

**Enilconazole Liquid Formulation**

Version 4.0      Revision Date: 30.09.2023      SDS Number: 906766-00019      Date of last issue: 04.04.2023  
Date of first issue: 22.09.2016

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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Enilconazole Liquid Formulation

**Manufacturer or supplier's details**

Company : MSD  
Address : 50 Tuas West Drive  
Singapore - Singapore 638408  
Telephone : +1-908-740-4000  
Emergency telephone number : 65 6697 2111 (24/7/365)  
E-mail address : EHSDATASTEWARD@msd.com

**Recommended use of the chemical and restrictions on use**

Recommended use : Veterinary product  
Restrictions on use : Not applicable

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**2. HAZARDS IDENTIFICATION****GHS Classification**

Flammable liquids : Category 3  
Acute toxicity (Oral) : Category 3  
Acute toxicity (Inhalation) : Category 4  
Serious eye damage/eye irritation : Category 2A  
Carcinogenicity : Category 2  
Specific target organ toxicity - repeated exposure : Category 2 (Liver)  
Long-term (chronic) aquatic hazard : Category 1

**GHS label elements**

Hazard pictograms :    

Signal word : Danger

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Hazard statements : H226 Flammable liquid and vapour.  
H301 Toxic if swallowed.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs (Liver) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
P233 Keep container tightly closed.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P391 Collect spillage.

**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste

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disposal plant.

### Other hazards which do not result in classification

Vapours may form explosive mixture with air.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
Sodium bis(2-ethylhexyl)sulfosuccinate	577-11-7	>= 30 -< 50
1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole	35554-44-0	>= 10 -< 20
Benzyl alcohol	100-51-6	>= 1 -< 10
Ethanol#	64-17-5	>= 1 -< 10

# Voluntarily-disclosed substance

### 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.  
Remove contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
If easy to do, remove contact lens, if worn.  
Get medical attention.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Call a physician or poison control centre immediately.  
Rinse mouth thoroughly with water.  
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Gastrointestinal disturbance  
Toxic if swallowed.  
Causes serious eye irritation.  
Harmful if inhaled.  
Suspected of causing cancer.  
May cause damage to organs through prolonged or repeated exposure.
- Protection of first-aiders : First Aid responders should pay attention to self-protection,

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Notes to physician : and use the recommended personal protective equipment when the potential for exposure exists (see section 8).  
: Treat symptomatically and supportively.

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### 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.  
Flash back possible over considerable distance.  
Vapours may form explosive mixtures with air.  
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides  
Sulphur oxides  
Metal oxides

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

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### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Remove all sources of ignition.  
Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Non-sparking tools should be used.  
Soak up with inert absorbent material.  
Suppress (knock down) gases/vapours/mists with a water spray jet.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.

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Clean up remaining materials from spill with suitable absorbent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

### 7. HANDLING AND STORAGE

- |                             |   |   |
|-----------------------------|---|---|
| Technical measures          | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.   |
| Local/Total ventilation     | : | If sufficient ventilation is unavailable, use with local exhaust ventilation.<br>Use explosion-proof electrical, ventilating and lighting equipment.  |
| Advice on safe handling     | : | Do not breathe mist or vapours.<br>Do not swallow.<br>Do not get in eyes.<br>Avoid prolonged or repeated contact with skin.<br>Wash skin thoroughly after handling.<br>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Non-sparking tools should be used.<br>Keep container tightly closed.<br>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>Take precautionary measures against static discharges.<br>Do not eat, drink or smoke when using this product.<br>Take care to prevent spills, waste and minimize release to the environment. |
| Conditions for safe storage | : | Keep in properly labelled containers.<br>Store locked up.<br>Keep tightly closed.<br>Keep in a cool, well-ventilated place.<br>Store in accordance with the particular national regulations.<br>Keep away from heat and sources of ignition.  |
| Materials to avoid          | : | Do not store with the following product types:<br>Self-reactive substances and mixtures<br>Organic peroxides<br>Oxidizing agents<br>Flammable gases<br>Pyrophoric liquids<br>Pyrophoric solids<br>Self-heating substances and mixtures<br>Poisonous gases<br>Explosives   |

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole	35554-44-0	TWA	0.3 mg/m <sup>3</sup> (OEB 2)	Internal
Further information: Skin				
Ethanol	64-17-5	PEL (long term)	1,000 ppm 1,880 mg/m <sup>3</sup>	SG OEL
		STEL	1,000 ppm	ACGIH

**Engineering measures** : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).  
 All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.  
 Laboratory operations do not require special containment.  
 Use explosion-proof electrical, ventilating and lighting equipment.

