

Section 1 - Identification of The Material and Supplier

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Chemical nature: Deltamethrin is a pyrethroid insecticide.

Trade Name: **DELTATHOR™ Insecticide**

Product Code: Australia APVMA: 58723 New Zealand HSR Approval: HSR 100597

Product Use: For the control of a range of urban pests as specified on the registered label.

Creation Date: **January 2005**

This version issued: **February, 2016** and is valid for 5 years from this date.

Section 2 - Hazards Identification**Statement of Hazardous Nature**

This product is classified as: Xn, Harmful. Xi, Irritating. N, Dangerous to the environment. Not classified as hazardous according to the criteria of SWA.

Not a Dangerous Good according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R50, R22, R36/38. Very toxic to aquatic organisms. Harmful if swallowed. Irritating to eyes and skin.

Safety Phrases: S20, S36, S37, S24, S26, S28, S45, S61, S37/39, S61. When using, do not eat or drink. Wear suitable protective clothing. Wear suitable gloves. Avoid contact with skin. In case of contact with eyes, rinse immediately with plenty of water and contact a doctor or Poisons Information Centre. After contact with skin, wash immediately with plenty of soap and water. Wear suitable gloves. Wear eye/face protection. Avoid release to the environment. Refer to special instructions/safety data sheet.

SUSMP Classification: S5

ADG Classification: None allocated. Not a Dangerous Good under the ADG Code, IATA or IMDG/IMSBC criteria.

UN Number: None allocated

HS Code: 3808.91

**GHS Signal word: WARNING****HAZARD STATEMENT:**

- H302: Harmful if swallowed.
- H315: Causes skin irritation.
- H320: Causes eye irritation.
- H332: Harmful if inhaled.
- H335: May cause respiratory irritation.
- H400: Very toxic to aquatic life.

PREVENTION

- P102: Keep out of reach of children.
- P261: Avoid breathing fumes, mists, vapours or spray.
- P264: Wash contacted areas thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P280: Wear protective gloves, protective clothing and eye or face protection.

RESPONSE

- P312: Call a POISON CENTRE or doctor if you feel unwell.
- P362: Take off contaminated clothing and wash before reuse.
- P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P302+P352: IF ON SKIN: Wash with plenty of soap and water.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P332+P313: If skin irritation occurs: Get medical advice.

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P337+P313: If eye irritation persists: Get medical advice.

P391: Collect spillage.

P370+P378: Not combustible. Use extinguishing media suited to burning materials.

STORAGE

P402+P404: Store in a dry place. Store in a closed container.

P403+P235: Store in a well-ventilated place. Keep cool.

DISPOSAL

P501: Dispose of contents and containers as specified on the registered label.

Emergency Overview

Physical Description & Colour: White opaque suspension.

Odour: Negligible odour.

Major Health Hazards: Physical signs of deltamethrin poisoning can include dermatitis after skin contact; exposure to sunlight can make it worse. Swelling of the face including lips and eyelids can occur. Symptoms and consequences of poisoning include: sweating, fever, anxiety and rapid heartbeat. If swallowed, symptoms are likely to include feeling sick, vomiting, diarrhoea, twitching of arms and legs, and if poisoning is severe, convulsions.

Potential Health Effects

Inhalation:

Short Term Exposure: Available data shows that this product is not harmful. In addition product is unlikely to cause any discomfort or irritation.

Long Term Exposure: No data for health effects associated with long term inhalation.

Skin Contact:

Short Term Exposure: This product may cause temporary skin numbness. Product may be irritating but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term skin exposure.

Eye Contact:

Short Term Exposure: This product may be irritating to eyes, but is unlikely to cause anything more than mild transient discomfort.

Long Term Exposure: No data for health effects associated with long term eye exposure.

Ingestion:

Short Term Exposure: This product is unlikely to cause any irritation problems in the short or long term. May cause gastric upset.

