

Ultisil® Series HPLC Column

Ultisil® Series HPLC Columns are based on ultra-pure (purity > 99.999%) spherical and totally porous silica, unique bonding chemistry and proprietary surface modification techniques, producing excellent peak shape, column efficiency and exceptional lot-to-lot reproducibility. Ultisil® column is the best choice for method development, owing to complete bonding chemistries and stable performance.

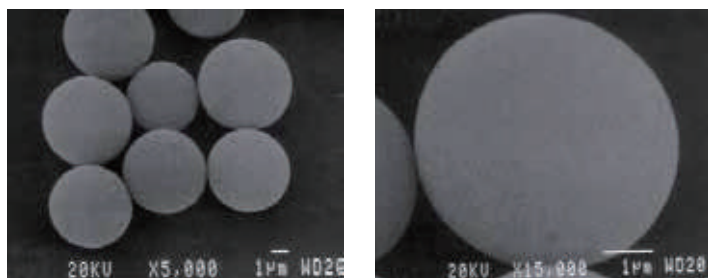
Features:

- Ultra-pure spherical porous silica, purity > 99.999%
- Unique bonding chemistry and endcapping technology
- High efficiency: theoretical plate > 80000/m
- Excellent peak symmetry: tailing factor=0.95~1.05
- Wide pH range: 1.5–10
- Long column lifetime
- Exceptional lot-to-lot reproducibility
- Complete bonding chemistries with different selectivities

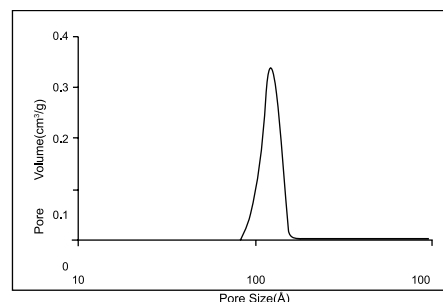
Ultisil® HPLC Column Packing Materials

Pictures below show size uniformity and surface smoothness of the packing particles, characteristics that enable more uniform packing with less channeling effect, resulting in lower back pressure and higher column efficiency.

SEM Pictures of Ultisil® Particles

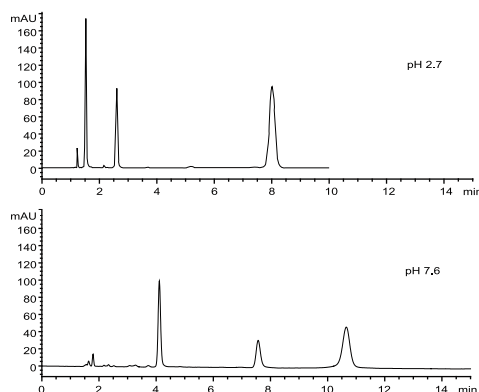


Ultisil® Pore Size Distribution



Trace Amount Metal Contents Test

Trace amount of metal contents were determined by using Ultisil® XB-C18 column with the following conditions: Mobile phase: 20 mM phosphate (pH 7.6) / methanol=55/45, Flow rate: 1.0 mL/min, Detector: 215 nm, Temperature: 25°C, Injection Volume: 1 µL. Samples: 1) 4,4'-Dipyridyl, 2) 2,2'-Dipyridyl, 3) 1,2-Dihydroxynaphthalene.



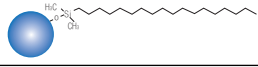
Column:	Ultisil® XB-C18, 4.6 × 150 mm, 5 µm
Mobile Phase:	20 mM phosphate(pH 7.6) / methanol=55/45
Flow rate:	1.0 mL/min
Detector:	215 nm
Temperature:	25°C
Injection Volume:	1 µL
Samples:	1) 4,4'-Dipyridyl 2) 2,2'-Dipyridyl 3) 1,2-Dihydroxynaphthalene

Ultisil® XB-C18 provides good peak shapes in the separation of these three compounds under pH 7.6, which indicates Ultisil silica contains hardly any metals.

