



# Per- and polyfluoroalkyl substances (PFAS)

Per- and polyfluoroalkyl substances (PFAS) are a family of >4,730 compounds – produced since the 1940s – that are of anthropogenic origin.<sup>1</sup> Although PFAS are remarkably useful in many industries, they are an emerging concern to environmental health for all living beings, including humans. This has driven the search for analytical technologies to monitor these chemicals and, more importantly, calls for global regulations to restrict or eliminate PFAS.<sup>2</sup>



# What are PFAS?

PFAS are compounds that have a chain of strong carbon-fluorine (C-F) bonds. They can be gases, liquids or solid short- and long-chain polymers, with a wide range of different physical, chemical and biological properties. PFAS is often used as a broad term, therefore it is important to classify and group these compounds, based on their structure.<sup>3</sup>

Non-polymers	Polymers*
<p><b>Perfluoroalkyl</b></p> <p>All C-H replaced with C-F (except on functional groups)</p> <p>(Aliphatic) perfluorocarbons Perfluoroalkyl acids Perfluoroalkane sulfonyl fluorides Perfluoroalkane sulfonamides Perfluoroalkyl iodides Perfluoroalkyl aldehydes</p>	<p><b>Fluoropolymers</b></p> <p>Carbon-only backbone with C-F</p>
<p><b>Polyfluoroalkyl</b></p> <p>At least one (but not all) C-H replaced with C-F</p> <p>Perfluoroalkane sulfonamido derivatives Fluorotelomer-based compounds Semifluorinated hydrocarbons</p>	<p><b>Perfluoropolyethers</b></p> <p>Carbon and oxygen backbone with C-F</p>
	<p><b>Side-chain fluorinated polymers</b></p> <p>Fluorinated side chain on non-fluorinated backbone; polymers of:</p> <p>(Meth)acrylate Urethane Oxetane</p>

\*Polymers are currently not available from Chiron.

## What are PFAS used for?

The hydrophobic, lipophobic chain and hydrophilic head of the PFAS provide them with unique characteristics – resistance to heat, water and grease – making them desirable in a variety of industrial applications and in consumer goods. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are the most produced and studied PFAS.<sup>4</sup>

Some uses of PFAS in major industries include<sup>5</sup>:

- **Aerospace and defence** e.g. fuel pump seals for protecting against fuel loss
- **Transportation** e.g. durable interior surfaces in trains
- **Construction** e.g. water-resistant building materials
- **Electronics** e.g. heat transfer in semiconductor processing
- **Healthcare** e.g. implantable medical devices





# PFAS

can be found in these products:

## How do PFAS get into the environment and human body?

There are many routes through which PFAS can enter the environment to contaminate groundwater, surface water and soil before being transported long distances away from the source of their release, ultimately entering the human body via food, water or air.

The pathway may begin with:

- **Exhaust air from industrial sources** that is dispersed into nearby ground and water
- **Rain and snow** carrying PFAS from the air into the soil and water
- **Evaporation** from items like carpets, treated with waterproofing sprays
- **Direct contamination of soil** with products such as firefighting foam
- **Leaching of household sources** into surface waters from wastewater treatment facilities, sewage or landfill

## What are the concerns?

The detrimental health effects of PFAS have been neglected for a long time. Humans are exposed to ever greater concentrations every day at home, in their workplace, even in the food they eat and drinking water. PFAS have been widely recognised as contaminants of emerging global concern due to their high persistence compared to other man-made substances, in combination with their high environmental mobility, high toxicity, and poor removability from drinking water.<sup>6</sup>





# Regulations

## Globally regulated PFAS

Since 2009, the Stockholm Convention has regulated the global elimination of PFOS, PFOA and their related compounds. PFOS have already been restricted in the EU for >10 years under the EU's Persistent Organic Pollutants (POPs) Regulation,<sup>7,8</sup> whereas PFOA have been banned since July 2020.<sup>9</sup> PFHxS its salts, and related compounds were added to the Stockholm convention as of June 17th 2022 setting in motion plans for their elimination.

## REACH

The manufacture and use of some PFAS is restricted under REACH. The European Chemicals Agency (ECHA) supports the proposals submitted by Germany, Norway and Sweden for the restriction of the following compounds and their derivatives<sup>10</sup>:

- Perfluorinated carboxylic acids
- Undecafluorohexanoic acid (PFUndA)
- Perfluorohexane-1-sulfonic acid (PFHxS)

These substances have also been recommended for inclusion in the Stockholm Convention. PFAS in various industries are currently being studied by the ECHA and the European Commission (EC), to clarify initial concerns and for ongoing or future restrictions.<sup>11</sup> For example, the ECHA submitted a restriction proposal for PFAS used in firefighting foams in October 2021, although it is unlikely that any restriction would come into force before 2024.

## Substances of very high concern (SVHC) under REACH

SVHC identifies chemicals equivalent to carcinogens, mutagens and reprotoxicants, which are very persistent, bioaccumulative and toxic. To date, two PFAS and their derivatives are classed as SVHC<sup>10</sup>:

- Perfluorobutane sulfonic acid (PFBS)
- 2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy) propionic acid (HFPO-DA)





## Classification, labelling and packaging (CLP), and grouping approach

Classification and labelling of some PFAS is already harmonised under CLP, with others being proposed.<sup>10</sup>

ECHA's database contains information on >2,000 PFAS on the EU market. In December 2019, ECHA submitted a proposal to the EC from several Member States for a holistic group approach to the regulatory assessment and risk management for PFAS.<sup>13</sup>

## PFAS in drinking water and food

As of January 2021, the Drinking Water Directive limit is 0.5 µg/l for all PFAS, which is aligned with the grouping approach.<sup>14</sup>

In September 2020, the European Food Safety Authority set a new safety threshold – a tolerable weekly intake of 4.4 ng/kg of body weight/week – for PFOA, PFOS, PFHxS and perfluorononanoic acid, which commonly accumulate in the body.<sup>15</sup>

## What does Chiron offer?

To address the escalating concerns regarding environmental and health impacts, and to comply with evolving regulatory requirements for risk assessment and management, Chiron offers an expanding portfolio of reference materials for PFAS.




## References:

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2. United Nations Environment Programme. (2015) PFAS analysis in water for the Global Monitoring Plan of the Stockholm Convention: set-up and guidelines for monitoring. [https://stg-wedocs.unep.org/bitstream/handle/20.500.11822/29682/Analysis\\_PFAS\\_En.pdf?sequence=1&isAllowed=y](https://stg-wedocs.unep.org/bitstream/handle/20.500.11822/29682/Analysis_PFAS_En.pdf?sequence=1&isAllowed=y)
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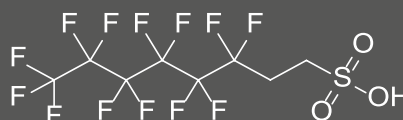


