Section 1 - Identification of The Material and Supplier

Turf Culture Pty Ltd
43 Gap Road
Sunbury, Vic 3429 Australia

Phone: +61 1300 11 8873
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www.turfculture.co.nz

Chemical nature:	Abamectin is a macrocyclic lactone derivative.
Trade Name:	**Turf Culture Thumper NZ Insecticide**
EPA Approval No:	HSR100729
Product Use:	For the control of couch mite in couch turf and nematodes in turf.
Creation Date:	**September 2014**
This version issued:	**March, 2021** and is valid for 5 years from this date.
New Zealand Supplier:	PGG Wrightson Turf 3 / 118 Savill Drive, Mangere East, Auckland 2024 New Zealand Ph: +64 09 570 2570, Fax: +64 09 570 4064 www.pggwrightsonturf.co.nz
Emergency Telephone No.	0800 764 766 (from anywhere in New Zealand).

Section 2 - Hazards Identification

Statement of Hazardous Nature.

This substance is classified as hazardous according to the HSNO (Minimum Degrees of Hazard) Regulations 2001.

This substance is classified as a dangerous good for Land Transport in New Zealand according to NZS5433: 2012.

EPA Approval Code:	HSR100729
HSNO Classification:	6.1D, 6.3A, 6.4A , 6.8B , 6.8C , 6.9B, 9.1A, 9.2C , 9.3C , 9.4A
Signal Word:	**WARNING**
Label Pictograms	

Hazard Code	Hazard Statement	GHS Category
H302	Harmful if swallowed.	Acute Oral Toxicity Category 4
H315	Causes skin irritation.	Skin Irritation Category 2
H320	Causes eye irritation.	Eye irritation Category 2B
H361	Suspected of damaging fertility or the unborn child.	Reproductive toxicity Category 2
H362	May cause harm to breast-fed children.	Reproductive Toxicity (via lactation) Category 2
H373	May cause damage to organs through prolonged or repeated exposure.	STOT Category 2
H410	Very toxic to aquatic life with long lasting effects.	Aquatic Toxicity Category 1
H423	Harmful to the soil environment.	Ecotoxic to soil environment
H433	Harmful to terrestrial vertebrates.	Ecotoxic to terrestrial vertebrates
H441	Very toxic to terrestrial invertebrates.	Ecotoxic to terrestrial invertebrates

Prevention Code	Prevention Statement
P102	Keep out of reach of children.
P103	Read label before use.
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist/vapours/spray.
P263	Avoid contact during pregnancy/while nursing.
P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.

Response code	Response Statement
P101	If medical advice is needed, have product container or label at hand.
P314	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see first aid instruction on this label).
P330	Rinse mouth.
P331	Do NOT induce vomiting.
P362	Take off contaminated clothing and wash before re-use.
P391	Collect spillage.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P305 + P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.

Disposal	Disposal Statement
Container Disposal	Ensure the container is empty. Triple rinse empty container and add rinsate to spray tank. Recycle punctured container without caps through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose.
Product Disposal	Disposal of this product only by using according to this label, or at an approved landfill or other approved facility.

Section 3 - Composition/Information on Ingredients

Ingredients (mg/m^3)	CAS No.	Conc. %	TWA (mg/m^3)	STEL
Abamectin	71751-41-2	20 g/L	not set	not set
Triethylene glycol	112-27-6	30-60	not set	not set
Other non-hazardous ingredients	various	30-60	not set	not set
Water	7732-18-5	10-30	not set	not set

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

The SWA TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8-hour working day for a 5-day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term 'peak 'is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Section 4 - First Aid Measures

General Information:

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 0800 764 766 in New Zealand and is available at all times. Have this SDS with you when you call.

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.

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.

Ingestion: If swallowed, do NOT induce vomiting. Wash mouth with water and contact a Poisons Information Centre, or call a doctor.

Section 5 - Fire Fighting Measures

Hazchem Code: 3Z Contain Spillage

Fire and Explosion Hazards: There is little risk of an explosion from this product if commercial quantities are involved in a fire.
This product is likely to decompose only after heating to dryness, followed by further strong heating.
Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: Use extinguishing media suited to burning materials. Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or watercourses.

