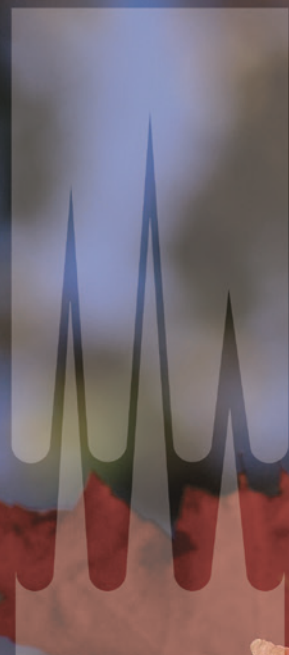


有機フッ素化合物 標準液
Perfluorinated Compounds(PFCs)

2014



WELLINGTON
LABORATORIES

STANDARDS FOR ENVIRONMENTAL
TESTING AND RESEARCH

Wellington Laboratories Japan Inc.
www.well-labs.co.jp

NATIVE PERFLUOROALKYLSULFONATES (PFASs)

Catalogue Number	Product (methanol solution)	Qty/Conc	
L-PFBS	Potassium perfluoro-1-butanesulfonate	1.2 ml	50 µg/ml
L-PFPeS	Sodium perfluoro-1-pentanesulfonate	1.2 ml	50 µg/ml
L-PFHxS	Sodium perfluoro-1-hexanesulfonate	1.2 ml	50 µg/ml
br-PFHxSK	L-PFHxS with branched isomers (Potassium Salt)	1.2 ml	50 µg/ml
L-PFHpS	Sodium perfluoro-1-heptanesulfonate	1.2 ml	50 µg/ml
確 L-PFOS	Sodium perfluoro-1-octanesulfonate	1.2 ml	50 µg/ml
確 L-PFOSK	Potassium perfluoro-1-octanesulfonate	1.2 ml	50 µg/ml
確 br-PFOSK	L-PFOSK with branched isomers	1.2 ml	50 µg/ml
確 T-PFOS	Potassium perfluorooctanesulfonate (Technical Grade)	1.2 ml	50 µg/ml
L-PFNS	Sodium perfluoro-1-nonanesulfonate	1.2 ml	50 µg/ml
ipPFNS	Sodium perfluoro-7-methyloctanesulfonate	1.2 ml	50 µg/ml
L-PFDS	Sodium perfluoro-1-decanesulfonate	1.2 ml	50 µg/ml
L-PFDoS	Sodium perfluoro-1-dodecanesulfonate	1.2 ml	50 µg/ml

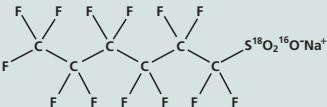
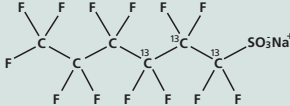
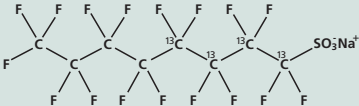
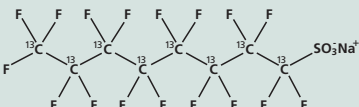
NOTE: Listed concentrations are reported as the salt.

NATIVE PERFLUOROALKYLSULFONATES: SOLUTION/MIXTURE

Catalogue Number	Product (methanol solution)	Qty/Conc
確 PFS-MXA	Native PFAS Solution/Mixture	1.2 ml
	Potassium perfluoro-1-butanesulfonate	2 µg/ml
	Sodium perfluoro-1-hexanesulfonate	2 µg/ml
	Sodium perfluoro-1-heptanesulfonate	2 µg/ml
	Sodium perfluoro-1-octanesulfonate	2 µg/ml
	Sodium perfluoro-1-decanesulfonate	2 µg/ml

NOTE: Listed concentrations are reported as the salt.

MASS-LABELLED PERFLUOROALKYLSULFONATES

Catalogue Number	Product
MPFHxS	 Sodium perfluoro-1-hexane[¹⁸O₂]sulfonate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >94% ¹⁸O₂
M3PFHxS	 Sodium perfluoro-1-[1,2,3-¹³C₃]hexanesulfonate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³C₃
確 MPFOS	 Sodium perfluoro-1-[1,2,3,4-¹³C₄]-octanesulfonate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³C₄
確 M8PFOS	 Sodium perfluoro-1-[¹³C₈]octanesulfonate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³C₈

NOTE: Listed concentrations are reported as the salt.

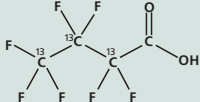
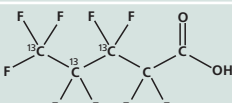
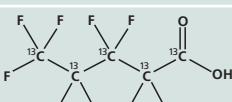
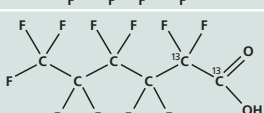
NATIVE PERFLUOROALKYLCARBOXYLIC ACIDS (PFCAs)

