**Material Safety Data Sheet**

**1. PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** Prentox® Pyronyl™ Oil Concentrate #525  
**DESCRIPTION:** Insecticide mixture  
**EPA Reg. Number:** 655-471  
**EPA Signal Word:** CAUTION  
**COMPANY IDENTIFICATION:**  
Envincio LLC  
501 Cascade Pointe Lane, Suite 103  
Cary, NC 27513  
www.envincio.com

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

**ACTIVE INGREDIENTS**

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS NO.</th>
<th>% COMPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyrethrins</td>
<td>8003-34-7</td>
<td>5.0</td>
</tr>
<tr>
<td>Piperonyl Butoxide Technical</td>
<td>51-03-6</td>
<td>25.0</td>
</tr>
</tbody>
</table>

**OSHA AcGIh TLV**  
**NTP/IARC/OSHA Material PEL TLV Other Carcinogen**

- Pyrethrins: Not Est. 5 mg/m³ TWA Not Est. No  
- Piperonyl Butoxide Technical: Not Est. Not Est. Not Est. No  
- Petroleum solvent (CAS # 64742-47-8): TWA 300 ppm*  
  *Supplier recommendation

**3. HAZARD IDENTIFICATION**

**SYSTEMS OF ACUTE EXPOSURE**

**INGESTION:** May cause gastrointestinal effects, such as nausea, cramps, vomiting and diarrhea. Ingestion of large quantities can result in nervous system effects, such as dizziness, loss of coordination, tremors, and loss of consciousness. Symptoms usually regress with no long lasting effects. At high oral doses, the type of solvent in this product has caused irreversible damage to the liver and kidney (male only) in rats. These effects are not relevant to humans at occupational levels of exposure.  
**EYES:** May cause temporary eye irritation.  
**SKIN:** May be irritating to skin. Repeated contact may cause dermatitis.  
**INHALATION:** May cause nasal and respiratory irritation at high concentrations.

**4. FIRST AID**

**INGESTION:** Do not induce vomiting. This product contains a petroleum solvent. Vomiting may cause aspiration pneumonia. Call a physician or Poison Control Center immediately.  
**INHALATION:** Remove victim to fresh air. Administer artificial respiration if necessary.  
**EYE CONTACT:** Flush eyes with plenty of water for 15 minutes. Call a physician if irritation persists.  
**SKIN CONTACT:** Remove contaminated clothing and wash affected areas with soap and water. Contact a physician if irritation persists.

**5. FIRE-FIGHTING MEASURES**

**FIRE AND EXPLOSION**

**FLASH POINT (Method Used):** 170° F (closed cup)  
**FLAMMABLE LIMITS:** LEL: 0.6 UEL: 7.0 (solvent)  
**UNUSUAL FIRE, EXPLOSION AND REACTIVITY HAZARDS:** Combustible liquid. Keep containers cool to avoid explosive ignition.  
**IN CASE OF FIRE:** Use CO2, foam, dry chemical, or sand extinguishing media. Do not inhale smoke or vapors. Use self-contained breathing apparatus and wear full protective clothing. 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. This product is toxic to fish, birds and other wildlife, prevent spread of contaminated runoff.  
**NFPA HAZARD RATINGS:**  
  - Health: 1  
  - Flammability: 2  
  - Reactivity: 0

**6. ACCIDENTAL RELEASE MEASURES**

Wear chemical safety glasses with side shields or chemical goggles, chemical resistant gloves, such as barrier laminate, nitrile rubber, neoprene rubber or viton®, shoes and socks, long-sleeved shirt and long pants to prevent contact with the product.
or its vapors. Cover the spilled area with generous amounts of absorbent material, such as clay, diatomaceous earth, sand or sawdust. Sweep the contaminated absorbent onto a shovel and put the sweepings into a salvage drum. Wash the spill area with water containing a strong detergent, absorb the rinsate, sweep up and put into salvage drum. Dispose of wastes as below.

**WASTE DISPOSAL METHOD:** Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. This product is toxic to fish, birds and other wildlife. Do not contaminate the environment through improper disposal.

### 7. HANDLING AND STORAGE

Do not use or store near heat or open flame. Exposure to temperatures above 130º F may cause bursting of containers. Store in a well ventilated, secure area, out of reach of children, domestic animals. Do not contaminate water, food or feed by storage or disposal. Periodically inspect stored materials. Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**INGESTION:** Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

**EYE CONTACT:** To avoid eye contact, wear safety glasses with side shields or chemical goggles.

**SKIN CONTACT:** To avoid skin contact, wear chemical resistant gloves, such as barrier laminate, nitrile rubber, neoprene rubber or viton®, shoes and socks, long-sleeved shirt and long pants.