Fire Fighting: Use breathing apparatus. Contain spillage.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

Flash point:	Will not burn until water component is driven off.
Upper Flammability Limit:	Does not burn.
Lower Flammability Limit:	Does not burn.
Autoignition temperature:	Does not burn.
Flammability Class:	Does not burn.

Section 6 - Accidental Release Measures

Accidental release: In the event of a major spill, prevent spillage from entering drains or watercourses. Wear full protective clothing including eye/face protection. All skin areas should be covered. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC, butyl rubber. 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. It should be fitted with a type G cartridge, suitable for agricultural chemicals. Otherwise, not normally necessary.
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. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. 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. After spills, wash area-preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. 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.

Section 7 - Handling and Storage

Approved Handler: This Product must be under the control of an Approved Handler.

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: Protect this product from sunlight. 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 and Personal Protection

The following Australian/ New Zealand Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: AS/NZS 4501 set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits **TWA (mg/m^3)** **STEL (mg/m^3)**

Exposure limits have not been established by SWA for any of the significant ingredients in this product.

The ADI for Abamectin is set at 0.0005mg/kg/day. The corresponding NOEL is set at 0.5mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from Australian ADI List, Dec 2012.

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

Ventilation: This product should only be used in a well-ventilated area. If natural ventilation is inadequate, use of a fan is suggested.

Eye Protection: Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

Skin Protection: Prevent skin contact by wearing impervious gloves, clothes and, preferably, apron. Make sure that all skin areas are covered. See below for suitable material types.

Protective Material Types: We suggest that protective clothing be made from the following materials: rubber, PVC, butyl rubber.

Respirator: Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where product is being used.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	Dark yellow, watery liquid.
Odour:	Characteristic odour.
Boiling Point:	Approximately 100°C at 100kPa.
Freezing/Melting Point:	Below 0°C.
Volatiles:	Water component.
Vapour Pressure:	2.37 kPa at 20°C (water vapour pressure).
Vapour Density:	No data.
Specific Gravity:	No data.
Water Solubility:	Dispersible.
pH:	4-6 (1% in water)
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	No data.
Coeff Oil/water Distribution:	No data
Autoignition temp:	Does not burn.

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.
Fire Decomposition: This product is likely to decompose only after heating to dryness, followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Oxides of sulfur (sulfur dioxide is a respiratory hazard) and other sulfur compounds. Most will have a foul odour. Water. 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

Target Organ: Central Nervous System (CNS), reproductive system, reproductive or developmental effects on or via lactation.

Emergency Overview

Physical Description & Colour: Dark yellow, watery liquid.
Odour: Characteristic odour.
Major Health Hazards: Symptoms of poisoning observed in laboratory animals include pupil dilation, vomiting, convulsions and/or tremors, and coma. Abamectin acts on insects by interfering with the nervous system. At very high doses, it can affect mammals, causing symptoms of nervous system depression such as incoordination, tremors, lethargy, excitation, and pupil dilation. Very high doses have caused death from respiratory failure. Abamectin is not readily absorbed through skin. Acutely toxic if swallowed, Suspected human reproductive or developmental toxicant, reproductive or developmental effects on or via lactation irritating to eyes and skin.

Potential Health Effects

Inhalation:
Short Term Exposure: Available data shows that this product is harmful, see symptoms above. In addition product may be mildly irritating, although unlikely to cause anything more than mild transient discomfort.
Long Term Exposure: No data for health effects associated with long-term inhalation.

Skin Contact:
Short Term Exposure: Available data shows that this product is harmful, see symptoms above. In addition product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.
Long Term Exposure: No data for health effects associated with long-term skin exposure.

Eye Contact:
Short Term Exposure: This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.
Long Term Exposure: No data for health effects associated with long-term eye exposure.

Ingestion:
Short Term Exposure: Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, see symptoms above. However, this product is an oral irritant. Symptoms may include burning sensation and reddening of skin in mouth and throat. Other symptoms may also become evident, but all should disappear once exposure has ceased.
Long Term Exposure: Suspected human reproductive or developmental toxicant, reproductive or developmental effects on or via lactation.

Carcinogen Status:
SWA: No significant ingredient is classified as carcinogenic by SWA.
NTP: No significant ingredient is classified as carcinogenic by NTP.

