



Cambridge Isotope Laboratories, Inc.
isotope.com

ENVIRONMENTAL STANDARDS

Per- and Polyfluoroalkyl Substances (PFAS)



Cambridge Isotope Laboratories, Inc.

North America: 1.800.322.1174 envsales@isotope.com | International: +1.978.749.8000 intlsales@isotope.com | fax: 1.978.749.2768 | isotope.com

Introduction

Per- and polyfluoroalkyl substances (PFAS) are a class of industrial chemicals that are used to resist grease, oil, water, and heat. They are most commonly used in the manufacture of water- and stain-resistant fabrics and carpeting, food packaging, and fire-fighting foams.

PFAS have been one of the most discussed classes of chemical pollutants in recent years due to their widespread use, prevalence and persistence in the environment, and human-exposure concerns. Regulatory agencies worldwide have begun proposing or enacting bans on certain PFAS compounds to protect the environment and

human health from additional PFAS accumulation and exposure. And with ever-decreasing allowable limits, the need for more analytical standards is increasingly important.

CIL has been working diligently to produce high-purity stable isotope-labeled and native individual and multi-component PFAS standards to assist with ongoing environmental and biomonitoring studies. More standards are being developed and released as new compounds of concern are identified and standardized methods are established.

Table of Contents

Perfluorocarboxylic Acids (PFCA)	3	Perfluorooctanesulfonamides (FOSA)	7
Perfluoroalkyl Sulfonates (PFAS)	4	Perfluorooctanesulfonamido Ethanols (FOSE)	7
PFOS/PFOA Mixtures	5	Bile Acid Salts	7
Fluoroethers and Polyethers	6	EPA Method 537.1 Mixtures	8
Other Fluorinated Compounds	6	EPA Method 533 Mixtures	9
Fluorotelomer Sulfonates (FTS)	6	UCMR 5 Supplemental Mixture	10
Fluorotelomer Alcohols (FTOH)	7	EPA Method 8327 Mixtures	11
Fluorotelomer Acids (FTA)	7	EPA Method 1633 Mixtures	12
Perfluorooctanesulfonamidoacetic Acids (FOSAA)	7	PFAS Mixtures	13

You can find all of the information presented in this catalog on isotope.com. Visitors to our website can immediately access updated product information, availability, pricing, and documentation, such as a certificates of analysis (CoA) and safety data sheets (SDS). Visit isotope.com to learn more.

Chemical purity for unlabeled/native compounds is 97-99% or greater unless otherwise specified; chemical purity for labeled compounds is 95-99% or greater unless otherwise specified.



Standards for Environmental Analysis

Through our collaborations with environmental testing laboratories, regulatory agencies, and research institutions around the world, CIL has developed numerous products to assist a wide range of testing applications. You will find more than 3,000 products developed specifically for trace and ultratrace analysis by isotope dilution mass spectrometry (IDMS). As new technology and methodologies advance, CIL maintains a leadership role in developing new standards and standard mixtures to keep pace with these new procedures. You will find throughout this catalog many new products developed in various solvents for use in not only new GC-MS applications, but also LC-MS methods that continue to gain importance as an integral part of the environmental testing laboratory.

Perfluorocarboxylic Acids (PFCA)

Catalog No.	Description	Concentration	Amount
CLM-11046-1.2	Sodium trifluoroacetate (TFA) ($^{13}\text{C}_2$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-11087-1.2	Sodium trifluoroacetate (TFA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-11324-A-1.2	Perfluoropropanoic acid (PFPrA) ($^{13}\text{C}_3$, 99%)	50 µg/mL in methanol (w/4 molar equivalent NaOH)	1.2 mL
ULM-11323-A-1.2	Perfluoropropanoic acid (PFPrA) (unlabeled)	50 µg/mL in methanol (w/4 molar equivalent NaOH)	1.2 mL
CLM-10883-1.2	Sodium perfluoro- <i>n</i> -butyrate (PFBA) (2,3,4- $^{13}\text{C}_3$, 99%)	50 µg/mL in methanol	1.2 mL
CLM-8173-1.2	Sodium perfluoro- <i>n</i> -butyrate (PFBA) ($^{13}\text{C}_4$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-11058-1.2	Sodium perfluoro- <i>n</i> -butyrate (PFBA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-10931-1.2	Sodium perfluoro- <i>n</i> -pentanoate (PFPeA) (pentanoyl- $^{13}\text{C}_5$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-10960-1.2	Sodium perfluoro- <i>n</i> -pentanoate (PFPeA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-8340-1.2	Sodium perfluoro- <i>n</i> -hexanoate (PFHxA) ($^{13}\text{C}_6$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-8342-1.2	Sodium perfluoro- <i>n</i> -hexanoate (PFHxA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-10624-1.2	Sodium perfluoro- <i>n</i> -heptanoate (PFHpA) ($^{13}\text{C}_7$, 99%)	50 µg/mL in methanol	1.2 mL
CLM-11723-1.2	Sodium perfluoro- <i>n</i> -heptanoic acid (PFHpA) (5,6,7- $^{13}\text{C}_3$, 99%)	100 µg/mL in methanol	1.2 mL
ULM-9516-1.2	Perfluoro- <i>n</i> -heptanoic acid (PFHpA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-8005-A-1.2	Perfluoro- <i>n</i> -octanoic acid (PFOA) ($^{13}\text{C}_8$, 99%)	50 µg/mL in methanol (w/4 molar equivalent NaOH)	1.2 mL
ULM-11782-1.2	Sodium perfluoro- <i>n</i> -octanoate (PFOA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-8060-1.2	Perfluoro- <i>n</i> -nonanoic acid (PFNA) ($^{13}\text{C}_9$, 99%)	50 µg/mL in methanol	1.2 mL
CLM-11537-1.2	Sodium perfluoro- <i>n</i> -nonanoate (PFNA) (1,2,3,4,5,6- $^{13}\text{C}_6$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-8066-1.2	Perfluoro- <i>n</i> -nonanoic acid (PFNA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-11039-1.2	Sodium perfluoro- <i>n</i> -decanoate (PFDA) ($^{13}\text{C}_9$, 99%)	50 µg/mL in methanol	1.2 mL
CLM-11538-1.2	Sodium perfluoro- <i>n</i> -decanoate (PFDA) (1,2,3,4,5,6- $^{13}\text{C}_6$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-11038-1.2	Sodium perfluoro- <i>n</i> -decanoate (PFDA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-8789-1.2	Sodium perfluoro- <i>n</i> -undecanoate (PFUA) ($^{13}\text{C}_9$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-8084-1.2	Sodium perfluoro- <i>n</i> -undecanoate (PFUA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-10593-1.2	Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA) ($^{13}\text{C}_{12}$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-10594-1.2	Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-9955-1.2	Perfluoro- <i>n</i> -tridecanoic acid (PFTrDA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-9956-1.2	Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-11544-1.2	Sodium perfluoro- <i>n</i> -hexadecanoate (PFHxDA) (1,2,3,4- $^{13}\text{C}_4$, 99%)	50 µg/mL in methanol	1.2 mL
ULM-10721-1.2	Perfluoro- <i>n</i> -hexadecanoic acid (PFHxDA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-10722-1.2	Perfluoro- <i>n</i> -octadecanoic acid (PFODA) (unlabeled)	50 µg/mL in methanol	1.2 mL

