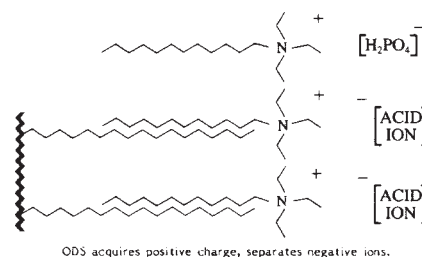
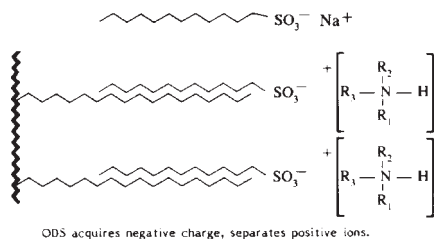


Regis Technologies Ion Pair Reagents and Buffers

Ion Pair HPLC greatly extends the applicability of HPLC by making the efficient octadecylsilyl columns amendable to use with ionized or ionizable samples.



Regis S-Series (for Cations)

The sulfonates are sodium salts that act as an anionic counterion for the separation and resolution of positively charged analytes.

The sulfonates are available as ion pair concentrates: premixed 0.5 M solutions of alkyl sulfonates. When diluted to 1 L with HPLC-grade water, a 10mL bottle forms a 0.005 M solution.

Description	Five 10mL Bottles Cat. No.	100mL Bottle Cat. No.
S5 Pentanesulfonate	405025	405035
S6 Hexanesulfonate	405026	405036
S7 Heptanesulfonate	405027	405037
S8 Octanesulfonate	405028	405038
S12 Dodecanesulfonate	405021	405031

Method Development Kit

S-Series 10mL of S (5, 6, 7, 8, and 12)	405020
-----------------------------------------	--------

Regis Q-Series (for Anions)

The Q-series is comprised of quaternary alkyltriethylamines that can be used for the resolution of negatively charged species. This unique set of cationic reagents was developed to complement the Sulfonate Series (S-series).

The Quaternary Alkyltriethylamines are available as ion pair concentrates: premixed 0.5 M solutions of alkyl amines. When diluted to 1 L with HPLC-grade water, a 10mL bottle forms a 0.005 M buffered solution.

Description	Five 10mL Bottles Cat. No.	100mL Bottle Cat. No.
Q5 Pentyl (TEA)	404025	404035
Q6 Hexyl (TEA)	404026	404036
Q7 Heptyl (TEA)	404027	404037
Q8 Octyl (TEA)	404028	404038
Q12 Dodecyl (TEA)	404021	404031

Method Development Kit

Q-Series 10mL of Q (5, 6, 7, 8, and 12)	404020
-----------------------------------------	--------

Bulk Ion Pair Reagents

For Cations

Cat. No.	Description	Grams
403025	1-Pentanesulfonate, sodium salt	25g
403125		100g
403026	1-Hexanesulfonate, sodium salt	25g
403126		100g
403027	1-Heptanesulfonate, sodium salt	25g
403127		100g
403028	1-Octanesulfonate, sodium salt	25g
403128		100g
403021	1-Dodecanesulfonate, sodium salt	5g
403022		25g

For Anions

680502	Tetrabutylammonium Phosphate 0.5M, pH 7.5	10mL
680503	Tetrabutylammonium Phosphate 0.5M, pH 7.5	500mL

Tech Tip:

Guidelines to developing a successful method using ion pair reagents:

- Select a column – endcapped ODS (octadecylsilyl) is most common.
- Use only HPLC-grade water and chromatography grade reagents in mobile phase preparation.
- Choose the mobile phase components and concentrations that give the best separation.
- If nonionic components are present in the sample, optimize the resolution prior to attempting ionic separations.
- Select the appropriate ion pair series to provide the necessary counterion. Use the Q-series for acidic compounds and the S-series for basic compounds.
- Through a process of elimination, choose the alkyl chain length which results in the best separation.
- Once the reagent has been selected, adjust the pH of the mobile phase to maximize resolution. Because slight modification of pH can profoundly effect retention and selectivity, make all adjustments in small increments and monitor carefully.
- Ideally, the ion pair reagent concentration in the mobile phase should be 0.005M. However, small adjustments in reagent concentration may increase retention slightly and optimize the separation.



For a complete list of Regis reagents, please contact Chrom Tech.

Agilent Zorbax HPLC Columns

New! Zorbax Rapid Resolution (HT) High Throughput Columns

- Up to 93% decrease in analysis time
- Great resolution
- Extended pH range, pH 1 to 9

A better way to faster separations!

All Agilent Zorbax columns are uniquely optimized for specific applications. Our newest Zorbax columns, Rapid Resolution HT, are packed with totally porous 1.8µm particles. These columns are optimized for ultra-fast HPLC separations – with more resolving power for small molecules.

The typical particle size of traditional HPLC columns is 5µm, but in the past, 3.0 to 3.5µm particles offered better efficiency with short column lengths. Now, our new Rapid Resolution HT columns with 1.8µm particles nearly double laboratory productivity compared with columns containing 3.5µm packings.

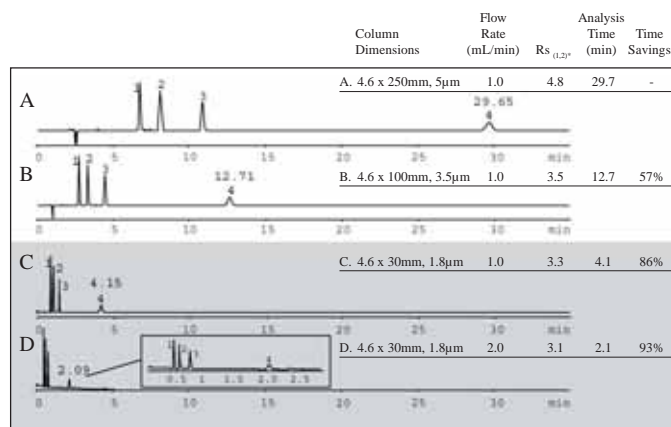
You get even higher resolution and efficiency in very short columns (15 to 50mm) – ideal for sample screening, LC/MS and many routine analyses.

