1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers
Product Name: 1,2-dioleoyl-sn-glycero-3-phospho-(1’-rac-glycerol) (sodium salt) in Chloroform
Product Number: 840475C

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Company Avanti Polar Lipids, Inc.
700 Industrial Park Drive
Alabaster, Alabama 35007
USA
Telephone (205) 663-2494 / (800) 227-0651
Fax (205) 663-0756 / (800) 229-1004

1.4 Emergency telephone number
+1 800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 3), H331
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Specific target organ toxicity - repeated exposure (Category 1), Liver, Kidney, H372
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word Danger

Hazard statement(s)
H302 Harmful if swallowed.
H315 Causes skin Irritation.
H319 Causes serious eye Irritation.
H331 Toxic if inhaled.
### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroform</td>
<td>Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 3; H302, H315, H319, H331, H336, H351, H361, H372, H402</td>
<td>&gt;= 95 - &lt;= 100%</td>
</tr>
<tr>
<td>1,2-dioleoyl-sn-glycero-3-phospho-(1'-rac-glycerol) (sodium salt)</td>
<td>No Known Hazards</td>
<td>&lt;=5%</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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. Take victim immediately to hospital. 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.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURE

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

5.2 Special hazards arising from the substance or mixture
No data available

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

5.4 Further information
6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
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.

Recommended storage temperature -20 °C

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloroform</td>
<td>67-66-3</td>
<td>TWA</td>
<td>10.000000 ppm</td>
<td>USA, ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

No data available
<table>
<thead>
<tr>
<th>Remarks</th>
<th>Central Nervous System impairment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Liver damage</td>
</tr>
<tr>
<td></td>
<td>Embryo/fetal damage</td>
</tr>
<tr>
<td></td>
<td>Confirmed animal carcinogen with unknown relevance to humans</td>
</tr>
<tr>
<td>ST</td>
<td>2.000000 ppm 9.780000 mg/m³</td>
</tr>
<tr>
<td></td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>Potential Occupational Carcinogen</td>
<td></td>
</tr>
<tr>
<td>See Appendix A</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>50.000000 ppm 240.000000 mg/m³</td>
</tr>
<tr>
<td></td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
</tbody>
</table>

The value in mg/m³ is approximate. Ceiling limit is to be determined from breathing-zone air samples.

8.2 Exposure controls

Appropriate engineering controls
- Avoid contact with skin, eyes and clothing.
- Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses 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
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Clear Colorless Solution
b) Odor No data available
c) Odor Threshold No data available
d) pH No data available
e) Melting point/freezing point -63 °C (-81 °F)
f) Initial boiling point and boiling range 60.5 - 61.5 °C (140.9 - 142.7 °F)
   at 1,013 hPa (760 mmHg)
g) Flash point No data available
h) Evaporation rate No data available
i) Flammability (solid, gas) No data available
j) Upper/lower flammability or explosive limits No data available
k) Vapor pressure 213 hPa (160 mmHg) at 20 °C (68 °F)
l) Vapor density 4.1
m) Relative density 1.480 g/cm³
n) Water solubility No data available
o) Partition coefficient: n- octanol/water log Pow: 1.97
p) Auto-ignition temperature No data available
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 27.1 mN/m at 20 °C (68 °F)
Relative vapor density 4.1

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available
10.5 Incompatible materials
   Strong oxidizing agents, Strong bases, Magnesium, Sodium/sodium oxides, Lithium

10.6 Hazardous decomposition products
   Other decomposition products - No data available
   In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION
11.1 Information on toxicological effects
   Acute toxicity
   No data available

   Inhalation
   No data available

   Dermal
   No data available

   Skin corrosion/irritation
   No data available

   Serious eye damage/eye irritation
   No data available

   Respiratory or skin sensitization
   No data available

   Germ cell mutagenicity
   No data available

   Carcinogenicity
   IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)
   IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Cholesterol)
   NTP: Reasonably anticipated to be a human carcinogen (Chloroform)
   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

Vomiting, Gastrointestinal disturbance. Exposure to and/or consumption of alcohol may increase toxic effects. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Toxicity to fish
- LC100 - Leuciscus idus (Golden orfe) - 220 mg/l - 48 h
- LC50 - Danio rerio (zebra fish) - 121 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates
- EC50 - Daphnia magna (Water flea) - 79 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
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.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1888 Class: 6.1 Packing group: III
1,2-dioleoyl-sn-glycero-3-phospho-(1’-rac-glycerol) (sodium salt)

Proper shipping name: Chloroform solution
Reportable Quantity (RQ): 10 lbs
Poison Inhalation Hazard: No

**IMDG**
UN number: 1888  Class: 6.1  Packing group: III  EMS-No: F-A, S-A
Proper shipping name: Chloroform solution

**IATA**
UN number: 1888  Class: 6.1  Packing group: III
Proper shipping name: Chloroform solution

---

15. REGULATORY INFORMATION

**SARA 302 Components**
The following components are subject to reporting levels established by SARA Title III, Section 302:

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-66-3</td>
<td>2008-11-03</td>
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**SARA 313 Components**
The following components are subject to reporting levels established by SARA Title III, Section 313:

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</table>

**SARA 311/312 Hazards**
Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

<table>
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**Pennsylvania Right To Know Components**

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**New Jersey Right To Know Components**

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**California Prop. 65 Components**
WARNING! This product contains a chemical known to the State of California to cause cancer.
Chloroform

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WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive
Chloroform

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</thead>
<tbody>
<tr>
<td>67-66-3</td>
<td>2008-11-03</td>
</tr>
</tbody>
</table>
harm
Chloroform

16. OTHER INFORMATION

Further information

Copyright Avanti Polar Lipids, Inc. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Avanti Polar Lipids, Inc., and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.