



# pH Flexibility

**Expands Robustness and Reproducibility**

- **High Efficiency**
- **Excellent Lifetime**
- **pH Stable 1-12**

 **phenomenex**<sup>®</sup>  
...breaking with tradition<sup>SM</sup>



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

## Setting the Standard for pH Method Development

Gemini columns are rugged reversed phase HPLC columns that offer extended lifetime at extreme pH conditions and excellent stability for reproducible, high efficiency separations.

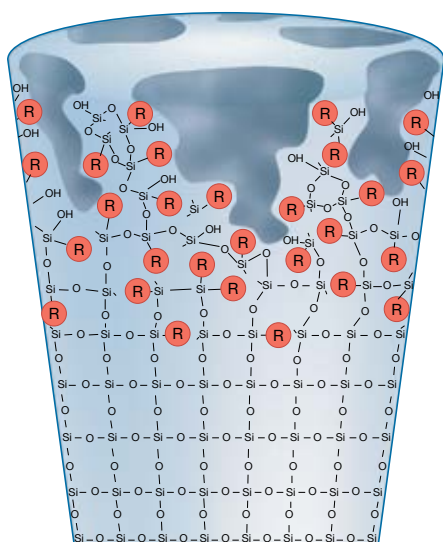
- Take full advantage of high and low pH conditions (pH 1-12) to manipulate selectivity
- Expect longer column lifetime with patented TWIN-NX™ technology
- For analytical and preparative separations of basic and acidic compounds

Phase	Description	USP Classification
NX-C18	The most rugged Gemini column, offering 5 times the durability of previous generation hybrid columns	L1
C6-Phenyl	A low bleed phenyl phase for UV and MS detection, which offers an aromatic selectivity complementary to C18 phases	L11
C18	Selectivity, high structural integrity and increased loadability for preparative and purification applications in pre-packed columns and bulk media	L1

### TWIN™ (Two-In-One) Technology

#### Gemini C18 and C6-Phenyl

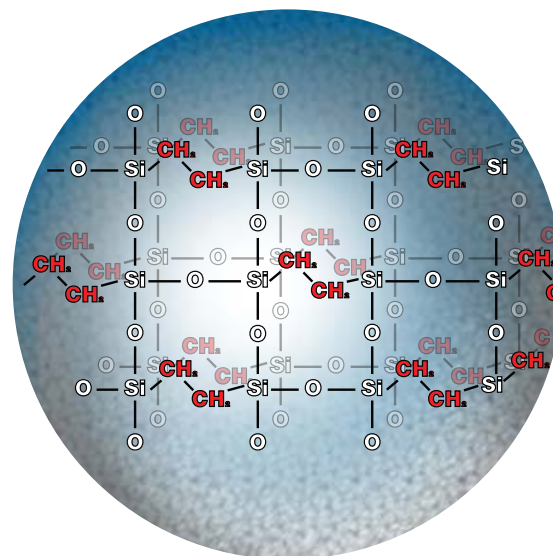
During the final stage of silica manufacturing a unique silica-organic layer is grafted to create a completely new composite particle. Since the internal base silica is unaltered by this manufacturing process, the particle retains its mechanical strength and rigidity along with excellent efficiency, while the silica-organic shell protects the particle from chemical attack.



### Second-Generation TWIN-NX Technology

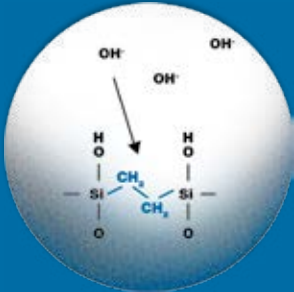
#### Gemini NX-C18

TWIN-NX technology uses an improved patented organo-silica grafting process which incorporates highly stabilizing ethane cross-linking. These organic groups are evenly incorporated into the grafted layers on the silica surface while maintaining a pure silica core. This not only provides resistance to high pH attack, but also maintains the high efficiency and mechanical strength of a silica particle.

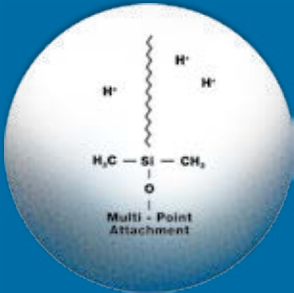


# How It Works

## Gemini NX-C18 Ethane Cross-Linking Resists High pH Attack



## Multi-Point Ligand Attachment Resists Low pH Ligand Cleavage

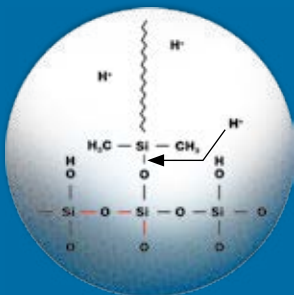


Vs.

## Standard Silica Silica Dissolution



## Ligand Cleavage



# Gemini® NX-C18

- pH stable 1-12 for durability
- Consistent performance in both volatile and non-volatile buffers
- High sample loading capacity for metabolite identification and preparative purification

## Gemini NX-C18

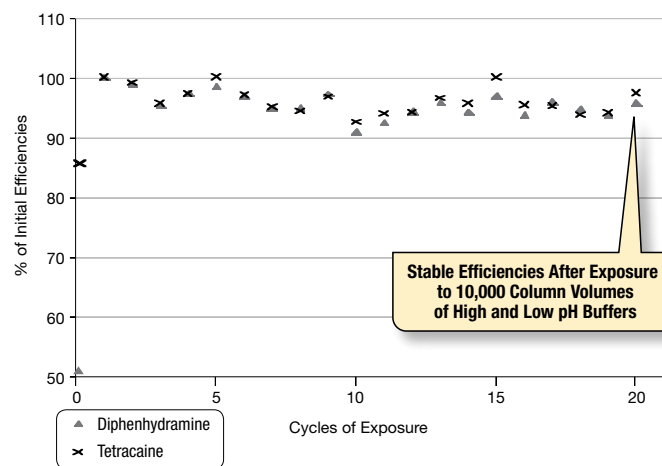
USP: L1

LC/MS  
Certified

<b>pH Stability:</b>	1.0 – 12.0
<b>Particle Size:</b>	3 µm, 5 µm, and 10 µm
<b>Phase:</b>	C18
<b>Application:</b>	Small molecules, basic compounds
<b>Strength:</b>	Most durable pH stable particle
<b>Pore Size (Å):</b>	110
<b>Surface Area (m<sup>2</sup>/g):</b>	375
<b>Carbon Load %:</b>	14
<b>End Capping:</b>	TMS

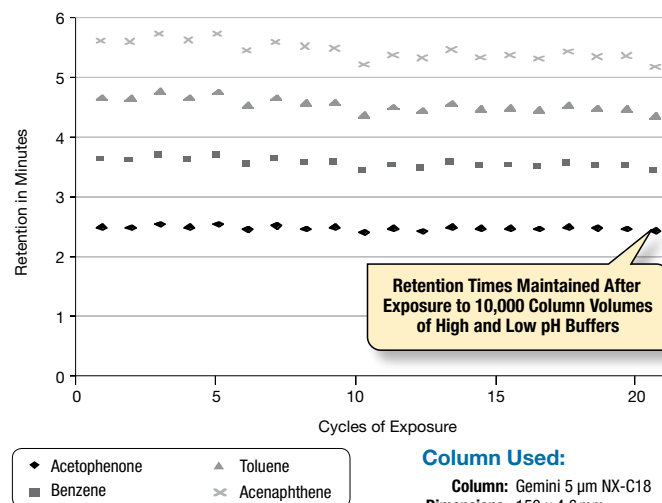
## Gemini NX-C18 Tested for Extreme Durability in Changing Mobile Phase pH

### Column Efficiencies Maintained in High pH Testing for 20 Cycles



Stable Efficiencies After Exposure to 10,000 Column Volumes of High and Low pH Buffers

### Retention Times of Four Probes Maintained in Neutral pH Testing for 20 Cycles



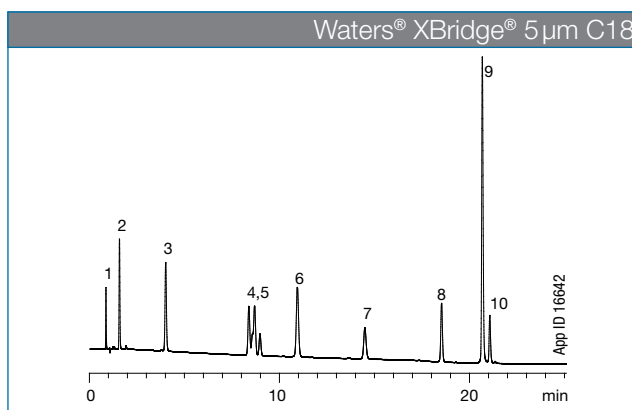
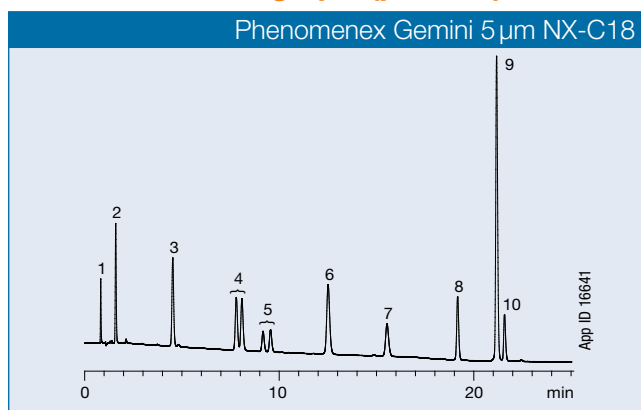
Retention Times Maintained After Exposure to 10,000 Column Volumes of High and Low pH Buffers

### Column Used:

Column: Gemini 5 µm NX-C18  
Dimensions: 150 x 4.6mm  
Part No.: 00F-4454-E0

The incredible durability across low and high pH ranges for Gemini NX-C18 analytical and preparative columns gives scientists the ability to get more performance from their "basic" separations.