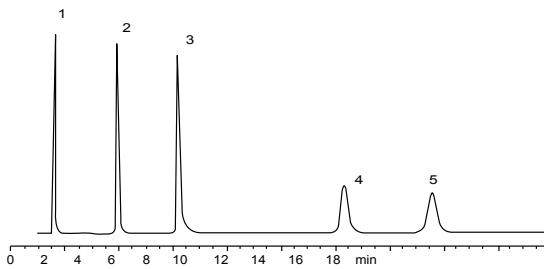
Ultisil® XB-C18—Universal HPLC Analytical Column

Ultisil®XB-C18 is the most commonly used column in the market. It can substitute Waters Symmetry C18, Agilent Zorbax XDB C18, Phenomenex Luna C18, Supelcosil LC-18-DB, YMC ODS-AM, Alltima C18, GL, Inertsil ODS-2 etc. XB-C18 has high theoretical plates and peak capacity, so it's suitable for analysis of complex samples.

Ultisil®XB-C18

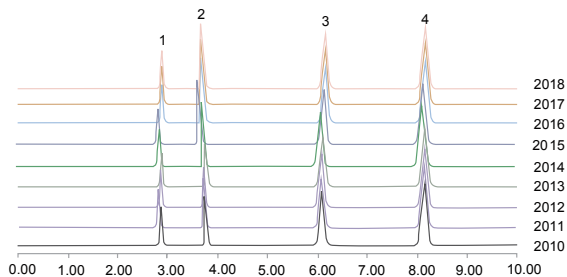
Structural Formula	
pH Range	1.5-10.0
Particle Size	3 µm, 5 µm, 10 µm
Surface Area(m ² /g)	320(120 Å), 90(300 Å)
Carbon Loading(%)	17(120 Å), 8(300 Å)
USP List	L1
Endcapped	Yes

Separation of Basic Compounds Antidepressant at pH 7.0



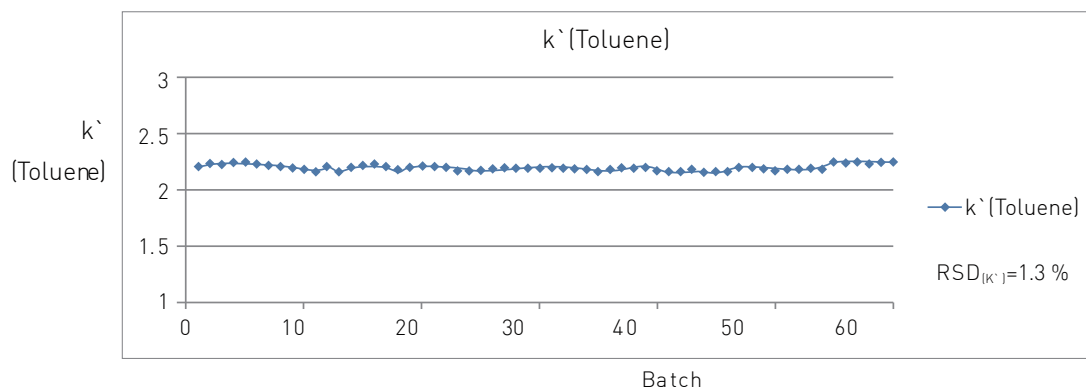
Column:	Ultisil®XB-C18, 4.6 ×150 mm, 5 µm	
Mobile Phase:	20 mM phosphate(pH 7.0) / methanol=20 / 80	
Flow rate:	1.0 mL/min	
Detector:	215 nm	
Temperature:	25°C	
Samples:	1) Uracil 3) Ortriptyline 5) Trimipramine	2) Ropranolol 4) Amitriptyline

Comparison of Peak Shape between Batch to Batch

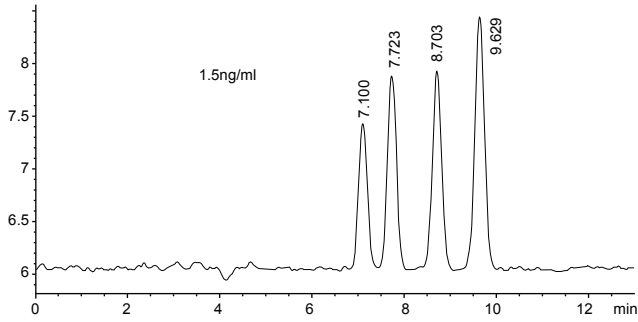


Column:	Ultisil®XB-C18, 4.6 ×250 mm, 5 µm	
Mobile Phase:	Methanol / water=75 / 25	
Flow rate:	1.0 mL/min	
Detector:	254 nm	
Temperature:	25°C	
Samples:	1) Uracil 3) 4-chloronitrobenzen	2) Phenol 4) Methylbenzene

