SAFETY DATA SHEET

Enilconazole Liquid Formulation

Version 5.0  Revision Date: 23.03.2020  SDS Number: 906751-00011  Date of last issue: 13.09.2019

Date of first issue: 22.09.2016

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Enilconazole Liquid Formulation

Manufacturer or supplier’s details

Company: MSD
Address: Rua Coronel Bento Soares, 530 Cruzeiro - Sao Paulo - Brazil  CEP 12730-340
Telephone: 908-740-4000
Emergency telephone: 1-908-423-6000
E-mail address: EHSDATASTEWARD@msd.com
Telefax: 908-735-1496

Recommended use of the chemical and restrictions on use

Recommended use: Veterinary product

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with ABNT NBR 14725 Standard

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

GHS label elements in accordance with ABNT NBR 14725 Standard

Hazard pictograms:

Signal Word: Danger
Hazard Statements:
- H226 Flammable liquid and vapor.
- 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.
- H401 Toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements:
- Prevention:
  - P201 Obtain special instructions before use.
  - P210 Keep away from heat/ sparks/ open flames/ hot surfaces.
  - No smoking.
  - 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.
  - P391 Collect spillage.

Other hazards which do not result in classification:
Vapors may form explosive mixture with air.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bis(2-ethylhexyl)sulfosuccinate</td>
<td>577-11-7</td>
<td>Acute toxicity (Oral), Category 5</td>
<td>&gt;= 30 - &lt; 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin irritation, Category 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Serious eye damage, Category 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short-term (acute) aquatic hazard, Category 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole</td>
<td>35554-44-0</td>
<td>Acute toxicity (Oral), Category 3</td>
<td>&gt;= 10 - &lt; 20</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity (Inhalation), Category 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity (Dermal), Category 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Serious eye damage, Category 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carcinogenicity, Category 2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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| Benzyl alcohol | 100-51-6 | Acute toxicity (Oral), Category 4
|               |         | Acute toxicity (Inhalation), Category 4
|               |         | Eye irritation, Category 2A
| Ethanol       | 64-17-5 | Flammable liquids, Category 2
|               |         | Eye irritation, Category 2A

SECTION 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 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 center 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, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician: Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
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.
Vapors may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides
Sulfur 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 fire-fighters: In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Remove all sources of ignition.
Use personal protective equipment.
Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Discharge into the environment must be avoided.
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/vapors/mists with a water spray jet.
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
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.

SECTION 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.
If advised by assessment of the local exposure potential, use only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling : Do not breathe vapors or spray mist.
Do not swallow.
Do not get in eyes.
Avoid prolonged or repeated contact with skin.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.

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

Conditions for safe storage : Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.
Keep away from heat and sources of ignition.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures which in contact with water emit flammable gases
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSOAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole</td>
<td>35554-44-0</td>
<td>TWA</td>
<td>0.3 mg/m³ (OEB 2)</td>
<td>Internal</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>LT</td>
<td>780 ppm</td>
<td>BR OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1.480 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>1.000 ppm</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

Further information: Skin

Further information: Degree of harmfulness: minimum

Engineering measures: Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless 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.

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 vapor type

Hand protection: 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: light yellow
### Enilconazole Liquid Formulation

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odor</td>
<td>musty</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>9.5</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>45 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.094</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
<tr>
<td>Particle size</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### SECTION 10. STABILITY AND REACTIVITY
## Reactivity
Not classified as a reactivity hazard.

## Chemical stability
Stable under normal conditions.

## Possibility of hazardous reactions
Flammable liquid and vapor. Vapors 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.

### SECTION 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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Acute oral toxicity</th>
<th>Acute dermal toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium bis(2-ethylhexyl)sulfosuccinate:</td>
<td>LD50 (Rat): 3.080 mg/kg</td>
<td>LD50 (Rabbit): &gt; 5.000 mg/kg</td>
</tr>
<tr>
<td>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:</td>
<td>LD50 (Rat): 227 mg/kg</td>
<td>LD50 (Mouse): 390 - 620 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 (Mouse): 390 - 620 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 (Dog): &gt; 640 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LC50 (Rat): 1.84 - 2.88 mg/l Exposure time: 4 h Test atmosphere: dust/mist</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI</td>
<td></td>
</tr>
</tbody>
</table>
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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: vapor

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
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

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

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

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
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)
- **Routes of exposure**: Skin contact
- **Species**: Humans
- **Result**: negative

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
- **Test Type**: Maximization Test
- **Routes of exposure**: Dermal
- **Species**: Guinea pig
- **Result**: equivocal
- **Species**: Humans
- **Result**: Not a skin sensitizer.

Benzyl alcohol:
- **Test Type**: Maximization Test
- **Routes of exposure**: Skin contact
- **Species**: Guinea pig
- **Method**: OECD Test Guideline 406
- **Result**: negative

Ethanol:
- **Test Type**: Local lymph node assay (LLNA)
- **Routes of exposure**: Skin contact
- **Species**: Mouse
- **Result**: negative

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)
    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:

<table>
<thead>
<tr>
<th>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species</strong> : Rat</td>
</tr>
<tr>
<td><strong>Application Route</strong> : Oral</td>
</tr>
<tr>
<td><strong>Exposure time</strong> : 2 Years</td>
</tr>
<tr>
<td><strong>NOAEL</strong> : 40 mg/kg body weight</td>
</tr>
<tr>
<td><strong>Result</strong> : negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species : Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application Route</strong> : Oral</td>
</tr>
<tr>
<td><strong>Exposure time</strong> : 2 Years</td>
</tr>
<tr>
<td><strong>LOAEL</strong> : 33 mg/kg body weight</td>
</tr>
<tr>
<td><strong>Result</strong> : positive</td>
</tr>
<tr>
<td><strong>Target Organs</strong> : Liver</td>
</tr>
</tbody>
</table>

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

| Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies |

<table>
<thead>
<tr>
<th>Benzyl alcohol:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species</strong> : Mouse</td>
</tr>
<tr>
<td><strong>Application Route</strong> : Ingestion</td>
</tr>
<tr>
<td><strong>Exposure time</strong> : 103 weeks</td>
</tr>
<tr>
<td><strong>Method</strong> : OECD Test Guideline 451</td>
</tr>
<tr>
<td><strong>Result</strong> : negative</td>
</tr>
</tbody>
</table>

### Reproductive toxicity

Not classified based on available information.

