Xtimate® Series HPLC Column

---Next generation beyond mid-range priced Ultisil ® series

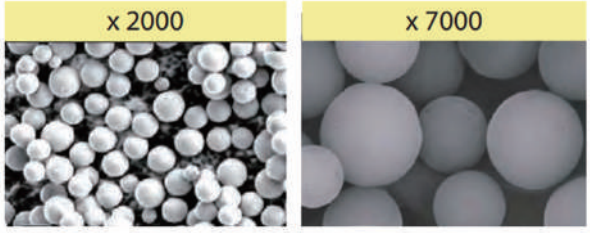
Features

- Extra pH range: wide 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 columns 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

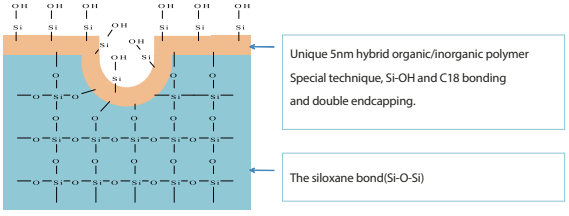
Xtimate® Silica Based HPLC Column

Xtimate® HPLC column derives its outstanding performance from a special hybrid particle based technique, which coats a unique 5nm organic/inorganic polymer layer on the silica surface, so that the pH range is extended to 1.0-12.5.

Xtimate® column is designed for HPLC method development. Regardless of the types of mobile phase or high temperature, Xtimate® HPLC column always has stable performance and long lifetime.

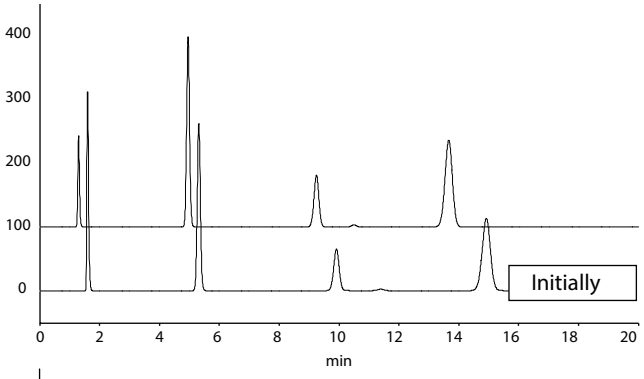


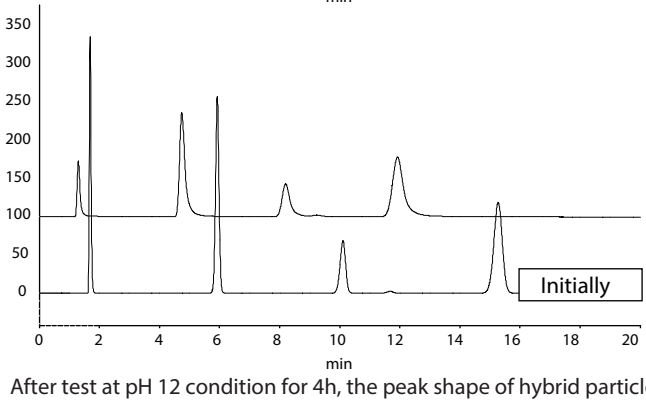
SEM of Hybrid particle



Hybrid Particles Based Xtimate Technology

Comparison of Peak Shape After Soaking In Base



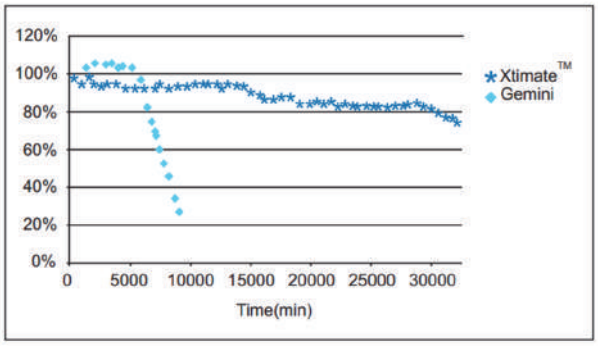


Column:	Xtimate® C18, 5 μm, 150 x 4.6 mm
Mobile Phase:	CH_3CN/0.01N-NaOHaq.(pH=12)=30/70
Flow Rate:	1.0ml/min
Temperature:	40°C
Soak Time:	4 hours

Column:	Ultisil® C18, 5 μm, 150 x 4.6 mm
Mobile Phase:	CH_3OH/H_2O=60/40
Flow Rate:	1.0 mL/min
Temperature:	40°C
Detector:	UV 254nm
Samples:	1.Uracil 2.Methyl benzoate 3.Toluence 4.Naphthalene

After test at pH 12 condition for 4h, the peak shape of hybrid particles based Xtimate® column shows no difference.

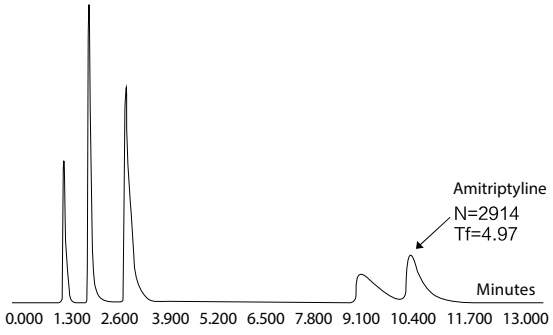
Lifetime Test Comparison: 5 Times Longer Than Gemini



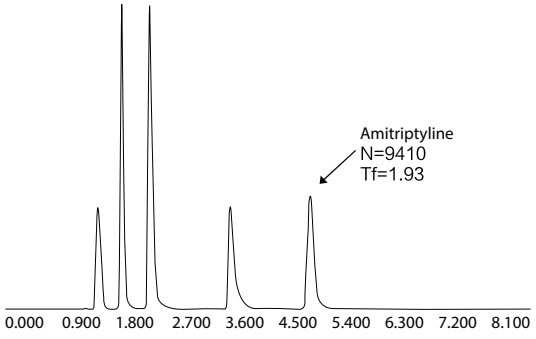
Column:	Xtimate® C18, 5 µm, 150x4.6 mm / Gemini C18, 5 µm, 150x4.6 mm
Mobile Phase:	A: 10mM Ammonium Bicarbonate pH 10.5 B: 90:10 Acetonitrile/buffer
Gradient Program:	0% to 100% B in 10min. 100% B for 7min. 0% B for 3min.
Flow Rate:	1.0 mL/min
Temperature:	50°C
Detector:	UV 254 nm
Samples:	1.Uracil 2.Methyl benzoate 3.Toluence 4.Naphthalene

