

MATERIAL SAFETY DATA SHEET

Ficam® W Insecticide

Date of Issue: September 13th, 2006

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

Product name: Ficam® W Insecticide
Other names: None
Product code: 4209426 (150 g), 4208454 (1.5 kg)
Chemical group: Carbamate
Recommended use: A general purpose residual insecticide for use in and around buildings, as a seed treatment and on turf.
Formulation: Wettable powder (WP)
Supplier: Bayer Environmental Science – A Business Group of Bayer CropScience Pty Ltd
ABN 87 000 226 022
Address: 391 - 393 Tooronga Road, East Hawthorn
Victoria 3123, Australia
Telephone: (03) 9248 6888
Facsimile: (03) 9248 6800
Website: www.bayercropscience.com.au
Contact: Technical Manager (03) 9248 6888
Emergency Telephone Number: 1800 033 111 – Orica SH&E Shared Services

2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE - DANGEROUS GOOD

Toxic by inhalation and if swallowed. Harmful in contact with skin. Not flammable.

Hazard designation: Hazardous (National Occupational Health and Safety Commission - NOHSC)
Risk phrases: R23/25 – Toxic by inhalation and if swallowed
R21 – Harmful in contact with skin
Safety phrases: See sections 4, 5, 6, 7, 8, 9, 13
ADG classification: Dangerous Goods for transport by road and rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail – CARBAMATE PESTICIDE, SOLID, TOXIC (bendiocarb) Class 6.1, Packing Group III UN2757
SUSDP classification: Schedule 6

3. COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredients: | CAS Number: | Concentration (g/kg): |
|-------------------|-----------------|-----------------------|
| Bendiocarb | [22781-23-3] | 800 |
| Other ingredients | (non hazardous) | 200 |

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4. FIRST AID MEASURES

If poisoning occurs, immediately contact a doctor or Poisons Information Centre (telephone 13 11 26), and follow the advice given. Show this Material Safety Data Sheet to a doctor.

Inhalation: Remove person to fresh air. If signs of poisoning occur get medical attention immediately. Persons assisting the patient should protect themselves from contamination. If advised by doctor or Poisons Information Centre, atropine tablets may be administered. Artificial respiration may be required.

Skin contact: If poisoned by skin absorption, remove any contaminated clothing, wash skin thoroughly with soap and water and continue flushing with water for at least 15 minutes. Seek medical attention if irritation develops or persists. If signs of poisoning occur get medical attention immediately. Persons assisting the patient should protect themselves from contamination. If advised by doctor or Poisons Information Centre, atropine tablets may be administered.

Eye contact: Rinse immediately with water for at least 15 minutes and seek medical advice.

Ingestion: Induce vomiting if patient is fully conscious, time since ingestion is less than 30 minutes and medical aid is readily available (vomit should not get into respiratory tract). Wash out mouth with water. Keep patient at rest and seek urgent medical advice. Transport patient to doctor or hospital quickly. If advised by doctor or Poisons Information Centre, atropine tablets may be administered. DO NOT attempt to give anything by mouth to a semi-conscious or unconscious person.

First Aid Facilities: Obtain an emergency supply of atropine tablets 0.6 mg.

Symptoms: Bendiocarb belongs to the carbamate group of insecticides, which are acetylcholinesterase inhibitors. Inhibition of acetylcholinesterase results in accumulation of the neurotransmitter acetylcholine in the central and peripheral nervous system.

Symptoms of poisoning include mild intoxication causes headache, blurred vision, weakness, sweating, mild chest pain, nausea and vomiting. Severe intoxication causes cyanosis, muscular twitching, spasms, miosis and respiratory paralysis. Onset of symptoms may be delayed. Cholinesterase inhibition sometimes persists for several weeks.

Medical attention: Basic aid, decontamination, symptomatic treatment and if necessary administration of antidote (atropine).

Note for physicians

Endotracheal intubation should be done and gastric lavage performed, followed by administration of charcoal. Treatment is with atropine sulphate. Additionally diazepam should be given in case of seizures/convulsions. Atropine should not be given to a cyanosed patient. Monitor respiratory, cardiac and central nervous system functions. Monitor red blood cell and plasma cholinesterase levels. Administer oxygen if necessary. Watch for pulmonary oedema and delayed neurological symptoms. Contraindications include oximes (pralidoxime, oblidoxime), succinyl chloride and aminophylline.