### Polar Bases at High pH (pH 10.5)



Y-axis normalized for all chromatograms

#### Polar Bases (Beta Blockers) at High pH

##### Conditions for all columns:

**Dimensions:** 150 x 4.6 mm

**Mobile Phase:** A: 10 mM Ammonium Bicarbonate pH 10.5

B: Acetonitrile

**Gradient:** A/B (85:15) to (70:30) in 15 min to (50:50) in 5 min, Hold for 5 min

**Flow Rate:** 1.5 mL/min

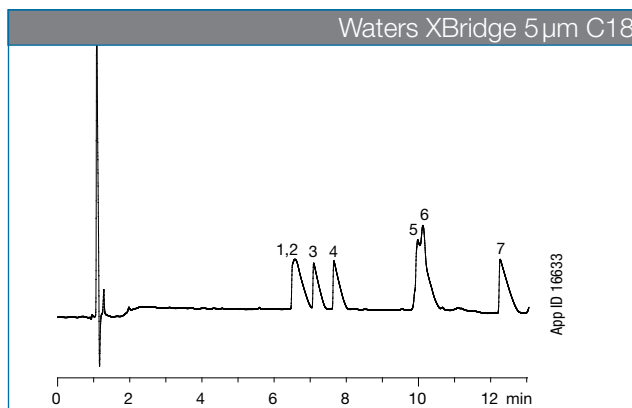
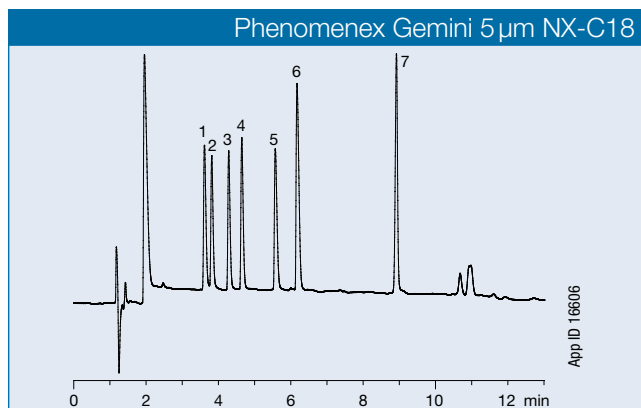
**Temperature:** Ambient

**Detection:** UV @ 230 nm

##### Sample:

1. Bisoprolol Contaminant
2. Sotalol
3. Atenolol
4. Labetalol (Diastereoisomeric Pair)
5. Nadolol (Diastereoisomeric Pair)
6. Pindolol
7. Metoprolol
8. Bisoprolol
9. Propranolol
10. Alprenolol

### Polar Bases at Low pH (pH 2.7)



Y-axis normalized for all chromatograms

#### Polar Bases (Antihistamines) in Formic Acid

##### Conditions for all columns:

**Dimensions:** 150 x 4.6 mm

**Mobile Phase:** A: 0.1 % Formic Acid in Water

B: 0.1 % Formic Acid in Acetonitrile

**Gradient:** A/B (90:10) to (50:50) in 10 min

**Flow Rate:** 1.5 mL/min

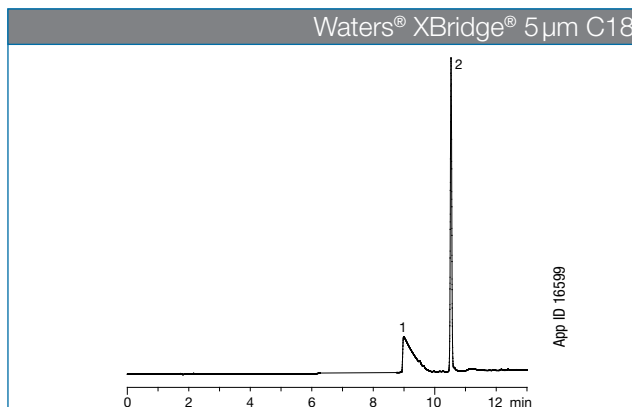
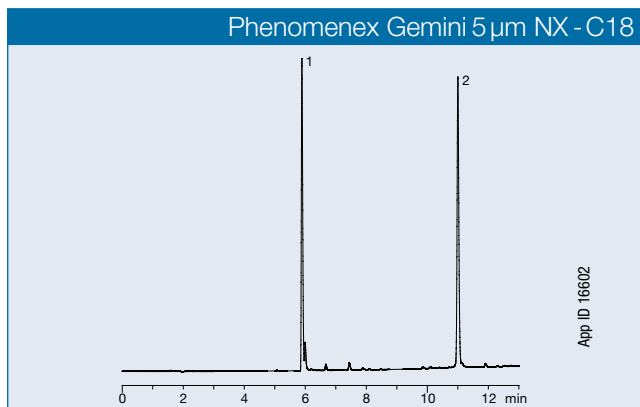
**Temperature:** Ambient

**Detection:** UV @ 210 nm

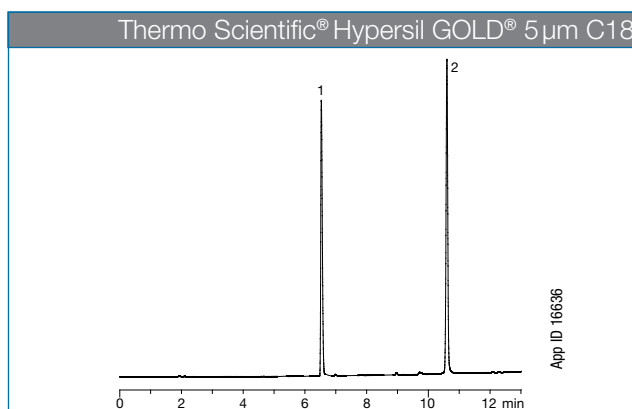
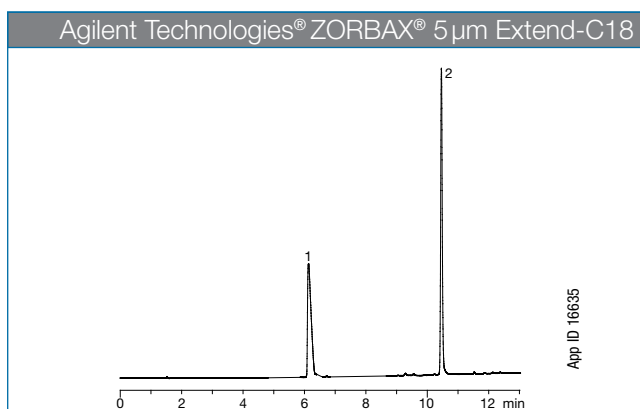
##### Sample:

