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Safety Data Sheet acc. to OSHA HCS

Date of issue: 03/27/2025 Revision date 03/27/2025

1 Identification

· Product identifier

Trade name: 1,2-Diphytanoyl-sn-glycero-3-PE

· **Synonym** 1,2-diphytanoyl-sn-glycero-3-phosphatidylethanolamine

· Other means of identification

· Article number: 15094

· Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use.

· Details of the supplier of the safety data sheet

Manufacturer/Supplier: Cayman Chemical Co. 1180 E. Ellsworth Rd. Ann Arbor, MI 48108

USA

· Information department: Product safety department

Emergency telephone number:

During normal opening times: +1 (734) 971-3335

US/CANADA: 800-424-9300

Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

· Classification of the substance or mixture



GHS02 Flame

Flammable liquids 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute toxicity - inhalation 3 H331 Toxic if inhaled.



GHS08 Health hazard

Carcinogenicity 2
Reproductive toxicity 2

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

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Specific target organ toxicity (single exposure) 1 H370 Causes of

H370 Causes damage to the central nervous

system and the visual organs.

Specific target organ toxicity (repeated exposure) 1 H372 Causes damage to the central nervous

system, the kidneys, the liver and the respiratory system through prolonged or

repeated exposure.



Acute toxicity - oral 4 H302 Harmful if swallowed.

Acute toxicity - dermal 4 H312 Harmful in contact with skin.

Skin irritation 2 H315 Causes skin irritation.

Eye irritation 2A H319 Causes serious eye irritation.

Specific target organ toxicity (single exposure) 3 H336 May cause drowsiness or dizziness.

· Label elements

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms









GHS02 GHS06 GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labeling:

Chloroform Methanol

· Hazard statements

H225 Highly flammable liquid and vapor.

H302+H312 Harmful if swallowed or in contact with skin.

H331 Toxic if inhaled. H315 Causes skin irritation.

H319 Causes serious eye irritation.H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

H370 Causes damage to the central nervous system and the visual organs.

H336 May cause drowsiness or dizziness.

H372 Causes damage to the central nervous system, the kidneys, the liver and the respiratory system through prolonged or repeated exposure.

· Precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P240 Ground / bond container and receiving equipment.

P241 Use explosion-proof [electrical/ventilating/lighting] equipment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharge.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash thoroughly after handling.

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P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing

protection.

P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

P330 Rinse mouth.

P321 Specific treatment (see on this label).

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with

water [or shower].

P304+P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P314 Get medical advice/attention if you feel unwell.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire: Use CO2, powder or water spray to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P403+P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international

regulations.

· Information pertaining to particular dangers for man and environment:

- · Classification system:
- NFPA ratings (scale 0 4)



Health = 2 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = *2 Fire = 3 Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.
- Classification according to (d)(1)(ii) of § 1910.1200

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

· Hazards not otherwise classified

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

3 Composition/information on ingredients

- · Chemical characterization: Mixtures
- Description: Mixture of the substances listed below with nonhazardous additions.

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Trade name: 1,2-Diphytanoyl-sn-glycero-3-PE

		(Contd. from page 3)
· Dangerous compon	ents:	
CAS: 67-66-3 RTECS: FS9100000	Chloroform	79.2%
CAS: 67-56-1 RTECS: PC1400000	Methanol	19.8%
· Other ingredients		
201036-16-0 1,2-Dip	hytanoyl-sn-glycero-3-PE	1.0%

4 First-aid measures

- · Description of first aid measures
- · General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· After inhalation:

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- · After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- · After swallowing: Immediately call a doctor.
- · Most important symptoms and effects, both acute and delayed

No further relevant information available.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

67-56-1During heating or in case of fire poisonous gases are produced.

- Advice for firefighters
- · **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

· Environmental precautions:

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to section 13.

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Ensure adequate ventilation.