**Personal protective equipment**

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapour type

Hand protection

Material : Chemical-resistant gloves

Remarks : Take note that the product is flammable, which may impact the selection of hand protection.

Eye protection : Wear safety glasses with side shields or goggles.  
 If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.  
 Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection : Work uniform or laboratory coat.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
 When using do not eat, drink or smoke.  
 Wash contaminated clothing before re-use.  
 The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures,

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industrial hygiene monitoring, medical surveillance and the use of administrative controls.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	:	liquid
Colour	:	light yellow
Odour	:	musty
Odour Threshold	:	No data available
pH	:	9.5
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	45 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	1.094
Solubility(ies) Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity Viscosity, kinematic	:	No data available

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Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

Particle size : No data available

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**10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Flammable liquid and vapour.  
Vapours may form explosive mixture with air.  
Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents  
Acids

Hazardous decomposition products : No hazardous decomposition products are known.

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**11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Toxic if swallowed.  
Harmful if inhaled.

**Product:**

Acute oral toxicity : LD50 (Rat): 192 - 309 mg/kg

Acute inhalation toxicity : LC50 (Rat): 3.1 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 900 mg/kg

**Components:****Sodium bis(2-ethylhexyl)sulfosuccinate:**

Acute oral toxicity : LD50 (Rat): 3,080 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg



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**1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Acute oral toxicity : LD50 (Rat): 227 mg/kg  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI  
  
LD50 (Mouse): 390 - 620 mg/kg  
LD50 (Dog): > 640 mg/kg

Acute inhalation toxicity : LC50 (Rat): 1.84 - 2.88 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : LD50 (Rat): 4,200 - 4,800 mg/kg  
LD50 (Rabbit): 4,200 mg/kg

Acute toxicity (other routes of administration) : LD50 (Rat): 155 mg/kg  
Application Route: Intraperitoneal

**Benzyl alcohol:**

Acute oral toxicity : LD50 (Rat): 1,620 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 4.178 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

**Ethanol:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 124.7 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Species : Rabbit  
Result : Mild skin irritation

**Components:****Sodium bis(2-ethylhexyl)sulfosuccinate:**

Species : Rabbit  
Method : OECD Test Guideline 404

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||Result : Skin irritation

**1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

||Species : Rabbit  
||Result : Mild skin irritation

**Benzyl alcohol:**

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

**Ethanol:**

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

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Product:**

Species : Rabbit  
Result : Moderate eye irritation

**Components:****Sodium bis(2-ethylhexyl)sulfosuccinate:**

||Species : Rabbit  
||Result : Irreversible effects on the eye  
||Method : OECD Test Guideline 405

**1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

||Species : Rabbit  
||Result : Irreversible effects on the eye  
||Remarks : Based on harmonised classification in EU regulation 1272/2008, Annex VI

||Species : Rabbit  
||Result : Moderate eye irritation  
||Remarks : Based on harmonised classification in EU regulation 1272/2008, Annex VI

**Benzyl alcohol:**

||Species : Rabbit  
||Result : Irritation to eyes, reversing within 21 days  
||Method : OECD Test Guideline 405

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**Ethanol:**

Species : Rabbit  
Result : Irritation to eyes, reversing within 21 days  
Method : OECD Test Guideline 405

**Respiratory or skin sensitisation****Skin sensitisation**

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

**Product:**

Species : Guinea pig  
Result : Not a skin sensitizer.

**Components:****Sodium bis(2-ethylhexyl)sulfosuccinate:**

Test Type : Human repeat insult patch test (HRIPT)  
Exposure routes : Skin contact  
Species : Humans  
Result : negative

**1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Test Type : Maximisation Test  
Exposure routes : Dermal  
Species : Guinea pig  
Result : equivocal

Exposure routes : Dermal  
Species : Humans  
Result : Not a skin sensitizer.

