SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier
Trade name: Ronstar® Turf and Ornamental Herbicide
Product code (UVP): 05924065

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

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
Classification in accordance with Australian GHS Regulation
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
Labelling according to specific Australian legislation
No hazard label for supply/use required.

2.3 Other hazards
No other hazards known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature
Oxadiazon 20g/kg
Granule (GR)
### 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

**General advice**
Remove contaminated clothing immediately and dispose of safely.

**Inhalation**
Move the victim to fresh air and keep at rest. If symptoms persist, call a physician.

**Skin contact**
Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 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**
Keep at rest. Rinse mouth. Do NOT induce vomiting. If symptoms persist, call a physician.

#### 4.2 Most important symptoms and effects, both acute and delayed

**Symptoms**
- Local: To date no symptoms are known.
- Systemic: To date no symptoms are known.

#### 4.3 Indication of any immediate medical attention and special treatment needed

**Treatment**
- Local treatment: Initial treatment: symptomatic.
- Systemic treatment: Initial treatment: symptomatic. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. There is no specific antidote.

### SECTION 5. FIRE FIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable**
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
5.2 Special hazards arising from the substance or mixture
In the event of fire the following may be released: Hydrogen chloride (HCl), Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2)

5.3 Advice for firefighters
Special protective equipment for firefighters
In the event of fire, wear self-contained breathing apparatus.

Further information
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. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Hazchem Code
2Z

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Precautions
Avoid dust formation. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke. Use personal protective equipment. Keep unauthorized people away.

6.2 Environmental precautions
Do not allow to get into surface water, drains and ground water.

6.3 Methods and materials for containment and cleaning up
Methods for cleaning up
Avoid dust formation. Collect and transfer the product into a properly labelled and tightly closed container.

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
Dust may form explosive mixture in air. Avoid dust formation by friction. Take measures to prevent the build up of electrostatic charge.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. After each day’s use, wash gloves, face shield or goggles and contaminated clothing.

7.2 Conditions for safe storage, including any incompatibilities
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Ronstar® Turf and Ornamental Herbicide

Version 1 / AUS
102000001758

Revision Date: 27.10.2016
Print Date: 27.10.2016

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. Keep away from direct sunlight.

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>
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<tbody>
<tr>
<td>Crystalline quartz (respirable) (Respirable dust.)</td>
<td>14808-60-7</td>
<td>0.1 mg/m³ (TWA)</td>
<td>12 2011</td>
<td>AU NOEL</td>
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</tbody>
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8.2 Exposure controls

Respiratory protection
Breathing apparatus only if aerosol or dust is formed. In case of dust formation, use a fine dust face mask.

Hand protection
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.
Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.
Material: Nitrile rubber
Rate of permeability: > 480 min
Glove thickness: > 0.4 mm
Protective index: Class 6

Eye protection
Safety glasses with side-shields

Skin and body protection
Use suitable protective clothing, gloves and footwear, selected with regard to use conditions and exposure potential.

General protective measures
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the above mentioned recommendations would apply.

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: granular
Colour: light brown
Odour: weak, characteristic
Bulk density: ca. 0.67 g/ml (loose)
Water solubility: miscible
9.2 Other information: Further safety related physical-chemical data are not known.

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity
Thermal decomposition: Stable under normal conditions.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No hazardous reactions known.

10.4 Conditions to avoid
Exposure to moisture.
Elevated temperatures

10.5 Incompatible materials
Strong acids, Strong bases, Strong oxidizing agents

10.6 Hazardous decomposition products
Thermal decomposition can lead to release of:
Hydrogen chloride (HCl)
Nitrogen oxides (NOx)
Oxides of carbon

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute oral toxicity: LD50 (Rat) > 2,000 mg/kg
Acute inhalation toxicity: LC50 (Rat) > 5.0 mg/l
Exposure time: 4 h
Acute dermal toxicity: LD50 (Rat) > 2,000 mg/kg
Skin irritation: No skin irritation (Rabbit)
Eye irritation: No eye irritation (Rabbit)
Sensitisation: Non-sensitizing. (Guinea pig)

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

Assessment carcinogenicity
Oxadiazon caused at high dose levels an increased incidence of tumours in the following organ(s): Liver. The mechanism that triggers tumours in rodents and the type of tumours observed are not relevant to humans.
Assessment toxicity to reproduction

Oxadiazon 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 Oxadiazon is related to parental toxicity.

