



Avanti Polar Lipids, LLC. 700 Industrial Park Drive, Alabaster, AL 35007, USA • (800) 227-0651 • (205) 663-2494  
• Fax (800) 229-1004 • (205) 663-0756 • E-mail General Inquiries: [customerservice@avantiresearch.com](mailto:customerservice@avantiresearch.com)  
• E-mail Technical Questions: [technical@avantiresearch.com](mailto:technical@avantiresearch.com) • Visit [www.avantiresearch.com](http://www.avantiresearch.com)

---

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : 1-palmitoyl-2-oleoyl-sn-glycero-3-phospho(tempo)choline

Product Number : 810609C

Brand : Avanti

REACH No. :

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : For R&D use only. Not for pharmaceutical, household or other uses.

**1.3**

CHEMIKART

**1.4 Emergency telephone**

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

---

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Acute toxicity, (Category 4) H302: Harmful if swallowed.

Acute toxicity, (Category 3) H331: Toxic if inhaled.

Skin irritation, (Category 2) H315: Causes skin irritation.

Eye irritation, (Category 2) H319: Causes serious eye irritation.

Carcinogenicity, (Category 2) H351: Suspected of causing cancer.

Reproductive toxicity, (Category 2) H361d: Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure, (Category 3), Central nervous system H336: May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure, (Category 1) H372: Causes damage to organs through prolonged or repeated exposure.

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

#### Pictogram

|                                |                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------|
| Signal Word                    | Danger                                                                                                   |
| Hazard Statements              |                                                                                                          |
| H302                           | Harmful if swallowed.                                                                                    |
| H315                           | Causes skin irritation.                                                                                  |
| H319                           | Causes serious eye irritation.                                                                           |
| H331                           | Toxic if inhaled.                                                                                        |
| H336                           | May cause drowsiness or dizziness.                                                                       |
| H351                           | Suspected of causing cancer.                                                                             |
| H361d                          | Suspected of damaging the unborn child.                                                                  |
| H372                           | Causes damage to organs through prolonged or repeated exposure.                                          |
| Precautionary Statements       |                                                                                                          |
| P201                           | Obtain special instructions before use.                                                                  |
| P260                           | Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.                                                     |
| P264                           | Wash skin thoroughly after handling.                                                                     |
| P280                           | Wear protective gloves/ protective clothing/ eye protection/ face protection.                            |
| P304 + P340 + P311             | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor. |
| P403 + P233                    | Store in a well-ventilated place. Keep container tightly closed.                                         |
| Supplemental Hazard Statements | none                                                                                                     |
|                                | For use in industrial installations only.                                                                |

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

---

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Synonyms : 16:0-18:1 Tempo PC

| Component           |                       | Classification                                                                                                                                                                                      | Concentration    |
|---------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Chloroform</b>   |                       |                                                                                                                                                                                                     |                  |
| CAS-No.             | 67-66-3               | Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; H302, H331, H315, H319, H351, H361d, H336, H372<br>Concentration limits:<br>20 %: STOT SE 3, H336; | >= 90 - <= 100 % |
| EC-No.              | 200-663-8             |                                                                                                                                                                                                     |                  |
| Index-No.           | 602-006-00-4          |                                                                                                                                                                                                     |                  |
| Registration number | 01-2119486657-20-XXXX |                                                                                                                                                                                                     |                  |
|                     |                       |                                                                                                                                                                                                     |                  |

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

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). 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

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides

Hydrogen chloride gas

Not combustible.

Ambient fire may liberate hazardous vapours.

### **5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **5.4 Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **6.2 Environmental precautions**

Do not let product enter drains.

### **6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### **6.4 Reference to other sections**

For disposal see section 13.

---

## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### **7.2 Conditions for safe storage, including any incompatibilities**

#### **Storage conditions**

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

**Storage stability** Recommended storage temperature

-20 °C

#### **Storage class**

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

Ingredients with workplace control parameters

### 8.2 Exposure controls

Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### Skin protection

required

#### Body Protection

protective clothing

#### Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type AX

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### Control of environmental exposure

Do not let product enter drains.

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                                                 |                                                          |
|-------------------------------------------------|----------------------------------------------------------|
| a) Physical state                               | liquid                                                   |
| b) Color                                        | colorless                                                |
| c) Odor                                         | sweet                                                    |
| d) Melting point/freezing point                 | Melting point: -63,5 °C at 1.013 hPa                     |
| e) Initial boiling point and boiling range      | 61,2 °C at 1.013 hPa                                     |
| f) Flammability (solid, gas)                    | No data available                                        |
| g) Upper/lower flammability or explosive limits | No data available                                        |
| h) Flash point                                  | - DIN 51755 Part 1 does not flashNot applicable          |
| i) Autoignition temperature                     | > 600 °C<br>at 1.013 hPa - DIN 51794<br>Not applicable   |
| j) Decomposition temperature                    | Distillable in an undecomposed state at normal pressure. |
| k) pH                                           | No data available                                        |

- |                                           |                                                                                  |
|-------------------------------------------|----------------------------------------------------------------------------------|
| l) Viscosity                              | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                       | 8,7 g/l at 23 °C - OECD Test Guideline 105                                       |
| n) Partition coefficient: n-octanol/water | log Pow: 1,97 at 25 °C - (ECHA), Bioaccumulation is not expected.                |
| o) Vapor pressure                         | 210 hPa at 20 °C                                                                 |
| p) Density                                | 1,49 g/cm <sup>3</sup>                                                           |
| Relative density                          | No data available                                                                |
| q) Relative vapor density                 | No data available                                                                |
| r) Particle characteristics               | No data available                                                                |
|                                           |                                                                                  |
| s) Explosive properties                   | No data available                                                                |
| t) Oxidizing properties                   | none                                                                             |

