# Ziram Granuflo Fungicide



Version 1.2 PRD Revision Date: 06/29/2017

SDS Number: 150000103611 SDSUS / EN / 0001

Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

**SECTION 1. IDENTIFICATION** 

Product name : Ziram Granuflo Fungicide

Product code : 51040-00, P5104050, P5104020, P5104027, P5104010,

P5104011, P5104012, P5104031, P5104030, P5104029, P5104028, P5104026, P5104032, P5104033, P5104035, P5104036, P5104037, P5104038, P5104039, P5104040, P5104042, P5104023, P5104022, P5104019, P5104018, P5104015, P5104043, P5104044, P5104045, P5104046,

P5104047, P5104048, P5104051, P5104052

EPA Registration Number : 45728-12

Manufacturer or supplier's details

Company name of supplier : Eastman Chemical Company

Address : 200 South Wilcox Drive

Kingsport TN 37660-5280

Telephone : (423) 229-2000

Emergency telephone num-

ber

: CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use

Recommended use : Fungicide

Restrictions on use : None known.

#### **SECTION 2. HAZARDS IDENTIFICATION**

#### GHS classification in accordance with 29 CFR 1910.1200

Combustible dust

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 2

Serious eye damage : Category 1

Skin sensitisation : Category 1

Specific target organ toxicity

- single exposure

Category 3 (Respiratory system)

Specific target organ toxicity:

- repeated exposure

Category 2 (Liver, Blood, spleen)

#### **GHS** label elements

# Ziram Granuflo Fungicide



Version 1.2 PRD Revision Date: 06/29/2017

SDS Number: 150000103611 SDSUS / EN / 0001

Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

Hazard pictograms







Signal word : Danger

Hazard statements : May form combustible dust concentrations in air.

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction. H318 Causes serious eye damage.

H330 Fatal if inhaled.

H335 May cause respiratory irritation.

H373 May cause damage to organs (Liver, Blood, spleen)

through prolonged or repeated exposure.

Precautionary statements

#### Prevention:

P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves/ eye protection/ face protection.

P284 Wear respiratory protection.

#### Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

P330 Rinse mouth.

P304 + P340 IF INHALED: Remove person to fresh air and

keep comfortable for breathing.

P310 Immediately call a POISON CENTER or doctor/ physician. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P363 Wash contaminated clothing before reuse.

### Storage:

P403 + P233 Store in a well-ventilated place. Keep container

tightly closed.

P405 Store locked up.

#### Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

## Other hazards

None known.

# Ziram Granuflo Fungicide



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06/07/2016

 1.2
 06/29/2017
 150000103611
 Date of first issue: 10/22/2015

PRD SDSUS / EN / 0001

#### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
Ziram	137-30-4	>= 75

#### **SECTION 4. FIRST AID MEASURES**

General advice : Show this safety data sheet to the doctor in attendance.

Consult a physician.

If inhaled : Remove to fresh air.

If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Call a physician or poison control centre immediately.

In case of skin contact : Wash off immediately with soap and plenty of water while

removing all contaminated clothes and shoes.

Call a physician or poison control centre immediately.

Wash contaminated clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Call a physician or poison control centre immediately.

If swallowed : Call a physician or poison control centre immediately.

Do not induce vomiting without medical advice.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and

delayed

Irregular cardiac activity

Nausea Eczema Dermatitis

Shortness of breath

Use of alcoholic beverages may enhance toxic effects

Harmful if swallowed.

May cause an allergic skin reaction. Causes serious eye damage.

Fatal if inhaled.

May cause respiratory irritation.

May cause damage to organs through prolonged or repeated

exposure.

Notes to physician : General advice for dithiocarbamates

Biomonitoring possible at chronical exposure: determination of

TTCA in the urine at the end of the workday/week.