Capacity Factor(K') of Batch to Batch Reproducibility

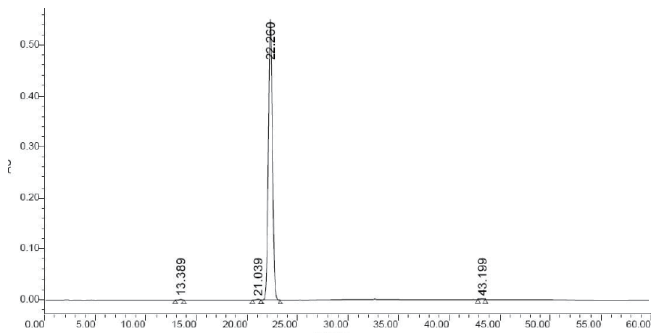


Aflatoxin



Column:	Ultisil® XB-C18, 4.6 × 250 mm, 5 µm
Mobile Phase:	Water / methanol / acetonitrile=46/40/14
Flow Rate:	1.0 mL/min
Detector:	Excitation wavelength: 360 nm Emission wavelength: 450 nm Gain:17
Temperature:	30°C
Injection Volume:	Post-column photo chemical derivation (254 nm)
Aflatoxin B1, B2, G1, G2 mixed standards, meets separation requirements	

Progesterone(EP 5.0)



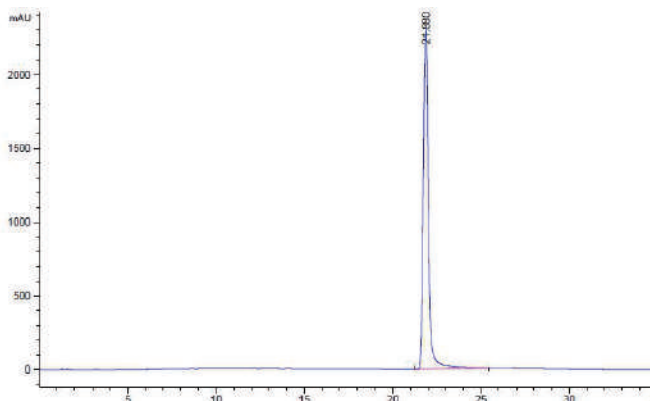
Column:	Ultisil® XB-C18, 4.6 × 150 mm, 5 µm															
Mobile Phase:	A: water B: acetonitrile															
Gradient Program:	<table border="1"> <thead> <tr> <th>Time(min)</th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>0-20</td> <td>50</td> <td>50</td> </tr> <tr> <td>20-27</td> <td>50-20</td> <td>50-80</td> </tr> <tr> <td>27-45</td> <td>20</td> <td>80</td> </tr> <tr> <td>45-50</td> <td>50</td> <td>50</td> </tr> </tbody> </table>	Time(min)	A	B	0-20	50	50	20-27	50-20	50-80	27-45	20	80	45-50	50	50
Time(min)	A	B														
0-20	50	50														
20-27	50-20	50-80														
27-45	20	80														
45-50	50	50														
Flow Rate:	0.9 mL/min															
Detector:	254 nm, 275 nm, 317 nm															
Temperature:	40°C															
Injection Volume:	20 µL															
Reference Sample:	L-hydroxyproline, glycine, alanine, L-proline															

