SAFETY DATA SHEET

Enilconazole Smoke Formulation

Version 7.0 Revision Date: 2020/03/23 SDS Number: 785474-00012 Date of last issue: 2019/09/13
Date of first issue: 2016/06/28

1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name: Enilconazole Smoke Formulation

Supplier's company name, address and phone number
Company name of supplier: MSD
Address: Kumagaya, Saitama Prefecture, Xicheng 810 MSD Co., Ltd. Menuama factory
Telephone: 048-588-8411
E-mail address: EHSDATASTEWARD@msd.com
Emergency telephone number: 1-908-423-6000

Recommended use of the chemical and restrictions on use
Recommended use: Veterinary product

2. HAZARDS IDENTIFICATION

GHS classification of chemical product
Oxidizing solids: Category 1
Serious eye damage/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
Hazard pictograms:
Signal word: Danger
Hazard statements:
H271 May cause fire or explosion; strong oxidizer.
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 and understood.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P220 Keep away from clothing and other combustible materials.
- P260 Do not breathe dust.
- P264 Wash skin thoroughly after handling.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ 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 advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
- P391 Collect spillage.

**Storage:**
- P405 Store locked up.
- P420 Store separately.

**Disposal:**
- P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification:

Important symptoms and outlines of the emergency assumed:
- Contact with dust can cause mechanical irritation or drying of the skin.
- May form explosive dust-air mixture during processing, handling or other means.

### 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>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
<th>ENCS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Substance</th>
<th>UN number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>&gt;= 50 - &lt; 60</td>
</tr>
<tr>
<td>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethy]-1H-imidazole</td>
<td>35554-44-0</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
<tr>
<td>Potassium chlorate</td>
<td>3811-04-9</td>
<td>14</td>
</tr>
</tbody>
</table>

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. 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: Causes serious eye irritation. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure. Contact with dust can cause mechanical irritation or drying of the skin.

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.

5. FIREFIGHTING 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 firefighters:**
- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.

### 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 and personal protective equipment recommendations.

**Environmental precautions:**
- Discharge into the environment must be avoided.
- 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.
- Sweep up or vacuum up spillage and collect in suitable container for disposal.
- Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
- Flush with water.
- Suppress (knock down) gases/vapours/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.

### 7. HANDLING AND STORAGE

**Handling**

**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.
- 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 and sources of ignition.
- Take precautionary measures against static discharges.
- Keep away from combustible material.
- Take care to prevent spills, waste and minimize release to the environment.

**Avoidance of contact:**
- Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents
- Flammable materials
- Organic materials

**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.

**Storage**

**Conditions for safe storage:**
- Keep in properly labelled 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:
  - Strong oxidizing agents

**Packaging material:**
- Unsuitable material: None known.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Threshold limit value and permissible exposure limits for each component in the work environment**

<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>Talc</td>
<td>14807-96-6</td>
<td>OEL-M</td>
<td>0.5 mg/m³</td>
<td>JP OEL</td>
</tr>
</tbody>
</table>
### 6. HUMAN HEALTH EFFECTS

<table>
<thead>
<tr>
<th>(Respirable dust)</th>
<th>JSOH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further information: Class 1 Dust</td>
<td></td>
</tr>
<tr>
<td>OEL-M (Total dust)</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>Further information: Class 1 Dust</td>
<td></td>
</tr>
<tr>
<td>TWA (Respirable particulate matter)</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole</td>
<td>35554-44-0</td>
</tr>
<tr>
<td>Further information: Skin</td>
<td></td>
</tr>
</tbody>
</table>

#### 7. ENGINEERING MEASURES

**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.

#### 8. PERSONAL PROTECTIVE EQUIPMENT

**Respiratory protection**: Use appropriate respiratory protection if adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines.

**Filter type**: Particulates type

**Hand protection**

<table>
<thead>
<tr>
<th>Material</th>
<th>Chemical-resistant gloves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks</td>
<td>Take note that the product is flammable, which may impact the selection of hand protection.</td>
</tr>
<tr>
<td>Eye protection</td>
<td>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.</td>
</tr>
</tbody>
</table>

**Skin and body protection**: Work uniform or laboratory coat.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state</th>
<th>powder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Grey-brown</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point, initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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Flammability (solid, gas) : May form explosive dust-air mixture during processing, handling or other means.

Flammability (liquids) : No data available

Lower explosion limit and upper explosion limit / flammability limit
Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Flash point : No data available

Decomposition temperature : No data available

pH : No data available

Evaporation rate : No data available

Auto-ignition temperature : No data available

Viscosity
Viscosity, kinematic : No data available

Solubility(ies)
Water solubility : No data available

Partition coefficient: n-octanol/water : No data available

Vapour pressure : No data available

Density and / or relative density
Relative density : No data available

Density : No data available

Relative vapour density : No data available

Explosive properties : Not explosive

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

Molecular weight : No data available

Particle characteristics
Particle size : No data available

10. STABILITY AND REACTIVITY

Reactivity : May cause fire or explosion; strong oxidizer.
### 8. Chemical stability
Possibility of hazardous reactions

- Stable under normal conditions.
- 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.

