

## SUPPLEMENTAL DATA

### PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFASs) IN THE ENVIRONMENT: TERMINOLOGY, CLASSIFICATION, AND ORIGINS

Robert C. Buck†, James Franklin\*‡, Urs Berger§, Jason M. Conder||, Ian T. Cousins§, Pim de Voogt#, Allan Astrup Jensen††, Kurunthachalam Kannan‡‡, Scott A. Mabury§§, and Stefan P. J. van Leeuwen||||

†E.I. du Pont de Nemours & Co. Inc., DuPont Chemicals and Fluoroproducts, 4417 Lancaster Pike, CRP 702-2211B, Wilmington, DE 19880-0702 USA ([Robert.C.Buck@USA.dupont.com](mailto:Robert.C.Buck@USA.dupont.com))

‡CLF-Chem Consulting SPRL, 3 Clos du Châtaignier, BE-1390 Grez-Doiceau, Belgium ([james.franklin@skynet.be](mailto:james.franklin@skynet.be))

§Department of Applied Environmental Science (ITM), Stockholm University, Svante Arrhenius väg 8, SE-10691 Stockholm, Sweden ([urs.berger@itm.su.se](mailto:urs.berger@itm.su.se); [ian.cousins@itm.su.se](mailto:ian.cousins@itm.su.se))

||ENVIRON International Corporation, 18100 Von Karman Avenue, Suite 600, Irvine, CA 92612, USA ([jconder@envirocorp.com](mailto:jconder@envirocorp.com))

#Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam, PO Box 94248, NL-1090 GE Amsterdam, The Netherlands ([w.p.devoogt@uva.nl](mailto:w.p.devoogt@uva.nl))

†† Nordic Institute for Product Sustainability, Environmental Chemistry and Toxicology (NIPSECT), 1 Dalgas Boulevard, DK-2000 Frederiksberg, Denmark ([allan.astrup.jensen@gmail.com](mailto:allan.astrup.jensen@gmail.com))

‡‡ Wadsworth Center, New York State Department of Health, and Department of Environmental Health Sciences, School of Public Health, State University of New York at Albany, Empire State Plaza, P.O. Box 509, Albany, NY 12201-0509, USA ([kkannan@wadsworth.org](mailto:kkannan@wadsworth.org))

§§ Department of Chemistry, University of Toronto, 80 St. George Street, Toronto, Ontario M5S 3H6, Canada ([smabury@chem.utoronto.ca](mailto:smabury@chem.utoronto.ca))

|||| Institute for Environmental Studies, VU University, De Boelelaan 1085, NL-1081 HV Amsterdam, The Netherlands ([Stefan.van.Leeuwen@ivm.vu.nl](mailto:Stefan.van.Leeuwen@ivm.vu.nl))

\*To whom correspondence may be addressed: [james.franklin@skynet.be](mailto:james.franklin@skynet.be), Phone/Fax +32-10-24-69-98

## Table of Contents

PART 1 – FAMILIES OF SUBSTANCES (NON-POLYMERS) .....	4
PART 2 – SELECTED INDIVIDUAL COMPOUNDS (NON-POLYMERS) .....	7
Perfluoroalkyl carboxylic acids (and selected salts).....	7
Perfluoroalkyl carboxylate anions.....	8
Perfluoroalkane sulfonic acids (and selected anions and salts) .....	10
Perfluoroalkane sulfinic acids .....	11
Perfluoroalkyl phosphonic acids .....	12
Perfluoroalkyl phosphinic acids .....	12
Perfluoroalkyl iodides .....	12
(n:2) Fluorotelomer iodides .....	13
(n:2) Fluorotelomer olefins .....	13
(n:2) Fluorotelomer alcohols .....	14
(n:2) Fluorotelomer acrylates .....	14
(n:2) Fluorotelomer methacrylates.....	15
Polyfluoroalkyl phosphoric acid monoesters.....	16
Polyfluoroalkyl phosphoric acid diesters .....	16
Semifluorinated n-alkanes .....	17
Semifluorinated n-alkenes .....	17
(n:2) Fluorotelomer (saturated) aldehydes .....	18
(n:2) Fluorotelomer unsaturated aldehydes.....	18
Perfluoroalkyl aldehydes.....	19
Perfluoroalkyl aldehyde hydrates .....	19
(n:2) Fluorotelomer (saturated) carboxylic acids.....	20

(n:2) Fluorotelomer unsaturated carboxylic acids.....	20
Other biotransformation products of n:2 FTOHs.....	21
(n:2) Fluorotelomer sulfonic acids .....	21
(n:2) Fluorotelomer sulfonate anions .....	22
Perfluoroalkane sulfonyl fluorides.....	22
Perfluoroalkane sulfonamides .....	23
N-Methyl perfluoroalkane sulfonamides.....	23
N-Ethyl perfluoroalkane sulfonamides .....	23
N,N-Dialkyl perfluoroalkane sulfonamides .....	24
Perfluoroalkane sulfonamido ethanols.....	24
Perfluoroalkane sulfonamidoacetic acids .....	25
N-Methyl perfluoroalkane sulfonamidoethanols .....	25
N-Ethyl perfluoroalkane sulfonamidoethanols.....	26
N-Methyl perfluoroalkane sulfonamidoacetic acids and salts .....	26
N-Ethyl perfluoroalkane sulfonamidoacetic acids and salts .....	27
N-Methyl perfluoroalkane sulfonamidoethyl acrylates.....	27
N-Ethyl perfluoroalkane sulfonamidoethyl acrylates .....	28
N-Methyl perfluoroalkane sulfonamidoethyl methacrylates .....	28
N-Ethyl perfluoroalkane sulfonamidoethyl methacrylates.....	29
Figure S1. Terminology Decision Flowcharts .....	30
Example #1 8:2 Fluorotelomer alcohol .....	32
Example #2 Perfluorobutane sulfonamide .....	33
Example #3 Perfluorohexyl phosphonic acid .....	34
Example #4 Side-chain Fluorinated Acrylate Polymer (Fluorotelomer origin) .....	35

## PART 1 – FAMILIES OF SUBSTANCES (NON-POLYMERS)

NAME OF FAMILY	FORMULA	ACRONYM
Perfluoroalkyl substances	Generic name: See main paper	PFASs
Perfluoroalkyl acids	Includes perfluoroalkyl carboxylic, sulfonic, sulfinic, phosphonic and phosphinic acids	PFAAs
Perfluoroalkyl carboxylic acids	$C_nF_{2n+1}COOH$	PFCAs
Perfluoroalkane sulfonic acids	$C_nF_{2n+1}SO_3H$	PFSAs
Perfluoroalkane sulfinic acids	$C_nF_{2n+1}SO_2H$	PFSIAs
Perfluoroalkyl phosphonic acids	$O=P(OH)_2C_nF_{2n+1}$	PFPAs
Perfluoroalkyl phosphinic acids	$O=P(OH)(C_nF_{2n+1})(C_mF_{2m+1})$	PFPIAs

NAME OF FAMILY	FORMULA	ACRONYM
Perfluoroalkyl iodides	$C_nF_{2n+1}I$	PFAls
(n:2) Fluorotelomer iodides	$C_nF_{2n+1}CH_2CH_2I$	(n:2) FTIs
(n:2) Fluorotelomer olefins	$C_nF_{2n+1}CH=CH_2$	(n:2) FTOs
(n:2) Fluorotelomer alcohols	$C_nF_{2n+1}CH_2CH_2OH$	(n:2) FTOHs
(n:2) Fluorotelomer acrylates	$C_nF_{2n+1}CH_2CH_2OC(O)CH=CH_2$	(n:2) FTACs
(n:2) Fluorotelomer methacrylates	$C_nF_{2n+1}CH_2CH_2OC(O)C(CH_3)=CH_2$	(n:2) FTMACs

Polyfluoroalkyl phosphoric acid esters / Polyfluoroalkyl phosphates / (n:2) Fluorotelomer phosphates	$(O)P(OH)_{3-x}(OCH_2CH_2C_nF_{2n+1})_x$	PAPs
Polyfluoroalkyl phosphoric acid monoesters	$(O)P(OH)_2(OCH_2CH_2C_nF_{2n+1})$	monoPAPs
Polyfluoroalkyl phosphoric acid diesters	$(O)P(OH)(OCH_2CH_2C_nF_{2n+1})(OCH_2CH_2C_mF_{2m+1})$	diPAPs
Semi-fluorinated <i>n</i> -alkanes	$F(CF_2)_n(CH_2)_mH$	SFAs
Semi-fluorinated <i>n</i> -alkenes	$F(CF_2)_nCH=CH(CH_2)_{m-2}H$	SFAenes
(n:2) Fluorotelomer (saturated) aldehydes	$C_nF_{2n+1}CH_2CHO$	(n:2) FTALs
(n:2) Fluorotelomer unsaturated aldehydes	$C_{n-1}F_{2n-1}CF=CHCHO$	(n:2) FTUALs
Perfluoroalkyl aldehydes	$C_nF_{2n+1}CHO$	PFALs
Perfluoroalkyl aldehyde hydrates	$C_nF_{2n+1}CH(OH)_2$	PFAL.H <sub>2</sub> O <sub>s</sub>
(n:2) Fluorotelomer (saturated) carboxylic acids	$C_nF_{2n+1}CH_2COOH$	(n:2) FTCAs
(n:2) Fluorotelomer unsaturated carboxylic acids	$C_{n-1}F_{2n-1}CF=CHCOOH$	(n:2) FTUCAs
[Biotransformation product of (n+1):2 FTOH]	$C_nF_{2n+1}CH_2CH_2COOH$	n:3 Acid
[Biotransformation product of (n+1):2 FTOH]	$C_nF_{2n+1}CH=CHCOOH$	n:3 UAcid
(n:2) Fluorotelomer sulfonic acids	$C_nF_{2n+1}CH_2CH_2SO_3H$	(n:2) FTSAs

