## Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

### 1.1 Product Code:
15633

### 1.2 Product Name:
Voriconazole

### 1.3 Synonyms:
- \((\alpha,\alpha)-(2,4\text{-difluorophenyl})-5\text{-fluoro-}\beta\text{-methyl-}\alpha-(1H-1,2,4\text{-triazol-1-ylmethyl})-4\text{-pyrimidineethanol}; DRG 0301; UK 109496; Vfend®; VRC;

### 1.2 Relevant identified uses of the substance or mixture and uses advised against:
Relevant identified uses:
For research use only, not for human or veterinary use.

### 1.3 Details of the Supplier of the Safety Data Sheet:
- **Company Name:** Cayman Chemical Company
  1180 E. Ellsworth Rd.
  Ann Arbor, MI 48108
- **Web site address:** www.caymanchem.com
- **Information:** Cayman Chemical Company +1 (734)971-3335

### 1.4 Emergency telephone number:
- **Emergency Contact:** CHEMTREC Within USA and Canada: +1 (800)424-9300
  CHEMTREC Outside USA and Canada: +1 (703)527-3887

## Section 2. Hazards Identification

### 2.1 Classification of the Substance or Mixture:
- **Acute Toxicity: Oral, Category 3**
- **Carcinogenicity, Category 2**
- **Toxic To Reproduction, Category 2**
- **Specific Target Organ Toxicity (repeated exposure), Category 2**
- **Aquatic Toxicity (Acute), Category 1**
- **Aquatic Toxicity (Chronic), Category 3**

### 2.2 Label Elements:

#### GHS Signal Word:
Danger

#### GHS Hazard Phrases:
- H301: Toxic if swallowed.
- H351: Suspected of causing cancer.
- H361: Suspected of damaging fertility or the unborn child.
- H373: May cause damage to (oral, liver) through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H412: Harmful to aquatic life with long lasting effects.

#### GHS Precaution Phrases:
- P201: Obtain special instructions before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P260: Do not breathe dust/fume/gas/mist/vapours/spray.
- P264: Wash hands thoroughly after handling.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

#### GHS Response Phrases:
- P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P308+313: IF exposed or concerned: Get medical attention/advice.
P314: Get medical attention/advice if you feel unwell.
P330: Rinse mouth.
P391: Collect spillage.

**GHS Storage and Disposal Phrases:**
Please refer to Section 7 for Storage and Section 13 for Disposal information.

### 2.3 Adverse Human Health

**Effects and Symptoms:**
- Harmful to aquatic life with long lasting effects.
- Material may be irritating to the mucous membranes and upper respiratory tract.
- May be harmful by inhalation or skin absorption.
- May cause damage to (oral, liver) through prolonged or repeated exposure.
- May cause eye, skin, or respiratory system irritation.
- Suspected of causing cancer.
- Suspected of damaging fertility or the unborn child.
- Toxic if swallowed.
- To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

### Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS # / RTECS #</th>
<th>Hazardous Components (Chemical Name)/ REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>137234-62-9 UV9145000</td>
<td>Voriconazole</td>
<td>100.0 %</td>
<td>629-701-5 NA</td>
<td>Acute Tox.(O) 3: H301 Carcinogen 2: H351 Toxic Repro. 2: H361 STOT (RE) 2: H373 Aquatic (C) 3: H412 Aquatic (A) 1: H400</td>
</tr>
</tbody>
</table>

### Section 4. First Aid Measures

#### 4.1 Description of First Aid Measures:

- **In Case of Inhalation:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.
- **In Case of Skin Contact:** Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.
- **In Case of Eye Contact:** Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.
- **In Case of Ingestion:** Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.
Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

5.2 Unsuitable Extinguishing Media: Use water spray to cool fire-exposed containers.

5.3 Flammable Properties and Hazards: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

No data available.

Flash Pt: No data.

Explosive Limits: LEL: No data. UEL: No data.

Autoignition Pt: No data.

Fire Fighting Instructions: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray. Use water spray to cool fire-exposed containers.

Suitable Extinguishing Media: Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

Unsuitable Extinguishing Media: Use water spray to cool fire-exposed containers.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid raising and breathing dust, and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Keep container tightly closed. Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

8.2 Exposure Controls:

8.2.1 Engineering Controls (Ventilation etc.): Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses

Protective Gloves: Compatible chemical-resistant gloves

Other Protective Clothing: Lab coat

Respiratory Equipment: NIOSH approved respirator, as conditions warrant.

Work/Hygienic/Maintenance Practices: Do not take internally.

Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower. Wash thoroughly after handling. No data available.
## Section 9. Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical States:</th>
<th>[ ] Gas</th>
<th>[ ] Liquid</th>
<th>[X] Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance and Odor:</td>
<td>A crystalline solid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting Point:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Pt:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>No data available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosive Limits:</td>
<td>LEL: No data. UEL: No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure (vs. Air or mm Hg):</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Density (vs. Air = 1):</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity (Water = 1):</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility Notes:</td>
<td>~20 mg/ml in EtOH &amp; DMSO;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Octanol/Water Partition Coefficient:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autoignition Pt:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity:</td>
<td>No data.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9.2 Other Information

- **Molecular Formula & Weight:** C16H14F3N5O 349.3

## Section 10. Stability and Reactivity

### 10.1 Reactivity:

No data available.

### 10.2 Stability:

- **Stable [X] Unstable [ ]**

### 10.3 Stability Note(s):

Stable if stored in accordance with information listed on the product insert.

### 10.4 Conditions To Avoid:

No data available.

### 10.5 Incompatibility - Materials

- **strong oxidizing agents**

### 10.6 Hazardous To Avoid:

- carbon dioxide
- carbon monoxide
- hydrogen fluoride
- nitrogen oxides
Section 11. Toxicological Information

11.1 Information on Toxicological Effects: Voriconazole - Toxicity Data: Oral TDLO (woman): 280 mg/kg/5W (intermittent); Oral TDLO (rat): 350 mg/kg/35D (intermittent);

Chronic Toxicological Effects: Voriconazole - Investigated as a drug.

Only select Registry of Toxic Effects of Chemical Substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

Voriconazole RTECS Number: UV9145000

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>137234-62-9 Voriconazole</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td></td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects: No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):
DOT Proper Shipping Name: Toxic solid, organic, n.o.s. (Voriconazole)
DOT Hazard Class: 6.1 POISON
UN/NA Number: UN2811 Packing Group: III

14.1 LAND TRANSPORT (European ADR/RID):
ADR/RID Shipping Name: Toxic solid, organic, n.o.s. (Voriconazole)
UN Number: 2811 Packing Group: III
Hazard Class: 6.1 - POISON

14.3 AIR TRANSPORT (ICAO/IATA):
ICAO/IATA Shipping Name: Toxic solid, organic, n.o.s. (Voriconazole)
UN Number: 2811 Packing Group: III
Hazard Class: 6.1 - POISON IATA Classification: 6.1

Additional Transport Information:
Transport in accordance with local, state, and federal regulations.

When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10.
Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.
Section 15. Regulatory Information

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
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</thead>
<tbody>
<tr>
<td>137234-62-9</td>
<td>Voriconazole</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td>137234-62-9</td>
<td>Voriconazole</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
</tr>
</tbody>
</table>

Regulatory Information
This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC)

Section 16. Other Information

Revision Date: 03/20/2019

Additional Information About This Product: No data available.

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