1 - Product and Company Identification

Product name: Lubricit 2-EHC16-DF

Product type/usage/industry: 2-Ethylhexyl Palmitate
Plasticizer/Emollient/Lubricant

Manufacturer/Supplier Information:
Zschimmer and Schwarz, Inc.
70 GA Hwy. 22 W
Milledgeville, GA 31061
Phone: (478) 454-1942

Emergency contact:
Company: (478) 454-1942
CHEMTREC (24HR): (800) 424-9300

2 – Hazards Identification

| HMIS Rating: | Health: 1 | Fire: 1 | Reactivity: 0 | PPE: X |

GHS Classification:

Physical Hazards: No physical hazards according to OSHA/GHS criteria.

Health Hazards: No health hazards according to OSHA/GHS criteria.

Environmental Hazards: No environmental hazards according to OSHA/GHS criteria.

Precautionary Statements:
P103: Read label before use
P233: Keep container tightly closed
P262: Do not get in eyes, on skin, or on clothing
P281: Use personal protective equipment as required

3 – Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Material or component</th>
<th>Avg % weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>29806-73-3</td>
<td>Hexadecanoic acid,2-ethylhexyl ester</td>
<td>100%</td>
</tr>
</tbody>
</table>

This is not intended to be a complete compositional disclosure. Information provided pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200/ HazCom 2012). See Section 8 for Exposure Limits, if any.
4 - First Aid Measures

Eyes:  **P305: IF IN EYES:** Immediately flush with gentle but large stream of water for 15 min, lifting upper and lower eyelids occasionally. Get medical attention if irritation develops.

Skin:  **P302: IF ON SKIN:** Wash affected area with soap and water. If itching or redness develops, seek medical attention. Contaminated clothing should be removed immediately and washed before reuse. Contaminated shoes should be discarded.

Inhalation:  **P304: IF INHALED:** Move the person to fresh air. If breathing becomes difficult, contact a physician.

Ingestion:  **P301: IF SWALLOWED:** Do not induce vomiting. If large amounts were swallowed, give water to rinse mouth and get medical attention.

5 - Firefighting Measures

**Extinguishing Media:** Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Unsuitable Extinguishing Media:** Water jet.

**Special Protective Equipment for Firefighters:** Self-contained breathing apparatus and protective clothing when fighting any chemical fire.

**Unusual Fire & Explosion Hazards:** In case of fire, containers may explode from internal pressure. Cool with water. May emit toxic fumes of CO and CO₂ under fire conditions.

6 - Accidental Release Measures

**Personal precautions:**
- **P210:** Keep away from heat/sparks/open flames/hot surfaces – No smoking
- **P261:** Avoid breathing mists of product
- **P262:** Do not get in eyes, on skin, or on clothing
- **P264:** Wash thoroughly after handling
- **P280:** Wear protective gloves/protective clothing/eye protection/face protection

**Environmental precautions:**
- **P273:** Avoid release to the environment
- Limit leakage with earth or sand. Do not discharge into the drains/surface water/groundwater. Dispose of absorbed material in accordance with local, state and federal regulations.

**Methods for Containment/Cleaning Up:**
- Take up with absorbent material (e.g. vermiculite, general purpose binder). Dispose of absorbed material in accordance with local, state, and federal regulations.
7 - Handling and Storage

Handling:
- P210: Keep away from heat/sparks/open flames/hot surfaces — No smoking
- P261: Avoid breathing mists of product
- P262: Do not get in eyes, on skin, or on clothing
- P264: Wash thoroughly after handling
- P280: Wear protective gloves/protective clothing/eye protection/face protection

Storage:
- P402+404: Store in a dry place. Store in a closed container
- P403+233: Store in a well ventilated place. Keep container tightly closed
- Protect from moisture. Do not store together with acids.

Special Packaging Requirements:
- None known.

Incompatible Materials or Fire/Explosion Protection:
- P210: Keep away from heat/sparks/open flames/hot surfaces — No smoking
- Strong oxidizers.

8 - Exposure Controls/Personal Protection

Personal Protective Equipment (PPE):
- Hand Protection: Use impervious gloves.
- Eye Protection: Wear safety glasses with side shields or full face shield.
- Skin Protection: Wear protective clothing.
- Respiratory Protection: Recommended if ventilation is limited.

Engineering Measures/Controls:
- Ventilation: Ensure adequate ventilation to maintain product at acceptable airborne levels.
- Other measures: Eye-wash station.