<b>NAME OF FAMILY</b>	<b>FORMULA</b>	<b>ACRONYM</b>
Perfluoroalkane sulfonyl fluorides	$C_nF_{2n+1}SO_2F$	PASFs
Perfluoroalkane sulfonamides	$C_nF_{2n+1}SO_2NH_2$	FASAs
<i>N</i> -Methyl perfluoroalkane sulfonamides	$C_nF_{2n+1}SO_2NH(CH_3)$	MeFASAs
<i>N</i> -Ethyl perfluoroalkane sulfonamides	$C_nF_{2n+1}SO_2NH(C_2H_5)$	EtFASAs
<i>N,N</i> -Dialkyl perfluoroalkane sulfonamides	$C_nF_{2n+1}SO_2N(C_mH_{2m+1})(C_pH_{2p+1})$ , with $m, p = 1$ or $2$	Me <sub>2</sub> FASAs, Et <sub>2</sub> FASAs, MeEtFASAs
Perfluoroalkane sulfonamidoethanols	$C_nF_{2n+1}SO_2NHCH_2CH_2OH$	FASEs
Perfluoroalkane sulfonamidoacetic acids	$C_nF_{2n+1}SO_2NHCH_2COOH$	FASAAs
<i>N</i> -Methyl perfluoroalkane sulfonamidoethanols	$C_nF_{2n+1}SO_2N(CH_3)CH_2CH_2OH$	MeFASEs
<i>N</i> -Ethyl perfluoroalkane sulfonamidoethanols	$C_nF_{2n+1}SO_2N(C_2H_5)CH_2CH_2OH$	EtFASEs
<i>N</i> -Methyl perfluoroalkane sulfonamidoacetic acids	$C_nF_{2n+1}SO_2N(CH_3)CH_2COOH$	MeFASAAs
<i>N</i> -Ethyl perfluoroalkane sulfonamidoacetic acids	$C_nF_{2n+1}SO_2N(C_2H_5)CH_2COOH$	EtFASAAs
<i>N</i> -Methyl perfluoroalkane sulfonamidoethyl acrylates	$C_nF_{2n+1}SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	MeFASACs
<i>N</i> -Ethyl perfluoroalkane sulfonamidoethyl acrylates	$C_nF_{2n+1}SO_2N(C_2H_5)CH_2CH_2OC(O)CH=CH_2$	EtFASACs
<i>N</i> -Methyl perfluoroalkane sulfonamidoethyl methacrylates	$C_nF_{2n+1}SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	MeFASMACs
<i>N</i> -Ethyl perfluoroalkane sulfonamidoethyl methacrylates	$C_nF_{2n+1}SO_2N(C_2H_5)CH_2CH_2OC(O)C(CH_3)=CH_2$	EtFASMACs

## PART 2 – SELECTED INDIVIDUAL COMPOUNDS (NON-POLYMERS)

Perfluoroalkyl carboxylic acids (and selected salts)	FORMULA	CAS REGISTRY NUMBER	ACRONYM
Trifluoroacetic acid	CF <sub>3</sub> COOH	76-05-1	TFAA
Perfluoropropanoic acid	C <sub>2</sub> F <sub>5</sub> COOH	422-64-0	PFPrA
Perfluorobutanoic acid	C <sub>3</sub> F <sub>7</sub> COOH	375-22-4	PFBA
Ammonium perfluorobutanoate	NH <sub>4</sub> <sup>+</sup> C <sub>3</sub> F <sub>7</sub> COO <sup>-</sup>	10495-86-0	NH <sub>4</sub> -PFBA
Sodium perfluorobutanoate	Na <sup>+</sup> C <sub>3</sub> F <sub>7</sub> COO <sup>-</sup>	2218-54-4	Na-PFBA
Perfluoropentanoic acid	C <sub>4</sub> F <sub>9</sub> COOH	2706-90-3	PFPeA
Ammonium perfluoropentanoate	NH <sub>4</sub> <sup>+</sup> C <sub>4</sub> F <sub>9</sub> COO <sup>-</sup>	68259-11-0	NH <sub>4</sub> -PFPeA
Perfluorohexanoic acid	C <sub>5</sub> F <sub>11</sub> COOH	307-24-4	PFHxA
Ammonium perfluorohexanoate	NH <sub>4</sub> <sup>+</sup> C <sub>5</sub> F <sub>11</sub> COO <sup>-</sup>	21615-47-4	NH <sub>4</sub> -PFHxA
Sodium perfluorohexanoate	Na <sup>+</sup> C <sub>5</sub> F <sub>11</sub> COO <sup>-</sup>	2923-26-4	Na-PFHxA
Perfluoroheptanoic acid	C <sub>6</sub> F <sub>13</sub> COOH	375-85-9	PFHpA
Ammonium perfluoroheptanoate	NH <sub>4</sub> <sup>+</sup> C <sub>6</sub> F <sub>13</sub> COO <sup>-</sup>	6130-43-4	NH <sub>4</sub> -PFHpA
Sodium perfluoroheptanoate	Na <sup>+</sup> C <sub>6</sub> F <sub>13</sub> COO <sup>-</sup>	20109-59-5	Na-PFHpA
Perfluorooctanoic acid	C <sub>7</sub> F <sub>15</sub> COOH	335-67-1	PFOA
Ammonium perfluorooctanoate	NH <sub>4</sub> <sup>+</sup> C <sub>7</sub> F <sub>15</sub> COO <sup>-</sup>	3825-26-1	APFO (or NH <sub>4</sub> -PFOA)

Sodium perfluorooctanoate	$^{222}\text{Na}^+ \text{C}_7\text{F}_{15}\text{COO}^-$	335-95-5	Na-PFOA
Potassium perfluorooctanoate	$\text{K}^+ \text{C}_7\text{F}_{15}\text{COO}^-$	2395-00-8	K-PFOA
Perfluorononanoic acid	$\text{C}_8\text{F}_{17}\text{COOH}$	375-95-1	PFNA
Ammonium perfluorononanoate	$\text{NH}_4^+ \text{C}_8\text{F}_{17}\text{COO}^-$	4149-60-4	APFN (or $\text{NH}_4$ -PFNA)
Sodium perfluorononanoate	$\text{Na}^+ \text{C}_8\text{F}_{17}\text{COO}^-$	21049-39-8	Na-PFNA
Perfluorodecanoic acid	$\text{C}_9\text{F}_{19}\text{COOH}$	335-76-2	PFDA
Ammonium perfluorodecanoate	$\text{NH}_4^+ \text{C}_9\text{F}_{19}\text{COO}^-$	3108-42-7	$\text{NH}_4$ -PFDA
Perfluoroundecanoic acid	$\text{C}_{10}\text{F}_{21}\text{COOH}$	2058-94-8	PFUnDA
Ammonium perfluoroundecanoate	$\text{NH}_4^+ \text{C}_{10}\text{F}_{21}\text{COO}^-$	4234-23-5	$\text{NH}_4$ -PFUnDA
Perfluorododecanoic acid	$\text{C}_{11}\text{F}_{23}\text{COOH}$	307-55-1	PFDODA
Perfluorotridecanoic acid	$\text{C}_{12}\text{F}_{25}\text{COOH}$	72629-94-8	PFTTrDA
Perfluorotetradecanoic acid	$\text{C}_{13}\text{F}_{27}\text{COOH}$	376-06-7	PFTeDA
Perfluoropentadecanoic acid	$\text{C}_{14}\text{F}_{29}\text{COOH}$	141074-63-7	PFPeDA
Perfluorohexadecanoic acid	$\text{C}_{15}\text{F}_{31}\text{COOH}$	67905-19-5	PFHxDA
Perfluoroheptadecanoic acid	$\text{C}_{16}\text{F}_{33}\text{COOH}$	57475-95-3	PFHpDA
Perfluorooctadecanoic acid	$\text{C}_{17}\text{F}_{35}\text{COOH}$	16517-11-6	PFODA
<b>Perfluoroalkyl carboxylate anions</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Trifluoroacetate	$\text{CF}_3\text{COO}^-$	14477-72-6	TFA