**INHALATION:** To avoid breathing vapors or mist, wear a NIOSH approved chemical cartridge respirator with organic vapor cartridges and a pesticide pre-filter, or a supplied air respirator.

### 9. PHYSICAL DATA

**APPEARANCE:** Yellow to amber liquid

**ODOR:** Pleasant woody odor

**MELTING POINT:** N/A

**BOILING POINT:** N/D

**SPECIFIC GRAVITY (H₂O = 1):** 0.8888

**pH:** N/A

**SOLUBILITY IN WATER:** Virtually insoluble

**VAPOUR PRESSURE:** N/D

### 10. STABILITY AND REACTIVITY

**REACTIVITY:**

**Stability:** Stable

**Hazardous Polymerization:** Will not occur

**Conditions to avoid:** Flame, heat, ignition sources, strong acids and alkalies.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known

### 11. TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY/IRRITATION STUDIES**

**PYRETHRINS (58% MANUFACTURING GRADE):**

**ACUTE ORAL TOXICITY:**

Slightly toxic

Oral LD₅₀ (rat): 2,370 mg/kg (58% pyrethrins)

**ACUTE DERMAL TOXICITY:**

Slightly toxic

Dermal LD₅₀ (rabbit): >2,000 mg/kg (58% pyrethrins)

**ACUTE INHALATION TOXICITY:**

Slightly toxic

Inhalation LC₅₀ 3.4 mg/L (58% pyrethrins)

**EYE CONTACT:** Minimally irritating (rabbit)

**SKIN CONTACT:** Minimally irritating (rabbit)

**SKIN SENSITIZATION:** Not a skin sensitizer (guinea pig)

**MUTAGENIC POTENTIAL:** Pyrethrins – none observed

**REPRODUCTIVE HAZARD POTENTIAL:**

Pyrethrins – none observed

**CHRONIC/SUBCHRONIC TOXICITY:**

Pyrethrins – none observed

**CARCINOGENICITY/ONCOGENICITY:** Pyrethrum has been tested in chronic feeding studies in mice and rats. Slightly elevated incidences of benign tumors of the thyroid and liver were seen in rats following high doses of Pyrethrum. Further detailed scientific studies into the mechanism causing these responses indicate that these effects in animals only occur at doses greatly exceeding the likely human exposure levels. Thus, the effects seen in animals are of little relevance to humans.

**OTHER TOXICITY INFORMATION:** Not available
ACUTE TOXICITY/IRRITATION STUDIES

PIPERONYL BUTOXIDE (TECHNICAL GRADE):

ACUTE ORAL TOXICITY:
Minimally toxic
Oral LD₅₀ (rat): 4,570 mg/kg – males
7,220 mg/kg - females

ACUTE DERMAL TOXICITY:
Slightly toxic
Dermal LD₅₀ (rabbit): >2,000 mg/kg

ACUTE INHALATION TOXICITY:
Slightly toxic
Inhalation LC₅₀ >5.9 mg/L

EYE CONTACT: Slightly irritating (rabbit)

SKIN CONTACT: Minimally irritating (rabbit)

SKIN SENSITIZATION: Not a skin sensitizer (guinea pig)

MUTAGENIC POTENTIAL: None observed

REPRODUCTIVE HAZARD POTENTIAL: None observed

CHRONIC/SUBCHRONIC TOXICITY
None observed

CARCINOGENIC POTENTIAL: Marginally higher incidences of benign liver tumors in mice were observed following lifetime high dose exposures to Piperonyl Butoxide. The significance of this observation is questionable and under review. The doses at which tumors were observed greatly exceeded potential human exposure from labeled uses. Doses at which these effects were observed greatly exceeded human dietary intake. At anticipated dietary exposure levels, it is highly unlikely that this product would result in carcinogenic effects.

OTHER TOXICITY INFORMATION:

MUTAGENICITY: Piperonyl Butoxide was not genotoxic in several tests, including the Ames mutagenicity assay, chromosome aberration in Chinese hamster ovary (CHO) cells, CHO/HGPRT assay with S9 activation, and in the unscheduled DNA synthesis (UDS) assay in cultured human liver cells.

TERATOLOGY/REPRODUCTIVE EFFECTS: There were no birth defects or adverse effects on reproductive parameters in rats or rabbits. Piperonyl Butoxide is not considered to be teratogenic.

