LGC | DR EHRENSTORFER™

REFERENCE MATERIAL CERTIFICATE ISO 17034

Certified Reference Material

This certificate is designed in accordance with ISO 17034 and ISO Guide 31. This certified reference material (CRM) was designed, produced and verified in accordance with ISO/IEC 17025, ISO 17034 and a registered quality management system ISO 9001.

Product Name
EPA Method 1633 PFAS Mixture 10 µg/mL in Methanol:Water

Product Code	Lot Number	Format	Expiry Date	Storage
DRE-A50000753MW	2-H539251MW	Multicomponent Solution	23 Jun 2028	-18ºC +/- 4ºC

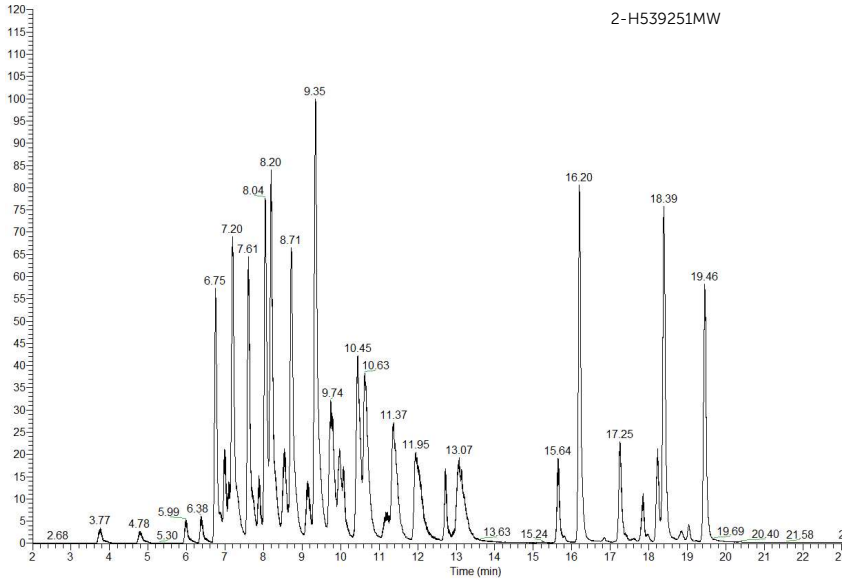
Compound Name	CERTIFIED Conc. (ug/mL)	Expanded Uncertainty U (ug/mL)	CAS	Lot No.	Purity (%)	Amount (mg)	RT (min)
heptafluorobutyric acid (PFBA)	9.91	.53	375-22-4	1306.421.1.1P	99.1	2.00	3.76
perfluoro-3-methoxypropanoic acid	9.965	.69	377-73-1	11259.421.2.1	99.2	2.01	4.79
nonafluoropentanoic acid	10.2	.41	2706-90-3	399.158.1P	99	2.06	5.98
Perfluoro-4-methoxybutanoic Acid	9.811	.39	863090-89-5	11882.158.1P	99	1.98	6.38
1H,1H,2H,2H-perfluorohexanesulfonic acid	9.8	.35	757124-72-4	9062.158.2P	100	1.96	6.75
perfluoro-3,6-dioxaheptanoic acid	9.811	.39	151772-58-6	10184.158.1P	99	1.98	6.99
perfluorohexanoic acid (PFHxA)	9.801	.4	307-24-4	2982.158.1P	99	1.98	7.10
perfluoro-1-butanesulfonic acid (PFBS)	9.811	.39	375-73-5	2978.158.1P	99	1.98	7.20
undecafluoro-2-methyl-3-oxahexanoic acid	10.17	1.1	13252-13-6	8474.421.1P	96.5	2.11	7.37
Perfluoro(2-ethoxyethane)sulfonic Acid	10.09	.53	113507-82-7	11025.286.2P	100	2.02	7.61
perfluoroheptanoic acid (PFHpA)	9.999	.41	375-85-9	2981.158.1P	99	2.02	7.89
Perfluoropentanesulfonic acid (PFPeS)	9.925	.55	2706-91-4	12182.551.1.1	99.25	2.00	8.05
3H-Perfluoro-4,8-dioxanonanoic acid	10.11	1.1	919005-14-4	10690.421.2P	90.3	2.24	8.19
6:2FTS	9.898	.4	27619-97-2	5909.158.2.1P	98	2.02	8.20
Perfluorooctanoic Acid	10.02	.35	335-67-1	2655.7.1P	98	2.04	8.53
perfluorohexanesulfonic acid (PFHS)	10.01	.4	355-46-4	9063.158.1.1P	95	2.11	8.72
perfluorononanoic acid (PFNA)	9.801	.4	375-95-1	2983.158.1P	99	1.98	9.14
perfluoroheptanesulfonic acid (PFHpS)	9.865	.34	375-92-8	8564.158.2P	100	1.97	9.35
3-Perfluoropropyl Propanoic Acid	10.19	.54	356-02-5	12382.286.1P	98	2.08	10.08
K 9Cl-PF3ONS as Free Acid	10.01	.51	73606-19-6	10891.286.1P	96	2.09	10.44
perfluoroundecanoic acid (PFUnDA)	9.98	.7	2058-94-8	3740.421.1.2P	99.8	2.00	10.44
Na PFNS as Free Acid	9.85	.4	98789-57-2	8570.286.1P	95	2.07	10.62
perfluorododecanoic acid (PFDoA)	10.2	.55	307-55-1	3738.158.2P	100	2.04	11.17
perfluorodecane sulfonic acid	9.88	.4	335-77-3	8033.286.1.7	95	2.08	11.37
perfluorotridecanoic acid (PFTrDA)	9.9	.69	72629-94-8	3739.421.1.1P	93.4	2.12	12.09
2H,2H,3H,3H-Perfluorooctanoic Acid	9.97	.53	914637-49-3	12681.286.1P	96.8	2.06	12.72
Perfluorododcanesulfonate as free acid	9.954	.69	1260224-54-1	12877.421.1P	92.9	2.14	13.07
perfluorotetradecanoic acid (PFTeDA)	10.18	.71	376-06-7	3737.421.2.1P	92.5	2.20	13.07
3-Perfluoroheptyl propanoic acid (7:3)	10	.7	812-70-4	8151.421.1P	97.1	2.06	15.65
perfluorooctane sulfonamide	9.991	.53	754-91-6	5605.421.2.3	97	2.06	16.20