1. Pyrilamine
2. Triprolidine
3. Chlorpheniramine
4. Brompheniramine
5. Chlorpyramine
6. Diphenhydramine
7. Loratadine

### Hydrophobic Basic Drugs at Low pH (pH 2.7)



Y-axis normalized for all chromatograms



Y-axis normalized for all chromatograms

#### Hydrophobic Bases (Diltiazem, Promethazine) in Formic Acid

**Columns:** Gemini 5µm NX-C18  
 XBridge 5µm C18  
 ZORBAX 5µm Extend-C18  
 Hypersil GOLD 5µm C18

**Conditions for all columns:**

**Dimensions:** 150 x 4.6 mm

**Mobile Phase:** A: 0.1% Formic Acid in Water

B: 0.1% Formic Acid in Acetonitrile

**Gradient:** A/B (95:5) to (5:95) in 10 min

**Flow Rate:** 1.0 mL/min

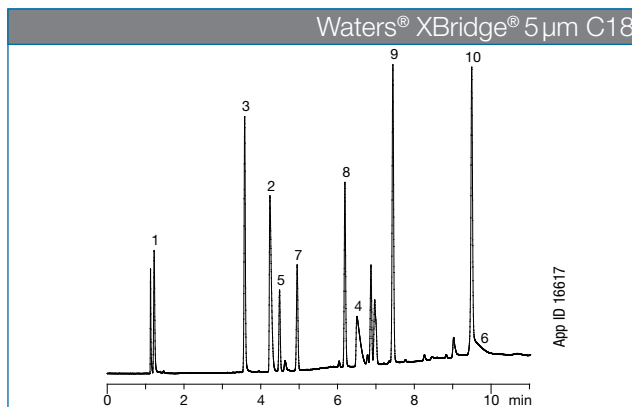
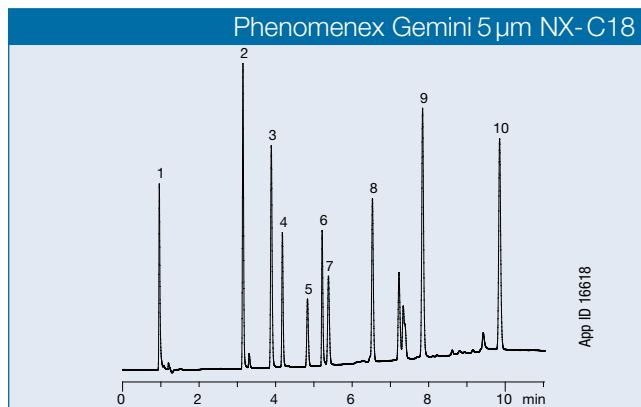
**Temperature:** Ambient

**Detection:** UV @ 254 nm

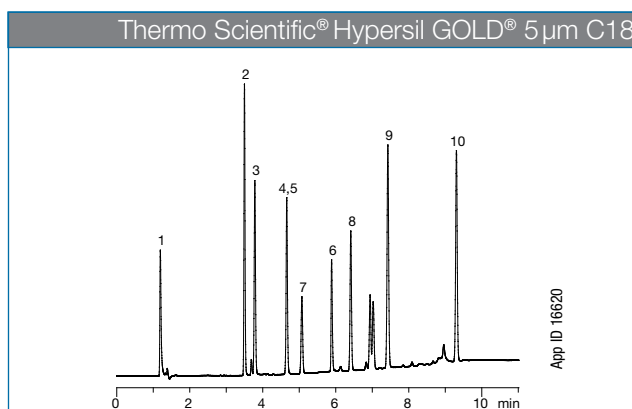
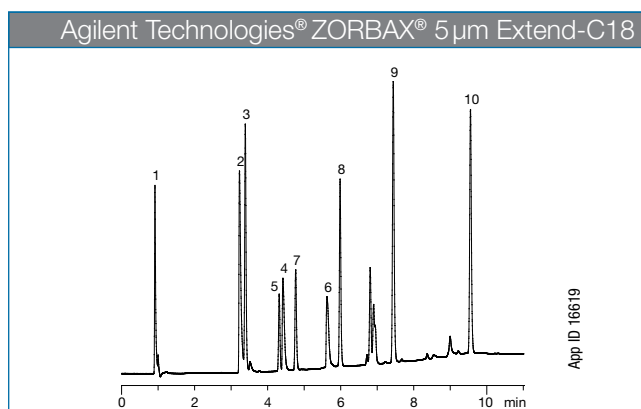
**Sample:** 1. Diltiazem  
 2. Promethazine

## Performance in Volatile Buffers

With the widespread adoption of LC/MS and LC/MS/MS techniques, column performance in volatile buffers is critical.



Y-axis normalized for all chromatograms



Y-axis normalized for all chromatograms

### Mixtures of Acids, Neutrals, and Bases in Formic Acid (pH 2.7)

**Columns:** Gemini 5 µm NX-C18  
XBridge 5 µm C18  
ZORBAX 5 µm Extend-C18  
Hypersil GOLD 5 µm C18

**Conditions for all columns:**

**Dimensions:** 150 x 4.6 mm

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

**Gradient:** A/B (95:5) to (20:80) in 8 min,  
Hold for 2 min

**Flow Rate:** 1.5 mL/min

**Temperature:** Ambient

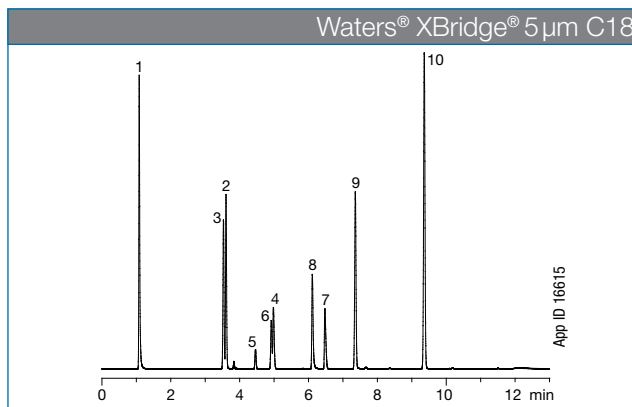
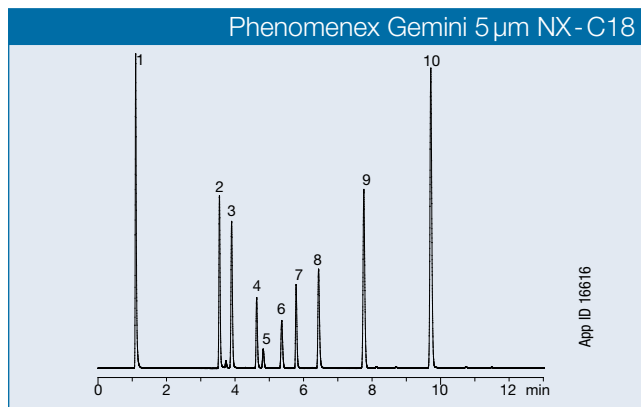
**Detection:** UV @ 254 nm

**Sample:**

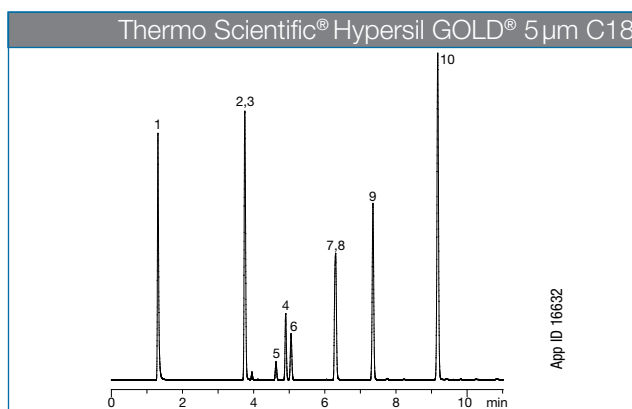
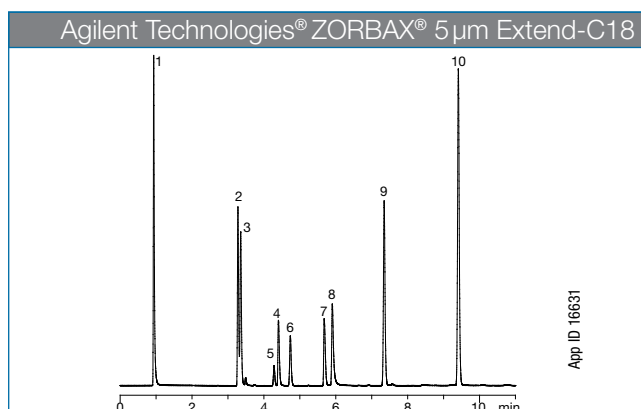
1. Pyridine	6. Nortriptyline
2. Quinidine	7. Phenol
3. Sulfathiazole	8. 3-Methyl-4-nitrobenzoic acid
4. Triprolidine	9. Methylsalicylaldehyde
5. Benzyl alcohol	10. Hexanophenone

## Performance in Non-Volatile Buffers

Gemini was engineered to be the column of choice for pharmaceutical scientists who work with difficult sample mixtures and harsh mobile phase conditions. The consistent performance and rugged phase will provide simplified method development and long column lifetimes.



