Section 1. Product and Company Identification

Product Name: Ligustrazine Hydrochloride
Product ID: L3326
Chemical Name (Synonyms): Tetramethylpyrazine Hydrochloride
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:
- Acute toxicity, Oral (Category 4), H302
- Acute aquatic toxicity (Category 1), H400
- Chronic aquatic toxicity (Category 1), H410

GHS Label elements including precautionary statements

Pictogram: 
Signal word: Warning
Hazard and precautionary statements:
- Hazard statements:
  - H302 Harmful if swallowed.
  - H410 Very toxic to aquatic life with long lasting effects.
- Precautionary statements:
  - P264 Wash skin thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P273 Avoid release to the environment.
  - P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
  - P330 Rinse mouth.
  - P391 Collect spillage.
  - P501 Dispose of contents/container to an approved waste disposal plant.

HMIS Classification: Not classified. Caution - substance is not yet fully tested.

NFPA Rating: Not classified. Caution - substance is not yet fully tested.

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

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>C₈H₁₂N₂·HCl</td>
<td>Formula Wt. 172.66</td>
</tr>
<tr>
<td>CAS No.</td>
<td>76494-51-4</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 water as a precaution.

Skin Contact
Wash off with soap and plenty of water.

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 fire fighting if necessary.

Unusual Fire Hazards
Carbon oxides, nitrogen oxides (NOx).

Section 6. Accidental Release Measures

Personal Precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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: Ambient

Hazardous Decomposition Products
Not available.

Other Remarks
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

**EXPOSURE CONTROLS**

Contains no substances with occupational exposure limit values.

General industrial hygiene practice.

**PERSONAL PROTECTION**

**Eye/face protection:** 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.

**Body protection:** Choose body protection in relation to its type, to the concentration and amount of dangerous substances and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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Section 9. Physical and Chemical Properties

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<tr>
<th>Physical State</th>
<th>Color</th>
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<td>Solid.</td>
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<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
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<table>
<thead>
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<th>Melting Point</th>
<th>Density</th>
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<table>
<thead>
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<th>pH</th>
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<th>Ignition temperature</th>
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<table>
<thead>
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<th>Lower explosion limit</th>
<th>Autoignition temperature</th>
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<td>Not available.</td>
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</table>

<table>
<thead>
<tr>
<th>Upper explosion limit</th>
<th>Vapor pressure</th>
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<table>
<thead>
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<th>Odor</th>
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<table>
<thead>
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<th>Partition coefficient: n-octanol/water</th>
<th>Odor Threshold</th>
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<thead>
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<th>Relative vapor density</th>
<th>Evaporation rate</th>
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</table>

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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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Oral LD50</td>
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<tr>
<td>Skin corrosion/irritation</td>
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<tr>
<td>Inhalation LC50</td>
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<tr>
<td>Serious eye damage/irritation</td>
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<tr>
<td>Dermal LD50</td>
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<td>Respiratory or skin sensitization</td>
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<tr>
<td>Other information on acute toxicity</td>
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<tr>
<td>Germ cell mutagenicity</td>
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<tr>
<td>Reproductive Toxicity</td>
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<tr>
<td>Aspiration Hazard</td>
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<td>Specific organ toxicity single exposure (GHS)</td>
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<td>Synergistic effects</td>
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<td>Specific organ toxicity repeated exposure (GHS)</td>
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<td>Additional Information</td>
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<td>Teratogenicity</td>
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<tr>
<td>Signs and symptoms of exposure</td>
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</tbody>
</table>

**Potential Health Effects**

Inhalation - May be harmful if inhaled. May cause respiratory tract irritation. 
Skin - May be harmful if absorbed through skin. May cause skin irritation. 
Eyes - May cause 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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Mobility in soil</td>
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</tr>
<tr>
<td>PBT and vPvB assessment</td>
<td>PBT/vPvB assessment not available as chemical safety assessment not required/not</td>
</tr>
</tbody>
</table>
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)**
UN number: 3077  Class: 9  Packing Group: III
Proper shipping name: Environmentally Hazardous Substance, Solid, n.o.s.

**IATA**
UN number: 3077  Class: 9  Packing Group: III
Proper shipping name: Environmentally Hazardous Substance, Solid, n.o.s.

**IMDG**
UN number: 3077  Class: 9  Packing Group: III
Proper shipping name: Environmentally Hazardous Substance, Solid, n.o.s.

Further Information

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**
No SARA hazards.

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

**Pennsylvania Right To Know Components**
Ligustrazine Hydrochloride  CAS: 76494-51-4

**New Jersey Right To Know Components**
Ligustrazine Hydrochloride  CAS: 76494-51-4

**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.