DENDREX®

MATERIAL SAFETY DATA SHEET

Florida Silvics, Inc. (dba Tree Tech Microinjection Systems)
950 SE 215th Ave.
Morriston, FL 32667
In case of emergency call 1-800-622-2831

I. MATERIAL IDENTIFICATION

Product Name: **DENDREX®** **EPA Registration # 64014-1**

Active Ingredient: 1.5 mg ACEPHATE 97% SPECIALTY PRODUCT in 10 mL of distilled water per microinjection unit
Chemical Name: Acephate
Chemical Class: Insecticide
EPA Signal Word: Caution

CAUTION - HARMFUL IF SWALLOWED
- AVOID CONTACT WITH EYES, SKIN OR CLOTHING
- AVOID BREATHING MIST OR VAPOR
- KEEP OUT OF REACH OF CHILDREN

II. FIRST AID - EMERGENCY NUMBER (800) 457-2022

EYE CONTACT: Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. No additional first aid should be necessary. However, if irritation persists, see a doctor.

SKIN CONTACT: If on skin, remove contaminated clothing, wash with plenty of soap and water. Wash contaminated clothing before reuse.

INHALATION: If inhaled, move victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

INGESTION: If swallowed, drink 1 or 2 glasses of water (or milk) and induce vomiting by touching the back of throat with finger. If possible, contact a physician, Poison Control Center, or emergency center before inducing vomiting. Do not induce vomiting or give anything by mouth to an unconscious person. Take person and product container to the nearest emergency treatment center.

NOTE TO PHYSICIAN: This material contains a cholinesterase inhibitor. Measurement of blood cholinesterase activity may be useful in monitoring exposure. If signs of cholinesterase inhibition appear, atropine sulfate is antidotal. 2-PAM (PROTOPAM) is also antidotal and may be used in conjunction with atropine but should not be used alone.

III. IMMEDIATE HEALTH EFFECTS - (ALSO SEE SECTIONS XI AND XII)

EYE CONTACT: This substance is not expected to cause prolonged or significant eye irritation.

SKIN IRRITATION: This substance is not expected to cause prolonged or significant skin irritation.

DERMAL TOXICITY: If absorbed through the skin, this substance is considered practically non-toxic to internal organs.

RESPIRATORY/INHALATION: If inhaled, this substance is considered practically non-toxic to internal organs. This substance may be irritating if inhaled. Signs and symptoms of respiratory tract irritation may include, but may not be limited to, one or more of the following: nasal discharge, sore throat, coughing, bronchitis, pulmonary edema, and difficulty in breathing.

INGESTION: This substance is slightly toxic to internal organs if swallowed. The degree of injury will depend on the amount absorbed from the gut. Signs and symptoms which may be seen, usually within 12 hours following overexposure, may include, but not be ,limited to headache, dizziness, weakness, constriction of he pupil of he eye, blurred or dark visions, excessive salivation or nasals discharge, profuse sweating, abdominal cramps, nausea and vomiting. Incontinence, unconsciousness and convulsions indicate severe poisoning. In untreated severe poisoning, respiratory depression or cardiac arrest may be fatal.

IV. PROTECTIVE EQUIPMENT

EYE PROTECTION: Do not get this material in your eyes. Eye contact can be avoided by wearing chemical goggles.

SKIN PROTECTION: No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing protective clothing.

RESPIRATORY PROTECTION: No special respiratory protection is normally required. However, if operating conditions create airborne concentrations which exceed the recommended exposure standards the use of an approved respirator is required**.**

VENTILATOR: Use adequate ventilation to keep the airborne concentrations of this material below the recommended exposure standard.

V. FIRE PROTECTION

FLASH POINT: n/a
AUTOIGNITION: n/d/a
FLAMMABILITY LIMITS: (% by volume in air): Lower:n/d/a Upper: n/d/a
EXTINGUISHING MEDIA: CO_2 dry chemical, foam and water fog.
NFPA RATINGS: Health 1; Flammability 1; Reactivity n/d/a; Special n/d/a;

HMIS RATINGS: Health 1; Flammability 1; Reactivity n/d/a; Other n/d/a:
(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association or, if applicable, the National Paint and Coating Association, and do not necessarily reflect the hazard evaluation of the Chevron Environmental Health Center. Read the entire document and label before using this product.

FIRE FIGHTING PROCEDURES**:**
Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

COMBUSTION PRODUCTS**:**
Normal combustion forms carbon dioxide. water vapor, and may produce oxides of sulfur, nitrogen and phosphorus. Incomplete combustion can produce carbon monoxide.

VI. STORAGE, HANDLING AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS: Contact with alkaline materials including hypochlorite oxidants may produce noxious gases.
STABILITY: Stable at temperatures below 122° F (500^{o} C).
HAZARDOUS POLYMERIZATION: Polymerization will not occur.
INCOMPATIBILITY: Avoid contact with alkaline materials.
SPECIAL PRECAUTIONS: IT IS A VIOLATION OF FEDERAL LAW TO USE THIS PRODUCT IN A MANNER INCONSISTENT WITH ITS LABELING. READ THE ENTIRE LABEL. USE STRICTLY IN ACCORDANCE WITH LABEL PRECAUTIONARY STATEMENTS AND DIRECTIONS**.**

Keep pesticide in original container. Do not store or transport near food or feed. Do not contaminate food or feed. Store in a secure, preferably locked, cool dry storage area way from heat, open flame, and direct sunlight.

