

MACHEREY-NAGEL
NUCLEODUR®
C₁₈ Gravity-SB

Chromatography



Providing distinct polar selectivity in HPLC

- Hydrophobic C18 phase with polar selectivity
- Excellent performance under highly aqueous conditions
- Suitable for LC/MS

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NUCLEODUR® C₁₈ Gravity-SB

Key features

- Hydrophobic C18 phase with distinct polar selectivity, ideal for method development, better retention of early eluting substances
- Excellent performance under highly aqueous conditions
- Suitable for LC/MS due to low bleeding characteristics

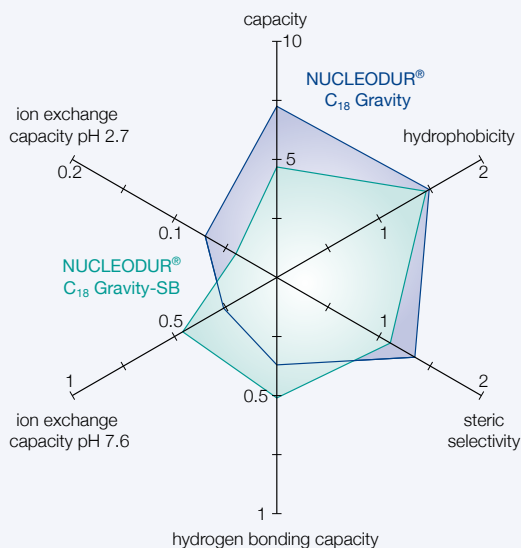
Technical characteristics

- Monomeric octadecyl silane with bulky side chains
- Pore size 110 Å, available particle sizes 1.8 µm, 3 µm and 5 µm
- Carbon content 13 %, pH stability 1–9, endcapped

Recommended application

- Overall sophisticated analytical separations, especially for polar compounds, e.g., antibiotics, water-soluble vitamins, organic acids

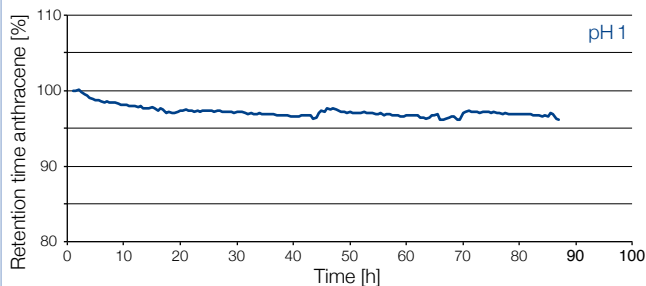
USP L1



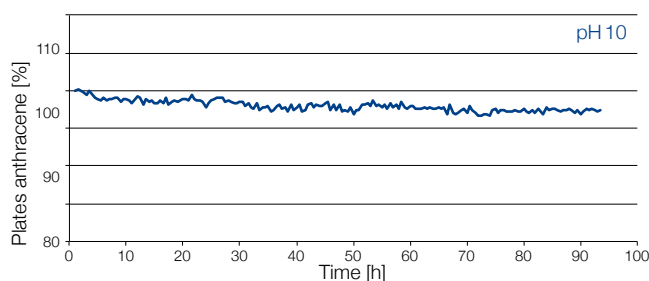
Stability of NUCLEODUR® C₁₈ Gravity-SB at extreme pH

MN Appl. No. 127280/127290

Column: EC 50/2 NUCLEODUR® C₁₈ Gravity-SB, 5 µm
 Eluent: 1 % TFA in water – 1 % TFA in methanol (30:70, v/v)
 Flow rate: 0.33 mL/min, temperature: 60 °C
 Detection: UV, 254 nm, injection: 2 µL (0.05 mg/mL)



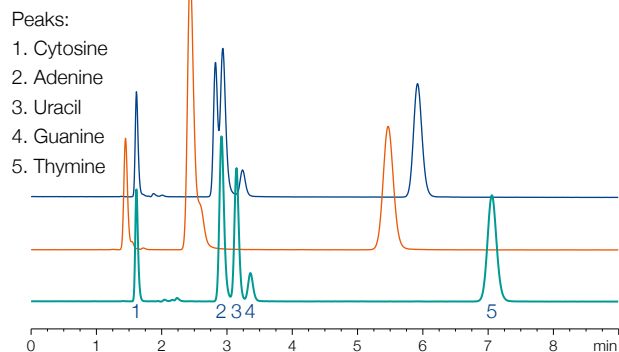
Column: EC 50/2 NUCLEODUR® C₁₈ Gravity-SB, 3 µm
 Eluent: 50 mmol/L NH₄Ac – methanol (30:70, v/v)
 Flow rate: 0.33 mL/min, temperature: 50 °C
 Detection: UV, 254 nm, injection: 2 µL (0.05 mg/mL)



