



MATERIAL SAFETY DATA SHEET

Material Safety Data Sheet according to Reg. (EU) No 2001/58

Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO., LTD.

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

Tel: +86-577-88905587

Fax: +86-577-88905567

Email: info@rayfull.com sales@rayfull.com

1. Identification of the substance/preparation and the company/undertaking

1.1. Identification of the substance or preparation

Trade name : Propiconazole 250 g/L EC
Chemical description : Propiconazole, 250 g/L emulsifiable concentrate
Synonym : TILT 250 EC, Bumper 250 EC, etc.
CAS number : 60207-90-1
EC Number : 262-104-4

1.2. Use of the substance/preparation

Use : For the control of certain fungal diseases of banana, oats, peanuts, perennial ryegrass, pineapples, stone fruit, sugar cane, wheat and other crops.

1.3. Company/undertaking identification

Company identification : ZHEJIANG RAYFULL CHEMICALS CO., LTD.
ADD: NO.52 PUCHANG ROAD, PUZHOU INDUSTRIAL
PARK, LONGWAN DISTRICT, WENZHOU ZHEJIANG P.R.
CHINA

1.4. Emergency telephone

Emergency telephone : 114



2. Composition/Information on ingredients

2.1. Substance

The product is a mixture, not a substance.

Substance name	Value(s)	CAS RN / EC-No. / Index-No.	Classification (Dir.67/548)	Classification: REGULATION (EC) No 1272/2008	REACH No
Propiconazol e	≥250 g/L	CAS RN 60207-90-1 EC-No. 262-104-4 Index-No. 613-205-00-0	Hazard symbol(s): Xn, N R-phrase(s): R22, R43, R50/53	Acute Tox.4; H302 Skin Sens.1; H317 Aquatic Acute1; H400 Aquatic Chronic1; H410	no data available
butan-1-ol	1.5-3% w/w	CAS RN 71-36-3 EC-No. 200-751-6 Index-No. 603-004-00-6	Hazard symbol(s): Xn, Xi R-phrase(s): R10, R22, R37/38, R67	Flam Liq. 3; H226 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 STOT SE 3; H336	no data available
Benzenesulfo nic acid, C10-13-alkyl derivs., calcium salt	1-2% w/w	CAS RN N/A EC-No. N/A Index-No. N/A	Hazard symbol(s): Xi R-phrase(s): R41, R38	Skin Irrit. 2; H315 Eye Dam. 1; H318	01-2119 560592-37

Substances for which there are Community workplace exposure limits.

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

3. Hazards Identification

3.1. Classification of the substance or mixture

Hazard Class and Category Code Regulation EC 1272/2008 (CLP)

- Health hazards : Skin irritation: Category 2 (H315); Eye irritation: Category 2



(H319); Aspiration hazard: Category 1 (H304); Specific target organ toxicity - single exposure: Category 3 (H336)

- Environmental hazards : Chronic aquatic toxicity: Category 2 (H411)

For the full text of the H-Statements mentioned in this Section, see Section 16.

Classification EU 67/548/EEC or 1999/45/EC

Symbol(s) : Xn - Harmful
N - Dangerous for the environment

R-code(s) : R36/38, R51/53, R65, R67

For the full text of the R phrases mentioned in this Section, see Section 16.

3.2. Label elements

Labelling according to Regulation EC 1272/2008 (CLP)

Hazard pictograms :



- Hazards pictograms -code : GHS02, GHS07, GHS08, GHS09
- Signal words : Danger
- Hazard statements : H226: Flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H411: Toxic to aquatic life with long lasting effects.
- Precautionary statements
 - Prevention : P102: Keep out of reach of children.
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P270: Do not eat, drink or smoke when using this product.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
 - Response : P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331: Do NOT induce vomiting.



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- | | | |
|---------------------------|---|--|
| - Storage | : | None |
| - Disposal | : | P501: Dispose of contents/ container to an approved waste disposal plant. |
| -Supplemental information | : | Contains propiconazole. May produce an allergic reaction.
EUH401: To avoid risks to human health and the environment, comply with the instructions for use. |

3.3. Other hazards

None of the ingredients in the product meets the criteria for being PBT or vPvB.

4. First Aid Measures

4.1. Description of first aid measures

First aid

- | | | |
|----------------|---|---|
| General advice | : | Have the product container, label or Material Safety Data Sheet with you when calling the emergency number, a poison control center or physician, or going for treatment. |
| Ingestion | : | If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting. |
| Skin contact | : | Take off all contaminated clothing immediately.
Wash off immediately with plenty of water.
If skin irritation persists, call a physician.
Wash contaminated clothing before re-use. |
| Eye contact | : | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Immediate medical attention is required. |
| Inhalation | : | Move the victim to fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Keep patient warm and at rest.
Call a physician or poison control centre immediately. |

4.2. Most important symptoms and effects, both acute and delayed



Symptoms : Aspiration may cause pulmonary oedema and pneumonitis.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physician : There is no specific antidote available.