VII. PHYSICAL PROPERTIES

SOLUBILITY: Soluble in water; moderately soluble in alcohol and acetone; slight-moderate solubility in aromatic solvents**.**
APPEARANCE: White powder with a strong cabbage-like odor.
BOILING POINT: n/a
MELTING POINT: 86.9 - 91.0 ^{o}C (Decomposes)
EVAPORATION: n/a
SPECIFIC GRAVITY: 1.35
VAPOR PRESSURE: 1.7 X 10^{-6}mm Hg @ 24 ^{o}C
VOLATILE (VOLUME %): n/a
VAPOR DENSITY (AIR=1): n/a
MOLECULAR WEIGHT: 183
DENSITY: n/d/a Bulk den. 0.69 g/cc Fluff

VIII. ENVIRONMENTAL CONCERNS, SPILL RESPONSE AND DISPOSAL

CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300 (24 hours).

SPILL/LEAK PRECAUTIONS**:**
Do not discharge into lakes, streams, ponds or public waters unless in accordance with NPDES permit. Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of waste. For help with any spill, leak, fire or exposure involving this material, call day or night (800) 457-2022.
Clean up spills immediately, observing precautions in Protective Equipment section. Vacuum with machines equipped with high efficiency filters or sweep up material and place in a disposable container. Scrub contaminated area with detergent and water using a stiff broom. Pick up liquid with Oil Dri, cat litter, clay, rags or other absorbent and place in a disposable container.

DISPOSAL METHODS: Check government regulations and local authorities for approved disposal of this material.

IX. EXPOSURE STANDARDS, REGULATORY LIMITS AND COMPOSITION

COMPOSITION CONTENT**:**
ACTIVE INGREDIENT: Acephate 97% Specialty Product (CAS 305601910)
Acephate: O,S-Dimethyl acetyl phosphoramidothioate

This substance is subject to the provisions of the Pennsylvania Worker and Community Right-to-Know Act. Specific chemical identities are trade secret under the provisions of 35 Pennsylvania Statute Section 7311.

EACH MICROINJECTION UNIT CONTAINS 1.5 g OF ACEPHATE 97% SP DISSOLVED IN 10 mL OF DISTILLED WATER

X. REGULATORY INFORMATION

DOT SHIPPING NAME: n/d/a
DOT HAZARD CLASS: n/d/a
DOT IDENTIFICATION NUMBER: n/d/a

SARA 311 CATEGORIES:
1. Immediate (Acute) Health Effects; YES
2. Delayed (Chronic) Health Effects; NO
3. Fire Hazard; NO
4. Sudden Release of Pressure Hazard; NO
5. Reactivity Hazard; n/d/a

XI. PRODUCT TOXICOLOGY DATA

EYE IRRITATION: Minimal effects clearing in less than 24 hours.
SKIN IRRITATION: No irritation at 72 hours.
DERMAL TOXICITY: The dermal LD_{50} in rabbits is > 10 g/kg
RESPIRATORY INHALATION: The 4-hour Inhalation LC_{50} in rats is > 61 mg/l.
INGESTION: The oral LD_{50} in male rats is 900 mg/kg. The oral LD_{50} in female rats is 700 mg/kg.

XII. ADDITIONAL HEALTH DATA

ADDITIONAL HEALTH DATA**:**

This product contains acephate. There is no substantiated evidence that acephate has caused cancer, long-term health, mutagenic, or reproductive problems in humans. When mice were fed diets containing acephate throughout their entire lifetime, a compound-related increase in liver weight, together with liver carcinoma (a commonly-occurring cancer in mice) occurred in high-dose females. These changes were not observed in the males at any dose level or in low- or mid-dose females. When rats were fed diets containing acephate throughout their entire lifetime, there were no treatment-related increase in tumors at any site. The most significant treatment-related effect was a decrease in cholinesterase activity of plasma, RBC and brain.

Acephate has been shown to have a weak potential to cause mutations when tested in microbes or cultured cells and in some studies using ,mice. However, the results of most live animal studies indicate that acephate does not use mutations in whole animals.

When male and female rats were fed acephate continuously for two generations through weaning of the third generation, animals in the mid- and high-dose groups demonstrated compound-related effects on reproductive performance. The low-dose was judged to be a no-effect level. There is no evidence that acephate causes birth defects.

The significance of the above-mentioned results cannot be fully evaluated for humans. However, based on the dose-response results cannot be fully evaluated for humans. However, based no the dose-response observed in these studies and risk evaluation of the results, it is concluded that the risk of developing cancer or other adverse health effects is minimal if one follows the precautions outlined on the product label. material safety data sheet and any plant safety instructions.

Acephate did not induce a positive skin sensitization reaction in the guineas pig using the Modified Buehler or the Maximization techniques.

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. Issues 4/13/98