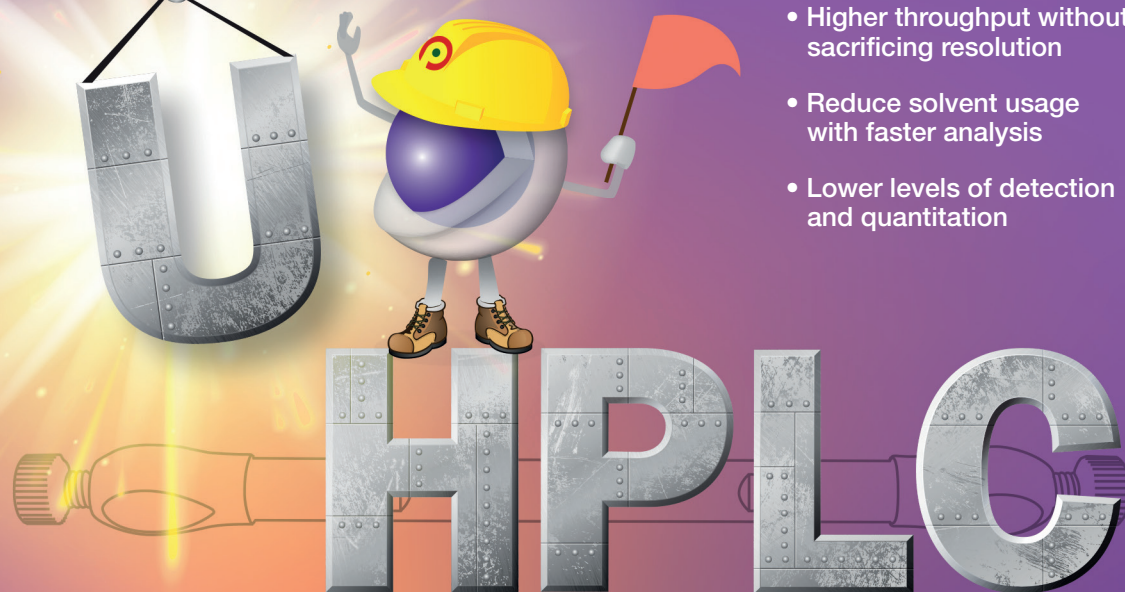


The  
**POWER** of

# ULTRA-Performance on Any LC System

- Higher throughput without sacrificing resolution
- Reduce solvent usage with faster analysis
- Lower levels of detection and quantitation



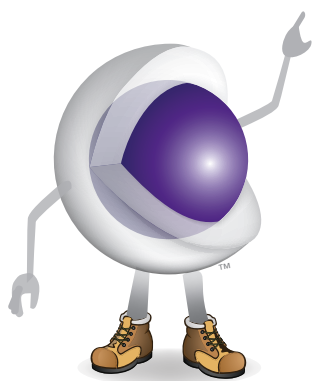
Find applications that fit your market on pages 21-28



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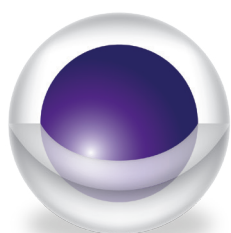
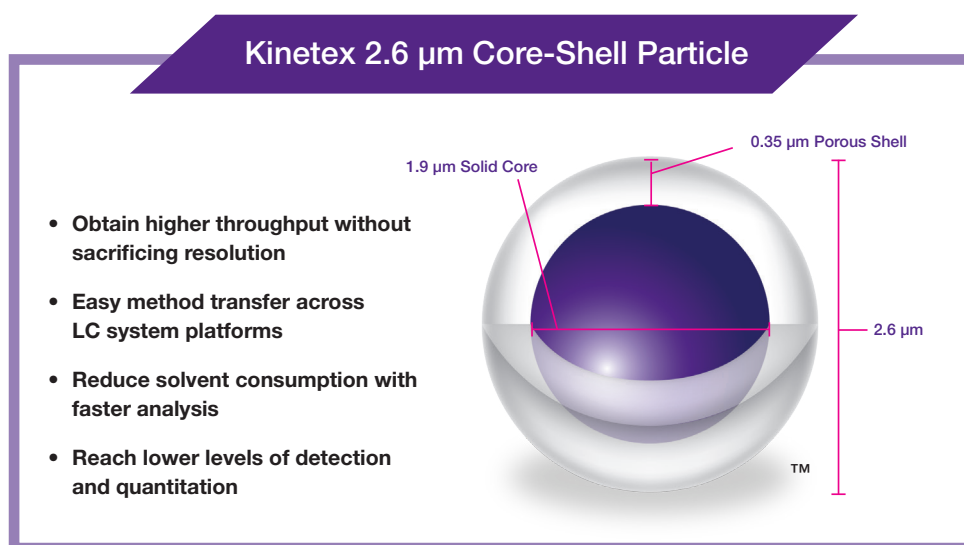


p. 3	The Core-Shell Advantage
p. 4	Superior Core-Shell Quality
p. 5	Get the Most Out of Your Core-Shell Particle
p. 6	Ultra-High Performance on Any LC System
p. 7	A Versatile Upgrade for HPLC and UHPLC
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pp. 21-28	Kinetex Applications for Your Market
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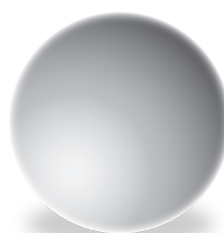
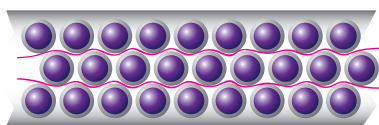


# Core-Shell Advantage

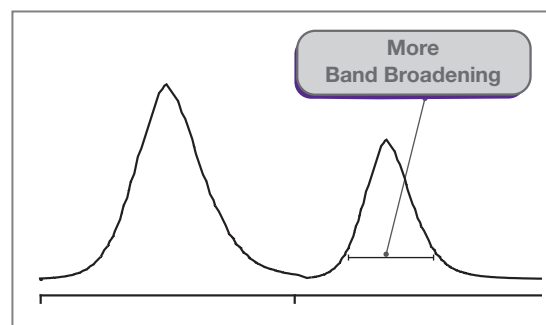
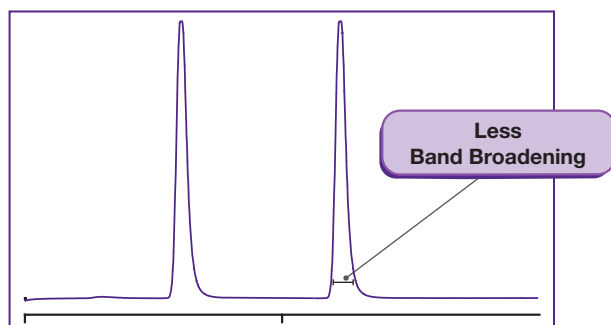
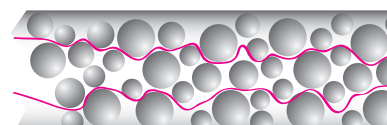
Using sol-gel processing techniques that incorporate nano-structuring technology, a durable, homogeneous porous shell is grown on a solid silica core to create a Kinetex Core-Shell particle. This particle morphology results in less band broadening for all four sources of UHPLC band broadening compared to fully porous particles and thus delivers extremely high efficiencies.



**Kinetex Core-Shell**



**Fully Porous**



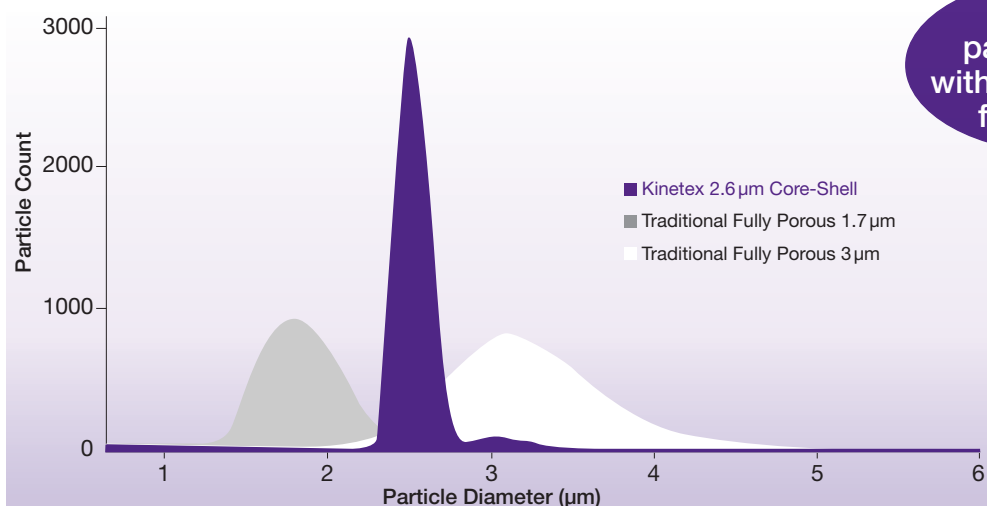
# Superior Core-Shell Quality



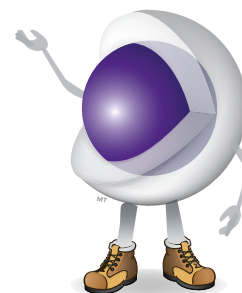
To ensure reproducible, robust, and reliable results, **Kinetex** columns are manufactured with high quality standards. Every step in the manufacturing process of Kinetex columns is tightly controlled for:

- Particle size distribution
- Surface and bonding homogeneity
- Selectivity quality control testing
- Inertness of the base silica
- Packing quality and consistency

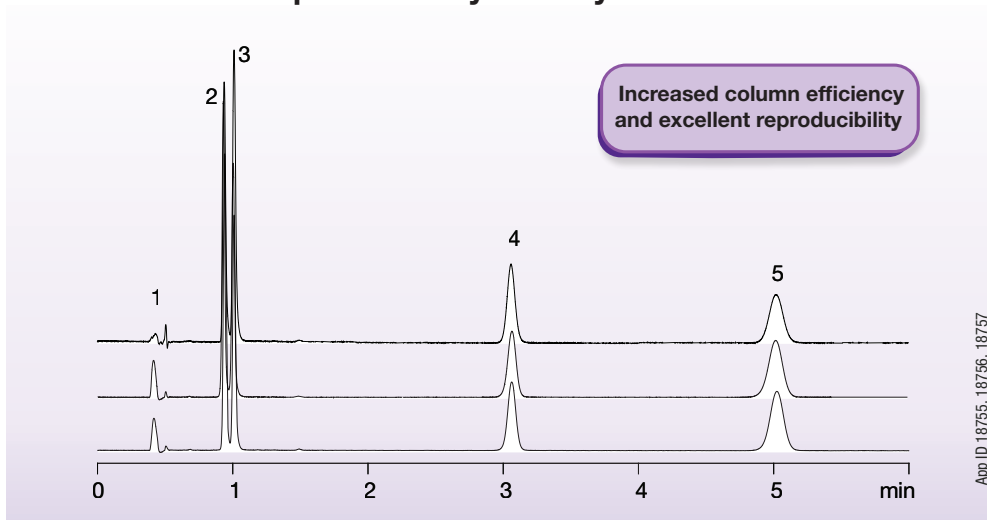
## Uniform Particle Size Distribution



Increased particle count with core-shell vs. fully porous



## Batch-to-Batch Reproducibility Overlay



Increased column efficiency and excellent reproducibility

Conditions same for all examples:  
**Column:** Kinetex 2.6µm C18  
**Dimensions:** 50 x 4.6 mm  
**Part No.:** [00B-4462-E0](#)  
**Mobile Phase:** Water / Acetonitrile (65:35)  
**Flow Rate:** 1.0 mL/min  
**Detection:** UV @ 254 nm  
**Sample:** 1. Uracil  
2. Hydrocortisone  
3. Cortisone  
4. Cortisone acetate  
5. 17-Hydroxyprogesterone

App ID 18755, 18756, 18757

Comparative separations may not be representative of all applications.

# Get the Most Out of Your Core-Shell Particle

Advancements in core-shell particle morphologies have led to many HPLC or UHPLC performance benefits for the analytical scientist. However, the quality and consistency of each core-shell particle is vital to fully realizing the performance benefits afforded to by core-shell columns. Phenomenex is committed to the highest quality and consistency of our products and continues to strive to provide our customers the excellence in LC columns that they deserve.

## From the *Journal of Chromatography A*



“Never had such a low reduced HETP value has been achieved in column manufacturing technology.”

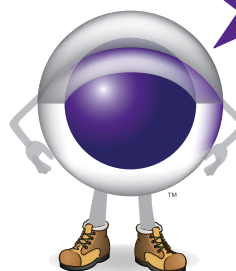
F. Gritti et al. / *J. Chromatogr. A* 1217 (2010) 1589-1603

## From *Talanta*



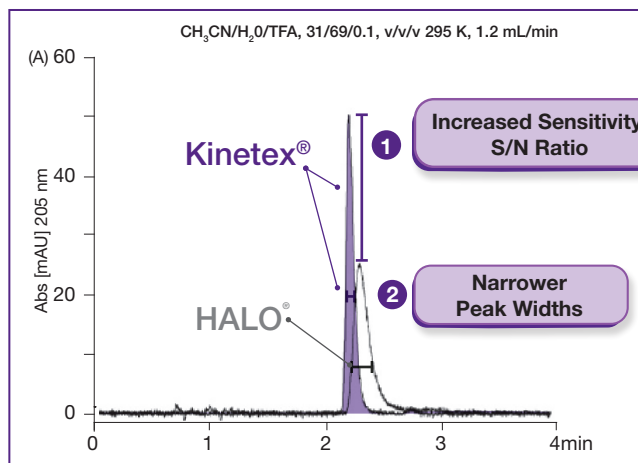
“The highest peak capacity was obtained with the Kinetex column which is in good agreement with the theory.”

S. Fekete, J. Fekete / *Talanta* 84 (2011) 416-423

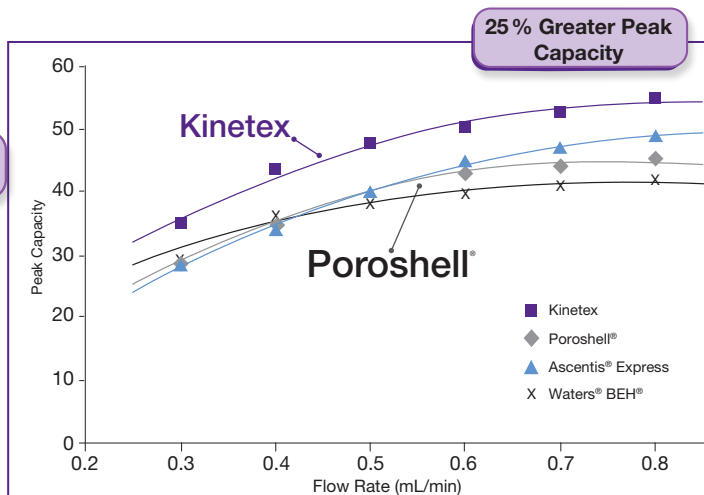


You Deserve Consistent Performance and Unique Selectivity!

## Comparison of Peak Shape and Capacity



Comparison between the peak shapes of insulin recorded on the Kinetex and HALO columns. Reprinted from *Journal of Chromatography A*, Volume 1217, Issue 10, with permission from Elsevier. “Performance of columns packed with the new shell particles, Kinetex-C18,” page 1598, copyright 2010. By Fabrice Gritti, Irene Leonardis, David Shock, Paul Stevenson, Andrew Shalliker, and Georges Guiochon.



Peak capacity plots a function of flow rate at 3 min gradient time. Reprinted from *Talanta*, Volume 84, Issue 2, with permission from Elsevier. “Fast gradient screening of pharmaceuticals with 5 cm long, narrow bore reversed-phase columns packed with sub-3 μm core-shell and sub-2 μm totally porous particles,” page 416, copyright 2011. By Szabolcs Fekete and Jenő Fekete.

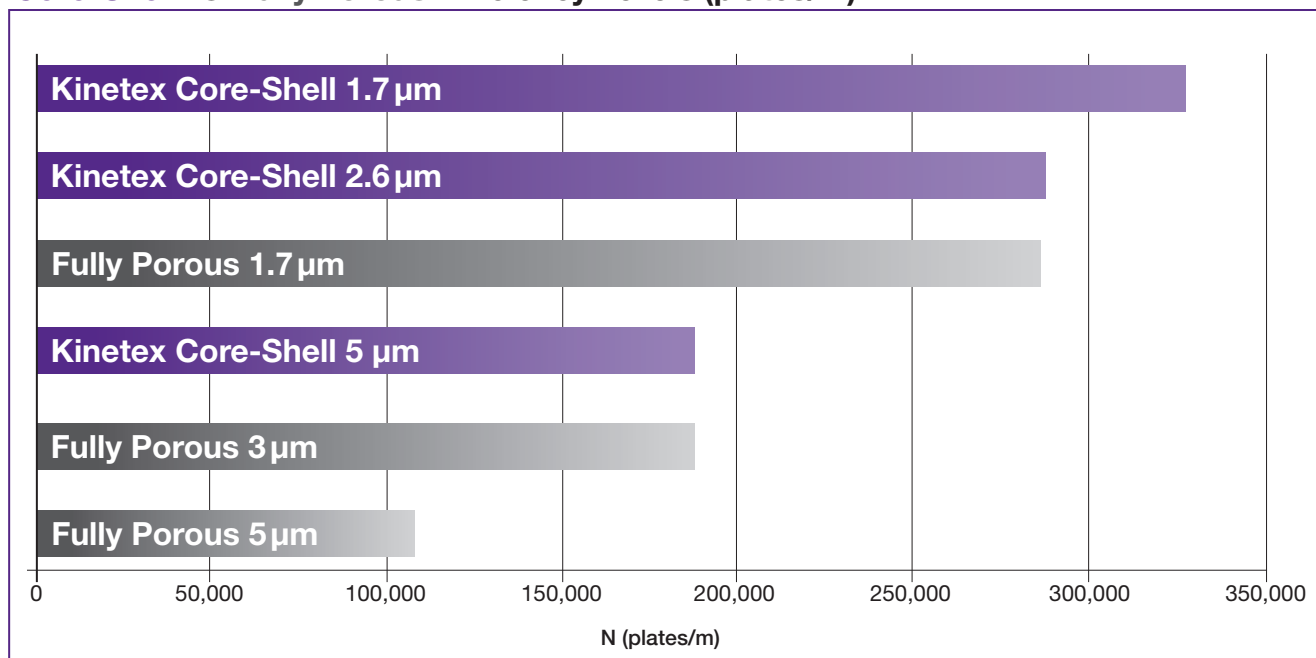
The opinions stated herein are solely those of the speaker and not necessarily those of any company or organization. Comparative separations may not be representative of all applications.