Y-axis normalized for all chromatograms



Y-axis normalized for all chromatograms

### Mixtures of Acids, Neutrals, and Bases in Potassium Phosphate (pH 2.5)

**Columns:** Gemini 5 µm NX-C18  
XBridge 5 µm C18  
ZORBAX 5 µm Extend-C18  
Hypersil GOLD 5 µm C18

**Conditions for all columns:**

**Dimensions:** 150 x 4.6 mm

**Mobile Phase:** A: 20 mM Potassium Phosphate pH 2.5  
B: Acetonitrile

**Gradient:** A/B (95:5) to (20:80) in 8 min,  
Hold for 2 min

**Flow Rate:** 1.5 mL/min

**Temperature:** Ambient

**Detection:** UV @ 254 nm

**Sample:**

1. Pyridine	6. Phenol
2. Quinidine	7. Nortriptyline
3. Sulfathiazole	8. 3-Methyl-4-nitrobenzoic acid
4. Triprolidine	9. Methylsalicylaldehyde
5. Benzyl alcohol	10. Hexanophenone

- Increased loading and retention of basic compounds
- Silica efficiency and mechanical strength
- pH stable 1–12 for durability

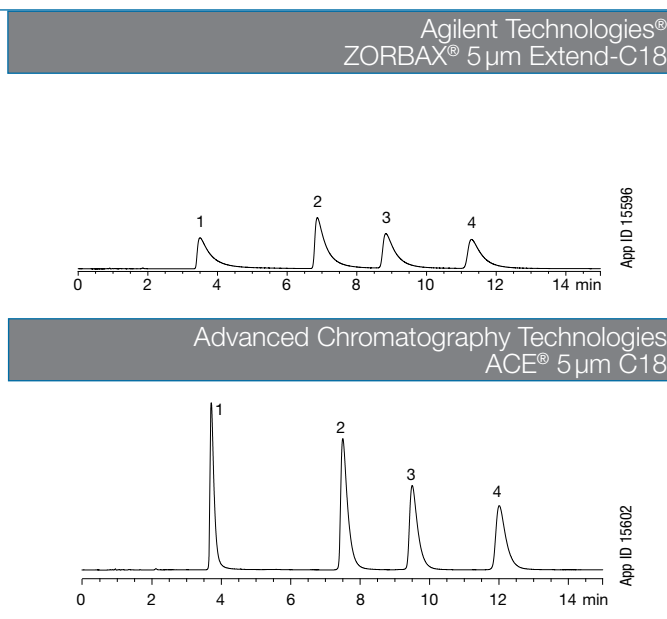
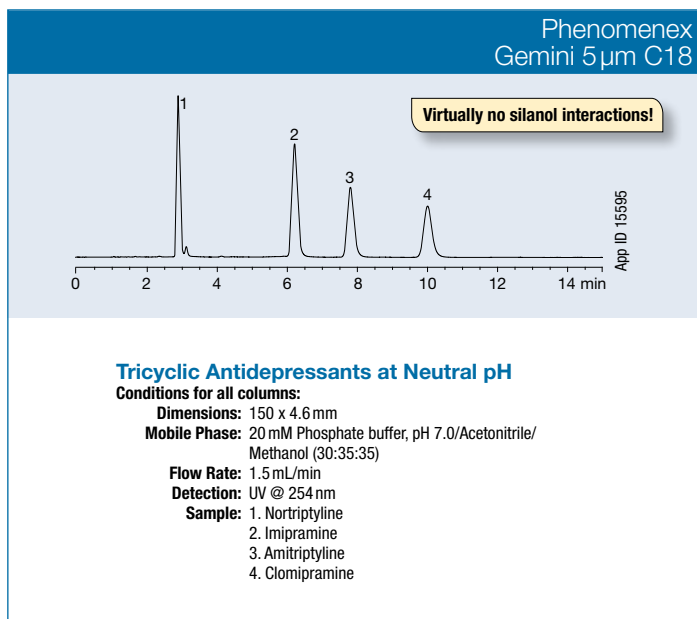
## Gemini C18

USP: L1

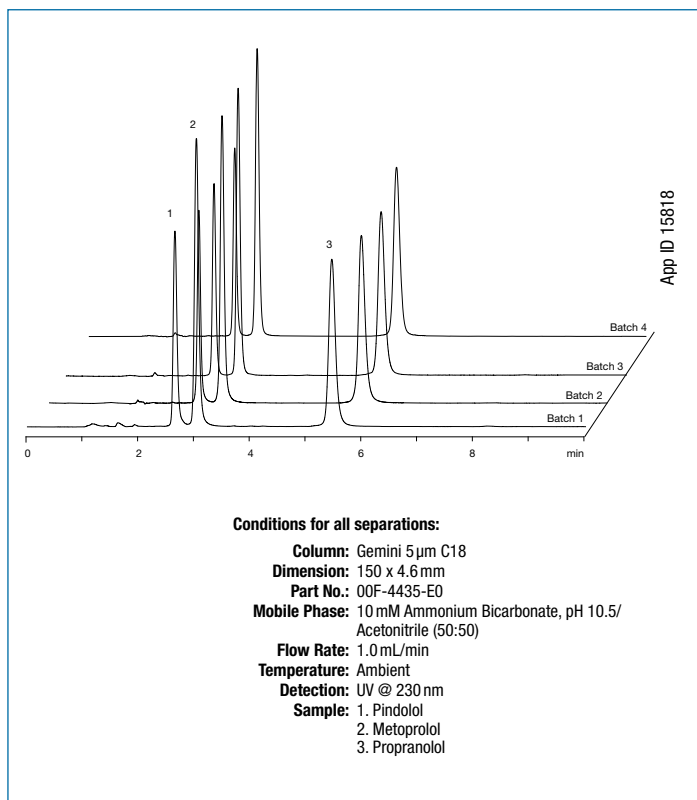
LC/MS  
Certified

<b>pH Stability:</b>	1.0 – 12.0
<b>Particle Size:</b>	3 µm, 5 µm, and 10 µm
<b>Phase:</b>	C18
<b>Application:</b>	Small molecules, basic compounds
<b>Strength:</b>	Wide pH stability, high efficiency
<b>Pore Size (Å):</b>	110
<b>Surface Area (m<sup>2</sup>/g):</b>	375
<b>Carbon Load %:</b>	14
<b>End Capping:</b>	TMS

## Chromatographic Comparisons

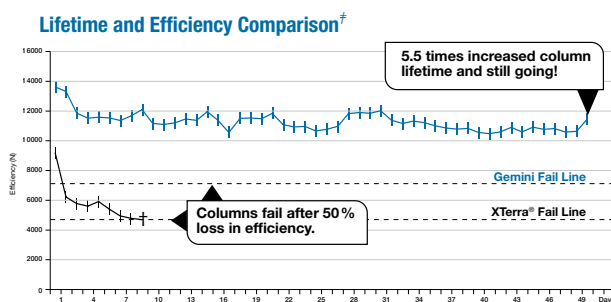


## Batch-to-Batch Reproducibility



## Extended Column Lifetime

The TWIN™ Technology engineering of Gemini provides stability and increased column lifetime. Whether used under isocratic or gradient conditions, Gemini out-performs and outlasts pH stable columns. This is illustrated below.



### Conditions for all columns:

**Columns:** Gemini 5 µm C18  
Waters XTerra 5 µm MS C18  
**Dimensions:** 150 x 4.6 mm  
**Mobile Phase:** Acetonitrile/50 mM Methylpyrrolidine  
Buffer, pH 11.5 (50:50)  
**Flow Rate:** 1 mL/min  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** Diphenhydramine



- pH stable 1-12 for durability
- Great aromatic selectivity
- Extremely low UV and MS bleed

## Gemini C6-Phenyl

USP: L11

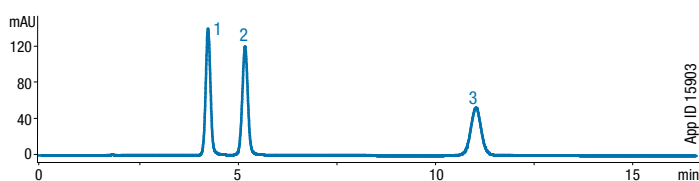
LC/MS  
Certified

<b>pH Stability:</b>	1.0 – 12.0
<b>Particle Size:</b>	3 µm and 5 µm
<b>Phase:</b>	Phenyl with C6 linker
<b>Application:</b>	Aromatic, polar or basic compounds
<b>Strength:</b>	High aromatic selectivity with exceptional peak shape even in neutral conditions. Extremely low bleed phenyl column.
<b>Pore Size (Å):</b>	110
<b>Surface Area (m<sup>2</sup>/g):</b>	375
<b>Carbon Load %:</b>	12
<b>End Capping:</b>	TMS

