



# Phalanx™

## Ultra High Density End Capping

### Unique Features:

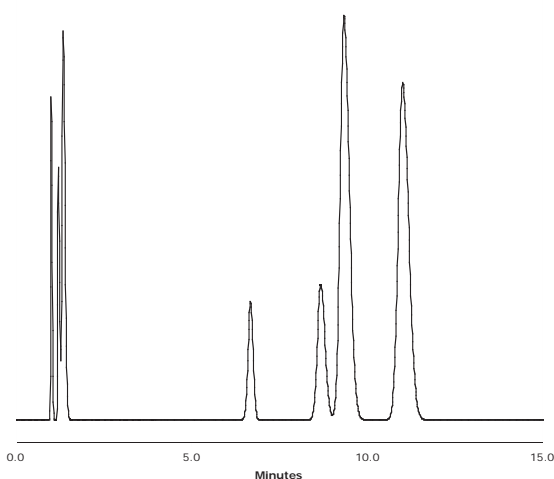
- Ideal for Basic and Acidic Analytes
- Wide pH Range Stability
- High Capacity
- No secondary Si-OH interaction
- No metal contamination
- Extreme hydrophobicity range

### Physical Properties:

- Particle sizes: 4.5µm and 10µm
- Pore Size: 100Å
- Surface Area: 430m<sup>2</sup>/gm
- Functionality: Monomeric C18
- %C (w/w): 18%
- End Capping: Proprietary and extremely exhaustive.

### Standard Sizes:

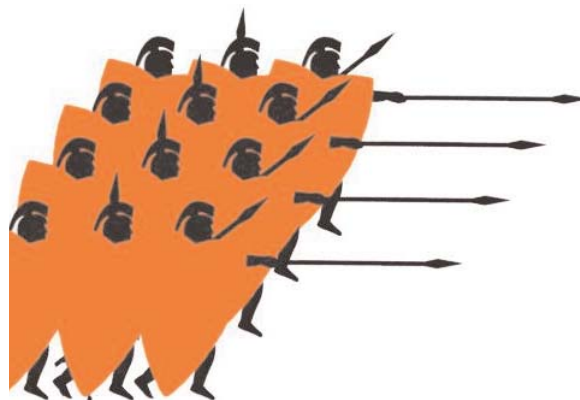
- Special products for LC-MS
- 0.075 - 20mm I.D. range
- Cartridge and Column versions
- PEEK/titanium as well as s.s. format



### High Selectivity:

Wide range of solutes resolve quickly on a short HPLC column.

Phalanx C18, 100x4.6mm, PIN: PS-1046-C185  
(1) Uracil, (2) Caffeine, (3) Phenol, (4) n-Butylbenzene,  
(5) o-Terphenyl, (6) n-Amylbenzene, (7) Triphenylene  
80% MeOH/water, 1mL/min



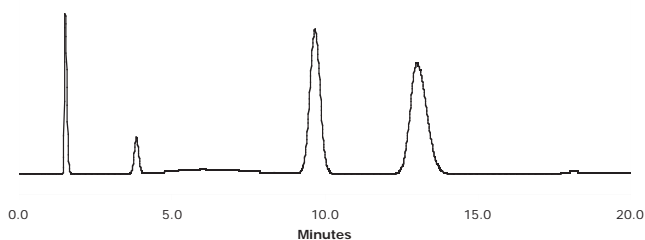
Phalanx is Higgins Analytical's latest addition to a family of unique high performance HPLC sorbents. The novel end capping technology of this new sorbent is a continuation of the pioneering approach taken in 1996 when we introduced *Targa*, the first HPLC sorbent specifically designed for efficient LC-MS applications without TFA.

Based on an ultrapure, *Type B* silica backbone, *Phalanx* has a relatively high surface area of 430 m<sup>2</sup>/gm, but its very tight pore size distribution eliminates the undesirable side effects of micropores that often plague other high surface materials.

