


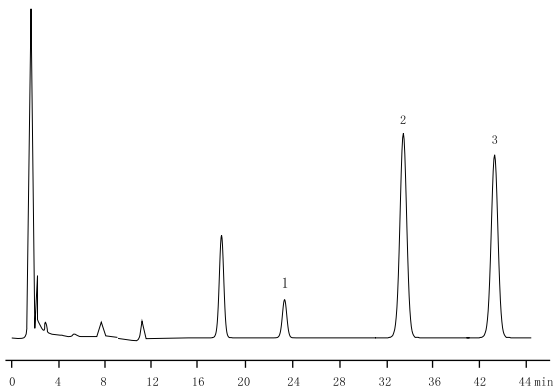
# Ultisil™ SiO<sub>2</sub>

Ultisil SiO<sub>2</sub> column uses ultra-high purity type B silica particles with no metal contents. SiO<sub>2</sub> column can separate strong hydrophilic compounds in high concentration organic solvent in reversed phase. Good result can be obtained for the analysis of polar compounds which are prone to peak tailing in reversed phase.

## Ultisil™ SiO<sub>2</sub>

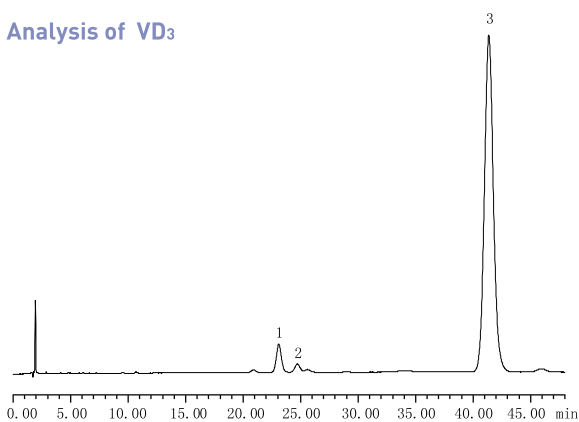
Structural Formula	
pH Range	2.0-8.0
Particle Size	3 μm, 5 μm, 10 μm
Surface Area(m <sup>2</sup> /g)	320(120 Å), 90(300Å)
Carbon Loading(%)	N/A
USP List	L3
Endcapped	No

### Analysis of VD<sub>2</sub>



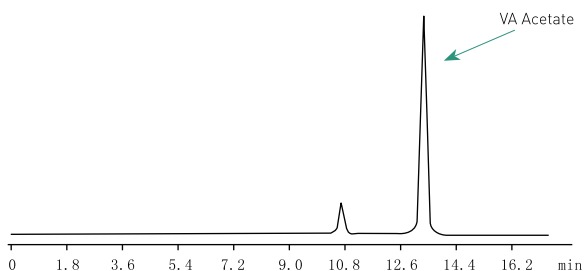
Column:	Ultisil™ SiO <sub>2</sub> , 4.6 × 250 mm, 5 μm
Mobile Phase:	Hexane / isopropanol=997/3
Flow Rate:	2.0 mL/min
Detector:	254 nm
Temperature:	30°C
Injection Volume:	1. Facade VD <sub>2</sub> 2. Internal Standard 3. VD <sub>2</sub>

### Analysis of VD<sub>3</sub>



Column:	Ultisil™ SiO <sub>2</sub> , 4.6 × 250 mm, 5 μm
Mobile Phase:	N-hexane / n-amyl alcohol=99.7/0.3
Detector:	254 nm
Temperature:	30°C
Flow Rate:	2.0 mL/min
Injection Volume:	1. Facade VD <sub>3</sub> 2. trans VD <sub>3</sub> 3. VD <sub>2</sub>

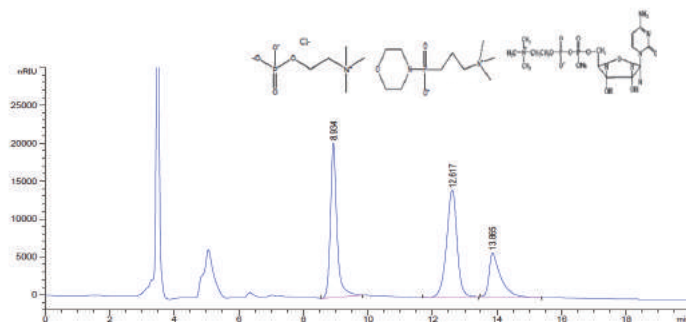
### Analysis of VA Acetate



Column:	Ultisil™ SiO <sub>2</sub> , 4.6 × 250 mm, 5 μm
Mobile Phase:	N-hexane / isopropanol=99.8/0.2
Detector:	326 nm
Temperature:	16°C
Flow rate:	1.0 mL/min

Sample is dissolved with n-hexane.

