardous decomposition products

Decompositions are not observed during the expiration period under recommended conditions.

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Not Classified

Chemical Name	Oral LD50 (Rat)	Dermal LD50 (Rabbit)	Inhalation LC50 (Rat)
Guanidine hydrochloride CAS No.: 50-01-1	475-907 mg/kg	2000 mg/kg	[4h] 3181-7655 µg/m ³

Skin corrosion/irritation

Skin irritation/Irritating to eyes

Serious eye damage/irritation

Not Classified

Respiratory or skin sensitization

Not Classified

Germ cell mutagenicity

Not Classified

Carcinogenicity

Not Classified

Reproductive toxicity

Not Classified

Specific target organ toxicity (STOT) – single exposure

Not Classified

Specific target organ toxicity (STOT) – repeated exposure

Not Classified

Aspiration hazard

Not Classified

11.2 Information on other hazards

No data available

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Following information is valid for pure substances.

Guanidine hydrochloride

CAS No.: 50-01-1

LC50leuciscus idus/96h: 1759 mg/L

WGK (DE): 1 WGK No.: 0788

Storage class (VCI): 12

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

Section 13. DISPOSAL CONSIDERATIONS

Refer to local regulations.

13.1 Waste treatment methods

Dispose of contents/container in accordance with local regulation.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IMDG: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA-DGR: no

14.6 Special precautions for user

None

14.7 Maritime transport in bulk according to IMO instruments

Not Applicable.

Further information

Not classified as dangerous in transport regulations.

Section 15. REGULATIONS INFORMATION

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

Look for your country-specific regulations.

15.2 Chemical safety assessment

Not necessary

Section 16. OTHER INFORMATION

16.1 List of R, H and P phrases

Full text of H-Statements referred to under sections 2 and 3.

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

Only for professional/research user.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Section 1. IDENTIFICATION

1.1 Product Identifier

Commercial Product Name: Wash Buffer 2

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

Product form: Laboratory chemical mixture

Relevant identified uses: For research use only, not for diagnostic use.

Uses advised against:

1.3 Details of the supplier of the safety data sheet

Company: Favorgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park No. 8-1, Yuanxi 2nd Road, Ping Tung 908126, TAIWAN

Phone Number: +886-8-762-1829

1.4 Emergency telephone number

+886-8-762-1829

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

No hazardous substance as specified in Regulation (EC) No 1272/2008.

2.2 Label elements

Does not need labelling as hazardous.

2.3 Other hazards

Not applicable

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances or 3.2 Mixtures

Chemical: chemicals/mixture < 1%, no declaration necessary CAS No.: -----

Concentration: 0.1 - <1%

Section 4. FIRST AID MEASURES

4.1 Description of first-aid measures

If inhaled

Supply fresh air.

In case of skin contact

Remove contaminated clothing. Rinse skin with water/shower.

In case of eye contact

Rinse out with plenty of water.

If swallowed

Consult a doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

All extinguishers can be used.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



5.2 Special hazards arising from the substance or mixture

None

5.3 Advice for firefighters

No explosion hazard.

5.4 Additional Information

Section 6. ACCIDENTAL RELEASE MEASURE

6.1 Personal precautions, protective equipment, and emergency procedures

Ensure adequate ventilation.

6.2 Environmental precautions

Do not allow mixture to enter ground water system.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material.

6.4 Reference to other sections

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Always wear recommended Personal Protective Equipment.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

For research use only.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Contains no substances with occupational exposure limit.

8.2 Exposure controls

Personal protective equipment

Personal Hygiene: Wash hands before breaks and at the end of work. Handle in accordance with good industrial hygiene and safety practice.

Eye/face protection: Tight sealing safety glasses.

Hand protection: Protective gloves.

Respiratory protection: Not necessary, if the workplace is well-ventilated.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: liquid/Color: clear/ Odor: odorless/pH: 8.0~8.8

9.2 Other information

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

None

10.2 Chemical stability

No data available

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



10.3 Possibility of hazardous reactions

None

10.4 Conditions to avoid

Not necessary

10.5 Incompatible materials

None

10.6 Hazardous decomposition products

Decompositions are not observed during the expiration period under recommended conditions.

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Not Classified
Skin corrosion/irritation	Not Classified
Serious eye damage/irritation	Not Classified
Respiratory or skin sensitization	Not Classified
Germ cell mutagenicity	Not Classified
Carcinogenicity	Not Classified
Reproductive toxicity	Not Classified
Specific target organ toxicity (STOT) – single exposure	Not Classified
Specific target organ toxicity (STOT) – repeated exposure	Not Classified
Aspiration hazard	Not Classified

11.2 Information on other hazards

No data available

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Contains no substances known to be hazardous to the ecosystem.

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

Section 13. DISPOSAL CONSIDERATIONS

Refer to local regulations.

