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Perfluoroalkyl and polyfluoroalkyl substances (PFASs) in the environment: terminology, classification, and origins

Buck, R.C.; Franklin, J.; Berger, U.; Conder, J.M.; Cousins, I.T.; de Voogt, P.; Jensen, A.A.; Kannan, K.; Mabury, S.A.; van Leeuwen, S.P.J.

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SUPPLEMENTAL DATA

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

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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 ₂ O _s
(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

NAME OF FAMILY	FORMULA	ACRONYM
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 ₂ FASAs, Et ₂ 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 ₃ COOH	76-05-1	TFAA
Perfluoropropanoic acid	C ₂ F ₅ COOH	422-64-0	PFPrA
Perfluorobutanoic acid	C ₃ F ₇ COOH	375-22-4	PFBA
Ammonium perfluorobutanoate	NH ₄ ⁺ C ₃ F ₇ COO ⁻	10495-86-0	NH ₄ -PFBA
Sodium perfluorobutanoate	Na ⁺ C ₃ F ₇ COO ⁻	2218-54-4	Na-PFBA
Perfluoropentanoic acid	C ₄ F ₉ COOH	2706-90-3	PFPeA
Ammonium perfluoropentanoate	NH ₄ ⁺ C ₄ F ₉ COO ⁻	68259-11-0	NH ₄ -PFPeA
Perfluorohexanoic acid	C ₅ F ₁₁ COOH	307-24-4	PFHxA
Ammonium perfluorohexanoate	NH ₄ ⁺ C ₅ F ₁₁ COO ⁻	21615-47-4	NH ₄ -PFHxA
Sodium perfluorohexanoate	Na ⁺ C ₅ F ₁₁ COO ⁻	2923-26-4	Na-PFHxA
Perfluoroheptanoic acid	C ₆ F ₁₃ COOH	375-85-9	PFHpA
Ammonium perfluoroheptanoate	NH ₄ ⁺ C ₆ F ₁₃ COO ⁻	6130-43-4	NH ₄ -PFHpA
Sodium perfluoroheptanoate	Na ⁺ C ₆ F ₁₃ COO ⁻	20109-59-5	Na-PFHpA
Perfluorooctanoic acid	C ₇ F ₁₅ COOH	335-67-1	PFOA
Ammonium perfluorooctanoate	NH ₄ ⁺ C ₇ F ₁₅ COO ⁻	3825-26-1	APFO (or NH ₄ -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 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	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	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
Perfluoroalkyl carboxylate anions	FORMULA	CAS REGISTRY NUMBER	ACRONYM
Trifluoroacetate	CF_3COO^-	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

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

Ammonium perfluorooctane sulfonate	$\text{NH}_4^+ \text{C}_8\text{F}_{17}\text{SO}_3^-$	29081-56-9	NH ₄ -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 ₄ -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 ₄ -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 ₄ -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

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

Perfluoroalkyl phosphonic acids	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

Perfluoroalkyl phosphinic acids	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

Perfluoroalkyl iodides	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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 _o DI
Perfluorotetradecyl iodide	$C_{14}F_{29}I$	307-63-1	PFT _e DI
Perfluorohexadecyl iodide	$C_{16}F_{33}I$	355-50-0	PFH _x DI
Perfluorooctadecyl iodide	$C_{18}F_{37}I$	29809-35-6	PFODI

(n:2) Fluorotelomer iodides	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer olefins	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer alcohols	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer acrylates	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer methacrylates	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

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

Semifluorinated <i>n</i>-alkanes	FORMULA	CAS REGISTRY NUMBER	ACRONYM
(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	$F_{16}H_{16}$

Semifluorinated <i>n</i>-alkenes	FORMULA	CAS REGISTRY NUMBER	ACRONYM
(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	$F_{16}H_{16}ene$

(n:2) Fluorotelomer (saturated) aldehydes	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer unsaturated aldehydes	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

