



MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO., LTD

ADD: ROOM 601 3A, DAZIRAN CITY, TANGJIAQIAO ROAD, WENZHOU, ZHEJIANG, CHINA

Tel: +86-577-88905587

Fax: +86-577-88905567

Email: info@rayfull.com

sales@rayfull.com

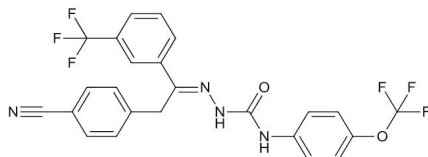
1. Chemical Product Identification

Product Name: Metaflumizone 96% TC

Molecular Formula: C₂₄H₁₆F₆N₄O₂

Molecular Weight: 506.40 g/mol

Structural Formula:



Chemical Name:

(EZ)-2'-[2-(4-cyanophenyl)-1-(α,α,α-trifluoro-m-tolyl)ethylidene]-4-(trifluoromethoxy)carbanilohydrazide

Form: Powder

Color: Off-white

2. Composition / Information on Ingredients

Composition	CAS No.	Content, %
Metaflumizone	139968-49-3	96%
Other ingredients	---	4%

3. Hazards Identification

Pictogram:



Signal Word: Warning

Hazard statement(s):

H361: Suspected of damaging fertility or the unborn child.

H362: May cause harm to breast-fed children.

H373: May cause damage to organs through prolonged or repeated exposure.

H401: Toxic to aquatic life.

Precautionary statement(s):

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P260: Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

P263: Avoid contact during pregnancy/ while nursing.

P264: Wash skin thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P273: Avoid release to the environment.

P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

P308 + P313: IF exposed or concerned: Get medical advice/ attention.

P405: Store locked up.

P501: Dispose of contents/ container to an approved waste disposal plant.

4. First Aid Measures

Ingestion: Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

Inhalation: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

Skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

Eyes: Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison



control centre or doctor for treatment advice.

5. Fire-Fighting Measures

Suitable extinguishing media: Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

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

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions: Move containers from fire area if you can do so without risk.

Specific methods: Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards: No unusual fire or explosion hazards noted.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate personal protective equipment. Do not breathe mist or vapor. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent product from entering drains. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.

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

Precautions for safe handling: Do not breathe mist or vapor. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities: Store in original tightly closed container. Store away from incompatible materials.

8. Exposure Controls/Personal Protection

Occupational exposure limits: No exposure limits noted for ingredient(s).

Biological limit values: No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

General Information: Clean water should be available for washing in case of eye or skin contamination. Wash hands prior to eating, drinking chewing gum or using tobacco. Shower or bathe at the end of working.

Respiratory protection: For dust, splash, mist or spray exposures wear a filtering mask.

Eye/face protection: For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.

Skin and body protection: Wear long-sleeved shirt, long pants, socks, shoes, and gloves.

Hand protection Protective: gloves

Hygiene measures: Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

9. Physical and Chemical Properties

Appearance: Off-white powder

Odor: Odorless



Density: 1.46 g/mL

Melting Point: 133°C

Boiling point: Decomposes before boiling

Partition Coefficient: log P= 4.6 (at pH 7, 20°C)

Vapour pressure: 2.32×10^{-08} mPa (25°C)

Solubility: 0.0018 mg/L in water (20°C); In organic solvents: 85 mg/L in n-Hexane, 4000 mg/L in Toluene, 153300 mg/L in Acetone, 14100 mg/L in Methanol (all at 20°C).

10. Stability and Reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability: Material is stable under normal conditions.

Possibility of hazardous reactions: No dangerous reaction known under conditions of normal use.

Conditions to avoid: Contact with incompatible materials.

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products: No hazardous decomposition products are known.

11. Toxicological Information

Acute oral LD₅₀ for rats: >5000 mg/kg

Acute dermal LD₅₀ for rats: >5000 mg/kg

Acute inhalation LC₅₀ (4 h) for rats: >5.2 mg/L.

Skin irritation: Non-irritating to skin (rabbits)

Eye irritation: Non-irritating to eyes (rabbits)

Skin Sensitization: Not a skin sensitiser (guinea pigs)

12. Ecological And Ecotoxicological Information

Effect on birds: Acute LD₅₀ for Bobwhite quail is >2025 a.i.mg/kg.

Effect on fish: Acute 96h LC₅₀ for Rainbow trout is > 0.228 a.i.mg/L.

Effects on aquatic invertebrates: Acute 48h EC₅₀ for Daphnia magna is > 0.331 a.i.mg/L.

Effects on algae: Acute 72 hour for Pseudokirchneriella subcapitata EC₅₀ is > 0.311 mg/L.

Effects on bees: Oral acute 48 hour LD₅₀ is 1.65 a.i.µg/bee, contact acute 48 hour LD₅₀ is 2.43 a.i.µg/bee.



ZHEJIANG RAYFULL CHEMICALS CO., LTD

Tel: +86-577-88905587,88908857

Fax: +86-577-88905567

EMAIL: info@rayfull.com sales@rayfull.com

Effects on earthworms: Acute 14 day LC₅₀ is >500 a.i.mg/kg.

13. Disposal Considerations

Waste from residues / unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

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.