

# These Phases Rock Your LC Laboratory



**Chromatographers in the following industries can benefit from the advantages of Core-Shell technology:**

-  **Agriculture**
-  **Forensics**
-  **Clinical**
-  **Life Science**
-  **Environmental**
-  **Pharmaceutical**
-  **Food and Beverage**
-  **Chemical/Industrial**
-  **Consumer Care**

**guarantee**

If you are not completely satisfied with Kinetex core-shell columns, return the column(s) and comparative data within 45 days for a FULL REFUND.

**Efficiency**



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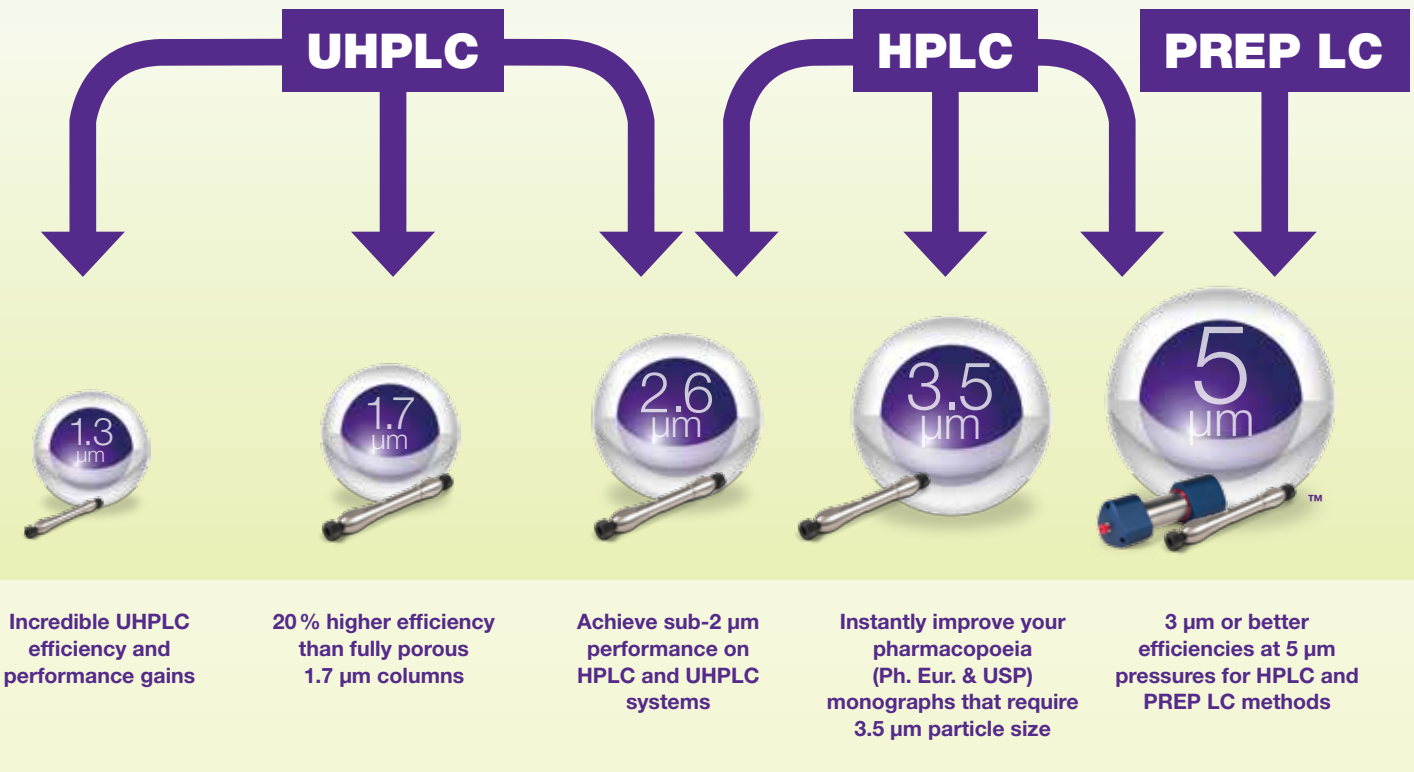
**Resolution**

**Productivity**

**Selectivity**

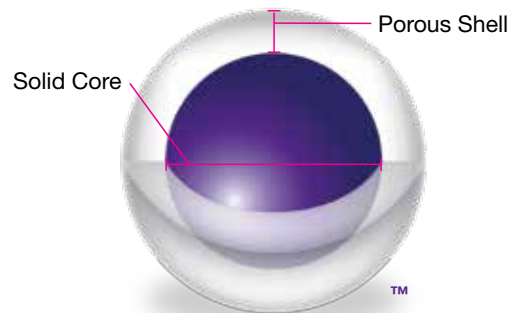


Complete Scalable Solution from UHPLC to HPLC to PREP LC



## Better Performance than Fully Porous Particles

Using sol-gel processing techniques that incorporate nano structuring technology, a durable, homogeneous porous shell is grown on a solid silica core. This highly optimized process combined with industry leading column packing technology produces highly reproducible columns that generate extremely high plate counts.



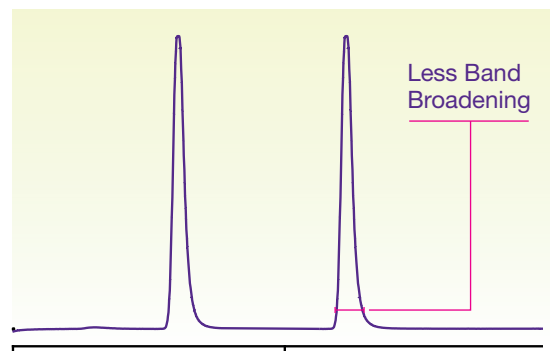
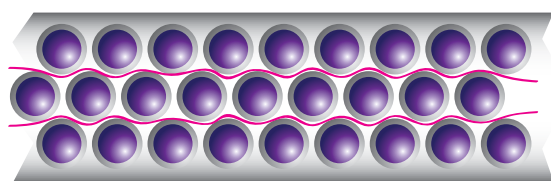
Fully Porous		Kinetex Core-Shell		Average Efficiency Gain with Kinetex*
5 μm	vs	5 μm		<b>90% Higher</b>
3 μm	vs	2.6 μm		<b>85% Higher</b>
1.7 μm	vs	1.7 μm		<b>20% Higher</b>
1.7 μm	vs	1.3 μm		<b>50% Higher</b>

\* May not be representative of all applications

# The Technology

## Kinetex Core-Shell Technology

- Obtain higher throughput without sacrificing resolution
- Easy method transfer across LC system platforms
- Reduce solvent consumption with faster analysis
- Reach lower levels of detection and quantitation



2009

Small Molecules



2010

Synthetic  
Oligonucleotides



2011

Peptides / Proteins



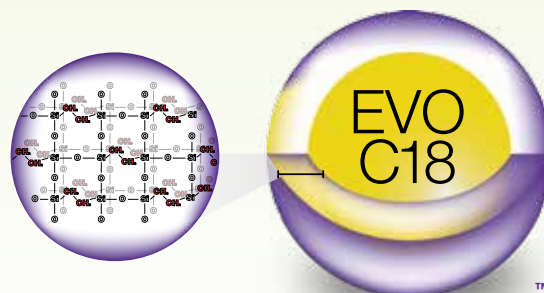
2014

Kinetex EVO



## Kinetex EVO C18

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 mechanical strength of the core-shell particle.



