

Agilent's newly expanded ZORBAX Rapid Resolution High Throughput (RRHT) and Rapid Resolution (RR) HPLC Column Portfolio



Over 110 new configurations – so you never have to choose between **speed**, **resolution**, and **sensitivity**.



Perform faster separations on shorter columns.
Scale and transfer conventional LC methods.
Identify sensitive compounds with less coelution.



Agilent Technologies



"I need to run twice as many samples in half the time with half the resources."



"Scaling methods is becoming too time-consuming, because performance suffers whenever we change the particle size."



"I worry that the methods I develop today may have to be revalidated tomorrow when I transfer them to the QC lab."



"I can't afford to lose time troubleshooting and repeating my experiments."



"Complex samples used to be an occasional challenge. Now, they're a routine complication."

Whether you specialize in pharmaceuticals, chemical analysis, foods, flavors, biotech, or environmental testing, chances are good that you're under increased pressure to generate conclusive data about sample identification, quantitation, purity, metabolic stability, and other key sample attributes. And to get it done under tight time constraints.

But the good news is... Agilent has expanded its line of ZORBAX Rapid Resolution High Throughput (RRHT) LC Columns to offer you more choices than ever before. So you can achieve rapid, reproducible results without compromising quality.

Agilent's High Pressure ZORBAX Rapid Resolution HT 1.8 μm LC columns set a new standard for speed and resolution.

Now, they're setting a new standard for choice and flexibility.



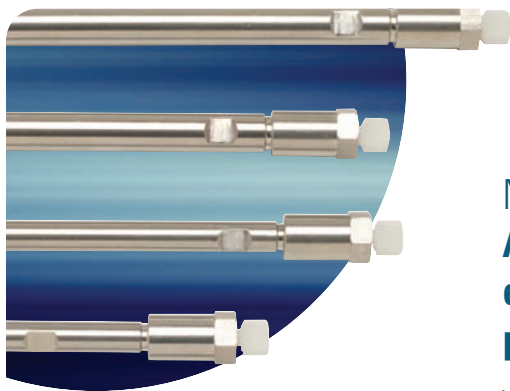
ZORBAX Rapid Resolution HT 1.8 μm LC columns – combined with Agilent's 1200 Series Rapid Resolution LC System – deliver up to 20X faster separations... 60% greater resolution... and easy, reliable method transfer. They can also reduce analysis time by up to 95%.

Now, we've expanded our portfolio to give you over 110 configurations to choose from – including:

- **NEW** Lengths from 15 mm-150 mm
- **NEW** IDs from 2.1 mm-4.6 mm
- 10 ZORBAX bare silica and bonded phases – including:
 - **NEW** Phenyl columns for extraordinary aromatic compound selectivity
 - **NEW** SB-AQ columns for polar compounds and 100% aqueous mobile phases
 - **NEW** Eclipse Plus columns that reliably produce symmetrical peaks for bases

What's more, if you have already developed conventional LC methods on Agilent's ZORBAX LC columns, you can easily and securely transfer these methods to Agilent's ZORBAX RRHT LC columns – without compromising resolution. That's because column efficiency increases dramatically as the particle size decreases to 1.8 μm . So you can analyze more complex separations on shorter columns – and re-evaluate current methods on fast LC without changing separation conditions.

Finally, Agilent ZORBAX RRHT columns allow you to push flow rates to the limit without compromising the efficiency or quality of your separations. And if you perform LC/MS, you can count on our high-pressure RRHT LC columns to deliver more accurate identification with less coelution. So you can achieve better separations of high-sensitivity compounds.



No matter what your separation needs may be,
Agilent's ZORBAX RRHT and RR LC columns can enhance your lab's productivity without sacrificing performance, reliability, or convenience.

Whether you need to analyze complex protein digests – or perform an ultra-fast separation in under 1 minute – Agilent's diverse selection of ZORBAX Rapid Resolution High Throughput and Rapid Resolution LC columns deliver the right results on time. In your lab... or any lab throughout the world.