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

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

(n:2) Fluorotelomer (saturated) carboxylic acids	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer unsaturated carboxylic acids	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

Other biotransformation products of n:2 FTOHs	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer sulfonic acids	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

(n:2) Fluorotelomer sulfonate anions	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

Perfluoroalkane sulfonyl fluorides	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

Perfluoroalkane sulfonamides	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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
<i>N</i>-Methyl perfluoroalkane sulfonamides	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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
<i>N</i>-Ethyl perfluoroalkane sulfonamides	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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	$C_7F_{15}SO_2NH(C_2H_5)$	68957-62-0	EtFHpSA
<i>N</i> -Ethyl perfluorooctane sulfonamide	$C_8F_{17}SO_2NH(C_2H_5)$ (sulfluramid)	4151-50-2	EtFOSA
<i>N,N</i>-Dialkyl perfluoroalkane sulfonamides	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<i>N,N</i> -Dimethyl perfluorooctane sulfonamide	$C_8F_{17}SO_2N(CH_3)_2$	213181-78-3	Me ₂ FOSA
<i>N,N</i> -Diethyl perfluorooctane sulfonamide	$C_8F_{17}SO_2N(C_2H_5)_2$	87988-61-2	Et ₂ FOSA

Perfluoroalkane sulfonamido ethanols	FORMULA	CAS REGISTRY NUMBER	ACRONYM
Perfluorobutane sulfonamidoethanol	$C_4F_9SO_2NHCH_2CH_2OH$	34454-99-4	FBSE
Perfluoropentane sulfonamidoethanol	$C_5F_{11}SO_2NHCH_2CH_2OH$	None available	FPeSE
Perfluorohexane sulfonamidoethanol	$C_6F_{13}SO_2NHCH_2CH_2OH$	106443-63-4	FHxSE
Perfluoroheptane sulfonamidoethanol	$C_7F_{15}SO_2NHCH_2CH_2OH$	167398-54-1	FHpSE
Perfluorooctane sulfonamidoethanol	$C_8F_{17}SO_2NHCH_2CH_2OH$	10116-92-4	FOSE

Perfluoroalkane sulfonamidoacetic acids	FORMULA	CAS REGISTRY NUMBER	ACRONYM
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

<i>N</i>-Methyl perfluoroalkane sulfonamidoethanols	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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

<i>N</i>-Ethyl perfluoroalkane sulfonamidoethanols	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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

<i>N</i>-Methyl perfluoroalkane sulfonamidoacetic acids and salts	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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

<i>N</i>-Ethyl perfluoroalkane sulfonamidoacetic acids and salts	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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

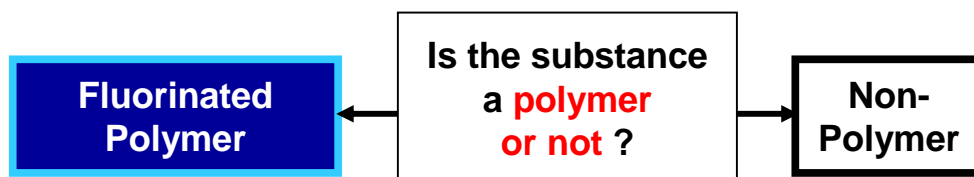
<i>N</i>-Methyl perfluoroalkane sulfonamidoethyl acrylates	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<i>N</i> -Methyl perfluorobutane sulfonamidoethyl acrylate	$C_4F_9SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	67584-55-8	MeFBSAC
<i>N</i> -Methyl perfluoropentane sulfonamidoethyl acrylate	$C_5F_{11}SO_2N(CH_3)CH_2CH_2OC(O)CH=CH_2$	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
<i>N</i>-Ethyl perfluoroalkane sulfonamidoethyl acrylates	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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
<i>N</i>-Methyl perfluoroalkane sulfonamidoethyl methacrylates	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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