IARC: No significant ingredient is classified as carcinogenic by IARC.

Classification of Hazardous Ingredients

Toxicity:

Acute toxicity: Abamectin is highly toxic to insects and may be highly toxic to mammals as well. Emulsifiable concentrate formulations may cause slight to moderate eye irritation and mild skin irritation. Symptoms of poisoning observed in laboratory animals include pupil dilation, vomiting, convulsions and/or tremors, and coma. Abamectin acts on insects by interfering with the nervous system. At very high doses, it can affect mammals, causing symptoms of nervous system depression such as incoordination, tremors, lethargy, excitation, and pupil dilation. Very high doses have caused death from respiratory failure. Abamectin is not readily absorbed through skin. Tests with monkeys show that less than 1% of dermally applied abamectin was absorbed into the bloodstream through the skin. Abamectin does not cause allergic skin reactions. The oral LD_{50} for abamectin in rats is 10 mg/kg, and in mice ranges from 14 mg/kg to greater than 80 mg/kg. The dermal LD_{50} for technical abamectin in rats and rabbits is greater than 330 mg/kg.
Chronic toxicity: In a 1-year study with dogs given oral doses of abamectin, dogs at the 0.5 and 1 mg/kg/day doses exhibited pupil dilation, weight loss, lethargy, tremors, and recumbency. Similar results were seen in a 2-year study with rats fed 0.75, 1.5, or 2 mg/kg/day. Rats at all the dosage levels exhibited body weight gains significantly higher than the controls. A few individuals in the high dose group exhibited tremors. When mice were fed 8 mg/kg/day for 94 weeks, the males developed dermatitis and changes in blood formation in the spleen, while females exhibited tremors and weight loss.
Reproductive effects: Rats given 0.40 mg/kg/day of abamectin had increased stillbirths, decreased pup viability, decreased lactation, and decreased pup weights. These data suggest that abamectin may have the potential to cause reproductive effects at high enough doses.
Teratogenic effects: Abamectin produced cleft palate in the offspring of treated mice and rabbits, but only at doses that were also toxic to the mothers. There were no birth defects in the offspring of rats given up to 1 mg/kg/day. Abamectin is unlikely to cause teratogenic effects except at doses toxic to the mother.
Mutagenic effects: Abamectin does not appear to be mutagenic. Mutagenicity tests in live rats and mice were negative. Abamectin was shown to be non-mutagenic in the Ames test.
Carcinogenic effects: Abamectin is not carcinogenic in rats or mice. The rats were fed dietary doses of up to 2 mg/kg/day for 24 months, and the mice were up to 8 mg/kg/day for 22 months. These represent the maximum tolerated doses.
Organ toxicity: Animal studies indicate that abamectin may affect the nervous system.
Fate in humans and animals: Tests with laboratory animals show that ingested avermectin B1a is not readily absorbed into the bloodstream by mammals and that it is rapidly eliminated from the body within 2 days via the faeces. Rats given single oral doses of avermectin B1a excreted 69 to 82% of the dose unchanged in the faeces. The average half-life of avermectin B1a in rat tissue is 1.2 days. Lactating goats given daily oral doses for 10 days excreted 89% of the administered avermectin, mainly in the faeces. Less than 1% was recovered in the urine.

Section 12 - Ecological Information

This product is very toxic to aquatic organisms. This product is biodegradable. It will not accumulate in the soil or water or cause long-term problems.
Effects on birds: Abamectin is practically nontoxic to birds. The LD_{50} for abamectin in bobwhite quail is >2000 mg/kg. The dietary LC_{50} is 3102 ppm in bobwhite quail. There were no adverse effects on reproduction when mallard ducks were fed dietary doses of 3, 6, or 12 ppm for 18 weeks.
Effects on aquatic organisms: Abamectin is highly toxic to fish and extremely toxic to aquatic invertebrates. Its LC_{50} (96-hour) is 0.003 mg/L in rainbow trout, 0.0096 mg/L in bluegill sunfish, 0.015 mg/L in sheepshead minnows, 0.024 mg/L in channel catfish, and 0.042 mg/L in carp. Its 48-hour LC_{50} in Daphnia magna, a small freshwater crustacean, is 0.003 mg/L. The 96-hour LC_{50} for abamectin is 0.0016 mg/L in pink shrimp, 430 mg/L in eastern oysters, and 153 mg/L in blue crab. While highly toxic to aquatic organisms, actual concentrations of abamectin in surface waters adjacent to treated areas are expected to be low. Abamectin did not bio-accumulate in bluegill sunfish exposed to 0.099µg/L for 28 days in a flow-through tank. The levels in fish were from 52 to 69 times the ambient water concentration, indicating that abamectin does not accumulate or persist in fish.
Effects on other organisms: Abamectin is highly toxic to bees, with a 24-hour contact LC_{50} of 0.002µg/bee and an oral LD_{50} of 0.009µg/bee.

