

**SECTION 1 – IDENTIFICATION**

**1.1 Product Identifier:**

Product No: KIT-9102-125ml  
Product Name: SEPa Plant RNA Isolation Reagent Kit, 125 mL

**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 125 mL Plant Lysis Buffer  
3x 1 mL Binding Enhancer  
1x 20 mL Lithium Chloride  
1x 15 mL Nuclease-free Water  
1x 250 µL DNase I  
1x 1.25 mL DNase Buffer with MgCl<sub>2</sub>  
1x 500 µL DNase Removal Solution*

**1.2 Recommended use of the chemical and restrictions on use:**

To extract total RNA from plant tissues.

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](mailto:custcare@axilscientific.com)

**Apical Scientific Sdn Bhd**  
No 7-1 to 7-4, Jalan SP 2/7  
Taman Serdang Perdana, Seksyen 2  
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Tel: +603 8943 3252

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**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

WARNING

**Hazard Identification**

H302

H315

H319

**Hazard Classification; Hazard Statement**

Acute Tox. 4 oral; Harmful if swallowed

Skin Irrit. 2; Causes skin irritation.

Eye Irrit. 2A; Causes serious eye irritation.

## 2.1 GHS Classification of the Substance or Mixture

### 125 mL Plant Lysis Buffer



Signal word

Warning

**Hazard Identification**

H319

**Hazard Classification; Hazard Statement**

Eye Irrit. 2A; Causes serious eye irritation

### 1 mL Binding Enhancer



Signal word

Warning

**Hazard Identification**

H315

H319

**Hazard Classification; Hazard Statement**

Skin Irrit. 2; Causes skin irritation

Eye Irrit. 2A; Causes serious eye irritation

### 20 mL Lithium Chloride



Signal word

Warning

**Hazard Identification**

H302

H315

H319

**Hazard Classification; Hazard Statement**

Acute Tox. 4 oral; Harmful if swallowed

Skin Irrit. 2; Causes skin irritation

Eye Irrit. 2; Causes serious eye irritation

### 15 mL Nuclease-free Water

Signal word  
No hazard class

Do not need labelling as hazardous

-

### 250 µL DNase I

Signal word  
No hazard class

Do not need labelling as hazardous

-

## 1.25 mL DNase Buffer with MgCl<sub>2</sub>

Signal word  
No hazard class

Do not need labelling as hazardous

-

## 500µL DNase Removal Solution

Signal word  
No hazard class

Do not need labelling as hazardous

-

## 2.2 Label Elements, including precautionary statements

### 125 mL Plant Lysis Buffer



Signal word: WARNING

### 1 mL Binding Enhancer



Signal word: WARNING

### 20 mL Lithium Chloride



Signal word: WARNING

### 15 mL Nuclease-free Water

Do not need labelling as hazardous.

Signal word: -

### 250 µL DNase I

Do not need labelling as hazardous.

Signal word: -

### 1.25 mL DNase Buffer with MgCl<sub>2</sub>

Do not need labelling as hazardous.

Signal word: -

### 500 µL DNase Removal Solution

Do not need labelling as hazardous.

Signal word: -

**Precautionary statement(s):****Prevention**

P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ eye protection/ face protection.

**Response**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.

**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**

This mixture has not been tested to determine the overall health hazard.

**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****125 mL Plant Lysis Buffer**

GHS Classification: H302, Acute Tox. 4 (Oral); H315, Skin Irrit. 2; H318, Eye Dam. 1; H335, STOT SE 3; H373, STOT RE 2; H400, Aquatic Acute 1  
Formula:  $\text{CH}_3(\text{CH}_2)_{15}\text{N}(\text{Br})(\text{CH}_3)$   
Pseudonym: cetyltrimethylammonium bromide  
EC No.: 200-311-3  
Concentration: 1 to <3%  
acc. CLP (GHS): H319, Eye Irrit. 2A