# Ultra-high Performance on Any LC system

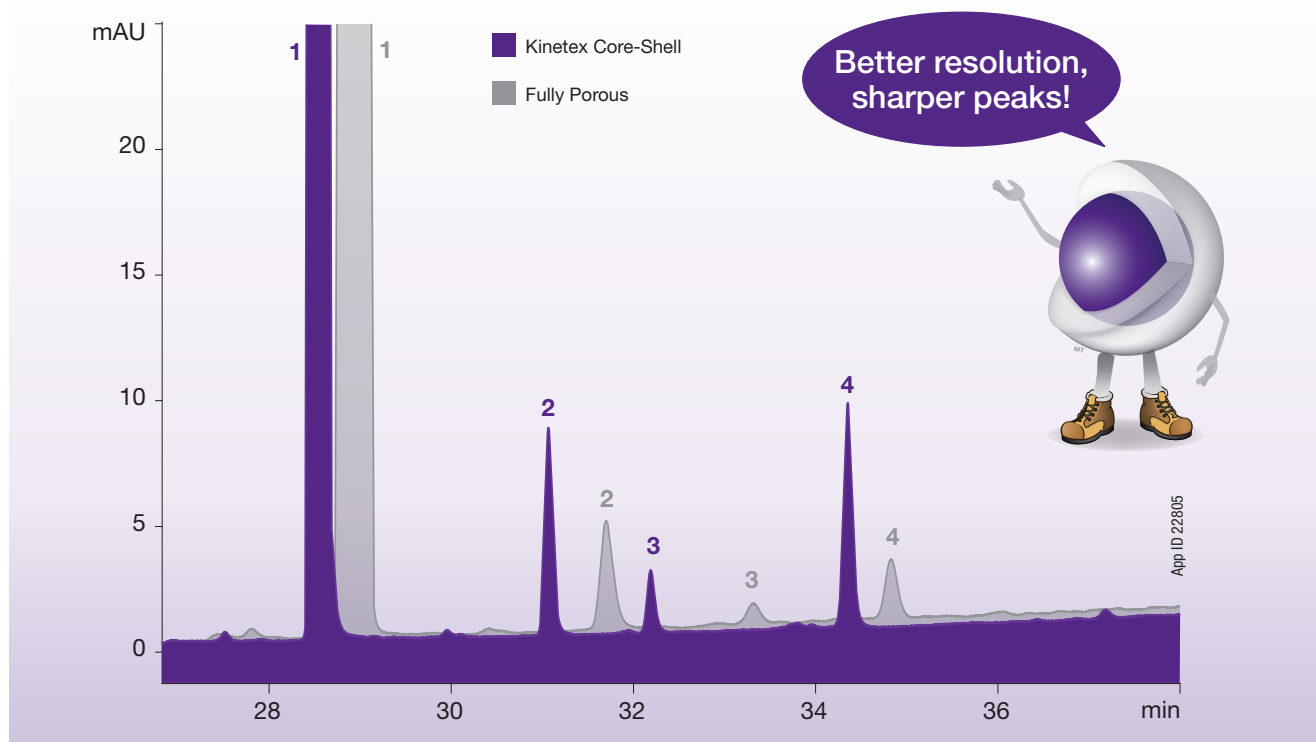


The band broadening (wide peaks) and lengthy retention times of traditional fully porous products can be limiting your results. Now you can use the incredible efficiency levels of **Kinetex Core-Shell Technology** to achieve shorter run times, higher levels of sensitivity, and overall better HPLC or UHPLC results.

## Core-Shell vs. Fully Porous Efficiency Levels (plates/m)



## Core-Shell Performance Gains

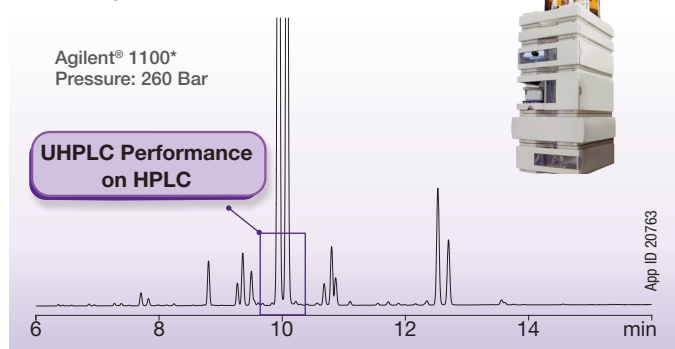


# A Versatile Upgrade for HPLC and UHPLC

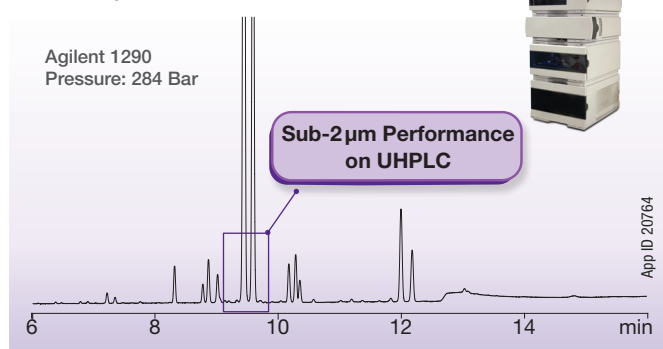
On a low volume HPLC or UHPLC system **Kinetex® 2.6µm** columns will perform similar to a fully porous sub-2µm column, providing up to 3x the efficiency of 5µm and potentially double the efficiency of 3µm fully porous media. Dramatically improve the productivity and performance of your existing methods with the use of shorter Kinetex columns, all while decreasing your solvent usage!

## Performance with Kinetex 2.6µm on HPLC or UHPLC Systems

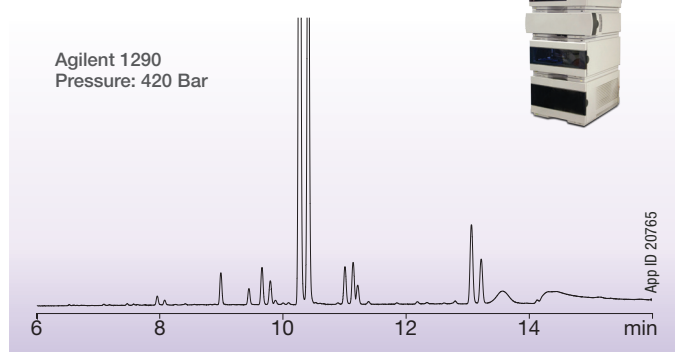
### Kinetex 2.6µm C18



### Kinetex 2.6µm C18



### Agilent® ZORBAX® 1.8µm SB-C18



Conditions for all columns :

**Columns:** Kinetex 2.6µm C18  
Kinetex 2.6µm C18  
ZORBAX 1.8µm SB-C18

**Dimensions:** 100 x 4.6 mm

**Mobile Phase:** A: Water with 0.1% TFA  
B: Acetonitrile with 0.1% TFA

Gradient:	Time (min)	% B
	0	10
	20	70

**Flow Rate:** 1.2 mL/min

**Temperature:** Ambient

**Detection:** UV @ 210 nm

**Sample:** Mupirocin degradants

\*Agilent 1100 was optimized with the Core-Shell Performance Enhancement Kit [AQO-8892](#). Comparative separations may not be representative of all applications.

## SecurityLink Fingertight HPLC and UHPLC Connections in a Click

**SecurityLINK** ∞  
UHPLC Connections in a Click

- No tools required
- Zero dead-volume for better chromatographic results
- Torque limiting technology prevents system and column port damage
- UHPLC and HPLC compatibility: pressure rated to 19,000 psi (1,310 bar)



For more information, see page 29

# Core-Shell

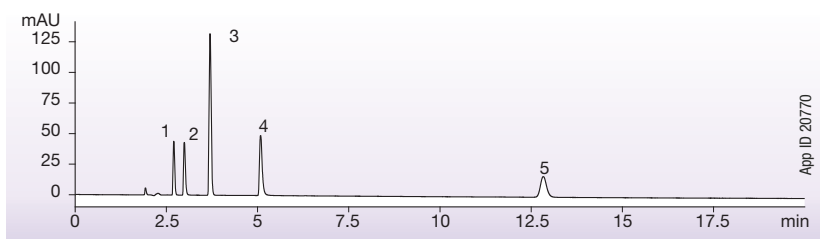
## Scalability and Portability



With **Kinetex 5  $\mu\text{m}$ , 2.6  $\mu\text{m}$ , 1.7  $\mu\text{m}$ , and 1.3  $\mu\text{m}$  Core-Shell Technology**, you are no longer restricted from developing high-performance LC methods on any system and transferring them anywhere. These four scalable Kinetex particle sizes offer you the ability to develop and transfer your method effortlessly from system to system.

### Portability

**Kinetex 5  $\mu\text{m}$  C18 on Shimadzu<sup>®</sup> LC-20A**



Conditions are the same except as noted:

**Mobile Phase:** Water/Acetonitrile/  
Phosphoric Acid (600:400:2)

**Flow Rate:** 1 mL/min

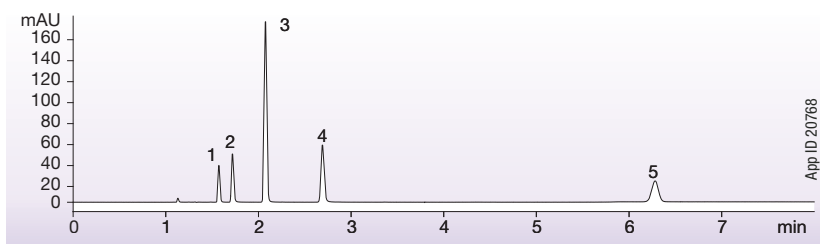
**Temperature:** Ambient

**Detection:** UV @ 237 nm

**Sample:** 1. Impurity A  
2. Impurity B  
3. Impurity C  
4. Acetylsalicylic acid  
5. Impurity D

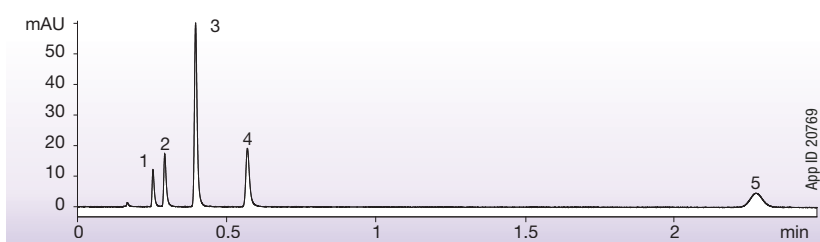
**Columns:** Kinetex 5  $\mu\text{m}$  C18  
**Dimension:** 250 x 4.6 mm  
**Part No.:** [00G-4601-E0](#)

**Kinetex 2.6  $\mu\text{m}$  C18 on Agilent<sup>®</sup> 1100**



**Columns:** Kinetex 2.6  $\mu\text{m}$  C18  
**Dimension:** 150 x 4.6 mm  
**Part No.:** [00F-4462-E0](#)

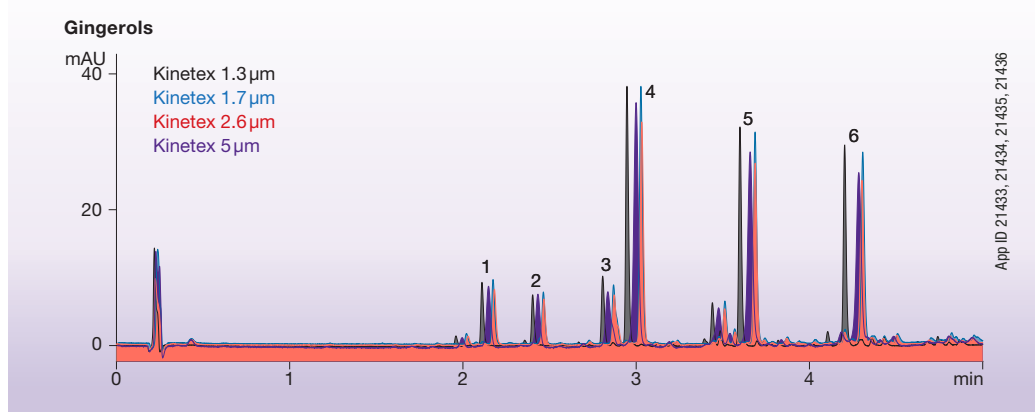
**Kinetex 1.7  $\mu\text{m}$  C18 on Agilent 1290**



**Columns:** Kinetex 1.7  $\mu\text{m}$  C18  
**Dimension:** 50 x 3.0 mm  
**Part No.:** [00B-4475-Y0](#)  
**Mobile Phase:** 680:320:2

### Scalability

**UHPLC/HPLC/PREP LC**



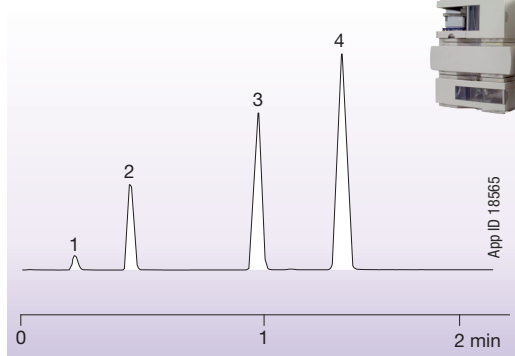
Comparative separations may not be representative of all applications.



# Method Transfer to Any LC System

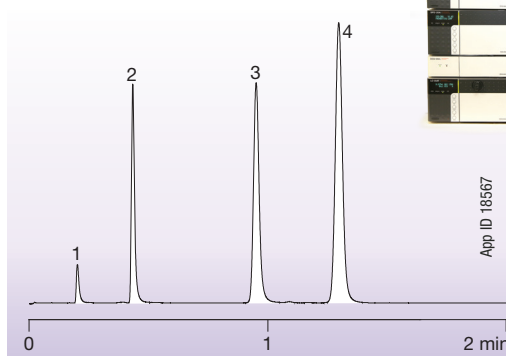
UHPLC methods developed with fully porous sub-2  $\mu\text{m}$  columns often generate higher backpressure that only certain systems can run. With the **Kinetex<sup>®</sup> 2.6  $\mu\text{m}$**  particle performance you are no longer restricted by system limitations for your HPLC or UHPLC method development.

**Kinetex 4.6 mm ID**  
on Agilent<sup>®</sup> 1100



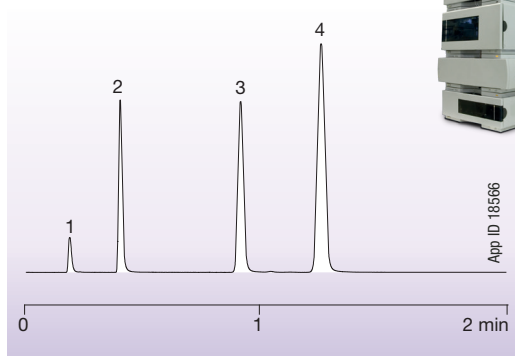
**Column:** Kinetex 2.6  $\mu\text{m}$  C18  
**Dimensions:** 50 x 4.6 mm  
**Part No.:** [00B-4462-E0](#)  
**Mobile Phase:** Acetonitrile / Water (50:50)  
**Flow Rate:** 2.35 mL/min\*  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 1. Uracil  
 2. Acetophenone  
 3. Toluene  
 4. Naphthalene

**Kinetex 3.0 mm ID**  
on Shimadzu<sup>®</sup> Prominence UFPLC<sup>®</sup>



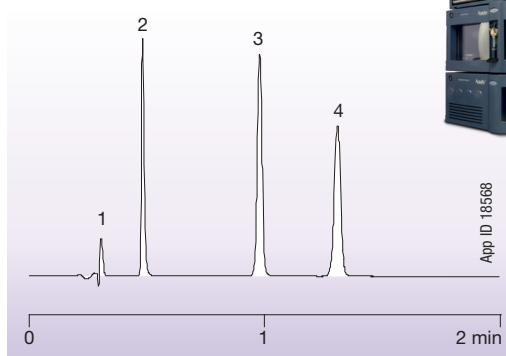
**Column:** Kinetex 2.6  $\mu\text{m}$  C18  
**Dimensions:** 50 x 3.0 mm  
**Part No.:** [00B-4462-Y0](#)  
**Mobile Phase:** Acetonitrile / Water (50:50)  
**Flow Rate:** 1.0 mL/min\*  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 1. Uracil  
 2. Acetophenone  
 3. Toluene  
 4. Naphthalene

**Kinetex 2.1 mm ID**  
on Agilent 1200



**Column:** Kinetex 2.6  $\mu\text{m}$  C18  
**Dimensions:** 50 x 2.1 mm  
**Part No.:** [00B-4462-AN](#)  
**Mobile Phase:** Acetonitrile / Water (50:50)  
**Flow Rate:** 0.49 mL/min\*  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 1. Uracil  
 2. Acetophenone  
 3. Toluene  
 4. Naphthalene

**Kinetex 2.1 mm ID**  
on Waters<sup>®</sup> ACQUITY<sup>®</sup> UPLC<sup>®</sup>



**Column:** Kinetex 2.6  $\mu\text{m}$  C18  
**Dimensions:** 50 x 2.1 mm  
**Part No.:** [00B-4462-AN](#)  
**Mobile Phase:** Acetonitrile / Water (50:50)  
**Flow Rate:** 0.49 mL/min\*  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 1. Uracil  
 2. Acetophenone  
 3. Toluene  
 4. Naphthalene

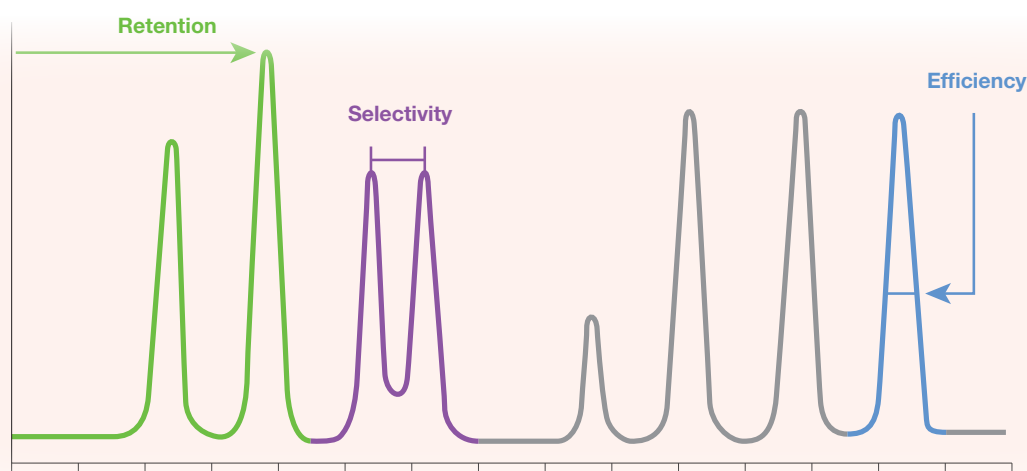
\*Please note that the flow rates were scaled to maintain the same linear velocity.