TOXICITY OF OTHER COMPONENTS:

PETROLEUM SOLVENT: The supplier reports that overexposure to this solvent may cause kidney damage. Exposure to the liquid may cause eye irritation and mild skin irritation. Breathing can cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache, possible unconsciousness and even death. Swallowing can cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration into the lungs can cause aspiration pneumonia, which can be fatal.

12. ECOLOGICAL INFORMATION

SUMMARY OF EFFECTS: Pyrethrins are highly toxic to fish and aquatic organisms.

ECO-ACUTE TOXICITY:

PYRETHRINS

Rainbow trout 96-hour LC₅₀ 5.2 μg/L
Bluegill sunfish 96-hour LC₅₀ 10 μg/L
Honeybee Acute 0.022 μg/bee
Daphnia magna 48-hour LC₅₀ 12 μg/L
Bobwhite Quail Oral LD₅₀ >2,000 mg/kg
Bobwhite 5 day dietary LC₅₀ >5,620 ppm
Mallard 5 day dietary LC₅₀ >5,620 ppm

PIPERONYL BUTOXIDE

Rainbow Trout 96-hour LC₅₀ 6.12 ppm
Bluegill Sunfish 96-hour LC₅₀ 5.37 ppm
Daphnia Magna 48-hour LC₅₀ 0.51 ppm
Honeybee Acute >25 μg/bee
Bobwhite Quail Oral LD₅₀ >2,250 mg/kg
Bobwhite 5 day dietary LC₅₀ >5,620 ppm
Mallard 5 day dietary LC₅₀ >5,620 ppm

ECO-CHRONIC TOXICITY:

PYRETHRINS

Fish (Fathead Minnow) Early life stage MATC >1.9 μg total pyrethrins/L
Invertebrate (Daphnia Magna) Life cycle MATC 1.3 μg total pyrethrins/L
PIPERONYL BUTOXIDE

Fish (Fathead Minnow) Early life stage MATC
>0.18 mg/L - <0.42 mg/L

Invertebrate (Daphnia Magna) life cycle MATC
>30 μg/L - <47 μg/L

ENVIRONMENTAL FATE: Not available

13. DISPOSAL CONSIDERATIONS

DISPOSAL: Do not reuse product containers. Dispose of product containers, waste containers, and residues according to Federal, State and local health and environmental regulations.

CHARACTERISTIC WASTE: Ignitable

LISTED WASTE: None

14. TRANSPORT INFORMATION

DOT CLASSIFICATION: Combustible liquid, n.o.s. (petroleum naptha), NA1993, PG III, RQ (Pyrethrins)

B/L FREIGHT CLASSIFICATION: Insecticides; other than poison, NMFC item 102120

INTERNATIONAL TRANSPORTATION: Not Available

15. REGULATORY INFORMATION

SARA TITLE III – SECTION 311/312

ACUTE HEALTH HAZARD

FIRE HAZARD

SARA TITLE III – SECTION 313 CHEMICALS:
Piperonyl Butoxide Technical (25%)

This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III and of 40 CFR 372. Any copies or redistribution of this MSDS must include this notice.

PROPOSITION 65: Not applicable

CERCLA REPORTABLE QUANTITY (RQ): 20 lb (2.7 gal)

RCRA CLASSIFICATION: Ignitable

TSCA STATUS: Exempt from TSCA

16. OTHER INFORMATION

DATE PREPARED: May 23, 2003
SUPERSEDES: February 3, 2003
REASON: Revision of Section II

DISCLAIMER:
Envincio LLC warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated in the Directions for Use, subject to the inherent risks referred to above, when used in accordance with directions under normal use conditions. This warranty does not extend to the use of this product contrary to label instructions, or under abnormal conditions or under conditions not reasonably foreseeable to or beyond the control of Seller or Envincio LLC, and Buyer and User assume the risk of any such use. To the extent consistent with applicable law, Envincio LLC MAKES NO WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE NOR ANY OTHER EXPRESS OR IMPLIED WARRANTY EXCEPT AS STATED ABOVE.

To the extent consistent with applicable law Envincio LLC or Seller shall not be liable for any incidental, consequential or special damages resulting from the use or handling of this product. To the extent consistent with applicable law, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ENVINCIIO LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF ENVINCIIO LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

Envincio LLC and Seller offer this product, and Buyer and User accept it, subject to the foregoing Conditions of Sale and Limitation of Warranty and Liability, which may not be modified except by written agreement signed by a duly authorized representative of Envincio LLC.

Prentox® and Pyronyl™ are trademarks of Prentiss, LLC.