SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier
Trade name: Merit® Turf and Ornamental Insecticide
Product code (UVP): 80481853

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use: Insecticide

1.3 Details of the supplier of the safety data sheet
Supplier: Bayer CropScience Pty Ltd.
ABN 87 000 226 022
Level 1, 8 Redfern Road
3123 Hawthorn East
Victoria
Australia

Telephone: (03) 9248 6888
Telefax: (03) 9248 6800

Responsible Department: 1800 804 479 Technical Information Service
Website: www.environmentalscience.bayer.com.au

1.4 Emergency telephone no.
Emergency telephone no.: 1800 033 111 IXOM Operations Pty Ltd

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Australia. GHS Hazardous Chemical Information
Acute toxicity: Category 4
H302 Harmful if swallowed.
Acute aquatic toxicity: Category 1
H400 Very toxic to aquatic life.
Chronic aquatic toxicity: Category 1
H410 Very toxic to aquatic life with long lasting effects.

2.2 Label elements
Hazardous components which must be listed on the label:
Imidacloprid

Signal word: Warning

Hazard statements
H302 Harmful if swallowed.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
P330 Rinse mouth.
P501 Dispose of contents/container in accordance with local regulation.

2.3 Other hazards
No other hazards known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

Imidacloprid 200 g/l
Chemical nature Suspension concentrate (=flowable concentrate)(SC)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidacloprid</td>
<td>138261-41-3</td>
<td>18.30</td>
</tr>
<tr>
<td>Mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one</td>
<td>55965-84-9</td>
<td>&lt;= 0.001</td>
</tr>
<tr>
<td>Glycerine</td>
<td>56-81-5</td>
<td>10.00</td>
</tr>
<tr>
<td>1,2-Propanediol</td>
<td>57-55-6</td>
<td>&gt;= 1.00 - &lt;= 5.00</td>
</tr>
<tr>
<td>Other ingredients (non-hazardous) to 100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 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 Safety Data Sheet to the doctor.

4.1 Description of first aid measures

Inhalation Move to fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Skin contact Wash off thoroughly with plenty of soap and water, if available with polyethylene glycol 400, subsequently rinse with water. If symptoms persist, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms Dizziness, Nausea, Abdominal pain

Local: No symptoms known or expected., Systemic: Apathy, Respiratory disorder, Trembling
4.3 Indication of any immediate medical attention and special treatment needed

**Risks**
This product contains a nicotinoid.

**Treatment**
Treat symptomatically. Monitor: blood (Hb, RBC, WBC). Carefully monitor the respiratory functions. Oxygen or artificial respiration if needed. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. There is no specific antidote. Contraindications: alcohol.

### SECTION 5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>5.1 Extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suitable</strong></td>
</tr>
<tr>
<td>Water spray, Alcohol-resistant foam, Dry chemical, Carbon dioxide (CO2), Sand</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.2 Special hazards arising from the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the event of fire the following may be released: Hydrogen chloride (HCl), Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Nitrogen oxides (NOx)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5.3 Advice for firefighters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special protective equipment for firefighters</strong></td>
</tr>
<tr>
<td>In the event of fire and/or explosion do not breathe fumes. In the event of fire, wear self-contained breathing apparatus. Wear self-contained breathing apparatus and protective suit.</td>
</tr>
</tbody>
</table>

Further information
Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

Evacuate personnel to safe areas. Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.

**Hazchem Code**
•3Z

### SECTION 6. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>6.1 Personal precautions, protective equipment and emergency procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Precautions</strong></td>
</tr>
<tr>
<td>Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment. When dealing with a spillage do not eat, drink or smoke. Keep unauthorized people away.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6.2 Environmental precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.</td>
</tr>
</tbody>
</table>
6.3 Methods and materials for containment and cleaning up

Methods for cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling: Use only in area provided with appropriate exhaust ventilation.
Advice on protection against fire and explosion: No special precautions required.
Hygiene measures: Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt). After each day's use, wash gloves, face shield or goggles and contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Store in a place accessible by authorized persons only. Store in original container.
Advice on common storage: Keep away from food, drink and animal feedingstuffs.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycerine (Inhalable mist.)</td>
<td>56-81-5</td>
<td>10 mg/m³ (TWA)</td>
<td>12 2011</td>
<td>AU NOEL</td>
</tr>
<tr>
<td>1,2-Propanediol (Total vapour and particulates.)</td>
<td>57-55-6</td>
<td>474 mg/m³/150 ppm (TWA)</td>
<td>12 2011</td>
<td>AU NOEL</td>
</tr>
<tr>
<td>1,2-Propanediol (Particulate.)</td>
<td>57-55-6</td>
<td>10 mg/m³ (TWA)</td>
<td>12 2011</td>
<td>AU NOEL</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Personal protective equipment - End user