Bloodtesting for delayed effects: livertests, kidney function,

thyroid function

# Ziram Granuflo Fungicide



Version 1.2 PRD Revision Date: 06/29/2016

SDS Number: 150000103611 SDSUS / EN / 0001

Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

## **SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Water spray

Carbon dioxide (CO2)

Dry chemical

Alcohol-resistant foam

Unsuitable extinguishing

media

Do NOT use water jet.

Specific hazards during fire-

fighting

Risk of dust explosion.

Hazardous decomposition products will be formed at elevated

temperatures.

Hazardous combustion prod-

ucts

Nitrogen oxides (NOx)

Sulphur oxides Carbon oxides

Further information : Use a water spray to cool fully closed containers.

Do not allow run-off from fire fighting to enter drains or water

courses.

Prevent fire extinguishing water from contaminating surface

water or the ground water system.

Special protective equipment :

for firefighters

Wear an approved positive pressure self-contained breathing

apparatus in addition to standard fire fighting gear.

#### **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protec: :

tive equipment and emer-

gency procedures

Wear appropriate personal protective equipment.

Local authorities should be advised if significant spillages

cannot be contained.

Environmental precautions : Avoid release to the environment.

Methods and materials for containment and cleaning up

Sweep up or vacuum up spillage and collect in suitable con-

tainer for disposal.

Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local /

national regulations (see section 13).

Eliminate all ignition sources if safe to do so. Prevent further leakage or spillage if safe to do so.

### **SECTION 7. HANDLING AND STORAGE**

Advice on protection against

fire and explosion

: Minimize dust generation and accumulation. Keep product and empty container away from heat and sources of ignition.

Advice on safe handling : Avoid contact with skin, eyes and clothing.

Ensure adequate ventilation, especially in confined areas.

Do not breathe vapours or spray mist.

# Ziram Granuflo Fungicide



 Version
 06/29/2017
 SDS Number:
 Date of last issue: 06/07/2016

 1.2
 150000103611
 Date of first issue: 10/22/2015

PRD SDSUS / EN / 0001

Wash thoroughly after handling.

Ensure that eyewash stations and safety showers are close to

the workstation location.

Conditions for safe storage : Keep container tightly closed and in a well-ventilated place.

#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Components with workplace control parameters

**Engineering measures** : Good general ventilation (typically 10 air changes per hour)

should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an

acceptable level.

Personal protective equipment

Respiratory protection : Wear respiratory protection.

Hand protection

Remarks : Rubber gloves Neoprene gloves The data about break

through time/strength of material are standard values! The exact break through time/strength of material has to be ob-

tained from the producer of the protective glove.

Eye protection : Wear safety glasses with side shields (or goggles).

Face-shield

Always wear eye protection when the potential for inadvertent

eye contact with the product cannot be excluded.

Skin and body protection : Complete suit protecting against chemicals

Protective measures : Remove respiratory and skin/eye protection only after va-

pours have been cleared from the area.

Ensure that eye flushing systems and safety showers are

located close to the working place.

Use personal protective equipment as required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety

practice.

### **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : powder

Colour : beige

Odour : sweet

# Ziram Granuflo Fungicide



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06/07/2016

 1.2
 06/29/2017
 150000103611
 Date of first issue: 10/22/2015

PRD SDSUS / EN / 0001

Odour Threshold : not determined

pH : 7.1

Concentration: 10 g/l

Flash point : Not applicable

Flammability (solid, gas) : May form combustible dust concentrations in air.

Density : 0.60 g/cm3

Solubility(ies)

Water solubility : dispersible

Auto-ignition temperature : 244 °C

Explosive properties : Not explosive

### **SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Stable under recommended storage conditions.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

Hazardous decomposition products formed under fire condi-

tions

Dust can form an explosive mixture in air.

Conditions to avoid : Heat

Avoid dust formation.

Incompatible materials : Strong oxidizing agents

Strong acids

Hazardous decomposition

products

Carbon dioxide (CO2)

Sulphur oxides

Nitrogen oxides (NOx)

### **SECTION 11. TOXICOLOGICAL INFORMATION**

## **Acute toxicity**

Harmful if swallowed. Fatal if inhaled.

