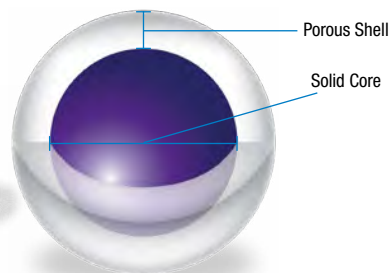
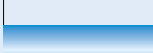
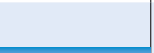
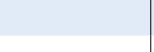
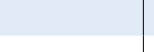


Performance Gains on Any LC System

- 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



Complete scalable solution from UHPLC to HPLC to PREP LC

	UHPLC	HPLC	PREP	
				Incredible UHPLC efficiency and performance gains
				20 % higher efficiency than fully porous 1.7 µm columns
				Achieve sub-2 µm performance on HPLC and UHPLC systems
				Instantly improve your pharmacopoeia (Ph. Eur. & USP) monograph methods that require 3.5 µm particle size
				3 µm or better efficiencies at 5 µm pressures for HPLC and PREP LC methods



For more information on Kinetex PREP LC applications, see p. 391

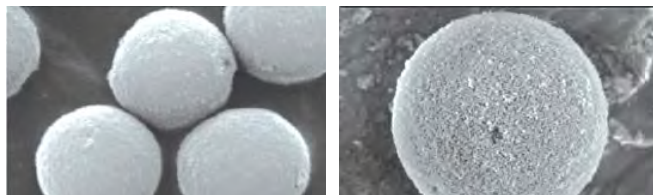


Kinetex has earned the Gold Seal of Quality!
Learn more at:
www.phenomenex.com/Kinetex

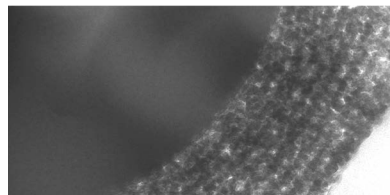
Innovation in Particle Technology

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

SEM of Kinetex Core-Shell Particles



Cross Section of Kinetex Core-Shell Particle



Optimized for Ultra-High Performance

High Efficiency, High Density Particle

Kinetex particles are built with a solid high density core that promotes the particles to settle into an optimal bed structure. This reduces the band broadening effects of Eddy Diffusion since the interstitial space between the particles is virtually homogeneous and results in ultra-high column efficiency and excellent reproducibility.

High Efficiency over Extended Range of Flow Rates

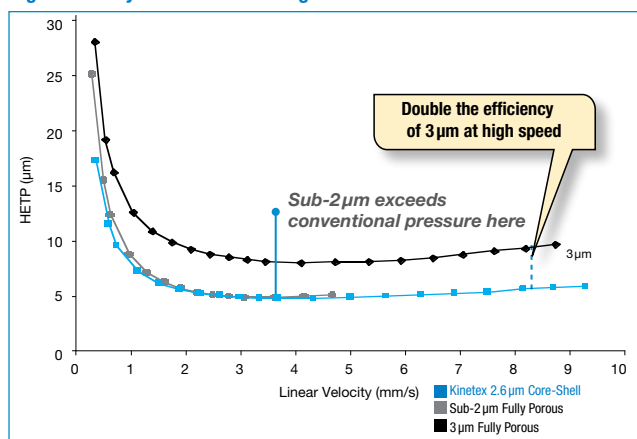
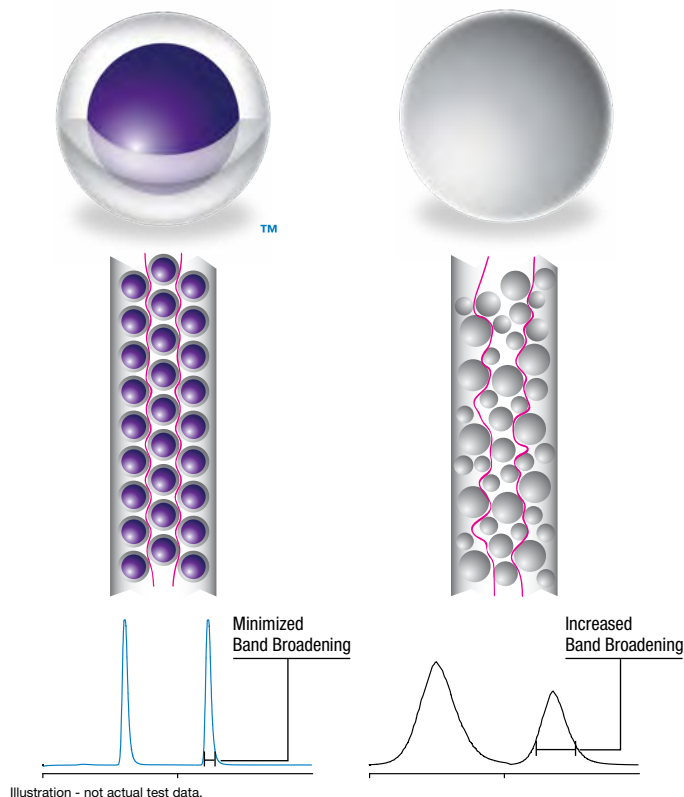


Illustration of Eddy Diffusion Effects

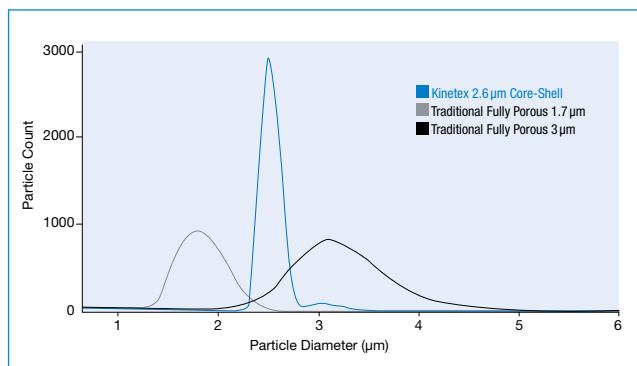
Kinetex Core-Shell

Fully Porous

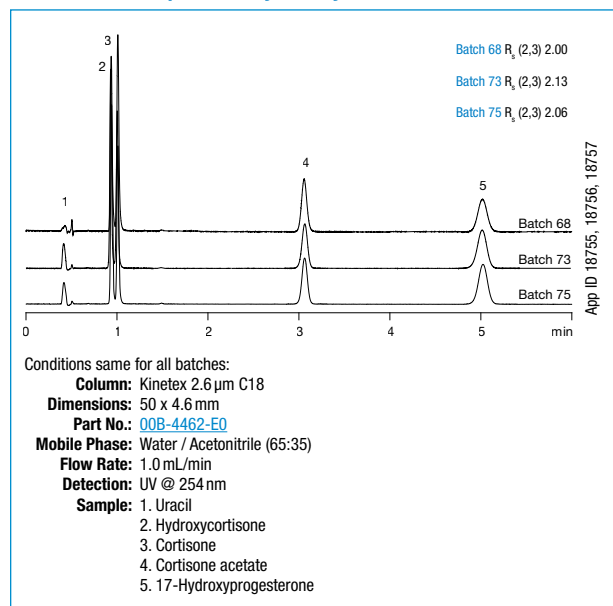


Kinetex particles are nearly monodispersed. This extremely narrow particle size distribution results in increased column efficiency and excellent reproducibility.

Uniform Particle Size Distribution

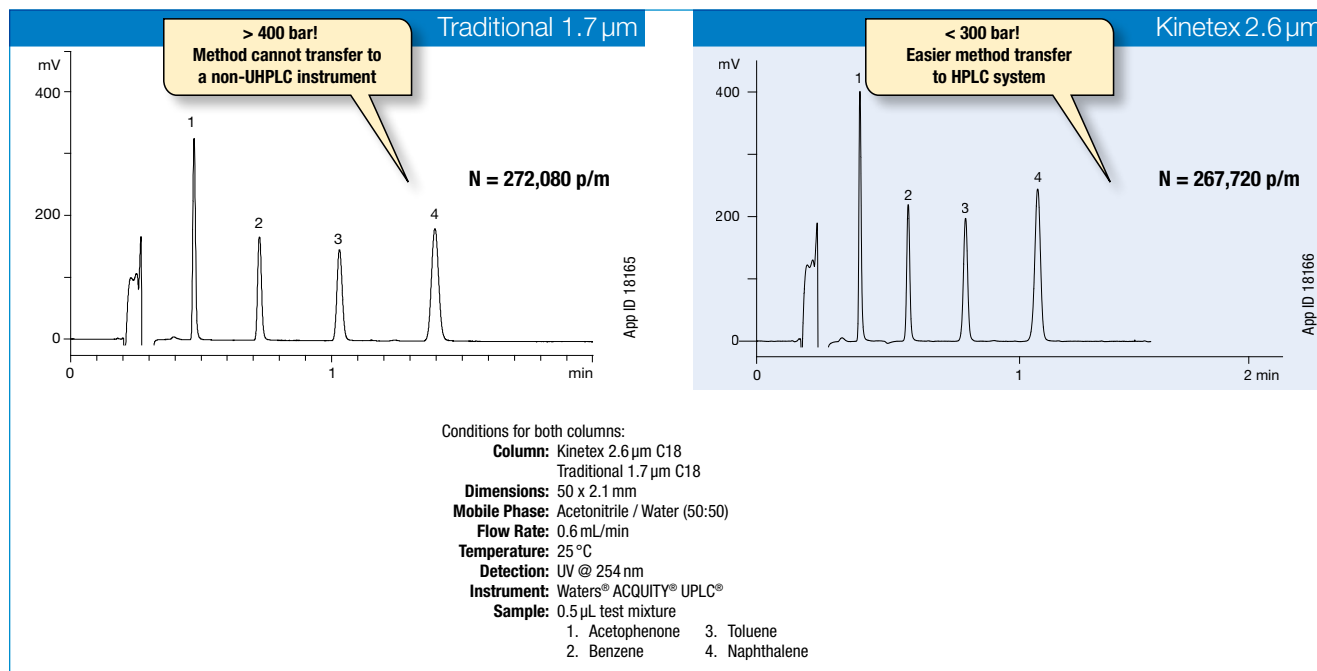


Batch-to-Batch Reproducibility Overlay



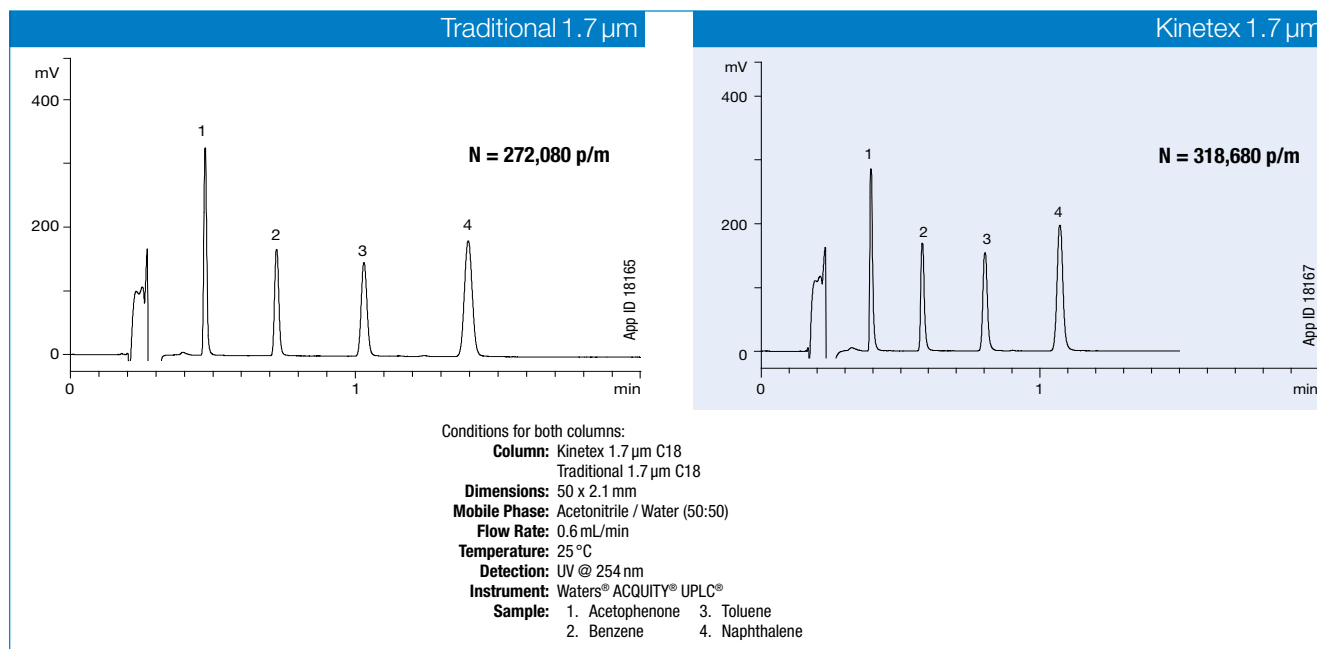
Achieve Sub-2 μ m Performance within HPLC Backpressure Limitations

With the efficiency of a sub-2 μ m column and typical operating backpressure less than 400 bar[†], you can achieve the promise of ultra-high performance on **any** LC system.



Unparalleled Levels of Ultra-High Performance

For users of higher pressure capable instruments who want increased levels of efficiency, we offer the Kinetex 1.7 μ m column—the first sub-2 μ m core-shell particle to be available on the market.

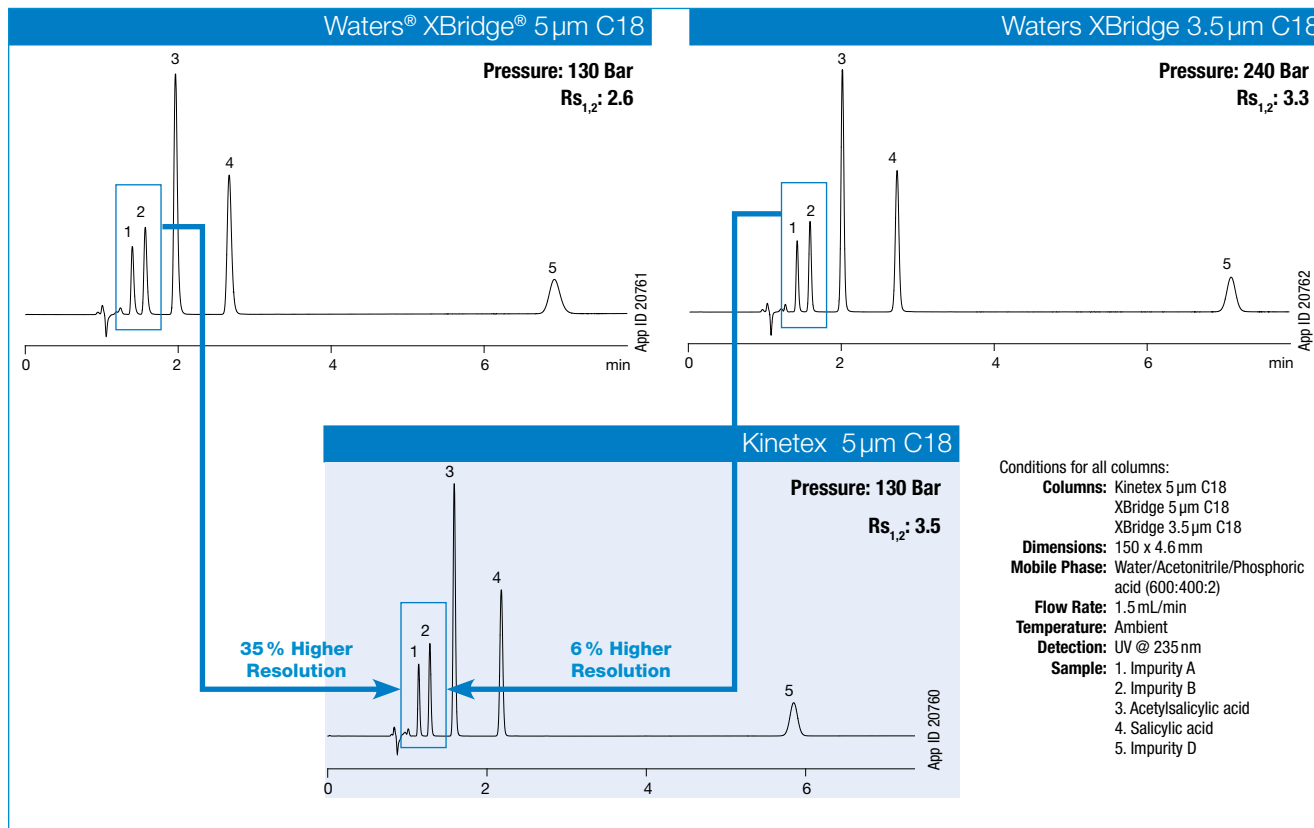


[†] Kinetex 2.6 μ m columns, 2.1 mm ID, are pressure rated to 1000 bar use on both HPLC and UHPLC instrumentation.

