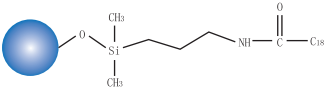


Ultisil™ Polar Embedded HPLC Column (polar-RP&Phenyl-Ether)

Ultisil™ polar embedded phases have been developed for more than 10 years. Earlier polar embedded phase is developed with amide phase. The polar functional group close to the surface increases the wet ability of this phase, thus decreasing phase collapse, making this phase compatible with mobile phase of up to 95% water content. The polar functional group also shields the effects of unreacted silanol groups, providing excellent peak shape for very polar and strong basic compounds and different selectivity than C18 phase. Welch provides two kinds of packing materials - Ultisil™ Polar-RP and Ultisil™ Phenyl-Ether.

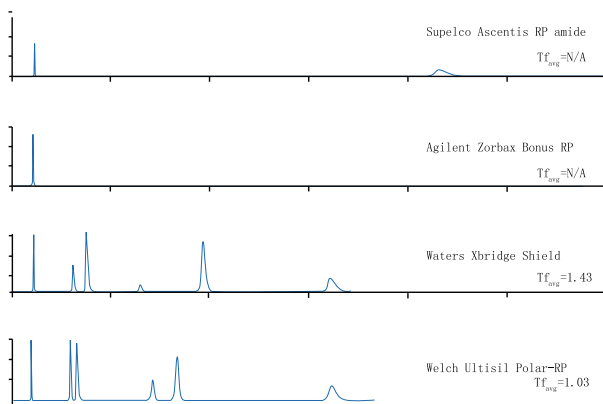
Ultisil™ Polar-RP

Structural Formula	
pH Range	1.5-10.0
Particle Size	3 μm, 5 μm, 10 μm
Surface Area(m ² /g)	320(120 Å)
Carbon Loading(%)	18(120 Å)
USP List	L1
Endcapped	Yes

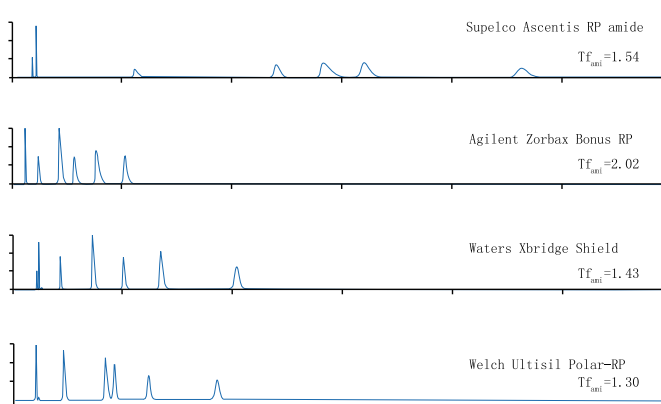
Ultisil™ Polar-RP HPLC Column

- Excellent at 100% water content in mobile phase, even better than AQ-C18
- Different selectivity to AQ-C18
- Excellent peak shape for acidic and basic compounds owing to the “shield” effect of polar linkage to silanol activity by forming hydrogen bonding
- Be retentive for polar compounds. Uracil, which can't be retained on most reversed phase columns at 100% water, can be retained on this column, and eluted after 5-fluorocytosine and cytosine. Analysis of purine, pyrimidine, small molecular acids, catecholamine and water soluble vitamins, requires high water phase content mobile phase
- Fast separation of similar samples on a column

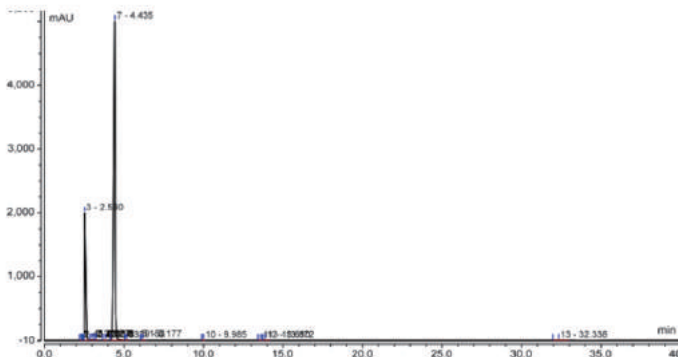
Comparison of separation of acid compounds