**Product:** 

Acute oral toxicity : LD50 Oral (Rat): 478 mg/kg

Remarks: Harmful if swallowed.

Acute inhalation toxicity : Remarks: It was demonstrated that during intended and fore-

seen applications, no respirable aerosol is formed.

# Ziram Granuflo Fungicide



Version 1.2

PRD

Revision Date: 06/29/2017

SDS Number: 150000103611 SDSUS / EN / 0001

Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

Acute toxicity estimate: 0.17 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: Calculation method

Acute dermal toxicity : LD50 Dermal (Rabbit): > 5,000 mg/kg

Remarks: No significant adverse effects were reported

**Components:** 

Ziram:

Acute oral toxicity : LD50 (Rat): 267 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.06 mg/l

Exposure time: 4 h

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

**Product:** 

Species: Rabbit

Result: Non-irritating to the skin.

Remarks: May cause an allergic skin reaction.

**Components:** 

Ziram:

Species: Rabbit

Result: No skin irritation

Remarks: No significant adverse effects were reported

Serious eye damage/eye irritation

Causes serious eye damage.

**Product:** 

Species: Rabbit

Result: Risk of serious damage to eyes.

Assessment: Corrosive

**Components:** 

Ziram:

Species: Rabbit Result: Corrosive

Remarks: Causes serious eye damage.

# Ziram Granuflo Fungicide



Version 1.2 PRD Revision Date: 06/29/2017

SDS Number: 150000103611 SDSUS / EN / 0001

Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

## Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

### Respiratory sensitisation

Not classified based on available information.

#### **Product:**

Test Type: Skin sensitisation

Species: Guinea pig Result: positive

Remarks: Causes sensitisation.

### **Components:**

#### Ziram:

Exposure routes: Skin contact Result: Causes sensitisation.

#### Germ cell mutagenicity

Not classified based on available information.

#### **Product:**

Germ cell mutagenicity -

Did not show mutagenic effects in animal experiments.

Assessment

### **Components:**

## Ziram:

Germ cell mutagenicity -

Assessment

Did not show mutagenic effects in animal experiments.

## Carcinogenicity

Not classified based on available information.

#### **Product:**

Remarks: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

#### **Components:**

#### Ziram:

Carcinogenicity - Assess-

ment

Did not show carcinogenic effects in animal experiments.

IARC No component of this product present at levels greater than or

equal to 0.1% is identified as probable, possible or confirmed

human carcinogen by IARC.

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

# Ziram Granuflo Fungicide



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06/07/2016

 1.2
 06/29/2017
 150000103611
 Date of first issue: 10/22/2015

PRD SDSUS / EN / 0001

human carcinogen by IARC.

OSHA No component of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential carcino-

gen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcino-

gen by OSHA.

NTP No component of this product present at levels greater than or

equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen

by NTP.

Reproductive toxicity

Not classified based on available information.

**Product:** 

Reproductive toxicity - As-

sessment

Did not show teratogenic effects in animal experiments.

**Components:** 

Ziram:

Reproductive toxicity - As-

sessment

No toxicity to reproduction

Did not show teratogenic effects in animal experiments.

STOT - single exposure

May cause respiratory irritation.

**Product:** 

Assessment: May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs (Liver, Blood, spleen) through prolonged or repeated exposure.

Product:

Target Organs: Liver, Blood, spleen

Assessment: May cause damage to organs through prolonged or repeated exposure.

**Aspiration toxicity** 

Not classified based on available information.

**Product:** 

No aspiration toxicity classification

# Ziram Granuflo Fungicide



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06/07/2016

 1.2
 06/29/2017
 150000103611
 Date of first issue: 10/22/2015

PRD SDSUS / EN / 0001

## Information on likely routes of exposure

**Product:** 

Inhalation : Remarks: Fatal if inhaled.

Skin contact : Remarks: May cause an allergic skin reaction.

Eye contact : Remarks: Causes serious eye damage.

Ingestion : Remarks: Harmful if swallowed.