And now, with the introduction of our **NEW ZORBAX Eclipse Plus** columns, you can also achieve superior, reproducible separations of basic compounds – as well as acids and neutrals.

Meet deadlines while increasing productivity.

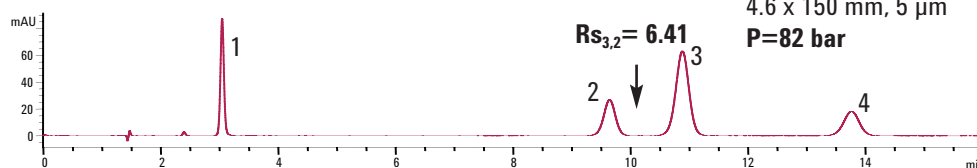
From supporting fast separations under higher pressures... to ensuring consistent performance under lower pressures... Agilent ZORBAX HPLC columns deliver reliable results on both Agilent and non-Agilent systems. With Agilent ZORBAX HPLC columns, you can...

- Process samples up to 10-20 times faster than conventional HPLC, while achieving equal or superior resolution, sensitivity, and reproducibility.
- Complete more runs per day.
- Perform conventional, fast and ultra-fast separations within the same column family – including our **NEW ZORBAX Eclipse Plus** line. So you can transfer methods easily and reliably no matter which bonded phase you choose.

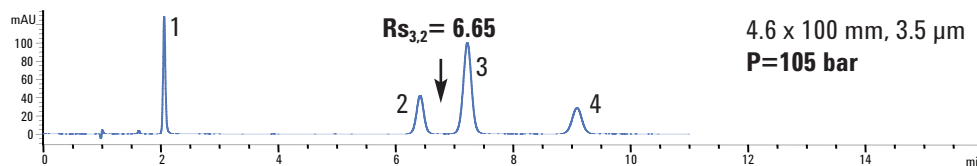
ZORBAX RRHT LC columns are specifically designed for high-speed and high-throughput applications. They are an extension of our ZORBAX family of LC columns engineered for the highest performance over the widest range of applications.

Perform conventional, fast and ultra-fast separations **within the same column family**

