SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION

1.1 Product Identifier:

Product No: KIT-9021-250
Product Name: PrimeWay Total RNA Extraction Kit, 250 preps

Other means of identification:
See section 3 or
A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1x 200 mL TR Buffer
2x 170 mL Wash Buffer R1
2x 50 mL Wash Buffer R2
1x 30 mL RNase-Free Water
3x 550 µL DNase I (2U/µL)
1x 15 mL DNase I Buffer

1.2 Recommended use of the chemical and restrictions on use:
To extract total RNA from bacteria, yeast, cultured cell, animal tissues, insect, white blood cells and plant.
For R&D use only. Not for pharmaceutical, household, or other uses.

1.3 Supplier Information:

Axil Scientific Pte Ltd
2 Tukang Innovation Grove,
06-01 JTC MedTech Hub,
Singapore 618305

Tel: +65 6775 7318

Email: custcare@axilscientific.com

Apical Scientific Sdn Bhd
No 7-1 to 7-4, Jalan SP 2/7
Taman Serdang Perdana, Seksyen 2
Seri Kembangan 43300
Selangor Darul Ehsan, Malaysia
Tel: +603 8943 3252
Fax: +603 8943 3243
Email: custcare@apicalscientific.com

1.4 Emergency phone number:

Monday – Friday, **(UTC +8:00)** 8:00 a.m. to 6:00 p.m.
+65 6775 7318 (Singapore)
+603 8943 3252 (Malaysia & Other Countries)

SECTION 2 – HAZARDS IDENTIFICATION

2.0 GHS Classification of Complete Product

Signal word DANGER

Hazard Identification	Hazard Classification; Hazard Statement
H302	Acute Tox. 4 oral; Harmful if swallowed.
H315	Skin Irrit. 2; Causes skin irritation.
H317	Skin Sens. 1; May cause an allergic skin reaction
H319	Eye Irrit. 2; Causes eye irritation.
H332	Acute Tox 4; Harmful if inhaled.

2.1 GHS Classification of the Substance or Mixture

200 mL TR Buffer

Signal word: WARNING

Hazard Identification	Hazard Classification; Hazard Statement
H302	Acute Tox 4; Harmful if swallowed.
H315	Skin Irrit. 2; Causes skin irritation.
H319	Eye Irrit. 2; Causes serious eye irritation.
H332	Acute Tox 4; Harmful if inhaled.

170 mL Wash Buffer R1

Signal word: WARNING

Hazard Identification	Hazard Classification; Hazard Statement
H302	Acute Tox 4; Harmful if swallowed.
H315	Skin Irrit. 2; Causes skin irritation.
H319	Eye Irrit. 2; Causes serious eye irritation.
H332	Acute Tox 4; Harmful if inhaled.

50 mL Wash Buffer R2

Do not need labelling as hazardous

Signal word: -

No hazard class

30 mL RNase-Free Water

Do not need labelling as hazardous

Signal word: -

No hazard class

550 µL DNase I

Signal word: DANGER

Hazard Identification	Hazard Classification; Hazard Statement
H302	Acute Tox. 4; Harmful if swallowed.
H315	Skin Irrit. 2; Causes skin irritation.
H317	Skin Sens. 1; May cause allergic skin reaction.

H319	Eye Irrit. 2; Causes serious eye irritation.

15 mL DNase I Buffer

Signal word	DANGER

Hazard Identification	**Hazard Classification; Hazard Statement**
H302	Acute Tox. 4; Harmful if swallowed.
H315	Skin Irrit. 2; Causes skin irritation.
H319	Eye Irrit. 2; Causes serious eye irritation.

2.2 Label Elements, including precautionary statements

200 mL TR Buffer

Signal word: WARNING

170 mL Wash Buffer R1

Signal word: WARNING

50 mL Wash Buffer R2

Do not need labelling as hazardous.
Signal word: -

30 mL RNase-Free Water

Do not need labelling as hazardous.
Signal word: **-**

550 µL DNase I

Signal word: WARNING

15 mL DNase I Reaction Buffer

Signal word: WARNING

Precautionary statement(s): -

Prevention

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

Response

P302 + P352	If on skin: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 +P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
P321	Call a POISON CENTER or doctor/ physician.
P330	IF SWALLOWED: Rinse mouth.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P501	Dispose of contents/container to comply with local, state and federal regulations

2.3 Other hazards

Possible hazards from physicochemical properties

In the case of pH values are less than 5 or higher than 9 then it is irritant.

Information pertaining to particular risks to human and possible symptoms

Cause after oral intake, impairments of health when ingested in small quantities. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Kit contains small amounts of enzymes, which may cause sensitization by direct and repeated contact.

Information pertaining to particular risks to the environment

No data available.

Other hazards

No additional data available.