ES-5587	Perfluoroalkylcarboxylic acid (PFCA) C_4 - C_{14} Native Mixture	1.2 mL in methanol
---------	--	--------------------

Unlabeled	(ng/mL)*
Perfluoro- <i>n</i> -butyric acid (PFBA)	2000
Perfluoro- <i>n</i> -pentanoic acid (PFPA)	2000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)	2000
Perfluoro- <i>n</i> -heptanoic acid (PFHpA)	2000
Perfluoro- <i>n</i> -octanoic acid (PFOA)	2000
Perfluoro- <i>n</i> -nonanoic acid (PFNA)	2000
Sodium perfluoro- <i>n</i> -decanoate (PFDA)	2000
Sodium perfluoro- <i>n</i> -undecanoate (PFUA)	2000
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA)	2000
Perfluoro- <i>n</i> -tridecanoic acid (PFTrA)	2000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeA)	2000

*Gravimetric concentration is based on the salt form, where applicable.

Perfluoroalkyl Sulfonates (PFAS)

Catalog No.	Description	Concentration	Amount
ULM-11678-1.2	Sodium trifluoromethanesulfonate (PFMeS) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-11676-1.2	Sodium perfluoroethanesulfonate (PFETs) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-11655-1.2	Sodium perfluoro-1-propanesulfonate (PFPrS) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-9523-1.2	Potassium perfluoro-1-butanesulfonate (PFBS) (¹³ C ₄ , 99%)	50 µg/mL in methanol	1.2 mL
ULM-9521-1.2	Potassium perfluoro-1-butanesulfonate (PFBS) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-9520-1.2	Sodium perfluoro-1-pentanesulfonate (PFPeS) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-9526-1.2	Potassium perfluoro-1-hexanesulfonate (PFHxS) (¹³ C ₆ , 99%)	50 µg/mL in methanol	1.2 mL
ULM-12310-1.2	Potassium perfluoro-1-hexanesulfonate (PFHxS) (unlabeled) (linear isomer)	50 µg/mL in methanol	1.2 mL
ULM-9524-1.2	Potassium perfluorohexanesulfonate (PFHxS) (unlabeled) (mix of isomers)	50 µg/mL in methanol	1.2 mL
ULM-9531-1.2	Sodium perfluoro-1-heptanesulfonate (PFHpS) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-11340-1.2	Potassium perfluoro-1-octanesulfonate (PFOS) (¹³ C ₈ , 99%)	50 µg/mL in methanol	1.2 mL
CLM-11540-1.2	Potassium perfluoro-1-octanesulfonate (PFOS) (1,2,3,4,5- ¹³ C ₅ , 99%)	50 µg/mL in methanol	1.2 mL
ULM-11563-1.2	Potassium perfluoro-1-octanesulfonate (PFOS) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-9001-1.2	Sodium perfluoro-1-octanesulfonate (PFOS) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-10655-1.2	Perfluorooctanesulfonate (PFOS) (unlabeled) (mix of isomers)	50 µg/mL in methanol	1.2 mL
ULM-9530-1.2	Sodium perfluoro-1-nonanesulfonate (PFNS) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-12322-1.2	Potassium perfluoro-1-decanesulfonate (PFDS) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-11557-1.2	Potassium perfluoro-1-dodecanesulfonate (PFDoDS) (unlabeled)	50 µg/mL in methanol	1.2 mL

ES-5576-A	Perfluoroalkylsulfonate (PFAS) C ₄ -C ₁₀ Native Mixture	1.2 mL in methanol
-----------	---	--------------------

Unlabeled	(ng/mL)*
Potassium perfluoro-1-butanesulfonate (PFBS)	5000
Sodium perfluoro-1-pentanesulfonate (PFPeS)	5000
Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)	5000
Sodium perfluoro-1-heptanesulfonate (PFHpS)	5000
Sodium perfluoro-1-octanesulfonate (PFOS)	5000
Sodium perfluoro-1-nonanesulfonate (PFNS)	5000
Potassium perfluoro-1-decanesulfonate (PFDS)	5000

*Gravimetric concentration is based on the salt form, where applicable.

PFOS/PFOA Mixtures

Catalog No.	Description	Amount
ES-5570	PFOS/PFOA Calibration Series CS1-CS5	5 × 0.25 mL in methanol
ES-5570-CS0.25	PFOS/PFOA Calibration Series CS0.25	0.25 mL in methanol

All concentrations are in ng/mL*

Unlabeled	CS0.25**	CS1	CS2	CS3	CS4	CS5
Perfluoro- <i>n</i> -octanoic acid (PFOA)	0.5	2	10	50	200	1000
Sodium perfluoro-1-octanesulfonate (PFOS)	0.5	2	10	50	200	1000
Extraction						
Perfluoro- <i>n</i> -octanoic acid (PFOA) (¹³ C ₈ , 99%)	50	50	50	50	50	50
Sodium perfluoro-1-octanesulfonate (PFOS) (¹³ C ₈ , 99%)	50	50	50	50	50	50
Injection						
Perfluoro- <i>n</i> -nonanoic acid (PFNA) (¹³ C ₉ , 99%)	50	50	50	50	50	50

*Gravimetric concentration is based on the salt form, where applicable. **Not included in ES-5570 – available for separate purchase.

ES-5571	PFOS/PFOA Extraction Standard Mixture	3 mL in methanol
---------	---------------------------------------	------------------

Labeled	(ng/mL)*
Perfluoro- <i>n</i> -octanoic acid (PFOA) (¹³ C ₈ , 99%)	2000
Sodium perfluoro-1-octanesulfonate (PFOS) (¹³ C ₈ , 99%)	2000

*Gravimetric concentration is based on the salt form, where applicable.