# Impact of Selectivity on Resolution

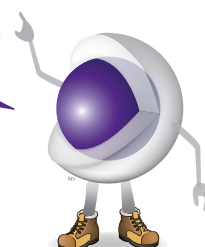


Selectivity ( $\alpha$ ) has the greatest impact on observed resolution ( $R$ ) when compared to other chromatographic parameters. Often the simplest and most effective way to improve your chromatographic results is to change your column's phase or solid support. Phenomenex offers a wide breadth of phase chemistries across multiple solid supports for simplified method development and optimization.

## The Impact of Selectivity on Resolution

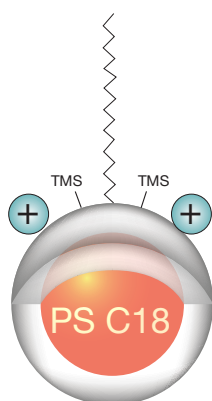


Kinetex,  
Where Selectivity  
Meets  
Performance



# Expand Your LC Method Development

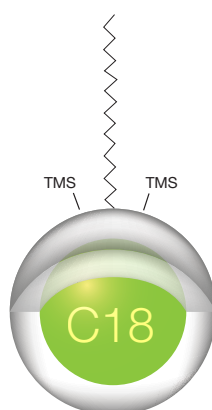
## Polar Bases



**Kinetex® PS C18**  
2.6  $\mu\text{m}$

A multi-modal, 100 % aqueous C18 column with a positive surface modification that demonstrates unique selectivity and improved peak shape for basic compounds.

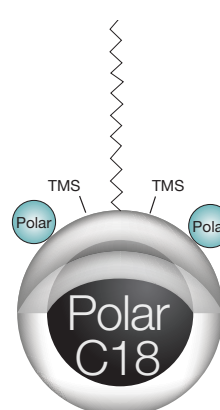
## Hydrophobic Compounds



**Kinetex C18**  
1.3, 1.7, 2.6, 5  $\mu\text{m}$

Balanced C18 phase that provides the highest degree of hydrophobic selectivity relative to other Kinetex phases.

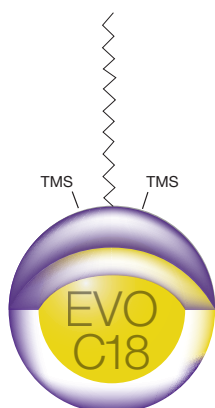
## Polar Acids



**Kinetex Polar C18**  
2.6  $\mu\text{m}$

Combined C18 and polar modified surface that provides polar and non-polar retention alongside 100 % aqueous stability.

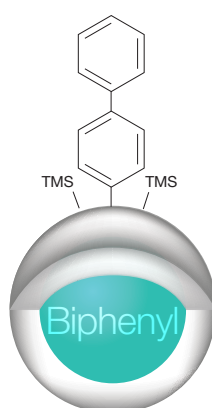
## Alkaline Conditions



**Kinetex EVO C18**  
1.7, 2.6, 5  $\mu\text{m}$

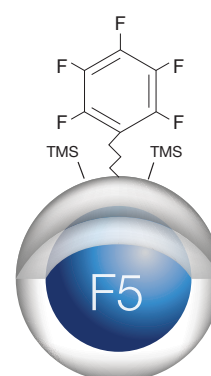
Novel pH 1-12 stable C18 that delivers robust methods and improved peak shape for bases.

## Closely Related Compounds



**Kinetex Biphenyl**  
1.7, 2.6, 5  $\mu\text{m}$

100 % aqueous stable reversed phase chemistry with hydrophobic, aromatic, and enhanced polar selectivity.



**Kinetex F5**  
1.7, 2.6, 5  $\mu\text{m}$

Highly reproducible pentafluorophenylpropyl phase, exceptional for halogenated, conjugated, isomeric, or highly polar compounds.

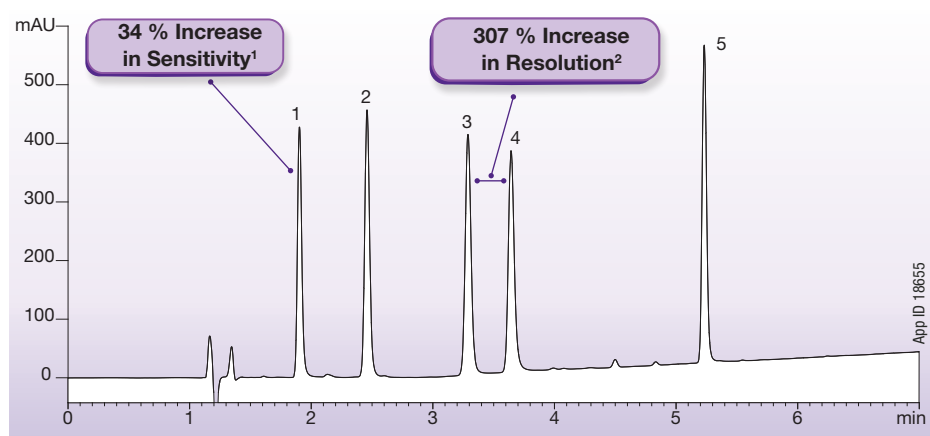
# Hydrophobic Compounds



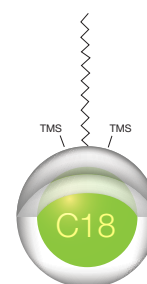
**Kinetex C18** is a well-rounded, all-purpose core-shell column that produces increased efficiencies over traditional fully porous columns. Yielding remarkable chromatographic resolution, higher peak capacities, and greater sensitivity, so labs can get the most out of every HPLC or UHPLC analysis.

## Core-Shell vs. Fully Porous

Kinetex 2.6 $\mu$ m C18

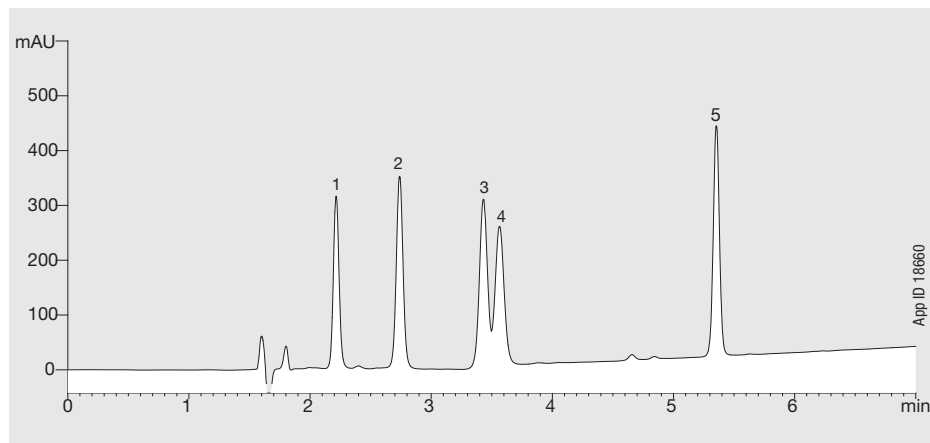


**31% Narrower Peak Widths<sup>3</sup>**



1. Signal-to-noise ratio of peak 1
2. Resolution measured between peaks 3 and 4
3. Based on average peak widths

HYPERSIL GOLD® 3 $\mu$ m C18



Conditions for all columns:

**Column:** Kinetex 2.6 $\mu$ m C18  
HYPERSIL GOLD 3 $\mu$ m C18  
Waters XBridge 3 $\mu$ m C18

**Dimensions:** 150 x 4.6 mm

**Mobile Phase:** A: Water with 0.1 % of Formic Acid  
B: Acetonitrile with 0.1 % Formic Acid

Gradient: Time (min)	% B
0	15
1	15
7	35
7.01	15
11	15

**Injection Volume:** 5  $\mu$ L

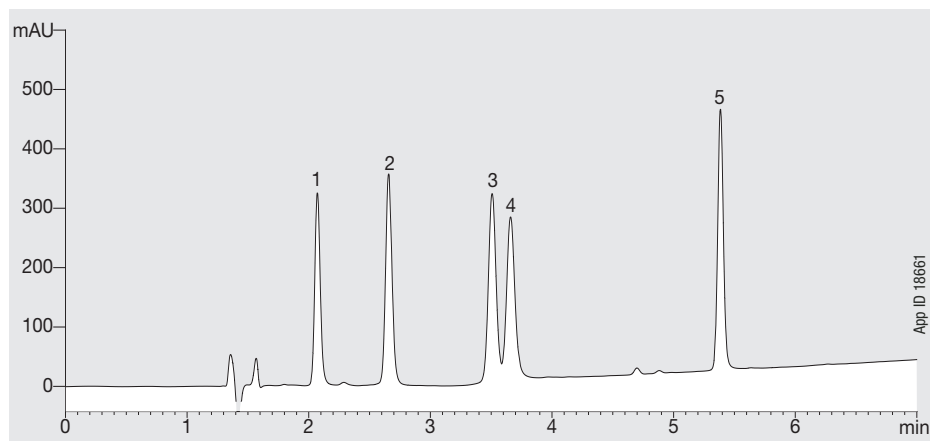
**Flow Rate:** 1.2 mL/min

**Temperature:** 30 °C

**Detection:** UV @ 230 nm

- Analytes:**
1. Epigallocatechin
  2. Catechin
  3. Epicatechin
  4. Epigallocatechin gallate
  5. Epicatechin gallate

Waters® XBridge® 3 $\mu$ m C18



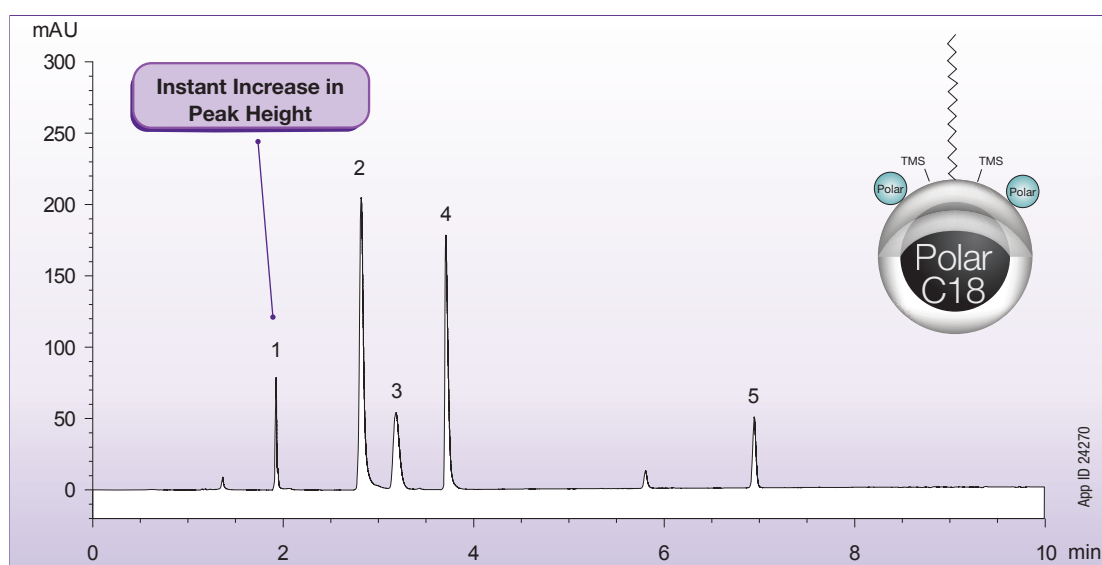
Comparative separations may not be representative of all applications.

# Polar Acidic Compounds

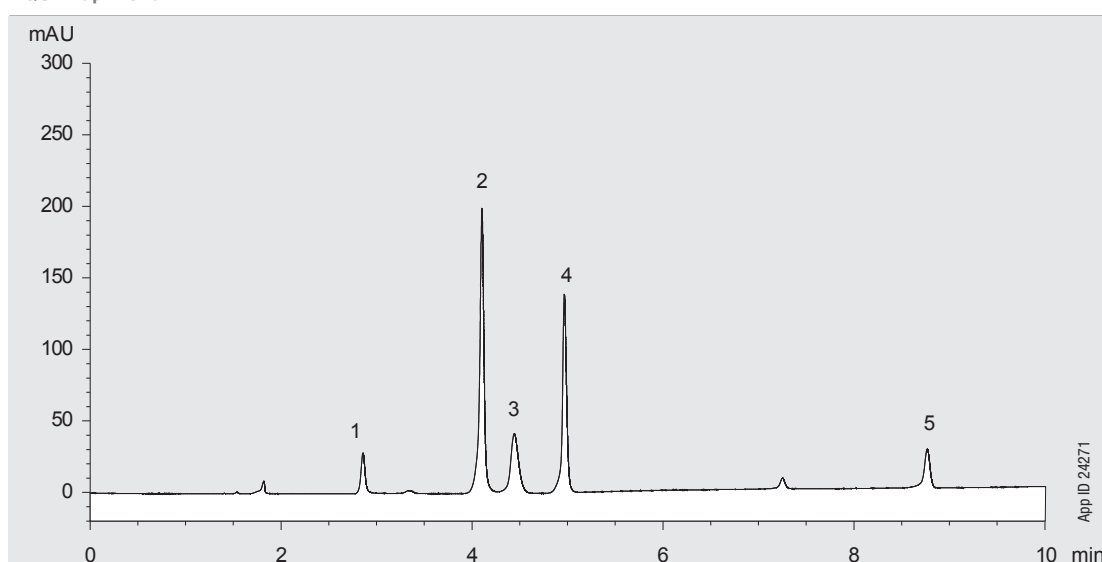
The **Kinetex® 2.6 µm Polar C18** is a core-shell based particle with a polar modified surface and a C18 alkyl phase. This versatile column can easily upgrade existing fully porous 5 µm and 3 µm methods to shorten run runtime, increase sensitivity, and even provide greater resolution with much higher efficiency levels. The **Kinetex Polar C18** is an excellent all-purpose, 100% aqueous stable phase for use with multi-compound mixes that contain polar and non-polar compounds, or even single class methods that have closely related compounds, impurities, or metabolites.

## Water Soluble Vitamins

**Kinetex 2.6 µm Polar C18**



**AQUA™ 3 µm C18**



Conditions for both columns

**Column:** Kinetex 2.6 µm Polar C18  
AQUA 3 µm C18  
**Dimensions:** 150 x 4.6 mm  
**Mobile Phase:** A: 20 mM Potassium Phosphate (pH 1.5)  
B: Methanol  
**Gradient:**

Time (min)	% B
0	0
1	30
7	30
7.01	0
14	0

**Injection Volume:** 5 µL  
**Flow Rate:** 1.2 mL/min  
**Temperature:** 22 °C  
**Detection:** UV @ 210 nm  
**Analytes:** 1. Thiamine  
2. Nicotinamide  
3. Pyridoxal  
4. Pyridoxine  
5. Pantothenic Acid

Comparative separations may not be representative of all applications.

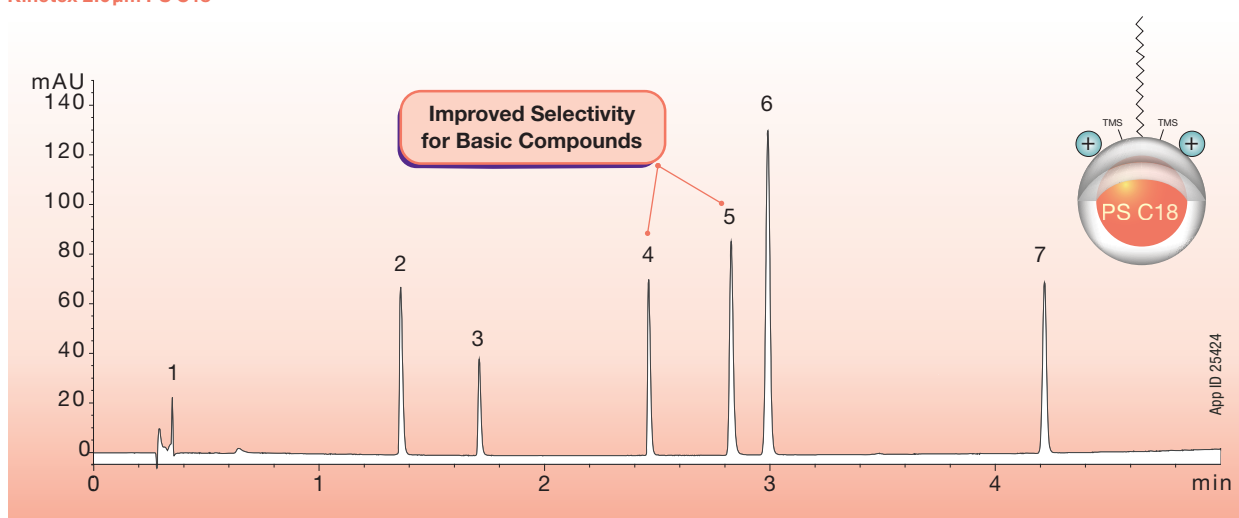
# Polar Basic Compounds



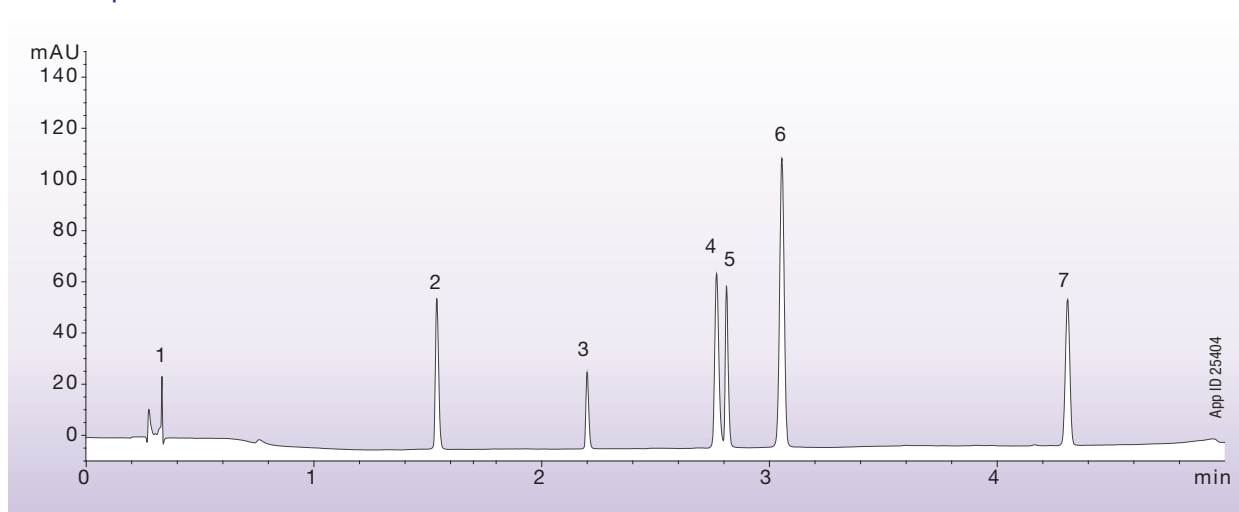
The **Kinetex PS C18** combines a 100% aqueous stability C18 stationary phase, with a unique positive surface charge, and the core-shell advantage to deliver both excellent performance and reversed phase selectivity. Upgrade your traditional fully porous particle to a Kinetex PS C18 Core-Shell particle to take full polar advantage of your systems analytical capabilities. Under identical running conditions and analytes, the **Kinetex PS C18** column below demonstrates unique polar selectivity with peaks associated with 3-methyl-4-nitrobenzoic acid and 2-hydroxy-5-methylbenzaldehyde.