## Separation of chlorophosphorylcholine, Phosphorylcholine morpholine and Citicoline Sodium



<b>Column:</b>	Ultisil™ SiO <sub>2</sub> , 4.6 × 250 mm, 5 μm
<b>Mobile Phase:</b>	Acetonitrile / water/ glacial acetic acid = 60/40/2
<b>Detector:</b>	RID
<b>Temperature:</b>	35°C
<b>Flow rate:</b>	1.0 mL/min
<b>Injection Volume:</b>	10 μL

## Ordering Information

### Ultisil™ SiO<sub>2</sub>

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	00200-21009	09200-21009	00200-21010	00200-21011	00200-21012	00200-21013	00200-21014	00200-21015	00200-21016	-	00808-23007	00808-01107
	3.0	00200-21018	-	00200-21019	00200-21020	00200-21021	00200-21022	00200-21023	00200-21024	00200-21025	-	00808-23007	00808-01107
	4.0	00200-21027	-	00200-21028	00200-21029	00200-21030	00200-21031	00200-21032	00200-21033	00200-21034	-	00808-03007	00808-01101
	4.6	00200-21036	11200-21036	00200-21037	00200-21038	00200-21039	00200-21040	00200-21041	00200-21042	00200-21043	-	00808-03007	00808-01101
5 μm 120 Å	2.1	00200-31009	09200-31009	00200-31010	00200-31011	00200-31012	00200-31013	00200-31014	00200-31015	00200-31016	-	00808-24007	00808-01107
	3.0	00200-31018	-	00200-31019	00200-31020	00200-31021	00200-31022	00200-31023	00200-31024	00200-31025	-	00808-24007	00808-01107
	4.0	00200-31027	-	00200-31028	00200-31029	00200-31030	00200-31031	00200-31032	00200-31033	00200-31034	00200-31035	00808-04007	00808-01101
	4.6	00200-31036	11200-31036	00200-31037	00200-31038	00200-31039	00200-31040	00200-31041	00200-31042	00200-31043	00200-31044	00808-04007	00808-01101
10 μm 120 Å	4.0	-	-	-	-	-	-	00200-41032	00200-41033	00200-41034	00200-41035	00808-05007	00808-01101
	4.6	-	-	-	-	-	-	00200-41041	00200-41042	00200-41043	00200-41044	00808-05007	00808-01101

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



## Ultisil™ Diol

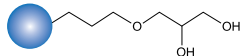
Ultisil™ Diol Column is based on ultra-pure porous spherical silica bonded with 1,2-dihydroxypropyl functional group silica. Ultisil™ Diol is used in normal phase mostly, suitable for separation of peptides, proteins, polar molecules, and organic acids and its polymers.

Like bare silica, Ultisil™ Diol has the ability to form hydrogen bonds and is capable of separating structure isomers. Since most of its surface is covered with organic functions, Ultisil™ Diol absorbs less water, which leads to more reproducible activity. It is also the sorbent of choice when working in normal phase in the presence of water. It has a different selectivity than bare silica gel, and slight modification in the composition of solvent mixture may be necessary to obtain a similar retention.

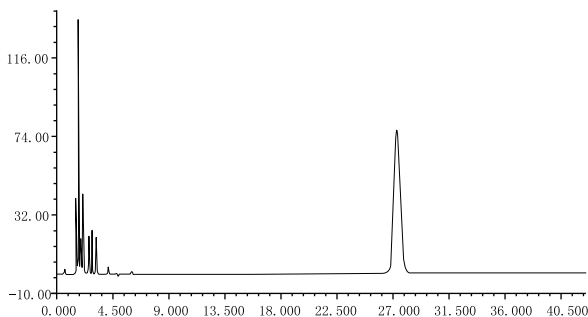
Ultisil™ Diol column is more stable than traditional normal phase columns, such as NH<sub>2</sub>/SiO<sub>2</sub>. Compared with NH<sub>2</sub>/SiO<sub>2</sub> column, Diol column is not sensitive to water. Ultisil™ Diol column can also be used in reversed phase analysis.