Long Term Exposure: No data for health effects associated with long term ingestion.

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

Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m ³)	STEL (mg/m ³)
Deltamethrin	52918-63-5	1	not set	not set
Propylene glycol	57-55-6	>1	not set	not set
Other non hazardous ingredients		10 approx.	not set	not set
Water	7732-18-5	to 100	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.

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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 13 11 26 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

Inhalation: First aid is generally not required. If in doubt, contact a Poisons Information Centre, or a doctor at once.

Skin Contact: If irritation does occur, flush with lukewarm, gently flowing water for 5 minutes or until chemical is removed. If in doubt obtain medical advice.

Eye Contact: If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 15 minutes or until product is removed while holding the eyelid(s) open. Obtain medical advice if irritation becomes painful or lasts more than for a few minutes. flush the contaminated eye(s) with lukewarm, gently flowing water for 20 minutes or until the product is removed. 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

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. There is no risk of an explosion from this product under normal circumstances if it is 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: Not combustible. Use extinguishing media suited to burning materials.

Fire Fighting: If a significant quantity of this product is involved in a fire, call the fire brigade.

Flash point: Does not burn.

Upper Flammability Limit: Does not burn.

Lower Flammability Limit: Does not burn.

Autoignition temperature: Not applicable - 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 water courses. 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, Viton. 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 clean-up area, we recommend that you use a respirator. Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned below (section 8). 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. 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 MSDS 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.

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 MSDS 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.

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Storage: This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. 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 and Personal Protection

The following Australian 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/m³)** **STEL (mg/m³)**

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

The ADI for Deltamethrin is 0.01mg/kg bw. The corresponding NOEL has been set at 1 mg/kg bw

ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, Dec 2014.

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.

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, Viton.

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.

Section 9 - Physical and Chemical Properties:

Physical Description & colour:	White opaque suspension.
Odour:	Negligible odour.
Boiling Point:	Approximately 100° C at 100kPa.
Freezing/Melting Point:	About 0° C.
Volatiles:	Water component.
Vapour Pressure:	2.37 kPa at 20° C (water vapour pressure).
Vapour Density:	As for water.
Specific Gravity:	1.0 approx.
Water Solubility:	Forms suspension when mixed with water.
pH:	6 - 7.
Volatility:	No data.
Odour Threshold:	No data.
Evaporation Rate:	As for water.
Autoignition temp:	Not applicable - 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: acids, bases, oxidising agents.

Fire Decomposition: This product is likely to decompose only after heating to dryness, followed by further strong heating. Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. 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.

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Section 11 - Toxicological Information

Toxicity: The acute oral LD₅₀ (Oral), for deltamethrin in male rats typically ranged from 128mg/kg to greater than 5,000 mg/kg depending on the carrier and conditions of the study. Dogs had a reported LD₅₀ of 300 mg/kg. The acute percutaneous LD₅₀ for rats was reported to be greater than 2,000 mg/kg; greater than 10,000 mg/kg for quail; and greater than 4,640 mg/kg for ducks. The acute dermal LD₅₀ for rabbits was greater than 2,000 mg/kg. No skin irritation and slight eye irritation were reported.

Chronic Toxicity: In 2 year feeding trials, the reported NEL (no effect level) was 12 mg/kg diet for mice; and 2.1 mg/kg diet for rats. The dose without activity in rats over a 90 day period was 10 mg/kg/day. Suspected chronic exposure effects in humans include the following: choreoathetosis, hypotension, prenatal damage and shock. Workers exposed to deltamethrin during its manufacture over 7-8 years experienced transient cutaneous and mucous membrane irritation, which could be prevented by use of gloves and face masks. No other ill effects were seen.

Reproductive Effects: A reproductive 3-generation study in rats reported a reproductive NOEL to be greater than 2.5 mg/kg/day. Levels tested were 0, 0.1, 1.0, and 2.5 mg/kg/day. Oral administration of deltamethrin to mice on days 7 to 16 of gestation produced a dosage-related reduction of weight gain but no effect on the number of implants, foetal mortality, foetal weight or malformations.