Unprecedented Peak Shape

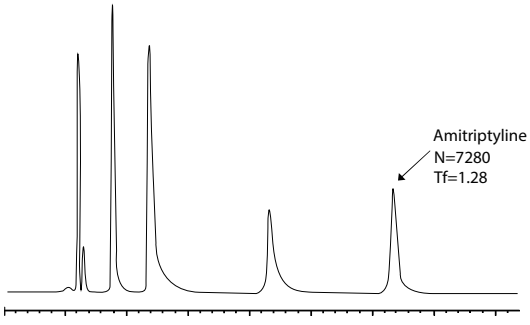
At mid pH, strong bases usually exhibit bad tailing due to secondary interactions between the analytes and the surface silaols. In Welch's unique technique, the hybrid layer totally covers the surface silanols and blocks analytes' access to these surface silanols. Improved bonding and endcapping further reduce silanol activity. As a result, hybrid particle based Xtimate® columns show unprecedented peak shape.



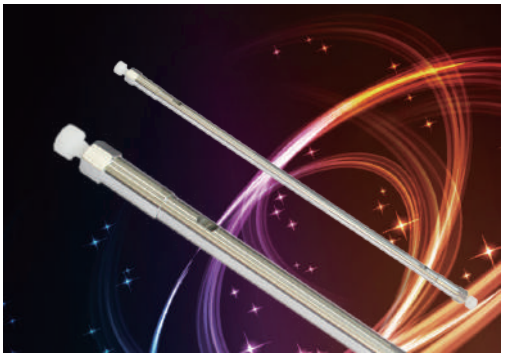
The detection of amitriptyline by poor endcapping product



The detection of Amitriptyline by Symmetry C18



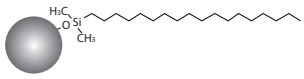
The detection of amitriptyline by Xtimate® C18



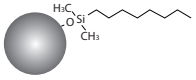
Xtimate® HPLC Column

Besides C18 and C8 bonded phases, Xtimate also provides C4, CN, Phenyl bonded phases.
Xtimate® applies a new special SmoothpakTM technique to C18, C8, C4, CN, Phenyl and amino phases, different than the bonding method of other series. As a result, Xtimate® provides a different selectivity, improved stability and reproducibility. In particular, for the Phenyl phase of Phenyl-Hexyl, Xtimate® is totally different from Ultisil® Phenyl. Xtimate® Phenyl phase's longer hexyl group provides extra hydrocarbon interaction and longer retention than conventional phenyl-propyl phase; it also provides better chemical stability. Welch also adds polar embedded phase, Polar-RP on Xtimate® particles, to further improve peak shape for very polar and strong basic

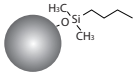
Xtimate® C18

Structural Formula	
pH Range	1.0-12.5
Particle Size	3 µm, 5 µm, 10 µm
Surface Area(m^2/g)	320(120 Å)
Carbon Loading(%)	14(120 Å)
USP List	L1
Endcapped	Yes

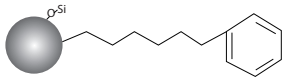
Xtimate® C8

Structural Formula	
pH Range	1.0-12.5
Particle Size	3 µm, 5 µm, 10 µm
Surface Area(m^2/g)	320(120 Å)
Carbon Loading(%)	10(120 Å)
USP List	L7
Endcapped	Yes

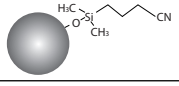
Xtimate® C4

Structural Formula	
pH Range	1.0-12.5
Particle Size	3 µm, 5 µm
Surface Area(m^2/g)	320(120 Å)
Carbon Loading(%)	8(120 Å)
USP List	L26
Endcapped	Yes

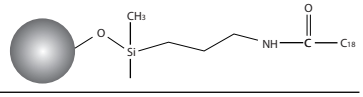
Xtimate® Phenyl-Hexyl

Structural Formula	
pH Range	1.0-12.5
Particle Size	3 µm, 5 µm
Surface Area(m^2/g)	320(120 Å)
Carbon Loading(%)	12(120 Å)
USP List	L11
Endcapped	Yes

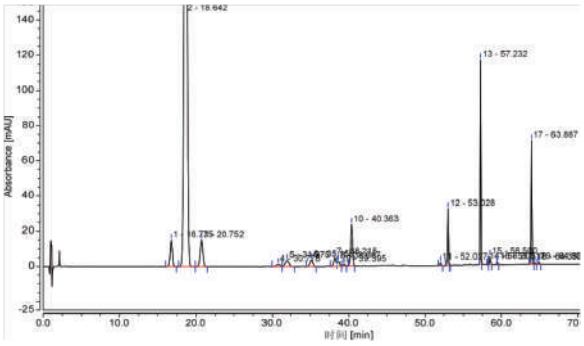
Xtimate® CN

Structural Formula	
pH Range	1.0-12.5
Particle Size	5 µm
Surface Area(m^2/g)	320(120 Å)
Carbon Loading(%)	7(120 Å)
USP List	L10
Endcapped	Yes

Xtimate® Polar-RP

Structural Formula	
pH Range	1.0-12.5
Particle Size	5 µm
Surface Area(m^2/g)	320(120 Å)
Carbon Loading(%)	16(120 Å)
USP List	L1
Endcapped	Yes

Rosuvastatin Calcium

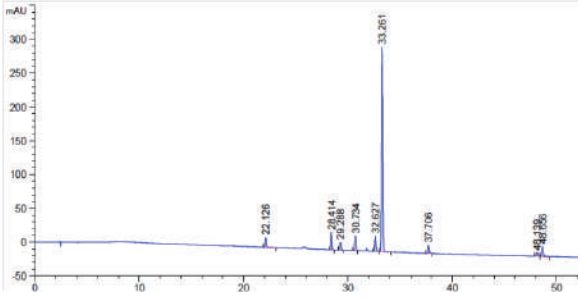


Column:	Xtimate® C18, 3.0 ×150 mm, 3 μm
Mobile Phase:	A: 1% TFA/acetonitrile/water=1/29/70 B: 1% TFA/acetonitrile/water=1/75/24

