**Material Safety Data Sheet**

**TREE-äge**  Insecticide

**Section 1: Product Identification**

Product Trade Name: TREE-äge  
EPA Signal Word: Warning  
Active Ingredient (% w/w): Emamectin Benzoate (4%)  
Chemical Name: Avermectin B1, 4"--deoxy-4"--(methylamino)-(4R)--benzoate (salt)  
Chemical Class: Insecticide  
EPA Registration Number: 100-1309-74578

**Section 2: Composition/Information on Ingredients**

<table>
<thead>
<tr>
<th>Material</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>OTHER</th>
<th>NTP/IARC/OSHA Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrofurfuryl Alcohol (THFA)</td>
<td>Not Established</td>
<td>Not Established</td>
<td>2 ppm (TWA)***</td>
<td>No</td>
</tr>
<tr>
<td>Emamectin Benzoate (4%)</td>
<td>Not Established</td>
<td>Not Established</td>
<td>0.02 mg/m³ (TWA)**</td>
<td>No</td>
</tr>
</tbody>
</table>

*** Syngenta Occupational Exposure Limit (OEL)  
**** Recommended by AIHA (American Industrial Hygiene Association)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications. Syngenta Hazard Category: C S

**Section 3: Hazards Identification**

**Health and Environmental:** Causes eye and skin irritation. May be harmful if swallowed. Harmful if inhaled. Vapors may cause drowsiness and dizziness. Inhalation can cause irritation to the respiratory tract and can result in chemical pneumonitis if aspirated. Ingestion results in central nervous system effects such as muscle tremors, decreased activity, ataxia (unsteadiness or incoordination), and dilated pupils (mydriasis).  
**Hazardous Decomposition Products:** May decompose at high temperatures forming toxic gases.

**Physical Properties**

**Appearance:** Blue liquid  
**Odor:** Aromatic

**Unusual Fire, Explosion and Reactivity Hazards** During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

**In Case of Spill or Leak:** Control the spill at its source. Contain the spill to prevent spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

**Section 5: Fire Fighting Measures**

**Fire and Explosion:**  
Flash Point (Test Method): >226°F (Pensky-Martens CC)  
Flammable Limits (% in Air): Lower: N/A Upper: N/A  
Auto ignition Temperature: 682°F  
Flammability: Not Applicable

**Unusual Fire, Explosion and Reactivity Hazards** During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

**In Case of Fire**

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion.  
Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

**Section 6: Accidental Release Measures**

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

**Section 7: Handling and Storage**

**Section 8: Exposure Controls/Personal Protection**

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.**

**FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.**

Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

Eye Contact: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

**Section 9: Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Blue Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Aromatic</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>1.08 g/cm³ @ 68°F (20°C)</td>
</tr>
<tr>
<td>pH</td>
<td>5.68 @ 77°F (25°C)</td>
</tr>
<tr>
<td>Solubility in H₂O</td>
<td>30 – 50 ppm (pH 7)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>3 x 10⁻(8) mmHg @ 70°F (21°C)</td>
</tr>
</tbody>
</table>

**Section 10: Stability and Reactivity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable under normal use and storage conditions.</td>
</tr>
<tr>
<td>Hazardous Polymerization</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>None known.</td>
</tr>
<tr>
<td>Materials to Avoid</td>
<td>None known.</td>
</tr>
<tr>
<td>Hazardous Decomposition</td>
<td>May decompose at high temperatures forming toxic gases.</td>
</tr>
</tbody>
</table>

**Section 11: Toxicology Information**

**Acute Toxicity/Irritation Studies (Finished Product)**

- **Ingestion**: Oral (LD50 Female Rat): 3129 mg/kg body weight
- **Dermal**: Dermal (LD50 Rat): > 5000 mg/kg body weight
- **Inhalation**: Inhalation (LC50): > 2.54 mg/l air – 4 hours

**Eye Contact**: Severly Irritating (Rabbit)

**Skin Contact**: Slightly Irritating (Rabbit)

**Skin Sensitization**: Not a Sensitizer (Guinea Pig)

**Reproductive/Developmental Effects**

- **Emamectin Benzoate**: Developmental and reproductive toxicity observed in dosages that are toxic to mature animals.

**Chronic/Subchronic Toxicity Studies**

- **Emamectin Benzoate**: Tremors and nervous lesions observed at lowest does tested in rabbits. Bladder changes reported in rats.

**Carcinogenicity**

- **Emamectin Benzoate**: None observed

**Other Toxicity Information**

**Toxicity of Other Components**

- **Tetrahydrofurfuryl Alcohol (THFA)**: May be harmful if swallowed. Causes respiratory tract irritation. Causes skin irritation. May cause digestive tract irritation. Causes severe eye irritation. Inhalation overexposure may cause dizziness, incoordination and unconsciousness. Chronic overexposure may affect the kidney.

**Target Organs**

- **Active Ingredients**
  - Emamectin Benzoate: Central nervous system, bladder
- **Inert Ingredients**
  - Tetrahydrofurfuryl Alcohol (THFA): Digestive tract, respiratory tract, skin, eye, CNS, kidney

- **Carcinogenicity**
  - **Emamectin Benzoate**: None observed

**Section 12: Ecological Information**

**Summary of Effects**

- **Emamectin Benzoate**: Very toxic to aquatic life with long lasting effects

**Ecotoxicity Effects**

- **Emamectin Benzoate**
  - Fish (Rainbow Trout) 96-hour LC50 174 ppb
  - Fish (Bluegill Sunfish) 96-hour LC50 180 ppb
  - Green Algae 5-day EC50 > 3.9 ppb
  - Bird (Bobwhite Quail) LD50 Oral 264 mg/kg
  - Bee (Contact) LD50 0.0035 ug/bee
  - Invertebrate (Water Flea) 48-hour EC50 1.00ppb

**Environmental Fate**

- **Emamectin Benzoate**: The information presented here is for the active ingredient, emamectin benzoate.

  - Sinks in water (after 24 h).

**Section 13: Disposal Considerations**

- **Disposal**
  - Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.
  - **Characteristic Waste**: Not Applicable
  - **Listed Waste**: Not Applicable

**Section 14: Transport Information**

**DOT Classification**

- **Ground Transport - NAFTA**: Not regulated by US DOT.
- **Air Transport - NAFTA**: Not regulated by US DOT.

**B/L Freight Classification**

- Insects, NOI, O/T Poison

**Comments**

- **Water Transport - International**
- Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Emamectin Benzoate), Marine Pollutant
- Hazard Class or Division: Class 9
- Identification Number: UN 3082
- Packing Group: PG III
- IMDG EMS #: F-A, S-F

- **Air Transport - International**
- Hazard Class or Division: Class 9
- Identification Number: UN 3082
- Packing Group: PG III
- Packing Auth.: 914

- **Note**: Max. inner container 5 liter; Max. single container 450 liter

**Section 15: Regulatory Information**

**EPCRA SARA Title III Classification**

- Section 311/312 Hazard Classes: Not Applicable
- **California Proposition 65**: Not Applicable
- CERCLA/SARA 302 Reportable Quantity (RQ): None
- **RCRA Hazardous Waste Classification (40 CRR 261)**: Not Applicable
- TSCA Status: Exempt from TSCA, subject to FIFRA

**Section 16: Other Information**

**NFPA Hazard Ratings**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**HMIS Hazard Ratings**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
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