ES-5572	PFOS/PFOA Injection Standard Mixture	3 mL in methanol
---------	--------------------------------------	------------------

Labeled	(ng/mL)*
Perfluoro- <i>n</i> -nonanoic acid (PFNA) (¹³ C ₉ , 99%)	2000

*Gravimetric concentration is based on the salt form, where applicable.

ES-5573	PFOS/PFOA Native Standard Mixture	1.2 mL in methanol
---------	-----------------------------------	--------------------

Unlabeled	(ng/mL)*
Perfluoro- <i>n</i> -octanoic acid (PFOA)	5000
Sodium perfluoro-1-octanesulfonate (PFOS)	5000

*Gravimetric concentration is based on the salt form, where applicable.

ES-5649	PFOS/PFOA/PFHxS Labeled Standard Mixture	1.2 mL in methanol
---------	--	--------------------

Labeled	(ng/mL)*
Sodium perfluoro-1-octanesulfonate (PFOS) (¹³ C ₈ , 99%)	2000
Perfluoro- <i>n</i> -octanoic acid (PFOA) (¹³ C ₈ , 99%)	2000
Potassium perfluoro-1-hexanesulfonate (PFHxS) (¹³ C ₆ , 99%)	2000

*Gravimetric concentration is based on the free acid, where applicable.

ES-5648	PFOS/PFOA/PFHxS Native Analyte Mixture	1.2 mL in methanol
---------	--	--------------------

Unlabeled	(ng/mL)*
Sodium perfluoro-1-octanesulfonate (PFOS)	5000
Perfluoro- <i>n</i> -octanoic acid (PFOA)	5000
Potassium perfluoro-1-hexanesulfonate (PFHxS)	5000

*Gravimetric concentration is based on the free acid, where applicable.

Fluoroethers and Polyethers

Catalog No.	Description	Concentration	Amount
CLM-11543-1.2	Sodium tetrafluoro-2-(heptafluoropropoxy)propanoate (HFPO-DA) "GenX" ($^{13}\text{C}_3$, 99%)	100 µg/mL in methanol	1.2 mL
ULM-11542-1.2	Sodium tetrafluoro-2-(heptafluoropropoxy)propanoate (HFPO-DA) "GenX" (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-11280-A-1.2	Dodecafluoro-3H-4,8-dioxanonanoic acid (DONA) (unlabeled)	100 µg/mL in methanol (w/4 molar equivalent NaOH)	1.2 mL
ULM-10843-1.2	Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9CI-PF3ONS) (F53B Major) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-10844-1.2	Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11CI-PF3OUdS) (F53B Minor) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-11230-1.2	Perfluoro-3,6-dioxo-4-methyl-7-octenesulfonic acid (Nafion BP1) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-11231-1.2	7H-Perfluoro-4-methyl-3,6-dioxaoctanesulfonic acid (Nafion BP2) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-11226-1.2	Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-12320-1.2	Perfluoro-2-methoxypropanoic acid (PMPA), sodium salt (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-12321-1.2	Perfluoro-2-ethoxypropanoic acid (PEPA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-11223-1.2	Perfluoro-2-methoxyacetic acid (PFMOAA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-10738-1.2	Perfluoro-3-methoxypropanoic acid (PFMPA) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-10739-1.2	Perfluoro-4-methoxybutanoic acid (PFMBA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-10734-1.2	Perfluoro-3,6-dioxahexanoic acid (PFDHA) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-11128-1.2	Perfluoro(2-ethoxyethane) sulfonic acid (PFEEA) (unlabeled)	50 µg/mL in methanol	1.2 mL

Other Fluorinated Compounds

Catalog No.	Description	Concentration	Amount
ULM-11073-1.2	Bis(1H,1H,2H,2H-perfluorodecyl) phosphate (8:2-DiPAP) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-11260-1.2	2,2-Difluoromalononic acid (MMF), sodium salt ($^{13}\text{C}_3$, 99%)	100 µg/mL in methanol	1.2 mL
ULM-12303-1.2	2,2-Difluoromalononic acid (MMF), sodium salt (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-11742-1.2	Lithium bis(trifluoromethanesulfonyl)imide (TFSI) (unlabeled)	100 µg/mL in methanol	1.2 mL

Fluorotelomer Sulfonates (FTS)

Catalog No.	Description	Concentration	Amount
CDLM-10753-1.2	Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	50 µg/mL in methanol	1.2 mL
ULM-10757-1.2	Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS) (unlabeled)	50 µg/mL in methanol	1.2 mL
CDLM-10752-1.2	Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	50 µg/mL in methanol	1.2 mL
ULM-10756-1.2	Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) (unlabeled)	50 µg/mL in methanol	1.2 mL
CDLM-10751-1.2	Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	50 µg/mL in methanol	1.2 mL
ULM-10755-1.2	Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) (unlabeled)	50 µg/mL in methanol	1.2 mL
CDLM-10750-1.2	Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	50 µg/mL in methanol	1.2 mL
ULM-10754-1.2	Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS) (unlabeled)	50 µg/mL in methanol	1.2 mL

ES-5661	Fluorotelomer Sulfonates (FTS) Labeled Standard Mixture	1.2 mL in methanol
ES-5661-2X	Fluorotelomer Sulfonates (FTS) Labeled Standard Mixture (2X Stock)	1.2 mL in methanol

Labeled

	ES-5661 (ng/mL)*	ES-5661-2X (ng/mL)*
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000	2000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000	2000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000	2000
Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000	2000

*Gravimetric concentration is based on the salt form, where applicable.

ES-5662	Fluorotelomer Sulfonates (FTS) Native Standard Mixture	1.2 mL in methanol
---------	--	--------------------

Unlabeled

	(ng/mL)*
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS) (unlabeled)	1000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) (unlabeled)	1000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) (unlabeled)	1000
Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS) (unlabeled)	1000

*Gravimetric concentration is based on the salt form, where applicable.

