SECTION 1. IDENTIFICATION

Product name : Enilconazole Smoke Formulation
Other means of identification : No data available

Manufacturer or supplier’s details
Company name of supplier : Merck & Co., Inc
Address : 2000 Galloping Hill Road
Kenilworth - New Jersey - U.S.A. 07033
Telephone : 908-740-4000
Telefax : 908-735-1496
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

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations
Oxidizing solids : Category 1
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.
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.
**SAFETY DATA SHEET**

**Enilconazole Smoke Formulation**

**Version** 4.3  |  **Revision Date:** 03/23/2020  |  **SDS Number:** 785465-00012  |  **Date of last issue:** 09/13/2019  |  **Date of first issue:** 06/28/2016

P264 Wash skin thoroughly after handling.
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.

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

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

**Other hazards**
Contact with dust can cause mechanical irritation or drying of the skin.
May form explosive dust-air mixture during processing, handling or other means.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance / Mixture:** Mixture

**Components**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>&gt;= 30 - &lt; 60</td>
</tr>
<tr>
<td>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole</td>
<td>35554-44-0</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
<tr>
<td>Potassium chlorate</td>
<td>3811-04-9</td>
<td>&gt;= 10 - &lt; 30</td>
</tr>
</tbody>
</table>

Actual concentration or concentration range 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.
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.

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 fire fighting: 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 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/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.
- 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.

Conditions for safe storage:
- Keep in properly labeled containers.
Materials to avoid:

- Do not store with the following product types:
  - Organic peroxides
  - 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

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talc</td>
<td>14807-96-6</td>
<td>TWAEV (respirable dust)</td>
<td>3 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable particulates)</td>
<td>2 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable)</td>
<td>2 mg/m³</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>2 fibres per cubic centimeter</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable fraction)</td>
<td>2 mg/m³</td>
<td>CA ON OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Respirable particulate matter)</td>
<td>2 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td>1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole</td>
<td>35554-44-0</td>
<td>TWA</td>
<td>0.3 mg/m³ (OEB 2)</td>
<td>Internal</td>
</tr>
</tbody>
</table>

**Further information**: Skin

### 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: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
   Filter type: Particulates 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
Hygiene measures: 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.
   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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance: powder
Color: Grey-brown
Odor: No data available
Odor Threshold: No data available
pH: No data available
Melting point/freezing point: No data available
Initial boiling point and boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): May form explosive dust-air mixture during processing, handling or other means.
Flammability (liquids): No data available
### 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>4.3</td>
<td>03/23/2020</td>
<td>785465-00012</td>
<td>09/13/2019</td>
<td>06/28/2016</td>
</tr>
</tbody>
</table>

- **Upper explosion limit / Upper flammability limit**: No data available
- **Lower explosion limit / Lower flammability limit**: No data available
- **Vapor pressure**: No data available
- **Relative vapor density**: No data available
- **Relative density**: No data available
- **Density**: No data available
- **Solubility(ies)**:
  - **Water solubility**: No data available
- **Partition coefficient: n-octanol/water**: No data available
- **Autoignition temperature**: No data available
- **Decomposition temperature**: No data available
- **Viscosity**:
  - **Viscosity, kinematic**: 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 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:
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
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

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

**1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:**
Species: Rabbit
Result: Irreversible effects on the eye
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

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

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

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

Genotoxicity in vivo: Test Type: Chromosome aberration test in vitro
Species: Rat
Application Route: Ingestion
Result: negative

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: Chromosomal aberration
Test system: Human lymphocytes
Result: negative

Test Type: gene mutation test
Test system: Chinese hamster fibroblasts
Result: negative

Test Type: unscheduled DNA synthesis assay
Test system: rat hepatocytes
Result: negative

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

Test Type: Micronucleus test
Species: Mouse
Application Route: Oral
Result: negative

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

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

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

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
Species: Rat
Application Route: Oral
Exposure time: 2 Years
NOAEL: 40 mg/kg body weight
Result: negative

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

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

Carcinogenicity - Assessment: Limited evidence of carcinogenicity in animal studies
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 fetal development: Test Type: Embryo-fetal 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 fetal development: Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 80 mg/kg body weight
Result: Reduced fetal weight., Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses
Remarks: The effects were seen only at maternally toxic doses.

Test Type: Development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: LOAEL: 10 mg/kg body weight
Result: Maternal toxicity observed., No teratogenic effects., Postimplantation loss.
Remarks: The effects were seen only at maternally toxic doses.

Potassium chlorate:
Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 416
Result: negative
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:

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
Target Organs : Liver
Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole:
Species : Rat
NOAEL : 5 mg/kg
LOAEL : 20 mg/kg
Application Route : Oral
Exposure time : 3 - 24 Months
Target Organs : Liver
Symptoms : decrease in appetite

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

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

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Talc:
Toxicity to fish: LC50 (Brachydanio rerio (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

Potassium chlorate:
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
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
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:
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

Other adverse effects
No data available
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues : Dispose of in accordance with local regulations.
Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal. 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
(1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)
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

TDG
UN number : UN 1485
Proper shipping name : POTASSIUM CHLORATE MIXTURE
Class : 5.1
Packing group : II
Labels : 5.1
ERG Code : 140
Marine pollutant : yes(1-[2-(Allyloxy)-2-(2,4-dichlorophenyl)ethyl]-1H-imidazole)
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

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

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICS</td>
<td>not determined</td>
</tr>
<tr>
<td>DSL</td>
<td>not determined</td>
</tr>
<tr>
<td>IECSC</td>
<td>not determined</td>
</tr>
</tbody>
</table>

SECTION 16. OTHER INFORMATION

Full text of other abbreviations:

- **ACGIH** : USA. ACGIH Threshold Limit Values (TLV)
- **CA AB OEL** : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
- **CA BC OEL** : Canada. British Columbia OEL
- **CA ON OEL** : Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
- **CA QC OEL** : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
- **ACGIH / TWA** : 8-hour, time-weighted average
- **CA AB OEL / TWA** : 8-hour Occupational exposure limit
- **CA BC OEL / TWA** : 8-hour time weighted average
- **CA ON OEL / TWA** : Time-Weighted Average Limit (TWA)
- **CA QC OEL / TWAEV** : Time-weighted average exposure value

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; NWS - Not Well Standardised; OEL - Occupational Exposure Limit; OELX - Loading rate associated with x% response; Os - Observable; PEL - Permissible Exposure Limit; PVC - Polyvinyl Chloride; RTECS - Registry of Toxic Effects of Chemical Substances; SATP - Safe Administrative and Transportation Practices; SBDT - Standard Board for Domestic Transport; SC - Standard of Canada; SDG - Standard of China; SGx - Loading rate associated with x% response; SGxG - Loading rate associated with x% growth rate response; SBQ - Standard Board for Quality; SLD - Standard List of Dangerous Goods; TWA - Time-Weighted Average; x% - X% percent response; Z - Hazardous waste
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


Revision Date: 03/23/2020

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.

CA / Z8