



Ziram Granuflo® Fungicide

Version 1 / AUS
10200003354

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Revision Date: 21.10.2016
Print Date: 21.10.2016

SECTION 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Trade name Ziram Granuflo® Fungicide
Product code (UVP) 05948606

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

Use Fungicide

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.crop.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 toxicity: Category 4
H302 Harmful if swallowed.

Acute toxicity: Category 2
H330 Fatal if inhaled.

Serious eye damage: Category 1
H318 Causes serious eye damage.

Skin sensitisation: Category 1
H317 May cause an allergic skin reaction.

Specific target organ toxicity - single exposure: Category 3
H335 May cause respiratory irritation.

Specific target organ toxicity - repeated exposure: Category 2
H373 May cause damage to organs through prolonged or repeated exposure.

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.



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2.2 Label elements

Hazard label for supply/use required.

Hazardous components which must be listed on the label:

Ziram

Signal word: Danger

Hazard statements

- H302 Harmful if swallowed.
- H330 Fatal if inhaled.
- H318 Causes serious eye damage.
- H317 May cause an allergic skin reaction.
- H335 May cause respiratory irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

- P260 Do not breathe dust or mist.
- P264 Wash face, hands and any exposed skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P280 Wear protective gloves/ protective clothing/ eye protection.
- P284 Wear respiratory protection.
- P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
- P330 Rinse mouth.
- P302 + P352 IF ON SKIN: Wash with plenty of water/ soap.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER/doctor/ physician.
- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- 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

Ziram 760g/kg
Chemical nature Water dispersible granules (WG)

Chemical Name	CAS-No.	Concentration [%]
Ziram	137-30-4	76.00
Other ingredients (non-hazardous) to 100%		

SECTION 4. FIRST AID MEASURES



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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 the victim to fresh air and keep at rest. Oxygen or artificial respiration if needed. Call a physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. If symptoms persist, call a physician. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician or poison control center immediately.
Ingestion	Rinse mouth. Call a physician or poison control center immediately. Take victim immediately to hospital. More severe effects if alcohol is consumed.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	Symptoms of Overexposure: Dizziness, Confusion, Drowsiness, Lethargy, Ataxia, Headache, Coma, Abdominal pain, Nausea, Vomiting, Diarrhoea, Muscular weakness, Respiratory paralysis, Cough, Rash.
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4.3 Indication of any immediate medical attention and special treatment needed

Risks	This product is not a cholinesterase inhibitor.
Treatment	Treat symptomatically. There is no specific antidote. Gastric lavage is not normally required. However, if a significant amount (more than a mouthful) has been ingested, administer activated charcoal and sodium sulphate. Contraindication: atropine. Follow-up measures: Strict abstinence from alcohol for 1 to 2 weeks, due to antabuse effect. Forced alkaline diuresis and hemodialysis may be considered.

SECTION 5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable	Water spray, Carbon dioxide (CO ₂), Foam, Dry powder
Unsuitable	High volume water jet

5.2 Special hazards arising from the substance or mixture	Accumulation of fine dust may entail the risk of a dust explosion in the presence of air. In the event of fire the following may be released: Carbon disulphide, Sulphur oxides, Nitrogen oxides (NO _x)
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5.3 Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. Wear self-contained breathing apparatus and protective suit.
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Further information Contain the spread of the fire-fighting media. 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. Do not allow run-off from fire fighting to enter drains or water courses.

Hazchem Code 2Z

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Precautions Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke. Do not breathe dust. Remove all sources of ignition. Use personal protective equipment. Keep unauthorized people away. Avoid dust formation.

6.2 Environmental precautions Do not allow to get into surface water, drains and ground water. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up Clean contaminated surface thoroughly. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Decontaminate tools and equipment following cleanup.

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 Avoid dust formation. Use only in area provided with appropriate exhaust ventilation.

Advice on protection against fire and explosion Dust may form explosive mixture in air.

Hygiene measures Contact with eyes and skin must be avoided. 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. Remove soiled clothing immediately and clean thoroughly before using again. When using, do not eat, drink or smoke.

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. Keep away from direct sunlight.



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Advice on common storage Keep away from food, drink and animal feedingstuffs.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

No control parameters known.

8.2 Exposure controls

Respiratory protection

Wear respirator with a particle filter mask (protection factor 20) conforming to European Norm EN149FFP3 or EN140P3 or equivalent.

Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.

Hand protection

Wear CE Marked (or equivalent) nitrile rubber gloves (minimum thickness of 0,4 mm). Wash when contaminated and 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.

Eye protection

Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).

Skin and body protection

Wear standard coveralls and Category 3 Type 5 suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.

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

Avoid dust formation. 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	brown
Odour	none
pH	ca. 5.3 at 4 % (20 °C) (deionized water)
Density	ca. 0.60 g/cm ³ at 20 °C
Water solubility	dispersible



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Partition coefficient: n-octanol/water	log Pow: 1.086
Partition coefficient: n-octanol/water	Ziram: log Pow: 1.65
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 Dust may form explosive mixture in air. Stable under recommended storage conditions.
No hazardous reactions when stored and handled according to prescribed instructions.

10.4 Conditions to avoid Exposure to moisture.
Heat, flames and sparks.
Extremes of temperature and direct sunlight.

10.5 Incompatible materials Aldehydes, Acids, Iron, Copper, Strong oxidizing agents, Acid chlorides, Mercury and its alloys

10.6 Hazardous decomposition products Thermal decomposition can lead to release of:
Nitrogen oxides (NO_x)
Carbon monoxide
Sulphur oxides
Carbon disulphide

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity LD50 (Rat) 478 mg/kg

Acute inhalation toxicity LC50 (Rat) 0.07 mg/l
Exposure time: 4 h
The value mentioned relates to the active ingredient ziram.

Acute dermal toxicity LD50 (Rat) > 2,000.00 mg/kg

Skin irritation No skin irritation (Rabbit)

Eye irritation Severe eye irritation (Rabbit)

Sensitisation Non-sensitizing (Guinea pig)

Assessment mutagenicity

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



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Assessment carcinogenicity

Ziram was not carcinogenic in lifetime feeding studies in rats and mice.

Assessment toxicity to reproduction

Ziram did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Ziram did not cause developmental toxicity in rats and rabbits.

Assessment STOT Specific target organ toxicity – repeated exposure

Ziram caused specific target organ toxicity in experimental animal studies in the following organ(s):
Liver, Blood.

Aspiration hazard

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

Information on likely routes of exposure

Toxic by inhalation. Irritation of mucous membranes.
May cause skin irritation.
Corrosive to eyes.
Toxic 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

Further information

No further toxicological information is available.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)) 1.9 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient ziram.

Toxicity to aquatic

EC50 (Daphnia magna (Water flea)) 0.048 mg/l



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invertebrates The value mentioned relates to the active ingredient ziram.

Toxicity to other organisms LD50 (Colinus virginianus (Bobwhite quail)) 97 mg/kg
The value mentioned relates to the active ingredient ziram.
LD50 (Eisenia fetida (earthworms)) 190 mg/kg
Exposure time: 7 d
The value mentioned relates to the active ingredient ziram.
LD50 (Apis mellifera (bees)) > 0.1mg/bee
The value mentioned relates to the active ingredient ziram.

12.2 Persistence and degradability

Biodegradability Ziram:
Not rapidly biodegradable

Koc Ziram: Koc: 3007

12.3 Bioaccumulative potential

Bioaccumulation Ziram: Bioconcentration factor (BCF) 470
Does not bioaccumulate.

12.4 Mobility in soil

Mobility in soil Ziram: Slightly mobile in soils

12.5 Other adverse effects

Additional ecological information No other effects to be mentioned.

SECTION 13. DISPOSAL CONSIDERATIONS

Plastic and foil bags:
Single rinse before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. Puncture and bury empty bags 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 bags and product should not be burnt.

SECTION 14. TRANSPORT INFORMATION

ADG

UN number	3077
Transport hazard class(es)	9
Subsidiary Risk	None
Packaging group	III
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (ZIRAM MIXTURE)
Hazchem Code	2Z

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.



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IMDG

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. (ZIRAM 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. (ZIRAM MIXTURE)

SECTION 15. REGULATORY INFORMATION

Registered according to the Agricultural and Veterinary Chemicals Code Act 1994
Australian Pesticides and Veterinary Medicines Authority approval number: 47127

SUSMP classification (Poison Schedule)

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

SECTION 16. OTHER INFORMATION

Trademark information Granuflo® is a Registered Trademark of Taminco.

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



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	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.
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

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

END OF SDS