

according to Regulation UK SI 2019/758 and UK SI 2020/1577 as amended

Creation Date 06-Feb-2012 Revision Date 10-Feb-2024 Revision Number 4

# SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

## 1.1. Product identifier

Product Description: Perfluorooctanoic acid

 Cat No.:
 L08862

 Index No
 607-704-00-2

 CAS No
 335-67-1

 EC No
 206-397-9

 Molecular Formula
 C8 H F15 O2

REACH registration number -

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

Recommended Use Laboratory chemicals.
Uses advised against No Information available

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

Company

Avocado Research Chemicals Ltd. (Part of Thermo Fisher Scientific)

Shore Road, Heysham Lancashire, LA3 2XY, United Kingdom

Office Tel: +44 (0) 1524 850506 Office Fax: +44 (0) 1524 850608

E-mail address begel.sdsdesk@thermofisher.com

1.4. Emergency telephone number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11 Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

# **SECTION 2: HAZARDS IDENTIFICATION**

# 2.1. Classification of the substance or mixture

#### CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

## **Physical hazards**

Based on available data, the classification criteria are not met

#### **Health hazards**

ALFAAL08862

#### Perfluorooctanoic acid Revision Date 10-Feb-2024

Acute oral toxicity

Acute Inhalation Toxicity - Dusts and Mists

Serious Eye Damage/Eye Irritation

Carcinogenicity

Reproductive Toxicity

Effects on or via lactation

Specific target organ toxicity - (repeated exposure)

Category 4 (H302) Category 4 (H332) Category 1 (H318) Category 2 (H351) Category 1B (H360D)

(H362)

Category 1 (H372)

## **Environmental hazards**

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

#### 2.2. Label elements



Signal Word

Danger

#### **Hazard Statements**

H318 - Causes serious eye damage

H351 - Suspected of causing cancer

H360D - May damage the unborn child

H362 - May cause harm to breast-fed children

H372 - Causes damage to organs through prolonged or repeated exposure

H302 + H332 - Harmful if swallowed or if inhaled

#### **Precautionary Statements**

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting

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 or doctor/physician

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

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P263 - Avoid contact during pregnancy and while nursing

#### Additional EU labelling

Restricted to professional users

## 2.3. Other hazards

This product does not contain any known or suspected endocrine disruptors

# **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1. Substances

Component	CAS No	EC No	Weight %	CLP Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567
Octanoic acid, pentadecafluoro-	335-67-1	EEC No. 206-397-9	>95	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Eye Dam. 1 (H318)

Perfluorooctanoic acid	Revision Date 10-Feb-2024

		Carc. 2 (H351)
		Repr. 1B (H360D)
		Lact. (H362)
		STOT RE 1 (H372)

#### **REACH registration number**

Full text of Hazard Statements: see section 16

# **SECTION 4: FIRST AID MEASURES**

## 4.1. Description of first aid measures

**General Advice** If symptoms persist, call a physician.

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get **Eve Contact** 

medical attention.

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, **Skin Contact** 

call a physician.

Clean mouth with water and drink afterwards plenty of water. Get medical attention if Ingestion

symptoms occur.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if

symptoms occur.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to

protect themselves and prevent spread of contamination.

## 4.2. Most important symptoms and effects, both acute and delayed

None reasonably foreseeable. Causes severe eye damage. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the

delicate tissue and danger of perforation

## 4.3. Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## **SECTION 5: FIREFIGHTING MEASURES**

## 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

## Extinguishing media which must not be used for safety reasons

No information available.

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

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

#### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Gaseous hydrogen fluoride (HF), Thermal decomposition can lead to release of irritating gases and vapors.

Perfluorooctanoic acid Revision Date 10-Feb-2024

## 5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

# **SECTION 6: ACCIDENTAL RELEASE MEASURES**

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

Use personal protective equipment as required. Ensure adequate ventilation. Avoid dust formation.

## 6.2. Environmental precautions

Should not be released into the environment.

## 6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

#### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

## **SECTION 7: HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation.

## **Hygiene Measures**

Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wear suitable gloves and eye/face protection.

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

Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Technical Rules for Hazardous Substances (TRGS) 510 Class 6.1C Storage Class (LGK) (Germany)

## 7.3. Specific end use(s)

Use in laboratories

# **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

# 8.1. Control parameters

#### **Exposure limits**

List source(s):

## **Biological limit values**

Perfluorooctanoic acid Revision Date 10-Feb-2024

List source(s):

## Derived No Effect Level (DNEL) / Derived Minimum Effect Level (DMEL)

No information available

#### **Predicted No Effect Concentration (PNEC)**

No information available.

#### 8.2. Exposure controls

#### **Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

**Eye Protection** Goggles (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	See manufacturers	-	EN 374	(minimum requirement)
Neoprene	recommendations			
Natural rubber				
PVC				

**Skin and body protection** Long sleeved clothing.

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use

appropriate certified respirators.

To protect the wearer, respiratory protective equipment must be the correct fit and be used

and maintained properly

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits

are exceeded or if irritation or other symptoms are experienced **Recommended Filter type:** Particulates filter conforming to EN 143

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure

limits are exceeded or if irritation or other symptoms are experienced.