# Core-Shell Advantage for UHPLC

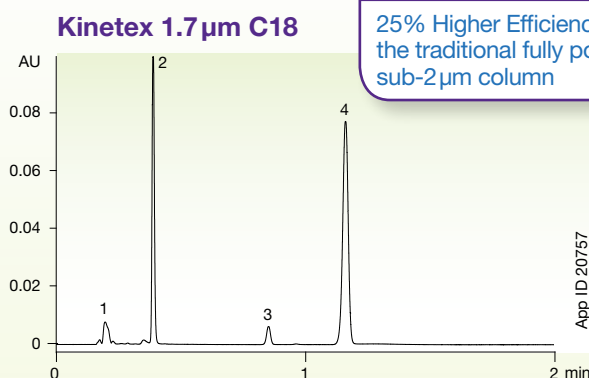
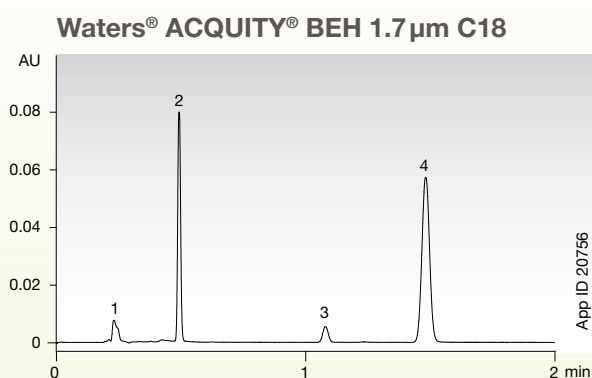


## Get the Most Performance Out of Your UHPLC System

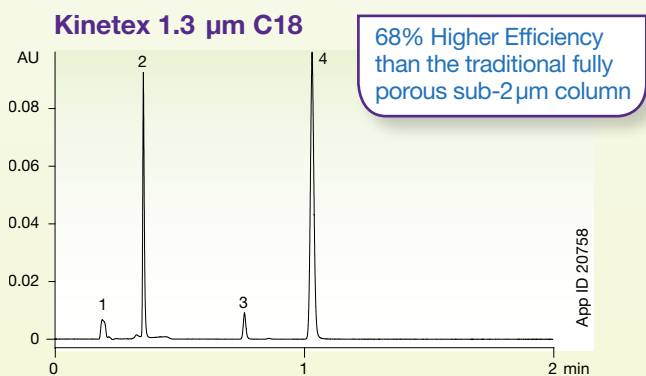
Kinetex 1.3 and 1.7  $\mu\text{m}$  Core-Shell Technology produces increased efficiencies over traditional sub-2  $\mu\text{m}$  columns on the market, yielding remarkable chromatographic resolution, higher peak capacities, and greater sensitivity, so you can get the most out of every UHPLC analysis.



## Incredible Efficiency Gains



25% Higher Efficiency than the traditional fully porous sub-2  $\mu\text{m}$  column



68% Higher Efficiency than the traditional fully porous sub-2  $\mu\text{m}$  column

Easy Installation on UHPLC Systems:  
[www.phenomenex.com/kinetex](http://www.phenomenex.com/kinetex)

### Conditions for all columns:

- Columns:** Kinetex 1.7  $\mu\text{m}$  C18  
Kinetex 1.3  $\mu\text{m}$  C18  
ACQUITY UPLC® BEH 1.7  $\mu\text{m}$  C18
- Dimensions:** 50 x 2.1 mm
- Mobile Phase:** Acetonitrile / Water (50:50)
- Flow Rate:** 0.5 mL/min
- Temperature:** Ambient
- Detection:** UV @ 254 nm
- Instrument:** Waters® ACQUITY® UPLC®
- Sample:** 1. Acetophenone  
2. Benzene  
3. Toluene  
4. Naphthalene



Efficiency calculated from peak 4 in each chromatogram. Waters, ACQUITY, and UPLC are registered trademarks, and BEH Technology is a trademark of Waters Corporation. Phenomenex is not affiliated with Waters Corporation. Comparative separations may not be representative of all applications.

## Column Protection with No Loss in Performance

Trap contaminants and microparticulates within the SecurityGuard ULTRA guard cartridge system and learn how to greatly extend UHPLC column life at:

[www.phenomenex.com/SecurityGuardULTRA](http://www.phenomenex.com/SecurityGuardULTRA)



# Core-Shell Advantage for HPLC and UHPLC



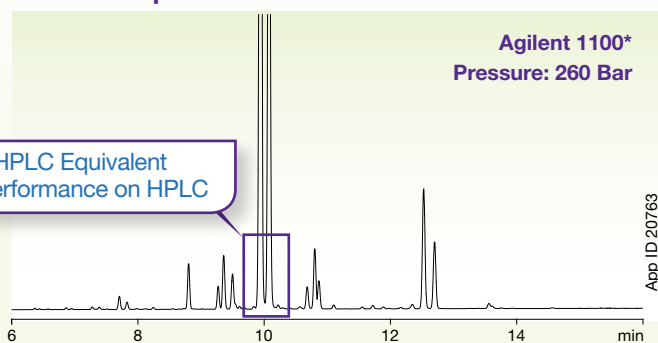
## A Versatile Upgrade for HPLC and UHPLC

On a low volume HPLC or UHPLC system Kinetex 2.6  $\mu\text{m}$  columns will perform like a fully porous sub-2  $\mu\text{m}$  column, providing up to 3x the efficiency of 5  $\mu\text{m}$  and double the efficiency of 3  $\mu\text{m}$  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!

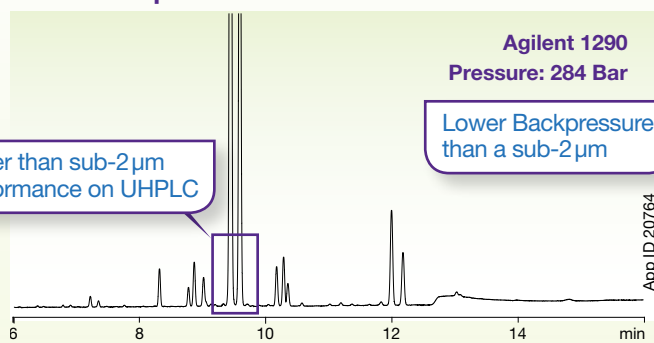


## Sub-2 $\mu\text{m}$ Performance with Kinetex 2.6 $\mu\text{m}$ on HPLC and UHPLC Systems

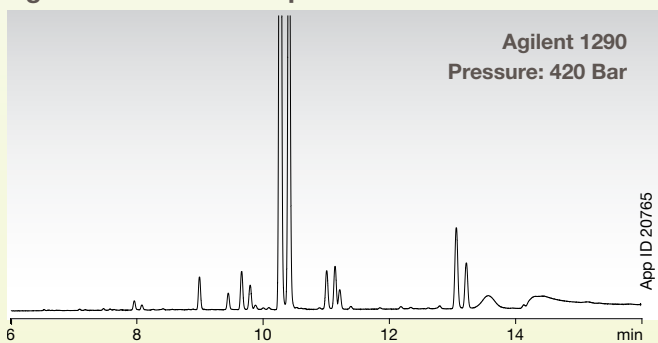
### Kinetex 2.6 $\mu\text{m}$ C18



### Kinetex 2.6 $\mu\text{m}$ C18



### Agilent® ZORBAX® 1.8 $\mu\text{m}$ SB-C18



Conditions for all columns same except where noted:

**Columns:** Kinetex 2.6  $\mu\text{m}$  C18 (Agilent 1100\*)  
Kinetex 2.6  $\mu\text{m}$  C18 (Agilent 1290)  
ZORBAX 1.8  $\mu\text{m}$  SB-C18 (Agilent 1290)

**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. Agilent and ZORBAX are registered trademarks of Agilent Technologies, Inc. Phenomenex is not affiliated with Agilent Technologies. Comparative separations may not be representative of all applications.

## Maximize Performance with Kinetex 2.6 $\mu\text{m}$

Decrease the system dwell volume of your HPLC instrument with the pre-cut tubing and column fittings found in the Core-Shell Performance Enhancement Kit and instantly improve the observed performance of your Kinetex core-shell 2.6  $\mu\text{m}$  column.

