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Колонки Chromolith® для ВЭЖХ



Chromolith® HPLC and UHPLC Columns

Chromolith® HPLC and UHPLC columns are made from [monolithic silica](#) with a bimodal pore structure using sol-gel technology. There are no silica particles.

Several key benefits result directly from the bimodal pore structure of the silica gel, which has 2 µm macropores and 13 nm mesopores:

- Rapid separations at very low column back-pressure
- Standard HPLC instruments are fully compatible with all Chromolith® columns and UHPLC instruments are fully compatible with Chromolith® UHPLC 2mm I.D. columns.
- Matrix-rich samples (such as food or life science samples) can be analyzed without the need for sophisticated and time-consuming sample preparation. Guard column cartridges are also available.
- Cost-savings are achieved as the column lifetimes are much longer than for particulate HPLC columns, in particular when analyzing matrix-rich samples.
- Complex multi-component samples can be separated either by using Chromolith® HighResolution (HR) columns or by using long very high-efficiency columns formed by connecting two or more Chromolith® columns together. The low column backpressure makes this possible.
- Easy transfer of methods from a particulate column to a Chromolith® column.
- [Chromolith® WP 300 columns](#) are an excellent solution for the separation of Biomolecules

The columns are available not only with octadecyl (RP-18e) or octyl (RP-8e) endcapped surface modification, but also with Phenyl, CN (nitrile), Diol and NH₂ (amino) surface modification as well as an unmodified pure silica.

Chromolith® 2 mm I.D.: 1.5 µm
 Chromolith® Prep 25 mm I.D. 3 µm Macropores



Macropore: 2 µm
 Mesopore: 130 Å

Macropore: 1.15 µm
 Mesopore: 150 Å

Chromolith® HighResolution RP-18e



Chromolith® HighResolution RP-8e



Chromolith® RP-18e



Chromolith® RP-8e



Chromolith® Phenyl



Chromolith® CN



Chromolith® Diol



Chromolith® NH2	✓
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Chromolith® Si	✓
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Specifications

Silica Type	High-purity
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Base Material	Monolithic
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Macropore Size	2µm (Chromolith® HPLC columns) 1.5µm (Chromolith® UHPLC columns) 1.15µm (Chromolith® HighResolution columns)
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Mesopore Size	13 nm (130 Å for Chromolith® columns) 15 nm (150 Å for Chromolith® HighResolution columns)
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Pore Volume	1 mL/g
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Total Pore Volume	3.2 mL/g (Chromolith® HPLC columns) 2.9 mL/g (Chromolith® HighResolution columns)
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Total Porosity	>80 %
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Surface Area	300 m ² /g (Chromolith® HPLC columns) 250 m ² /g (Chromolith® HighResolution columns)
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Surface Modification (USP classification)	RP-18 – octadecyl endcapped - USP classification L1 RP-8 – octyl endcapped - USP classification L7 Phenyl - USP classification L11 CN (nitrile) - USP classification L10 DIOL - USP classification L20 NH2 (amine) - USP classification L8 Si (silica unmodified) - USP classification L3
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Carbon Content	RP-18 – 18 % RP-8 – 11 % Phenyl
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CN (nitrile)
DIOL
NH₂ (amine)

The internal diameters of the analytical columns are 2 mm, 3 mm, 4.6 mm and guard column cartridges with holders are also available. Chromolith® SemiPrep and Prep columns (10 mm and 25 mm I.D.) are also available as well as Chromolith® CapRod® capillary columns.

The mesopores of the silica gel in all Chromolith® columns are 13 nm, which gives a high specific surface area of 300 m²/g and good retention of the analytes.

Chromolith® UHPLC columns are Chromolith® columns with 2 mm internal diameter. These columns are ideal for use with UHPLC or UPLC instruments, thanks to their very small internal volumes. A particular benefit is again the very fast analysis, reduced sample-preparation and the low column backpressure.

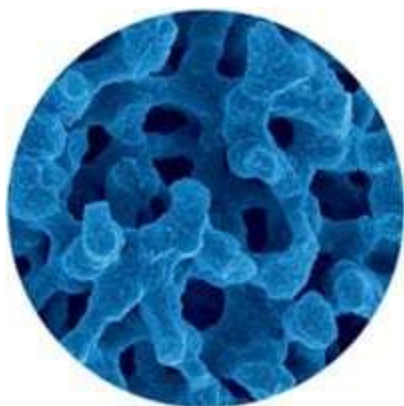


Figure 1. Electron-Microscope photo of monolithic silica structure.