Perfluoropropanoate	$C_2F_5COO^-$	44864-55-3	PFPPrA
Perfluorobutanoate	$C_3F_7COO^-$	45048-62-2	PFBA
Perfluoropentanoate	$C_4F_9COO^-$	45167-47-3	PFPeA
Perfluorohexanoate	$C_5F_{11}COO^-$	92612-52-7	PFHxA
Perfluorohepanoate	$C_6F_{13}COO^-$	120885-29-2	PFHpA
Perfluorooctanoate	$C_7F_{15}COO^-$	45285-51-6	PFOA
Perfluorononanoate	$C_8F_{17}COO^-$	72007-68-2	PFNA
Perfluorodecanoate	$C_9F_{19}COO^-$	73829-36-4	PFDA
Perfluoroundecanoate	$C_{10}F_{21}COO^-$	196859-54-8	PFUnDA
Perfluorododecanoate	$C_{11}F_{23}COO^-$	171978-95-3	PFDoDA
Perfluorotridecanoate	$C_{12}F_{25}COO^-$	862374-87-6	PFTrDA
Perfluorotetradecanoate	$C_{13}F_{27}COO^-$	365971-87-5	PFTeDA
Perfluoropentadecanoate	$C_{14}F_{29}COO^-$	1214264-29-5	PFPeDA
Perfluorohexadecanoate	$C_{15}F_{31}COO^-$	1214264-30-8	PFHxDA
Perfluoroheptadecanoate	$C_{16}F_{33}COO^-$	None available	PFHpDA
Perfluorooctadecanoate	$C_{17}F_{35}COO^-$	798556-82-8	PFODA

<b>Perfluoroalkane sulfonic acids (and selected anions and salts)</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Trifluoromethane sulfonic (or triflic) acid	CF <sub>3</sub> SO <sub>3</sub> H	1493-13-6	TFMS
Perfluoroethane sulfonic acid	C <sub>2</sub> F <sub>5</sub> SO <sub>3</sub> H	354-88-1	PFEtS
Perfluoropropane sulfonic acid	C <sub>3</sub> F <sub>7</sub> SO <sub>3</sub> H	423-41-6	PFPrS
Perfluorobutane sulfonic acid	C <sub>4</sub> F <sub>9</sub> SO <sub>3</sub> H	375-73-5 or 59933-66-3	PFBS
Perfluorobutane sulfonate anion	C <sub>4</sub> F <sub>9</sub> SO <sub>3</sub> <sup>-</sup>	45187-15-3	PFBS
Potassium perfluorobutane sulfonate	K <sup>+</sup> C <sub>4</sub> F <sub>9</sub> SO <sub>3</sub> <sup>-</sup>	29420-49-3	K-PFBS
Perfluoropentane sulfonic acid	C <sub>5</sub> F <sub>11</sub> SO <sub>3</sub> H	2706-91-4	PFPeS
Potassium perfluoropentane sulfonate	K <sup>+</sup> C <sub>5</sub> F <sub>11</sub> SO <sub>3</sub> <sup>-</sup>	3872-25-1	K-PFPeS
Perfluorohexane sulfonic acid	C <sub>6</sub> F <sub>13</sub> SO <sub>3</sub> H	355-46-4	PFHxS
Perfluorohexane sulfonate anion	C <sub>6</sub> F <sub>13</sub> SO <sub>3</sub> <sup>-</sup>	108427-53-8	PFHxS
Potassium perfluorohexane sulfonate	K <sup>+</sup> C <sub>6</sub> F <sub>13</sub> SO <sub>3</sub> <sup>-</sup>	3871-99-6	K-PFHxS
Perfluoroheptane sulfonic acid	C <sub>7</sub> F <sub>15</sub> SO <sub>3</sub> H	375-92-8	PFHpS
Ammonium perfluoroheptane sulfonate	NH <sub>4</sub> <sup>+</sup> C <sub>7</sub> F <sub>15</sub> SO <sub>3</sub> <sup>-</sup>	68259-07-4	NH <sub>4</sub> -PFHpS
Potassium perfluoroheptane sulfonate	K <sup>+</sup> C <sub>7</sub> F <sub>15</sub> SO <sub>3</sub> <sup>-</sup>	60270-55-5	K-PFHpS
Perfluorooctane sulfonic acid	C <sub>8</sub> F <sub>17</sub> SO <sub>3</sub> H	1763-23-1	PFOS
Perfluorooctane sulfonate anion	C <sub>8</sub> F <sub>17</sub> SO <sub>3</sub> <sup>-</sup>	45298-90-6	PFOS

Ammonium perfluorooctane sulfonate	$\text{NH}_4^+ \text{C}_8\text{F}_{17}\text{SO}_3^-$	29081-56-9	NH <sub>4</sub> -PFOS
Sodium perfluorooctane sulfonate	$\text{Na}^+ \text{C}_8\text{F}_{17}\text{SO}_3^-$	4021-47-0	Na-PFOS
Potassium perfluorooctane sulfonate	$\text{K}^+ \text{C}_8\text{F}_{17}\text{SO}_3^-$	2795-39-3	K-PFOS
Lithium perfluorooctane sulfonate	$\text{Li}^+ \text{C}_8\text{F}_{17}\text{SO}_3^-$	29457-72-5	Li-PFOS
Tetraethylammonium perfluorooctane sulfonate	$\text{N}(\text{C}_2\text{H}_5)_4^+ \text{C}_8\text{F}_{17}\text{SO}_3^-$	56773-42-3	NEt <sub>4</sub> -PFOS
Diethanolammonium perfluorooctane sulfonate	$\text{NH}_2(\text{CH}_2\text{CH}_2\text{OH})_2^+ \text{C}_8\text{F}_{17}\text{SO}_3^-$	56773-42-3	
Perfluorononane sulfonic acid	$\text{C}_9\text{F}_{19}\text{SO}_3\text{H}$	474511-07-4	PFNS
Ammonium perfluorononane sulfonate	$\text{NH}_4^+ \text{C}_9\text{F}_{19}\text{SO}_3^-$	17202-41-4	NH <sub>4</sub> -PFNS
Perfluorodecane sulfonic acid	$\text{C}_{10}\text{F}_{21}\text{SO}_3\text{H}$	335-77-3	PFDS
Perfluorodecane sulfonate anion	$\text{C}_{10}\text{F}_{21}\text{SO}_3^-$	126105-34-8	PFDS
Ammonium perfluorodecane sulfonate	$\text{NH}_4^+ \text{C}_{10}\text{F}_{21}\text{SO}_3^-$	67906-42-7	NH <sub>4</sub> -PFDS
Potassium perfluorodecane sulfonate	$\text{K}^+ \text{C}_{10}\text{F}_{21}\text{SO}_3^-$	2806-16-8	K-PFDS
Perfluoroundecane sulfonic acid	$\text{C}_{11}\text{F}_{23}\text{SO}_3\text{H}$	749786-16-1	PFUnDS
Perfluorododecane sulfonic acid	$\text{C}_{12}\text{F}_{25}\text{SO}_3\text{H}$	79780-39-5	PFDoDS

<b>Perfluoroalkane sulfinic acids</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluorooctane sulfinic acid	$\text{C}_8\text{F}_{17}\text{SO}_2\text{H}$	647-29-0	PFOSI

<b>Perfluoroalkyl phosphonic acids</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluorohexyl phosphonic acid	$O=P(OH)_2C_6F_{13}$	40143-76-8	C6-PFPA
Perfluorooctyl phosphonic acid	$O=P(OH)_2C_8F_{17}$	40143-78-0	C8-PFPA
Perfluorodecyl phosphonic acid	$O=P(OH)_2C_{10}F_{21}$	52299-26-0	C10-PFPA

<b>Perfluoroalkyl phosphinic acids</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Bis(perfluorohexyl) phosphinic acid	$O=P(OH)(C_6F_{13})_2$	40143-77-9	C6/C6-PFPIA
Bis(perfluorooctyl) phosphinic acid	$O=P(OH)(C_8F_{17})_2$	40143-79-1	C8/C8-PFPIA
Perfluoro(hexyloctyl) phosphinic acid	$O=P(OH)(C_6F_{13})(C_8F_{17})$	610800-34-5	C6/C8-PFPIA

<b>Perfluoroalkyl iodides</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluoro (or pentafluoro)ethyl iodide	$C_2F_5I$	354-64-3	PFEI
Perfluorobutyl iodide	$C_4F_9I$	423-39-2	PFBI
Perfluorohexyl iodide	$C_6F_{13}I$	355-43-1	PFHxI
Perfluorooctyl iodide	$C_8F_{17}I$	507-63-1	PFOI
Perfluorodecyl iodide	$C_{10}F_{21}I$	423-62-1	PFDI

