

# SAFETY DATA SHEET



## TOPGUARD 300 SC

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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

**Product name** TOPGUARD 300 SC

#### Other means of identification

**Product code** 50001704

#### 1.2 **Relevant identified uses of the substance or mixture and uses advised against**

Use of the Sub-  
stance/Mixture : Fungicide

Recommended restrictions  
on use : Use as recommended by the label.

#### 1.3 Details of the supplier of the safety data sheet

#### Supplier Address

FMC Chemicals (Pty) Ltd  
Company Registration Number: 1988/001451/07  
West End Office Park, Building C  
Cnr. West Ave & Hall Street  
Centurion, 0014

E-mail address: SDS-Info@fmc.com (E-Mail General Information)

#### 1.4 Emergency telephone

For leak, fire, spill or accident emergencies, call:  
South Africa: 0-800-983-611 (CHEMTREC)

Medical emergency:  
For any emergency or poisoning contact: Griffon Poison Information Centre (24 hrs) - +27-(0)-82-446-8946

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### SECTION 2: Hazards identification

#### 2.1 **Classification of the substance or mixture**

#### **Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4 H332: Harmful if inhaled.

Eye irritation, Category 2 H319: Causes serious eye irritation.

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Reproductive toxicity, Category 2      H361d: Suspected of damaging the unborn child.  
Long-term (chronic) aquatic hazard, Category 2      H411: Toxic to aquatic life with long lasting effects.

### 2.2 Label elements

#### Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H361d Suspected of damaging the unborn child.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.  
P261 Avoid breathing mist or vapors.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.  
**Response:**  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P391 Collect spillage.

Hazardous ingredients which must be listed on the label:  
tebuconazole (ISO)

#### Additional Labeling

EUH208 Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No.	Classification	Concentration (% w/w)
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	Index-No. Registration number		
tebuconazole (ISO)	107534-96-3 403-640-2 603-197-00-7	Acute Tox. 4; H302 Eye Irrit. 2; H319 Repr. 2; H361d Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10	>= 10 - < 20
(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol	76674-21-0	Acute Tox. 4; H302 STOT SE 3; H335 (Respiratory system) Aquatic Chronic 2; H411	>= 2.5 - < 10
Alcohols, C13-15, branched and linear, ethoxylated	157627-86-6 500-337-8	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 2; H411  M-Factor (Acute aquatic toxicity): 1	>= 2.5 - < 3
Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts	68425-94-5	Eye Irrit. 2; H319 Aquatic Chronic 3; H412	>= 1 - < 2.5
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 2; H411  M-Factor (Acute aquatic toxicity): 10	>= 0.0025 - < 0.025

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

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

Risks : Causes serious eye irritation.

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Harmful if inhaled.  
Suspected of damaging the unborn child.

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

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**SECTION 5: Firefighting measures****5.1 Extinguishing media**

- Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, water spray or regular foam.
- Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.

**5.2 Special hazards arising from the substance or mixture**

- Hazardous combustion products : Thermal decomposition can lead to release of irritating gases and vapors.  
Nitrogen oxides (NO<sub>x</sub>)  
Carbon oxides  
Fluorinated compounds

**5.3 Advice for firefighters**

- Special protective equipment for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.
- Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.  
Use a water spray to cool fully closed containers.
- Further information : Standard procedure for chemical fires.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- 

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

- Personal precautions : Evacuate personnel to safe areas.  
Use personal protective equipment.  
If it can be safely done, stop the leak.  
Do not touch or walk through the spilled material.  
Never return spills in original containers for re-use.  
For disposal considerations see section 13.

**6.2 Environmental precautions**

- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Try to prevent the material from entering drains or water courses.

**6.3 Methods and material for containment and cleaning up**

- Methods for cleaning up : Contain spillage, soak up with non-combustible absorbent
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material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).  
Pick up and transfer to properly labeled containers.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Advice on safe handling : For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Dispose of rinse water in accordance with local and national regulations.  
Avoid formation of respirable particles.
- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Hygiene measures : General industrial hygiene practice. Avoid contact with skin, eyes and clothing. Do not inhale aerosol.

