



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

Product Name	Ziram
Synonym	Zinc dimethyldithiocarbamate

### 1.2 Use of the Substance/Mixture

Identified uses	Fungicide
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### 1.3 Manufacturer or supplier's details

Company/Undertaking identification address	Merchem Limited Grove Centre, 44- Development Plot, Kalamassery, Cochin – 683 109, Kerala, India
Telephone	+ 91-484-4089300
Telefax	+ 91-484-4089310

### 1.4 Emergency Telephone Number

Emergency Telephone Number	+ 91-484-4089300
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## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Classification according to EU directives 67/548/EEC or 1999/45/EC

T+  
Xn  
Xi  
N  
R50/53  
R26  
R22  
R48/22  
R37  
R41  
R43

EC Number: 205-288-3

Annex 1 Index Number: 006-012-00-2



# MERCHEM LIMITED

## SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

### REGULATION (EC) No. 1272/2008

**Classification of the substance or mixture** Acute tox: Cat. 2; Acute tox: Cat. 4; STOT RE: Cat. 2; STOT Se: Cat. 3; Eye damage: Cat 1; Skin sensitization: Cat. 1; Aquatic acute: Cat. 1; Aquatic Chronic: Cat. 1; M-factor: 100

### 2.2 Label elements

**Product Name**

ZIRAM

**Hazard pictograms**



**Signal Word**

Danger

### Hazard Statements

H330 - Fatal if inhaled

H302 - Harmful if swallowed

H373 - May cause damage to organs through prolonged or repeated exposure

H335 - May cause respiratory irritation

H318 - Causes serious eye damage

H317 - May cause an allergic skin reaction

H410 - Very toxic to aquatic life with long lasting effects

### Precautionary statement –

**Prevention**

P264 - Wash face, hands and any exposed skin thoroughly after handling

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

P260 - Do not breathe dust/ fume/ gas /mist/ vapors/spray

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

P284 - Wear respiratory protection

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P273 - Avoid release to the environment

### Precautionary statement –

**Response**

P301+312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

P330 - Rinse mouth

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

P310 - Immediately call a POISON CENTER or doctor/physician

P320 - Specific treatment is urgent (see supplemental first aid instructions on this label)



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

P302 +P352 - IF ON SKIN: Wash with plenty of soap and water  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
P321 - Specific treatment (see supplemental first aid instructions on this label)  
P363 - Wash contaminated clothing before reuse  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses, if present and easy to do. Continue rinsing  
P314 - Get medical advice/attention if you feel unwell  
P391 - Collect spillage  
P312 - Call a POISON CENTER or doctor/physician if you feel unwell

**Precautionary statement – Storage** P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up

**Precautionary statement – disposal** - P501 - Dispose of contents/container to an approved incineration plant

### 2.3 Other hazards

#### PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)

This substance is not considered to be very persistent nor very bioaccumulating (vPvB)

#### Other hazards which do not result in classification

Risk of dust explosion

Use of alcoholic beverages may enhance toxic effects

**For the full text of the R phrases, S phrases, and symbols mentioned in this Section, see Section 16**

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

**Chemical description:** Zinc dimethyldithiocarbamate

#### Composition/Information on ingredients

Chemical Name	CAS No.	EC No.	Annex-1 Index No.	Weight %
Zinc Dimethyl dithio carbamate	137-30-4	205-288-3	006-012-00-2	>96

### 3.2 Mixtures

Not applicable. Substance is not a mixture



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

#### SECTION 4: FIRST AID MEASURES

##### 4.1 Description of first-aid measures

<b>General Advice</b>	If symptoms persist, call a physician. Show this material safety data sheet to the doctor in attendance. Treat symptomatically. Use of alcoholic beverages may enhance toxic effects. In case of allergic reaction after exposure, any future exposure must be avoided.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes Remove contact lenses Obtain medical attention
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Thoroughly clean shoes before reuse. If skin irritation persists, call a physician
<b>Inhalation</b>	Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. Immediate medical attention is required
<b>Ingestion</b>	Clean mouth with water and afterwards drink plenty of water. Do not induce vomiting. Treat symptomatically. If swallowed, seek medical advice immediately and show this container or label. Loosen tight clothing such as collar, tie, belt and waistband

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

- May be fatal if inhaled in large quantities
- Toxic if swallowed
- Serious eye damage/eye irritation
- Irritating to respiratory system
- May cause sensitization by skin contact
- Dermal absorption possible
- Liver and kidney injuries may occur
- Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness

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

- General advice for dithiocarbamates
- Biomonitoring possible at chronic exposure: determination of TTCA in the urine at the end of the workday/week.
- Blood testing for delayed effects: liver tests, kidney function, thyroid function



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

#### SECTION 5: FIRE FIGHTING MEASURES

##### 5.1 Extinguishing media

**Suitable extinguishing media:** Water spray/mist , foam, dry chemical powder

**Extinguishing media which must not be used for safety reasons:** High volume water jet

##### 5.2 Specific hazards arising from the substance or mixture

**Specific hazards** Combustible material  
Dust may form explosive mixture in air  
Heating can release hazardous gases:  
Carbon monoxide  
Sulphur oxides  
Nitrogen oxides (NOx)