Perfluorododecyl iodide	$C_{12}F_{25}I$	307-60-8	PFD <sub>o</sub> DI
Perfluorotetradecyl iodide	$C_{14}F_{29}I$	307-63-1	PFT <sub>e</sub> DI
Perfluorohexadecyl iodide	$C_{16}F_{33}I$	355-50-0	PFH <sub>x</sub> DI
Perfluorooctadecyl iodide	$C_{18}F_{37}I$	29809-35-6	PFODI

<b>(n:2) Fluorotelomer iodides</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer iodide	$C_4F_9CH_2CH_2I$	2043-55-2	4:2 FTI
6:2 Fluorotelomer iodide	$C_6F_{13}CH_2CH_2I$	2043-57-4	6:2 FTI
8:2 Fluorotelomer iodide	$C_8F_{17}CH_2CH_2I$	2043-53-0	8:2 FTI
10:2 Fluorotelomer iodide	$C_{10}F_{21}CH_2CH_2I$	2043-54-1	10:2 FTI
12:2 Fluorotelomer iodide	$C_{12}F_{25}CH_2CH_2I$	30046-31-2	12:2 FTI
14:2 Fluorotelomer iodide	$C_{14}F_{29}CH_2CH_2I$	65510-55-6	14:2 FTI
16:2 Fluorotelomer iodide	$C_{16}F_{33}CH_2CH_2I$	65150-94-9	16:2 FTI
18:2 Fluorotelomer iodide	$C_{18}F_{37}CH_2CH_2I$	65104-63-4	18:2 FTI

<b>(n:2) Fluorotelomer olefins</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer olefin	$C_4F_9CH=CH_2$	19430-93-4	4:2 FTO
6:2 Fluorotelomer olefin	$C_6F_{13}CH=CH_2$	25291-17-2	6:2 FTO

8:2 Fluorotelomer olefin	$C_8F_{17}CH=CH_2$	21652-58-4	8:2 FTO
10:2 Fluorotelomer olefin	$C_{10}F_{21}CH=CH_2$	30389-25-4	10:2 FTO
12:2 Fluorotelomer olefin	$C_{12}F_{25}CH=CH_2$	67103-05-3	12:2 FTO

<b>(n:2) Fluorotelomer alcohols</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2-Fluorotelomer alcohol	$C_4F_9CH_2CH_2OH$	2043-47-2	4:2 FTOH
6:2-Fluorotelomer alcohol	$C_6F_{13}CH_2CH_2OH$	647-42-7	6:2 FTOH
8:2-Fluorotelomer alcohol	$C_8F_{17}CH_2CH_2OH$	678-39-7	8:2 FTOH
10:2-Fluorotelomer alcohol	$C_{10}F_{21}CH_2CH_2OH$	865-86-1	10:2 FTOH
12:2 Fluorotelomer alcohol	$C_{12}F_{25}CH_2CH_2OH$	39239-77-5	12:2 FTOH
14:2 Fluorotelomer alcohol	$C_{14}F_{29}CH_2CH_2OH$	60699-51-6	14:2 FTOH
16:2 Fluorotelomer alcohol	$C_{16}F_{33}CH_2CH_2OH$	65104-67-8	16:2 FTOH
18:2 Fluorotelomer alcohol	$C_{18}F_{37}CH_2CH_2OH$	65104-65-6	18:2 FTOH

<b>(n:2) Fluorotelomer acrylates</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer acrylate	$C_4F_9CH_2CH_2OC(O)CH=CH_2$	52591-27-2	4:2 FTAC
6:2 Fluorotelomer acrylate	$C_6F_{13}CH_2CH_2OC(O)CH=CH_2$	17527-29-6	6:2 FTAC
8:2 Fluorotelomer acrylate	$C_8F_{17}CH_2CH_2OC(O)CH=CH_2$	27905-45-9	8:2 FTAC

10:2 Fluorotelomer acrylate	$C_{10}F_{21}CH_2CH_2OC(O)CH=CH_2$	17741-60-5	10:2 FTAC
12:2 Fluorotelomer acrylate	$C_{12}F_{25}CH_2CH_2OC(O)CH=CH_2$	34395-24-9	12:2 FTAC
14:2 Fluorotelomer acrylate	$C_{14}F_{29}CH_2CH_2OC(O)CH=CH_2$	34362-49-7	14:2 FTAC
16:2 Fluorotelomer acrylate	$C_{16}F_{33}CH_2CH_2OC(O)CH=CH_2$	65150-93-8	16:2 FTAC
18:2 Fluorotelomer acrylate	$C_{18}F_{37}CH_2CH_2OC(O)CH=CH_2$	65104-64-5	18:2 FTAC

<b>(n:2) Fluorotelomer methacrylates</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer methacrylate	$C_4F_9CH_2CH_2OC(O)C(CH_3)=CH_2$	1799-84-4	4:2 FTMAC
6:2 Fluorotelomer methacrylate	$C_6F_{13}CH_2CH_2OC(O)C(CH_3)=CH_2$	2144-53-8	6:2 FTMAC
8:2 Fluorotelomer methacrylate	$C_8F_{17}CH_2CH_2OC(O)C(CH_3)=CH_2$	1996-88-9	8:2 FTMAC
10:2 Fluorotelomer methacrylate	$C_{10}F_{21}CH_2CH_2OC(O)C(CH_3)=CH_2$	2144-54-9	10:2 FTMAC
12:2 Fluorotelomer methacrylate	$C_{12}F_{25}CH_2CH_2OC(O)C(CH_3)=CH_2$	6014-75-1	12:2 FTMAC
14:2 Fluorotelomer methacrylate	$C_{14}F_{29}CH_2CH_2OC(O)C(CH_3)=CH_2$	4980-53-4	14:2 FTMAC
16:2 Fluorotelomer methacrylate	$C_{16}F_{33}CH_2CH_2OC(O)C(CH_3)=CH_2$	59778-97-1	16:2 FTMAC
18:2 Fluorotelomer methacrylate	$C_{18}F_{37}CH_2CH_2OC(O)C(CH_3)=CH_2$	65104-66-7	18:2 FTMAC

<b>Polyfluoroalkyl phosphoric acid monoesters</b> (= fluorotelomer phosphate monoesters)	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer phosphate monoester	(O)P(OH) <sub>2</sub> (OCH <sub>2</sub> CH <sub>2</sub> C <sub>4</sub> F <sub>9</sub> )	150065-76-2	4:2 monoPAP
6:2 Fluorotelomer phosphate monoester	(O)P(OH) <sub>2</sub> (OCH <sub>2</sub> CH <sub>2</sub> C <sub>6</sub> F <sub>13</sub> )	57678-01-0	6:2 monoPAP
8:2 Fluorotelomer phosphate monoester	(O)P(OH) <sub>2</sub> (OCH <sub>2</sub> CH <sub>2</sub> C <sub>8</sub> F <sub>17</sub> )	57678-03-2	8:2 monoPAP
10:2 Fluorotelomer phosphate monoester	(O)P(OH) <sub>2</sub> (OCH <sub>2</sub> CH <sub>2</sub> C <sub>10</sub> F <sub>21</sub> )	57678-05-4	10:2 monoPAP
12:2 Fluorotelomer phosphate monoester	(O)P(OH) <sub>2</sub> (OCH <sub>2</sub> CH <sub>2</sub> C <sub>12</sub> F <sub>25</sub> )	57678-07-6	12:2 monoPAP
<b>Polyfluoroalkyl phosphoric acid diesters</b> (= fluorotelomer phosphate diesters)	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>4</sub> F <sub>9</sub> ) <sub>2</sub>	135098-69-0	4:2 diPAP
4:2/6:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>4</sub> F <sub>9</sub> )(OCH <sub>2</sub> CH <sub>2</sub> C <sub>6</sub> F <sub>13</sub> )	1158182-59-2	4:2/6:2 diPAP
6:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>6</sub> F <sub>13</sub> ) <sub>2</sub>	57677-95-9	6:2 diPAP
6:2/8:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>6</sub> F <sub>13</sub> )(OCH <sub>2</sub> CH <sub>2</sub> C <sub>8</sub> F <sub>17</sub> )	943913-15-3	6:2/8:2 diPAP
8:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>8</sub> F <sub>17</sub> ) <sub>2</sub>	678-41-1	8:2 diPAP
8:2/10:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>8</sub> F <sub>17</sub> )(OCH <sub>2</sub> CH <sub>2</sub> C <sub>10</sub> F <sub>21</sub> )	1158182-60-5	8:2/10:2 diPAP
10:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>10</sub> F <sub>21</sub> ) <sub>2</sub>	1895-26-7	10:2 diPAP
10:2/12:2 Fluorotel. phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>10</sub> F <sub>21</sub> )(OCH <sub>2</sub> CH <sub>2</sub> C <sub>12</sub> F <sub>25</sub> )	1158182-61-6	10:2/12:2 diPAP
12:2 Fluorotelomer phosphate diester	(O)P(OH)(OCH <sub>2</sub> CH <sub>2</sub> C <sub>12</sub> F <sub>25</sub> ) <sub>2</sub>	57677-99-3	12:2 diPAP



