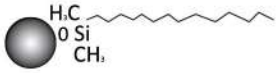
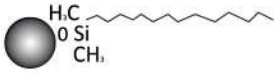
WELCHROM® SEIRES HPLC COLUMN

- Combination of perfect peak shap and lwest back pressure
- Perfect peak shape and low back pressure
- Ultra-high purity (>99.999%) Type B silica perticles
- New bonding and endcopping technique
- Economically priced

Welchrom C18

Struclural Formula	
pH Range	1.5-10.0
Particle Size	5µm
Surface Area(M2/g)	320(120 A)
Carbon Loading (%)	19(120 A)
USP List	L1
Endcapped	Yes

Welchrom C18

Struclural Formula	
pH Range	1.5-10.0
Particle Size	5µm
Surface Area(M2/g)	320(120 A)
Carbon Loading (%)	12(120 A)
USP List	L7
Endcapped	Yes

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 propritary surface modification techniques. producing excellent peak shape, column efficiency and exceptional lot-to-lt reproducibility. Ultisil coloumn is the best choies for method development owng to complete bonding chemistries and stable performance.

FEATURES:

- Ultra-pure spherical porous silica, purity > 99.999%
- Unique bonding chemistry and endcapping tecenology
- High efficiency: theroetical 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

XTIMATE SERIES HPLC COLUMN

NEXT GENRATION BEYOND MID-RANGE PRICED ULTISIL SERIES

X features of Xtimate column
extra pH range from 1.0 to 12.5, excellent peak shape for strong bases
extra column lifetime: 5 times of similar product such as Gemini
extra performance: column efficiency of 5µm column is as high as 90000/m, 2-3 times of that of Xterra
extra care from welch: enjoy excellent pre-sales and after-sales service from welch

UHPLC COLUMN

Welch also offers Ultisil UHPLC (1.8hm) column. With high column efficiency and good lot-to-lot reproducibility. Ultisil UHPLC can generate high quality data, decreasing the probability of repeated sample analyses while reducing the consumption of solvent at the same time. Ultisil UHPLC series offer a variety of bonded phases, specified guard column and pre-coloumn for the users to design and realize faster and more environmentally friendly chrom atography applications with higher resolution.

- Ultra resolution: some resolutions as or batter than that of conventional column which has more packing materials.
- Ultra speed: UHPLC offers more information per unit time and higher speed owing to its smaller partivles.
- Sensitivity: higher N, narrower peak width (W), higher peak hight. the system sensitivity of 1.8µm UHPLC is 70% ans 40% higher than that of conventional column of 5hm and 3.5hm packng, respectively.v

