Section 1. Product and Company Identification

Product Name: Palmatine Chloride Hydrate
Product ID: P0245
Chemical Name (Synonyms): Berbericinine; Palmatin

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 toxicity, Inhalation (Category 4), H332
- Skin irritation (Category 2), H315
- Eye irritation (Category 2A), H319

GHS Label elements including precautionary statements

Pictogram: ![Warning]

Signal word: Warning

Hazard statements:
- H302 + H332 - Harmful if swallowed or inhaled.
- H315 - Causes skin irritation.
- H319 - Causes serious eye irritation.

Precautionary statements:
- P261 - Avoid breathing 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, eye and face protection.
- P301 + P312 - IF SWALLOWED: CALL A POISON CENTER or doctor/physician if you feel unwell.
- 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 instructions on this label).
- P330 - Rinse mouth.
- P332 + P313 - If skin irritation occurs: Get medical advice/attention.
- P337 + P313 - If eye irritation persists: Get medical advice/attention.
- P362 - Take off contaminated clothing and wash before reuse.
- P501 - Dispose of contents/container to an approved waste disposal plant.

HMIS Classification:
- Health hazard: 2
- Chronic health hazard: *
- Flammability: 1
- Physical hazard: 0

NFPA Rating:
- Health hazard: 2
- Fire hazard: 1
- Reactivity hazard: 0

Potential Health Effects:
- Inhalation: Harmful if inhaled. Causes 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.

Section 3. Composition/Information on Ingredients

Substances

<table>
<thead>
<tr>
<th>Formula</th>
<th>Formula Wt.</th>
<th>CAS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C_{21}H_{22}ClNO_4 \cdot xH_2O</td>
<td>387.86</td>
<td>171869-95-7</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
Rinse thoroughly 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
113°C (235°F) - closed cup.

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

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

Unusual Fire Hazards
Carbon oxides, nitrogen oxides (NOx) and 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. Avoid breathing dust.

Environmental Precautions
Do not let product enter drains.

Methods and materials for containment and cleanup
Avoid raising 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. Normal measures for preventive fire protection.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place. Store at -20°C.

Hazardous Decomposition Products
Nature of decomposition products not known.

Other Remarks
None.
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 conforming 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.

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.

Respiratory protection: For nuisance exposures use type 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>
</tr>
</thead>
<tbody>
<tr>
<td>Solid.</td>
<td>Yellow needle crystal needle, powder, odorless.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Volatility</th>
</tr>
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<tbody>
<tr>
<td>206°C-207°C(dec)</td>
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</table>

<table>
<thead>
<tr>
<th>Melting Point</th>
<th>Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>113°C (235°F) - closed cup.</td>
<td>Not available.</td>
</tr>
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</table>

Solubility
Soluble in hot water and alcohol.

Flash Point
113°C (235°F) - closed cup.

<table>
<thead>
<tr>
<th>Flash Point</th>
<th>Ignition temperature</th>
</tr>
</thead>
<tbody>
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<td>113°C (235°F) - closed cup.</td>
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</table>

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

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

Partition coefficient: n-octanol/water
Not available.

<table>
<thead>
<tr>
<th>Relative vapor density</th>
<th>Odor threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td>Not available.</td>
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</table>

<table>
<thead>
<tr>
<th>Section 10. Stability and Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
</tr>
<tr>
<td>Stable under recommended storage conditions.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Materials To Avoid</th>
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</thead>
<tbody>
<tr>
<td>Not available.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous Decomposition Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature of decomposition products not known.</td>
</tr>
</tbody>
</table>
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.

Reproductive Toxicity Not available.

Aspiration Hazard Not available.

Specifc organ toxicity single exposure (GHS) Not available.

Synergistic effects Not available.

Additional Information RTECS: Not available.

Potential Health Effects Inhalation: Harmful if inhaled. Causes 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. Other adverse effects Not available.

Bioaccumulative potential Not available.

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: 2811    Class: 6.1    Packing group: III
Proper shipping name: Toxic solids, organic, n.o.s. (Palmatine chloride hydrate)
Marine pollutant: No / Poison inhalation hazard: No

IATA
UN 2811    Class: 6.1    Packing group: III
Proper shipping name: Toxic solid, organic, n.o.s. (Palmatine chloride hydrate)

IMDG
UN 2811    Class: 6.1    Packing group: III    EMS-No: F-A, S-A
Proper shipping name: Toxic solids, organic, n.o.s. (Palmatine chloride hydrate)
Marine pollutant: No

Further Information

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

SARA 311/312 Components Acute health hazard, Chronic health hazard

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

Pennsylvania Right To Know Components Palmatine chloride hydrate CAS #: 171869-95-7 Revision Date:

New Jersey Right To Know Components Palmatine chloride hydrate CAS #: 171869-95-7 Revision Date:

California Prop 65 Components This product does not contain any chemicals known to 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.
For emergencies in the USA, call CHEMTREC 800-424-9300