



Printing date 05/07/2021 Revision date 05/07/2021

1 Identification

- · Product identifier
- · Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE
- Synonym

(7Z,10Z,13Z,16Z)-7,10,13,16-docosatetraenoic acid, (1R)-1-[[[(2-aminoethoxy)hydroxyphosphinyl]oxy] methyl]-2-[(1-oxooctadecyl)oxy]ethyl ester; 1-Octadecanoyl-2-Docosatetraenoyl-sn-glycero-3-Phosphatidylethanolamine;

- · Article number: 33661
- · Application of the substance / the mixture

This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.

- · 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

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS06 Skull and crossbones

Acute Tox. 2 H310 Fatal in contact with skin.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.

STOT RE 1 H372 Causes damage to the central nervous system, the kidneys, the liver and the

respiratory system through prolonged or repeated exposure.



GHS09 Environment

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

(Contd. on page 2)

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

(Contd. from page 1)



Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Aguatic Acute 3 H402 Harmful to aquatic life.

· Label elements

· GHS label elements

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

Hazard pictograms











GHS02 GHS06 GHS07 GHS08 GHS09

· Signal word Danger

· Hazard-determining components of labeling:

Chloroform

· Hazard statements

H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H310 Fatal in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

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

H402 Harmful to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· 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/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

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

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P262 Do not get in eyes, on skin, or on clothing.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

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

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

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

(Contd. on page 3)

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

(Contd. from page 2)

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

present and easy to do. Continue rinsing.

P310 Immediately call a poison center/doctor.

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

P321 Specific treatment (see on this label).

P314 Get medical advice/attention if you feel unwell.

P330 Rinse mouth.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P332+P313 If skin irritation occurs: Get medical advice/attention. P337+P313 If eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.

P391 Collect spillage.

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.

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



Health = 3 Fire = 3 Reactivity = 0

· HMIS-ratings (scale 0 - 4)



Health = 3 Fire = 3

Reactivity = 0

- · Other hazards
- · Results of PBT and vPvB assessment
- PBT: Not applicable.vPvB: Not applicable.

3 Composition/information on ingredients

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

 Dangerous components 	erous compo	nents	
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CAS: 67-66-3 Chloroform 99.0% RTECS: FS9100000

Other ingredients

131350-53-3 1-Stearoyl-2-Adrenoyl-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.

· After inhalation: In case of unconsciousness place patient stably in side position for transportation.

(Contd. on page 4)

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

(Contd. from page 3)

- · 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.
- · Information for doctor:
- · Most important symptoms and effects, both acute and delayed

May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects. 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.

- · For safety reasons unsuitable extinguishing agents: Water with full jet
- · 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:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

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 item 13.

Ensure adequate ventilation.

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.

· Protective Action Criteria for Chemicals

· PAC-1:	
67-66-3 Chloroform	2 ppm
· PAC-2:	
67-66-3 Chloroform	64 ppm
· PAC-3:	
67-66-3 Chloroform	3,200 ppm

US

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

(Contd. from page 4)

7 Handling and storage

· Handling:

· 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:
- 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

- · Additional information about design of technical systems: No further data; see item 7.
- · 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

- · Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- · 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.

(Contd. on page 6)

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

(Contd. from page 5)

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.

· Eye protection:



Tightly sealed goggles

9 Phy	vsical	and c	hemica	pro	perties

 Information on basic 	physical and chemical	properties
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· General Information

· Appearance:

Form: Liquid

Color: According to product specification

Odor: CharacteristicStructural Formula C45H82NO8P

· Molecular Weight 796.1

· Odor threshold: Not determined. · Formulation A solution in chloroform

· pH-value: Not determined.

pri-value.

· Change in condition

Melting point/Melting range: $-63 \,^{\circ}\text{C} \, (-81.4 \,^{\circ}\text{F})$ Boiling point/Boiling range: $62 \,^{\circ}\text{C} \, (143.6 \,^{\circ}\text{F})$

· Flash point: 0 °C (32 °F)

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 982 °C (1,799.6 °F)

• **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/

vapor mixtures are possible.