Catalogue Number	Product (methanol solution)	Qty/Conc	
PFBA	Perfluoro-n-butanoic acid	1.2 ml	50 µg/ml
PFPeA	Perfluoro-n-pentanoic acid	1.2 ml	50 µg/ml
PFHxA	Perfluoro-n-hexanoic acid	1.2 ml	50 µg/ml
PFHpA	Perfluoro-n-heptanoic acid	1.2 ml	50 µg/ml
PFOA	Perfluoro-n-octanoic acid	1.2 ml	50 µg/ml
T-PFOA	Perfluorooctanoic acid (Technical Grade)	1.2 ml	50 µg/ml
PFNA	Perfluoro-n-nonanoic acid	1.2 ml	50 µg/ml
ipPFNA	Perfluoro-7-methyloctanoic acid (purity 90%)	1.2 ml	45 µg/ml
PFDA	Perfluoro-n-decanoic acid	1.2 ml	50 µg/ml
PFUdA	Perfluoro-n-undecanoic acid	1.2 ml	50 µg/ml
PFDoA	Perfluoro-n-dodecanoic acid	1.2 ml	50 µg/ml
PFTTrDA	Perfluoro-n-tridecanoic acid	1.2 ml	50 µg/ml
PFTeDA	Perfluoro-n-tetradecanoic acid	1.2 ml	50 µg/ml
PFHxDA	Perfluoro-n-hexadecanoic acid	1.2 ml	50 µg/ml
PFODA	Perfluoro-n-octadecanoic acid	1.2 ml	50 µg/ml

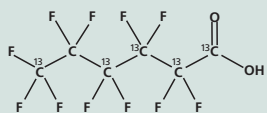
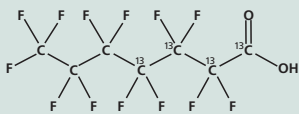
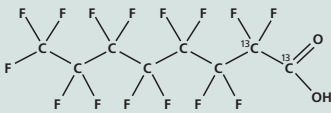
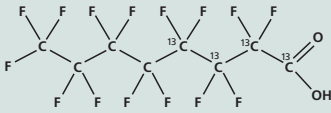
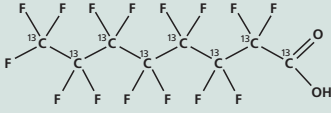
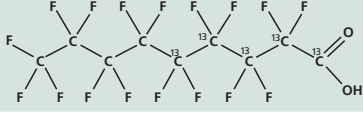
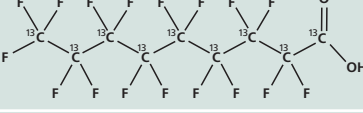
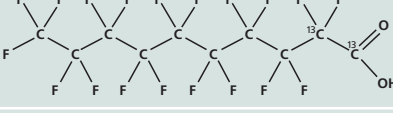
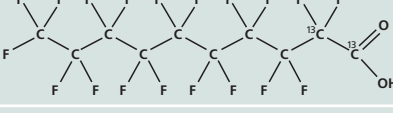
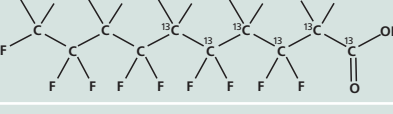
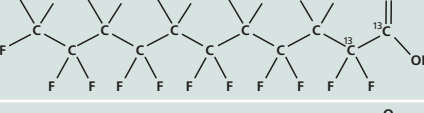
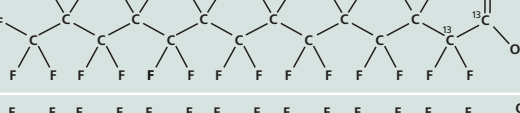
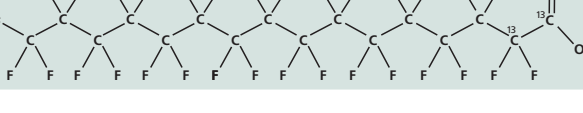
NATIVE PERFLUOROALKYLCARBOXYLIC ACIDS: SOLUTION/MIXTURE

Catalogue Number	Product (methanol solution)	Qty/Conc
PFC-MXA	Native PFCA Solution/Mixture	1.2 ml
	Perfluoro-n-butanoic acid	2 µg/ml
	Perfluoro-n-pentanoic acid	2 µg/ml
	Perfluoro-n-hexanoic acid	2 µg/ml
	Perfluoro-n-heptanoic acid	2 µg/ml
	Perfluoro-n-octanoic acid	2 µg/ml
	Perfluoro-n-nonanoic acid	2 µg/ml
	Perfluoro-n-decanoic acid	2 µg/ml
	Perfluoro-n-undecanoic acid	2 µg/ml
	Perfluoro-n-dodecanoic acid	2 µg/ml
	Perfluoro-n-tridecanoic acid	2 µg/ml
	Perfluoro-n-tetradecanoic acid	2 µg/ml

MASS-LABELLED PERFLUOROALKYLCARBOXYLIC ACIDS

Catalogue Number	Product
M3PFBA	 Perfluoro-n-[2,3,4- ¹³ C ₃]butanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% 2,3,4- ¹³ C ₃
MPFBA	 Perfluoro-n-[1,2,3,4- ¹³ C ₄]butanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₄
M3PFPeA	 Perfluoro-n-[3,4,5- ¹³ C ₃]pentanoic acid 1.2ml 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% 3,4,5- ¹³ C ₃
M5PFPeA	 Perfluoro-n-[1,2,3,4,5- ¹³ C ₅]pentanoic acid 1.2ml 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₅
MPFHxA	 Perfluoro-n-[1,2- ¹³ C ₂]hexanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₂