Treat symptomatically.

Do not induce vomiting: contains petroleum distillates and/or aromatic solvents.

5. Fire-fighting measures

5.1. Extinguishing media

Extinguishing media : Extinguishing media - small fires

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Extinguishing media - large fires

Alcohol-resistant foam.

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Special hazards arising from the chemical : As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10).

Exposure to decomposition products may be a hazard to health.

Flash back possible over considerable distance.

5.3. Advice for fire-fighters

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

Further information : Fight fire from safe distance or protected location. Contain and collect extinguishing water.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.



Keep people away from and upwind of spill/leak.

Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Remove all sources of ignition.

Pay attention to flashback.

6.2. Environmental precautions

Environmental precautions : Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

After spillage and/or leakage : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

If the product contaminates rivers and lakes or drains inform respective authorities.

6.4. Reference to other sections

Refer to protective measures listed in sections 7 and 8.

Refer to disposal considerations listed in section 13.

7. Handling and storage

7.1. Handling

Handling : Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray.

7.2. Storage

Storage : Keep out of reach of uninformed persons, children and animals. Store in tightly closed container, with original label, in a shaded, well-ventilated area, away from heat, sparks and other sources of



ignition. Observe all warnings and precautions listed for the product. Do not contaminate water, fertilizer, food or feed in storage.

7.3. Specific use(s)

Registered Crop Protection products: For proper and safe use of this product, please refer to the approval conditions laid down on the product label.

8. Exposure controls/personal protection

8.1. Exposure limit values

Components with PNEC : No information available.

Components with DNEL : No information available

8.2. Exposure controls

Engineering measures : Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.

The extent of these protection measures depends on the actual risks in use.

If airborne mists or vapors are generated, use local exhaust ventilation controls.

Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.

Where necessary, seek additional occupational hygiene advice.

Protective measures : The use of technical measures should always have priority over the use of personal protective equipment.

When selecting personal protective equipment, seek appropriate professional advice.

Personal protective equipment should be certified to appropriate standards.

-Respiratory protection : A combination gas, vapor and particulate respirator may be necessary until effective technical measures are installed.

Protection provided by air-purifying respirators is limited.

Use a self-contained breathing apparatus in cases of emergency



spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

-Skin protection : Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material.

Wash with soap and water after removing protective clothing.

Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.)

Wear as appropriate:

impervious protective suit

-Hand protection : Chemical resistant gloves should be used.

Gloves should be certified to an appropriate standard.

Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure.

The breakthrough time of gloves varies according to the thickness, material and manufacturer.

Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Suitable material

Nitrile rubber.

-Eye protection : Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm.

Emergency eye wash facilities are also recommended in an area close to where this product is being used.

9. Physical And Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state : Liquid

Colour : Yellowish liquid

Odor : Characteristic odor

pH : 6.0-8.0



Melting point	:	No data available
Boiling point/boiling range	:	> 170°C
Flammability	:	Not flammable
Density	:	0.984 g/cm ³ at 20°C
Viscosity, dynamic	:	5.0 mPa.s at 20°C; 3.0 mPa.s at 40°C
Viscosity, kinematic	:	4.9 mm ² /s at 20°C; 2.9 mm ² /s at 40°C
Explosive properties	:	Not explosive
Oxidising properties	:	Not oxidising
Miscibility	:	Miscible
Surface tension	:	30.9 mN/m at 25°C
Water/oil partition coefficient:	:	Log P = 3.65 (Propiconazole Technical)

10. Stability And Reactivity

10.1. Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.2. Materials to avoid

Materials to avoid : No information available

10.3. Hazardous decomposition products

Hazardous decomposition products : Combustion or thermal decomposition will evolve toxic and irritant decomposition vapors.

11. Toxicological information

11.1. Information on toxicological effects

Acute toxicity:

Acute oral LD ₅₀ for rats	:	>2010 mg/kg
Acute dermal LD ₅₀ for rats	:	>2010 mg/kg
Inhalation LD ₅₀ for rats	:	>9.46 mg/L
Skin irritation for rabbit	:	Non-irritating to the skin
Eye irritation for rabbit	:	Not irritating to eyes
Skin sensitization	:	Not a skin sensitizer (Guinea pig)



Reproductive effects	:	Propiconazole: Did not show reproductive toxicity effects in animal experiments.
Mutagenic effects	:	Propiconazole: Did not show mutagenic effects in animal experiments.
Carcinogenic effects	:	Propiconazole: Did not show carcinogenic effects in animal experiments.
Organ toxicity	:	STOT - single exposure : May cause drowsiness or dizziness. STOT - repeated exposure Propiconazole: No adverse effect has been observed in chronic toxicity tests.

