

MACHEREY-NAGEL

NUCLEODUR[®] PFAS and PFAS DELAY columns

Chromatography



Solutions for PFAS HPLC analysis

- Specially batch tested for PFAS analysis
- Highest batch-to-batch reproducibility
- Well suited for LC-MS detection

MACHEREY-NAGEL

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Solutions for PFAS HPLC analysis

More than 4730 compounds belong to the group of PFAS (which stands for per- and polyfluoroalkyl substances), which have been produced since the 1940s. Since these compounds do not originate in nature, global pollution is the result of human activities. PFAS are „forever chemicals“, chemicals that are very persistent in the environment and in the human body. For reliable PFAS analysis, we have developed products that are ideally suited for sample preparation, sample integrity and determination of these harmful substances by HPLC.

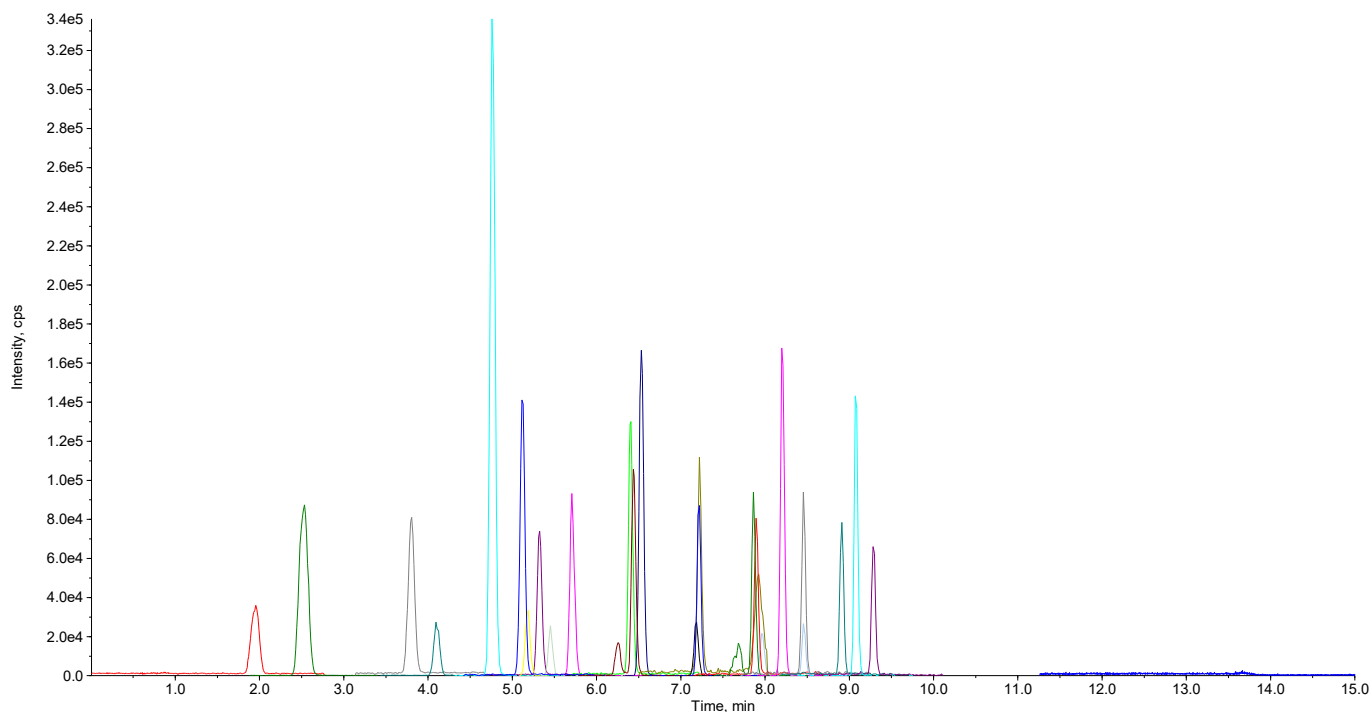
PFAS HPLC analysis from drinking water according to EPA 533