### 7.2 Conditions for safe storage, including any incompatibilities

### 7.3 Specific end use(s)

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Routes of exposure	Potential health effects	Value
propane-1,2-diol	Workers	Inhalation	Long-term systemic effects	168 mg/m <sup>3</sup>
	Workers	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>
	Consumers	Inhalation	Long-term systemic effects	50 mg/m <sup>3</sup>
	Consumers	Inhalation	Long-term local effects	10 mg/m <sup>3</sup>
1,2-benzisothiazol-3(2H)-one	Workers	Inhalation	Long-term systemic effects	6.81 mg/m <sup>3</sup>
	Workers	Dermal	Long-term systemic effects	0.966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1.2 mg/m <sup>3</sup>
	Consumers	Dermal	Long-term systemic effects	0.345 mg/kg

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### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
propane-1,2-diol	Fresh water	260 mg/l
	Intermittent use/release	183 mg/l
	Sea water	26 mg/l
	Sewage treatment plant	20 g/l
	Fresh water sediment	572 mg/kg
1,2-benzisothiazol-3(2H)-one	Sea sediment	57.2 mg/kg
	Soil	50 mg/kg
	Fresh water	0.00403 mg/l
1,2-benzisothiazol-3(2H)-one	Sea water	0.000403 mg/l
	Sewage treatment plant	1.03 mg/l
	Fresh water sediment	0.0499 mg/l
	Sea sediment	0.00499 mg/l

## 8.2 Exposure controls

### Personal protective equipment

- Eye protection : Safety glasses
- Hand protection  
Material : Protective gloves
- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Skin and body protection : Protective suit
- Protective measures : Plan first aid action before beginning work with this product.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance : liquid
- Color : off-white  
cloudy
- Odor : unpleasant  
Faint odour
- Odor Threshold : No data available
- pH : 9.1 (25 °C)  
(undiluted)  
7.1 (25 °C)  
(1% solution in water)

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Melting point/range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 95 °C Method: Pensky-Martens closed cup
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Density	:	1,080 g/l
Solubility(ies) Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, dynamic	:	1,100 - 1,500 mPa.s
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing

### 9.2 Other information

Self-ignition	:	> 400 °C
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

### 10.2 Chemical stability

### 10.3 Possibility of hazardous reactions

### 10.4 Conditions to avoid

Conditions to avoid	:	Avoid extreme temperatures Avoid formation of aerosol.
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### 10.5 Incompatible materials

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Materials to avoid : Avoid strong acids, bases, and oxidizers.

### 10.6 Hazardous decomposition products

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Harmful if inhaled.

#### Product:

- Acute oral toxicity : LD50 Oral (Rat): 5,000 mg/kg  
Method: OECD Test Guideline 425  
Assessment: The component/mixture is minimally toxic after single ingestion.
- Acute inhalation toxicity : LC50 (Rat): > 2.03 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The component/mixture is moderately toxic after short term inhalation.
- Acute dermal toxicity : LD50 Dermal (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

#### Components:

##### **tebuconazole (ISO):**

- Acute oral toxicity : LD50 (Rat, female): 1,700 mg/kg  
LD50 (Mouse): 3,000 mg/kg ca.  
Acute toxicity estimate: 1,700 mg/kg  
Method: Calculation method
- Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist
- Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

- Acute oral toxicity : LD50 (Rat): 1,140 - 1,480 mg/kg  
Acute toxicity estimate: 1,140 mg/kg  
Method: Calculation method
- Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l  
Exposure time: 4 h



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Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402

### **Alcohols, C13-15, branched and linear, ethoxylated:**

Acute oral toxicity : LD50 (Rat): 500 - 2,000 mg/kg

Acute toxicity estimate: 500 mg/kg  
Method: Calculation method

### **Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

### **1,2-benzisothiazol-3(2H)-one:**

Acute oral toxicity : LD50 (Rat, male and female): 490 mg/kg  
Method: OECD Test Guideline 401

Acute toxicity estimate: 490 mg/kg  
Method: Calculation method

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

### **Skin corrosion/irritation**

Not classified based on available information.