Rapid Resolution HT Columns, 1.8µm

Dimensions (mm)		StableBond SB-C18	Eclipse XDB-C18
4.6 x 50	column		922975-902
4.6 x 50	cartridge	825975-902	925975-902
4.6 x 30	cartridge	823975-902	923975-902
4.6 x 15	cartridge	821975-902	921975-902
2.1 x 50	column	822700-902	922700-902
2.1 x 50	cartridge	825700-902	925700-902
2.1 x 30	cartridge	823700-902	923700-902
2.1 x 15	cartridge	821700-902	921700-902

Rapid Resolution HT Cartridge Hardware Kit

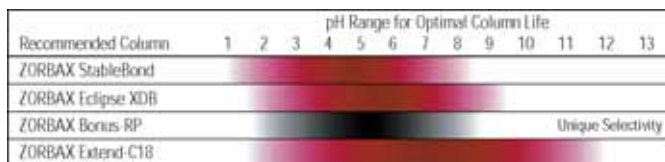
820555-901 Kit includes: (2) end-fitting assemblies; (1) 50mm holder; (1) 30mm holder; (1) 15mm holder



Column Conditions Zorbax SB-C18:

Mobile Phase: 50% 20mM Na₂HPO₄, pH 2.8; 50% ACN
 Temperature: Ambient
 Detection: 230nm
 Sample:
 1. Estradiol
 2. Ethynylestradiol
 3. Dienestrol
 4. Norethindrone

*Resolution between peaks 1 and 2



Zorbax Method Development (pH 1-12)

Low pH 1-3

- **Zorbax StableBond**

Start method development at low pH, where silanols on a RP-HPLC column are protonated. This minimizes peak tailing by eliminating silanol/base interactions.

At low pH, basic compounds are positively charged and their retention may be reduced.

Acidic compounds may be protonated and have increased retention.

Retention times are usually stable with small changes in pH, producing a robust method.

Volatile mobile phase additives, such as formic acid or trifluoroacetic acid (TFA), are often used at low pH with LC/MS.

Mid pH 3-8

- **Zorbax Eclipse XDB or Bonus-RP**

Develop methods at pH's at least 1 pH unit above or below the pKa to minimize changes in retention with small changes in pH.

Some silica surface SiOH groups become SiO⁻ above pH 4 to 5; tailing interactions may be possible.

Minimize interaction by selecting an end-capped column, using additives such as TEA (less desirable) or using "polar-linked" bonded phases.

Silica breakdown is prevented by innovative bonding chemistry, heavy endcapping and use of Rx-SIL.

High pH 8-12

- **Extend C18**

In this region, basic compounds may be in their free base form.

Increased retention and resolution of basic compounds are likely.

Retention changes little in this region-thus robust methods can be developed.

Silica breakdown is prevented by innovative bidentate column chemistry, heavy endcapping, use for Rx-SIL and optimum mobile phase.

Ammonium hydroxide is an excellent volatile mobile phase modifier at high pH.

Agilent HPLC Columns – Zorbax StableBond 80Å

- Long column lifetime and best reproducibility for low pH separations – down to pH 1!
- Stable column chemistry allows use at high temperature and low pH without degradation
- Excellent first choice for method development

StableBond packing materials are not endcapped in order to provide exceptional stability and to maximize lifetime and reproducibility under acidic mobile phase conditions. Zorbax StableBond columns are compatible with all common mobile phases including very high aqueous mobile phases.

Polar compounds can be analyzed with excellent reproducibility and peak shape because SB-Aq columns have a hydrophilic surface that inhibits phase collapse, even with 100% aqueous mobile phases.

Zorbax StableBond Column Specifications

Bonded Phase	Pore Size	Surface Area	Temp Limits*	pH Range	Endcapped	Carbon Load
SB-C18	80Å	180m ² /g	90° C	1.0 - 8.0	No	10%
SB-C8	80Å	180m ² /g	80° C	1.0 - 8.0	No	5.5%
SB-C3	80Å	180m ² /g	80° C	1.0 - 8.0	No	4.0%
SB-CN	80Å	180m ² /g	80° C	1.0 - 8.0	No	4.0%
SB-Phenyl	80Å	180m ² /g	80° C	1.0 - 8.0	No	5.5%
SB-Aq	80Å	180m ² /g	80° C	1.0 - 8.0	No	Proprietary

*StableBond columns are designed for optimal use at low pH. At pH 6-8, highest column stability for all silica-based columns is obtained by operating at temperatures <40° C and using low buffer concentrations in the range of 0.01 - 0.02M.

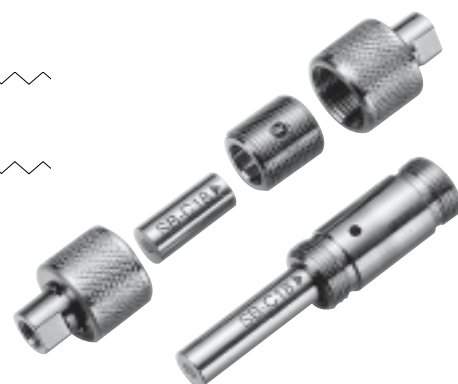
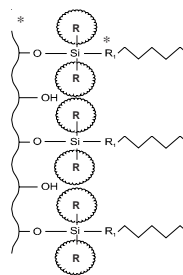
At mid-range pH, Eclipse XDB and Bonus-RP are recommended.