## Polar Basic Selectivity Comparison

**Kinetex 2.6µm PS C18**



**Kinetex 2.6µm XB-C18**



Conditions for both columns

**Column:** Kinetex 2.6µm C18  
Kinetex 2.6µm XB-C18  
**Dimensions:** 50 x 4.6 mm  
**Mobile Phase:** A: Water with 0.1% Formic Acid  
B: Acetonitrile with 0.1% Formic Acid  
**Gradient:**

Time (min)	% B
0	5
5	95
6	95
6.1	5
9	5

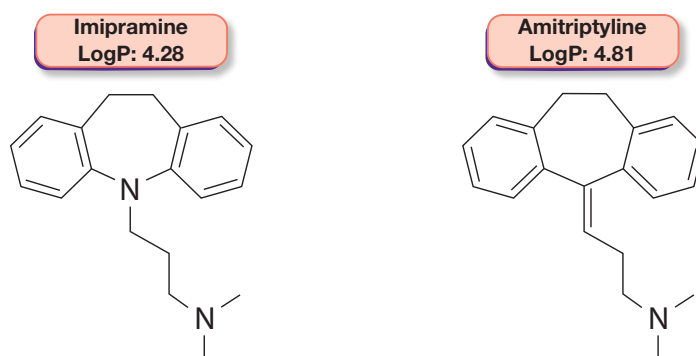
**Injection Volume:** 1 µL

**Flow Rate:** 1.85 mL/min  
**Temperature:** 30 °C  
**Detection:** UV @ 254 nm  
**Sample:** 1. Uracil  
2. Pindolol  
3. Chlorpheniramine  
4. Nortriptyline  
5. 3-methyl-4-nitrobenzoic Acid  
6. 2-hydroxy-5-methylbenzaldehyde  
7. Hexanophenone

Comparative separations may not be representative of all applications.

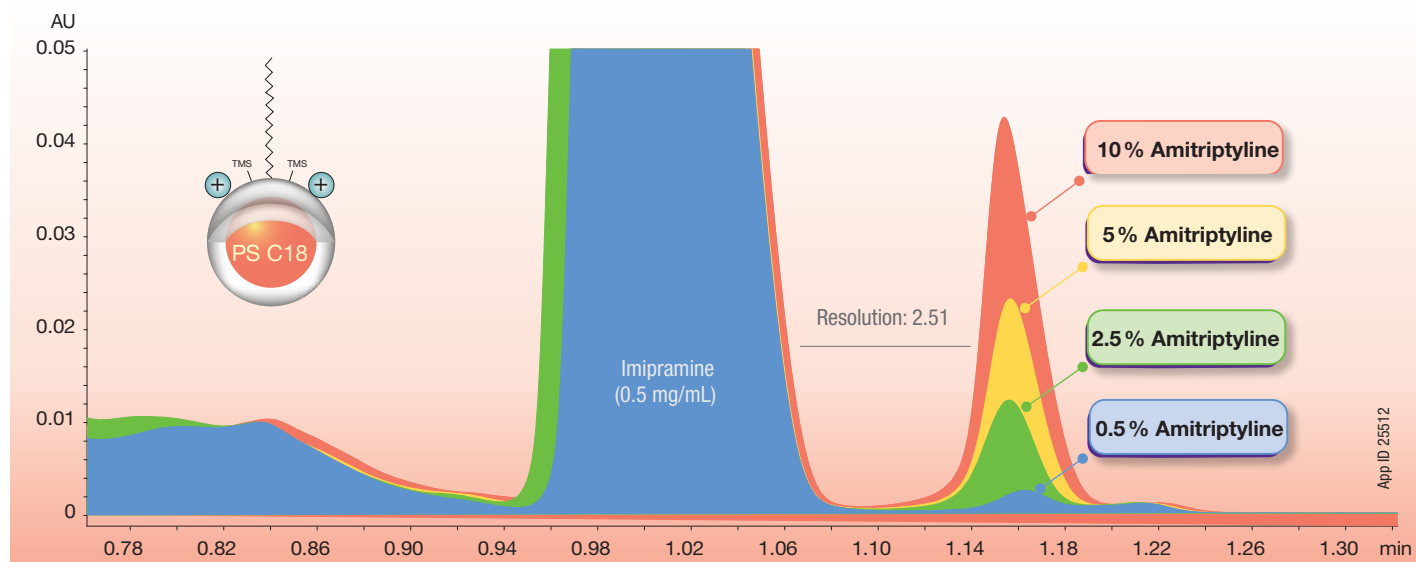
# Polar Basic Compounds

While traditional alkyl C18 phases are prone to peak tailing for basic compounds due to secondary interactions occurring at the silica surface, the surface of the **Kinetex® PS C18** was designed with positive charges that serve to repel basic species and deliver consistently sharper peak shape for basic compounds.



## Improved Impurity Loading Profiling for Bases

Kinetex 2.6µm PS C18



Column: Kinetex 2.6µm PS C18  
 Dimensions: 50 x 4.6 mm  
 Part No.: [00B-4780-EO](#)  
 Mobile Phase: A: Methanol with 0.1 % Formic Acid  
 B: Acetonitrile with 0.1 % Formic Acid

Gradient: Time (min)	% B
0	25
2	35
3	95
3.1	25
5	25

Flow Rate: 1.85 mL/min  
 Temperature: 30 °C  
 Detection: UV @ 254 nm  
 Sample: 1. Imipramine  
 2. Amitriptyline

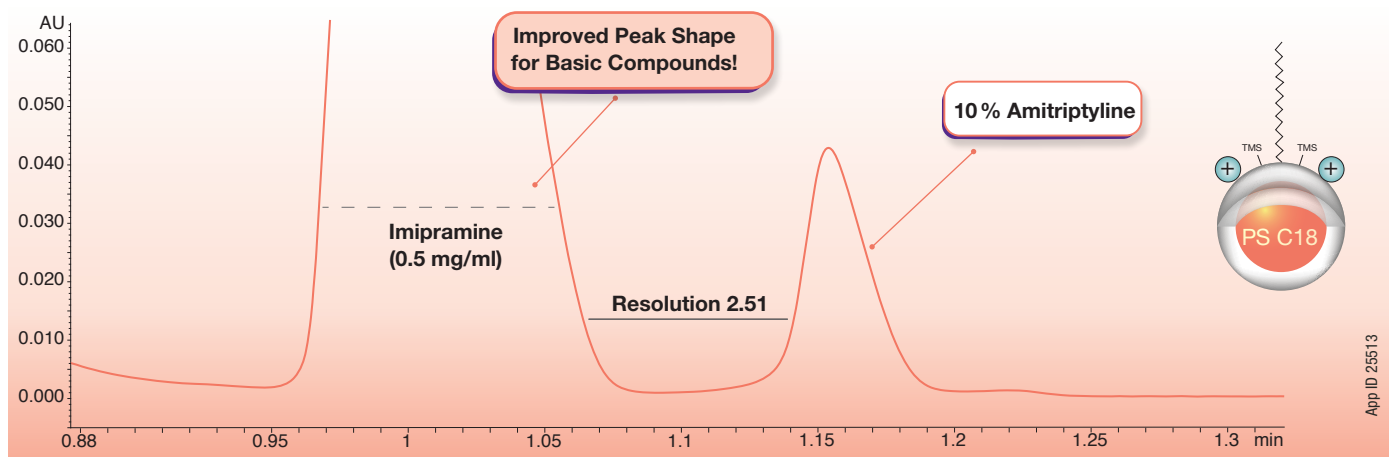
# Polar Basic Compounds



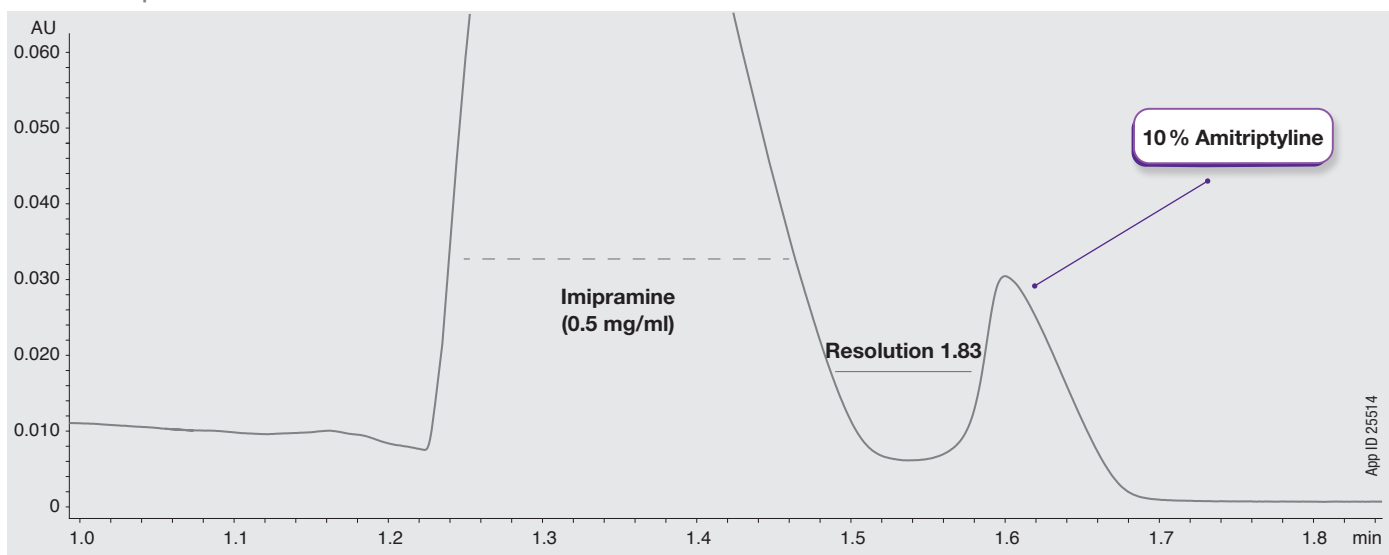
The **Kinetex PS C18** is a high-efficiency, multi-modal interaction selectivity C18 with a positive surface modification. The column demonstrates enhanced selectivity and improved peak shape for basic compounds under typical reversed phase conditions.

## Core-Shell Comparison

Kinetex 2.6  $\mu$ m PS C18



Core-Shell 2.6  $\mu$ m C18



Conditions for both columns

**Column:** Kinetex 2.6  $\mu$ m PS C18  
Core-Shell 2.6  $\mu$ m C18  
**Dimensions:** 50 x 4.6 mm  
**Part No.:** [00B-4780-EQ](#)  
**Mobile Phase:** A: Water with 0.1% Formic Acid  
B: Acetonitrile with 0.1% Formic Acid  
**Gradient:**

Time (min)	% B
0	25
2	35
3	95
3.1	25
5	25

**Injection Volume:** 5  $\mu$ L  
**Flow Rate:** 1.85 mL/min  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 1. Imipramine  
2. Amitriptyline

Comparative separations may not be representative of all applications.

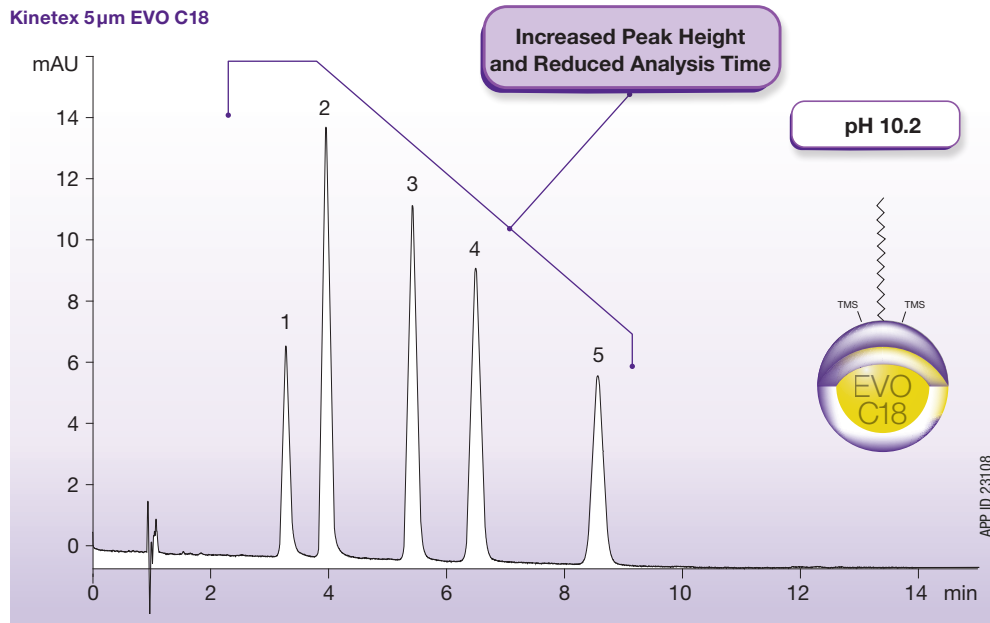


# Alkaline Mobile Phase Conditions

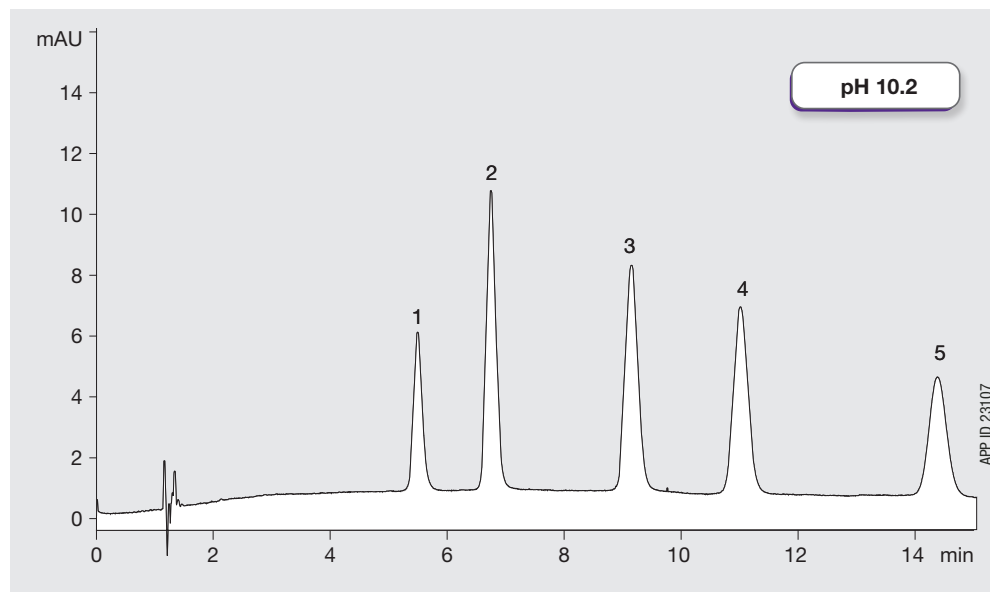
**Kinetex® EVO C18** uses a patented organo-silica grafting process which incorporates uniform stabilizing ethane cross-linking to provide resistance to high pH attack while maintaining the mechanical strength of the core-shell particle. Providing both increased peak sensitivity and decreased overall analysis time.

## High pH Stable Core-Shell

Kinetex 5 µm EVO C18



Waters® XBridge® 5 µm C18



Conditions for all columns:

**Column:** Kinetex 5 µm EVO C18  
XBridge 5 µm C18

**Dimensions:** 150 x 4.6 mm

**Mobile Phase:** A: 20 mM Sodium Phosphate/  
Methanol/Acetonitrile (30:35:35)

**Flow Rate:** 1.25 mL/min

**Temperature:** 30 °C

**Detection:** UV @ 254 nm

**Sample:** 1. Protriptyline  
2. Nortriptyline  
3. Imipramine  
4. Amitriptyline  
5. Clomipramine

Comparative separations may not be representative of all applications.

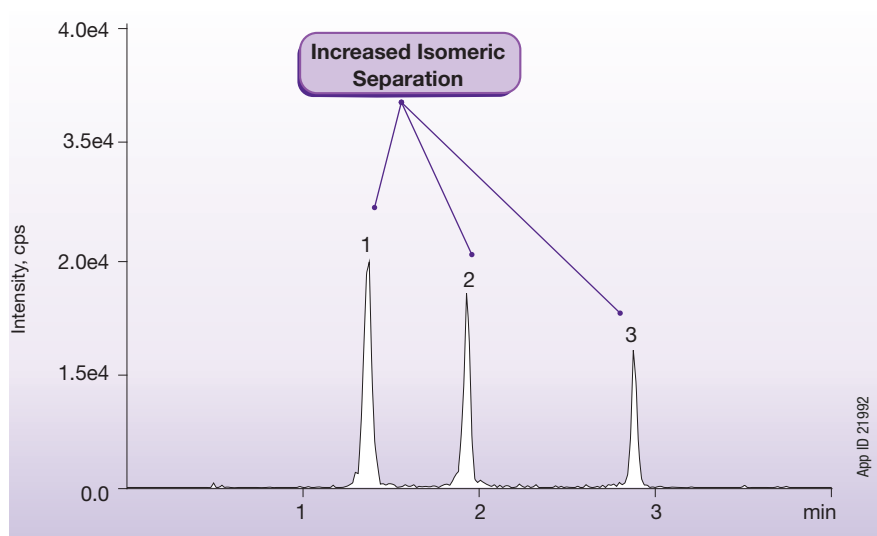
# Closely Related Compounds



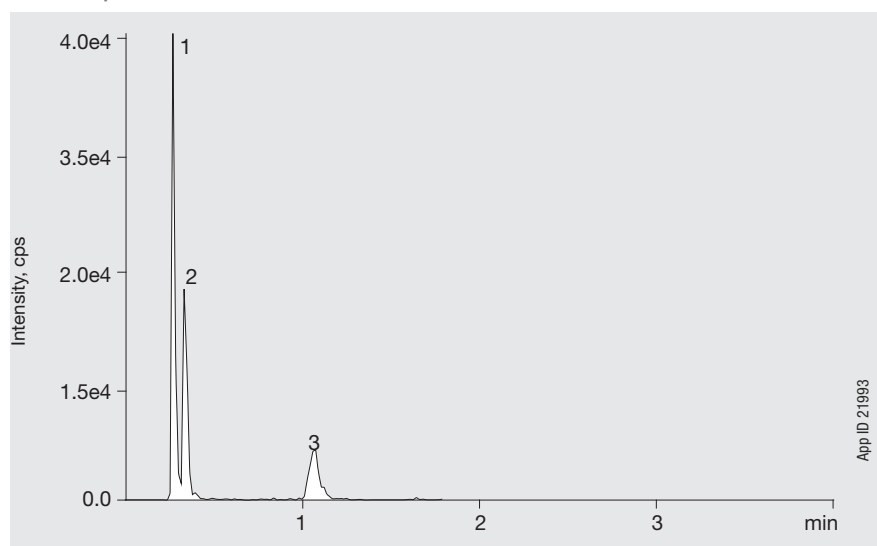
**Kinetex Biphenyl** is a high-efficiency core-shell product capable of adding extra separation power to your analysis of non-polar and polar compounds. Take advantage of multiple selectivity interaction mechanisms such as hydrophobic, pi-pi, and dipole-dipole to improve tough separations.

