Product and Company Information

Product Name: TransZol Plant
Cat. No.: ET121
Company: TransGen Biotech Co., Ltd.
Technical Phone: +86-400-898-0321
Fax: +86-10-57815011
E-mail Address: trans@transgen.com.cn

The following TransGen products are included:

TP I buffer
TP II buffer
RNA Dissolving Solution
1. Product and Company Information

Product Name: TP I buffer
Cat. No.: GR101-11
Company: TransGen Biotech Co., Ltd.
Technical Phone: +86-400-898-0321
Fax: +86-10-57815011
E-mail Address: trans@transgen.com.cn

2. Hazards Identification

GHS-Classification
Signal word: Danger

Health hazard

<table>
<thead>
<tr>
<th>Health hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 4</td>
</tr>
<tr>
<td>Acute Inhalation toxicity - Vapours</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 1B</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Specific target organ systemic toxicity (repeated exposure)</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Hazard statements: H302 - Harmful if swallowed
H332 - Harmful if inhaled
H314 - Causes severe skin burns and eye damage
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements
P310 - Immediately call a POISON CENTRE or doctor/physician
P301 + P312 - IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P260 - Do not breathe dust or mist
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P264 - Wash hands thoroughly after handling
P391 - Collect spillage
P273 - Avoid release to the environment.

Potential health effects

| Eyes      | Causes burns. Risk of serious damage to eyes. |
| Skin     | Causes burns. Irritating to skin. May cause sensitisation by skin contact. |
| Inhalation | Harmful by inhalation. |
| Ingestion | Harmful if swallowed. |

3. Composition

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Mercaptoethanol</td>
<td>60-24-2</td>
<td>20</td>
</tr>
<tr>
<td>Sodium azide</td>
<td>26628-22-8</td>
<td>0.5</td>
</tr>
</tbody>
</table>

We recommend handling all chemicals with caution. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides.

4. First Aid Measures

| General advice | In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). |
| Eye contact    | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. |
| Skin contact   | Wash off immediately with plenty of water for at least 15 minutes. |
| Inhalation     | Move to fresh air. |
5. **Fire-Fighting Measures**


Special protective equipment for firefighters: Wear self-contained breathing apparatus and protective suit.

6. **Accidental Release Measures**

Personal precautions: Use personal protective equipment.

Methods for cleaning up: Soak up with inert absorbent material.

Environmental precautions: Prevent further leakage or spillage if safe to do so.

7. **Handling and Storage**

Handling: Always wear recommended Personal Protective Equipment. No special handling advice required.

Storage: Keep containers tightly closed in a cool, well-ventilated place.

8. **Exposure Controls/Personal Protection**

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL (TWA)</th>
<th>OSHA PEL (STEL)</th>
<th>ACGIH OEL (TWA)</th>
<th>ACGIH OEL (STEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Mercaptoethanol</td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Sodium azide</td>
<td>0.1 mg/m³</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

9. **Physical and Chemical Properties**

General Information

Form: liquid
Water solubility: soluble
Others: No information available.

10. Stability and Reactivity

Stability
Stable under normal conditions

Materials to avoid
Strong oxidizing agents. Strong acids. Isocyanates. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides.

Polymerization
None under normal processing.

11. Toxicological Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 (oral, rat/mouse)</th>
<th>LD50 (dermal, rat/rabbit)</th>
<th>LC50 (inhalation, rat/mouse)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Mercaptoethanol</td>
<td>244 mg/kg (Oral)</td>
<td>no data available</td>
<td>250 ppm/8hrs</td>
</tr>
<tr>
<td>Sodium azide</td>
<td>27 mg/kg (Oral)</td>
<td>no data available</td>
<td>no data available</td>
</tr>
</tbody>
</table>

Principal Routes of Exposure / Potential Health effects

Eyes
Causes burns Risk of serious damage to eyes

Skin
Causes burns Irritating to skin. May cause sensitisation by skin contact.

Inhalation
Harmful by inhalation.