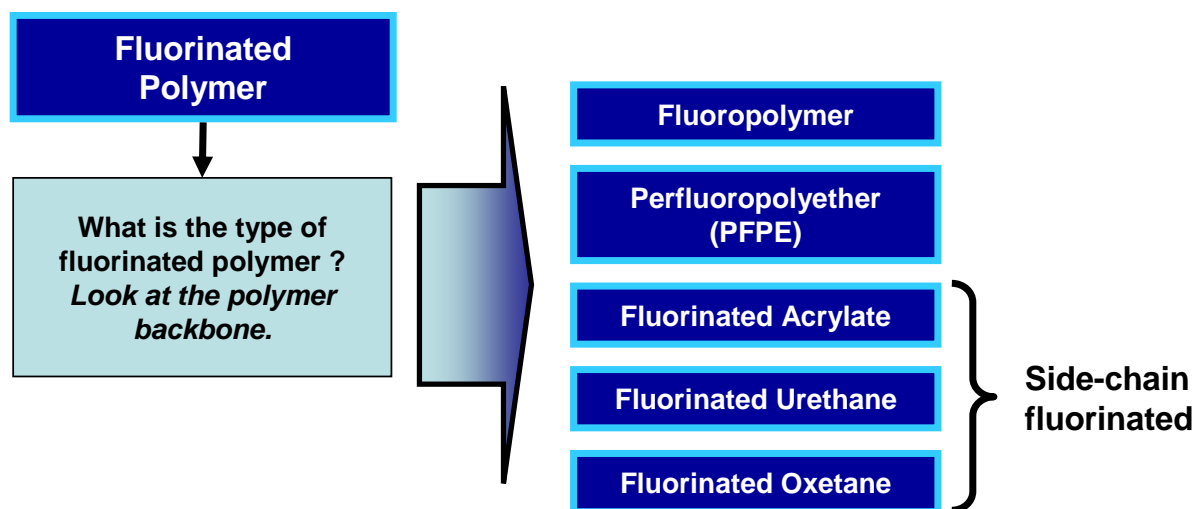
<i>N</i> -Methyl perfluoroheptane sulfonamidoethyl methacrylate	$C_7F_{15}SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	67939-96-2	MeFHpSMAC
<i>N</i> -Methyl perfluorooctane sulfonamidoethyl methacrylate	$C_8F_{17}SO_2N(CH_3)CH_2CH_2OC(O)C(CH_3)=CH_2$	14650-24-9	MeFOSMAC
<i>N</i>-Ethyl perfluoroalkane sulfonamidoethyl methacrylates	FORMULA	CAS REGISTRY NUMBER	ACRONYM
<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

