Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Code: 20954
Product Name: 1,2-Dilinoleoyl-sn-glycero-3-PC
Synonyms: 2,3-bis(((9Z,12Z)-octadeca-9,12-dienoyl)oxy)propyl (2-(trimethylammonio)ethyl) phosphate; 1,2-Dilinoleoyl-sn-glycero-3-Phosphatidylcholine; DLPC; 18:2 (cis) PC;

1.2 Relevant identified uses of the substance or mixture and uses advised against:
Relevant identified uses: For research use only, not for human or veterinary use.

1.3 Details of the Supplier of the Safety Data Sheet:

Company Name: Cayman Chemical Company
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335

1.4 Emergency telephone number:
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

2.1 Classification of the Substance or Mixture:
Acute Toxicity: Inhalation, Category 3
Acute Toxicity: Oral, Category 4
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2A
Carcinogenicity, Category 2
Toxic To Reproduction, Category 2
Specific Target Organ Toxicity (repeated exposure), Category 2

2.2 Label Elements:

GHS Signal Word: Danger
GHS Hazard Phrases:
H302: Harmful if swallowed.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H351: Suspected of causing cancer.
H361: Suspected of damaging fertility or the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure.
GHS Precaution Phrases:
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe (dust/fume/gas/mist/vapors/spray).
P264: Wash (hands) thoroughly after handling.
P280: Wear (protective gloves/protective clothing/eye protection/face protection).

GHS Response Phrases:
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+313: IF exposed or concerned: Get medical attention/advice.
P311: Call a POISON CENTER or doctor/physician.
P314: Get medical attention/advice if you feel unwell.
P330: Rinse mouth.
P332+313: IF skin irritation occurs, get medical advice/attention.
P337+313: IF eye irritation persists, get medical advice/attention.
P362+364: Take off contaminated clothing and wash it before reuse.

GHS Storage and Disposal Phrases:
Please refer to Section 7 for Storage and Section 13 for Disposal information.

2.3 Adverse Human Health Effects and Symptoms:
Causes skin irritation.
Causes serious eye irritation.
Harmful if swallowed.
Material may be irritating to the mucous membranes and upper respiratory tract.
May be harmful by skin absorption.
May cause damage to organs through prolonged or repeated exposure.
May cause respiratory system irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
Toxic if inhaled.

To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

<table>
<thead>
<tr>
<th>CAS # / REACH Registration No.</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>6542-05-8 / NA</td>
<td>1,2-Dilinoleoyl-sn-glycero-3-PC</td>
<td>2.0 %</td>
<td>NA / NA</td>
<td>No data available.</td>
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<tr>
<td>67-66-3 / FS9100000</td>
<td>Chloroform</td>
<td>98.0 %</td>
<td>200-663-8 / 602-006-00-4</td>
<td>Acute Tox.(O) 4: H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox.(I) 3: H331</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Eye Damage 2: H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 2: H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Carcinogen 2: H351</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Toxic Repro. 2: H361d</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STOT (RE) 1: H372</td>
</tr>
</tbody>
</table>

Multi-region format
Section 4. First Aid Measures

4.1 Description of First Aid Measures:

In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

4.2 Important Symptoms and Effects, Both Acute and Delayed:

Exposure may cause: dizziness, drowsiness, gastrointestinal disturbances, headache, lassitude, nausea, and vomiting.

Section 5. Fire Fighting Measures

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

Unsuitable Extinguishing Media: Use water spray to cool fire-exposed containers.

5.2 Flammable Properties and Hazards:

Flash Pt: No data available.

Explosive Limits: LEL: No data. UEL: No data.

Autoignition Pt: No data.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

6.1 Protective Precautions, Protective Equipment and Emergency Procedures: Avoid breathing vapors and provide adequate ventilation. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

6.2 Environmental Precautions: Take steps to avoid release into the environment, if safe to do so.

6.3 Methods and Material For Containment and Cleaning: Contain spill and collect, as appropriate. Transfer to a chemical waste container for disposal in accordance with local regulations. Keep container tightly closed.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid prolonged or repeated exposure.

7.2 Precautions To Be Taken in Storing: Store in accordance with information listed on the product insert.
Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Chemical Name</th>
<th>Jurisdiction</th>
<th>Recommended Exposure Limits</th>
<th>Notations</th>
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</thead>
<tbody>
<tr>
<td>67-66-3</td>
<td>Chloroform</td>
<td>ACGIH TLV</td>
<td>TLV: 10 ppm</td>
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<tr>
<td></td>
<td></td>
<td>Europe</td>
<td>TWA: 10 mg/m3 (2 ppm)</td>
<td>Skin Absorption</td>
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<tr>
<td></td>
<td></td>
<td>France VL</td>
<td>TWA: 10 mg/m3 (2 ppm)</td>
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<td></td>
<td></td>
<td></td>
<td>STEL: 250 mg/m3 (50 ppm)</td>
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<tr>
<td></td>
<td></td>
<td>OSHA PELs</td>
<td>CEIL: 50 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Britain EH40</td>
<td>TWA: 9.9 mg/m3 (2 ppm)</td>
<td>Skin Absorption</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STEL: ()</td>
<td></td>
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</tbody>
</table>

8.2 Exposure Controls:

8.2.1 Engineering Controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

8.2.2 Personal protection equipment:

Eye Protection: Safety glasses
Protective Gloves: Compatible chemical-resistant gloves
Other Protective Clothing: Lab coat
Respiratory Equipment: NIOSH approved respirator, as conditions warrant.