[www.phenomenex.com/enhancement](http://www.phenomenex.com/enhancement)



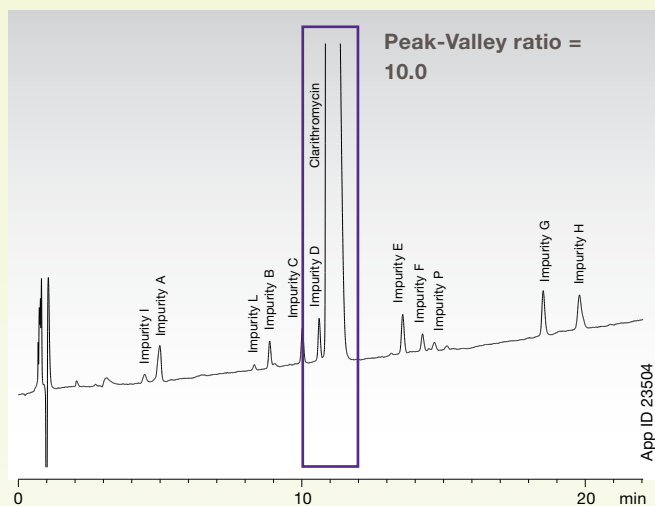
## Instantly Improve Your 3.5 $\mu\text{m}$ Pharmacopoeia Methods

Immediately improve resolution, productivity, and sensitivity of your current 3.5  $\mu\text{m}$  HPLC methods following the requirements of Ph. Eur. or USP with the new Kinetex 3.5  $\mu\text{m}$  core-shell technology. This core-shell particle was developed for use on standard or older model HPLC systems that may have low pressure limitations.

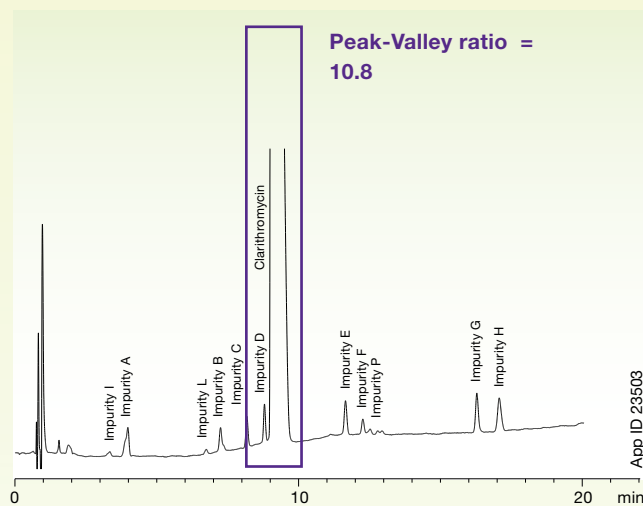


## Clarithromycin according to Ph. Eur. Monograph 1651

### Kromasil<sup>®</sup> 3.5 $\mu\text{m}$ C18



### Kinetex 3.5 $\mu\text{m}$ XB-C18



Using Kinetex 3.5  $\mu\text{m}$  XB-C18 for the Clarithromycin method provides the user with better resolution and narrower peaks for better quantification compared to a fully porous 3.5  $\mu\text{m}$  C18 material.

#### Conditions for both columns:

**Columns:** Kinetex 3.5  $\mu\text{m}$  XB-C18  
Kromasil 3.5  $\mu\text{m}$  C18

**Dimensions:** 100 x 4.6 mm

**Mobile Phase:** A: 4.76 g/L Potassium phosphate pH 4.4  
B: Acetonitrile

Gradient:	Time (min)	% B
	0	25
	32	65
	34	65

**Injection:** 10  $\mu\text{L}$

**Detection:** UV @ 205 nm

**Sample:** Clarithromycin

Kromasil is registered trademark of AkzoNobel Pulp And Performance Chemicals AB. Phenomenex is not affiliated with AkzoNobel. Comparative separations may not be representative of all applications.

## Allowable Adjustments to Pharmacopoeia Methods

Recent revisions of the Ph. Eur. and USP detail what “allowable adjustments” can be made to methods without resorting to revalidation. Find out what changes you are allowed to make by visiting:

[www.phenomenex.com/allowable](http://www.phenomenex.com/allowable)





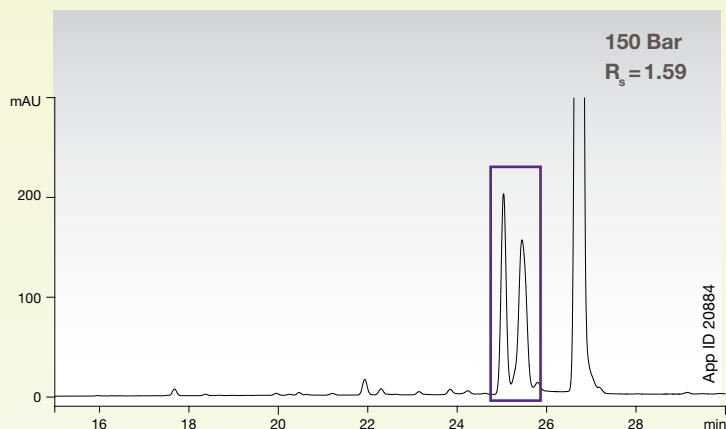
# Core-Shell Advantage for HPLC

## Instantly Improve 5 $\mu$ m and 3 $\mu$ m Methods

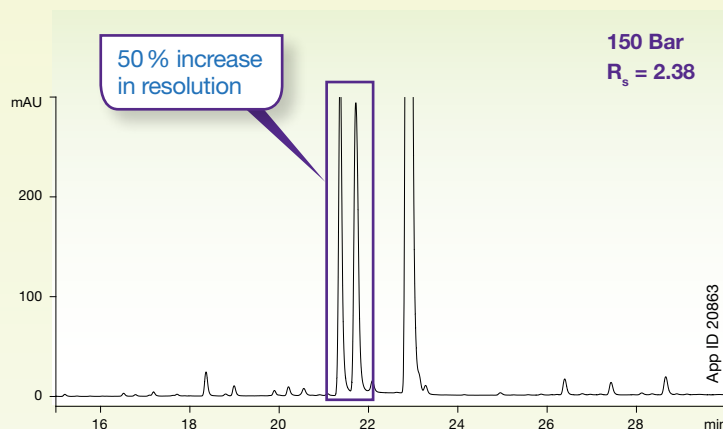
Immediately improve resolution, productivity, and sensitivity of your current 3  $\mu$ m and 5  $\mu$ m HPLC methods with Kinetex 5  $\mu$ m core-shell technology. This core-shell particle was specifically developed for use on standard or older model HPLC systems that may have low pressure limitations.



### GL Sciences Inertsil<sup>®</sup> 5 $\mu$ m ODS-3



### Phenomenex Kinetex 5 $\mu$ m C18



### Critical Advantages of Increased Resolution:

- Save time and money by adjusting method
- Separate critical pairs or difficult mixtures
- Less risk of failing system suitability requirements

#### Conditions for all columns:

**Columns:** Kinetex 5  $\mu$ m C18

Inertsil ODS-3 5  $\mu$ m C18

**Dimensions:** 250 x 4.6 mm

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

B: Acetonitrile with 0.1 % TFA

Gradient:	Time (min)	% B
	0	10
	40	70

**Flow Rate:** 1.0 mL/min

**Temperature:** Ambient

**Detection:** UV @ 210 nm

**Sample:** Pharmaceutical degradation sample

Inertsil is a registered trademark of GL Sciences Inc. Phenomenex is not affiliated with GL Sciences Inc. Comparative separations may not be representative of all applications.

### First and Only Core-Shell Material for Axia<sup>™</sup> Preparative Purifications

Axia packed Kinetex 5  $\mu$ m columns will provide incredible gains in efficiency and performance for any of your Prep LC methods. Learn more online at:

[www.phenomenex.com/kinetexprep](http://www.phenomenex.com/kinetexprep)



## Preparative Column Packing Technology

An advanced preparative column packing and hardware design, Axia incorporates patented Hydraulic Piston Compression technology that offers increased sorbent bed density and eliminates media bed collapse as a source of premature column failure in preparative HPLC columns.