<b>Semifluorinated <i>n</i>-alkanes</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
(Perfluorooctyl)ethane	$F(CF_2)_8(CH_2)_2H$	77117-48-7	$F_8H_2$
(Perfluorohexyl)octane	$F(CF_2)_6(CH_2)_8H$	133331-77-8	$F_6H_8$
(Perfluorohexyl)hexadecane	$F(CF_2)_6(CH_2)_{16}H$	133310-71-1	$F_6H_{16}$
(Perfluorooctyl)hexadecane	$F(CF_2)_8(CH_2)_{16}H$	117146-18-6	$F_8H_{16}$
(Perfluorohexadecyl)hexadecane	$F(CF_2)_{16}(CH_2)_{16}H$	137338-42-2	$F_{16}H_{16}$

<b>Semifluorinated <i>n</i>-alkenes</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
(Perfluorohexyl)hexadecene	$F(CF_2)_6CH=CH(CH_2)_{14}H$	1244062-15-4	$F_6H_{16}ene$
(Perfluorooctyl)hexadecene	$F(CF_2)_8CH=CH(CH_2)_{14}H$	1244062-16-5	$F_8H_{16}ene$
(Perfluorohexadecyl)hexadecene	$F(CF_2)_{16}CH=CH(CH_2)_{14}H$	1244062-14-3	$F_{16}H_{16}ene$

<b>(n:2) Fluorotelomer (saturated) aldehydes</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer aldehyde	$C_4F_9CH_2CHO$	135984-67-7	4:2 FTAL
6:2 Fluorotelomer aldehyde	$C_6F_{13}CH_2CHO$	56734-81-7	6:2 FTAL
8:2 Fluorotelomer aldehyde	$C_8F_{17}CH_2CHO$	135984-68-8	8:2 FTAL
10:2 Fluorotelomer aldehyde	$C_{10}F_{21}CH_2CHO$	864551-38-2	10:2 FTAL
12:2 Fluorotelomer aldehyde	$C_{12}F_{25}CH_2CHO$	None available	12:2 FTAL

<b>(n:2) Fluorotelomer unsaturated aldehydes</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer unsaturated aldehyde	$C_3F_7CF=CHCHO$	864551-39-3	4:2 FTUAL
6:2 Fluorotelomer unsaturated aldehyde	$C_5F_{11}CF=CHCHO$	69534-12-9	6:2 FTUAL
8:2 Fluorotelomer unsaturated aldehyde	$C_7F_{15}CF=CHCHO$	58544-13-1	8:2 FTUAL
10:2 Fluorotelomer unsaturated aldehyde	$C_9F_{19}CF=CHCHO$	864551-40-6	10:2 FTUAL
12:2 Fluorotelomer unsaturated aldehyde	$C_{11}F_{23}CF=CHCHO$	None available	12:2 FTUAL

<b>Perfluoroalkyl aldehydes</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluoropentanal	C <sub>4</sub> F <sub>9</sub> CHO	375-53-1	PFPeAL
Perfluoroheptanal	C <sub>6</sub> F <sub>13</sub> CHO	63967-41-9	PFHpAL
Perfluorononanal	C <sub>8</sub> F <sub>17</sub> CHO	63967-40-8	PFNAL
Perfluorooctanal	C <sub>9</sub> F <sub>19</sub> CHO	335-60-4	PFOAL
Perfluoroundecanal	C <sub>10</sub> F <sub>21</sub> CHO	63967-42-0	PFUnDAL

<b>Perfluoroalkyl aldehyde hydrates</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluoropentanal hydrate	C <sub>4</sub> F <sub>9</sub> CH(OH) <sub>2</sub>	355-30-6	PFPeAL.H <sub>2</sub> O
Perfluoroheptanal hydrate	C <sub>6</sub> F <sub>13</sub> CH(OH) <sub>2</sub>	64739-16-8	PFHpAL.H <sub>2</sub> O
Perfluorononanal hydrate	C <sub>8</sub> F <sub>17</sub> CH(OH) <sub>2</sub>	191528-99-1	PFNAL.H <sub>2</sub> O
Perfluoroundecanal hydrate	C <sub>10</sub> F <sub>21</sub> CH(OH) <sub>2</sub>	None Available	PFUnDAL.H <sub>2</sub> O

<b>(n:2) Fluorotelomer (saturated) carboxylic acids</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
6:2 Fluorotelomer carboxylic acid	$C_6F_{13}CH_2COOH$	53826-12-3	6:2 FTCA
8:2 Fluorotelomer carboxylic acid	$C_8F_{17}CH_2COOH$	27854-31-5	8:2 FTCA
10:2 Fluorotelomer carboxylic acid	$C_{10}F_{21}CH_2COOH$	53826-13-4	10:2 FTCA
12:2 Fluorotelomer carboxylic acid	$C_{12}F_{25}CH_2COOH$	70887-93-3	12:2 FTCA

<b>(n:2) Fluorotelomer unsaturated carboxylic acids</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
6:2 Fluorotelomer unsaturated carboxylic acid	$C_5F_{11}CF=CHCOOH$	70887-88-6	6:2 FTUCA
8:2 Fluorotelomer unsaturated carboxylic acid	$C_7F_{15}CF=CHCOOH$	70887-84-2	8:2 FTUCA
10:2 Fluorotelomer unsaturated carboxylic acid	$C_9F_{19}CF=CHCOOH$	70887-94-4	10:2 FTUCA
12:2 Fluorotelomer unsaturated carboxylic acid	$C_{11}F_{23}CF=CHCOOH$	70887-95-5	12:2 FTUCA

<b>Other biotransformation products of n:2 FTOHs</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:3 Acid	$C_4F_9(CH_2)_2COOH$	80705-13-1	4:3 Acid
5:3 Acid	$C_5F_{11}(CH_2)_2COOH$	914637-49-3	5:3 Acid
6:3 Acid	$C_6F_{13}(CH_2)_2COOH$	27854-30-4	6:3 Acid
7:3 Acid	$C_7F_{15}(CH_2)_2COOH$	812-70-4	7:3 Acid
5:3 Unsaturated carboxylic acid	$C_5F_{11}CH=CHCOOH$	1869-04-1 875878-70-9 (E)	5:3 UAcid
7:3 Unsaturated carboxylic acid	$C_7F_{15}CH=CHCOOH$	755-03-3 56017-63-1 (E) 173441-56-0 (Z)	7:3 UAcid

<b>(n:2) Fluorotelomer sulfonic acids</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer sulfonic acid	$C_4F_9CH_2CH_2SO_3H$	757124-72-4	4:2 FTSA
6:2 Fluorotelomer sulfonic acid	$C_6F_{13}CH_2CH_2SO_3H$	27619-97-2	6:2 FTSA
8:2 Fluorotelomer sulfonic acid	$C_8F_{17}CH_2CH_2SO_3H$	39108-34-4	8:2 FTSA
10:2 Fluorotelomer sulfonic acid	$C_{10}F_{21}CH_2CH_2SO_3H$	120226-60-0	10:2 FTSA

<b>(n:2) Fluorotelomer sulfonate anions</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
4:2 Fluorotelomer sulfonate anion	$C_4F_9CH_2CH_2SO_3^-$	414911-30-1	4:2 FTSA
6:2 Fluorotelomer sulfonate anion	$C_6F_{13}CH_2CH_2SO_3^-$	425670-75-3	6:2 FTSA
8:2 Fluorotelomer sulfonate anion	$C_8F_{17}CH_2CH_2SO_3^-$	481071-78-7	8:2 FTSA
10:2 Fluorotelomer sulfonate anion	$C_{10}F_{21}CH_2CH_2SO_3^-$	None available	10:2 FTSA

<b>Perfluoroalkane sulfonyl fluorides</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluorobutane sulfonyl fluoride	$C_4F_9SO_2F$	375-72-4	PBSF
Perfluoropentane sulfonyl fluoride	$C_5F_{11}SO_2F$	375-81-5	PPeSF
Perfluorohexane sulfonyl fluoride	$C_6F_{13}SO_2F$	423-50-7	PHxSF
Perfluoroheptane sulfonyl fluoride	$C_7F_{15}SO_2F$	335-71-7	PHpSF
Perfluorooctane sulfonyl fluoride	$C_8F_{17}SO_2F$	307-35-7	POSF
Perfluorononane sulfonyl fluoride	$C_9F_{19}SO_2F$	68259-06-3	PNSF
Perfluorodecane sulfonyl fluoride	$C_{10}F_{21}SO_2F$	307-51-7	PDSF