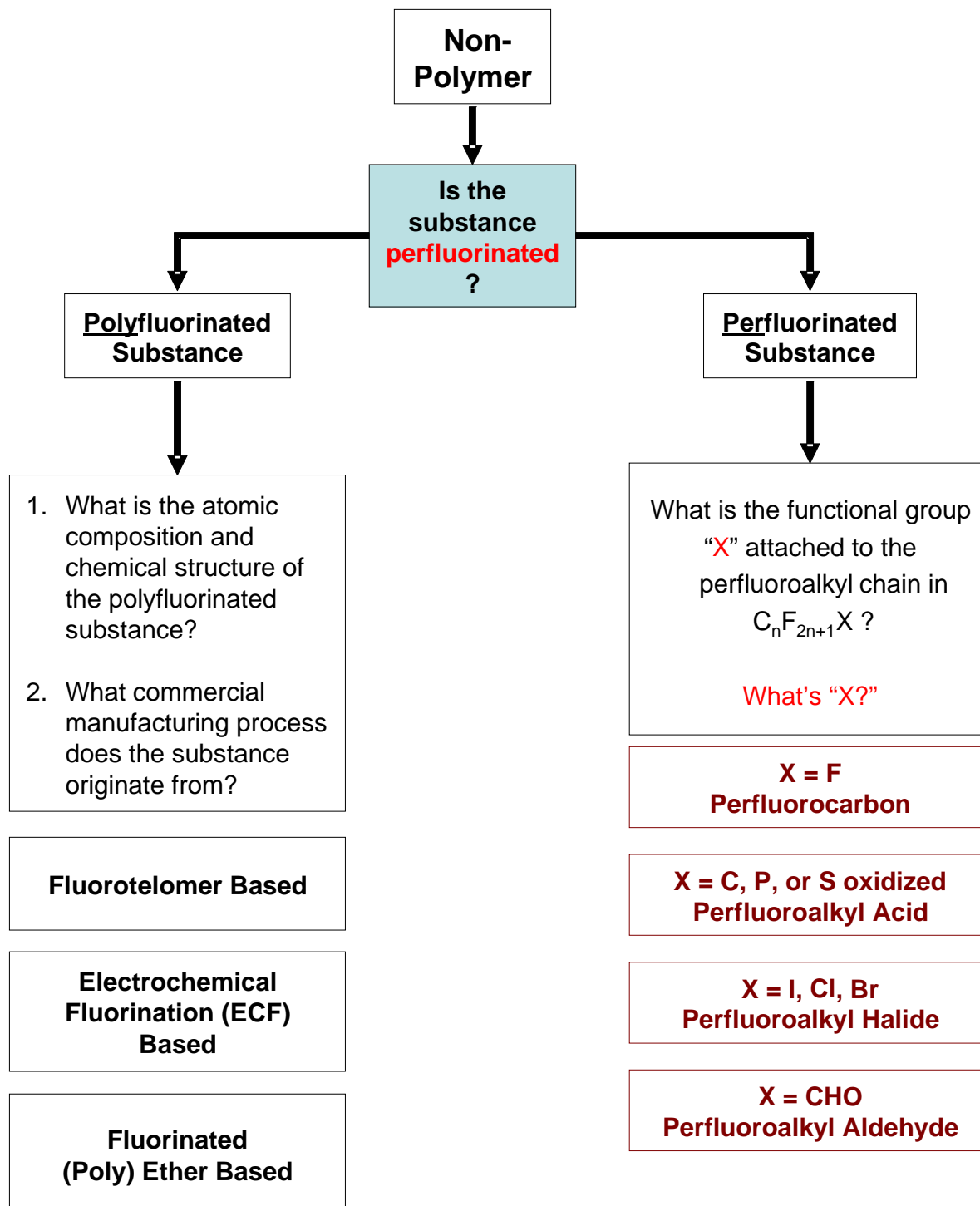
How to determine nomenclature – **an Overview**