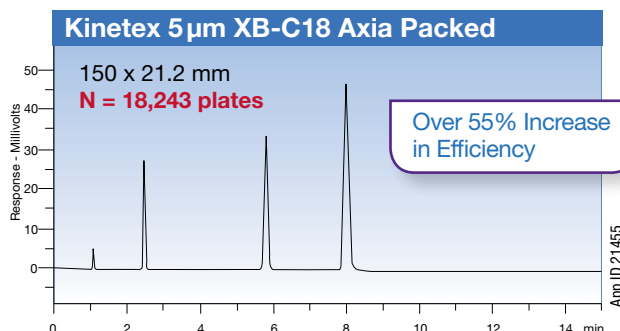
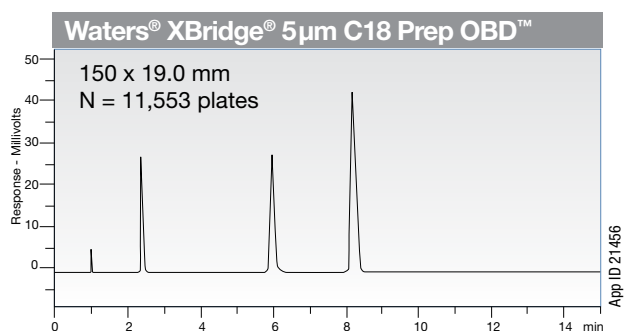
Unlike traditional column packing methods, the Axia packing method is completely automated and monitored by multiple sensors to allow for measurement and recording of all process parameters for every column. The result is a vastly improved packing process that offers the following benefits:

- Extended column lifetimes
- Improved reproducibility: Column-to-Column and Batch-to-Batch
- Efficiencies and peak symmetries on par with analytical separations
- Increased column stability under high flow rates



## Higher Efficiency!

Start with sharper peaks by taking advantage of the high efficiencies of Kinetex 5 µm Axia preparative columns.



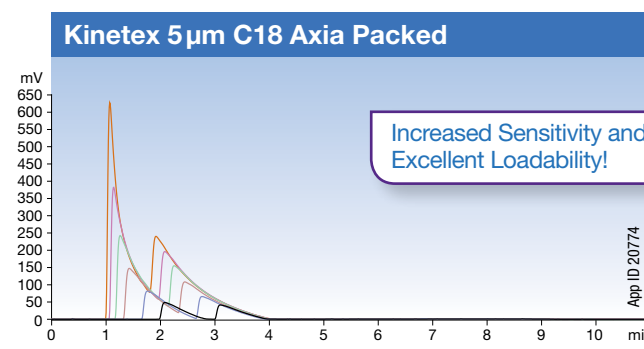
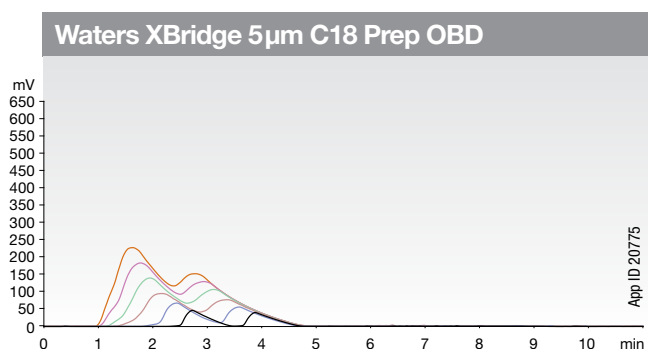
**Conditions for both columns:**  
**Columns:** Kinetex 5 µm XB-C18 Axia Packed  
 XBridge 5 µm C18 Prep OBD  
**Dimensions:** 150 x 21.2 mm (Kinetex)  
 150 x 19 mm (XBridge)  
**Mobile Phase:** Water/ Acetonitrile (50:50)  
**Injection Volume:** 10 µL

**Flow Rate:** 25 mL/min  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 1. Uracil  
 2. Acetophenone  
 3. Toluene  
 4. Naphthalene



## Excellent Loadability!

With narrower peak widths than fully porous columns across every sample load, Axia packed Kinetex 5 µm columns give you the capability of increased sample load and higher throughput for vastly improved purification performance and economics.



**Conditions for both columns:**  
**Columns:** Kinetex 5 µm C18 Axia Packed  
 XBridge 5 µm C18 Prep OBD  
**Dimensions:** 50 x 21.2 mm (Kinetex)  
 50 x 19 mm (XBridge)  
**Mobile Phase:** A: Water with 0.5 % Formic acid  
 B: Acetonitrile with 0.5 % Formic acid  
**Gradient:**

Time (min)	% B
0	20
8	50
11	50

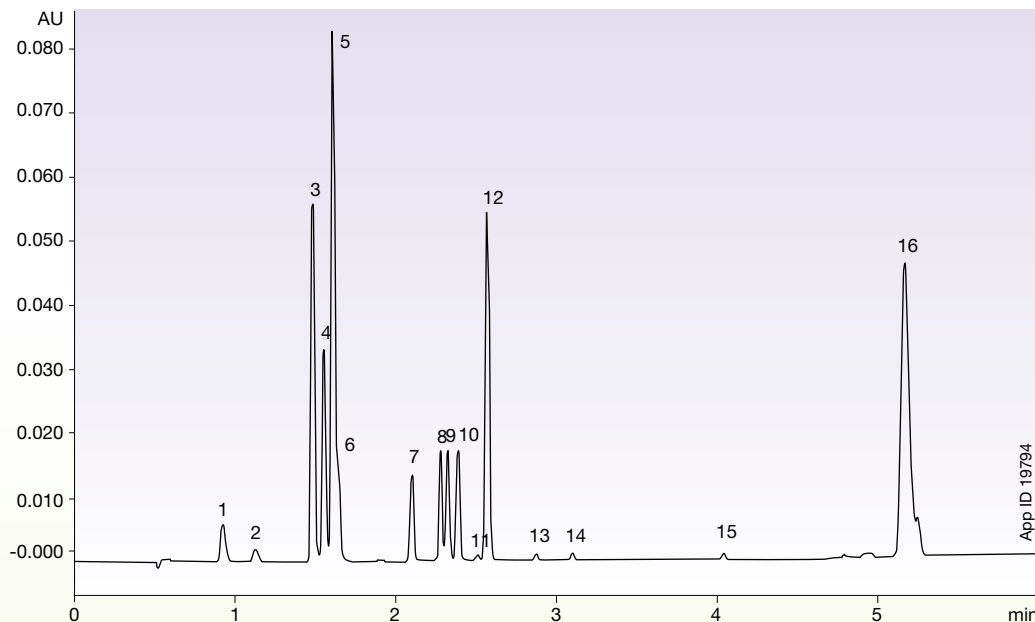
**Flow Rate:** 30 mL/min  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 200 mg/mL in DMSO  
 1. Doxepin (From 1 - 500 mg on-column)  
 2. Amitriptyline (From 1 - 500 mg on-column)

Waters and XBridge are registered trademarks of Waters Corp. OBD is a trademark of Waters Corp. Phenomenex is in no way affiliated with Waters Corp. Comparative separations may not be representative of all applications.

# Significant Cost Savings with Kinetex Core-Shell Columns



Reduce Runtimes, Increase Productivity, and Cut Costs Today



**Column:** Kinetex 1.7 µm C18  
**Dimensions:** 100 x 2.1 mm  
**Part No.:** 00D-4475-AN  
**Mobile Phase:** A: 5 mM Ammonium formate pH 3.25 / Acetonitrile (95:5)  
 B: 5 mM Ammonium formate pH 3.25 / Acetonitrile (10:90)  
**Gradient:**

Time (min)	% B
0.0	30
1.5	50
3.0	56.3
5.0	95
6.0	95
6.1	30

**Flow Rate:** 0.4 mL/min  
**Temperature:** 50 °C  
**Detection:** PDA 210-300 nm, extracted channel 280 nm  
**Instrument:** Waters® ACQUITY® equipped with PDA

**Sample:** 1. Antidepressant drug (containing an HCl salt)  
 2. Hormone therapy #1 (containing a salt)  
 3. SERM drug (containing basic functional group)  
 4. CNS drug (containing basic functional group)  
 5. PPI drug (containing basic functional group)  
 6. CNS drug (containing basic functional group)  
 7. CNS drug (containing basic functional group)  
 8. Hormone therapy #2 (neutral)  
 9. Oral contraceptive hormone #1 (neutral)  
 10. Hormone therapy #3 (neutral)  
 11. Oral contraceptive hormone #2 (neutral)  
 12. Hormone therapy #4 (neutral)  
 13. Oral contraceptive hormone (neutral)  
 14. Hormone therapy #5 (neutral)  
 15. Hormone therapy #6 (acetate salt of 14)  
 16. Immunosuppressant drug (macromolecule, containing basic functional group)

Waters and ACQUITY are registered trademarks of Waters Corporation. Phenomenex is not affiliated with Waters Corporation.