<b>Perfluoroalkane sulfonamides</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluorobutane sulfonamide	$C_4F_9SO_2NH_2$	30334-69-1	FBSA
Perfluoropentane sulfonamide	$C_5F_{11}SO_2NH_2$	82765-76-2	FPeSA
Perfluorohexane sulfonamide	$C_6F_{13}SO_2NH_2$	41997-13-1	FHxSA
Perfluoroheptane sulfonamide	$C_7F_{15}SO_2NH_2$	82765-77-3	FHpSA
Perfluorooctane sulfonamide	$C_8F_{17}SO_2NH_2$	754-91-6	FOSA
<b><i>N</i>-Methyl perfluoroalkane sulfonamides</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Methyl perfluorobutane sulfonamide	$C_4F_9SO_2NH(CH_3)$	68298-12-4	MeFBSA
<i>N</i> -Methyl perfluoropentane sulfonamide	$C_5F_{11}SO_2NH(CH_3)$	68298-13-5	MeFPeSA
<i>N</i> -Methyl perfluorohexane sulfonamide	$C_6F_{13}SO_2NH(CH_3)$	68259-15-4	MeFHxSA
<i>N</i> -Methyl perfluoroheptane sulfonamide	$C_7F_{15}SO_2NH(CH_3)$	68259-14-3	MeFHpSA
<i>N</i> -Methyl perfluorooctane sulfonamide	$C_8F_{17}SO_2NH(CH_3)$	31506-32-8	MeFOSA
<b><i>N</i>-Ethyl perfluoroalkane sulfonamides</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Ethyl perfluorobutane sulfonamide	$C_4F_9SO_2NH(C_2H_5)$	40630-67-9	EtFBSA
<i>N</i> -Ethyl perfluoropentane sulfonamide	$C_5F_{11}SO_2NH(C_2H_5)$	162682-16-8	EtFPeSA
<i>N</i> -Ethyl perfluorohexane sulfonamide	$C_6F_{13}SO_2NH(C_2H_5)$	87988-56-5	EtFHxSA

<i>N</i> -Ethyl perfluoroheptane sulfonamide	C <sub>7</sub> F <sub>15</sub> SO <sub>2</sub> NH(C <sub>2</sub> H <sub>5</sub> )	68957-62-0	EtFHpSA
<i>N</i> -Ethyl perfluorooctane sulfonamide	C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> NH(C <sub>2</sub> H <sub>5</sub> ) (sulfluramid)	4151-50-2	EtFOSA
<b><i>N,N</i>-Dialkyl perfluoroalkane sulfonamides</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N,N</i> -Dimethyl perfluorooctane sulfonamide	C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> N(CH <sub>3</sub> ) <sub>2</sub>	213181-78-3	Me <sub>2</sub> FOSA
<i>N,N</i> -Diethyl perfluorooctane sulfonamide	C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> N(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub>	87988-61-2	Et <sub>2</sub> FOSA

<b>Perfluoroalkane sulfonamido ethanols</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluorobutane sulfonamidoethanol	C <sub>4</sub> F <sub>9</sub> SO <sub>2</sub> NHCH <sub>2</sub> CH <sub>2</sub> OH	34454-99-4	FBSE
Perfluoropentane sulfonamidoethanol	C <sub>5</sub> F <sub>11</sub> SO <sub>2</sub> NHCH <sub>2</sub> CH <sub>2</sub> OH	None available	FPeSE
Perfluorohexane sulfonamidoethanol	C <sub>6</sub> F <sub>13</sub> SO <sub>2</sub> NHCH <sub>2</sub> CH <sub>2</sub> OH	106443-63-4	FHxSE
Perfluoroheptane sulfonamidoethanol	C <sub>7</sub> F <sub>15</sub> SO <sub>2</sub> NHCH <sub>2</sub> CH <sub>2</sub> OH	167398-54-1	FHpSE
Perfluorooctane sulfonamidoethanol	C <sub>8</sub> F <sub>17</sub> SO <sub>2</sub> NHCH <sub>2</sub> CH <sub>2</sub> OH	10116-92-4	FOSE



<b>Perfluoroalkane sulfonamidoacetic acids</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
Perfluorobutane sulfonamidoacetic acid	$C_4F_9SO_2NHCH_2COOH$	347872-22-4	FBSAA
Perfluoropentane sulfonamidoacetic acid	$C_5F_{11}SO_2NHCH_2COOH$	647-43-8	FPeSAA
Perfluorohexane sulfonamidoacetic acid	$C_6F_{2n+1}SO_2NHCH_2COOH$	1003193-99-4	FHxSAA
Perfluoroheptane sulfonamidoacetic acid	$C_7F_{15}SO_2NHCH_2COOH$	1003194-00-0	FHpSAA
Perfluorooctane sulfonamidoacetic acid	$C_8F_{17}SO_2NHCH_2COOH$	2806-24-8	FOSAA

<b><i>N</i>-Methyl perfluoroalkane sulfonamidoethanols</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Methyl perfluorobutane sulfonamidoethanol	$C_4F_9SO_2N(CH_3)CH_2CH_2OH$	34454-97-2	MeFBSE
<i>N</i> -Methyl perfluoropentane sulfonamidoethanol	$C_5F_{11}SO_2N(CH_3)CH_2CH_2OH$	68555-74-8	MeFPeSE
<i>N</i> -Methyl perfluorohexane sulfonamidoethanol	$C_6F_{13}SO_2N(CH_3)CH_2CH_2OH$	68555-75-9	MeFHxSE
<i>N</i> -Methyl perfluoroheptane sulfonamidoethanol	$C_7F_{15}SO_2N(CH_3)CH_2CH_2OH$	68555-76-0	MeFHpSE
<i>N</i> -Methyl perfluorooctane sulfonamidoethanol	$C_8F_{17}SO_2N(CH_3)CH_2CH_2OH$	24448-09-7	MeFOSE

<b><i>N</i>-Ethyl perfluoroalkane sulfonamidoethanols</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Ethyl perfluorobutane sulfonamidoethanol	$C_4F_9SO_2N(C_2H_5)CH_2CH_2OH$	34449-89-3	EtFBSE
<i>N</i> -Ethyl perfluoropentane sulfonamidoethanol	$C_5F_{11}SO_2N(C_2H_5)CH_2CH_2OH$	68555-72-6	EtFPeSE
<i>N</i> -Ethyl perfluorohexane sulfonamidoethanol	$C_6F_{13}SO_2N(C_2H_5)CH_2CH_2OH$	34455-03-3	EtFHxSE
<i>N</i> -Ethyl perfluoroheptane sulfonamidoethanol	$C_7F_{15}SO_2N(C_2H_5)CH_2CH_2OH$	68555-73-7	EtFHpSE
<i>N</i> -Ethyl perfluorooctane sulfonamidoethanol	$C_8F_{17}SO_2N(C_2H_5)CH_2CH_2OH$	1691-99-2	EtFOSE

<b><i>N</i>-Methyl perfluoroalkane sulfonamidoacetic acids and salts</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Methyl perfluorobutane sulfonamidoacetic acid	$C_4F_9SO_2N(CH_3)CH_2COOH$	159381-10-9	MeFBSAA
<i>N</i> -Methyl perfluorohexane sulfonamidoacetic acid	$C_6F_{13}SO_2N(CH_3)CH_2COOH$	715646-50-7	MeFHxSAA
<i>N</i> -Methyl perfluorooctane sulfonamidoacetic acid	$C_8F_{17}SO_2N(CH_3)CH_2COOH$	2355-31-9	MeFOSAA
Potassium <i>N</i> -methyl perfluorooctane sulfonamidoacetate	$K^+ C_8F_{17}SO_2N(CH_3)CH_2COO^-$	70281-93-5	K-MeFOSAA

<b><i>N</i>-Ethyl perfluoroalkane sulfonamidoacetic acids and salts</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Ethyl perfluorobutane sulfonamidoacetic acid	$C_4F_9SO_2N(C_2H_5)CH_2COOH$	68957-33-5	EtFBSAA
<i>N</i> -Ethyl perfluoropentane sulfonamidoacetic acid	$C_5F_{11}SO_2N(C_2H_5)CH_2COOH$	68957-31-3	EtFPeSAA
<i>N</i> -Ethyl perfluorohexane sulfonamidoacetic acid	$C_6F_{13}SO_2N(C_2H_5)CH_2COOH$	68957-32-4	EtFHxSAA
<i>N</i> -Ethyl perfluoroheptane sulfonamidoacetic acid	$C_7F_{15}SO_2N(C_2H_5)CH_2COOH$	68957-63-1	EtFHpSAA
<i>N</i> -Ethyl perfluorooctane sulfonamidoacetic acid	$C_8F_{17}SO_2N(C_2H_5)CH_2COOH$	2991-50-6	EtFOSAA
Potassium <i>N</i> -ethyl perfluorooctane sulfonamidoacetate	$K^+ C_8F_{17}SO_2N(C_2H_5)CH_2COO^-$	2991-51-7	K-EtFOSAA