Comparing of selectivity for nucleobases

MN Appl. No. 127270

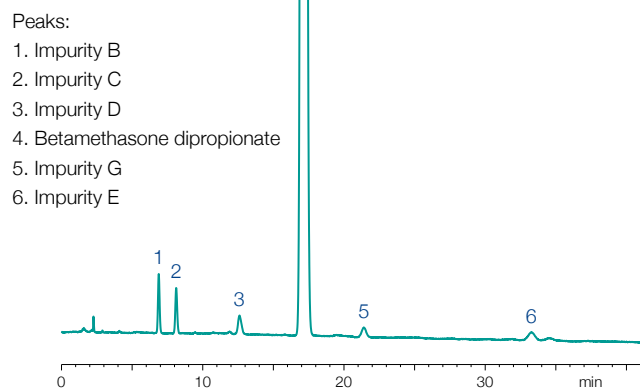
Columns: EC 150/4.6 mm
 NUCLEODUR® C₁₈ Gravity-SB, 5 µm
 NUCLEODUR® C₁₈ Gravity, 5 µm
 NUCLEODUR® C₁₈ Pyramid, 5 µm
 Eluent: 25 mmol/L KH₂PO₄, pH 3 – methanol (95:5, v/v)
 Flow rate: 1.0 mL/min, Temperature: 20 °C
 Detection: UV, 220 nm, Injection: 2.5 µL (1 mg/mL)



Purity control of betamethasone dipropionate (Ph. Eur.)

MN Appl. No. 127310

Column: EC 250/4.6 NUCLEODUR® C₁₈ Gravity-SB, 5 µm
 Eluent: Acetonitrile – water (60:40, v/v)
 Flow rate: 1 mL/min
 Temperature: 22 °C
 Detection: UV, 254 nm
 Injection: 20 µL



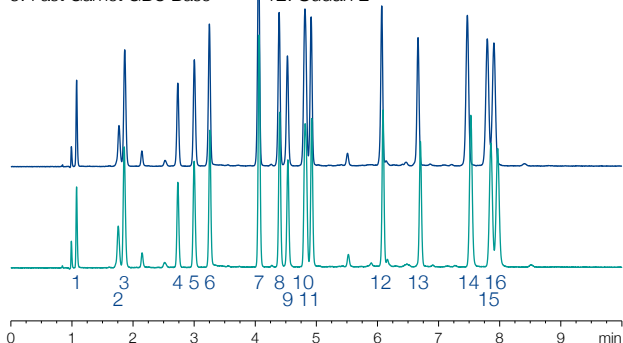
Stability at 70 °C (dyes)

MN Appl. No. 127300

Column: EC 150/3 NUCLEODUR® C₁₈ Gravity-SB, 3 µm
 1st injection, 500th injection
 Eluent: A) 10 mmol/L NH₄Ac pH 4.5; B) methanol;
 65–95 % B in 5 min, 95 % B for 10 min
 Flow rate: 0.8 mL/min
 Temperature: 70 °C
 Detection: UV, 432 nm
 Injection: 2 µL, 500 injections

Peaks:

- | | | |
|-------------------------|------------------|------------------|
| 1. 4-Nitroaniline | 7. Sudan Yellow | 13. Sudan 3 |
| 2. Orange 2 | 8. Para Red | 14. Sudan Red 7B |
| 3. Metanil Yellow | 9. Toluidine Red | 15. Sudan Red B |
| 4. Sudan Orange G | 10. Sudan Red G | 16. Sudan 4 |
| 5. Rhodamine B | 11. Sudan 1 | |
| 6. Fast Garnet GBC Base | 12. Sudan 2 | |



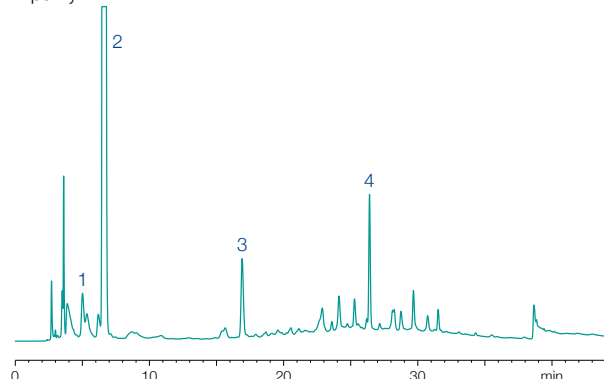
Purity control of cefepime dihydrochloride (Ph. Eur.)