### **Product:**

Method : OECD Test Guideline 404  
Result : slight irritation

### **Components:**

#### **tebuconazole (ISO):**

Species : Rabbit  
Result : No skin irritation

#### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

### **Alcohols, C13-15, branched and linear, ethoxylated:**

Result : No eye irritation

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### **Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Remarks : No data available

### **1,2-benzisothiazol-3(2H)-one:**

Species : Rabbit  
Exposure time : 72 h  
Method : OECD Test Guideline 404  
Result : No skin irritation

### **Serious eye damage/eye irritation**

Causes serious eye irritation.

### **Product:**

Method : OECD Test Guideline 405  
Result : Eye irritation

### **Components:**

#### **tebuconazole (ISO):**

Species : Rabbit  
Result : Mild eye irritation

#### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : No eye irritation

### **Alcohols, C13-15, branched and linear, ethoxylated:**

Result : Irreversible effects on the eye

### **Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Result : Eye irritation

### **1,2-benzisothiazol-3(2H)-one:**

Species : Bovine cornea  
Method : OECD Test Guideline 437  
Result : No eye irritation

Species : Rabbit  
Method : EPA OPP 81-4  
Result : Irreversible effects on the eye

### **Respiratory or skin sensitization**

#### **Skin sensitization**

Not classified based on available information.

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### Respiratory sensitization

Not classified based on available information.

#### Product:

Species : mice  
Method : OECD Test Guideline 429  
Result : Does not cause skin sensitization.

#### Components:

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Test Type : Local lymph node assay (LLNA)  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : Not a skin sensitizer.

##### **1,2-benzisothiazol-3(2H)-one:**

Test Type : Maximization Test  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : May cause sensitization by skin contact.

Species : Guinea pig  
Method : FIFRA 81.06  
Result : May cause sensitization by skin contact.

### Germ cell mutagenicity

Not classified based on available information.

#### Components:

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Genotoxicity in vivo : Test Type: dominant lethal test  
Method: OECD Test Guideline 478  
Result: negative

##### **1,2-benzisothiazol-3(2H)-one:**

Genotoxicity in vitro : Test Type: gene mutation test  
Test system: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

Test Type: Ames test  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive

Genotoxicity in vivo : Test Type: unscheduled DNA synthesis assay  
Species: Rat (male)

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Cell type: Liver cells  
Application Route: Ingestion  
Exposure time: 4 h  
Method: OECD Test Guideline 486  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

### **Carcinogenicity**

Not classified based on available information.

#### **Components:**

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Species : Mouse  
Exposure time : 2 Years  
NOAEL : 1.2 mg/kg bw/day  
Result : negative

Species : Rat  
Exposure time : 2 Years  
NOAEL : 1 mg/kg bw/day  
Result : negative

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

### **Reproductive toxicity**

Suspected of damaging the unborn child.

#### **Product:**

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

#### **Components:**

##### **tebuconazole (ISO):**

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Reproductive toxicity - Assessment : Animal testing did not show any effects on fertility.  
Animal testing showed no developmental toxicity.

##### **1,2-benzisothiazol-3(2H)-one:**

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Effects on fertility : Species: Rat, male  
Application Route: Ingestion  
General Toxicity Parent: NOAEL: 18.5 mg/kg body weight  
General Toxicity F1: NOAEL: 48 mg/kg body weight  
Fertility: NOAEL: 112 mg/kg wet weight  
Symptoms: No effects on reproduction parameters.  
Method: OPPTS 870.3800  
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

### STOT-single exposure

Not classified based on available information.

#### Components:

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Assessment : May cause respiratory irritation.

### STOT-repeated exposure

Not classified based on available information.