## 9.2 Other safety information

- |                              |                                        |
|------------------------------|----------------------------------------|
| Solubility in other solvents | organic solvent at 20 °C<br>- miscible |
| Surface tension              | 27,1 mN/m at 20,0 °C                   |
| Relative vapor density       | 4,12 - (Air = 1.0)                     |

---

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .  
Contains the following stabilizer(s):  
ethanol (0,5 %)

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Strong oxidizing agents, Strong bases, Magnesium, Sodium/sodium oxides, Lithium, various plastics

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

---

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

##### Acute toxicity

Acute toxicity estimate Oral - 913,48 mg/kg

(Calculation method)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Acute toxicity estimate Inhalation - 4 h - 3,12 mg/l - vapor(Calculation method)

Symptoms: Possible symptoms:, mucosal irritations

Dermal: No data available

##### Skin corrosion/irritation

Remarks: Mixture causes skin irritation.

##### Serious eye damage/eye irritation

Remarks: Mixture causes serious eye irritation.

##### Respiratory or skin sensitization

No data available

##### Germ cell mutagenicity

No data available

##### Carcinogenicity

Evidence of a carcinogenic effect.

##### Reproductive toxicity

Evidence of harm to the unborn child.

##### Specific target organ toxicity - single exposure

Mixture may cause drowsiness or dizziness.

##### Specific target organ toxicity - repeated exposure

Mixture causes damage to organs through prolonged or repeated exposure.

##### Aspiration hazard

No data available

### 11.2 Additional Information

#### Endocrine disrupting properties

##### Product:

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

## Components

### Chloroform

#### Acute toxicity

LD50 Oral - Rat - male - 908 mg/kg

(OECD Test Guideline 401)

Acute toxicity estimate Oral - 908 mg/kg

(ATE value derived from LD50/LC50 value)

LC50 Inhalation - Rat - 6 h - 9,17 mg/l - vapor

Acute toxicity estimate Inhalation - Expert judgment - 4 h - 3,1 mg/l - vapor

Dermal: No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: Irritating to skin. - 24 h

Remarks: (ECHA)

Remarks: Drying-out effect resulting in rough and chapped skin.

Skin - Rabbit

Result: slight irritation

Remarks: (IUCLID)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes.

Remarks: (ECHA)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

#### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(Regulation (EC) No. 440/2008, Annex, B.6)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Remarks: (ECHA)

Test Type: unscheduled DNA synthesis assay

Test system: Liver

Result: negative

Remarks: (ECHA)

Method: OECD Test Guideline 474

Species: Rat - male and female - Red blood cells (erythrocytes)

Result: negative

Method: OECD Test Guideline 486

Species: Rat - male - Liver cells

Result: negative

Species: Mouse - female

Result: negative

Remarks: (ECHA)

#### Carcinogenicity

Suspected of causing cancer.

#### Reproductive toxicity

Suspected of damaging the unborn child.

#### Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

#### Specific target organ toxicity - repeated exposure

Oral - Causes damage to organs through prolonged or repeated exposure.

- Liver, Kidney

**Aspiration hazard**  
No data available

---

## SECTION 12: Ecological information

### 12.1 Toxicity

**Mixture**

No data available

### 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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

No data available

**Components**

**Chloroform**

|                                                                       |                                                                                                   |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Toxicity to daphnia and other aquatic invertebrates                   | static test EC50 - Crassostrea gigas - 152,5 mg/l - 48 h<br>Remarks: (ECHA)                       |
| Toxicity to algae                                                     | static test ErC50 - Chlamydomonas reinhardtii (green algae) - 13,3 mg/l - 72 h<br>Remarks: (ECHA) |
| Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity) | semi-static test NOEC - Daphnia magna (Water flea) - 6,3 mg/l - 21 d<br>Remarks: (ECHA)           |

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

---

**SECTION 14: Transport information****14.1 UN number**

ADR/RID: 1888

IMDG: 1888

IATA: 1888

**14.2 UN proper shipping name**

ADR/RID: CHLOROFORM, SOLUTION

IMDG: CHLOROFORM, SOLUTION

IATA: Chloroform, SOLUTION

**14.3 Transport hazard class(es)**

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

**14.4 Packaging group**

ADR/RID: III

IMDG: III

IATA: III

**14.5 Environmental hazards**

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

**14.6 Special precautions for user**

Tunnel restriction code : (E)

Further information : No data available

**14.7 Maritime transport in bulk according to IMO instruments**

Not applicable for product as supplied.

---

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**Authorisations and/or restrictions on use**

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Chloroform

**National legislation**

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. H2 ACUTE TOXIC

H2 ACUTE TOXIC

**Other regulations**

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

**15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

---

## SECTION 16: Other information

### Full text of H-Statements

|       |                                                                              |
|-------|------------------------------------------------------------------------------|
| H302  | Harmful if swallowed.                                                        |
| H315  | Causes skin irritation.                                                      |
| H319  | Causes serious eye irritation.                                               |
| H331  | Toxic if inhaled.                                                            |
| H336  | May cause drowsiness or dizziness.                                           |
| H351  | Suspected of causing cancer.                                                 |
| H361d | Suspected of damaging the unborn child.                                      |
| H372  | Causes damage to organs through prolonged or repeated exposure if swallowed. |

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Classification of the mixture

|              |       |
|--------------|-------|
| Acute Tox.4  | H302  |
| Acute Tox.3  | H331  |
| Skin Irrit.2 | H315  |
| Eye Irrit.2  | H319  |
| Carc.2       | H351  |
| Repr.2       | H361d |
| STOT SE3     | H336  |

### Classification procedure:

|                    |
|--------------------|
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |

CHEMIKART