**Optimum for Basic and Acidic compounds:** Many modern HPLC sorbents employ embedded polar functionality. While these secondary structures can provide unique selectivity and eliminate undesirable solute/sorbent interaction, they often compromise the useful range of solutes or buffers that can be used. The figure on the left and those on page 2 illustrate that *Phalanx* columns produce symmetrical peaks during the analysis of basic, neutral, and acidic compounds.

**Wide pH operating range:** The unique endcapping reduces acid/base hydrolysis of the bonded phase and greatly reduces silica solvation at high pH.

## Applications Characterizing Phalanx Performance



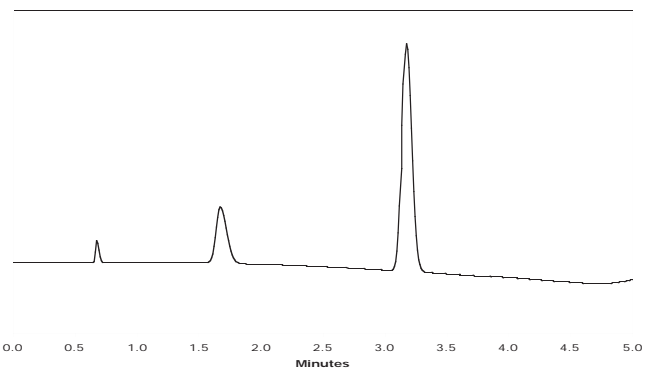
### Good Peak Symmetry for Basic Compounds:

The very low solute/sorbent interaction of Phalanx C18 is clearly illustrated by the analysis of basic compounds on a short 5cm cartridge column.

Phalanx C18, 50x2.1mm, P/N: PK-0521-C185

(1) Propanediol, (2) Diphenylramine, (3) Acenaphthene, (4) Amitiptyline.

65% MeOH/water 20mM  $\text{KH}_2\text{PO}_4$  (pH 7.0), 200 $\mu\text{L}/\text{min}$



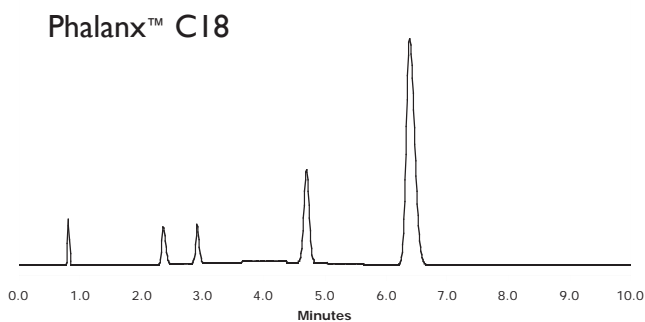
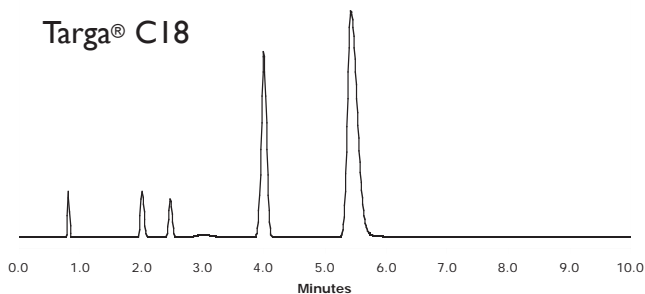
### Unbuffered Pyridine Test for Free Silanol Activity:

A very sensitive test for residual silanols produces a symmetrical pyridine peak in a low organic mobile phase without buffers.

Phalanx C18, 50x2.1mm, P/N: PK-0521-C185

(1) Uracil, (2) Phenol, (3) Pyridine

40% MeCN/water, 200 $\mu\text{L}/\text{min}$



### NIST Test Mix for Metal Activity and Residual Silanols:

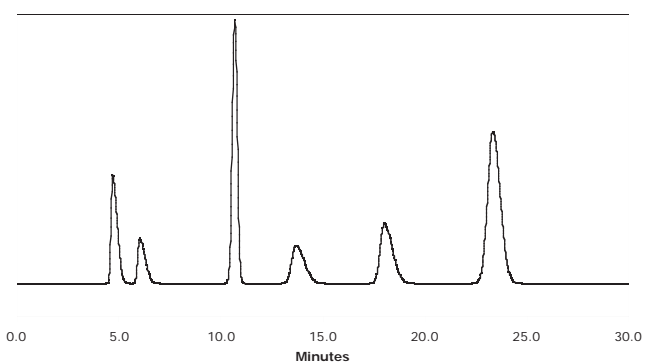
Quinizarin, a strong metal chelator, and amitriptyline, a very sensitive solute for residual silanols, both elute with good recovery and symmetrical peaks on both Targa and Phalanx C18 columns.