## Separation of Closely Related Compounds

**Kinetex 2.6 μm Biphenyl**



**HALO® 2.7 μm C18**



Conditions for all columns:

**Column:** Kinetex 2.6 μm Biphenyl  
HALO 2.7 μm C18

**Dimensions:** 50 x 2.1 mm

**Mobile Phase:** A: Water with 0.1 % Formic Acid  
B: Methanol with 0.1 % Formic Acid

Gradient:	Time (min)	% B
	0	10
	0.5	10
	2	25
	4.5	80
	4.51	85
	5.5	85
	5.51	10
	7	10

**Flow Rate:** 0.6 mL/min

**Temperature:** 40 °C

**Detection:** MS/MS (SCIEX® API 4000™)

**Sample:** 1. Morphine  
2. Hydromorphone  
3. Norhydrocodone

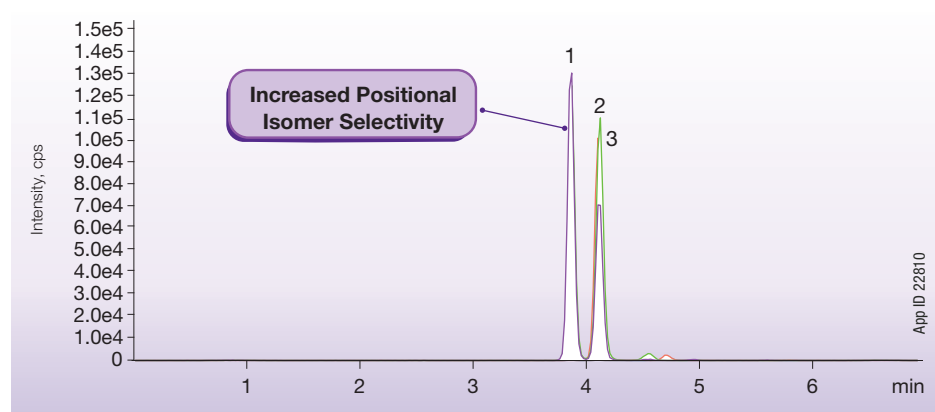
Comparative separations may not be representative of all applications.

# Closely Related Compounds

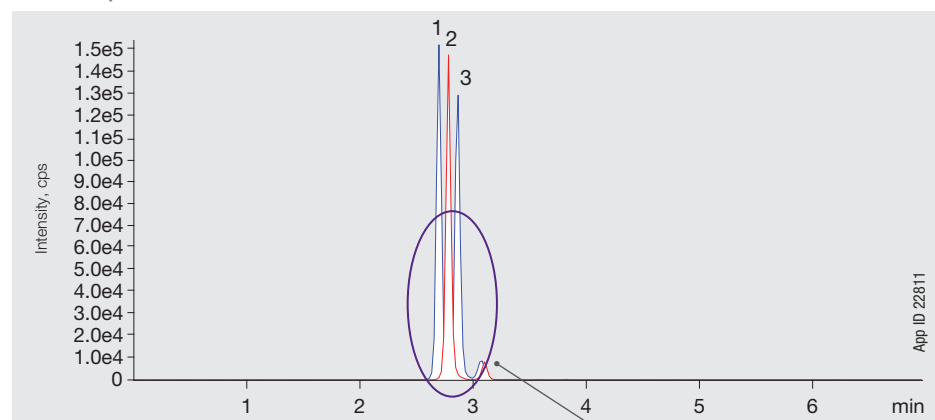
Combine core-shell performance, multiple retention mechanisms and the **Kinetex® F5** column's ability to be run in a variety of separation modes (reversed phase, HILIC, SFC, 2D-LC, and 100% aqueous) and you now have an impeccable method development tool at your disposal.

## Performance and Selectivity

### Kinetex 2.6 µm F5



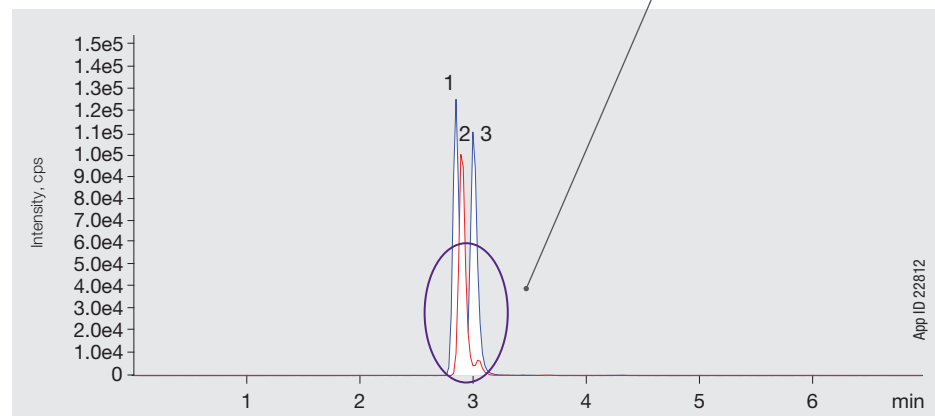
### HALO® 2.7 µm PFP



Conditions for all columns:

- Column:** Kinetex 2.6 µm F5  
HALO 2.7 µm PFP  
XSelect HSS 2.5 µm PFP
- Dimensions:** 100 x 4.6 mm
- Mobile Phase:** Water with 0.1 % Formic Acid/Methanol with 0.1 % Formic Acid (15:85)
- Flow Rate:** 0.75 mL/min
- Temperature:** Ambient
- Detection:** MS/MS (SCIEX® API 4000™)
- Sample:** 1. 25-OH Vitamin D3  
2. 25-OH Vitamin D2  
3. 3-epi-25-OH Vitamin D3

### Waters® XSelect® HSS 2.5 µm PFP



Comparative separations may not be representative of all applications.

# Phase and Particle Size Availability



Choose from an extensive selection of phases for greater flexibility in UHPLC/HPLC method development. Kinetex columns come in a variety of stationary phases to cover a full spectrum of applications ranging from acids and bases, to isomers and extremely polar compounds.

## Material Characteristics

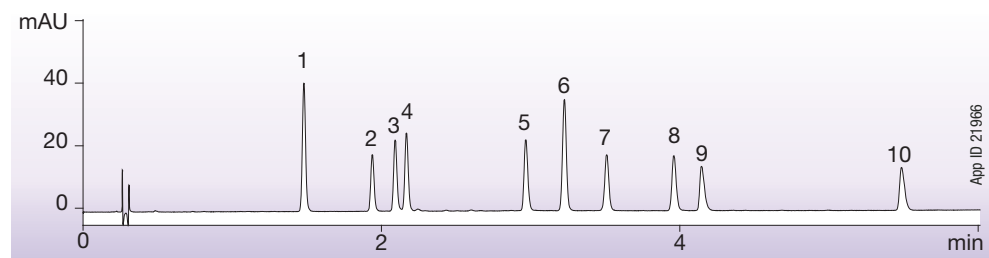
Packing Material	Available Particle Size (µm)	Pore Size (Å)	Effective Surface Area (m <sup>2</sup> /g)	Effective Carbon Load %	pH Stability	Pressure Stability
PS C18	2.6	100	200	9	1.5 - 8.5*	1,000/600† bar
Polar C18	2.6	100	200	9	1.5 - 8.5*	
EVO C18	1.7, 2.6, 5	100	200	11	1.0 - 12.0	
C18	1.3, 1.7, 2.6, 5	100	200	12	1.5 - 8.5*	
XB-C18	1.7, 2.6, 3.5, 5	100	200	10	1.5 - 8.5*	
C8	1.7, 2.6, 5	100	200	8	1.5 - 8.5*	
F5	1.7, 2.6, 5	100	200	9	1.5 - 8.5*	
Biphenyl	1.7, 2.6, 5	100	200	11	1.5 - 8.5*	
Phenyl-Hexyl	1.7, 2.6, 5	100	200	11	1.5 - 8.5*	
HILIC	1.7, 2.6, 5	100	200	0	2.0 - 7.5	
PAH	3.5	100	200	12	1.5 - 8.5*	

\* pH stability under gradient conditions. pH stability is 1.5 - 10 under isocratic conditions.

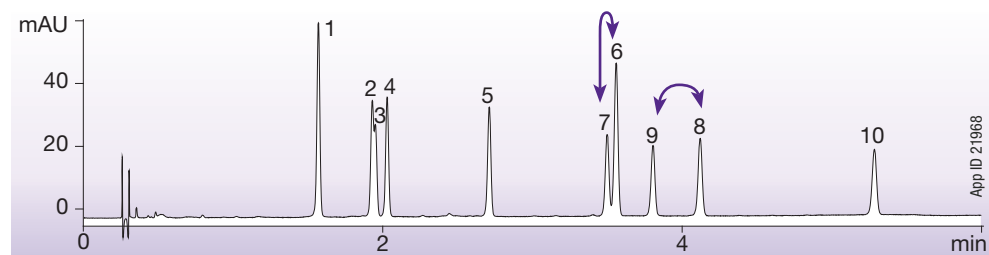
† 2.1 mm ID Kinetex columns are pressure stable up to 1000 bar. 3.0 mm and 4.6 mm ID Kinetex 2.6 µm columns are stable up to 600 bar.

When using Kinetex 1.3 µm or 1.7 µm, increased performance can be achieved, however high pressure-capable instrumentation is required.

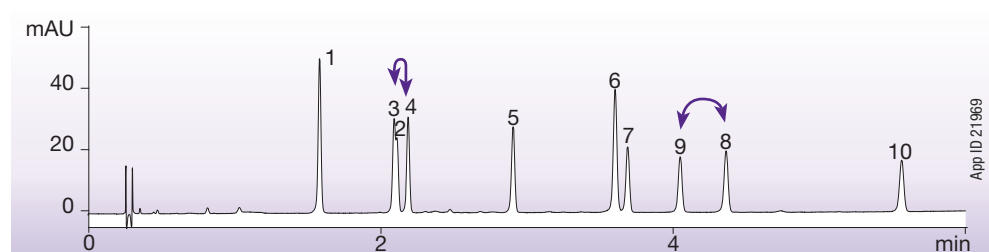
### Kinetex 2.6 µm Biphenyl



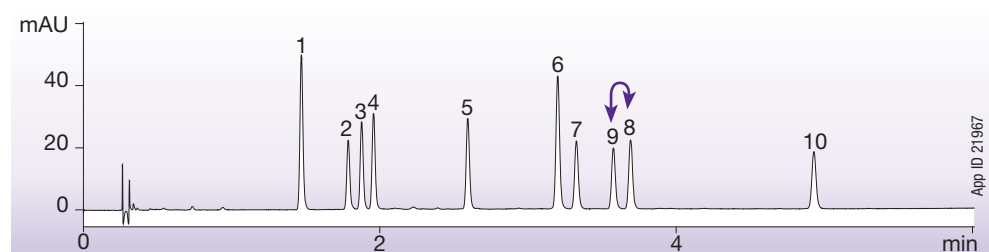
### Kinetex 2.6 µm C18



### Kinetex 2.6 µm XB-C18



### Kinetex 2.6 µm Phenyl-Hexyl



Conditions for all columns:

**Column:** Kinetex 2.6 µm Biphenyl  
Kinetex 2.6 µm C18  
Kinetex 2.6 µm XB-C18  
Kinetex 2.6 µm Phenyl-Hexyl

**Dimensions:** 50 x 4.6 mm

**Mobile:** A: Water

**Phase:** B: Acetonitrile

**Gradient:** 20 to 60% B in 6 minutes

**Flow Rate:** 1.85 mL/min

**Temperature:** 30 °C













**Detection:** UV @ 220 nm

**Samples:** 1. Estriol  
2. Hydrocortisone  
3. Prednisone  
4. Cortisone  
5. Corticosterone  
6. β-Estradiol  
7. Cortisone Acetate  
8. 17-Hydroxyprogesterone  
9. 21-Hydroxyprogesterone  
10. Deoxycorticosterone

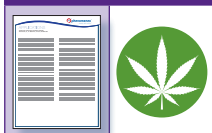
# Kinetex Applications

Kinetex columns cover a full spectrum of applications with its extensive selection for greater flexibility in UHPLC/HPLC method development.

Please refer to the legend to see which industry the technical and application notes below fall into:

<b>Agriculture</b> 	<b>Biopharmaceuticals</b> 	<b>Cannabis</b> 	<b>Clinical</b> 
<b>Environmental</b> 	<b>Food &amp; Beverage</b> 	<b>Forensic/Toxicology</b> 	<b>Fuels</b> 
<b>Life Science</b> 	<b>Personal Care/Consumer Products</b> 	<b>Pharmaceuticals</b> 	<b>Specialty Chemical/Industrial</b> 

## 18 Cannabinoids for Potency Testing by LC-UV



## A Screen of 22 Common Antibiotics that Demonstrates the Unique Reversed Phase Selectivity and Improved Chromatographic Performance for Bases using a Kinetex PS C18 HPLC/UHPLC Column



## Analysis of a Peptide Calibration Mix using Kinetex 2.6 $\mu\text{m}$ XB-C18 Core-Shell Column Compared with 1.7 $\mu\text{m}$ Fully Porous Column



## Analysis of Chloroquine and Its Metabolite Desethylchloroquine by LC-MS/MS



View these applications online at [www.phenomenex.com/KinetexAppsPg21](http://www.phenomenex.com/KinetexAppsPg21)

# Kinetex Applications

**Comparing the Kinetex 2.6  $\mu$ m PS C18 Core-Shell Column's Chromatographic Performance and Unique Reversed Phase Selectivity to a Conventional Fully Porous UHPLC Column**



**Comparison of the Reversed Phase Retention of Six Extremely Polar Artificial Sweeteners with Two Polar Modified Kinetex Core-Shell C18 Columns with MS/MS Detection**



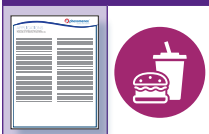
**Comparison of Two Particle Morphologies and Four C18 Phases When Applied to the Underivatized Retention of Five Carboxylic Acids Under Typical Reversed Phase LC Conditions and UV-Vis Detection**



**Demonstrating the Kinetex PS C18 HPLC/UHPLC Column's Resistance to Dewetting and 100% Aqueous Stability**



**Demonstrating Kinetex PS C18 HPLC/UHPLC Column's Unique Reversed Phase Selectivity and Improved Chromatographic Performance through the Analysis of the Polar Base Berberine**



**Determination of Chloroquine, Hydroxychloroquine and its Metabolite Desethyl Hydroxychloroquine in Plasma Samples by LC-MS/MS**



**Effective Sample Preparation and LC-MS/MS Analysis of Unconjugated Bile Acids from Human Serum**



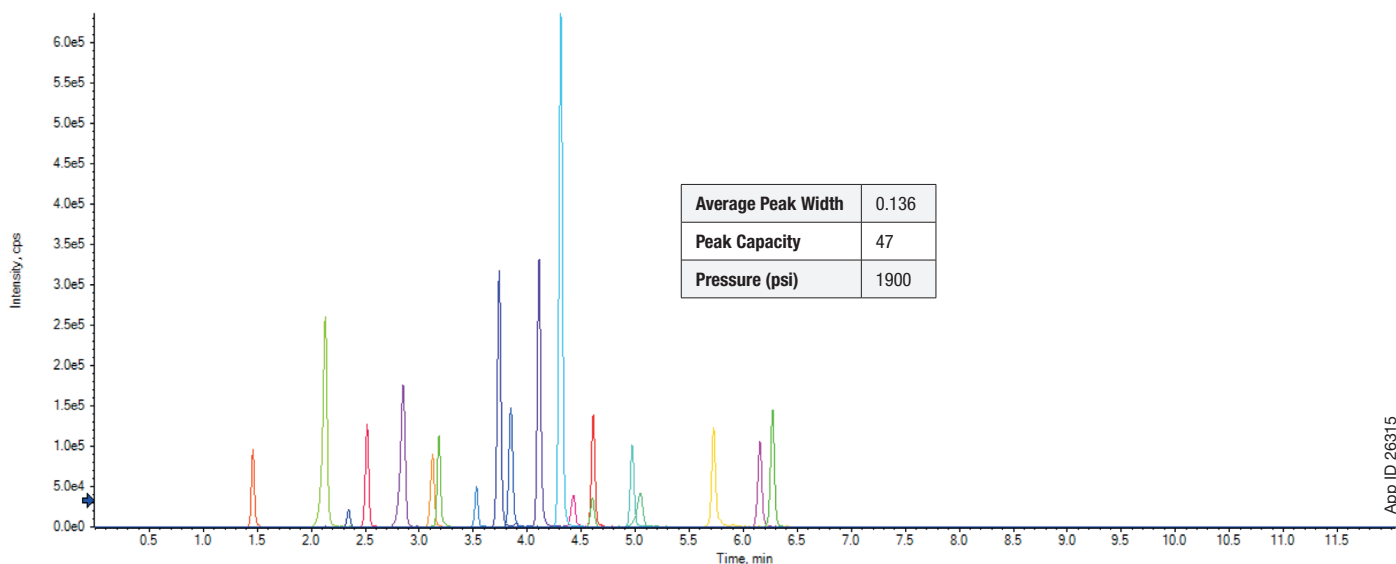
View these applications online at [www.phenomenex.com/KinetexAppsPg22](http://www.phenomenex.com/KinetexAppsPg22)



