

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

Perfluoroundecanoic acid ¹³C2 (1,2-¹³C2) 50 µg/mL in Methanol:Water

Product Code

DRE-A15989002MW-50

Lot Number

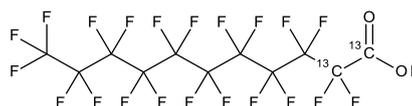
1-H1559646MW

CAS No.

960315-51-9

Format

Solution



Mol. Weight

566.08

Expiry Date

23 May 2028

Mol. Formula

¹³C₂C₉HF₂₁O₂

Storage Temp

-18°C ± 4°C

CERTIFIED

Concentration
50.01 µg/mL

CERTIFIED

Expanded Uncertainty (U)
2.20 µg/mL

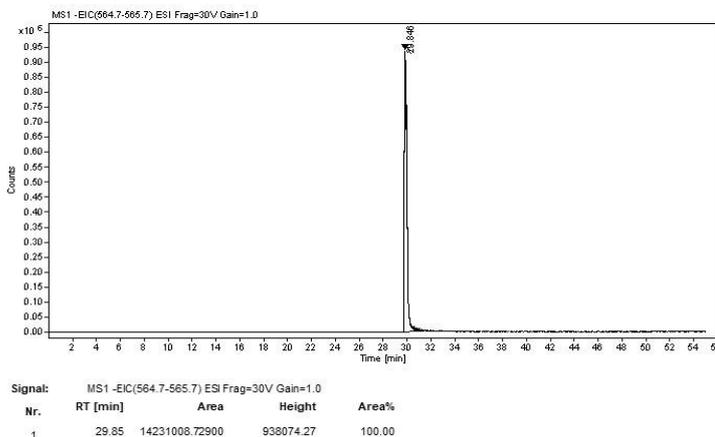
Uncertainty

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 and stability testing. Stability values are based on real evidence opposed to simulation.

The producer certifies that this certified 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 certified reference material are set out in the terms and conditions of purchase.

CERTIFIED BY		CERTIFIED ON	
L. Messerschmid	23 May 2025	<i>L. Messerschmid</i>	RM Release

CHROMATOGRAM



Instrument

HPLC/DAD+MS

Column

Synergi Polar-RP 4 µm 250 x 4.6 mm

Method Details

Eluent A: 100% Acetonitrile

Eluent B: Water + Formic Acid

Time [min]	Eluent A [%]	Eluent B [%]
0	10	90
2	10	90
47	98	2
52	98	2

Flow

0.5 mL/min

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, Lot No. V2N046033A20 / Water, Lot No. O044007, 96:4, 100.00 mL.

Isotopic composition about: 98,7% ¹³C₂; 1,3% ¹³C₁

Concentration calculation based on Combined Purity = Chemical Purity * Isotopic Value.

Gravimetric Data

Compound Name	Lot No.	Combined Purity (%)	Weight (mg)	Chemical Purity (%)	Isotopic Purity (%)
Perfluoroundecanoic acid ¹³ C ₂ (1,2- ¹³ C ₂)	1487961	93.4	5.354	94.1	99.3

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.

Traceability

The balances used for gravimetric measurements are calibrated with weights traceable to the national standards (DKD). The calibration of

the balances is verified daily internally and annually by an external accredited calibration service. Chromatographic methods are traceable to the International System of Units (SI).

Homogeneity

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

Storage

The CRM should be stored in the original sealed container 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 mL as the minimum sample size and if less material is used, to increase the certified uncertainty by a factor of two for half sample and four for a quarter of sample. If storage after opening is necessary, the CRM should be tightly closed and kept from light and moisture. If the CRM was in a sealed ampoule, it should be transferred to a vial with minimum head space. 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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LGC Labor GmbH is accredited by DAkkS as reference material producer on ISO 17034 (D-RM-19883-01-00).

All characterisation measurements at LGC Labor GmbH are accredited methods to ISO/IEC 17025.