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· Protective Action	Criteria for	r Chemicals
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· PAC-1:				
67-66-3	Chloroform	2.0 ppm		
67-56-1	Methanol	530 ppm		
· PAC-2:	· PAC-2:			
67-66-3	Chloroform	64 ppm		
67-56-1	Methanol	2,100 ppm		
· PAC-3:	· PAC-3:			
67-66-3	Chloroform	3200 ppm		
67-56-1	Methanol	7200* ppm		

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Keep respiratory protective device available.

- · Conditions for safe storage, including any incompatibilities
- · Storage: Store in accordance with information listed on the product insert.
- Requirements to be met by storerooms and receptacles: Store in a cool location.
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

67-66-3 Chloroform

PEL Ceiling limit value: 240 mg/m³, 50 ppm
REL Short-term value: 9.78* mg/m³, 2* ppm
*60-min; See Pocket Guide App. A
TLV Long-term value: 49 mg/m³, 10 ppm
A3

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67-56-1 Methanol

PEL Long-term value: 260 mg/m³, 200 ppm
REL Short-term value: 325 mg/m³, 250 ppm
Long-term value: 260 mg/m³, 200 ppm

Skin

TLV Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm

Skin; BEI

Ingredients with biological limit values:

67-56-1 Methanol

BEI 15 mg/L

Medium: urine
Time: end of shift

Parameter: Methanol (background, nonspecific)

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Appropriate engineering controls No further data; see section 7.
- Personal protective equipment:
- General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately. Avoid contact with the eyes and skin.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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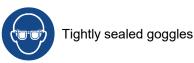
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Trade name: 1,2-Diphytanoyl-sn-glycero-3-PE

· Eye protection:



9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Physical state Liquid

· Color: According to product specification

Odor: Characteristic
 Structural Formula C45H90NO8P
 Molecular Weight 804.2 g/mol

· Storage Buffer

· Odor threshold: Not determined.

• Formulation An 80:20 solution in chloroform:methanol

Melting point/Melting range:
Boiling point/Boiling range:
Flammability:
Undetermined.
62 °C (143.6 °F)
Highly flammable.

· Explosion limits:

Lower: 5.5 Vol %
Upper: 44 Vol %
Flash point: 11 °C (51.8 °F)
Auto igniting: 455 °C (851 °F)
Decomposition temperature: Not determined.
pH-value: Not determined.

· Viscosity:

Kinematic: Not determined.
SOLUBILITY Chloroform: 3 mg/ml
Dynamic: Not determined.

Solubility in / Miscibility with

Water: Fully miscible.Partition coefficient (n-octanol/water): Not determined.

Vapor pressure at 20 °C (68 °F): 210 hPa (157.5 mm Hg)

Vapor pressure:

Density: Not determined.
 Relative density Not determined.
 Vapor density Not determined.
 Particle characteristics Not applicable.

· Other information

· Appearance:

· Form: Liquid

· Important information on protection of health

and environment, and on safety.

• **Ignition temperature:** Product is not selfigniting.

Danger of explosion: Product is not explosive. However, formation of

explosive air/vapor mixtures are possible.

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· Solvent content:

· Organic solvents: 19.8 % · VOC content: 19.80 %

198.0 g/l / 1.65 lb/gal

· Solids content: 1.0 %

· Change in condition

· Evaporation rate Not determined.

10 Stability and reactivity

- · **Reactivity** No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

- Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
Oral	LD50	351 mg/kg (rat)
Dermal	LD50	1,516 mg/kg (rabbit)
Inhalative	LC50/4 h	3.13 mg/l (rat)

67-66-3 Chloroform				
Oral	LD50	908 mg/kg (rat) OECD Test Guideline 401		
Inhalative	LC50/4 h	3.1 mg/l (rat) Expert judgment		
67-56-1 M	67-56-1 Methanol			
Oral	LD50	100.1 mg/kg (rat) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Symptoms: Nausea, Vomiting		
Dermal	LD50	300.1 mg/kg (rabbit) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)		
Inhalative	LC50/4 h	3.1 mg/l (rat) (Expert judgment) Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2) Symptoms: Irritation symptoms in the respiratory tract.		

