MATERIAL SAFETY DATA SHEET

Emergency Phone: CHEMTREC 800-424-9300   Effective Date: November 15, 2012

New

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Willowood Abamectin 0.7SC
CHEMICAL NAME: Abamectin
IUPAC NAME: Mixture, typically not less than 80% Avermectin B1a and not more than 20% Avermectin B1b
CHEMICAL FAMILY: Acaricide, Miticide, and Nematicide Insecticide
PRODUCT CODE: EPA Reg. No. 87290-36

COMPANY IDENTIFICATION:
Willowood, LLC
1600 NW Garden Valley Blvd., Suite 120
Roseburg, Oregon 97471
Tel: 877-679-9963

24/7 Health Emergencies: Call 800-858-7378 (National Pesticide Information Center)

2. HAZARDS IDENTIFICATION SUMMARY:

NOTE: Please refer to Section 11 for detailed toxicological information.

EMERGENCY OVERVIEW: WARNING! Abamectin, Technical is an environmentally hazardous substance. It is toxic if ingested. It can irritate the skin, eyes, and respiratory system, and it can be absorbed through the skin. It may cause an allergic skin reaction. Vapors can cause dizziness or drowsiness.

There is no evidence that Abamectin 0.7SC, Technical is teratogenic, mutagenic, or may be a human carcinogen. Abamectin 0.7SC is moderately toxic to fish and highly toxic to bees. It has low toxicity for birds and animals. Avoid breathing dust or aerosol.

PHYSICAL STATE: Liquid.

APPEARANCE: White to slightly beige.

ROUTE OF EXPOSURE: Inhalation, Ingestion, Skin Contact, Skin Absorption, or Eye Contact.

IMMEDIATE EFFECTS:
   Eye: Can cause moderate eye irritation. Do not get in eyes.
   Skin: Avoid contact with skin and clothing.
   Skin Irritation: Unlikely to cause prolonged irritation or sensitization by skin contact.
   Ingestion: Harmful if swallowed. Do not ingest.
   Inhalation: Harmful if inhaled. Avoid breathing mist or aerosol.

CHRONIC OR DELAYED LONG-TERM: There is no evidence Abamectin 0.7SC is a human mutagen, teratogen, or carcinogen.

Medical Conditions Aggravated by Exposure: May cause upper respiratory irritation, or temporary irritation to the eyes.
3. COMPOSITION, INFORMATION OF INGREDIENTS:

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS - No.</th>
<th>EINECS #</th>
<th>Average % by Weight</th>
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<tbody>
<tr>
<td>Abamectin</td>
<td>71751-41-2</td>
<td>265-610-3</td>
<td>8.0</td>
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<tr>
<td>NE</td>
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4. FIRST AID MEASURES:

GENERAL: Have the product container or label with you when calling a poison control center or doctor or taking the exposed person for treatment.

INHALATION: Move the exposed person to fresh air, free from risk of further exposure. If the person is not breathing call 911, then give artificial respiration. Seek medical attention as soon as possible.

EYE CONTACT: Flush with clean, lukewarm water raising upper and lower eyelids at low pressure for 15 minutes. Remove contact lenses, if present, after the first five minutes and continue to rinse the eyes. Seek medical attention if no relief.

SKIN CONTACT: Remove any contaminated clothing. Rinse area with clean water for 15-20 minutes. Call poison control center or doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have the affected person drink a glass of water if they are able to swallow. DO NOT INDUCE VOMITING unless instructed to do so by a physician. Lower the head if the exposed person is vomiting to minimize entry into throat and lungs.

NOTE to Physician: There is no specific antidote. Use appropriate supportive and symptomatic treatment as indicated by the patient's condition. Abamectin 0.15EC contains petroleum distillates. Toxicity following ingestion can be mitigated by inducing vomiting with ipecac and copious amounts of water within 30 minutes of ingestion.

5. FIRE FIGHTING MEASURES:

FLASH POINT: 493 °F (256 °C).

AUTOIGNITION TEMPERATURE: This product is unlikely to undergo spontaneous decomposition.

FIRE AND EXPLOSION HAZARDS: During a fire, thermal decomposition of Abamectin 0.7SC can produce irritating and toxic oxides of carbon.

SUITABLE EXTINGUISHING MEDIA: Use water spray, dry chemicals, carbon dioxide, or foam.