## Enhanced Performance for Aromatic Compounds

### Sulfa Drug Application

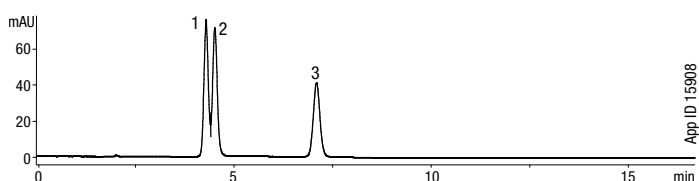
Resolution	Pursuit 5 µm Diphenyl	Gemini 5 µm C6-Phenyl
RS <sub>1,2</sub>	1.0	4.0
RS <sub>2,3</sub>	9.8	16.0



#### Conditions for all columns:

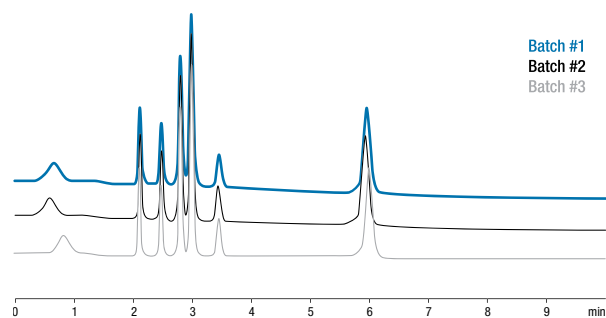
**Dimensions:** 150 x 4.6 mm  
**Mobile Phase:** 0.1% Formic Acid in Water/  
Methanol (70:30)  
**Flow Rate:** 1.0 mL/min  
**Temperature:** Ambient  
**Detection:** UV @ 254 nm  
**Sample:** 1. Sulfathiazole  
2. Sulfamerazine  
3. Sulfamethoxazole

### Agilent Technologies® Pursuit® 5 µm Diphenyl



## Reproducible Phenyl Phase

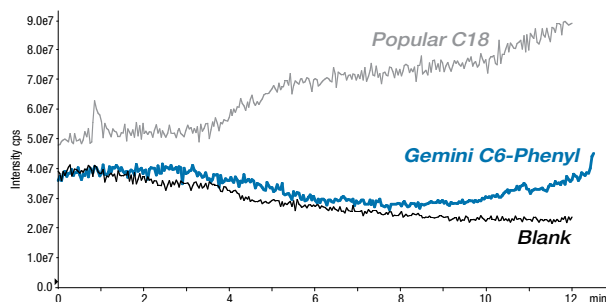
### Aliphatic Acid Application



#### Conditions for all columns:

**Column:** Gemini 5 µm C6-Phenyl  
**Dimensions:** 150 x 4.6 mm  
**Part No.:** 00F-4444-E0  
**Mobile Phase:** 20 mM Phosphate buffer,  
pH 2.5/Methanol (97:3)  
**Flow Rate:** 1.0 mL/min  
**Temperature:** Ambient  
**Detection:** UV @ 220 nm  
**Sample:** 1. Tartaric Acid 4. Acetic Acid  
2. Malic Acid 5. Citric Acid  
3. Lactic Acid 6. Propionic Acid

## Low Bleed Phenyl Phase



#### Conditions for all columns:

**Dimensions:** 150 x 3.0 mm  
**Mobile Phase:** A: 0.1% Formic acid in Water  
B: 0.1% Formic acid in Acetonitrile  
**Gradient:** 5% B to 95% B in 10 min, then  
hold 95% B for 2 min  
**Flow Rate:** 0.6 mL/min  
**Temperature:** Ambient  
**MS Detection:** ESI + ion mode,  
M/Z 100-700



# Seamlessly Scale-Up to Gemini® Axia Packed Prep Columns

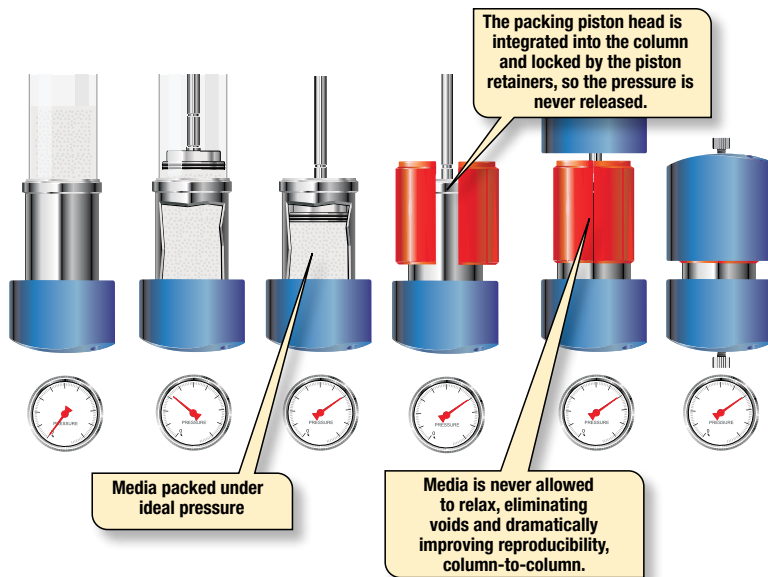
## Axia Packing Technology

Axia packed preparative columns involve a single axial compression step unlike conventional packed preparative columns. The ideal column bed density is custom calculated and automated for each specific media and column size. Computer control of the entire process ensures both proper bed density and column uniformity every time.

During the Axia packing process, the packing piston is locked in place, eliminating any decompression and then recompression of the media sorbent, thus maintaining media and column bed integrity. This solves common lifetime and performance problems associated with conventional packing processes for preparative columns.



## Axia Packing Process Involves: Compression → Final Column



## Axia Technology vs. Traditional “OBD” Prep Column Packing

### Traditional Slurry Packing

Traditional slurry packing processes, like the Waters® OBD™ (Optimum Bed Density) column packing approach, involve the column being removed from the column packing station once it is packed.

Several potential problems with this packing method are:

- Variability in column performance due to increased number of manual operations required for assembly
- Potential silica media damage during recompression
- Level of process control is based on traditional slurry packing technology



## Conventional Packing Process Involves: Compression → Decompression → Recompression → Final Column

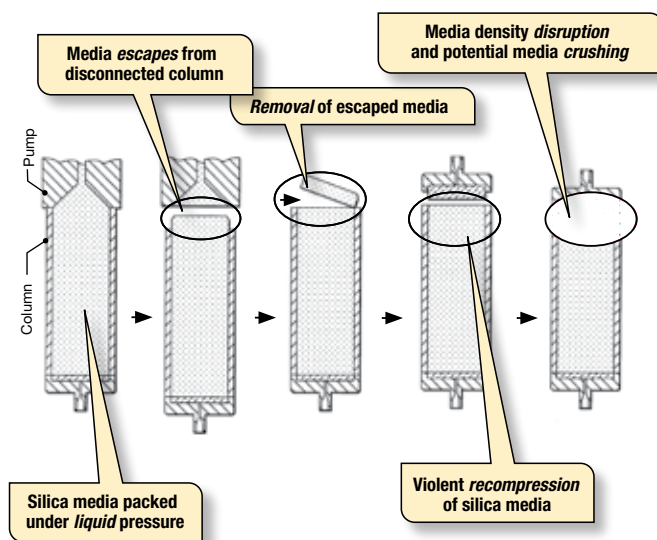


Diagram from Waters Corporation U.S. Patent No. 7,399,410

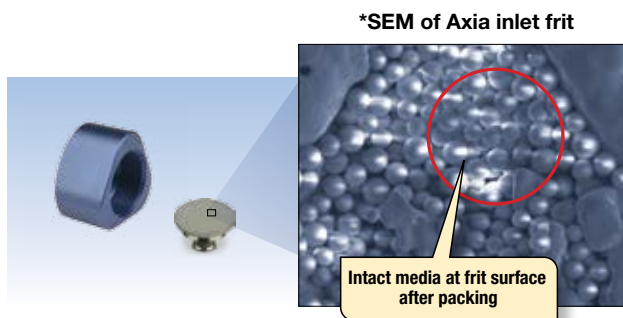


# See the Difference with Gemini® Axia Packed Prep Columns

## Axia packed columns produce uniform media bed with intact particles

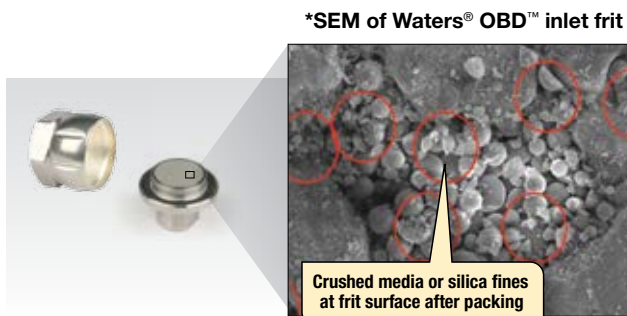
The highly tuned patented process and hardware eliminates potential decompression ensuring bed stability and optimal packing density.