13.1 Waste treatment methods

Dispose of contents/container in accordance with local regulation.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. TRANSPORT INFORMATION

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IMDG: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: No

IMDG Marine pollutant: No

IATA-DGR: No

14.6 Special precautions for user

None

14.7 Maritime transport in bulk according to IMO instruments

Not Applicable.

Further information

Not classified as dangerous in transport regulations.

Section 15. REGULATIONS INFORMATION

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

Look for your country-specific regulations.

15.2 Chemical safety assessment

Not necessary

Section 16. REGULATIONS INFORMATION

16.1 List of R, H and P phrases

Full text of H-Statements referred to under sections 2 and 3.

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

Only for professional/research user.

Section 1. IDENTIFICATION

1.1 Product Identifier

Commercial Product Name: RNase-Free Water

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

Product form: Laboratory chemical mixture

Relevant identified uses: For research use only, not for diagnostic use.

Uses advised against:

1.3 Details of the supplier of the safety data sheet

Company: Favourgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park No. 8-1, Yuanxi 2nd Road, Ping Tung 908126, TAIWAN

Phone Number: +886-8-762-1829

1.4 Emergency telephone number

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



+886-8-762-1829

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

No hazardous substance as specified in Regulation (EC) No 1272/2008.

2.2 Label elements

Does not need labelling as hazardous.

2.3 Other hazards

Not applicable.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances or 3.2 Mixtures

Chemical:	chemicals/mixture < 1%,	no declaration necessary	CAS No.: -----
Concentration:	0.1 - <1%		

Section 4. FIRST AID MEASURES

4.1 Description of first-aid measures

If inhaled

Supply fresh air.

In case of skin contact

Remove contaminated clothing. Rinse skin with water/shower.

In case of eye contact

Rinse out with plenty of water.

If swallowed

Consult a doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

All extinguishers can be used.

5.2 Special hazards arising from the substance or mixture

None.

5.3 Advice for firefighters

No explosion hazard.

5.4 Additional Information

Section 6. ACCIDENTAL RELEASE MEASURE

6.1 Personal precautions, protective equipment, and emergency procedures

Ensure adequate ventilation.

6.2 Environmental precautions

Do not allow mixture to enter ground water system.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material.

6.4 Reference to other sections

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Always wear recommended Personal Protective Equipment.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

For research use only.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Contains no substances with occupational exposure limit.

8.2 Exposure controls

Personal protective equipment

Personal Hygiene: Wash hands before breaks and at the end of work. Handle in accordance with good industrial hygiene and safety practice.

Eye/face protection: Tight sealing safety glasses.

Hand protection: Protective gloves.

Respiratory protection: Not necessary, if the workplace is well-ventilated.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: liquid/ Color: clear/ Odor: odorless/ pH: 8.0~9.0

9.2 Other information

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

None.

10.2 Chemical stability

No data available.

10.3 Possibility of hazardous reactions

None.

10.4 Conditions to avoid

Not necessary.

10.5 Incompatible materials

None.

10.6 Hazardous decomposition products

Decompositions are not observed during the expiration period under recommended conditions.

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Not Classified
Skin corrosion/irritation	Not Classified
Serious eye damage/irritation	Not Classified
Respiratory or skin sensitization	Not Classified
Germ cell mutagenicity	Not Classified
Carcinogenicity	Not Classified

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Reproductive toxicity	Not Classified
Specific target organ toxicity (STOT) – single exposure	Not Classified
Specific target organ toxicity (STOT) – repeated exposure	Not Classified
Aspiration hazard	Not Classified

11.2 Information on other hazards

No data available.

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Contains no substances known to be hazardous to the ecosystem.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

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

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No data available.

Section 13. DISPOSAL CONSIDERATIONS

Refer to local regulations.

13.1 Waste treatment methods

Dispose of contents/container in accordance with local regulation.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IMDG: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: No

IMDG Marine pollutant: No

IATA-DGR: No

14.6 Special precautions for user

None

14.7 Maritime transport in bulk according to IMO instruments

Not Applicable.

Further information

Not classified as dangerous in transport regulations.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Section 15. REGULATIONS INFORMATION

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

Look for your country-specific regulations.

15.2 Chemical safety assessment

Not necessary.

Section 16. REGULATIONS INFORMATION

16.1 List of R, H and P phrases

Full text of H-Statements referred to under sections 2 and 3.

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

Only for professional/research user.

Section 1. IDENTIFICATION

1.1 Product Identifier

Commercial Product Name: **Proteinase K (Liquid)**

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

Product form: Laboratory chemical mixture

Relevant identified uses: For research use only, not for diagnostic use.