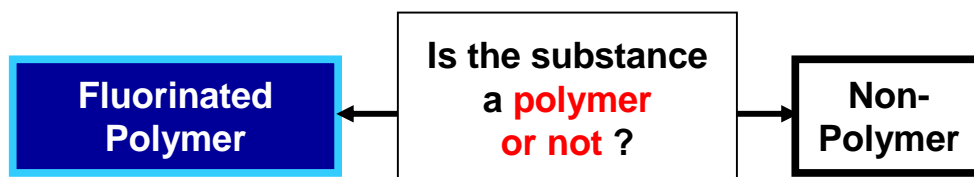
<b><i>N</i>-Methyl perfluoroalkane sulfonamidoethyl acrylates</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Methyl perfluorobutane sulfonamidoethyl acrylate	$C_4F_9SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	67584-55-8	MeFBSAC
<i>N</i> -Methyl perfluoropentane sulfonamidoethyl acrylate	$C_5F_{11}SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	67584-56-9	MeFPeSAC
<i>N</i> -Methyl perfluorohexane sulfonamidoethyl acrylate	$C_6F_{13}SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	67584-57-0	MeFHxSAC

<i>N</i> -Methyl perfluoroheptane sulfonamidoethyl acrylate	$C_7F_{15}SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	68084-62-8	MeFHpSAC
<i>N</i> -Methyl perfluorooctane sulfonamidoethyl acrylate	$C_8F_{17}SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	25268-77-3	MeFOSAC
<b><i>N</i>-Ethyl perfluoroalkane sulfonamidoethyl acrylates</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Ethyl perfluorobutane sulfonamidoethyl acrylate	$C_4F_9SO_2N(C_2H_5)CH_2CH_2OC(O)CH=CH_2$	17329-79-2	EtFBSAC
<i>N</i> -Ethyl perfluoropentane sulfonamidoethyl acrylate	$C_5F_{11}SO_2N(C_2H_5)CH_2CH_2OC(O)CH=CH_2$	68298-06-6	EtFPeSAC
<i>N</i> -Ethyl perfluorohexane sulfonamidoethyl acrylate	$C_6F_{13}SO_2N(C_2H_5)CH_2CH_2OC(O)CH=CH_2$	1893-52-3	EtFHxSAC
<i>N</i> -Ethyl perfluoroheptane sulfonamidoethyl acrylate	$C_7F_{15}SO_2N(C_2H_5)CH_2CH_2OC(O)CH=CH_2$	59071-10-2	EtFHpSAC
<i>N</i> -Ethyl perfluorooctane sulfonamidoethyl acrylate	$C_8F_{17}SO_2N(C_2H_5)CH_2CH_2OC(O)CH=CH_2$	423-82-5	EtFOSAC
<b><i>N</i>-Methyl perfluoroalkane sulfonamidoethyl methacrylates</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Methyl perfluorobutane sulfonamidoethyl methacrylate	$C_4F_9SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	67584-59-2	MeFBSMAC
<i>N</i> -Methyl perfluoropentane sulfonamidoethyl methacrylate	$C_5F_{11}SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	67584-60-5	MeFPeSMAC
<i>N</i> -Methyl perfluorohexane sulfonamidoethyl methacrylate	$C_6F_{13}SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	67584-61-6	MeFHxSMAC

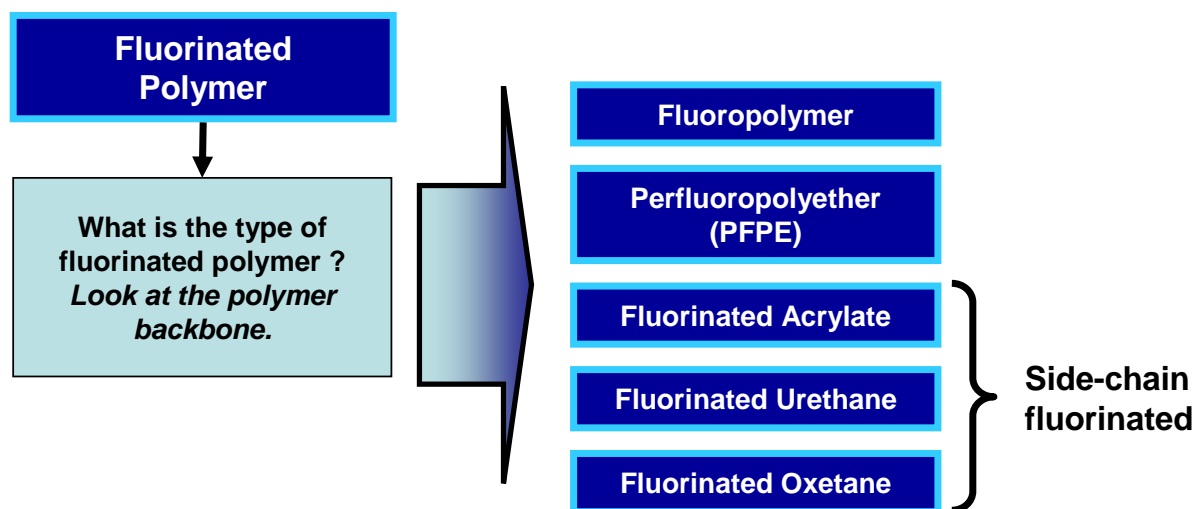
<i>N</i> -Methyl perfluoroheptane sulfonamidoethyl methacrylate	$C_7F_{15}SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	67939-96-2	MeFHpSMAC
<i>N</i> -Methyl perfluorooctane sulfonamidoethyl methacrylate	$C_8F_{17}SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	14650-24-9	MeFOSMAC
<b><i>N</i>-Ethyl perfluoroalkane sulfonamidoethyl methacrylates</b>	<b>FORMULA</b>	<b>CAS REGISTRY NUMBER</b>	<b>ACRONYM</b>
<i>N</i> -Ethyl perfluorobutane sulfonamidoethyl methacrylate	$C_4F_9SO_2N(C_2H_5)CH_2CH_2OC(O)C(CH_3)=CH_2$	67939-33-7	EtFBSMAC
<i>N</i> -Ethyl perfluoropentane sulfonamidoethyl methacrylate	$C_5F_{11}SO_2N(C_2H_5)CH_2CH_2OC(O)C(CH_3)=CH_2$	67906-73-4	EtFPeSMAC
<i>N</i> -Ethyl perfluorohexane sulfonamidoethyl methacrylate	$C_6F_{13}SO_2N(C_2H_5)CH_2CH_2OC(O)C(CH_3)=CH_2$	67906-70-1	EtFHxSMAC
<i>N</i> -Ethyl perfluoroheptane sulfonamidoethyl methacrylate	$C_7F_{15}SO_2N(C_2H_5)CH_2CH_2OC(O)C(CH_3)=CH_2$	67939-36-0	EtFHpSMAC
<i>N</i> -Ethyl perfluorooctane sulfonamidoethyl methacrylate	$C_8F_{17}SO_2N(C_2H_5)CH_2CH_2OC(O)C(CH_3)=CH_2$	376-14-7	EtFOSMAC

