
MATERIAL SAFETY DATA SHEET

Section 1: IDENTIFICATION of CHEMICAL PRODUCT and COMPANY

Product Name:	Biomectin Miticide
Product Code:	501705 (20 L); 503905 (1000L)
Recommended Use:	For the control of pest mites on pears, apples, tomatoes, strawberries and ornamentals. For the control of pest mites and native budworm on cotton.
Company Identification:	Jurox Pty Limited
Address:	85 Gardiner Street Rutherford NSW 2320 Australia
Customer Centre:	1800 023 312
National Poisons Information Centre:	131126 (Australia-wide)
Emergency Telephone Number:	1800 023 312 (Monday – Friday, 9a.m. – 5p.m).

Section 2: HAZARDS IDENTIFICATION

Hazard Classifications:	Considered a Hazardous Substance according to the criteria of NOHSC Australia. Considered a Dangerous Good according to the criteria of the Australian Dangerous Goods (ADG) Code.
Poisons Schedule:	S6
Risk phrases:	May form explosive peroxides Harmful if swallowed Irritating to eyes, respiratory system and skin Limited evidence of a carcinogenic effect Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment Toxic to bees May cause harm to the unborn child HARMFUL – May cause lung damage if swallowed Possible risk of irreversible effects Inhalation and/or skin contact may produce health damage * Cumulative effects may result following exposure * May possibly affect fertility * Repeated exposure potentially causes skin dryness and cracking * Vapours potentially causes drowsiness and dizziness * * (limited evidence)
Safety phrases:	Keep locked up Do not breathe vapours Avoid contact with skin Avoid contact with eyes Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment Wear suitable gloves Wear eye / face protection Handle and open container with care Use only in well ventilated areas Keep container in a well ventilated place Avoid exposure – obtain special instructions before use Do not empty into drains

To clean the floor and all objects contaminated by this material, use water
Keep container tightly closed
This material and its container must be disposed of in a safe way
Keep away from food, drink and animal feeding stuffs
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre
Use appropriate container to avoid environmental contamination
Avoid release to the environment. Refer to special instructions/Safety data sheets
This material and its container must be disposed of as hazardous waste
If swallowed do not induce vomiting: seek medical advice immediately and show this container or label

Section 3: COMPOSITION / INFORMATION on INGREDIENTS

INGREDIENT	CAS No.	CONTENT
N-methyl-2- pyrrolidone	872-50-4	27.2%
1-octanol	111-87-5	10 – <30%
Butylated hydroxytoluene (2,6- di- tert- butyl- 4- methyl phenol)	128-37-0	< 10%
Abamectin	71751-41-2	1.8%
Other non hazardous ingredients		10 – 30%

Section 4: FIRST AID MEASURES

- First Aid Measures:** Consult the National Poisons Centre on 131126 or a doctor immediately in every case of suspected chemical poisoning. Never give fluids or induce vomiting if a patient is unconscious or convulsing regardless of cause of injury. If medical advice/attention is needed, have product container or label at hand.
- Inhalation:** Remove patient to fresh air. Lay patient down and keep warm and rested. If breathing is shallow or has stopped, ensure airway is clear and apply resuscitation. If breathing is difficult, give oxygen. Seek medical assistance immediately.
- Ingestion:** If swallowed, DO NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Give water to rinse mouth, then provide liquid slowly and as much as casualty can comfortably drink. Keep subject warm and at rest. For advice, contact the National Poisons Centre on 131126. Seek medical assistance immediately.
- Skin:** If skin contact occurs, wash affected area thoroughly with plenty of soap and water for at least 20 minutes. If skin irritation or rash occurs, get medical advice/attention. Remove and wash / dispose of contaminated clothing promptly.
- Eye:** If eye contact occurs, rinse cautiously with water for at least 20 minutes. If eye irritation persists, get medical advice/attention.
- Advice to Doctor:** No specific antidote. Treat symptomatically. If vomiting is induced, suggest endotracheal and/or oesophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Only induce vomiting if conscious. NOTE: wear a protective glove when inducing vomiting by mechanical means. Since abamectin is thought to bind to glutamate-gated chloride ion channels, it is probably wise to avoid drugs that also interact with other ligand-gated chloride channels, including those that enhance GABA activity (barbiturates, benzodiazepines, valproic acid etc.).

Section 5: FIRE FIGHTING MEASURES

Flash Point:	71°C (closed cup)
Hazardous Combustion Products:	If involved in a fire, may emit toxic or irritant fumes.
Extinguishing Media:	Use alcohol stable foam, dry chemical powder; BCF; carbon dioxide or water (spray or fog) (for large fires only).
Protective Equipment:	Full body protective clothes (preferably gas tight chemical resistant suit), face protection, elbow length PVC gloves and eye wear and breathing apparatus.
HAZCHEM Code:	3Z

Section 6: ACCIDENTAL RELEASE MEASURES

Spills and Disposal:	Wear appropriate protective clothing. Exclude non-essential people from the area and move upwind. Contain spill and absorb with inert material such as soil, sand or absorbent granules and place in a sealable waste container. Ventilate area and wash spill site after pick-up complete. Dispose of waste safely in an approved landfill. For major spills alert Fire Brigade and tell them location and nature of the hazard.
Protective Clothing:	See Section 5.
Environmental Precautions:	Prevent from entering drains, waterways or sewers. If spill does enter waterways contact local authority.