MASS-LABELLED PERFLUOROALKYLCARBOXYLIC ACIDS

Catalogue Number	Product
M5PFHxA 	Perfluoro-n-[1,2,3,4,6- ¹³ C ₅]hexanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₅
M4PFHpA 	Perfluoro-n-[1,2,3,4,1- ¹³ C ₄]heptanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₄
M2PFOA 	Perfluoro-n-[1,2- ¹³ C ₂]octanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₂
MPFOA 	Perfluoro-n-[1,2,3,4,1- ¹³ C ₄]octanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₄
M8PFOA 	Perfluoro-n-[¹³ C ₈]octanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; 97.9% ¹³ C ₈ and 2.1% ¹³ C ₄
MPFNA 	Perfluoro-n-[1,2,3,4,5,1- ¹³ C ₅]nonanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₅
M9PFNA 	Perfluoro-n-[¹³ C ₉]nonanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₉
MPFDA 	Perfluoro-n-[1,2- ¹³ C ₂]decanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₂
MPFDA-A 	Perfluoro-n-[1,2- ¹³ C ₂]decanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in acetonitrile >99% linear; >99% ¹³ C ₂
M6PFDA 	Perfluoro-n-[1,2,3,4,5,6,1- ¹³ C ₆]decanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₆
MPFUdA 	Perfluoro-n-[1,2- ¹³ C ₂]undecanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₂
M7PFUdA 	Perfluoro-n-[1,2,3,4,5,6,7,1- ¹³ C ₇]undecanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₇
MPFDoA 	Perfluoro-n-[1,2- ¹³ C ₂]dodecanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₂
M2PFTeDA 	Perfluoro-n-[1,2- ¹³ C ₂]tetradecanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₂
M2PFHxDA 	Perfluoro-n-[1,2- ¹³ C ₂]hexadecanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³ C ₂

MIXED NATIVE PFCAs AND PFASs: SOLUTION/MIXTURE

Catalogue Number	Product (methanol solution)	Qty/Conc
確 PFAC-MXA	Native PFCAs and PFASs Solution/Mixture	1.2 ml
Perfluoro-n-butanoic acid		5 µg/ml
Perfluoro-n-pentanoic acid		5 µg/ml
Perfluoro-n-hexanoic acid		5 µg/ml
Perfluoro-n-heptanoic acid		5 µg/ml
Perfluoro-n-octanoic acid		5 µg/ml
Perfluoro-n-nonanoic acid		5 µg/ml
Perfluoro-n-decanoic acid		5 µg/ml
Potassium perfluoro-1-butanedisulfonate		5 µg/ml
Sodium perfluoro-1-hexanesulfonate		5 µg/ml
Sodium perfluoro-1-octanesulfonate		5 µg/ml

確 PFAC-MXB	Native PFCAs and PFASs Solution/Mixture	1.2 ml
Perfluoro-n-butanoic acid		2 µg/ml
Perfluoro-n-pentanoic acid		2 µg/ml
Perfluoro-n-hexanoic acid		2 µg/ml
Perfluoro-n-heptanoic acid		2 µg/ml
Perfluoro-n-octanoic acid		2 µg/ml
Perfluoro-n-nonanoic acid		2 µg/ml
Perfluoro-n-decanoic acid		2 µg/ml
Perfluoro-n-undecanoic acid		2 µg/ml
Perfluoro-n-dodecanoic acid		2 µg/ml
Perfluoro-n-tridecanoic acid		2 µg/ml
Perfluoro-n-tetradecanoic acid		2 µg/ml
Perfluoro-n-hexadecanoic acid		2 µg/ml
Perfluoro-n-octadecanoic acid		2 µg/ml
Potassium perfluoro-1-butanedisulfonate		2 µg/ml
Sodium perfluoro-1-hexanesulfonate		2 µg/ml
Sodium perfluoro-1-octanesulfonate		2 µg/ml
Sodium perfluoro-1-decanedisulfonate		2 µg/ml

MIXED MASS-LABELLED PFCAs AND PFASs: SOLUTION/MIXTURE

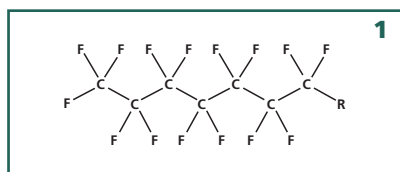
Catalogue Number	Product (methanol solution)	Qty/Conc
確 MPFAC-MXA	Mass-Labelled PFCAs and PFASs Solution/Mixture	1.2 ml
Perfluoro-n-[1,2,3,4- ¹³ C ₄]butanoic acid		2 µg/ml
Perfluoro-n-[1,2- ¹³ C ₂]hexanoic acid		2 µg/ml
Perfluoro-n-[1,2,3,4- ¹³ C ₄]octanoic acid		2 µg/ml
Perfluoro-n-[1,2,3,4,5- ¹³ C ₅]nonanoic acid		2 µg/ml
Perfluoro-n-[1,2- ¹³ C ₂]decanoic acid		2 µg/ml
Perfluoro-n-[1,2- ¹³ C ₂]undecanoic acid		2 µg/ml
Perfluoro-n-[1,2- ¹³ C ₂]dodecanoic acid		2 µg/ml
Sodium perfluoro-1-hexane[¹⁸ O ₂]sulfonate		2 µg/ml
Sodium perfluoro-1-[1,2,3,4- ¹³ C ₄]octanesulfonate		2 µg/ml

NOTE: Listed concentrations for the perfluoroalkylsulfonates are reported as the salt.