#### Components:

##### **1,2-benzisothiazol-3(2H)-one:**

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Repeated dose toxicity

#### Components:

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Species : Rat  
NOAEL : 13.3 mg/kg bw/day  
Application Route : Oral - feed  
Exposure time : 90 d  
Symptoms : anemia, Liver effects

Species : Dog  
NOAEL : 5 mg/kg bw/day  
Application Route : Oral  
Exposure time : 90 d  
Symptoms : anemia, Liver effects

##### **1,2-benzisothiazol-3(2H)-one:**

Species : Rat, male and female  
NOAEL : 15 mg/kg  
Application Route : Ingestion  
Exposure time : 28 d  
Method : OECD Test Guideline 407  
Symptoms : Irritation

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Species : Rat, male and female  
NOAEL : 69 mg/kg  
Application Route : Ingestion  
Exposure time : 90 d  
Symptoms : Irritation, Reduced body weight

### Aspiration toxicity

Not classified based on available information.

#### Components:

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

The substance does not have properties associated with aspiration hazard potential.

### Neurological effects

#### Components:

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

No neurotoxicity observed in animal studies.

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## SECTION 12: Ecological information

### 12.1 Toxicity

#### Product:

##### **Ecotoxicology Assessment**

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

#### Components:

##### **tebuconazole (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.4 mg/l  
Exposure time: 96 h  
Test Type: flow-through test

LC50 (Lepomis macrochirus (Bluegill sunfish)): 5.7 mg/l  
Exposure time: 96 h

LC50 (Leuciscus idus (Golden orfe)): 8.7 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 2.79 mg/l  
Exposure time: 48 h  
Test Type: flow-through test

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (algae)): 3.8 mg/l  
Exposure time: 72 h  
Test Type: static test

M-Factor (Acute aquatic tox- : 1

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icity)

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : LC50: 1,381 mg/kg  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : LD50: 1,988 mg/kg  
Species: Colinus virginianus (Bobwhite quail)

LD50: > 200 µg/bee  
Species: Apis mellifera (bees)  
Remarks: Contact

LD50: > 83 µg/bee  
Exposure time: 48 h  
Species: Apis mellifera (bees)

### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 61 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 78 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : IC50 (Selenastrum capricornutum (green algae)): 12 mg/l  
Exposure time: 96 h

IC50 (Scenedesmus subspicatus): 1.9 mg/l  
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC: 6.2 mg/l  
Exposure time: 28 d  
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.31 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

Toxicity to soil dwelling organisms : NOEC:  
0.01 mg/cm<sup>2</sup>  
Exposure time: 180 d  
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : LD50: > 50 µg/bee  
End point: Acute contact toxicity  
Species: Apis mellifera (bees)

LD50: > 2 µg/bee  
End point: Acute oral toxicity  
Species: Apis mellifera (bees)

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LD50: > 5,000 mg/kg  
Species: Anas platyrhynchos (Mallard duck)

### Alcohols, C13-15, branched and linear, ethoxylated:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1 - 10 mg/l  
Exposure time: 48 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1 - 10 mg/l  
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EC50 (Scenedesmus subspicatus): 1 - 10 mg/l  
Exposure time: 72 h
- M-Factor (Acute aquatic toxicity) : 1
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.1 - 1 mg/l

### Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:

- Toxicity to fish : LC50 (Zebra fish): > 10 - 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials
- EC10 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: > 10 - 100 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

### 1,2-benzisothiazol-3(2H)-one:

- Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 16.7 mg/l



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Exposure time: 96 h

Test Type: static test

LC50 (Oncorhynchus mykiss (rainbow trout)): 2.15 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.9 mg/l

Exposure time: 48 h

Test Type: static test

Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.070 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.04 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (activated sludge): 24 mg/l

Exposure time: 3 h

Test Type: Respiration inhibition

Method: OECD Test Guideline 209

EC50 (activated sludge): 12.8 mg/l

Exposure time: 3 h

Test Type: Respiration inhibition

Method: OECD Test Guideline 209

### 12.2 Persistence and degradability

#### Components:

##### **tebuconazole (ISO):**

Biodegradability : Result: Not readily biodegradable.

##### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Biodegradability : Result: Not readily biodegradable.