Chromatographic conditions	
Delay column	EC 50/2 NUCLEODUR® PFAS Delay, 5 µm (REF 760673.20)
Analytical column	EC 100/2 NUCLEODUR® PFAS, 3 µm (REF 760666.20)
Eluent A	5 mM ammonium acetate in water
Eluent B	5 mM ammonium acetate in water
Gradient	hold 40 % B for 1.0 min, in 8 min from 40 % B to 95 % B, hold 95 % B for 3.0 min, in 0.1 min to 40 % B, hold 40 % B for 2.9 min
Flow rate	0.3 mL/min
Temperature	40 °C
Injection volume	2 µL
Sample solution	Mixture of PFAS in methanol, concentration 1 ng/mL for each compound
Detection	MS

For more information



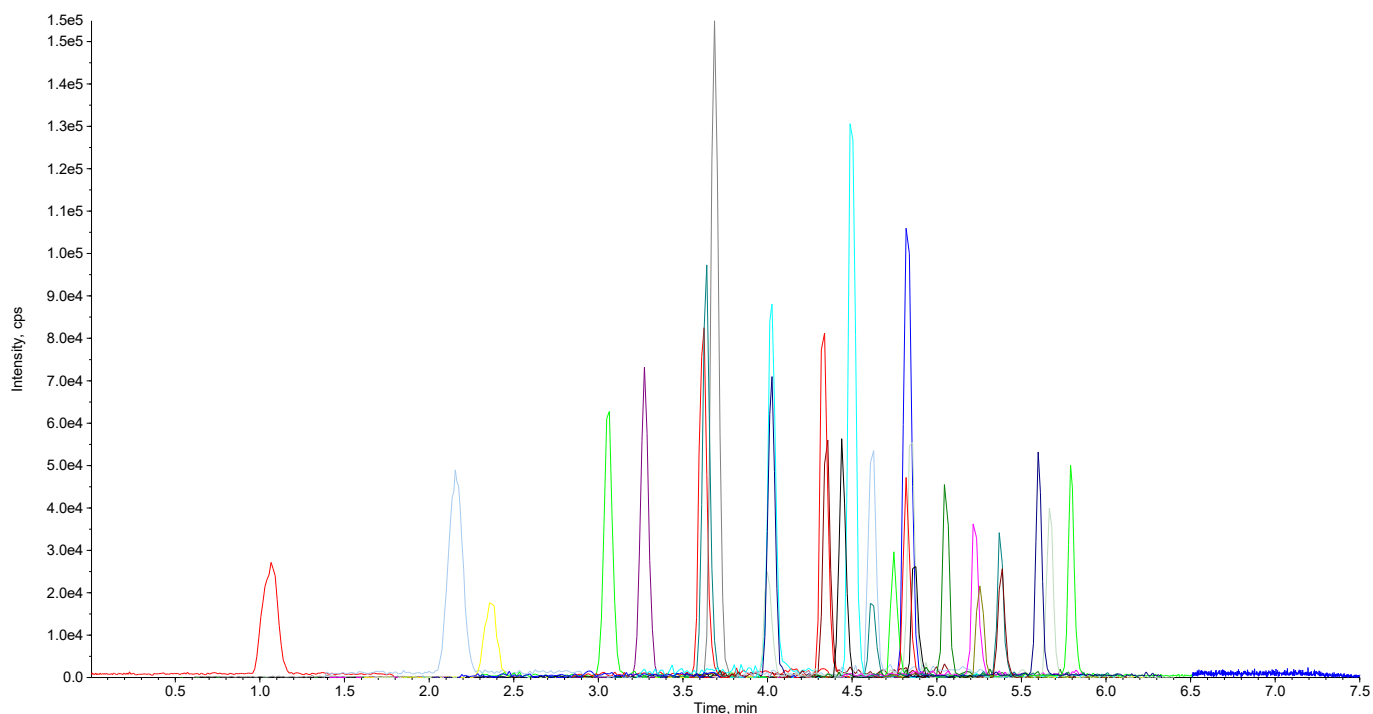
or visit our PFAS Landing page:
<https://www.mn-net.com/de/pfas>



Chromatogram of PFAS according to EPA 533 on NUCLEODUR® PFAS EC 100 x 2 mm column ($\beta = 1.0$ ng/mL for each compound).