12. Ecological information

12.1. Ecotoxicity

Effects on fish	:	LC ₅₀ (96 h) for Rainbow trout is 8.02 mg/L
Effects on aquatic invertebrates	:	EC ₅₀ (48 h) for Daphnia magna is 26 mg/L
Effects on algae	:	EC ₅₀ (72 h) for Scenedesmus subspicatus is 0.88 mg/L
Effects on birds	:	Oral LD ₅₀ for Mallard duck, Bobwhite quail is >2510 a.i.mg/kg
Effects on bees	:	Oral LD ₅₀ (48 h) is > 100 a.i.µg/bee; contact LD ₅₀ (48 h) is > 100 a.i.µg/bee
Effects on earthworms	:	Acute LC ₅₀ (14 day) is 686 a.i.mg/kg

12.2. Mobility

Mobility	:	Low to medium mobility in soil.
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12.3. Persistence and degradability

Persistence and degradability	:	Stability in water Propiconazole: Degradation half life: 28 - 64 d. Propiconazole is stable in water. Stability in soil Propiconazole: Degradation half life: 66 - 170 d. Not persistent in soil.
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12.4. Bioaccumulative potential

Bioaccumulative potential : The bioaccumulative potential is threshold for concern based on the BCF is 116 for whole fish.

12.4. Mobility in soil

Mobility : Low to medium mobility in soil.

12.5. Other adverse effects

Other relevant hazardous effects in the environment are not known.

13. Disposal Considerations

13.1. Waste treatment methods

Waste from Residues / Unused Products : Disposal should be in accordance with applicable regional, national and local laws and regulations.

Disposal of product : Do not contaminate ponds, waterways or ditches with chemical or used container.

Do not dispose of waste into sewer.

Where possible recycling is preferred to disposal or incineration.

If recycling is not practicable, dispose of in compliance with local regulations.

Disposal of packaging : Empty remaining contents.

Triple rinse containers.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Do not re-use empty containers.

14. Transport Information

ADR/RID

-UN No. : 3082

-Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Propiconazole)

-Packing group : III



-Class : 9
-Environmental Hazards : yes
-Special precautions for user : None known

IMDG/IMO

-UN No. : 3082
-Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Propiconazole)
-Packing group : III
-Class : 9
-Marine pollutant : yes
-Special precautions for user : None known

IATA/ICAO

-UN No. : 3082
-Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Propiconazole)
-Packing group : III
-Class : 9
-Environmental Hazard : yes
-Special Provisions : None known

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS-Labeling

Hazard pictograms :



Signal word : Danger

Hazard statements : H226: Flammable liquid and vapour.

H303: May be harmful if swallowed.

H304: May be fatal if swallowed and enters airways.



	H315: Causes skin irritation.
	H319: Causes serious eye irritation.
	H336: May cause drowsiness or dizziness.
	H411: Toxic to aquatic life with long lasting effects.
Precautionary statements	: P102: Keep out of reach of children.
	P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
	P270: Do not eat, drink or smoke when using this product.
	P280: Wear protective gloves/ protective clothing/eye protection/ face protection.
	P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
	P331: Do NOT induce vomiting.
	P501: Dispose of contents/ container to an approved waste disposal plant.
Supplemental information	: EUH401: To avoid risks to human health and the environment, comply with the instructions for use.
	Contains propiconazole. May produce an allergic reaction.

15.2. Chemical Safety Assessment

A chemical safety assessment is not required to be included for this product.

16. Other Information

Full text of R-phrases referred to under sections 2 and 3

R10: Flammable.

R22: Harmful if swallowed.

R36/38: Irritating to eyes and skin.

R37/38: Irritating to respiratory system and skin.

R38: Irritating to skin.

R41: Risk of serious damage to eyes.

R43: May cause sensitization by skin contact.

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.



R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65: Harmful: may cause lung damage if swallowed.

R67: Vapours may cause drowsiness and dizziness.

Full text of H-Statements referred to under sections 2 and 3

H226: Flammable liquid and vapour.

H302: Harmful if swallowed.

H303: May be harmful if swallowed.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H336: May cause drowsiness or dizziness.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

H411: Toxic to aquatic life with long lasting effects.

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.