# PFAS product listing

ISO 17034  
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Chiron No.	Name	Synonym / Example Structure	CAS
<b>PFAS Sulfonic acids</b>		 <chem>CCCCC(F)(F)F(S(=O)(=O)O)F</chem> <i>PFHpS</i>	
<b>15140.2</b>	Perfluoroethanesulfonic acid, potassium salt	PFES-K	2837-92-5
<b>14849.3</b>	Perfluoropropanesulfonic acid, sodium salt	PFPrS-Na	359868-82-9
<b>2041.4</b>	Perfluorobutanesulfonic acid	PFBS	375-73-5
<b>2719.4</b>	Perfluorobutanesulfonic acid, potassium salt	PFBS-K	29420-49-3
<b>15263.5</b>	Perfluoropentanesulfonic acid	PFPeS	2706-91-4
<b>14797.5</b>	Perfluoropentanesulfonic acid, sodium salt	PFPeS-Na	630402-22-1
<b>8579.6</b>	Perfluorohexanesulfonic acid	PFHxS	355-46-4
<b>8581.6</b>	Perfluorohexanesulfonic acid, potassium salt	PFHxS-K	3871-99-6
<b>12433.7</b>	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
<b>11156.7</b>	Perfluoroheptanesulfonic acid, potassium salt	PFHpS-K	60270-55-5
<b>12467.7</b>	Perfluoroheptanesulfonic acid, sodium salt	PFHpS-Na	21934-50-9
<b>2037.8</b>	Perfluorooctanesulfonic acid, techn. isomer mixture	PFOS isomer mix.	1763-23-1 (for the n-isomer)
<b>14862.8</b>	Perfluorooctanesulfonic acid, techn. isomer mixture, purified	PFOS isomer mix.	1763-23-1 (for the n-isomer)
<b>14910.8</b>	Perfluorooctanesulfonic acid (n-isomer enriched)	PFOS, n-isomer enriched	1763-23-1
<b>14863.8</b>	n-Perfluorooctanesulfonic acid	PFOS	1763-23-1
<b>2193.8</b>	Perfluorooctanesulfonic acid, potassium salt	PFOS-K	2795-39-3
<b>14717.30</b>	Didecyltrimethylammonium perfluorooctane sulfonate	PFOS-N	251099-16-8
<b>12746.9</b>	Methyl perfluorooctane sulfonate	Me-PFOS	71417-25-9
<b>12747.10</b>	Ethyl perfluorooctane sulfonate	Et-PFOS	71417-26-0
<b>2192.8</b>	Perfluoro-4-ethylcyclohexanesulfonic acid, potassium salt	PFECHS-K	335-24-0
<b>14799.9</b>	Perfluorononanesulfonic acid, sodium salt	PFNS-Na	98789-57-2
<b>11157.10</b>	Perfluorodecanesulfonic acid	PFDS	335-77-3
<b>11309.10</b>	Perfluorodecanesulfonic acid, sodium salt	PFDS-Na	2806-15-7
<b>14946.11</b>	Perfluoroundecanesulfonic acid, sodium salt	PFUnDS-Na	N/A
<b>14963.12</b>	Perfluorododecanesulfonic acid	PFDoDS	79780-39-5
<b>14948.13</b>	Perfluorotridecanesulfonic acid, sodium salt	PFTrDS-Na	174675-49-1

## Telomeric PFAS Sulfonic acid, FTSA's






*6:2 FTSA; 6:2-FtS*

<b>15137.4</b>	1H,1H,2H,2H-Perfluorobutanesulfonic acid	2:2 FTSA; 2:2-FtS	149246-63-9
<b>12748.6</b>	1H,1H,2H,2H-Perfluorohexanesulfonic acid	4:2 FTSA; 4:2-FtS	757124-72-4
<b>2559.8</b>	1H,1H,2H,2H-Perfluorooctanesulfonic acid	6:2 FTSA; 6:2-FtS	27619-97-2
<b>12749.10</b>	1H,1H,2H,2H-Perfluorodecanesulfonic acid	8:2 FTSA; 8:2-FtS	39108-34-4
<b>12750.12</b>	1H,1H,2H,2H-Perfluorododecanesulfonic acid	10:2 FTSA; 10:2-FtS	120226-60-0



# PFAS product listing


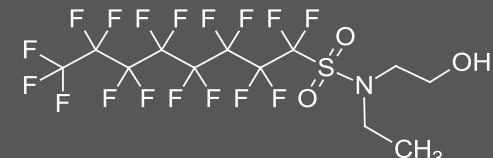

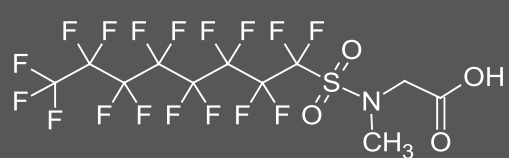
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Chiron No.	Name	Synonym / Example Structure	CAS
<b>PFAS Sulfonamides</b>		 <p><i>FOSA; PFOSA</i></p>	
15117.2	Perfluoroethanesulfonamide	FESA	78491-70-0
15139.3	Perfluoropropansulfonamide	FPrSA	152894-03-6
14170.4	n-Perfluorobutanesulfonamide	FBSA	30334-69-1
14902.6	n-Perfluorohexanesulfonamide	FHSA	41997-13-1
14903.6	Perfluorohexanesulfonamide, techn. isomer mixture	FHSA	41997-13-1
2043.8	Perfluorooctanesulfonamide, techn., n-isomer (major)	FOSA; PFOSA	754-91-6
<b>PFAS Sulfonamides, N-methyl</b>		 <p><i>N-MeFOSA</i></p>	
14171.5	N-Methyl-n-perfluorobutanesulfonamide	MeFBSA	68298-12-4
14952.5	N-Methyl-n-perfluorobutanesulfonamide-d3	MeFBSA-d3	N/A
14904.7	N-Methyl-n-perfluorohexanesulfonamide	N-MeFHSA, n-isomer	68259-15-4
15037.7	N-Methylperfluorohexanesulfonamide, isomer mixture	N-MeFHSA, isomer mixture	68259-15-4 as n-isomer
14905.7	N-Methyl-n-perfluorohexanesulfonamide-d3	N-MeFHSA-d3, n-isomer	N/A
11932.9	N-Methyl-n-perfluorooctanesulfonamide	N-MeFOSA, n-isomer	31506-32-8
13580.9	N-Methylperfluorooctanesulfonamide, isomer mix	N-MeFOSA, isomer mixture	N/A
13260.9	N-Methyl-n-perfluorooctanesulfonamide-d3	N-MeFOSA-d3, n-isomer	936109-37-4
13579.9	N-Methylperfluorooctanesulfonamide-d3, isomer mix	N-MeFOSA-d3, isomer mix	N/A
13586.10	N,N-Dimethyl-n-perfluorooctanesulfonamide	N,N-Me2FOSA, n-isomer	213181-78-3
<b>PFAS Sulfonamides, N-ethyl</b>		 <p><i>N-EtFOSA</i></p>	
14953.6	N-Ethyl-n-perfluorobutanesulfonamide	N-EtFBSA	40630-67-9
14954.6	N-Ethyl-n-perfluorobutanesulfonamide-d5	N-EtFBSA-d5	N/A
14955.8	N-Ethyl-n-perfluorohexanesulfonamide	N-EtFHSA	87988-56-5
14956.8	N-Ethyl-n-perfluorohexanesulfonamide-d5	N-EtFHSA-d5	N/A
11933.10	N-Ethyl-n-perfluorooctanesulfonamide	N-EtFOSA, n-isomer; Sulfluramid, n-isomer	4151-50-2
13587.10	N-Ethylperfluorooctanesulfonamide, isomer mix	N-EtFOSA, isomer mix; Sulfluramid, isomer mix	N/A
13412.10	N-Ethyl-n-perfluorooctanesulfonamide-d5	N-EtFOSA-d5, n-isomer; Sulfluramid-d5, n-isomer	936109-40-9
13588.10	N-Ethylperfluorooctanesulfonamide-d5, isomer mix	N-EtFOSA-d5, isomer mix; Sulfluramid-d5, isomer mix	N/A