Time(min)	A(%)	B(%)
0-30	100	0
30-50	100-50	0-40
50-60	60-0	40-100
60-70	0	100

Flow Rate:	0.75 mL/min
Temperature:	40°C
Detector:	242 nm
Injection Volume:	10 μL

Cangrelor

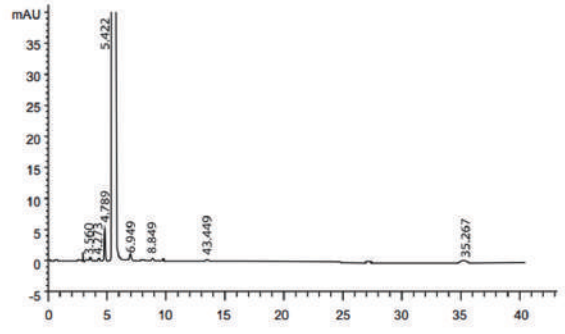


Column:	Xtimate® C18, 4.6 ×250 mm, 5 μm
Mobile Phase:	Mobile phase A: 0.05 mol/L K_2HPO_4(pH 8.5) Mobile Phase B: acetonitrile

Time(min)	A(%)	B(%)
0	95	5
3	95	5
35	67	33
50	60	40
60	35	65
65	35	65
66	95	5
75	95	5

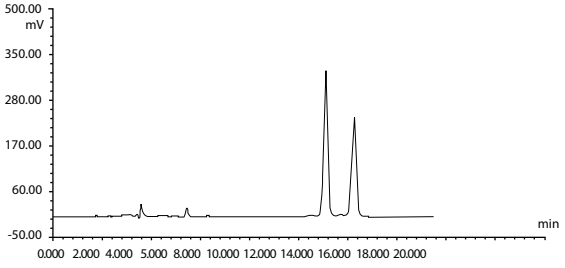
Flow Rate:	1.0 mL/min
Temperature:	25°C
Detector:	242 nm
Injection Volume:	5 μL

Valaciclovir Hydrochloride



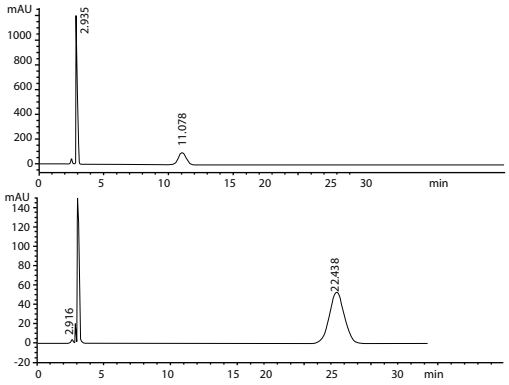
Column:	Xtimate® Phenyl-Hexyl, 250 x 4.6 mm, 5 μm
Mobile Phase:	Methanol/0.01mol/L KH_2PO_4(pH3.0)=15/85
Flow Rate:	1.0 mL/min
Temperature:	35°C
Detector:	251 nm
Injection Volume:	20 μL

Omeprazole



Column:	Xtimate® C8, 250 x 4.6 mm, 5 μm
Mobile Phase:	10 mmoL/L Na_2HPO_4(pH7.4)/ Acetonitrile=70/30
Flow Rate:	1.0 mL/min
Temperature:	Ambient
Detector:	280 nm
Injection Volume:	20 μL

Enalapril Maleate



Column:	Xtimate® C8, 250 x 4.6 mm, 5 µm
Mobile Phase:	Phosphate buffer/acetonitrile=75/25
Flow Rate:	1.0mL/min
Temperature:	50°C
Detector:	280 nm
Injection Volume:	20 µL

Ordering Information

Xtimate® C18

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder
		30	33	50	75	100	125	150	200	250	300	10mm length	
3 µm	2.1	00101-11009	00101-11071	00101-11010	00101-11011	00101-11012	00101-11013	00101-11014	00101-11015	00101-11016	-	00808-23101	00808-01107
	3.0	00101-11018	00101-11072	00101-11019	00101-11020	00101-11021	00101-11022	00101-11023	00101-11024	00101-11025	-	00808-23101	00808-01107
	4.0	00101-11027	00101-11073	00101-11028	00101-21029	00101-11030	00101-11031	00101-11032	00101-11033	00101-11034	-	00808-03101	00808-01101
	4.6	00101-11036	00101-11074	00101-11037	00101-21038	00101-11039	00101-11040	00101-11041	00101-11042	00101-11043	-	00808-03101	00808-01101
5 µm	2.1	00101-21009	00101-21071	00101-21010	00101-21011	00101-21012	00101-21013	00101-21014	00101-21015	00101-21016	-	00808-24101	00808-01107
	3.0	00101-21018	00101-21072	00101-21019	00101-21020	00101-21021	00101-21022	00101-21023	00101-21024	00101-21025	-	00808-24101	00808-01107
	4.0	00101-21027	00101-21073	00101-21028	00101-21029	00101-21030	00101-21031	00101-21032	00101-21033	00101-21034	00101-21035	00808-04101	00808-01101
	4.6	00101-21036	00101-21074	00101-21037	00101-21038	00101-21039	00101-21040	00101-21041	00101-21042	00101-21043	00101-21044	00808-04101	00808-01101
10 µm	4.0	-	-	-	-	-	-	00101-31032	00101-31033	00101-31034	00101-31035	00808-05101	00808-01101
	4.6	-	-	-	-	-	-	00101-31041	00101-31042	00101-31043	00101-31044	00808-05101	00808-01101