- More stable than traditional normal phase columns, such as Silica, Amine
- Can be used in reversed phase analysis
- Similar polarity to Amine
- Good selectivity without excessive retention
- Improved peak shape compared to bare silica

### Ultisil™ Diol

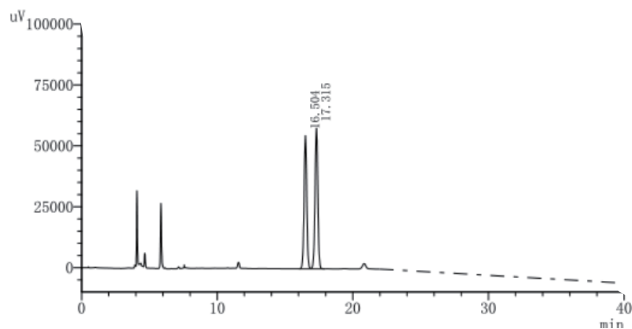
Structural Formula	
pH Range	2.0-8.0
Particle Size	3 μm, 5 μm, 10 μm
Surface Area(m <sup>2</sup> /g)	320(120 Å)
Carbon Loading(%)	2.5(120 Å)
USP List	L20
Endcapped	No

### Tacrolimus



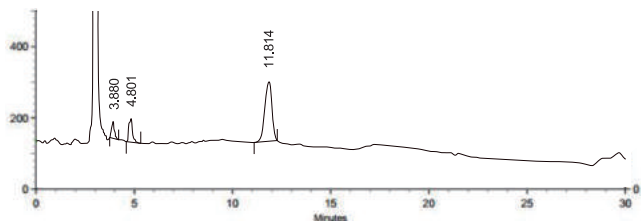
Column:	Ultisil™ Diol, 4.6 ×250 mm, 5 μm
Mobile Phase:	N-hexane/ butyl chloride/ acetonitrile=7/2/1
Detector:	225 nm
Temperature:	Ambient
Flow Rate:	1.7 mL/min
Injection Volume:	5 μL

### Cloprostenol Sodium



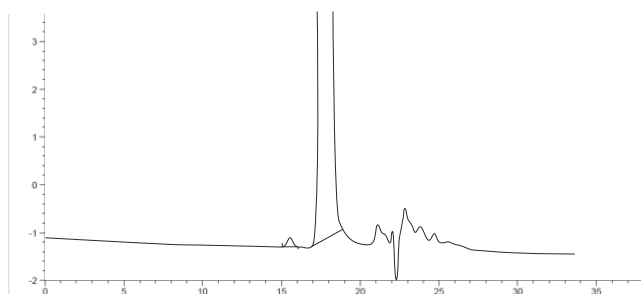
Column:	Ultisil™ Diol, 4.6 ×300 mm, 3 μm
Mobile Phase:	N-hexane/isopropanol =99.5/0.5 (volume ratio)
Detector:	220 nm
Temperature:	Ambient
Flow Rate:	1.0 mL/min
Injection Volume:	10 μL

## Propofol



<b>Column:</b>	Ultisil™ Diol, 4.6 ×250 mm, 5 μm																		
<b>Mobile Phase:</b>	Mobile phase A: methanol/water/glacial acetic acid/triethylamine=85/15/0.5/0.05 Mobile Phase B: n-hexane/isopropanol/ mobile phase A=20/48/32																		
<b>Gradient Program:</b>	<table border="1"> <thead> <tr> <th>Time(min)</th> <th>A(%)</th> <th>B(%)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>5</td> <td>95</td> </tr> <tr> <td>10</td> <td>22</td> <td>78</td> </tr> <tr> <td>22</td> <td>22</td> <td>78</td> </tr> <tr> <td>23</td> <td>90</td> <td>10</td> </tr> <tr> <td>27</td> <td>5</td> <td>95</td> </tr> </tbody> </table>	Time(min)	A(%)	B(%)	0	5	95	10	22	78	22	22	78	23	90	10	27	5	95
Time(min)	A(%)	B(%)																	
0	5	95																	
10	22	78																	
22	22	78																	
23	90	10																	
27	5	95																	
<b>Flow Rate:</b>	1.0 mL/min																		
<b>Detector:</b>	ELSD: gas flow rate=2.5 L/min, drift tube temperature: 70°C																		
<b>Temperature:</b>	40°C																		
<b>Injection Volume:</b>	20 μL																		

## Insulin



<b>Column:</b>	Ultisil™ Diol, 7.8 ×300 mm, 5 μm
<b>Mobile Phase:</b>	1 mg/mL L-arginine solution/acetonitrile/ glacial acetic acid=65/20/15
<b>Detector:</b>	276 nm
<b>Temperature:</b>	30°C
<b>Flow Rate:</b>	0.5 mL/min
<b>Injection Volume:</b>	20 μL

