

**Safety Data Sheet**  
acc. to OSHA HCS

Date of issue: 10/16/2024

Revision date 10/16/2024

**1 Identification**

- **Product identifier**
- **Trade name: Pentadecafluorooctanoic Acid**
- **Synonym** Perfluorooctanoic acid
- **CAS Number:**  
335-67-1
- **Other means of identification**
- **Article number:** 37232
- **EC number:**  
206-397-9
- **Index number:**  
607-704-00-2
- **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**



GHS08 Health hazard

Carcinogenicity 2

H351

Suspected of causing cancer.

Reproductive toxicity 1B

H360-H362

May damage fertility or the unborn child. May cause harm to breast-fed children.

Specific target organ toxicity (repeated exposure) 1 H372

Causes damage to the liver through prolonged or repeated exposure.



GHS05 Corrosion

Eye damage 1

H318

Causes serious eye damage.

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GHS07

Acute toxicity - oral 4

H302

Harmful if swallowed.

Acute toxicity - inhalation 4

H332

Harmful if inhaled.

- Label elements

- GHS label elements

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

- Hazard pictograms



GHS05 GHS07 GHS08

- Signal word Danger

- Hazard statements

H302+H332 Harmful if swallowed or if inhaled.

H318 Causes serious eye damage.

H351 Suspected of causing cancer.

H360-H362 May damage fertility or the unborn child. May cause harm to breast-fed children.

H372 Causes damage to the liver 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.

P260 Do not breathe dusts or mists.

P263 Avoid contact during pregnancy and /while nursing.

P264 Wash thoroughly after handling.

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.

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.

P310 Immediately call a poison center/doctor.

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

P314 Get medical advice/attention if you feel unwell.

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 = 3

Fire = 0

Reactivity = 0

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- **HMIS-ratings (scale 0 - 4)**

HEALTH	3	Health = *3
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**

- **PBT:**

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- **vPvB:** Not applicable.
- **Classification according to (d)(1)(ii) of § 1910.12000**  
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: Substances**
- **CAS No. Description**  
335-67-1 Pentadecafluorooctanoic Acid
- **Identification number(s)**
- **EC number:** 206-397-9
- **Index number:** 607-704-00-2

## 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then 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:**  
Use fire fighting measures that suit the environment.  
A solid water stream may be inefficient.

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- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Use neutralizing agent.  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.
- **Protective Action Criteria for Chemicals**
- **PAC-1:** 1.1 mg/m<sup>3</sup>
- **PAC-2:** 12 mg/m<sup>3</sup>
- **PAC-3:** 75 mg/m<sup>3</sup>
- **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**  
Thorough dedusting.  
Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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:** Not required.
- **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.  
Avoid contact with the eyes and skin.

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- **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.

- **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 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

· <b>Physical state</b>	Solid
· <b>Color:</b>	Not determined.
· <b>Odor:</b>	Characteristic
· <b>Structural Formula</b>	C <sub>8</sub> HF <sub>15</sub> O <sub>2</sub>
· <b>Molecular Weight</b>	414.1 g/mol
· <b>Storage Buffer</b>	
· <b>Odor threshold:</b>	Not determined.
· <b>Formulation</b>	
· <b>Melting point/Melting range:</b>	55–56 °C (131–132.8 °F)
· <b>Boiling point/Boiling range:</b>	190 °C (374 °F)
· <b>Flammability:</b>	Product is not flammable.
· <b>Explosion limits:</b>	
· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.
· <b>Flash point:</b>	Not applicable.
· <b>Decomposition temperature:</b>	Not determined.
· <b>pH-value:</b>	Not applicable.
· <b>Viscosity:</b>	
· <b>Kinematic:</b>	Not applicable.
· <b>SOLUBILITY</b>	EtOH
· <b>Dynamic:</b>	Not applicable.

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- **Solubility in / Miscibility with**
  - **Water:** Insoluble.
  - **Partition coefficient (n-octanol/water):** Not determined.
  - **Vapor pressure:** Not applicable.
  - **Vapor pressure:** Not applicable.
  - **Density at 20 °C (68 °F):** 0.77 g/cm<sup>3</sup> (6.42565 lbs/gal)
  - **Relative density** Not determined.
  - **Vapor density** Not applicable.
  - **Particle characteristics** Not determined.
- 
- **Other information**
  - **Appearance:**
  - **Form:** A low melting solid
  - **Important information on protection of health and environment, and on safety.**
  - **Ignition temperature:** Not determined.
  - **Danger of explosion:** Product does not present an explosion hazard.
  - **Change in condition**
  - **Evaporation rate** Not applicable.

## 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:**

Intraperitoneal TDLO	100 mg/kg (rat)
Intraperitoneal LD50	189 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Interactive effects** No interactive effects between components are known.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer) 1**
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

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- **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:**

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- **vPvB:** Not applicable.
- **Other adverse effects**
- **Additional ecological information:**
- **General notes:**

Water hazard class 3 (Assessment by list): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Must not reach bodies of water or drainage ditch undiluted or unneutralized.  
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.

## 14 Transport information

- **UN-Number**
- **DOT, IMDG, IATA** UN3261
- **UN proper shipping name**
- **DOT, IATA** Corrosive solid, acidic, organic, n.o.s.  
(Pentadecafluorooctanoic Acid)
- **IMDG** CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.  
(Pentadecafluorooctanoic Acid)
- **Transport hazard class(es)**
- **DOT**
- **Class** 8 Corrosive substances



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· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, IMDG, IATA	III
· 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: 25 kg On cargo aircraft only: 100 kg
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g
· 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: Corrosive substances
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG1) Acids
· Stowage Category	A
· Segregation Code	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
· UN "Model Regulation":	UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (PENTADECAFLUOROOCTANOIC ACID), 8, III

## 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):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is listed.

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- **TSCA (Toxic Substances Control Act):** ACTIVE
- **Hazardous Air Pollutants** Substance is not listed.
- **Chemicals known to cause cancer:** Substance is listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **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** 04/03/2024
- **Date of preparation** 10/16/2024
- **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
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - 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
  - Acute toxicity - oral 4: Acute toxicity – Category 4
  - Eye damage 1: Serious eye damage/eye irritation – Category 1
  - Carcinogenicity 2: Carcinogenicity – Category 2
  - Reproductive toxicity 1B: Reproductive toxicity – Category 1B
  - Specific target organ toxicity (repeated exposure) 1: Specific target organ toxicity (repeated exposure) – Category 1
- **\* Data compared to the previous version altered.**

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