Breakdown in soil and groundwater: Abamectin is rapidly degraded in soil. At the soil surface, it is subject to rapid photodegradation, with half-lives of 8 hours to 1 day reported. When applied to the soil surface and not shaded, its soil half-life is about 1 week. Under dark, aerobic conditions, the soil half-life was 2 weeks to 2 months. Loss of abamectin from soils is thought to be due to microbial degradation. The rate of degradation was significantly decreased under anaerobic conditions. Because abamectin is nearly insoluble in water and has a strong tendency to bind to soil particles, it is immobile in soil and unlikely to leach or contaminate groundwater. Compounds produced by the degradation of abamectin are also immobile and unlikely to contaminate groundwater.
Breakdown in water: Abamectin is rapidly degraded in water. After initial distribution, its half-life in artificial pond water was 4 days. Its half-life in pond sediment was 2 to 4 weeks. It undergoes rapid photodegradation, with a half-life of 12 hours in water. When tested at pH levels common to surface and groundwater (pH 5, 7, and 9), abamectin did not hydrolyse.
Breakdown in vegetation: Plants do not absorb abamectin from the soil. Abamectin is subject to rapid degradation when present as a thin film, as on treated leaf surfaces. Under laboratory conditions and in the presence of light, its half-life as a thin film was 4 to 6 hours.

Do not allow to enter waterways

Section 13 - Disposal Considerations

Product Disposal	Dispose of this product only by using according to this label, or at an approved landfill or other approved facility.
Container Disposal	Ensure the container is empty. Triple rinse empty container and add rinsate to spray tank. Recycle punctured container without caps through Agrecovery (0800 247 326, www.agrecovery.co.nz). Otherwise crush and bury in a suitable landfill. DO NOT reuse this container for any other purpose. Do not allow to enter waterways.

Section 14 - Transport Information

New Zealand
Classified as a Dangerous Good for transport in accordance with the Land Transport Rule Dangerous Goods 2005 and NZS 5433:2012.

Transport Pictogram

Road and Rail Transport

UN No	3082
Class-primary	9
Packing Group	PGIII
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Marine Transport

UN No	3082
Class-primary	9
Packing Group	PGIII
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Air Transport

UN No	3082
Class-primary	9
Packing Group	PGIII
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Section 15 - Regulatory Information

New Zealand:
EPA Approval No: HSR100729 See www.epa.govt.nz for controls.

HSNO Classification: 6.1D, 6.3A, 6.4A, 6.8B, 6.8C, 6.9B, 9.1A, 9.2C, 9.3C, 9.4A
HSNO Controls

Approved Handler	This product must be under the control of an approved handler.
Additional Controls s77A	The substance must not be applied onto or into water.
Location Certificate	Not applicable
Tracking Trigger Quantities	Not required
Signage Trigger Quantities	100L (9.1A)
Emergency Response Plan trigger Quantities	100L (9.1A)
Secondary Containment	100L (9.1A)

Section 16 - Other Information

This SDS contains only safety-related information. For other data see product literature.

Acronyms:

CAS number	Chemical Abstracts Service Registry Number
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
IARC	International Agency for Research on Cancer
NOS	Not otherwise specified
NTP	National Toxicology Program (USA)
UN Number	United Nations Number

THIS SDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS

OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accordance with the NZ Code of Practice (HSNOCOP8) Preparation of Safety Data Sheets.

Issue Date: 17/9/14 Review Date: 17/9/19