Comparative separations may not be representative of all applications.

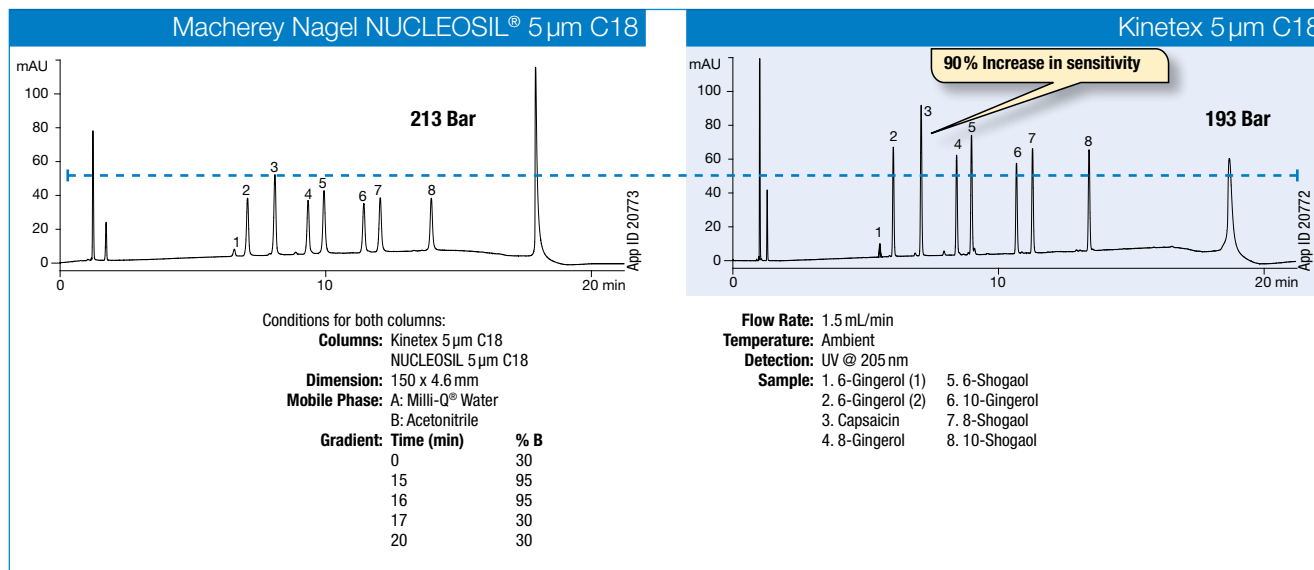
Higher Resolution with No Pressure Increase

Replace traditional 3 and 5 μm columns with Kinetex 5 μm core-shell columns for immediate improvements in resolution, productivity, and sensitivity.



Enhanced Sensitivity at 5 μm Pressure

Kinetex 5 μm core-shell columns easily provide enhanced sensitivity on any HPLC system without an increase in backpressure.



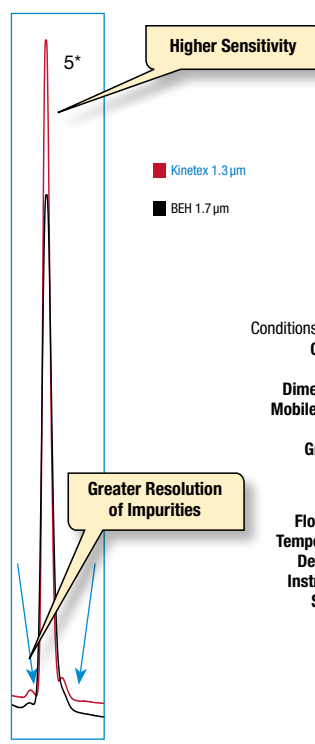
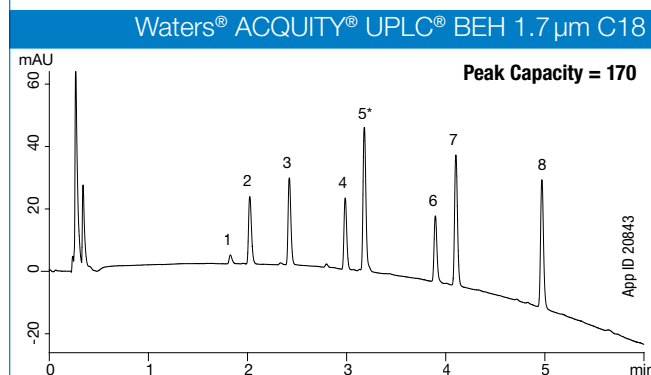
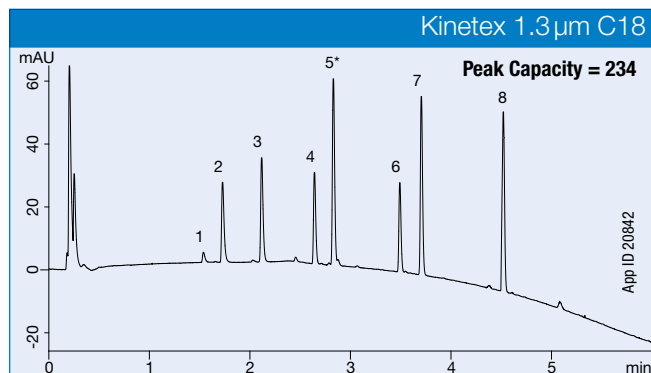
Comparative separations may not be representative of all applications.

Get the Most Performance Out of Your UHPLC System

Kinetex 1.3 μm , 1.7 μm , and 2.6 μm core-shell particles were engineered to provide incredible efficiency gains and improved performance compared to traditional fully porous sub-2 μm particles on UHPLC systems.

- Increase resolution, throughput, and sensitivity
- Save time and money
- 1.3 μm , 1.7 μm and 2.6 μm particles are directly scalable
- Available in C18, XB-C18, EVO C18, Polar C18, PS C18, C8, Biphenyl, HILIC, Phenyl-Hexyl, and F5 phases (1.3 μm available in C18)

1.3 μm and 1.7 μm Kinetex core-shell columns are scalable sub-2 μm core-shell particles, and produce up to 50 % and 20 % higher efficiencies respectively than sub-2 μm fully porous particles, taking UHPLC to the next level.



Conditions for both columns:

Column: Kinetex 1.3 μm C18
ACQUITY UPLC BEH 1.7 μm C18

Dimensions: 50 x 2.1 mm

Mobile Phase: A: 0.1 % TFA in Water
B: 0.1 % TFA in Acetonitrile

Gradient Time (min)	% B
0	30
5	95

Flow Rate: 0.5 mL/min

Temperature: Ambient

Detection: UV @ 214 nm

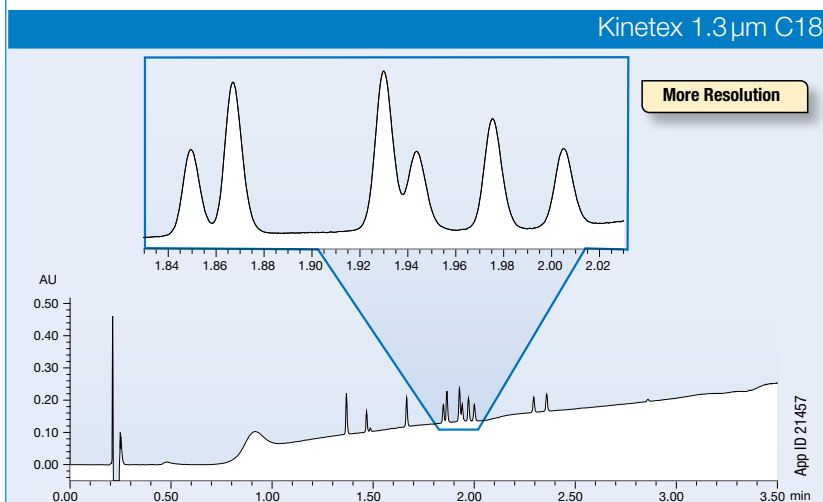
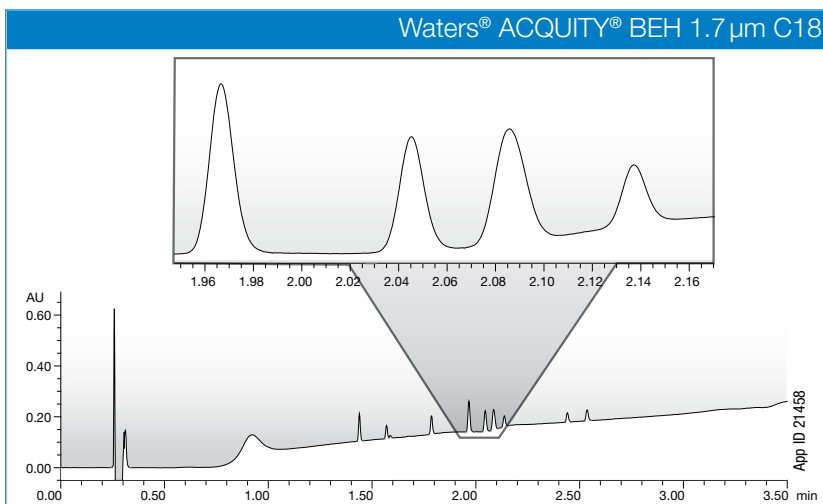
Instrument: Waters ACQUITY UPLC

Sample: 1. 6-Gingerol (1)
2. 6-Gingerol (2)
3. Capsaicin
4. 8-Gingerol
5. 6-Shogaol
6. 10-Gingerol
7. 8-Shogaol
8. 10-Shogaol

Comparative separations may not be representative of all applications.

Our New Standard for UHPLC

Bring your UHPLC analyses to the next level with the resolving power of Kinetex 1.3µm Core-Shell Technology. It's time you were able to see MORE!



Conditions for all columns same except where noted:

Columns: Waters ACQUITY UPLC® BEH 1.7µm C18
Kinetex 1.3µm C18

Dimensions: 50 x 2.1 mm

Mobile Phase: A: 0.1 % Formic acid in Water
B: 0.1 % Formic acid in Acetonitrile

Gradient:	Time (min)	% B
	0	5
	3.0	95
	3.5	95
	3.6	5

Flow Rate: 0.5 mL/min

Temperature: Ambient

Detection: UV @ 254 nm

Instrument: Waters ACQUITY UPLC

Sample:

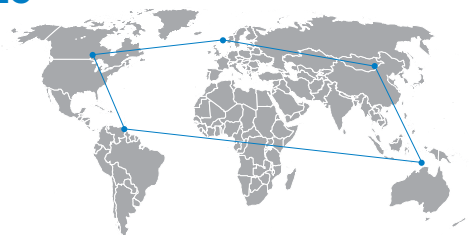
1. Estriol
2. Hydrocortisone
3. Corticosterone
4. Cortisone acetate
5. 17-beta-estradiol
6. 17-alpha-estradiol
7. 21-OH-progesterone
8. 17-alpha-ethinylestradiol
9. Estrone
10. Deoxycorticosterone acetate
11. Progesterone

Comparative separations may not be representative of all applications.

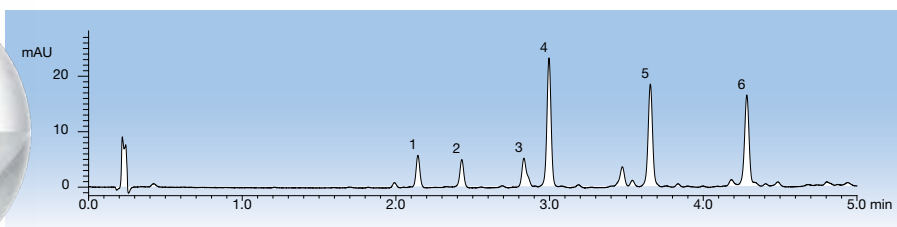
Kinetex™ Core-Shell LC Columns

Analytical Scalability and Portability HPLC to UHPLC

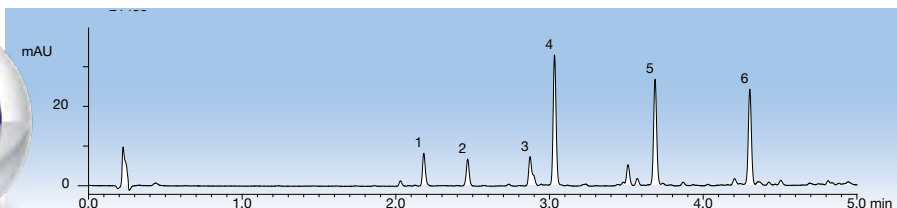
UHPLC methods developed with fully porous sub-2 μm columns often generate backpressure higher than HPLC system limitations. With Kinetex 5 μm , 2.6 μm , 1.7 μm , and 1.3 μm core-shell technology, you are no longer restricted from developing high performance LC methods and transferring them anywhere. These four scalable Kinetex particle sizes offer you the ability to develop and transfer your method effortlessly from system to system.



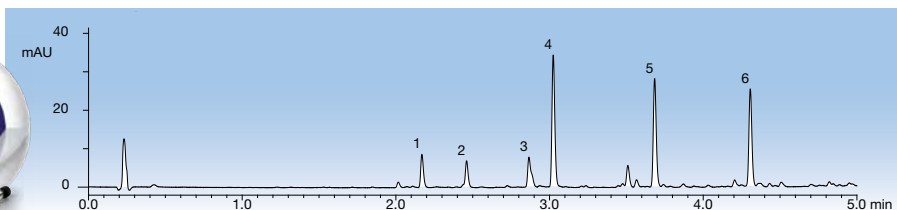
4 Kinetex particles give you full scalability HPLC $\leftrightarrow$ UHPLC



Kinetex 5 μm : 3 μm or better efficiencies at 5 μm pressures for HPLC and PREP LC methods



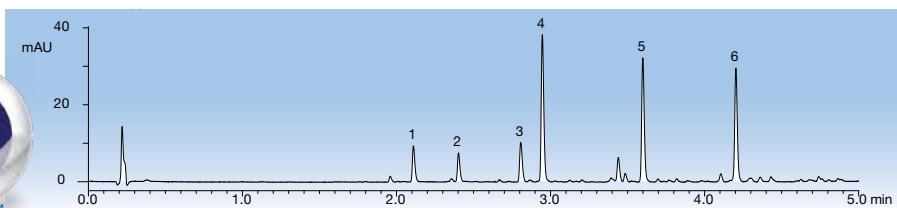
Kinetex 2.6 μm : Achieve sub-2 μm performance on HPLC and UHPLC systems



Kinetex 1.7 μm : 20 % higher efficiency than fully porous 1.7 μm columns



for Kinetex 1.3 μm UHPLC columns



Kinetex 1.3 μm : Incredible UHPLC efficiency and performance gains

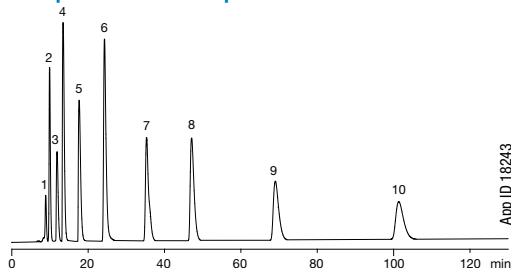
^aGingerols analyzed on 50x2.1 mm columns

Improve Performance, Save Solvent

When chromatographic column performance improves you can not only decrease your analysis time but also decrease your overall solvent consumption without compromising your separations. Use Kinetex core-shell technology to dramatically decrease the solvent consumption in your laboratory and increase sample throughput.

Column: Traditional 5 μ m C18
Dimensions: 250 x 4.6 mm
Flow Rate: 1.0 mL/min

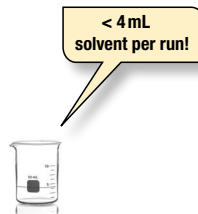
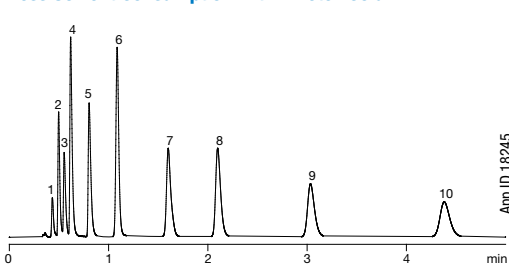
Example Method Consumption



110 mL
solvent per run!

Column: Kinetex 2.6 μ m C18
Dimensions: 50 x 2.1 mm
Part No.: 00B-4462-AN
Flow Rate: 0.6 mL/min

Less Solvent Consumption with Kinetex Column



< 4 mL
solvent per run!