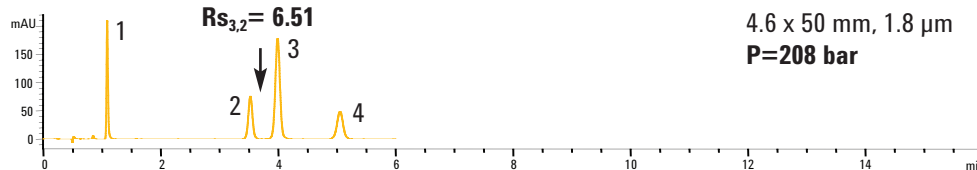
Eclipse Plus C18, 5 µm



RR Eclipse Plus C18, 3.5 µm



RRHT Eclipse Plus C18, 1.8 µm

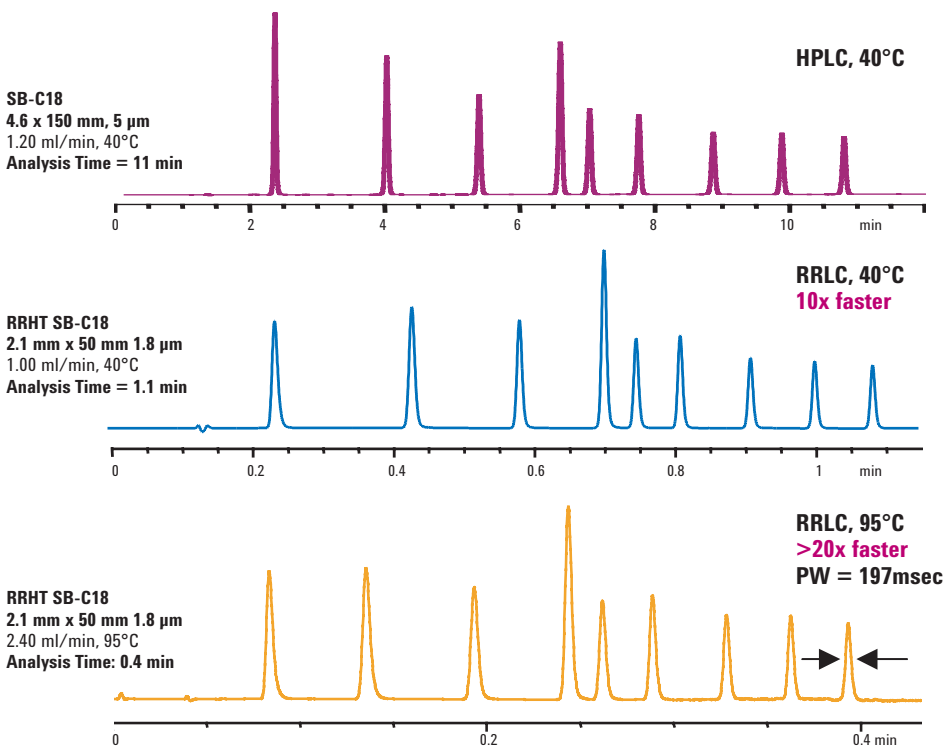


1. 2-hydroxy-4-methoxybenzophenone
2. Padimate-O
3. 2-ethylhexyl trans-4-methoxycinnamate
4. 2-ethylhexyl salicylate

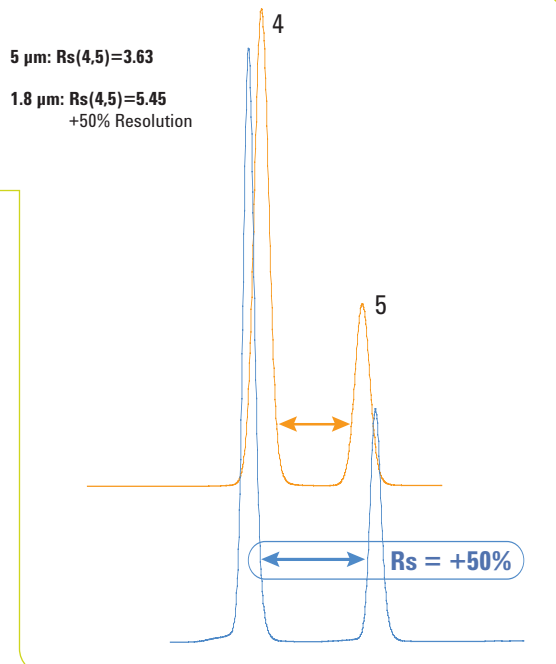
Columns: **ZORBAX Eclipse Plus C18**, as described above. Mobile Phase: A: water, B: MeOH, (15:85) Injection volume: 6 µL Temperature: 25°C Flow: 1 mL/min. Detection: 310, 4 nm, 0.5 s response time, semi-micro flow cell, Sample: Sunscreens

ZORBAX Rapid Resolution HT columns and the Agilent 1200 Series Rapid Resolution LC System

10X – 20X faster than conventional HPLC with traditional 5 μm columns



ZORBAX RRHT 1.8 μm LC columns can **improve resolution by 50-60%** vs. conventional LC



Full chromatograms not shown. Conditions are the same for each column, with the exception of particle size.





The broadest LC column selection for **maximum separation flexibility.**

With over 110 LC column configurations to choose from, the ZORBAX RRHT and RR LC column portfolio can help you achieve optimal results under varying temperatures, pressures, and pH ranges.

