

# ACE<sup>®</sup> Generix<sup>™</sup>

High Performance, Excellent Value HPLC Columns

*Generix  
Excellence*

ACE

ACE

*Value*

*reproducibility*

- Excellent efficiency
- Excellent reproducibility
- Excellent column lifetime
- C8 and C18 phases
- 3 $\mu$ m and 5 $\mu$ m particles



**ACE<sup>®</sup> Generix<sup>™</sup>**  
HPLC Columns

# ACE<sup>®</sup> Generix<sup>™</sup>

High Performance, Excellent Value HPLC Columns

## High Efficiency 3µm and 5µm Particles with C18 and C8 Phases

- High purity, highly reproducible 3µm and 5µm silica
- Ultra narrow particle size distribution for excellent column efficiency
- C18 and C8 phases available

## Excellent Reproducibility

- Made in the United Kingdom in laboratories accredited to ISO9001 Quality Standard
- Every column individually tested and supplied with a test chromatogram
- Excellent column and silica batch reproducibility (see Figure 1)

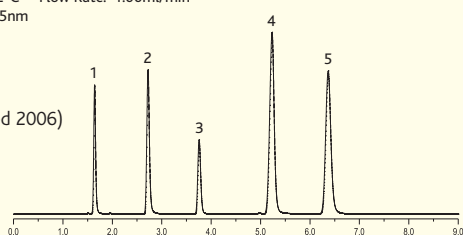
## Excellent Column Lifetime

- Highly stable bonded phases (see Figure 2)
- Ultra robust HPLC column packing technology

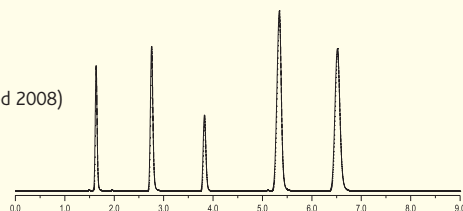
### Figure 1 - Excellent Reproducibility

Column: ACE Generix 3µm C18, 150 x 4.6mm  
Sample: 1) norephedrine 2) nortriptyline 3) toluene 4) imipramine 5) amitriptyline  
Mobile Phase: 80:20 MeOH/25mM KH<sub>2</sub>PO<sub>4</sub> (pH 6.0)  
Temperature: 22°C Flow Rate: 1.00ml/min  
Wavelength: 215nm

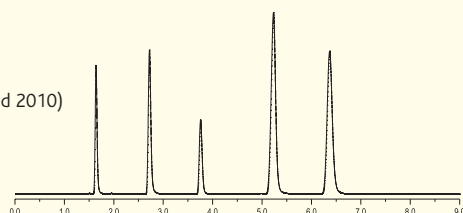
Batch #1  
(Manufactured 2006)



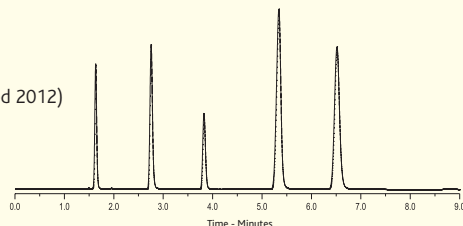
Batch #2  
(Manufactured 2008)



Batch #3  
(Manufactured 2010)



Batch #4  
(Manufactured 2012)



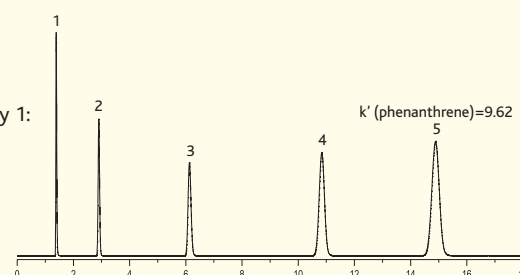
#### Conclusion:

Highly reproducible historical test data including different silica batches gives you future confidence in ACE Generix HPLC columns.

### Figure 2 - Excellent Stability

Acidic flow conditions  
Column: ACE Generix 5µm C18, 150 x 4.6mm  
Mobile Phase: 60:40 MeCN:0.1% TFA in H<sub>2</sub>O (pH 1.8)  
Temperature: 22°C Flow Rate: 1.00ml/min

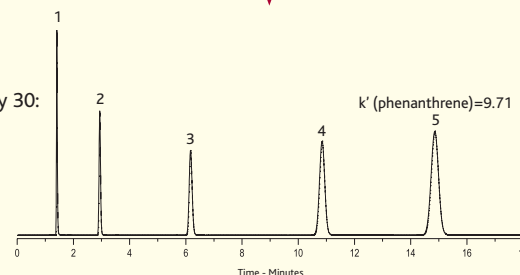
Day 1:



Acidic Mobile Phase (pH 1.8)  
(continuous flow)

>20,000 column volumes  
>2,000 injections

Day 30:



#### Evaluation conditions

Sample: 1) uracil 2) dimethyl phthalate 3) toluene 4) biphenyl 5) phenanthrene  
Mobile Phase: 60:40 MeCN:H<sub>2</sub>O  
Temperature: 22°C Flow Rate: 1.00ml/min  
Wavelength: 254nm

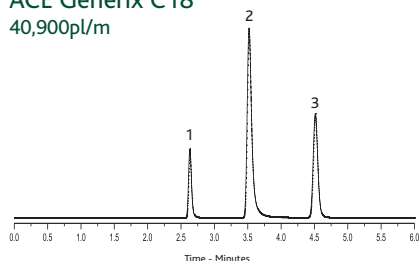
#### Conclusion:

Excellent chromatographic performance and stability for thousands of injections gives confidence in the long term use of ACE Generix HPLC columns.

