



MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO., LTD.

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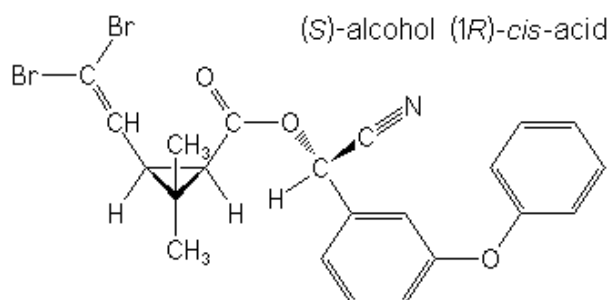
1. Chemical Product Identification

Product Name: Deltamethrin 98% TC

Molecular Formula: C₂₂H₁₉Br₂NO₃

Molecular Weight: 505.2 g/mol

Structural Formula:



Chemical Name: (S)-cyano-3-phenoxybenzyl (1R)-cis-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropane carboxylate

Form: Crystals

Colour: Colourless

CAS No.: 52918-63-5

2. Composition / Information on Ingredients

Composition	CAS No.	Content %
Deltamethrin	52918-63-5	98.0 min
Other ingredients		2.0 max



3. Hazards Identification

Dangerous for the environment

Harmful in contact with skin; readily absorbed through skin system

Toxic by inhalation

Very toxic if swallowed

May cause sensitization by inhalation and skin contact

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. First Aid Measures

If poisoning occurs, immediately contact a doctor or Poisons Information Centre, and follow the advice given. Show this Material Safety Data Sheet to a doctor.

General: In case of accident or if you feel unwell, seek medical advice immediately (show label where possible).

Skin contact: Remove contaminated clothing and shoes immediately. Wash affected area with soap and mild detergent and large amounts of water (approximately 15 - 20 minutes)

Eye contact: Wash with large amounts of water immediately, occasionally lifting upper and lower lids, (approximately 15-20 minutes)

Inhalation: Remove victim from exposed area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

Ingestion: Rinse mouth. Induce vomiting only, if patient is fully conscious, medical aid is not readily available, significant amount (more than a mouthful) has been ingested and time since ingestion is less than 1 hour. (Vomit should not get into the respiratory tract).

Note to physician: No specific antidote is available. Symptomatic and supportive treatment as indicated. Deltamethrin may cause anaphylactic reactions.

5. Fire-Fighting Measures

Extinguishing media: foam.

Hazards from combustion products: Deltamethrin decomposes in a fire to emit toxic fumes of Br⁻, CN⁻ and NO_x.

Precautions for fire fighters: wear appropriate PPE (personal protective equipment) to avoid direct contact with the product. PVC overall, rubber gloves and rubber boots are



recommended. Wear self-contained breathing apparatus.

6. Accidental Release Measures

Soak up spillage with dry sand, sweep up and dispose of as for toxic waste in accordance with local/national regulations. Spillage of concentrate may result in slippery conditions. Keep animals and children away from spilt material.

Protective clothing to be worn when clearing spillage. The material is toxic to fish, birds and animals.

7. Handling and Storage

Handling: Prepare spray and dipping solution in a well-ventilated area. Do not mix this product with any other spray or dip.

Storage: Store product in the closed, original container in a safe, cool, well-ventilated area. Do not store for prolonged periods in direct sunlight.

8. Exposure Controls/Personal Protection

Exposure standards: No exposure standard has been assigned by the National Occupational Health and Safety Commission. Aventis recommends an Occupational Exposure Standard for deltamethrin of 0.28 mg/m³.

Engineering controls: No special ventilation is required, as this product is not volatile. Control process conditions to avoid contact.

Personal Protective Equipment:

Eyes: Avoid contact with eyes.

Clothing: Full-length work-clothes should be worn during use.

Gloves: Waterproof gloves should be worn during use.

Respiratory: Not required.

Other: Do not eat, drink or smoke until after washing. Wash thoroughly after handling. After use wash or dispose of gloves and wash contaminated clothing.

9. Physical and Chemical Properties

Appearance: Colourless Crystals

Odor: Odourless

Density(water=1): 0.55g/cm³ (20°C)



Melting Point: 101°C

Vapor pressure: 1.24×10^{-5} mPa (25°C)

Water solubility: 0.0002 mg/l (20°C)

Other organic solvents: Acetone 500, benzene 450, cyclohexanone 750, dioxane 900, xylene 250, dichloromethane 700, dimethyl sulfoxide 450, ethanol 15, isopropanol 6 (all in g/l, 20°C);

10. Stability and Reactivity

Incompatibility: Incompatible with acids, alkalies, strong oxidising agents.

Chemical stability: Stable under normal conditions of use.

Conditions to avoid: Extreme heat

Incompatible materials: Avoid oxidising agents, strong acids and alkalis.

Hazardous decomposition products: Heating/combustion will generate oxides of carbon and nitrogen, and other irritant and toxic fumes.

11. Toxicological Information

Acute oral LD₅₀ for rats is 87 mg/kg.

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

Acute inhalation toxicity LC₅₀ (4 h) for rats is 0.6 mg/l.

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

Eye irritation: Slightly irritating to eyes (rabbits).

Skin sensitization for guinea pig: Not a skin sensitiser.

12. Ecological and Ecotoxicological Information

Effect on birds: Acute oral LD₅₀ for Bobwhite quail is >2250 mg/kg.

Effect on fish: Acute LC₅₀ (96 h) for Rainbow trout is 0.00026 mg/l.

Effects on aquatic invertebrates: Acute EC₅₀ (48 h) for Daphnia magna is 0.00056 mg/l.

Effects on algae: Acute EC₅₀ (72 h) is 9.1 mg/l.

Effects on bees: Contact acute (48 h) LD₅₀ is 0.0015 µg/bee, Oral acute (48 h) LD₅₀ is 0.079 µg/bee.

Effects on earthworms: Acute 14 day LC₅₀ is >1290 mg/kg.

13. Disposal Considerations



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Dispose of packaging in the household garbage.

Dispose of spent dip by pouring over bare-soil or around non-food producing plants in the home-garden. Do not contaminate streams, rivers or waterways with the tablet or dip solution.

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.