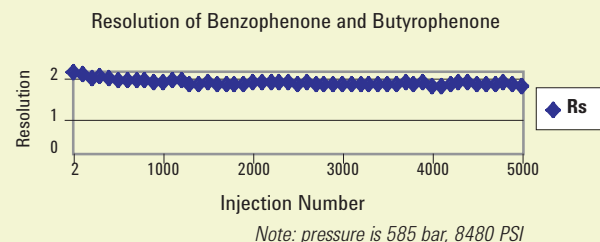
See pages 8-10 for our full line of fast and ultra-fast columns featuring:

- **Shorter (15 mm-50 mm) columns** for performing high-speed analysis.
- **Longer (100 mm-150 mm / 1.8 μm) columns** for greater resolution.
- **Both narrow and standard bores** with IDs ranging from 1 mm to 4.6 mm
- **Multiple bonded phases** – such as our **NEW ZORBAX Eclipse Plus LC columns** that enhance efficiency, resolution, and peak symmetry for challenging basic compounds, as well as acids and neutrals.

Long life and robust performance

Typically, you might expect a column's lifetime to shorten significantly as you decrease its particle size. However, Agilent's ZORBAX RRHT LC columns have been shown to last through thousands of injections. Our careful attention to design makes it possible to increase column life to 5,000+ injections, while decreasing the likelihood of the column frit becoming plugged with sample.

Achieve long column lifetime with Agilent ZORBAX RRHT LC columns



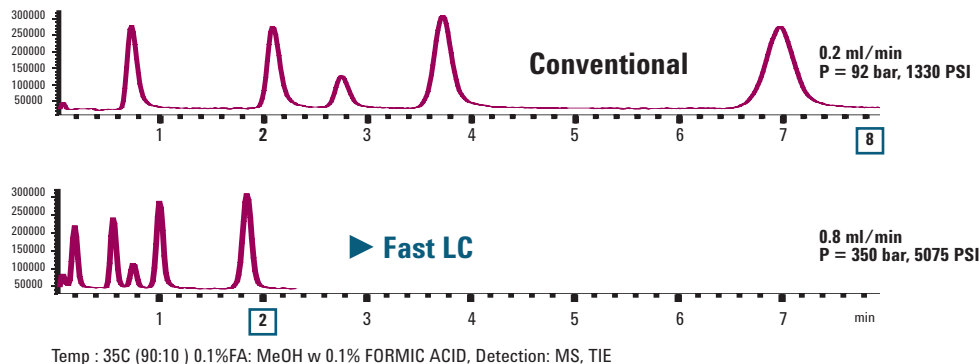
High investment protection and value

Both ZORBAX RRHT and RR LC columns allow you to perform conventional and/or ultra-fast separations on your new Agilent 1200 Series Rapid Resolution LC System – or with only minor modifications to your existing Agilent 1100 Series System. So you can maximize your resources – and minimize the need for additional training. (See page 9 to order your RRHT-1100 series upgrade kit.) ZORBAX 1.8 μm particles operate at 25% lower pressure than competitive LC columns, making it possible to effectively use sub-2-micron (1.8 μm) technology on your existing instrumentation – without upgrading your entire system.

Agilent ZORBAX RRHT LC column with Agilent 1200 Series Rapid Resolution LC System: better performance at dramatically lower pressures

	Competitor A	Agilent RRHT LC column
Column	2.1 mm x 50 mm, 1.7 μm	2.1 mm x 50 mm, 1.8 μm
Resolution	3.50	3.69
Pressure	700 bar, 10150 PSI	440 bar, 6380 PSI – that's 40% lower!

ZORBAX RRHT LC columns can be used for conventional *and* fast LC and LC/MS



Count on Agilent instruments, columns, and supplies for high-quality results, improved productivity, and a reduced cost of doing business.

To learn more, visit us at: www.agilent.com/chem/fastLC



Run samples up to 20x faster than conventional LC with the highly flexible Agilent 1200 Series Rapid Resolution LC System.

Agilent's **NEW** 1200 Series Rapid Resolution LC System can help you produce your numbers more efficiently than ever before. So you can meet your most difficult deadlines. Features include...