It has been shown that the **1.7 µm Kinetex 100 x 2.1 mm column** was capable of resolving 16 different chemical entities with a 6 minute run time. This new analytical method will be used to replace 16 older methods thereby facilitating an **annualised cost saving for the site of €320,000 (\$346,000 USD)**.

A. Charles, et. al., Pfizer Grange Castle,  
 Grange Castle Business Park, Clondalkin,  
 Dublin Republic of Ireland

# Core-Shell Fits Your System



## Typical UHPLC Instrumentation



### Kinetex on Agilent® 1290



### Kinetex on JASCO® X-LC



### Kinetex on Shimadzu® Nexera®



### Kinetex on Waters® ACQUITY UPLC®



# Core-Shell Fits Your System



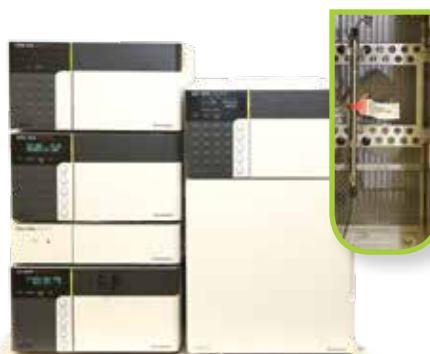
## Typical HPLC Instrumentation



### Kinetex on Agilent® 1100



### Kinetex on Shimadzu® Prominence® LC-20A



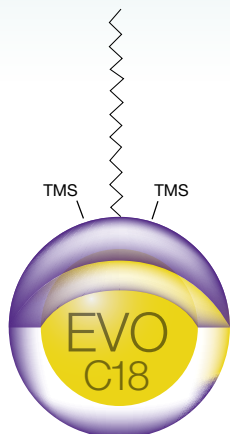
### Kinetex on Waters® Alliance®



### Kinetex on Gilson® HPLC



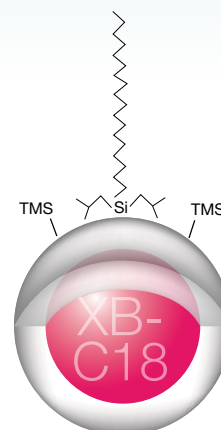
## Kinetex EVO C18



Available in: 1.7  $\mu\text{m}$ , 2.6  $\mu\text{m}$  and 5  $\mu\text{m}$

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

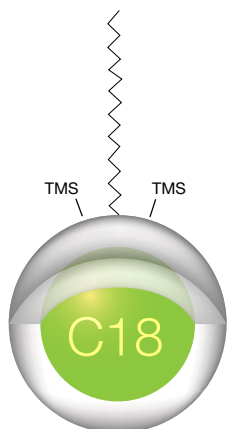
## Kinetex XB-C18



Available in: 1.7  $\mu\text{m}$ , 2.6  $\mu\text{m}$ , 3.5  $\mu\text{m}$  and 5  $\mu\text{m}$

This unique C18 phase yields increased hydrogen bonding with hydrophobic selectivity, resulting in improved peak shape for basic compounds and increased retention of acidic compounds.

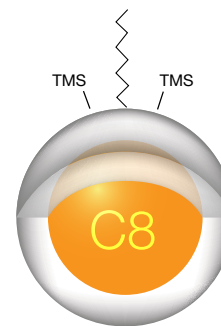
## Kinetex C18



Available in: 1.3  $\mu\text{m}$ , 1.7  $\mu\text{m}$ , 2.6  $\mu\text{m}$  and 5  $\mu\text{m}$

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

## Kinetex C8

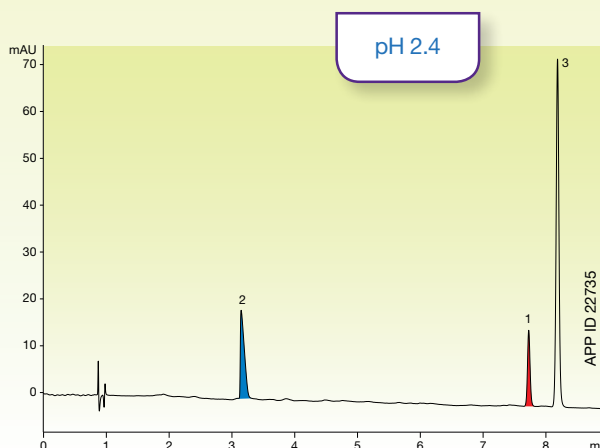


Available in: 1.7  $\mu\text{m}$ , 2.6  $\mu\text{m}$  and 5  $\mu\text{m}$

Moderate hydrophobic and steric selectivity is offered, bringing ultra-high performance to USP L7 and other octyl silane methods.

## pH Selectivity

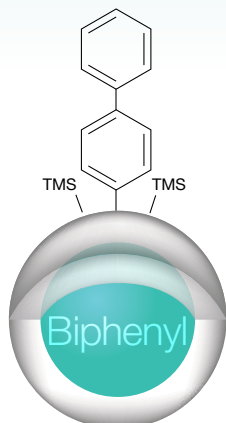
With excellent performance across a large pH range, Kinetex EVO C18 columns allow you to transform chromatograms and manipulate retention order, no matter the combination of compound functionalities. Now is your chance to break the mold and let your creative LC side flourish.



### Conditions for all columns:

- Column:** Kinetex 5  $\mu\text{m}$  EVO C18
- Dimensions:** 150 x 4.6 mm
- Part No.:** 00F-4633-E0
- Mobile Phase:** A: 20 mM Potassium phosphate  
B: Acetonitrile
- Gradient:** 20-75 % B in 10 minutes
- Flow Rate:** 1.5 mL/min
- Temperature:** 30  $^{\circ}\text{C}$
- Detection:** UV @ 254 nm
- Sample:** 1. Ibuprofen  
2. Diphenhydramine  
3. Ethyl Benzene

