MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY ADDRESS:
RAINBOW TREECARE SCIENTIFIC ADVANCEMENTS
ST. LOUIS PARK, MN 55426

EMERGENCY TELEPHONE NUMBERS:
(800) 424-9300 (CHEMTREC, transportation and spills)

PRODUCT NAME : Pinetect™
CHEMICAL NAME : A mixture of avermectins containing primarily Avermectin B1a and Avermectin B1b
ACTIVE INGREDIENT : Abamectin (2.0%)
CHEMICAL FAMILY : Glycoside Insecticide
PRODUCT CODE : EPA Reg. No. 74779-1
CAS NUMBER : 65195-56-4 & 65195-55-3
EPA SIGNAL WORD : Warning

SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>OSHA PEL</th>
<th>ACIGH TLV</th>
<th>OTHER</th>
<th>NTP/IARC/OSHA CARCINOGEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Oil</td>
<td>5 mg/m³</td>
<td>5 mg/m³ (mist); 10 mg/m³ (STEL)</td>
<td>5 mg/m³ (mist); 10 mg/m³ (STEL)</td>
<td>No</td>
</tr>
<tr>
<td>Butylated Hydroxytoluene (BHT)</td>
<td>Not Established</td>
<td>2 mg/m³ TWA (inhalable)</td>
<td>10 mg/m³ TWA</td>
<td>IARC Group 3</td>
</tr>
<tr>
<td>n-Methylpyrroldione (&lt;= 30%)</td>
<td>Not Established</td>
<td>Not Established</td>
<td>10 ppm TWA</td>
<td>No</td>
</tr>
<tr>
<td>Abamectin (2.0%)</td>
<td>Not Established</td>
<td>Not Established</td>
<td>0.02 mg/m³ TWA</td>
<td>No</td>
</tr>
</tbody>
</table>

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

SECTION 3 - HAZARDS IDENTIFICATION SUMMARY


HEALTH HAZARDS: Causes eye and skin irritation. Harmful if swallowed or absorbed through the skin. Allergic skin reactions are possible.

PHYSICAL HAZARDS: Can decompose at high temperatures forming toxic gases.

REACTIVITY HAZARDS: Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

ENVIRONMENTAL HAZARDS: Highly toxic to fish, invertebrates, bird and bees. Not bioconcentrateable in fish.
SECTION 4 - FIRST AID MEASURES

IF SWALLOWED: Call physician or Poison Control Center immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so after calling a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF IN EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

IF INHALED: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

IF ON SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

NOTES TO PHYSICIAN: Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids. Early signs of intoxication include dilation of pupils, muscular incoordination and muscular tremors. Toxicity following accidental ingestion of abamectin can be minimized by early administration of chemical absorbents (e.g. activated charcoal). If toxicity from exposure has progressed to cause severe vomiting, the extent of resultant fluid and electrolyte imbalance should be gauged. Appropriate supportive parental fluid replacement therapy should be given, along with other required supportive measures (such as maintenance of blood pressure levels and proper respiratory functionality) as indicated by clinical signs, symptoms and measurements. In severe cases, observation should continue for at least several days until clinical condition is stable and normal. Since abamectin is believed to enhance GABA activity in animals, it is probably wise to avoid drugs that enhance GABA activity (barbiturates, benzodiazepines, valproic acid) in patients with potentially toxic abamectin exposure.

SECTION 5 - FIRE FIGHTING MEASURES

FLASHPOINT (method): > 161°F
FLAMMABLE LIMITS (% in Air): Lower: % Not Applicable Upper: % Not Applicable
FIRE AND EXPLOSION HAZARD: Combustible Liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Heavy vapors can flow along surfaces to distant ignition sources and flash back. During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

FIRE FIGHTING INSTRUCTIONS: Use appropriate extinguishing media for combustibles in the area. 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.

FIRE FIGHTING EQUIPMENT: Wear full protective clothing and self-contained breathing apparatus with full facepiece.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Clean up spills immediately, observing precautions in Section 8 of this document. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

IN CASE OF SPILL OR LEAK: Control the spill at its source. Contain the spill to prevent from 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 disposal.

This material should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of
SECTION 7 - HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN!

HANDLING: Use only in a well-ventilated area.

STORAGE: 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, 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 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.

EXPOSURE LIMITS (8 HOUR TWA): (Refer to Section 3)

ENGINEERING CONTROLS: Proper ventilation is required when handling or using this product to keep exposure to airborne contaminants below the exposure limit. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION – Use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

CLOTHING – Wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.

GLOVES - Chemical-resistant gloves, such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyvinyl chloride (PVC), viton.

RESPIRATOR – A combination particulate/organic vapor respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a NIOSH approved respirator with an organic vapor (OV) cartridge or canister with an HE filter.

Discard clothing and other absorbent materials that have been heavily contaminated with this product. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under circumstances where air-purifying respirators may not provide adequate protection.

