SECTION 1. IDENTIFICATION

Product name : Enilconazole Smoke Formulation

Manufacturer or supplier's details
Company name of supplier : Merck & Co., Inc
Address : 126 E. Lincoln Avenue
          Rahway, New Jersey U.S.A. 07065
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Oxidizing solids : Category 1
Combustible dust
Eye irritation : Category 2A
Carcinogenicity : Category 2
Specific target organ toxicity - repeated exposure : Category 2 (Liver)

GHS label elements
Hazard pictograms :

Signal Word : Danger
Hazard Statements : H271 May cause fire or explosion; strong oxidizer. If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air. H319 Causes serious eye irritation. H351 Suspected of causing cancer. H373 May cause damage to organs (Liver) through prolonged or repeated exposure.

Precautionary Statements : Prevention:
P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read
P210 Keep away from heat.
P220 Keep away from clothing and other combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P260 Do not breathe dust.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves, protective clothing, eye protection and face protection.
P283 Wear fire resistant or flame retardant clothing.

Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P306 + P360 IF ON CLOTHING: rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P308 + P313 IF exposed or concerned: Get medical attention.
P337 + P313 If eye irritation persists: Get medical attention.
P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards
Contact with dust can cause mechanical irritation or drying of the skin.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th></th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>&gt;= 50 - &lt; 70</td>
</tr>
<tr>
<td>Enilconazole</td>
<td>35554-44-0</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>Potassium chlorate</td>
<td>3811-04-9</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
</tbody>
</table>

Actual concentration is withheld as a trade secret

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. Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
SAFETY DATA SHEET

Enilconazole Smoke Formulation

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.
Get medical attention.
Rinse mouth thoroughly with water.

Most important symptoms and effects, both acute and delayed:
Contact with dust can cause mechanical irritation or drying of the skin.
Causes serious eye irritation.
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:
None known.

Specific hazards during firefighting:
Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
Carbon oxides
Chlorine compounds
Metal oxides

Specific extinguishing methods:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fight fire remotely due to the risk of explosion.
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:
Evacuate personnel to safe areas.
Only trained personnel should re-enter the area.
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.
- 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.
- Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
- Flush with water.
- Suppress (knock down) gases/vapors/mists with a water spray jet.
- Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
- 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:
- Static electricity may accumulate and ignite suspended dust causing an explosion.
- Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

Local/Total ventilation:
- Use only with adequate 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 dust.
- 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.
- Keep container tightly closed.
- Minimize dust generation and accumulation.
- Keep container closed when not in use.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Take precautionary measures against static discharges.
- Keep away from combustible material.
- Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage:
- Keep in properly labeled containers.
Store in original container.
Store locked up.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Keep away from direct sunlight.
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:
- Self-reactive substances and mixtures
- Organic peroxides
- Flammable liquids
- Flammable solids
- Pyrophoric liquids
- Pyrophoric solids
- Self-heating substances and mixtures
- Substances and mixtures which in contact with water emit flammable gases
- Aerosol cans and lighters
- Explosives
- Gases
- Very acutely toxic substances and mixtures
- Acutely toxic substances and mixtures
- Substances and mixtures with chronic toxicity

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>inert or nuisance dust</td>
<td></td>
<td>50 Million particles per cubic foot</td>
<td>TWA (total dust)</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>TWA (total dust)</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>TWA (respirable fraction)</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 Million particles per cubic foot</td>
<td>TWA (respirable fraction)</td>
<td>OSHA Z-3</td>
</tr>
<tr>
<td>Dust, nuisance dust and particulates</td>
<td></td>
<td>10 mg/m³</td>
<td>PEL (Total dust)</td>
<td>CAL PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>PEL (respirable dust fraction)</td>
<td>CAL PEL</td>
</tr>
</tbody>
</table>
Enilconazole Smoke Formulation

### Engineering measures
- Use feasible engineering controls to minimize exposure to compound.
- All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

### Personal protective equipment

#### Respiratory protection
- General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn.
- Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.
- Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

#### 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.
- 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.

#### Hygiene measures
- The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures,
**SAFETY DATA SHEET**

**Enilconazole Smoke Formulation**

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.0</td>
<td>04/04/2023</td>
<td>785480-00018</td>
<td>10/01/2022</td>
<td>06/28/2016</td>
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</tbody>
</table>

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

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>powder</td>
</tr>
<tr>
<td>Color</td>
<td>Grey-brown</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</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>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>May form explosive dust-air mixture during processing, handling or other means.</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>No data available</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>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</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>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is classified as oxidizing with the category 1.

Molecular weight : No data available

Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : May cause fire or explosion; strong oxidizer.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : May form explosive dust-air mixture during processing, handling or other means.
Exposure to metals, combustible or organic materials can cause a violent reaction or ignition.
May cause fire or explosion; strong oxidizer.

