SAFETY DATA SHEET
Enilconazole Liquid Formulation

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

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 Skin irritation, Category 2 Serious eye damage, Category 1 Short-term (acute) aquatic hazard, Category 2</td>
<td>&gt;= 30 -&lt; 50</td>
<td></td>
</tr>
<tr>
<td>Enilconazole</td>
<td>35554-44-0</td>
<td>Acute toxicity (Oral), Category 3 Acute toxicity (Inhalation), Category 4 Acute toxicity (Dermal), Category 5 Serious eye damage, Category 1 Carcinogenicity, Category 2 Specific target organ toxicity - repeated exposure (Liver), Cat-</td>
<td>&gt;= 10 -&lt; 20</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Enilconazole Liquid Formulation

<table>
<thead>
<tr>
<th>Category</th>
<th>Hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 2</td>
<td>Short-term (acute) aquatic hazard, Category 2</td>
<td></td>
</tr>
<tr>
<td>Category 1</td>
<td>Long-term (chronic) aquatic hazard, Category 1</td>
<td></td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>Acute toxicity (Oral), Category 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acute toxicity (Inhalation), Category 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye irritation, Category 2</td>
</tr>
<tr>
<td>Ethanol#</td>
<td>64-17-5</td>
<td>Flammable liquids, Category 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eye irritation, Category 2A</td>
</tr>
</tbody>
</table>

# Voluntarily-disclosed non-hazardous substance

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 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 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.

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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 (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/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.
Use explosion-proof electrical, ventilating and lighting equipment.

Advice on safe handling : Do not breathe mist or vapors.
Do not swallow.
Do not get in eyes.
Avoid prolonged or repeated contact with skin.
Wash skin thoroughly after handling.
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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.
Do not eat, drink or smoke when using this product.
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 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
SAFETY DATA SHEET

Enilconazole Liquid Formulation

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>Enilconazole</td>
<td>35554-44-0</td>
<td>TWA</td>
<td>0.3 mg/m^3 (OEB 2)</td>
<td>Internal</td>
</tr>
</tbody>
</table>

Further information:
- Skin

<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>Ethanol</td>
<td>64-17-5</td>
<td>LT</td>
<td>780 ppm 1.480 mg/m^3</td>
<td>BR OEL</td>
</tr>
</tbody>
</table>

Further information: Degree of harmfulness: minimum

<table>
<thead>
<tr>
<th>Components</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STEL</td>
<td>1.000 ppm</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

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.
- 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 vapor 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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
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<td>Color</td>
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<tr>
<td>Odor</td>
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<td>Odor Threshold</td>
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<tr>
<td>pH</td>
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<tr>
<td>Melting point/freezing point</td>
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<td>Initial boiling point and boiling range</td>
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</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>
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<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
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<tr>
<td>Lower explosion limit / Lower flammability limit</td>
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</tr>
<tr>
<td>Vapor pressure</td>
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<td>Relative vapor density</td>
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<tr>
<td>Relative density</td>
<td>1.094</td>
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<td>Solubility(ies)</td>
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<tr>
<td>Water solubility</td>
<td>soluble</td>
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<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
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<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
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</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>
</tbody>
</table>
SAFETY DATA SHEET
Enilconazole Liquid Formulation

Particle size: No data available

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:

Sodium bis(2-ethylhexyl)sulfosuccinate:
- Acute oral toxicity: LD50 (Rat): 3.080 mg/kg
- Acute dermal toxicity: LD50 (Rabbit): > 5.000 mg/kg

Enilconazole:
- 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
SAFETY DATA SHEET

Enilconazole Liquid Formulation

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: 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

Enilconazole:
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

Enilconazole:
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

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

Enilconazole:
Test Type: Maximization Test
Routes of exposure: Dermal
Species: Guinea pig
Result: equivocal

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
Enilconazole:
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:**

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

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

**Remarks:**
Based on harmonised classification in EU regulation 1272/2008, Annex VI

**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

<table>
<thead>
<tr>
<th>Effects on fertility</th>
<th>Application Route</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type</td>
<td>Ingestion</td>
<td>Rat</td>
<td>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>Effects on fetal development</th>
<th>Application Route</th>
<th>Species</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type</td>
<td>Ingestion</td>
<td>Rat</td>
<td>negative</td>
</tr>
</tbody>
</table>
Enilconazole Liquid Formulation

Enilconazole:
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 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.

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.
Components:

Enilconazole:
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

Enilconazole:
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

Components:

Enilconazole:
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
Enilconazole:
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
  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: LC$_{50}$ (Pimephales promelas (fathead minnow)): $>1.000$ mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC$_{50}$ (Ceriodaphnia (water flea)): $>1.000$ mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants:
- ErC$_{50}$ (Chlorella vulgaris (Fresh water algae)): 275 mg/l
  Exposure time: 72 h
- EC$_{10}$ (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:
- EC$_{50}$ (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

**Enilconazole:**
- 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

**Enilconazole:**
Enilconazole Liquid Formulation

**Partition coefficient:** n-octanol/water

- **Benzyl alcohol:** Log Pow: 3.82
- **Ethanol:** Log Pow: -0.35

**Mobility in soil**

**Components:**

- **Enilconazole:** Log Koc: 3.82

**Other adverse effects**

No data available

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### 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.

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### SECTION 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)

**IATA-DGR**

- UN/ID No.: UN 1992
- Proper shipping name: Flammable liquid, toxic, n.o.s. (Ethanol, Eniliconazole)
- Class: 3
- Subsidiary risk: 6.1
- Packing group: III
ENILCONAZOLE LIQUID FORMULATION

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

The ingredients of this product are reported in the following inventories:

AICS : not determined

DSL : not determined
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.

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