

Expand your Retention Capabilities with XSelect HSS PFP Columns

- Unique phase for selectivity for basic and planar aromatic compounds
- Provides excellent peak shape performance
- Available in different particle sizes and column formats to help you efficiently develop methods



The XSelect™ HSS (High Strength Silica) family of HPLC columns has expanded its selectivity range, now offering a pentafluorophenyl [PFP] chemistry. The new XSelect HSS PFP columns are the most stable, reproducible and scalable silica-based PFP LC columns available. The HSS substrate combined with the PFP ligand gives you true PFP performance without compromise to peak shape and retention time variation.

Maintain Retention and Peak Shape

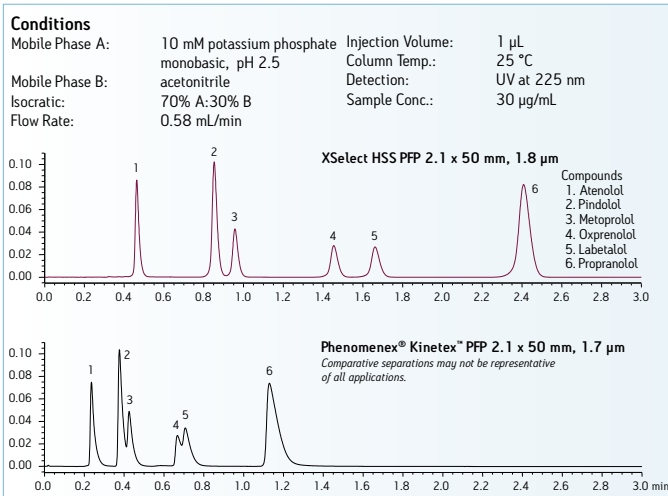


Figure 1. The HSS substrate combined with the PFP bonded ligand results in best in class performance for peak shape and retention. This example shows the separation of a mixture of beta-blocker pharmaceuticals.

XSelect HSS PFP columns are used when you require increased compound retention, especially for polar basic analytes that are difficult to retain using conventional reversed-phase C₁₈ stationary phases. PFP phases are electron acceptors - these ligands will have pi-pi interactions with compounds that are Lewis bases. The rigid aromatic ring provides additional selectivity based on analyte shape, dipole moment and hydrogen bonding interactions.

Achieve Greater Retention and Analyte Selectivity

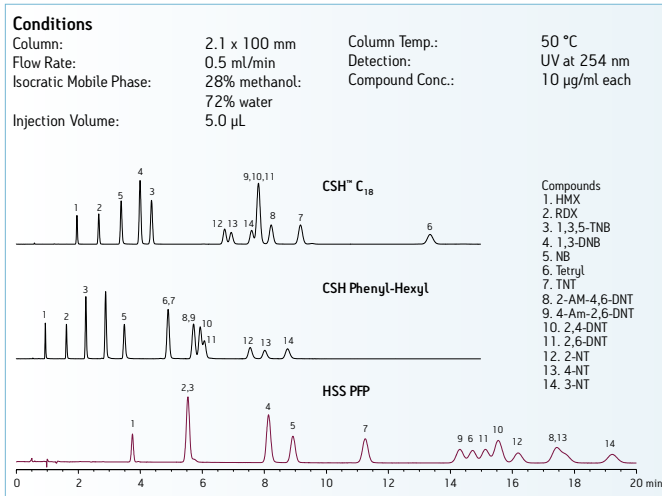


Figure 2. PFP columns show a strong retention affinity for compounds that contain planar aromatic structures. This example shows the increased retention for explosive compounds compared to other commonly used XSelect columns.

Scalability and Method Transferability

The ability to scale between UPLC® and HPLC methods requires tightly controlled batch-to-batch reproducibility for all particle sizes. Historically, chromatography using PFP columns suffered from the challenges of manufacturing reproducible PFP stationary phases. Figure 3 demonstrates scaling between different particle sizes and column dimensions using a HILIC gradient separation of basic analytes. Column configurations were selected to maintain the same resolving power.

Complete Method Transfer and Scalability Between Column Formats

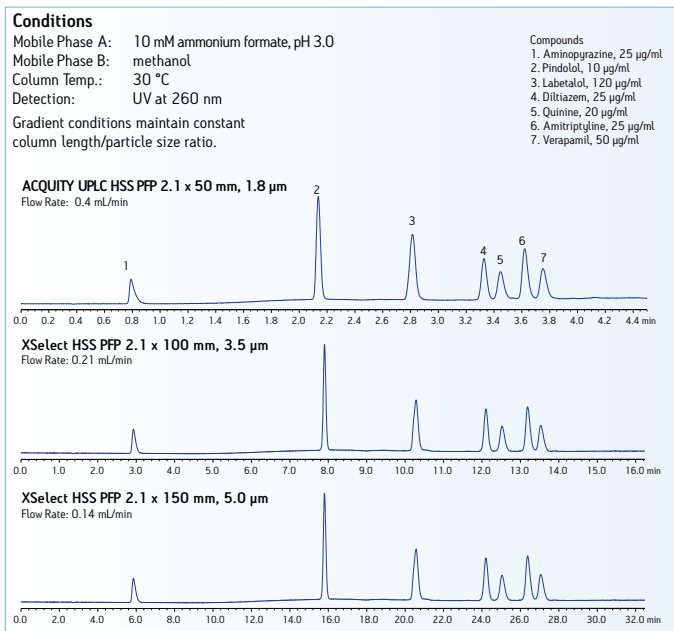


Figure 3. When using HPLC methods, you can have the confidence that the separation you create can be easily transferred to any LC platform or column dimension required. This example shows chromatographic scalability between particle sizes using ACQUITY UPLC HSS PFP and XSELECT HSS PFP columns.