Targa® C18, 150x4.6mm, P/N: TS-1546-C185

Phalanx™ C18, 150x4.6mm, P/N: PS-1546-C185

(1) Uracil, (2) Toluene, (3) Ethylbenzene, (4) Quinizarin, (5) Amitiptyline.

80% MeOH/buffer, 1.5mL/min



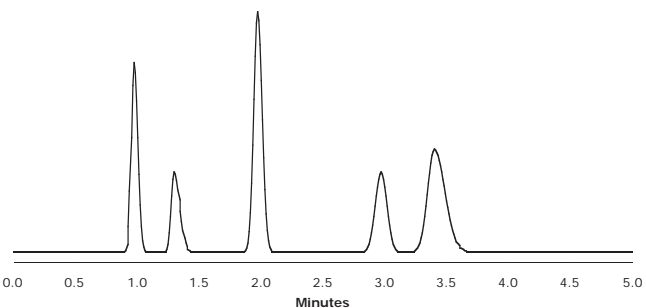
### Tricyclic Antidepressants:

The very low solute/sorbent interaction of Phalanx C18 is clearly illustrated by the analysis of basic compounds on a 100x4.6mm HPLC column.

Phalanx C18, 100x4.6mm, P/N: PS-1046-C185

(1) Desipramine, (2) Nortriptyline, (3) acenaphthene, (4) Imipramine, (5) Amitiptyline, (6) Trimipramine.

70% MeOH/water 20mM  $\text{KH}_2\text{PO}_4$  (pH 7.0), 1.0mL/min



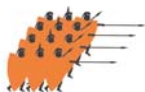
### Nucleosides:

Like its cousin Targa, Phalanx's unique end-capping chemistry works equally well at extreme hydrophilic and hydrophobic ranges.

Phalanx C18, 50x2.1mm, P/N: PK-0521-C185

(1) Cytosine, (2) Uracil, (3) Cytidine, (4) Uridine, (5) Thymine.

100% Water, 1.0mL/min



## Phalanx Ordering Information



### Analytical Columns - Stainless Steel

<b>Phalanx C18 5µm</b>	<b>4.6, 3.0, and 2.1mm I.D. s.s. columns</b>			
30x4.6mm PS-0346-C185	50x4.6mm PS-0546-C185	100x4.6mm PS-1046-C185	150x4.6mm PS-1546-C185	250x4.6mm PS-2546-C185
30x3.0mm PS-0330-C185	50x3.0mm PS-0530-C185	100x3.0mm PS-1030-C185	150x3.0mm PS-1530-C185	250x3.0mm PS-2530-C185
30x2.1mm PS-0321-C185	50x2.1mm PS-0521-C185	100x2.1mm PS-1021-C185	150x2.1mm PS-1521-C185	250x2.1mm PS-2521-C185

### Semi-Prep and Prep Columns

<b>Phalanx C18 5µm</b>	<b>10 and 20mm I.D. s.s. columns</b>			
	50x10mm PS-0510-C185	100x10mm PS-1010-C185	150x10mm PS-1510-C185	250x10mm PS-2510-C185
	50x20mm PS-0520-C185	100x20mm PS-1020-C185	150x20mm PS-1520-C185	250x20mm PS-2520-C185

