MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: ULTRA PURE™ LAMP OIL
SYNONYMS: LINPAR® 1416-V NORMAL PARAFFIN, Mixture of Tetradecane, Pentadecane, and Hexadecane. EINECS # 265-233-4

MANUFACTURER: Lamplight Farms
ADDRESS: 4900 North Lilly Road, Menomonee Falls, WI 53051
(800) 645-5267  262-781-9590 (8:00 AM- 4:30 PM CST) M-F

EMERGENCY NUMBER: 1-800-308-7141 (Prosar)
For non-emergency and all other information call: 1-800-645-5267

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>C\textsubscript{14}-C\textsubscript{16} Paraffins</td>
<td>90622-46-1</td>
<td>100</td>
</tr>
</tbody>
</table>

See Section 8 for Exposure Guidelines and Section 15 for OSHA Classification

3. HAZARDS IDENTIFICATION

Emergency Overview
Water white, oily liquid. Mild hydrocarbon odor.

HEALTH HAZARD: MAY CAUSE EYE OR SKIN IRRITATION. High vapor concentrations may cause headache, stupor, dizziness, or irritation of throat and eyes

Potential Health Effects

EYES: Irritation may occur with exposure to concentrated vapors or contact with product.

SKIN: Repeated or prolonged contact can cause redness, irritation, and scaling of the skin (dermatitis). Normal care and personal hygiene should prevent skin effects.

INHALATION: Exposure to high concentration of vapors may result in headache and stupor.

INGESTION: Lung exposure to this product either by prolonged breathing of a mist or vomiting following ingestion, can lead to serious lung injury and possibly death.

(See section 11 for Toxicological Information).
4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, seek medical attention.

SKIN: Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash affected area with mild soap. Call a physician if irritation occurs.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration and seek medical attention immediately. Oxygen should only be administered by trained personnel.

INGESTION: DO NOT INDUCE VOMITING. Seek medical advice immediately.

5. FIRE FIGHTING MEASURES

Flammable Properties

FLASH POINT / METHOD:
250°F (121°C) / PM

AUTOIGNITION TEMPERATURE:
420°F (216°C)

FLAMMABLE LIMITS IN AIR % BY VOLUME:
None Expected.

FIRE AND EXPLOSION HAZARD:
None Expected.

FIRE FIGHTING INSTRUCTIONS:
Water spray, carbon dioxide, dry chemical, or alcohol compatible foam is recommended.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE OF A SPILL OR LEAK:
Evacuate the area and eliminate all sources of ignition. Contain the spill if possible. Material may be picked up with a solid sorbent. Dispose of only in accordance with local, state, and federal regulations.

CERCLA HAZARDOUS SUBSTANCE:

<table>
<thead>
<tr>
<th>Component</th>
<th>CERCLA RQ</th>
<th>Maximum Wt. %</th>
</tr>
</thead>
</table>

Contains no chemicals on the CERCLA Hazardous Substance List.
7. HANDLING AND STORAGE

ELECTROSTATIC ACCUMULATION HAZARD:
Yes – ground all equipment.

USUAL SHIPPING CONTAINERS:
Tank cars, tank trucks.

STORAGE / TRANSPORT TEMPERATURE:
Ambient. (Product will freeze at 47° F (8° C))

STORAGE / TRANSPORT PRESSURE:
Ambient. (Product will freeze at 47° F (8° C))

LOAD / UNLOAD TEMPERATURE:
Ambient, above freezing point. (Product will freeze at 47° F (8° C))

STORAGE AND HANDLING MATERIALS:
Carbon steel is suitable.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls

Air contaminant levels should be controlled below the PEL or TLV for this product (see Exposure Guidelines of this section). Mechanical ventilation may be necessary if working with this product in enclosed areas and at elevated temperatures.

Personal Protective Equipment

EYES:
When contact with liquid is possible, use a face shield and chemical goggles. Otherwise use safety glasses or goggles.