**Further information** 

**Product:** 

Remarks: None known.

## **SECTION 12. ECOLOGICAL INFORMATION**

## **Ecotoxicity**

### **Components:**

Ziram:

Toxicity to fish : LC50: 0.0097 - 1.70 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

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

Exposure time: 48 h

Toxicity to algae : EC50 (Chlorella pyrenoidosa (aglae)): 0.094 mg/l

Exposure time: 72 h

Toxicity to fish (Chronic tox-

icity)

NOEC: 0.101 - 0.222 mg/l

Toxicity to microorganisms : IC50 (Bacteria): 19.20 mg/l

Exposure time: 3 h

# Persistence and degradability

**Product:** 

Biodegradability : Biodegradation: 50 %

Exposure time: < 2 d

**Components:** 

Ziram:

Biodegradability : Biodegradation: 50 %

Exposure time: < 2 d

# Ziram Granuflo Fungicide



Version 1.2

PRD

Revision Date: 06/29/2017

SDS Number: 150000103611 SDSUS / EN / 0001

Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

**Bioaccumulative potential** 

**Product:** 

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

**Components:** 

Ziram:

Bioaccumulation : Remarks: Accumulation in aquatic organisms is unlikely.

Partition coefficient: n-

octanol/water

log Pow: 1.8 (20 °C)

Mobility in soil
No data available

Other adverse effects

Product:

Results of PBT and vPvB

assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be

very persistent and very bioaccumulating (vPvB).

**SECTION 13. DISPOSAL CONSIDERATIONS** 

**Disposal methods** 

Waste from residues : In accordance with local and national regulations.

Waste must be classified and labelled prior to recycling or

disposal.

Contaminated packaging : Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

**SECTION 14. TRANSPORT INFORMATION** 

International Regulations

**IATA-DGR** 

UN/ID No. : UN 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s.

(Ziram)

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo

aircraft)

Packing instruction (passen-

956

956

ger aircraft)

**IMDG-Code** 

UN number : UN 3077

11 / 14

# Ziram Granuflo Fungicide



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06/07/2016

 1.2
 06/29/2017
 150000103611
 Date of first issue: 10/22/2015

PRD SDSUS / EN / 0001

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S. (Ziram)

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

ves

Not applicable for product as supplied.

**National Regulations** 

Marine pollutant

**49 CFR** 

UN/ID/NA number : UN 3077

Proper shipping name : Environmentally hazardous substance, solid, n.o.s., Environ-

mentally hazardous substances, solid, n.o.s.

(Ziram)

Class : 9 Packing group : III

Labels : Class 9 - Miscellaneous Dangerous Goods

ERG Code : 171 Marine pollutant : no

**SECTION 15. REGULATORY INFORMATION** 

**EPCRA - Emergency Planning and Community Right-to-Know Act** 

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Fire Hazard

Acute Health Hazard Chronic Health Hazard

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**EPA Labeling Information:** 

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under the federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Danger: Corrosive. Causes irreversible eye damage. May be fatal if inhaled. Harmful if swallowed or absorbed through skin. Do not breathe dust or spray mist. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

The components of this product are reported in the following inventories:

ISHL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

# Ziram Granuflo Fungicide



 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06/07/2016

 1.2
 06/29/2017
 150000103611
 Date of first issue: 10/22/2015

PRD SDSUS / EN / 0001

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : Listed on TSCA

#### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

#### **SECTION 16. OTHER INFORMATION**

#### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI -Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ -Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB -Very Persistent and Very Bioaccumulative

# Ziram Granuflo Fungicide



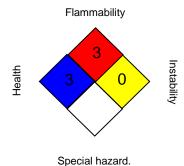
Version 1.2 PRD Revision Date: 06/29/2017

SDS Number: 150000103611 SDSUS / EN / 0001

Date of last issue: 06/07/2016 Date of first issue: 10/22/2015

#### **Further information**

#### NFPA:



#### HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Revision Date : 06/29/2017

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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