## Ordering Information

### Ultisil™ Diol

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	00206-21009	09206-21009	00206-21010	00206-21011	00206-21012	00206-21013	00206-21014	00206-21015	00206-21016	-	00808-23020	00808-01107
	3.0	00206-21018	-	00206-21019	00206-21020	00206-21021	00206-21022	00206-21023	00206-21024	00206-21025	-	00808-23020	00808-01107
	4.0	00206-21027	-	00206-21028	00206-21029	00206-21030	00206-21031	00206-21032	00206-21033	00206-21034	-	00808-03020	00808-01101
	4.6	00206-21036	11206-21036	00206-21037	00206-21038	00206-21039	00206-21040	00206-21041	00206-21042	00206-21043	-	00808-03020	00808-01101
5 μm 120 Å	2.1	00206-31009	09206-31009	00206-31010	00206-31011	00206-31012	00206-31013	00206-31014	00206-31015	00206-31016	-	00808-24020	00808-01107
	3.0	00206-31018	-	00206-31019	00206-31020	00206-31021	00206-31022	00206-31023	00206-31024	00206-31025	-	00808-24020	00808-01107
	4.0	00206-31027	-	00206-31028	00206-31029	00206-31030	00206-31031	00206-31032	00206-31033	00206-31034	00206-31035	00808-04020	00808-01101
	4.6	00206-31036	11206-31036	00206-31037	00206-31038	00206-31039	00206-31040	00206-31041	00206-31042	00206-31043	00206-31044	00808-04020	00808-01101
10 μm 120 Å	4.0	-	-	-	-	-	-	00206-41032	00206-41033	00206-41034	00206-41035	00808-05020	00808-01101
	4.6	-	-	-	-	-	-	00206-41041	00206-41042	00206-41043	00206-41044	00808-05020	00808-01101

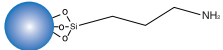
Don't see your needed size or format? Contact Welch or your local distributor for other dimensions.

# Ultisil™ XB-NH<sub>2</sub>

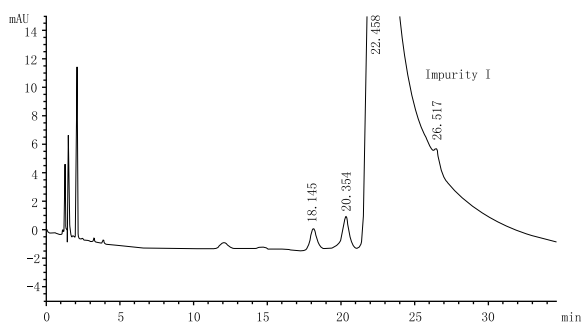
Ultisil™ XB-NH<sub>2</sub> column is based on propyl-amino silane, mostly used in normal phase, but can also be used in reversed phase.

- Used in normal phase for weak anion-exchange, and in reversed-phase HPLC for polar compounds
- For applications in aggressive normal phase mode with aqueous eluent
- Vitamins A and D can be separated in the normal-phase mode
- Carbohydrates and sugars can be separated in the reversed-phase mode

## Ultisil™ XB-NH<sub>2</sub>

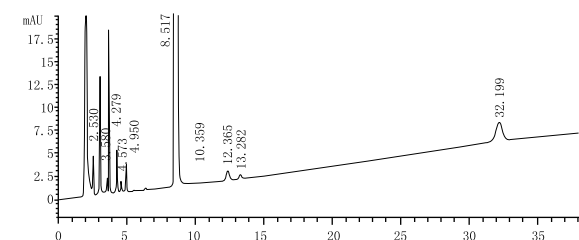
Structural Formula	
pH Range	2.0-8.0
Particle Size	3 μm, 5 μm, 10 μm
Surface Area(m <sup>2</sup> /g)	320(120 Å)
Carbon Loading(%)	4(120 Å)
USP List	L8
Endcapped	No

### Acarbose



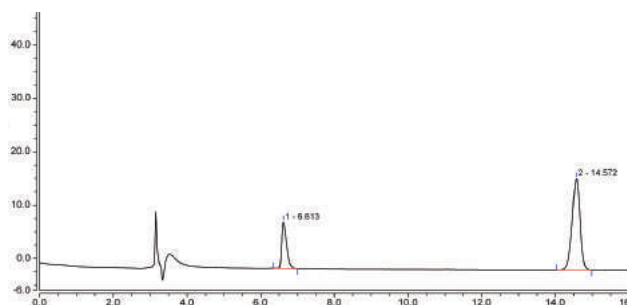
Column:	Ultisil™ XB-NH <sub>2</sub> , 4.6 ×250 mm, 5 μm
Mobile Phase:	Phosphate buffer */ acetonitrile=28/72 * Dissolve 600 mg of s KH <sub>2</sub> PO <sub>4</sub> and 279 mg of ADSP in 100 mL water, add water to make 1000 mL
Detector:	210 nm
Temperature:	35°C
Flow Rate:	2.0 mL/min
Injection Volume:	10 μL