80Å Zorbax StableBond Cartridge Columns

Dimensions (mm)	Particle Size (µm)	(USP L1) SB-C18	(USP L7) SB-C8
4.6 x 250	5	7995218-585 ¹	7995208-585 ¹
4.6 x 150	5	7995218-595 ¹	7995208-595 ¹
4.6 x 75	3.5	7995218-344 ¹	7995208-344 ¹
4.6 x 30	3.5	833975-902 ²	833975-906 ²
4.6 x 15	3.5	831975-902 ²	831975-906 ²
4.0 x 4.0, 10/pk	5	7995118-504 ¹	7995118-504 ¹
2.1 x 30	3.5	873700-902 ²	873700-906 ²
2.1 x 15	3.5	875700-902 ²	875700-906 ²
Cartridge holder	-	5021-1845	5021-1845
Hardware kit	-	820555-901	820555-901

¹requires cartridge holder 5021-1845

²requires hardware kit 820222-901



80Å Zorbax StableBond Columns

Dimensions (mm)	Particle Size (µm)	(USP L1) SB-C18	(USP L7) SB-C8	(USP L10) SB-CN	SB-C3	(USP L11) SB-Phenyl	SB-Aq
4.6 x 250	5	880975-902	880975-906	880975-905	880975-909	880975-912	880975-914
4.6 x 150	5	883975-902	883975-906	883975-905	883975-909	883975-912	883975-914
4.6 x 50	5	846975-902	846975-906				846975-914
4.6 x 150	3.5	863953-902	863953-906	863953-905		863953-912	863953-914
4.6 x 100	3.5	861953-902	861953-906	861953-905		861953-912	861953-914
4.6 x 75	3.5	866953-902	866953-906	866953-905		866953-912	866953-914
4.6 x 50	3.5	835975-902	835975-906	835975-905		835975-912	835975-914
3.0 x 250	5	880975-302	880975-306	880975-305	880975-309	880975-312	
3.0 x 150	5	883975-302	883975-306	883975-305	883975-309	883975-312	
3.0 x 150	3.5	863954-302	863954-306	863954-305		863954-312	
3.0 x 100	3.5		861954-306				
2.1 x 150	5	883700-922	883700-906	883700-905	883700-909	883700-912	
2.1 x 50	5	860975-902	860975-906	860975-905	860975-909	860975-912	860975-914
2.1 x 150	3.5	830990-902	830990-906				830990-914
2.1 x 100	3.5	861753-902	861753-906	861753-905		861753-912	861753-914
2.1 x 75	3.5	866735-902					
2.1 x 50	3.5	871700-902	871700-906				871700-914
1.0 x 150	3.5	863600-902	863600-906	863600-905			
1.0 x 50	3.5	865600-902	865600-906				
1.0 x 30	3.5	861600-902	861600-906				
1.0 x 17	5	5185-5920	5185-5920				

Guard Cartridges (requires hardware kit)

4.6 x 12.5, 4/pk	5	820950-920	820950-915	820950-916	820950-922	820950-917	820950-933
2.1 x 12.5, 4/pk	5	821125-926	821125-926	821125-924	821125-924	821125-926	821125-933

Guard Hardware Kit (fits both 4.6 x 12.5 and 2.1 x 12.5 cartridges)

Hardware kit	-	820888-901	820888-901	820888-901	820888-901	820888-901	820888-901
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Agilent HPLC Columns – Zorbax StableBond 300Å

- Designed for the acidic pH mobile phases used in peptide and protein separations
- Improve hydrophobic peptide separations
- Applications: Peptides, biopharmaceuticals, hydrophobic peptides, proteins at low pH

Zorbax 300StableBond columns are an ideal choice for the reproducible separations of proteins and peptides for two key reasons. First, wide-pore, 300Å columns are necessary for an efficient separation of proteins and peptides, or other large molecules, in order to allow these analytes to completely access the

bonded phase. Second, 300StableBond columns are unmatched in their durability at low pH, such as with the TFA containing mobile phases typically used. 300StableBond columns can also be used with formic acid and acetic acid mobile phase modifiers.

Zorbax StableBond Column Specifications

Bonded Phase	Pore Size	Surface Area	Temp Limits*	pH Range	Endcapped	Carbon Load
SB-C18	300Å	45m ² /g	90° C	1.0 - 8.0	No	2.8%
SB-C8	300Å	45m ² /g	80° C	1.0 - 8.0	No	1.5%
SB-C3	300Å	45m ² /g	80° C	1.0 - 8.0	No	1.1%
SB-CN	300Å	45m ² /g	80° C	1.0 - 8.0	No	1.2%

*StableBond columns are designed for optimal use at low pH. At pH 6-8, highest column stability for all silica-based columns is obtained by operating at temperatures <40° C and using low buffer concentrations in the range of 0.01 - 0.02M.

At mid-range pH, Eclipse XDB and Bonus-RP are recommended.

300Å Zorbax StableBond Columns

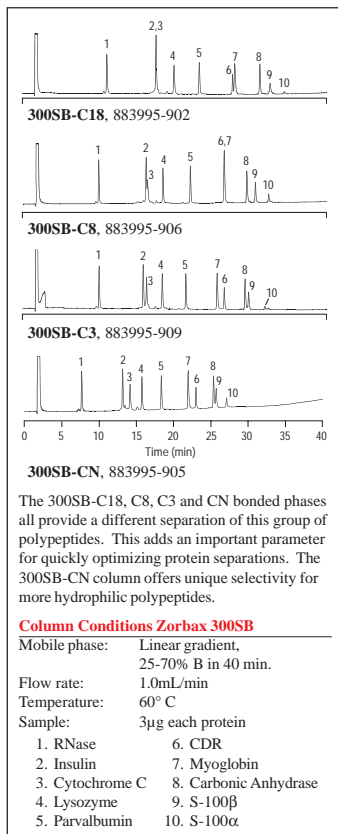
Dimensions (mm)	Particle Size (µm)	(USP L1)	(USP L7)	(USP L10)	
		300SB-C18	300SB-C8	300SB-CN	SB-C3
4.6 x 250	5	880995-902	880995-906	880995-905	880995-909
4.6 x 150	5	883995-902	883995-906	883995-905	883995-909
4.6 x 50	5	860950-902	860950-906	860950-905	860950-909
4.6 x 150	3.5	863973-902	863973-906	863957-905	863973-909
4.6 x 100	3.5	861973-902	861973-906		
4.6 x 50	3.5	865973-902	865973-906	865973-905	865973-909
3.0 x 150	3.5		863974-306		
3.0 x 100	3.5		861973-306		
2.1 x 150	5	883750-902	883750-906	883750-905	883750-909
2.1 x 150	3.5		863750-906		
2.1 x 100	3.5	861775-902	861775-906		
2.1 x 50	3.5	865750-902	865750-906		
1.0 x 150	3.5	863630-902	863630-906		
1.0 x 50	3.5	865630-902	865630-906		
1.0 x 17, 3/pk	5	5185-5920	5185-5920		

