



# CHROMABOND® reversed phases



## CHROMABOND® C<sub>18</sub> ec / C<sub>18</sub> ec f (f = fast flow) octadecyl silica, endcapped

### ★ Key features

- Very nonpolar, hydrophobic interactions with a wide variety of organic compounds
- Advantageous for the clean-up of samples with large structural variations (polarity differences)

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 µm for C<sub>18</sub> ec, 100 µm for C<sub>18</sub> ec f (for fast flow), specific surface 500 m<sup>2</sup>/g, pH stability 2–8
- Octadecyl phases, endcapped, carbon content 14 %

### ✓ Recommended application

- Nonpolar compounds  
 aflatoxins, amphetamines, antibiotics, antiepileptics, barbiturates, caffeine, drugs, preservatives, fatty acids, nicotine, PAHs, pesticides, PCBs, heavy metals, vitamins
- Very well suited for desalting of samples
- C<sub>18</sub> ec f for viscous samples

### Ordering information

	Volume	Adsorbent weight →						Pack of	
		100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	
<b>CHROMABOND® C<sub>18</sub> ec polypropylene columns</b>									
	1 mL	730011							100
	3 mL		730012	730013					50
	6 mL			730014	730015	730141			30
	15 mL					730404			20
	45 mL						730405		20
	70 mL							730259	10
<b>CHROMABOND® C<sub>18</sub> ec polypropylene columns · BIGpacks</b>									
	3 mL			730013.250					250
	6 mL			730014.250	730015.250				250
<b>CHROMABOND® C<sub>18</sub> ec glass columns</b>									
	3 mL		730012G	730013G					50
	6 mL			730014G	730015G				30
<b>CHROMABOND® LV-C<sub>18</sub> ec</b>									
	15 mL		732012	732013					30
<b>CHROMAFIX® C<sub>18</sub> ec cartridges</b>									
		Size →	S	M	L				Pack of
		Minimum adsorbent weight →	90 mg	230 mg	630 mg				
			731804	731805	731806				50
<b>CHROMABOND® MULTI 96 C<sub>18</sub> ec</b>									
			96 x 25 mg	96 x 50 mg	96 x 100 mg				Pack of
			738011.025M	738011.050M	738011.100M				1
<b>CHROMABOND® C<sub>18</sub> ec adsorbent</b>									
							730611		100 g
<b>CHROMABOND® C<sub>18</sub> ec f polypropylene columns (fast flow)</b>									
	3 mL		730269	730018					50
	6 mL			730016	730010				30
	<b>CHROMABOND® C<sub>18</sub> ec f adsorbent (fast flow)</b>								
							730613		100 g



## CHROMABOND® C<sub>18</sub>/C<sub>18</sub> f (f = fast flow) octadecyl silica

### ★ Key features

- Similar to C<sub>18</sub> ec, however possesses more free silanols (SiOH), which allow secondary interactions with polar groups of the analytes

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 µm for C<sub>18</sub>, 100 µm for C<sub>18</sub> f (for fast flow), specific surface 500 m<sup>2</sup>/g, pH stability 2–8
- Octadecyl phases, not endcapped, carbon content 14 %

### ✓ Recommended application

- Nonpolar compounds, pesticides
- C<sub>18</sub> f for viscous samples

### Ordering information

Volume	Adsorbent weight →							Pack of
	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	
<b>CHROMABOND® C<sub>18</sub> polypropylene columns</b>								
1 mL	730001							100
3 mL		730002	730003					50
6 mL			730004	730005	730130			30
15 mL					730028			20
45 mL						730400		20
70 mL							730261	10
<b>CHROMABOND® C<sub>18</sub> polypropylene columns · BIGpacks</b>								
3 mL			730003.250					250
6 mL			730004.250	730005.250				250
<b>CHROMABOND® C<sub>18</sub> glass columns</b>								
3 mL			730003G					50
6 mL			730004G	730005G				30
<b>CHROMABOND® LV-C<sub>18</sub></b>								
15 mL		732002						30
<b>CHROMAFIX® C<sub>18</sub> cartridges</b>								
Size →		S	M	L				Pack of
Minimum adsorbent weight →		90 mg	200 mg	560 mg				
		731801	731802	731803				50
		96 x 25 mg		96 x 100 mg				Pack of
<b>CHROMABOND® MULTI 96 C<sub>18</sub></b>								
		738001.025M		738001.100M				1
<b>CHROMABOND® C<sub>18</sub> adsorbent</b>								
						730602		100 g
<b>CHROMABOND® C<sub>18</sub> f polypropylene columns (fast flow)</b>								
3 mL		730402	730008					50
6 mL			730403	730009				30
<b>CHROMABOND® C<sub>18</sub> f adsorbent (fast flow)</b>								
						730612		100 g

For further applications on CHROMABOND® phases visit our online application database at [www.mn-net.com/apps](http://www.mn-net.com/apps)



## CHROMABOND<sup>®</sup> C<sub>18</sub> Hydra octadecyl silica for polar analytes

### ★ Key features

- Special octadecyl phase for polar analytes, not endcapped, carbon content 15 %

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 µm, specific surface 500 m<sup>2</sup>/g, pH stability 2–8

### ✓ Recommended application

- Polar compounds like pesticides and their polar degradation products, phenols, phenoxy-carboxylic acids

#### Pesticides from water

MN Appl. No. 302060

Compounds investigated: triazines and carboxylic amides

#### 📏 Column type:

CHROMABOND<sup>®</sup> C<sub>18</sub> Hydra, 6 mL, 2 g  
REF 730301

Sample pretreatment: adjust 1000 mL water to pH 7–8 with diluted NH<sub>3</sub> and add 100 µL of the internal standards (1 µg/L).

