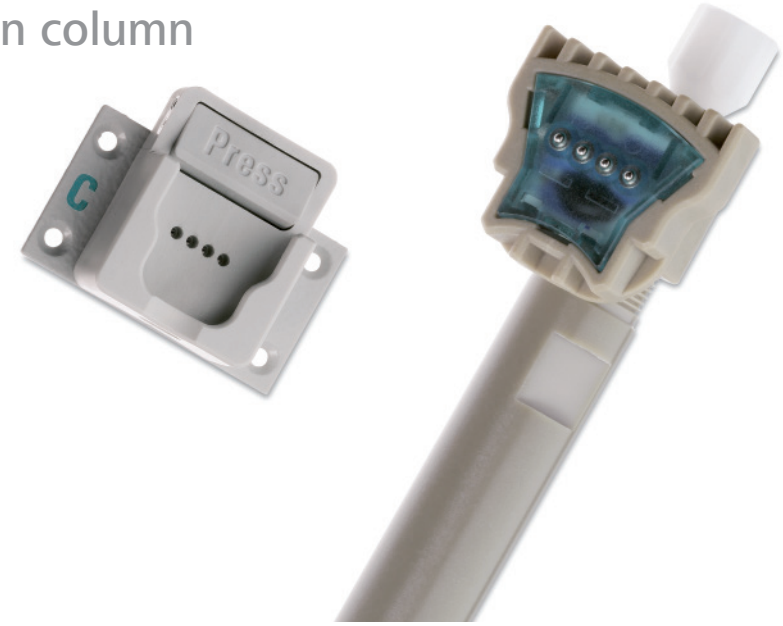
Metrosep Carb 2

Carbohydrate separation column for ion chromatography

Metrohm

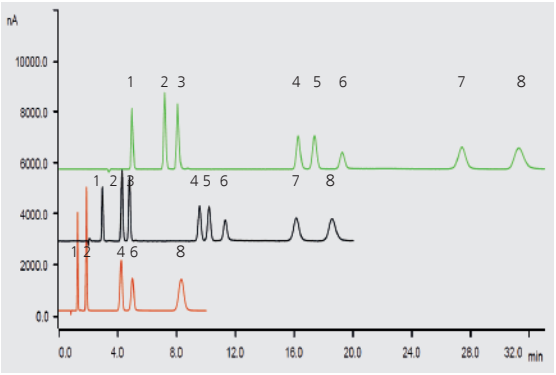
Carbohydrate analysis with the Metrosep Carb 2 separation column

Metrohm is continually expanding its own range of columns and improving existing separation column types using state-of-the-art manufacturing processes and materials. The result is columns with excellent separating efficiency, short retention times, high stability, and low costs per injection.



The high-capacity Metrosep Carb 2 carbohydrate separation column is available as an iColumn. «i» stands for intelligent: In addition to the serial number of the column, all of its function parameters (e.g., maximum permissible pressure and maximum permissible flow) are saved on a single chip. Furthermore, data such as the operating hours and the number of determinations is recorded automatically and is made available to the IC system for monitoring the optimum performance of the column.

The Metrosep carbohydrate separation column is available in three lengths (100, 150, and 250 mm), each with inner diameters of 4.0 and 2.0 mm. It is ideally suited to the separation of sugar alcohols, monosaccharides, and disaccharides.



Column dimensions (mm)		100/4.0	150/4.0	250/4.0
1	2.5 mg/L inositol	×	×	×
2	5 mg/L arabitol	×	×	×
3	5 mg/L sorbitol		×	×
4	5 mg/L glucose	×	×	×
5	5 mg/L xylose		×	×
6	5 mg/L fructose	×	×	×
7	10 mg/L lactose		×	×
8	15 mg/L sucrose	×	×	×

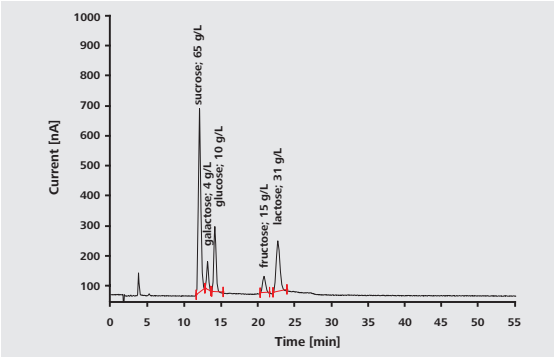
Effect of the column length on the resolution and the analysis times under standard conditions using pulsed amperometric detection: Eluent: 100 mmol/L sodium hydroxide + 10 mmol/L sodium acetate, column temperature 30°C; sample volume 20 µL. Flow for 100 mm column 0.8 mL/min, for 150 and 250 mm columns 0.5 mL/min, amperometric detector: PAD mode, WE: Au, RE: Pd, working potential: 50 mV

Applications

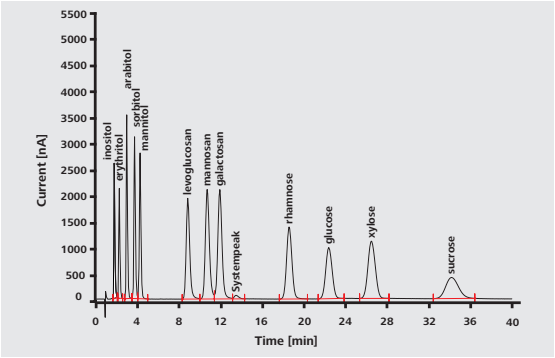
The Metrosep Carb 2 is ideally suited for routine analysis of carbohydrates and their derivatives. It has applications across a range of industries: Water and environmental analysis, in the pharmaceutical and food industries, forensic analysis, quality control of biofuels and cosmetics, and in life sciences.