Compound Name	CERTIFIED Conc. (ug/mL)	Expanded Uncertainty U (ug/mL)	CAS	Lot No.	Purity (%)	Amount (mg)	RT (min)
perfluorooctanesulfonic acid (PFOS)	10.19	.38	1763-23-1	2654.158.2P	98	2.08	16.20
N-methyl perfluorooctanesulfonamidoacetic	9.894	.53	2355-31-9	8137.286.2.1P	97	2.04	17.27
NMeFOSE	9.88	.4	24448-09-7	5918.286.1P	95	2.08	17.85
NEtFOSAA	9.975	.4	2991-50-6	8138.747.1P	95	2.10	18.23
N-methyl perfluorooctanesulfonamide	9.894	.4	31506-32-8	5920.286.1P	97	2.04	18.39
perfluorodecanoic acid (PFDA)	10.19	.41	335-76-2	2979.158.1P	98	2.08	18.39
K 11Cl-PF3OUdS as Free Acid	9.936	1.1	83329-89-9	10889.13158.	97.7	2.03	18.94
NEtFOSE	10.07	.41	1691-99-2	5919.286.1P	95	2.12	18.94
Sulfuramid	9.888	.4	4151-50-2	4743.286.1P	96	2.06	19.45
8:2FTS	10.09	.41	39108-34-4	7068.158.2P	97	2.08	19.46

The producer certifies that this reference material meets the specification stated in this certificate until the expiry date, provided it is stored unopened at the recommended temperature herein. Product warranties for this reference material are set out in the terms and conditions of purchase.

CERTIFIED BY	CERTIFIED ON		
HuiChen Stavros, Ph.D.	30 Jun 2025	HuiChen Stavros	RM Release

CHROMATOGRAM



Instrument
LC/HRMS – Negative Mode
Column/Flow
Vanquish C18+ 100 mm x 2.1 mm
ID 1.5 um Particle/ 0.2 ml/min

Method Details
Mobile Phase A: Water w/0.1% Acetic Acid
Mobile Phase B: Acetonitrile x/ 0.1% Acetic Acid

Time	%A	%B
0	90	10
1.0	95	5
22	5	95
22.5	5	95
28.5	90	10

Inj-vol
0.5 uL

Method of Preparation

The certified value is based on gravimetric and volumetric preparation of this CRM. This CRM has been confirmed by the appropriate analytical techniques.

Batch Information

Solvent: Methanol:Water 96%:4%, Lot no. 246208-ME: 061925, 200 mL

Sulfuramid : Linear:90%, Branched:10% perfluorooctane sulfonamide : Linear:98%, Branched:2% NMeFOSE : Linear:85.5%, Branched:14.5% NEtFOSE : Linear:60.5%, Branched:39.5% N-methyl perfluorooctanesulfonamide : Linear:98.3%, Branched:1.7% Perfluorooctanoic Acid : Linear:98.3%, Branched 1.7% perfluorononanoic acid (PFNA) : Linear isomer only N-methyl perfluorooctanesulfonamidoacetic acid : Linear:94.3%, Branched:5.7% NEtFOSAA : Linear: 85%, Branched: 10% perfluorooctanesulfonic acid (PFOS) : Branched: 66%, Linear: 33% perfluorohexanesulfonic acid (PFHS) : Linear:86.7%, Branched:13.3%

Concentrations are given as the free acid concentration when a salt was used as the starting material.

Intended Use

This CRM is intended for use in a laboratory as a calibration and quality control standard or in method development for analytical techniques.

Safety

Proper precautions should be observed while handling. See Safety Data Sheet.

Uncertainty

The certified value(s) and uncertainty(ies) are determined in accordance with ISO 17034 with an 95% confidence level (k=2). Uncertainty is based on the Total Combined Uncertainty, including uncertainties of preparation, purity of neat materials, homogeneity, long-term stability testing, and transportation stability.

Traceability

The balances used for gravimetric measurements are calibrated with weights traceable to the national standards (NIST). The calibration of the balances is verified daily internally and annually by an external accredited calibration service. Only Class A glassware is used for volumetric measurements.

Homogeneity

Random replicate samples of the final packaged CRM have been analysed to prove homogeneity consistent with ISO 17034.

Storage

The CRM should be stored in the original sealed bottle at the indicated temperature.

Instructions for Use

The CRM should be used shortly after opening to avoid concentration changes due to evaporation. It is recommended to use 1 µL as the minimum sample size. If storage after opening is necessary, it should be transferred to an amber vial with minimum head space and a Teflon lined silicon septum. If handled as recommended, use period after opening is a maximum of 187 days for an estimated 5% drift in concentration as a result of analyte and/or solvent transpiration. Visit the support section of our website lgcstandards.com for a series of Dr. Ehrenstorfer Tech Tip videos and frequently asked questions.

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The producer of this reference material is registered to ISO 9001:2015 under 56 100 19560019 by TUV USA and accredited to ISO 17025:2017 and ISO 17034:2016 by A2LA with the accreditation numbers 3031.01 and 3031.02.

ISO 17034 Accredited
Reference Material Producer
Cert. No. 3031.02