Xtimate® C8

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder
		30	33	50	75	100	125	150	200	250	300	10mm length	
3 µm	2.1	00102-11009	00102-11071	00102-11010	00102-11011	00102-11012	00102-11013	00102-11014	00102-11015	00102-11016	-	00808-23102	00808-01107
	3.0	00102-11018	00102-11072	00102-11019	00102-11020	00102-11021	00102-11022	00102-11023	00102-11024	00102-11025	-	00808-23102	00808-01107
	4.0	00102-11027	00102-11073	00102-11028	00102-21029	00102-11030	00102-11031	00102-11032	00102-11033	00102-11034	-	00808-03102	00808-01101
	4.6	00102-11036	00102-11074	00102-11037	00102-21038	00102-11039	00102-11040	00102-11041	00102-11042	00102-11043	-	00808-03102	00808-01101
5 µm	2.1	00102-21009	00102-21071	00102-21010	00102-21011	00102-21012	00102-21013	00102-21014	00102-21015	00102-21016	-	00808-24102	00808-01107
	3.0	00102-21018	00102-21072	00102-21019	00102-21020	00102-21021	00102-21022	00102-21023	00102-21024	00102-21025	-	00808-24102	00808-01107
	4.0	00102-21027	00102-21073	00102-21028	00102-21029	00102-21030	00102-21031	00102-21032	00102-21033	00102-21034	00102-21035	00808-04102	00808-01101
	4.6	00102-21036	00102-21074	00102-21037	00102-21038	00102-21039	00102-21040	00102-21041	00102-21042	00102-21043	00102-21044	00808-04102	00808-01101
10 µm	4.0	-	-	-	-	-	-	00102-31032	00102-31033	00102-31034	00102-31035	00808-05102	00808-01101
	4.6	-	-	-	-	-	-	00102-31041	00102-31042	00102-31043	00102-31044	00808-05102	00808-01101

Xtimate® Phenyl-Hexyl

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder
		30	33	50	75	100	125	150	200	250	300	10mm length	
3 µm	2.1	00104-11009	00104-11071	00104-11010	00104-11011	00104-11012	00104-11013	00104-11014	00104-11015	00104-11016	-	00808-23106	00808-01107
	3.0	00104-11018	00104-11072	00104-11019	00104-11020	00104-11021	00104-11022	00104-11023	00104-11024	00104-11025	-	00808-23106	00808-01107
	4.0	00104-11027	00104-11073	00104-11028	00104-21029	00104-11030	00104-11031	00104-11032	00104-11033	00104-11034	-	00808-03106	00808-01101
	4.6	00104-11036	00104-11074	00104-11037	00104-21038	00104-11039	00104-11040	00104-11041	00104-11042	00104-11043	-	00808-03106	00808-01101
5 µm	2.1	00104-21009	00104-21071	00104-21010	00104-21011	00104-21012	00104-21013	00104-21014	00104-21015	00104-21016	-	00808-24106	00808-01107
	3.0	00104-21018	00104-21072	00104-21019	00104-21020	00104-21021	00104-21022	00104-21023	00104-21024	00104-21025	-	00808-24106	00808-01107
	4.0	00104-21027	00104-21073	00104-21028	00104-21029	00104-21030	00104-21031	00104-21032	00104-21033	00104-21034	00104-21035	00808-04106	00808-01101
	4.6	00104-21036	00104-21074	00104-21037	00104-21038	00104-21039	00104-21040	00104-21041	00104-21042	00104-21043	00104-21044	00808-04106	00808-01101

Xtimate® C4

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder
		30	33	50	75	100	125	150	200	250	300	10mm length	
3 µm	2.1	00107-11009	00107-11071	00107-11010	00107-11011	00107-11012	00107-11013	00107-11014	00107-11015	00107-11016	-	00808-23103	00808-01107
	3.0	00107-11018	00107-11072	00107-11019	00107-11020	00107-11021	00107-11022	00107-11023	00107-11024	00107-11025	-	00808-23103	00808-01107
	4.0	00107-11027	00107-11073	00107-11028	00107-21029	00107-11030	00107-11031	00107-11032	00107-11033	00107-11034	-	00808-03103	00808-01101
	4.6	00107-11036	00107-11074	00107-11037	00107-21038	00107-11039	00107-11040	00107-11041	00107-11042	00107-11043	-	00808-03103	00808-01101
5 µm	2.1	00107-21009	00107-21071	00107-21010	00107-21011	00107-21012	00107-21013	00107-21014	00107-21015	00107-21016	-	00808-24103	00808-01107
	3.0	00107-21018	00107-21072	00107-21019	00107-21020	00107-21021	00107-21022	00107-21023	00107-21024	00107-21025	-	00808-24103	00808-01107
	4.0	00107-21027	00107-21073	00107-21028	00107-21029	00107-21030	00107-21031	00107-21032	00107-21033	00107-21034	00107-21035	00808-04103	00808-01101
	4.6	00107-21036	00107-21074	00107-21037	00107-21038	00107-21039	00107-21040	00107-21041	00107-21042	00107-21043	00107-21044	00808-04103	00808-01101