Ingestion
Harmful if swallowed.

Carcinogenic effects
None.

Mutagenic effects
None.

Reproductive toxicity
None.

12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity effects</th>
<th>No information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>No information available.</td>
</tr>
<tr>
<td>Biodegradation</td>
<td>No information available.</td>
</tr>
<tr>
<td>Bioaccumulation</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

13. Disposal Considerations

TransGen Biotech Co., Ltd.
14. Transport Information

IATA
Proper shipping name: Toxic liquid, organic, n.o.s. (thioglycol solution)
Hazard class: 6.1
Subsidiary Class: No information available
Packing group: II
UN-No: UN2810

15. Regulatory Information

International Inventories: Complies

16. Other Information

For research use only. Not intended for human or animal diagnostic or therapeutic uses.

The above information was acquired by diligent search and/or investigation and the recommendations are based on prudent application of professional judgment. The information shall not be taken as being all inclusive and is to be used only as a guide. All materials and mixtures may present unknown hazards and should be used with caution. Since the Company cannot control the actual methods, volumes, or conditions of use, the Company shall not be held liable for any damages or losses resulting from the handling or from contact with the product as described herein.

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End of Safety Data Sheet
Material Safety Data Sheet

Revision Date: 16-Feb-2016

1. Product and Company Information

Product Name: TP II buffer
Cat. No.: GR101-12
Company: TransGen Biotech Co., Ltd.
Technical Phone: +86-400-898-0321
Fax: +86-10-57815011
E-mail Address: trans@transgen.com.cn

2. Hazards Identification

GHS-Classification
Signal word: Danger

Hazard statements:
- H301 - Toxic if swallowed
- H311 - Toxic in contact with skin
- H314 - Causes severe skin burns and eye damage.
- H341 - Suspected of causing genetic defects
- H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements
- P261 - Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTRE or doctor/physician
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/physician.

3. Composition
<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>&gt;50</td>
</tr>
<tr>
<td>Tris (hydroxymethyl) aminomethane</td>
<td>77-86-1</td>
<td>&lt;10</td>
</tr>
</tbody>
</table>

We recommend handling all chemicals with caution.

4. **First Aid Measures**
   
   **General advice**
   In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

   **Eye contact**
   Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

   **Skin contact**
   Wash off immediately with plenty of water for at least 15 minutes.

   **Inhalation**
   Move to fresh air.

   **Ingestion**
   Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

   **Notes to physician**
   Treat symptomatically.

5. **Fire-Fighting Measures**
   
   **Suitable extinguishing media**
   Water spray. Carbon dioxide (CO₂). Foam. Dry chemical

   **Special protective equipment for firefighters**
   Wear self-contained breathing apparatus and protective suit.

6. **Accidental Release Measures**
   
   **Personal precautions**
   Use personal protective equipment.

   **Methods for cleaning up**
   Soak up with inert absorbent material.

   **Environmental precautions**
   Prevent further leakage or spillage if safe to do so.

7. **Handling and Storage**
   
   **Handling**
   Always wear recommended Personal Protective Equipment. No special handling advice required.
8. Exposure Controls/Personal Protection

Exposure limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL (TWA)</th>
<th>OSHA PEL (STEL)</th>
<th>ACGIH OEL (TWA)</th>
<th>ACGIH OEL (STEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>2 ppm</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td></td>
<td>7.8 mg/m$^3$</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
</tbody>
</table>

9. Physical and Chemical Properties

General Information

Form: liquid

Water solubility: soluble

Others: No information available.

10. Stability and Reactivity

Stability: Stable under normal conditions

Materials to avoid: Strong oxidizing agents.

Polymerization: None under normal processing.

11. Toxicological Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 (oral, rat/mouse)</th>
<th>LD50 (dermal, rat/rabbit)</th>
<th>LC50 (inhalation, rat/mouse)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>317 mg/kg (Rat)</td>
<td>no data available</td>
<td>316 mg/m$^3$ (Rat)</td>
</tr>
</tbody>
</table>

Principal Routes of Exposure/ Potential Health effects

Eyes

Causes eye burns.