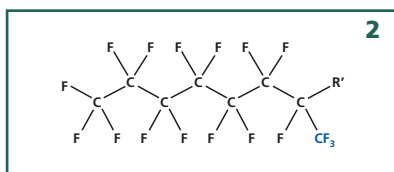
確 第一種特定化学物質

PFOS/PFOA ISOMERS

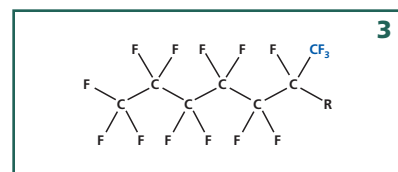
Catalogue Number	Product (methanol solution)	Qty/Conc	
P1MHpS	Perfluoro-1-methylheptane sulfonate	200µl	1.00 µg/ml
P3MHpS	Perfluoro-3-methylheptane sulfonate	200µl	1.00 µg/ml
	Perfluoro-3-methylheptanoic acid		1.90 µg/ml
P4MHpS	Perfluoro-4-methylheptane sulfonate	200µl	1.00 µg/ml
	Perfluoro-4-methylheptanoic acid		2.20 µg/ml
P5MHpS	Perfluoro-5-methylheptane sulfonate	200µl	1.00 µg/ml
	Perfluoro-5-methylheptanoic acid		1.96 µg/ml
P6MHpS	Perfluoro-6-methylheptane sulfonate	200µl	1.00 µg/ml
	Perfluoro-6-methylheptanoic acid		3.10 µg/ml
P55DMHxS	Perfluoro-5,5-dimethylhexane sulfonate	200µl	1.00 µg/ml
	Perfluoro-5,5-dimethylhexanoic acid		1.95 µg/ml
P44DMHxS	Perfluoro-4,4-dimethylhexane sulfonate	200µl	1.00 µg/ml
	Perfluoro-4,4-dimethylhexanoic acid		3.14 µg/ml
P45DMHxS	Perfluoro-4,5-dimethylhexane sulfonate	200µl	1.00 µg/ml
	Perfluoro-4,5-dimethylhexanoic acid		1.22 µg/ml
	Perfluoro-3,5-dimethylhexane sulfonate		0.50 µg/ml
	Perfluoro-3,5-dimethylhexanoic acid		0.60 µg/ml



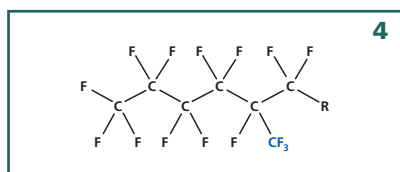
Linear



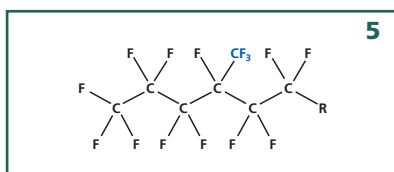
Perfluoro-1-methyl-



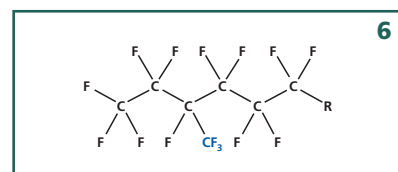
Perfluoro-2-methyl-



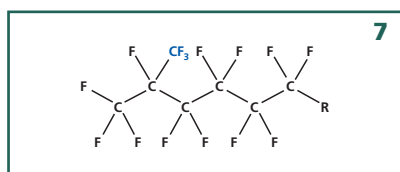
Perfluoro-3-methyl-



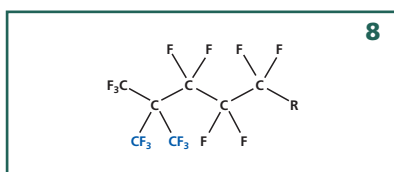
Perfluoro-4-methyl-



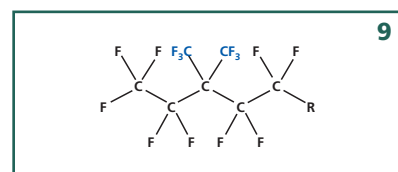
Perfluoro-5-methyl-



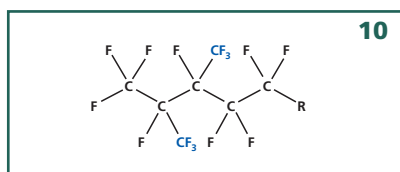
Perfluoro-6-methyl-



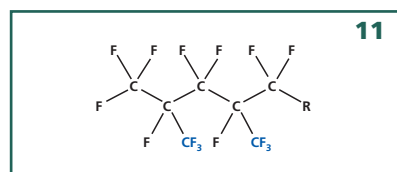
Perfluoro-5,5-dimethyl-



Perfluoro-4,4-dimethyl-



Perfluoro-4,5-methyl-



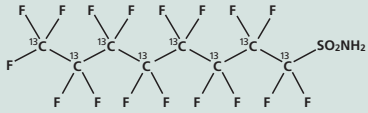
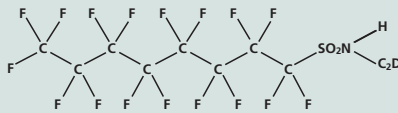
Perfluoro-3,5-dimethyl-

NOTE: R=CO₂⁻ and CF₂SO₃⁻ except for Isomer 2 where R'=SO₃⁻ only

NATIVE PERFLUOROOCTANESULFONAMIDES (FOSAs)

Catalogue Number	Product	Qty/Conc	
FOSA-I	Perfluoro-1-octanesulfonamide in isopropanol	1.2 ml	50 µg/ml
N-MeFOSA-M	N-methylperfluoro-1-octanesulfonamide in methanol	1.2 ml	50 µg/ml
N,N-Me2FOSA-M	N,N-dimethylperfluoro-1-octanesulfonamide in methanol	1.2 ml	50 µg/ml
N-EtFOSA-M	N-ethylperfluoro-1-octanesulfonamide in methanol	1.2 ml	50 µg/ml

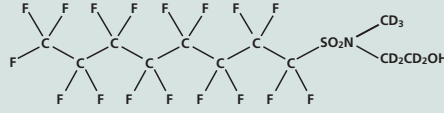
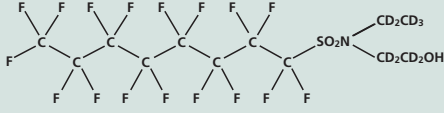
MASS-LABELLED PERFLUOROOCTANESULFONAMIDES