Respiratory protection: Respiratory protection is not required under anticipated circumstances of exposure.
Hand protection: Elbow-length PVC or nitrile gloves
Eye protection
Goggles
Skin and body protection
Cotton overall buttoned to the neck and wrist
Washable hat
Engineering Controls
Advice on safe handling
Use only in area provided with appropriate exhaust ventilation.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties
- **Form**: suspension
- **Colour**: white to light beige
- **Odour**: weak, characteristic
- **pH**: 7.0 - 8.5 at 100 % (23 °C)
- **Flash point**: Not applicable
- **Auto-ignition temperature**: 405 °C
- **Density**: ca. 1.10 g/cm³ at 20 °C
- **Water solubility**: miscible
- **Partition coefficient: n-octanol/water**: Imidacloprid: log Pow: 0.57
- **Viscosity, dynamic**: 400 - 800 mPa×s at 23 °C Velocity gradient 7.5 /s
- **Surface tension**: 48.9 mN/m
- **Explosivity**: Not explosive
- **9.2 Other information**: Further safety related physical-chemical data are not known.

### SECTION 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity
- **Thermal decomposition**: 210 °C
  Exothermic decomposition.
  The value mentioned relates to the active ingredient.

#### 10.2 Chemical stability
Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions
No hazardous reactions when stored and handled according to prescribed instructions.
10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Acids, Bases, Strong oxidizing agents

10.6 Hazardous decomposition products
Thermal decomposition can lead to release of:
- Hydrogen chloride (HCl)
- Hydrogen cyanide (hydrocyanic acid)
- Carbon monoxide
- Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity
LD50 (Rat) > 1,218 mg/kg

Acute inhalation toxicity
LC50 (Rat) > 2.238 mg/l
Exposure time: 4 h
Determined in the form of a respirable aerosol.
Highest attainable concentration.

Acute dermal toxicity
LD50 (Rat) > 4,000 mg/kg

Skin irritation
No skin irritation (Rabbit)

Eye irritation
No eye irritation (Rabbit)

Sensitisation
Non-sensitizing, (Guinea pig)
OECD Test Guideline 406, Buehler test

Assessment mutagenicity
Imidacloprid was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

Assessment carcinogenicity
Imidacloprid was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction
Imidacloprid caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Imidacloprid is related to parental toxicity.

Assessment developmental toxicity
Imidacloprid caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Imidacloprid are related to maternal toxicity.

Assessment repeated dose toxicity
Imidacloprid did not cause specific target organ toxicity in experimental animal studies.

Aspiration hazard
Based on available data, the classification criteria are not met.

Information on likely routes of exposure
May be harmful if inhaled.
Irritating to skin., Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Causes eye irritation.
Harmful if swallowed.

**Early onset symptoms related to exposure**
Refer to Section 4

**Delayed health effects from exposure**
Refer to Section 11

**Exposure levels and health effects**
Refer to Section 4

**Interactive effects**
Not known

**When specific chemical data is not available**
Not applicable

**Mixture of chemicals**
Refer to Section 2.1

### SECTION 12. ECOLOGICAL INFORMATION

**12.1 Toxicity**

**Toxicity to fish**
LC50 (Oncorhynchus mykiss (rainbow trout)) > 535 mg/l
Exposure time: 96 h

LC50 (Leuciscus idus (Golden orfe)) 237 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient imidacloprid.

LC50 (Oncorhynchus mykiss (rainbow trout)) 211 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient imidacloprid.

LC50 (Cyprinus carpio (Carp)) 280 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient imidacloprid.

**Toxicity to aquatic invertebrates**
EC50 (Daphnia magna (Water flea)) > 535 mg/l
Exposure time: 24 h

EC50 (Chironomus riparius (non-biting midge)) 0.0552 mg/l
Exposure time: 24 h
The value mentioned relates to the active ingredient imidacloprid.

EC50 (Hyalella azteca (Scud)) 0.055 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient imidacloprid.

