Section 1. Product and Company Identification

Product Name: Terbinafine Hydrochloride
Product ID: T1672
Chemical Name (Synonyms): Lamisil

Supplier: LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

Emergency Phone #: 1-800-424-9300

Section 2. Hazards Identification

GHS Classification:
- Skin irritation (Category 2), H315
- Eye irritation (Category 2A), H319
- Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
- Acute aquatic toxicity (Category 1), H400
- Chronic aquatic toxicity (Category 1), H410

GHS Label elements including precautionary statements

Pictogram

Signal word: Warning

Hazard statements
- H315 - Causes skin irritation.
- H319 - Causes serious eye irritation.
- H335 - May cause respiratory irritation.
- H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements
- P261 - Avoid breathing dust, fumes, gas, mist, vapors and spray.
- P264 - Wash skin thoroughly after handling.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P280 - Wear protective gloves, eye protection and face protection.
- P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
- P321 - Specific treatment (see supplemental first aid instruction on this label).
- P337 + P313 - If eye irritation persists: Get medical advice/attention.
- P362 - Take off contaminated clothing and wash before reuse.
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
- P405 - Store locked up.
- P501 - Dispose of contents/container to an approved waste disposal plant.

HMIS Classification
- Health hazard: 2
- Chronic health hazard: *
- Flammability: 0
- Physical hazard: 0

NFPA Rating
- Health hazard: 2
- Fire hazard: 0
- Physical hazard: 0

Potential Health Effects
- Inhalation: May be harmful if inhaled. May cause respiratory tract irritation.
- Skin: May be harmful if absorbed through skin. Causes skin irritation.
- Eyes: Causes serious eye irritation.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Ingredient: Title Compound</th>
<th>Percent: 100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formula</td>
<td>C_{21}H_{25}N \cdot HCl</td>
<td>Formula Wt. 327.90</td>
</tr>
<tr>
<td>CAS No.</td>
<td>78628-80-5</td>
<td>EC No.</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye Contact
Flush eyes with plenty of water for at least 15 minutes and consult a physician.

Skin Contact
Wash off with soap and plenty of water. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
Not available.

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

Firefighting Procedures
Wear self-contained breathing apparatus for firefighting if necessary.

Unusual Fire Hazards
Carbon oxides, nitrogen oxides (NOx), hydrogen chloride gas.

Section 6. Accidental Release Measures

Personal Precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleanup
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: 4 °C
Keep in a dry place.

Hazardous Decomposition Products
Not available.

Other Remarks
Ingestion - May be harmful if swallowed.
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**
- **EXPOSURE CONTROLS**: Contains no substances with occupational exposure limit values.
- **Handle** in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**PERSONAL PROTECTION**
- **Eye/face protection**: Safety glasses with side-shields confirming to EN 166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
- **Skin protection**: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full and splash contact - Material: Nitrile rubber. Minimum layer thickness: 0.11 mm, Break through time: 480 min, Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M).
- **Body protection**: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- **Respiratory protection**: For nuisance exposures, use the P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection, use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
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</thead>
<tbody>
<tr>
<td>Solid.</td>
<td>White or off-white powder.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
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</table>

<table>
<thead>
<tr>
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<th>Density</th>
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<tbody>
<tr>
<td>195-198°C</td>
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</table>

<table>
<thead>
<tr>
<th>Solubility</th>
<th>pH</th>
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</thead>
<tbody>
<tr>
<td>Soluble in methanol, methylene chloride or ethanol.</td>
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<table>
<thead>
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<th>Flash Point</th>
<th>Ignition temperature</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Lower explosion limit</th>
<th>Autoignition temperature</th>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Upper explosion limit</th>
<th>Vapor pressure</th>
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</tr>
</thead>
<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Water solubility</th>
<th>Odor</th>
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</thead>
<tbody>
<tr>
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<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water</th>
<th>Odor Threshold</th>
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</thead>
<tbody>
<tr>
<td>log Pow: 5.342</td>
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</table>

<table>
<thead>
<tr>
<th>Relative vapor density</th>
<th>Evaporation rate</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
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</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

**Stability**
- Stable under recommended storage conditions.

**Materials To Avoid**
- Strong oxidizing agents.

**Hazardous Decomposition Products**
- Not available.
Section 11. Toxicological Information

Oral LD50 Not available.

Inhalation LC50 Not available.

Dermal LD50 Rat - > 2,000mg/kg

Other information on acute toxicity Not available.

Skin corrosion/irritation Not available.

Serious eye damage/irritation Not available.

Respiratory or skin sensitization Not available.

Germ cell mutagenicity Not available.

Reproductive Toxicity Rat - Oral Maternal Effects: Other effects.

Specific organ toxicity single exposure (GHS) Inhalation - May cause respiratory irritation.

Specific organ toxicity repeated exposure (GHS) Not available.

Teratogenicity Not available.

Aspiration Hazard Not available.

Synergistic effects Not available.

Additional Information RTECS: QJ8600100 Not available. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects Inhalation - May be harmful if inhaled. May cause respiratory tract irritation. Skin - May be harmful if absorbed through skin. Causes skin irritation. Eyes - Causes serious eye irritation. Ingestion - May be harmful if swallowed.

Carcinogenicity IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC. ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Section 12. Ecological Information

Toxicity Not available.

Mobility in soil Not available.

PBT and vPvB assessment Not available as chemical safety assessment not required/not
Persistence and degradability Not available.

Bioaccumulative potential Not available.

Other adverse effects An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

Section 13. Disposal Considerations

Waste Disposal
Dispose of material according to all federal, state and local regulations.
Offer material to a licensed, professional waste disposal company to dispose of as unused product.

Section 14. Transport Information

DOT (US) Not dangerous goods.

IATA UN number: 3077 Class: 9 Packing group: III EMS No.: F-A, S-F Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Terbinafine hydrochloride)

IMDG UN number: 3077 Class: 9 Packing group: III Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Terbinafine hydrochloride)

Further Information EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L > 5kg for solids.

Section 15. Regulatory Information

SARA 302 Components SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components Acute health hazard

Massachusetts Right To Know Components No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components Terbinafine Hydrochloride CAS #: 78628-80-5 Revision Date:

New Jersey Right To Know Components Terbinafine Hydrochloride CAS #: 78628-80-5 Revision Date:

California Prop 65 Components This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

Section 16. Other Information

Other information The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.