Welch HPLC Column Selection by USP Listing

HPLC Column	Particle Size	pH Range	Carbon Loading	Surface Area(m^2/g)	Endcapped
L1: Octadecyl silane chemically bonded to porous silica or ceramic microparticles, 1.5 to 10 µm in diameter, or a monolithic rod.					
Ultisil XB-C18	3, 5, 10 µm	1.5-10.0	17%(120Å), 8%(300Å)	320(120Å), 90(300Å)	Yes
Ultisil AQ-C18	3, 5, 10 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
Ultisil LP-C18	3, 5, 10 µm	0.5-8.0	10%(120Å), 5%(300Å)	320(120Å), 90(300Å)	No
Ultisil LP-AQ	5 µm	1.0-8.0	5%(120Å)	320(120Å)	No
Ultisil Polar-RP	3, 5,10 µm	1.5-10.0	18%(120Å)	320(120Å)	Yes
Ultisil AA(Amino Acid)	5 µm	1.5-10.0	17%(120Å)	320(120Å)	Yes
Ultisil PAH	3, 5 µm	1.5-10.0	22%(120Å)	320(120Å)	No
Ultisil ALK C18	5 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
Ultisil Plus C18	3.5, 5 µm	2.0-8.0	10%(130Å)	160(130Å)	Yes
Ultisil ODS-3	3, 5 µm	2.0-8.0	15%(100Å)	380(100Å)	Yes
Ultisil XS-C18	3, 5 µm	2.0-10.0	23%(120Å)	320(120Å)	Yes
Xtimate C18	3, 5, 10 µm	1.0-12.5	14%(120Å)	320(120Å)	Yes
Xtimate Polar-RP	5 µm	1.0-12.5	16%(120Å)	320(120Å)	Yes
Welchrom C18	5 µm	1.5-10.0	19%(120Å)	320(120Å)	Yes
Topsil C18	3, 5 µm	2.0-9.5	12%(150Å)	260(150Å)	Yes
Boltimate C18(Core-shell)	2.7 µm	2.0-8.5	9%(90Å)	120(90Å)	Yes
Boltimate EXT-C18(Core-shell)	2.7 µm	1.5-12.0	8%(90Å)	120(90Å)	Yes
Boltimate LP-C18(Core-shell)	2.7 µm	1.0-8.5	7%(90Å)	120(90Å)	No
Ultisil UHPLC XB-C18	1.8 µm	1.5-10.0	17%(120Å)	320(120Å)	Yes
Ultisil UHPLC AQ-C18	1.8 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
Ultisil UHPLC LP-C18	1.8 µm	0.5-8.0	10%(120Å)	320(120Å)	No
Ultisil UHPLC Polar-RP	1.8 µm	1.5-10.0	18%(120Å)	320(120Å)	Yes
Xtimate UHPLC C18	1.8 µm	1.0-12.5	14%(120Å)	320(120Å)	Yes
L3: Porous silica particles, 1.5 to 10 µm in diameter, or a mondithic silica rod.					
Ultisil SiO_2	3, 5, 10 µm	2.0-8.0	N/A	320(120Å),90(300Å)	No
Ultisil HILIC Silica	3, 5, 10 µm	2.0-8.0	N/A	320(120Å)	No
Ultisil UHPLC HILIC	1.8 µm	2.0-8.0	N/A	320(120Å)	No
Topsil Silica	5 µm	2.0-8.0	N/A	260(150Å)	No
Boltimate HILIC	2.7 µm	2.0-8.5	N/A	120(90Å)	No
L7: Octyl silane chemically bonded to totally porous silica particles, 1.5 to 10 µm in diameter, or a monolithic silca rod.					
Ultisil XB-C8	3, 5, 10 µm	1.5-10.0	12%(120Å), 4%(300Å)	320(120Å), 90(300Å)	Yes
