

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  
• E-mail Technical Questions: technical@avantiresearch.com • Visit www.avantiresearch.com

---

## **SECTION 1: Identification of the substance/mixture and of the company/undertaking**

### **1.1 Product identifiers**

Product name : TopFluor® TMR Cardiolipin

Product Number : 810310C

Brand : Avanti

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

### **1.3 Details of the supplier of the safety data sheet**

Company : Avanti Polar Lipids LLC  
700 Industrial Park Drive  
Alabaster, AL 35007  
United States of America

Telephone : (205) 663-2494

Fax : (205) 663-0756

### **1.4 Emergency telephone**

Emergency Phone # : +1 703-741-5970  
+1 1800-424-9300(CHEMTREC)

---

## **SECTION 2: Hazards identification**

### **2.1 Classification of the substance or mixture**

#### **GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Skin irritation (Category 2), H315

Eye irritation (Category 2A), H319

Carcinogenicity (Category 2), H351  
 Reproductive toxicity (Category 2), H361  
 Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336  
 Specific target organ toxicity - repeated exposure, Oral (Category 1), Liver, Kidney, H372  
 Short-term (acute) aquatic hazard (Category 3), H402

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

## 2.2 GHS Label elements, including precautionary statements

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.                                                                 |
| H361 | Suspected of damaging fertility or the unborn child.                                         |
| H372 | Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if swallowed. |
| H402 | Harmful to aquatic life.                                                                     |

Precautionary Statements

|                    |                                                                                                                                  |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| P201               | Obtain special instructions before use.                                                                                          |
| P202               | Do not handle until all safety precautions have been read and understood.                                                        |
| P260               | Do not breathe mist or vapors.                                                                                                   |
| P264               | Wash skin thoroughly after handling.                                                                                             |
| P270               | Do not eat, drink or smoke when using this product.                                                                              |
| P271               | Use only outdoors or in a well-ventilated area.                                                                                  |
| P273               | Avoid release to the environment.                                                                                                |
| P280               | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                                    |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.                                                      |
| P302 + P352        | IF ON SKIN: Wash with plenty of soap and water.                                                                                  |
| P304 + P340 + P311 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.                         |
| 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.                                                                          |
| P332 + P313        | If skin irritation occurs: Get medical advice/ attention.                                                                        |
| P337 + P313        | If eye irritation persists: Get medical advice/ attention.                                                                       |
| P362               | Take off contaminated clothing and wash before reuse.                                                                            |
| P403 + P233        | Store in a well-ventilated place. Keep container tightly closed.                                                                 |
| P405               | Store locked up.                                                                                                                 |
| P501               | Dispose of contents/ container to an approved waste disposal plant.                                                              |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

---

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Component         | Classification                                                                                                                                                                                                             | Concentration    |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| <b>Chloroform</b> |                                                                                                                                                                                                                            |                  |
|                   | Acute Tox. 4; Acute Tox. 3; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 3; H302, H331, H315, H319, H351, H361, H336, H372, H402<br>Concentration limits:<br>20 %: STOT SE 3, H336; | >= 90 - <= 100 % |

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

Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

**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

Mixture with combustible ingredients.

Development of hazardous combustion gases or vapours possible in the event of fire.

**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

-25 - -10 °C

**Storage class**

Storage class (TRGS 510): 6.1C: Combustible, acute toxic Cat.3 / toxic compounds or compounds which 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

| Component  | CAS-No. | Value                                                        | Control parameters              | Basis                                                                                   |
|------------|---------|--------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------|
| Chloroform | 67-66-3 | TWA                                                          | 10 ppm                          | USA. ACGIH Threshold Limit Values (TLV)                                                 |
|            | Remarks | Confirmed animal carcinogen with unknown relevance to humans |                                 |                                                                                         |
|            |         | ST                                                           | 2 ppm<br>9.78 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits                                                  |
|            |         | Potential Occupational Carcinogen                            |                                 |                                                                                         |
|            |         | C                                                            | 50 ppm<br>240 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|            |         | PEL                                                          | 2 ppm<br>9.78 mg/m <sup>3</sup> | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |

### 8.2 Exposure controls

#### Appropriate engineering controls

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

#### 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

Recommended Filter type: Filter type ABEK

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.

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.

