



MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO., LTD.

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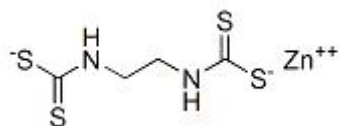
1. Chemical Product Identification

Product Name: Zineb

Molecular Formula: C₄H₆N₂S₄Zn

Molecular Weight: 275.78 g/mol

Structural Formula:



Chemical Name: zinc bis(dimethyldithiocarbamate)

Form: Powder

Color: Off-white

Odor: Odorous egg smell

CAS No.: 12122-67-7

2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Zineb	12122-67-7	85.0
Other ingredients	--	15.0

3. Hazards Identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



Specific target organ toxicity - single exposure (Category 3), H335

Skin sensitisation (Category 1), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

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

Xi Irritant R37

R43

For the full text of the R-phrases mentioned in this Section, see Section 16.

Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word Warning

Hazard statement(s)

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

Precautionary statement(s)

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P280 Wear protective gloves.

Supplemental Hazard none

Statements

Other hazards - none

4. First Aid Measures

Inhalation: Remove victim to fresh air. Keep victim warm and at rest. If breathing is difficult: give oxygen. If not breathing: apply artificial respiration.

Get medical attention.

Ingestion: Induce vomiting. Never give anything by mouth to an unconscious person. Wash out mouth with water. Consult a doctor.

Skin contact: Remove contaminated clothing. Wash off with plenty of water and soap. Consult a doctor in the event of any complaints.

Eye contact: Wash off with plenty of water for at least 15 minutes. If pain persists, consult an eye specialist.

Notes to a physician: There is no specific antidote. Treat symptomatically and give supportive therapy. If ingested perform gastric lavage and administer activated charcoal.



5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

Carbon oxides, nitrogen oxides (NO_x), Sulphur oxides, Zinc/zinc oxides

Nature of decomposition products not known.

Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary

Further information

no data available

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

7. Handling And Storage

HANDLING: Use only with adequate ventilation and appropriate protective equipment. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.



STORAGE: Keep out of reach of children and animals. Store in a cool, dry place and avoid excess heat. Store in original containers only. Carefully open containers. After partial use, fold and roll back bags, clamp and close tightly. Do not contaminate water, food or feed by storage and disposal.

8. Exposure Controls/Personal Protection

Engineering Controls: In an enclosed environment, mechanical dust extraction may be necessary to ensure above exposure standards are met.

Personal Protection: Do not breath dust or spray. Appropriate agricultural respirator should be worn if necessary. Avoid contact with eyes and skin. Wear cotton overalls buttoned to the neck and wrist and washable hat, elbow length PVC gloves and face shield or goggles.

9. Physical and Chemical Properties

Appearance: Off-white powder

Odor: odorous egg smell

Melting point: Thermal decomposition at 157°C

Flash point: 138-143°C

pH: 5.0-9.0

Water: $\leq 2.0\%$

Solubility: Insoluble in water and most organic solvents. It can be soluble in Pyridine and carbon disulfide.

Vapor Pressure: < 0.01 mPa at 20°C

Partition Coefficient: < 1.3010 at 20°C

Adsorption Coefficient: 1000 (estimated)

10. Stability and Reactivity

Stability: Stable under normal dry conditions.

Conditions to avoid : Avoid exposure to excessive heat

Materials to avoid: Strong oxidizing agents

Hazardous reactions:

Hazardous decomposition products: Decomposed by excessive heat and acids. Thermal decomposition will generate oxides of carbon, oxides of nitrogen, and sulfur. Acid decomposition may evolve carbon disulfide.



Hazardous polymerization: will not occur.

11. Toxicological Information

Acute toxicity

Acute oral LD50 for rats is >5200 mg/kg.

Acute dermal LD50 for rats is >6000 mg/kg.

Acute inhalation toxicity LC50 (4h) for rats is 0.8 mg/L.

Skin irritation: Moderately irritating to skin (rabbits).

Eye irritation: Moderately irritating to eyes (rabbits).

Skin sensitization for guinea pig: Sensitizing.

12. Ecological And Ecotoxicological Information

Effect on birds: Acute oral LD50 for Mallard ducks is 2000 mg/kg.

Effect on fish: Acute LC50 (96 h) for Rainbow trout is 20.8 mg/l.

Effects on aquatic invertebrates: Acute EC50 (48 h) for Daphnia magna is 40mg/l.

Effects on algae: Acute 72 hour EC50 for Scenedesmus acutus is 0.51 mg/l.

Effects on bees: contact acute 48 hour LD50 is 13.1 µg/bee.

Effects on earthworms: Acute 14 day LC50 is 960 mg/kg.

13. Disposal Considerations

Do not reuse containers for any purpose. Completely empty bag into application equipment. Contact your local dealer/distributor for the location of the nearest collection site. Before taking container to the collection site: make the empty container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Do not contaminate water, food, or feed by storage or disposal.

14. Transport Information

Not Applicable

15. Regulatory Information

Not applicable



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16. Other Information

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in good faith and believed to be correct. This information applies to the product as such. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.