Conditions for both columns:

Mobile Phase: A: 20 mM Potassium phosphate pH 7
B: Methanol / Acetonitrile (50:50)
A/B (48:52)

Temperature: 40 °C

Detection: UV @ 254 nm

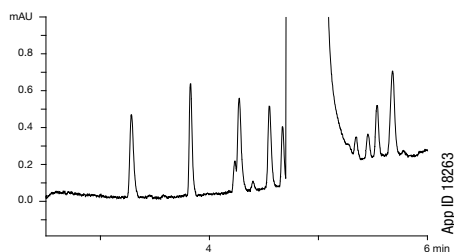
Sample:

- | | |
|---------------------|------------------|
| 1. Tianeptine | 6. Amoxapine |
| 2. Desmethyldoxepin | 7. Doxepin |
| 3. Protriptyline | 8. Nortriptyline |
| 4. Desipramine | 9. Amitriptyline |
| 5. Imipramine | 10. Clomipramine |

Reach Lower Levels of Detection and Quantitation

The combination of the small particle size, narrow particle size distribution, and the significantly shorter diffusion path results in much higher column efficiencies and increased chromatographic resolution. The increased efficiencies provide an immediate benefit on sensitivity since higher chromatographic efficiencies translate into significantly narrower and taller peaks, making it easier to detect low level impurities.

Agilent Technologies® ZORBAX® 3.5 μ m SB-C18



Conditions for both columns:

Dimensions: 150 x 4.6 mm

Mobile Phase: A: Water

B: Acetonitrile

Gradient: (95:5) A/B for 1.16 min, then to (5:95) A/B

Flow Rate: 1.5 mL/min

Temperature: 45 °C

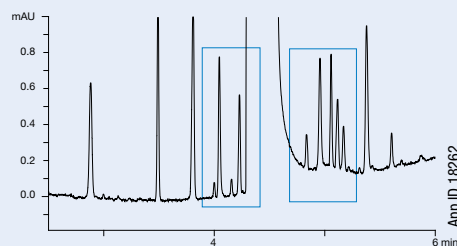
Detection: UV @ 254 nm

Instrument: Agilent 1200

Sample:

- | | |
|---------------------|-------------------------------------|
| 1. Pyridine | 9. Nortriptyline |
| 2. Acetaminophen | 10. 4-Chlorobenzoic acid |
| 3. Pindolol | 11. 5-Methyl-2-hydroxy benzaldehyde |
| 4. Quinine | 12. 4-Chlorocinnamic acid |
| 5. Acebutolol | 13. Diazepam |
| 6. Chlorpheniramine | 14. Diflunisal |
| 7. Triprolidine | 15. Niflumic acid |
| 8. Prednisolone | 16. Hexanophenone |

Kinetex 2.6 μ m C18



Complementary and Orthogonal Selectivities

To provide alternative and orthogonal selectivity phases, Kinetex columns are available in 11 selectivities: Polar C18, PS C18, EVO C18, XB-C18, C18, C8, Biphenyl, Phenyl-Hexyl, F5, PAH, and HILIC (Hydrophilic Interaction Liquid Chromatography), for resolution of a wide range of compounds from polar to hydrophobic, aromatic, and isomers.

Kinetex PS C18	Kinetex Polar C18	Kinetex EVO C18	Kinetex XB-C18	Kinetex C18	Kinetex C8
A multi-modal, 100% aqueous C18 column with a positive surface modification that demonstrates unique selectivity and improved peak shape for basic compounds	Combined C18 and polar modified surface that provides polar and non-polar retention alongside 100% aqueous stability	Novel pH 1-12 stable C18 that delivers robust methods and improved peak shape for bases	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	Balanced C18 phase that provides the highest degree of hydrophobic selectivity relative to the other Kinetex phases	Moderate hydrophobic and steric selectivity is offered, bringing ultra-high performance to USP L7 and other octyl silane methods
pH Range: 1.5 – 8.5* USP Classification: L1 Effective Carbon Load: 9%	pH Range: 1.5 – 8.5* USP Classification: L1 Effective Carbon Load: 9%	pH Range: 1 – 12 USP Classification: L1 Effective Carbon Load: 11%	pH Range: 1.5 – 8.5* USP Classification: L1 Effective Carbon Load: 10%	pH Range: 1.5 – 8.5* USP Classification: L1 Effective Carbon Load: 12%	pH Range: 1.5 – 8.5* USP Classification: L7 Effective Carbon Load: 8%

Kinetex Biphenyl	Kinetex Phenyl-Hexyl	Kinetex F5	Kinetex HILIC	Kinetex PAH
pH Range: 1.5 – 8.5* USP Classification: L11 Effective Carbon Load: 11%	pH Range: 1.5 – 8.5* USP Classification: L11 Effective Carbon Load: 11%	pH Range: 1.5 – 8.5* USP Classification: L43 Effective Carbon Load: 9%	pH Range: 2.0 – 7.5 USP Classification: L3 Carbon Load: –	pH Range: 1.5 – 8.5* USP Classification: L118 Carbon Load: 12%

*Columns are pH stable from 1.5-10 under isocratic conditions. Columns are pH stable 1.5-8.5 under gradient conditions.

Selecting The Right Chemistry

Use the charts below to determine the best Kinetex core-shell chemistry for your work.

Recommended Selectivities By Compound Classes:

Acids	Bases	Neutrals	Aromatics	Acids, Bases, and Neutrals	Highly Polar Compounds	High pH	Isomers
Polar C18	PS C18	C18	Biphenyl	EVO C18	Polar C18	EVO C18	F5
F5	XB-C18	C8	Phenyl-Hexyl	Polar C18	F5		
HILIC		Biphenyl	F5	PS C18	Biphenyl		
				XB-C18	HILIC		

Column Characteristics

Kinetex Phases	Shipping Solvent†	Particle Sizes (µm)	Pore Size (Å)	Surface Area (m²/g)	Carbon Load (%)	pH Stability	Reversed Phase	Normal Phase	HILIC	100% Aqueous Stable
Polar C18	Acetonitrile/Water (50:50)	2.6	100	200	9	1.5-8.5*				
PS C18	Acetonitrile/Water (50:50)	2.6	100	200	9	1.5-8.5*				
C18	Acetonitrile/Water (50:50)	1.3, 1.7, 2.6, 5	100	200	12	1.5-8.5*				
EVO C18	Acetonitrile/Water (45:55)	1.7, 2.6, 5	100	200	11	1-12				
XB-C18	Acetonitrile/Water (50:50)	1.7, 2.6, 3.5, 5	100	200	10	1.5-8.5*				
C8	Acetonitrile/Water (45:55)	1.7, 2.6, 5	100	200	8	1.5-8.5*				
Biphenyl	Acetonitrile/Water w/ 0.1% Formic Acid (50:50)	1.7, 2.6, 5	100	200	11	1.5-8.5*				
Phenyl-Hexyl	Acetonitrile/Water (45:55)	1.7, 2.6, 5	100	200	11	1.5-8.5*				
F5	Acetonitrile/Water (40:60)	1.7, 2.6, 5	100	200	9	1.5-8.5*				
HILIC	Acetonitrile / 100 mM Ammonium Formate (93:7)	1.7, 2.6, 5	100	200	0	2.0-7.5				
PAH	Acetonitrile/Water (65:35)	3.5	—	—	12	1.5-8.5*				

† Shipping conditions may vary slightly in terms of organic to aqueous ratio, depending on column dimensions.

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

Find Products and Develop Your Methods Faster

Develop an SPE method. Find the right HPLC column and guard system or the perfect vials and syringe filters for your application. Optimize your HPLC methods in minutes with our easy to use interactive tools, developed by scientists for scientists. So take a minute and try our tools for your chromatography methods. They are designed to help you do what you need to do faster so you can do the things that matter most, like walking your dog and spending time with your family.

www.phenomenex.com/webtools

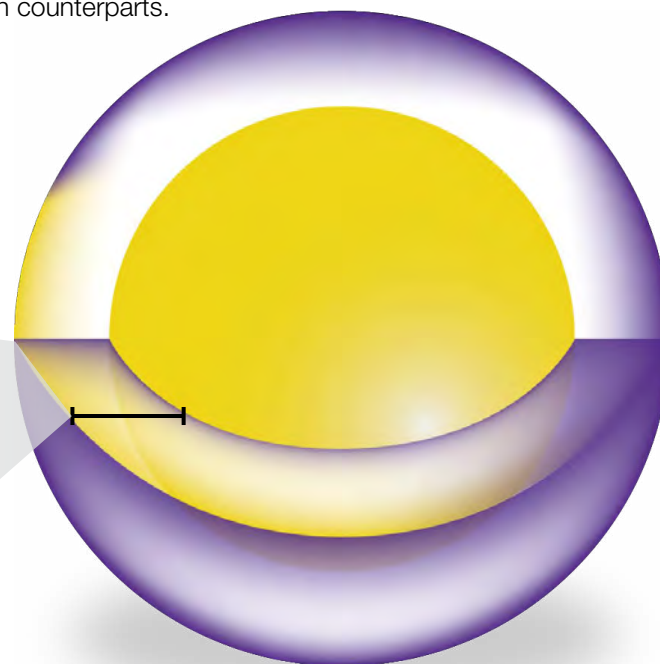
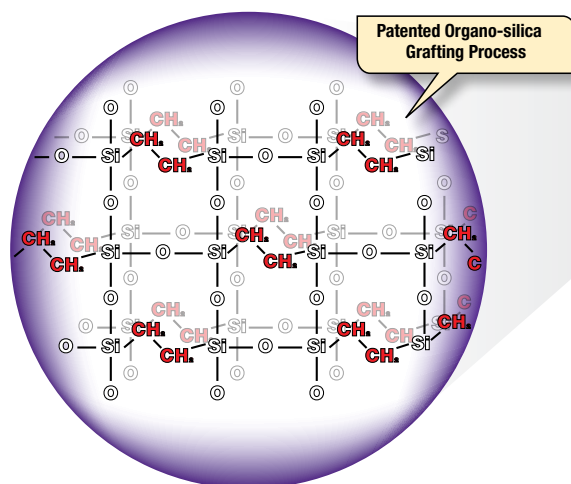


Kinetex™ Core-Shell LC Columns

U.S. Patent Nos. 7, 563, 367 and 8, 658, 038 and foreign counterparts.

Kinetex EVO C18

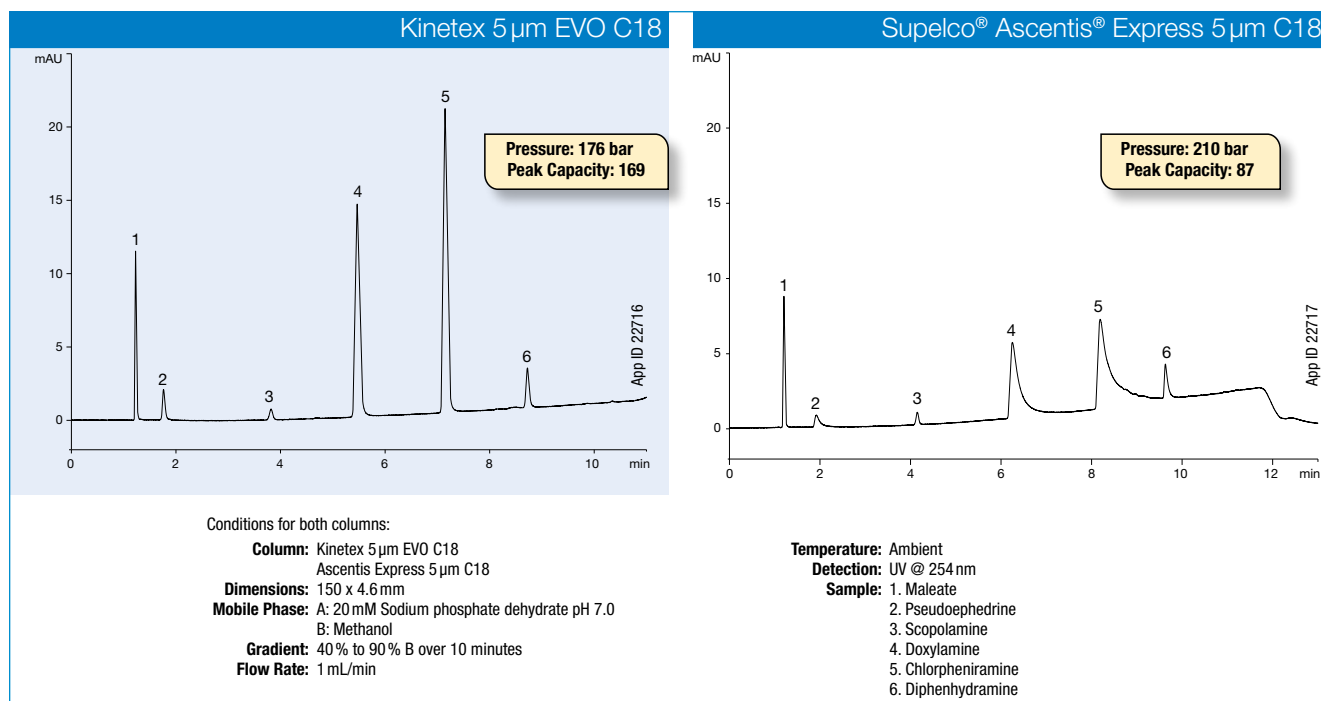
- Develop robust methods from pH 1-12
- Get improved peak shape for bases
- Easily reduce run times and increase sensitivity



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.

Improved Peak Shape for Bases Under Alkaline Conditions

The unique organo-silica layer of ethane cross-linking found within each Kinetex EVO C18 particle creates a highly inert surface which provides the additional benefit of better peak shape for bases.



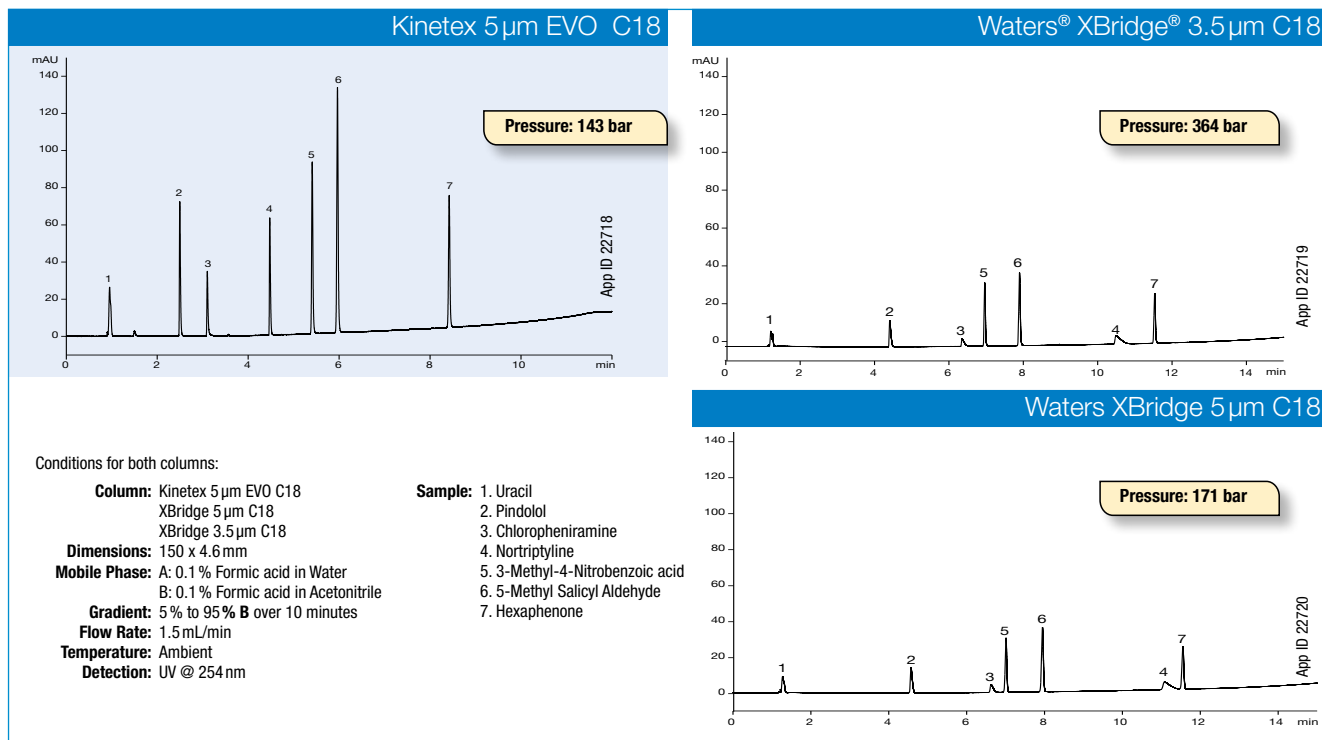
Comparative separations may not be representative of all applications.

Kinetex™ Core-Shell LC Columns

U.S. Patent Nos. 7, 563, 367 and 8, 658, 038 and foreign counterparts.