Fluorotelomer Alcohols (FTOH)

Catalog No.	Description	Concentration	Amount
ULM-10723-1.2	1H,1H,2H,2H-Perfluoro-1-hexanol (4:2 FTOH) (unlabeled)	100 µg/mL in methanol	1.2 mL
CDLM-10709-1.2	1H,1H,2H,2H-Perfluoro-1-octanol (6:2 FTOH) (1,2- ¹³ C ₂ , 99%; 1,1,2,2-D ₄ , 98%)	50 µg/mL in methanol	1.2 mL
ULM-10724-1.2	1H,1H,2H,2H-Perfluoro-1-octanol (6:2 FTOH) (unlabeled)	100 µg/mL in methanol	1.2 mL
CDLM-10712-1.2	1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH) (1,2- ¹³ C ₂ , 99%; 1,1,2,2-D ₄ , 98%) CP 95%	50 µg/mL in methanol	1.2 mL
ULM-10727-1.2	1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH) (unlabeled)	100 µg/mL in methanol	1.2 mL
CDLM-10715-1.2	1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2 FTOH) (1,2- ¹³ C ₂ , 99%; 1,1,2,2-D ₄ , 98%)	50 µg/mL in methanol	1.2 mL
ULM-11175-1.2	1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2 FTOH) (unlabeled)	50 µg/mL in methanol	1.2 mL

Fluorotelomer Acids (FTA)

Catalog No.	Description	Concentration	Amount
ULM-10725-1.2	2H,2H-Perfluorooctanoic acid (6:2 FTA) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-10726-1.2	2H,2H-Perfluorodecanoic acid (8:2 FTA) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-11532-1.2	2H,2H,3H,3H-Perfluorohexanoic acid (3:3 FTCA) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-11533-1.2	2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA) (unlabeled)	100 µg/mL in methanol	1.2 mL
ULM-11534-1.2	2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA) (unlabeled)	100 µg/mL in methanol	1.2 mL

Perfluorooctanesulfonamidoacetic Acids (FOSAA)

Catalog No.	Description	Concentration	Amount
DLM-10663-1.2	<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (<i>N</i> -methyl-D ₃ , 98%)	50 µg/mL in methanol	1.2 mL
ULM-10656-1.2	<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (unlabeled) (mix of isomers)	50 µg/mL in methanol	1.2 mL
DLM-10664-1.2	<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (<i>N</i> -ethyl-D ₅ , 98%)	50 µg/mL in methanol	1.2 mL
ULM-10657-1.2	<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (unlabeled) (mix of isomers)	50 µg/mL in methanol	1.2 mL

Perfluorooctanesulfonamides (FOSA)

Catalog No.	Description	Concentration	Amount
ULM-11129-1.2	Perfluorobutanesulfonamide (PFBSA) (unlabeled)	50 µg/mL in methanol	1.2 mL
ULM-11130-1.2	Perfluorohexanesulfonamide (PFHxSA) (unlabeled)	50 µg/mL in methanol	1.2 mL
CLM-11007-1.2	Perfluorooctanesulfonamide (PFOSA) (¹³ C ₈ , 99%)	50 µg/mL in methanol	1.2 mL
ULM-10977-1.2	Perfluorooctanesulfonamide (PFOSA) (unlabeled) (mix of isomers)	50 µg/mL in methanol	1.2 mL
ULM-11309-1.2	Perfluorooctanesulfonamide (PFOSA) (unlabeled) (linear isomer)	50 µg/mL in methanol	1.2 mL
DLM-10740-1.2	<i>N</i> -Methylperfluorooctanesulfonamide (<i>N</i> -MeFOSA) (D ₃ , 98%)	100 µg/mL in methanol	1.2 mL
ULM-10779-1.2	<i>N</i> -Methylperfluorooctanesulfonamide (<i>N</i> -MeFOSA) (unlabeled) (mix of isomers)	100 µg/mL in methanol	1.2 mL
DLM-10741-1.2	<i>N</i> -Ethylperfluorooctanesulfonamide (<i>N</i> -EtFOSA) (D ₅ , 98%)	100 µg/mL in methanol	1.2 mL
ULM-10780-1.2	<i>N</i> -Ethylperfluorooctanesulfonamide (<i>N</i> -EtFOSA) (unlabeled) (mix of isomers)	100 µg/mL in methanol	1.2 mL

Perfluorooctanesulfonamido Ethanols (FOSE)

Catalog No.	Description	Concentration	Amount
DLM-11035-1.2	<i>N</i> -Methylperfluorooctanesulfonamidoethanol (<i>N</i> -MeFOSE) (<i>N</i> -methyl-D ₃ , 98%)	50 µg/mL in methanol	1.2 mL
ULM-11034-1.2	<i>N</i> -Methylperfluorooctanesulfonamidoethanol (<i>N</i> -MeFOSE) (unlabeled) (mix of isomers)	50 µg/mL in methanol	1.2 mL
DLM-11037-1.2	<i>N</i> -Ethylperfluorooctanesulfonamidoethanol (<i>N</i> -EtFOSE) (<i>N</i> -ethyl-D ₅ , 98%)	50 µg/mL in methanol	1.2 mL
ULM-11036-1.2	<i>N</i> -Ethylperfluorooctanesulfonamidoethanol (<i>N</i> -EtFOSE) (unlabeled) (mix of isomers)	50 µg/mL in methanol	1.2 mL

Bile Acid Salts

Catalog No.	Description	Concentration	Amount
ULM-9943-0.01	Taurodeoxycholic acid (TDCA), sodium salt hydrate (unlabeled)	neat	0.01 g
ULM-9561-0.01	Taurochenodeoxycholic acid (TCDCA), sodium salt (unlabeled)	neat	0.01 g
ULM-9885-0.01	Tauroursodeoxycholic acid (TUDCA), dihydrate (unlabeled)	neat	0.01 g

EPA Method 537.1 Mixtures

Catalog No.	Description	Amount
ES-5631-A	Method 537.1 Analyte Primary Dilution Standard (PDS)	1.2 mL in methanol (with 4 molar equivalent NaOH)
	Unlabeled	(ng/mL)*
	Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)	2000
	Perfluoro- <i>n</i> -heptanoic acid (PFHpA)	2000
	Perfluoro- <i>n</i> -octanoic acid (PFOA)	2000
	Perfluoro- <i>n</i> -nonanoic acid (PFNA)	2000
	Sodium perfluoro- <i>n</i> -decanoate (PFDA)	2000
	Sodium perfluoro- <i>n</i> -undecanoate (PFUA)	2000
	Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA)	2000
	Perfluoro- <i>n</i> -tridecanoic acid (PFTrDA)	2000
	Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA)	2000
	Potassium perfluoro-1-butanesulfonate (PFBS)	2000
	Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)	2000
	Perfluorooctanesulfonate (PFOS) (mix of isomers)	2000
	<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (mix of isomers)	2000
	<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (mix of isomers)	2000
	Sodium tetrafluoro-2-(heptafluoropropoxy)propanoate (HFPO-DA) "GenX"	2000
	Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9CI-PF3ONS) (F53B Major)	2000
	Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11CI-PF3OUdS) (F53B Minor)	2000
	Dodecafluoro-3H-4,8-dioxanonanoic acid (DONA)	2000
	<i>*Gravimetric concentration is based on the free acid, where applicable.</i>	
ES-5610-A	Method 537.1 Internal Standard Primary Dilution Standard (ISPDS)	1.2 mL in methanol (with 4 molar equivalent NaOH)
	Labeled	(ng/mL)*
	Perfluoro- <i>n</i> -octanoic acid (PFOA) (¹³ C ₈ , 99%)	1000
	Potassium perfluoro-1-octanesulfonate (PFOS) (¹³ C ₈ , 99%)	3000
	<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (<i>N</i> -methyl-D ₃ , 98%)	4000
	<i>*Gravimetric concentration is based on the free acid, where applicable.</i>	
ES-5632-A	Method 537.1 Surrogate Primary Dilution Standard (SUR PDS)	1.2 mL in methanol (with 4 molar equivalent NaOH)
	Labeled	(ng/mL)*
	Sodium perfluoro- <i>n</i> -hexanoate (PFHxA) (¹³ C ₆ , 99%)	1000
	Sodium perfluoro- <i>n</i> -decanoate (PFDA) (¹³ C ₉ , 99%)	1000
	<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (<i>N</i> -ethyl-D ₅ , 98%)	4000
	Sodium tetrafluoro-2-(heptafluoropropoxy)propanoate (HFPO-DA) "GenX" (¹³ C ₃ , 99%)	1000
	<i>*Gravimetric concentration is based on the free acid, where applicable.</i>	