Catalogue Number	Product
M8FOSA-M	 Perfluoro-1-[¹³C₈]octanesulfonamide 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; >99% ¹³C₈
d-N-MeFOSA-M	 N-methyl-d₃-perfluoro-1-octanesulfonamide 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; 98% ²H₃
d-N-EtFOSA-M	 N-ethyl-d₅-perfluoro-1-octanesulfonamide 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; 98% ²H₅

NATIVE PERFLUOROOCTANESULFONAMIDOETHANOLS (FOSEs)

Catalogue Number	Product (nonane solution)	Qty/Conc	
N-MeFOSE-M	2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	1.2 ml	50 µg/ml
N-EtFOSE-M	2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	1.2 ml	50 µg/ml

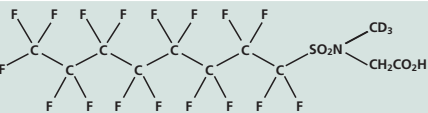
MASS-LABELLED PERFLUOROOCTANESULFONAMIDOETHANOLS

Catalogue Number	Product
d7-N-MeFOSE-M	 2-(N-methyl-d₃-perfluoro-1-octanesulfonamido)ethan-d₄-ol 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; 98% ²H₇
d9-N-EtFOSE-M	 2-(N-ethyl-d₅-perfluoro-1-octanesulfonamido)ethan-d₄-ol 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; 98% ²H₉

NATIVE PERFLUOROOCTANESULFONAMIDOACETIC ACIDS (FOSAAs)

Catalogue Number	Product (methanol solution)	Qty/Conc	
FOSAA	Perfluoro-1-octanesulfonamidoacetic acid	1.2 ml	50 µg/ml
N-MeFOSAA	N-methylperfluoro-1-octanesulfonamidoacetic acid	1.2 ml	50 µg/ml
N-EtFOSAA	N-ethylperfluoro-1-octanesulfonamidoacetic acid	1.2 ml	50 µg/ml

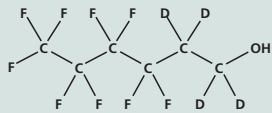
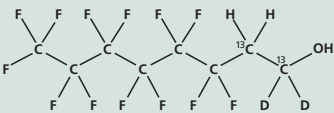
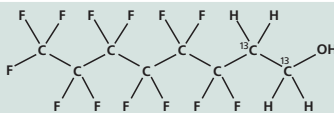
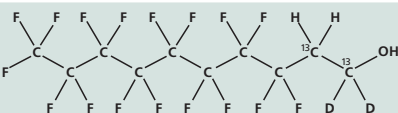
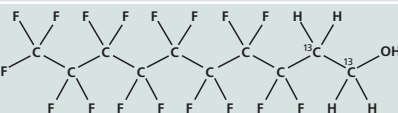
MASS-LABELLED PERFLUOROOCTANESULFONAMIDOACETIC ACIDS

Catalogue Number	Product
d3-N-MeFOSAA 	N-methyl-d ₃ -perfluoro-1-octane-sulfonamidoacetic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; 98% ² H ₃
d5-N-EtFOSAA 	N-ethyl-d ₅ -perfluoro-1-octane-sulfonamidoacetic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol >99% linear; 98% ² H ₅

NATIVE TELOMER ALCOHOLS (FTOHs)

Catalogue Number	Product (methanol solution)	Qty/Conc
FBET	2-Perfluorobutyl ethanol (4:2)	1.2 ml 50 µg/ml
FHET	2-Perfluorohexyl ethanol (6:2)	1.2 ml 50 µg/ml
7:2sFTOH	1-Perfluoroheptyl ethanol (7:2 secondary)	1.2 ml 50 µg/ml
FOET	2-Perfluorooctyl ethanol (8:2)	1.2 ml 50 µg/ml
FDET	2-Perfluorodecyl ethanol (10:2)	1.2 ml 50 µg/ml

MASS-LABELLED TELOMER ALCOHOLS

Catalogue Number	Product
MFBET 	2-Perfluorobutyl-[1,1,2,2- ² H ₄]-ethanol (4:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; > 98% 1,1,2,2- ² H ₄
MFHET 	2-Perfluorohexyl-[1,1- ² H ₂]-[1,2- ¹³ C ₂]-ethanol (6:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; 98% 1,1- ² H ₂ ; >99% 1,2- ¹³ C ₂
M2FHET 	2-Perfluorohexyl-[1,2- ¹³ C ₂]-ethanol (6:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; >99% 1,2- ¹³ C ₂
MFOET 	2-Perfluorooctyl-[1,1- ² H ₂]-[1,2- ¹³ C ₂]-ethanol (8:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; 98% 1,1- ² H ₂ ; >99% 1,2- ¹³ C ₂
M2FOET 	2-Perfluorooctyl-[1,2- ¹³ C ₂]-ethanol (8:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; >99% 1,2- ¹³ C ₂
MFDET 	2-Perfluorodecyl-[1,1- ² H ₂]-[1,2- ¹³ C ₂]-ethanol (10:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; 98% 1,1- ² H ₂ ; >99% 1,2- ¹³ C ₂

NATIVE TELOMER ACIDS (FTAs)

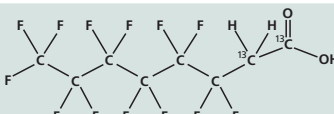
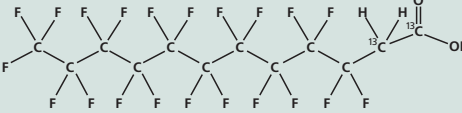
Catalogue Number	Product (isopropanol solution)	Qty/Conc	
FHEA	2-Perfluorohexyl ethanoic acid (6:2)	1.2 ml	50 µg/ml
FOEA	2-Perfluorooctyl ethanoic acid (8:2)	1.2 ml	50 µg/ml
FDEA	2-Perfluorodecyl ethanoic acid (10:2)	1.2 ml	50 µg/ml