Assessment developmental toxicity

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

Assessment STOT Specific target organ toxicity – repeated exposure

Oxadiazon caused specific target organ toxicity in experimental animal studies in the following organ(s): Liver, Blood. The observed effects do not appear to be relevant for humans.

Assessment hazard

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

Information on likely routes of exposure

May cause upper respiratory tract irritation. Low acute oral toxicity., May cause irritation.

This product is not listed as a carcinogen by ACGIH, NTP, IARC or OSHA. However, it may contain crystalline silica (quartz), a substance which has been listed as a carcinogen by ACGIH, NTP and IARC. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Although the carcinogenic potential of crystalline silica in humans is controversial, it must be considered if it is inhaled under excessive exposure conditions. The respirable portion of the silica that may be contained in this product, however, is small, such that inhalation exposure during anticipated conditions of use is minimal.

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

Further information

The above values are calculated as prescribed by the "Conventional Method" according to 1999/45/EC.

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**SECTION 12. ECOLOGICAL INFORMATION**

12.1 Toxicity

Toxicity to fish  
LC50 (Oncorhynchus mykiss (rainbow trout))  1.2 mg/l  
Exposure time: 96 h
The value mentioned relates to the active ingredient oxadiazon.

**Toxicity to aquatic invertebrates**

EC50 (Daphnia magna (Water flea)) > 2.4 mg/l  
Exposure time: 48 h  
The value mentioned relates to the active ingredient oxadiazon.

**Toxicity to aquatic plants**

EC50 (Desmodesmus subspicatus (green algae)) 0.00423 mg/l  
Growth rate; Exposure time: 120 h  
The value mentioned relates to the active ingredient oxadiazon.

### 12.2 Persistence and degradability

**Biodegradability**  
Oxadiazon: Not rapidly biodegradable

**Koc**  
Oxadiazon: Koc: 1294

### 12.3 Bioaccumulative potential

**Bioaccumulation**  
Oxadiazon: Bioconcentration factor (BCF) 243  
Does not bioaccumulate.

### 12.4 Mobility in soil

**Mobility in soil**  
Oxadiazon: Slightly mobile in soils

### 12.5 Other adverse effects

**Additional ecological information**  
No other effects to be mentioned.

### SECTION 13. DISPOSAL CONSIDERATIONS

Shake empty bag into granule applicator. DO NOT dispose of undiluted chemicals on site. Puncture, shred and bury empty containers in a local authority landfill. If no landfill is available bury the empty 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. Dispose of waste product via a reputable disposal contractor.

### SECTION 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>ADG</th>
<th>UN number</th>
<th>Transport hazard class(es)</th>
<th>Subsidiary Risk</th>
<th>Packaging group</th>
<th>Description of the goods</th>
<th>Hazchem Code</th>
</tr>
</thead>
<tbody>
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<td>3077</td>
<td>9</td>
<td>None</td>
<td>III</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (OXADIAZON MIXTURE)</td>
<td>2Z</td>
</tr>
</tbody>
</table>

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.
Safety Data Sheet

Ronstar® Turf and Ornamental Herbicide

Version 1 / AUS

102000001758

Revision Date: 27.10.2016
Print Date: 27.10.2016

UN number 3077
Transport hazard class(es) 9
Subsidiary Risk None
Packaging group III
Marine pollutant YES
Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
OXADIAZON MIXTURE

IATA
UN number 3077
Transport hazard class(es) 9
Subsidiary Risk None
Packaging group III
Environm. Hazardous Mark YES
Description of the goods ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
OXADIAZON MIXTURE

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 62461

SUSMP classification (Poison Schedule)
Schedule 6 (Standard for the Uniform Scheduling of Medicines and Poisons)

SECTION 16. OTHER INFORMATION

Trademark information Ronstar® 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)
Changes since the last version are highlighted in the margin. This version replaces all previous versions.