SECTION 3 – COMPOSITION/ INFORMATION ON INGREDIENTS THAT CONTRIBUTING TO HAZARD

3.1 Substances or 3.2 Mixtures

200 mL TR Buffer

Chemical: Guanidine Hydrochloride CAS No.: 50-01-1
GHS Classification: H302, Acute Tox. 4 oral; H315, Skin Irrit. 2; H319, Eye Irrit. 2; H332, Acute Tox. 4, inh.
Formula: CH_6ClN_3
Pseudonym: Guanidinium Chloride
EC No.: 200-002-3
Concentration: 30~40%

170 mL Wash Buffer R1

Chemical: Guanidine Hydrochloride CAS No.: 50-01-1
GHS Classification: H302, Acute Tox. 4 oral; H315, Skin Irrit. 2; H319, Eye Irrit. 2; H332, Acute Tox. 4, inh.
Formula: CH_6ClN_3
Pseudonym: Guanidinium Chloride
EC No.: 200-002-3
Concentration: 50~70%

50 mL Wash Buffer R2

No component or ingredient is contributing to hazard.

30 mL RNase-Free Water

No component or ingredient is contributing to hazard.

550 µL DNase I

Chemical: DNase I — CAS No.: 9003-98-9

GHS Classification:	H317, Skin Sens. 1
Formula:	N/A
Pseudonym:	Deoxyribonuclease
EC No.:	232-667-0
Concentration:	40%

15 mL DNase I Buffer

Chemical: Tris-HCl — CAS No.: 1185-53-1

GHS Classification:	H302, Acute Tox. 4 oral; H315, Skin Irrit. 2; H319, Eye Irrit. 2.
EC No.:	214-684-5
Concentration:	≤ 10%

Chemical: Calcium Chloride — CAS No.: 10043-52-4

GHS Classification:	H319, Eye Irrit. 2
Formula:	$CaCl_2$
Pseudonym:	Calcium(II) Chloride, Calcium Dichloride
EC No.:	233-140-8
Concentration:	< 0.1%

3.3 Remarks

Components of mixture that are not listed are not hazardous to health or the environment within the meaning of GHS, and/or are present below their cut-off levels.

SECTION 4 – FIRST-AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact

Rinse cautiously with plenty of water. Remove contact lenses. Continue rinsing for at least 15 minutes and consult a physician.

Skin Contact

Rinse skin with soap and plenty of water. Remove contaminated clothing/ shoes and consult a physician.

Inhalation

Not expected to be an inhalation hazard under anticipated conditions of normal use of this material. Consult a physician if necessary.

Ingestion

After oral intake, lots of water should be drunk after it has been ingested. If you feel unwell, seek medical advice.

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 2.3) 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
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Special Exposure Hazards
Carbon oxides, Nitrogen oxides (NOx)

5.3 Special Fire-fighting Procedures
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.4 Further Information
The product itself does not burn.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures
Regular staff training is necessary, indicating hazards and precautions about the basis of operating instructions. Restrictions on activity must be observed. Wear protective gloves, protective clothing, and eye/face protection. Observe general safety guidelines for protection; avoid eye and skin contact.

6.2 Environmental precautions
Contain spill to prevent migration. Do not allow the undiluted product to enter sewers/surface or ground water. Dispose of contents/container in accordance with local regulations.

6.3 Methods and material for containment and cleaning up
Bind any escaping liquid with inert absorbent or liquid-binding material. And dispose chemicals or excess reagents in accordance to local regulations for hazardous chemicals. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections
Nil.

SECTION 7 – HANDLING AND STORAGE

7.1 Precautions for safe handling
Handling in accordance with the test instruction, that comes with the product. Use only in well-ventilated working areas.

7.2 Conditions for safe storage, including any incompatibilities.
The original product package allows a safe storage. To maintain product quality, store according to the instructions in the product labelling.

7.2.1 Requirements for stock rooms and containers
Keep original product packages tightly closed during handling and storage.

7.3 Specific end use(s)
Product for research use.

SECTION 8 – EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

200 mL TR Buffer
This component is not known to contain any substances with occupational exposure limit values.

170 mL Wash Buffer R1
This component is not known to contain any substances with occupational exposure limit values.

50 mL Wash Buffer R2
This component is not known to contain any substances with occupational exposure limit values.

30 mL RNase-Free Water
This component is not known to contain any substances with occupational exposure limit values.

550 µL DNase I
This component is not known to contain any substances with occupational exposure limit values.

15 mL DNase I Buffer
This component is not known to contain any substances with occupational exposure limit values.

8.2 Exposure controls
Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. High level of cleanliness shall be maintained at the workplace.

8.2.1 Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts is desired, use typeN95 (US) or type P1 (EN 143) dust masks.