SKIN:
Chemical gloves should be worn to prevent repeated contact. If potential for significant exposure to liquid exists, use full protective clothing and chemical boots.

RESPIRATORY PROTECTION:
NIOSH-approved organic vapor air-purifying respirator, self contained breathing apparatus, or air-supplied respirators dependent on concentration.
Exposure Guidelines:
No exposure limit has been set for exposure to vapors for this product. However, Lamplight and its suppliers recommend the ACGIH/OSHA/NIOSH – recommended limit of 5 mg/m³ (8-hour TWA) for exposure to mists of this product.

<table>
<thead>
<tr>
<th>Component</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>None Established.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PEL = Permissible Exposure Limits  
TWA = Time Weighted Average (8hr.)  
TLV = Threshold Limit Value  
STEL = Short Term Exposure Limit (15 min.)

Carcinogenicity

No carcinogenic ingredients.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Water white, oily liquid

ODOR: Mild hydrocarbon odor.

VAPOR PRESSURE (mm Hg.): 0.05 @ 68°F (20°C).

VAPOR DENSITY (Air=1): 7 - 8

SOLUBILITY IN WATER: Negligible

VISCOSITY: 2.5 – 2.7 cSt @ 104°F (40°C).

PHYSICAL STATE: Liquid.

BOILING POINT: 490 - 592°F (254 – 283°C).

MELTING POINT: 48 - 50°F (8 - 10°C).

SPECIFIC GRAVITY (H₂O = 1): 0.773 @ 60°F/60°F (16°C/16°C).

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: High Temperatures.

INCOMPATIBILITY WITH OTHER MATERIALS: Strong Oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compound.

HAZARDOUS POLYMERIZATION: Stable.
11. TOXICOLOGICAL INFORMATION

EYES:
Primary Eye Irritation Index (Rabbits): 5.7 for nonwashed eyes after 1 hour, 6 for washed eyes after 1 hour. (Maximum score is 110).

SKIN:
Acute Dermal LD$_{50}$ (Rabbits): >2 g/kg
Primary Skin Irritation Index (Rabbits): 4.4 (Maximum score is 8.0)

INHALATION:
LC$_{50}$ (Rats): >5.8 mg/l (nominal) with four-hour exposure.

INGESTION:
Acute Oral LD$_{50}$ (Rat): > 5 g/kg.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:
Not Available.

CHEMICAL FATE INFORMATION:
Not Available.

13. DISPOSAL CONSIDERATIONS

SPECIAL INSTRUCTIONS:
Evacuate the area and eliminate all sources of ignition. Contain the spill is possible. Material may be picked up with solid sorbent. Dispose of only in accordance with local state, and federal regulations.

WASTE CLASSIFICATION:
If discarded in its purchased form, this product is not a RCRA hazardous waste. Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transforms, and mixtures may change the classification.

EMPTY CONTAINERS:
Empty containers retain product residue (liquid and/or vapor) can be dangerous. DO NOT PRESSURIZE, CUT WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.
(See Section 6 for CERCLA Reporting Requirements).
14. TRANSPORT INFORMATION

DOT DESCRIPTION:
This product is not a hazardous material according to DOT regulations for ground transportation.

ICAO / IATA DESCRIPTION:
This product is not a dangerous good as defined by IATA for air transportation.

IMO DESCRIPTION (IMDG CODE):
This product is not a dangerous good as defined by IMO in the IMDG Code for water transportation.

15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA HAZARD COMMUNICATION STANDARD CLASSIFICATION:
Nonhazardous as defined by the OSHA Hazard Communication Standard.

TSCA INVENTORY LISTING:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkanes (C₁₄-C₁₆)</td>
<td>90622-46-1</td>
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</table>

SARA 302 STATUS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Maximum Wt. %</th>
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<tbody>
<tr>
<td></td>
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</table>

Contains no chemicals subject to SARA 302 reporting.