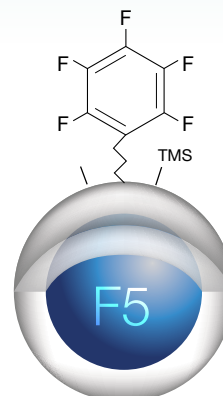
## Kinetex Biphenyl



Available in: 1.7  $\mu\text{m}$ , 2.6  $\mu\text{m}$  and 5  $\mu\text{m}$

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

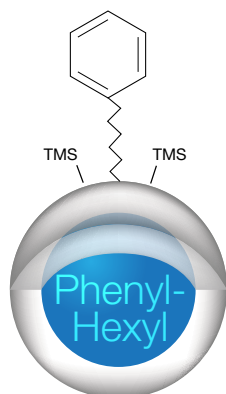
## Kinetex F5



Available in: 1.7  $\mu\text{m}$  and 2.6  $\mu\text{m}$

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

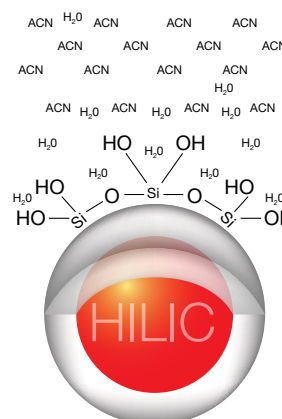
## Kinetex Phenyl-Hexyl



Available in: 1.7  $\mu\text{m}$ , 2.6  $\mu\text{m}$  and 5  $\mu\text{m}$

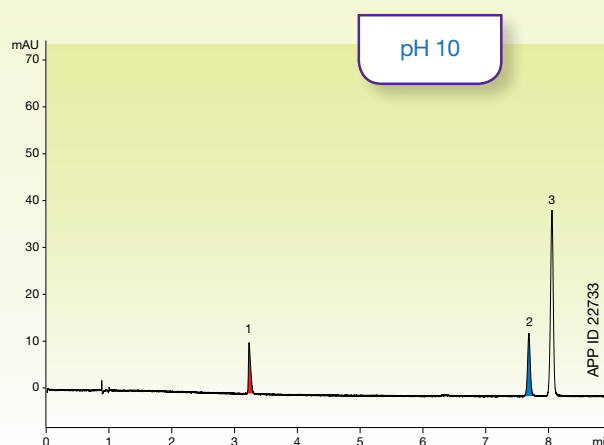
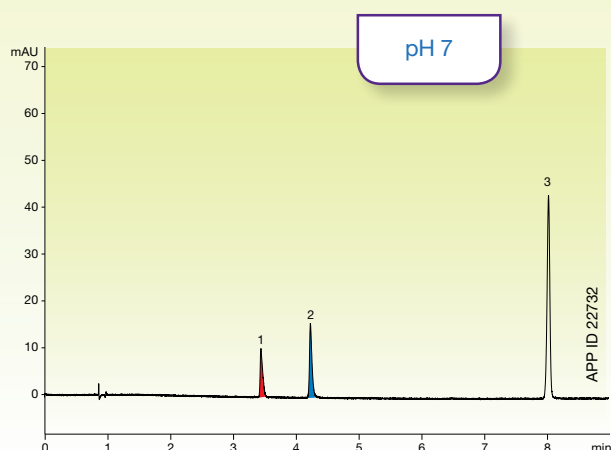
Aromatic and moderate hydrophobic selectivity result in the great retention and separation of aromatic hydrocarbons.

## Kinetex HILIC

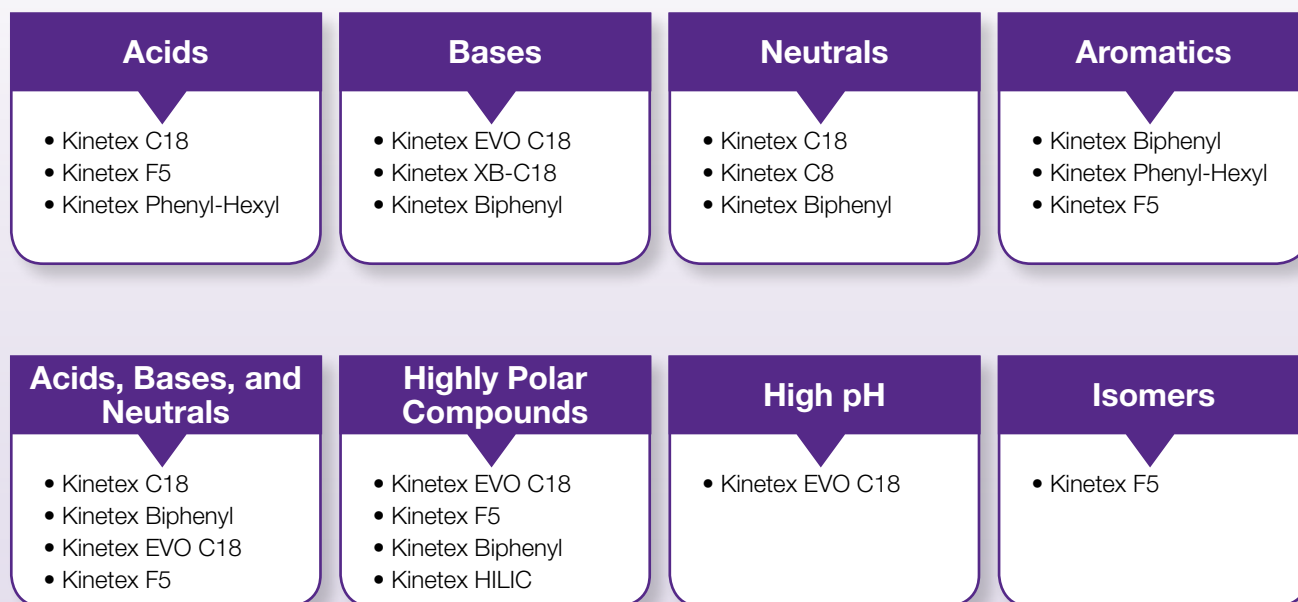


Available in: 1.7  $\mu\text{m}$ , 2.6  $\mu\text{m}$  and 5  $\mu\text{m}$

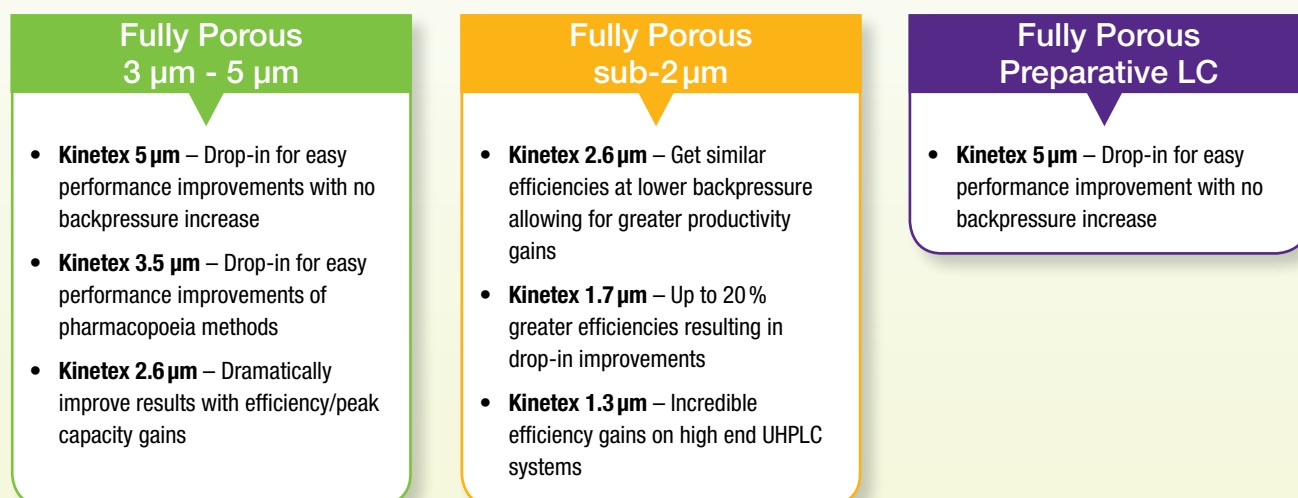
Used under HILIC running conditions, this phase provides the highest polar selectivity for retention and separation of hydrophilic compounds.



## Recommended Selectivities If You're Working With:



## Upgrading Your Fully Porous Methods:





# Simple Selection of the Suitable Column

	5 μm	3.5 μm	2.6 μm	1.7 μm	1.3 μm
UHPLC					
HPLC					
PREP LC					

Phase	Best Use	pH Stability	Available Particle Size(s)				
<b>EVO C18</b>	Robust reversed phase methods even in alkaline conditions with improved peak shape for polar basic compounds	1 - 12	5 μm	2.6 μm	1.7 μm		
<b>C18</b>	All purpose phase that offers the hydrophobic retention and methylene selectivity chromatographers expect from a C18 column	1.5 - 8.5*	5 μm	2.6 μm	1.7 μm	1.3 μm	
<b>XB-C18</b>	C18 phase with protective butyl side chains for improved peak shape for basic compounds under neutral and acidic conditions	1.5 - 8.5*	5 μm	3.5 μm	2.6 μm	1.7 μm	
<b>C8</b>	USP L7 phase that provides less hydrophobic and methylene selectivity than a C18	1.5 - 8.5*	5 μm	2.6 μm	1.7 μm		
<b>F5</b>	Highly reproducible pentafluorophenyl propyl phase that offers a unique combination of polar, hydrophobic, aromatic, and shape selectivity	1.5 - 8.5		2.6 μm	1.7 μm		
<b>Biphenyl</b>	100% aqueous stable and allows for excellent reversed phase retention and enhanced polar and aromatic selectivity	1.5 - 8.5*	5 μm	2.6 μm	1.7 μm		
<b>Phenyl-Hexyl</b>	Reversed phase chemistry that allows for greater retention and separation of aromatic hydrocarbons	1.5 - 8.5*	5 μm	2.6 μm	1.7 μm		
<b>HILIC</b>	Unbonded silica phase for HILIC conditions to provide selectivity for polar compounds	2.0 - 7.5	5 μm	2.6 μm	1.7 μm		

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

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.