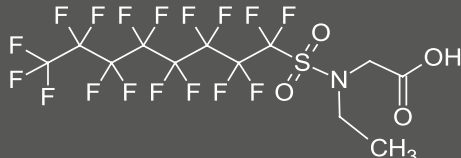
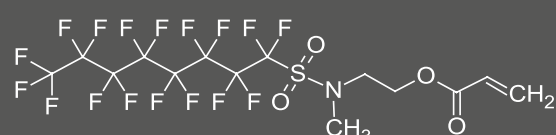
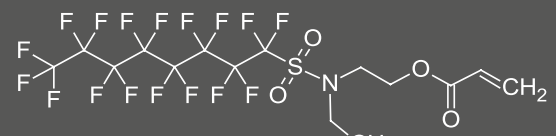
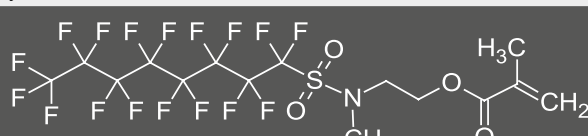
# PFAS product listing

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Chiron No.	Name	Synonym / Example Structure	CAS
<b>PFAS Sulfonamides, N-methyl, N-hydroxyethyl</b>		 <i>N-MeFOSE</i>	
15253.7	N-(2-Hydroxyethyl)-N-methylperfluorobutanesulfonamide	N-MeFBSE	34454-97-2
15254.7	N-(2-Hydroxyethyl)-N-methylperfluorobutanesulfonamide-d7	N-MeFBSE-d7	N/A
15255.9	N-(2-Hydroxyethyl)-N-methylperfluorohexanesulfonamide	N-MeFHxSE	68555-75-9
15256.9	N-(2-Hydroxyethyl)-N-methylperfluorohexanesulfonamide-d7	N-MeFHxSE-d7	N/A
10979.11	N-(2-Hydroxyethyl)-N-methylperfluorooctanesulfonamide	N-MeFOSE	24448-09-7
14846.11	N-(2-Hydroxyethyl)-N-methylperfluorooctanesulfonamide-d7	N-MeFOSE-d7	1265205-95-5
<b>PFAS Sulfonamides, N-ethyl, N-hydroxyethyl</b>		 <i>N-EtFOSE</i>	
15257.8	N-Ethyl-N-(2-hydroxyethyl)perfluorobutanesulphonamide	N-EtFBSE	34449-89-3
15258.8	N-Ethyl-N-(2-hydroxyethyl)perfluorobutanesulphonamide-d9	N-EtFBSE-d9	N/A
15259.10	N-Ethyl-N-(2-hydroxyethyl)perfluorohexanesulphonamide	N-EtFHxSE	34455-03-3
15352.10	N-Ethyl-N-(2-hydroxyethyl)perfluorohexanesulphonamide-d9	N-EtFHxSE-d9	N/A
11931.12	N-Ethyl-N-(2-hydroxyethyl)perfluorooctanesulphonamide	N-EtFOSE	1691-99-2
14848.12	N-Ethyl-N-(2-hydroxyethyl)perfluorooctanesulphonamide-d9	N-EtFOSE-d9	1691-99-2 (unlabelled)
<b>PFAS Sulfonylglycine</b>		 <i>FOSAA</i>	
14901.6	N-Perfluorobutanesulfonylglycine	FBSAA	347872-22-4
14957.8	N-Perfluorohexanesulfonylglycine	FHSAA	1003193-99-4
14526.10	N-Perfluorooctanesulfonylglycine	FOSAA	2806-24-8
<b>PFAS Sulfonylglycine, N-methyl</b>		 <i>N-MeFOSAA</i>	
14172.7	N-Methyl-n-perfluorobutanesulfonylglycine	N-MeFBSAA	159381-10-9
14949.7	N-Methyl-n-perfluorobutanesulfonylglycine-d3	N-MeFBSAA-d3	N/A
14950.9	N-Methyl-n-perfluorohexanesulfonylglycine	N-MeFHSAA	715646-50-7
14951.9	N-Methyl-n-perfluorohexanesulfonylglycine-d3	N-MeFHSAA-d3	N/A
13257.11	N-Methyl-n-perfluorooctanesulfonylglycine	N-MeFOSAA, n-isomer	2355-31-9
13589.11	N-Methylperfluorooctanesulfonylglycine, isomer mix	N-MeFOSAA, isomer mix	N/A
13258.11	N-Methyl-n-perfluorooctanesulfonylglycine-d3	N-MeFOSAA-d3, n-isomer	1400690-70-1
13585.11	N-Methylperfluorooctanesulfonylglycine-d3, isomer mix	N-MeFOSAA-d3, isomer mix	N/A

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Chiron No.	Name	Synonym / Example Structure	CAS
	<b>PFAS Sulfonylglycine, N-ethyl</b>	 <p><i>N-EtFOSAA</i></p>	
14958.8	N-Ethyl-n-perfluorobutanesulfonylglycine	N-EtFBSAA	68957-33-5
14959.8	N-Ethyl-n-perfluorobutanesulfonylglycine-d5	N-EtFBSAA-d5	N/A
14960.10	N-Ethyl-n-perfluorohexanesulfonylglycine	N-EtFHSAA	68957-32-4
14961.10	N-Ethyl-n-perfluorohexanesulfonylglycine-d5	N-EtFHSAA-d5	N/A
13259.12	N-Ethyl-n-perfluorooctanesulfonylglycine	N-EtFOSAA, n-isomer	2991-50-6
13590.12	N-Ethylperfluorooctanesulfonylglycine, isomer mix	N-EtFOSAA, isomer mix	N/A
13413.12	N-Ethyl-n-perfluorooctanesulfonylglycine-d5	N-EtFOSAA-d5, n-isomer	1265205-97-7
13591.12	N-Ethylperfluorooctanesulfonylglycine-d5, isomer mix	N-EtFOSAA-d5, isomer mix	N/A
	<b>PFAS Sulfonyl acrylate, N-methyl</b>	 <p><i>MeFOSEA</i></p>	
15332.10	N-Methylperfluorobutanesulphonamidoethyl acrylate	MeFBSEA	67584-55-8
15333.10	N-Methylperfluorobutanesulphonamidoethyl acrylate-d7	MeFBSEA-d7	N/A
11857.12	N-Methylperfluorohexanesulphonamidoethyl acrylate	MeFHxSEA	67584-57-0
15334.12	N-Methylperfluorohexanesulphonamidoethyl acrylate-d7	MeFHxSEA-d7	NA
15067.14	N-Methylperfluorooctanesulphonamidoethyl acrylate	MeFOSEA	25268-77-3
15335.14	N-Methylperfluorooctanesulphonamidoethyl acrylate-d7	MeFOSEA-d7	N/A
	<b>PFAS Sulfonyl acrylate, N-ethyl</b>	 <p><i>EtFOSEA</i></p>	
15336.11	N-Ethylperfluorobutanesulphonamidoethyl acrylate	EtFBSEA	17329-79-2
15337.11	N-Ethylperfluorobutanesulphonamidoethyl acrylate-d9	EtFBSEA-d9	N/A
15339.13	N-Ethylperfluorohexanesulphonamidoethyl acrylate	EtFHxSEA	1893-52-3
15340.13	N-Ethylperfluorohexanesulphonamidoethyl acrylate-d9	EtFHxSEA-d9	N/A
15341.15	N-Ethylperfluorooctanesulphonamidoethyl acrylate	EtFOSEA	423-82-5
15342.15	N-Ethylperfluorooctanesulphonamidoethyl acrylate-d9	EtFOSEA-d9	N/A
	<b>PFAS Sulfonyl methacrylate, N-methyl</b>	 <p><i>MeFOSEMA</i></p>	
15343.11	N-Methylperfluorobutanesulphonamidoethyl methacrylate	MeFBSEMA	67584-59-2
15344.11	N-Methylperfluorobutanesulphonamidoethyl methacrylate-d7	MeFBSEMA-d7	N/A
15345.13	N-Methylperfluorohexanesulphonamidoethyl methacrylate	MeFHxSEMA	67584-61-6
15346.13	N-Methylperfluorohexanesulphonamidoethyl methacrylate-d7	MeFHxSEMA-d7	N/A
15347.15	N-Methylperfluorooctanesulphonamidoethyl methacrylate	MeFOSEMA	14650-24-9
15348.15	N-Methylperfluorooctanesulphonamidoethyl methacrylate-d7	MeFOSEMA-d7	N/A