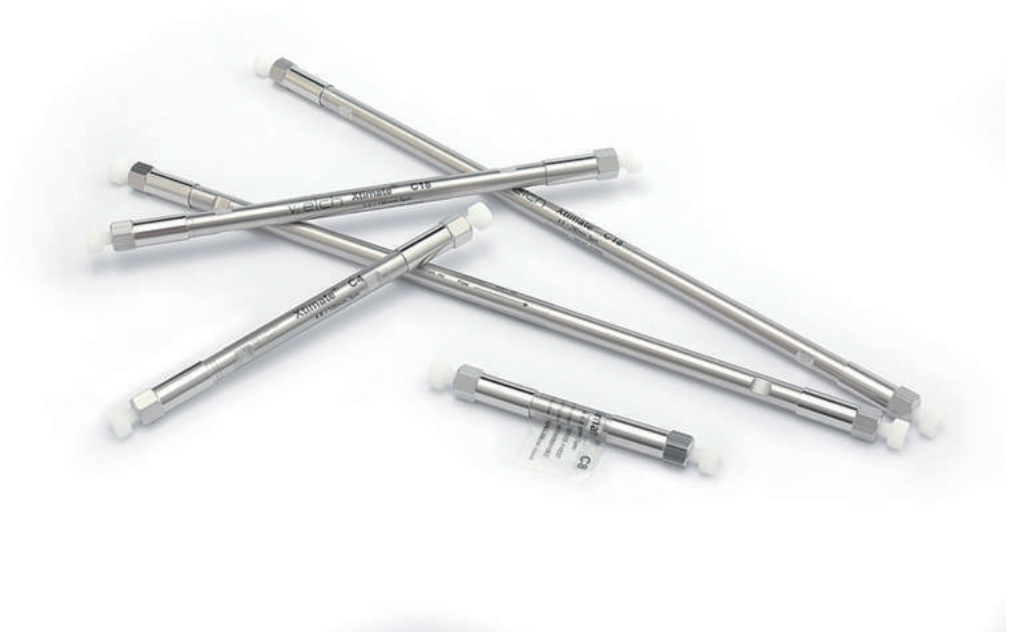
Xtimate® CN

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder
		30	33	50	75	100	125	150	200	250	300	10mm length	
5 µm	2.1	00105-21009	00105-21071	00105-21010	00105-21011	00105-21012	00105-21013	00105-21014	00105-21015	00105-21016	-	00808-24105	00808-01107
	3.0	00105-21018	00105-21072	00105-21019	00105-21020	00105-21021	00105-21022	00105-21023	00105-21024	00105-21025	-	00808-24105	00808-01107
	4.0	00105-21027	00105-21073	00105-21028	00105-21029	00105-21030	00105-21031	00105-21032	00105-21033	00105-21034	00105-21035	00808-04105	00808-01101
	4.6	00105-21036	00105-21074	00105-21037	00105-21038	00105-21039	00105-21040	00105-21041	00105-21042	00105-21043	00105-21044	00808-04105	00808-01101

Xtimate® Polar-RP

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Cartridge holder
		30	33	50	75	100	125	150	200	250	300	10mm length	
5 µm	2.1	00118-21009	00118-21071	00118-21010	00118-21011	00118-21012	00118-21013	00118-21014	00118-21015	00118-21016	-	00808-24111	00808-01107
	3.0	00118-21018	00118-21072	00118-21019	00118-21020	00118-21021	00118-21022	00118-21023	00118-21024	00118-21025	-	00808-24111	00808-01107
	4.0	00118-21027	00118-21073	00118-21028	00118-21029	00118-21030	00118-21031	00118-21032	00118-21033	00118-21034	00118-21035	00808-04152	00808-01101
	4.6	00118-21036	00118-21074	00118-21037	00118-21038	00118-21039	00118-21040	00118-21041	00118-21042	00118-21043	00118-21044	00808-04152	00808-01101

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



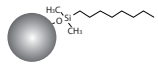
Xtimate® C8 300Å

Welch launched a new Xtimate® C8 300Å column to meet the needs of biopharmaceutical customers to detect protein samples at high pH , and to provide our customers a column with high column efficiency, long life and wide pH range.

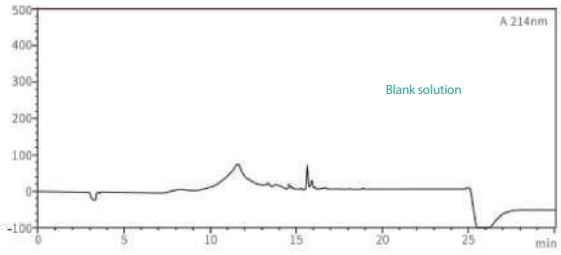
Features

- The pH range is widened to 1.0-12.5
- Excellent stability for high pH applications
- Excellent peak shape for strong alkaline compounds

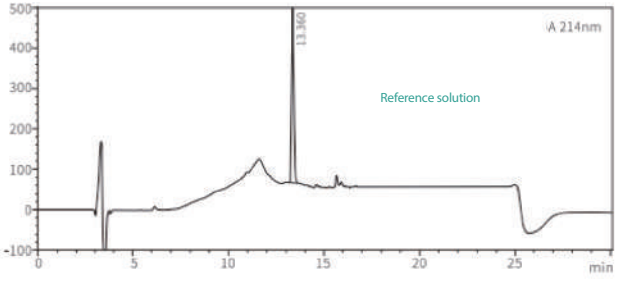
Xtimate® C8

Structural Formula			
pH Range	1.0-12.5	Carbon Loading(%)	5(300 Å)
Particle Size	5 μm	USP List	L7
Surface Area(m^2/g)	100(300 Å)	Endcapped	Yes

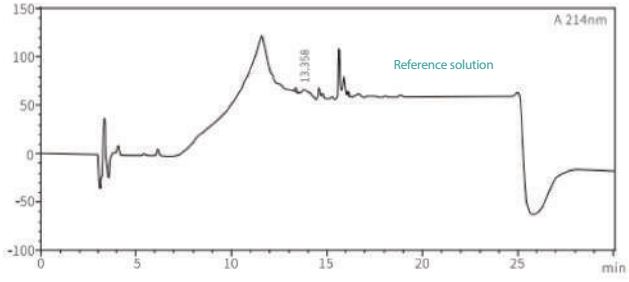
Interleukin-2



Column:	Xtimate® C8 300Å(4.6×250mm, 5μm)
Mobile Phase:	Mobile phase A: 0.1% trifluoroacetic acid aqueous solution Mobile phase B: 0.1% trifluoroacetic acid in acetonitrile
Flow Rate:	1.0 mL/min
Temperature:	30 ℃
Detector:	214 nm
Injection Volume:	10 μL

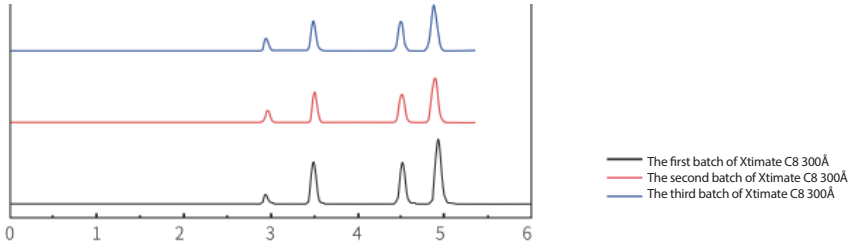


Retention time	Area	Height	Number of plates(USP)	Compound name
13.360	3206759	437905	69712	Interleukin 2



Retention time	Area	Height	Number of plates(USP)	Compound name
13.358	24247	4111	93524	Interleukin 2