##### 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) Appearance                                   | Form: liquid      |
| b) Odor                                         | No data available |
| c) Odor Threshold                               | No data available |
| d) pH                                           | No data available |
| e) Melting point/freezing point                 | No data available |
| f) Initial boiling point and boiling range      | No data available |
| g) Flash point                                  | No data available |
| h) Evaporation rate                             | No data available |
| i) Flammability (solid, gas)                    | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapor pressure                               | No data available |
| l) Vapor density                                | No data available |
| m) Density                                      | No data available |
| Relative density                                | No data available |
| n) Water solubility                             | No data available |
| o) Partition coefficient: n-octanol/water       | No data available |
| p) Autoignition temperature                     | No data available |
| q) Decomposition temperature                    | No data available |
| r) Viscosity                                    | No data available |
| s) Explosive properties                         | No data available |
| t) Oxidizing properties                         | No data available |

### 9.2 Other safety information

No data available

---

## 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) .

### **10.3 Possibility of hazardous reactions**

Oxidizing agents

### **10.4 Conditions to avoid**

no information available

### **10.5 Incompatible materials**

No data available

### **10.6 Hazardous decomposition products**

In the event of fire: see section 5

---

## **SECTION 11: Toxicological information**

### **11.1 Information on toxicological effects**

#### **Acute toxicity**

Acute toxicity estimate Oral - 912.65 mg/kg  
(Calculation method)

Acute toxicity estimate Inhalation - 4 h - 3.12 mg/l - vapor (Calculation method)

Dermal: No data available

#### **Skin corrosion/irritation**

No data available

#### **Serious eye damage/eye irritation**

No data available

#### **Respiratory or skin sensitization**

No data available

#### **Germ cell mutagenicity**

No data available

#### **Carcinogenicity**

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Chloroform)

NTP: RAHC - Reasonably anticipated to be a human carcinogen (Chloroform)

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **Reproductive toxicity**

No data available

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

No data available

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

No data available

#### **Aspiration hazard**

No data available

### **11.2 Additional Information**

No data available

---

## SECTION 12: Ecological information

### 12.1 Toxicity

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### 12.6 Endocrine disrupting properties

No data available

### 12.7 Other adverse effects

No data available

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

---

## SECTION 14: Transport information

### DOT (US)

UN number: 1888    Class: 6.1    Packing group: III  
Proper shipping name: ChloroformSOLUTION

Reportable Quantity (RQ): 10 lbs  
Reportable Quantity (RQ): 10 lbs  
Poison Inhalation Hazard: No

### IMDG

UN number: 1888    Class: 6.1    Packing group: III    EMS-No: F-A, S-A  
Proper shipping name: CHLOROFORMSOLUTION

### IATA

UN number: 1888    Class: 6.1    Packing group: III  
Proper shipping name: ChloroformSOLUTION

---

**SECTION 15: Regulatory information****CERCLA Reportable Quantity**

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|------------|---------|--------------------|-----------------------------|
| Chloroform | 67-66-3 | 10                 | 10                          |
| Chloroform | 67-66-3 | 10                 | 10 (D022)                   |

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|------------|---------|--------------------|-----------------------------|
| Chloroform | 67-66-3 | 10                 | 10                          |

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

| Components | CAS-No. | Component TPQ (lbs) |
|------------|---------|---------------------|
| Chloroform | 67-66-3 | 10000               |

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Chloroform      67-66-3      >= 90 - <= 100 %

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

Chloroform      67-66-3      >= 90 - <= 100 %

The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

Chloroform      67-66-3      >= 90 - <= 100 %

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

Chloroform      67-66-3      >= 90 - <= 100 %

**Clean Water Act**

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Chloroform      67-66-3      >= 90 - <= 100 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Chloroform      67-66-3      >= 90 - <= 100 %

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Chloroform      67-66-3      >= 90 - <= 100 %

This product contains the following priority pollutants related to the U.S. Clean Water Act:

Chloroform      67-66-3      >= 90 - <= 100 %

**US State Regulations****Massachusetts Right To Know**

Chloroform      67-66-3

**Pennsylvania Right To Know**

Chloroform      67-66-3

**Maine Chemicals of High Concern**

Product does not contain any listed chemicals

**Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

**Washington Chemicals of High Concern**

Product does not contain any listed chemicals

**California Prop. 65**

WARNING: This product can expose you to chemicals including Chloroform, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**The ingredients of this product are reported in the following inventories:**

TSCA : Product contains substance(s) not listed on TSCA inventory.

**TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

---

**SECTION 16: Other information**

Version: 8.5

Revision Date: 03/15/2025

Print Date: 03/17/2025