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4. FIRST AID MEASURES - continued

Medical attention continued:

2 regimens for initial atropine treatment are currently suggested, in both cases the cessation of the cholinergic symptoms salivation, bronchial secretion, sweating and bradycardia indicates sufficient atropinization. The skin should be dry, the lungs should be clear on auscultation and the heart rate should be in a range of 80 to 100/minute. Overdoses of atropine have to be strictly avoided, as these can promote heart rhythm disturbances.

Regimen 1: (2-10 mg atropine i.v. , followed every 15 minutes by 2 mg atropine i.v. until cessation of the symptoms.

Regimen 2:

- 2 mg atropine i.v., 5 minutes wait, if symptoms persist or reappear
- 4 mg atropine i.v., 5 minutes wait, if symptoms persist or reappear
- 8 mg atropine i.v., 5 minutes wait, if symptoms persist or reappear
- 16 mg atropine i.v., 5 minutes wait, if symptoms persist or reappear
- 32 mg atropine i.v.

No higher doses of atropine should be given nor are necessary.

For children, the dosage has to be more careful due to a higher sensitivity of children to atropine. The initial dose should be 0.1 mg/kg body weight, then careful repletion or increase depending on the reversal of symptoms as described above.

It is mandatory to allow 5 minutes after each dose for atropine to become fully effective, the next higher dose must not be given earlier and only if the above symptoms are persisting.

Regimen 2 currently is advisable. If further atropine treatment is required (taking into account the relatively short effect of carbamates), it should be done by continuous application of 1 – 2 mg/hour. Atropine treatment can be stopped, when the plasma cholinesterase level has returned to above 30% of normal.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water fog or fine spray, carbon dioxide, dry chemical, foam.

Hazards from combustion products: Fine dust may form explosive mixtures in air. The product is not flammable, but when heated above 125° C will evolve toxic fumes of methyl isocyanate. Water is the preferred extinguishing medium as it decomposes any methyl isocyanate.

Precautions for fire fighters: Fire fighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Keep unnecessary people away and move all other personnel to windward side of fire. Bund area with sand or earth to prevent contamination of drains or waterways. Dispose of fire control water or other extinguishing agent and spillage safely later.

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6. ACCIDENTAL RELEASE MEASURES

Dealing with spills and disposals may result in the potential for increased personal exposure. Protective clothing and equipment as described in the PERSONAL PROTECTION section should be worn. Avoid contact with spilled material or contaminated surfaces. Keep people and animals away. Prevent spill from entering drains, sewers or any body of water. Scoop or shovel into sealable containers for disposal, avoiding formation of a dust cloud. If the diluted spray mix is spilt, absorb with an inert absorbent, and scoop up as above. Wash contaminated surface with water.

7. HANDLING AND STORAGE

Handling: Keep out of reach of children. Avoid contact with skin and eyes, and do not inhale dust or spray mist. Use only in a well-ventilated area.

Storage: Store product in the closed, original container in a safe, cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards: No exposure standard has been assigned by the National Occupational Health and Safety Commission (Worksafe Australia).
WHO recommended TLV for bendiocarb is 0.2 mg/m³ (8 h) or 9.6 mg/m³ (10 minutes).
Production workers and applicators handling this product should be monitored for cholinesterase levels. A baseline level should be established prior to any potential exposure.

Engineering controls: Control process conditions to avoid contact. Use local exhaust ventilation during manufacture and use.