Guard Cartridges (requires hardware kit)

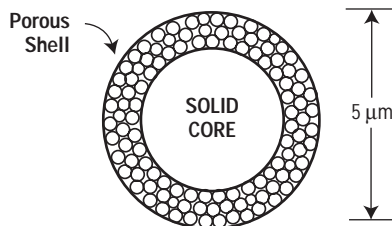
4.6 x 12.5, 4/pk	5	820950-921	820950-918	820950-923	820950-924
2.1 x 12.5, 4/pk	5	821125-918	821125-918	821125-924	821125-924

Guard Hardware Kit (fits both 4.6 x 12.5 and 2.1 x 12.5 cartridges)

Hardware kit	-	820888-901	820888-901	820888-901	820888-901
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Zorbax Poroshell 300SB Columns for Bioanalytical Chemistry



- For very large, heterogeneous proteins, Zorbax Poroshell C3 or C8 columns give the best peak shape in a separation

The revolutionary new Poroshell 5µm particle combines a solid core with a 300Å porous surface layer bonded with SB-C18. The result is a highly efficient particle for rapid, high-resolution separations of proteins and other large molecules. Large and/or heterogeneous proteins have more complex interactions with the surface of the column packing and show improved peak shapes and resolution on superficially porous particles bonded with shorter phases such as C3 and C8. The simplified interaction of protein with the surface of the packing is the reason for improved chromatography.

300Å Zorbax StableBond Columns

Dimensions (mm)	Particle Size (µm)	Poroshell 300SB-C18	Poroshell 300SB-C8	Poroshell 300SB-C3
2.1 x 75	5	660750-902	660750-906	660750-909
1.0 x 75	5	661750-902	661750-906	661750-909

Guard Cartridges (requires hardware kit)

2.1 x 12.5, 4/pk	5	821075-920		
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Guard Hardware Kit (fits both 4.6 x 12.5 and 2.1 x 12.5 cartridges)

Hardware kit	-	820888-901		
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Agilent HPLC Columns – Zorbax Eclipse XDB

- Long column life at mid pH with **extra dense bonding (XDB)** and double endcapping
- Complementary selectivity to StableBond, Bonus-RP or Extend columns
- Uses Zorbax Rx-SIL silica with uniform wall thickness for better column life at higher pH
- pH range: recommended 3 to 8, maximum 2 to 9

Zorbax Eclipse XDB Column Specifications

Bonded Phase	Pore Size	Surface Area	Temp Limits	pH Range	Carbon Endcapped	Carbon Load
XDB-C18	80Å	180m ² /g	60° C	2.0 - 9.0	Double	10%
XDB-C8	80Å	180m ² /g	60° C	2.0 - 9.0	Double	7.6%
XDB-Phenyl	80Å	180m ² /g	60° C	2.0 - 9.0	Double	7.2%

Zorbax Eclipse XDB Columns

Dimensions (mm)	Particle Size (µm)	(USP L1) XDB-C18	(USP L7) XDB-C8	(USP L11) XDB-Phenyl
4.6 x 250	5	990967-902	990967-906	990967-912
4.6 x 150	5	993967-902	993967-906	993967-912
4.6 x 50	5	946975-902	946975-906	
4.6 x 150	3.5	963967-902	963967-906	963967-912
4.6 x 100	3.5	961967-902	961967-906	
4.6 x 75	3.5	966967-902	966967-906	966967-912
4.6 x 50	3.5	935967-902	935967-906	935967-912
3.0 x 250	5	990967-302	990967-306	990967-312
3.0 x 150	5	993967-302	993967-306	993967-312
3.0 x 150	3.5	963954-302	963954-306	963954-312
3.0 x 75	3.5	966954-302		
2.1 x 150	5	993700-902	993700-906	993700-912
2.1 x 50	5	960967-902	960967-906	960967-912
2.1 x 150	3.5	930990-902	930990-906	
2.1 x 100	3.5	961753-902	961753-906	
2.1 x 75	3.5	966735-902		
2.1 x 50	3.5	971700-902	971700-906	
1.0 x 150	3.5	963600-902	963600-902	
1.0 x 50	3.5	965600-902	965600-906	
1.0 x 17, 3/pk	5	5185-5921	5185-5921	

Guard Cartridges (requires hardware kit)

4.6 x 12.5, 4/pk	5	820950-925	820950-926	820950-927
2.1 x 12.5, 4/pk	5	821125-926	821125-926	821125-926

Guard Hardware Kit (fits both 4.6 x 12.5 and 2.1 x 12.5 cartridges)

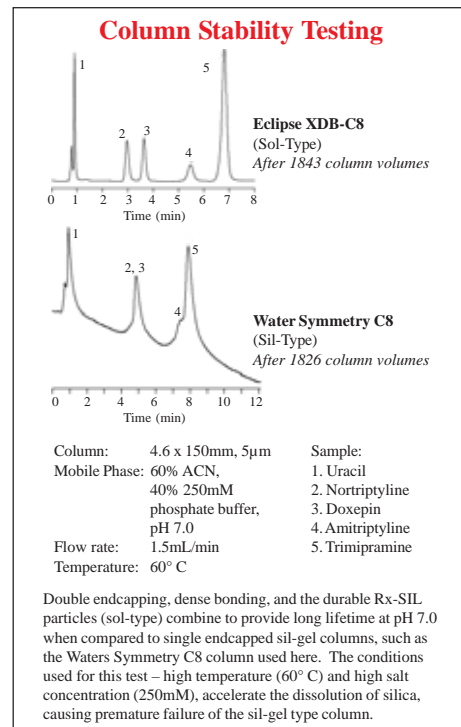
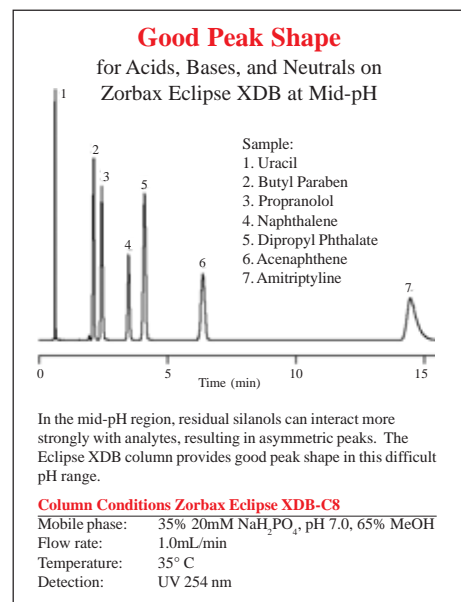
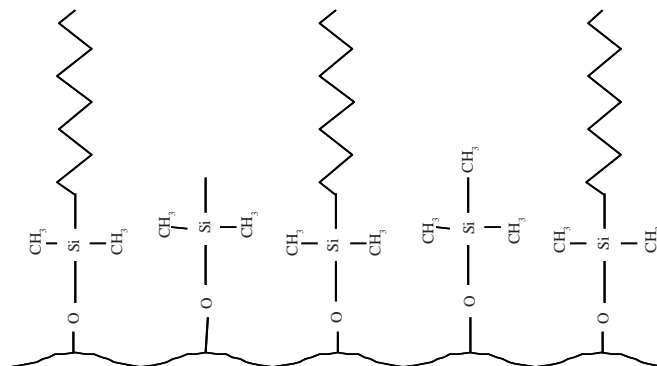
Hardware kit	-	820888-901	820888-901	820888-901
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Zorbax Eclipse XDB Cartridge Columns