Conditions to avoid : Heat, flames and sparks.
Avoid dust formation.

Incompatible materials : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents
Flammable materials
Organic materials

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
Not classified based on available information.

Product:
Acute oral toxicity : LD50 (Rat): 2,100 - 2,800 mg/kg

Acute inhalation toxicity : LC0 (Rat): 10.73 mg/l
Test atmosphere: dust/mist
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
LD50 (Rabbit): > 0.6 ml/kg

Components:
Talc:
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Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Remarks: Based on data from similar materials

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
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

Potassium chlorate:
Acute oral toxicity: LD50 (Rat): > 300 - 2,000 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity: LC50 (Rat): > 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
Assessment: The substance or mixture has no acute inhalation toxicity

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

Skin corrosion/irritation
Not classified based on available information.

Product:
Species: Rabbit
Result: No skin irritation

Components:
Talc:
Species: Rabbit
Result : No skin irritation

Enilconazole:
Species : Rabbit
Result : Mild skin irritation

Potassium chlorate:
Species : Rabbit
Result : No skin irritation
Remarks : Based on data from similar materials

Serious eye damage/eye irritation
Causes serious eye irritation.

Product:
Species : Rabbit
Result : Moderate eye irritation

Components:

Talc:
Species : Rabbit
Result : No eye irritation

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

Potassium chlorate:
Species : Rabbit
Result : No eye irritation
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:

Talc:
- Routes of exposure: Skin contact
- Species: Humans
- Result: negative

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

Potassium chlorate:
- Test Type: Maximization Test
- Routes of exposure: Skin contact
- Species: Guinea pig
- Method: OECD Test Guideline 406
- Result: negative
- Remarks: Based on data from similar materials

Germ cell mutagenicity
Not classified based on available information.

Components:

Talc:
- Genotoxicity in vitro: Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
  Result: negative

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
Genotoxicity in vivo:
- 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

Genotoxicity in vivo:
- Test Type: Micronucleus test
  Species: Mouse
  Application Route: Oral
  Result: negative

Genotoxicity in vivo:
- Test Type: Rodent dominant lethal test (germ cell) (in vivo)
  Species: Mouse
  Result: negative

Potassium chloride:
- Genotoxicity in vitro:
  Test Type: Bacterial reverse mutation assay (AMES)
  Method: OECD Test Guideline 471
  Result: negative

Potassium chloride:
- Test Type: In vitro mammalian cell gene mutation test
  Method: OECD Test Guideline 476
  Result: negative
  Remarks: Based on data from similar materials

Potassium chloride:
- Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
  Method: OECD Test Guideline 482
  Result: negative
  Remarks: Based on data from similar materials

Genotoxicity in vivo:
- Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
  Species: Mouse
  Application Route: Ingestion
  Method: OECD Test Guideline 474
  Result: negative
  Remarks: Based on data from similar materials

Carcinogenicity
Suspected of causing cancer.

Components:

Talc:
- Species: Mouse
- Application Route: inhalation (dust/mist/fume)
- Exposure time: 2 Years
- Result: negative
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**Enilconazole:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>NOAEL</td>
<td>40 mg/kg body weight</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

- **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

| Carcinogenicity | Limited evidence of carcinogenicity in animal studies |

### Potassium chlorate:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>106 weeks</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**IARC**

| No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |

**OSHA**

| No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens. |

**NTP**

| No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |

### Reproductive toxicity

Not classified based on available information.

### Components:

**Talc:**

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

Potassium chlorate:

| **Effects on fertility** |
| Test Type: Two-generation reproduction toxicity study |
| Species: Rat |
| Application Route: Ingestion |
| Method: OECD Test Guideline 416 |
| Result: negative |
| Remarks: Based on data from similar materials |

| **Effects on fetal development** |
| Test Type: Embryo-fetal development |
| Species: Rat |
| Application Route: Ingestion |
| Result: negative |
| Remarks: Based on data from similar materials |

**STOT-single exposure**
Not classified based on available information.

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

**Components**

<table>
<thead>
<tr>
<th>Enilconazole:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Organs</strong></td>
</tr>
<tr>
<td>Liver</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
</tr>
<tr>
<td>May cause damage to organs through prolonged or repeated exposure</td>
</tr>
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</table>
### Repeated dose toxicity

**Components:**

**Enilconazole:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>5 mg/kg</td>
</tr>
<tr>
<td>LOAEL</td>
<td>20 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Exposure time</td>
<td>3 - 24 Months</td>
</tr>
<tr>
<td>Target Organs</td>
<td>Liver</td>
</tr>
<tr>
<td>Symptoms</td>
<td>Decrease in appetite</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>Dog</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>2.5 mg/kg</td>
</tr>
<tr>
<td>LOAEL</td>
<td>20 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Exposure time</td>
<td>12 Months</td>
</tr>
<tr>
<td>Symptoms</td>
<td>Salivation, Vomiting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Species</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>12 mg/kg</td>
</tr>
<tr>
<td>LOAEL</td>
<td>140 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Exposure time</td>
<td>3 Months</td>
</tr>
<tr>
<td>Target Organs</td>
<td>Liver</td>
</tr>
</tbody>
</table>

**Potassium chlorate:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>&gt; 100 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>90 Days</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

### Aspiration toxicity

Not classified based on available information.