### Microbore Columns

<b>Phalanx C18 5µm</b>	<b>1.0mm - 0.5mm - 0.3mm I.D.</b>			
30x1.0mm PS-0301-C185	50x1.0mm PS-0501-C185	100x1.0mm PS-1001-C185	150x1.0mm PS-1501-C185	250x1.0mm PS-2501-C185
30x0.5mm PS-03M5-C185	50x0.5mm PS-05M5-C185	100x0.5mm PS-10M5-C185	150x0.5mm PS-15M5-C185	250x0.5mm PS-25M5-C185
30x0.3mm PS-03M3-C185	50x0.3mm PS-05M3-C185	100x0.3mm PS-10M3-C185	150x0.3mm PS-15M3-C185	250x0.3mm PS-25M3-C185

### Capellini Columns

<b>Phalanx C18 5µm</b>	<b>150 and 0.75µm I.D.</b>			
30x0.150mm PC-0315-C185	50x0.150mm PC-0515-C185	100x0.150mm PC-1015-C185	150x0.150mm PC-1515-C185	250x0.150mm PC-2515-C185
30x0.075mm PC-0307-C185	50x0.075mm PC-0507-C185	100x0.075mm PC-1007-C185	150x0.075mm PC-1507-C185	250x0.075mm PC-2507-C185

### HAICART - Stainless Steel Analytical Cartridge Columns

<b>Phalanx C18 5µm</b>	<b>4.6 and 3.2mm I.D. s.s. Analytical Cartridges</b>			
	40x4.6mm 2/pkg PF-0446-C185	50x4.6mm 2/pkg PF-0546-C185	100x4.6mm 1/pkg PF-1046-C185	
	40x3.2mm 2/pkg PF-0432-C185	50x3.2mm 2/pkg PF-0532-C185	100x3.2mm 1/pkg PF-1032-C185	

### HAIPEEK - PEEK and Titanium Analytical Cartridge Columns

<b>Phalanx C18 5µm</b>	<b>2.1mm I.D. PEEK Analytical Cartridges</b>	
	40x2.1mm 2/pkg PK-0421-C185	50x2.1mm 2/pkg PK-0521-C185

### HAISpeed10 - 10mm I.D. Stainless Steel Cartridge Columns

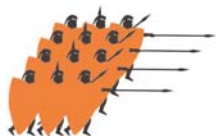
<b>Phalanx C18 5µm</b>	<b>10mm I.D. s.s. Analytical / Semi-Prep Cartridges</b>			
	30x10mm 1/pkg PF-0310-C185	50x10mm 1/pkg PF-0510-C185	100x10mm 1/pkg PF-1010-C185	

### HAICART GUARDS - Stainless Steel Guard Cartridges

<b>Phalanx C18 5µm</b>	<b>3.2mm I.D. s.s. Guard Cartridges</b>
	20x3.2mm 5/pkg PF-0232-C185

### HAIPEEK GUARDS - PEEK and Titanium Guard Cartridges

<b>Phalanx C18 5µm</b>	<b>2.1mm I.D. PEEK Guard Cartridges</b>
	20x2.1mm 5/pkg PK-0221-C185



## Special Phalanx C18 Columns for LC-MS and High Speed



### Direct Connect Sprite Columns:

- 10 to 40 x 2.1mm sizes
- Fast HPLC Analysis
- LC-MS Applications
- PEEK/titanium design
- Individually tested
- Certificate of Analysis included

### Sprite - Direct-Connect PEEK/Titanium HPLC Columns

**Phalanx C18 5µm**

**Sprite HPLC Columns**

10x2.1mm

20x2.1mm

40x2.1mm

PR-0121-C185

PR-0221-C185

PR-0421-C185



### Short Microbore Columns:

- 10x1.0 mm to 2.5x0.5mm sizes
- Trap column applications
- Fast LC-MS
- PEEK/titanium design
- 6-32 threads for capillary fittings
- Individually tested
- Certificate of Analysis included

### Piccolo - Short Microbore/Trap Columns

**Phalanx C18 5µm**

**Piccolo HPLC Columns**

2.5x0.5mm

5x1.0mm

10x1.0mm

PP-M2M5-C185

PP-M501-C185

PP-0101-C185



For more information about Higgins Analytical Products, please ask us or your local distributor for our catalog. It can also be downloaded from our web site [www.higanalyt.com](http://www.higanalyt.com)

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