- Easy, secure method transfer from HPLC to RRLC
- Compatibility with existing HPLC methods using column lengths up to 300 mm by standard delay volume configuration (600 - 800 µL)
- 60% more resolving power than traditional LC
- A peak capacity greater than 600
- 30-second cycle time
- Efficiencies above 60,000 plates
- Comprehensive services – plus 24x7 technical support by phone or Web – to ensure peak performance

Together with Agilent's **NEW** ZORBAX RRHT 1.8 µm LC columns, the Agilent 1200 Series Rapid Resolution LC System can help you achieve fast, rugged and precise HPLC... ultra-fast separations ... and results you can trust.

All the performance. All the time.

To learn more visit: www.agilent.com/chem/1200RR





You asked for *choice* in column dimension, ID, and bonded phase. **We offer an unsurpassed variety of columns to accommodate virtually any application.**

Choose from the following configurations optimized for performance, reliability, ruggedness, and long life:

ZORBAX Eclipse Plus and Eclipse XDB RRHT 1.8 µm LC columns for high-pressure use*
An ideal first choice for method development.

	Eclipse Plus C18	Eclipse Plus C8	Eclipse XDB-C18	Eclipse XDB-C8	Extend-C18
4.6 x 150 mm	959994-902				
4.6 x 100 mm	959964-902	959964-906	928975-902	928975-906	728975-902
4.6 x 50 mm	959941-902	959941-906	927975-902	927975-906	727975-902
4.6 x 30 mm	959931-902	959931-906	924975-902	924975-906	724975-902
4.6 x 20 mm			926975-902	926975-906	726975-902
3.0 x 150 mm	959994-302				
3.0 x 100 mm	959964-302	959964-306	928975-302	928975-306	728975-302
3.0 x 50 mm	959941-302	959941-306	927975-302	927975-306	727975-302
3.0 x 30 mm			924975-302	924975-306	724975-302
3.0 x 20 mm			926975-302	926975-306	726975-302
2.1 x 150 mm	959794-902				
2.1 x 100 mm	959764-902	959764-906	928700-902	928700-906	728700-902
2.1 x 50 mm	959741-902	959741-906	927700-902	927700-906	727700-902
2.1 x 30 mm	959731-902	959731-906	924700-902	924700-906	724700-902
2.1 x 20 mm			926700-902	926700-906	726700-902

*Engineered for maximum pressure of 600 bar, 9,000 PSI

NEW for 2007

TIP: 150 mm RRHT columns perform up to **30% more efficiently** than 250 mm, 5 µm columns – and ensure **maximum peak capacity** for high-resolution and unknown samples.

ZORBAX StableBond and Rx-SIL RRHT 1.8 µm LC columns for high-pressure use*
Best for high temperature.

	SB-C18	SB-C8	SB-Phenyl	SB-CN	SB-AQ	Rx-Sil
4.6 x 150 mm	829975-902	829975-906	829975-912	829975-905	829975-914	
4.6 x 100 mm	828975-902	828975-906	828975-912	828975-905	828975-914	828975-901
4.6 x 50 mm	827975-902	827975-906	827975-912	827975-905	827975-914	827975-901
4.6 x 30 mm	824975-902	824975-906	824975-912	824975-905	824975-914	
4.6 x 20 mm	826975-902	826975-906				
3.0 x 150 mm	829975-302	829975-306	829975-312	829975-305		
3.0 x 100 mm	828975-302	828975-306	828975-312	828975-305	828975-314	828975-301
3.0 x 50 mm	827975-302	827975-306	827975-312	827975-305	827975-314	827975-301
3.0 x 30 mm	824975-302	824975-306		824975-305		
3.0 x 20 mm	826975-302	826975-306				
2.1 x 150 mm	820700-902	820700-906	820700-912	820700-905		
2.1 x 100 mm	828700-902	828700-906	828700-912	828700-905	828700-914	828700-901
2.1 x 50 mm	827700-902	827700-906	827700-912	827700-905	827700-914	827700-901
2.1 x 30 mm	824700-902	824700-906	824700-912	824700-905	824700-914	
2.1 x 20 mm	826700-902	826700-906				

*Engineered for maximum pressure of 600 bar, 9,000 PSI

NEW for 2007

ZORBAX RRHT 1.8µm columns and cartridges*

Best for fast LC.