SARA 311/312 CLASSIFICATION:
Nonhazardous according to SARA 311/312.

SARA 313 CHEMICALS:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS Number</th>
<th>Maximum Wt. %</th>
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<tbody>
<tr>
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</table>

Contains no chemicals subject to SARA 313 reporting.

(See Section 6 for CERCLA Reporting Requirements.)
International Regulations

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION:
This material is not a controlled product as defined by Canada's Workplace Hazardous Materials Information System (WHMIS).

CANADIAN DOMESTIC SUBSTANCE LIST (DSL) INVENTORY LISTING:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C₁₄ Tetradecane</td>
<td>629-59-4</td>
</tr>
<tr>
<td>C₁₅ Pentadecane</td>
<td>629-62-9</td>
</tr>
<tr>
<td>C₁₆ Hexadecane</td>
<td>544-76-3</td>
</tr>
</tbody>
</table>

EUROPEAN INVENTORY OF EXISTING COMMERCIAL SUBSTANCES (EINECS) LISTING:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EINECS Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>C₁₄ Tetradecane</td>
<td>2110960</td>
</tr>
<tr>
<td>C₁₅ Pentadecane</td>
<td>2110981</td>
</tr>
<tr>
<td>C₁₆ Hexadecane</td>
<td>2088789</td>
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JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) INVENTORY LISTING:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Section Structure #</th>
</tr>
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<tbody>
<tr>
<td>Alkane (C₁₀₋₂₉)</td>
<td>2-10</td>
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</table>

AUSTRALIAN INVENTORY OF CHEMICAL SUBSTANCES (AICS) LISTING:

<table>
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<th>CAS Number</th>
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</table>

State Regulations

CALIFORNIA SAFE DRINKING WATER ACT (PROP 65) LISTING:

**No ingredients listed in this section**

CALIFORNIA AIR RESOURCES BOARD Title 17, Article 2, Section 94510 Consumer Products:
This product is VOC exempt by 94510 (d)(1) as it has a vapor pressure below 0.1 mm Hg at 20°C.
16. OTHER INFORMATION

Hazard Ratings

<table>
<thead>
<tr>
<th>Health:</th>
<th>NFPA</th>
<th>HMIS</th>
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<tbody>
<tr>
<td>FLAMMABILITY:</td>
<td>1</td>
<td>1</td>
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<tr>
<td>REACTIVITY:</td>
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Revision Summary

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>Jan 10, 2002</td>
<td>Document created.</td>
</tr>
<tr>
<td>June 28, 2002</td>
<td>Added Emergency numbers (Prosar) and Non emergency contact number.</td>
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THE DATA AND INFORMATION CONTAINED HEREIN ARE BEING FURNISHED FOR INFORMATIONAL PURPOSES ONLY. UPON THE EXPRESS CONDITION THAT EACH CUSTOMER SHALL MAKE ITS OWN ASSESSMENT OF APPROPRIATE USE AND APPROPRIATE SHIPPING, TRANSFER, AND STORAGE MATERIALS AND PROCEDURES FOR LAMPLIGHT FARMS PRODUCTS. LAMPLIGHT DISCLAIMS ANY LIABILITY FOR DAMAGE OR INJURY WHICH MAY RESULT FROM THE USE OF THE ABOVE DATA, AND NOTHING CONTAINED THEREIN SHALL CONSTITUTE A GUARANTEE, WARRANTY, (INCLUDING WARRANTY OF MERCHANTABILITY) OR REPRESENTATION (INCLUDING FREEDOM FROM PATENT LIABILITY) BY LAMPLIGHT WITH RESPECT TO THE DATA, THE PRODUCTS DESCRIBED, OR THEIR USE FOR ANY SPECIFIC PURPOSE, EVEN IF THAT PURPOSE IS KNOWN TO LAMPLIGHT.

PREPARED BY: LAMPLIGHT FARMS Engineering Department.
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