**Specific methods** Cool containers / tanks with water spray  
Keep product and empty container away from heat and sources of ignition  
Do not flush into surface water or sanitary sewer system  
Prevent product from entering drains  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains

##### 5.3 Protective Equipment and Precautions for Firefighters

Wear full protective clothing and self-contained breathing apparatus

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

##### 6.1 Personal precautions, protective equipment and emergency procedures

- Avoid contact with skin, eyes and clothing
- Evacuate personnel to safe areas
- Keep people away from and upwind of spill/leak
- Wear respiratory protection
- Wear suitable protective clothing, gloves and eye/face protection

##### 6.2 Environmental precautions

- Remove immediately adhering matter
- Prevent product from entering drains
- Do not flush into surface water or sanitary sewer system



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

#### **6.3 Methods and materials for containment and cleaning up**

- Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container
- Do not flush with water
- Avoid dust formation
- Use a suitable vacuum cleaner
- Use explosion-proof equipment

#### **6.4 Reference to other sections**

See section 7, 8 and 13

### **SECTION 7: HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

- Take measures to prevent the build-up of electrostatic charge
- Use only in area provided with appropriate exhaust ventilation
- Use spark-proof tools and explosion-proof equipment
- Avoid dust formation
- Avoid contact with skin, eyes and clothing
- Wear personal protective equipment
- Do not breathe vapours/dust
- Use only in an area equipped with a safety shower
- Ensure that eyewash stations and safety showers are close to the workstation location
- Do not eat, drink or smoke when using this product
- Wash hands after handling
- Remove contaminated clothing and protective equipment before entering eating areas

#### **7.2 Conditions for safe storage, including any incompatibilities**

- In accordance with local and national regulations
- Keep in a dry, cool place
- Do not store near acids
- Do not store together with oxidizing and self-igniting products
- Use spark-proof tools and explosion-proof equipment
- Keep away from heat and sources of ignition

#### **7.3 Specific end uses**

No further relevant information available.



MERCHEM LIMITED

SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

**SECTION 8: EXPOSURE CONTROL/PERSONNEL PROTECTION**

**8.1 Control parameters**

**Occupational exposure limit values** No data available

**8.2 Exposure controls**

**Engineering Controls:** Avoid dust generation. Ensure good ventilation and Local exhaustion of the working area

**Personal Protective Equipment:**

**Eye/face Protection** Tightly fitting safety goggles or Face-shield

**Skin Protection** Wear suitable protective clothing/equipment

**Hand Protection** The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it  
The suitability for a specific workplace should be discussed with the producers of the protective gloves

**Respiratory Protection** In accordance with local and national regulations  
In case of insufficient ventilation, wear suitable respiratory equipment  
Suitable mask with particle filter P3 (European Norm 143)  
self-contained breathing apparatus (EN 133)  
(in case of higher concentration)

**Environmental exposure controls** Prevent product from entering drains  
Do not contaminate surface water  
Avoid subsoil penetration



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Physical State	Solid powder
Color	White
Odor	None
Boiling point/Range	Not applicable
Melting point/Range	240°C
Flash Point	Approximately 200°C
Flammability	No data available
Auto-ignition temperature	400°C
Explosive properties	Dust explosion hazard
Explosion Limit	Lower explosion Limit (LEL): 40g/m <sup>3</sup> Minimum ignition energy: =<10 mJ
Oxidizing properties	No data available
Vapor pressure	Negligible at room temperature
Density	1700 Kg/M <sup>3</sup> at 20°C
Bulk density	330 – 370 Kg/M <sup>3</sup>
Solubility in water	Practically insoluble
Solubility in other solvents	Acetone, alcohol, benzene
pH	No data available
Partition coefficient (n-Octanol-water)	No data available
Relative vapor density	No data available
Viscosity	No data available

### 9.2 Other information

No data available

## SECTION 10: STABILITY AND REACTIVITY

### 10.1 Reactivity

- See Incompatible Materials

### 10.2 Chemical Stability

- Stable under recommended storage and handling conditions (See section 7)

### 10.3 Possibility of hazardous reactions

- See Incompatible Materials





## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

#### 10.4 Conditions to Avoid

- Avoid dust formation
- Keep away from heat and sources of ignition
- Take precautionary measures against static discharges

#### 10.5 Incompatible materials to avoid

- Strong acids
- Oxidizing agents

#### 10.6 Hazardous Decomposition Products

- Heating or fire can release toxic gas
  - Carbon oxides
  - Nitrogen oxides (NO<sub>x</sub>)
  - Sulphur oxides

