Section 1. Product and Company Identification

Product Name: Melittin
Product ID: M1744
Chemical Name (Synonyms): Melittin, Melitten I, Forapin
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 3) H301
Acute toxicity, Skin (Category 3) H311
Acute toxicity, Inhalation (Category 3) H331

GHS Label elements including precautionary statements

Pictogram
Signal word: Danger
Hazard statements
H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled.
Precautionary statements
P261 - Avoid breathing dust, fumes, gas, mist, vapors, 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.
P302 + P352 + P332 - IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/ doctor if you feel unwell.
P304 + P340 + P311 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a
POISON CENTER/ doctor.
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
Reactivity hazard: 0

Potential Health Effects
Inhalation - Acute toxicity. Harmful if inhaled. May cause respiratory tract irritation.
Skin - Acute toxicity. Harmful in contact with skin. Harmful if absorbed through skin. May cause skin irritation.
Eyes - May cause 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_{131}H_{229}O_{31} )</td>
<td>2846.5</td>
</tr>
<tr>
<td>CAS No.</td>
<td>20449-79-0</td>
<td></td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact
Flush eyes with water as a precaution.

Skin Contact
Wash off 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
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).

Section 6. Accidental Release Measures

Personal Precautions
Wear respiratory protection. Avoid dust formation. Avoid breathing dust, 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
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. 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: -20°C

Hazardous Decomposition Products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx).

Other Remarks
Storage class (TRGS 510): 6.1B: Noncombustible, acute toxic Cat. 1 and 2/ very toxic, hazardous materials.
Section 8. Exposure Controls/Personal Protection

Personal protective equipment

EXPOSURE CONTROLS
Contains no substances with occupational exposure limit values.
Hazardous components without workplace control parameters.
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the
product.

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 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: Complete suit protecting against chemicals. The type of protective equipment must be
selected according to the concentration and amount of the dangerous substance at the specific workplace.

Section 9. Physical and Chemical Properties

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

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility</td>
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<table>
<thead>
<tr>
<th>Physical State</th>
<th>Density</th>
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<tbody>
<tr>
<td>Melting Point</td>
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<table>
<thead>
<tr>
<th>Physical State</th>
<th>pH</th>
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</thead>
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<td>Ignition temperature</td>
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</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Autoignition temperature</th>
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</thead>
<tbody>
<tr>
<td>Lower explosion limit</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Odor Threshold</th>
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</thead>
<tbody>
<tr>
<td>Water solubility</td>
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</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Relative vapor density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and Reactivity

Stability
Stable under recommended storage conditions.

Materials To Avoid
Strong oxidizing agents.

Hazardous Decomposition Products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx).
Section 11. Toxicological Information

**Oral LD50**: Not available.

**Inhalation LC50**: Not available.

**Dermal LD50**: Not available.

**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.

**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.
- **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**: Not available.

**Teratogenicity**: Not available.

**Specific organ toxicity single exposure (GHS)**: Not available.

**Specific organ toxicity repeated exposure (GHS)**: Not available.

**Aspiration Hazard**: Not available.

**Synergistic effects**: Not available.

**Additional Information**
- **RTECS**: OS2960000
  - To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

**Potential Health Effects**
- **Inhalation**: Acute toxicity. Harmful if inhaled. May cause respiratory tract irritation.
- **Skin**: Acute toxicity. Harmful in contact with skin. May cause skin irritation.
- **Eyes**: May cause eye irritation.
- **Ingestion**: Acute toxicity. 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.
- **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**: PBT/vPvB assessment not available as chemical safety assessment not required/not
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: 3462
- Class: 6.1
- Packing Group: I
- Proper shipping name: Toxins, extracted from living sources, solid, n.o.s. (Melittin)
- Poison inhalation hazard: No

**IATA**
- UN number: 3462
- Class: 6.1
- Packing Group: I
- Proper shipping name: Toxins, extracted from living sources, solid, n.o.s. (Melittin)

**IMDG**
- UN number: 3462
- Class: 6.1
- Packing Group: I
- Proper shipping name: TOXINS, EXTRACTED FORM LIVING SOURCES, SOLID, N.O.S. (Melittin)

**Further Information**

Section 15. Regulatory Information

**Reach No.**

**SARA 302 Components**
SARA 302: This material does not contain any components with a section 302 EHS TPQ.

**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**
- Melittin
- CAS #: 20449-79-0
- Revision Date:

**New Jersey Right To Know Components**
- Melittin
- CAS #: 20449-79-0
- 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.