Skin

Toxic in contact with skin. Causes burns.
Components of the product may be absorbed into the body through the skin.

Inhalation

May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion

Toxic if swallowed. Causes burns.
Carcinogenic effects  
None.
Mutagenic effects  
None.
Reproductive toxicity  
None.

12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity effects</th>
<th>No information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>No information available.</td>
</tr>
<tr>
<td>Biodegradation</td>
<td>No information available.</td>
</tr>
<tr>
<td>Bioaccumulation</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

13. Disposal Considerations

Dispose of in accordance with local regulations.

14. Transport Information

IATA
Proper shipping name  Phenol solution
Hazard class  6.1
Subsidiary Class  No information available
Packing group  II
UN-No  UN2821

15. Regulatory Information

International Inventories  Complies

16. Other Information

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End of Safety Data Sheet
1. Product and Company Information

Product Name: RNA Dissolving Solution  
Cat. No.: GQ101-01  
Company: TransGen Biotech Co., Ltd.

2. Hazards Identification

Not hazardous

3. Composition

The product contains no substances which at their given concentration, are considered to be hazardous to health. We recommend handling all chemicals with caution.

4. First Aid Measures

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact: Wash off immediately with plenty of water for at least 15 minutes.

Inhalation: Move to fresh air.

Ingestion: Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Not an expected route of exposure.

Notes to physician: Treat symptomatically.
5. **Fire-Fighting Measures**

   - **Suitable extinguishing media**: Water spray. Carbon dioxide (CO₂). Foam. Dry chemical.
   - **Special protective equipment for firefighters**: Wear self-contained breathing apparatus and protective suit.

6. **Accidental Release Measures**

   - **Personal precautions**: Use personal protective equipment.
   - **Methods for cleaning up**: Soak up with inert absorbent material.
   - **Environmental precautions**: Prevent further leakage or spillage if safe to do so.

7. **Handling and Storage**

   - **Precautions for safe handling**: Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice.
   - **Conditions for safe storage**: Keep in a dry, cool and well-ventilated place.

8. **Exposure Controls/Personal Protection**

   - Exposure limits: We are not aware of any national exposure limit.

9. **Physical and Chemical Properties**

   - **General Information**
     - **Form**: Liquid
     - **Water solubility**: Soluble
     - **Others**: No information available.

10. **Stability and Reactivity**

    - **Stability**: Stable under normal conditions
    - **Materials to avoid**: No data available
    - **Hazardous decomposition**: No data available

11. **Toxicological Information**

    - **Acute toxicity**: No information available.
### Principle Routes of Exposure/ Potential Health effects

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>May cause eye irritation with susceptible persons.</td>
</tr>
<tr>
<td>Skin</td>
<td>May cause skin irritation in susceptible persons.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>May be harmful by inhalation.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
<tr>
<td>Carcinogenic effects</td>
<td>No information available.</td>
</tr>
<tr>
<td>Mutagenic effects</td>
<td>No information available.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

### 12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity effects</th>
<th>No information available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>No information available.</td>
</tr>
<tr>
<td>Biodegradation</td>
<td>No information available.</td>
</tr>
<tr>
<td>Bioaccumulation</td>
<td>No information available.</td>
</tr>
</tbody>
</table>

### 13. Disposal Considerations

Dispose of in accordance with local regulations.

### 14. Transport Information

<table>
<thead>
<tr>
<th>IATA</th>
<th>Not dangerous goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Not classified as dangerous in the meaning of transport regulations</td>
</tr>
<tr>
<td>Hazard class</td>
<td>none</td>
</tr>
<tr>
<td>Subsidiary Class</td>
<td>none</td>
</tr>
<tr>
<td>Packing group</td>
<td>none</td>
</tr>
<tr>
<td>UN-No</td>
<td>none</td>
</tr>
</tbody>
</table>

### 15. Regulatory Information

TransGen Biotech Co., Ltd.
16. Other Information

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