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- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.
- · on the eye: Irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Toxic Harmful Irritant

· Interactive effects No interactive effects between components are known.

Carcinogenic categories

· IARC (International Agency for Research on Cancer)	
67-66-3 Chloroform	2B
· NTP (National Toxicology Program)	
67-66-3 Chloroform	R

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Alternative sources for toxicological information

No non-standard sources for toxicological information where used.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- Persistence and degradability No further relevant information available.
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- Other adverse effects
- · Additional ecological information:
- · General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- · Uncleaned packagings:
- · **Recommendation:** Disposal must be made according to official regulations.

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Trade name: 1,2-Diphytanoyl-sn-glycero-3-PE

· Recommended cleansing agent: Water, if necessary with cleansing agents.

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UN-Number	
DOT, IMDG, IATA	UN1992
UN proper shipping name	
DOT	Flammable liquids, toxic, n.o.s. (Methanol, Chlorofor
IMDG	FLAMMABLE LIQUID, TOXIC, N.O.S. (Methan
IATA	CHLOROFORM) Flammable liquid, toxic, n.o.s. (Methan
	CHLOROFORM)
Transport hazard class(es)	
DOT	
RAMMARE LOUD TOXIC 8	
Class	3 Flammable liquids
Label	3, 6.1
IMDG	
Class Label	3 Flammable liquids 3/6.1
IATA	3/0.1
Class	3 Flammable liquids
Label	3 (6.1)
Packing group DOT, IMDG, IATA	II
Environmental hazards:	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT	
Quantity limitations	On passenger aircraft/rail: 1 L

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Trade name: 1,2-Diphytanoyl-sn-glycero-3-PE

· IMDG
· Limited quantities (LQ)
· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· IATA
· Remarks:

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.

· Special precautions for user Warning: Flammable liquids

· Hazard identification number (Kemler code): 336 · EMS Number: F-E,S-D

· Segregation groups (SGG10) Liquid halogenated hydrocarbons

Stowage Category B

· **Stowage Code** SW2 Clear of living quarters.

· UN "Model Regulation": UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S.

(METHANOL, CHLOROFORM), 3 (6.1), II

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

· Sara

· Section	355 (extremely hazardous substances):		
67-66-3	Chloroform		
· Section	313 (Specific toxic chemical listings):		
67-66-3	Chloroform		
67-56-1	Methanol		
· TSCA (1	Toxic Substances Control Act):		
67-66-3	Chloroform	ACTIVE	
67-56-1	Methanol	ACTIVE	
· Hazardo	· Hazardous Air Pollutants		
67-66-3	Chloroform		

67-56-1 Methanol

· Chemicals known to cause cancer:

67-66-3 Chloroform

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

67-66-3 Chloroform

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67-56-1 Methanol

Carcinogenic categories

· EPA (Environmental Protection Agency)

67-66-3 Chloroform

B2, L, NL

TLV (Threshold Limit Value)

67-66-3 Chloroform

А3

· NIOSH-Ca (National Institute for Occupational Safety and Health)

67-66-3 Chloroform

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- · Department issuing SDS: Environment protection department.
- · Contact: -
- Date of previous version 10/19/2022
- Date of preparation 03/27/2025
- Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flammable liquids 2: Flammable liquids - Category 2

Acute toxicity - oral 4: Acute toxicity - Category 4

Acute toxicity - inhalation 3: Acute toxicity - Category 3
Skin irritation 2: Skin corrosion/irritation - Category 2

Eye irritation 2A: Serious eye damage/eye irritation - Category 2A

Carcinogenicity 2: Carcinogenicity – Category 2
Reproductive toxicity 2: Reproductive toxicity – Category 2

Specific target organ toxicity (single exposure) 1: Specific target organ toxicity (single exposure) - Category 1

Specific target organ toxicity (repeated exposure) 1: Specific target organ toxicity (repeated exposure) - Category 1

* Data compared to the previous version altered.