EPA Method 533 Mixture

Catalog No.	Description	Concentration	Amount
ES-5654	EPA Method 533 Native Analyte PDS	in methanol (with 4 molar equivalent NaOH)	1.2 mL
Unlabeled		(ng/mL)*	
Sodium perfluoro- <i>n</i> -butyrate (PFBA)		1000	
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA)		1000	
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)		1000	
Perfluoro- <i>n</i> -heptanoic acid (PFHpA)		1000	
Perfluoro- <i>n</i> -octanoic acid (PFOA)		1000	
Perfluoro- <i>n</i> -nonanoic acid (PFNA)		1000	
Sodium perfluoro- <i>n</i> -decanoate (PFDA)		1000	
Sodium perfluoro- <i>n</i> -undecanoate (PFUA)		1000	
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA)		1000	
Potassium perfluoro-1-butanefluorobutanesulfonate (PFBS)		1000	
Sodium perfluoro-1-pentanesulfonate (PFPS)		1000	
Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)		1000	
Sodium perfluoro-1-heptanesulfonate (PFHpS)		1000	
Perfluorooctanesulfonate (PFOS) (mix of isomers)		1000	
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)		1000	
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS)		1000	
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)		1000	
Sodium tetrafluoro-2-(heptafluoropropoxy)propanoate (HFPO-DA) "GenX"		1000	
Dodecafluoro-3H-4,8-dioxanonanoic acid (DONA)		1000	
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9CI-PF3ONS) (F53B Major)		1000	
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11CI-PF3OUdS) (F53B Minor)		1000	
Perfluoro-3-methoxypropanoic acid (PFMPA)		1000	
Perfluoro-4-methoxybutanoic acid (PFMBA)		1000	
Perfluoro-3,6-dioxahexanoic acid (PFDHA)		1000	
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)		1000	

*Gravimetric concentration is based on the free acid, where applicable.

EPA Method 533 Mixtures

Catalog No.	Description	Concentration	Amount
ES-5656	EPA Method 533 Isotope Dilution Standard PDS	in methanol (with 4 molar equivalent NaOH)	1.2 mL

Labeled	(ng/mL)*
Sodium perfluoro- <i>n</i> -butyrate (PFBA) (¹³ C ₄ , 99%)	500
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA) (¹³ C ₅ , 99%)	500
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA) (¹³ C ₆ , 99%)	500
Sodium perfluoro- <i>n</i> -heptanoate (PFHpA) (¹³ C ₇ , 99%)	500
Perfluoro- <i>n</i> -octanoic acid (PFOA) (¹³ C ₈ , 99%)	500
Perfluoro- <i>n</i> -nonanoic acid (PFNA) (¹³ C ₉ , 99%)	500
Sodium perfluoro- <i>n</i> -decanoate (PFDA) (¹³ C ₉ , 99%)	500
Sodium perfluoro- <i>n</i> -undecanoate (PFUA) (¹³ C ₉ , 99%)	500
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA) (¹³ C ₁₂ , 99%)	500
Potassium perfluoro-1-butanedisulfonate (PFBS) (¹³ C ₄ , 99%)	500
Potassium perfluoro-1-hexanedisulfonate (PFHxS) (¹³ C ₆ , 99%)	500
Potassium perfluoro-1-octanedisulfonate (PFOS) (¹³ C ₈ , 99%),	500
Sodium tetrafluoro-2-(heptafluoropropoxy)propanoate (HFPO-DA) "GenX" (¹³ C ₃ , 99%)	500
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS) (¹³ C ₂ , 99%; D ₄ , 98%)	2000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) (¹³ C ₂ , 99%; D ₄ , 98%)	2000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) (¹³ C ₂ , 99%; D ₄ , 98%)	2000

*Gravimetric concentration is based on the free acid, where applicable.

ES-5655*	EPA Method 533 Isotope Performance Standard PDS	in methanol (with 4 molar equivalent NaOH)	1.2 mL
----------	---	--	--------

Labeled	(ng/mL)**
Sodium perfluoro- <i>n</i> -butyrate (PFBA) (2,3,4- ¹³ C ₃ , 99%)	1000
Sodium perfluoro- <i>n</i> -octanoic acid (PFOA) (¹³ C ₆ , 99%)	1000
Potassium perfluoro-1-octanedisulfonate (PFOS) (¹³ C ₅ , 99%)	3000

*Currently in production. Please contact CIL or your CIL representative for a delivery estimate.

**Gravimetric concentration is based on the free acid, where applicable.

UCMR 5 Supplemental Mixture

Catalog No.	Description	Concentration	Amount
ES-5664	UCMR 5 Supplemental Native PFAS 4-Component Mix	in methanol (with 4 molar equivalent NaOH)	1.2 mL

Unlabeled	(ng/mL)*
<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (mix of isomers)	2000
<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (mix of isomers)	2000
Perfluoro- <i>n</i> -tridecanoic acid (PFTrA)	2000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeA)	2000

*Gravimetric concentration is based on the free acid, where applicable.