Comparison of separation of base compounds



Amoxicillin and clavulanate potassium



Column:	Ultisil™ Polar RP, 4.6 ×150 mm, 5 μm																		
Mobile Phase:	A: phosphate buffer * B: phosphate buffer/acetonitrile=20/80 *Dissolve 1.36 g KH ₂ PO ₃ in 900 mL water, adjust pH 6.0±0.1 with KOH, add water to 1000 mL																		
Gradient Program:	<table border="1"> <thead> <tr> <th>Time(min)</th> <th>A(%)</th> <th>B(%)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>95</td> <td>5</td> </tr> <tr> <td>0.5</td> <td>95</td> <td>5</td> </tr> <tr> <td>30.5</td> <td>59</td> <td>41</td> </tr> <tr> <td>32</td> <td>95</td> <td>5</td> </tr> <tr> <td>40</td> <td>95</td> <td>5</td> </tr> </tbody> </table>	Time(min)	A(%)	B(%)	0	95	5	0.5	95	5	30.5	59	41	32	95	5	40	95	5
Time(min)	A(%)	B(%)																	
0	95	5																	
0.5	95	5																	
30.5	59	41																	
32	95	5																	
40	95	5																	
Flow Rate:	1.0 mL/min																		
Injection Volume:	215 μL																		
Temperature:	30°C																		
Injection Volume:	20 μL																		

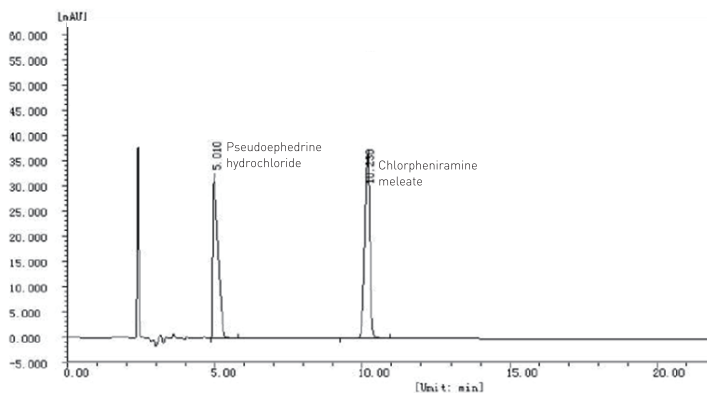
Ultisil™ Phenyl-Ether

Structural Formula	
pH Range	1.5-10.0
Particle Size	5 μm
Surface Area(m ² /g)	320(120 Å)
Carbon Loading(%)	12(120 Å)
USP List	L11
Endcapped	Yes

Ultisil™ Phenyl-Ether HPLC Column

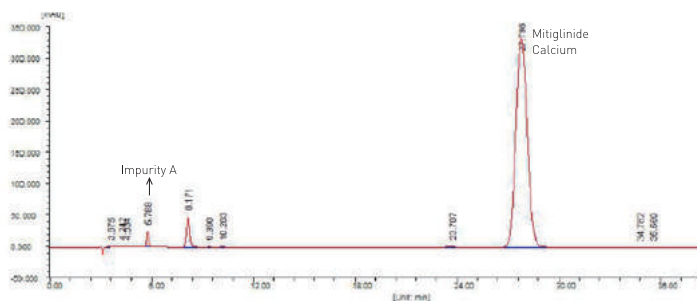
- Improved polar & aromatic reversed phases selectivity that complements the more conventional C18 column chemistries
- Better selectivity than phenyl phase for separation of nitrobenzene isomers
- Improved peak shape of highly acidic polar compounds, and different selectivity from other polar phases such as polar embedded phase
- Compatible with 100% water mobile phase