**Benzyl alcohol:**

Test Type : Maximisation Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : negative

**Ethanol:**

Test Type : Local lymph node assay (LLNA)  
Exposure routes : Skin contact  
Species : Mouse  
Result : negative

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### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### **Sodium bis(2-ethylhexyl)sulfosuccinate:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative
		Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: equivocal
		Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: negative Remarks: Based on data from similar materials

#### **1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
		Test Type: Chromosomal aberration Test system: Human lymphocytes Result: negative
		Test Type: gene mutation test Test system: Chinese hamster fibroblasts Result: negative
		Test Type: unscheduled DNA synthesis assay Test system: rat hepatocytes Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Rat Application Route: Oral Result: negative
		Test Type: Micronucleus test Species: Mouse Application Route: Oral Result: negative
		Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Mouse Result: negative

#### **Benzyl alcohol:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES)
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		Result: negative
	Genotoxicity in vivo	: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Application Route: Intraperitoneal injection Result: negative

**Ethanol:**

	Genotoxicity in vitro	: Test Type: In vitro mammalian cell gene mutation test Result: negative
		Test Type: Bacterial reverse mutation assay (AMES) Result: negative
	Genotoxicity in vivo	: Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Mouse Application Route: Ingestion Result: equivocal

**Carcinogenicity**

Suspected of causing cancer.

**Components:****1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Species		: Rat
Application Route		: Oral
Exposure time		: 2 Years
NOAEL		: 40 mg/kg body weight
Result		: negative

Species		: Mouse
Application Route		: Oral
Exposure time		: 2 Years
LOAEL		: 33 mg/kg body weight
Result		: positive
Target Organs		: Liver

Species		: Mouse
Application Route		: oral (feed)
Exposure time		: 23 Months
NOAEL		: 8 mg/kg body weight
LOAEL		: 105 mg/kg body weight
Result		: positive
Target Organs		: Liver
Remarks		: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Carcinogenicity - Assessment		: Limited evidence of carcinogenicity in animal studies
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### Benzyl alcohol:

Species	: Mouse
Application Route	: Ingestion
Exposure time	: 103 weeks
Method	: OECD Test Guideline 451
Result	: negative

### Reproductive toxicity

Not classified based on available information.

### Components:

#### Sodium bis(2-ethylhexyl)sulfosuccinate:

Effects on fertility	: Test Type: Three-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
Effects on foetal development	: Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Result: negative

#### 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:

Effects on fertility	: Test Type: Multi-generation study Species: Rat Application Route: Oral General Toxicity - Parent: NOAEL: 20 mg/kg body weight Result: Maternal toxicity observed., Embryotoxic effects and adverse effects on the offspring were detected. Remarks: Not classified due to data which are conclusive although insufficient for classification.
Effects on foetal development	: Test Type: Development Species: Rat Application Route: Oral Developmental Toxicity: LOAEL: 80 mg/kg body weight Result: Reduced foetal weight, Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses Remarks: The effects were seen only at maternally toxic doses.  Test Type: Development Species: Rabbit Application Route: Oral Developmental Toxicity: LOAEL: 10 mg/kg body weight Result: Maternal toxicity observed., No teratogenic effects, Postimplantation loss. Remarks: The effects were seen only at maternally toxic doses.

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**II****Benzyl alcohol:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Species: Rat  
Application Route: Ingestion  
Result: negative  
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Mouse  
Application Route: Ingestion  
Result: negative

**Ethanol:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Mouse  
Application Route: Ingestion  
Result: negative

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

May cause damage to organs (Liver) through prolonged or repeated exposure.

**Components:****1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Target Organs : Liver  
Assessment : May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Product:**

Species : Rabbit  
NOAEL : 1 mg/kg  
Application Route : Dermal  
Exposure time : 21 d  
Symptoms : No adverse effects

**Components:****Sodium bis(2-ethylhexyl)sulfosuccinate:**

Species : Rat  
NOAEL : 750 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days

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**1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Species : Rat  
NOAEL : 5 mg/kg  
LOAEL : 20 mg/kg  
Application Route : Oral  
Exposure time : 3 - 24 Months  
Target Organs : Liver  
Symptoms : decrease in appetite

Species : Dog  
NOAEL : 2.5 mg/kg  
LOAEL : 20 mg/kg  
Application Route : Oral  
Exposure time : 12 Months  
Symptoms : Salivation, Vomiting

Species : Mouse  
NOAEL : 12 mg/kg  
LOAEL : 140 mg/kg  
Application Route : Oral  
Exposure time : 3 Months  
Target Organs : Liver

**Benzyl alcohol:**

Species : Rat  
NOAEL : 1.072 mg/l  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 28 Days  
Method : OECD Test Guideline 412

**Ethanol:**

Species : Rat  
NOAEL : 1,280 mg/kg  
LOAEL : 3,156 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure****Product:**

Inhalation : Remarks: May cause respiratory tract irritation.  
Skin contact : Remarks: May irritate skin.  
Eye contact : Remarks: May irritate eyes.  
Ingestion : Symptoms: Gastrointestinal disturbance, central nervous system effects