The media found on the inlet frit of the Axia packed column shows no signs of damage unlike the media found on inlet frit of traditionally packed prep columns.



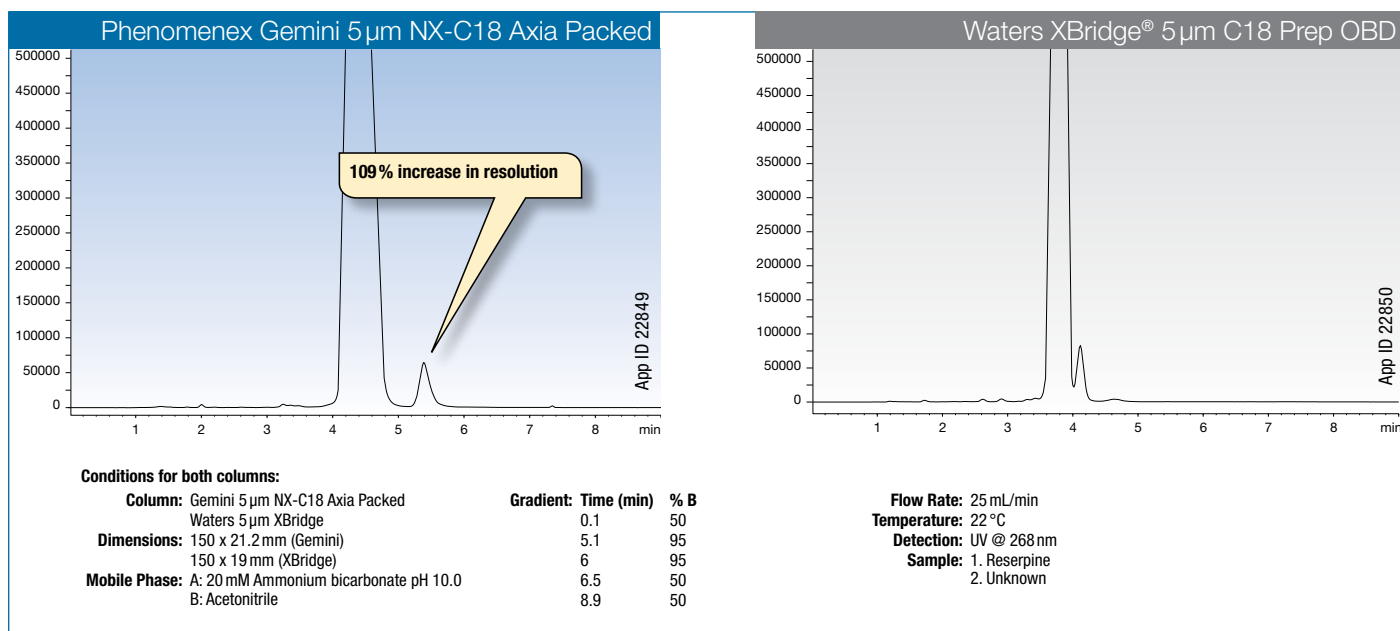
## Traditional packed preparative columns produce non-uniform media beds with sheared and crushed particles

Decompression and then recompression during packing can damage the media and lead to increased column-to-column variability, flow disturbances, and decreased column lifetimes.



\*The images are believed to be representative, but individual columns may vary.

Dramatically improve sample resolution, productivity and performance of any preparative column media with Axia column hardware and packing technology. Axia packed prep column offers the opportunity for longer lifetime, higher loading and increased throughput.



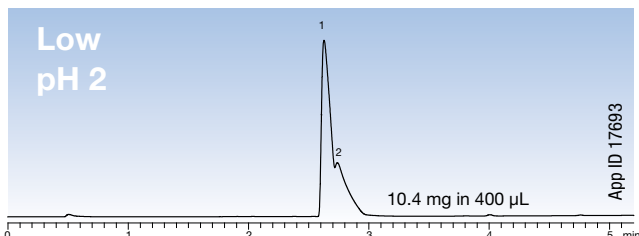
Packing Material	Particle Size (µm)	Pore Size (Å)	Surface Area (m <sup>2</sup> /g)	Carbon Load (%)	pH Range	Applications				Type of Compounds				Loading Available Surface Area	
						Small Molecules	Peptides	Proteins	Chiral	Oligonucleotides	Acids	Polar	Hydrophobic		Bases
Gemini C18	3, 5, 10	110	375	14	1.0-12.0	●	●				●	●	●	●	●
Gemini C6-Phenyl	3, 5	110	375	12	1.0-12.0	●	●				●	●	●	●	●
Gemini NX-C18	3, 5, 10	110	375	14	1.0-12.0	●	●				●	●	●	●	●

Comparative separations may not be representative of all applications.

# Gemini® pH Flexibility Allows for Increased Purification Performance

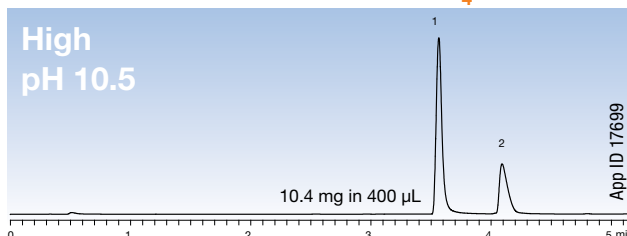
Separating basic compounds at higher pH levels produces dramatic changes when compared to low pH conditions. At pH 10.5, the basic compounds become neutralized and are more hydrophobic. The retention for the uncharged basic compounds increases providing an increase in separation along with superior peak shapes.

## Gemini NX-C18 with 0.5 % TFA



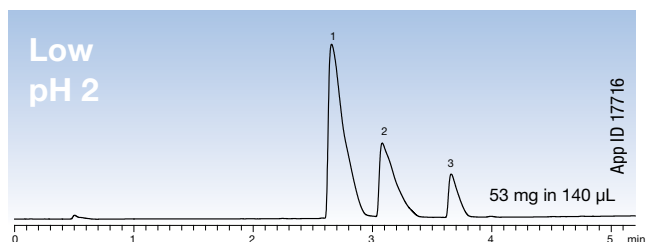
**Column:** Gemini 5 µm NX-C18 Axia™ Packed  
**Dimensions:** 50 x 21.2 mm  
**Mobile Phase:** A: 0.5% TFA in Water  
 B: Acetonitrile  
**Gradient:** 5% to 95% B in 5 min  
**Flow Rate:** 30 mL/min  
**Detection:** UV @ 254 nm  
**Sample:** 1. Diphenhydramine  
 2. Propranolol

## Gemini NX-C18 with 0.2 % NH<sub>4</sub>OH



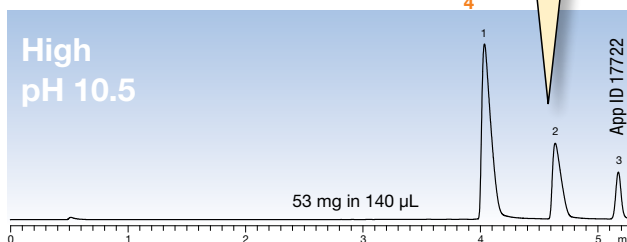
**Column:** Gemini 5 µm NX-C18 Axia Packed  
**Dimensions:** 50 x 21.2 mm  
**Mobile Phase:** A: 0.2% NH<sub>4</sub>OH in Water  
 B: Acetonitrile  
**Gradient:** 5% to 95% B in 5 min  
**Flow Rate:** 30 mL/min  
**Detection:** UV @ 254 nm  
**Sample:** 1. Diphenhydramine  
 2. Propranolol

## Gemini NX-C18 with 0.5 % TFA



**Column:** Gemini 5 µm NX-C18 Axia Packed  
**Dimensions:** 50 x 21.2 mm  
**Mobile Phase:** A: 0.5% TFA in Water  
 B: Acetonitrile  
**Gradient:** 5% to 95% B in 5 min  
**Flow Rate:** 30 mL/min  
**Detection:** UV @ 254 nm  
**Sample:** 1. Diphenhydramine  
 2. Oxybutynin  
 3. Terfenadine

## Gemini NX-C18 with 0.2 % NH<sub>4</sub>OH



**Column:** Gemini 5 µm NX-C18 Axia Packed  
**Dimensions:** 50 x 21.2 mm  
**Mobile Phase:** A: 0.2% NH<sub>4</sub>OH in Water  
 B: Acetonitrile  
**Gradient:** 5% to 95% B in 5 min  
**Flow Rate:** 30 mL/min  
**Detection:** UV @ 254 nm  
**Sample:** 1. Diphenhydramine  
 2. Oxybutynin  
 3. Terfenadine

“ Our Phenomenex Gemini and Luna Axia packed columns are the workhorses in our lab. These columns exhibit outstanding performance for challenging separations while also handling a high workload for standard separations. Longevity has also been excellent with some columns lasting 2 years or more. Dependability is so important in my line of work and these columns never disappoint!!