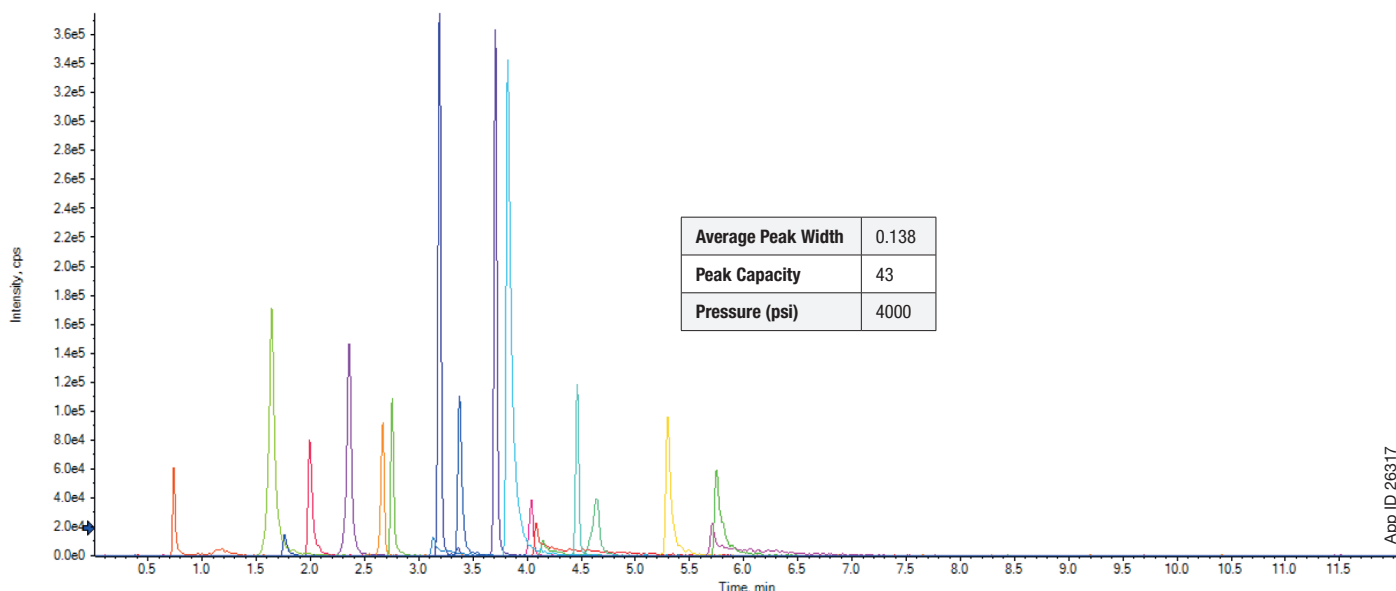
# Analysis of a Peptide Calibration Mix using Kinetex® 2.6 µm XB-C18 Core-Shell Column Compared with 1.7 µm Fully Porous Column

The Kinetex 2.6 µm XB-C18 micro-UHPLC columns provide exceptional peak efficiency with which to resolve and evaluate the many peaks of a complex peptide mixture without generating the corresponding backpressure. The superficially-porous nature of the Kinetex “core-shell” particles feature shorter pore pathways that mimic the efficiency of smaller fully-porous particles, while also mitigating the backpressure associated with UHPLC efficiency. In this application note we show that a peptide calibration standard demonstrates the higher peak capacity, higher efficiency, and lower backpressure of the Kinetex 2.6 µm XB-C18 media when compared with competing fully-porous micro-UHPLC columns that share the same hardware dimensions.

PepCalMix run on the Kinetex 2.6 µm XB-C18 (50 x 0.3 mm).



PepCalMix run on the Waters® 1.7 µm nanoEase™ M/Z Peptide CSH C18 (50 x 0.3 mm).



The Kinetex 2.6 µm XB-C18 micro-UHPLC columns generate the efficiency and resolution necessary to optimize peptide characterization within a single chromatogram. Exceedingly high peak capacities may be achieved with the Kinetex 2.6 µm XB-C18 columns on a wide range of micro-UHPLC instrumentation while operating well within the capabilities of the instrument. Ultimately, the Kinetex 2.6 µm XB-C18 media expands opportunities for micro-UHPLC peptide characterization.

Find the full technote at [www.phenomenex.com/TN1284](http://www.phenomenex.com/TN1284)

# Kinetex Applications

## Enhancing Sensitivity and Peak Capacity for Protein Digest using Micro-LC



## European Pharmacopoeia Monograph 2287 Fluconazole: Efficient Separation on Fully Porous and Core-Shell C18 Columns Within the Allowable Adjustments



## European Pharmacopoeia Paracetamol Monograph Draft Method: Achieving Improved Sensitivity, Resolution, and Separation for Paracetamol and All 14 Related Impurities



## Extraction and Analysis of Fentanyl and Analogs from Whole Blood Using a Kinetex F5 LC Column



## HPLC Column Screening for Favipiravir on Six Different 100 x 4.6 mm Columns



## Ibuprofen Tablet USP Dissolution: A Rapid HPLC Alternative to the Traditional UV Method



## Identification and Quantification of Designer Drugs in Urine by LC-MS/MS



View these applications online at [www.phenomenex.com/KinetexAppsPg24](http://www.phenomenex.com/KinetexAppsPg24)

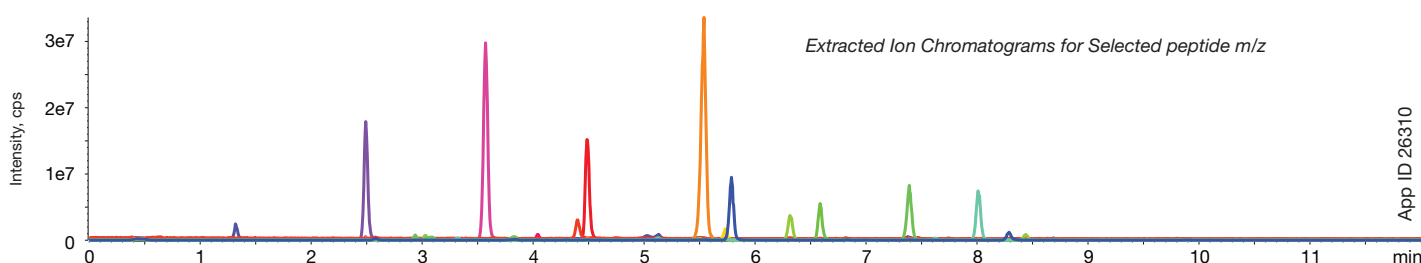
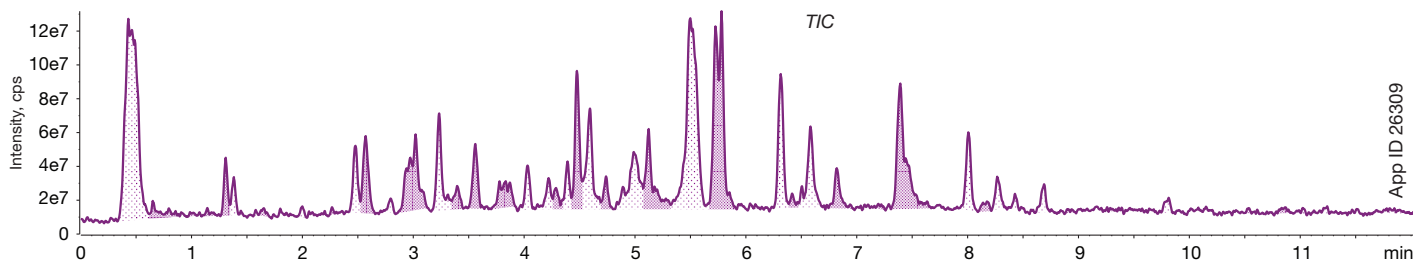




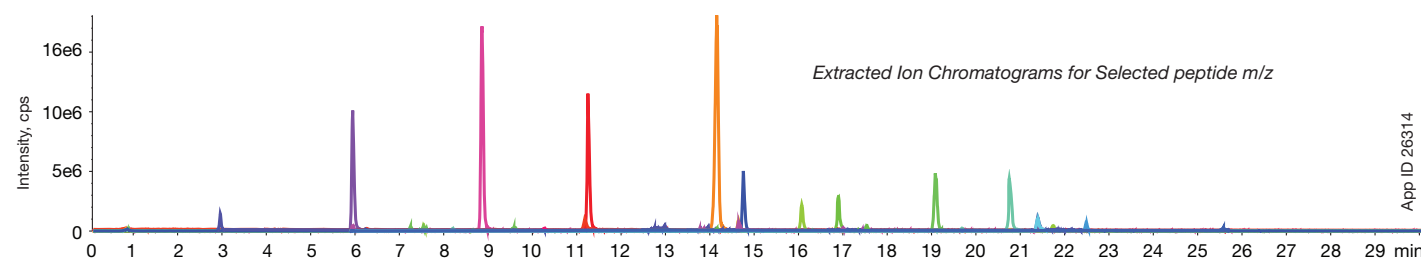
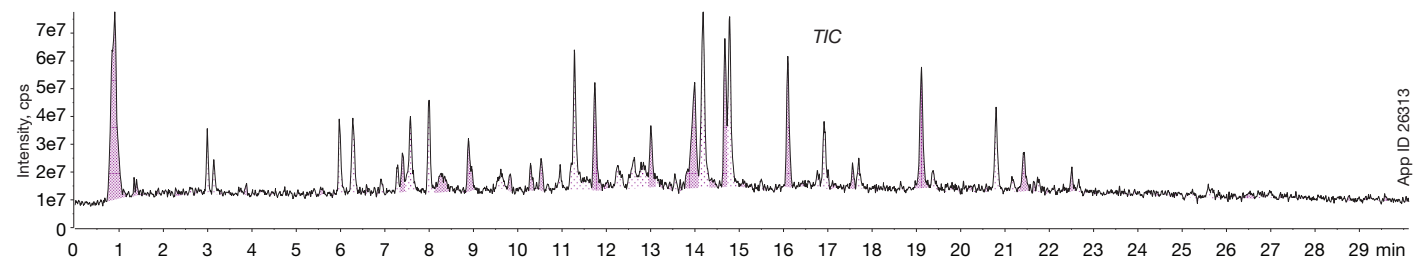
# Enhancing Sensitivity and Peak Capacity for Protein Digest using Micro-LC and the Power of 2.6 $\mu\text{m}$ Kinetex<sup>®</sup> Core-Shell Column

In this technote we compare the performance of the Kinetex 2.6  $\mu\text{m}$  core-shell packed into 0.3 mm ID columns to a market leading 1.7  $\mu\text{m}$  fully porous UHPLC alternative and demonstrate the average peak widths and peak capacities seen between a 2.6  $\mu\text{m}$  core-shell material are comparable to a sub-2  $\mu\text{m}$  fully porous whilst operating at a significantly lower backpressure. Furthermore, the reduction in backpressure can facilitate the use of longer columns, something which has the potential to be extremely beneficial when the goal is maximizing peak capacity.

Kinetex 2.6  $\mu\text{m}$  XB-C18 50 x 0.3 mm, BSA tryptic digest



Kinetex 2.6  $\mu\text{m}$  XB-C18 150 x 0.3 mm, BSA tryptic digest



## LC Conditions

<b>Column:</b> Kinetex 2.6 $\mu\text{m}$ XB-C18	<b>Gradient:</b>	<b>Time (min)</b>	<b>% B</b>	<b>Flow Rate:</b> 10 $\mu\text{L}/\text{min}$
<b>Dimensions:</b> 50 x 0.3 mm		0	3	<b>Temperature:</b> 30 $^{\circ}\text{C}$
150 x 0.3 mm		35.1	36	<b>LC System:</b> nanoLC <sup>™</sup> (SCIEX <sup>®</sup> )
<b>Part No.:</b> <a href="#">00B-4496-AC</a>		37.2	95	<b>Detection:</b> nanoESI
<a href="#">00F-4496-AC</a>		46.23	95	<b>Detector:</b> 6500 QTRAP <sup>®</sup> (SCIEX)
<b>Pressure (bar):</b> 4000 bar		46.26	3	<b>Injection Volume:</b> 1 $\mu\text{L}$
<b>Mobile Phase:</b> A: 0.1% Formic Acid in Water		63	3	
B: 0.1% Formic Acid in Acetonitrile				

Kinetex columns packed with 2.6  $\mu\text{m}$  core-shell particles offer comparable efficiency and lower backpressure to fully porous 1.7  $\mu\text{m}$  columns with the same column dimension. The lower backpressure produced from a larger particle can be utilized to allow longer columns to be used at flow rates which in many cases would be unattainable on sub-2  $\mu\text{m}$  UHPLC columns due to pressure restrictions.

Find the full technote at [www.phenomenex.com/TN1285](http://www.phenomenex.com/TN1285)

# Kinetex Applications



## Improved Loading for Impurity Profiling of Basic Compounds



## Investigating the Effect of Column ID on Sensitivity when Using Micro LC Columns



## Investigation on the Impact of Using Different Mobile Phase Ratios of Acetonitrile to Methanol on Reversed Phase Phenyl Selectivity



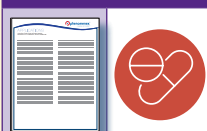
## LC-MS/MS Quantitative Analysis of NDMA in Ranitidine Active Pharmaceutical Ingredient (API) and Drug Product



## Limit of Free Salicylic Acid in Aspirin Tablets Under USP Allowable Adjustments



## Meeting and Surpassing System Suitability for USP Fluconazole and Related Impurities



## Rapid Analysis of Genotoxic Nitrosamines by HPLC-MS/MS



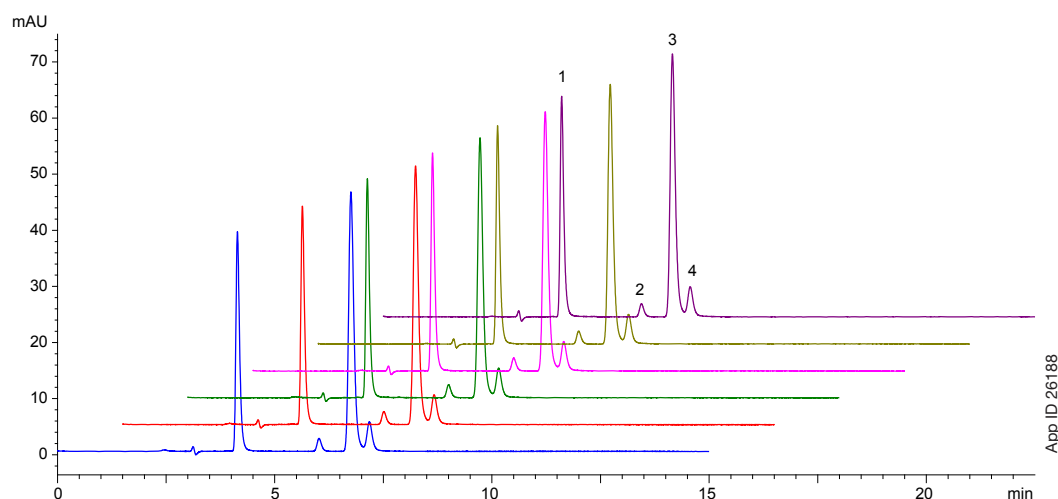
View these applications online at [www.phenomenex.com/KinetexAppsPg26](http://www.phenomenex.com/KinetexAppsPg26)



# Meeting and Surpassing System Suitability for USP Fluconazole and Related Impurities Using Kinetex® Core-Shell HPLC/UHPLC Column

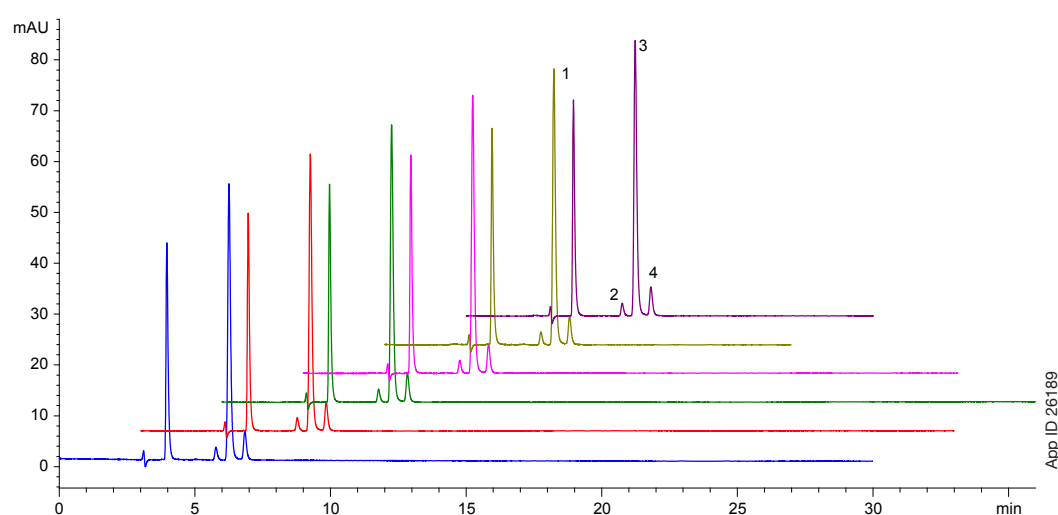
Fluconazole is a third generation triazole antifungal drug with broad spectrum activity against systemic and superficial fungal infections. It is one of the most widely used antifungal agents on the market today. As a result, the development of a quick and efficient analysis of Fluconazole and its related impurities poses significant interest. For this report, we focused on Fluconazole and related impurities as identified in the US Pharmacopeia monograph. We were able to show better resolution for Fluconazole and the related compound impurities. The USP monograph requires that the resolution between Fluconazole related compound B and C be no less than 1.5 to meet system suitability; this was achieved here. In order to maximize performance, an HPLC column packed with core-shell silica particles containing a C18 bonded phase was used. The performance of the Kinetex core-shell columns used here was compared to that of the Inertsil® 3 µm ODS-3 and all method parameters were consistent with the USP monograph for Fluconazole.

