Section 1. Product and Company Identification

Product Name: Leptomycin B
Product ID: L1761
Chemical Name (Synonyms): LMB; Elactocin, CI-940, CL-1957A, NSC-364372, PD-114720.
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

Section 2. Hazards Identification

GHS Classification
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Skin (Category 3), H311
Acute toxicity, Inhalation (Category 3), H331
Specific target organ toxicity - single exposure (Category 1), H370

GHS Label elements including precautionary statements

Pictogram

Signal word Danger

Hazard and precautionary statements
H225 - Highly flammable liquid and vapor.
H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled.
H370 - Causes damage to organs.

Precautionary Statements
P210 - Keep away from heat, sparks, open flames and hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical, ventilating, lighting and equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe dust, fumes, gas, mist, vapors and spray.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves, protective clothing, eye protection and face protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P303 + P361 + P353 - IF ON SKIN (or hair): Remove or take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician.
P322 - Specific measures (see supplemental first aid instructions on this label).
P330 - Rinse mouth.
P361 - Remove/Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse.
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to an approved waste disposal plant.

HMIS Classification
Health hazard: 2
Chronic health hazard: *
Flammability: 4
Physical hazard: 0

NFPA Rating
Health hazard: 2
Fire hazard: 4
Reactivity hazard: 0

Potential Health Effects
Inhalation: Acute toxicity. Toxic if inhaled. May cause respiratory tract irritation.
Skin: Acute toxicity. Toxic in contact with skin. May cause skin irritation.
Eyes: May cause eye irritation.
Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Substances</th>
<th>Formula</th>
<th>Formula Wt.</th>
<th>CAS No.</th>
<th>EC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C_{33}H_{48}O_{6}</td>
<td>540.74</td>
<td>87081-35-4</td>
<td>200-659-6</td>
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</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 thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact
Wash with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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

Ingestion
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5. Firefighting Measures

Flash Point
11.1°C in closed cup method

Extinguishing Media
Water spray, alcohol-resistant foam, dry chemical or carbon dioxide. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure buildup, autoignition or explosion.

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

Unusual Fire Hazards
Carbon oxides.

Section 6. Accidental Release Measures

Personal Precautions
Wear a full suit, goggles, boots and gloves. Suggested protective clothing might not be sufficient. Consult a specialist BEFORE handling this product.

Environmental Precautions
Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Methods and materials for containment and cleanup
Highly flammable. Flammable liquid and vapor. Vapor may cause flash fire. Keep away from heat. Keep away from sources of ignition. Absorb with DRY earth, sand or other noncombustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage Conditions
Store in a tightly closed container in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid all possible sources of ignition, sparks or flame. Recommended storage temperature: -20°C.

Hazardous Decomposition Products
Not available.

Other Remarks
WARNING! Small quantities of LepB are reported to be unstable when dried down into a film. Thus, under no circumstances should the solvent be removed from solutions of LepB, because rapid decomposition may result.
### Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

**PERSONAL PROTECTION**

**Eye/face protection:** Face shield and safety glasses. 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 contact: Material: butyl-rubber, Minimum layer thickness: 0.3 mm, Break through time: 480 min., Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M). Splash contact: Material: Nitrile rubber, Minimum layer thickness: 0.4 mm, Break through time: 30 min., Material tested: Camatri® (KCL 730 / Aldrich Z677442, Size M).

**Body protection:** Complete suit protecting against chemicals. Flame retardant antistatic protective 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:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. 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>
</tr>
</thead>
<tbody>
<tr>
<td>Clear liquid.</td>
<td>Clear colorless solution in absolute ETOH.</td>
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<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
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<td>Not available.</td>
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<table>
<thead>
<tr>
<th>Melting Point</th>
<th>Density</th>
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</thead>
<tbody>
<tr>
<td>41°C-44°C</td>
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</table>

<table>
<thead>
<tr>
<th>Solubility</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soluble in ethanol or methanol.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>Ignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1°C in closed cup method</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower explosion limit</th>
<th>Autoignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper explosion limit</th>
<th>Vapor pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Water solubility</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
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</tbody>
</table>

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

### Section 10. Stability and Reactivity

**Stability**

Stable under recommended storage conditions. This product is light and moisture sensitive.

