

## HydroBond™ AQ and HydroBond™ PS Reversed-Phase HPLC Columns

New bonding technology brings

■ Retention ■ Reproducibility ■ Reliability  
to HPLC methods using *high aqueous mobile phases*.

The analysis of highly polar analytes by conventional reversed-phase HPLC columns can be problematic if adequate retention can only be obtained using a mobile phase with less than 5% organic modifier. Such "high aqueous" mobile phases fail to adequately wet the hydrophobic bonded phase, causing the phase to "collapse" leading to low efficiency, poor reproducibility and slow column re-equilibration.

HydroBond AQ and HydroBond PS reversed-phase HPLC columns are ideal for method development on compounds requiring high, or even 100% aqueous mobile phases. The use of polar functional groups in the bonded silane of these columns improves the "wettability" of the column giving improved efficiency, retention and reproducibility.

### HydroBond AQ — Maximum Retention for Polar Compounds

- Compatible with 100% aqueous mobile phases
- Rapid gradient re-equilibration
- *No ion pairing agents required*
- High available carbon load for maximum retention

Choose this phase for the analysis of organic acids, aromatic acids, water soluble vitamins, purine and pyrimidine bases and other compounds that show little or no retention on standard reversed-phase columns. These compounds can be separated in 100% aqueous mobile phases with no ion pair additives.

The HydroBond AQ series consists of a C8 silane with an ether linkage near the point of attachment to the silica. This polar ether group allows water to penetrate and hydrate the silica surface, preventing self-association of the C8 chains. This patented bonding technology allows the C8 chains to be fully extended even in 100% aqueous mobile phases.

### Specifications:

**Phases:** C8  
**Particle Size:** 5 µm  
**Pore Size:** 100 Å  
**Surface Area:** 450 m<sup>2</sup>/g  
**Carbon:** 16%  
**pH range:** 2 - 8

FIGURE 1  
Organic Acids

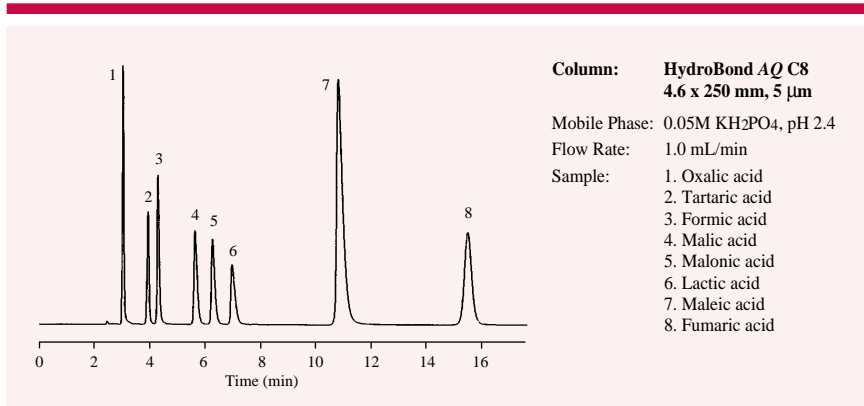


FIGURE 2  
Purine and Pyrimidine Bases

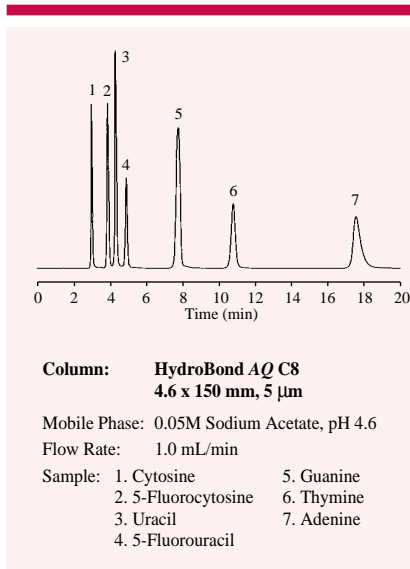
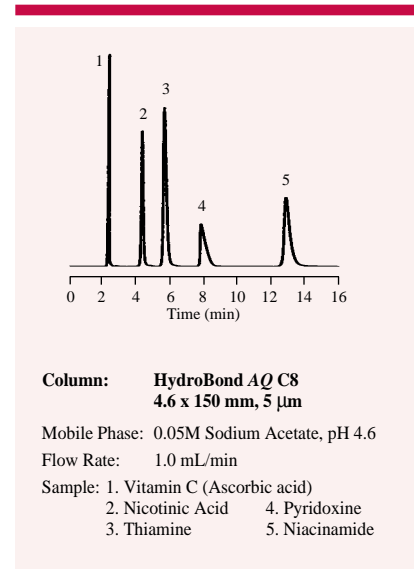


FIGURE 3  
Water Soluble Vitamins



## HydroBond PS — Unique "Polar Shielding"

- Eliminates secondary silanol interaction
- Excellent peak shape without mobile phase additives
- Available in C8 and C18 — both perform well in high aqueous mobile phases

An excellent column for poorly retained basic compounds which exhibit peak tailing on other HPLC columns. HydroBond PS, available in both a C8 and C18, uses a polar shielding group to further deactivate the silica surface. This polar end-capping group also serves to allow water to better hydrate the silica surface. Not only does HydroBond PS offer superior performance in high aqueous mobile phases, it is also an excellent general purpose reversed-phase column giving excellent peak shape for basic compounds.

Because of the efficient shielding of the silica surface, many separations, in particular, peptide maps requiring trifluoroacetic acid (TFA) in the mobile phase, can be carried out using dilute acetic or formic acids. This can greatly enhance sensitivity in LC/MS applications.

