



Hangzhou Tianlong Biotechnology Co., Ltd.

Add: Room 1906, Fengqi Times Tower, No.338, Fengqi East Road, Hangzhou, Zhejiang, China.

MATERIAL SAFETY DATA SHEET

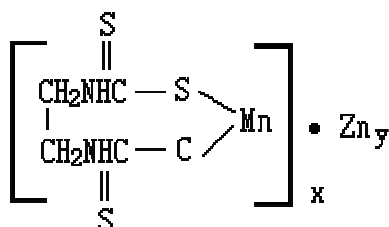
1. Chemical Product and company Identification

Product Name: Mancozeb

Molecular Formula: $C_4H_6N_2S_4Mn)_x \cdot (Zn)_y$

Molecular Weight: 266.31

Structural Formula:



Chemical Name: [1,2-Ethanediybis(carbamodithio)(2-)]manganese zinc salt

CAS No.: 8018-01-7

Supplier: HANZHOU TIANLONG BIOTECHNOLOGY CO., LTD

Address: Room 1906, Fengqi Times Tower, No.338 Fengqi East Road, Hangzhou, China, 310020

Tel: 0086-571-87214516

Fax: 0086-571-87079476

2. Composition / Information on Ingredients

Composition	CAS No.	Content %
Mancozeb	8018-01-7	85.0
Other ingredients		15.0

3. Hazards Summarizing

Emergency Overview:

- Mancozeb is very rapidly absorbed and eliminated from the body.
- Harmful if absorbed through skin or inhaled.
- Causes moderate eye and skin irritation.
- Avoid breathing product vapors or spray mist.
- Avoid contact with eyes, skin or clothing.
- Keep out of reach of children.

Symptoms of over exposure are headache, nausea, vomiting, cramps, weakness, blurred vision, pin point pupils, tightness in chest, labored breathing, nervousness, sweating, watering of eyes, drooling, muscle spasms and coma.

4. First Aid Measures

Inhalation: If affected, remove from contaminated area to fresh air. Seek medical advice.

Skin contact: wash affected skin areas with soap and water. Consult a physician if irritation persists. Remove and wash contaminated clothing thoroughly before reuse.

Eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Seek medical attention.

Ingestion: If swallowed, give 2 glasses of water to drink. Consult a physician. Never give anything by mouth to an unconscious person. Do not give alcohol.

5. Fire-Fighting Measures

Extinguishing media: CO₂, dry chemical, water spray or foam

Special Fire Fighting procedures:

Wear self-contained breathing apparatus. Use water spray. Cool tank/container with water spray. If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the contamination hazard.

Unusual Fire & Explosion Hazards:

Pesticide particulates can become airborne. Combustion generates toxic fumes of the following:

hydrogen sulphide, carbon disulphide and oxides of sulphur, nitrogen and carbon.

Like most organic powders or crystals, under severe dusting conditions, this material may form explosive mixtures in air.

6. Accidental Release Measures

Personal cautions: safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants and hats.

Avoid contact with the spilled material or contaminated surfaces. When dealing with spills do not eat, drink or smoke and wear personal protective clothing and equipment as described in the PERSONAL PROTECTION section below. Prevent spilled material from entering drains or watercourses. Contain spill and absorb with earth, sand, clay, or other absorbent material.

Collect and store in properly labelled, sealed drums for safe disposal. Deal with all spillages immediately. If contamination of drains, streams, watercourses, etc. is unavoidable, warn the local water authority. Neutralising chemicals are not required.

7. Handling and Storage

Handling: Keep out of reach of children. Avoid contact with the eyes and skin.

Storage: Store in the closed, original container in a dry, cool, well-ventilated area. Do not store for prolonged periods in direct sunlight. Store in a locked room or place away from children, animals, food, animal feed, seed and fertilizers. Store below 40°C. Protect from frost.

8. Exposure Controls/Personal Protection

Exposure standards:

No exposure standard has been assigned by the National Occupational Health and Safety Commission for the product or its ingredients. The exposure standard for Mancozeb set is 1 mg/m³.