USER SAFETY RECOMMENDATIONS:
1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Yellow to red brown liquid
ODOR: Not determined.
BOILING POINT: Not Available
SPECIFIC GRAVITY/DENSITY: 0.96 g/cm³ (68-78°F [20-25°C])
pH: 2.6-3.6 (1% in deionized H₂O)
VAPOR PRESSURE: 7.5 x 10⁻⁸ mmHg @ 77°F (25°C)
WATER SOLUBILITY: 0.007 – 0.01 mg/l @ 68°F (20°C)

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal use and storage conditions.
CONDITIONS TO AVOID: None known.
INCOMPATIBILITY WITH OTHER MATERIALS: None known.
HAZARDOUS DECOMPOSITION PRODUCTS: Can decompose at high temperatures forming toxic gas.
HAZARDOUS POLYMERIZATION: Product will not undergo polymerization.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:
Oral LD₅₀ (rat) - ~ 300 mg/Kg body weight (Moderately Toxic)
Dermal LD₅₀ (rabbit) - > 1,800 mg/Kg body weight (Moderately Toxic)
Inhalation LC₅₀ (rat) - > 3.5 mg/l air – 4 hours (Practically Non-Toxic)
Eye Irritation (rabbit) - Moderately Irritating
Skin Irritation (rabbit) - Moderately Irritating
Sensitization (guinea pig) - Sensitizing

CARCINOGEN STATUS:
OSHA - Not listed.
NTP - Not listed.
IARC - Not listed.

TOXICITY OF AMBAMECTIN:
Reproductive/Developmental Effects: Reproductive toxin in animal studies only at doses acutely toxic to the maternal animal.
Chronic/Subchronic Toxicity Studies: Central nervous system effects in animals.
Carcinogenicity: None Observed.

TOXICITY OF OTHER COMPONENTS:
Butylated Hydroxytoluene (BHT): Listed as an IARC (Group 3) carcinogen not classifiable as human (no data available) with limited animal evidence. Exposure may result in irritation to eyes, skin and respiratory tract. Ingestion may cause diarrhea, respiratory depression, tremors, and chronic pulmonary edema or congestion and hemorrhage.
Mineral Oil: May cause respiratory irritation when inhaled as a mist.
n-Methylpyrrolidone (≤ 30%): May cause respiratory tract irritation. Repeated or prolonged exposure may cause drying and cracking of the skin.

TARGET ORGANS:
Active Ingredients
Abamectin: Skin, eye, CNS

Inert Ingredients
Butylated Hydroxytoluene (BHT): Eye, skin, respiratory tract
Mineral Oil: Respiratory tract
n-Methylpyrrolidone: Eye, skin
SECTION 12 - ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: Abamectin is highly toxic to fish, invertebrates, birds, and bees. Not bioconcentrateable in fish.

ECO-ACUTE TOXICITY OF ABAMECTIN:
Bees LC50/EC50 0.002 ug/bee
Invertebrates (Water Flea) LC50/EC50 0.00037 ppm
Fish (Trout) LC50/EC50 0.0036 ppm
Fish (Bluegill) LC50/EC50 0.0096 ppm
Birds (8-day dietary – Bobwhite Quail) LC50/EC50 3,102 ppm
Birds (8-day dietary – Mallard Duck) LC50/EC50 383 ppm

ECO-CHRONIC TOXICITY OF ABAMECTIN: Not Available


SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE: Insecticide wastes are toxic. Dispose of in accordance with applicable Federal, state and local laws and regulations.

CONTAINER: Do not reuse product containers. Dispose of product containers, waster containers, and residues according to local, state, and federal health and environmental regulations.

SECTION 14 - TRANSPORT INFORMATION

DOT SHIPPING DESCRIPTION: Pesticides, Liquid, Toxic, N.O.S. (Abamectin Solution), Marine Pollutant
DOT HAZARD CLASS: Division 6.1
UN NUMBER: 2902
DOT PACKING GROUP: PG III
DOT PRIMARY/SECONDARY LABEL: N/A
DOT PRIMARY/SECONDARY PLACARD: N/A
DOT EMERGENCY RESPONSE GUIDE #: N/A
PACKING INSTRUCTIONS (AIR): Passenger: PI611 – Max. inner pkg. 2.5 liters, single pkg. 60 liters
Cargo: PI 618 – Max. inner pkg. 5 liters, single pkg. 220 liters

B/L FREIGHT CLASSIFICATION: Insecticides, NOI, Poison
IMDG EMS#: F-A, S-A

SECTION 15 - REGULATORY INFORMATION

CERCLA SARA 302 REPORTABLE QUANTITY: - None
EPCRA SARA TITLE III CLASSIFICATION:
311/312 Hazard Categories - Acute Health Hazard, Chronic Health Hazard, Fire Hazard
313 Toxic Chemicals - n-Methylpyrrolidone (<= 30%) (CAS No. 872-50-4)
TSCA STATUS: - Exempt from TSCA, subject to FIFRA

SECTION 16 - OTHER INFORMATION

NFPA Hazard Ratings: Health 2, Flammability 2, Instability 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Extreme)

HMIS Hazard Ratings: Health 2, Flammability 2, Reactivity 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Extreme)

For non-emergency questions about this product call: 1-877-ARBORIST

DISCLAIMER: The information presented herein is based on available data from reliable sources and is correct to the best of Rainbow Treecare Scientific Advancements knowledge. Rainbow Treecare Scientific Advancements makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

Pinetect™ is a trademark of Rainbow Treecare Scientific Advancements.

© 2008 Rainbow Treecare Scientific Advancements.

REVISED DATE: January, 2008
REVISED FOR: Initial draft