Overlay of 6 injections for Kinetex 5 µm C18 150 x 4.6 mm



Peak No.	Analyte	Time	Area	Height	Width	Area%	USP Tailing Factor
1	Impurity A	4.106	246.3	39.8	0.1031	34.787	1.479
2	Impurity B	5.943	17.7	2.3	0.1171	2.493	1.256
3	Impurity C	6.656	395	46.8	0.1304	55.782	1.332
4	Fluconazole	7.064	49.1	5.4	0.152	6.938	1.232

Overlay of 6 injections for Kinetex 2.6 µm C18 150 x 4.6 mm



Peak No.	Analyte	Time	Area	Height	Width	Area%	USP Tailing Factor
1	Impurity A	3.962	235.7	43	0.0914	33.588	1.582
2	Impurity B	5.767	17.5	2.5	0.1065	2.487	1.395
3	Impurity C	6.246	398.4	54.5	0.1114	56.766	1.359
4	Fluconazole	6.827	41.5	5.6	0.116	5.913	1.234

Find the full technote at [www.phenomenex.com/TN1276](http://www.phenomenex.com/TN1276)

# Kinetex Applications

## Reversed Phase Retention of Uracil, 5,6-Dihydrouracil, and 5-Fluorouracil with a Kinetex PS C18 HPLC/UHPLC Column and MS Detection



## Robust Separation of Hydroxychloroquine and Chloroquine in Hydroxychloroquine Sulfate Tablets Using the Kinetex 5 µm C18



## Significance of HPLC in the Development and Production of the Antiviral Drug Remdesivir



## The Effectiveness of Polar Stationary Phase Modification on Peak Shape for Basic Compounds Under General Reversed Phase Conditions – A Comparison of Four Alkyl C18 Phases



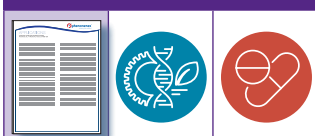
## USP Assay (LC-UV) for Lopinavir and Ritonavir Tablets



## USP Assay and Organic Impurities (LC-UV) for Chloroquine Phosphate



## USP Dissolution Test 3 for Metformin Hydrochloride Tablets



View these applications online at [www.phenomenex.com/KinetexAppsPg28](http://www.phenomenex.com/KinetexAppsPg28)

# Protect Your LC Column

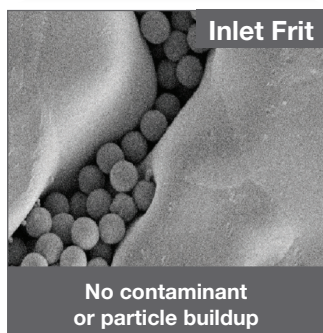
## Save Time and Money

It's a fact! Chemical contaminants and particulates are a natural part of any chromatographic analysis. The easiest way to extend column performance is to remove these contaminants and particulates with the SecurityGuard Cartridge System before they reach your column and degrade your chromatography.

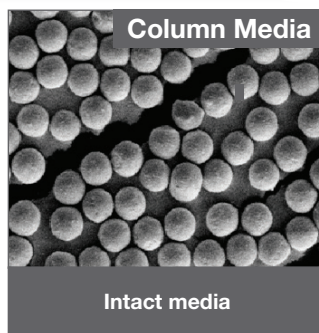
## With SecurityGuard, you will Experience:

- Increased column lifetime
- Higher column performance
- More reproducible chromatography
- Fewer wasted columns

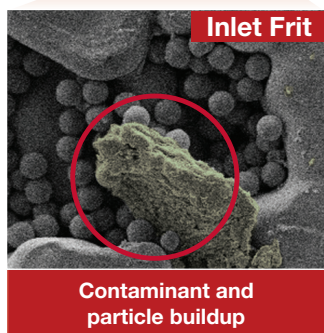
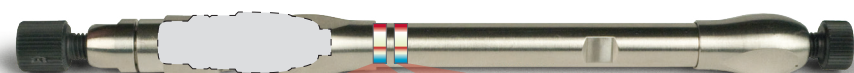
## With SecurityGuard ULTRA



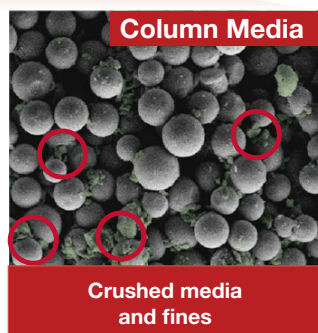
(24,000 times magnification)



## Without SecurityGuard ULTRA



(24,000 times magnification)



**SecurityGuard™**  
UHPLC Column Protection

## UHPLC SecurityGuard ULTRA

All Core-Shell and/or  
< 3 µm particle columns  
(< 20,000 psi / 1,378 bar)



“ We used to have to change out our columns every 2 to 3 months and ever since we started using the SecurityGuard cartridges we can do at least 6 months before changing a column out. ”

T. Serviss

The opinions stated herein are solely those of the speaker and not necessarily those of any company or organization.

# Protect Your LC Column

## SecurityGuard Keeps Columns Performing at Their Best

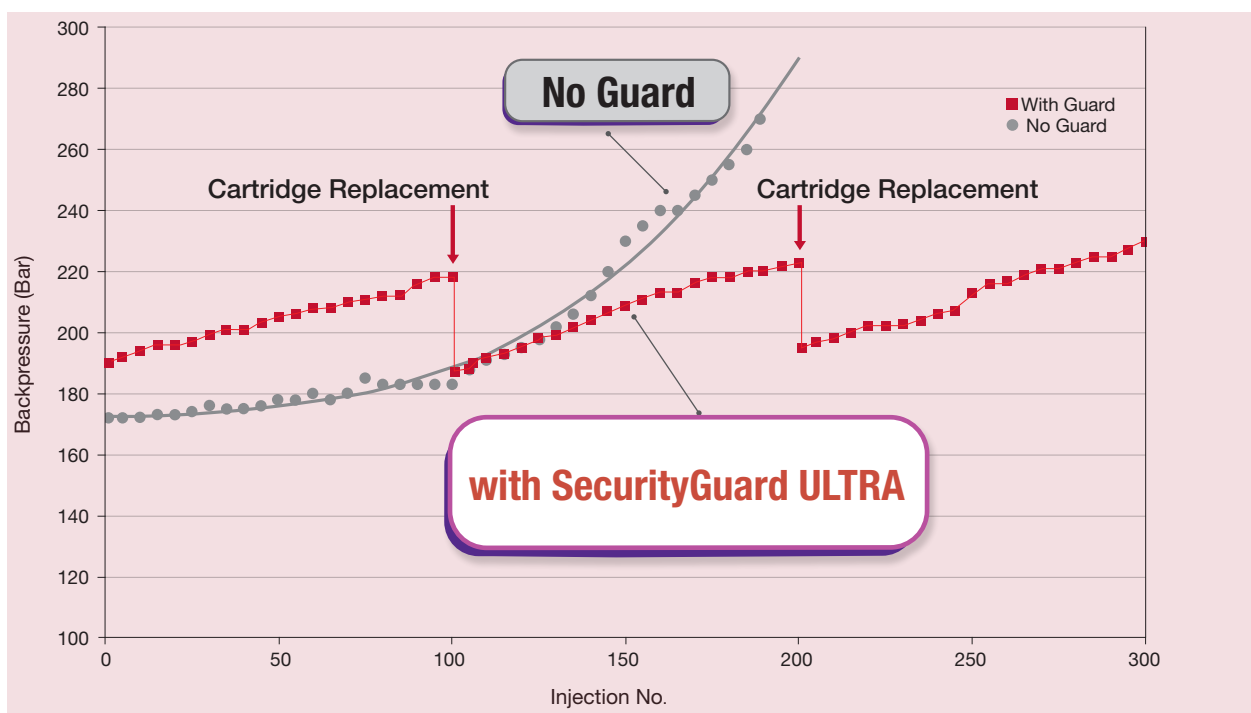
When contaminants and particulates build up at the head of the column or on the guard cartridges, system pressures dramatically increase.



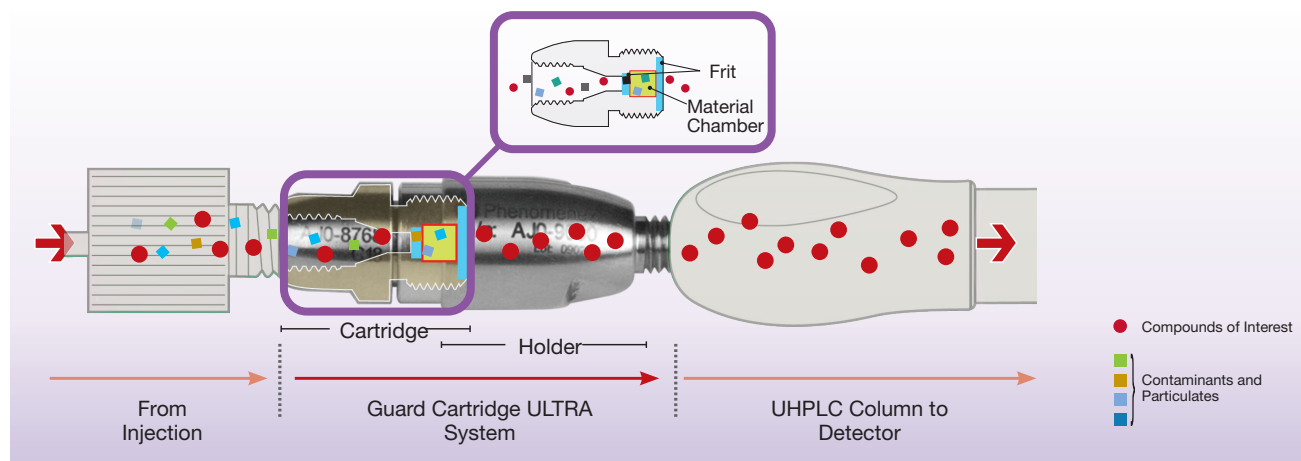
By simply replacing the SecurityGuard ULTRA cartridge instead of your <math>< 3 \mu\text{m}</math> and/or Core-Shell UHPLC column, you are able to regain normal operating conditions and reclaim original column performance.

## SecurityGuard ULTRA Performance

Accelerated lifetime test using endogenous biological matrix on Kinetex® 2.6  $\mu\text{m}$  C18 50 x 4.6 mm ID



In this accelerated column lifetime test, the UHPLC column lasts substantially longer with SecurityGuard ULTRA guard Cartridge system.



# SecurityLink

## Fingertight Connections

### SecurityLINK Fingertight HPLC and UHPLC Connections in a Click

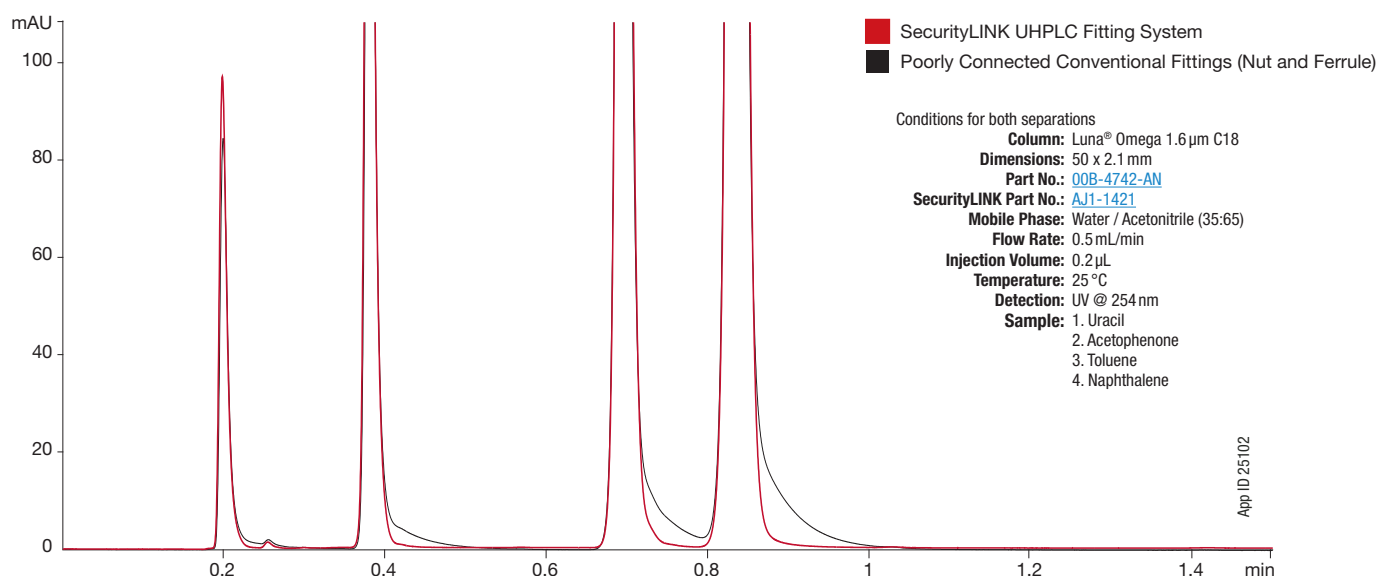
- No tools required for quick and easy installation
- Fitting self-adjusts at column inlet to ensure zero dead-volume for better chromatographic results
- Torque limiting technology prevents system and column port damage
- UHPLC and HPLC compatibility: pressure rated to 19,000 psi (1,310 bar)

**SecurityLINK**  
UHPLC Connections in a Click

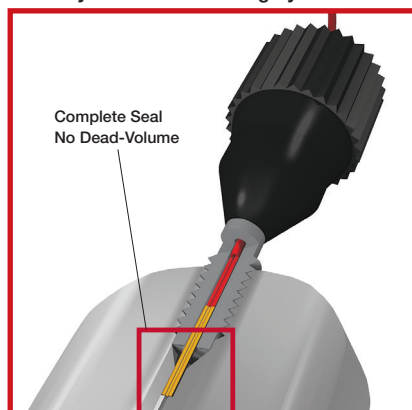


### SecurityLINK vs. Poorly Connected Conventional Fittings

Poorly connected fittings are often the cause of carryover, band broadening, and peak tailing. SecurityLINK offers zero dead-volume connections every time.

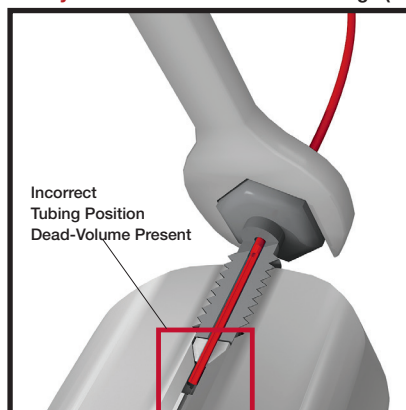


SecurityLINK UHPLC Fitting System



VS.

Poorly Connected Conventional Fittings (Nut and Ferrule)



# SecurityLINK Ordering Information



## PEEKsil™

PEEKsil Double-Sided 10-32 Fittings with 1/16 in. OD tubing

Part No.	ID (µm)	Length (mm)
<a href="#">AJ1-2111</a>	25	100
<a href="#">AJ1-2121</a>	25	150
<a href="#">AJ1-2141</a>	25	250
<a href="#">AJ1-2151</a>	25	300
<a href="#">AJ1-2171</a>	25	500
<a href="#">AJ1-2191</a>	25	750
<a href="#">AJ1-21A1</a>	25	1000
<a href="#">AJ1-2211</a>	50	100
<a href="#">AJ1-2221</a>	50	150
<a href="#">AJ1-2231</a>	50	200
<a href="#">AJ1-2241</a>	50	250
<a href="#">AJ1-2251</a>	50	300
<a href="#">AJ1-2271</a>	50	500
<a href="#">AJ1-2291</a>	50	750
<a href="#">AJ1-22A1</a>	50	1000
<a href="#">AJ1-2321</a>	75	150
<a href="#">AJ1-2341</a>	75	250
<a href="#">AJ1-2371</a>	75	500
<a href="#">AJ1-23A1</a>	75	1000
<a href="#">AJ1-2411</a>	100	100
<a href="#">AJ1-2421</a>	100	150
<a href="#">AJ1-2441</a>	100	250
<a href="#">AJ1-2471</a>	100	500
<a href="#">AJ1-24A1</a>	100	1000



## PEEK-Lined Stainless Steel

PEEK-Lined Stainless Steel Double-Sided 10-32 Fittings with 1/16 in. OD tubing

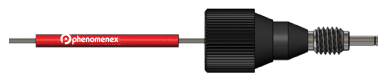
Part No.	ID (µm)	Length (mm)
<a href="#">AJ1-3121</a>	25	150
<a href="#">AJ1-3141</a>	25	250
<a href="#">AJ1-3161</a>	25	350
<a href="#">AJ1-3171</a>	25	500
<a href="#">AJ1-3181</a>	25	600
<a href="#">AJ1-3221</a>	50	150
<a href="#">AJ1-3241</a>	50	250
<a href="#">AJ1-3261</a>	50	350
<a href="#">AJ1-3271</a>	50	500
<a href="#">AJ1-3281</a>	50	600
<a href="#">AJ1-3321</a>	75	150
<a href="#">AJ1-3341</a>	75	250
<a href="#">AJ1-3361</a>	75	350
<a href="#">AJ1-3371</a>	75	500
<a href="#">AJ1-3381</a>	75	600
<a href="#">AJ1-3421</a>	100	150
<a href="#">AJ1-3441</a>	100	250
<a href="#">AJ1-3461</a>	100	350
<a href="#">AJ1-3471</a>	100	500
<a href="#">AJ1-3481</a>	100	600



## Stainless Steel

Stainless Steel Double-Sided 10-32 Fittings with 1/16 in. OD tubing

Part No.	ID (µm)	Length (mm)
<a href="#">AJ1-14A1</a>	100	1000
<a href="#">AJ1-1411</a>	100	100
<a href="#">AJ1-1414</a>	100	100
<a href="#">AJ1-1421</a>	100	150
<a href="#">AJ1-1441</a>	100	100
<a href="#">AJ1-1461</a>	100	350
<a href="#">AJ1-1471</a>	100	500
<a href="#">AJ1-1481</a>	100	600
<a href="#">AJ1-15A1</a>	125	1000
<a href="#">AJ1-1521</a>	125	150
<a href="#">AJ1-1541</a>	125	250
<a href="#">AJ1-1561</a>	125	350
<a href="#">AJ1-1571</a>	125	500
<a href="#">AJ1-1581</a>	125	600
<a href="#">AJ1-1611</a>	254	100
<a href="#">AJ1-1621</a>	254	150
<a href="#">AJ1-1641</a>	254	250
<a href="#">AJ1-1661</a>	254	350
<a href="#">AJ1-1671</a>	254	500
<a href="#">AJ1-1681</a>	254	600



## PEEKsil

PEEKsil Single-Sided Fittings; 1/32 in. OD PEEKsil Tubing with one 10-32 fitting for 1/16 in. ports, and one side with no fitting.