EC50 (Daphnia magna (Water flea)) 85 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient imidacloprid.
Toxicity to aquatic plants
IC50 (Desmodesmus subspicatus (green algae)) > 1,000 mg/l
Growth rate; Exposure time: 72 h
EC50 (Raphidocelis subcapitata (freshwater green alga)) > 100 mg/l
Exposure time: 72 h
The value mentioned relates to the active ingredient imidacloprid.

Toxicity to bacteria
EC50 (activated sludge) > 10,000 mg/l
The value mentioned relates to the active ingredient imidacloprid.

Toxicity to other organisms
LD50 (Coturnix japonica (Japanese quail)) 31 mg/kg
The value mentioned relates to the active ingredient imidacloprid.
LD50 (Colinus virginianus (Bobwhite quail)) 152 mg/kg
The value mentioned relates to the active ingredient imidacloprid.
(Apis mellifera (bees))
The value mentioned relates to the active ingredient imidacloprid.
Toxic to bees.

12.2 Persistence and degradability
Biodegradability
Imidacloprid:
Not rapidly biodegradable
Koc
Imidacloprid: Koc: 225

12.3 Bioaccumulative potential
Bioaccumulation
Imidacloprid:
Does not bioaccumulate.

12.4 Mobility in soil
Mobility in soil
Imidacloprid: Moderately mobile in soils

12.5 Other adverse effects
Additional ecological information
No other effects to be mentioned.

SECTION 13. DISPOSAL CONSIDERATIONS

Metal drums and plastic containers:
Triple or preferably pressure rinse containers 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.

SECTION 14. TRANSPORT INFORMATION

ADG
UN number 3082
Transport hazard class(es) 9
Subsidiary Risk None
Packaging group III
Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IMIDACLOPRID SOLUTION)
Hazchem Code •3Z

According to AU01, Environmentally Hazardous Substances in packagings, IBC or any other receptacle not exceeding 500 kg or 500 L are not subject to the ADG Code.

IMDG
UN number 3082
Transport hazard class(es) 9
Subsidiary Risk None
Packaging group III
Marine pollutant YES
Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IMIDACLOPRID SOLUTION)

IATA
UN number 3082
Transport hazard class(es) 9
Subsidiary Risk None
Packaging group III
Environm. Hazardous Mark YES
Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (IMIDACLOPRID SOLUTION)

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 59696

SUSMP classification (Poison Schedule)

Schedule 5 (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 16. OTHER INFORMATION

Trademark information Merit® is a registered trademark of the Bayer Group.

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 should read this SDS 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.
Abbreviations and acronyms

ADN  European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR  European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE  Acute toxicity estimate
AU OEL  Australia. OELs. (Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment)
CAS-Nr.  Chemical Abstracts Service number
CEILING  Ceiling Limit Value
Conc.  Concentration
EC-No.  European community number
ECx  Effective concentration to x %
EINECS  European inventory of existing commercial substances
ELINCS  European list of notified chemical substances
EN  European Standard
EU  European Union
IATA  International Air Transport Association
IBC  International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code)
ICx  Inhibition concentration to x %
IMDG  International Maritime Dangerous Goods
LCx  Lethal concentration to x %
LDx  Lethal dose to x %
LOEC/LOEL  Lowest observed effect concentration/level
MARPOL  MARPOL: International Convention for the prevention of marine pollution from ships
N.O.S.  Not otherwise specified
NOEC/NOEL  No observed effect concentration/level
OECD  Organization for Economic Co-operation and Development
OES BCS  OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"
PEAK  PEAK: Exposure Standard - Peak means a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.
RID  Regulations concerning the International Carriage of Dangerous Goods by Rail
SK-SEN  Skin sensitiser
SKIN_DES  SKIN_DES: Skin notation: Absorption through the skin may be a significant source of exposure.
STEL  STEL: Exposure standard - short term exposure limit (STEL): A 15 minute TWA exposure which should not be exceeded at any time during a working day even if the eight-hour TWA average is within the TWA exposure standard. Exposures at the STEL should not be longer than 15 minutes and should not be repeated more than four times per day. There should be at least 60 minutes between successive exposures at the STEL.
TWA  TWA: Exposure standard - time-weighted average (TWA): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.
UN  United Nations
WHO  World Health Organization

Changes since the last version are highlighted in the margin. This version replaces all previous versions.
END OF SDS