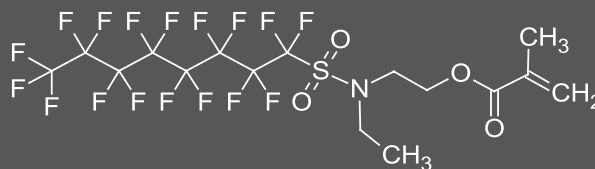


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Chiron No.	Name	Synonym / Example Structure	CAS
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## PFAS Sulfonyl methacrylate, N-ethyl



*EtFOSEMA*

15349.12	N-Ethylperfluorobutanesulphonamidoethyl methacrylate	EtFBSEMA	67939-33-7
15350.12	N-Ethylperfluorobutanesulphonamidoethyl methacrylate-d9	EtFBSEMA-d9	N/A
15351.14	N-Ethylperfluorohexanesulphonamidoethyl methacrylate	EtFHxSEMA	67906-70-1
15353.14	N-Ethylperfluorohexanesulphonamidoethyl methacrylate-d9	EtFHxSEMA-d9	N/A
15354.16	N-Ethylperfluorooctanesulphonamidoethyl methacrylate	EtFOSEMA	376-14-7
15355.16	N-Ethylperfluorooctanesulphonamidoethyl methacrylate-d9	EtFOSEMA-d9	N/A

## XH PFAS Acids



*8H-PFOA*

15050.2	2H-Perfluoroethanoic acid	2H PFEA; HPtEtBA; 2H-Difluoroethanoic acid	381-73-7
15051.3	3H-Perfluoropropanoic acid	3H PFPrA; HPFPrA; 3H-Tetrafluoropropanoic acid	756-09-2
15052.4	4H-Perfluorobutanoic acid	4H PFBA; HPFBA; 4H-Hexafluorobutanoic acid	679-12-9
2834.5	5H-Perfluoropentanoic acid	5H PFPeA; HPFPeA; 5H-Octafluoropentanoic acid	376-72-7
2835.7	7H-Perfluoroheptanoic acid	7H PFHPA; HPFHpA	1546-95-8
15053.8	8H-Perfluorooctanoic acid	8H PFOA; HPFOA	13973-14-3
2836.9	9H-Perfluorononanoic acid	9H PFNA; HPFNA	76-21-1
2825.11	11H-Perfluoroundecanoic acid	11H PFUndA; HPFUndA	1765-48-6

## PFAS acids



*PFOA*

15118.2	Perfluoroethanoic acid	PFEA; TFA	76-05-1
2190.3	Perfluoropropionic acid, sodium salt	PFPrA-Na; Pentafluoropropionic acid sodium salt	378-77-8
2810.4	Perfluorobutyric acid	PFBA; Heptafluorobutyric acid	375-22-4
2189.4	Perfluorobutyric acid, sodium salt	PFBA-Na; Heptafluorobutyric acid sodium salt	2218-54-4
2819.5	n-Perfluoropentanoic acid	PFPA; n-Nonafluoropentanoic acid	2706-90-3
2590.6	Perfluorohexanoic acid	PFHxA	307-24-4
2821.7	n-Perfluoroheptanoic acid	PFHpA	375-85-9
2820.7	Perfluorocyclohexanecarboxylic acid	PFCyHxA	374-88-9
2042.8	n-Perfluorooctanoic acid	PFOA	335-67-1
2822.8	n-Perfluorooctanoic acid, ammonium salt	PFOA-NH4	3825-26-1
2191.8	Perfluorooctanoic acid, sodium salt	PFOA-Na	335-95-5

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Chiron No.	Name	Synonym / Example Structure	CAS
12744.9	Methyl perfluorooctanoate		376-27-2
12745.10	Ethyl perfluorooctanoate		3108-24-5
2715.9	Perfluorononanoic acid	PFNA	375-95-1
2832.9	Perfluoro-3,5,5-trimethylhexanoic acid	PF3,5,5TriMeHxA	238403-51-5
2823.10	n-Perfluorodecanoic acid	PFDA	335-76-2
2824.10	Perfluoro-3,7-dimethyloctanoic acid	PF3,7DiMeOA	172155-07-6
2874.11	Perfluoroundecanoic acid, n-isomer (major)	PFUndA	2058-94-8
2826.12	n-Perfluorododecanoic acid	PFDodA	307-55-1
11367.13	Perfluorotridecanoic acid, n-isomer (major)	PFTriDA; PFTriDA	72629-94-8
2827.14	Perfluorotetradecanoic acid, n-isomer (major)	PFTedA	376-06-7
15262.15	Perfluoropentadecanoic acid	PFPeDA	141074-63-7
2828.16	Perfluorohexadecanoic acid	PFHxdA	67905-19-5
2829.18	Perfluorooctadecanoic acid	PFOdA	16517-11-6
15359.9	Perfluorononanedioic acid	Tetradecafluoroazelaic acid	356-02-5
15360.12	Perfluorododecanedioic acid		27854-30-4

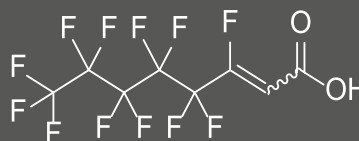
## Telomeric acids, FTCA's



8:2 FTCA; H2PFDA

2830.6	2H,2H,3H,3H-Perfluorohexanoic acid	3:3 FTCA	356-02-5
2831.9	2H,2H,3H,3H-Perfluorononanoic acid	6:3 FTCA	27854-30-4
14847.8	2H,2H,3H,3H-Perfluorooctanoic acid	5:3 FTCA	914637-49-3
15034.8	2H,2H-Perfluorooctanoic acid	6:2 FTCA; H2PFOA	53826-12-3
8548.10	2H,2H-Perfluorodecanoic acid	8:2 FTCA; H2PFDA	27854-31-5
8547.11	2H,2H,3H,3H-Perfluoroundecanoic acid	8:3 FTCA; H4PFUnA; H-PFUdA	34598-33-9

## Unsaturated telomeric acid, FTUCAs and unsaturated acids



6:2 FTUCA; 6:2 fluorotelomer unsaturated carboxylic acid

14801.6	4,5,5,5-Tetrafluoro-4-(trifluoromethyl)-2-pentenoic acid	FTMeUPA	243139-64-2
14802.6	4-(Trifluoromethylhexafluoro)-2-pentenoic acid	PFMeUPA	239795-58-5
2833.6	2H,3H-Perfluoro-2-hexenoic acid	3:3 FTUCA; 3:3 fluorotelomer unsaturated carboxylic acid	37759-76-5
15264.8	2H-Perfluoro-2-octenoic acid	6:2 FTUCA; 6:2 fluorotelomer unsaturated carboxylic acid	70887-88-6
14173.10	2H-Perfluoro-2-decenoic acid	8:2 FTUCA; 8:2 fluorotelomer unsaturated carboxylic acid	70887-84-2
14474.12	2H-Perfluoro-2-dodecenoic acid	10:2 FTUCA; 10:2 fluorotelomer unsaturated carboxylic acid	70887-94-4