### Components:

<table>
<thead>
<tr>
<th>Sodium bis(2-ethylhexyl)sulfosuccinate:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effects on fertility</strong> : Test Type: Three-generation reproduction toxicity study</td>
</tr>
<tr>
<td>Species: Rat</td>
</tr>
<tr>
<td>Application Route: Ingestion</td>
</tr>
<tr>
<td>Result: negative</td>
</tr>
</tbody>
</table>

| Effects on fetal development : Test Type: Embryo-fetal development |
| Species: Rat                                                |
| Application Route: Ingestion                               |
| Result: negative                                           |

<table>
<thead>
<tr>
<th>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effects on fertility</strong> : Test Type: Multi-generation study</td>
</tr>
</tbody>
</table>


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 fetal development:

 Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 80 mg/kg body weight
Result: Reduced fetal 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.

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 fetal development:

 Test Type: Embryo-fetal 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.
SAFETY DATA SHEET

Enilconazole Liquid Formulation

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

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

Species:
- 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

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

SECTION 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
- 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:**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to fish</td>
<td>LC50 (Oncorhyncus mykiss (rainbow trout)): 1,48 mg/l&lt;br&gt;Exposure time: 96 h&lt;br&gt;Method: OECD Test Guideline 203</td>
</tr>
<tr>
<td>Toxicity to fish</td>
<td>LC50 (Lepomis macrochirus (Bluegill sunfish)): 3,99 mg/l&lt;br&gt;Exposure time: 96 h&lt;br&gt;Method: OECD Test Guideline 203</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>EC50 (Daphnia magna (Water flea)): 3,54 mg/l&lt;br&gt;Exposure time: 48 h&lt;br&gt;Method: OECD Test Guideline 202</td>
</tr>
<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>EC50 (Pseudokirchneriella subcapitata (green algae)): 1,2 mg/l&lt;br&gt;Exposure time: 72 h&lt;br&gt;Method: OECD Test Guideline 201</td>
</tr>
<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>NOEC (Pseudokirchneriella subcapitata (green algae)): 0,457 mg/l&lt;br&gt;Exposure time: 72 h&lt;br&gt;Method: OECD Test Guideline 201</td>
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<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>NOEC (Daphnia magna (Water flea)): &lt; 0,007 mg/l&lt;br&gt;Exposure time: 21 d&lt;br&gt;Method: OECD Test Guideline 211</td>
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<td>M-Factor (Chronic aquatic toxicity)</td>
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**Benzyl alcohol:**

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<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Toxicity to fish</td>
<td>LC50 (Pimephales promelas (fathead minnow)): 460 mg/l&lt;br&gt;Exposure time: 96 h</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>EC50 (Daphnia magna (Water flea)): 230 mg/l&lt;br&gt;Exposure time: 48 h&lt;br&gt;Method: OECD Test Guideline 202</td>
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<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>EC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l&lt;br&gt;Exposure time: 72 h&lt;br&gt;Method: OECD Test Guideline 201</td>
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<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>NOEC (Pseudokirchneriella subcapitata (green algae)): 310 mg/l&lt;br&gt;Exposure time: 72 h&lt;br&gt;Method: OECD Test Guideline 201</td>
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<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>NOEC (Daphnia magna (Water flea)): 51 mg/l&lt;br&gt;Exposure time: 21 d&lt;br&gt;Method: OECD Test Guideline 211</td>
</tr>
</tbody>
</table>

**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
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

**1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**
Enilconazole Liquid Formulation

Distribution among environmental compartments:
- Benzyl alcohol: log Pow: 1.05
- Ethanol: log Pow: -0.35
- Mobility in soil: log Koc: 3.82

Components:

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

Other adverse effects:
- No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods:
- Waste from residues: 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

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN 1992</th>
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</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>FLAMMABLE LIQUID, TOXIC, N.O.S. (Ethanol, 1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)</td>
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</table>

<table>
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<tr>
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<td>Labels</td>
<td>3 (6.1)</td>
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IATA-DGR

<table>
<thead>
<tr>
<th>UN/ID No.</th>
<th>UN 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper shipping name</td>
<td>Flammable liquid, toxic, n.o.s. (Ethanol, 1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>3</th>
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<tbody>
<tr>
<td>Subsidiary risk</td>
<td>6.1</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Enilconazole Liquid Formulation

Packing group : III
Labels : Flammable Liquids, Toxic
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355

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 polluant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

ANTT
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)
Hazard Identification Number : 36

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.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
National List of Carcinogenic Agents for Humans - (LINACH) : Not applicable
Brazil. List of chemicals controlled by the Federal Police : Ethanol

International Regulations
The ingredients of this product are reported in the following inventories:
AICS : not determined
SECTION 16. OTHER INFORMATION

Further information

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of other abbreviations
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
BR OEL : Brazil. NR 15 - Unhealthy activities and operations

ACGIH / STEL : Short-term exposure limit
BR OEL / LT : Up to 48 hours /week

AICS - Australian Inventory of Chemical Substances; 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; 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. 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.

BR / Z8