**1 mL Binding Enhancer**

Chemical: 4-Azaoctamethylenediamine CAS No.: 124-20-9  
GHS Classification: H314, Skin Corr. 1B, H318, Eye Dam.1  
Formula:  $\text{NH}_2(\text{CH}_2)_3\text{NH}(\text{CH}_2)_4\text{NH}_2$   
Pseudonym: 1,8-Diamino-4-azaoctane, N-(3-Aminopropyl)-1,4-diaminobutane  
EC No.: 204-689-0  
Concentration: 1 to <3%  
acc. CLP (GHS): H315, Skin Irrit. 2, H319, Eye Irrit. 2

**20 mL Lithium Chloride**

Chemical: Lithium Chloride Solution CAS No.: 7447-41-8  
GHS Classification: H302 Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2  
Formula: LiCl  
Pseudonym: -  
EC No.: 231-212-3  
Concentration: 30 to <60%  
acc. CLP (GHS): H302 Acute Tox. 4 oral, H315, Skin Irrit. 2, H319, Eye Irrit. 2

**15 mL Nuclease-free Water**

No component or ingredient is contributing to hazard.

**250 µL DNase I**

No component or ingredient is contributing to hazard.

**1.25 mL DNase Buffer with MgCl<sub>2</sub>**

No component or ingredient is contributing to hazard.

**500 µL DNase Removal Solution**

No component or ingredient is contributing to hazard.

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

**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 (NO<sub>x</sub>)

**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. 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**
- 125 mL Plant Lysis Buffer**  
This component is not known to contain any substances with occupational exposure limit values.
- 1 mL Binding Enhancer**  
This component is not known to contain any substances with occupational exposure limit values.
- 20 mL Lithium Chloride**  
This component is not known to contain any substances with occupational exposure limit values.

**15 mL Nuclease-free Water**

This component is not known to contain any substances with occupational exposure limit values.

**250 µL DNase I**

This component is not known to contain any substances with occupational exposure limit values.

**1.25 mL DNase Buffer with MgCl<sub>2</sub>**

This component is not known to contain any substances with occupational exposure limit values.

**500 µL DNase Removal Solution**

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 type N95 (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**

**125 mL Plant Lysis Buffer**

Appearance: liquid  
pH: No data available

Colour: Colourless  
Relative density: 1.07 g/mL at 20°C

Odour: Odourless

**1 mL Binding Enhancer**

Appearance: liquid  
pH: No data available

Colour: Colourless  
Relative density: 1.00 g/mL at 20°C

Odour: Odourless

**20 mL Lithium Chloride Solution**

Appearance: liquid  
pH: No data available

Colour: Colourless  
Specific gravity: No data available

Odour: No data available

### 15 mL Nuclease-free Water

Appearance: liquid

pH: 8.4 – 9.0 (Neat, 25 °C)

Colour: Colourless

Specific gravity: No data available

Odour: Odourless

### 250 µL DNase I

Appearance: liquid

pH: 8.4 – 9.0 (Neat, 25 °C)

Colour: Colourless

Specific gravity: No data available

Odour: Odourless

### 1.25 mL DNase Buffer with MgCl<sub>2</sub>

Appearance: liquid

pH: 8.4 – 9.0 (Neat, 25 °C)

Colour: Colourless

Specific gravity: No data available

Odour: Odourless

### 500 µL DNase Removal Solution

Appearance: liquid

pH: 8.4 – 9.0 (Neat, 25 °C)

Colour: Colourless

Specific gravity: No data available

Odour: Odourless

## 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

Data not available.

### 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, strong alkaline or Bromine trifluoride.

### 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:

**Plant Lysis Buffer**

#### Acute toxicity

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Possible symptoms: Mucosal irritations

#### Skin corrosion/irritation



Mixture causes skin irritation.

**Serious eye damage/eye irritation**

Mixture causes serious eye irritation.

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

**IARC:** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

Acute oral toxicity - Irritations of mucous membranes in the mouth, pharynx, esophagus and gastrointestinal tract.