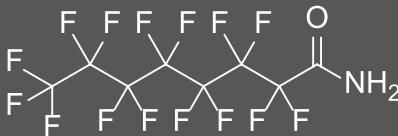
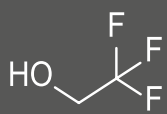

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Chiron No.	Name	Synonym / Example Structure	CAS
<b>PFAS acid ethers</b>			
<b>GenX and related</b>			
		 HFPO-DA	
14110.6	2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propionic acid	HFPO-DA; "GENX" precursor; FRD-903; PFPrOPrA	13252-13-6
14111.6	2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propanoyl chloride	"GenX" chloride; Perfluoro-2-propoxypropanoic acid chloride	72848-57-8
14112.6	2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propionic acid ammonium salt	GenX; FRD-902; Perfluoro-2-propoxypropanoic acid ammonium salt	62037-80-3
15128.9	Hexafluoropropylene oxide trimer acid	HFPO-TA; Perfluoro-2,5-dimethyl-3,6-dioxananoic acid	13252-14-7
14115.7	Methyl 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionate	HFPO-DA methyl ester; GENX methyl ester	13140-34-6
14515.5	1,1,1,2,2,3,3-Heptafluoro-3-(1,2,2,2-tetrafluoroethoxy)propane	Freon E1; Dupont E1	3330-15-2
<b>ADONA and related</b>			
		 ADONA	
14460.7	Dodecafluoro-3H-4,8-dioxananoate (>90%)	ADONA	919005-14-4
<b>9Cl-PF3ONS and 11Cl-PF3OUNS and related</b>			
		 9Cl-PF3ONS K	
14174.8	9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid potassium salt	9Cl-PF3ONS K; C8Cl PFESA K; F-53B K; 6:2 Cl-PFESA K	73606-19-6
14462.10	11Cl-PF3OUdS potassium salt	11Cl-PF3OUdS potassium salt	83329-89-9
<b>Others</b>			
		 PPVE	
14513.5	Trifluoro(heptafluoro-1-propoxy)ethylene	PPVE; Cheminox PPVE	1623-05-8
14514.6	1,1,2,2,3,3-Hexafluoro-1-(trifluoromethoxy)-3-[(1,2,2-trifluorovinyl)oxy]propane	MV 31	40573-09-9
14398.9	2-Trifluoromethyl-3-ethoxydodecafluorohexane	Novec HFE 7500; HFE 7500	297730-93-9
14056.5	Perfluoro-4-methoxybutanoic acid	PFMOBA; PFMBA	863090-89-5
15129.3	Perfluoro-2-methoxyacetic acid	PFMOAA	674-13-5
14721.4	Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
14722.4	Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7

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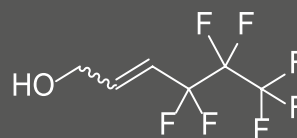
Chiron No.	Name	Synonym / Example Structure	CAS
<b>PFAS acid internal standards</b>			
	5H-Perfluoropentanoic acid, see 2834.5		
	7H-Perfluoroheptanoic acid, see 2835.7		
	9H-Perfluorononanoic acid, see 2836.9		
	11H-Perfluoroundecanoic acid, see 2825.11		
<b>PFAS amides</b>			
			
		<i>Perfluorooctanamide</i>	
<b>15119.2</b>	Perfluoroethanamide	Trifluoroacetamide	354-38-1
<b>15120.3</b>	Perfluoropropanamide	Pentafluoroacetamide	354-76-7
<b>2837.4</b>	Perfluorobutyramide	Heptafluorobutyramide	662-50-0
<b>15138.6</b>	Perfluorohexanamide	Undecafluorooctanamide	335-54-6
<b>2838.8</b>	Perfluorooctanamide	Pentadecafluorooctanamide	423-54-1
<b>15184.8</b>	Perfluorooctanamide	Perfluorooctanidine	307-31-3
<b>PFAS alcohols</b>			
			
		<i>Trifluoroethyl alcohol</i>	
<b>14416.2</b>	2,2,2-Trifluoroethanol	1:1 FTOH	75-89-8
<b>Telomeric alcohols</b>			
			
		<i>6:2 FTOH</i>	
<b>14829.3</b>	2,2-Difluoropropan-1-ol	3H,3H,3H 2:1 FTOH	33420-52-9
<b>14828.3</b>	3,3,3-Trifluoropropan-1-ol	1:2 FTOH	2240-88-2
<b>14827.3</b>	2,2,3,3,3-Pentafluoropropan-1-ol	2:1 FTOH	422-05-9
<b>14831.4</b>	1H,1H,2H,2H,3H,3H-Perfluorobutan-1-ol	1:3 FTOH	461-18-7
<b>2839.4</b>	1H,1H,2H,2H-Perfluorobutan-1-ol	2:2 FTOH	54949-74-5
<b>14830.4</b>	1H,1H-Perfluorobutan-1-ol	3:1 FTOH	375-01-9
<b>2860.5</b>	1H,1H,5H-Perfluoropentan-1-ol	5H 4:1 FTOH	355-80-6
<b>8802.6</b>	1H,1H,2H,2H-Perfluorohexan-1-ol	4:2 FTOH	2043-47-2
<b>2841.6</b>	1H,1H,2H,2H,3H,3H-Perfluorohexan-1-ol	3:3 FTOH	679-02-7
<b>2842.6</b>	1H,1H-Perfluorohexan-1-ol	5:1 FTOH	423-46-1
<b>2861.7</b>	1H,1H,7H-Perfluoroheptan-1-ol	7H 6:1 FTOH	335-99-9
<b>2843.7</b>	1H,1H-Perfluoroheptan-1-ol	6:1 FTOH	375-82-6
<b>2147.8</b>	1H,1H,2H,2H-Perfluorooctan-1-ol	6:2 FTOH	647-42-7
<b>2146.8</b>	1H,1H,8H-Perfluorooctan-1-ol	8H 7:1 FTOH	10331-08-5
<b>2145.8</b>	1H,1H-Perfluorooctan-1-ol	7:1 FTOH	307-30-2
<b>2844.9</b>	1H,1H,2H,2H,3H,3H-Perfluorononan-1-ol	6:3 FTOH	80806-68-4
<b>2847.9</b>	1H,1H,2H,2H-Perfluoro-7-methyloctan-1-ol	7Me 6:1 FTOH	20015-46-7
<b>2846.9</b>	1H,1H,9H-Perfluorononan-1-ol	9H 8:1 FTOH	376-18-1
<b>2845.9</b>	1H,1H-Perfluorononan-1-ol	8:1 FTOH	423-56-3