Part No.	ID (µm)	Length (mm)
<a href="#">AJ1-21B1</a>	25	1500
<a href="#">AJ1-2224</a>	50	150
<a href="#">AJ1-2274</a>	50	500
<a href="#">AJ1-2294</a>	50	750
<a href="#">AJ1-22A4</a>	50	1000

## Phenomenex Column / Tubing ID Recommendation Chart

	Nano		Microbore		Analytical			Semi-Prep	
Column ID	0.05 - 0.1 mm (50 µm-100 µm)	0.3 - 0.5 mm (300 µm-500 µm)	1 mm	2.1 mm	3 mm	4.6 mm	7.8 mm	9.0 - 16.0 mm	
Tubing ID	25 µm	50 µm	50 µm - 75 µm	100 µm	100 µm	100 µm	125 µm	254 µm	



# Kinetex Ordering Information

Kinetex UHPLC Columns



3.5 µm Columns (mm)						SecurityGuard™ ULTRA Cartridges <sup>‡</sup>	
Phases	50 x 2.1	150 x 2.1	100 x 4.6	150 x 4.6	250 x 4.6	3/pk	3/pk
XB-C18	—	—	<a href="#">00D-4744-E0</a>	<a href="#">00F-4744-E0</a>	—	—	<a href="#">AJ0-8768</a>
PAH	<a href="#">00B-4764-AN</a>	<a href="#">00F-4764-AN</a>	<a href="#">00D-4764-E0</a>	<a href="#">00F-4764-E0</a>	<a href="#">00G-4764-E0</a>	<a href="#">AJ0-9535</a>	<a href="#">AJ0-9533</a>

for 2.1 mm ID      for 4.6 mm ID

5 µm Minibore Columns (mm)					SecurityGuard™ ULTRA Cartridges <sup>‡</sup>
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
EVO C18	<a href="#">00A-4633-AN</a>	<a href="#">00B-4633-AN</a>	<a href="#">00D-4633-AN</a>	<a href="#">00F-4633-AN</a>	<a href="#">AJ0-9298</a>
F5	—	<a href="#">00B-4724-AN</a>	<a href="#">00D-4724-AN</a>	<a href="#">00F-4724-AN</a>	<a href="#">AJ0-9322</a>
Biphenyl	<a href="#">00A-4627-AN</a>	<a href="#">00B-4627-AN</a>	<a href="#">00D-4627-AN</a>	—	<a href="#">AJ0-9209</a>
XB-C18	<a href="#">00A-4605-AN</a>	<a href="#">00B-4605-AN</a>	<a href="#">00D-4605-AN</a>	—	<a href="#">AJ0-8782</a>
C18	<a href="#">00A-4601-AN</a>	<a href="#">00B-4601-AN</a>	<a href="#">00D-4601-AN</a>	<a href="#">00F-4601-AN</a>	<a href="#">AJ0-8782</a>
C8	—	<a href="#">00B-4608-AN</a>	<a href="#">00D-4608-AN</a>	—	<a href="#">AJ0-8784</a>
Phenyl-Hexyl	—	<a href="#">00B-4603-AN</a>	—	—	<a href="#">AJ0-8788</a>
HILIC	—	<a href="#">00B-4606-AN</a>	—	—	<a href="#">AJ0-8786</a>

for 2.1 mm ID

5 µm MidBore™ Columns (mm)					SecurityGuard ULTRA Cartridges <sup>‡</sup>
Phases	30 x 3.0	50 x 3.0	100 x 3.0	150 x 3.0	3/pk
EVO C18	<a href="#">00A-4633-Y0</a>	<a href="#">00B-4633-Y0</a>	<a href="#">00D-4633-Y0</a>	<a href="#">00F-4633-Y0</a>	<a href="#">AJ0-9297</a>
F5	—	—	<a href="#">00D-4724-Y0</a>	<a href="#">00F-4724-Y0</a>	<a href="#">AJ0-9321</a>
Biphenyl	—	<a href="#">00B-4627-Y0</a>	<a href="#">00D-4627-Y0</a>	<a href="#">00F-4627-Y0</a>	<a href="#">AJ0-9208</a>
XB-C18	—	<a href="#">00B-4605-Y0</a>	<a href="#">00D-4605-Y0</a>	<a href="#">00F-4605-Y0</a>	<a href="#">AJ0-8775</a>
C18	<a href="#">00A-4601-Y0</a>	<a href="#">00B-4601-Y0</a>	<a href="#">00D-4601-Y0</a>	<a href="#">00F-4601-Y0</a>	<a href="#">AJ0-8775</a>
C8	—	<a href="#">00B-4608-Y0</a>	<a href="#">00D-4608-Y0</a>	—	<a href="#">AJ0-8777</a>
Phenyl-Hexyl	—	<a href="#">00B-4603-Y0</a>	<a href="#">00D-4603-Y0</a>	—	<a href="#">AJ0-8781</a>

for 3.0 mm ID

5 µm Analytical Columns (mm)					SecurityGuard ULTRA Cartridges <sup>‡</sup>
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	3/pk
EVO C18	<a href="#">00B-4633-E0</a>	<a href="#">00D-4633-E0</a>	<a href="#">00F-4633-E0</a>	<a href="#">00G-4633-E0</a>	<a href="#">AJ0-9296</a>
F5	<a href="#">00B-4724-E0</a>	<a href="#">00D-4724-E0</a>	<a href="#">00F-4724-E0</a>	<a href="#">00G-4724-E0</a>	<a href="#">AJ0-9320</a>
Biphenyl	<a href="#">00B-4627-E0</a>	<a href="#">00D-4627-E0</a>	<a href="#">00F-4627-E0</a>	<a href="#">00G-4627-E0</a>	<a href="#">AJ0-9207</a>
XB-C18	<a href="#">00B-4605-E0</a>	<a href="#">00D-4605-E0</a>	<a href="#">00F-4605-E0</a>	<a href="#">00G-4605-E0</a>	<a href="#">AJ0-8768</a>
C18	<a href="#">00B-4601-E0</a>	<a href="#">00D-4601-E0</a>	<a href="#">00F-4601-E0</a>	<a href="#">00G-4601-E0</a>	<a href="#">AJ0-8768</a>
C8	<a href="#">00B-4608-E0</a>	<a href="#">00D-4608-E0</a>	<a href="#">00F-4608-E0</a>	<a href="#">00G-4608-E0</a>	<a href="#">AJ0-8770</a>
Phenyl-Hexyl	<a href="#">00B-4603-E0</a>	<a href="#">00D-4603-E0</a>	<a href="#">00F-4603-E0</a>	<a href="#">00G-4603-E0</a>	<a href="#">AJ0-8774</a>
HILIC	—	—	<a href="#">00F-4606-E0</a>	<a href="#">00G-4606-E0</a>	<a href="#">AJ0-8772</a>

for 4.6 mm ID

**The POWER of ULTRA-Performance**  
on Any LC System

Find more Kinetex applications and available parts online at  
**[www.Phenomenex.com/Kinetex](http://www.Phenomenex.com/Kinetex)**

# Kinetex Ordering Information

Kinetex Analytical Columns



2.6 µm Micro LC Columns (mm)						
Phases	30 x 0.3	50 x 0.3	100 x 0.3	150 x 0.3	50 x 0.5	150 x 0.5
Biphenyl	—	00B-4622-AC	—	00F-4622-AC	00B-4622-AF	—
C18	00A-4462-AC	00B-4462-AC	—	00F-4462-AC	00B-4462-AF	—
EVO C18	—	00B-4725-AC	—	00F-4725-AC	00B-4725-AF	—
F5	—	00B-4723-AC	00D-4723-AC	00F-4723-AC	00B-4723-AF	—
XB-C18	00A-4496-AC	00B-4496-AC	00D-4496-AC	00F-4496-AC	00B-4496-AF	00F-4496-AF

2.6 µm Minibore Columns (mm)						SecurityGuard ULTRA Cartridges <sup>‡</sup>
Phases	30 x 2.1	50 x 2.1	75 x 2.1	100 x 2.1	150 x 2.1	3/pk
EVO C18	00A-4725-AN	00B-4725-AN	—	00D-4725-AN	00F-4725-AN	AJO-9298
PS C18	00A-4780-AN	00B-4780-AN	—	00D-4780-AN	00F-4780-AN	AJO-8951
Polar C18	00A-4759-AN	00B-4759-AN	—	00D-4759-AN	00F-4759-AN	AJO-9532
F5	00A-4723-AN	00B-4723-AN	—	00D-4723-AN	00F-4723-AN	AJO-9322
Biphenyl	00A-4622-AN	00B-4622-AN	—	00D-4622-AN	00F-4622-AN	AJO-9209
XB-C18	00A-4496-AN	00B-4496-AN	00C-4496-AN	00D-4496-AN	00F-4496-AN	AJO-8782
C18	00A-4462-AN	00B-4462-AN	00C-4462-AN	00D-4462-AN	00F-4462-AN	AJO-8782
C8	00A-4497-AN	00B-4497-AN	00C-4497-AN	00D-4497-AN	00F-4497-AN	AJO-8784
HILIC	00A-4461-AN	00B-4461-AN	00C-4461-AN	00D-4461-AN	00F-4461-AN	AJO-8786
Phenyl-Hexyl	00A-4495-AN	00B-4495-AN	00C-4495-AN	00D-4495-AN	00F-4495-AN	AJO-8788

for 2.1 mm ID

2.6 µm MidBore™ Columns (mm)						SecurityGuard ULTRA Cartridges <sup>‡</sup>
Phases	30 x 3.0	50 x 3.0	75 x 3.0	100 x 3.0	150 x 3.0	3/pk
EVO C18	00A-4725-YO	00B-4725-YO	—	00D-4725-YO	00F-4725-YO	AJO-9297
PS C18	00B-4780-YO	00D-4780-YO	—	00D-4780-YO	00F-4780-YO	AJO-8950
Polar C18	—	00B-4759-YO	—	00D-4759-YO	00F-4759-YO	AJO-9531
F5	—	00B-4723-YO	—	00D-4723-YO	00F-4723-YO	AJO-9321
Biphenyl	—	00B-4622-YO	—	00D-4622-YO	00F-4622-YO	AJO-9208
XB-C18	00A-4496-YO	00B-4496-YO	00C-4496-YO	00D-4496-YO	00F-4496-YO	AJO-8775
C18	00A-4462-YO	00B-4462-YO	00C-4462-YO	00D-4462-YO	00F-4462-YO	AJO-8775
C8	00A-4497-YO	00B-4497-YO	00C-4497-YO	00D-4497-YO	00F-4497-YO	AJO-8777
HILIC	00A-4461-YO	—	—	00D-4461-YO	00F-4461-YO	AJO-8779
Phenyl-Hexyl	—	00B-4495-YO	—	00D-4495-YO	00F-4495-YO	AJO-8781

for 3.0 mm ID

2.6 µm Analytical Columns (mm)							SecurityGuard ULTRA Cartridges <sup>‡</sup>
Phases	30 x 4.6	50 x 4.6	75 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	3/pk
EVO C18	00A-4725-E0	00B-4725-E0	—	00D-4725-E0	00F-4725-E0	00G-4725-E0	AJO-9296
PS C18	—	00B-4780-E0	—	00D-4780-E0	00F-4780-E0	00G-4780-E0	AJO-8949
Polar C18	00A-4759-E0	00B-4759-E0	—	00D-4759-E0	00F-4759-E0	—	AJO-9532
F5	00A-4723-E0	00B-4723-E0	—	00D-4723-E0	00F-4723-E0	—	AJO-9320
Biphenyl	—	00B-4622-E0	—	00D-4622-E0	00F-4622-E0	—	AJO-9207
XB-C18	—	00B-4496-E0	00C-4496-E0	00D-4496-E0	00F-4496-E0	—	AJO-8768
C18	00A-4462-E0	00B-4462-E0	00C-4462-E0	00D-4462-E0	00F-4462-E0	—	AJO-8768
C8	—	00B-4497-E0	00C-4497-E0	00D-4497-E0	00F-4497-E0	—	AJO-8770
HILIC	—	00B-4461-E0	00C-4461-E0	00D-4461-E0	00F-4461-E0	—	AJO-8772
Phenyl-Hexyl	—	00B-4495-E0	00C-4495-E0	00D-4495-E0	00F-4495-E0	—	AJO-8774

for 4.6 mm ID

1.7 µm Minibore Columns (mm)						SecurityGuard™ ULTRA Cartridges <sup>‡</sup>
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk	
EVO C18	—	00B-4726-AN	00D-4726-AN	00F-4726-AN	AJO-9298	
F5	—	00B-4722-AN	00D-4722-AN	00F-4722-AN	AJO-9322	
Biphenyl	00A-4628-AN	00B-4628-AN	00D-4628-AN	00F-4628-AN	AJO-9209	
XB-C18	00A-4498-AN	00B-4498-AN	00D-4498-AN	00F-4498-AN	AJO-8782	
C18	00A-4475-AN	00B-4475-AN	00D-4475-AN	00F-4475-AN	AJO-8782	
C8	00A-4499-AN	00B-4499-AN	00D-4499-AN	00F-4499-AN	AJO-8784	
HILIC	00A-4474-AN	00B-4474-AN	00D-4474-AN	—	AJO-8786	
Phenyl-Hexyl	—	00B-4500-AN	00D-4500-AN	00F-4500-AN	AJO-8788	

for 2.1 mm ID

<sup>‡</sup> SecurityGuard ULTRA Cartridges require holder, Part No.: [AJO-9000](#)

1.7 µm MidBore Columns (mm)					SecurityGuard ULTRA Cartridges <sup>‡</sup>
Phases	30 x 3.0	50 x 3.0	100 x 3.0	3/pk	
XB-C18	00A-4498-YO	00B-4498-YO	00D-4498-YO	AJO-8775	
C18	—	00B-4475-YO	00D-4475-YO	AJO-8775	
C8	00A-4499-YO	00B-4499-YO	00D-4499-YO	AJO-8777	
Phenyl	—	—	00D-4500-YO	AJO-8781	
HILIC	—	00B-4474-YO	—	AJO-8779	

for 3.0 mm ID

2.6 µm Microbore Columns (mm)			
Phases	50 x 1.0	100 x 1.0	150 x 1.0
C18	00B-4462-A0	—	—
XB-C18	00B-4496-A0	00D-4496-A0	00F-4496-A0

1.7 µm Microbore Columns (mm)			
Phases	50 x 1.0	100 x 1.0	150 x 1.0
EVO C18	00B-4726-A0	00D-4726-A0	00F-4726-A0
Biphenyl	00B-4628-A0	00D-4628-A0	—

1.3 µm Minibore Columns (mm)		
Phases	30 x 2.1	50 x 2.1
C18	00A-4515-AN	00B-4515-AN

# Kinetex Ordering Information

Kinetex Semi-Preparative and Preparative Columns



5 µm Semi-Preparative Columns (mm)	SecurityGuard SemiPrep Cartridges***			
	100 x 10	150 x 10	250 x 10	10 x 10
EVO C18	—	<a href="#">00F-4633-NO</a>	<a href="#">00G-4633-NO</a>	<a href="#">AJO-9306</a>
F5	—	—	<a href="#">00G-4724-NO</a>	<a href="#">AJO-9323</a>
C18	<a href="#">00D-4601-NO</a>	<a href="#">00F-4601-NO</a>	<a href="#">00G-4601-NO</a>	<a href="#">AJO-9278</a>
Biphenyl	—	<a href="#">00F-4627-NO</a>	<a href="#">00G-4627-NO</a>	<a href="#">AJO-9280</a>
XB-C18	—	<a href="#">00F-4605-NO</a>	<a href="#">00G-4605-NO</a>	<a href="#">AJO-9278</a>

for 9-16 mm ID

5 µm Axia™ Packed Preparative Columns (mm)	SecurityGuard PREP Cartridges*				
	50 x 21.2	100 x 21.2	150 x 21.2	250 x 21.2	15 x 21.2
EVO C18	<a href="#">00B-4633-PO-AX</a>	<a href="#">00D-4633-PO-AX</a>	<a href="#">00F-4633-PO-AX</a>	<a href="#">00G-4633-PO-AX</a>	<a href="#">AJO-9304</a>
F5	—	—	<a href="#">00F-4724-PO-AX</a>	<a href="#">00G-4724-PO-AX</a>	<a href="#">AJO-9324</a>
Biphenyl	<a href="#">00B-4627-PO-AX</a>	<a href="#">00D-4627-PO-AX</a>	<a href="#">00F-4627-PO-AX</a>	<a href="#">00G-4627-PO-AX</a>	<a href="#">AJO-9272</a>
XB-C18	<a href="#">00B-4605-PO-AX</a>	<a href="#">00D-4605-PO-AX</a>	<a href="#">00F-4605-PO-AX</a>	<a href="#">00G-4605-PO-AX</a>	<a href="#">AJO-9145</a>
C18	<a href="#">00B-4601-PO-AX</a>	<a href="#">00D-4601-PO-AX</a>	<a href="#">00F-4601-PO-AX</a>	<a href="#">00G-4601-PO-AX</a>	<a href="#">AJO-9145</a>
C8	<a href="#">00B-4608-PO-AX</a>	<a href="#">00D-4608-PO-AX</a>	<a href="#">00F-4608-PO-AX</a>	<a href="#">00G-4608-PO-AX</a>	<a href="#">AJO-9205</a>
Phenyl-Hexyl	<a href="#">00B-4603-PO-AX</a>	<a href="#">00D-4603-PO-AX</a>	<a href="#">00F-4603-PO-AX</a>	<a href="#">00G-4603-PO-AX</a>	<a href="#">AJO-9147</a>
HILIC	—	<a href="#">00D-4606-PO-AX</a>	<a href="#">00F-4606-PO-AX</a>	<a href="#">00G-4606-PO-AX</a>	<a href="#">AJO-9277</a>

for 18-29 mm ID

5 µm Axia Packed Preparative Columns (mm)	SecurityGuard PREP Cartridges**				
	50 x 30	100 x 30	150 x 30	250 x 30	15 x 30
EVO C18	<a href="#">00B-4633-UO-AX</a>	<a href="#">00D-4633-UO-AX</a>	<a href="#">00F-4633-UO-AX</a>	<a href="#">00G-4633-UO-AX</a>	<a href="#">AJO-9305</a>
F5	<a href="#">00B-4724-UO-AX</a>	<a href="#">00D-4724-UO-AX</a>	<a href="#">00F-4724-UO-AX</a>	—	<a href="#">AJO-9325</a>
Biphenyl	—	—	<a href="#">00F-4627-UO-AX</a>	<a href="#">00G-4627-UO-AX</a>	<a href="#">AJO-9273</a>
XB-C18	<a href="#">00B-4605-UO-AX</a>	<a href="#">00D-4605-UO-AX</a>	<a href="#">00F-4605-UO-AX</a>	<a href="#">00G-4605-UO-AX</a>	<a href="#">AJO-9204</a>
C18	<a href="#">00B-4601-UO-AX</a>	<a href="#">00D-4601-UO-AX</a>	<a href="#">00F-4601-UO-AX</a>	<a href="#">00G-4601-UO-AX</a>	<a href="#">AJO-9204</a>
C8	<a href="#">00B-4608-UO-AX</a>	<a href="#">00D-4608-UO-AX</a>	<a href="#">00F-4608-UO-AX</a>	<a href="#">00G-4608-UO-AX</a>	<a href="#">AJO-9217</a>
Phenyl-Hexyl	—	—	<a href="#">00F-4603-UO-AX</a>	<a href="#">00G-4603-UO-AX</a>	<a href="#">AJO-9216</a>
HILIC	—	—	<a href="#">00D-4606-UO-AX</a>	—	—

for 30-49 mm ID

\* PREP SecurityGuard Cartridges require holder, Part No.: [AJO-8223](#)

\*\* PREP SecurityGuard Cartridges require holder, Part No.: [AJO-8277](#)

\*\*\* SemiPrep SecurityGuard Cartridges require holder, Part No.: [AJO-9281](#)

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