Drop in a Kinetex EVO 5µm Column to Start Smiling

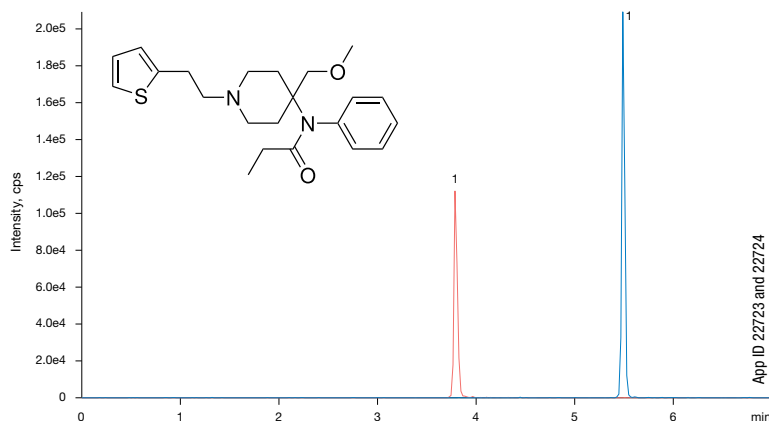
With the combination of rugged pH stability from 1-12 and the core-shell performance advantage, you can easily replace old hybrid silica columns and gain immediate method improvements without increasing backpressure.



Comparative separations may not be representative of all applications.

Increased Sensitivity for LC-MS Applications

Alongside LC-UV analyses, the high performance and low pressure of the Kinetex EVO 5µm make it a tremendous tool for LC-MS and LC-MS/MS. Increased polar basic retention provided by the Kinetex EVO allows for greater use of organic within the mobile phase, subsequently leading to improved ionization and increased sensitivity.



Column: Kinetex 5µm EVO C18
Dimensions: 50 x 2.1 mm
Part No.: [00B-4633-AN](#)
Mobile Phase: A: 0.1 % Formic acid in Water
 B: 0.1 % Formic acid in Methanol
Mobile Phase: A: 10 mM Ammonium Bicarbonate (pH 8.2)
 B: Methanol

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: 0.5 mL/min
Temperature: Ambient
Detection: MS/MS (SCIEX® API 4000™)
Sample: 1. Sufentanil

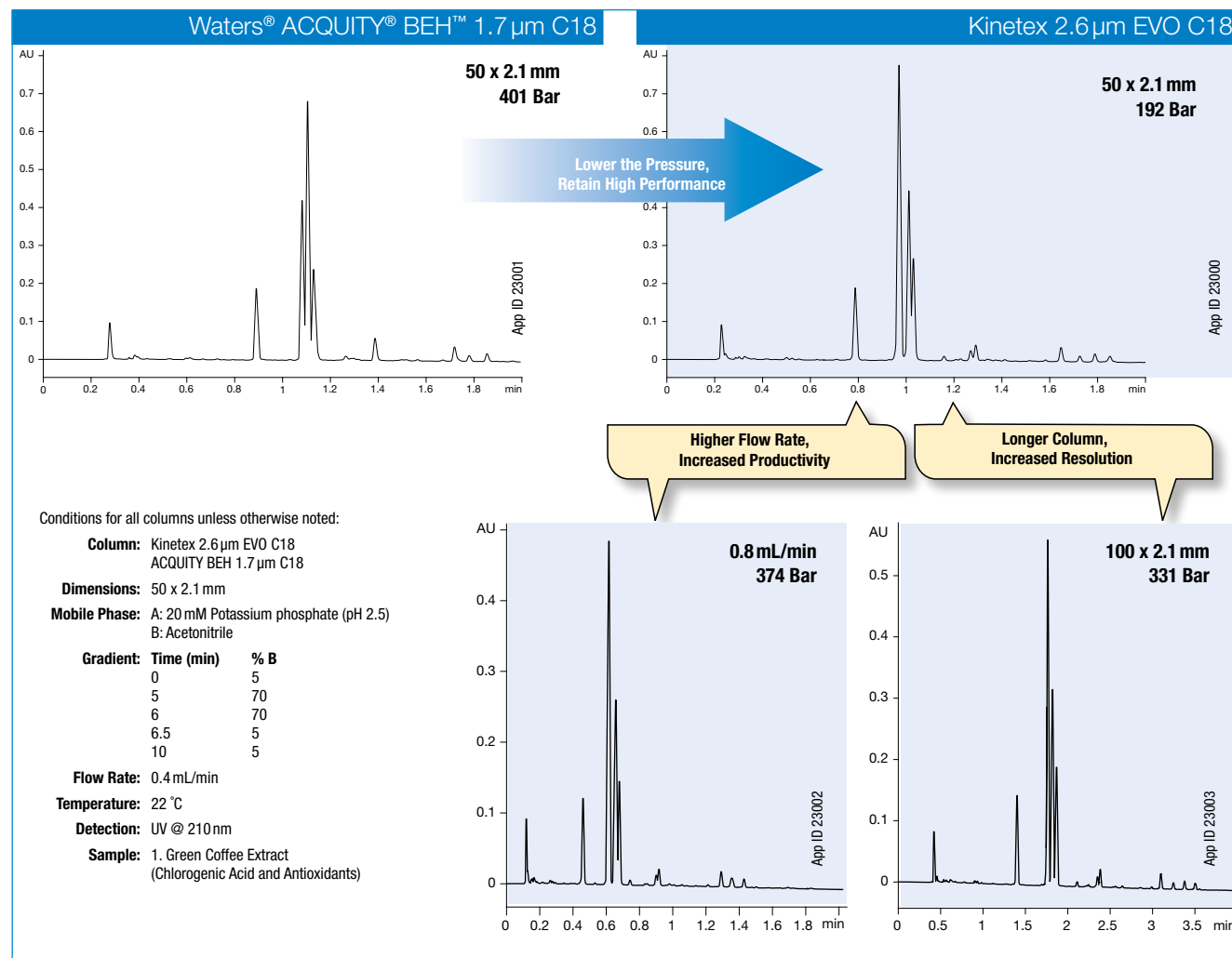
Kinetex™ Core-Shell LC Columns

U.S. Patent Nos. 7, 563, 367 and 8, 658, 038 and foreign counterparts.

A Simple Upgrade for Potential Greater Performance!

For scientists who are interested in high performance and fast run times, 2.6µm Kinetex EVO C18 columns are an amazing UHPLC solution. Start by matching a Kinetex 2.6µm column to the sub-2µm column you're currently using. With lower backpressure

and similar or better performance, you'll then have three options: keep the lower pressure for less system strain, increase the flow for higher productivity, or utilize a longer column length to increase potential resolving power.



Comparative separations may not be representative of all applications.

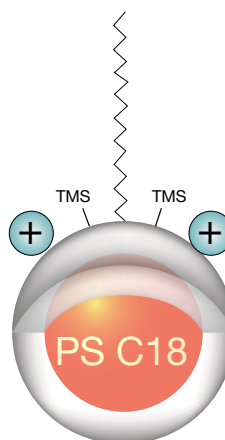
Kinetex PS C18

- Enhanced polar retention
- Improved peak shape for bases
- Multi-modal interaction selectivity

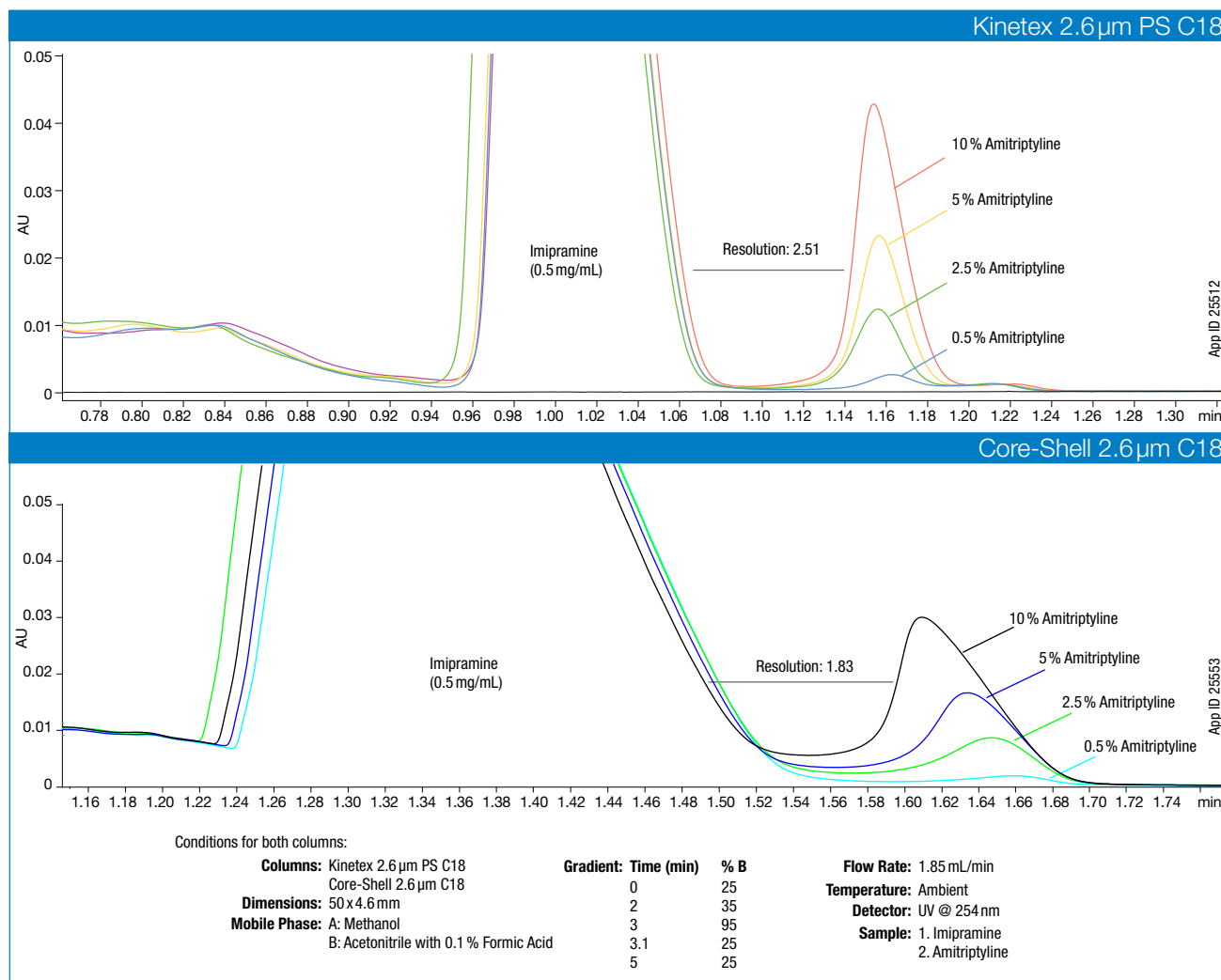
A Versatile C18

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

Kinetex PS C18



Enhanced Peak Shape for Basic Compounds



Comparative separations may not be representative of all applications.

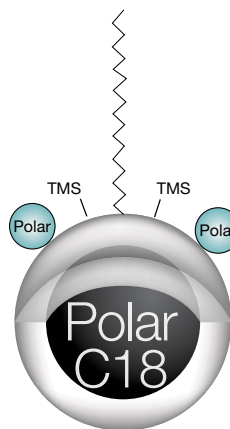
Kinetex Polar C18

- 100% aqueous stable
- Enhanced selectivity for polar analytes
- Orthogonal selectivity to traditional C18 phases

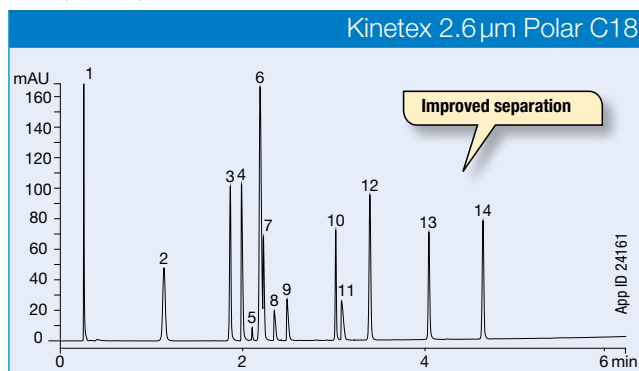
A Versatile C18

Who said all C18's are the same? By combining C18 ligands with a polar-modified surface, you can now achieve greater retention of polar and nonpolar compounds while ensuring 100% aqueous stability.

Kinetex Polar C18



Acids, Bases, and Neutrals



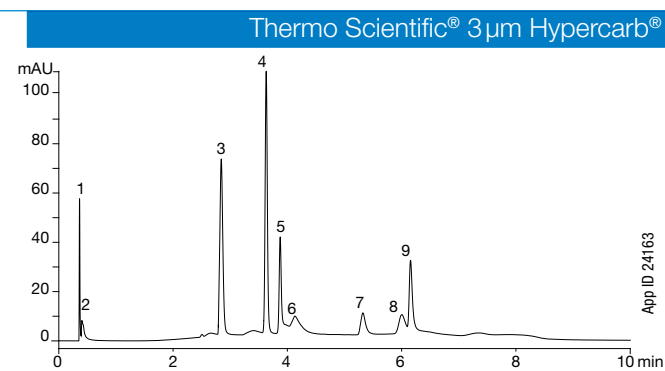
Conditions for both columns:

Columns: Kinetex 2.6 μ m Polar C18
Thermo Scientific 3 μ m Hypercarb

Dimensions: 50 x 4.6 mm

Mobile Phase: A: 0.1% Formic acid in Water
B: 0.1% Formic acid in Acetonitrile

Gradient:	Time (min)	% B
	0	5
	0.5	5
	5.5	95
	7.51	5
	10	5



Flow Rate: 1.85 mL/min

Temperature: Ambient

Detection: UV @ 254 nm

Sample:

- | | |
|-----------------------|-------------------------------|
| 1. Pyridine | 8. Chlorpheniramine |
| 2. Acetaminophen | 9. Triprolidine |
| 3. Sulfathiazole | 10. Prednisolone |
| 4. Quinidine | 11. Nortriptyline |
| 5. Quinidine Impurity | 12. 5-Methyl Salicyl Aldehyde |
| 6. Phenol | 13. Diflunisal |
| 7. Acebutolol | 14. Hexanophenone |

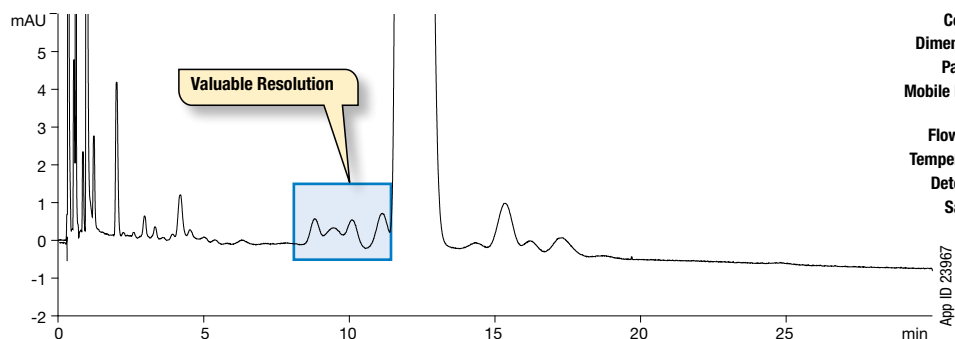
Comparative separations may not be representative of all applications.

Enhanced Polar Selectivity

The Kinetex Polar C18 contains a C18 ligand alongside a polar modified surface that increases polar compound retention and improves resolution values. Additionally, the advanced proprietary bonding technology used with this phase ensures 100% aqueous stability as well as balanced retention on non-polar compounds.

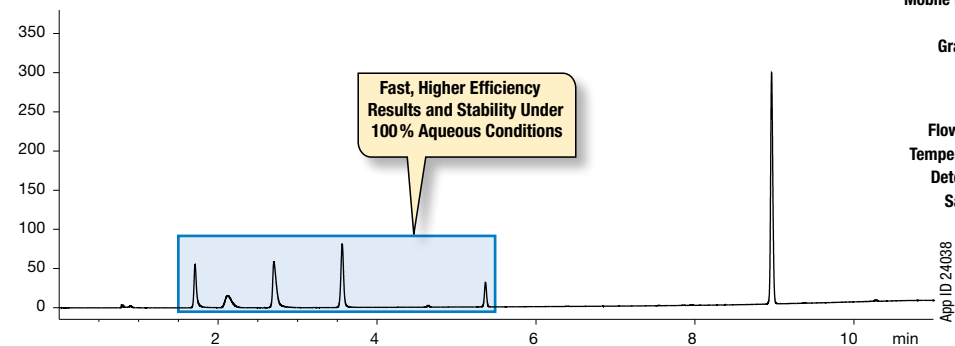
This is an excellent all purpose phase for use with multi-compound mixes that contain polar and nonpolar compounds, or even single class methods that have closely related compounds, impurities, or metabolites.