	Eclipse XDB-C18	Eclipse XDB-C18 3pk	Eclipse XDB-C8	SB-C18	SB-C18 3pk	SB-C8	Extend-C18
Standard Columns							
4.6 x 50 mm	922975-902	922975-932	922975-906	822975-902	822975-932	822975-906	722975-902
2.1 x 50 mm	922700-902	922700-932		822700-902	822700-932		
Cartridge Columns**							
4.6 x 50 mm	925975-902	925975-932		825975-902	825975-932		
4.6 x 30 mm	923975-902	923975-932		823975-902	823975-932		
4.6 x 15 mm	921975-902	921975-932		821975-902	821975-932		
2.1 x 50 mm	925700-902	925700-932		825700-902	825700-932		
2.1 x 30 mm	923700-902	923700-932		823700-902	823700-932		
2.1 x 15 mm	921700-902	921700-932		821700-902	821700-932		

*Engineered for maximum pressure: 400 bar, 6,000 PSI

**Require hardware kit 820555-901

ZORBAX Rapid Resolution Eclipse HPLC columns (3.5 µm)

Includes Eclipse Plus Columns, which deliver superior peaks for basic compounds.

	Eclipse Plus C18	Eclipse Plus C8	Eclipse XDB-C18	Eclipse XDB-C8	Eclipse XDB-CN	Eclipse XDB-Phenyl
4.6 x 150 mm	959963-902	959963-906	963967-902	963967-906	963967-905	963967-912
4.6 x 100 mm	959961-902	959961-906	961967-902	961967-906	961967-905	○
4.6 x 75 mm	959933-902	959933-906	966967-902	966967-906	966967-905	966967-912
4.6 x 50 mm	959943-902	959943-902	935967-902	935967-906	○	935967-912
4.6 x 30 mm	959936-902	959936-906	934967-902	934967-906	○	○
4.6 x 20 mm	○	○	932967-902	932967-906	○	○
3.0 x 150 mm	959963-302	959963-306	963954-302	963954-306	963954-305	963954-312
3.0 x 100 mm	959964-302	959964-306	961967-302	961967-306	○	961967-312
2.1 x 150 mm	959763-902	959763-906	930990-902	930990-906	○	○
2.1 x 100 mm	959793-902	959793-906	961753-902	961753-906	961753-905	○
2.1 x 50 mm	959743-902	959743-906	971700-902	971700-906	○	○
2.1 x 30 mm	959733-902	959733-906	974700-902	974700-906	○	○
2.1 x 20 mm	○	○	972700-902	972700-906	○	○
1.0 x 150 mm	○	○	963600-902	963600-906	○	○
1.0 x 50 mm	○	○	965600-902	965600-906	○	○
1.0 x 30mm	○	○	961600-902	961600-906	○	○
Guard Cartridges						
4.6 x 12.5 mm, 4 pk	○	○	820950-925	820950-926	820950-935	820950-927
2.1 x 12.5 mm, 4 pk	○	○	821125-926	821125-926	821125-935	821125-926
Guard Hardware Kit for 4.6 & 2.1 mm	○	○	820888-901	820888-901	820888-901	820888-901
1.0 x 17 mm, 3 pk	○	○	5185-5921	5185-5921	○	○

○ Custom column available. Contact your local Agilent Representative or Agilent Authorized Distributor

 **NEW for 2007**

Agilent's 1100 Series Conversion Kits for Fast LC can make your system RRHT compatible in less than 1 hour! Find out more at: www.agilent.com/chem/convert

ZORBAX Rapid Resolution StableBond HPLC columns

Excellent reproducibility for low-pH and high-temperature applications.