Uses advised against:

1.3 Details of the supplier of the safety data sheet

Company: Favorgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park No. 8-1, Yuanxi 2nd Road, Ping Tung 908126, TAIWAN

Phone Number: +886-8-762-1829

1.4 Emergency telephone number

+886-8-762-1829

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Hazard identification Hazard classes/categories

Resp. Sens.	Category 1
Sensitization/skin	Category 1

GHS hazard pictograms:



GHS08

Signal word: **DANGER**

Hazard statement(s)

H317

May cause an allergic skin reaction.

H334

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

Precautionary statement(s)

P101

If medical advice is needed, have product container or label at hand.

P102

Keep out of reach of children.

P103

Read label before use.

P261

Avoid breathing dust/fume/gas/mist/vapours/spray.

P280

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

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



P284 hearing protection/...
P304+P340 [In case of inadequate ventilation] wear respiratory protection.
P342+P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P501 If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Supplemental Hazard Statements
None

2.2 Label elements

According to section 1.5.2 of Annex I to CLP

GHS symbol



GHS08

DANGER

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances or 3.2 Mixtures

Chemical:	Proteinase K	CAS No.: 39450-01-6
Concentration:	1- ≤2.5%	
Classification:	H334, Resp. Sens. 1, H315, Skin Irrit. 2, H317, Skin Sens.1 H319, Eye Irrit. 2 H335, STOT SE 3	

Section 4. FIRST AID MEASURES

4.1 Description of first-aid measures

If inhaled

After inhalation: Supply fresh air; consult doctor in case of complaints.

In case of skin contact

After skin contact: Immediately wash with water and soap and rinse thoroughly. Seek medical treatment.

In case of eye contact

After eye contact: Rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses. Call a doctor immediately.

If swallowed

After swallowing: Call a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

All extinguishers can be used.

5.2 Special hazards arising from the substance or mixture

None known.

5.3 Advice for firefighters

No specific fire or explosion hazard.

5.4 Additional Information

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Section 6. ACCIDENTAL RELEASE MEASURE

6.1 Personal precautions, protective equipment, and emergency procedures

Do not breathe vapours/Ensure adequate ventilation/Avoid contact with skin, eyes or clothing/Use personal protection equipment/Regular staff training is necessary.

6.2 Environmental precautions

Do not allow mixture to enter ground water system.

6.3 Methods and material for containment and cleaning up

Ensure adequate ventilation.

Soak up the dissolved solution with inert absorbent material.

6.4 Reference to other sections

Section 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Always wear recommended Personal Protective Equipment.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: Tightly closed. Dry. Keep locked up or in an area accessible only to qualified or authorized persons.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters: None

Ingredients with workplace control parameters.

8.2 Exposure controls

Good ventilation and exhaust system in the workplace, and the floor has drainage and washing facilities, which can resist the erosion of chemicals. Must maintain the highest level of cleanliness in the workplace.

Personal protective equipment

Eye/face protection: Safety glasses. Used to prevent splash hazards. Government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Recommended to avoid contamination with these hazards.

Hand protection: Protective gloves, use for short times chemical resistant latex gloves with code EN 374-3 level 1.

Respiratory protection: Not necessary, if the workplace is well-ventilated.

Personal Hygiene: Wash hands before breaks and at the end of work. Handle in accordance with good industrial hygiene and safety practice.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: liquid/Color: colorless/Odor: odorless/pH: 7.5

9.2 Other information

Section 10. STABILITY AND REACTIVITY

10.1 Reactivity

No further relevant information available.

Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature). Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

No information available.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

In the event of fire: see section 5.

Section 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Not Classified

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitization

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

Germ cell mutagenicity

Not Classified

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Not Classified

Specific target organ toxicity (STOT) – single exposure

Not Classified

Specific target organ toxicity (STOT) – repeated exposure

Not Classified

Aspiration hazard

Not Classified

11.2 Information on other hazards

No data available.

Section 12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

No data available.

12.6 Endocrine disrupting properties

No data available.

12.7 Other adverse effects

No additional data available.

Section 13. DISPOSAL CONSIDERATIONS

Refer to local regulations.

13.1 Waste treatment methods

Dispose of contents/container in accordance with local regulation.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Section 14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: -

IMDG: -

IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous goods

IMDG: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: -

14.5 Environmental hazards

ADR/RID: No

IMDG Marine pollutant: No

IATA-DGR: No

14.6 Special precautions for user

None

14.7 Maritime transport in bulk according to IMO instruments

Not Applicable.

Further information

Not classified as dangerous in transport regulations.

Section 15. REGULATIONS INFORMATION

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

This material safety data sheet complies with the requirements of Regulation (EC) No.1907/2006.

15.2 Chemical safety assessment

For this product, a chemical safety assessment was not carried out

Section 16. OTHER INFORMATION

16.1 List of R, H and P phrases

Full text of H-Statements referred to under sections 2 and 3.

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

Only for professional/research user.