##### **Alcohols, C13-15, branched and linear, ethoxylated:**

Biodegradability : Result: Readily biodegradable.

##### **Residues (petroleum), catalytic reformer fractionator, sulfonated, polymers with formaldehyde, sodium salts:**

Biodegradability : Result: Not readily biodegradable.

Remarks: Based on data from similar materials

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### **1,2-benzisothiazol-3(2H)-one:**

Biodegradability : Result: rapidly biodegradable  
Method: OECD Test Guideline 301C

### **12.3 Bioaccumulative potential**

#### **Components:**

#### **tebuconazole (ISO):**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 3.7 (20 °C)

#### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Bioaccumulation : Species: Salmo gairdneri  
Bioconcentration factor (BCF): 7  
Remarks: Bioaccumulation is unlikely.  
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 2.29

#### **Alcohols, C13-15, branched and linear, ethoxylated:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

#### **1,2-benzisothiazol-3(2H)-one:**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Exposure time: 56 d  
Bioconcentration factor (BCF): 6.62  
Method: OECD Test Guideline 305  
Remarks: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: 0.7 (20 °C)  
pH: 7

log Pow: 0.99 (20 °C)  
pH: 5

### **12.4 Mobility in soil**

#### **Components:**

#### **tebuconazole (ISO):**

Distribution among environmental compartments : Remarks: Low mobility in soil.

#### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Distribution among environmental compartments : Remarks: medium mobility in soil

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mental compartments

### **1,2-benzisothiazol-3(2H)-one:**

Distribution among environmental compartments : Koc: 9.33, log Koc: 0.97  
Method: OECD Test Guideline 121

## 12.5 Results of PBT and vPvB assessment

### **Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 12.6 Other adverse effects

### **Product:**

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### **Components:**

#### **(RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol:**

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.

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## SECTION 14: Transport information

### 14.1 UN number

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**IMDG** : UN 3082

**IATA** : UN 3082

### 14.2 UN proper shipping name

**IMDG** : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Tebuconazole, Flutriafol)

**IATA** : Environmentally hazardous substance, liquid, n.o.s.  
(Tebuconazole, Flutriafol)

### 14.3 Transport hazard class(es)

**IMDG** : 9

**IATA** : 9

### 14.4 Packing group

**IMDG**  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F

**IATA (Cargo)**  
Packing instruction (cargo aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

**IATA (Passenger)**  
Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ) : Y964  
Packing group : III  
Labels : Miscellaneous

### 14.5 Environmental hazards

**IMDG**  
Marine pollutant : yes

**IATA (Passenger)**  
Environmentally hazardous : yes

**IATA (Cargo)**  
Environmentally hazardous : yes

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****The ingredients of this product are reported in the following inventories:**

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL.  tebuconazole (ISO) (RS)-2,4'-difluoro- $\alpha$ -(1H-1,2,4-triazol-1-ylmethyl)benzhydryl alcohol Alcohols, C13-15, branched and linear, ethoxylated
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

**15.2 Chemical Safety Assessment****SECTION 16: Other information****Full text of H-Statements**

H302	:	Harmful if swallowed.
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.
H361d	:	Suspected of damaging the unborn child.
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.
H412	:	Harmful to aquatic life with long lasting effects.

**Full text of other abbreviations**

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Acute Tox.                                : Acute toxicity  
Aquatic Acute                            : Short-term (acute) aquatic hazard  
Aquatic Chronic                         : Long-term (chronic) aquatic hazard  
Eye Dam.                                 : Serious eye damage  
Eye Irrit.                                 : Eye irritation  
Repr.                                        : Reproductive toxicity  
Skin Irrit.                                 : Skin irritation  
Skin Sens.                                 : Skin sensitization  
STOT SE                                    : Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Other information                        :

### Classification of the mixture:

Acute Tox. 4                                H332  
Eye Irrit. 2                                 H319  
Repr. 2                                        H361d  
Aquatic Chronic 2                         H411

### Classification procedure:

Based on product data or assessment  
Based on product data or assessment  
Based on product data or assessment  
Based on product data or assessment

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