



SAFETY DATA SHEET

WARLOCK® INSECTICIDE

Section 1: Identification of the Substance and Supplier

Product name: WARLOCK INSECTICIDE
Chemical name of active: Emamectin Benzoate (common name)
IUPAC: A mixture containing 90% of (10E,14E,16E,22Z)-(1R,4S,5'S,6S,6'R,8R,12S,13S,20R,21R,24S)-6'-[(S)-sec-butyl]-21,24-dihydroxy-5',11,13,22-tetramethyl-2-oxo-3,7,19-trioxatetracyclo[15.6.1.14,8.020,24]pentacosa-10,14,16,22-tetraene-6-spiro-2'-(5',6'-dihydro-2'H-pyran)-12-yl 2,6-dideoxy-3-O-methyl-4-O-(2,4,6-trideoxy-3-O-methyl-4-methylamino--L-lyxo-hexopyranosyl)-L-arabino-hexopyranoside and 10% of (10E,14E,16E,22Z)-(1R,4S,5'S,6S,6'R,8R,12S,13S,20R,21R,24S)-21,24-dihydroxy-6'-isopropyl-5',11,13,22-tetramethyl-2-oxo-3,7,19-trioxatetracyclo[15.6.1.14,8.020,24]pentacosa-10,14,16,22-tetraene-6-spiro-2'-(5',6'-dihydro-2'H-pyran)-12-yl 2,6-dideoxy-3-O-methyl-4-O-(2,4,6-trideoxy-3-O-methyl-4-methylamino--L-lyxo-hexopyranosyl)-L-arabino-hexopyranoside

Supplier: ADAMA New Zealand Limited
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Telephone +64 3 543 8275 Fax: +64 3 543 8274

Emergency Telephone: 0800 POISON (0800 764 766) 24 Hour Service

Section 2: Hazards Identification

HAZARD CLASSIFICATIONS: 3.1D, 6.1E, 6.3B, 6.4A, 6.8A, 6.8C, 6.9B, 9.1A, 9.3B, 9.4A



GHS Signal word: DANGER

FLAMMABILITY

- **Warning** – Combustible liquid. Do not store or use near heat or naked flame. Will burn if ignited.

TOXICITY

- **Danger** –
 - Repeated exposure may cause skin dryness or cracking.
 - Harmful if swallowed.
 - May be fatal if swallowed and enters airways.
 - Causes skin irritation.
 - Causes eye irritation.
 - Harmful if inhaled.
 - May cause respiratory irritation.
 - May cause drowsiness or dizziness.
 - May damage fertility or the unborn child.

ECOTOXIC

- **Very toxic to aquatic life with long lasting effects. Higher risk of toxic effects in estuarine environments.** Avoid contamination of any water supply with product or empty container. Direct contamination or spray drift to any aquatic environment MUST be strictly avoided.
- **Harmful to terrestrial vertebrates.**
- **Very toxic to terrestrial vertebrates.**
- **Toxic to bees.** Spray MUST NOT contact plants in flower if bees are actively foraging.

Section 3. Composition/Information on Ingredients

Substance/preparation	Preparation		
Information on hazardous ingredients *			
Common name	CAS No.	%	EC Number
Emamectin Benzoate	155569-91-8	19.2%	-----
N-Methyl-2-pyrrolidone	872-50-4	10%	
Liquid hydrocarbon		60.3%	
Other non-hazardous ingredients	secret	to 100%	



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This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non-hazardous ingredients are also possible.

- **Occupational Exposure Limit(s), if available, are listed in section 8**

Section 4: First-Aid Measures

First-aid measures:

Inhalation:	If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.
Ingestion:	If swallowed, do NOT induce vomiting. Wash mouth with water and contact the National Poisons Centre 0800 POISON (0800 764 766) or a doctor immediately.
Skin contact:	Wash gently and thoroughly with warm water (use non-abrasive soap if necessary) for 10-20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts) and completely decontaminate them before reuse or discard. If irritation persists, repeat flushing and seek medical attention.
Eye contact:	Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.
Notes to a physician:	There is no specific antidote. Treat symptomatically and give supportive therapy.

Section 5: Fire-Fighting Measures

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Suitable Extinguishing media:	In case of fire, use carbon dioxide, dry chemical, foam, water fog.
Fire Fighting:	If a significant quantity of this product is involved in a fire, call the fire brigade. Cool closed, undamaged containers exposed to fire with water spray.
Protection against fire:	Self-contained breathing apparatus and total protection required in enclosed areas.
Hazardous thermal (de)composition products:	Sulfur oxides, nitrogen oxides, (NO, NO ₂), carbon oxides (CO, CO ₂)

Section 6: Accidental Release Measures

Personal precautions:	Suitable materials for protective clothing include no specific manufacturer recommendations. Use impermeable gloves with care. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product.
Environmental precautions:	Do not empty into drains. Do not discharge into the environment.
Methods for cleaning up:	Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this SDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.



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Section 7: Handling and Storage

Handling:	Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this SDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.
Storage:	Note that this product is combustible and therefore, for Storage, meets the definition of Dangerous Goods in some states. If you store large quantities (tonnes) of such products, we suggest that you consult your Dangerous Goods authority in order to clarify your obligations regarding their storage. Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. Some liquid preparations settle or separate on standing and may require stirring before use. Check packaging - there may be further storage instructions on the label.