Ordering Information Ultisil® XB-C18

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder
		30	33	50	75	100	125	150	200	250	300		
3 µm 120 Å	2.1	H00201-21009	H09201-21009	H00201-21010	H00201-21011	H00201-21012	H00201-21013	H00201-21014	H00201-21015	H00201-21016	-	H00808-2300	00808-01107
	3.0	H00201-21018	-	H00201-21019	H00201-21020	H00201-21021	H00201-21022	H00201-21023	H00201-21024	H00201-21025	-	H00808-2300	00808-01107
	4.0	H00201-21027	-	H00201-21028	H00201-21029	H00201-21030	H00201-21031	H00201-21032	H00201-21033	H00201-21034	-	H00808-0300	00808-01101
	4.6	H00201-21036	H11201-21036	H00201-21037	H00201-21038	H00201-21039	H00201-21040	H00201-21041	H00201-21042	H00201-21043	-	H00808-0300	00808-01101
5 µm 120 Å	2.1	H00201-31009	H09201-31009	H00201-31010	H00201-31011	H00201-31012	H00201-31013	H00201-31014	H00201-31015	H00201-31016	-	H00808-2400	00808-01107
	3.0	H00201-31018	-	H00201-31019	H00201-31020	H00201-31021	H00201-31022	H00201-31023	H00201-31024	H00201-31025	-	H00808-2400	00808-01107
	4.0	H00201-31027	-	H00201-31028	H00201-31029	H00201-31030	H00201-31031	H00201-31032	H00201-31033	H00201-31034	H00201-31035	H00808-0400	00808-01101
	4.6	H00201-31036	H11201-31036	H00201-31037	H00201-31038	H00201-31039	H00201-31040	H00201-31041	H00201-31042	H00201-31043	H00201-31044	H00808-0400	00808-01101
10 µm 120 Å	4.0	-	-	-	-	-	-	H00201-41032	H00201-41033	H00201-41034	H00201-41035	H00808-0500	00808-01101
	4.6	-	-	-	-	-	-	H00201-41041	H00201-41042	H00201-41043	H00201-41044	H00808-0500	00808-01101

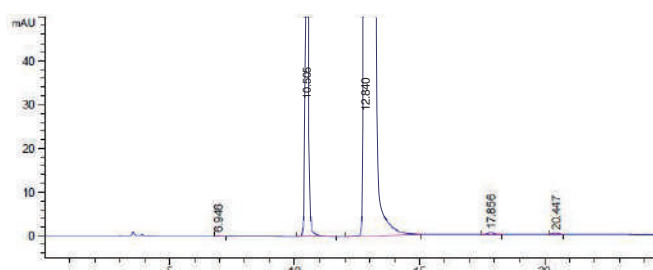
300 Å pore size column provided. Please contact Welch or your local distributor for other dimensions.

Cetilistat



Column:	Ultisil®XB-CN, 4.6 ×250 mm, 5 µm												
Mobile Phase:	Mobile phase A: water Mobile Phase B: acetonitrile												
	<table border="1"> <tr> <th>Time(min)</th> <th>A(%)</th> <th>B(%)</th> </tr> <tr> <td>0</td> <td>60</td> <td>40</td> </tr> <tr> <td>30</td> <td>20</td> <td>80</td> </tr> <tr> <td>40</td> <td>20</td> <td>80</td> </tr> </table>	Time(min)	A(%)	B(%)	0	60	40	30	20	80	40	20	80
Time(min)	A(%)	B(%)											
0	60	40											
30	20	80											
40	20	80											
Flow Rate:	1.0 ml/min												
Detector:	221 nm												
Temperature:	35°C												
Injection Volume:	10 µL												

Alogliptin Benzoate



Column:	Ultisil®XB-CN, 4.6 ×250 mm, 5 µm															
Mobile Phase:	Mobile phase A: acetonitrile/water/TFA=100/1900/1 Mobile Phase B: acetonitrile/water/TFA=1900/100/1															
	<table border="1"> <tr> <th>Time(min)</th> <th>A(%)</th> <th>B(%)</th> </tr> <tr> <td>0</td> <td>99</td> <td>1</td> </tr> <tr> <td>30</td> <td>80</td> <td>20</td> </tr> <tr> <td>50</td> <td>10</td> <td>90</td> </tr> <tr> <td>51</td> <td>99</td> <td>1</td> </tr> </table>	Time(min)	A(%)	B(%)	0	99	1	30	80	20	50	10	90	51	99	1
Time(min)	A(%)	B(%)														
0	99	1														
30	80	20														
50	10	90														
51	99	1														
Flow Rate:	1.0 mL/min															
Detector:	278 nm															
Temperature:	35°C															
Injection Volume:	20 µL															

Ordering Information

Ultisil® XB-CN

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder	
		30	33											300
3 µm 120 Å	2.1	H00205-21009	H09205-21009											
	3.0	H00205-21018	-											
	4.0	H00205-21027	-											
	4.6	H00205-21034	H11205-21034											
5 µm 120 Å	2.1	H00205-31009	H09205-31009											
	3.0	H00205-31018	-											
	4.0	H00205-31027	-									H00205-31035		
	4.6	H00205-31034	H11205-31034									H00205-31044		
10 µm 120 Å	4.0	-	-									H00205-41035		
	4.6	-	-									H00205-41044		

Don't see your needed size or format? Contact Welch or your local distributor for other dimensions.