#### 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 Phase:** A: Water  
B: Acetonitrile

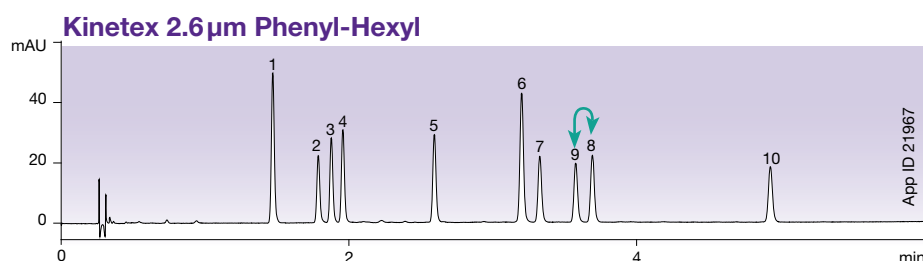
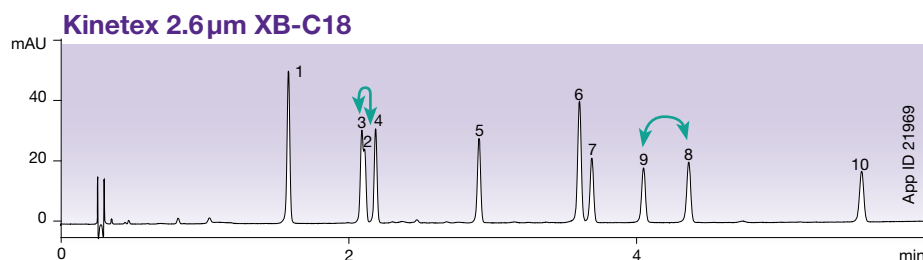
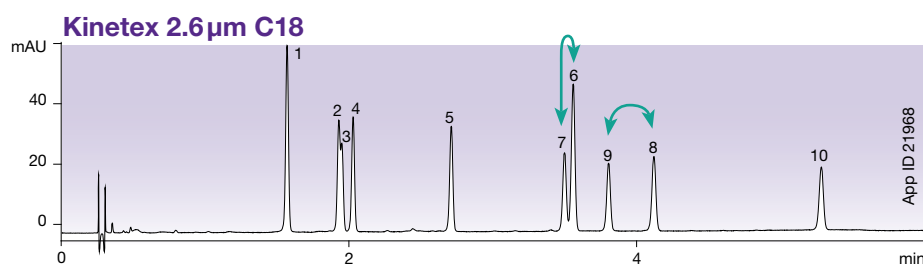
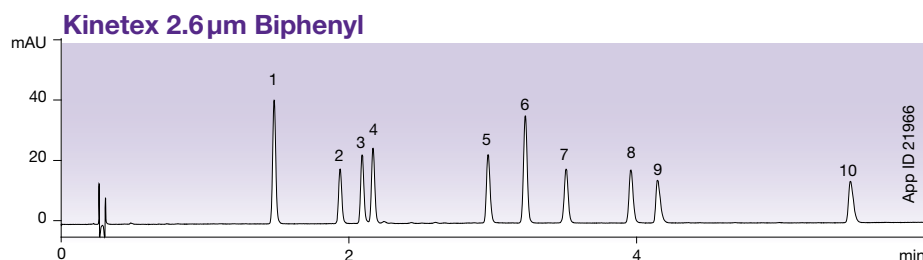
**Gradient:** 20 to 60 % B in 6 minutes

**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



# Ordering Information

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
<b>EVO C18</b>	00A-4633-AN	00B-4633-AN	00D-4633-AN	00F-4633-AN	AJO-9298
<b>Biphenyl</b>	00A-4627-AN	00B-4627-AN	00D-4627-AN	—	AJO-9209
<b>XB-C18</b>	00A-4605-AN	00B-4605-AN	00D-4605-AN	—	AJO-8782
<b>C18</b>	00A-4601-AN	00B-4601-AN	00D-4601-AN	00F-4601-AN	AJO-8782
<b>C8</b>	—	00B-4608-AN	00D-4608-AN	—	AJO-8784
<b>Phenyl-Hexyl</b>	—	00B-4603-AN	00D-4603-AN	—	AJO-8788

for 2.1 mm ID

5 µm MidBore™ Columns (mm)				SecurityGuard™ ULTRA Cartridges <sup>‡</sup>
Phases	50 x 3.0	100 x 3.0	150 x 3.0	3/pk
<b>EVO C18</b>	00B-4633-YO	00D-4633-YO	00F-4633-YO	AJO-9297
<b>Biphenyl</b>	00B-4627-YO	00D-4627-YO	00F-4627-YO	AJO-9208
<b>XB-C18</b>	00B-4605-YO	00D-4605-YO	00F-4605-YO	AJO-8775
<b>C18</b>	00B-4601-YO	00D-4601-YO	00F-4601-YO	AJO-8775
<b>C8</b>	00B-4608-YO	00D-4608-YO	—	AJO-8777
<b>Phenyl-Hexyl</b>	00B-4603-YO	00D-4603-YO	—	AJO-8781

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
<b>EVO C18</b>	00B-4633-E0	00D-4633-E0	00F-4633-E0	00G-4633-E0	AJO-9296
<b>Biphenyl</b>	00B-4627-E0	00D-4627-E0	00F-4627-E0	00G-4627-E0	AJO-9207
<b>XB-C18</b>	00B-4605-E0	00D-4605-E0	00F-4605-E0	00G-4605-E0	AJO-8768
<b>C18</b>	00B-4601-E0	00D-4601-E0	00F-4601-E0	00G-4601-E0	AJO-8768
<b>C8</b>	00B-4608-E0	00D-4608-E0	00F-4608-E0	00G-4608-E0	AJO-8770
<b>Phenyl-Hexyl</b>	00B-4603-E0	00D-4603-E0	00F-4603-E0	00G-4603-E0	AJO-8774

for 4.6 mm ID

5 µm Semi-Preparative Columns (mm)			SecurityGuard™ SemiPrep Cartridges***
Phases	150 x 10	250 x 10	10 x 10
<b>C18</b>	00F-4601-NO	00G-4601-NO	AJO-9278
<b>Biphenyl</b>	00F-4627-NO	00G-4627-NO	AJO-9280

for 10 mm ID

5 µm Axia™ Packed Preparative Columns (mm)					SecurityGuard™ PREP Cartridges*
Phases	50 x 21.2	100 x 21.2	150 x 21.2	250 x 21.2	15 x 21.2
<b>EVO C18</b>	00B-4633-P0-AX	00D-4633-P0-AX	00F-4633-P0-AX	00G-4633-P0-AX	AJO-9304
<b>Biphenyl</b>	00B-4627-P0-AX	00D-4627-P0-AX	00F-4627-P0-AX	00G-4627-P0-AX	AJO-9272
<b>XB-C18</b>	00B-4605-P0-AX	00D-4605-P0-AX	00F-4605-P0-AX	00G-4605-P0-AX	AJO-9145
<b>C18</b>	00B-4601-P0-AX	00D-4601-P0-AX	00F-4601-P0-AX	00G-4601-P0-AX	AJO-9145
<b>C8</b>	00B-4608-P0-AX	00D-4608-P0-AX	00F-4608-P0-AX	00G-4608-P0-AX	AJO-9205
<b>Phenyl-Hexyl</b>	00B-4603-P0-AX	00D-4603-P0-AX	00F-4603-P0-AX	00G-4603-P0-AX	AJO-9147
<b>HILIC</b>	—	00D-4606-P0-AX	00F-4606-P0-AX	00G-4606-P0-AX	AJO-9277