Personal Protective Equipment:

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| Eyes: | Face shield or goggles |
| Clothing: | Cotton overalls buttoned to the neck and wrist and a washable hat |
| Gloves: | Elbow-length PVC gloves |
| Respiratory: | Respiratory: Wear a disposable face mask in enclosed areas. |
| Other: | 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, face shield or goggles and contaminated clothing. |

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9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--------------------------------------|---|
| Appearance: | Off-white powder. |
| Odour: | Practically odourless. |
| Freezing/melting point: | Not applicable |
| Solubility: | Forms a suspension in water |
| Density: | Not applicable |
| pH: | ~ 7 (1% in water) |
| Flash Point: | Not applicable |
| Flammability (explosive) limits: | Lower explosion limit 30 g/m ³ |
| Flammability: | Ficam W Insecticide is combustible. |
| Octanol/water partition coefficient: | Log Pow: 1.7 at 25 degrees C (active ingredient bendiocarb) |
| Formulation: | Wettable powder |

10. STABILITY AND REACTIVITY

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|-----------------------------------|--|
| Chemical stability: | Stable under normal conditions of use. Fine dust may form explosive mixtures in air. |
| Hazardous polymerisation: | None |
| Conditions to avoid: | Avoid heat, oxidising agents and sources of ignition. |
| Incompatible materials: | None known |
| Hazardous decomposition products: | The product is not flammable, but when heated above 125° C will evolve toxic fumes of methyl isocyanate. |

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

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|---------------|--|
| Inhalation: | Toxic by inhalation. |
| Skin contact: | Harmful in contact with skin. Poisonous if absorbed by skin contact. Will irritate the skin. |
| Eye contact: | Contact with the eyes will cause tears and blurred vision. Mildly irritating. |
| Ingestion: | Toxic if swallowed. |
| Other: | None |

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ANIMAL TOXICITY DATA – PRODUCT:

Acute:

| | |
|----------------------|--|
| Oral toxicity: | LD ₅₀ rat: >179 mg/kg |
| Dermal toxicity: | LD ₅₀ rabbit: > 1000 mg/kg |
| Inhalation toxicity: | LC ₅₀ (4 h) rat: 0.3mg/L |
| Skin irritation: | May irritate the skin. |
| Eye irritation: | May irritate the eyes. |
| Sensitisation: | Non-sensitizing (guinea pig) (OECD Test Guideline 406, Magnusson and Kligman Test) |

Chronic:

Repeated minor exposure may have a cumulative poisoning effect. The main health effect from repeated exposure would be toxic symptoms of cholinesterase inhibition described above. Bendiocarb is not mutagenic, carcinogenic nor teratogenic.

12. ECOLOGICAL INFORMATION

| | |
|--|---|
| Fish toxicity: | LC ₅₀ rainbow trout: 1.55 mg/L (96 h) (Bendiocarb) |
| Daphnia toxicity: | EC ₅₀ Water flea (Daphnia magna): 0.0377 mg/l (48 h) (Bendiocarb) |
| Toxicity to algae: | EC ₅₀ Pseudokirchneriella subcapitata: 0.408 mg/l (48 h) (Bendiocarb) |
| Bird toxicity: | LD ₅₀ mallard ducks: 3.1 mg/kg (Bendiocarb) LD ₅₀ quail: 19 mg/kg (Bendiocarb) |
| Bee toxicity: | LD ₅₀ (oral): 0.1 µg/bee (Toxic to bees) (Bendiocarb) |
| Other: | Toxic to earthworms |
| Environmental fate, persistence and degradation: | Do not contaminate any body of water with this product. Bendiocarb persistence in soil is low. |

13. DISPOSAL CONSIDERATIONS

Ensure container is completely empty before disposal. Triple rinse or preferably pressure rinse containers before disposal. Dispose of rinsings in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots. Break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit. Empty containers and product should not be burnt.

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14. TRANSPORT INFORMATION

UN number: 2757
Proper shipping name: CARBAMATE PESTICIDE, SOLID, TOXIC (bendiocarb)
Class and Subsidiary Risk: 6.1
Packing Group: III
EPG: 34 - Dangerous Goods – Initial Emergency Response Guide
Hazchem code: 2X
Marine Pollutant: Yes

15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988

Australian Pesticides and Veterinary Medicines Authority approval number: 31988

16. OTHER INFORMATION

Trademark information: Ficam® is a Registered Trademark of Bayer.

Preparation information: Replaces September 13th, 2005 edition.
Reasons for update: Risk Phrases, First Aid Measures, Ecological Information.

Data sources: Bayer CropScience Pty Ltd product safety data and published data

This MSDS 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 should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.

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.

END OF MSDS