Typical applications

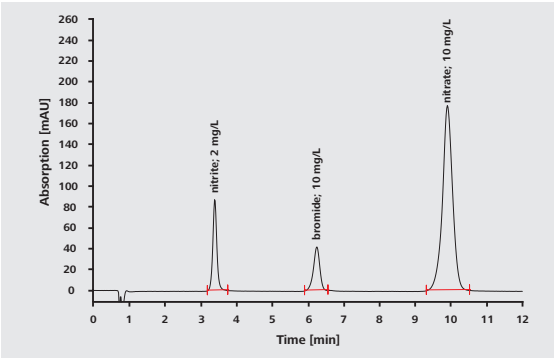
- Sugars, e.g. monosaccharides, oligosaccharides, and polysaccharides, etc.
- Sugar alcohols, polyols, glycols, etc.
- Amino sugars, e.g. aminoglucose, galactosamine, etc.
- Anhydrous sugars, e.g. levoglucosan, galactosan, mannosan, etc.
- Saccharic acids, e.g. glucuronic acid, gluconic acid, sialic acid, etc.
- Substituted sugar compounds, e.g. glucose-6-phosphate, 2-fluoro-2-deoxy-D-glucose, etc.
- Nitrite, bromide, nitrate in seawater with UV/VIS detection



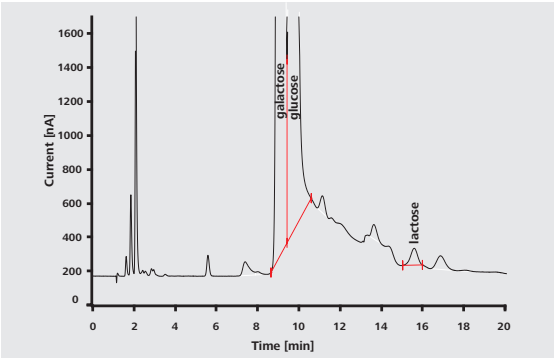
Sugar determination in yogurt using Inline Dialysis
Metrosep Carb 2 - 150/2.0
5 mmol/L sodium hydroxide / 2 mmol/L sodium acetate, column temperature 40°C; sample volume 5 µL, flow 0.13 mL/min, amperometric detector: PAD mode, WE: Au, RE: Pd, working potential: 50 mV



Air particle analysis of tracers such as levoglucosan from wood burning sources
Metrosep Carb 2 - 150/4.0
10 mmol/L sodium hydroxide, column temperature 45°C; sample volume 100 µL, flow 1.0 mL/min, amperometric detector: PAD mode, WE: Au, RE: Pd, working potential: 50 mV



Seawater analysis after Inline Ultrafiltration
Metrosep Carb 2 - 100/2.0
10 g/L NaCl, column temperature 30°C, sample volume 20 µL, flow 0.375 mL/min, UV/VIS detector: 218 ± 5 nm



Analysis of lactose in lactose-free milk diluted 1:100 after Inline Dialysis
Metrosep Carb 2 - 150/4.0
5 mmol/L sodium hydroxide / 2 mmol/L sodium acetate, column temperature 40°C; sample volume 20 µL, flow 0.8 mL/min, amperometric detector: PAD mode, WE: Au, RE: Pd, working potential: 50 mV. The sample was augmented with 100 mg/L lactose.

The Metrosep Carb 2 exhibits optimum peak shapes. Free selection of column length allows for a high degree of flexibility, depending on the application.

Technical information

Housing	PEEK	
Substrate	Polystyrene-divinylbenzene copolymer with quaternary ammonium groups	
Standard eluent	100 mmol/L sodium hydroxide + 10 mmol/L sodium acetate	
	Standard flow	**Maximum flow**
Metrosep Carb 2 - 100/4.0	0.8 mL/min	1.6 mL/min
Metrosep Carb 2 - 150/4.0	0.5 mL/min	1.2 mL/min
Metrosep Carb 2 - 250/4.0	0.5 mL/min	0.8 mL/min
Metrosep Carb 2 - 100/2.0	0.2 mL/min	0.7 mL/min
Metrosep Carb 2 - 150/2.0	0.13 mL/min	0.45 mL/min
Metrosep Carb 2 - 250/2.0	0.13 mL/min	0.30 mL/min
Maximum pressure	20 MPa	
Particle size	5 µm	
Standard temperature	30°C	
Temperature range	20–60°C	
pH range	0–14	
Organic modifiers (in the eluent)	0–50% acetonitrile and methanol	
Organic modifiers (in the sample)	0–100% acetone, acetonitrile, and methanol	
Storage	In standard eluent	

Can be combined with the Metrosep BO_3^{3-} Trap 1 - 100/4.0 (6.1015.200) and Metrosep CO_3^{2-} Trap 1 - 100/4.0 (6.1015.300).

Ordering information

6.1090.410	Metrosep Carb 2 - 100/4.0
6.1090.420	Metrosep Carb 2 - 150/4.0
6.1090.430	Metrosep Carb 2 - 250/4.0
6.1090.500	Metrosep Carb 2 Guard/4.0
6.1090.510	Metrosep Carb 2 S-Guard/4.0
6.01090.210	Metrosep Carb 2 - 100/2.0
6.01090.220	Metrosep Carb 2 - 150/2.0
6.01090.230	Metrosep Carb 2 - 250/2.0
6.01090.600	Metrosep Carb 2 Guard/2.0
6.01090.610	Metrosep Carb 2 S-Guard/2.0
6.01806.000	PEEK capillary 0.18 mm ID, 2 m

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Subject to modifications
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