FIGURE 4  
HydroBond PS C18 Gives Excellent Peak Shape Even Without Buffer Salts

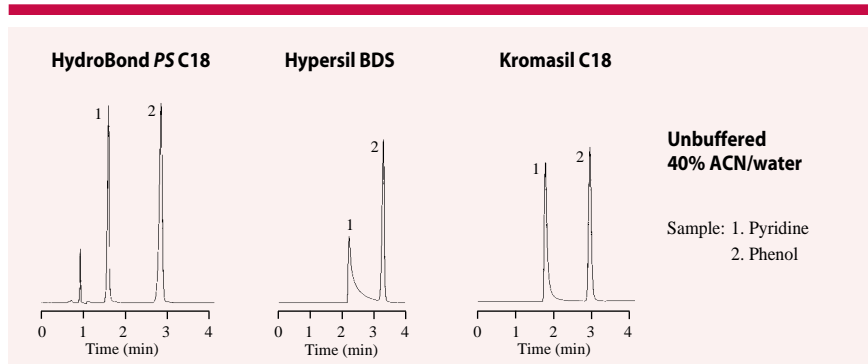
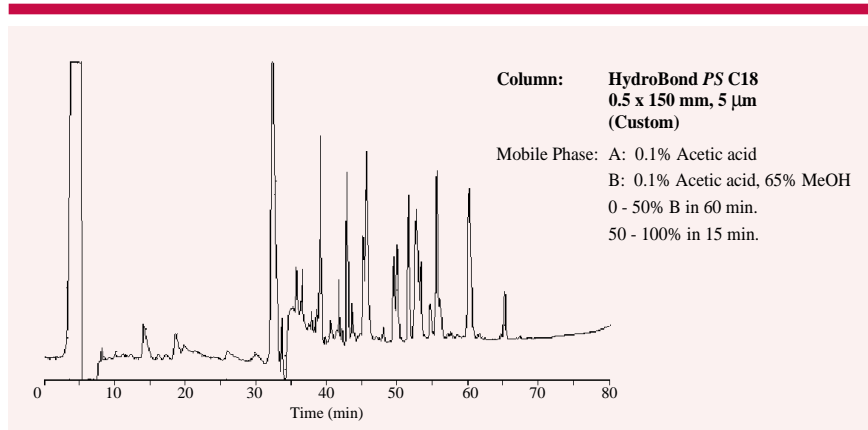


FIGURE 5  
Tryptic Map Without TFA (for Enhanced LC/MS Sensitivity)



### Specifications:

- Phases: C8 and C18
- Particle Size: 5 μm
- Pore Size: 120 Å
- Pore Volume: 0.8 mL/gm
- Surface Area: 330 m<sup>2</sup>/g
- Carbon: C8 = 8%, C18 = 16%

### MAC-MOD Analytical — A Name You Can Trust

Since 1986 chromatographers have trusted MAC-MOD Analytical as a source of quality HPLC columns, responsive customer service and the finest technical support. Our informative technical bulletins, *Forum Newsletter* and *Open Forum Workshops* have provided valuable technical references to chromatographers throughout the United States. Please call us for advice on your next method development project. Our technical staff can recommend which of our quality product lines will be the best solution to your problem.



### To order or for more information:

MAC-MOD Analytical, Inc.  
P.O. Box 2600  
127 Commons Court  
Chadds Ford, PA 19317  
Phone: 1-800-441-7508  
FAX: 1-610-358-5993

### HydroBond Ordering Information

| Dimensions (mm)             | HydroBond AQ | HydroBond PS C8 | HydroBond PS C18 | Price     |
|-----------------------------|--------------|-----------------|------------------|-----------|
| 4.6 x 50                    | MMHB8-46055  | MMTG8-46055     | MMTG18-46055     | \$ 350.00 |
| 3.0 x 50                    | MMHB8-30055  | MMTG8-30055     | MMTG18-30055     | 350.00    |
| 2.1 x 50                    | MMHB8-21055  | MMTG8-21055     | MMTG18-21055     | 350.00    |
| 4.6 x 100                   | MMHB8-46105  | MMTG8-46105     | MMTG18-46105     | 365.00    |
| 3.0 x 100                   | MMHB8-30105  | MMTG8-30105     | MMTG18-30105     | 365.00    |
| 2.1 x 100                   | MMHB8-21105  | MMTG8-21105     | MMTG18-21105     | 365.00    |
| 4.6 x 150                   | MMHB8-46155  | MMTG8-46155     | MMTG18-46155     | 385.00    |
| 3.0 x 150                   | MMHB8-30155  | MMTG8-30155     | MMTG18-30155     | 385.00    |
| 2.1 x 150                   | MMHB8-21155  | MMTG8-21155     | MMTG18-21155     | 385.00    |
| 4.6 x 250                   | MMHB8-46255  | MMTG8-46255     | MMTG18-46255     | 445.00    |
| 3.0 x 250                   | MMHB8-30255  | MMTG8-30255     | MMTG18-30255     | 445.00    |
| 2.1 x 250                   | MMHB8-21255  | MMTG8-21255     | MMTG18-21255     | 445.00    |
| Guard Cartridge, 2.1 mm (5) | MMHB8-21205  | MMTG8-21205     | MMTG18-21205     | 200.00    |
| Guard Cartridge, 3.2 mm (5) | MMHB8-32205  | MMTG8-32205     | MMTG18-32205     | 200.00    |
| Guard Holder                | MMHB-GUARD   | MMTG-GUARD      | MMTG-GUARD       | 150.00    |

Additional column configurations available upon request.