Dimensions (mm)	Particle Size (µm)	(USP L1) XDB-C18	(USP L7) XDB-C8
4.6 x 250	5	7995118-585 ¹	7995108-585 ¹
4.6 x 150	5	7995118-595 ¹	7995108-595 ¹
4.6 x 75	3.5	7995118-344 ¹	7995108-344 ¹
4.6 x 30	3.5	933975-902 ²	933975-906 ²
4.6 x 15	3.5	931975-902 ²	931975-906 ²
4.0 x 4.0, 10/pk	5	7995118-504 ¹	7995118-504 ¹
3.0 x 75	3.5	7995230-344 ¹	
2.1 x 30	3.5	973700-902 ²	973700-906 ²
2.1 x 15	3.5	975700-902 ²	975700-906 ²
Cartridge holder	-	5021-1845	5021-1845
Hardware kit	-	820555-901	820555-901

¹requires cartridge holder 5021-1845

²requires hardware kit 820222-901



Agilent HPLC Columns – Zorbax Bonus-RP

- Excellent peak shape for challenging basic compounds at low and mid pH
- Unique reversed-phase selectivity
- Novel bonding technology with embedded polar group and steric protection
- Usable in 100% aqueous mobile phases

The Agilent Zorbax Bonus-RP column has a polar amide group embedded in a long alkyl chain. This novel bonding reduces interactions between basic compounds and the silica support, improving peak shape for the most difficult basic compounds. Peak shape and column lifetime are further improved by triple endcapping. In addition, diisopropyl side groups provide steric protection against acid hydrolysis for good lifetime at low pH. The Bonus-RP column provides an alternate selectivity to C18 and C8 alkyl bonded phases.

Zorbax Bonus-RP Column Specifications

Bonded Phase	Pore Size	Surface Area	Temp Limits	pH Range	Endcapped	Carbon Load
Bonus-RP	80Å	180m ² /g	60° C	2.0 - 9.0	Triple	9.5%

Zorbax Bonus-RP Columns

	Particle Size (µm)	Bonus-RP Cat. No.
4.6 x 250mm	5	880668-901
4.6 x 150mm	5	883668-901
4.6 x 150mm	3.5	863668-901
4.6 x 100mm	3.5	864668-901
4.6 x 75mm	3.5	866668-901
2.1 x 150mm	5	883725-901
2.1 x 50mm	5	861971-901
2.1 x 100mm	3.5	861768-901
2.1 x 50mm	3.5	861700-901
1.0 x 150mm	3.5	863608-901
1.0 x 50mm	3.5	865608-901
1.0 x 30mm	3.5	861608-901
1.0 x 17mm, 3/pk	5	5185-5922

Guard Cartridges (requires hardware kit 820888-901)

4.6 x 12.5mm, 4/pk	5	820950-928
2.1 x 12.5mm, 4/pk	5	821125-928

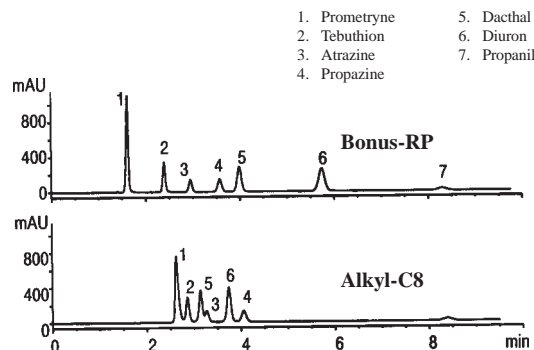
Guard Hardware Kit (fits 4.6 and 2.1mm ID cartridges)

Hardware kit	-	820888-901
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820888-901 guard hardware kit shown with guard cartridge and column

Bonus-RP Can Provide Alternative Selectivity to Alkyl Phases

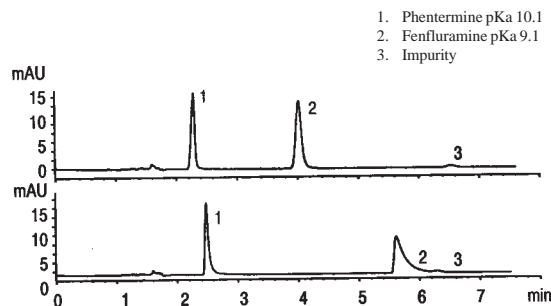


Column Conditions Zorbax Bonus-RP

Column: 4.6 x 150mm
Instrument: Agilent 1100
Mobile phase: MeOH: 0.1% TFA (70:30)*
Flow rate: 1 mL/min.
Temperature: Ambient
Inj.: 2µL
UV: 254nm

*For low pH work, a TFA mobile phase is often preferred over phosphate and is compatible with LC/MS