· Explosion limits:

Lower: Not determined. Upper: Not determined.

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

Density at 20 °C (68 °F): 1.47988 g/cm³ (12.3496 lbs/gal)

(Contd. on page 7)

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

		(Contd. from page
· Relative density	Not determined.	
· Vapor density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water at 20 °C (68 °F):	8 g/l	
· Partition coefficient (n-octanol/w	rater): Not determined.	
· Viscosity:		
Dynamic at 20 °C (68 °F):	0.56 mPas	
Kinematic:	Not determined.	
· Solvent content:		
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	1.0 %	
· Other information	No further relevant information available.	

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 Tox	cicity Estimate)		
Oral	LD50	36.4 mg/kg (mouse)	
Dermal	LD50	75.8 mg/kg (rat)	
67-66-3 Chlorof	orm		
Oral	LDLO	2,514 mg/kg (man)	
	LD50	300 mg/kg (rat)	
Dermal	LD50	>20 g/kg (rabbit)	
	LD50	75 mg/kg (rat)	
Inhalative	LC50	47,702 mg/m³/4h (rat)	
	TCLO	5,000 mg/m³/7m (hmn)	
Irritation of skin	Irritation	10 mg/24h (rabbit)	
Irritation of eyes	Irritation	20 mg/24h (rabbit)	
	Intraperitoneal LD50	623 mg/kg (mouse)	
	•	(Contd. on page 8)	

(Contd. from page 7)

Safety Data Sheet acc. to OSHA HCS

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

· 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:

Harmful Irritant

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.

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · 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.

Also poisonous for fish and plankton in water bodies.

- Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · **vPvB**: Not applicable.
- · Other adverse effects No further relevant information available.

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.

110

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

(Contd. from page 8)

Transport information	
UN-Number	
DOT, IMDG, IATA	UN1992
UN proper shipping name	
DOT	Flammable liquids, toxic, n.o.s. (Chloroform)
IMDG	FLAMMABLE LIQUID, TOXIC, N.O (CHLOROFORM)
IATA	Flammable liquid, toxic, n.o.s. (CHLOROFORM)
Transport hazard class(es)	
DOT	
TOXIC TOXIC	
Class	3 Flammable liquids
Label	3, 6.1
IMDG	
Class	3 Flammable liquids
Label	3/6.1
Class	3 Flammable liquids
Label	3 (6.1)
Packing group	
DOT, IMDG, IATA	II
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Flammable liquids
Hazard identification number (Kemler code): EMS Number:	336 F-E,S-D
Segregation groups	Liquid halogenated hydrocarbons
Stowage Category	В
Stowage Code	SW2 Clear of living quarters.
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
	On cargo aircraft only: 60 L

Printing date 05/07/2021 Revision date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

	(Contd. from page 9
·IMDG	
· Limited quantities (LQ)	1L
· 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.
UN "Model Regulation":	UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S (CHLOROFORM), 3 (6.1), II

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

· TSCA (Toxic Substances Control Act):
67-66-3 | Chloroform | ACTIVE

· Hazardous Air Pollutants

67-66-3 Chloroform Proposition 65

Chemicals known to cause cancer:

67-66-3 Chloroform

15 Regulatory information

· 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

· Carcinogenic categories

· EPA (Environmental Protection Agency)	
67-66-3 Chloroform	B2, L, NL
· TLV (Threshold Limit Value)	
67-66-3 Chloroform	A3

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

67-66-3 Chloroform

(Contd. on page 11)

Revision date 05/07/2021 Printing date 05/07/2021

Trade name: 1-Stearoyl-2-Adrenoyl-sn-glycero-3-PE

(Contd. from page 10)

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 preparation / last revision 05/07/2021 / -
- · 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**

Flam. Liq. 2: Flammable liquids - Category 2

Acute Tox. 4: Acute toxicity – Category 4 Acute Tox. 2: Acute toxicity – Category 2

Skin Irrit. 2: Skin corrosion/irritation - Category 2

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

Carc. 2: Carcinogenicity - Category 2

Repr. 2: Reproductive toxicity - Category 2

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

Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard - Category 3

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard - Category 1