Engineering Controls: Control process conditions to avoid contact. Use local exhaust ventilation during manufacture. Use in a well-ventilated area only.

Personal Protective Equipment:

To avoid eye and skin contact, wearing the following personal protective clothing and equipment is recommended:

Eyes: Safety goggles or face shield

Clothing: Cotton overalls buttoned to the neck and wrist and a washable hat.

Gloves: Elbow length PVC gloves.

Respiratory: Respiratory protection is not normally required. If airborne concentrations are likely to exceed the exposure standard above, an AS/NZS 1715/1716 approved respirator should be worn.

Other: After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves, goggles or face shield and contaminated clothing.

9. Physical and Chemical Properties

Form: Powder

Color: Grayish-yellow

Odour: Sulphur odour

Melting point: Decomposes without melting at 192°C

Density: 1.92

Flash point: 137.8°C

Stability: In water 6.2 ppm (pH 7.5, 25 °C), practically insoluble in most organic solvents. Decomposes in acid and alkaline conditions. Decomposed by heat and when exposed to moisture and air.

Vapor Pressure: Negligible at 25°C

10. Stability and Reactivity

Stability: This material is considered stable for 2 years in its unopened package. However, keep away from moisture, heat or flame.

Polymerisation: Product will not undergo polymerisation.

Decomposition Products: Thermal decomposition may yield toxic fumes as described above.

Materials to avoid: Avoid contact with strong oxidising agents and acids

11. Toxicological Information

Acute Toxicity:

Swallowed: The oral LD50 for rats is > 5000 mg/kg which indicates very low toxicity if swallowed.

Eye: Direct contact could cause irritation. Not classified as an eye irritant under EU guidelines. Skin: The dermal LD50 for rats >10 000, (rabbit) is > 5000 (low toxicity). Prolonged or repeated skin contact can cause possible skin irritation/dermatitis due to skin sensitization.

Unlikely to cause poisoning by skin contact.

Inhaled: Inhalation LC50 (rat) is >5.14 mg/L for 4 hr. Inhalation of dust can cause the irritation of nose and throat.

Eye Irritation: Moderate eye irritant (rabbits)

Skin Irritation: Moderate skin irritant (rabbits)

Other toxicity data:

Acceptable Daily Intake (ADI) for mancozeb: 0.05 mg/kg bw/day.

Acceptable Daily Intake (ADI) for ethylenebisdithiocarbamates as a group: 0.03 mg/kg bw/day. Acceptable Daily Intake (ADI) for ETU: 0.004 mg/kg bw/day.

12. Ecological Information

Mancozeb is not hazardous to bees and is slightly toxic to birds. However mancozeb is highly toxic to warm-water fish and moderately toxic to cold-water fish and aquatic invertebrates. Mancozeb is extensively metabolised in plants to eventually form natural products, especially those derived from glycine. In mammals, mancozeb is rapidly absorbed into the body from the gastrointestinal tract but both metabolised and excreted very rapidly, usually within 96 hours.

Representative ecotoxicity data are provided below:

Birds: In 10-day dietary studies, there were no mortalities in mallard ducks at 6400 mg/kg daily, and in Japanese quail at 3200 mg/kg daily.

Fish: LC50 (48 h) for goldfish 9.0, rainbow trout 2.2, catfish 5.2, carp 4.0

mg/l.

Bees: LC50 0.193 mg/bee.

Environmental fate:

Mancozeb is rapidly degraded in the environment by hydrolysis, oxidation photolysis and metabolism by micro-organisms. Its half-life in soil is 6 – 15 days. It is not persistent in aquatic environments.

13. Disposal Considerations

Waste: Pesticide wastes are toxic and hazardous. Dispose of in accordance with applicable and local laws and regulations. Do not discharge or pour into soil, drainage system or bodies of water.

Container: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning (plastic containers). If burned, stay out of smoke.

14. Transport Information

Class: 9

UN No: UN 3077

Packaging Group III

15. Regulatory Information

Safety Phrases: Keep out of reach of children

Keep away from food, drink and animal feeding stuff

Do not breathe spray

When using do not eat, drink or smoke

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible)

Use appropriate containment to avoid environmental contamination

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.