SECTION 1: IDENTIFICATION

Product Name: DOP

CAS Number: 117-81-7

Chemical Name: Dioctyl Phthalate

Synonyms: DOP; Bis(2-ethylhexyl) phthalate; Phthalic acid bis(2-ethylhexyl ester)

Uses: Plasticizer

Company
Silver Fern Chemical, Inc.
2226 Queen Anne Avenue North
Suite #C
Seattle WA 98109, USA

Business Contact
Customer Service: 1-866-282-3384
info@silverfernchemical.com

24 Hour Emergency Contact
Infotrac 800-535-5053
Outside USA & Canada 352-323-3500

SECTION 2: HAZARD IDENTIFICATION

Danger

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):
Reproductive toxicity (Category 1B), H360

Hazard Statements:
H360 May damage fertility or the unborn child.
H351 Suspected of causing cancer

Precautionary Statements:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280: Wear protective gloves?protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Content (W/W)</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>117-81-7</td>
<td>100%</td>
<td>Bis (2-ethylhexyl) phthalate</td>
</tr>
</tbody>
</table>

SECTION 4: FIRST AID MEASURES

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician

In case of skin contact: Wash off with soap and plenty of water. Consult a physician

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: 216°C, 420.8°F (Cleveland open cup)

Lower/Upper explosion limit: Lower explosion limit: 0.3 % (V)

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: Carbon oxides

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Containment and Clean-Up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal

Personal Precautions: Use personal protective equipment. Avoid breathing 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.
SECTION 7: HANDLING AND STORAGE

Handling: Do not taste or swallow. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

Storage: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Occupational Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Di(2-ethylhexyl)phthalate (DEHP)</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>US. ACGIH Threshold Limit Values (01 2010)</td>
</tr>
<tr>
<td></td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.100) (02 2006)</td>
</tr>
</tbody>
</table>

Personal Protective Equipment (PPE)

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand 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.

Eye protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body protection: impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

General safety and hygiene measures: Wash hands before breaks and at the end of workday. Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance       Form: Liquid, Colorless
Odor             Slight
Odor Threshold   no data available
pH               no data available
Freezing Point   -50°C
Initial boiling point 384°C / 723.2°F
Flash point      216°C / 420.8°F (Cleveland Open Cup)
Evaporation rate Not determined

Effective Date: 11/2/2015
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>Upper/lower flammability limits</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.00000001 mbar (20°C/68°F)</td>
</tr>
<tr>
<td>Vapor density</td>
<td>13.5</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.985 (20°C)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>0.1 g/l</td>
</tr>
<tr>
<td>Partition Coefficient:</td>
<td>Pow: 75,858 log</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;393°C (DTA) No exotherm</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>no data available</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>57.46 mm²/s (25°C/77°F)</td>
</tr>
</tbody>
</table>

**SECTION 10: STABILITY AND REACTIVITY**

- **Conditions to avoid:** N/A
- **Substances to avoid:** Strong oxidizing agents
- **Hazardous reactions:** no data available
- **Decomposition products:** Carbon dioxide, carbon monoxide.

**SECTION 11: TOXICOLOGICAL INFORMATION**

- **Acute toxicity**
  - LD50 Oral - Rat - 30,000 mg/kg
  - LD50 Dermal - Rabbit - 25,000 mg/kg
- **Skin corrosion/irritation:**
  - Skin - Rabbit/ Result: Mild skin irritation - 24 h
- **Serious eye damage/eye irritation:**
  - Eyes - Rabbit/ Result: Mild eye irritation - 24 h
- **Respiratory or skin sensitization:**
  - Maximisation Test (GPMT) - Guinea pig/ Result: Does not cause skin sensitisation
- **Germ cell mutagenicity:** no data available
- **Carcinogenicity:**
  - This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification
  - IARC: 2B - Group 2B: Possibly carcinogenic to humans (bis(2-Ethylhexyl) phthalate)
  - NTP: Reasonably anticipated to be a human carcinogen (bis(2-Ethylhexyl) phthalate)
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:
May cause congenital malformation in the fetus. Presumed human reproductive toxicant, May cause reproductive disorders.

Additional Information:
Effects due to ingestion may include: Gastrointestinal disturbance.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:
Toxicity to fish
C50 - Pimephales promelas (fathead minnow) - > 0.67 mg/l - 96 h
LC50 - Oncorhynchus mykiss (rainbow trout) - > 0.32 mg/l - 96 h
LC50 - Cyprinodon variegatus (sheepshead minnow) - > 0.17 mg/l - 96 h
LC50 - Lepomis macrochirus (Bluegill) - > 0.20 mg/l - 96 h
NOEC - other fish - > 0.3 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates
Immobilization EC50 - Daphnia magna (Water flea) - > 0.16 mg/l - 48 h

Biodegradability: Readily biodegradable

Bioaccumulative
Potential: Oncorhynchus mykiss (rainbow trout) - 100 d - 0.014 mg/l
Bioconcentration factor (BCF): 113
Remarks: Does not bioaccumulate.

Other: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

SECTION 13: DISPOSAL CONSIDERATIONS

Waste disposal of substance: Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Container disposal: Dispose of as unused product. Do not let product enter drains.

SECTION 14: TRANSPORT INFORMATION

DOT (US):
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (bis(2-Ethylhexyl) phthalate)
Reportable Quantity (RQ): 100 lbs

IMDG:
Not dangerous goods

IATA:
Not dangerous goods.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.
SECTION 15: REGULATORY INFORMATION

TSCA (US Toxic Substances Control Act): This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

SARA 302 Components:  
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components:  
The following components are subject to reporting levels established by SARA Title III, Section 313:  
- bis(2-Ethylhexyl) phthalate  CAS-No 117-81-7  Revision Date 2007-07-01

SARA 311/312 Hazards: Chronic Health Hazard

Massachusetts Right To Know Components:  
bis(2-Ethylhexyl) phthalate  CAS-No 117-81-7  Revision Date 2007-07-01

New Jersey Right To Know Components:  
bis(2-Ethylhexyl) phthalate  CAS-No 117-81-7  Revision Date 2007-07-01

Pennsylvania Right To Know Components:  
bis(2-Ethylhexyl) phthalate  CAS-No 117-81-7  Revision Date 2007-07-01

California Prop. 65 Components:  
WARNING! This product contains a chemical known to the State of California to cause cancer.  
bis(2-Ethylhexyl) phthalate  CAS-No.117-81-7  Revision Date 2009-02-7

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive Harm.  
bis(2-Ethylhexyl) phthalate  CAS-No.117-81-7  Revision Date 2009-02-7

SECTION 16: OTHER INFORMATION

HMIS Rating
Health hazard: 0  
Chronic Health Hazard: *  
Flammability: 1  
Physical Hazard 0

NFPA Rating
Health hazard: 0  
Fire Hazard: 1  
Reactivity Hazard: 0

DISCLAIMER OF RESPONSIBILITY

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Revision Date: 11/11/15

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