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### Components:

#### 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:

Skin contact	:	Symptoms: pruritis, skin rash, Skin irritation
Eye contact	:	Symptoms: Eye irritation
Ingestion	:	Symptoms: Nausea

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### Sodium bis(2-ethylhexyl)sulfosuccinate:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 49 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 6.6 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): 82.5 mg/l Exposure time: 72 h  EC10 (Desmodesmus subspicatus (green algae)): 22 mg/l Exposure time: 72 h
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC10 (Daphnia magna (Water flea)): 9 mg/l Exposure time: 21 d Method: OECD Test Guideline 211
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): 164 mg/l Exposure time: 16 h

##### 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 1.48 mg/l Exposure time: 96 h Method: OECD Test Guideline 203  LC50 (Lepomis macrochirus (Bluegill sunfish)): 3.99 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 3.54 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 1.2 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

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NOEC (Pseudokirchneriella subcapitata (green algae)): 0.457 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): < 0.007 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 10

**Benzyl alcohol:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 460 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 230 mg/l  
 Exposure time: 48 h  
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 310 mg/l  
 Exposure time: 72 h  
 Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 51 mg/l  
 Exposure time: 21 d  
 Method: OECD Test Guideline 211

**Ethanol:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1,000 mg/l  
 Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia (water flea)): > 1,000 mg/l  
 Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l  
 Exposure time: 72 h

EC10 (Chlorella vulgaris (Fresh water algae)): 11.5 mg/l  
 Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 9.6 mg/l  
 Exposure time: 9 d

Toxicity to microorganisms : EC50 (Pseudomonas putida): 6,500 mg/l

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Exposure time: 16 h

**Persistence and degradability****Components:****Sodium bis(2-ethylhexyl)sulfosuccinate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 91.2 %  
Exposure time: 28 d

**1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Biodegradability : Result: not rapidly degradable  
Biodegradation: 50 %  
Exposure time: 166 d

**Benzyl alcohol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 92 - 96 %  
Exposure time: 14 d

**Ethanol:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 84 %  
Exposure time: 20 d

**Bioaccumulative potential****Components:****Sodium bis(2-ethylhexyl)sulfosuccinate:**

Partition coefficient: n-octanol/water : log Pow: 1.998  
Remarks: Calculation

**1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**

Partition coefficient: n-octanol/water : log Pow: 3.82

**Benzyl alcohol:**

Partition coefficient: n-octanol/water : log Pow: 1.05

**Ethanol:**

Partition coefficient: n-octanol/water : log Pow: -0.35

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### Mobility in soil

#### Components:

#### 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:

Distribution among environmental compartments : log Koc: 3.82

#### Other adverse effects

No data available

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## 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Do not dispose of waste into sewer.  
Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Empty containers retain residue and can be dangerous.  
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.  
If not otherwise specified: Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number : UN 1992

Proper shipping name : FLAMMABLE LIQUID, TOXIC, N.O.S.  
(Ethanol, 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)

Class : 3

Subsidiary risk : 6.1

Packing group : III

Labels : 3 (6.1)

Environmentally hazardous : yes

#### IATA-DGR

UN/ID No. : UN 1992

Proper shipping name : Flammable liquid, toxic, n.o.s.  
(Ethanol, 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)

Class : 3

Subsidiary risk : 6.1

Packing group : III

Labels : Flammable Liquids, Toxic

Packing instruction (cargo aircraft) : 366

Packing instruction (passenger aircraft) : 355

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**IMDG-Code**

UN number	:	UN 1992
Proper shipping name	:	FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol, 1-[2-(allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)
Class	:	3
Subsidiary risk	:	6.1
Packing group	:	III
Labels	:	3 (6.1)
EmS Code	:	F-E, S-D
Marine pollutant	:	yes

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**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.

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**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.**

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations	:	Anionic surface active agents
Fire Safety (Petroleum and Flammable Materials) Regulations	:	Ethanol

**The components of this product are reported in the following inventories:**

AICS	:	not determined
DSL	:	not determined
IECSC	:	not determined

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**16. OTHER INFORMATION**

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**Further information**

Sources of key data used to compile the Safety Data	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen-
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Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Date format : dd.mm.yyyy

**Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
SG OEL : Singapore. Workplace Safety and Health (General Provisions) Regulations - First Schedule Permissible Exposure Limits of Toxic Substances.

ACGIH / STEL : Short-term exposure limit  
SG OEL / PEL (long term) : Permissible Exposure Level (PEL) Long Term

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text.

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Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

SG / EN