ZHEJIANG RAYFULL CHEMICALS CO., LTD

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MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO., LTD

ADD: NO.52 PUCHANG ROAD, PUZHOU INDUSTRIAL PARK, LONGWAN DISTRICT, WENZHOU ZHEJIANG P.R. CHINA

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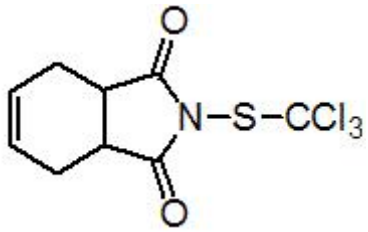
1. Chemical Product Identification

Product Name: Captan TC

Molecular Formula: $C_9H_8Cl_3NO_2S$

Molecular Weight: 300.61 g/mol

Structural Formula:



Chemical Name:

N-(trichloromethylthio)cyclohex-4-ene-1,2-dicarboximide

Color: White

Odor: slight odor

CAS No.: 133-06-2

2. Composition / Information on Ingredients

Composition	CAS No.	Content
Captan	133-06-2	95.0%
Others		5.0%

3. Hazards Identification

Emergency overview:

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May be harmful if swallowed or inhaled.

- Causes severe eye irritation
- Avoid breathing dusts or spray mist
- Avoid contact with eyes, skin or clothing
- Keep out of reach of children Potential health hazards: not applicable

4. First Aid Measures

If swallowed: Rinse mouth. Refer for medical attention. If in inhalation: Fresh air rest. Refer for medical attention. If on skin: Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention. If in eyes: First rinse with plenty of water for several minutes (remove contact lenses if easily possible) then take to a doctor.

5. Fire-Fighting Measures

Flash point (Method): Will not flash

Flammable limits (LEL&UEL): None established

Extinguishing media: Use foam, dry chemical, carbon dioxide, or water spray when fighting fires involving this material

Fire and explosion hazard: Can burn in fire, releasing irritating and toxic gases due to thermal decomposition or combustion.

Fire fighting instructions: Dike and collect water used to fight fire to prevent environmental damage due to run off. Foam or dry chemical fire extinguishing systems is preferred to prevent environmental damage from excessive water run off.

Fire fighting equipment: Self-contained breathing apparatus with full facepiece, Full fire fighting turnout gear (Bunker gear).

Hazardous combustion products: Hydrogen chloride. Oxides of nitrogen, hydrogen, carbon, sulfur.

6. Accidental Release Measures

Clean up spills immediately, observing precautions described in Section 8 of this document. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Small spill: Vacuum or sweep up material and place in a container for reuse or disposal.

Large spill: Vacuum or sweep up material and place in appropriate container for reuse or disposal. After removal, flush contaminated area thoroughly with water. Pick up wash liquid

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with inert absorbent and place in a chemical waste container for disposal.

7. Handling And Storage

Handling: Avoid contact with the eyes, skin and clothing and avoid inhalation of product or spray mist. After handling and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

Storage: Keep out of reach of children. Store in the closed, original container in a dry, cool, well-ventilated area, out of direct sunlight. Store in locked room or place away from children, animals, food, animal feed, seed and fertilizers.

8. Exposure Controls / Personal Protection

Engineering controls: not applicable

Personal protective equipment: Eye protection- Safely goggles. Clothing- Long-sleeved shirt and long pants, shoes plus socks, chemical resistant apron when cleaning equipment, mixing, or loading. Gloves- Waterproof gloves

User safety recommendations: not applicable

9. Physical And Chemical Properties

Appearance and odor: colorless crystal

Solubility: 3.3 mg/L @ 25ºC in water

Specific gravity (water=1): Not applicable

Bulk density: Not applicable

Vapour pressure: 1.3 mPa @ 25ºC

Boiling point: >252ºC PH: 7

10. Stability And Reactivity

Chemical stability: Stable, however may decompose if heated. Conditions to avoid: Avoid exposure to excessive heat and high moisture conditions for prolonged periods. Incompatibility with other materials: Alkaline and acidic conditions and materials. Hazardous decomposition products: Hydrogen chloride. Oxides of hydrogen, nitrogen, sulfur, carbon. Hazardous polymerization: Products will not undergo polymerization.

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11. Toxicological Information

Acute oral LD50 for rat: >2000 a.i.mg/kg.

Acute dermal LD50 for rat: >2000 a.i.mg/kg.

Inhalation LC50 (4 h) for rat: 0.67 a.i. mg/L.

Eye irritation: Corrosive to eyes (rabbit)

Skin irritation: mildly irritating to skin (rabbit)

Skin sensitisation: Not a skin sensitiser (guinea pigs).

12. Ecological And Eco-toxicological Information

Effect on birds: low toxicity to birds, acute oral LD_{50} for Mallard ducks is >2000 a.i.mg/kg.

Effect on fish: moderate toxicity to fish, acute 96 hour LC50 for Rainbow trout is 0.186 a.i.mg/L.

Effect on aquatic invertebrates: moderate toxicity to aquatic invertebrates, acute 48 hour EC50 for Daphnia magna is 7.1 a.i.mg/L.

Effect on algae: moderate toxicity to algae, acute 72 hour EC_{50} for Raphidocelis subcapitata is 1.18 a.i.mg/L.

Effect on honeybees: low toxicity to honeybees, contact acute 48 hour LD50 is >200 a.i.μg/bee, oral acute 48 hour LD50 is >100 a.i.μg/bee.

Effect on earthworms: moderate toxicity to earthworms, acute 14 day LC50 for Eisenia foetida is >519 a.i.mg/kg.

13. Disposal Considerations

Product: In accordance with local and national regulations. Do not contaminate ponds waterways or ditches with chemical or used container.

The contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. Transport Information

Not applicable

15. Regulatory Information

Not applicable

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16. Other Information

All information and instructions provided in this MSDS are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are presented in food faith and believed to be correct. This information applies to the product as such. In case of formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons in 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 come in contact with the product.