for 21.2 mm ID

5 µm Axia Packed Preparative Columns (mm)					SecurityGuard™ PREP Cartridges**
Phases	50 x 30	100 x 30	150 x 30	250 x 30	15 x 30
<b>EVO C18</b>	00B-4633-U0-AX	00D-4633-U0-AX	00F-4633-U0-AX	00G-4633-U0-AX	AJO-9305
<b>Biphenyl</b>	—	—	00F-4627-U0-AX	—	AJO-9273
<b>XB-C18</b>	00B-4605-U0-AX	00D-4605-U0-AX	00F-4605-U0-AX	00G-4605-U0-AX	AJO-9204
<b>C18</b>	00B-4601-U0-AX	00D-4601-U0-AX	00F-4601-U0-AX	00G-4601-U0-AX	AJO-9204
<b>C8</b>	00B-4608-U0-AX	00D-4608-U0-AX	00F-4608-U0-AX	00G-4608-U0-AX	AJO-9217
<b>Phenyl-Hexyl</b>	00B-4603-U0-AX	00D-4603-U0-AX	00F-4603-U0-AX	00G-4603-U0-AX	AJO-9216

for 30 mm ID

## Protect Your LC Investment!

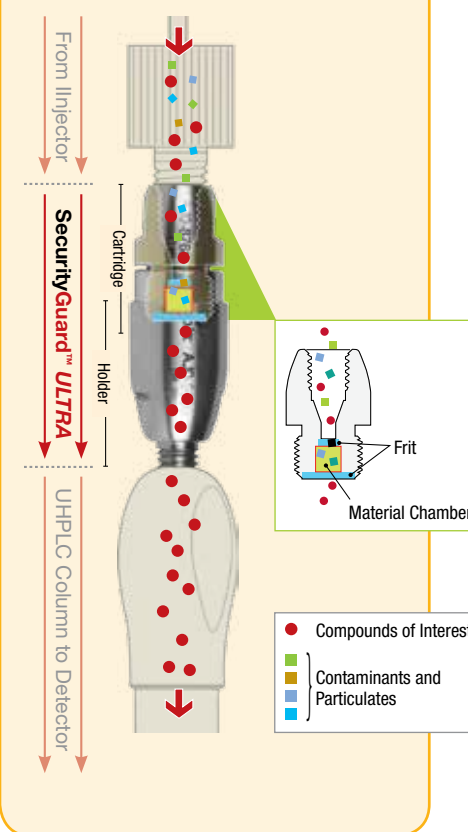


Protect your Kinetex LC columns from contaminants and extend their lifetime.

[www.phenomenex.com/guardit](http://www.phenomenex.com/guardit)



SecurityGuard ULTRA Guard Cartridge System (Cartridge connected to Holder)



<sup>‡</sup> SecurityGuard ULTRA Cartridges require holder, Part No.: AJO-9000

\* 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

3.5 µm Analytical Columns (mm)			SecurityGuard ULTRA Cartridges <sup>†</sup>
Phases	100 x 4.6	150 x 4.6	3/pk
<b>XB-C18</b>	00D-4744-E0	00F-4744-E0	AJO-8768 for 4.6 mm ID

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
<b>EVO C18</b>	00A-4725-AN	00B-4725-AN	—	00D-4725-AN	00F-4725-AN	AJO-9298
<b>F5</b>	00A-4723-AN	00B-4723-AN	—	00D-4723-AN	00F-4723-AN	AJO-9322
<b>Biphenyl</b>	00A-4622-AN	00B-4622-AN	—	00D-4622-AN	00F-4622-AN	AJO-9209
<b>XB-C18</b>	00A-4496-AN	00B-4496-AN	00C-4496-AN	00D-4496-AN	00F-4496-AN	AJO-8782
<b>C18</b>	00A-4462-AN	00B-4462-AN	00C-4462-AN	00D-4462-AN	00F-4462-AN	AJO-8782
<b>C8</b>	00A-4497-AN	00B-4497-AN	00C-4497-AN	00D-4497-AN	00F-4497-AN	AJO-8784
<b>HILIC</b>	00A-4461-AN	00B-4461-AN	00C-4461-AN	00D-4461-AN	00F-4461-AN	AJO-8786
<b>Phenyl-Hexyl</b>	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
<b>EVO C18</b>	—	00B-4725-Y0	—	00D-4725-Y0	00F-4725-Y0	AJO-9297
<b>F5</b>	—	00B-4723-Y0	—	00D-4723-Y0	00F-4723-Y0	AJO-9321
<b>Biphenyl</b>	—	00B-4622-Y0	—	00D-4622-Y0	00F-4622-Y0	AJO-9208
<b>XB-C18</b>	00A-4496-Y0	00B-4496-Y0	00C-4496-Y0	00D-4496-Y0	00F-4496-Y0	AJO-8775
<b>C18</b>	00A-4462-Y0	00B-4462-Y0	00C-4462-Y0	00D-4462-Y0	00F-4462-Y0	AJO-8775
<b>C8</b>	00A-4497-Y0	00B-4497-Y0	00C-4497-Y0	00D-4497-Y0	00F-4497-Y0	AJO-8777
<b>HILIC</b>	00A-4461-Y0	—	—	—	00F-4461-Y0	AJO-8779
<b>Phenyl-Hexyl</b>	—	00B-4495-Y0	—	00D-4495-Y0	00F-4495-Y0	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	3/pk
<b>EVO C18</b>	—	00B-4725-E0	—	00D-4725-E0	00F-4725-E0	AJO-9296
<b>F5</b>	—	00B-4723-E0	—	00D-4723-E0	00F-4723-E0	AJO-9320
<b>Biphenyl</b>	—	00B-4622-E0	—	00D-4622-E0	00F-4622-E0	AJO-9207
<b>XB-C18</b>	—	00B-4496-E0	00C-4496-E0	00D-4496-E0	00F-4496-E0	AJO-8768
<b>C18</b>	00A-4462-E0	00B-4462-E0	00C-4462-E0	00D-4462-E0	00F-4462-E0	AJO-8768
<b>C8</b>	—	00B-4497-E0	00C-4497-E0	00D-4497-E0	00F-4497-E0	AJO-8770
<b>HILIC</b>	—	00B-4461-E0	00C-4461-E0	00D-4461-E0	00F-4461-E0	AJO-8772
<b>Phenyl-Hexyl</b>	—	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
<b>EVO C18</b>	—	00B-4726-AN	00D-4726-AN	00F-4726-AN	AJO-9298
<b>F5</b>	—	00B-4722-AN	00D-4722-AN	00F-4722-AN	AJO-9322
<b>Biphenyl</b>	—	00B-4628-AN	00D-4628-AN	00F-4628-AN	AJO-9209
<b>XB-C18</b>	00A-4498-AN	00B-4498-AN	00D-4498-AN	00F-4498-AN	AJO-8782
<b>C18</b>	00A-4475-AN	00B-4475-AN	00D-4475-AN	00F-4475-AN	AJO-8782
<b>C8</b>	00A-4499-AN	00B-4499-AN	00D-4499-AN	00F-4499-AN	AJO-8784
<b>HILIC</b>	00A-4474-AN	00B-4474-AN	00D-4474-AN	—	AJO-8786
<b>Phenyl-Hexyl</b>	—	00B-4500-AN	00D-4500-AN	00F-4500-AN	AJO-8788

for 2.1 mm ID

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
<b>XB-C18</b>	00A-4498-Y0	00B-4498-Y0	00D-4498-Y0	AJO-8775
<b>C18</b>	—	00B-4475-Y0	00D-4475-Y0	AJO-8775
<b>C8</b>	00A-4499-Y0	00B-4499-Y0	00D-4499-Y0	AJO-8777
<b>HILIC</b>	—	00B-4474-Y0	—	AJO-8779

for 3.0 mm ID

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

<sup>†</sup> SecurityGuard ULTRA Cartridges require holder, Part No.: AJO-9000

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If you are not completely satisfied with Kinetex core-shell columns, return the column(s) and comparative data within 45 days for a FULL REFUND.

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Comparative separations may not be representative of all applications.

Axial column and packing technology is patented by Phenomenex. U.S. Patent No. 7,674,383

Kinetex EVO is patented by Phenomenex. U.S. Patent Nos. 7,563,367 and 8,658,038 and foreign counterparts.

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

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