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Chiron No.	Name	Synonym / Example Structure	CAS
2851.10	1H,1H,10H,10H-Perfluoro-1,10-decanediol	1:8:1 FTdiOH	754-96-1
2849.10	1H,1H,2H,2H-Perfluorodecan-1-ol	8:2 FTOH	678-39-7
2848.10	1H,1H-Perfluorodecan-1-ol	9:1 FTOH	307-37-9
2850.10	1H,1H-Perfluoro-3,7-dimethyloctan-1-ol	3,7DiMe 7:1FTOH	232587-50-7
2854.11	1H,1H,2H,2H-Perfluoro-9-methyldecan-1-ol	9Me 8:2 FTOH	31200-98-3
2853.11	1H,1H,11H-Perfluoroundecan-1-ol	11H 10:1 FTOH	307-70-0
2852.11	1H,1H-Perfluoroundecan-1-ol	10:1 FTOH	307-46-0
2767.12	1H,1H,2H,2H-Perfluorododecan-1-ol	10:2 FTOH	865-86-1
3821.13	1H,1H,13H-Perfluorotridecan-1-ol	13H 12:1 FTOH	423-72-3
12220.14	1H,1H,2H,2H-Perfluorotetradecan-1-ol	12:2 FTOH	39239-77-5
2855.14	1H,1H-Perfluorotetradecan-1-ol	13:1 FTOH	15622-57-8
2856.16	1H,1H-Perfluorohexadecan-1-ol	15:1 FTOH	216144-94-4
2857.18	1H,1H-Perfluorooctadecan-1-ol	17:1 FTOH	242142-82-1

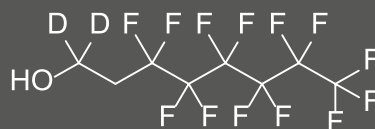
## Allylic alcohols



Allylic 3:3 FTOH

2858.6	1H,1H,2H,3H-Perfluorohex-2-en-1-ol	Allylic 3:3 FTOH	37759-88-9
2859.9	1H,1H,2H,3H-Perfluoronon-2-en-1-ol	Allylic 6:3 FTOH	38550-47-9

## Internal standards



6:2 FTOH-d2

1H,1H,5H-Perfluoropentan-1-ol, see 2860.5  
1H,1H,7H-Perfluoroheptan-1-ol, see 2861.7  
1H,1H,8H-Perfluorooctane-1-ol, see 2146.8

11202.6	1D,1D,2H,2H-1-Hydroxyperfluorohexane	4:2 FTOH-d2	N/A
11203.8	1D,1D,2H,2H-1-Hydroxyperfluorooctane	6:2 FTOH-d2	647-42-7 (unlabelled)
9825.10	1D,1D,2H,2H-1-Hydroxyperfluorodecane	8:2 FTOH-d2	N/A
10089.12	1D,1D,2H,2H-1-Hydroxyperfluorododecane	10:2 FTOH-d2	N/A

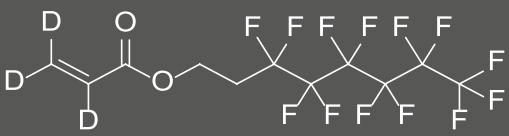
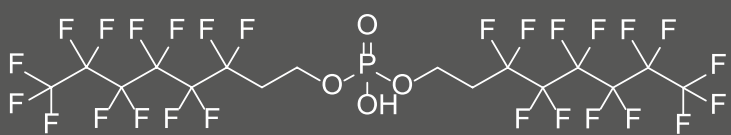
## PFAS aldehydes

14898.7	1H,7H-Perfluoroheptane-1,1-diol	1H,7H-Perfluoro-1-heptaldehyde hydrate	812-87-3
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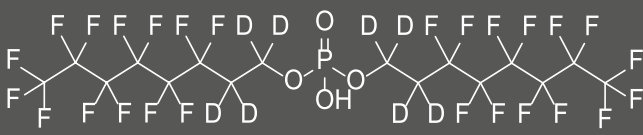
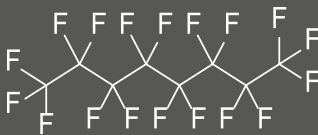
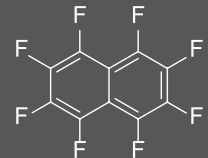
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Chiron No.	Name	Synonym / Example Structure	CAS
<p><b>PFA esters of telomeric alcohols including internal standards</b></p>  <p>6:2 FTAC-d3; 8:2 FTO acrylic acid-d3</p>			
10698.11	1H,1H,2H,2H-Perfluoro-n-octyl acrylate	6:2 FTAC; 6:2 Perfluorotelomer acrylate; 6:2 FTO acrylate	17527-29-6
11204.11	1H,1H,2H,2H-Perfluoro-n-octyl acrylate-d3	6:2 FTAC-d3; 6:2 FTO acrylic acid d-3	17527-29-6 (unlabelled)
9228.13	1H,1H,2H,2H-Perfluoro-n-decyl acrylate	8:2 FTAC; 8:2 FTO acrylic acid; Repellion 120 C1	27905-45-9
9520.13	1H,1H,2H,2H-Perfluoro-n-decyl acrylate-d3	8:2 FTAC-d3; 8:2 FTO acrylic acid-d3	N/A
10699.15	1H,1H,2H,2H-Perfluoro-n-dodecyl acrylate	10:2 FTAC; 10:2 Fluorotelomer acrylate	17741-60-5
11205.15	1H,1H,2H,2H-Perfluoro-n-dodecyl acrylate-d3	10:2 FTAC-d3; 10:2 FTO acrylic acid-d3	N/A
11206.12	1H,1H,2H,2H-Perfluoro-n-octyl methacrylate	6:2 FTMAC; 6:2 FTO methacrylic acid	2144-53-8
11207.12	1H,1H,2H,2H-Perfluoro-n-octyl methacrylate-d5	6:2 FTMAC-d5; 6:2 FTO methacrylic acid-d5	2144-53-8 (unlabelled)
9519.14	1H,1H,2H,2H-Perfluoro-n-decyl methacrylate	8:2 FTMAC; 8:2 FTO methacrylic acid	1996-88-9
9521.14	1H,1H,2H,2H-Perfluoro-n-decyl methacrylate-d5	8:2 FTMAC-d5; 8:2 FTO methacrylic acid-d5	N/A
11208.16	1H,1H,2H,2H-Perfluoro-n-dodecyl methacrylate	10:2 FTMAC; 10:2 FTO methacrylic acid	2144-54-9
11209.16	1H,1H,2H,2H-Perfluoro-n-dodecyl methacrylate-d5	10:2 FTMAC-d5; 10:2 FTO methacrylic acid-d5	N/A
<p><b>PAPS</b></p>  <p>6:2 DiPAPS</p>			
15280.6	4:2 MonoPAPS	Mono[2-(perfluorobutyl)ethyl] phosphate	150065-76-2
9563.8	6:2 MonoPAPS		57678-01-0
11340.16	6:2 DiPAPS sodium salt		407582-79-0
9565.24	6:2 TriPAPS		165325-62-2
9391.10	8:2 MonoPAPS		57678-03-2
14573.10	8:2 MonoPAPS sodium salt		130771-95-8 (Conjugated base)
14572.20	8:2 DiPAPS sodium salt		114519-85-6
13264.24	10:2 DiPAPS sodium salt		120433-74-1