Bonus-RP Provides Excellent Peak Shape for Anorectics at Mid-Range

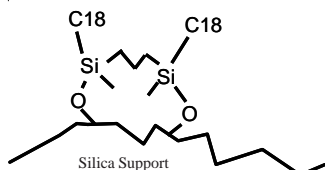


Column Conditions Zorbax Bonus-RP

Columns: 4.6 x 150mm
Mobile phase: 25mM K₂HPO₄, pH 7.2/MeOH:ACN (50:50), 45/55
Flow rate: 1 mL/min.
Inj.: 5µL
UV: 254nm
Sample: Anorectics ("Fen-phen")

Agilent HPLC Columns – Zorbax Extend-C18

- High efficiency and long life at high pH – up to pH 11.5
- Unique bidentate bonding and double endcapping provides high pH stability
- More efficiency and better peak shape than polymer-based columns
- Improve retention, resolution and peak shape of basic compounds
- High sensitivity for LC/MS separations of peptides



New bidentate C18-C18 bonding for Extend-C18 bonded phase

The Agilent Zorbax Extend-C18 column uses a new bidentate C18-C18 column bonding technology to make high pH separations a good choice with a silica-based column. At high pH, non-charged basic compounds will not interact with the silica, so it is possible to do separations with high efficiency, superior peak shape and improved resolution. Some of the mobile phase buffer options for high pH include triethylamine, pyrrolidine, glycine, borate and ammonium hydroxide. Ammonium hydroxide at pH 10.5 is an excellent mobile phase modifier for the LC/MS of peptides and small molecules with improved sensitivity compared with TFA containing mobile phase at low pH.

Zorbax Extend-C18 Column Specifications

Bonded Phase	Pore Size	Surface Area	Temp Limits*	pH Range	Carbon Endcapped	Carbon Load
Extend-C18	**	180m ² /g	60° C	2.0 - 11.5	Double	12.5%

*Temperature limits are 60° C up to pH 8, 40° C for pH 8-11.5.

**80Å or 300Å, as indicated in ordering information table below.

Zorbax Extend-C18 Columns

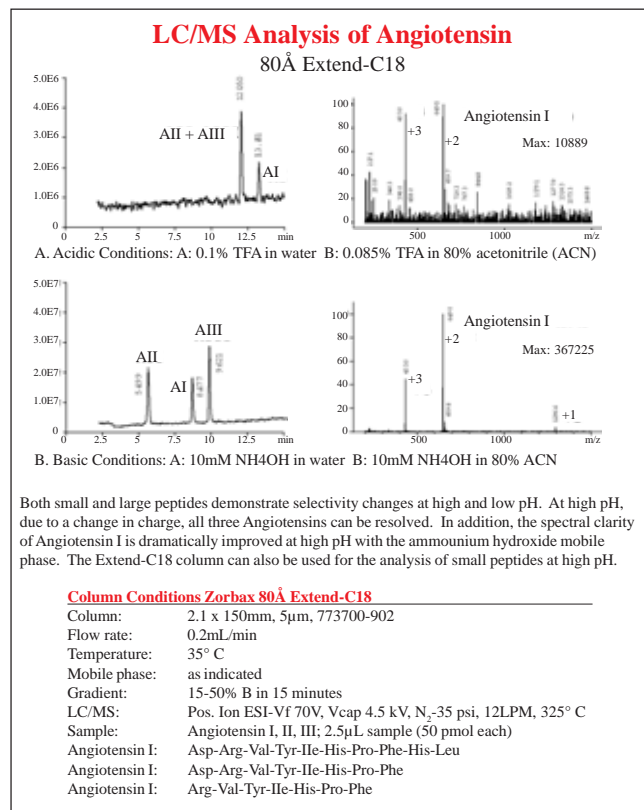
Dimensions (mm)	Particle Size (µm)	80Å Extend-C18	300Å Extend-C18
4.6 x 250	5	770450-902	770995-902
4.6 x 150	5	773450-902	773995-902
4.6 x 50	5	746450-902	
4.6 x 150	3.5	763953-902	763973-902
4.6 x 100	3.5	764953-902	761973-902
4.6 x 75	3.5	766953-902	
4.6 x 50	3.5	735953-902	765973-902
3.0 x 150	3.5	763954-302	
3.0 x 50	3.5	735954-302	
2.1 x 150	5	773700-902	
2.1 x 50	5	760450-902	
2.1 x 100	3.5	761753-902	761775-902
2.1 x 50	3.5	735700-902	765750-902
1.0 x 150	3.5	763600-902	
1.0 x 50	3.5	765600-902	
1.0 x 30	3.5	761600-902	
1.0 x 17, 3/pk	5	5185-5923	

Guard Cartridges (requires hardware kit 820888-901)

4.6 x 12.5, 4/pk	5	820950-930	820950-932
2.1 x 12.5, 4/pk	5	821125-930	821125-932

Guard Hardware Kit (fits 4.6 and 2.1mm ID cartridges)

Hardware kit	-	820888-901	820888-901
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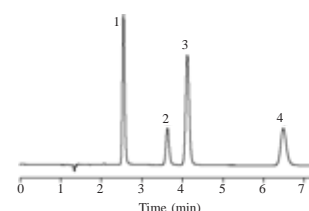


Extend-C18 Provides Good Peak Shape at Low pH

These basic compounds are separated on the Extend-C18 at low pH with excellent peak shape. The Extend-C18 column can be used at high and low pH.

Column Conditions Zorbax Extend-C18

Column:	4.6 x 150mm, 5µm, 773450-902
Mobile phase:	80% 25mM NaH ₂ PO ₄ , pH 3.0, 20% MeOH
Flow rate:	1.0mL/min
Temperature:	35° C
Detection:	UV 254 nm
Sample:	1. Theobromine 2. Dimethylxanthine 3. Theophylline 4. Caffeine

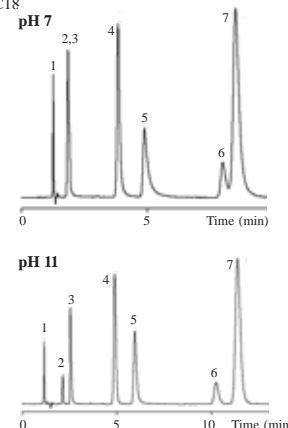


Improved Retention, Resolution and Peak Shape of Basic Antihistamines on Extend-C18 at High pH

Pseudoephedrine and scopolamine are difficult to retain at low and mid pH. Pseudoephedrine is often analyzed by ion exchange methods. The Extend-C18 column retains these compounds in a noncharged form at high pH and improves resolution.