Ultisil LP-C8	3, 5 µm	1.0-8.0	5.5%(120Å), 3%(300Å)	320(120Å), 90(300Å)	No
Ultisil F-C8	3, 5 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
Xtimate C8	3, 5, 10 µm	1.0-12.5	10%(120Å)	320(120Å)	Yes
Welchrom C8	5 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
Topsil C8	3, 5 µm	2.0-9.5	10%(150Å)	260(150Å)	Yes
Ultisil UHPLC XB-C8	1.8 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
L8: An essentially monomolecular layer of aminopropyl-silane chemically bonded to totally porous silica gel support, 3 to 10 µm in diameter.					
Ultisil XB-NH_2	3, 5, 10 µm	2.0-8.0	4%(120Å)	320(120Å)	No
Ultisil HILIC-NH_2	3, 5, 10 µm	2.0-8.0	4%(120Å)	320(120Å)	No
Topsil NH_2	5 µm	2.0-8.0	3%(150Å)	260(150Å)	No
Topsil Hilic-NH_2	5 µm	2.0-8.0	3%(150Å)	260(150Å)	No
Xtimate Lactose-NH_2	5 µm	2.0-8.0	7%(120Å)	450(120Å)	No
L9: Irregular or spherical, totally porous silica gel having a chemically bonded, strongly acidic cation-exchange coating, 3 to 10 µm in diameter.					
Ultisil XB-SCX	3, 5,10 µm	2.0-8.0	12%(120Å), 5%(300Å)	320(120Å), 90(300Å)	No
Xtimate XB-SCX	5 µm	2.0-8.0	2%(120Å)	300(120Å)	No
L10: Nitrile groups chemically bonded to porous silica particles, 3 to 10 µm in diameter.					
Ultisil XB-CN	3, 5, 10 µm	1.5-9.0	7%(120Å)	320(120Å)	Yes
Ultisil LP-CN	5 µm	1.0-8.0	6%(120Å)	320(120Å)	No
Xtimate CN	5 µm	1.0-12.5	7%(120Å)	320(120Å)	Yes
Topsil CN	5 µm	2.0-8.0	6%(150Å)	260(150Å)	Yes
L11: Phenyl groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter.					
Ultisil XB-Phenyl	3, 5, 10 µm	1.5-10.0	12%(120Å), 4%(300Å)	320(120Å), 90(300Å)	Yes
Ultisil Phenyl-Ether	5 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
Ultisil PFP	3, 5 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
Xtimate Phenyl-hexyl	3, 5 µm	1.0-12.5	12%(120Å)	320(120Å)	Yes
Topsil Phenyl-hexyl	3, 5 µm	2.0-9.5	12%(150Å)	260(150Å)	Yes
Boltimate Phenyl-hexyl(Core-shell)	2.7 µm	2.0-8.5	7%(90Å)	120(90Å)	Yes
Boltimate EXT-PFP(Core-shell)	2.7 µm	1.5-12.0	5%(90Å)	120(90Å)	Yes
Ultisil UHPLC XB-Phenyl	1.8 µm	1.5-10.0	12%(120Å)	320(120Å)	Yes
L13:Trimethylsilane chemically bonded to porous silica particles, 3 to 10 µm in diameter.					
Ultisil XB-C1	5 µm	1.5-10.0	4%(120Å)	320(120Å)	Yes