Catalogue Number	Product (methanol solution)	Qty/Conc	
FPrPA	3-Perfluoropropyl propanoic acid (3:3)	1.2 ml	50 µg/ml
FPePA	3-Perfluoropentyl propanoic acid (5:3)	1.2 ml	50 µg/ml
FHpPA	3-Perfluoroheptyl propanoic acid (7:3)	1.2 ml	50 µg/ml

NATIVE TELOMER ACIDS: SOLUTION/MIXTURE

Catalogue Number	Product (isopropanol solution)	Qty/Conc
FTA-MXA	Native FTA Solution/Mixture	1.2 ml
	2-Perfluorohexyl ethanoic acid (6:2)	2 µg/ml
	2-Perfluorooctyl ethanoic acid (8:2)	2 µg/ml
	2-Perfluorodecyl ethanoic acid (10:2)	2 µg/ml

MASS-LABELLED TELOMER ACIDS

Catalogue Number	Product
MFHEA	 2-Perfluorohexyl-[1,2- ¹³ C ₂]-ethanoic acid (6:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in isopropanol ; >99% ¹³ C ₂
MFOEA	 2-Perfluorooctyl-[1,2- ¹³ C ₂]-ethanoic acid (8:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in isopropanol ; >99% ¹³ C ₂
MFDEA	 2-Perfluorodecyl-[1,2- ¹³ C ₂]-ethanoic acid (10:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in isopropanol ; >99% ¹³ C ₂

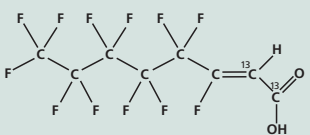
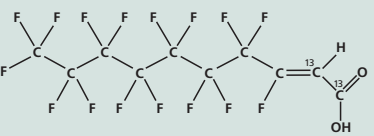
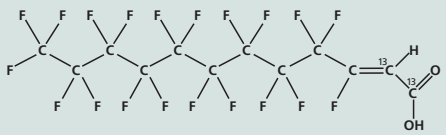
MASS-LABELLED TELOMER ACIDS: SOLUTION/MIXTURE

Catalogue Number	Product (isopropanol solution)	Qty/Conc
MFTA-MXA	Mass-Labelled FTA Solution/Mixture	1.2 ml
	2-Perfluorohexyl-[1,2- ¹³ C ₂]-ethanoic acid (6:2)	2 µg/ml
	2-Perfluorooctyl-[1,2- ¹³ C ₂]-ethanoic acid (8:2)	2 µg/ml
	2-Perfluorodecyl-[1,2- ¹³ C ₂]-ethanoic acid (10:2)	2 µg/ml

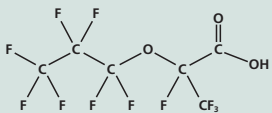
NATIVE UNSATURATED TELOMER ACIDS (FTUAs)

Catalogue Number	Product (methanol solution)	Qty/Conc	
FHUEA	2H-Perfluoro-2-octenoic acid (6:2)	1.2 ml	50 µg/ml
FOUEA	2H-Perfluoro-2-decenoic acid (8:2)	1.2 ml	50 µg/ml
FDUEA	2H-Perfluoro-2-dodecenoic acid (10:2)	1.2 ml	50 µg/ml

MASS-LABELLED UNSATURATED TELOMER ACIDS

Catalogue Number	Product
MFHUEA 	2H-Perfluoro-[1,2- ¹³ C ₂]-2-octenoic acid (6:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in isopropanol ; > 99% ¹³ C ₂
MFOUEA 	2H-Perfluoro-[1,2- ¹³ C ₂]-2-decenoic acid (8:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in isopropanol ; >99% ¹³ C ₂
MFDUEA 	2H-Perfluoro-[1,2- ¹³ C ₂]-2-dodecenoic acid (10:2) 1.2 ml; 50 µg/ml (±2.5 µg/ml); in isopropanol ; >99% ¹³ C ₂

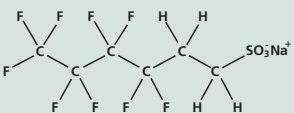
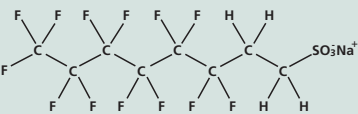
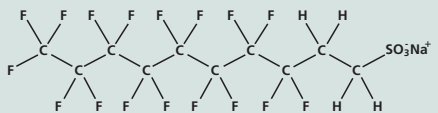
NATIVE HEXAFLUOROPROPYLENE OXIDE DIMER ACID

Catalogue Number	Product
HFPO-DA 	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)propanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol

MASS-LABELLED HEXAFLUOROPROPYLENE OXIDE DIMER ACID

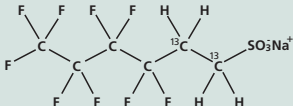
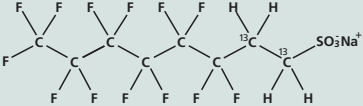
Catalogue Number	Product
M3HFPO-DA 	2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)- ¹³ C ₃ -propanoic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol

NATIVE TELOMER SULFONATES(FTSs)

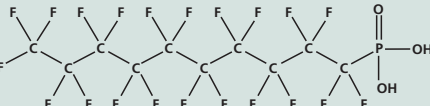
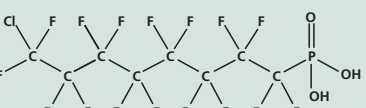
Catalogue Number	Product
4:2FTS 	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2) 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol
6:2FTS 	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2) 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol
8:2FTS 	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2) 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol

NOTE: Listed concentrations are reported as the salt.