-Major Pharmaceutical Company, USA ”




### Tip:

If you want longer Gemini NX-C18 Axia packed column lifetimes, request technical note: **TN-1138 Increase Column Performance and Lifetime in Peptide and Protein Purification using Aggressive Wash Conditions**

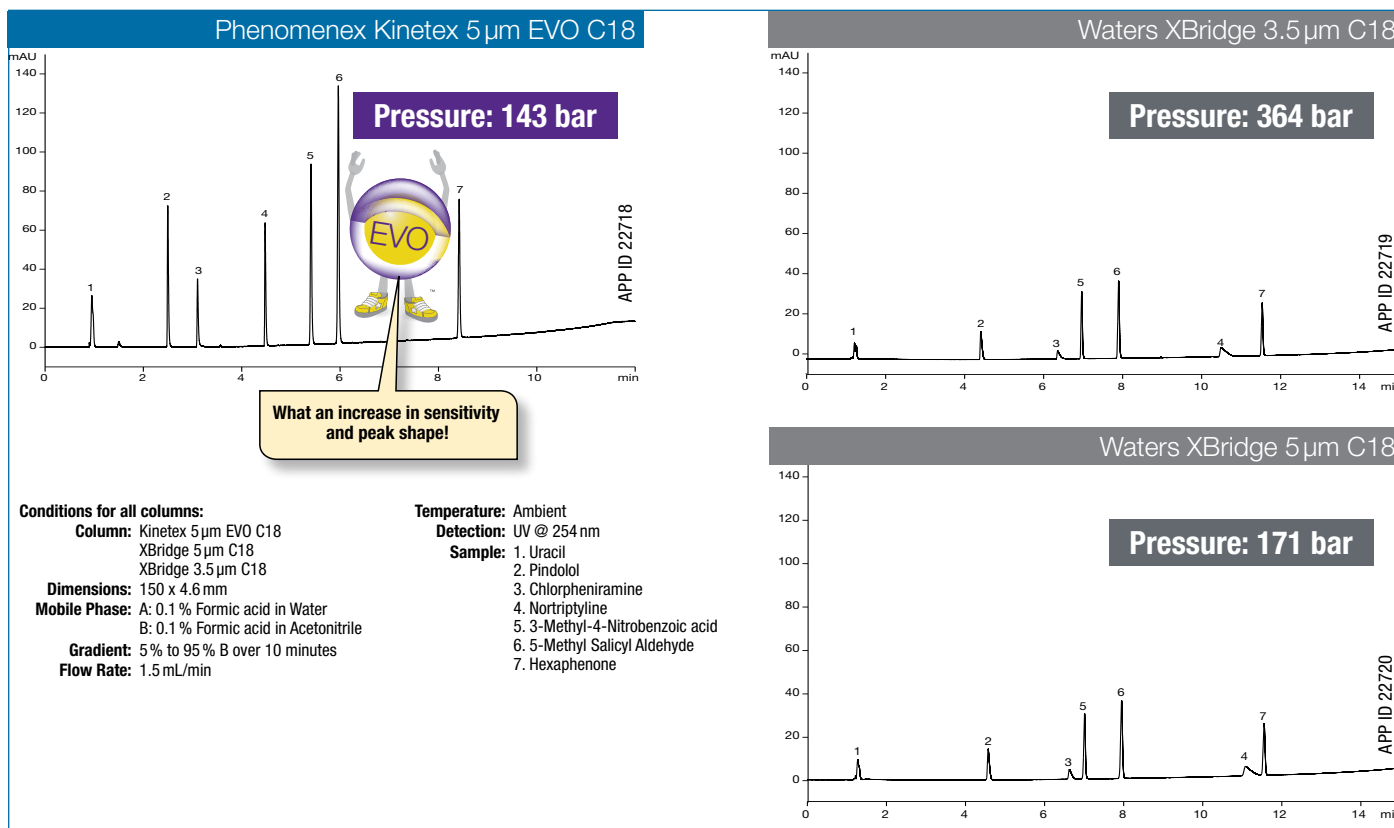
## Kinetex EVO C18: Superior Core-Shell Upgrade

- Higher sensitivity and efficiency without increase in backpressure
- Superior peak shape for bases
- Greater cost savings

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. 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!

	UHPLC	HPLC	PREP	
	Orange bar			20% higher efficiency than fully porous 1.7 µm columns
	Orange bar	Orange bar		Achieve sub-2 µm performance on HPLC and UHPLC systems
		Orange bar	Orange bar	3 µm or better efficiencies at 5 µm pressures for HPLC and PREP LC methods

## When Compared to Waters® XBridge® C18:



Comparative separations may not be representative of all applications.



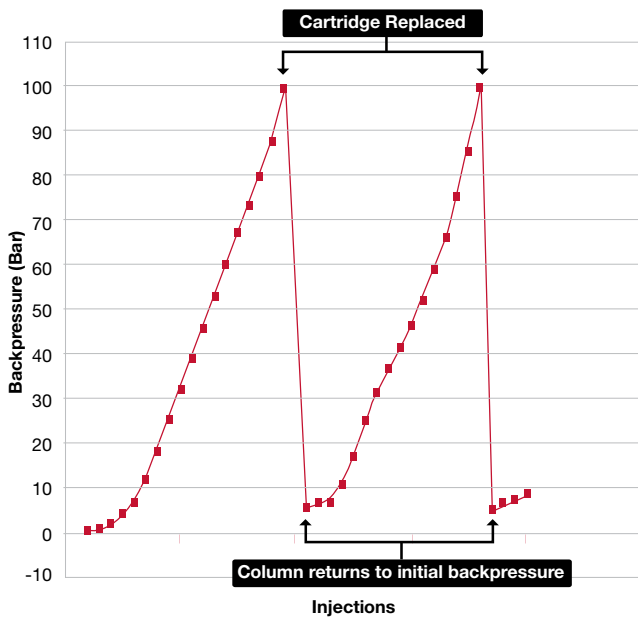
For Ordering Information and to Learn More about the Kinetex Family visit:  
[www.phenomenex.com/Kinetex](http://www.phenomenex.com/Kinetex)

## Protect your Columns from Contaminants

- Extends HPLC column lifetime
- Won't alter chromatography
- Compatible with virtually all HPLC columns
- Easy to determine when to change cartridge
- Simple to use

## Increases HPLC Column Lifetime, Guaranteed!

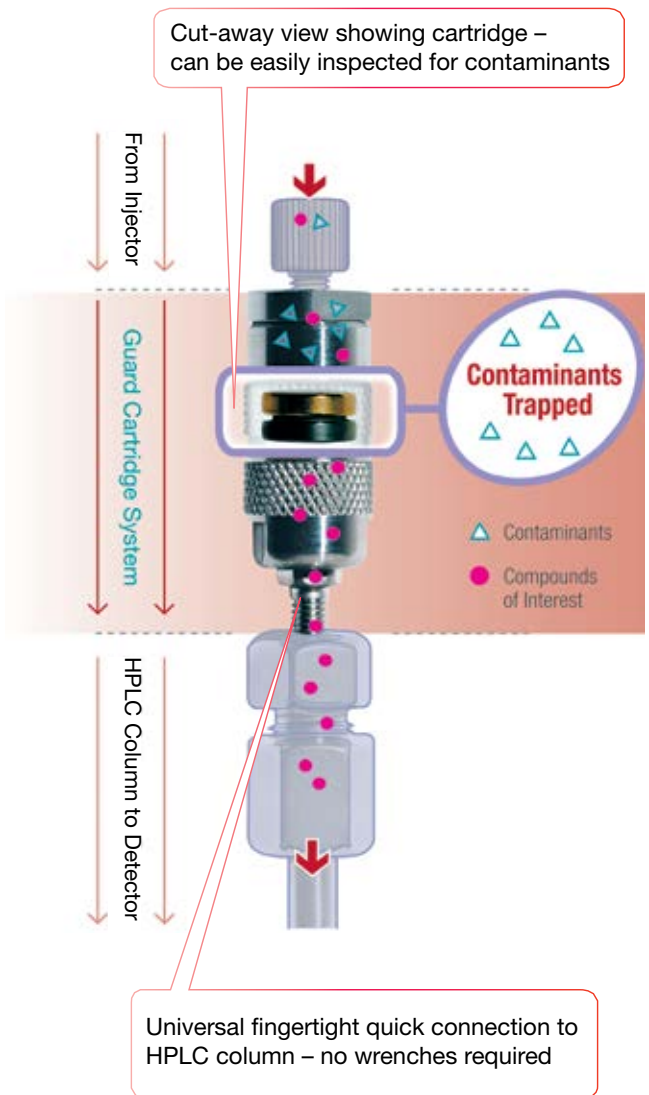
Simply replace SecurityGuard cartridges instead of your expensive HPLC columns. In this graph, once the expired SecurityGuard cartridge was replaced, the pressure immediately dropped and the column performance was restored allowing for extended column use.