EPA Method 8327 Mixtures

Catalog No.	Description	Amount
ES-5643	Method 8327 Surrogate Spiking Mixture	1.2 mL in methanol (with 4 molar equivalent NaOH)
Labeled		(ng/mL)*
Sodium perfluoro- <i>n</i> -butyrate (PFBA) (2,3,4- ¹³ C ₃ , 99%)		1000
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA) (pentanoyl- ¹³ C ₅ , 99%)		1000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA) (¹³ C ₆ , 99%)		1000
Sodium perfluoro- <i>n</i> -heptanoate (PFHpA) (heptanoyl- ¹³ C ₇ , 99%)		1000
Perfluoro- <i>n</i> -octanoic acid (PFOA) (¹³ C ₈ , 99%)		1000
Perfluoro- <i>n</i> -nonanoic acid (PFNA) (¹³ C ₉ , 99%)		1000
Perfluoro- <i>n</i> -decanoic acid (PFDA) (¹³ C ₉ , 99%)		1000
Sodium perfluoro- <i>n</i> -undecanoate (PFUA) (¹³ C ₉ , 99%)		1000
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA) (dodecanoyl- ¹³ C ₁₂ , 99%)		1000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA) (¹³ C ₂ , 99%)		1000
Potassium perfluoro-1-butanefluorobutanesulfonate (PFBS) (¹³ C ₄ , 99%)		1000
Potassium perfluoro-1-hexanesulfonate (PFHxS) (¹³ C ₆ , 99%)		1000
Potassium perfluoro-1-octanesulfonate (PFOS) (¹³ C ₈ , 99%)		1000
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS) (¹³ C ₂ , 99%; D ₄ , 98%)		1000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) (¹³ C ₂ , 99%; D ₄ , 98%)		1000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) (¹³ C ₂ , 99%; D ₄ , 98%)		1000
Perfluorooctanesulfonamide (PFOSA) (¹³ C ₈ , 99%)		1000
<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (<i>N</i> -methyl-D ₃ , 98%)		1000
<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (<i>N</i> -ethyl-D ₅ , 98%)		1000
<i>*Gravimetric concentration is based on the free acid, where applicable.</i>		
ES-5642	Method 8327 Target Analyte Mixture	1.2 mL in methanol (with 4 molar equivalent NaOH)
Unlabeled		(ng/mL)*
Sodium perfluoro- <i>n</i> -butyrate (PFBA)		2000
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA)		2000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)		2000
Perfluoro- <i>n</i> -heptanoic acid (PFHpA)		2000
Perfluoro- <i>n</i> -octanoic acid (PFOA)		2000
Perfluoro- <i>n</i> -nonanoic acid (PFNA)		2000
Sodium perfluoro- <i>n</i> -decanoate (PFDA)		2000
Sodium perfluoro- <i>n</i> -undecanoate (PFUA)		2000
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA)		2000
Perfluoro- <i>n</i> -tridecanoic acid (PFTrDA)		2000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA)		2000
Potassium perfluoro-1-butanefluorobutanesulfonate (PFBS)		2000
Sodium perfluoro-1-pentanesulfonate (PFPeS)		2000
Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)		2000
Sodium perfluoro-1-heptanesulfonate (PFHpS)		2000
Perfluorooctanesulfonic acid (PFOS) (mix of isomers)		2000
Sodium perfluoro-1-nonanesulfonate (PFNS)		2000
Potassium perfluoro-1-decanesulfonate (PFDS)		2000
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)		2000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS)		2000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)		2000
Perfluorooctanesulfonamide (PFOSA) (mix of isomers)		2000
<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (mix of isomers)		2000
<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (mix of isomers)		2000
<i>*Gravimetric concentration is based on the free acid, where applicable.</i>		

EPA Method 1633 Mixtures

Catalog No.	Description	Amount
ES-5667	PFAS 40 Multi-Class Native Standard Solution	1.2 mL in methanol (with 4 molar equivalent NaOH)

Unlabeled	(ng/mL)*
Sodium perfluoro- <i>n</i> -butyrate (PFBA)	2000
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA)	1000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)	500
Perfluoro- <i>n</i> -heptanoic acid (PFHpA)	500
Perfluoro- <i>n</i> -octanoic acid (PFOA) (linear isomer only)	500
Perfluoro- <i>n</i> -nonanoic acid (PFNA) (linear isomer only)	500
Sodium perfluoro- <i>n</i> -decanoate (PFDA)	500
Sodium perfluoro- <i>n</i> -undecanoate (PFUA)	500
Sodium perfluoro- <i>n</i> -dodecanoate (PFDaA)	500
Perfluoro- <i>n</i> -tridecanoic acid (PFTrDA)	500
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA)	500
Potassium perfluoro-1-butanefluorobutanesulfonate (PFBS)	500
Sodium perfluoro-1-pentanesulfonate (PFPeS)	500
Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)	500
Sodium perfluoro-1-heptanesulfonate (PFHpS)	500
Perfluorooctanesulfonate (PFOS) (mix of isomers)	500
Sodium perfluoro-1-nonanesulfonate (PFNS)	500
Potassium perfluoro-1-decanesulfonate (PFDS)	500
Potassium perfluoro-1-dodecanesulfonate (PFDoDS)	500
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	2000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS)	2000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	2000
Perfluorooctanesulfonamide (PFOSA) (mix of isomers)	500
<i>N</i> -Methylperfluorooctanesulfonamide (<i>N</i> -MeFOSA) (mix of isomers)	500
<i>N</i> -Ethylperfluorooctanesulfonamide (<i>N</i> -EtFOSA) (mix of isomers)	500
<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (mix of isomers)	500
<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (mix of isomers)	500
<i>N</i> -Methylperfluorooctanesulfonamidoethanol (<i>N</i> -MeFOSE) (mix of isomers)	5000
<i>N</i> -Ethylperfluorooctanesulfonamidoethanol (<i>N</i> -EtFOSE) (mix of isomers)	5000
Sodium tetrafluoro-2-(heptafluoropropoxy) propanoic acid (HFPO-DA) "GenX"	2000
Dodecafluoro-3H-4,8-dioxananoic acid (DONA)	2000
Perfluoro-3-methoxypropanoic acid (PFMPA)	1000
Perfluoro-4-methoxybutanoic acid (PFMBA)	1000
Perfluoro-3,6-dioxahexanoic acid (PFDHA)	1000
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS) (F53B Major)	2000
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS) (F53B Minor)	2000
Perfluoro(2-ethoxyethane) sulfonic acid (PFEEA)	1000
2H,2H,3H,3H-Perfluorohexanoic acid (3:3 FTCA)	2500
2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	12,500
2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA) (mix of isomers)	12,500

*Gravimetric concentration is based on the free acid, where applicable.