Three batches of Xtimate® C8 300 Å packing materials factory test result



Ordering Information

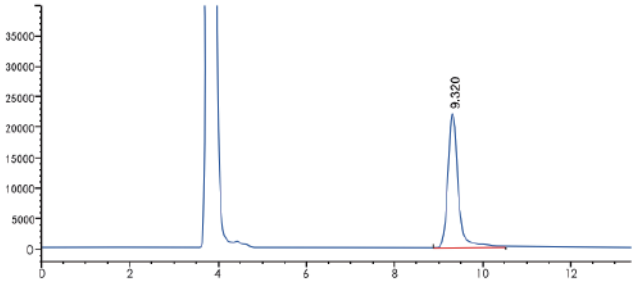
Specification	P/N
4.6 mm × 250mm, 5 μm	00102-23043
4.6 mm × 150mm, 5 μm	00102-23041

Xtimate® Lactose-NH_2 Column

A special bonding technique is adopted to make the retention of lactose more stable so that RSD value of lactose peak area is very low.

Xtimate® Lactose-NH_2

pH Range	2.0-8.0
Particle Size	5 μm
Surface Area(m^2/g)	450(120 Å)
Carbon Loading(%)	7(120 Å)
USP List	L8
Endcapped	No



Column:	Xtimate® Lactose-NH_2 , 4.6×250mm, 5μm
Mobile Phase:	Acetonitrile/water=70/30
Flow Rate:	1 mL/min
Detector:	RID (45°C)
Temperature:	40°C
Injection Volume:	10 μL

Rt (min)	Area (nRIU*S)	Height (nRIU)	Symmetrical factor	Width (min)	Plates	Resolution	Selectivity
9.320	3.5546e5	2.20093e4	0.79	0..2298	9103	-	-

Ordering Information

Dimension	P/N	Guard Cartridge(10mm length)	Guard Column
4.6×300, 5 μm	00121-21044	00808-04151	00808-01101

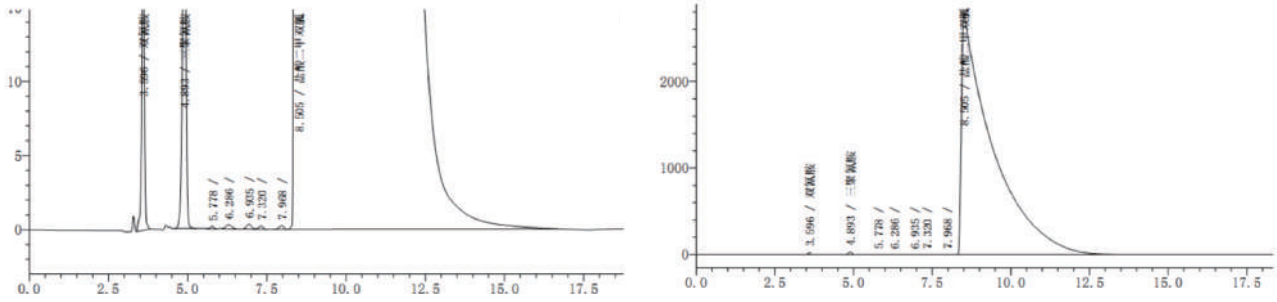
Xtimate® XB-SCX

Xtimate® XB-SCX column which formed by cations bonded silica gel packing materials is mainly used for the separation of metformin hydrochloride. This column not only makes the resolution of melamine and metformin much greater than 10, but also makes dicyandiamide have excellent peak shape, which completely avoids the interference of solvent peak to dicyandiamide.

Xtimate® XB-SCX

pH Range	2.0-8.0
Particle Size	5 μm
Surface Area(m^2/g)	350(120 Å)
Carbon Loading(%)	2(120 Å)
USP List	L9
Endcapped	No

Determination of content of metformin hydrochloride



Column:	Xtimate® XB-SCX , 4.6×250mm, 5μm
Mobile Phase:	1.7% ammonium dihydrogen phosphate solution, adjust pH to 3.00 with phosphoric acid
Flow Rate:	1 mL/min
Detector:	218nm
Temperature:	Room temperature
Injection Volume:	10 μL

Ordering Information

Dimension	P/N	Guard Cartridge(10mm length)	Guard Column
4.6×150, 5 μm	00120-21041	00808-04153	00808-01101
4.6×250, 5 μm	00120-21043	00808-04153	00808-01101

Xtimate® Polymer Based Column

Xtimate® Sugar-H is a special column designed for Ribavirin. Packed with H+ modified low-linking polystyrene-divinybenzene spheres (PS-DVB), this column can be applied for the analysis of organic acids and mixed alcohols.

Xtimate® Sugar-Ca is a strong cation exchange column packed with Ca2+ modified PS-DVB resins, can be used for the analysis of sugar products.

Xtimate® PS/DVB is based on polystyrene-divinybenzene. This column can be used in extreme conditions(pH 1-14).

Xtimate® Sugar-H

pH Range	1.0-3.0
Particle Size	5 μm, 8 μm
Cross-link	8%
Counter Ion	H^+
USP List	L17
Max. Temp.	95°C

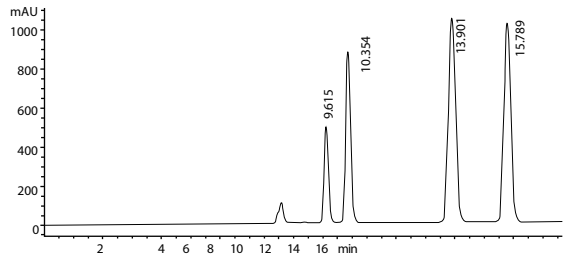
Xtimate® Sugar-Ca

pH Range	5.0-9.0
Particle Size	5 μm, 8 μm
Cross-link	8%
Counter Ion	Ca^{2+}
USP List	L19
Max. Temp.	95°C