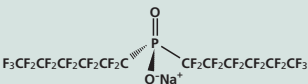
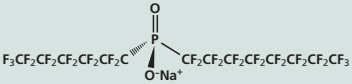
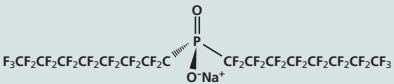
MASS-LABELLED TELOMER SULFONATES (FTSs)

Catalogue Number	Product
M2-4:2FTS 	Sodium 1H,1H,2H,2H-perfluoro-1-[1,2- ¹³ C ₂]-hexane sulfonate (4:2) 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol
M2-6:2FTS 	Sodium 1H,1H,2H,2H-perfluoro-1-[1,2- ¹³ C ₂]-octane sulfonate (6:2) 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol
M2-8:2FTS 	Sodium 1H,1H,2H,2H-perfluoro-1-[1,2- ¹³ C ₂]-decane sulfonate (8:2) 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol

NATIVE PERFLUOROALKYLPHOSPHONIC ACIDS (PFAPAs)

Catalogue Number	Product
PFHxPA 	Perfluorohexylphosphonic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ;
PFOPA 	Perfluorooctylphosphonic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ;
PFDPA 	Perfluorodecylphosphonic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ;
Cl-PFHxPA 	6-Chloroperfluorohexylphosphonic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ;
Cl-PFOPA 	8-Chloroperfluorooctylphosphonic acid 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ;

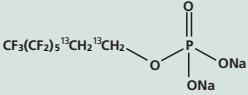
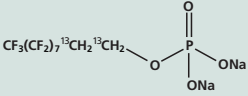
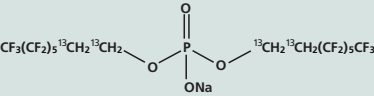
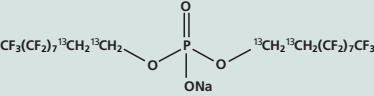
NATIVE SODIUM PERFLUOROALKYL PHOSPHINATES (X:XPFPi)

Catalogue Number	Product
6:6 PFPi 	Sodium bis(perfluorohexyl)phosphinate 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol
6:8 PFPi 	Sodium perfluorohexylfluorooctylphosphinate 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol
8:8 PFPi 	Sodium bis(perfluorooctyl)phosphinate 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol

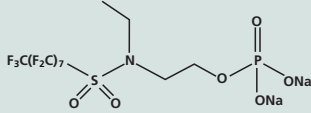
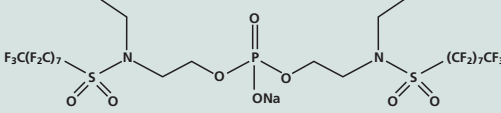
NATIVE POLYFLUORINATED PHOSPHATE ESTERS (PAPs and diPAPs)

Catalogue Number	Product (methanol solution)	Qty/Conc	
6:2PAP	Sodium 1H,1H,2H,2H-perfluorooctylphosphate	1.2 ml	50 µg/ml
8:2PAP	Sodium 1H,1H,2H,2H-perfluorodecylphosphate	1.2 ml	50 µg/ml
6:2diPAP	Sodium bis(1H,1H,2H,2H-perfluorooctyl)phosphate	1.2 ml	50 µg/ml
8:2diPAP	Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate	1.2 ml	50 µg/ml
6:2/8:2diPAP	Sodium (1H,1H,2H,2H-perfluorooctyl-1H,1H,2H,2H-perfluorodecyl)phosphate	1.2 ml	50 µg/ml

MASS-LABELLED POLYFLUORINATED PHOSPHATE ESTERS (M2-PAPs and M4-diPAPs)

Catalogue Number	Product	
M2-6:2PAP		Sodium 1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorooctylphosphate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; >99% ¹³ C ₂
M2-8:2PAP		Sodium 1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorodecylphosphate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; >99% ¹³ C ₂
M4-6:2diPAP		Sodium bis(1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorooctyl)-phosphate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; >99% ¹³ C ₄
M4-8:2diPAP		Sodium bis(1H,1H,2H,2H-[1,2- ¹³ C ₂]perfluorodecyl)-phosphate 1.2 ml; 50 µg/ml (±2.5 µg/ml); in methanol ; >99% ¹³ C ₄

NATIVE POLYFLUORINATED PHOSPHATE ESTERS (SAmPAPs)

Catalogue Number	Product	
SAmPAP		Sodium 2-(N-ethylperfluorooctane-1-sulfonamido)ethyl phosphate 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol
diSAmPAP		Sodium bis-[2-(N-ethylperfluorooctane-1-sulfonamido)ethyl] phosphate 1.2 ml x 50 µg/ml (±2.5µg/ml); in methanol

NMIJ 認証標準物質

CRM No.	Description	Certified Value Mass fraction mg/kg	Qty
確 4220-a	Potassium perfluorooctanesulfonate in methanol	9.93±0.15	1g

確 第一種特定化学物質

認証書見本 (Sample of Certificate)

4220-a No. +++ 2010.03.23

独立行政法人 産業技術総合研究所
計量標準総合センター 標準物質認証書



認証標準物質

NMIJ CRM 4220 - a

No. +++



ペルフルオロオクタンスルホン酸カリウム標準液（メタノール溶液）
Potassium Perfluorooctanesulfonate in Methanol

本標準物質は、JIS Q 0034 (ISO GUIDE 34) に適合する品質システムに基づき生産されたものであり、ペルフルオロオクタンスルホン酸 (PFOS) 又はその塩の定量において、分析装置の校正に用いる他、分析の精度管理、分析方法や分析装置の妥当性確認に用いることができる。

