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## 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND SUPPLIER

**Product name** Bayfidan® 250 EC Fungicide  
**Other names** None  
**Product code** 378015 (1 L), 259784 (5 L)  
**Chemical group** Triazole  
**Recommended use** Agricultural fungicide  
**Formulation** Emulsifiable concentrate  
**Supplier** 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](http://www.bayercropscience.com.au)  
**Contact** Development Manager (03) 9248 6888  
**Emergency telephone number** 1800 033 111 – Orica SH&E Shared Services

## 2. HAZARDS IDENTIFICATION

### **EMERGENCY OVERVIEW** **HAZARDOUS SUBSTANCE (see Risk phrases below) – NON DANGEROUS GOOD**

**Hazard designation** Hazardous (National Occupational Health and Safety Commission - NOHSC)  
**Risk phrases** R22 – Harmful if swallowed.  
 R36/38 – Irritating to eyes and skin.  
**Safety phrases** See Sections 4, 5, 6, 7, 8, 10, 12, 13  
**ADG classification** Not classified as a “Dangerous good” for transport by road or rail according to the Australian Code for the Transport of Dangerous Goods by Road and Rail:  
**SUSDP classification** Schedule 6 (Standard for the Uniform Scheduling of Drugs and Poisons)

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredients                              | CAS Number    | Concentration (g/L) |
|--|---------------|---------------------|
| Triadimenol                              | [55219-65-3]  | 250                 |
| N-methyl-2-pyrrolidone                   | [872-50-4]    | 602                 |
| Other ingredients, including emulsifiers | Non-hazardous | 238                 |

## 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 the doctor.**

**Inhalation** If inhaled, remove to fresh air and keep warm and at rest. Seek medical advice as above immediately.

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## 4. FIRST AID MEASURES - continued

|                             |  |
|-----------------------------|--|
| <b>Skin contact</b>         | Carefully remove contaminated clothing. Wash affected areas with soap and water. Seek medical advice if at all worried.  |
| <b>Eye contact</b>          | Rinse eyes immediately with clean water for at least 15 minutes, holding eyes open. Consult an eye specialist.   |
| <b>Ingestion</b>            | Obtain immediate medical advice as above. If swallowed, do NOT induce vomiting. Rinse mouth and give a glass of water.   |
| <b>First aid facilities</b> | Provide eye wash and safety shower in the workplace.   |
| <b>Medical attention</b>    | <u>Information for the physician:</u><br>Triadimenol is a triazole compound. Symptoms of poisoning have not been recorded.<br>Therapeutic measures: Basic aid, decontamination, symptomatic treatment.<br>Ingestion of N-methyl-2-pyrrolidone causes gastric disturbances such as nausea and vomiting. Treat symptoms. |

## 5. FIRE FIGHTING MEASURES

|   |  |
|---|--|
| <b>Extinguishing media</b>              | Sprayed water jet, foam, extinguishing powder, carbon dioxide, sand.   |
| <b>Hazards from combustion products</b> | Explosion hazard is low. Can react with oxidising materials. In a fire, formation of hydrogen chloride, hydrogen cyanide, carbon monoxide and nitrogen oxides can be expected.   |
| <b>Precautions for fire fighters</b>    | Firefighters should wear full protective gear, including self-contained breathing apparatus (AS/NZS 1715/1716). Keep unnecessary people away. If it can be done safely, remove intact containers from the fire. Otherwise, use water spray to cool them. 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. Do not release contaminated water into the environment. |

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the spilled material or contaminated surfaces. Extinguish or remove any ignition sources. When dealing with spills do not eat, drink or smoke and wear protective clothing and equipment as described in Section 8 - PERSONAL PROTECTION. Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay, or other absorbent material. Collect and store in properly labelled, sealed drums for safe disposal. Clean floor and all contaminated objects with damp cloth. Place used cleaning materials into the drum for disposal. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority.

## 7. HANDLING AND STORAGE

|                 |  |
|-----------------|--|
| <b>Handling</b> | Keep out of reach of children. Will irritate the eyes and skin. Avoid contact with eyes and skin. Do not inhale spray mist. If product in eyes, wash it out immediately with water. 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, goggles and contaminated clothing. Keep away from ignition sources. |
|-----------------|--|

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## 7. HANDLING AND STORAGE - continued

|                     |   |
|---------------------|---|
| <b>Storage</b>      | Store in the closed, original container in a cool, well-ventilated area. Keep dry. Do not store for prolonged periods in direct sunlight. |
| <b>Flammability</b> | Combustible liquid Class C1 – flash point between 61 and 150° C   |

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure standards** No exposure standards have been assigned. The manufacturer of N-methyl-2-pyrrolidone recommends a TWA of 20 ppm (80 mg/m<sup>3</sup>). Skin

Definition:

*Exposure standard – Time Weighted Average (TWA)* means the average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day working week.

*Skin notation* – Absorption through the skin may be a significant source of exposure.