MN Appl. No. 127320

Column: EC 250/4.6 NUCLEODUR® C₁₈ Gravity-SB, 5 µm
 Eluent: A) 5 mmol/L KH₂PO₄ pH 5 – acetonitrile (90:10, v/v);
 B) 5 mmol/L KH₂PO₄ pH 5 – acetonitrile (50:50, v/v);
 0 % B (10 min) to 50 % B in 20 min, 50 % B (5 min) to
 100 % B in 1 min (9 min 100 % B)
 Flow rate: 1 mL/min
 Temperature: 22 °C
 Detection: UV, 254 nm
 Injection: 10 µL

Peaks:

1. Impurity F
2. Cefepime
3. Impurity A
4. Impurity B



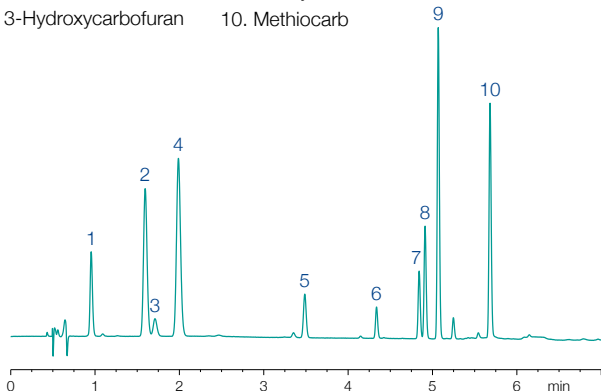
Carbamates (EPA 531.1)

MN Appl. No. 127360

Column: EC 100/3 NUCLEODUR® C₁₈ Gravity-SB, 3 µm
 Eluent: A) acetonitrile;
 B) 5 mmol/L ammonium formate
 15 % A (1 min) to 75 % A in 4 min, to 85 % A in 2 min
 Flow rate: 1.0 mL/min
 Temperature: 20 °C
 Detection: UV, 230 nm
 Injection: 1 µL (0.25 mg/mL)

Peaks:

- | | |
|------------------------|----------------|
| 1. Aldicarb sulfoxide | 6. Aldicarb |
| 2. Aldicarb sulfone | 7. Propoxur |
| 3. Oxamyl | 8. Carbofuran |
| 4. Methomyl | 9. Carbaryl |
| 5. 3-Hydroxycarbofuran | 10. Methiocarb |



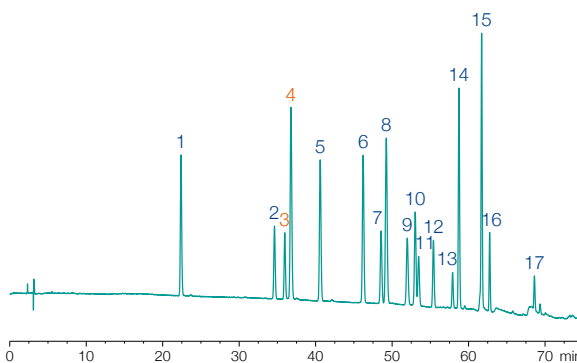
Pesticide mix (Ehrenstorfer, 17 components)

MN Appl. No. 127330

Column: EC 250/4.6 NUCLEODUR® C₁₈ Gravity-SB, 3 µm
 Eluent: A) Acetonitrile
 B) 5 mmol/L NH₄Ac;
 10–37.5 % A in 50 min, 37.5–75 % A in 25 min
 Flow rate: 1.1 mL/min
 Temperature: 35 °C
 Detection: UV, 230 nm
 Injection: 3 µL

Peaks:

- | | | |
|-----------------------|------------------|-------------------|
| 1. Desethylatrazine | 7. Chlortoluron | 13. Metazachlor |
| 2. Metoxuron | 8. Atrazine | 14. Sebuthylazin |
| 3. Hexazinone | 9. Monolinuron | 15. Terbutylazine |
| 4. Simazine | 10. Isoproturon | 16. Linuron |
| 5. Cyanazine | 11. Diuron | 17. Metolachlor |
| 6. Methabenzthiazuron | 12. Metobromuron | |



NUCLEODUR® C₁₈ Gravity-SB

Ordering information

Eluent in column acetonitrile – water

| Length | 30 mm | 50 mm | 75 mm | 100 mm | 125 mm | 150 mm | 250 mm |
|----------------------------------------------------------------------------------|-----------|----------------------|-----------|------------------------|------------|------------------------|------------|
| NUCLEODUR® C₁₈ Gravity-SB, 1.8 µm particle size 1.8 µm · UHPLC | | | | | | | |
| EC columns (pack of 1 column) | | particle size 1.8 µm | | | | | |
| 2 mm ID | 760591.20 | 760593.20 | 760595.20 | 760596.20 | | 760598.20 | |
| 3 mm ID | 760591.30 | 760593.30 | | 760596.30 | | | |
| 4 mm ID | 760591.40 | 760593.40 | | 760596.40 | | | |
| 4.6 mm ID | 760591.46 | 760593.46 | | 760596.46 | | | |
| EC guard columns* | | 4 x 2 mm: 761990.20 | | 4 x 3 mm: 761990.30 | | | |
| NUCLEODUR® C₁₈ Gravity-SB, 3 µm particle size 3 µm | | | | | | | |
| EC columns (pack of 1 column) | | | | | | | |
| 2 mm ID | | 760603.20 | | 760606.20 | 760607.20 | 760608.20 | 760609.20 |
| 3 mm ID | | 760603.30 | | 760606.30 | 760607.30 | 760608.30 | 760609.30 |
| 4 mm ID | | 760603.40 | | 760606.40 | 760607.40 | 760608.40 | 760609.40 |
| 4.6 mm ID | | 760603.46 | 760605.46 | 760606.46 | 760607.46 | 760608.46 | 760609.46 |
| EC guard columns* | | 4 x 2 mm: 761991.20 | | 4 x 3 mm: 761991.30 | | | |
| NUCLEODUR® C₁₈ Gravity-SB, 5 µm particle size 5 µm | | | | | | | |
| EC columns (pack of 1 column) | | | | | | | |
| 2 mm ID | | 760613.20 | | 760616.20 | 760617.20 | 760618.20 | 760619.20 |
| 3 mm ID | | 760613.30 | | 760616.30 | 760617.30 | 760618.30 | 760619.30 |
| 4 mm ID | | 760613.40 | | 760616.40 | 760617.40 | 760618.40 | 760619.40 |
| 4.6 mm ID | | 760613.46 | 760615.46 | 760616.46 | 760617.46 | 760618.46 | 760619.46 |
| EC guard columns* | | 4 x 2 mm: 761992.20 | | 4 x 3 mm: 761992.30 | | | |
| NUCLEODUR® C₁₈ Gravity-SB, 5 µm particle size 5 µm | | | | | | | |
| VarioPrep columns (pack of 1 column) | | | | | | | |
| 10 mm ID | | 762350.100 | | | 762351.100 | | 762353.100 |
| 21 mm ID | | 762350.210 | | | 762351.210 | | 762353.210 |
| 32 mm ID | | | | | | | 762353.320 |
| 40 mm ID | | | | | | 762352.400 | 762353.400 |
| VP guard columns** | | 10 x 8 mm: 762354.80 | | 10 x 16 mm: 762354.160 | | 15 x 32 mm: 762355.320 | |

Guard column systems

| Guard columns for EC columns with ID | | 2 mm | 3 mm | 4 mm | 4.6 mm |
|----------------------------------------------|----|----------|-----------|-----------|---------|
| * EC guard columns (pack of) | EC | 4/2 (3) | 4/3 (3) | 4/3 (3) | 4/3 (3) |
| Column Protection System guard column holder | | 718966 | 718966 | 718966 | 718966 |
| Guard columns for VarioPrep columns with ID | | 8, 10 mm | 16, 21 mm | 32, 40 mm | |
| **VP guard columns (pack of) | VP | 10/8 (2) | 10/16 (2) | 15/32 (1) | |
| VP guard column holder | | 718251 | 718256 | 718253 | |

Column Protection System

The innovative guard column system for analytical HPLC columns



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