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.

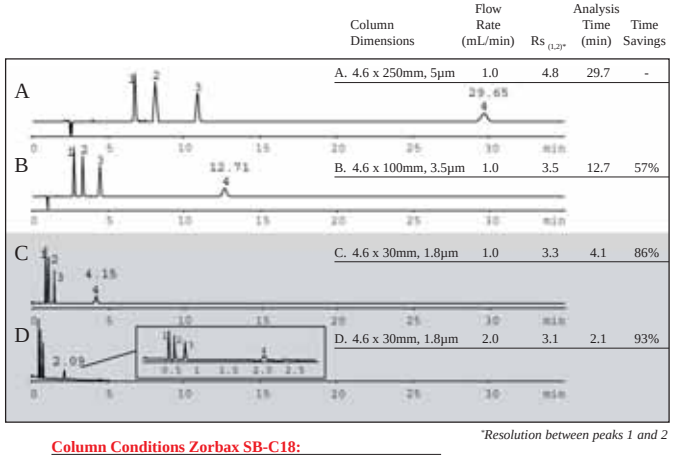
You get even higher resolution and efficiency in very short columns (15 to 50mm) – ideal for sample screening, LC/MS and many routine analyses.

Rapid Resolution HT Columns, 1.8µm

Dimensions (mm)	Format	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

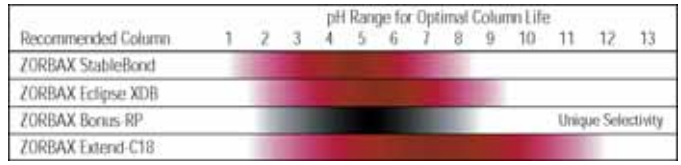
820555-901 Kit includes: (2) end-fitting assemblies; (1) 50mm holder; (1) 30mm holder; (1) 15mm holder



Resolution between peaks 1 and 2

Column Conditions Zorbax SB-C18:

Mobile Phase:	50% 20mM Na_2HPO_4, pH 2.8: 50% ACN
Temperature:	Ambient
Detection:	230nm
Sample:	1. Estradiol 2. Ethynylestradiol 3. Dienestrol 4. Norethindrone



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 minimiz 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.