**WARNING:** Small quantities of LepB are reported to be unstable when dried down into a film. Thus, under no circumstances should the solvent be removed from solutions of LepB, because rapid decomposition may result.

**Materials To Avoid**

Keep away from heat, strong oxidizing agents and strong reducing agents. Acids, acid chlorides, acid anhydrides, oxidizing agents, alkali metals and reducing agents.

**Hazardous Decomposition Products**

Not available.
## Section 11. Toxicological Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>Not available</td>
</tr>
<tr>
<td>Oral LD50 Skin corrosion/irritation</td>
<td>Not available</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>Not available</td>
</tr>
<tr>
<td>Inhalation LC50 Serious eye damage/irritation</td>
<td>Not available</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Not available</td>
</tr>
<tr>
<td>Dermal LD50 Respiratory or skin sensitization</td>
<td>Not available</td>
</tr>
<tr>
<td>Other information on acute toxicity</td>
<td>Not available</td>
</tr>
<tr>
<td>Other information on acute toxicity Germ cell mutagenicity</td>
<td>Not available</td>
</tr>
<tr>
<td>Reproductive Toxicity</td>
<td>Not available</td>
</tr>
<tr>
<td>Reproductive Toxicity Aspiration Hazard</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific organ toxicity single exposure (GHS)</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific organ toxicity single exposure (GHS)</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific organ toxicity repeated exposure (GHS)</td>
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<tr>
<td>Specific organ toxicity repeated exposure (GHS)</td>
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<tr>
<td>Teratogenicity</td>
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<tr>
<td>Additional Information</td>
<td>RTECS: Not available</td>
</tr>
<tr>
<td>Signs and symptoms of exposure</td>
<td>Central nervous system - Breathing difficulties - Based on human evidence - Stomach - Irregularities - Based on Human Evidence (Methanol)</td>
</tr>
</tbody>
</table>

### Potential Health Effects

- **Inhalation**: Acute toxicity. Toxic if inhaled. May cause respiratory tract irritation.
- **Skin**: Acute toxicity. Toxic in contact with skin. May cause skin irritation.
- **Eyes**: May cause eye irritation.
- **Ingestion**: Acute toxicity. Toxic if swallowed.
- **Specific target organ toxicity - single exposure (Category 1)**: Causes damage to organs.

### 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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity</td>
<td>Not available</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>Not available</td>
</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

Dispose of material according to all federal, state and local regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber, but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed, professional waste disposal service to dispose of this material. Dispose of as unused product.

Section 14. Transport Information

DOT (US) UN number: 1230  Class: 3 (Flammable Liquid A)  Packing group: II  Proper shipping name: Ethanol solution  Reportable Quantity (RQ): 7150 lbs.  Poison Inhalation Hazard: No  IATA UN number: 1230  Class: 3 (6.1 Flammable Liquid)  Packing group: II  Proper shipping name: Ethanol, solution.  IMDG UN number: 1170  Class: 3 (6.1 Flammable Liquid)  Packing group: II  EMS No: F-E, S-D  Proper shipping name: ETHANOL, SOLUTION

Section 15. Regulatory Information

Reach No.

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

SARA 313 Components  The following components are subject to reporting levels established by SARA Title III, Section 313:  Methanol  CAS #: 67-56-1  Revision Date: 2007-07-01

SARA 311/312 Components  Fire hazard, acute health hazard and chronic health hazard.

Massachusetts Right To Know Components  Methanol  CAS #: Revision Date: 2007-07-01

Pennsylvania Right To Know Components  Water  CAS #: 7732-18-5  Revision Date: 2007-07-01  Methanol  CAS #: 67-56-1  Revision Date: 2007-07-01

New Jersey Right To Know Components  Water  CAS #: 7732-18-5  Revision Date: 2007-07-01  Methanol  CAS #: 67-56-1  Revision Date: 2007-07-01

California Prop 65 Components  WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.  Methanol  CAS #: 67-56-1  Revision Date: 2012-03-16

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.