Work/Hygienic/Maintenance

Do not take internally.
Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
Wash thoroughly after handling.
No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas [X] Liquid [ ] Solid
Appearance and Odor: A solution in chloroform
pH: No data.
Melting Point: No data.
Boiling Point: No data.
Flash Pt: No data.
Evaporation Rate: No data.
Flammability (solid, gas): No data available.
Explosive Limits: LEL: No data. UEL: No data.
Vapor Pressure (vs. Air or mm Hg): 160 MM_HG at 20.0 C
Vapor Density (vs. Air = 1): No data.
Specific Gravity (Water = 1): No data.
Solubility in Water: No data.
Octanol/Water Partition Coefficient: No data.
1,2-Dilinoleoyl-sn-glycero-3-PC

SAFETY DATA SHEET

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.
10.2 Stability: Unstable [   ] Stable [ X ]
10.3 Stability Note(s): Stable if stored in accordance with information listed on the product insert.
10.4 Conditions To Avoid: protect from air, light, and heat
10.5 Incompatibility - Materials
To Avoid:
- lithium
- magnesium
- potassium
- sodium/sodium oxides
- strong bases
- strong oxidizing agents

10.6 Hazardous
Decomposition or Byproducts:
- carbon dioxide
- carbon monoxide
- chlorine
- hydrogen chloride gas
- phosgene gas

Section 11. Toxicological Information

11.1 Information on Toxicological Effects:
The toxicological effects of this product have not been thoroughly studied.

Chloroform - Toxicity Data: Oral LD50 (rat): 300 mg/kg; Oral LD50 (mouse): 36 mg/kg; Skin LD50 (rabbit): > 20 gm/kg; Inhalation TCLO (human): 5,000 mg/m3 (7m); Inhalation LC50 (rat): 47,702 mg/m3 (4h);
Chloroform - Irritation Data: Skin (rabbit):10 mg (24h) mild; Eye (rabbit): 20 mg (24h) moderate;
Chloroform - Investigated as a carcinogetic, mutagen, reproductive effector and tumorigen; May cause damage to organs through prolonged or repeated exposure.

Chronic Toxicological Effects:
Chloroform - California Prop. 65 carcinogetic.

Carcinogenicity/Other Information:
Chloroform - IARC category 2B; NTP Carcinogen - reasonably anticipated;

Carcinogenicity:
NTP? No IARC Monographs? Yes OSHA Regulated? No

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
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<tr>
<td>6542-05-8</td>
<td>1,2-Dilinoleoyl-sn-glycero-3-PC</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
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<td>67-66-3</td>
<td>Chloroform</td>
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<td>2B</td>
<td>A3</td>
<td>n.a.</td>
</tr>
</tbody>
</table>
Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.

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: No data available.

12.6 Other adverse effects: No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Chloroform Solution
DOT Hazard Class: 6.1 - POISON
UN/NA Number: 1888 Packing Group: III

14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: Chloroform Solution
UN Number: 1888 Packing Group: III
Hazard Class: 6.1 - POISON

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Chloroform Solution
UN Number: 1888 Packing Group: III
Hazard Class: 6.1 - POISON IATA Classification: 6.1

Transport in accordance with local, state, and federal regulations.

When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
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<tr>
<td>6542-05-8</td>
<td>1,2-Dilinoleoyl-sn-glycero-3-PC</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>67-66-3</td>
<td>Chloroform</td>
<td>Yes 10000 LB</td>
<td>Yes 10 LB</td>
<td>Yes</td>
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</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>Other US EPA or State Lists</th>
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<tbody>
<tr>
<td>6542-05-8</td>
<td>1,2-Dilinoleoyl-sn-glycero-3-PC</td>
<td>CAA HAP,ODC: No; CWA NPDES: No; TSCA: No; CA PROP.65: No</td>
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<tr>
<td>67-66-3</td>
<td>Chloroform</td>
<td>CAA HAP,ODC: HAP; CWA NPDES: Yes; TSCA: Yes -</td>
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<tr>
<td>Regulatory Information</td>
<td>Statement:</td>
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<tr>
<td>------------------------</td>
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<tr>
<td>This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.</td>
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### Section 16. Other Information

**Revision Date:** 01/21/2017  
**Additional Information About This Product:** No data available.  
**Company Policy or Disclaimer:**  
DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.