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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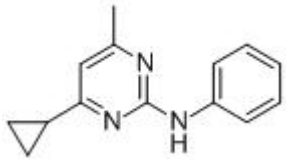
1．Chemical Product Identification

Common Name: Oryzalin 95% TC

Molecular Formula: $C_{12}H_{18}N_4O_6S$

Molecular Weight: 346.36

Structural Formula:



Chemical Name: 3,5-dinitro-N4,N4-dipropylsulfanilamide

Form: Powder

Color: White to yellow

CAS No.: 19044-88-3

2．Composition / Information On Ingredients

Composition	CAS No.	Content %
Oryzalin	19044-88-3	95
Other ingredients	---	5

3．Hazards Identification

Hazard Statements:

H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements:

P273: Avoid release to the environment.

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P391: Collect spillage.

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

4．First Aid Measures

General Advice: When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment. If exposed or concerned: Get medical advice/attention.

Eye Contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison control center or doctor for treatment advice.

Skin Contact: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Call a poison control center or doctor for treatment advice.

Inhalation: Give oxygen if breathing is difficult. If breathing has stopped, call emergency phone number, give artificial respiration. Call a poison control center or doctor for further treatment advice.

Ingestion: Immediately call a poison center or doctor/physician. Do not induce vomiting, unless directed by medical personnel. Never give anything by mouth to an unconscious person.

5．Fire-Fighting Measures

Suitable Extinguishing Media: Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.

Special Protective Equipment and Precaution for Firefighters: In the event of a fire, wear full protective clothing and NIOSH approved selfcontained breathing apparatus. Evacuate the area and fight fire from a safe distance.

Hazardous Combustion Products: May emit toxic fumes under fire conditions.

Toxic Gases Produced: Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides

6．Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe

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areas. Avoid breathing dust.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Method of Containment and Cleanup: Wear suitable protective clothing. Avoid dust formation. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let products enter drains.

7．Handling And Storage

Precaution for Safe Handling: Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Wash thoroughly after use.

Conditions for Safe Storage: Keep in a tightly closed container and store in a cool, dry, and well-ventilated area.

Incompatibilities: Strong oxidizing agent.

Recommended Storage Temperature: Room Temperature.

8．Exposure Controls/Personal Protection

OSHA's Permissible Exposure Limits (PELs): No data available.

Threshold Limit Values (TLVs): No data available.

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.

Skin Protection: Protective gloves.

Body Protection: Lab coat.

Respiratory Protection: Appropriate respirator.

9．Physical and Chemical Properties

Appearance: White to yellow powder

Loss on drying: ≤0.5%

Acidity(as H2SO4): ≤0.5%

Insoluble in acetone: ≤0.5%

Melting point: 139.7℃

Boiling point: Decomposes before boiling

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Bulk density: 1.2 g/ml

Partition Coefficient: log P = 3.73 (at pH 7, 20℃)

Vapour pressure: 1.1×10^{-7} mPa (25℃)

Solubility: 1.13 mg/l in water (20℃); In organic solvents: 250 g/l in acetone, 91.9 g/l in methanol, 0.709 mg/l in n-heptane, 1.57g/l in xylene (all at 20℃).

10．Stability and Reactivity

Reactivity: No data available.

Chemical Stability: Stable under normal conditions of use – dust may be flammable.

Possibility of Hazard Reactions: Will not occur.

Conditions to Avoid: Dust generation, excessive heat.

Incompatibles Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides.

11．Toxicological Information

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

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

Acute inhalation toxicity LC50 (4 h) for rats is >4.79 a.i.mg/L.

Skin irritation: Slightly irritating to skin (rabbits)

Eye irritation: Slightly irritating to eyes (rabbits)

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

12．Ecological And Ecotoxicological Information

Effect on birds: Acute oral LD50 for Mallard is 427 a.i.mg/kg.

Effect on fish: Acute LC50 (96 h) for Rainbow trout is 2.86 a.i.mg/l.

Effects on aquatic invertebrates: Acute EC50 (48 h) for Daphnia magna is 1.02 a.i.mg/l.

Effects on algae: Acute 72 hour EC50 for Anabaena flos-aquae is 18.1 a.i.mg/l.

Effects on bees: contact acute 48 hour LD50 is 40.8 a.i.μg/bee, oral acute 48 hour LD50 is 32 a.i.μg/bee.

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

13．Disposal Considerations

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Disposal Procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations.

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.