Accelerated lifetime test using endogenous biomolecule matrix on a reversed phase C18 column, 5  $\mu$ m, 50 x 4.6 mm with SecurityGuard C18 cartridges. Backpressure values represent additional backpressure contributed by SecurityGuard.

## How Does It Work?

The SecurityGuard analytical cartridge holder (patented) directly fingertightens into virtually any manufacturer's column with a female/inverted endfitting. Contaminants are retained by an inexpensive disposable cartridge instead of damaging your valuable HPLC column investment.



See it in Action!  
Visit: [www.phenomenex.com/securityguard](http://www.phenomenex.com/securityguard)



## Ordering Information

3 µm Microbore, Minibore and MidBore™ Columns (mm)										SecurityGuard™ Cartridges (mm)	
Phases	50 x 1.0	20 x 2.0	30 x 2.0	50 x 2.0	100 x 2.0	150 x 2.0	50 x 3.0	100 x 3.0	150 x 3.0	4 x 2.0*	
C18	00B-4439-A0	00M-4439-B0	00A-4439-B0	00B-4439-B0	00D-4439-B0	00F-4439-B0	00B-4439-Y0	00D-4439-Y0	00F-4439-Y0	10/pk	
C6-Phenyl	00B-4443-A0	—	00A-4443-B0	00B-4443-B0	00D-4443-B0	00F-4443-B0	00B-4443-Y0	00D-4443-Y0	00F-4443-Y0	AJ0-7596	
										AJ0-7914	
										10/pk	
NX-C18	00B-4453-A0	00M-4453-B0	00A-4453-B0	00B-4453-B0	00D-4453-B0	00F-4453-B0	00B-4453-Y0	00D-4453-Y0	00F-4453-Y0	AJ0-8367	

for ID: 2.0-3.0 mm

3 µm Analytical Columns (mm)							SecurityGuard Cartridges (mm)	
Phases	20 x 4.0	30 x 4.6	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0*	
C18	00M-4439-D0	00A-4439-E0	00B-4439-E0	00D-4439-E0	00F-4439-E0	00G-4439-E0	10/pk	
C6-Phenyl	—	00A-4443-E0	00B-4443-E0	00D-4443-E0	00F-4443-E0	00G-4443-E0	AJ0-7597	
							AJ0-7915	
							10/pk	
NX-C18	—	—	00B-4453-E0	00D-4453-E0	00F-4453-E0	00G-4453-E0	AJ0-8368	

for ID: 3.2-8.0 mm



5 µm Minibore and MidBore Columns (mm)										SecurityGuard Cartridges (mm)	
Phases	30 x 2.0	50 x 2.0	150 x 2.0	250 x 2.0	50 x 3.0	100 x 3.0	150 x 3.0	250 x 3.0	4 x 2.0*		
C18	00A-4435-B0	00B-4435-B0	00F-4435-B0	00G-4435-B0	00B-4435-Y0	00D-4435-Y0	00F-4435-Y0	00G-4435-Y0	10/pk		
C6-Phenyl	00A-4444-B0	00B-4444-B0	00F-4444-B0	—	00B-4444-Y0	—	00F-4444-Y0	00G-4444-Y0	AJ0-7596		
									AJ0-7914		
									10/pk		
NX-C18	00A-4454-B0	00B-4454-B0	00F-4454-B0	—	00B-4454-Y0	00D-4454-Y0	00F-4454-Y0	00G-4454-Y0	AJ0-8367		

for ID: 2.0-3.0 mm

5 µm Analytical Columns (mm)						SecurityGuard Cartridges (mm)	
Phases	30 x 4.6	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0*	
C18	00A-4435-E0	00B-4435-E0	00D-4435-E0	00F-4435-E0	00G-4435-E0	10/pk	
C6-Phenyl	—	00B-4444-E0	00D-4444-E0	00F-4444-E0	00G-4444-E0	AJ0-7597	
						AJ0-7915	
						10/pk	
NX-C18	—	00B-4454-E0	00D-4454-E0	00F-4454-E0	00G-4454-E0	AJ0-8368	

for ID: 3.2-8.0 mm



For Gemini Capillary HPLC Columns, Guards, and Adapter, contact your Phenomenex technical consultant or local distributor.



5 µm Semi-Prep Columns (mm)			SecurityGuard Cartridges (mm)
Phases	150 x 10	250 x 10	10 x 10*
C18	00F-4435-N0	00G-4435-N0	3/pk
C6-Phenyl	—	00G-4444-N0	AJ0-7598
			AJ0-9156
			3/pk
NX-C18	00F-4454-N0	00G-4454-N0	AJ0-8369

for ID: 9-16 mm

Axia™ Packed Preparative Columns (mm)							SecurityGuard Cartridges (mm)	
Phases	50 x 21.2	100 x 21.2	150 x 21.2	250 x 21.2	50 x 30	75 x 30	15 x 21.2**	15 x 30.0*
<b>5 µm</b>							ea	ea
C18	00B-4435-P0-AX	00D-4435-P0-AX	00F-4435-P0-AX	00G-4435-P0-AX	00B-4435-U0-AX	00C-4435-U0-AX	AJ0-7846	AJ0-8308
C6-Phenyl	—	00D-4444-P0-AX	00F-4444-P0-AX	00G-4444-P0-AX	—	00C-4444-U0-AX	AJ0-9157	AJ0-9158
<b>5 µm</b>							ea	ea
NX-C18	00B-4454-P0-AX	00D-4454-P0-AX	00F-4454-P0-AX	00G-4454-P0-AX	00B-4454-U0-AX	00C-4454-U0-AX	AJ0-8370	AJ0-8371
<b>10 µm</b>							ea	ea
C18	00B-4436-P0-AX	00D-4436-P0-AX	00F-4436-P0-AX	00G-4436-P0-AX	—	—	AJ0-7846	AJ0-8308
<b>10 µm</b>							ea	ea
NX-C18	00B-4455-P0-AX	00D-4455-P0-AX	00F-4455-P0-AX	00G-4455-P0-AX	—	—	AJ0-8370	AJ0-8371

for ID: 18-29 mm 30-49 mm

Axia Packed Preparative Columns (mm) continued							SecurityGuard Cartridges (mm)	
Phases	100 x 30	150 x 30	250 x 30	50 x 50	100 x 50	150 x 50	250 x 50	15 x 30.0*
<b>5 µm</b>								ea
C18	00D-4435-U0-AX	00F-4435-U0-AX	00G-4435-U0-AX	—	—	—	—	AJ0-8308
C6-Phenyl	00D-4444-U0-AX	—	—	—	—	—	—	AJ0-9158
<b>5 µm</b>								ea
NX-C18	00D-4454-U0-AX	00F-4454-U0-AX	00G-4454-U0-AX	—	—	—	—	AJ0-8371
<b>10 µm</b>								ea
C18	00D-4436-U0-AX	00F-4436-U0-AX	00G-4436-U0-AX	—	00D-4436-V0-AX	00F-4436-V0-AX	00G-4436-V0-AX	AJ0-8308
<b>10 µm</b>								ea
NX-C18	00D-4455-U0-AX	00F-4455-U0-AX	00G-4455-U0-AX	00B-4455-V0-AX	00D-4455-V0-AX	00F-4455-V0-AX	00G-4455-V0-AX	AJ0-8371

for ID: 30-49 mm

\*SecurityGuard Analytical Cartridges require holder, Part No.: KJ0-4282  
 †SecurityGuard SemiPrep Cartridges require holder, Part No.: AJ0-9281  
 \*\* SecurityGuard PREP Cartridges require holder, Part No.: AJ0-8223  
 ♦ SecurityGuard PREP Cartridges require holder, Part No.: AJ0-8277



If Gemini analytical columns do not provide at least an equivalent separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a full refund.



# pH Flexibility

## Expands Robustness and Reproducibility

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t: +32 (0)2 511 8666 (Dutch)  
f: +31 (0)30-2383749  
beinfo@phenomenex.com

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f: +1 (310) 328-7768  
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### Finland

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### Disclaimers

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Axia column and packing technology is patented by Phenomenex. U.S. Patent No 7,674,383. Gemini and Kinetex EVO C18 are patented by Phenomenex. U.S. Patent Nos. 7,563,367 and 8,658,038 and foreign counterparts.

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