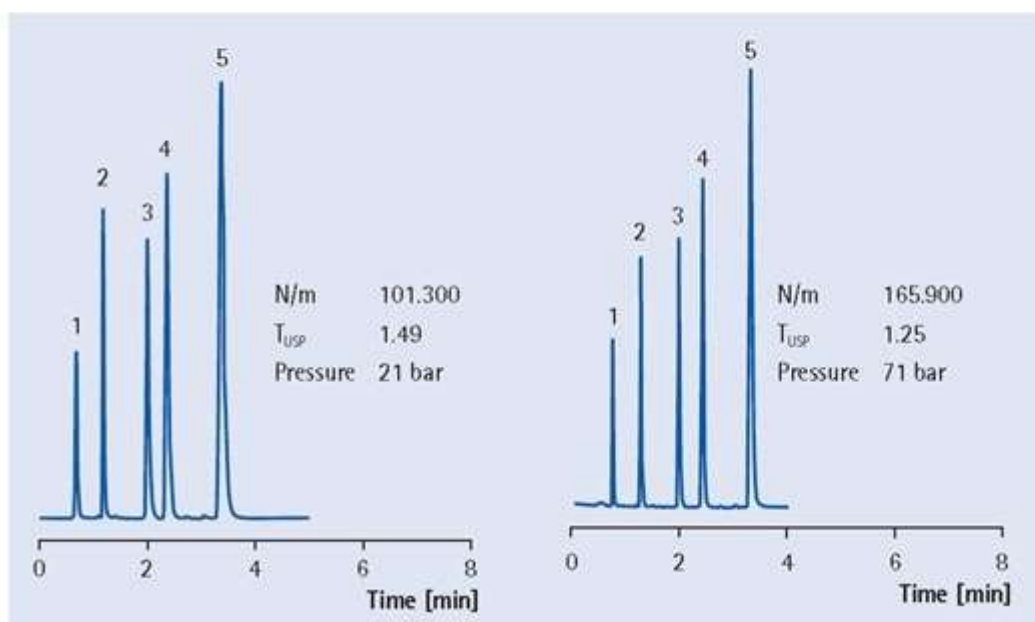
The silica itself is high purity, type B silica for inertness, reproducibility and stability, with modern bonding processes that optimize bonded phase coverage and maximize stability, while minimizing bleed and unwanted secondary interactions.

Chromolith® HighResolution (HR) columns are also available with the benefit of increased efficiency, very good peak symmetry and low column backpressure.

These have smaller 1.15 µm macropores, which significantly increase the separation efficiency (theoretical plate number) of the columns. The efficiency is approximately equivalent to 2.6 µm particulate columns whereas the backpressure is approximately equivalent to 5 µm columns.

Chromolith® Performance RP-18e,
100-4.6 mm

Chromolith® HighResolution RP-18e,
100-4.6 mm



Mobile phase	Acetonitrile/ water 60/40
Flow rate	2 mL/min
Detection	UV 254 nm
Temp.	ambient
Injection volume	5 µL
Sample	1. Urea 2. Biphenyl-2-ol 3. Progesterone 4. Hexanophenone 5. Anthracene

Figure 2.Chromolith Column Separation

Chromolith® HPLC and UHPLC monolithic silica columns are clad in inert PEEK (polyetheretherketone) polymeric material and can be connected directly to HPLC, UHPLC or UPLC system as a “ready to use” column.