Acute inhalation toxicity - Possible symptoms: mucosal irritations

**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.

Components:

**Lithium chloride**

RTECS: Not available

Burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Cyanosis and t-wave inversion have occurred in the breast-fed infants of women receiving lithium carbonate therapy. Large doses of lithium ion have caused dizziness and prostration and can cause kidney damage if sodium intake is limited. Dehydration, weight loss, dermatological effects, and thyroid disturbances have been reported. Central nervous system effects that include slurred speech, blurred vision, sensory loss, ataxia, and convulsions may occur. Diarrhea, vomiting, and neuromuscular effects such as tremor, clonus, and hyperactive reflexes may occur because of repeated exposure to lithium ion.

**Acute toxicity**

LD50 Oral - Rat - male - 526 mg/kg

Remarks: (ECHA)

LC50 Inhalation - Rat - male and female - 4 h - > 5.57 mg/L (OECD Test Guideline 403)

LD50 Dermal - Rat - male and female - > 2,000 mg/kg (OECD Test Guideline 402)

**Skin corrosion/irritation**

Skin - Rabbit

Result: Severe skin irritation - 24 h

Remarks: (RTECS)

Serious eye damage/eye irritation

Eyes - Rabbit  
Result: Eye irritation  
(OECD Test Guideline 405)  
Respiratory or skin sensitization  
Buehler Test - Guinea pig  
Result: Not a skin sensitizer.  
(OECD Test Guideline 406)

**Germ cell mutagenicity**

Ames test  
*Escherichia coli/ Salmonella typhimurium*  
Result: negative (in analogy to similar products)

**In vitro mammalian cell gene mutation test**

mouse lymphoma cells  
Result: negative (in analogy to similar products)

**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 mixtures are not available.

**12.2 Persistence and degradability**

Not necessary.

**12.3 Bioaccumulative potential**

Not necessary.

**12.4 Mobility in soil**

Not necessary.

**12.5 Other adverse effects**

No additional data available.

**Components: Lithium chloride**

Toxicity to fish: static test LC50 - *Oncorhynchus mykiss* (rainbow trout) – 158 mg/L - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates:  
static test EC50 - *Daphnia magna* (Water flea) - 249 mg/L – 48 h  
(OECD Test Guideline 202)

Toxicity to algae:	static test ErC50 - <i>Desmodesmus subspicatus</i> (green algae) -> 400 mg/L - 72 h (OECD Test Guideline 201)
Toxicity to bacteria:	static test EC50 - activated sludge - 320.05 mg/L - 3 h (OECD Test Guideline 209) Remarks: (in analogy to similar products)

## SECTION 13 – DISPOSAL CONSIDERATIONS

- 13.1 Product:** Offer surplus and non-recyclable solutions to a licensed disposal company.
- 13.2 Contaminated packaging:** Dispose-off as unused product.

## SECTION 14 – TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

- |  |                            |              |  |
|--|----------------------------|--------------|--|
| <b>14.1 UN Number</b>                    |                            |              |  |
| ADR/RID: -                               | IMDG: -                    | IATA-DGR: -  |  |
| <b>14.2 UN Proper Shipping Name:</b>     |                            |              |  |
| ADR/RID: Not dangerous goods             |                            |              |  |
| IMDG: Not dangerous goods                |                            |              |  |
| IATA-DGR: Not dangerous goods            |                            |              |  |
| <b>14.3 Transport Hazard Class(es)</b>   |                            |              |  |
| ADR/RID: -                               | IMDG: -                    | IATA-DGR: -  |  |
| <b>14.4 Packing Group</b>                |                            |              |  |
| ADR/RID: -                               | IMDG: -                    | IATA-DGR: -  |  |
| <b>14.5 Environmental Hazards</b>        |                            |              |  |
| ADR/RID: no                              | IMDG: marine pollutant: no | IATA-DGR: no |  |
| <b>14.6 Special Precaution for Users</b> |                            |              |  |
| 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:** 30 May 2021

**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.*