Column conditioning: 2 x 5 mL methanol, then 2 x 5 mL dist. water

Sample application: force or aspirate the sample through the column. Then dry for 2 h with 2 bar N<sub>2</sub>.

Elution: slowly aspirate 10 mL methanol through the column. Evaporate the eluate to dryness in a tapered flask with a rotation evaporator at 30 °C and store in a refrigerator for ~15 min. Redissolve the residue in 200 µL cold, fresh *n*-hexane and transfer the solution to a conic HPLC vial (e.g., REF 702891). Store the solution in a refrigerator until chromatography.

Recovery rates: between 95 and 100 %

Further analysis: GC with OPTIMA<sup>®</sup> δ-3 or OPTIMA<sup>®</sup> δ-6 (e.g., application 250420) or HPLC in accordance with EN ISO 11369: 1997 on NUCLEOSIL<sup>®</sup> 120-3 C<sub>18</sub> (application 110880)

### Ordering information

Volume	Adsorbent weight →							Pack of
	50 mg	100 mg	200 mg	500 mg	1 g	2 g	3 g	
<b>CHROMABOND<sup>®</sup> C<sub>18</sub> Hydra polypropylene columns</b>								
1 mL	730294	730295						100
3 mL			730296	730297	730298			50
6 mL				730299	730300	730301	730302	30
<b>CHROMABOND<sup>®</sup> C<sub>18</sub> Hydra glass columns</b>								
3 mL			730296G	730297G	730298G			50
6 mL				730299G	730300G			30
<b>CHROMABOND<sup>®</sup> LV-C<sub>18</sub> Hydra</b>								
15 mL			732295					30
<b>CHROMAFIX<sup>®</sup> C<sub>18</sub> Hydra cartridges</b>								
Size →		S	M	L				
Minimum adsorbent weight →		90 mg	230 mg	640 mg				
		731730	731731	731732				
				96 x 100 mg	Pack of			
<b>CHROMABOND<sup>®</sup> MULTI 96 C<sub>18</sub> Hydra</b>								
				738294.100M	1			
<b>CHROMABOND<sup>®</sup> C<sub>18</sub> adsorbent</b>								
							730628	100 g

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## CHROMABOND® C<sub>8</sub> octyl silica

### ★ Key features

- Similar to C<sub>18</sub>, however slightly more polar
- Secondary interactions with polar compounds are more pronounced due to shorter alkyl chains

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 µm, specific surface 500 m<sup>2</sup>/g, pH stability 2–8
- Octyl phase, not endcapped, carbon content 8 %

### ✓ Recommended application

- Pesticides, PCBs

## Ordering information

	Volume	Adsorbent weight → 100 mg	200 mg	500 mg	1 g	Pack of
	<b>CHROMABOND® C<sub>8</sub> polypropylene columns</b>					
	1 mL	730021				100
	3 mL		730022	730023		50
	6 mL			730024	730134	30
	<b>CHROMABOND® C<sub>8</sub> glass columns</b>					
	6 mL			730024G		30
	<b>CHROMABOND® LV-C<sub>8</sub></b>					
	15 mL			732023		30
	Size →		M			
	Minimum adsorbent weight →		210 mg	Pack of		
	<b>CHROMAFIX® C<sub>8</sub> cartridges</b>					
			731808		96 x 100 mg	50
	<b>CHROMABOND® MULTI 96 C<sub>8</sub></b>					
					738021.100M	1
	<b>CHROMABOND® C<sub>8</sub> adsorbent</b>					
					730601	100 g



## CHROMABOND<sup>®</sup> C<sub>4</sub> butyl silica

### ★ Key features

- Slightly more polar than C<sub>18</sub> or C<sub>8</sub>, due to shorter alkyl chains the silica surface is not completely shielded

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 µm, specific surface 500 m<sup>2</sup>/g, pH stability 2–8
- Butyl phase, not endcapped, carbon content 7 %

### ✓ Recommended application

- Compounds, which are too strongly retained on C<sub>18</sub> or C<sub>8</sub> e.g., analgetics from blood

### Ordering information

	Volume	Adsorbent weight →	100 mg	500 mg	Pack of
	<b>CHROMABOND<sup>®</sup> C<sub>4</sub> polypropylene columns</b>				
	1 mL		730225		100
	3 mL			730227	50
		Size →	S	M	
		Minimum adsorbent weight →	80 mg	200 mg	Pack of
	<b>CHROMAFIX<sup>®</sup> C<sub>4</sub> cartridges</b>				
			731740	731741	50
	<b>CHROMABOND<sup>®</sup> C<sub>4</sub> adsorbent</b>				
				730651	100 g

Glass columns, LV columns and MULTI 96 on request.