**Recommended half mask:-** Particle filtering: EN149:2001 When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls** No information available.

## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

Revision Date 10-Feb-2024 Perfluorooctanoic acid

## 9.1. Information on basic physical and chemical properties

**Physical State** Solid

Off-white **Appearance** Odor pungent

No data available **Odor Threshold** 

**Melting Point/Range** 53 - 60 °C / 127.4 - 140 °F

Softening Point No data available

189 - 192 °C / 372.2 - 377.6 °F **Boiling Point/Range** @ 760 mmHg

Flammability (liquid) Not applicable Solid

Flammability (solid,gas) No information available No data available

**Explosion Limits** 

**Flash Point** No information available Method - No information available

**Autoignition Temperature** No data available

> 300°C **Decomposition Temperature** 

1g/l ag.sol., 20°C 2.6 Hq

**Viscosity** Not applicable Solid

**Water Solubility** 3.4g/l

No information available Solubility in other solvents

Partition Coefficient (n-octanol/water)

**Vapor Pressure** No data available No data available **Density / Specific Gravity Bulk Density** No data available

**Vapor Density** Not applicable Solid

Particle characteristics No data available

9.2. Other information

**Molecular Formula** C8 H F15 O2 **Molecular Weight** 414.07

**Evaporation Rate** Not applicable - Solid

## **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity None known, based on information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

**Hazardous Polymerization** No information available. **Hazardous Reactions** None under normal processing.

10.4. Conditions to avoid

Incompatible products. Exposure to air or moisture over prolonged periods.

10.5. Incompatible materials

Bases. Strong acids. Reducing Agent.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO2). Gaseous hydrogen fluoride (HF). Thermal

decomposition can lead to release of irritating gases and vapors.

## **SECTION 11: TOXICOLOGICAL INFORMATION**

Revision Date 10-Feb-2024 Perfluorooctanoic acid

#### **Product Information**

(a) acute toxicity;

Oral Category 4 **Dermal** No data available Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Octanoic acid, pentadecafluoro-	LD50 200 - 2000 mg/kg (Rat)	-	-

No data available (b) skin corrosion/irritation;

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;

No data available Respiratory Skin No data available

(e) germ cell mutagenicity; No data available

Category 2 (f) carcinogenicity;

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	EU	UK	Germany	IARC
Octanoic acid, pentadecafluoro-				Group 2B

(g) reproductive toxicity;

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; Category 1

**Target Organs** Liver.

(j) aspiration hazard; Not applicable

Solid

delayed

Symptoms / effects,both acute and Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes

severe swelling, severe damage to the delicate tissue and danger of perforation.

## 11.2. Information on other hazards

**Endocrine Disrupting Properties** Assess endocrine disrupting properties for human health. This product does not contain any

known or suspected endocrine disruptors.

# **SECTION 12: ECOLOGICAL INFORMATION**

12.1. Toxicity

**Ecotoxicity effects** Do not flush into surface water or sanitary sewer system. Do not allow material to

contaminate ground water system.

Perfluorooctanoic acid Revision Date 10-Feb-2024

12.2. Persistence and degradability

**Persistence** Soluble in water, Persistence is unlikely, based on information available.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

12.4. Mobility in soil The product is water soluble, and may spread in water systems Will likely be mobile in the

environment due to its water solubility. Highly mobile in soils

12.5. Results of PBT and vPvB

assessment

No data available for assessment.

12.6. Endocrine disrupting

properties

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

12.7. Other adverse effects

Persistent Organic Pollutant See table for values

Ozone Depletion Potential This product does not contain any known or suspected substance

Component	Persistent Organic Pollutant	Ozone Depletion Potential
Octanoic acid, pentadecafluoro-	Annex I - Substance subject to prohibitions	
	Annex IV: 1 mg/kg (Waste Management - Conc.	
	Limit)	
	Stockholm Convention - Persistent Organic	
	Pollutant	

# **SECTION 13: DISPOSAL CONSIDERATIONS**

13.1. Waste treatment methods

Waste from Residues/Unused

**Products** 

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

European Waste Catalogue (EWC) According to the European Waste Catalog, Waste Codes are not product specific, but

application specific.

Other Information Waste codes should be assigned by the user based on the application for which the product

was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH

and harm aquatic organisms.

# **SECTION 14: TRANSPORT INFORMATION**

#### IMDG/IMO

**14.1. UN number** UN3261

**14.2. UN proper shipping name Technical Shipping Name**Corrosive solid, acidic, organic, n.o.s.
Octanoic acid, pentadecafluoro-

14.3. Transport hazard class(es) 8 14.4. Packing group III

Perfluorooctanoic acid Revision Date 10-Feb-2024

ADR

**14.1. UN number** UN3261

14.2. UN proper shipping nameCorrosive solid, acidic, organic, n.o.s.Technical Shipping NameOctanoic acid, pentadecafluoro-

14.3. Transport hazard class(es) 8 14.4. Packing group III

<u>IATA</u>

**14.1. UN number** UN3261

14.2. UN proper shipping nameCorrosive solid, acidic, organic, n.o.s.Technical Shipping NameOctanoic acid, pentadecafluoro-