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

<b>Acute oral toxicity (LD50/oral/rat):</b>	267 mg/Kg
<b>Acute dermal toxicity (LD50/dermal/rat):</b>	2000 mg/Kg
<b>Acute inhalational toxicity (LC50/inhalation/4h/rat):</b>	0.06 mg/L
<b>Eye irritation:</b>	Irritating to eyes
<b>Skin irritation/Sensitization:</b>	Non-irritating to the skin The results of a test on guinea pigs showed this substance to be a weak skin sensitizer
<b>Mutagenic Effects</b>	Did not show mutagenic effects in animal experiments
<b>Reproductive toxicity:</b>	No toxicity to reproduction
<b>Carcinogenic effects:</b>	Did not show carcinogenic effects in animal experiments
<b>Target Organ Effects:</b>	Kidney, Liver, Stomach, thyroid, adrenal gland, nervous system, muscle
<b>Human experience:</b>	May cause cardiac arrhythmia, dizziness, Fatigue, headache, eczema, dermatitis, nausea, muscular weakness, Shortness of breath, Drowsiness, More severe effects if alcohol is consumed, in extreme cases



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1 Ecotoxicity

Component information:	Active ingredient
Toxicity to fish:	LC50 : 0.0097 - 1.70 mg/L
EC50/48h/daphnia:	0.048 mg/l
EC50/120h/algae:	0.066 mg/l
Toxicity to bacteria:	IC50 : 19.20 mg/l

### 12.2 Mobility in soil

Minimum

### 12.3 Persistence and degradability

Degradation half life after <2 days

### 12.4 Bioaccumulative Potential

Minimum

### 12.5 Results of PBT and vPvB assessment

- This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)
- This substance is not considered to be very persistent nor very bioaccumulating (vPvB)

### 12.6 Other adverse effects

None known based on information supplied

### 12.7 Other information

Do not discharge product unmonitored into the environment

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste Disposal Method

#### Product

- Dispose of in accordance with local regulations
- Waste codes should be assigned by the user based on the application for which the product was used
- Classified as hazardous waste according to national equivalent of EC-Dir. 91/689; disposal of toxic and hazardous waste

#### Packing

- Empty containers should be taken for local recycling, recovery or waste disposal



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

#### SECTION 14: TRANSPORT INFORMATION

##### **14.1 Road transport (ADR/RID/ADN)**

<b>ADR/RID Class</b>	6.1
<b>UN-No</b>	2811
<b>Packing Group</b>	I
<b>Proper Shipping Name</b>	Toxic solid, organic, N.O.S. (Zinc dimethyldithiocarbamate)

##### **14.2 Sea transport (IMDG)**

<b>Class</b>	6.1
<b>UN-No</b>	2811
<b>Packing Group</b>	I
<b>Marine pollutant</b>	Yes
<b>Proper Shipping Name</b>	Toxic solid, organic, N.O.S. (Zinc dimethyldithiocarbamate)

##### **14.3 Air transport (ICAO-TI/IATA)**

<b>Class</b>	6.1
<b>UN-No</b>	2811
<b>Packing Group</b>	I
<b>Proper Shipping Name</b>	Toxic solid, organic, N.O.S. (Zinc dimethyldithiocarbamate)

##### **14.4 Other information**

No data available

##### **14.5 Environmental hazards**

Information on environmental hazards, if relevant, pls. see 14.1 - 14.3.

##### **14.6 Special precautions for user**

No data available

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

Not relevant

#### SECTION 15: REGULATORY INFORMATION

##### **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation 1907/2006 REGULATION (EC) No 1272/2008  
Classification according to EU directives 67/548/EEC or 1999/45/EC

##### **15.2 Chemical Safety Assessment**

No data available



## MERCHEM LIMITED

### SAFETY DATA SHEET

ZIRAM  
MSDS No. 49/20.03.2015

#### SECTION 16: OTHER INFORMATION

Issue No.	2
Issue date :	20.03.2015
Revision No.	0
Reason for revision	Reviewed & revamped based on the guide lines of Regulation (EC) No 1907/2006

#### **List of relevant R(isk)-phrase(s)**

- R22 - Harmful if swallowed
- R48/22 - Harmful: danger of serious damage to health by prolonged exposure if swallowed
- R26 - Very toxic by inhalation
- R37 - Irritating to respiratory system
- R41 - Risk of serious damage to eyes
- R43 - May cause sensitization by skin contact
- R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

#### **List of relevant S(afety) phrase(s)**

- S20 - Do not breathe dust
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S28 - After contact with skin, wash immediately with plenty of soap and water
- S36/37/39 – Wear suitable protective clothing, gloves and eye/-face protection
- S45 - In case of accident or in case you feel unwell, seek medical advice immediately
- S60 - This material and its container must be disposed of as hazardous waste
- S61 - Avoid release to the environment. Refer to special instructions/safety data sheets

#### **Classification of dangerous substance directive (67/548/EEC)**

- T+ - Toxic substances or preparations. classified as *very toxic* (T+) or *toxic* (T)
- Xn - Harmful substances or preparations
- Xi - Irritants
- N - Substances or preparations those are dangerous for the environment

#### **Training advice**

Provide adequate information, instruction and training to operators

#### **Further information for the material safety data sheet**

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 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. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release.

**End of Material Safety Data Sheet**