Teratogenic Effects: No reported teratogenic effects in mice, rats, rabbits. Deltamethrin has no teratogenic activity.

Mutagenic Effects: No reported mutagenic effects in mice, rats, rabbits. Deltamethrin has no mutagenic activity.

Carcinogenic Effects: No information available

Organ Toxicity: Deltamethrin is hydrolysed by liver microsomal enzymes to 3-(2,2dibromovinyl) 2,2-cyclopropane carboxylic acid and 3-phenoxybenzaldehyde.

Fate in Humans and Animals: Elimination of the compound in the rat occurs within 2-4 days of administration. Metabolites of the cyano substituent are eliminated more slowly, and tissue levels remain relatively high, especially in the skin and stomach. Deltamethrin at an oral dosage of 50 mg/kg produces a marked increase of cGMP but not cAMP in the brain of rats. Metabolism of deltamethrin in rats involves rapid ester cleavage and hydroxylation. Deltamethrin has a half-life in the rat brain of 1-2 days, but it is more persistent in body fat, with a half-life of 5 days.

Rats and dogs given oral doses of 10 mg/kg/day for 13 weeks exhibited some motor symptoms but no fatalities or pathological changes. The dogs exhibited diarrhoea and vomiting. In another study, rats given 15 daily doses of 10 mg/kg showed motor symptoms, but a full neuropathological examination of the central nervous system showed no pathological changes.

Classification of Hazardous Ingredients

Ingredient	Risk Phrases
Deltamethrin	<10%: Xn; R20/22, R36/38

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: The reported 8 day LC₅₀ for deltamethrin for ducks was greater than 4,640 mg/kg diet; and greater than 10,000 mg/kg diet for quail.

Effects on Aquatic Organisms: As is common with all pyrethroids, deltamethrin has a high toxicity to fish under laboratory conditions. However, in field conditions under normal conditions of use, fish are not harmed. Deltamethrin had an impact on aquatic herbivorous insects. This impact led to an increase in algae. Although the fish (fathead minnows) accumulated the deltamethrin, no mortality could be observed. In laboratory trials, the LC₅₀ for fish was 1-10 micrograms/L. Aquatic fauna, particularly crustacea, may be affected, but fish are not harmed under normal conditions of use.

Effects on Other Animals (Non target species): Deltamethrin is considered toxic to bees. The 24 hour oral LD₅₀ for technical deltamethrin fed to bees was 0.079 µg/bee.

ENVIRONMENTAL FATE

Breakdown of Chemical in Soil & Groundwater: In soil degradation occurs within 1-2 weeks.

Breakdown of chemical in Surface water: Deltamethrin in pond water was rapidly adsorbed, mostly by sediment, in addition to uptake by plants and evaporation into the air.

Breakdown of Chemical in Vegetation: About 10 days after use, there are no deltamethrin residues observed on plants. There is no known phytotoxicity to crops.

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Section 13 - Disposal Considerations

Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details.

Section 14 - Transport Information

ADG Code: This product is not classified as a Dangerous Good by ADG, IATA or IMDG/IMSBC criteria. No special transport conditions are necessary unless required by other regulations.

Section 15 - Regulatory Information

AICS: All of the significant ingredients in this formulation are compliant with NICNAS regulations. The ingredient Deltamethrin is mentioned in the SUSMP and a poison schedule number of S5 has been allocated to this product using criteria in the Standard for the Uniform Scheduling of Medicines and Poisons.

Section 16 - Other Information

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

If there is any conflict between this MSDS and the registered label, instructions on the label prevail.

Acronyms:

ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AICS	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
IARC	International Agency for Research on Cancer
NTP	National Toxicology Program (USA)
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
UN Number	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD STATEMENT: INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS 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 MSDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (December 2011)