ES-5669	8-Component PFAS 1633 Supplemental Mix	1.2 mL in methanol (with 4 molar equivalent NaOH)
---------	--	---

Unlabeled	(ng/mL)*
Perfluoropropanoic acid (PFPrA)	8000
Perfluoro- <i>n</i> -hexadecanoic acid (PFHxDA)	2000
Perfluoro- <i>n</i> -octadecanoic acid (PFODA)	2000
Sodium perfluoro-1-propanesulfonate (PFPrS)	2000
Perfluorobutanesulfonamide (PFBSA)	2000
Perfluorohexanesulfonamide (PFHxSA)	2000
Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS)	2000
Lithium bis(trifluoromethanesulfonyl)imide (TFSI)	2000

*Gravimetric concentration is based on the free acid, where applicable.

PFAS Mixture

Catalog No.	Description	Amount
ES-5665-1.2	PFAS RM-41 Native Spiking Mixture	1.2 mL in methanol (with 4 molar equivalent NaOH)
ES-5665	PFAS RM-41 Native Spiking Mixture	5 mL in methanol (with 4 molar equivalent NaOH)

Unlabeled	(ng/mL)*
Sodium perfluoro- <i>n</i> -butyrate (PFBA)	1000
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA)	1000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)	1000
Perfluoro- <i>n</i> -heptanoic acid (PFHpA)	1000
Perfluoro- <i>n</i> -octanoic acid (PFOA)	1000
Perfluoro- <i>n</i> -nonanoic acid (PFNA)	1000
Sodium perfluoro- <i>n</i> -decanoate (PFDA)	1000
Sodium perfluoro- <i>n</i> -undecanoate (PFUA)	1000
Sodium perfluoro- <i>n</i> -dodecanoate (PFDaA)	1000
Perfluoro- <i>n</i> -tridecanoic acid (PFTrDA)	1000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA)	1000
Perfluoro- <i>n</i> -hexadecanoic acid (PFHxDA)	1000
Perfluoro- <i>n</i> -octadecanoic acid (PFODA)	1000
Sodium perfluoro-1-propanesulfonate (PFPrS)	1000
Potassium perfluoro-1-butanesulfonate (PFBS)	1000
Sodium perfluoro-1-pentanesulfonate (PFPeS)	1000
Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)	1000
Sodium perfluoro-1-heptanesulfonate (PFHpS)	1000
Perfluorooctanesulfonate (PFOS) (mix of isomers)	1000
Sodium perfluoro-1-nonanesulfonate (PFNS)	1000
Potassium perfluoro-1-decanesulfonate (PFDS)	1000
Potassium perfluoro-1-dodecanesulfonate (PFDaDS)	1000
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	1000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS)	1000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	1000
Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS)	1000
Perfluorooctanesulfonamide (PFOSA) (mix of isomers)	1000
<i>N</i> -Methylperfluorooctanesulfonamide (<i>N</i> -MeFOSA) (mix of isomers)	1000
<i>N</i> -Ethylperfluorooctanesulfonamide (<i>N</i> -EtFOSA) (mix of isomers)	1000
<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (mix of isomers)	1000
<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (mix of isomers)	1000
<i>N</i> -Methylperfluorooctanesulfonamidoethanol (<i>N</i> -MeFOSE) (mix of isomers)	1000
<i>N</i> -Ethylperfluorooctanesulfonamidoethanol (<i>N</i> -EtFOSE) (mix of isomers)	1000
Sodium tetrafluoro-2-(heptafluoropropoxy) propanoic acid (HFPO-DA) "GenX"	1000
Dodecafluoro-3H-4,8-dioxanonanoic acid (DONA)	1000
Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF3ONS) (F53B Major)	1000
Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF3OUdS) (F53B Minor)	1000
Perfluoro-3-methoxypropanoic acid (PFMPA)	1000
Perfluoro-4-methoxybutanoic acid (PFMBA)	1000
Perfluoro-3,6-dioxahexanoic acid (PFDHA)	1000
Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	1000

*Gravimetric concentration is based on the free acid, where applicable.

PFAS Mixtures

Catalog No.	Description	Amount
ES-5640-A*	PFAS SIL Superfund Mixture 1	1.2 mL in methanol (with 4 molar equivalent NaOH)

Labeled	(ng/mL)**
Sodium perfluoro- <i>n</i> -butyrate (PFBA) ($^{13}\text{C}_3$, 99%)	1000
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA) ($^{13}\text{C}_5$, 99%)	1000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA) ($^{13}\text{C}_6$, 99%)	1000
Sodium perfluoro- <i>n</i> -heptanoate (PFHpA) ($^{13}\text{C}_7$, 99%)	1000
Perfluoro- <i>n</i> -octanoic acid (PFOA) ($^{13}\text{C}_8$, 99%)	1000
Perfluoro- <i>n</i> -nonanoic acid (PFNA) ($^{13}\text{C}_9$, 99%)	1000
Sodium perfluoro- <i>n</i> -decanoate (PFDA) ($^{13}\text{C}_9$, 99%)	1000
Sodium perfluoro- <i>n</i> -undecanoate (PFUA) ($^{13}\text{C}_9$, 99%)	1000
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA) ($^{13}\text{C}_{12}$, 99%)	1000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA) (1,2,3,4,5,6- $^{13}\text{C}_6$, 99%)	1000
Sodium perfluoro- <i>n</i> -hexadecanoate (PFHxDA) (1,2,3,4- $^{13}\text{C}_4$, 99%)	1000
Potassium perfluoro-1-butanefluorobutanesulfonate (PFBS) ($^{13}\text{C}_4$, 99%)	1000
Potassium perfluoro-1-hexanesulfonate (PFHxS) ($^{13}\text{C}_6$, 99%)	1000
Potassium perfluoro-1-octanesulfonate (PFOS) ($^{13}\text{C}_8$, 99%)	1000
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000
Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000
Perfluorooctanesulfonamide (PFOSA) ($^{13}\text{C}_8$, 99%)	1000
<i>N</i> -Methylperfluorooctanesulfonamide (<i>N</i> -MeFOSA) (D_3 , 98%)	1000
<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (D_3 , 98%)	1000
<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (D_5 , 98%)	1000
Sodium tetrafluoro-2-(heptafluoropropoxy)propanoate (HFPO-DA) "GenX" ($^{13}\text{C}_3$, 99%)	1000

*Currently in production. Please contact CIL or your CIL representative for a delivery estimate.

