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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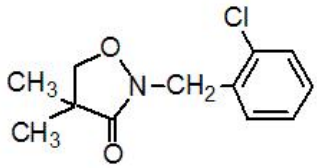
1. Chemical Product Identification

Common Name: Clomazone 90% TC

Molecular Formula: $C_{12}H_{14}ClNO_2$

Molecular Weight: 239.7

Structural Formula:



Chemical Name: 2-(2-chlorobenzyl)-4,4-dimethyl-1,2-oxazolidin-3-one

Form: Crystals

Color: White

CAS No.: 81777-89-1

2. Composition / Information On Ingredients

Composition	CAS No.	Content %
Clomazone	81777-89-1	90
Other ingredients	---	10

3. Hazards Identification

Precautionary Statements - Prevention

P264: Wash face, hands and any exposed skin thoroughly after handling.

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

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P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P271: Use only outdoors or in a well-ventilated area.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312: Call a POISON CENTER or doctor if you feel unwell.

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.

P330: Rinse mouth.

Precautionary Statements - Disposal

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

4. First Aid Measures

Eye Contact: Hold eyes 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. Call a poison control center or doctor for further treatment advice.

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

Inhalation: Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Ingestion: Call a poison control center 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 center or doctor Never give anything by mouth to an unconscious person.

5. Fire-Fighting Measures

Extinguishing Media: Foam, CO2 or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

Fire / Explosion Hazards: Slightly combustible. This material may support combustion at elevated temperatures.

Fire Fighting Procedures: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

6. Accidental Release Measures

Small Spills: Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact. Contain - prevent run off into drains and

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waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers for disposal.

Large Spills: Shut off all possible sources of ignition. Wear protective equipment to prevent skin and eye contact. Avoid breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops or waterways has occurred advise emergency services or State Department of Agriculture.

7. Handling And Storage

Handling: Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

Storage: Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container only.

8. Exposure Controls/Personal Protection

Occupational exposure controls

Engineering measures: Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Personal Protective Equipment

General Information: If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

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.

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9. Physical and Chemical Properties

Appearance: White crystals

Water content: ≤0.5%

Acidity (as H2SO4): ≤0.2%

Insoluble in acetone: ≤0.5%

pH: 6.0-8.0

Melting point: 33.9℃

Boiling point: 281.7℃

Bulk density: 1.19 g/ml

Partition Coefficient: log P = 2.54 (at pH 7, 20℃)

Vapour pressure: 19.2 mPa (25℃)

Solubility: 1.102 g/l in water (20℃); In organic solvents: 1000 g/l in acetone, 955 g/l in dichloromethane, 192 g/l in n-heptane, 969 g/l in methanol (all at 20℃).

10. Stability and Reactivity

Stability: Stable.

Conditions to avoid: Heat, flames and sparks.

Hazardous decomposition products: Carbon oxides, nitrogen oxides (NOx), Chlorine, Hydrogen chloride.

Hazardous polymerization: Hazardous polymerization does not occur.

11. Toxicological Information

Acute oral LD50 for rat: 1369 a.i.mg/kg

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

Inhalation LC50 (4 h) for rat: 4.85 a.i.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: low toxicity to birds, acute LD50 for Bobwhites quail is >2510 a.i.mg/kg.

Effect on fish: moderate toxicity to fish, acute 96 hour LC50 for Rainbow trout is 15.5

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a.i.mg/L.

Effect on aquatic invertebrates: moderate toxicity to aquatic invertebrates, acute 48 hour EC50 for Daphnia magna is 12.7 a.i.mg/L.

Effect on algae: moderate toxicity to algae, acute 120 hour EC50 for Navicula pelliculosa is 0.136 a.i.mg/L.

Effect on honeybees: low-moderate toxicity to honeybees, contact acute 48 hour LD50 is >100 a.i.μg/bee, oral acute 48 hour LD50 is >85.3 a.i.μg/bee.

Effect on earthworms: moderate toxicity to earthworms, acute 14 day LC50 is 78 a.i.mg/kg.

13. Disposal Considerations

Waste disposal methods: Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.

Contaminated packaging: Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

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.