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<b>Deuterated internal standards PAPS</b>		 <p>6:2 DiPAPS-d4</p>	
9928.16	6:2 DiPAPS-d4		N/A
9929.20	8:2 DiPAPS-d4		N/A
9930.24	10:2 DiPAPS-d4		N/A
<b>Fluoroalkanes</b>		 <p>Perfluoro-n-octane</p>	
12462.1	Tetrafluoromethane		75-73-0
12461.2	Hexafluoroethane		76-16-4
12464.3	Perfluoropropane		76-19-7
12463.5	Perfluoro-n-pentane		678-26-2
8400.6	Perfluoro-n-hexane		355-42-0
8401.7	Perfluoroheptane, isomer mixture		335-57-9
8402.8	Perfluoro-n-octane		307-34-6
8403.9	Perfluoro-n-nonane		375-96-2
8404.10	Perfluoro-n-decane		307-45-9
8405.11	1H-Perfluoro-n-undecane		66256-53-9
8406.12	Perfluoro-n-dodecane		307-59-5
8407.13	Perfluoro-n-tridecane		376-03-4
8408.14	Perfluoro-n-tetradecane		307-62-0
8409.15	Perfluoro-n-pentadecane		2264-03-1
8410.16	Perfluoro-n-hexadecane		355-49-7
8414.20	Perfluoro-n-eicosane		37589-57-4
12715.24	Perfluorotetracosane		1766-41-2
8923.16	Perfluorokerosene (bp. 70-200) for Mass spectrometry		N/A
10114.14	1-Iodo-1H,1H,2H,2H-pentacosafuorotetradecane	12:2 Fluorotelomer iodide; 12:2 FTI	30046-31-2
<b>Cyclic fluoroalkanes/PAHs</b>		 <p>Octafluoronaphthalene</p>	
12460.4	Perfluorocyclobutane; 99%		115-25-3
8416.10	Perfluorodecalin (mix E/Z)		306-94-5
8417.14	Perfluoro(ethylidimethyl)decalin)		N/A
8418.14	Perfluoroperhydrophenanthrene		306-91-2
8029.10	Perfluoronaphthalene	Octafluoronaphthalene	313-72-4

# PFAS product listing

ISO 17034  
ISO/IEC 17025  
ACCREDITED  
PRODUCER

Chiron No.	Name	Synonym / Example Structure	CAS
<b>Commercial products</b>			
9358.X	Forafac 1157N	Du Pont	133875-90-8
9359.X	Forafac 1183	Du Pont	133875-91-9
9836.X	Zonyl® UR	Du Pont	75496-28-5

## PFAS mixes

Methods used: ISO 21675  
EPA 8237  
EPA 533  
EPA8327 (=ISO 21675)

Chiron No.	Name (Mix number)	Composition (Synonym) [CAS]	Concentration / Solvent
S-4594-5-ME	Mix of C4-C10 carboxylic acids and C4, C6, C8 sulfonates (PFAS Mix 01)"	2810.4 n-Perfluorobutyric acid (PFBA) [375-22-4] 2819.5 n-Perfluoropentanoic acid (PFPA) [2706-90-3] 2590.6 n-Perfluorohexanoic acid (PFHxA) [307-24-4] 2821.7 n-Perfluoroheptanoic acid (PFHpA) [375-85-9] 2042.8 n-Perfluorooctanoic acid (PFOA) [335-67-1] 2715.9 n-Perfluorononanoic acid (PFNA) [375-95-1] 2823.10 n-Perfluorodecanoic acid (PFDA) [335-76-2] 2719.4 n-Perfluorobutane sulphonate, potassium salt (PFBS) [29420-49-3] 8581.6 n-Perfluorohexane sulfonic acid, potassium salt (PFHxS) [3871-99-6] 2193.8 Perfluorooctane sulfonic acid, potassium salt (PFOS) [2795-39-3]	5 µg/mL in Methanol
S-4867-50-ME	PFAS Mixture of 27 compounds (PFAS Mix 02)	2042.8 n-Perfluorooctanoic acid (PFOA) [335-67-1] 2715.9 Perfluorononanoic acid (PFNA) [375-95-1] 2041.4 Perfluorobutanesulfonic acid (PFBS) [375-73-5] 2037.8 Perfluorooctanesulfonic acid (PFOS) [1763-23-1] 8802.6 1H,1H,2H,2H-Perfluorohexan-1-ol (2-Perfluorobutyl ethanol) (4:2 FTOH) [2043-47-2] 2147.8 1H,1H,2H,2H-Perfluorooctan-1-ol (6:2 FTOH) [647-42-7] 2849.10 1H,1H,2H,2H-Perfluorodecan-1-ol (8:2 FTOH) [678-39-7] 2767.12 1H,1H,2H,2H-Perfluorododecan-1-ol (10:2 FTOH) [865-86-1] 8012.8 Perfluorooctanesulfonyl fluoride (POSF) [307-35-7] 8581.6 Perfluorohexanesulfonic acid, potassium salt (PFHxS-K) [3871-99-6] 2590.6 Perfluorohexanoic acid (PFHxA) [307-24-4] 2043.8 Perfluorooctanesulfonamide, techn., n-isomer (major) (PFOSA) [754-91-6] 10979.11 N-(2-Hydroxyethyl)-N-methylperfluorooctanesulfonamide (N-MeFOSE) [24448-09-7] 2810.4 Perfluorobutyric acid (PFBA) [375-22-4] 2819.5 n-Perfluoropentanoic acid (PFPA) [2706-90-3] 2821.7 n-Perfluoroheptanoic acid (PFHpA) [375-85-9] 2823.10 n-Perfluorodecanoic acid (PFDA) [335-76-2] 2874.11 Perfluoroundecanoic acid, n-isomer (major) (PFUndA) [2058-94-8] 2826.12 n-Perfluorododecanoic acid (PFDodA) [307-55-1] 2827.14 Perfluorotetradecanoic acid, n-isomer (major) (PFTedA) [376-06-7] 10698.11 1H,1H,2H,2H-Perfluoro-n-octyl acrylate (6:2 FTAC) [17527-29-6] 9228.13 1H,1H,2H,2H-Perfluoro-n-decyl acrylate (8:2 FTAC) [27905-45-9] 10699.15 1H,1H,2H,2H-Perfluoro-n-dodecyl acrylate (10:2 FTAC) [17741-60-5] 2824.10 Perfluoro-3,7-dimethyloctanoic acid (PF3,7DiMeOA) [172155-07-6] 2835.7 7H-Perfluoroheptanoic acid (HPFHpA) [1546-95-8] 8547.11 2H,2H,3H,3H-Perfluoroundecanoic acid (H4PFUnA) [34598-33-9] 2559.8 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTSA) [27619-97-2]"	50 µg/mL in Methanol
S-4775-500-DC	POP Mix 1	2037.8 Perfluorooctanesulfonic acid (PFOS) [1763-23-1] 2027.4 Hexachloro-1,3-butadiene [87-68-3] 1356.6 Hexachlorobenzene [118-74-1] 10280.10 Chordecone [143-50-0] 3457.10 Mirex [2385-85-5] 2663.10 Toxaphene [8001-35-2]	500 µg/mL in Dichloromethane