Xtimate® PS/DVB

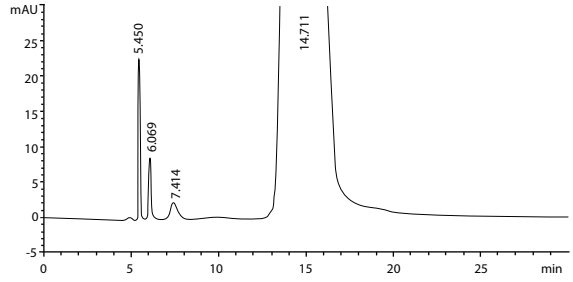
pH Range	1.0-14.0
Particle Size	5 μm, 10 μm
Surface Area(m^2/g)	450(300 Å)
USP List	L21
Max. Temp.	75°C

Separation of Organic Acids



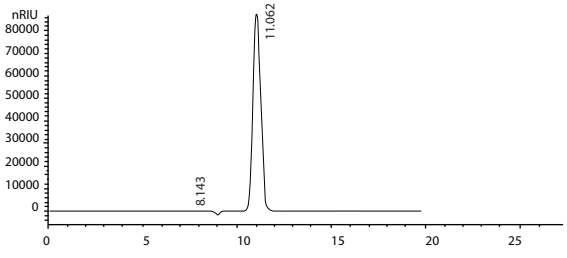
Column:	Xtimate® Sugar-H, 5 μm, 300 x 7.8 mm
Mobile Phase:	H_2SO_4 water solution (pH 2.0)
Flow Rate:	0.5 mL/min
Temperature:	60°C
Detector:	RID
Injection Volume:	20 μL
Organic Acids:	Maleic acid, L-malic acid, fumaric acid, sodium acetate trihydrate

Ketophenylalanine Calcium



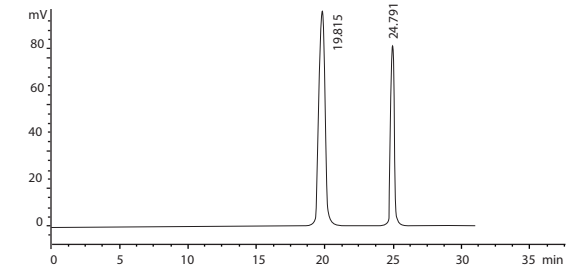
Column:	Xtimate® Sugar-H, 5 μm, 300 x 7.8 mm
Mobile Phase:	0.025 mol/L H_2SO_4 water solution
Flow Rate:	0.8 mL/min
Temperature:	20°C
Detector:	205 nm
Injection Volume:	20 μL

Xylose



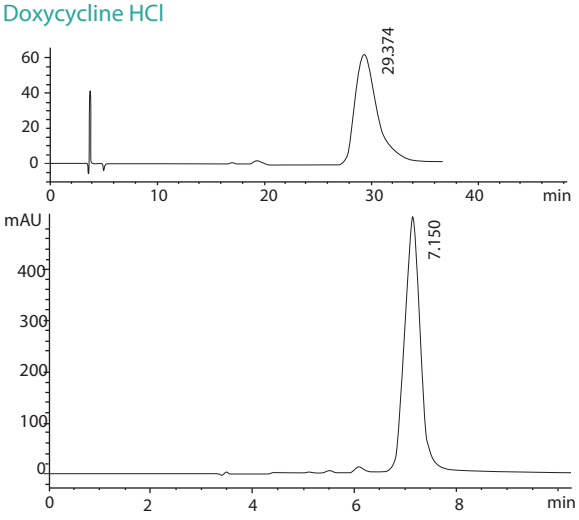
Column:	Xtimate® Sugar-Ca, 5 μm, 300 x 7.8 mm
Mobile Phase:	Ultra-pure water
Flow Rate:	0.6 mL/min
Temperature:	85°C
Detector:	RID 55°C
Injection Volume:	20 μL

Mannitol



Column:	Xtimate® Sugar-Ca, 8 µm, 300 x 7.8 mm
Mobile Phase:	Ultra-pure water
Flow Rate:	0.5 mL/min
Temperature:	80°C
Detector:	20 µL
Injection Volume:	R of mannitol and Sorbitol >2

Doxycycline HCl



Column:	Xtimate® PS/DVB, 8 µm, 250 x 7.8 mm
Mobile Phase:	50g TBA with 100 mL water, 200 mL buffer (pH 8.0), 25 mL TBAHS(10g/L, pH 8.0, adjust with NaOH), 5 mL EDTA(40 g/L, pH 8.0, adjust with NaOH), dilute to 500 mL with water
Flow Rate:	2.0 mL/min
Temperature:	75°C
Detector:	254 nm
Injection Volume:	20 µL
Notes:	Be sensitive to column temperature

Ordering Information

Xtimate® PS/DVB

Particle size	Column ID(mm)	Column Length (mm)	
		250	300
5 µm	4.6	00111-21043	00111-21044
100 Å	7.8	00111-21051	00111-21052
5 µm	4.6	00111-23043	00111-23044
300 Å	7.8	00111-23051	00111-23052
10 µm	4.6	00111-33043	00111-33044
300 Å	7.8	00111-33051	00111-33052

Xtimate® Sugar-H

Particle size	Column ID(mm)	Column Length (mm)		
		150	250	300
5 µm	4.6	00109-41041	00109-41043	00109-41044
	7.8	00109-41050	00109-41051	00109-41052
8 µm	4.6	00109-43041	00109-43043	00109-43044
	7.8	00109-43050	00109-43051	00109-43052

Xtimate® Sugar-Ca

Particle size	Column ID(mm)	Column Length (mm)		
		150	250	300
5 µm	4.6	00108-41041	00108-41043	00108-41044
	7.8	00108-41050	00108-41051	00108-41052
8 µm	4.6	00108-43041	00108-43043	00108-43044
	7.8	00108-43050	00108-43051	00108-43052

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

Xtimate® SEC

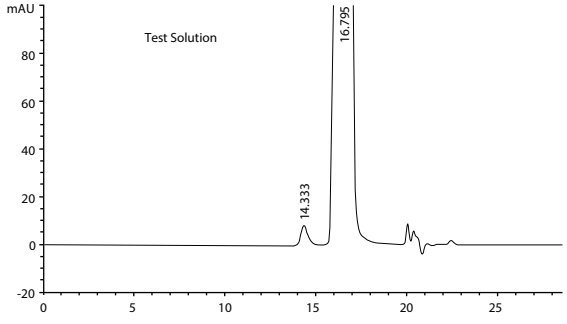
Xtimate® SEC (size exclusion chromatography), also known as “global protein hydrophilic modified silica column”, is made from ultra-high purity, stable silica bonded with hydrophilic polymer and diol functional groups. This double bonding mechanism, which makes possible of nonspecific adsorption of high Mw polymers, proteins, biological enzymes, polypeptides and other biological samples, can be applied to separating water-soluble polymers from biomacromolecules.