### Acetyl-L-carnitine



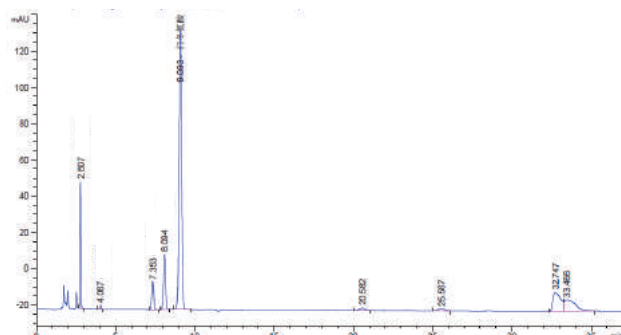
Column:	Ultisil™ XB-NH <sub>2</sub> , 4.6 ×250 mm, 5 μm
Mobile Phase:	Buffer/acetonitrile=30/70
Detector:	205 nm 210 nm
Temperature:	20°C
Flow Rate:	1.0 mL/min
Injection Volume:	10 μL

### Separation of N-tert-butylglycine hydrochloride and N-tert-butylglycine acid chloride hydrochloride



Column:	Ultisil™ XB-NH <sub>2</sub> , 4.6 ×250 mm, 5 μm
Mobile Phase:	Methanol/isopropanol=80/20
Detector:	210 nm
Temperature:	30°C
Flow Rate:	1.0 mL/min
Injection Volume:	5 μL

## Ornithine Aspartate



<b>Column:</b>	Ultisil™ XB-NH <sub>2</sub> , 4.6 ×250 mm, 5 μm
<b>Mobile Phase:</b>	KH <sub>2</sub> PO <sub>4</sub> buffer solution*/acetonitrile=40/60 * Dissolve 2.72 g of KH <sub>2</sub> PO <sub>4</sub> in 500 mL water, add 5 mL of concentrated ammonia solution, add water to 1000 mL, adjust pH 5.60±0.05 with H <sub>3</sub> PO <sub>4</sub>
<b>Detector:</b>	205 nm
<b>Temperature:</b>	30°C
<b>Flow Rate:</b>	1.0 mL/min
<b>Injection Volume:</b>	20 μL

## Ordering Information

### Ultisil™ XB-NH<sub>2</sub>

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Guard Column Holder
		30	33	50	75	100	125	150	200	250	300		
3μm	2.1	00204-21009	09204-21009	00204-21010	00204-21011	00204-21012	00204-21013	00204-21014	00204-21015	00204-21016	-	00808-23004	00808-01107
	3.0	00204-21018	-	00204-21019	00204-21020	00204-21021	00204-21022	00204-21023	00204-21024	00204-21025	-	00808-23004	00808-01107
	4.0	00204-21027	-	00204-21028	00204-21029	00204-21030	00204-21031	00204-21032	00204-21033	00204-21034	-	00808-03004	00808-01101
	4.6	00204-21036	11204-21036	00204-21037	00204-21038	00204-21039	00204-21040	00204-21041	00204-21042	00204-21043	-	00808-03004	00808-01101
5μm	2.1	00204-31009	09204-31009	00204-31010	00204-31011	00204-31012	00204-31013	00204-31014	00204-31015	00204-31016	-	00808-24004	00808-01107
	3.0	00204-31018	-	00204-31019	00204-31020	00204-31021	00204-31022	00204-31023	00204-31024	00204-31025	-	00808-24004	00808-01107
	4.0	00204-31027	-	00204-31028	00204-31029	00204-31030	00204-31031	00204-31032	00204-31033	00204-31034	00204-31035	00808-04004	00808-01101
	4.6	00204-31036	11204-31036	00204-31037	00204-31038	00204-31039	00204-31040	00204-31041	00204-31042	00204-31043	00204-31044	00808-04004	00808-01101
10μm	4.0	-	-	-	-	-	-	00204-41032	00204-41033	00204-41034	00204-41035	00808-05004	00808-01101
	4.6	-	-	-	-	-	-	00204-41041	00204-41042	00204-41043	00204-41044	00808-05004	00808-01101

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