HPLC Column	Particle Size	pH Range	Carbon Loading	Surface Area(m^2/g)	Endcapped
Ultisil XB-SAX	3, 5,10 µm	2.0-8.0	7.5%(120Å), 1.5%(300Å)	320(120Å), 90(300Å)	No
L17: Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the hydrogen form, 7 to 11 µm in diameter.					
Xtimate Sugar-H	5, 8 µm	1.0-3.0	N/A	N/A	N/A
L19: Strong cation-exchange resin consisting of sulfonated cross-linked styrene-divinylbenzene copolymer in the calcium form, 9 µm in diameter.					
Xtimate Sugar-Ca	5, 8 µm	5.0-9.0	N/A	N/A	N/A
L20: Dihydroxypropane groups chemically bonded to porous silica particles, 1.5 to 10 µm in diameter.					
Ultisil Diol	3, 5, 10 µm	2.0-8.0	2.5%(120Å)	320(120Å)	No
L21: A rigid, spherical styrene-divinylbenzene copolymer, 3 to 30 µm in diameter.					
Xtimate PS/DVB	5, 10 µm	1.0-14.0	N/A(100Å, 300Å)	N/A	N/A
L22: A cation-exchange resin made of porous polystyrene gel with sulfonic acid groups, about 10 µm in size.					
Xtimate Sugar-H	5, 8 µm	1.0-3.0	N/A	N/A	N/A
L26: Butyl silane chemically bonded to totally porous silica particles, 3 to 10 µm in diameter.					
Ultisil XB-C4	3, 5, 10 µm	1.5-10.0	8%(120Å), 3%(300Å)	320(120Å), 90(300Å)	Yes
Xtimate C4	3, 5 µm	1.0-12.5	8%(120Å)	320(120Å)	Yes
L33: Packing having the capacity to separate dextrans of 4,000 to 500,000 daltons. It is spherical, silica-based and processed to provide pH stability.					
Xtimate SEC-120	3, 5 µm	2.0-7.5	N/A(120Å)	N/A	N/A
Xtimate SEC-300	3, 5 µm	2.0-7.5	N/A(300Å)	N/A	N/A
Xtimate SEC-500	5 µm	2.0-7.5	N/A(500Å)	N/A	N/A
Xtimate SEC-700	5 µm	2.0-7.5	N/A(700Å)	N/A	N/A
Xtimate SEC-1000	5 µm	2.0-7.5	N/A(1000Å)	N/A	N/A
L40: Cellulose tris-3,5-dimethylphenylcarb-amate coated porous silica particles, 5 to 20 µm in diameter.					
Ultisil Cellu-D/Cellu-DR	5, 10 µm	2.0-9.0	N/A	320(120Å)	N/A
L43: Pentafluoropehnyl groups chemically bonded to silica particles 5 to 10 µm in diameter.					
Ultisil PFP	3, 5 µm	1.5-10.0	13%(120Å)	320(120Å)	Yes
Boltimate EXT-PFP(Core-shell)	2.7 µm	1.5-12.0	5%(90Å)	120(90Å)	Yes
L51: Amylose tris-3,5-dimethylphenylcarbamate-coated, porous, spherical, silica particles, 5 to 10 µm in diameter.					
Ultisil Amy-D/Amy-DR	5, 10 µm	2.0-9.0	N/A	320(120Å)	N/A
L56: Propyl silane chemically bonded to totally porous silica particles, 3 to 10 µm in diameter.					
Ultisil LP-C3	5 µm	1.0-8.0	4%(120Å)	320(120Å)	No
L59: Packing having the capacity to separate proteins by molecular weight over the range of 5 to 7000 kDa. It is spherical (1.5-10 µm),silica-based, and processed to provide hydrophilic characteristicsand pH stability.					
Xtimate SEC-120	3, 5 µm	2.0-7.5	N/A(120Å)	N/A	N/A
Xtimate SEC-300	3, 5 µm	2.0-7.5	N/A(300Å)	N/A	N/A
Xtimate SEC-500	5 µm	2.0-7.5	N/A(500Å)	N/A	N/A
Xtimate SEC-700	5 µm	2.0-7.5	N/A(700Å)	N/A	N/A
Xtimate SEC-1000	5 µm	2.0-7.5	N/A(1000Å)	N/A	N/A
L60: Spherical, porous silica gel, 10 µm or less in diameter, surface has been covalently modified with alkyl amide groups and endcapped.					
Ultisil Polar-RP	3, 5,10 µm	1.5-10.0	18%(120Å)	320(120Å)	Yes
Xtimate Polar-RP	5 µm	1.0-12.5	16%(120Å)	320(120Å)	Yes
Ultisil UHPLC Polar-RP	1.8 µm	1.5-10.0	18%(120Å)	320(120Å)	Yes
L62: C30 silane bonded phase on a fully porous spherical silica, 3 to 15 µm in diameter.					
Ultisil XB-C30	3, 5, 10 µm	1.5-10.0	22%(120Å)	320(120Å)	Yes
L80: Cellulose tris(4-methylbenzoate)-coated, porous, spherical, silicaparticles, 5 µm in diameter.					
Ultisil Cellu-J/Cellu-JR	5, 10 µm	2.0-9.0	N/A	320(120Å)	N/A
Not Included in USP List					
Ultisil HILIC Amide	3, 5, 10 µm	2.0-8.0	7%(120Å)	320(120Å)	N/A
Ultisil HILIC Amphion II	5 µm	2.0-8.0	6%(120Å)	320(120Å)	N/A
Ultisil Amy-S/Amy-SR	5, 10 µm	2.0-9.0	N/A	320(120Å)	N/A
Ultisil MM NH_2/CN	5 µm	2.0-8.0	N/A(120Å)	320(120Å)	N/A
Ultisil MM C18/SCX	5 µm	2.0-8.0	N/A(120Å)	320(120Å)	N/A