**Gravimetric concentration is based on the free acid, where applicable.

ES-5641*	PFAS SIL Superfund Mixture 2	1.2 mL in methanol (with 4 molar equivalent NaOH)
----------	------------------------------	---

Labeled	(ng/mL)**
Sodium perfluoro- <i>n</i> -butyrate (PFBA) ($^{13}\text{C}_3$, 99%)	1000
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA) ($^{13}\text{C}_5$, 99%)	1000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA) ($^{13}\text{C}_6$, 99%)	1000
Perfluoro- <i>n</i> -decanoic acid (PFDA) ($^{13}\text{C}_9$, 99%)	1000
Sodium perfluoro- <i>n</i> -undecanoate (PFUA) ($^{13}\text{C}_9$, 99%)	1000
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA) ($^{13}\text{C}_{12}$, 99%)	1000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA) ($^{13}\text{C}_2$, 99%)	1000
Potassium perfluoro-1-butanefluorobutanesulfonate (PFBS) ($^{13}\text{C}_4$, 99%)	1000
Potassium perfluoro-1-hexanesulfonate (PFHxS) ($^{13}\text{C}_6$, 99%)	1000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS) ($^{13}\text{C}_2$, 99%; D_4 , 98%)	1000
Perfluorooctanesulfonamide (PFOSA) ($^{13}\text{C}_8$, 99%)	1000

*Currently in production. Please contact CIL or your CIL representative for a delivery estimate.

**Gravimetric concentration is based on the free acid, where applicable.

PFAS Mixture

Catalog No.	Description	Amount
ES-5639-A	PFAS Superfund Mixture 1	1.2 mL in methanol (with 4 molar equivalent NaOH)
Unlabeled		(ng/mL)*
Sodium perfluoro- <i>n</i> -butyrate (PFBA)		2000
Sodium perfluoro- <i>n</i> -pentanoate (PFPeA)		2000
Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)		2000
Perfluoro- <i>n</i> -heptanoic acid (PFHpA)		2000
Perfluoro- <i>n</i> -octanoic acid (PFOA)		2000
Perfluoro- <i>n</i> -nonanoic acid (PFNA)		2000
Sodium perfluoro- <i>n</i> -decanoate (PFDA)		2000
Sodium perfluoro- <i>n</i> -undecanoate (PFUA)		2000
Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA)		2000
Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA)		2000
Perfluoro- <i>n</i> -hexadecanoic acid (PFHxDA)		2000
Perfluoro- <i>n</i> -octadecanoic acid (PFODA)		2000
Potassium perfluoro-1-butanesulfonate (PFBS)		2000
Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)		2000
Perfluorooctanesulfonate (PFOS) (mix of isomers)		2000
Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)		2000
Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS)		2000
Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)		2000
Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS)		2000
Perfluorooctanesulfonamide (PFOSA) (mix of isomers)		2000
<i>N</i> -Methylperfluorooctanesulfonamide (<i>N</i> -MeFOSA) (mix of isomers)		2000
<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (mix of isomers)		2000
<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (mix of isomers)		2000
Tetrafluoro-2-(heptafluoropropoxy) propanoic acid (HFPO-DA) "GenX"		2000

*Gravimetric concentration is based on the free acid, where applicable.

PFAS Mixture

Catalog No.	Description	Amount
ES-5636-A	PFAS EF-28 Native Mixture	1.2 mL in methanol
Unlabeled		(ng/mL)*
	Sodium perfluoro- <i>n</i> -butyrate (PFBA)	1000
	Sodium perfluoro- <i>n</i> -pentanoate (PFPeA)	1000
	Sodium perfluoro- <i>n</i> -hexanoate (PFHxA)	1000
	Perfluoro- <i>n</i> -heptanoic acid (PFHpA)	1000
	Perfluoro- <i>n</i> -octanoic acid (PFOA)	1000
	Perfluoro- <i>n</i> -nonanoic acid (PFNA)	1000
	Sodium perfluoro- <i>n</i> -decanoate (PFDA)	1000
	Sodium perfluoro- <i>n</i> -undecanoate (PFUA)	1000
	Sodium perfluoro- <i>n</i> -dodecanoate (PFDoA)	1000
	Perfluoro- <i>n</i> -tridecanoic acid (PFTrDA)	1000
	Perfluoro- <i>n</i> -tetradecanoic acid (PFTeDA)	1000
	Perfluoro- <i>n</i> -hexadecanoic acid (PFHxDA)	1000
	Perfluoro- <i>n</i> -octadecanoic acid (PFODA)	1000
	Potassium perfluoro-1-butanedisulfonate (PFBS)	1000
	Sodium perfluoro-1-pentanesulfonate (PFPeS)	1000
	Potassium perfluorohexanesulfonate (PFHxS) (mix of isomers)	1000
	Sodium perfluoro-1-heptanesulfonate (PFHpS)	1000
	Sodium perfluoro-1-octanesulfonate (PFOS)	1000
	Potassium perfluoro-1-decanedisulfonate (PFDS)	1000
	Sodium 1H,1H,2H,2H-perfluorohexanesulfonate (4:2 FTS)	1000
	Sodium 1H,1H,2H,2H-perfluorooctanesulfonate (6:2 FTS)	1000
	Sodium 1H,1H,2H,2H-perfluorodecanesulfonate (8:2 FTS)	1000
	Sodium 1H,1H,2H,2H-perfluorododecanesulfonate (10:2 FTS)	1000
	Perfluorooctanesulfonamide (PFOSA) (mix of isomers)	1000
	<i>N</i> -Methylperfluorooctanesulfonamide (<i>N</i> -MeFOSA) (mix of isomers)	1000
	<i>N</i> -Methylperfluorooctanesulfonamidoacetic acid (<i>N</i> -MeFOSAA) (mix of isomers)	1000
	<i>N</i> -Ethylperfluorooctanesulfonamidoacetic acid (<i>N</i> -EtFOSAA) (mix of isomers)	1000
	Bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2-DiPAP)	1000

*Gravimetric concentration is based on the free acid, where applicable.

Environmental products are distributed and sold worldwide via our extensive network. CIL's distributor listing is available at isotope.com.

To request a quotation or place an order, please contact Environmental Sales at:
North America: envsales@isotope.com | 1.978.749.8000 | 1.800.322.1174
International: intlsales@isotope.com | +1.978.749.8000



Solutions for a Greener World



Cambridge Isotope Laboratories, Inc. 3 Highwood Drive, Tewksbury, MA 01876 USA

tel: +1.978.749.8000 | fax: +1.978.749.2768 | 1.800.322.1174 (North America) | isotope.com

PFAS_CATALOG (2/6/25)
Supersedes all previously published literature