Column Conditions Zorbax Extend-C18

Column:	4.6 x 150mm, 5µm, 773450-902
Mobile phase:	pH 7: 30% 20mM Na ₂ HPO ₄ , 70% MeOH pH 11: 30% 20mM TEA, 70% MeOH
Flow rate:	1.0mL/min
Temperature:	Ambient
Detection:	UV 254 nm
Sample:	1. Maleate 2. Scopolamine 3. Pseudoephedrine 4. Doxylamine 5. Chlorpheniramine 6. Triprolidine 7. Diphenhydramine



Agilent HPLC Columns – Zorbax Columns

Zorbax Gel Filtration Columns

- Rapid separations and extended column life time – often twice that of other size exclusion columns
- High recovery for most proteins (>90%)
- Usable with organic modifiers and denaturants
- pH range of 3.0-8.0

The silica surface of the Zorbax Gel Filtration columns is stabilized with zirconia, then coated with a monolayer diol phase providing a broad pH range of 3-8 – a highly reproducible, hydrophilic column.

Zorbax Gel Filtration Column Specifications

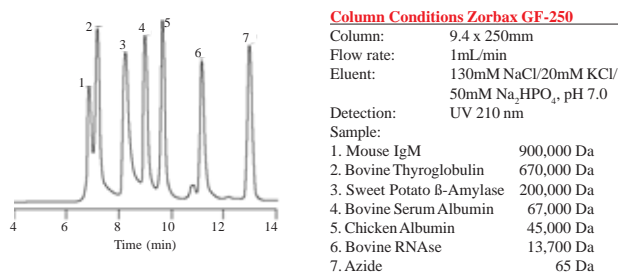
Bonded Phase	Pore Size	Particle Size	MW Range	Surface Area
GF-250	150Å	4µm	4,000-400,000	140m ² /g
GF-450	300Å	6µm	10,000-900,000	50m ² /g

Additional Specifications for Both Gel Filtration Columns

Bonded Phase	pH Range	Flow Rate	Max Pressure
GF-250 and GF-450	3.0-8.0	<3.0mL/min	5,000 psi

Separation of a Protein Mixture

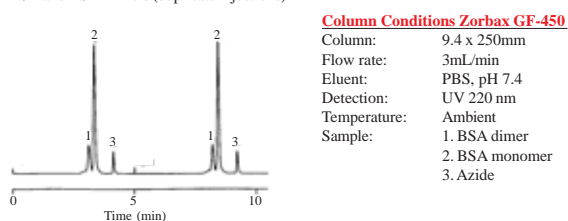
Zorbax GF-250 Column



High-Speed Size Exclusion Separation

Zorbax GF-450 Column

BSA and BSA Dimers (duplicate injections)



Zorbax Gel Filtration Columns

Dimensions (mm)	150Å GF-250	300Å GF-450
9.4 x 250	884973-901	884973-902
4.6 x 250	884973-701	

Guard Cartridges (requires hardware kit)

9.4 x 15, 2/pk	820675-111	820675-111
4.6 x 12.5, 4/pk	820950-911	820950-911

Guard Hardware Kit

Hardware kit for 9.4 ID	840140-901	840140-901
Hardware kit for 4.6 ID	820888-901	820888-901

Zorbax Ion Exchange Columns

Zorbax ion exchange columns (70Å SAX and 300Å SCX) use Zorbax SIL porous silica microspheres as the stationary phase support; ion exchange groups are attached to a diol backbone. These columns provides highly efficient, rapid separations (pressure limit 5,000 psi).

- SCX uses aromatic sulfonic acid
- SAX uses a trifunctional quaternary amine

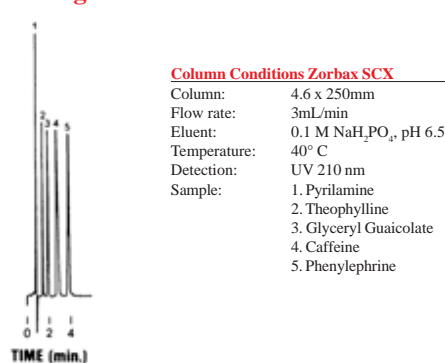
Typical Applications:

- SCX basic water soluble compounds
- SAX aromatic carboxylic acids, aliphatic carboxylic acids, and sulfonic acids

Zorbax Ion Exchange Columns

Bonded Phase	Pore Size	Particle Size	Surface Area	pH Range	Bonded Functionality
SCX	300Å	5µm	50m ² /g	2.0 - 7.0	Sulfonic acid
SAX	70Å	5µm	300m ² /g	2.0 - 7.0	Quaternary amine

Cough-cold Remedies – Zorbax SCX



Zorbax Ion Exchange Columns

Dimensions (mm)	SAX (70Å)	SCX (300Å)
9.4 x 250	880952-203	880952-204
4.6 x 250	880952-703	880952-704
4.6 x 150	883952-703	883952-704
4.6 x 50		846952-704
3.0 x 50		860700-304
2.1 x 150		883700-704
2.1 x 50		860700-704

Guard Cartridges, 4/pk (requires hardware kit 820888-901)

4.6 x 12.5	820950-903	820950-904
Hardware kit	820888-901	820888-901

Guard Hardware Kit

Hardware kit	820888-901	820888-901
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Hypersil Reversed Phase Columns

Hypersil BDS is both base deactivated and endcapped to improve peak shapes of basic solutes by minimizing interaction with unreacted silanols. Hypersil ODS, a very popular packing, adds a monolayer of octadecyl silane (C18) to the Hypersil Silica support. Columns are endcapped to reduce silanol interaction. For less retention with similar selectivity, Hypersil MOS columns provide a monolayer of dimethyloctylsilane (C8 alkyl chain).