### 9. Conditions to avoid

- Heat, flames and sparks.
- Avoid dust formation.

### 10. Incompatible materials

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

### 11. Hazardous decomposition products

- No hazardous decomposition products are known.

### 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:**

**Acute oral toxicity**

LD50 (Rat): > 5,000 mg/kg
- Remarks: Based on data from similar materials

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

**Acute oral toxicity**

LD50 (Rat): 227 mg/kg
- Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

LD50 (Mouse): 390 - 620 mg/kg

LD50 (Dog): > 640 mg/kg

**Acute inhalation toxicity**

LC50 (Rat): 1.84 - 2.88 mg/l
**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:**

<table>
<thead>
<tr>
<th>Talc</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Species</em>: Rabbit</td>
<td><em>Result</em>: No skin irritation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Species</em>: Rabbit</td>
</tr>
</tbody>
</table>

**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:**

<table>
<thead>
<tr>
<th>Talc</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species:</strong> Rabbit</td>
</tr>
<tr>
<td><strong>Result:</strong> No eye irritation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species:</strong> Rabbit</td>
</tr>
<tr>
<td><strong>Result:</strong> Irreversible effects on the eye</td>
</tr>
<tr>
<td><strong>Remarks:</strong> Based on harmonised classification in EU regulation 1272/2008, Annex VI</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potassium chlorate:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species:</strong> Rabbit</td>
</tr>
<tr>
<td><strong>Result:</strong> No eye irritation</td>
</tr>
<tr>
<td><strong>Method:</strong> OECD Test Guideline 405</td>
</tr>
</tbody>
</table>

### Respiratory or skin sensitisation

**Skin sensitisation**
Not classified based on available information.

**Respiratory sensitisation**
Not classified based on available information.

**Product:**
- **Species:** Guinea pig
- **Result:** Not a skin sensitizer.

**Components:**

<table>
<thead>
<tr>
<th>Talc</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exposure routes:</strong> Skin contact</td>
</tr>
<tr>
<td><strong>Species:</strong> Humans</td>
</tr>
<tr>
<td><strong>Result:</strong> negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Type:</strong> Maximisation Test</td>
</tr>
<tr>
<td><strong>Exposure routes:</strong> Dermal</td>
</tr>
<tr>
<td><strong>Species:</strong> Guinea pig</td>
</tr>
</tbody>
</table>
### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Talc:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)</td>
</tr>
<tr>
<td>Genotoxicity in vivo</td>
<td>Test Type: Chromosome aberration test in vitro</td>
</tr>
<tr>
<td></td>
<td>Species: Rat</td>
</tr>
<tr>
<td></td>
<td>Application Route: Ingestion</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: Chromosomal aberration</td>
</tr>
<tr>
<td></td>
<td>Test system: Human lymphocytes</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: gene mutation test</td>
</tr>
<tr>
<td></td>
<td>Test system: Chinese hamster fibroblasts</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: unscheduled DNA synthesis assay</td>
</tr>
<tr>
<td></td>
<td>Test system: rat hepatocytes</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td>Genotoxicity in vivo</td>
<td>Test Type: Micronucleus test</td>
</tr>
<tr>
<td></td>
<td>Species: Rat</td>
</tr>
<tr>
<td></td>
<td>Application Route: Oral</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
<tr>
<td></td>
<td>Test Type: Micronucleus test</td>
</tr>
<tr>
<td></td>
<td>Species: Mouse</td>
</tr>
<tr>
<td></td>
<td>Application Route: Oral</td>
</tr>
</tbody>
</table>

#### Potassium chlorate:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Maximisation Test</td>
</tr>
<tr>
<td>Species</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Method</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>OECD Test Guideline 406</td>
</tr>
<tr>
<td>Remarks</td>
<td>negative</td>
</tr>
<tr>
<td></td>
<td>Based on data from similar materials</td>
</tr>
<tr>
<td>Component</td>
<td>Test Type</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Potassium chloride:</strong></td>
<td>Genotoxicity in vitro</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Talc</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Application Route</td>
<td>inhalation (dust/mist/fume)</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
<tr>
<td><strong>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:</strong></td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<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>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Application Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Exposure time</td>
<td>2 Years</td>
</tr>
<tr>
<td>LOAEL</td>
<td>33 mg/kg body weight</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
</tbody>
</table>
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
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Carcinogenicity - Assessment: Limited evidence of carcinogenicity in animal studies

Potassium chlorate:
Species: Rat
Application Route: Ingestion
Exposure time: 106 weeks
Result: negative
Remarks: Based on data from similar materials

Reproductive toxicity
Not classified based on available information.

Components:

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

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
Effects on fertility: Test Type: Multi-generation study
Species: Rat
Application Route: Oral
General Toxicity - Parent: NOAEL: 20 mg/kg body weight
Result: Maternal toxicity observed., Embryotoxic effects and adverse effects on the offspring were detected.
Remarks: Not classified due to data which are conclusive although insufficient for classification.