Section 8: Exposure Controls/Personal Protection

Common name:	Emamectin benzoate
Ventilation:	This product should only be used in a well-ventilated area. If natural ventilation is inadequate, use of a fan is suggested.
Engineering measures:	Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
Hygiene measures:	Wash hands thoroughly after handling. When using do not eat, drink, or smoke. Wash clothing separately before re-use.
Personal protective equipment:	
Respiratory system:	Usually, no respirator is necessary when using this product.
Skin and body:	Wear suitable protective clothing - chemical resistant boots & gloves.
Hands:	Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered.
Eyes:	Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm.

Section 9: Physical and Chemical Properties

Physical state:	Liquid.
Colour:	Pale yellow-green liquid.
Odour:	Characteristic odour.
Boiling Point:	Not available.
Freezing/Melting Point:	No specific data. Liquid at normal temperatures.
Volatiles:	No data.
Vapour Pressure:	No data.
Vapour Density:	No data.
Specific Gravity:	0.86 at 25°C
Water Solubility:	Emulsifiable.
pH:	7.2
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water distribution:	No data
Autoignition temp:	292°C

Section 10: Stability and Reactivity

Reactivity:	This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.
Conditions to Avoid:	Protect this product from light. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.
Incompatibilities:	Strong acids, strong bases, strong oxidising agents.



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Fire Decomposition:	Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.
Polymerisation:	This product will not undergo polymerisation reactions.

Section 11: Toxicological Information

Common name:	Emamectin benzoate
Acute toxicity - Oral:	LD ₅₀ > 76-89 mg/kg (rat) (technical)
Acute toxicity - Dermal:	LD ₅₀ > 2,000 mg/kg (rabbit) (technical)
Acute toxicity - Inhalation:	LC ₅₀ > 2.12-4.44 mg/l/4h (rat) (technical)
Skin irritation:	Non irritating (rabbit).
Eye irritation:	Irritating (rabbit).
Sensitization:	Non sensitizer
Carcinogenicity:	Not classified (Emamectin benzoate)
Mutagenicity:	Not mutagenic (Emamectin benzoate)
Toxic for reproduction: Fertility:	Reproductive toxicity noted in rats that is not relevant to humans (Emamectin benzoate)
Toxic for reproduction:	Not teratogenic in animal experiments (Emamectin benzoate)

Section 12: Ecological Information

Common name:	Emamectin benzoate
On technical	
96 H-LC50 - Rainbow trout:	174 mg/L
LC50 - Daphnia magna:	0.99 µg/L
LD50 Bird:	46 mg/kg (mallard duck), 264 mg/kg (bobwhite quail)
Bees LD50 [µg]:	Toxic to bees
Persistence – degradability:	Soil: Rapidly degraded
Bioaccumulative potential:	No bioaccumulation potential

Section 13: Disposal Considerations

Methods of disposal:	Ensure container is empty. Triple rinse empty container and add rinsate to spray tank. Recycle empty container through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush or puncture and bury in a suitable landfill. DO NOT reuse this container for any other purpose. Dispose of product only by using according to the label or at an approved landfill.
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Section 14: Transport Information

UN Number	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Emamectin benzoate)
DG Class	9
Packing Group	III
Hazchem Code	2X
Marine Pollutant	Yes
National transport regulations:	Do not carry this product on a passenger service vehicle.

Segregation: Check the land transport Rule Dangerous Goods 1999, Rule 45001 for additional information. Sea transport may require additional segregation. Refer: NZS5433; Sea Segregation, or the International Maritime Dangerous Goods Code for details.

Section 15: Regulatory Information

ACVM Approval:	Registered pursuant to the ACVM Act 1997. No P8900 See www.foodsafety.govt.nz for registration conditions.
HSNO Approval:	Approved pursuant to the HSNO Act 1996, Approval No. HSR100932 See www.epa.govt.nz for approval conditions



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HSNO Classifications:

3.1D, 6.1E, 6.3B, 6.4A, 6.8A, 6.8C, 6.9B, 9.1A, 9.3B, 9.4A



APPROVED HANDLER: This product must be under the care of an approved handler when it is applied in a wide dispersive manner or used by a commercial contractor.

Record Keeping: Records of use must be kept under certain circumstances – see The New Zealand Standards for Management of Agrichemicals (NZS8409) for details.

HSNO Controls (inc. Tracking and Record Keeping):

See <http://www.epa.govt.nz/search-databases/Pages/controlssearch.aspx> for controls.

Section 16: Other Information

Note: This product is a registered agricultural chemical and must be therefore be used in accordance with the container label directions. A comprehensive package of toxicological and environmental data for the active ingredients of this product has been submitted to the Government health and environment authorities and has been evaluated by expert toxicologists and environmental scientists.

The information contained in the Safety Data sheet is correct to the best of our knowledge at the date of issue. It is intended as a guide for the safe use, handling, disposal, storage and transportation and is not intended as a warranty or as a specification. The information relates only to the product specified and may not be suitable for combinations with other materials or in processes other than those specifically described herein.

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HISTORY

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