14.3. Transport hazard class(es) 8 14.4. Packing group 8

14.5. Environmental hazards No hazards identified

**14.6. Special precautions for user** No special precautions required.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable, packaged goods

# **SECTION 15: REGULATORY INFORMATION**

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

# **International Inventories**

Europe (EINECS/ELINCS/NLP), China (IECSC), Taiwan (TCSI), Korea (KECL), Japan (ENCS), Japan (ISHL), Canada (DSL/NDSL), Australia (AICS), New Zealand (NZIoC), Philippines (PICCS). US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

Component	CAS No	EINECS	ELINCS	NLP	IECSC	TCSI	KECL	ENCS	ISHL
Octanoic acid, pentadecafluoro-	335-67-1	206-397-9		-	Х	X	KE-27883	X	X

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	DSL	NDSL	AICS	NZIoC	PICCS
Octanoic acid, pentadecafluoro-	335-67-1	X	ACTIVE	-	-	X	X	X

Legend: X - Listed '-' - Not Listed KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

# Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization		Candidate List of Substances of Very High
				Concern (SVHC)
Octanoic acid, pentadecafluoro-	335-67-1	-	Use restricted. See item	SVHC Candidate list -
·			75.	Toxic for reproduction
			(see link for restriction	(Article 57 c)
			details)	SVHC Candidate list - PBT
			Use restricted. See item	(Article 57 d)
			30.	, ,
			(see link for restriction	
			details)	

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

Perfluorooctanoic acid Revision Date 10-Feb-2024

https://echa.europa.eu/authorisation-list https://echa.europa.eu/candidate-list-table

#### Seveso III Directive (2012/18/EC)

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Octanoic acid, pentadecafluoro-	335-67-1	Not applicable	Not applicable

# Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

Component	ANNEX I - PART 1 List of chemicals subject to export notification procedure (referred to in Article 8)	ANNEX I - PART 2 List of chemicals qualifying for PIC notification (referred to in Article 11)	ANNEX I - PART 3 List of chemicals subject to the PIC procedure (referred to in Articles 13 and 14)
Octanoic acid, pentadecafluoro- 335-67-1 ( >95 )	b — ban (for the category or categories concerned)  b — ban (for the category or categories concerned)  i(1) — industrial chemical for professional use i(2) — industrial chemical for public sr — severe restriction	i — industrial chemical sr — severe restriction	-

# Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)? See table for values

Component	OECD PFAS	US (EPA) PFAS	EU (ECHA) PFAS	UK (HSE) PFAS	Chemsec PFAS (Sin
					List)
Octanoic acid, pentadecafluoro- (CAS #: 335-67-1)	Listed	Listed	Listed	Listed	Listed

#### **PFAS Legend**

Listed = Meets the PFAS definition of the named authority

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work .

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

Take note of Dir 92/85/EC on the protection of pregnant and breastfeeding women at work

## **National Regulations**

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

WGK Classification See table for values

Component	Germany - Water Classification (AwSV)	Germany - TA-Luft Class
Octanoic acid, pentadecafluoro-	WGK3	

Component	Switzerland - Ordinance on the	Switzerland - Ordinance on	Switzerland - Ordinance of the
	Reduction of Risk from	Incentive Taxes on Volatile	Rotterdam Convention on the
	handling of hazardous	Organic Compounds (OVOC)	Prior Informed Consent
	substances preparation (SR		Procedure

Perfluorooctanoic acid Revision Date 10-Feb-2024

	814.81)	
Octanoic acid, pentadecafluoro-	Persistent Organic Pollutants	Annex I - industrial chemical
335-67-1 (>95)	(POPs)	
, ,	Prohibited and Restricted	
	Substances	

#### 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

## **SECTION 16: OTHER INFORMATION**

#### Full text of H-Statements referred to under sections 2 and 3

H318 - Causes serious eye damage

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H351 - Suspected of causing cancer

H360D - May damage the unborn child

H362 - May cause harm to breast-fed children

H372 - Causes damage to organs through prolonged or repeated exposure

#### Legend

**CAS** - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b)

**ENCS** - Japanese Existing and New Chemical Substances

Inventory

Substances List

EINECS/ELINCS - European Inventory of Existing Commercial Chemical DSL/NDSL - Canadian Domestic Substances List/Non-Domestic

Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

**DNEL** - Derived No Effect Level

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

**NOEC** - No Observed Effect Concentration **PBT** - Persistent, Bioaccumulative, Toxic

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

Predicted No Effect Concentration (PNEC)

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

**POW** - Partition coefficient Octanol:Water **vPvB** - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of

Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime

Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from

Ships

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

# Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

#### **Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Prepared By Health, Safety and Environmental Department

**Creation Date** 06-Feb-2012 **Revision Date** 10-Feb-2024

**Revision Summary** New emergency telephone response service provider.

This safety data sheet complies with Regulation UK SI 2019/758 and UK SI 2020/1577 as amended.

Perfluorooctanoic acid Revision Date 10-Feb-2024

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

Disclaimer

**End of Safety Data Sheet**