Exposure Limits/Guidelines:

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS #</th>
<th>TYPE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
</tbody>
</table>

ACGIH

<table>
<thead>
<tr>
<th>Material</th>
<th>CAS #</th>
<th>TYPE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>N/E</td>
<td>N/E</td>
<td>N/E</td>
</tr>
</tbody>
</table>

OSHA
### 9 - Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Form and Appearance:</strong></td>
<td>Clear, colorless to yellow liquid</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Faint</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Boiling Point:</strong></td>
<td>&gt;572°F (300°C) (lit.)</td>
</tr>
<tr>
<td><strong>Vapor Pressure:</strong></td>
<td>&lt; 0.01 mmHg @ 20°C</td>
</tr>
<tr>
<td><strong>Flash Point:</strong></td>
<td>&gt;392°F (200°C) (COC)</td>
</tr>
<tr>
<td><strong>UEL:</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Octanol/Water Partition Coefficient:</strong></td>
<td>10.6 (lit.)</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature:</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Volatile content:</strong></td>
<td>&lt; 0.1%</td>
</tr>
<tr>
<td><strong>Odor Threshold:</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Melting/Freezing point:</strong></td>
<td>~35.6°F (2°C)</td>
</tr>
<tr>
<td><strong>Vapor Density (Air=1):</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Evaporation Rate:</strong></td>
<td>&lt; 0.01</td>
</tr>
<tr>
<td><strong>LEL:</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>Solubility in Water:</strong></td>
<td>Insoluble</td>
</tr>
<tr>
<td><strong>Specific Gravity:</strong></td>
<td>~ 0.85 @ 25°C</td>
</tr>
<tr>
<td><strong>Bulk Density:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Decomposition Temperature:</strong></td>
<td>N/D</td>
</tr>
<tr>
<td><strong>VOC Data:</strong></td>
<td>N/D</td>
</tr>
</tbody>
</table>

### 10 - Stability and Reactivity

**Chemical Stability:** Product is stable under ordinary conditions of use and storage.

**Hazardous Polymerization:** Will not occur.

**Conditions to Avoid:** Exposure to moist air or water, extreme heat, sources of ignition.

**Incompatible Materials:** Strong oxidizers.

**Hazardous Decomposition Products:** Extremely high temperatures and thermal decomposition may produce CO₂.
## 11 - Toxicological Information

### Acute Data:
- **Routes of Exposure:** Eye contact, skin contact, ingestion, inhalation (mist).
- **Eye Contact:** Minimal irritation, if any.
- **Skin Contact:** Minimal irritation, if any.
- **Ingestion:** Practically nontoxic.
- **Inhalation:** Minimal irritation, if any, from mists at ambient temperatures.
- **Skin Sensitization:** NDA

### Acute Toxicity/Effects:

<table>
<thead>
<tr>
<th>Test</th>
<th>Test type</th>
<th>Species</th>
<th>Results</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Toxicity</td>
<td>LD50</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>Practically nontoxic</td>
</tr>
<tr>
<td>Dermal Toxicity</td>
<td>N/D</td>
<td>N/D</td>
<td>N/D</td>
<td>-</td>
</tr>
<tr>
<td>Inhalation Toxicity</td>
<td>N/D</td>
<td>N/D</td>
<td>N/D</td>
<td>-</td>
</tr>
<tr>
<td>Eye Irritation</td>
<td>N/D</td>
<td>N/D</td>
<td>N/D</td>
<td>-</td>
</tr>
</tbody>
</table>

### Chronic Data:
- **Carcinogenicity:**
  - IARC: No
  - NTP: No
  - ACGIH: No
  - OSHA: No

- **Mutagenicity:** NDA
- **Reproductive Effects:** NDA
- **Target Organ Effects:** NDA
12 - Ecological Information

Ecotoxicity/Effects:

<table>
<thead>
<tr>
<th>Test:</th>
<th>Test type</th>
<th>Species:</th>
<th>Results:</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Toxicity to Fish</td>
<td>LC50</td>
<td>Fish</td>
<td>&gt; 100 mg/l (96h)</td>
<td>No effects expected at WSL (water solubility limit)</td>
</tr>
<tr>
<td>Acute Toxicity to Aquatic Invertebrates</td>
<td>EC50</td>
<td>Daphnia magna</td>
<td>&gt; 100 mg/l (24h)</td>
<td>No effects expected at WSL (water solubility limit)</td>
</tr>
<tr>
<td>Acute Toxicity to Aquatic Plants</td>
<td>EC50</td>
<td>Algae</td>
<td>&gt; 100 mg/l (48h)</td>
<td>No effects expected at WSL (water solubility limit)</td>
</tr>
</tbody>
</table>

Chronic Toxicity to Fish:

|                          |           | N/D             | N/D                    |                                           |

Environmental Fate:

- Persistence/Degradability: Product is expected to be readily biodegradable.
  ~85% in 28d
- COD/BOD5: NDA
- Bioaccumulation Potential: BAF = 126 (lit.) Low.
- Mobility in Soil: Low mobility is expected. (lit.)
- Other Adverse Effects: NDA

13 - Disposal Considerations

Product: Dispose of absorbed material/content and/or container in accordance with local, state, federal and/or international regulations.