**Engineering controls** Control process conditions to avoid contact. Use in a well-ventilated area only.

**Personal protective equipment**

- Wear safety goggles.
- Wear cotton overalls buttoned to the neck and wrist and a washable hat.
- Wear elbow-length butyl rubber or neoprene gloves.
- Wear an approved respirator suitable for organic vapour/mist if exposure to vapours or mists is likely or ventilation is inadequate.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|   |  |
|---|--|
| <b>Appearance:</b>                            | Light brown clear liquid   |
| <b>Odour:</b>                                 | Aromatic   |
| <b>pH:</b>                                    | 6.0 to 8.0 (1% in water)   |
| <b>Vapour pressure:</b>                       | 1 hPa at 20° C   |
| <b>Vapour density:</b>                        | 3.4 (N-methyl-2-pyrrolidone)   |
| <b>Boiling point:</b>                         | Not available  |
| <b>Freezing/melting point:</b>                | Not available  |
| <b>Solubility:</b>                            | Emulsifies in water  |
| <b>Specific gravity:</b>                      | 1.09 at 20° C  |
| <b>Flash point:</b>                           | 93° C  |
| <b>Flammability (explosive) limits:</b>       | Lower: 1.3 vol. %; upper 9.5 vol. % (N-methyl-2-pyrrolidone)   |
| <b>Auto-ignition temperature:</b>             | 245° C (N-methyl-2-pyrrolidone)  |
| <b>Partition coefficient (octanol/water):</b> | <i>Triadimenol:</i> Log P <sub>ow</sub> = 3.08 – 3.28 (25° C)<br><i>N-methyl-2-pyrrolidone:</i> Log P <sub>ow</sub> = - 0.46 |

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## 10. STABILITY AND REACTIVITY

|   |  |
|---|--|
| <b>Chemical stability</b>               | Stable under normal conditions of use.   |
| <b>Hazardous polymerisation</b>         | Will not polymerise.   |
| <b>Conditions to avoid</b>              | Extreme heat.  |
| <b>Incompatible materials</b>           | Oxidising agents. Exothermic reaction with strong acids or strong alkalies.                              |
| <b>Hazardous decomposition products</b> | Hydrogen chloride, hydrogen cyanide, carbon monoxide and oxides of nitrogen may be evolved upon heating. |

## 11. TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | May be harmful if inhaled. May produce respiratory irritation.                                       |
| <b>Skin contact</b> | Will irritate skin. Redness and dermatitis from prolonged contact. Can be absorbed through the skin. |
| <b>Eye contact</b>  | Will irritate eyes. May cause temporary corneal clouding.  |
| <b>Ingestion</b>    | Harmful if swallowed.  |

### ANIMAL TOXICITY DATA – PRODUCT

**Acute:**

|                                   |  |
|-----------------------------------|--|
| <b>Oral toxicity</b>              | LD <sub>50</sub> rat (male): 3700 mg/kg<br>LD <sub>50</sub> rat (female): 1720 mg/kg |
| <b>Dermal toxicity</b>            | LD <sub>50</sub> rat: > 5000 mg/kg   |
| <b>Inhalation toxicity</b>        | > 0.412 mg/L, aerosol (4 h) (highest attainable concentration)                       |
| <b>Skin irritation</b>            | Not irritating (rabbit)  |
| <b>Mucous membrane irritation</b> | Slightly irritating (rabbit)   |
| <b>Sensitisation</b>              | N-methyl-2-pyrrolidone was not sensitising in animal studies.                        |

**Chronic:**

Animal studies with triadimenol showed no evidence of oncogenic effects, no evidence of carcinogenic effects and no teratogenic potential. Triadimenol was not mutagenic.  
No known chronic toxicity effects are associated with N-methyl-2-pyrrolidone if exposure limit is observed.

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## 12. ECOLOGICAL INFORMATION

Harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment. It is non toxic to honey bees. DO NOT contaminate streams, rivers or waterways with the product or used containers.

### Ecotoxicity

#### Bayfidan 250 EC:

##### *Fish toxicity:*

LC<sub>50</sub>: 42 mg/L (96 h); trout (*Oncorhynchus mykiss*)

LC<sub>50</sub>: 79 mg/L (96 h); golden orfe (*Leuciscus melanotis*)

##### *Aquatic invertebrate toxicity:*

EC<sub>50</sub>: 253 mg/L (48 h) *Daphnia magna*

##### *Algae toxicity:*

Growth rate

IC<sub>50</sub>: 41.13 mg/L (72 h); green alga (*Selenastrum capricornutum*)

#### Triadimenol:

##### *Bacteria toxicity:*

EC<sub>50</sub>: > 10000 mg/L; activated sludge microorganism (ISO 8192 = OECD 209)

##### *Bird toxicity:*

Acute oral LD<sub>50</sub>: > 2000 mg/kg; bobwhite quail

### Environmental fate, persistence and degradability

Triadimenol: DT<sub>50</sub> in sandy loam 110-375 days; in loam 240-270 days.

## 13. DISPOSAL CONSIDERATIONS

Rinse container before disposal (1 L). Triple or preferably pressure rinse container before disposal (5 L). Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. Dispose of at a local authority landfill. If no landfill is available, bury the container 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 through a reputable waste contractor.

## 14. TRANSPORT INFORMATION

|                           |                |
|---------------------------|----------------|
| UN number                 | Not applicable |
| Proper shipping name      | Not applicable |
| Class and subsidiary risk | Not applicable |
| Packing group             | Not applicable |
| EPG                       | Not applicable |
| Hazchem code              | Not applicable |
| Marine pollutant          | No             |

## 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Act 1988.

National Registration Authority approval number: 30515

See also Section 2.

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## 16. OTHER INFORMATION

**Trademark information** Bayfidan® is a Registered Trademark of Bayer.

**Preparation information** Replaces August 1, 2002 MSDS. Reasons for update: 16 heading format, corrected poison schedule, added information on N-methyl-2-pyrrolidone.

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