

MATERIAL SAFETY DATA SHEET

Merit® Turf and Ornamental Insecticide

Date of Issue: November 9th, 2007

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

Product name: Merit® Turf and Ornamental Insecticide
Other names: None
Product code: 4545051 (1 L), 6238068 (5 L)
Chemical group: Guanidine
Recommended use: An insecticide concentrate for use on turf, ornamentals and amenity trees.
Formulation: Suspension Concentrate (SC)
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 - NON-DANGEROUS GOOD

May cause sensitisation by skin contact. Harmful if swallowed.

Hazard designation: Hazardous (National Occupational Health and Safety Commission - NOHSC)
Risk phrases: R43 – May cause sensitisation by skin contact
R22 – Harmful if swallowed
Safety phrases: See Sections 4, 5, 6, 7, 8, 9, 13
ADG classification: Not "dangerous goods" for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.
SUSDP classification: Schedule 5 (Standard for the Uniform Scheduling of Drugs and Poisons)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Concentration (g/L):
Imidacloprid	[138261-41-3]	200
Aqueous mixture of 5-chloro-2-methyl-2H-isothiazol-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	[55965-84-9]	1.2
Other ingredients	(non hazardous)	~950

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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 patient to fresh air. Keep rested and warm.
- Skin contact:** Remove patient's clothing and wash skin thoroughly with soap and water. If available, wash with polyethylenglykol 400 followed by water.
- Eye contact:** Irrigate eyes immediately with water for 15 minutes.
- Ingestion:** Give plenty of water to drink. Never give anything by mouth to an unconscious person.
- First Aid Facilities:** Provide washing facilities in the workplace.
- Symptoms:** Symptoms of intoxication that may arise if the product is mishandled include nausea, abdominal pain and diarrhoea. Muscular cramps, apathetic state, depressed muscular tone, respiratory disturbance and trembling are also possible in severe cases of poisoning.
- Medical attention:** Treatment
Basic aid, decontamination, symptomatic treatment.
Note for physicians
Check blood pressure and pulse rate frequently since bradycardia and hypotension are possible. Provide supportive measures for respiratory and cardiac function. Give artificial respiration if signs of paralysis appear. Additional therapeutic measures involve elimination of the substance from the body or acceleration of its excretion (gastro-lavage, saline laxatives). No specific antidote known.
Contraindications: Absorption promoting agents such as alcoholic beverages and milk. Oils and fats are of no special significance due to the low liposolubility of the active ingredient.

5. FIRE FIGHTING MEASURES

- Extinguishing media:** Sprayed water jet, foam, extinguishing powder, carbon dioxide, and sand.
- Hazards from combustion products:** In the event of fire, the formation of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides must be anticipated. Do not breathe fumes.
- Precautions for fire fighters:** Fight fire in the early stages if safe to do so. Wear respiratory protection.
Well ventilated areas: wear full face mask with combination filter eg., ABEK-P2 (offers no protection from carbon monoxide).
Enclosed premises: wear respirator with independent air supply.
Contain firefighting water. If at all possible do not allow firefighting water to enter drains and waterways.

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6. ACCIDENTAL RELEASE MEASURES

Prevent spill from spreading or entering waterways or drains. Take up with absorbent material such as sawdust, peat or binding agent for chemicals. Fill material along with any contaminated soil etc. into sealable containers. Clean affected area with an aqueous detergent and a small amount of water. On completion of clean-up remove and wash all protective clothing and equipment with detergent and water. Any heavily contaminated clothing should be placed in a plastic garbage bag and placed in a sealable drum. Do not smoke, eat or drink during clean-up operation.

7. HANDLING AND STORAGE

Handling: Keep out of reach of children. Avoid contact with the eyes and skin.

Storage: Store in original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight. Do not store near any material intended for use or consumption by humans or animals.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure standards: NOHSC exposure standards have not been established for any ingredient in this product.

Engineering controls: No engineering controls are required for the normal use of this product according to label.

