NUCLEODUR® NH2 / NH2-RP

Amino modified HPLC phase

Some compounds, especially polar substances, cannot be sufficiently resolved on C_{18} phases. Polar-modified silica phases offer alternative selectivities thus expanding the spectrum of analytical HPLC into the polar range.

Multi-mode columns

Besides cyano modifications, amino modifications belong to the most frequently used polar silica phases. They both feature an important advantage – that they can be run in the RP and NP mode. RP mode using aqueous-organic eluent mixtures and NP mode with hexane as a possible mobile phase.

NUCLEODUR® NH2, belongs to the so-called multi-mode columns. It can be used for RP chromatography of polar compounds (such as sugars in aqueous-organic eluent systems), for NP chromatography of substituted aromatics or chlorinated pesticides with organic mobile phases (such as hexane, dichloromethane or 2-propanol), but also for ion exchange chromatography of anions and organic acids using conventional buffers and organic modifiers.

The main field of application of NUCLEODUR® NH2 is the separation of simple and complex sugars, sugar alcohols, and other hydroxy compounds under RP conditions as well as hydrocarbons under NP conditions.

Key features

- Multi-mode phase modification (for RP, NP and IC)
- Stable against hydrolysis at low pH and stable in 100 % aqueous eluents
- Widens scope of analytical HPLC into the polar range
- Suitable for LC/MS

Technical data

- Aminopropyl high purity phase; not endcapped
- Pore size 110 Å; particle sizes 3 µm, 5 µm and 7 µm; carbon content 2.5 %; pH stability 2–8
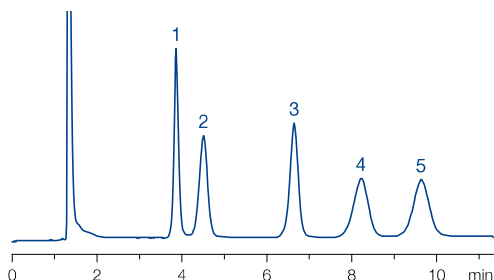
Recommended applications

- USP listing L8
- Polar compounds under RP conditions (sugars, DNA bases), hydrocarbons under NP conditions

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Reversed phase separation of sugars

MN Appl. No. 122160

Column:	250 x 4 mm NUCLEODUR® 100-5 NH2-RP
Eluent:	acetonitrile – water (79:21, v/v)
Flow rate:	2 mL/min
Detection:	RI

Peaks:
1. Fructose
2. Glucose
3. Saccharose
4. Maltose
5. Lactose

Normal phase separation of middle distillates in accordance with DIN EN 12916

MN Appl. No. 122180

Columns:	A) 250 x 4 mm NUCLEODUR® 100-5 NH2
	B) conventional aminopropyl phase
Eluent:	heptane
Flow rate:	1 mL/min
Detection:	RI

Peaks:
1. Cyclohexane
2. 1-Phenyldodecane
3. 1,2-Dimethylbenzene
4. Hexamethylbenzene
5. Naphthalene
6. Dibenzothiophene
7. 9-Methylanthracene
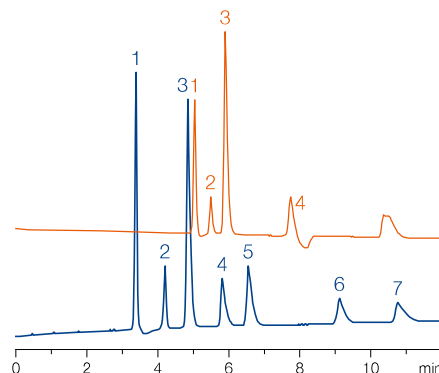
NUCLEODUR® NH2 / NH2-RP

Due to the special method of surface modification NUCLEODUR® NH2 features a pronounced stability at higher as well as lower pH values. The following figure shows, that even after several days of exposure of the column material at pH 1.75 good separation efficiency and peak symmetry are maintained. The resulting high column life allows cost reduction due to lower column consumption.

The following example shows enhanced pH stability of NUCLEODUR® NH2 and outstanding suitability for the separation of total herbicides (AMPA, glyphosate, glufonisate, …) - see application No. 122190 in our online database at ChromaAppDB.mn-net.com.

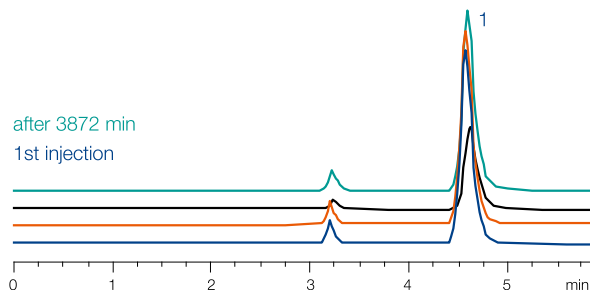Hydrolytical resistance of NUCLEODUR® NH2-RP

Column:	250 x 4 mm NUCLEODUR® 100-5 NH2-RP
Eluent:	acetonitrile – 50 mmol/L KH_2PO_4, pH 1.75 (50:50, v/v)
Flow rate:	0.6 mL/min
Detection:	UV, 254 nm

Peaks:
1. Aminomethylphosphonic acid (AMPA)

after 3872 min
1st injection

Based on spherical NUCLEODUR® silica this phase features a high pressure stability which makes it the perfect choice for preparative separations as well as for LC/MS. Additionally, the high batch-to-batch reproducibility of NUCLEODUR® NH2 enables reliable analyses especially for routine work.

Ordering information

NUCLEODUR® NH2-RP / NH2

Analytical EC columns NUCLEODUR® NH2-RP (pack of 1)

Length (mm)	ID (mm)	Particle size (µm)	REF	Guard columns*
250	4.6	5	760732.46	761953.30
250	4	5	760732.40	761953.30
250	2	5	760732.20	761953.20
125	4	5	760730.40	761953.30
250	4.6	3	760739.46	761951.30
150	4.6	3	760742.46	761951.30
100	2	3	760740.20	761951.20

Analytical EC columns NUCLEODUR® NH2 (pack of 1)

Length (mm)	ID (mm)	Particle size (µm)	REF	Guard columns*
250	4.6	5	760722.46	761952.30
250	4	5	760722.40	761952.30
125	4.6	5	760720.46	761952.30

* Pack of 3, EC guard columns require column protection system REF 718966. For more information, see page 90.

For more products and information
Or visit www.mn-net.com