SECTION 1: IDENTIFICATION

Product Name: Diisononyl Phthalate

CAS Number: 28553-12-0

Chemical Name: Diisononyl Phthalate

Synonyms: DINP

Uses: Plasticizer for flexible PVC is used for durable goods, construction and industrial applications.

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

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)
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 1B), H360

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

Precautionary Statements
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
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>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
<th>GHS Hazard Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2- BENZENEDICARBOXYLIC ACID, DI-C8-10-BRANCHED ALKYL ESTERS, C9-RICH</td>
<td>68515-48-0</td>
<td>100 %</td>
<td>None</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4: FIRST AID MEASURES

If inhaled:
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

In case of skin contact:
Wash contact areas with soap and water.

In case of eye contact:
Flush thoroughly with water. If irritation occurs, get medical assistance.

If swallowed:
First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: 214°C (417°F)

Lower/Upper explosion limit:
No data available

Suitable extinguishing media:
Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Special hazards arising from the substance or mixture:
Oxides of carbon, Incomplete combustion products: smoke and fume.

Advice for firefighters:
Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

SECTION 6: ACCIDENTAL RELEASE MEASURES

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

Evacuation Procedures:
Evacute personnel to safe areas.

Special Instructions:
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
SECTION 7: HANDLING AND STORAGE

Handling:
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

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:
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid
Form: Clear
Color: Colorless
Odor: Mild
Odor Threshold: Not available
Relative Density: Not available
Density (at 20 °C): 970 kg/m³ (8.09 lbs/gal, 0.97 kg/dm³)
Flammability (Solid, Gas): Not available
Flash Point [Method]: 214°C (417°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: >350°C (662°F)
Boiling Point / Range: > 250°C (482°F)
Decomposition Temperature: Not available
Vapor Density (Air = 1): > 1 at 101 kPa
Vapor Pressure: < 0.001 kPa (0.01 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): Not available
pH: Not available
Log Pow (n-Octanol/Water Partition Coefficient): Not available
Solubility in Water: Negligible
Viscosity: 32.1 cSt (32.1 mm²/sec) at 40 °C | 108 cSt (108 mm²/sec) at 20°C
Oxidizing Properties: See Hazards Identification Section.
Freezing Point: Not available
Melting Point: Not available
Pour Point: -48°C (-54°F)
Molecular Weight: 418
Hygroscopic: No
Coefficient of Thermal Expansion: 0.00076 V/VDEGC

SECTION 10: STABILITY AND REACTIVITY

Conditions to avoid: Excessive heat. High energy sources of ignition.
Substances to avoid: Strong oxidizers
Hazardous reactions: Hazardous polymerization will not occur.
Decomposition products: Material does not decompose at ambient temperatures.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - Rat - male and female - > 10,000 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - Rat - 4 h - > 4.4 mg/l

LD50 Dermal - Rabbit - > 3,160 mg/kg
No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Buehler Test - Guinea pig
Result: Does not cause skin sensitisation.
Germ cell mutagenicity
Ames test
S. typhimurium
Result: negative

Carcinogenicity

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
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY
Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to demonstrate chronic toxicity to aquatic organisms.

MOBILITY
Material -- Expected to partition to sediment and wastewater solids. Minimally volatile.

PERSISTENCE AND DEGRADABILITY
Biodegradation:
Material -- Expected to be readily biodegradable.

BIOACCUMULATION POTENTIAL
Material -- Potential to bioaccumulate is low.

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Test Duration</th>
<th>Organism Type</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic - Acute</td>
<td>96 hour(s)</td>
<td>Oncorhynchus mykiss</td>
<td>LC0 0.16 mg/l: data for the material</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic - Acute</td>
<td>48 hour(s)</td>
<td>Daphnia magna</td>
<td>EC0 0.06 mg/l: data for the material</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic - Acute</td>
<td>5 day(s)</td>
<td>Pseudokirchneriella subcapitata</td>
<td>EC0 1.8 mg/l: data for the material</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic - Chronic</td>
<td>284 day(s)</td>
<td>Oryzia latipes</td>
<td>NOEC 18.5 ug/g: data for the material</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquatic - Chronic</td>
<td>21 day(s)</td>
<td>Daphnia magna</td>
<td>NOEC 0.0036 mg/l: data for the material</td>
</tr>
<tr>
<td>Toxicity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Toxicity

| Aquatic - Acute Toxicity | 5 day(s) | Pseudokirchneriella subcapitata | NOEC 1.8 mg/l: data for the material |

### Persistence, Degradability and Bioaccumulation Potential

<table>
<thead>
<tr>
<th>Media</th>
<th>Test Type</th>
<th>Duration</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air</td>
<td>Photolysis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Half-life (t1/2) 5.4 hour(s)</td>
</tr>
<tr>
<td>Sediment</td>
<td>Sediment Adsorption</td>
<td></td>
<td>log Koc 5.9</td>
</tr>
<tr>
<td>Water</td>
<td>Bioaccumulation</td>
<td>14 day(s)</td>
<td>BCF &lt;3</td>
</tr>
<tr>
<td>Water</td>
<td>Ready Biodegradability</td>
<td>28 day(s)</td>
<td>Percent Degraded 70.5</td>
</tr>
</tbody>
</table>

NOTE: Not toxic to aquatic organisms at maximum water solubility.

### SECTION 13: DISPOSAL CONSIDERATIONS

**Waste disposal of substance:**
Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

**Container disposal:**
Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations.

### SECTION 14: TRANSPORT INFORMATION

**LAND (US DOT):** Not Regulated for Land Transport

**LAND (TDG):** Not Regulated for Land Transport

**SEA (IMDG):** Not Regulated for Sea Transport according to IMDG-Code

**Marine Pollutant:** No

**AIR (IATA):** Not Regulated for Air Transport

*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

**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:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>bis(2-Ethylhexyl) phthalate</td>
<td>117-81-7</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

**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

Pennsylvania Right To Know Components
Diisononyl phthalate  CAS-No.  28553-12-0
bis(2-Ethylhexyl) phthalate  CAS-NO.   117-81-7  Revision Date  2007-07-01

New Jersey Right To Know Components
Diisononyl phthalate  CAS-No.  28553-12-0
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  2009-02-01

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  2009-02-01

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under section 2.
H351  Suspected of causing cancer.
H360  May damage fertility or the unborn child.
Repr. Reproductive toxicity

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

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

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

Revision date: 02/25/2015

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