Effects on foetal development: Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 80 mg/kg body weight
Result: Reduced foetal weight, Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses
Remarks: The effects were seen only at maternally toxic doses.
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.

### Potassium chlorate:

#### Effects on fertility

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Test Type: Two-generation reproduction toxicity study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 416</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>

#### Effects on foetal development

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Test Type: Embryo-foetal development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<tr>
<td>Application Route</td>
<td>Ingestion</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>

**STOT - single exposure**

Not classified based on available information.

**STOT - repeated exposure**

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

### Components:

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

<table>
<thead>
<tr>
<th>Target Organs</th>
<th>Liver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
</tbody>
</table>

**Repeated dose toxicity**

### Components:

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

<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>
Enilconazole Smoke Formulation

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

Potassium chlorate:
Species: Rat
NOAEL: > 100 mg/kg
Application Route: Ingestion
Exposure time: 90 Days
Remarks: Based on data from similar materials

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
Skin contact: Symptoms: pruritis, skin rash, Skin irritation
Eye contact: Symptoms: Eye irritation
Ingestion: Symptoms: Nausea

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Talc:
Toxicity to fish: LC50 (Brachydani oo rerto (zebrafish)): > 100,000 mg/l
Exposure time: 24 h

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
Toxicity to fish:
LC50 (Oncorhynchus mykiss (rainbow trout)): 1.48 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
LC50 (Lepomis macrochirus (Bluegill sunfish)): 3.99 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:
EC50 (Daphnia magna (Water flea)): 3.54 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
### Toxicity to algae/aquatic plants
- **EC₅₀** (Pseudokirchneriella subcapitata (green algae)): 1.2 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201
- **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

### Potassium chlorate:
- **LC₅₀** (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
  - Exposure time: 96 h
  - Remarks: Based on data from similar materials
- **EC₅₀** (Daphnia magna (Water flea)): > 100 mg/l
  - Exposure time: 48 h
  - Remarks: Based on data from similar materials
- **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
  - Exposure time: 36 d
  - Method: OECD Test Guideline 210
  - Remarks: Based on data from similar materials
- **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:

**1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**
- **Biodegradability**: Result: not rapidly degradable
  - Biodegradation: 50%
  - Exposure time: 166 d
Bioaccumulative potential

**Components:**

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

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

**Mobility in soil**

**Components:**

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

*Distribution among environmental compartments*  
log Koc: 3.82

Hazardous to the ozone layer  
Not applicable

Other adverse effects  
No data available

### 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.  
  If not otherwise specified: Dispose of as unused product.

### 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
SAFETY DATA SHEET

Enilconazole Smoke Formulation

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.

National Regulations
Refer to section 15 for specific national regulation.

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.

15. REGULATORY INFORMATION

Related Regulations

Fire Service Law
Not applicable to dangerous materials / designated flammables.

Chemical Substance Control Law
Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacture
Not applicable

Harmful Substances Required Permission for Manufacture
Not applicable

Substances Prevented From Impairment of Health
Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity
Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity
Not applicable

Substances Subject to be Notified Names
Not applicable

Substances Subject to be Indicated Names
Not applicable

Ordinance on Prevention of Hazards Due to Specified Chemical Substances
Not applicable
Ordinance on Prevention of Lead Poisoning
Not applicable

Ordinance on Prevention of Tetraalkyl Lead Poisoning
Not applicable

Ordinance on Prevention of Organic Solvent Poisoning
Not applicable

Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)
Not applicable

Poisonous and Deleterious Substances Control Law
Deleterious substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Cabinet Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorates and preparations containing them</td>
<td>18</td>
</tr>
</tbody>
</table>

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof
Not applicable

High Pressure Gas Safety Act
Not applicable

Explosive Control Law
Not applicable

Vessel Safety Law
Oxidizing substances and organic peroxides (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law
Oxidizing substances and organic peroxides (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

Marine Pollution and Sea Disaster Prevention etc Law
Bulk transportation : Not classified as noxious liquid substance
Pack transportation : Classified as marine pollutant

Narcotics and Psychotropics Control Act
Narcotic or Psychotropic Raw Material (Export / Import Permission)
Not applicable

Specific Narcotic or Psychotropic Raw Material (Export / Import permission)
Not applicable

Waste Disposal and Public Cleansing Law
Industrial waste

The components of this product are reported in the following inventories:
AICS : not determined
DSL : not determined
IECSC : not determined
SAFETY DATA SHEET

Enilconazole Smoke Formulation

Version 7.0  Revision Date: 2020/03/23  SDS Number: 785474-00012  Date of last issue: 2019/09/13  Date of first issue: 2016/06/28

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.

Date format: yyyy/mm/dd

Full text of other abbreviations
ACGIH: USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA: 8-hour, time-weighted average
JP OEL JSOH / OEL-M: Occupational Exposure Limit-Mean

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; ICSO - Half maximal inhibitory concentration; ICAL - International Civil Aviation Organization; IECSC - Inventory of Existing Chemicals and 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.

JP / EN