

# Certificate of Analysis

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**Product Name:** DSPE-PEG 2000 Maleimide

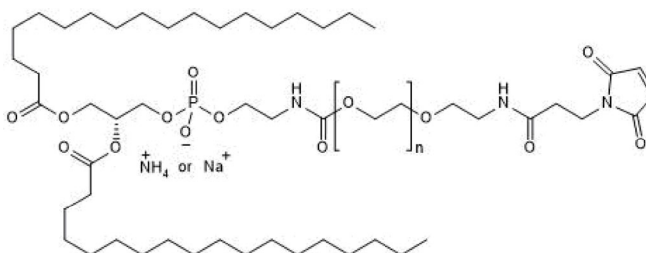
**Catalog No.:** 7947

**Batch No.:** 1

**IUPAC Name:** 1,2-Distearoyl-*sn*-glycero-3-phosphoethanolamine-*N*-[maleimide(polyethylene glycol-2000)]

## 1. PHYSICAL AND CHEMICAL PROPERTIES

<b>Batch Molecular Formula:</b>	$(C_2H_4O)_n C_{51}H_{91}N_3O_{13}P.NH_4$ or Na
<b>Physical Appearance:</b>	White solid
<b>Solubility:</b>	ethanol to 10 mg/ml with gentle warming chloroform to 10 mg/ml
<b>Storage:</b>	Store at -20°C
<b>Batch Molecular Structure:</b>	



## 2. ANALYTICAL DATA

<b>HPLC:</b>	Shows 92.9 % purity
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Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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**Batch No.:** 1

**IUPAC Name:** 1,2-Distearoyl-sn-glycero-3-phosphoethanolamine-N-[maleimide(polyethylene glycol-2000)]

**Description:**

DSPE-PEG 2000 Maleimide is a functionalized phospholipid-polymer conjugate. It comprises a 1,2-distearoyl-sn-glycero-PE (DSPE) covalently coupled to a linear polyethylene glycol ( $M_r$  2000) with a maleimide-terminated end for onward chemistry. It is commonly used to synthesize antibody-coupled liposomes and lipid nanoparticles. It has been used in antibody-targeted LNP-mRNA systems to generate transient antifibrotic chimeric antigen receptor (CAR) T cells *in vivo*.

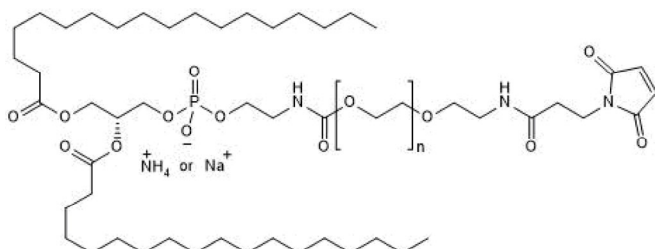
**Physical and Chemical Properties:**

Batch Molecular Formula:  $(C_{24}H_{48}O)_n C_{51}H_{91}N_3O_{13}P.NH_4$  or Na

Physical Appearance: White solid

**Minimum Purity:** ≥90%

**Batch Molecular Structure:**



**References:**

**Herrera-Barrera *et al*** (2023) Peptide-guided lipid nanoparticles deliver mRNA to the neural retina of rodents and nonhuman primates. *Sci.Adv.* **9** eadd4623. PMID: 36630502.

**Rurik *et al*** (2022) CAR T cells produced *in vivo* to treat cardiac injury. *Science* **375** 91. PMID: 34990237.

**Ishida *et al*** (1999) A combinatorial approach to producing sterically stabilized (Stealth) immunoliposomal drugs. *FEBS Lett.* **460** 129. PMID: 10571074.

**Storage:** Store at -20°C. This product is packaged under an inert atmosphere.

**Solubility & Usage Info:**

ethanol to 10 mg/ml with gentle warming

chloroform to 10 mg/ml

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. \*Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

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