UHPLC Analysis of Cyclosporine and Impurities



Column: Kinetex 2.6 μ m Polar C18
Dimensions: 50 x 2.1 mm
Part No.: [00B-4759-AN](#)
Mobile Phase: Acetonitrile/Tert-butyl methyl ether/
 Water/Phosphoric acid (430:50:520:1)
Flow Rate: 0.30 mL/min
Temperature: 80 °C
Detection: UV @ 210 nm
Sample: Cyclosporine

Water Soluble Vitamins

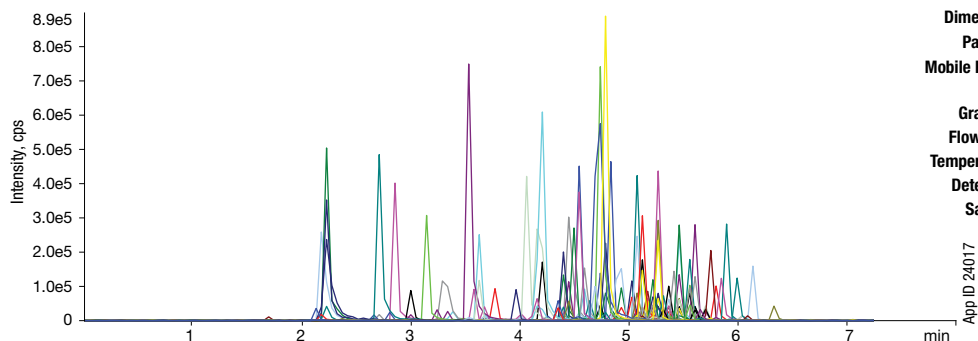


Column: Kinetex 2.6 μ m Polar C18
Dimensions: 100 x 4.6 mm
Part No.: [00D-4759-E0](#)
Mobile Phase: A: 20 mM Potassium Phosphate
 B: Methanol
Gradient:

Time (min)	% B
0	0
1	0
10	60

Flow Rate: 1.2 mL/min
Temperature: Ambient
Detection: UV @ 210 nm
Sample: 1. Thiamine
 2. Nicotinamide
 3. Pyridoxal
 4. Pyridoxine
 5. Pantothenic Acid
 6. Riboflavin

Multi-Class 206 Pesticide Panel Screen



Column: Kinetex 2.6 μ m Polar C18
Dimension: 50 x 4.6 mm
Part No.: [00B-4759-E0](#)
Mobile Phase: A: Water
 B: 0.1 % Formic acid in Methanol
Gradient: 5-100% B in 5 min, hold 1 min
Flow Rate: 0.7 mL/min
Temperature: Ambient
Detection: MS/MS (SCIEX®API 4000™)
Sample: 206 Pesticides.
 Find the full compound list online at
www.phenomenex.com/Application/Detail/24017

Kinetex Biphenyl

- Remarkable separation power
- Rugged and reliable
- 100 % aqueous stable

Selectivity That a C18 Just Can't Give You!

Think high performance, enhanced retention, and the ability to go where a traditional C18 can't. The Kinetex Biphenyl offers the high performance benefits of a core-shell particle with a unique stationary phase capable of becoming the go-to selectivity for reversed phase method development. Use Kinetex Biphenyl columns to get enhanced retention, higher sensitivity, and overall better results; especially for aromatic compounds.

Aromatic Pi-Pi Interactions

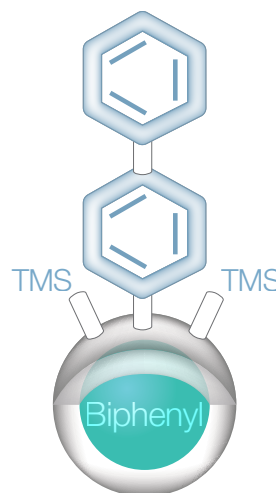
Between aromatic rings and pi electrons of target molecule and the double aromatic rings of the Biphenyl ligand

Hydrophobic Interactions

Between carbon skeleton of Biphenyl ligand and target analytes

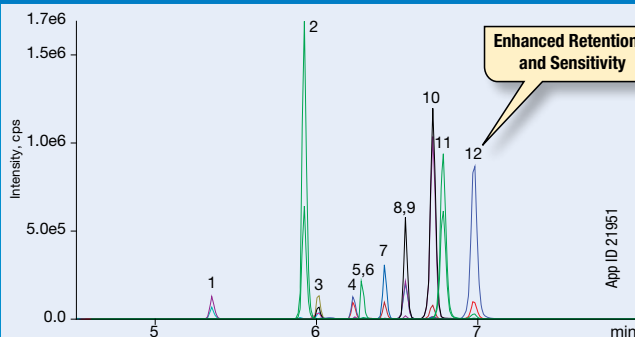
Weak Ionic or Dipole-Dipole Interactions

High electron density created by dual ring structure behaves similar to a weak cation exchanger, giving enhanced retention for basic analytes



Mycotoxins

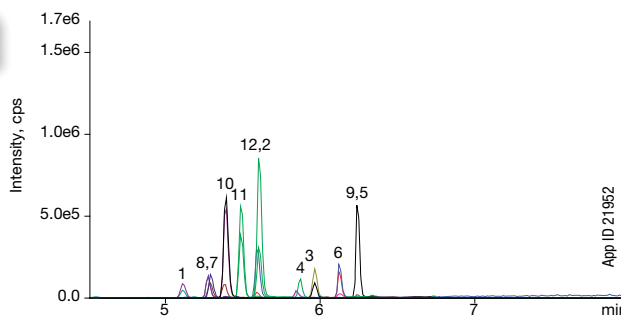
Kinetex 2.6 μm Biphenyl



Conditions for both columns:

Column: Kinetex 2.6 μm Biphenyl		
Waters SunFire 3.5 μm C18		
Dimensions: 50 x 2.1 mm		
Mobile Phase: A: 5 mM Ammonium acetate with 0.1 % Acetic acid		
B: Methanol with 5 mM Ammonium acetate with 0.1 % Acetic acid		
Gradient:	Time (min)	% B
	0	2
	2	2
	5	80
	5.2	98
	8	98
	8.01	2
	11	2

Waters® SunFire® 3.5 μm C18



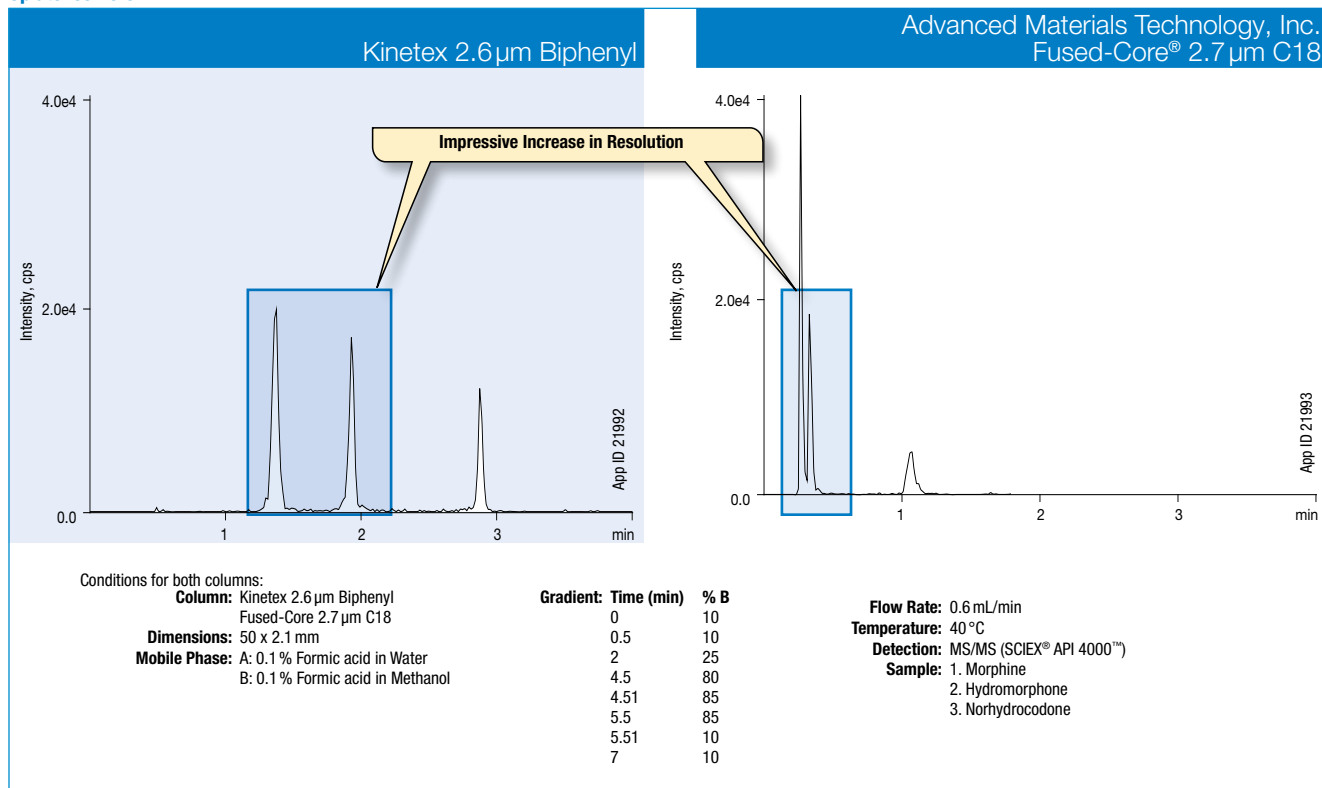
Flow Rate:	0.45 mL/min
Temperature:	40 °C
Detection:	MS/MS (SCIEX® API 4000™)
Sample:	1. 15-Acetyldeoxynivalenol
	2. DAS
	3. FB1
	4. HT-2 Toxin
	5. FB2
	6. T-2 Toxin
	7. Aflatoxin M1
	8. Aflatoxin G2
	9. Ochratoxin A
	10. Aflatoxin G1
	11. Aflatoxin B2
	12. Aflatoxin B1

Comparative separations may not be representative of all applications.

Enhanced Separation Power

Kinetex Biphenyl is a high efficiency core-shell product capable of adding extra separation power to your analysis of non-polar and polar compounds.

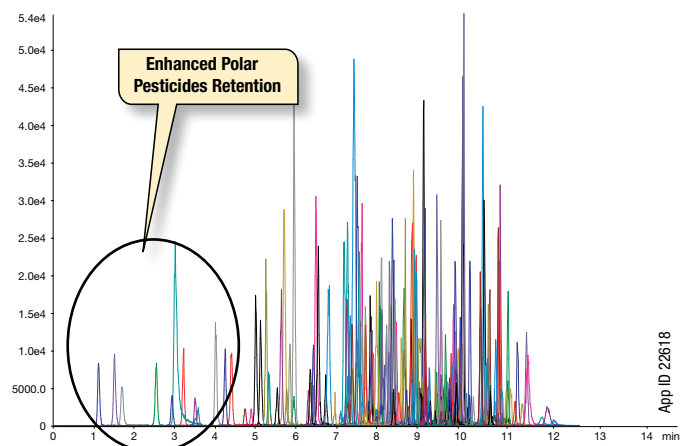
Opiate Isomers



Comparative separations may not be representative of all applications.

Excel With Your Multi-Compound, Multi-Class Screening

Increase the separation and analytical power of your HPLC/UHPLC compound screens with the multi-functional Kinetex Biphenyl stationary phase.



Column: Kinetex 5 µm Biphenyl
Dimensions: 100 x 2.1 mm
Part No.: [00D-4627-AN](#)
Mobile Phase: A: 5 mM Ammonium formate in Water
B: 5 mM Ammonium formate in Methanol

Gradient:	Time (min)	% B
	0.01	10
	1	10
	10	90
	15	90
	15.1	10
	20	10

Flow Rate: 0.5 mL/min
Temperature: 35 °C
Detection: Tandem Mass Spectrometer (MS/MS)
Detector: SCIEX® 4500 QTRAP®
Sample: 175+ Pesticide Mix

Kinetex F5

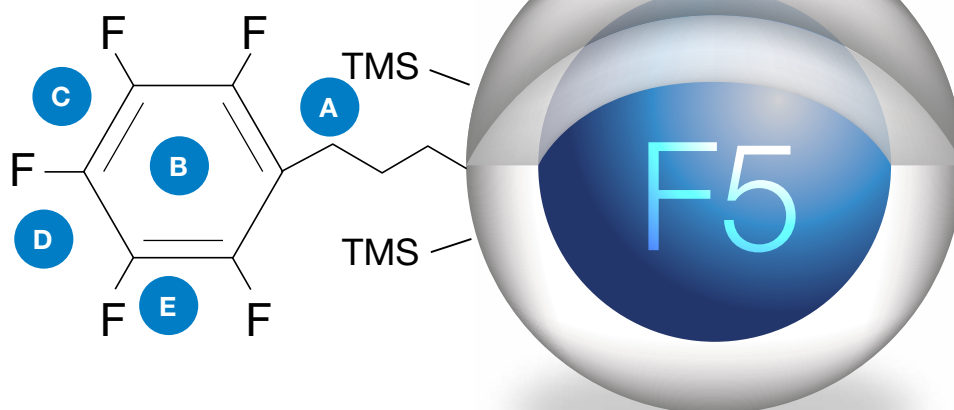
- Reduce method development time by days
- Greater reproducibility than other PFPs
- 5 glorious interaction mechanisms
- 5 valuable LC separation modes

How I Work

With the astonishing combination of core-shell performance and 5 interaction mechanisms, Kinetex F5 columns will effortlessly drive your orthogonal HPLC/UHPLC development!

Method Development Versatility—5 Separation Modes

- Reversed Phase
- HILIC
- SFC
- 2D-LC
- 100% Aqueous



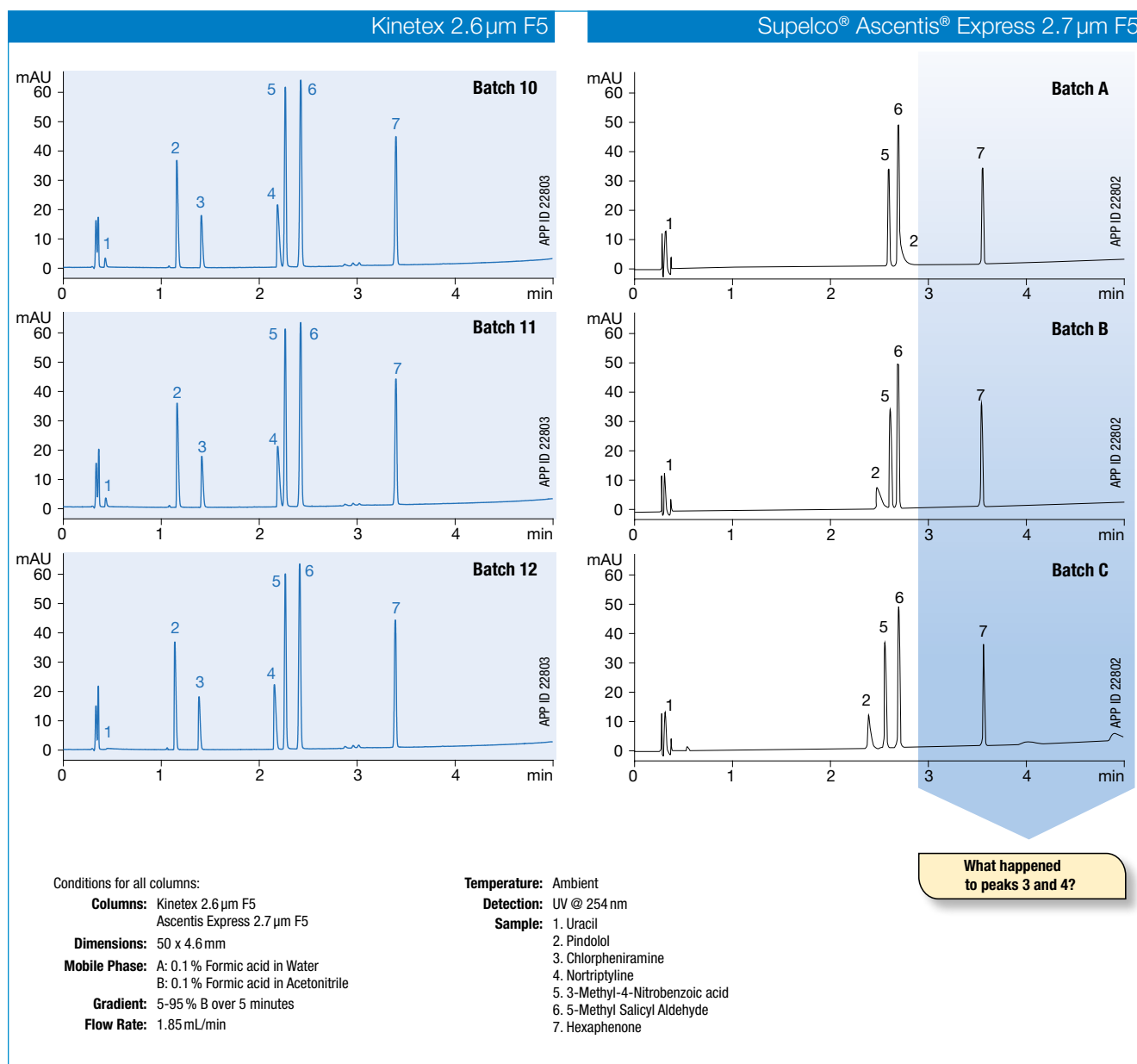
5 Interaction Mechanisms

- A Hydrophobic**
Carbon skeleton of linker and ring encourage neutral/hydrophobic retention
- B Aromatic**
In non-acetonitrile mobile phases, π - π electrons of the carbon ring interact with analyte π - π electrons and result in positive retention increase
- C Electrostatic**
High electronegativity of the fluorine groups create dipole moments, aiding in polar compound retention. Induced dipole moments can also aid neutral compound retention.
- D Steric/Planar**
Shape selectivity allows for isomeric separations that are otherwise impossible on traditional alkyl phases
- E Hydrogen Bonding**
Extremely effective retention mechanism caused as polar functional groups of analyte interact with the electron greedy fluorine

