Section 1 - Product and Company Information

Product Name: Leptomycin B
Cat. Code: tirl-lep

Company identification:
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Disclaimer: All InvivoGen products are supplied for research and laboratory use only. Not for drug, household or other uses.

Section 2 – Hazards Identification

2.1 Classification of substance
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319

2.2 Label elements
Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/eye protection/face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/attention.
Safety Data Sheet

2.3 Other hazards - none

Section 3 – Composition/Information on Ingredient

Leptomycin B (cas number: 87081-35-4) is provided as a 10 µM solution (5.4 µg/ml in ethanol). The hazardous component is listed below.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>200-578-6</td>
<td>Flam. Liq. 2; Eye Irrit. 2A; H225, H319</td>
<td>≥99%</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.

After skin contact: Immediately wash skin with soap and plenty of water. Consult a physician.

After swallowing: Never give anything by mouth to an unconscious person. Rinse mouth with water provided person is conscious. Consult a physician.

After inhalation: Remove to fresh air. If not breathing give artificial respiration. Consult a physician.

After eye contact: Immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician.

Section 5 – Fire Fighting Measures

Suitable extinguishing media: Water spray, carbon dioxide, dry chemical powder or appropriate foam.

Specific hazards arising from the chemical: Carbon oxides

Special Firefighting Procedures: Wear self-contained breathing apparatus for fire fighting if necessary.

Section 6 – Accidental Release Measures

Personal precautions: Wear protective equipment. Keep unprotected persons away. Avoid dust formation.

Method for Cleaning Up: Sweep up and place in closed containers for disposal. Dispose contaminated material as waste according to section 13. Ventilate area and wash spill site after material clean-up is complete.

Section 7 – Handling and Storage

Handling: Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure.

User Exposure: Avoid inhalation. Use personal protective equipment (i.e. impermeable gloves, lab coat or apron).

Storage: Store at -20°C.

Section 8 – Exposure Controls/PPE

8.1 Control parameters

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>TWA</td>
<td>1,000.000000 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks: Upper Respiratory Tract irritation
Confirmed animal carcinogen with unknown relevance to humans.
Safety Data Sheet

<table>
<thead>
<tr>
<th>Application Area</th>
<th>Exposure routes</th>
<th>Health effect</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>950 mg/m³</td>
</tr>
<tr>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>343 mg/kg BW/d</td>
</tr>
<tr>
<td>Workers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>343 mg/kg BW/d</td>
</tr>
<tr>
<td>Workers</td>
<td>Inhalation</td>
<td>Acute local effects</td>
<td>1900 mg/m³</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Appropriate engineering controls**
General industrial hygiene practice.

**Personal protective equipment**

**Eye/face protection**
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**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.

**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.

**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).

**Control of environmental exposure**
Do not let product enter drains.
Section 9 – Physical/Chemical Properties

Appearance
Physical state: Liquid
Color: Colorless

Safety Data
Odor: No data available
Odor threshold: No data available
pH: No data available
Melting point/freezing point: Melting point/range: -114 °C (-173 °F)
Initial boiling point and boiling range: 78 °C (172 °F)
Flash point: 14.0 °C (57.2 °F) - closed cup
Evaporation rate: No data available
Flammability: No data available
Upper/lower flammability or explosive limits: Upper explosion limit: 19 %(V) Lower explosion limit: 3.3 %(V)
Vapor pressure: 59.5 hPa (44.6 mmHg) at 20.0 °C (68.0 °F)
Vapor density: No data available
Relative density: 0.789 g/mL at 25 °C (77 °F)
Solubility: completely soluble
Partition coefficient: n-octanol/water: log Pow: -0.349 at 24 °C (75 °F)
Autoignition temperature: 363.0 °C (685.4 °F)
Decomposition temperature: No data available
Viscosity: No data available
Explosive properties: No data available
Oxidizing properties: No data available

Section 10 – Stability and Reactivity

Reactivity: No data available
Chemical stability: Stable under recommended storage conditions.
Possibility of hazardous reactions: Vapours may form explosive mixture with air.
Conditions to avoid: Heat, flames and sparks
Incompatible materials: Alkali metals, oxidizing agents, peroxides
Hazardous decomposition products: No data available
In the event of fire: see section 5

Section 11 – Toxicological Information

Acute toxicity
LD50 Oral – Rat (3-4 months old) - 10,600 mg/kg
LD50 Oral – Rat (10-12 months old) - 7,060 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Moderate eye irritation
(OECD Test Guideline 405)
Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
Carcinogenicity - Mouse - Oral

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.

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.

Reproductive toxicity
Human - female - Oral
Effects on newborn: Apgar score (human only). Effects on newborn: Drug dependence.

Specific target organ toxicity – single exposure
No data available

Specific target organ toxicity – repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KQ6300000

Organs effected: Central nervous system depression, narcosis, heart and stomach (based on human evidence).

Section 12 – Ecological Information

12.1 Toxicity: Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 14,200 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates
LC50 - Ceriodaphnia dubia (water flea) - 5,012 mg/l - 48 h
NOEC - Daphnia magna (Water flea) - 9.6 mg/l - 9 d
Toxicity to algae EC50 - Chlorella vulgaris (Fresh water algae) - 275 mg/l - 72 h
(OECD Test Guideline 201)

12.2 Persistence and degradability: Result: 95 % - Readily biodegradable

12.3 Bioaccumulative potential: Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

12.4 Mobility in soil: No data available

12.5 Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects: No data available
Section 13 – Disposal Considerations

**Product:** Observe all federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Must not be disposed of together with household garbage.

**Contaminated Packaging:** Dispose of as unused product.

Section 14 – Transport Information

**ADR/RID:** UN number: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol

**DOT (US):** UN number: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol

**IMDG:** UN number: 1170 Class: 3 Packing group: II
EMS-No: F-E, S-D
Proper shipping name: Ethanol

**IATA:** UN number: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol

Section 15 – Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available

15.2 Chemical Safety Assessment
no data available

Section 16 – Other Information

The information contained in this SDS relates only to the material(s) designated and does not relate to use(s) in combination with any other material, process(es) and/or chemical reaction(s). InvivoGen provides this information in good faith and is based on our present knowledge. This SDS is provided without warranty of any kind. The recipient is responsible for ensuring that, where applicable, existing laws and guidelines are observed.