Chlorphenamine Maleate Pseudoephedrine Hydrochloride Capsules



Column:	Ultisil™ Phenyl-Ether, 4.6 ×250 mm, 5 μm
Mobile Phase:	Acetonitrile/methanol/tetrahydrofuran/ H ₃ PO ₄ /water=320/80/50/1/550 Add 0.43 g lauryl sodium sulfate, adjust pH 3.5 with concentrated ammonia solution
Flow Rate:	1.0 mL/min
Detector:	254 nm
Temperature:	25°C
Injection Volume:	10 μL

Mitiglinide Calcium



Column:	Ultisil™ Phenyl-Ether, 4.6 ×250 mm, 5 μm
Mobile Phase:	0.02 mol/L KH ₂ PO ₃ buffer*/methanol=38/62 *Dissolve 2.72 g KH ₂ PO ₃ in water, add 5mL of triethylamine, add water to 1000 mL, adjust pH 2.5 with H ₃ PO ₄
Flow Rate:	1.0mL/min
Detector:	210 nm
Temperature:	Ambient
Injection Volume:	10 μL

Ordering Information

Ultisil™ Polar RP

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Guard Column Holder
		30	33	50	75	100	125	150	200	250	300		
3 μm 120 Å	2.1	00215-21009	09215-21009	00215-21010	00215-21011	00215-21012	00215-21013	00215-21014	00215-21015	00215-21016	-	00808-23009	00808-01107
	3.0	00215-21018	-	00215-21019	00215-21020	00215-21021	00215-21022	00215-21023	00215-21024	00215-21025	-	00808-23009	00808-01107
	4.0	00215-21027	-	00215-21028	00215-21029	00215-21030	00215-21031	00215-21032	00215-21033	00215-21034	-	00808-03009	00808-01101
	4.6	00215-21036	11215-21036	00215-21037	00215-21038	00215-21039	00215-21040	00215-21041	00215-21042	00215-21043	-	00808-03009	00808-01101
5 μm 120 Å	2.1	00215-31009	09215-31009	00215-31010	00215-31011	00215-31012	00215-31013	00215-31014	00215-31015	00215-31016	-	00808-24017	00808-01107
	3.0	00215-31018	-	00215-31019	00215-31020	00215-31021	00215-31022	00215-31023	00215-31024	00215-31025	-	00808-24017	00808-01107
	4.0	00215-31027	-	00215-31028	00215-31029	00215-31030	00215-31031	00215-31032	00215-31033	00215-31034	00215-31035	00808-04017	00808-01101
	4.6	00215-31036	11215-31036	00215-31037	00215-31038	00215-31039	00215-31040	00215-31041	00215-31042	00215-31043	00215-31044	00808-04017	00808-01101
10 μm 120 Å	4.6	-	-	-	-	-	-	00215-41041	00215-41042	00215-41043	00215-41044	00808-05015	00808-01101

Ultisil™ Phenyl-Ether

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Guard Column Holder
		30	33	50	75	100	125	150	200	250	300		
5 μm 120 Å	2.1	00214-31009	09214-31009	00214-31010	00214-31011	00214-31012	00214-31013	00214-31014	00214-31015	00214-31016	-	00808-24034	00808-01107
	3.0	00214-31018	-	00214-31019	00214-31020	00214-31021	00214-31022	00214-31023	00214-31024	00214-31025	-	00808-24034	00808-01107
	4.0	00214-31027	-	00214-31028	00214-31029	00214-31030	00214-31031	00214-31032	00214-31033	00214-31034	00214-31035	00808-04028	00808-01101
	4.6	00214-31036	11214-31036	00214-31037	00214-31038	00214-31039	00214-31040	00214-31041	00214-31042	00214-31043	00214-31044	00808-04028	00808-01101

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