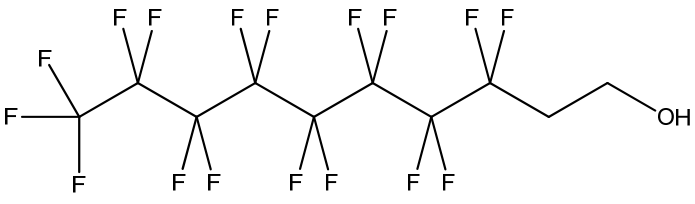
Fluorinated Polymer Decision



Non-Polymer Decision Tree



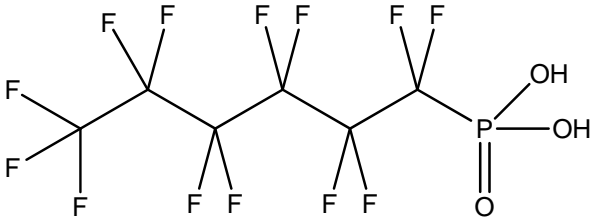
Example #1 8:2 Fluorotelomer alcohol

Substance Chemical Structure	Question	Conclusion
<p>$F(CF_2)_8CH_2CH_2OH$</p> 	<p>Polymer or Non-Polymer?</p>	<p>Non-Polymer</p>
<p>$F(CF_2)_8CH_2CH_2OH$</p>	<p>Perfluorinated?</p> <p><i>No. The substance has a perfluoroalkyl chain, $F(CF_2)_8$-, but all hydrogen on carbons are not replaced with fluorine</i></p>	<p>Poly-fluorinated</p>
<p>$F(CF_2)_8CH_2CH_2OH$</p>	<p>Process Origin?</p> <p><i>Perfluoroalkyl chain with an ethylene spacer (-CH₂CH₂-). Fluorotelomer origin</i></p>	<p>Fluoro-telomer origin</p>
<p>$F(CF_2)_8CH_2CH_2OH$</p>	<p>Functionality</p> <p><i>Alcohol</i></p>	<p>Fluoro-telomer Alcohol (FTOH)</p>
<p>$F(CF_2)_8CH_2CH_2OH$</p>	<p><i>Eight fluorinated carbons, two non-fluorinated carbons, therefore 8:2</i></p>	<p>8:2 Fluoro-telomer Alcohol (8:2 FTOH)</p>

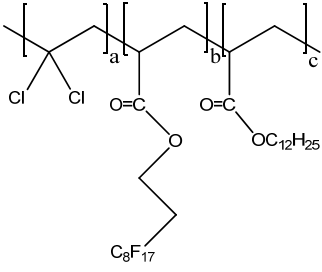
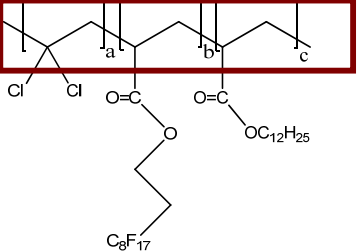
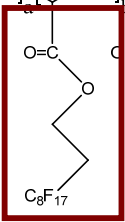
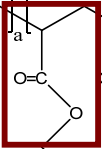
Example #2 Perfluorobutane sulfonamide

Substance Chemical Structure	Question	Conclusion
<p>$F(CF_2)_4SO_2NH_2$</p>	<p>Polymer or Non-Polymer?</p>	<p>Non-Polymer</p>
<p>$F(CF_2)_4SO_2NH_2$</p>	<p>Perfluorinated?</p> <p><i>Yes. All hydrogens on all four carbons are replaced with fluorine. Perfluorobutyl</i></p>	<p>Perfluorinated</p>
<p>$F(CF_2)_4SO_2NH_2$</p>	<p>Perfluoroalkyl Acid?</p> <p><i>No. Has no acid functionality</i></p>	
<p>$F(CF_2)_4SO_2NH_2$</p>	<p>Process Origin?</p> <p><i>Perfluoroalkyl chain with a sulfone, $-SO_2-$, spacer. Electrochemical fluorination (ECF) origin</i></p>	<p>ECF origin</p>
<p>$F(CF_2)_4SO_2NH_2$</p>	<p>Functionality 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>Polymer or Non-Polymer?</p>	<p>Non-Polymer</p>
$\text{F}(\text{CF}_2)_6\text{P}(=\text{O})(\text{OH})_2$	<p>Perfluorinated?</p> <p><i>Yes. All hydrogens on all six carbons are replaced with fluorine. Perfluorohexyl</i></p>	<p>Perfluorinated</p>
$\text{F}(\text{CF}_2)_6\text{P}(=\text{O})(\text{OH})_2$	<p>Perfluoroalkyl Acid?</p> <p><i>Yes. Phosphonic, -P(=O)(OH)₂, acid</i></p>	<p>Perfluoroalkyl acid</p>
$\text{F}(\text{CF}_2)_6\text{P}(=\text{O})(\text{OH})_2$		<p>Perfluorohexyl phosphonic acid (C6-PFPA)</p>

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

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