【認証値】
本標準物質の濃度（質量分率 (mg/kg)）の認証値は以下の通りである。認証値の不確かさは、合成標準不確かさと包含係数 $k=2$ から決められた拡張不確かさであり、約 95 % の信頼の水準をもつと推定される区間を示す。

物質名	CAS 番号	認証値 質量分率 (mg/kg)	拡張不確かさ 質量分率 (mg/kg)
ペルフルオロオクタンスルホン酸カリウム (ポタシウム ヘプタデカフルオロオクタン -1-スルホネート)	2795-39-3	9.93	0.15

【認証値の決定方法】
本標準物質の認証値は、標準液の調製におけるペルフルオロオクタンスルホン酸カリウムの希釈率に、ペルフルオロオクタンスルホン酸カリウムの純度を乗ずることによって算出した。ペルフルオロオクタンスルホン酸カリウムの純度は、示差走査熱量計を用いた凝固点降下法及びカールフィッシャー滴定装置を用いた電量滴定法により求めた。

【トレーサビリティ】
本標準物質の認証値は、質量比混合法による標準液の原料と溶液の質量分率に、凝固点降下法及び電量滴定法で純度決定されたペルフルオロオクタンスルホン酸カリウムの純度を乗じた値であり、国際単位系 (SI) にトレーサブルである。

【有効期限】
本標準物質の有効期限は、未開封で下記の保存条件のもとで 2013 年 3 月 31 日である。

【形状等】
本標準物質は常温では無色透明の液体で、約 1 g が 2 mL 褐色アンプルにアルゴンガス雰囲気下で封入されている。

【均質性】
作成した 405 本のアンプルからランダムに 10 本抜き取り、高速液体クロマトグラフ質量分析計 (LC/MS) を用いてピーク面積値を測定し、分散分析によって均質性を確認した。評価した均質性に起因する不確かさは、認証値の不確かさに含めた。

1/2

独立行政法人 産業技術総合研究所 計量標準総合センター
認証標準物質 (NMIJ CRM) カタログ

(P16より抜粋)

確約書について

「第一種特定化学物質」に指定されている化合物については、製造、輸入、使用は原則として禁止されています。但し、試験研究用に使用する場合に限り、経済産業大臣の許可を得ることにより使用することが出来ます。この為、使用目的等を明記した「確約書」を弊社宛に提出頂き、許可を取得したうえで販売させていただきますのでご了承ください。

「化学物質の審査及び製造等の規制に関する法律(略称:化審法)」に指定されている第一種特定化学物質に該当する弊社取扱製品は、本文中に以下の略号で表示しています。

確 第一種特定化学物質

本カタログ掲載品中の第一種特定化学物質該当製品

・ L-PFOS	P3
・ L-PFOSK	P3
・ brPFOSK	P3
・ T-PFOS	P3
・ PFS-MXA	P3
・ MPFOS	P3
・ M8PFOS	P3
・ PFAC-MXA	P4
・ PFAC-MXB	P4
・ MPFAC-MXA	P4
・ 4220-a (NMIJ 認証標準物質)	P12

(化学物質の審査及び製造等の規制に関する法律施行令第一条より)

ご購入をお考えの「第一種特定化学物質」該当製品がございましたら、下記までご連絡ください。該当製品の「確約書ひな型」をお送り致します。

株式会社 ウェリントン ラボラトリーズ ジャパン

TEL 03-5934-4184

E-mail : info@well-labs.co.jp

Wellington Laboratories Japan Inc.

www.well-labs.co.jp

第一種特定化学物質を輸入する為の「確約書」の記入例

(MPFAC-MXAを例にしてあります。)

確 約 書

平成 年 月 日

株式会社ウエリントン ラボラトリーズ ジャパン
代表取締役 加坂 達司 殿
輸入者 加坂 達司

(住所)

(名称)

(代表者役職名及び氏名) 公印

(使用者)

今般、貴社から購入予定の第一種特定化学物質は、「化学物質の審査及び製造等の規制に関する法律」(昭和48年法律第117号)第25条ただし書に規定する試験研究用として使用することを確約いたします。

1. 第一種特定化学物質の名称

PFOS又はその塩

2. 第一種特定化学物質の商品としての組成、数量及び荷姿

PFOS又はその塩: MPFAC-MXA

(PFOS又はその塩 1種類混合 メタノール溶液 1.2ml) ×1本

ガラスアンプル 組成表は別紙参照

3. 第一種特定化学物質を試験研究用に使用する事業所名、所在地、使用者の所属、

氏名及び電話番号

事業所名:

所在地:

所属:

氏名:

電話番号:

4. 試験研究の目的

目的:

水、土壌、大気等に含まれるPFOS又はその塩を定量分析することを目的とする。今回購入するPFOS又はその塩(MPFAC-MXA)は、液体クロマトグラフタンデム質量分析計(LCMSMS)にて正確に定量分析を行うための内部標準溶液として使用する。

内容:

今回購入するPFOS又はその塩(MPFAC-MXA)は、〇ng/mLに希釈し、内部標準溶液として1試料あたりその〇μLを試料に添加して使用する。

以上



Wellington Laboratories Japan Inc.

株式会社 ウェリントン ラボラトリーズ ジャパン

本社

〒177-0034 東京都練馬区富士見台1-22-12
TEL:03-5934-4184 E-mail:info@well-labs.co.jp

www.well-labs.co.jp

Wellington Laboratories Inc.

345 Southgate Drive, Guelph, ON, Canada N1G 3M5

www.well-labs.com