### Experience with human exposure

**Components:**

**Enilconazole:**

<table>
<thead>
<tr>
<th>Component</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin contact</td>
<td>Pruritis, skin rash, Skin irritation</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Eye irritation</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Nausea</td>
</tr>
</tbody>
</table>
### Ecotoxicity

**Components:**

**Talc:**

- **Toxicity to fish:** LC50 (Brachydanio rerio (zebrafish)): > 100,000 mg/l  
  Exposure time: 24 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

**Potassium chlorate:**

- **Toxicity to fish:** LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l  
  Exposure time: 96 h  
  Remarks: Based on data from similar materials

- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): > 100 mg/l  
  Exposure time: 48 h  
  Remarks: Based on data from similar materials

- **Toxicity to algae/aquatic plants:** ErC50: 1.9 mg/l  
  Exposure time: 72 h  
  NOEC: 0.5 mg/l  
  Exposure time: 72 h

- **Toxicity to fish (Chronic toxicity):** NOEC (Danio rerio (zebra fish)): > 1 mg/l
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Exposure time: 36 d
Method: OECD Test Guideline 210
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):

- NOEC (Daphnia magna (Water flea)): > 1 mg/l
- Exposure time: 21 d
- Method: OECD Test Guideline 211
- Remarks: Based on data from similar materials

Toxicity to microorganisms:

- EC50: > 1,000 mg/l
- Exposure time: 3 h
- Method: OECD Test Guideline 209
- Remarks: Based on data from similar materials

Persistence and degradability

Components:

Enilconazole:

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

Bioaccumulative potential

Components:

Enilconazole:

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

Mobility in soil

Components:

Enilconazole:

Distribution among environmental compartments: log Koc: 3.82

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations
UNRTDG
UN number : UN 1485
Proper shipping name : POTASSIUM CHLORATE MIXTURE
Class : 5.1
Packing group : II
Labels : 5.1

IATA-DGR
UN/ID No. : UN 1485
Proper shipping name : Potassium chlorate Mixture
Class : 5.1
Packing group : II
Labels : Oxidizer
Packing instruction (cargo aircraft) : 562
Packing instruction (passenger aircraft) : 558

IMDG-Code
UN number : UN 1485
Proper shipping name : POTASSIUM CHLORATE MIXTURE
(Class : 5.1
Packing group : II
Labels : 5.1
EmS Code : F-H, S-Q
Marine pollutant : yes

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

Domestic regulation

49 CFR
UN/ID/NA number : UN 1485
Proper shipping name : Potassium chlorate MIXTURE
Class : 5.1
Packing group : II
Labels : OXIDIZER
ERG Code : 140
Marine pollutant : yes(Enilconazole)

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

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.
SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards
- Oxidizer (liquid, solid or gas)
- Combustible dust
- Carcinogenicity
- Specific target organ toxicity (single or repeated exposure)
- Serious eye damage or eye irritation

SARA 313
The following components are subject to reporting levels established by SARA Title III, Section 313:

Enilconazole 35554-44-0 >= 10 - < 20%

US State Regulations

Pennsylvania Right To Know
- Talc 14807-96-6
- Enilconazole 35554-44-0
- Lactose 63-42-3
- Potassium chlorate 3811-04-9

California Prop. 65
WARNING: This product can expose you to chemicals including Enilconazole, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances
- Talc 14807-96-6

California Permissible Exposure Limits for Chemical Contaminants
- Talc 14807-96-6

The ingredients of this product are reported in the following inventories:
- AICS: not determined
- DSL: not determined
- IECSC: not determined

SECTION 16. OTHER INFORMATION

Further information
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Enilconazole Smoke Formulation

NFPA 704:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Special hazard</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

HMIS® IV:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>*2</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "," represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
CAL PEL : California permissible exposure limits for chemical contaminants (Title 8, Article 107)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA Z-3 : USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA : 8-hour, time-weighted average
CAL PEL / PEL : Permissible exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA Z-3 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; BC - 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of
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Enilconazole Smoke Formulation

Version 8.0 Revision Date: 04/04/2023 SDS Number: 785480-00018 Date of last issue: 10/01/2022
Date of first issue: 06/28/2016


Revision Date: 04/04/2023

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

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.

US / Z8