PFAS HPLC analysis from drinking water according to ISO 21675:2019

Chromatographic conditions	
Delay column	EC 50/2 NUCLEODUR® PFAS Delay, 5 µm (REF 760673.20)
Analytical column	EC 50/2 NUCLEODUR® PFAS, 3 µm (REF 760663.20)
Eluent A	5 mM ammonium acetate in water
Eluent B	5 mM ammonium acetate in water
Gradient	hold 40 % B for 0.5 min, in 4 min from 40 % B to 95 % B, hold 95 % B for 1.5 min, in 0.05 min to 40 % B, hold 40 % B for 1.45 min
Flow rate	0.3 mL/min
Temperature	40 °C
Injection volume	2 µL
Sample solution	Mixture of PFAS in methanol, concentration 1 ng/mL for each compound
Detection	MS



Chromatogram of PFAS according to ISO 21675:2019 on NUCLEODUR® PFAS EC 50 x 2 mm column ($\beta = 1.0$ ng/mL for each compound).

The special HPLC columns: NUCLEODUR® PFAS and NUCLEODUR® PFAS Delay

NUCLEODUR® PFAS, 3 µm HPLC columns provide a solution for analyzing PFAS substances. This hydrophobic HPLC phase with a distinct polar selectivity is made of high purity, fully porous NUCLEODUR® silica gel and is extensively endcapped. These analytical columns show a high batch-to-batch reproducibility, are specially batch tested for PFAS analyses and are suitable for high sensitivity LC-MS detection due to low bleeding characteristics. NUCLEODUR® PFAS Delay columns provide high retention for PFAS compounds and are used to temporarily trap and retain PFAS contaminants from the HPLC system, which could otherwise falsify the sample to be analyzed, ensuring trace level analysis in your samples. For this purpose, the NUCLEODUR® PFAS Delay column is connected in flow direction between the mixing vessel and the sample injector (see next page).

For more information



or visit our PFAS Landing page:
<https://www.mn-net.com/de/pfas>

Technical data

- pH stability: 1–9
- Particle size: 3 µm (5 µm for delay column)
- Pore size: 110 Å
- Specific surface: 340 m²/g