	SB-C18	SB-C8	SB-CN	SB-Phenyl	SB-AQ	SB-C3
4.6 x 250 mm	884950-567	○	○	⊙	○	○
4.6 x 150 mm	863953-902	863953-906	863953-905	863953-912	863953-914	○
4.6 x 100 mm	861953-902	861953-906	861953-905	861953-912	861953-914	○
4.6 x 75 mm	866953-902	866953-906	866953-905	866953-912	866953-914	○
4.6 x 50 mm	835975-902	835975-906	835975-905	835975-912	835975-914	○
4.6 x 30 mm	834975-902	834975-906	○	○	○	○
4.6 x 20 mm	832975-902	832975-906	○	○	○	○
3.0 x 150 mm	863954-302	863954-306	863954-305	863954-312	863954-314	○
3.0 x 100 mm	861954-302	861954-306	861954-305	861954-312	861954-314	861954-309
2.1 x 150 mm	830990-902	830990-906	○	○	830990-914	○
2.1 x 100 mm	861753-902	861753-906	861753-905	861753-912	861753-914	○
2.1 x 75 mm	866735-902		○	○	○	○
2.1 x 50 mm	871700-902	871700-906	○	○	871700-914	○
2.1 x 30 mm	874700-902	874700-906	○	○	○	○
2.1 x 20 mm	872700-902	872700-906	○	○	○	○
1.0 x 150 mm	863600-902	863600-906	○	○	○	○
1.0 x 50 mm	865600-902	865600-906	○	○	○	○
1.0 x 30 mm	861600-902	861600-906	○	○	○	○
Guard Cartridges						
4.6 x 12.5 mm, 4pk	820950-902	820950-902	820950-916	820950-917	820950-933	820950-922
2.1 x 12.5 mm, 4pk	821125-926	821125-926	821125-924	821125-926	821125-933	821125-924
Guard Hardware Kit For 4.6 & 2.1 mm	820888-901	820888-901	820888-901	820888-901	820888-901	820888-901
1.0 x 17 mm, 3pk	5185-5920	5185-5920	○	○	○	○

○ Custom column available. Contact your local Agilent Representative or Agilent Authorized Distributor

 **NEW for 2007**

ZORBAX Eclipse XDB and StableBond Rapid Resolution cartridge columns* High separation efficiency in an inexpensive format option.

	Eclipse XDB-C18	Eclipse XDB-C8	SB-C18	SB-C8
4.6 x 30 mm	933975-902	933975-906	833975-902	833975-906
4.6 x 30 mm, 3pk	933975-932	933975-936	833975-932	833975-936
4.6 x 15 mm	931975-902	931975-906	831975-902	831975-906
4.6 x 15 mm, 3pk	931975-932	931975-936	831975-932	831975-936
2.1 x 30 mm	973700-902	973700-906	873700-902	873700-906
2.1 x 30 mm, 3pk	973700-932	973700-936	873700-932	873700-936
2.1 x 15 mm	975700-902	975700-906	875700-902	875700-906
2.1 x 15 mm, 3pk	975700-932	975700-936	875700-932	875700-936

*Require hardware kit 820555-901

Additional ZORBAX Rapid Resolution HPLC columns

Provide different selectivities for a wide range of samples

	Extend-C18	Bonus-RP	Rx-C18	Rx-C8
4.6 x 150 mm	763953-902	863668-901	863967-902	863953-906
4.6 x 100 mm	764953-902	861953-914	861967-902	833975-936
4.6 x 75 mm	766953-902	866668-901	866967-902	831975-906
4.6 x 50 mm	735953-902	○	○	○
3.0 x 150 mm	○	○	863967-302	863954-306
3.0 x 100 mm	764953-302	864668-301	861967-302	861954-306
2.1 x 100 mm	761753-902	861753-914	861767-902	861753-906
2.1 x 50 mm	735700-902	861700-901	○	○
1.0 x 150 mm	763600-902	863608-901	○	○
1.0 x 50 mm	765600-902	865608-901	○	○
1.0 x 30 mm	761600-902	861608-901	○	○

○ Custom column available. Contact your local Agilent Representative or Agilent Authorized Distributor

Which bonded phase should you choose for your application?