FIRE FIGHTING INSTRUCTIONS: Wear an encapsulated suit and NIOSH-approved self-contained breathing apparatus while fighting a fire where this product is burning. Keep out of smoke. Fight fire from an upwind position. Cool closed containers exposed to fire with water spray. Dike the area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated.
6. ACCIDENTAL RELEASE MEASURES:

PERSONAL PRECAUTIONS: Wear PPE per Section 8. Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

METHODS FOR CLEANING UP: prevent spilled material form spreading. Dike the spill area. Keep any collected spilled material in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Comply with all label instructions and observe all local, state, and federal cleanup and disposal regulations

HANDLING AND STORAGE PRECAUTIONS: Use normal safety procedures and good personal hygiene. Wash thoroughly after use and before eating, drinking, chewing gum, or using tobacco.

ADDITIONAL ADVICE: Do not allow material to enter streams, sewers, or other waterways. Abamectin 0.7SC is moderately toxic to fish and aquatic invertebrates.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE: Keep containers tightly closed. Avoid temperatures above 100 °F. (38 °C.) or below 32 °F. (0 °C.) Store in a cool, dry, well-ventilated area.

SPECIAL SENSITIVITY: Avoid contact with skin and eyes. Wear PPE per Section 8.

HANDLING AND STORAGE PRECAUTIONS: Avoid breathing product mist or aerosol. Use normal safety procedures and good personal hygiene. Remove and wash PPE as soon as possible after handling product. Wash thoroughly after use, and before eating, drinking, chewing gum, or using tobacco.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION:

EYE PROTECTION: Use approved safety glasses, goggles, or face shield when there is potential for dust exposure to cause irritation to the eyes.

SKIN PROTECTION: Wear chemically resistant gloves (e.g. nitrile, butyl, or neoprene.) Wear a long-sleeved shirt, long pants, shoes, and socks.

RESPIRATORY PROTECTION: Wear a NIOSH-approved respirator if the airborne conditions result in a dust or aerosol forming. A respirator is not normally required for routine handling of Abamectin 0.7SC.

OCCUPATIONAL EXPOSURE LIMITS: None.

ENGINEERING CONTROLS: Provide adequate ventilation when product is used. Eyewash and shower should be provided in mixing and loading areas.

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM: Liquid.
ODOR: Some odor.
DENSITY (water=1): 1.05 g/cm³ @ 25 °C.
pH IN WATER: Slightly acidic.
COLOR: Off white to slightly beige.
SOLUBILITY IN WATER: Slightly soluble.
FLASH POINT: 493 °F (256 °C).
10. STABILITY AND REACTIVITY:

STABILITY: This product is a stable material under normal conditions of storage and handling. Avoid storage temperatures below 32°F. (0°C.) or above 100 °F. (38 °C.)

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBLES: Avoid contact with strong oxidizing agents.

DECOMPOSITION PRODUCTS: Products of thermal decomposition and/or combustion can include hydrogen chloride, hydrogen fluoride, hydrogen cyanide, and oxides of nitrogen, and carbon.

11. TOXICOLOGICAL INFORMATION:

Oral LD50 (rat) = > 50 mg/kg
Dermal LD50 (rat) = > 600 mg/kg
Inhalation LC50 (rat) = 0.06 mg/L/4hour

There is no evidence that Abamectin 0.7SC, causes cancer in humans, although there is some evidence of a possible carcinogenic effect at very high doses in some animal studies.

There is some evidence that Abamectin can be teratogenic in rats and mice at doses that are acutely toxic

The majority of tests on Abamectin 0.7SC have not shown it to be mutagenic.

There was no evidence that Abamectin 0.7SC, causes skin eye irritation or sensitization in guinea pig studies. It did produce mild eye irritation in some rabbit studies.

The significant routes of exposure are eyes, ingestion, skin contact, and inhalation.

12. ECOLOGICAL INFORMATION:

Dietary LC50 (bobwhite quail) = > 7000 mg/L.
Oral LC50 (mallard duck) = > 3,500 mg/L.
(This indicates that Abamectin 0.7SC, is only slightly toxic to most bird species.)

96-hour LC50 (rainbow trout) = 0.36 µg/L.
96-hour LC50 (bluegill sunfish) = 0.21 µg/L.
48-hour EC50 (daphnia magna) = 0.36 µg/L.
(This indicates that Abamectin 0.7SC is moderately toxic to fish and other aquatic organisms.)

Abamectin 0.7SC is highly toxic to honeybees.

Prevent Abamectin 0.7SC, Technical from getting into any waterways.

13. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD: Abamectin 0.7SC, is a liquid. Wear a respirator or NIOSH-approved self-contained breathing apparatus and other required PPE while disposing of Abamectin 0.7SC. Dispose of in accordance with label instructions and all local, state, and federal regulations.
14. TRANSPORT INFORMATION:

**US DOT (ground) SHIPPING NAME:** Abamectin 0.7SC is a liquid pesticide, N.O.S., UN Number 3082, DG Class 6.1, Packing Group III, per 49 CFR Part 172.101(12)(iv).

**IATA (air) SHIPPING NAME:** Abamectin 0.7SC is a liquid pesticide, N.O.S., UN Number 3082, DG Class 6.1, Packing Group III, per 49 CFR Part 172.101(12)(iv).

**IMO (water) SHIPPING NAME:** Abamectin 0.7SC is a liquid pesticide, N.O.S., UN Number 3082, DG Class 6.1, Packing Group III, per 49 CFR Part 172.101(12)(iv).

15. REGULATORY INFORMATION:

**OSHA STATUS:** None.

**TSCA STATUS:** Exempted, FIFRA regulated.

**CERCLA REPORTABLE QUANTITY:** None.

**CALIFORNIA PROPOSITION 65:** Abamectin is known to the State of California to cause birth defects or other reproductive harm.

**RCRA STATUS:** None.

**SARA 302/311/312 HAZARD NOTIFICATION/REPORTING**

Immediate: Y, Fire: N, Sudden Release of Pressure: N

Delayed: Y, Reactive: N

**SARA TITLE III:** Acute health hazard: Yes; Chronic Health Hazard: Yes.

**SECTION 302 EXTREMELY HAZARDOUS:** None.

**SECTION 311/312 HAZARD CATEGORIES:** None.

**SECTION 313 TOXIC CHEMICALS:** Yes.

**RIGHT TO KNOW:** NJ, PA Abamectin.

16. OTHER INFORMATION:

**National Fire Protection Association (NFPA)**

**Hazardous Materials Identification System (HMIS)**

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<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
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<tbody>
<tr>
<td>0 Least</td>
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<tr>
<td>2 Health</td>
<td>1 Slight</td>
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<tr>
<td>0 Flammability</td>
<td>2 Moderate</td>
</tr>
<tr>
<td>0 Instability</td>
<td>3 High</td>
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<tr>
<td>4 Severe</td>
<td>H PPE</td>
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</tbody>
</table>

**RISK PHRASES:** R20, Harmful by inhalation; R21, Harmful in contact with skin; R22, Harmful if swallowed; R36, Irritating to eyes; and R51, Toxic to aquatic organisms.
SAFETY PHRASES: S2, Keep out of reach of children; S9, Keep container in a well-ventilated place; S20 When using do not eat or drink; S24, Avoid contact with skin; S25, Avoid contact with eye; S36, Wear suitable protective clothing; S37, Wear suitable gloves; S38, In case of insufficient ventilation, wear suitable respiratory equipment; S39, Wear eye/face protection; S61, Avoid release to the environment; and S62, If swallowed, do not induce vomiting: seek medical advice immediately and show the product container or label.

REASON FOR ISSUE: New

APPROVAL DATE: 11/15/2012

PREPARED BY: Jack Firkins REVIEWED BY: Joe Middione

ABBREVIATIONS

ACGIH American Conference of Governmental Industrial Hygienists
AICS Australian Inventory of Chemical Substances
CAS# Chemical Abstract Service Number
CERCLA Comprehensive Environmental Response Compensation and Liability Act
°C Celsius temperature scale
CI China
DSL Canada Domestic Substances List
ECL Korean Existing Chemicals List
EEC European Economic Commission
ENCS Japanese existing Chemical List
EINECS # European Inventory of Existing Chemical Substance Number
EU European Union
FIFRA Federal Insecticide, Fungicide, and Rodenticide Act
(Israel) 2001 proposed list of chemical substances to be regulated under Israel Hazardous Substances Law and Regulations List of 1993
IARC International Agency for Research on Cancer
MAC Netherlands
MAK Germany
MITI Ministry of International Trade and Industry
NA Not Applicable
ND Not Determined
NE Not Established
NIOSH National Institute of Occupational Safety and Health
NPIC National Pesticide Information Center
NTP National Toxicology Program
OSHA Occupational Safety and Health Act
PICCS Philippines
PPE Personal Protective Equipment
Prop Proprietary
SARA Superfund Amendments and Reauthorization Act
SWISS Giftliste 1 and Inventory of Notified New Substances
TSCA Toxic Substances Control Act
(Taiwan) List of Toxic Chemical Substances regulated under Taiwan Toxic Chemical Substances Control Act of November 26, 1986
UK United Kingdom
USA United States of America
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