Section 7: HANDLING AND STORAGE

Handling:	When opening the container, preparing spray and using prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC gloves and goggles. For space applications, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC gloves, goggles and a half face-piece respirator with dust cartridge or canister. If product in eyes, wash it out immediately with water. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, goggles, contaminated clothing and respirator (and if rubber, wash with detergent and warm water.)
Storage:	Store in the closed original container in a well-ventilated area, as cool as possible. Do not store for prolonged periods in direct sunlight. Keep out of reach of children and other unauthorized persons. Keep under secure conditions away from foodstuffs.
Other Information:	Always read the APVMA-approved label before using the product.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

This MSDS describes personal protective measures relating to long term industrial and manufacturing exposure and emergency situations, such as accidents and spills. See product label for personal protective measures during normal use of the marketed product.

- Exposure Limits:** No exposure limits have been assigned for this product. Avoid breathing vapours. Do not handle until all safety precautions have been read and understood. Avoid contact during pregnancy/while nursing.
- Protective Equipment:** When using the product, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC gloves, goggles and a half face-piece respirator with dust cartridge or canister.
- Engineering Controls:** Always handle in a well ventilated area. The product is normally used outdoors. Under field conditions the spray should be allowed to dry on the foliage before re-entry into the treated areas. Do not allow entry into treated areas in glasshouses for 24 hours after treatment. When entry prior to this time is necessary, wear cotton overalls buttoned to the neck and wrist and elbow length PVC gloves.
- Hygiene Precautions:** After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, goggles, contaminated clothing and respirator (and if rubber, wash with detergent and warm water).

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Clear yellow acrid liquid
- Specific Gravity:** 0.95 – 0.96 at 20°C
- Solubility in Water:** Disperses in water
- Flash Point:** 71°C (closed cup)
- pH:** 2.6 – 3.6

Section 10: STABILITY AND REACTIVITY

- Stability:** The product is considered stable
- Hazardous Polymerisation:** Not known to occur
- Materials to Avoid:** Avoid strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents, alkaline metals, alkaline earth metals, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium and triisobutylaluminium. Do not heat above 49°C when in contact with aluminium equipment.

Section 11: TOXICOLOGICAL INFORMATION

Inhalation:	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.
Ingestion:	Harmful if swallowed Abamectin: Oral LD ₅₀ 11 mg/kg (rat), 14 mg/kg (mouse) 1-octanol: Oral LD ₅₀ 1790 mg/kg (mouse) N-methyl-2- pyrrolidone: Oral LD ₅₀ 3500 mg/kg (rabbit) Butylated hydroxytoluene: Oral LD ₅₀ 650 mg/kg (mouse)
Skin:	May cause skin irritation.
Eye:	May cause eye irritation.
Reproductive Toxicity:	Abamectin: There is some evidence from animal testing that exposure to abamectin may result in toxic effects to the mammalian foetus. Abamectin has produced cleft palates 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. N-methyl-2- pyrrolidone: Male reproductive toxicity has been manifested as reductions in the male fertility index in a multigeneration study in rats. Female reproductive toxicity has been manifested as reductions in the female fecundity index in a multigeneration study in rats. Developmental toxicity has been manifested as resorptions, malformations, reduced litter size, reduced postnatal survival and reduced pup body weight in experimental animals.
Mutagenicity:	Not known to be mutagenic. Microbial mutagenesis and mutagenicity tests with abamectin in live mice were negative.
Carcinogenicity:	Not known to be carcinogenic. Abamectin was not carcinogenic in rats or mice fed the maximum tolerated doses. The rats were fed dietary doses of 0.75, 1.5 or 2 mg / kg / day for 24 months.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity:	Very toxic to aquatic organisms and terrestrial invertebrates Harmful to the soil environment Abamectin: Acute oral LD50: 84.6 mg/kg (mallard ducks), >2000 mg/kg (bobwhite quail) Fish LC50 (96 h): 3.2 ug/l (rainbow trout), 9.6 ug/l (bluegill sunfish), 24 ug/l (channel catfish), 42 ug/l (carp) Daphnia EC50 (48 h): 0.34 ppb Other LC50 (96 h): 1.6 ppb (pink shrimp), 0.022 ppb (mysid shrimp), 153 ppb (blue crab) 1-Octanol: Fish LC50 (96 h): 12.2 mg/l <i>Pimephales promelas</i> (Fathead minnow); Crustacean EC50 (48 h): 15 – 26 mg/L (<i>Daphnia magna</i>) Green algae EC50 (48 h): 6.5 mg/L
Bioaccumulation:	Not determined.

Section 13: DISPOSAL INFORMATION

Product Disposal:	Dispose of product only by using according to label or by approved waste collection. Do not dispose of undiluted chemicals on-site.
Container Disposal:	Triple or preferably pressure rinse containers before disposal. Add rinsings to the spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return containers to recycle or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desired vegetation and tree roots. Empty containers and product should not be burnt.

Section 14: TRANSPORT INFORMATION

Dangerous Goods Classification: This material is categorized as Class 6.1, Packing Group III, UN No. 2902, Proper Shipping Name: Pesticide Liquid, Toxic, N.O.S. (Contains Abamectin) for the purposes of the Australian Code of Transport for Dangerous Goods by Road and Rail. Observe appropriate State regulations for storage, transport and sale.

Section 15: REGULATORY INFORMATION

APVMA Registration No: 53564

Section 16: OTHER INFORMATION

This information is based on data believed by Jurox Pty Limited to be accurate at the time of writing but is subject to change without notice. It is given in good faith, but no warranty expressed or implied is made as to its accuracy, completeness otherwise and no assumption of liability from howsoever arising is made by Jurox Pty Limited by reason of the provision of this information. Every person dealing with the materials referred to herein does so at his/her own risk absolutely and must make independent determinations of suitability and completeness of information from all sources to ensure their proper use.