# PFAS mixes

Chiron No.	Name (Mix number)	Composition (Synonym) [CAS]	Concentration / Solvent
<b>S-4941-50-THF</b>	FTOH-Et/MeFOSE Mixture of 6 compounds (PFAS Mix 04)	11931.12 N-Ethyl-N-(2-hydroxyethyl)perfluorooctylsulphonamide (EtFOSE) [1691-99-2] 10979.11 N-(2-Hydroxyethyl)-N-methylperfluorooctane sulfonamide (MeFOSE) [24448-09-7] 8802.6 1H,1,H,2H,2,H-Perfluorohexan-1-ol (FTOH 4:2) [2043-47-2] 2147.8 1H,1H,2H,2H-Perfluorooctan-1-ol (FTOH 6:2) [647-42-7] 2849.10 1H,1H,2H,2H-Perfluorodecan-1-ol (FTOH 8:2) [678-39-7] 2767.12 1H,1H,2H,2H-Perfluorododecan-1-ol (FTOH 10:2) [865-86-1]	50 µg/mL in Tetrahydrofuran
<b>S-4876-50-ME</b>	Fluorotelomer Mix 1 (PFAS Mix 05, Fluorotelomer Mix 01)	10698.11 1H,1H,2H,2H-Perfluoro-n-octyl acrylate (6:2 FTAC) [17527-29-6] 9228.13 1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTAC) [27905-45-9] 10699.15 1H,1H,2H,2H-Perfluorododecyl acrylate (10:2 FTAC) [17741-60-5]	50 µg/mL in Methanol
<b>S-4877-50-ME</b>	Fluorotelomer Mix 2 (PFAS Mix 06, Fluorotelomer Mix 02)	8802.6 1H,1H,2H,2H-Perfluorohexan-1-ol (4:2 FTOH) [2043-47-2] 2147.8 1H,1H,2H,2H-Perfluorooctan-1-ol (6:2 FTOH) [647-42-7] 2849.10 1H,1H,2H,2H-Perfluorodecan-1-ol (8:2-FTOH) [678-39-7] 2767.12 1H,1H,2H,2H-Perfluorododecan-1-ol (10:2 FTOH) [865-86-1]	50 µg/mL in Methanol
<b>S-4878-50-ME</b>	Fluorotelomer Mix 3 (PFAS Mix 07, Fluorotelomer Mix 03)	11206.11 1H,1H,2H,2H-Perfluorooctyl methacrylate (6:2 FTMAC) [2144-53-8] 9519.14 1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMAC) [1996-88-9] 11208.16 1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMAC) [2144-54-9]	50 µg/mL in Methanol
<b>S-4999-50-ME</b>	Fluorotelomer (PT) Mixture of 9 comp, Chain lengths C6-C12 (PFAS Mix 09)	11931.12 N-Ethyl-N-(2-hydroxyethyl)perfluorooctyl sulphonamide (N-EtFOSE) [1691-99-2] 10979.11 N-(2-Hydroxyethyl)-N-methylperfluorooctyl sulfonamide (N-MeFOSE) [24448-09-7] 8802.6 1H,1,H,2H,2,H-Perfluorohexan-1-ol (2-Perfluorobutyl ethanol) (4:2 FTOH) [2043-47-2] 2147.8 1H,1H,2H,2H-Perfluorooctan-1-ol (6:2 FTOH) [647-42-7] 2849.10 1H,1H,2H,2H-Perfluorodecan-1-ol (8:2 FTOH) [678-39-7] 2767.12 1H,1H,2H,2H-Perfluorododecan-1-ol (10:2 FTOH) [865-86-1] 10698.11 1H,1H,2H,2H-Perfluoro-n-octyl acrylate (6:2 FTAC) [17527-29-6] 9228.1 1H,1H,2H,2H-Perfluoro-n-decyl acrylate (8:2 FTAC) [27905-45-9] 10699.15 1H,1H,2H,2H-Perfluoro-n-dodecyl acrylate (10:2 FTAC) [17741-60-5]	50 µg/mL in Methanol
<b>S-5367-50-ME</b>	PFAS Mix 10	2819.5 n-Perfluoropentanoic acid (PFPA) [2706-90-3] 2590.6 Perfluorohexanoic acid (PFHxA) [307-24-4] 2821.7 n-Perfluoroheptanoic acid (PFHpA) [375-85-9] 2835.7 7H-Perfluoroheptanoic acid (7H PFHPA) [1546-95-8] 2715.9 Perfluorononanoic acid (PFNA) [375-95-1] 2823.10 n-Perfluorodecanoic acid (PFDA) [335-76-2] 8548.10 2H,2H-Perfluorodecanoic acid (8:2 FTCA) [27854-31-5] 2824.10 Perfluoro-3,7-dimethyloctanoic acid (PF3,7DiMeOA) [172155-07-6]	50 µg/mL in Methanol
<b>S-5368-50-ME</b>	PFAS Mix 11	2874.11 Perfluoroundecanoic acid, n-isomer (major) (PFUndA) [2058-94-8] 8547.11 2H,2H,3H,3H-Perfluoroundecanoic acid (H-PFUdA) [34598-33-9] 2826.12 n-Perfluorododecanoic acid (PFDodA) [307-55-1] 11367.13 Perfluorotridecanoic acid, n-isomer (major) (PFTrdA) [72629-94-8] 2827.14 Perfluorotetradecanoic acid, n-isomer (major) (PFTedA) [376-06-7] 2041.4 Perfluorobutanesulfonic acid (PFBS) [375-73-5] 8579.6 Perfluorohexanesulfonic acid (PFHxS) [355-46-4] 11156.7 Perfluoroheptanesulfonic acid, potassium salt (PFHpS-K) [60270-55-5]	50 µg/mL in Methanol
<b>S-5369-50-ME</b>	PFAS Mix 12	11157.10 Perfluorodecanesulfonic acid (PFDS) [335-77-3] 12748.6 1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTSA) [757124-72-4] 2559.8 1H,1H,2H,2H-Perfluorooctanesulfonic acid (6:2 FTSA ) [27619-97-2] 12750.12 1H,1H,2H,2H-Perfluorododecanesulfonic acid(10:2 FTSA ) [120226-60-0] 2043.8 Perfluorooctanesulfonamide, techn., n-isomer (major) (FOSA) [754-91-6]"	50 µg/mL in Methanol
<b>S-5370-50-ME</b>	PFAS Mix 13	11932.9 N-Methyl-n-perfluorooctanesulfonamide (N-MeFOSA) [31506-32-8] 11933.10 N-Ethyl-n-perfluorooctanesulfonamide (N-EtFOSA) [4151-50-2] 10979.11 N-(2-Hydroxyethyl)-N-methylperfluorooctane sulfonamide (N-MeFOSE) [24448-09-7] 11931.12 N-Ethyl-N-(2-hydroxyethyl)perfluorooctyl sulphonamide (N-EtFOSE) [1691-99-2] 14526.10 N-Perfluorooctanesulfonamidoacetic acid (FOSAA) [2806-24-8] 13257.11 N-Methyl-n-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) [2355-31-9] 13259.12 N-Ethyl-n-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) [2991-50-6] 14110.6 2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy)propionic acid (HFPO-DA) [13252-13-6]	50 µg/mL in Methanol

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These substances pose potential impacts on both human health and the environment.

SVHC (Substances of very high concern): ECHA-REACH directive: Updated January 2022

EC No.	Chemical Name	EC No.	Chemical Name	EC No.	Chemical Name
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid
100-02-7	Acetic acid	100-02-7	Acetic acid	100-02-7	Acetic acid

SVHC identifies chemicals equivalent to carcinogens, mutagens and reprotoxicants, which are very persistent, bioaccumulative and toxic.

To date, two PFAS and their derivatives are classed as SVHC<sup>10</sup>:

Perfluorobutane sulfonic acid (PFBS)

2,3,3,3-Tetrafluoro-2-(heptafluoropropoxy) propionic acid (HFPO-DA)

Review more by downloading our SVHC Product listing.

Unable to download, please follow this link:  
[www.chiron.no/en/about-us/news-archive/product-news/bmf-87-substances-of-very-high-concern-svhc/](http://www.chiron.no/en/about-us/news-archive/product-news/bmf-87-substances-of-very-high-concern-svhc/)

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