Packaging: NDA
14 - Transport Regulations

US DOT Regulations (Land Transport):
- Proper Shipping Name: Not regulated.
- Hazard Class: Not regulated.
- UN Number: Not regulated.
- Packing Group: Not regulated.
- Label Required: Not regulated.
- Other Information: Not regulated.

IATA/ICAO Regulations (Air Transport):
- Proper Shipping Name: Not regulated.
- Hazard Class: Not regulated.
- UN Number: Not regulated.
- Packing Group: Not regulated.
- Label Required: Not regulated.
- Other Information: Not regulated.

IMDG/IMO Regulations (Maritime Transport):
- Proper Shipping Name: Not regulated.
- Hazard Class: Not regulated.
- UN Number: Not regulated.
- Packing Group: Not regulated.
- Label Required: Not regulated.
- EMS Number: Not regulated.
- Segregation Groups: Not regulated.
- Other Information: Not regulated.
15 - Regulatory Information

Contents of this MSDS comply with the OSHA standard 29 CFR 1910.1200/HazCom 2012.

Domestic Regulations:

TSCA Status:
All the components in this material are listed on or exempt from the TSCA inventory.

SARA Title 302 (Extremely Hazardous Substances):
TPQ – Not listed.

SARA Title 304 (Extremely Hazardous Substances):
RQ – Not listed.

CERCLA Hazardous Substances (RQ):
Not listed.

SARA 311/312 Hazard Categorization:

Clean Air Act Section 112 (TQ):
TQ – Not listed.

State Information:
California Proposition 65:
May contain traces (< 10 ppm) of the following components known to the State of California to cause cancer, birth defects, or other reproductive harm.

None.

State Right to Know/Hazardous Substance List Information:
The following chemicals are present on one or more Right to Know/Hazardous Substance Lists for the states of MA, MN, NJ, PA and RI.

None.

This is not an exhaustive list. For information on listings in other states, please consult that state’s RTK/HSL.

Chemical Inventories:

<table>
<thead>
<tr>
<th>Component/CAS</th>
<th>TSCA</th>
<th>EINECS/ELINCS</th>
<th>Australia (AICS)</th>
<th>Canada (DSL/NDSL)</th>
<th>Korea (ECL)</th>
<th>Japan (ENCS)</th>
<th>China (IECSC)</th>
<th>New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexadecanoic acid,2-ethylhexyl ester (29806-73-3)</td>
<td>Yes</td>
<td>Yes/No</td>
<td>Yes</td>
<td>Yes/No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Key to Abbreviations:

- NDA - No data available
- N/D - Not determined
- N/A - Not applicable
- N/E - Not established

THE INFORMATION PRESENTED IN THIS MATERIAL SAFETY DATA SHEET (MSDS/SDS) WAS PREPARED BY TECHNICAL PERSONNEL BASED ON DATA THAT THEY BELIEVE IN THEIR GOOD FAITH JUDGMENT IS ACCURATE. HOWEVER, THE INFORMATION PROVIDED HEREIN IS PROVIDED “AS IS,” AND ZSCHIMMER & SCHWARZ INC. MAKES AND GIVES NO REPRESENTATIONS OR WARRANTIES WHATSOEVER, AND EXPRESSLY DISCLAIMS ALL WARRANTIES REGARDING SUCH INFORMATION AND THE PRODUCT TO WHICH IT RELATES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF ACCURACY, COMPLETENESS, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY, STABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, AND ANY WARRANTIES ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. THIS MSDS/SDS IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PROPERLY TRAINED PERSON USING THIS PRODUCT, AND IS NOT INTENDED TO BE COMPREHENSIVE AS TO THE MANNER AND CONDITIONS OF USE, HANDLING, STORAGE, OR DISPOSAL OF THE PRODUCT. INDIVIDUALS RECEIVING THIS MSDS/SDS MUST ALWAYS EXERCISE THEIR OWN INDEPENDENT JUDGMENT IN DETERMINING THE Appropriateness OF SUCH ISSUES. ACCORDINGLY, ZSCHIMMER & SCHWARZ, INC. ASSUMES NO LIABILITY WHATSOEVER FOR THE USE OF OR RELIANCE UPON THIS INFORMATION. NO SUGGESTIONS FOR USE ARE INTENDED AS, AND NOTHING HEREIN SHALL BE CONSTRUED AS, A RECOMMENDATION TO INFRINGE ANY EXISTING PATENTS OR TO VIOLATE ANY FEDERAL, STATE, LOCAL, OR FOREIGN LAWS. ZSCHIMMER & SCHWARZ INC. REMINDS YOU THAT IT IS YOUR LEGAL DUTY TO MAKE ALL INFORMATION IN THIS MSDS/SDS AVAILABLE TO YOUR EMPLOYEES. EXISTING ACTS AND REGULATIONS MUST BE OBSERVED BY THE RECIPIENT OF OUR PRODUCTS UNDER THEIR OWN RESPONSIBILITY.