Features:

- Ultra-high purity, stable silica bonded with hydrophilic polymer and diol functional groups.
- 5 μm or 3 μm silica microsphere, high separation efficiency.
- 120 Å minibore columns fit for analysis of polar compounds such as cephalosporins; 300Å ones fit for biomacromolecules such as proteins and polypeptides.
- Five pore sizes: 120 Å, 300 Å, 500 Å, 700 Å and 1000 Å.

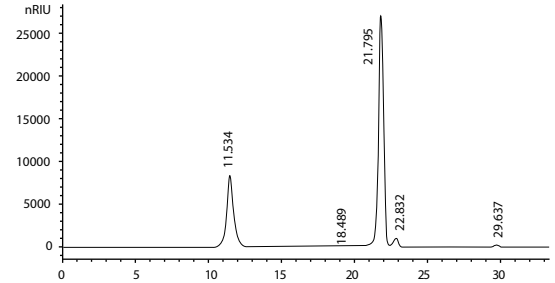
Phase	Xtimate® SEC-120	Xtimate® SEC-300	Xtimate® SEC-500	Xtimate® SEC-700	Xtimate® SEC-1000
Materials	Silica particles bonding hydrophilic polymer	Silica particles bonding hydrophilic polymer	Silica particles bonding hydrophilic polymer	Silica particles bonding hydrophilic polymer	Silica particles bonding hydrophilic polymer
Particle Size(μm)	3, 5	3, 5	5	5	5
Pore Size(Å)	120	300	500	700	1000
Protein Molecule Range	500-150,000	5,000-1,250,000	10,000-3,500,000	15,000-5,000,000	50,000-7,500,000
Soluble Polymer Molecule Mass Range	500-25,000	1,000-100,000	2,000-500,000	2,500-500,000	5,000-1,500,000
Maximum Pressure	~4,500	~3,500	~3,000	~3,000	~3,000
pH Range	2-7.5 (7.5-9,5 for short time)	2-7.5 (7.5-9,5 for short time)	2-7.5 (7.5-9,5 for short time)	2-7.5 (7.5-9,5 for short time)	2-7.5 (7.5-9,5 for short time)
Range of Salt Concentration	20 mM~2.0 M	20 mM~2.0 M	20 mM~2.0 M	20 mM~2.0 M	20 mM~2.0 M
Highest Temperature(℃)	~80℃	~80℃	~80℃	~80℃	~80℃
Mobile Phase	Aqueous or organic phase	Aqueous or organic phase	Aqueous or organic phase	Aqueous or organic phase	Aqueous or organic phase

Sex Hormone in Cosmetics



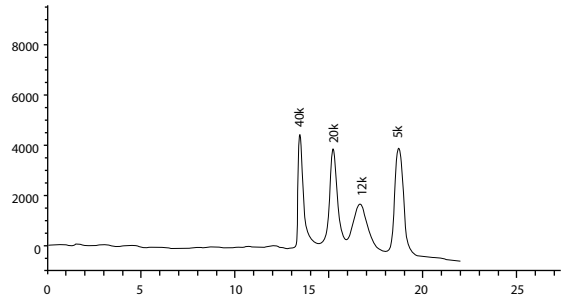
Column:	Xtimate® SEC-120, 3 μm, 300 x 7.8 mm
Mobile Phase:	Acetic acid/acetonitrile/ 0.1%rginine=15/20/65
Flow Rate:	0.5 mL/min
Temperature:	35℃
Detector:	276 nm
Injection Volume:	100 μL

Iron Dextran



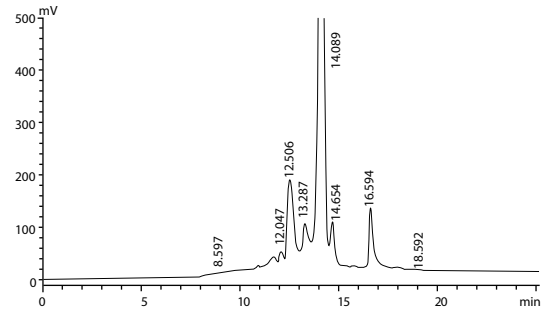
Column:	Xtimate® SEC-300, 5 μm, 300 x 7.8 mm
Mobile Phase:	Dissolve 7.1g Na_2SO_4 to 1000 mL water, filter
Flow Rate:	0.5 mL/min
Temperature:	Ambient
Detector:	RID
Injection Volume:	20 μL

Analysis of Molecular Weight of Polyethylene Glycol



Column:	Xtimate® SEC-300, 5 µm, 300 x 7.8 mm
Mobile Phase:	Ultrapure Water
Flow Rate:	1.0 mL/min
Temperature:	40°C, RID: 40°C
Detector:	RID
Injection Volume:	20 µL

Cefoxitin Sodium



Column:	Xtimate® SEC-120, 5 µm, 300 x 7.8 mm
Mobile Phase:	Phosphate buffer/acetonitrile=95/5
Flow Rate:	0.9 mL/min
Temperature:	30°C
Detector:	232 nm
Injection Volume:	20 µL

Ordering Information

Bonded phase	Particle size	Column ID(mm)	Column Length (mm)	
			250	300
SEC-120	3 µm	4.6	00237-21043	00237-21044
		7.8	00237-21051	00237-21052
	5 µm	4.6	00237-31043	00237-31044
		7.8	00237-31051	00237-31052
SEC-300	3 µm	4.6	00237-23043	00237-23044
		7.8	00237-23051	00237-23052
	5 µm	4.6	00237-33043	00237-33044
		7.8	00237-33051	00237-33052
SEC-700	5 µm	4.6	00237-34043	00237-34044
		7.8	00237-34051	00237-34052
SEC-1000	5 µm	4.6	00237-35043	00237-35044
		7.8	00237-35051	00237-35052

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