Dependability

Batch-to-Batch, Column-to-Column

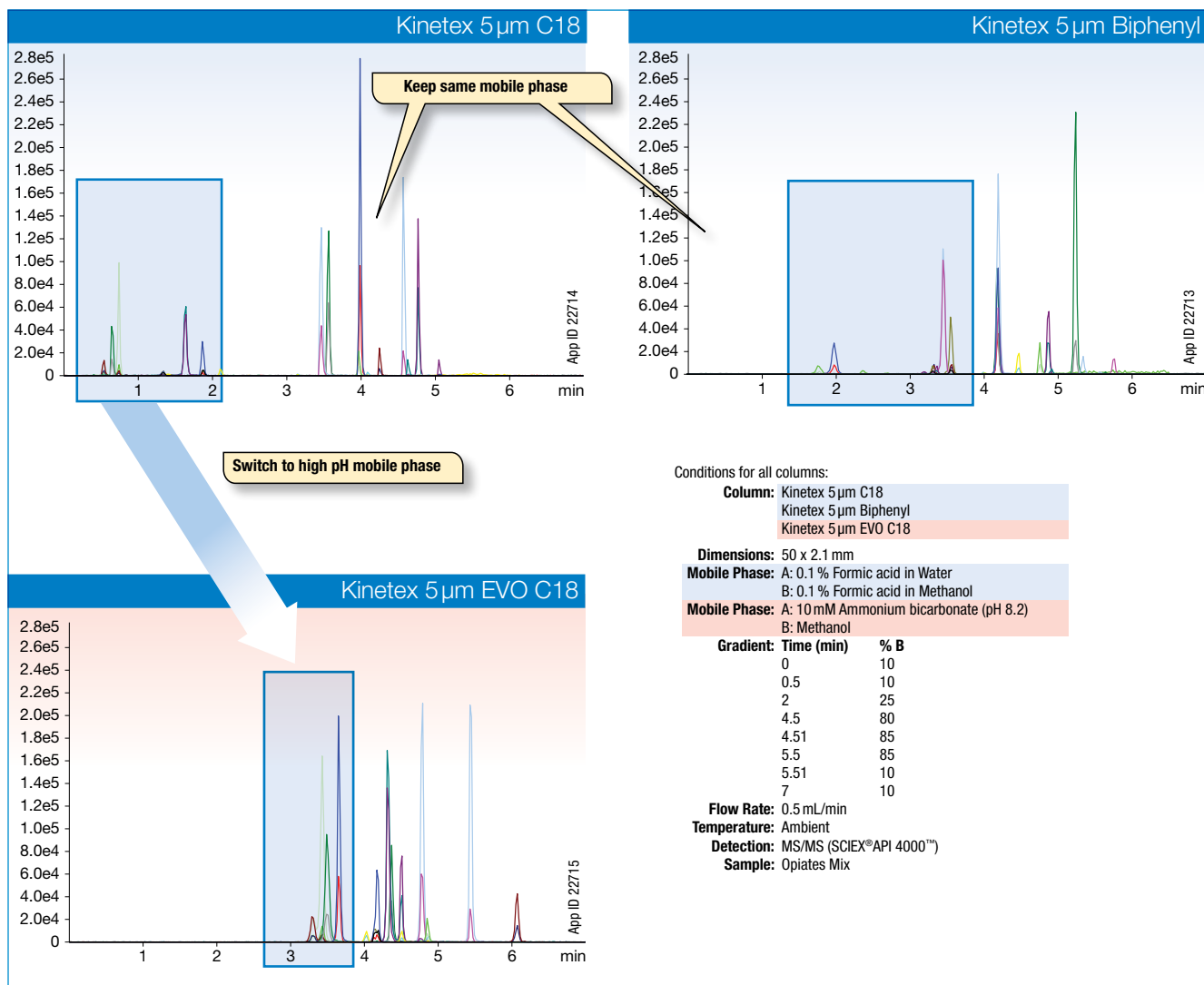
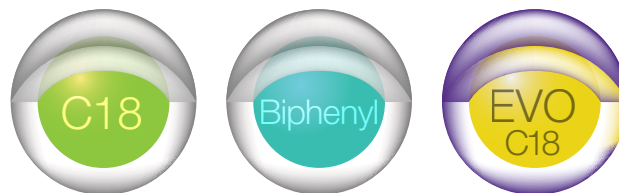
Conventional fully porous and core-shell PFP/F5 columns fail to reach the level of repeatability that you deserve. Inconsistencies in their base silica have led to data inaccuracies that waste your time and money. Kinetex F5 columns were specifically designed to avoid these past problems and provide a high degree of reproducibility.



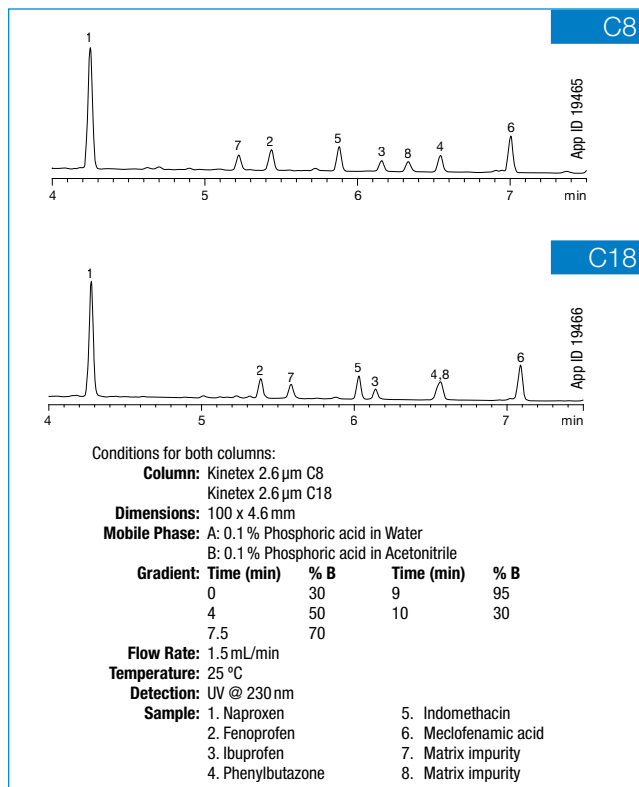
Comparative separations may not be representative of all applications.

Selectivities Built for Your Needs

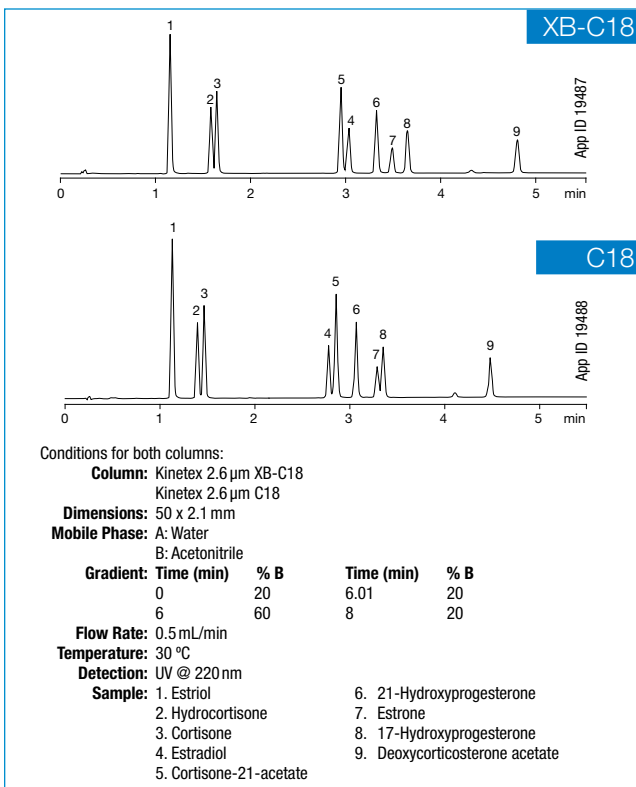
The extensive range of Kinetex stationary phases allows you to get retention enhancement without performance loss. Use the multi-functional Kinetex Biphenyl or pH stable Kinetex EVO C18 to reach the desired solution for your method.



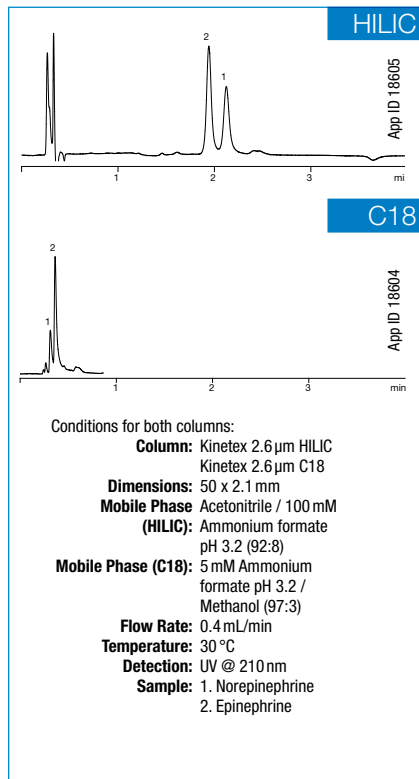
Veterinary Drugs



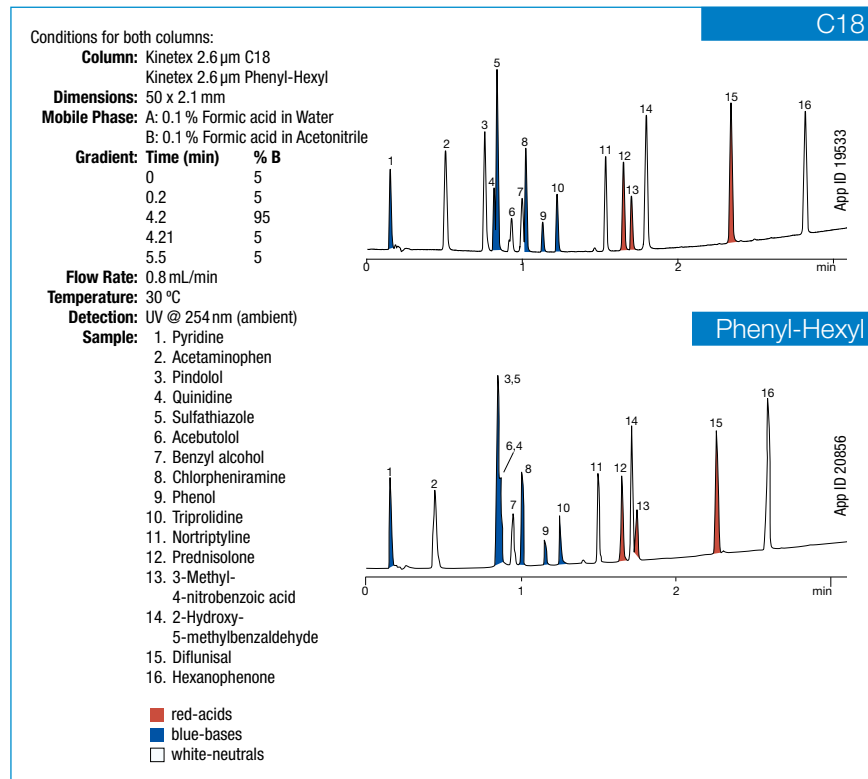
Steroids



Norepinephrine and Epinephrine



Acids, Bases, and Neutrals Mix



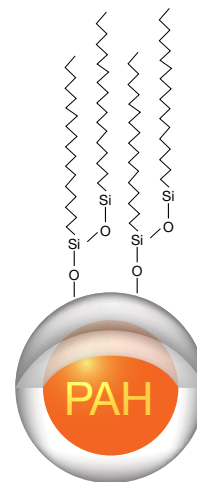
Comparative separations may not be representative of all applications.

Kinetex PAH

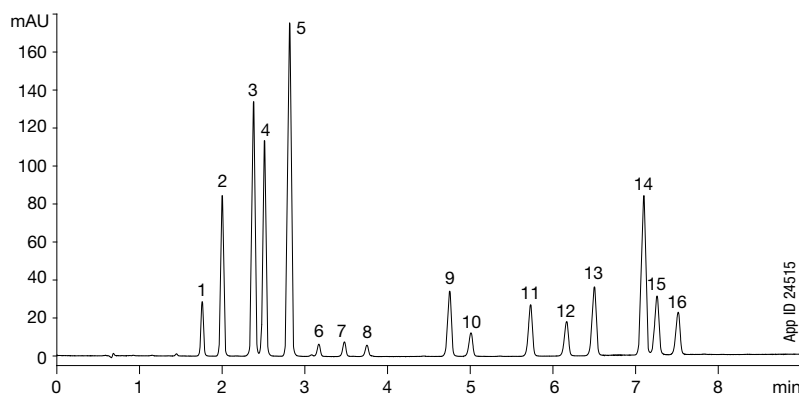
- Expanded resolution with chemical selectivity specifically for PAHs
- Increased throughput and sensitivity with core-shell technology for HPLC/UHPLC

Designed and QC Tested for PAH Analysis by HPLC/UHPLC

Kinetex PAH columns were specifically built for the analysis of PAHs. Controlled pore size processing and a proprietary polymerically bonded stationary phase were developed for this product to ensure excellent resolution between priority polycyclic aromatic hydrocarbons (PAHs). Combined with core-shell particle technology, incredibly high efficiency and sensitivity at comfortable LC pressures is very achievable.