For more information visit our website:
www.mn-net.com/chromatography

Solutions for PFAS HPLC analysis

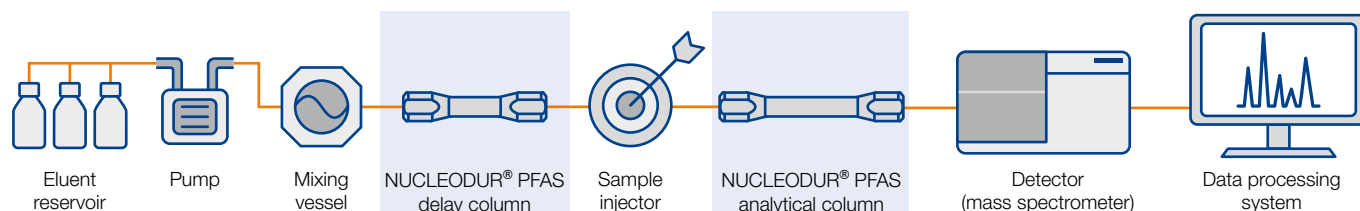
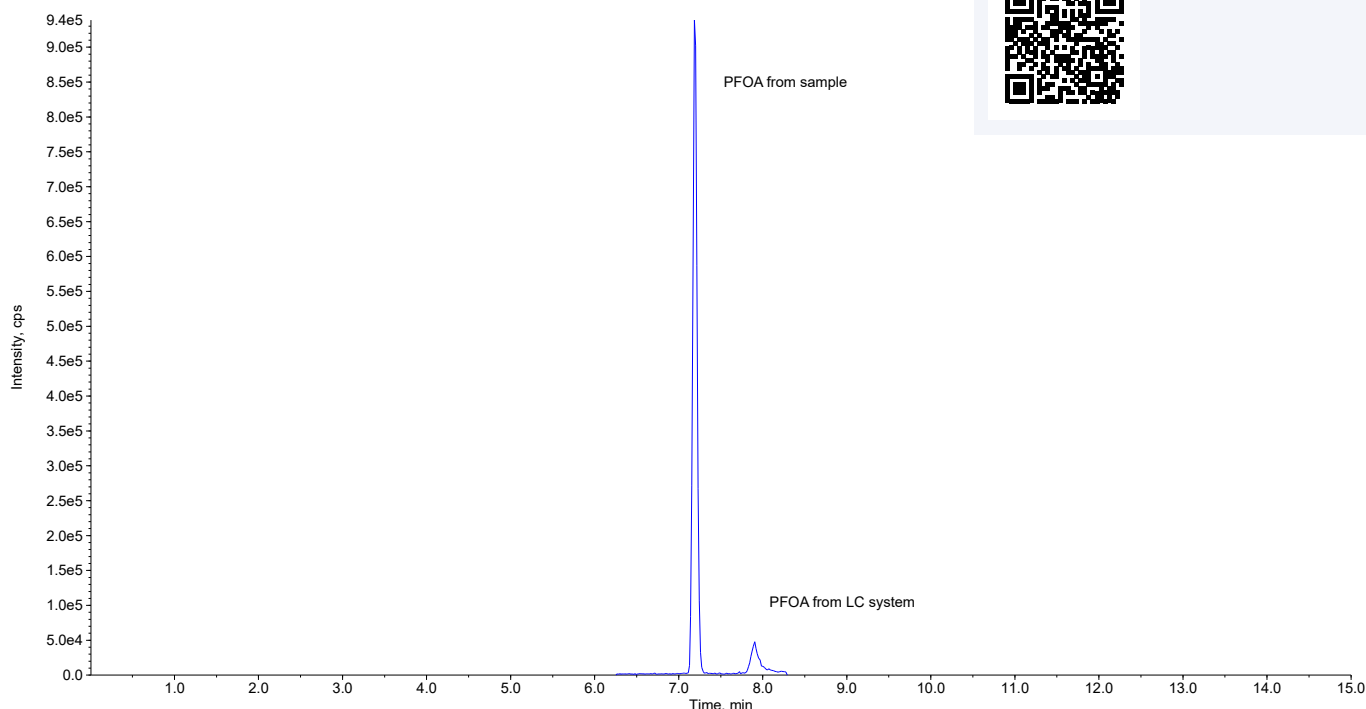


Illustration of installation and usage of a NUCLEODUR® PFAS Delay column.

The prevalence of PFOA is commonly observed as an instrument materials contaminant. The following figure shows the benefits of using a delay column 50 x 2 mm NUCLEODUR® PFAS Delay in combination with a 100 x 2 mm NUCLEODUR® PFAS analytical column.



The chromatogram shows the effectiveness of a NUCLEODUR® PFAS delay column by impeding the instrument PFOA contamination from the sample by 0.7 minutes (RT 7.21 min PFOA from sample, RT 7.91 min PFOA from LC system).

Ordering information

Product description HPLC columns	Article number / REF	Pack of
EC 100/2 NUCLEODUR® PFAS, 3 µm	760666.20	1 column
EC 50/2 NUCLEODUR® PFAS, 3 µm	760663.20	1 column
EC 50/2 NUCLEODUR® PFAS Delay, 5 µm	760673.20	1 column



NUCLEODUR® PFAS analytical HPLC column

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MACHEREY-NAGEL



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For more information

visit our PFAS Landing page:



Good to know

The MACHEREY-NAGEL application database provides over 3000 chromatography applications examples from HPLC, GC, TLC and SPE and is freely accessible:



<https://chromaAppDB.mn-net.com>