Personal Protective Equipment: When using the product wear cotton overalls buttoned to the neck and wrist a washable hat, and elbow-length PVC gloves. If clothing becomes contaminated with product or wet with spray, remove clothing immediately. If product or spray on skin, immediately wash the area with soap and water. Wash hands after use. After each day's use wash gloves and contaminated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White liquid (suspension concentrate)
Odour: Slight characteristic odour
Vapour pressure: 2×10^{-9} mbar at 20°C
Vapour density: Not available
Boiling point: >100 °C
Solubility: Miscible
Density: 1.15g/L at 20°C
pH: 4.0-7.0
Flash Point: No flash point up to 100°C
Flammability (explosive) limits: Not available
Auto-ignition temperature: Not available
Octanol/water partition coefficient: *Imidacloprid*: $\log P_{ow} = 0.57$ (21° C)
Formulation: Suspension concentrate

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10. STABILITY AND REACTIVITY

Chemical stability:	Product is stable. Not flammable under normal conditions of use. Avoid strong oxidising agents.
Conditions to avoid:	None particularly recommended
Incompatible materials:	Avoid strong oxidising agents.
Hazardous decomposition products:	In the event of fire, the formation of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides must be anticipated. Do not breathe fumes.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

Inhalation:	Not expected to be harmful if inhaled.
Skin contact:	Repeated exposure may cause some irritation. Repeated occupational exposure during use may cause allergic disorders.
Eye contact:	May be slightly irritating to the eyes.
Ingestion:	Harmful if swallowed.

ANIMAL TOXICITY DATA – PRODUCT:

Acute:

Oral toxicity:	LD ₅₀ rat (female): approximately 1218 mg/kg LD ₅₀ rat (male): approximately 1684 mg/kg
Dermal toxicity:	LD ₅₀ rat: >4000 mg/kg i.e. practically non-toxic
Inhalation toxicity:	LC50 rat (4 hour): > 2.238 mg/L – aerosol (highest attainable concentration)
Skin irritation:	Not irritating – rabbit
Eye irritation:	Non-irritant – rabbit
Sensitisation:	This product is classified as “Sensitising” as it contains a very small amount of an isothiazolone antifungal agent.

Chronic:

Animal studies show no evidence of carcinogenic, mutagenic or teratogenic effects.

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12. ECOLOGICAL INFORMATION – ACTIVE INGREDIENT

Imidacloprid is toxic to certain aquatic species. Dangerous to bees.
Do not contaminate ponds, waterways or drains with the product or used containers.

Ecotoxicity:

Imidacloprid:

Fish toxicity:

LC₅₀: 237 mg/L (96 h); golden orfe (*Leuciscus idus melanotis*)

LC₅₀: 211 mg/L (96 h); rainbow trout (*Oncorhynchus mykiss*)

Aquatic invertebrate toxicity:

EC₅₀: 85 mg/L (48 h) *Daphnia magna*

Algae toxicity:

EC₅₀: > 100 mg/L (72 h); green alga (*Pseudokirchneriella subcapitata*)

Bacteria toxicity:

EC₅₀: > 10000 mg/L; activated sludge (OECD 209)

Bird toxicity:

Acute oral LD₅₀: 31 mg/kg; Japanese quail

Acute oral LD₅₀: 152 mg/kg; bobwhite quail

Environmental fate, persistence and degradation:

Imidacloprid shows a medium adsorption to soil. Classified as immobile in soil. Not expected to leach.

13. DISPOSAL CONSIDERATIONS

1) After intended use:

Triple or preferably pressure rinse container before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler 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 the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

2) After spill or accident:

Dispose of containers at an approved local waste disposal site.

14. TRANSPORT INFORMATION

UN number: Not applicable

Proper shipping name: Not applicable

Class and Subsidiary Risk: Not "dangerous goods" for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

Packing Group: Not applicable

EPG: Not applicable

Hazchem code: Not applicable

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15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988
Australian Pesticides and Veterinary Medicines Authority Approval Number: 59696

16. OTHER INFORMATION

Trademark information: Merit® is a Registered Trademark of Bayer
Preparation information: Replaces April 19th, 2007 edition.
Reason for update: Inclusion of R22 risk phrase, amendment of toxicological data
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