NEW ZORBAX Eclipse Plus

with its industry-leading peak shape and performance, Eclipse Plus is your first choice for method development. Ideal for most applications up to 60°C.



ZORBAX Eclipse XDB

a good general-purpose bonded phase for most applications up to 60°C at pH 2-9.



ZORBAX StableBond

is best for low-pH and high-temperature applications as follows:

NEW SB-AQ: up to 100% aqueous mobile phases up to 60°C / at pH 2

NEW SB-Phenyl: up to 80°C / at pH 2

SB-C18: up to 90°C / down to pH <1

SB-C8: up to 80°C / down to pH 1

SB-CN: up to 80°C / at pH 2



ZORBAX Extend-C18

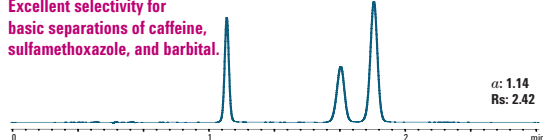
can be used in high-pH applications – up to pH 11.5 at ambient temperatures.



Multiple bonded phases provide the selectivity choices you need

✓ Eclipse Plus C8

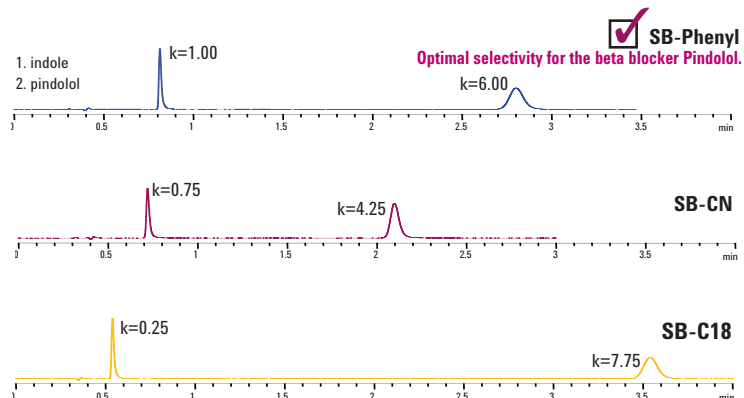
Excellent selectivity for basic separations of caffeine, sulfamethoxazole, and barbital.



Eclipse XDB C8



Columns: ZORBAX RRHT 4.6 x 50, 1.8 μm Mobile Phase: 32% MeOH, 68% water Flow Rate: 1 mL/min. Detection: DAD 225nm Sample: 1. Caffeine, 2. Sulfamethoxazole 3. Barbital



Columns: ZORBAX RRHT StableBond 4.6 x 50 mm 1.8 μm, as described above. Mobile Phase: A: pH 5 Na Acetate (USP method), B: MeCN, (70:30) Temperature: 25°C Flow: 1.5 mL/min. Detection: 219, 4 nm, 0.2 s response time, semi-micro flow cell, Sample: USP pindolol resolution solution

To learn more about Agilent ZORBAX RRHT LC columns, or other Agilent products and services, visit us online at: www.agilent.com/chem/fastLC.



Agilent is your single source for fast, accurate HPLC.

For more information about Agilent's ZORBAX Rapid Resolution High Throughput and Rapid Resolution HPLC column portfolio:

- **Visit** us online at www.agilent.com/chem/fastLC
- **Contact** your **local Agilent Representative** or **Agilent Authorized Distributor**.
- **Call** toll free: **800 227 9770**, option 1 (in the US and Canada)

For technical assistance in selecting the column that provides reliable, reproducible results on time, every time, call **800 227 9770**, option 4 (in the US and Canada).

For information about the Agilent 1200 Series Rapid Resolution LC System, visit us online at www.agilent.com/chem/1200RR.

Don't forget to visit Agilent's Online Store at www.agilent.com/chem/store for easy ordering and up-to-the-minute information.

Information, descriptions, and specifications in this publication are subject to change without notice.

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**Get your copy of the
Agilent ZORBAX Column
Selection Guide for HPLC!**

(Publication 5989-5992)



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