SAFETY DATA SHEET

1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION
PRODUCT NAME: DL-Phosphinothricin, Monoammonium Salt
PRODUCT NUMBER: P679
COMPANY INFO: PhytoTechnology Laboratories®
PO Box 12205, Shawnee, KS 66282-2205
Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442
www.phytotechlab.com
EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only
1-352-323-3500 - International
RECIEMMENDED USE: For Research Use Only
RESTRICTIONS ON USE: Products sold by PhytoTechnology Laboratories® are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

2. HAZARDS IDENTIFICATION
Classification of the substance or mixture

GHS Classification:
- H302 - Acute toxicity, Oral (Category 4)
- H302 – Acute toxicity, Inhalation (Category 4)
- H361 - Reproductive toxicity (Category 2)
- H373 – Specific target organ toxicity – repeated exposure (Category 2)

GHS Label elements, including hazard and precautionary statements:

Pictogram: Signal Word: Danger

Hazard Statements:
- H302 + H332 – Harmful if swallowed or if inhaled.
- H361 – Suspected of damaging the unborn child.
- H373 – May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements:
- P202 – Do not handle until all safety precautions have been read and understood.
- P260 – Do not breathe dust.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- P301 + P312 + P330 – IN SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
- P304 + P340 – IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

3. COMPOSITION/INFORMATION ON INGREDIENTS
Synonyms: PPT; 2-Amino-4-(hydroxymethylphosphinyl)butanoic Acid, Monoammonium Salt
CAS No: 77182-82-2
Formula: C₅H₁₅N₂O₄P
Molecular Weight: 198.19 g/mol
EC No.: 278-636-5
<table>
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<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>Percent</th>
<th>Hazardous</th>
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<tr>
<td>DL-Phosphinothricin, Monoammonium Salt</td>
<td>77182-82-2</td>
<td>&gt;90 %</td>
<td>No exposure limits established by OSHA or ACGIH</td>
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### 4. FIRST AID MEASURES

**General Advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**Route of Entry**

- **Ingestion**
  - Symptoms: May cause irritation if swallowed
  - First Aid Procedures: If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. Get medical attention.

- **Inhalation**
  - Symptoms: May cause irritation to respiratory tract
  - First Aid Procedures: Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. Get medical attention.

- **Eye Contact**
  - Direct contact may cause irritation. May cause redness, tearing, or blurred vision.
  - First Aid Procedures: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

- **Skin Contact**
  - Irritating. May cause reddening, itching or inflammation.
  - First Aid Procedures: Wash area thoroughly with soap and water. Remove and wash contaminated clothing. Get medical attention if irritation persists.

**Most Important Symptoms or Effects, Both Acute and Delayed:**

See section 2 and/or section 11

**Recommendation for Immediate Medical Care and Special Treatment Needed:**

No data available

### 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media:** Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.

**Special Protective Equipment and Precaution for Firefighters:** In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.

**Hazardous Combustion Products:** May emit toxic fumes under fire conditions.

**Toxic Gases Produced:** Carbon oxides, nitrogen oxides (NOx), Oxides of phosphorus

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions, Protective Equipment and Emergency Procedures:**

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental Precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**Method of Containment and Cleanup:** Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let products enter drains.

### 7. HANDLING AND STORAGE

**Precaution for Safe Handling:** Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Keep away from combustible materials. Wash thoroughly after use.

**Conditions for Safe Storage:** Keep in a tightly closed container and store in a cool, dry, and well-ventilated area. Protect from moisture.
Recommended Storage Temperature: Room Temperature

Incompatibilities: Strong oxidizing agent

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA’s Permissible Exposure Limits (PELs): No data available

Threshold Limit Values (TLVs): No data available

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

- Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.
- Skin Protection: Protective gloves
- Body Protection: Lab coat
- Respiratory Protection: Appropriate respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White to Yellow Powder

pH: Under Development

Solubility: Soluble in Water

Melting Range: 209 – 215 °C

Vapor Density: No data available

Vapor Pressure: No data available

Specific Gravity: 1.4

Odor: May have pungent odor

Odor Threshold: No data available

Viscosity: No data available

Relative Density: No data available

Evaporation Rate: No data available

Initial Boiling Point and Boiling Range: No data available

Flammability (solid, gas): No data available

Partition coefficient: n-octanol/water): No data available

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Flash Point: > 100 °C (>212 °F)

Flammable Limits: Upper (%) – No data available Lower (%) – No data available

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical Stability: Stable under normal conditions of use

Possibility of Hazard Reactions: Will not occur

Conditions to Avoid: Dust generation, moisture, air

Incompatibles Materials: Strong oxidizing agents

Hazardous Decomposition Products: Carbon oxides, nitrogen oxides (NOx), Oxides of phosphorus
11. TOXICOLOGICAL INFORMATION

Toxicity:  
$LD_{50}$ (Oral-Rat)(mg/Kg): 1620  
$LD_{50}$ (Inhalation-Rat)(mg/m$^3$): 1260  
$LD_{50}$ (Dermal-Rat)(mg/Kg): >2000  

Carcinogenicity:  
NTP: No  
IARC: No  
Z List: No  
OSHA Reg: No  

Reproductive Toxicity: Suspected human reproductive toxicant.  

Symptoms Associated with Overexposure: Irritation, itching, gastrointestinal upset, nausea, headache, breathing difficulties, depression, blood pressure changes, convulsions, excessive salivation, coma, cyanosis, kidney impairment, central nervous system stimulation, in extreme cases death.  

Specific Target Organ Toxicity:  
Single Exposure: No data available  
Repeated Exposure: May cause damage to organs through prolonged or repeated exposure.  

Target Organs: Respiratory system, gastrointestinal system, central nervous system, kidney, blood  

Medical Conditions Aggravated By Exposure: Pre-existing conditions  

Routes of Entry: Ingestion, inhalation, skin and eye contact  

NIOSH/RTECS NO: EK7713600  

*The toxicological properties of this product have not been thoroughly investigated*

12. ECOLOGICAL INFORMATION

Ecotoxicity: Toxicity to fish $LC_{50}$ - Oncorhynchus mykiss (rainbow trout) - 710 mg/l - 96 h  
Toxicity to daphnia and other aquatic invertebrates  

Persistence and Degradability: No data available  
Bioaccumulative Potential: No data available  
Mobility in Soil: No data available  
Other Adverse Effects: No data available  

13. DISPOSAL CONSIDERATION

Disposal Procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations.  

EPA Hazardous Waste Number: No data available  

14. TRANSPORT INFORMATION

Domestic (D.O.T.):  
Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)  
Hazard Class: N/A  
UN/NA: N/A  
Labels: N/A  

International:  
IMDG:  
Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)  
Hazard Class: N/A  
UN/NA: N/A  
Labels: N/A
IATA: 
Proper Shipping Name: CHEMICALS, N.O.S. (NON-REGULATED)

Hazard Class: N/A
UN/NA: N/A
Labels: N/A

15. REGULATORY INFORMATION

TSCA: No

SARA TITLE III:
- Section 302 (EHS) Ingredients: No
- Section 313 Ingredients: No
- Section 304 (EHS/CERCLA) Ingredients: No
- Section 311/312 Hazard: Acute Health Hazard

Massachusetts Right to Know Components: No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components: CAS No.: 77182-82-2
Glufosinate ammonium

New Jersey Right to Know Components: CAS No.: 77182-82-2
Glufosinate ammonium

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

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<th>Chronic Health Hazard</th>
<th>Flammability</th>
<th>Physical Hazard</th>
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Revision Date: 15 May 15