EPA 610 – PAH Analysis



Column: Kinetex 3.5 μ m PAH
Dimensions: 100 x 4.6 mm
Part No.: [00D-4764-E0](#)

Mobile Phase: A: Water

B: Acetonitrile

Gradient	Time (min)	% B
	0	50
	7	100
	8	100
	9	50
	12	50

Flow Rate: 1.2 mL/min

Backpressure: 136 Bar

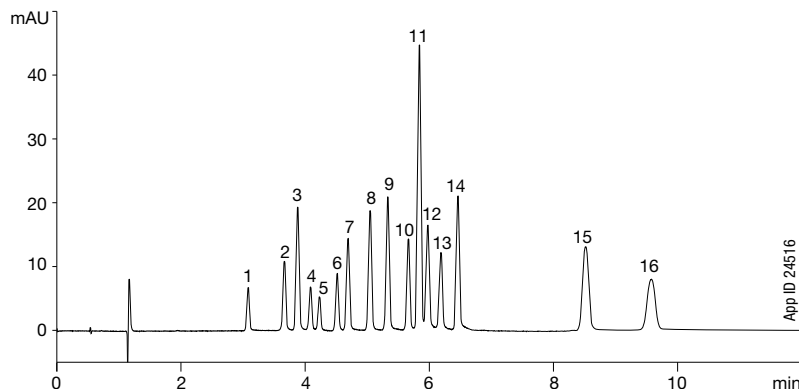
Temperature: 35 °C

Detection: UV @ 292 nm

- Sample:**
1. Naphthalene
 2. Acenaphthylene
 3. Acenaphthene
 4. Fluorene
 5. Phenanthrene
 6. Anthracene
 7. Fluoranthene
 8. Pyrene

9. Benz[a]anthracene
10. Chrysene
11. Benzo[b]fluoranthene
12. Benzo[k]fluoranthene
13. Benzo[a]pyrene
14. Dibenzo[a,h]anthracene
15. Benzo[g,h,i]perylene
16. Indeno[1,2,3-cd]pyrene

EU 15+1 PAH Analysis



Column: Kinetex 3.5 μ m PAH
Dimensions: 100 x 4.6 mm
Part No.: [00D-4764-E0](#)

Mobile Phase: A: Water

B: Acetonitrile

Gradient	Time (min)	% B
	0	50
	6	100
	11.5	100
	12	50
	14	50

Flow Rate: 1.5 mL/min

Backpressure: 136 Bar

Temperature: 35 °C

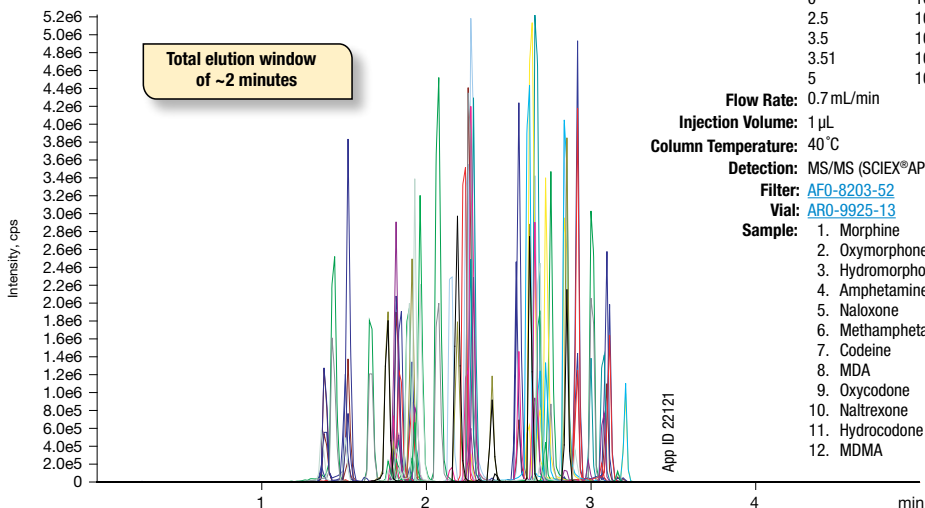
Detection: UV @ 292 nm

- Sample:**
1. Benzo[c]fluorene
 2. Cyclopenta[c,d]pyrene
 3. Benzo[a,h]anthracene
 4. Chrysene
 5. 5-Methylchrysene
 6. Benzo[j]fluoranthene
 7. Benzo[b]fluoranthene
 8. Benzo[k]fluoranthene
 9. Benzo[a]pyrene
 10. Dibenzo[a,i]pyrene
 11. Dibenzo[a,h]anthracene
 12. Benzo[g,h,i]perylene
 13. Indeno[1,2,3-cd]pyrene
 14. Dibenzo[a,e]pyrene
 15. Dibenzo[a,i]pyrene
 16. Dibenzo[a,h]pyrene

Applications

Clinical Research and Toxicology

Comprehensive Drug Research Panel



Column: Kinetex 2.6 μ m Biphenyl
 Dimensions: 50 x 3.0 mm
 Part No.: [00B-4622-Y0](#)
 Guard Cartridge: [AJ0-9208](#)
 Guard Holder: [AJ0-9000](#)
 Mobile Phase: A: 0.1 % Formic acid in Water
 B: 0.1 % Formic acid in Methanol

Gradient	Time (min)	% B
	0	10
	2.5	100
	3.5	100
	3.51	10
	5	10

Flow Rate: 0.7 mL/min
 Injection Volume: 1 μ L
 Column Temperature: 40 °C
 Detection: MS/MS (SCIEX® API 5000™)
 Filter: [AF0-8203-52](#)
 Vial: [ARO-9925-13](#)
 Sample:

1. Morphine
2. Oxycodone
3. Hydromorphone
4. Amphetamine
5. Naloxone
6. Methamphetamine
7. Codeine
8. MDA
9. Oxycodone
10. Naltrexone
11. Hydrocodone
12. MDMA

13. MDEA
14. Norfentanyl
15. Tramadol
16. Benzoylcegonine
17. Meperidine
18. Meprobamate
19. Norbuprenorphine
20. Fentanyl
21. Buprenorphine
22. Flurazepam
23. Carisoprodol
24. PCP
25. Propoxyphene
26. Sufentanil
27. 6-MAM
28. Midazolam
29. Normeperidine
30. EDDP
31. Methadone
32. Lorazepam
33. Clonazepam
34. Norpropoxyphene
35. Oxazepam
36. Hydroxylprazolam
37. Nordiazepam
38. Flunitrazepam
39. Temazepam
40. Alprazolam
41. Diazepam

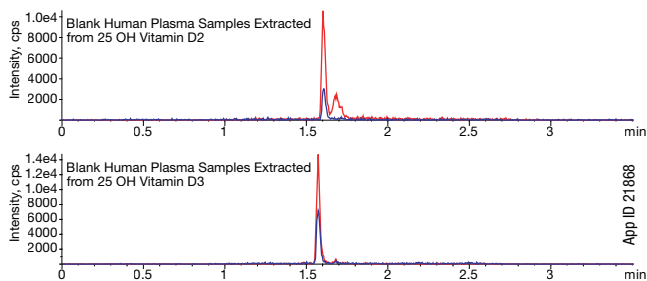
Vitamin D

Column: Kinetex 2.6 μ m C18
 Dimensions: 30 x 3.0 mm
 Guard Cartridge: [AJ0-8775](#)
 Guard Holder: [AJ0-9000](#)
 Part No.: [00A-4462-Y0](#)
 Mobile Phase: A: 0.1 % Formic acid in Water
 B: 0.1 % Formic acid in Methanol

Gradient	Time (min)	% B
	0	60
	0.5	95
	2	95
	2.01	60
	3.5	60

Flow Rate: 0.6 mL/min
 Temperature: 22 °C
 Detection: Tandem Mass Spectrometer (MS/MS) (22 °C)
 Detector: SCIEX API 5000™ System
 Filter: [AF0-8203-52](#)
 Vial: [ARO-9925-13](#)
 Sample:

1. 25-Hydroxy Vitamin D2 (25-OH D2)
2. 25-Hydroxy Vitamin D3-2H3
3. 25-Hydroxy Vitamin D3-d6 (25-OH D3-d6)



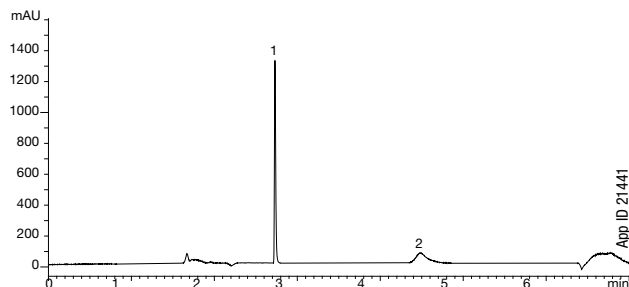
Human Plasma Vitamin C

Column: Kinetex 5 μ m XB-C18
 Dimensions: 150 x 4.6 mm
 Guard Cartridge: [AJ0-8768](#)
 Guard Holder: [AJ0-9000](#)
 Part No.: [00F-4605-E0](#)
 Mobile Phase: A: 0.1 % Formic acid in Water
 B: Acetonitrile

Gradient	Time (min)	% B
	0	0
	3.5	0
	3.6	100
	5	100
	5.1	0
	7	0

Flow Rate: 0.8 mL/min
 Temperature: 22 °C
 Detection: UV @ 245 nm
 Filter: [AF0-8103-52](#)
 Vial: [ARO-9925-13](#)
 Sample:

1. Vitamin C (ascorbic acid)
2. Uric acid



Applications

Food Testing

Multi-Class Antibiotics Screening of Meat

Column: Kinetex 2.6 µm C18

Dimensions: 50 x 2.1 mm

Part No.: 00B-4462-AN

Mobile Phase: A: 0.1 % Formic acid in Water

B: 0.1 % Formic acid in Methanol

Gradient	Time (min)	% B	Time (min)	% B
	0	2	7.37	99
	0.3	2	8.27	99
	7.27	80	13	2

Flow Rate: 0.5 mL/min

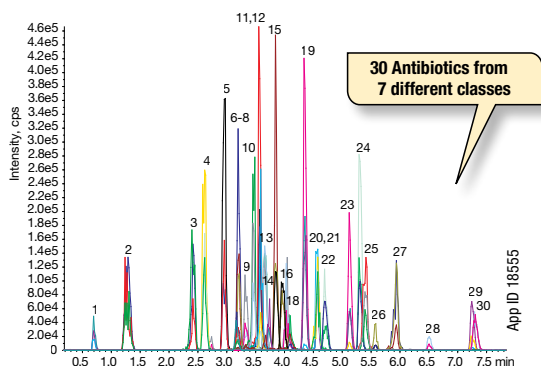
Temperature: 40 °C

Detection: Mass Spectrometer (MS) (300 °C)

Detector: SCIEX® API 4000™ System

Note: Analytes spiked at 100 ng/mL

Sample: See full list of analytes at www.phenomenex.com



Multi-Toxin Screen

Column: Kinetex 2.6 µm XB-C18 100 Å

Dimensions: 50 x 2.1 mm

Part No.: 00B-4496-AN

Mobile Phase: A: Water with 5 mM Ammonium acetate and 0.5 % Acetic acid

B: Methanol with 5 mM Ammonium acetate and 0.5 % Acetic acid

Gradient	Time (min)	% B	Time (min)	% B
	0	2	5.2	98
	2	2	8	98
	5	80		

Flow Rate: 0.45 mL/min

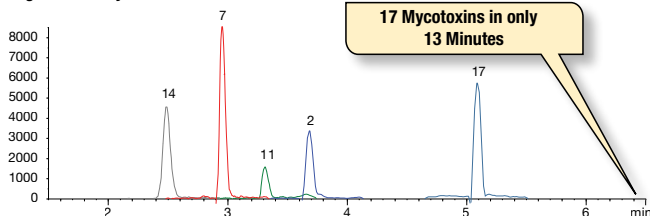
Temperature: Ambient (22 °C)

Detection: Tandem Mass Spectrometer (MS/MS) (550 °C)

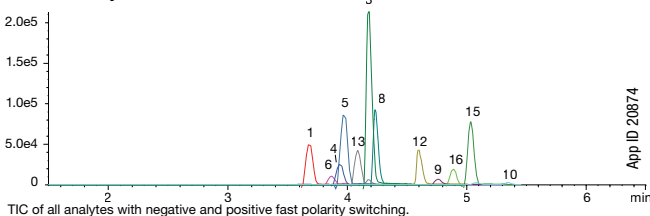
Detector: SCIEX API 5500™

Sample: 1. 15-Acetyldeoxynivalenol	7. Deoxynivalenol	13. Monoacetoxyscirpenol
2. 3-Acetyldeoxynivalenol	8. Diacetoxyscirpenol	14. Nivalenol
3. Aflatoxin B1	9. Fumonisin B1	15. Ochratoxin
4. Aflatoxin B2	10. Fumonisin B2	16. T-2 toxin
5. Aflatoxin G1	11. Fusarenon X	17. Zearalenon
6. Aflatoxin G2	12. HT-2 toxin	

Negative Polarity



Positive Polarity



TIC of all analytes with negative and positive fast polarity switching.

Azo Dyes

Column: Kinetex 2.6 µm C18

Dimensions: 150 x 4.6 mm

Part No.: 00F-4462-EQ

Mobile Phase: A: 0.1 % Phosphoric acid in Water

B: 0.1 % Phosphoric acid in Acetonitrile

Gradient	Time (min)	% B	Time (min)	% B
	0	25	17.01	25
	15	95	20	25
	17	95		

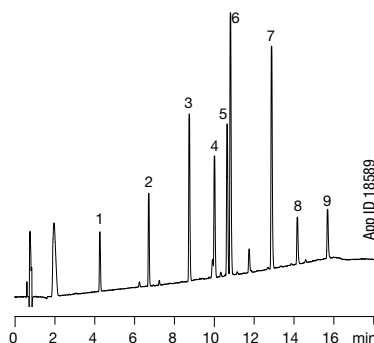
Flow Rate: 1.8 mL/min

Temperature: 50 °C

Detection: UV @ 215 nm

Backpressure: 380 bar

Sample: 1. Orange II	6. Sudan I
2. Sudan Orange G	7. Sudan II
3. Fast Garnet GBC	8. Sudan III
4. Dimethyl yellow	9. Sudan IV
5. Sudan Red G	



Pharmaceutical

Tricyclic Antidepressants

Column: Kinetex 2.6 µm C18

Dimensions: 50 x 2.1 mm

Part No.: 00B-4462-AN

Mobile Phase: A: 0.1 % Formic acid in Water

B: 0.1 % Formic acid in Methanol

Gradient	Time (min)	% B	Time (min)	% B
	0	40	4.01	40
	3.5	80	5	40
	4	80		

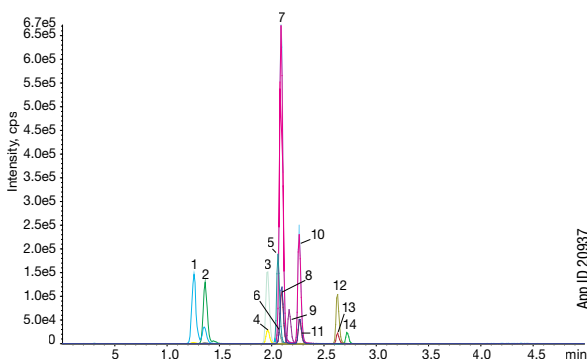
Flow Rate: 0.4 mL/min

Temperature: 22 °C

Detection: MS/MS

Detector: SCIEX® API 4000™ System

Sample: 1. Doxepin	8. Nortriptyline
2. DM-Doxepin	9. Amitriptyline
3. Imipramine-D3 (IS)	10. Protriptyline-D3 (IS)
4. Imipramine	11. Protriptyline
5. Desipramine-D3 (IS)	12. Clomipramine-D3 (IS)
6. Desipramine	13. Clomipramine
7. Nortriptyline-D3 (IS)	14. DM-Clomipramine

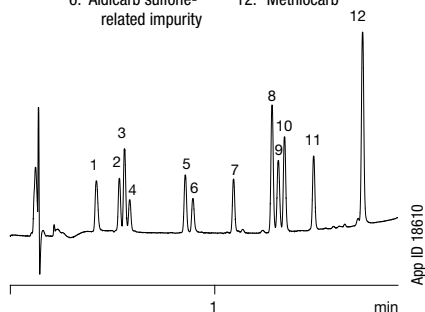


Applications Environmental

Carbamate Pesticides: EPA Method 531.1

Column: Kinetex 2.6 µm C18
Dimensions: 50 x 2.1 mm
Part No.: [00B-4462-AN](#)
Guard Cartridge: [AJ0-8782](#)
Guard Holder: [AJ0-9000](#)
Mobile Phase: A: 0.1 % Phosphoric acid in Water
 B: 0.1 % Phosphoric acid in Acetonitrile
Gradient: (95:5) A/B to (5:95) A/B over 3 min
Flow Rate: 1.0 mL/min
Temperature: 40 °C
Detection: UV @ 210 nm
Filter: [AF0-8203-52](#)
Vial: [AR0-9925-13](#)
Sample:

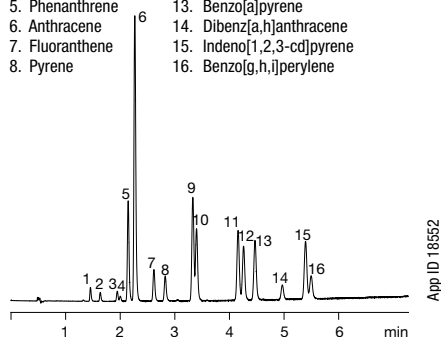
1. Aldicarb sulfoxide	7. Aldicarb
2. Oxamyl	8. Baygon® (Propoxur)
3. Aldicarb sulfone	9. Carbofuran
4. Methomyl	10. Carbaryl
5. 3-OH-Carbofuran	11. 1-Naphthol
6. Aldicarb sulfone-related impurity	12. Methiocarb



Polyaromatic Hydrocarbons (PAHs): EPA Method 610

Column: Kinetex 2.6 µm C18
Dimensions: 100 x 4.6 mm
Part No.: [00D-4462-E0](#)
Guard Cartridge: [AJ0-8768](#)
Guard Holder: [AJ0-9000](#)
Mobile Phase: A: Water
 B: Acetonitrile
Gradient: (30:70) A/B to (0:100) A/B over 10 min
Flow Rate: 1.5 mL/min
Temperature: 30 °C
Detection: UV @ 254 nm
Filter: [AF0-8203-52](#)
Vial: [AR0-9925-13](#)
Sample:

1. Naphthalene	9. Chrysene
2. Acenaphthylene	10. Benz[a]anthracene
3. Fluorene	11. Benzo[b]fluoranthene
4. Acenaphthene	12. Benzo[k]fluoranthene
5. Phenanthrene	13. Benzo[a]pyrene
6. Anthracene	14. Dibenzo[a,h]anthracene
7. Fluoranthene	15. Indeno[1,2,3-cd]pyrene
8. Pyrene	16. Benzo[g,h,i]perylene