Reversed Phase Cartridge Columns

Cat. No.	Description
79926BD-362	BDS-C18, 3.0µm, 2.0 x 125mm
79926BD-363	BDS-C18, 3.0µm, 3.0 x 125mm
79926BD-344	BDS-C18, 3.0µm, 4.0 x 75mm
79926OB-354	BDS-C18, 3.0µm, 4.0 x 100mm
79926OB-584	BDS-C18, 3.0µm, 4.0 x 250mm
79926BD-562	BDS-C18, 5.0µm, 2.0 x 125mm
79926BD-582	BDS-C18, 5.0µm, 2.0 x 250mm
79926OB-564	BDS-C18, 5.0µm, 4.0 x 125mm
79926BD-585	BDS-C18, 5.0µm, 4.6 x 250mm
79926BD-595	BDS-C18, 5.0µm, 4.6 x 150mm
7992618-363	ODS, 3.0µm, 3.0 x 125mm
79916OD-344	ODS, 3.0µm, 4.0 x 60mm
79926OD-354	ODS, 3.0µm, 4.0 x 100mm
7992618-562	ODS, 5.0µm, 2.0 x 125mm
7992618-582	ODS, 5.0µm, 2.0 x 250mm
79926OD-564	ODS, 5.0µm, 4.0 x 125mm
79926OD-584	ODS, 5.0µm, 4.0 x 250mm
7992618-595	ODS, 5.0µm, 4.6 x 150mm
7992618-585	ODS, 5.0µm, 4.6 x 250mm
79926B8-344	BDS-C8, 3.0µm, 4.0 x 75mm
79926B8-584	BDS-C8, 3.0µm, 4.0 x 250mm
79926B8-562	BDS-C8, 5.0µm, 2.0 x 125mm
79926B8-564	BDS-C8, 5.0µm, 4.0 x 125mm

Agilent Cartridge Hardware

5021-1845 Agilent cartridge hardware

Reversed Phase Stainless Steel Columns

79916BD-354	BDS-C18, 3.0µm, 4.6 x 100mm
79916BD-584	BDS-C18, 5.0µm, 4.6 x 250mm
79926BD-362	ODS, 3.0µm, 2.0 x 125mm
79916OD-352	ODS, 3.0µm, 2.1 x 100mm
79916OD-344	ODS, 3.0µm, 4.6 x 60mm
79916OD-552	ODS, 5.0µm, 2.1 x 100mm
79916OD-572	ODS, 5.0µm, 2.1 x 200mm
79916OD-554	ODS, 5.0µm, 4.6 x 100mm
79916OD-574	ODS, 5.0µm, 4.6 x 200mm
7991618-584	ODS, 5.0µm, 4.6 x 250mm
79916MO-552	MOS, 5.0µm, 2.1 x 100mm
79916MO-572	MOS, 5.0µm, 2.1 x 200mm
79916MO-574	MOS, 5.0µm, 4.6 x 200mm

Hypersil Reversed Phase Guard Cartridge Columns

79916KT-110	ODS, 5.0µm, 2.1 x 20mm, 3/pk
7992618-504	ODS, 5.0µm, 4.0 x 4mm, 10/pk
79916KT-120	ODS, 5.0µm, 4.0 x 20mm, 10/pk
79916KT-111	MOS, 5.0µm, 2.1 x 20mm, 3/pk
79916KT-121	MOS, 5.0µm, 4.0 x 20mm, 3/pk
79926BD-504	BDS, 5.0µm, 4.0 x 4mm, 10/pk

Agilent Guard Cartridge Hardware

79900CH-010 Cartridge hardware for 2.1mm, 4.1mm ID

Hypersil Silica Normal Phase Columns

Hypersil silica columns from Agilent combine a strong, high-purity silica and Agilent's superior packing processes. The strength and reproducibility of these silica particles are also available in an amino phase, Hypersil APS, for normal phase chromatography.

Normal Phase Guard Cartridge Columns

Cat. No.	Description
79916AP-552	Hypersil APS, 5.0µm, 2.1 x 100mm
79916AP-554	Hypersil APS, 5.0µm, 4.6 x 100mm
79916AP-574	Hypersil APS, 5.0µm, 4.6 x 200mm
79916SI-552	Hypersil, 5.0µm, 2.1 x 100mm
79916SI-572	Hypersil, 5.0µm, 2.1 x 200mm
79916SI-554	Hypersil, 5.0µm, 4.6 x 100mm
79916SI-574	Hypersil, 5.0µm, 4.6 x 200mm

Normal Phase Guard Cartridge Columns

79916KT-112	Hypersil APS, 5.0µm, 2.1 x 20mm, 3/pk
79916KT-122	Hypersil APS, 5.0µm, 4.0 x 20mm, 3/pk
79916KT-113	Hypersil, 5.0µm, 2.1 x 20mm, 3/pk
79916KT-123	Hypersil, 5.0µm, 4.0 x 20mm, 3/pk

Agilent Guard Cartridge Hardware

79900CH-010 Cartridge hardware for 2.1mm, 4.1mm ID



Column Identification Module (CIM)

Attached to an LC column, the column identification module (CIM) communicates with the Agilent 1100 Series control module and Agilent ChemStation through a built-in read/write device. Column usage data – including serial and batch numbers, dimensions, particle size, packing material and number of injections – is recorded electronically in the module (pre-recorded before shipment of Agilent's CIM HPLC columns). You can also record method, plate number, installation date, operator name and other data as needed. With constant updating, column information is always current. Automatic column tracking enhances the Agilent 1100 Series features for meeting GLP, cGMP and quality standard requirements, and for achieving fast trouble free validation.

Cartridge Columns with CIM

Cat. No.	Description
79826BD-354	BDS-C18 w/CIM, 3.0µm, 4.0 x 100mm
79826BD-584	BDS-C18 w/CIM, 3.0µm, 4.0 x 250mm
7982618-564	ODS w/CIM, 5.0µm, 4.0 x 125mm
7982618-584	ODS w/CIM, 5.0µm, 4.0 x 250mm

Stainless Steel Columns with CIM

7981618-552	ODS w/CIM, 3.0µm, 2.1 x 100mm
7981618-554	ODS w/CIM, 5.0µm, 4.6 x 100mm