Figure 3.Chromolith Column

Chromolith® Columns for Small Molecule Separations - I

Length (mm)		I.D. (mm)	RP-18e	HR RP-18e	RP-8e	HR RP-8e	Phenyl
Chromolith® HPLC Column [1 unit]							
25	x	4.6	1.51463.0001	1.52020.0001			1.52056.0001
25	x	3	1.52003.0001				
25	x	2	1.52014.0001	1.52320.0001			
50	x	4.6	1.51450.0001	1.52021.0001			1.52057.0001
50	x	3	1.52002.0001				

Chromolith® Columns for Small Molecule Separations - I

50	x	2	<u>1.52007</u> <u>.0001</u>	1.5232 1.0001			
100	x	4.6	<u>1.02129</u> <u>.0001</u>	<u>1.5202</u> <u>2.0001</u>	<u>1.5146</u> <u>8.0001</u>	<u>1.5</u> <u>20</u> <u>64.</u> <u>00</u> <u>01</u>	<u>1.52058.0001</u>
100	x	3	<u>1.52001</u> <u>.0001</u>				
100	x	2	<u>1.52006</u> <u>.0001</u>	1.5232 2.0001			
150	x	4.6		<u>1.5202</u> <u>3.0001</u>			
100	x	10	<u>1.52016</u> <u>.0001</u>				
100	x	25	<u>1.25252</u> <u>.0001</u>				
Validation Kits [3 Chromolith® HPLC cartridges from 3 different sorbent batches]							
50	x	2	<u>1.52062</u> <u>.0001</u>				
100	x	4.6	<u>1.51466</u> <u>.0001</u>	<u>1.5201</u> <u>9.0001</u>			
100	x	3	<u>1.52063</u> <u>.0001</u>				
100	x	10	<u>1.52036</u> <u>.0001</u>				
Chromolith® Guard cartridges [3 units]							
5	x	4.6	<u>1.51451</u> <u>.0001</u>	<u>1.5202</u> <u>5.0001</u>	<u>1.5201</u> <u>3.0001</u>		<u>1.52059.0001</u>
10	x	4.6	<u>1.51452</u> <u>.0001</u>				
5	x	3	<u>1.52005</u> <u>.0001</u>				

Chromolith® Columns for Small Molecule Separations - I

5	x	2	1.52009.0001	1.5232 5.0001
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Chromolith® Guard cartridge Set [1 starter kit with holder and 3 guard cartridges]





5	x	2	1.52008.0001
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5	x	3	1.52004.0001
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Chromolith® Columns for Small Molecule Separations - II

Length (mm)		I.D.(mm)	CN	Diol	NH2	Si
Chromolith® HPLC Column [1 unit]						
25	x	4.6	1.52046.0001	1.53170.0001	1.52026.0001	
25	x	3				
25	x	2				
50	x	4.6	1.52047.0001	1.53171.0001	1.52027.0001	
50	x	3				
50	x	2				
100	x	4.6	1.52048.0001	1.53172.0001	1.52028.0001	1.51465.0001
100	x	3				
100	x	2				
150	x	4.6				
100	x	10				1.52015.0001

Chromolith® Columns for Small Molecule Separations - II

100	x	25				1.25 251. 0001
Validation Kits [3 Chromolith® HPLC cartridges from 3 different sorbent batches]						
50	x	2				
100	x	4.6				
100	x	3				
100	x	10				1.52 035. 0001
Chromolith® Guard cartridges [3 units]						
5	x	4.6	1.52050.0001	1.53175.0001	1.52030.0001	1.52 011. 0001
10	x	4.6				
5	x	3				
5	x	2				
Chromolith® Guard cartridge Set [1 starter kit with holder and 3 guard cartridges]						
5	x	2				
5	x	3				
Chromolith® Holder						
	Product No.	Description				
	1.52004	Chromolith® RP-18 endcapped L × I.D. 5 mm x 3 mm guard cartridge kit (3 guard cartridges and 1 guard cartridge holder)				
	1.52355	Chromolith® Guard Cartridge Holder L × I.D. 5 MM X 2 MM Guard Cartridge Holder Bioinert				
	1.52255	Chromolith® Guard Cartridge Holder L × I.D. 5 mm x 4.6 mm guard cartridge holder bioinert				
	1.52256	Chromolith® Guard Cartridge Holder L × I.D. 10 mm x 4.6 mm guard cartridge holder bioinert				

Product No.	Description
 1.52032	Chromolith® Guard Cartridge Holder L × I.D. 5 mm x 4.6 mm guard cartridge holder
 1.52033	Chromolith® Guard Cartridge Holder L × I.D. 10 mm x 4.6 mm guard cartridge holder
 1.52037	Chromolith® Guard Cartridge Holder L × I.D. 10 mm x 10 mm SemiPrep guard cartridge holder

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