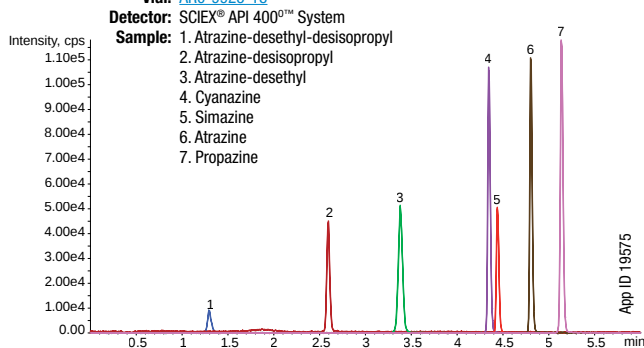


Triazine Pesticides: EPA Method 536

Column: Kinetex 2.6 µm XB-C18
Dimensions: 50 x 2.1 mm
Part No.: [00B-4496-AN](#)
Guard Cartridge: [AJ0-8782](#)
Guard Holder: [AJ0-9000](#)
Mobile Phase: A: 5 mM Ammonium Acetate
 B: Methanol
Gradient:

Time (min)	% B
0	5
0.25	40
2	40
3	75
4	75
4.1	5

Flow Rate: 0.3 mL/min
Temperature: 25 °C
Detection: MS/MS
Filter: [AF0-8203-52](#)
Vial: [AR0-9925-13](#)
Detector: SCIEX® API 4000™ System



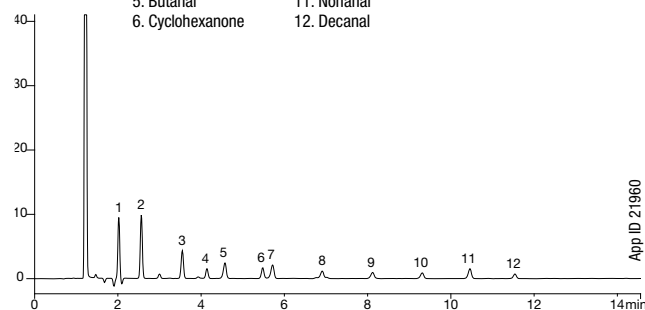
Carbonyl Compounds in Drinking Water

Column: Kinetex 5 µm C18
Dimensions: 150 x 4.6 mm
Part No.: [00F-4601-E0](#)
Guard Cartridge: [AJ0-8768](#)
Guard Holder: [AJ0-9000](#)
Mobile Phase: A: Water
 B: Acetonitrile
Gradient:

Time (min)	% B
0	50
15	100
20	100

Flow Rate: 2 mL/min
Temperature: 30 °C
Detection: UV @ 360 nm (ambient)
Filter: [AF0-8103-52](#)
Vial: [AR0-9925-13](#)
Sample:

1. Formaldehyde	7. Pentanal
2. Acetaldehyde	8. Hexanal
3. Propanal	9. Heptanal
4. Crotonaldehyde	10. Octanal
5. Butanal	11. Nonanal
6. Cyclohexanone	12. Decanal



Kinetex™ Core-Shell LC Columns

Material Characteristics

Packing Material	pH Stability	Particle Sizes (µm)	Pore Size (Å)	Effective Surface Area (m ² /g)	Effective Carbon Load (%)	USP Classification	Pressure Stability (bar)
Polar C18	1.5-8.5*	2.6	100	200	9	L1	1000/600*
PS C18	1.5-8.5*	2.6	100	200	9	L1	1000/600*
EVO C18	1-12	5, 2.6, 1.7	100	200	11	L1	1000/600*
C18	1.5-8.5**	5, 2.6, 1.7, 1.3	100	200	12	L1	1000/600*
XB-C18	1.5-8.5**	5, 3.5, 2.6, 1.7	100	200	10	L1	1000/600*
C8	1.5-8.5**	5, 2.6, 1.7	100	200	8	L7	1000/600*
Biphenyl	1.5-8.5**	5, 2.6, 1.7	100	200	11	L11	1000/600*
Phenyl-Hexyl	1.5-8.5**	5, 2.6, 1.7	100	200	11	L11	1000/600*
F5	1.5-8.5**	5, 2.6, 1.7	100	200	9	L43	1000/600*
HILIC	2.0-7.5	5, 2.6, 1.7	100	200	0	L3	1000/600*
PAH	1.5-8.5*	3.5	100	200	12	L118	1000/600*

*Columns are pH stable from 1.5-10 under isocratic conditions. Columns are pH stable 1.5-8.5 under gradient 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.

Ordering Information

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

for 2.1 mm ID

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

for 3.0 mm ID

5 µm Semi-Preparative Columns (mm)				SecurityGuard™ SemiPrep Cartridges***
Phases	100 x 10	150 x 10	250 x 10	10 x 10 /3pk
EVO C18	—	00F-4633-N0	00G-4633-N0	AJ0-9306
F5	—	—	00G-4724-N0	AJ0-9323
C18	00D-4601-N0	00F-4601-N0	00G-4601-N0	AJ0-9278
Biphenyl	—	00F-4627-N0	00G-4627-N0	AJ0-9280
XB-C18	—	00F-4605-N0	00G-4605-N0	AJ0-9278

for ID: 9-16 mm

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

for 4.6 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 /ea
EVO C18	00B-4633-P0-AX	00D-4633-P0-AX	00F-4633-P0-AX	00G-4633-P0-AX	AJ0-9304
F5	—	—	00F-4724-P0-AX	00G-4724-P0-AX	AJ0-9324
Biphenyl	00B-4627-P0-AX	00D-4627-P0-AX	00F-4627-P0-AX	00G-4627-P0-AX	AJ0-9272
XB-C18	00B-4605-P0-AX	00D-4605-P0-AX	00F-4605-P0-AX	00G-4605-P0-AX	AJ0-9145
C18	00B-4601-P0-AX	00D-4601-P0-AX	00F-4601-P0-AX	00G-4601-P0-AX	AJ0-9145
C8	00B-4608-P0-AX	00D-4608-P0-AX	00F-4608-P0-AX	00G-4608-P0-AX	AJ0-9205
Phenyl-Hexyl	00B-4603-P0-AX	00D-4603-P0-AX	00F-4603-P0-AX	00G-4603-P0-AX	AJ0-9147
HILIC	—	00D-4606-P0-AX	00F-4606-P0-AX	00G-4606-P0-AX	AJ0-9277

for ID: 18-29 mm



[‡]SecurityGuard ULTRA Cartridges require holder, Part No.: [AJ0-9000](#)
^{***}SemiPrep SecurityGuard Cartridges require holder, Part No.: [AJ0-9281](#)
^{*}PREP SecurityGuard Cartridges require holder, Part No.: [AJ0-8223](#)

Kinetex™ Core-Shell LC Columns

Ordering Information (continued)

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 / ea
EVO C18	00B-4633-UO-AX	00D-4633-UO-AX	00F-4633-UO-AX	00G-4633-UO-AX	AJ0-9305
F5	00B-4724-UO-AX	00D-4724-UO-AX	00F-4724-UO-AX	—	AJ0-9325
Biphenyl	—	—	00F-4627-UO-AX	00G-4627-UO-AX	AJ0-9273
XB-C18	00B-4605-UO-AX	00D-4605-UO-AX	00F-4605-UO-AX	00G-4605-UO-AX	AJ0-9204
C18	00B-4601-UO-AX	00D-4601-UO-AX	00F-4601-UO-AX	00G-4601-UO-AX	AJ0-9204
C8	00B-4608-UO-AX	00D-4608-UO-AX	00F-4608-UO-AX	00G-4608-UO-AX	AJ0-9217
Phenyl-Hexyl	00B-4603-UO-AX	00D-4603-UO-AX	00F-4603-UO-AX	00G-4603-UO-AX	AJ0-9216
HILIC	—	—	00F-4606-UO-AX	—	—

for ID: 30–49 mm

3.5 µm Minibore and MidBore™ Columns (mm)					SecurityGuard ULTRA Cartridges†	
Phases	50 x 2.1	100 x 2.1	150 x 2.1	100 x 3.0	3/pk	3/pk
PAH	00B-4764-AN	00D-4764-AN	00F-4764-AN	00D-4764-YO	AJ0-9535	AJ0-9534

for 2.1 mm ID for 3.0 mm ID

3.5 µm Analytical Columns (mm)		SecurityGuard™ ULTRA Cartridges†		2.6 µm Microbore Columns (mm)		
Phases	100 x 4.6	150 x 4.6	250 x 4.6	3/pk	Phases	50 x 1.0 100 x 1.0 150 x 1.0
XB-C18	00D-4744-EQ	00F-4744-EQ	—	AJ0-8768	XB-C18	00B-4496-AQ 00D-4496-AQ 00F-4496-AQ
PAH	00D-4764-EQ	00F-4764-EQ	00G-4764-EQ	AJ0-9533	C18	00B-4462-AQ — —

for 4.6 mm ID

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
XB-C18	00A-4496-AC	00B-4496-AC	00D-4496-AC	00F-4496-AC	00B-4496-AF	00F-4496-AF
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	—



For information on Micro LC Columns, Traps, and Fittings, see pp. 359–361

2.6 µm MercuryMS™ LC-MS Cartridges (mm)			MercuryMS Cartridge Holders		
Phases	20 x 2.0	20 x 4.0	Part No.	Description	Unit
Biphenyl	00M-4622-B0-CE	00M-4622-D0-CE	CH0-7188	Direct-Connect Cartridge Holder, 20 mm	ea
			CH0-5845	Standard Cartridge Holder, 20 mm	ea

2.6 µm Minibore Columns (mm)						SecurityGuard ULTRA Cartridges†
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	AJ0-9298
PS C18	00A-4780-AN	00B-4780-AN	—	00D-4780-AN	00F-4780-AN	AJ0-8951
Polar C18	00A-4759-AN	00B-4759-AN	—	00D-4759-AN	00F-4759-AN	AJ0-9532
Biphenyl	00A-4622-AN	00B-4622-AN	—	00D-4622-AN	00F-4622-AN	AJ0-9209
XB-C18	00A-4496-AN	00B-4496-AN	00C-4496-AN	00D-4496-AN	00F-4496-AN	AJ0-8782
C18	00A-4462-AN	00B-4462-AN	00C-4462-AN	00D-4462-AN	00F-4462-AN	AJ0-8782
C8	00A-4497-AN	00B-4497-AN	00C-4497-AN	00D-4497-AN	00F-4497-AN	AJ0-8784
HILIC	00A-4461-AN	00B-4461-AN	00C-4461-AN	00D-4461-AN	00F-4461-AN	AJ0-8786
Phenyl-Hexyl	00A-4495-AN	00B-4495-AN	00C-4495-AN	00D-4495-AN	00F-4495-AN	AJ0-8788
F5	00A-4723-AN	00B-4723-AN	—	00D-4723-AN	00F-4723-AN	AJ0-9322

for 2.1 mm ID

2.6 µm MidBore™ Columns (mm)						SecurityGuard ULTRA Cartridges†
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	AJ0-9297
PS C18	00A-4780-YO	00B-4780-YO	—	00D-4780-YO	00F-4780-YO	AJ0-8950
Polar C18	—	00B-4759-YO	—	00D-4759-YO	00F-4759-YO	AJ0-9531
Biphenyl	—	00B-4622-YO	—	00D-4622-YO	00F-4622-YO	AJ0-9208
XB-C18	00A-4496-YO	00B-4496-YO	00C-4496-YO	00D-4496-YO	00F-4496-YO	AJ0-8775
C18	00A-4462-YO	00B-4462-YO	00C-4462-YO	00D-4462-YO	00F-4462-YO	AJ0-8775
C8	00A-4497-YO	00B-4497-YO	00C-4497-YO	00D-4497-YO	00F-4497-YO	AJ0-8777
HILIC	00A-4461-YO	—	—	00D-4461-YO	00F-4461-YO	AJ0-8779
Phenyl-Hexyl	—	00B-4495-YO	—	00D-4495-YO	00F-4495-YO	AJ0-8781
F5	—	00B-4723-YO	—	00D-4723-YO	00F-4723-YO	AJ0-9321

for 3.0 mm ID

†SecurityGuard ULTRA Cartridges require holder, Part No.: [AJ0-9000](#)

**PREP SecurityGuard Cartridges require holder, Part No. [AJ0-8277](#)

Kinetex™ Core-Shell LC Columns

Ordering Information (continued)

2.6 µm Analytical Columns (mm)							SecurityGuard™ ULTRA Cartridges†
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	AJ0-9296
PS C18	00A-4780-E0	00B-4780-E0	—	00D-4780-E0	00F-4780-E0	00G-4780-E0	AJ0-8949
Polar C18	00A-4759-E0	00B-4759-E0	—	00D-4759-E0	00F-4759-E0	—	AJ0-9530
Biphenyl	—	00B-4622-E0	—	00D-4622-E0	00F-4622-E0	—	AJ0-9207
XB-C18	—	00B-4496-E0	00C-4496-E0	00D-4496-E0	00F-4496-E0	—	AJ0-8768
C18	00A-4462-E0	00B-4462-E0	00C-4462-E0	00D-4462-E0	00F-4462-E0	—	AJ0-8768
C8	—	00B-4497-E0	00C-4497-E0	00D-4497-E0	00F-4497-E0	—	AJ0-8770
HILIC	—	00B-4461-E0	00C-4461-E0	00D-4461-E0	00F-4461-E0	—	AJ0-8772
Phenyl-Hexyl	—	00B-4495-E0	00C-4495-E0	00D-4495-E0	00F-4495-E0	—	AJ0-8774
F5	00A-4723-E0	00B-4723-E0	—	00D-4723-E0	00F-4723-E0	—	AJ0-9320

for 4.6 mm ID

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	—

1.7 µm Minibore Columns (mm)					SecurityGuard ULTRA Cartridges†
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	AJ0-9298
Biphenyl	00A-4628-AN	00B-4628-AN	00D-4628-AN	00F-4628-AN	AJ0-9209
XB-C18	00A-4498-AN	00B-4498-AN	00D-4498-AN	00F-4498-AN	AJ0-8782
C18	00A-4475-AN	00B-4475-AN	00D-4475-AN	00F-4475-AN	AJ0-8782
C8	00A-4499-AN	00B-4499-AN	00D-4499-AN	00F-4499-AN	AJ0-8784
HILIC	00A-4474-AN	00B-4474-AN	00D-4474-AN	—	AJ0-8786
Phenyl-Hexyl	—	00B-4500-AN	00D-4500-AN	00F-4500-AN	AJ0-8788
F5	—	00B-4722-AN	00D-4722-AN	00F-4722-AN	AJ0-9322

for 2.1 mm ID



For Column Heater, see p. 416



1.7 µm MidBore™ Columns (mm)				SecurityGuard ULTRA Cartridges†
Phases	30 x 3.0	50 x 3.0	100 x 3.0	3/pk
XB-C18	00A-4498-Y0	00B-4498-Y0	00D-4498-Y0	AJ0-8775
C18	—	00B-4475-Y0	00D-4475-Y0	AJ0-8775
C8	00A-4499-Y0	00B-4499-Y0	00D-4499-Y0	AJ0-8777
HILIC	—	00B-4474-Y0	—	AJ0-8779
Phenyl	—	—	00D-4500-Y0	AJ0-8781

for 3.0 mm ID

†SecurityGuard ULTRA Cartridges require holder, Part No.: [AJ0-9000](#)

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

Core-Shell Performance Enhancement Kit

Ordering Information

Part No.	Unit
AQ0-8892	ea

SecurityGuard™ ULTRA Cartridge System

The SecurityGuard ULTRA cartridge system protects ultra-high performance columns, like Kinetex, from damaging contaminants and microparticulates.

- Extend Kinetex column lifetime
- Simple to use
- Pressure rated to 20000 psi (1378 bar)
- Fits virtually all manufacturers' columns 2.1 to 4.6 mm ID

High Pressure
Rated Format

SecurityGuard ULTRA Cartridge Holder

Ordering Information

Part No.	Description	Unit
AJ0-9000	SecurityGuard ULTRA Cartridge Holder	ea



For Core-Shell Performance Enhancement Kit description, see p. 421

For more information on the SecurityGuard ULTRA Cartridge System, see p. 335

For UHPLC system connections, see SecurityLINK™ UHPLC fingertight fitting system on pp. 336-337

Increase lab safety with HPLC / UHPLC solvent protection, see SecurityCAP™ products on pp. 417-418

UHPLC / HPLC Sure-Lok™ High Pressure PEEK Male Nut Fittings

Ordering Information

Part No.	Description	Unit
AQ0-8503	Sure-Lok High Pressure PEEK 1-Pc Nut 10-32, for 1/16 in. Tubing, 12000 psi (827 bar)	10/pk
AQ0-8530	Sure-Lok Fitting Tightening Tool, Aluminum	ea

See p. 420 for more information.



For Ultra-High Performance Stainless Steel Nut and Ferrule Set, see p. 420