8.2.2 Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

8.2.3 Eye/ face protection
Use safety glasses. Where contact with the eyes is likely, use chemical safety goggles.

8.2.4 Skin protection
Recommended to avoid contamination with these hazards.

8.2.5 Personal hygiene
Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes, and clothing. Rinse any clothing on which the substance has been spilled and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

200 mL TR Buffer

Appearance: Liquid	Colour: Colourless	Odour: Characteristic
pH: 4.5 (Neat, 25°C)	Specific gravity: 1.168 g/cm3	

170 mL Wash Buffer R1

Appearance: Liquid	Colour: Colourless	Odour: Characteristic
pH: 4.5 (Neat, 25°C)	Specific gravity: 1.168 g/cm3	

50 mL Wash Buffer R2

Appearance: Liquid	Colour: Colourless	Odour: Not available
pH: Not available	Specific gravity: No data available	

30 mL RNase-Free Water

Appearance: Liquid	Colour: Colourless	Odour: Odourless
pH: 8.0 – 9.0 (Neat, 25 °C)	Specific gravity: No data available	

550 µL DNase I

Appearance: Liquid	Colour: Colourless	Odour: Odourless
pH: 7.5 – 8.5 (Neat, 20 °C)	Specific gravity: No data available	

15 mL DNase I Buffer

Appearance: Liquid	Colour: Colourless	Odour: Odourless
pH: 7.5 – 8.5 (Neat, 20 °C)	Specific gravity: No data available	

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

9.3 Relevant Properties of Substance Group

No data available.

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Store according to the recommended temperature on the container label.

10.3 Possibility of hazardous reactions

Hazardous reaction has not been reported.

10.4 Conditions to avoid

Strong heat, direct sunlight, strong oxidizers, and strong reducers.

10.5 Incompatible materials

Avoid contact with strong acids or alkaline.

10.6 Hazardous decomposition products

In the original package, all parts/ all reagents are safely and separately stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Mixture

Acute toxicity

200 mL TR Buffer

Harmful if swallowed or inhaled.
Acute oral toxicity estimate - 1,922 mg/kg
Acute Inhalation toxicity estimate - 4 h - 18.88 mg/l – vapor

170 mL Wash Buffer R1

Harmful if swallowed or inhaled.
Acute oral toxicity estimate - 1,922 mg/kg
Acute Inhalation toxicity estimate - 4 h - 18.88 mg/l – vapor

550 µL DNase I

Harmful if swallowed.

15 mL DNase I Buffer

Harmful if swallowed.

Skin corrosion/irritation

200 mL TR Buffer

Mixture causes skin irritation.

170 mL Wash Buffer R1

Mixture causes skin irritation.

550 µL DNase I

Mixture causes skin irritation.

15 mL DNase I Buffer

Mixture causes skin irritation.

Serious eye damage/eye irritation

200 mL TR Buffer

Mixture causes serious eye irritation.

170 mL Wash Buffer R1

Mixture causes serious eye irritation.

550 µL DNase I

Mixture causes serious eye irritation.

15 mL DNase I Buffer

Mixture causes serious eye irritation.

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: No data available

Reproductive toxicity: No data available

Specific target organ toxicity - No data available

Specific target organ toxicity - repeated exposure: No data available

Aspiration hazard: No data available

11.2 Additional Information

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
Other dangerous properties cannot be excluded.
Handle in accordance with good industrial hygiene and safety practice.

Component:
Guanidine hydrochloride

Acute toxicity:
LD50 Oral - Rat - female - 773.6 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Rat - female - 4 h - 3.181 mg/l - dust/mist
(OECD Test Guideline 403)
LD50 Dermal - Rabbit - male and female - 2,000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Rabbit
Result: Skin irritation - 24 h
(US-EPA)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes serious eye irritation.
(OECD Test Guideline 405)

Respiratory or skin sensitization
Buehler Test - Guinea pig
Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity
Not mutagenic in Ames Test.

Ames test
Salmonella typhimurium
Result: negative

Chromosome aberration test in vitro
Chinese hamster fibroblasts
Result: negative

In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity – single exposure
No data available

Specific target organ toxicity – repeated exposure
No data available

Aspiration hazard
No data available

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity
Data for the substances and mixtures are not 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 Other adverse effects
No additional data available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose-off as unused product.

SECTION 14 – TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

UN Number
ADR/RID: - IMDG: - IATA-DGR: -

UN Proper Shipping Name:
ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA-DGR: Not dangerous goods

Transport Hazard Class(es)
ADR/RID: - IMDG: - IATA-DGR: -

Packing Group
ADR/RID: - IMDG: - IATA-DGR: -

Environmental Hazards
ADR/RID: no IMDG: marine pollutant: no IATA-DGR: no

Special Precaution for Users
Data not available.

SECTION 15 – REGULATORY INFORMATION

Safety, health, and environmental regulations/legislation specific for the substance or mixture
Data not available.

SECTION 16 – OTHER INFORMATION

Date of Issue: 4 November 2022 **Date of Revision:** 11 April 2023

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. We shall not be held liable for any damage resulting from handling or from contact with the above product and shall not establish a legally valid contractual relationship.