## CHROMABOND<sup>®</sup> C<sub>2</sub> dimethyl silica

### ★ Key features

- Similar to C<sub>4</sub>

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 µm, specific surface 500 m<sup>2</sup>/g, pH stability 2–8
- Dimethyl phase, not endcapped, carbon content 4 %

### ✓ Recommended application

- e.g., antiepileptics from plasma

### Ordering information

	Volume	Adsorbent weight →	100 mg	500 mg	1 g	Pack of
	<b>CHROMABOND<sup>®</sup> C<sub>2</sub> polypropylene columns</b>					
	1 mL		730169			100
	3 mL			730221		50
	6 mL			730409	730410	30
	<b>CHROMABOND<sup>®</sup> C<sub>2</sub> adsorbent</b>					
					730652	100 g

Glass columns, LV columns, CHROMAFIX<sup>®</sup> cartridges and MULTI 96 on request.



## CHROMABOND® C<sub>6</sub>H<sub>11</sub> ec cyclohexyl silica, endcapped

### ★ Key features

- Alternative phase for the midpolar range

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 µm, specific surface 500 m<sup>2</sup>/g, pH stability 2–8
- Cyclohexyl phase, endcapped, carbon content 9 %

### ✓ Recommended application

- Phenols from water
- Chloroanilines from waste water
- Anthelmintics from tissue

### Comparison of different phases for phenol analysis

MN Appl. No. 302150

Compounds investigated: phenol, 2,4-dinitrophenol, pentachlorophenol

#### Column types:

CHROMABOND® C<sub>18</sub>, 6 mL, 2000 mg

REF 730130

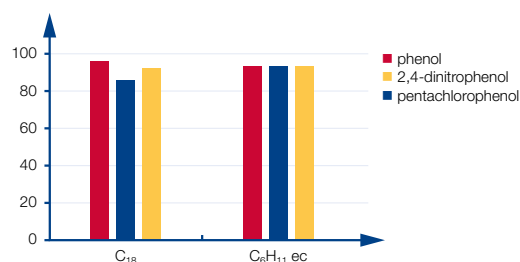
CHROMABOND® C<sub>6</sub>H<sub>11</sub> ec, 6 mL, 2000 mg

REF 730469

Column conditioning: 10 mL acetone, 10 mL methanol, and 10 mL dist. water (pH 2)

Sample application: aspirate the sample through the column.

Elution: 10 mL methanol



### Ordering information

	Volume	Adsorbent weight →		Pack of
		500 mg	1 g	
	<b>CHROMABOND® C<sub>6</sub>H<sub>11</sub> ec polypropylene columns</b>			
	3 mL	730442		50
	6 mL	730443	730444	30
	<b>CHROMABOND® C<sub>6</sub>H<sub>11</sub> ec adsorbent</b>			
			730631	100 g

Glass columns, LV columns, CHROMAFIX® cartridges and MULTI 96 on request.



## CHROMABOND<sup>®</sup> C<sub>6</sub>H<sub>5</sub> phenyl silica

### ★ Key features

- Polarity similar to C<sub>8</sub>
- In addition to hydrophobic interactions more selective adsorption is possible by π-π interactions due to the electron density of the phenyl ring.

### 🔧 Technical characteristics

- Base material silica, pore size 60 Å, particle size 45 μm, specific surface 500 m<sup>2</sup>/g, pH stability 2–8
- Phenyl phase, carbon content 8 %

### ✓ Recommended application

- Aflatoxins, caffeine, phenols

### Flavor compounds from brandy

MN Appl. No. 300170

Compounds investigated: asarone, quinine, coumarin, quassin

#### Column type:

CHROMABOND<sup>®</sup> C<sub>6</sub>H<sub>5</sub>, 6 mL, 1000 mg

REF 730412

**Sample pretreatment:** mix 10 mL sample with 90 mL water and 10 g sodium chloride and adjust to pH 7 with 0.1 mol/L sodium hydroxide solution



**Column conditioning:** 10 mL methanol, then 10 mL dist. water

**Sample application:** slowly force or aspirate the sample through the column

**Column washing:** 2.5 mL water, then 2.5 mL pentane

- Elution:**
- 1) 2 x 2.5 mL pentane – diethyl ether (7:3, v/v): asarone, coumarin
  - 2) 10 mL 1 mol/L basic methanol – diethyl ether (9:1, v/v): quinine
  - 3) 5 mL chloroform: quassin

### Ordering information

	Volume	Adsorbent weight →			Pack of
		100 mg	200 mg	500 mg	
	<b>CHROMABOND<sup>®</sup> C<sub>6</sub>H<sub>5</sub> polypropylene columns</b>				
	1 mL	730083			100
	3 mL		730411	730084	50
	<b>CHROMABOND<sup>®</sup> C<sub>6</sub>H<sub>5</sub> adsorbent</b>				
				730606	100 g

Glass columns, LV columns, CHROMAFIX<sup>®</sup> cartridges and MULTI 96 on request.

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