



# ZHEJIANG RAYFULL CHEMICALS CO., LTD

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## MATERIAL SAFETY DATA SHEET

### Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO., LTD.

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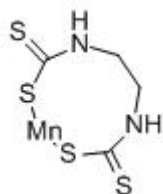
### 1. Chemical Product Identification

Product Name: Maneb TC

Molecular Formula:  $C_4H_6MnN_2S_4$

Molecular Weight: 265.30 g/mol

Structural Formula:



Chemical Name: Manganese ethylenebis(dithiocarbamate) (polymeric)

Form: Powder

Color: Yellow

Odor: Odorless

CAS No.: 12427-38-2

### 2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Maneb	12427-38-2	90.0
Other ingredients	--	10.0

### 3. Hazards Identification

#### 2.1 Classification of the substance or mixture



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**Classification according to Regulation (EU) 1272/2008**

**Physical hazards**

Pyrophoric solids      Category 1

Self-heating substances and mixtures      Category 2

**Health hazards**

Acute toxicity, inhalation      Category 4

Serious eye damage/eye irritation      Category 2

Sensitization, skin      Category 1

Reproductive toxicity (the unborn child)      Category 2

Specific target organ toxicity, single exposure      Category 3 respiratory tract irritation

**Environmental hazards**

Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment long-term hazard, Category 1

**OSHA defined hazards Not classified.**

**2.2 Label elements**

**Labelling: Regulation (EC) No. 1272/2008**

**Hazard pitograms**



**Signal Word:**    Danger

**Hazard Statements:**

Catches fire spontaneously if exposed to air. Self-heating in large quantities; may catch fire. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation. Suspected of damaging the unborn child. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

**Precautions Statement:**

**Prevention:**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Do not allow contact with air. Keep cool. Protect from sunlight. Avoid breathing dust/fume. Wash thoroughly after handling.



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Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

## **Response:**

If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. Specific treatment (see this label). If skin irritation or rash occurs: Get medical advice/attention. Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. If eye irritation persists: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up. Maintain air gap between stacks/pallets. Store away from other materials. Store contents under appropriate liquid or inert gas.

**Disposal:** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Supplemental Information:** Not applicable.

## **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**

**Suitable extinguishing media:** Dry powder. Carbon dioxide (CO<sub>2</sub>).



**Unsuitable extinguishing media:** Water. Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical:** Spontaneously flammable in air.

**Fire fighting:**

Remove spectators from surrounding area. Isolate the fire area and evacuate downwind. Use a recommended extinguishing agent for the type of surrounding fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Contain fire control agents for later disposal. Avoid inhaling hazardous vapours and fumes from burning materials. Keep upwind. Remove container from fire area if possible and without risk. Water can be used to cool unaffected containers but must be contained for later disposal. Dyke fire control water for later disposal. Do not scatter the material. Avoid pollution of waterways. Do not use high volume water jet, due to contamination risk. Contain water used for fire fighting for later disposal. Avoid the accumulation of polluted run-off from the site.

**Personal protective equipment:**

Fire may produce harmful combustion products (traces of hydrogen cyanide and oxides of nitrogen and carbon). Fire fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

## **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**

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways. Stop the flow of material, if this is without risk. Collect spillage.

Large Spills: Wet down with water and dike for later disposal. Following product recovery, flush area with water.



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Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal

**Environmental precautions**

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

**7. Handling And Storage**

**Handling:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not allow contact with air. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Minimize dust generation and accumulation. Keep cool. Avoid breathing dust. Avoid contact with skin. Avoid contact with eyes. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

**Storage:** Store locked up. Keep away from heat, sparks and open flame. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from other materials. Maintain air gap between stacks/pallets

**8. Exposure Controls/Personal Protection**

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Hygiene measures: Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day. Respiratory system: Wear appropriate respirator when ventilation is inadequate.

Skin and body: Lab coat.

Hands: Gloves

Eyes: Safety glasses.

**9. Physical and Chemical Properties**

Appearance: Yellow powder



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Melting point: Decomposes before melting

Solubility in water: 178 mg/L

Vapor Pressure: 0.014 mPa at 20°C

Bulk density: 1.99 g/ml

Partition coefficient : Kow logP=-0.45 (pH7; 22 °C)

## 10. Stability and Reactivity

**Chemical stability:** Stable under normal conditions of use and storage.

**Conditions to avoid:** Keep away from heat or open flames.

**Incompatible materials:** Peroxides

**Hazardous decomposition products:** No hazardous decomposition products are known..

**Hazardous polymerization:** Will not occur.

## 11. Toxicological Information

Acute oral LD50 for rats is >5000 mg/kg.

Acute dermal LD50 for rats is >2000 mg/kg.

Acute inhalation toxicity LC50 (4 h) for rats is 5.34 mg/L.

Skin irritation: Non-irritating to skin (rabbits).

Eye irritation: Moderately irritating to eyes (rabbits).

Skin sensitization for guinea pig: Not a sensitizer.

## 12. Ecological And Ecotoxicological Information

Effect on birds: Acute oral LD50 for Mallard is >1467 mg/kg.

Effect on fish: Acute LC50 (96 h) for Rainbow trout is 0.20 mg/l.

Effects on aquatic invertebrates: Acute EC50 (48 h) for Daphnia magna is 0.0021 mg/l.

Effects on algae: Acute 72 hour EC50 for Pseudokirchneriella subcapitata is 0.007 mg/l.

Effects on bees: contact acute 48 hour LD50 is >100 µg/bee, oral acute 48 hour LD50 is >89.5 µg/bee.

Effects on earthworms: Acute 14 day LC50 is 840 mg/kg.

## 13. Disposal Considerations

This product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used containers. Triple or



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preferable pressure rinse containers before disposal. Add rinsings to the mixing tank. Do not dispose of undiluted chemical onsite. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available bury the containers below 500mm 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.

#### **14. Transport Information**

Not Applicable

#### **15. Regulatory Information**

Not applicable

#### **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.