## Figure S1. Terminology Decision Flowcharts

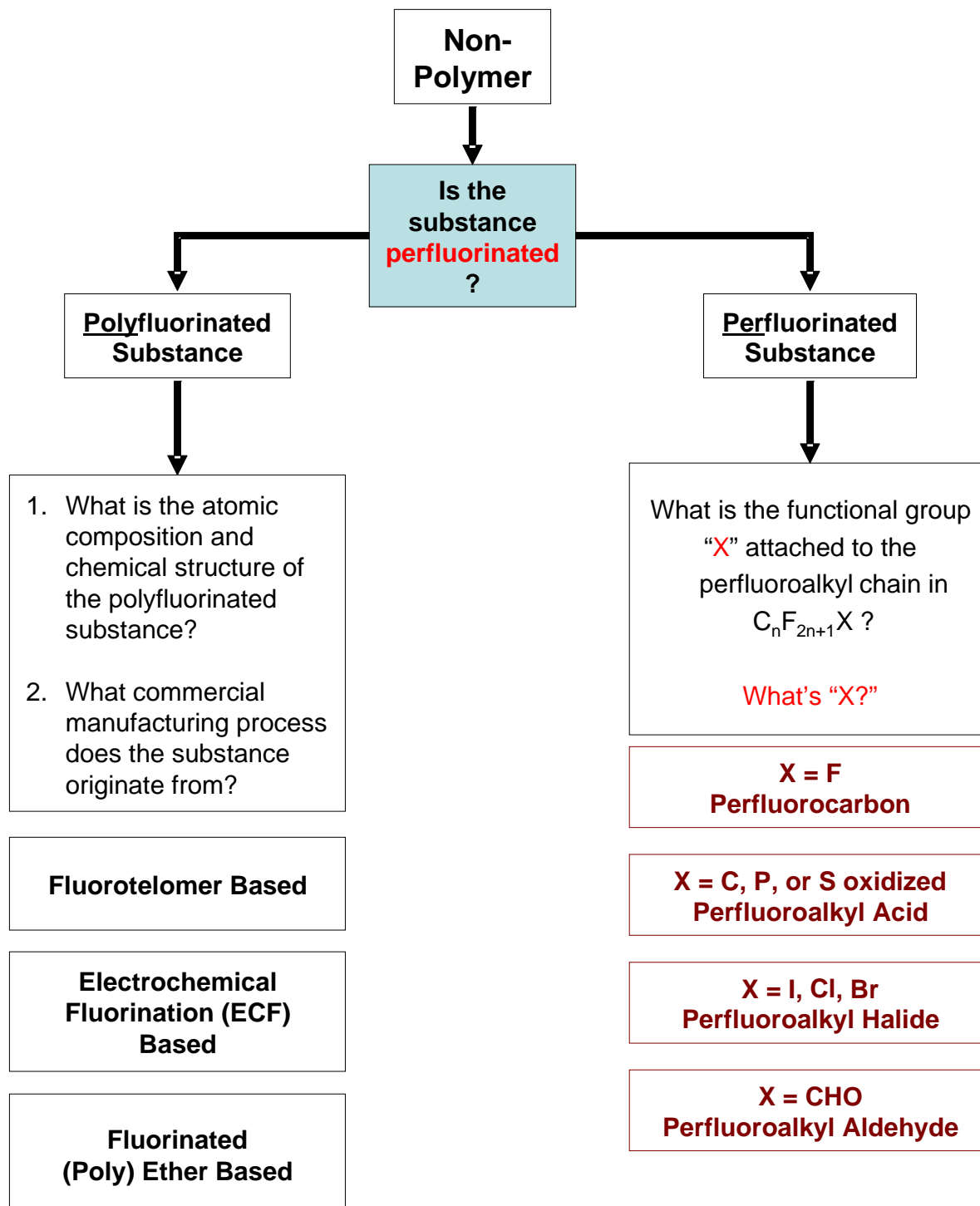
How to determine nomenclature – **an Overview**



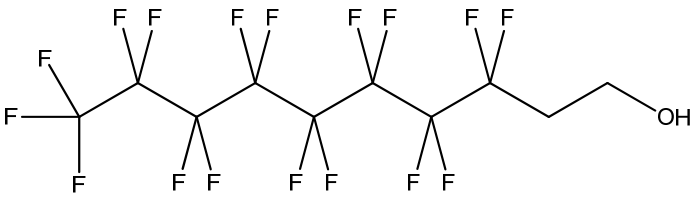
## Fluorinated Polymer Decision



# Non-Polymer Decision Tree



### Example #1 8:2 Fluorotelomer alcohol

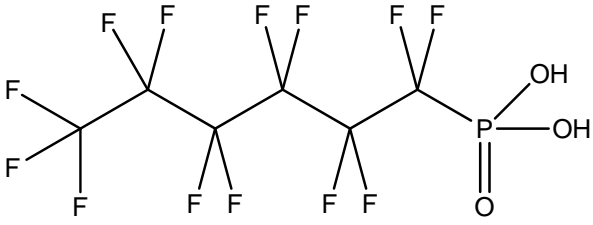
Substance Chemical Structure	Question	Conclusion
<p><b>F(CF<sub>2</sub>)<sub>8</sub>CH<sub>2</sub>CH<sub>2</sub>OH</b></p> 	<p><b>Polymer or Non-Polymer?</b></p>	<p><b>Non-Polymer</b></p>
<p><b>F(CF<sub>2</sub>)<sub>8</sub>CH<sub>2</sub>CH<sub>2</sub>OH</b></p>	<p><b>Perfluorinated?</b></p> <p><i>No. The substance has a perfluoroalkyl chain, F(CF<sub>2</sub>)<sub>8</sub>-, but all hydrogen on carbons are not replaced with fluorine</i></p>	<p><b>Poly-fluorinated</b></p>
<p><b>F(CF<sub>2</sub>)<sub>8</sub>CH<sub>2</sub>CH<sub>2</sub>OH</b></p>	<p><b>Process Origin?</b></p> <p><i>Perfluoroalkyl chain with an ethylene spacer (-CH<sub>2</sub>CH<sub>2</sub>-). Fluorotelomer origin</i></p>	<p><b>Fluoro-telomer origin</b></p>
<p><b>F(CF<sub>2</sub>)<sub>8</sub>CH<sub>2</sub>CH<sub>2</sub>OH</b></p>	<p><b>Functionality</b></p> <p><i>Alcohol</i></p>	<p><b>Fluoro-telomer Alcohol (FTOH)</b></p>
<p><b>F(CF<sub>2</sub>)<sub>8</sub>CH<sub>2</sub>CH<sub>2</sub>OH</b></p>	<p><i>Eight fluorinated carbons, two non-fluorinated carbons, therefore 8:2</i></p>	<p><b>8:2 Fluoro-telomer Alcohol (8:2 FTOH)</b></p>



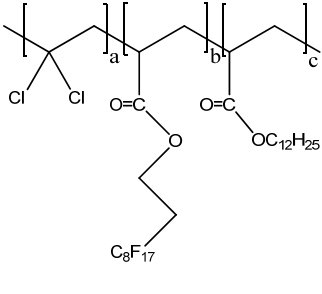
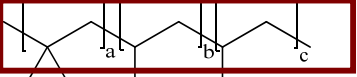
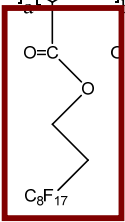
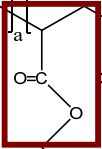
## Example #2 Perfluorobutane sulfonamide

Substance Chemical Structure	Question	Conclusion
<p><math>F(CF_2)_4SO_2NH_2</math></p>	<p><b>Polymer or Non-Polymer?</b></p>	<p>Non-Polymer</p>
<p><math>F(CF_2)_4SO_2NH_2</math></p>	<p><b>Perfluorinated?</b></p> <p><i>Yes. All hydrogens on all four carbons are replaced with fluorine. Perfluorobutyl</i></p>	<p>Perfluorinated</p>
<p><math>F(CF_2)_4SO_2NH_2</math></p>	<p><b>Perfluoroalkyl Acid?</b></p> <p><i>No. Has no acid functionality</i></p>	
<p><math>F(CF_2)_4SO_2NH_2</math></p>	<p><b>Process Origin?</b></p> <p><i>Perfluoroalkyl chain with a sulfone, <math>-SO_2-</math>, spacer. Electrochemical fluorination (ECF) origin</i></p>	<p>ECF origin</p>
<p><math>F(CF_2)_4SO_2NH_2</math></p>	<p><b>Functionality</b> Sulfonamide</p>	<p>Perfluorobutane-sulfonamide (FBSA)</p>

### Example #3 Perfluorohexyl phosphonic acid

Substance Chemical Structure	Question	Conclusion
$\text{F}(\text{CF}_2)_6\text{P}(=\text{O})(\text{OH})_2$ 	<p><b>Polymer or Non-Polymer?</b></p>	<p><b>Non-Polymer</b></p>
$\text{F}(\text{CF}_2)_6\text{P}(=\text{O})(\text{OH})_2$	<p><b>Perfluorinated?</b></p> <p><i>Yes. All hydrogens on all six carbons are replaced with fluorine. Perfluorohexyl</i></p>	<p><b>Perfluorinated</b></p>
$\text{F}(\text{CF}_2)_6\text{P}(=\text{O})(\text{OH})_2$	<p><b>Perfluoroalkyl Acid?</b></p> <p><i>Yes. Phosphonic, -P(=O)(OH)<sub>2</sub>, acid</i></p>	<p><b>Perfluoroalkyl acid</b></p>
$\text{F}(\text{CF}_2)_6\text{P}(=\text{O})(\text{OH})_2$		<p><b>Perfluorohexyl phosphonic acid (C6-PFPA)</b></p>

**Example #4 Side-chain Fluorinated Acrylate Polymer (Fluorotelomer origin)**

Substance Chemical Structure	Question	Conclusion
	<p><b>Polymer or Non-Polymer?</b></p>	<p><b>Polymer</b></p>
	<p><b>Fluoropolymer?</b></p> <p><i>No. The polymer backbone contains no fluorine bound to carbon.</i></p>	
	<p><b>Side-chain fluorinated?</b></p> <p>Yes</p>	<p><b>Side-chain fluorinated polymer</b></p>
	<p><b>Polymer Type?</b></p> <p><i>Acrylate</i></p>	<p><b>Side-chain fluorinated acrylate polymer</b></p>