XSelect HSS PFP Ligand Characteristics

Particle Size	2.5, 3.5, 5 µm
Ligand Density*	3.2 µmol/m ²
Carbon Load*	7%
Endcap Style	None
pH Range	2-8
Low pH Temp. Limit	45 °C
High pH Temp. Limit	45 °C
Pore Diameter*	100Å
Surface Area*	230 m ² /g

*Expected or approximate value

ORDERING INFORMATION

XSelect HSS PFP Columns

Dimension	Type	Particle Size	Part Number
1.0 x 50 mm	Column	3.5 µm	186005842
1.0 x 100 mm	Column	3.5 µm	186005843
1.0 x 150 mm	Column	3.5 µm	186005844
2.1 x 20 mm IS ⁺	Column	3.5 µm	186005845
2.1 x 30 mm	Column	3.5 µm	186005846
2.1 x 50 mm	Column	3.5 µm	186005847
2.1 x 75 mm	Column	3.5 µm	186005848
2.1 x 100 mm	Column	3.5 µm	186005849
2.1 x 150 mm	Column	3.5 µm	186005850
3.0 x 20 mm IS	Column	3.5 µm	186005851
3.0 x 30 mm	Column	3.5 µm	186005852
3.0 x 50 mm	Column	3.5 µm	186005853
3.0 x 75 mm	Column	3.5 µm	186005854
3.0 x 100 mm	Column	3.5 µm	186005855
3.0 x 150 mm	Column	3.5 µm	186005856
4.6 x 20 mm IS	Column	3.5 µm	186005857
4.6 x 30 mm	Column	3.5 µm	186005858
4.6 x 50 mm	Column	3.5 µm	186005859
4.6 x 75 mm	Column	3.5 µm	186005860
4.6 x 100 mm	Column	3.5 µm	186005861
4.6 x 150 mm	Column	3.5 µm	186005862
4.6 x 250 mm	Column	3.5 µm	186005863
2.1 x 10 mm	Guard Cartridge, 2/pk	3.5 µm	186005864
3.0 x 20 mm	Guard Cartridge, 2/pk	3.5 µm	186005865
4.6 x 20 mm	Guard Cartridge, 2/pk	3.5 µm	186005866
2.1 x 20 mm IS	Column	5 µm	186005867
2.1 x 30 mm	Column	5 µm	186005868
2.1 x 50 mm	Column	5 µm	186005869
2.1 x 100 mm	Column	5 µm	186005871
2.1 x 150 mm	Column	5 µm	186005872
3.0 x 20 mm IS	Column	5 µm	186005873
3.0 x 30 mm	Column	5 µm	186005874
3.0 x 50 mm	Column	5 µm	186005875
3.0 x 100 mm	Column	5 µm	186005877
3.0 x 150 mm	Column	5 µm	186005878
3.0 x 250 mm	Column	5 µm	186005879
4.6 x 20 mm IS	Column	5 µm	186005880
4.6 x 30 mm	Column	5 µm	186005881
4.6 x 50 mm	Column	5 µm	186005882
4.6 x 75 mm	Column	5 µm	186005883
4.6 x 100 mm	Column	5 µm	186005884
4.6 x 150 mm	Column	5 µm	186005885
4.6 x 250 mm	Column	5 µm	186005886
2.1 x 10 mm	Guard Cartridge, 2/pk	5 µm	186005887
3.0 x 20 mm	Guard Cartridge, 2/pk	5 µm	186005888
4.6 x 20 mm	Guard Cartridge, 2/pk	5 µm	186005889

ACQUITY UPLC HSS PFP Columns

Dimension	Type	Particle Size	Part Number
1.0 x 50 mm	Column	1.8 µm	186005961
1.0 x 100 mm	Column	1.8 µm	186005962
1.0 x 150 mm	Column	1.8 µm	186005963
2.1 x 30 mm	Column	1.8 µm	186005964
2.1 x 50 mm	Column	1.8 µm	186005965
2.1 x 75 mm	Column	1.8 µm	186005966
2.1 x 100 mm	Column	1.8 µm	186005967
2.1 x 150 mm	Column	1.8 µm	186005968
3.0 x 30 mm	Column	1.8 µm	186005969
3.0 x 50 mm	Column	1.8 µm	186005970
3.0 x 75 mm	Column	1.8 µm	186005971
3.0 x 100 mm	Column	1.8 µm	186005972
3.0 x 150 mm	Column	1.8 µm	186005973

VanGuard™ Pre-Column 3-Packs

Description	Dimension	Particle Size	Part Number
HSS PFP	2.1 x 5 mm	1.8 µm	186005974

HSS PFP Method Transfer Kits

Description	Particle Size	Part Number
HSS PFP Method Transfer Kit	1.8, 5 µm	186005979
HSS PFP Method Transfer Kit	1.8, 3.5 µm	186005980
HSS PFP High Rs Method Transfer Kit	1.8, 3.5 µm	186005981

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Waters Corporation
 34 Maple Street
 Milford, MA 01757 U.S.A.
 T: 1 508 478 2000
 F: 1 508 872 1990
 www.waters.com