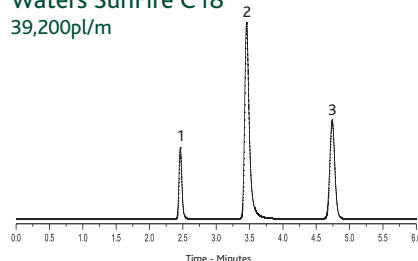
# Comparison of Leading C18 HPLC Column Brands

- Comparison of column efficiency for pyridine, a basic compound
- Efficiency measured at 10% peak height to account for peak tailing effects

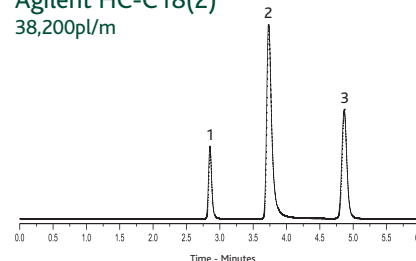
ACE Generix C18  
40,900pl/m



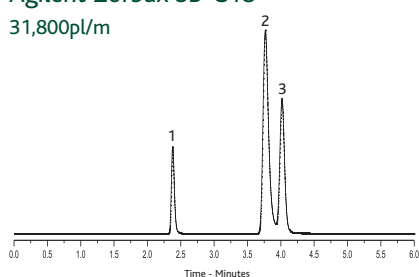
Waters SunFire C18  
39,200pl/m



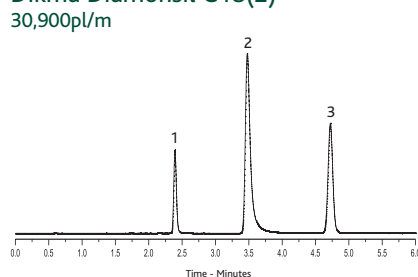
Agilent HC-C18(2)  
38,200pl/m



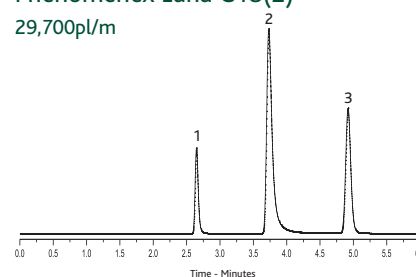
Agilent Zorbax SB-C18  
31,800pl/m



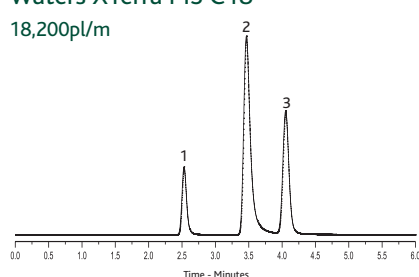
Dikma Diamonsil C18(2)  
30,900pl/m



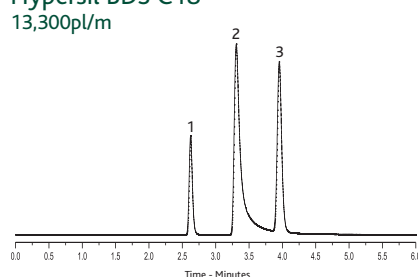
Phenomenex Luna C18(2)  
29,700pl/m



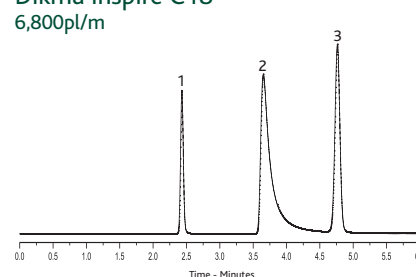
Waters XTerra MS C18  
18,200pl/m



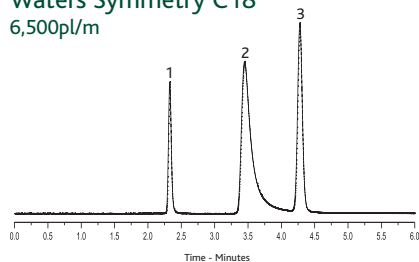
Hypersil BDS C18  
13,300pl/m



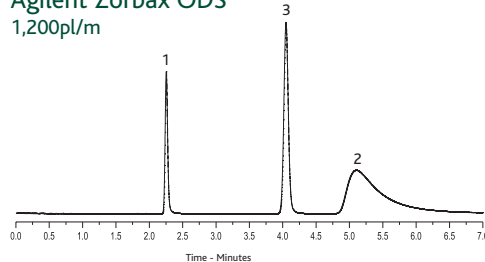
Dikma Inspire C18  
6,800pl/m



Waters Symmetry C18  
6,500pl/m



Agilent Zorbax ODS  
1,200pl/m



Column Dimensions: 250 x 4.6mm, 5µm  
Sample: 1) uracil 2) pyridine 3) phenol  
Mobile Phase: 60:40 MeOH/10mM KH<sub>2</sub>PO<sub>4</sub> (pH 6.0)  
Temperature: 22°C Flow Rate: 1.00ml/min  
Wavelength: 254nm

Comparative data may not be representative of all applications. Please see back page for acknowledgement of trademarks.

## Conclusion:

- Significant differences in efficiency, peak shape and selectivity are seen when analysing pyridine - a small highly basic molecule.
- Increased tailing and retention are generally indicative of undesirable secondary interactions between pyridine and silanol groups on the stationary phase surface. These interactions can also result in poor column reproducibility.
- ACE Generix columns provide excellent separations at a lower cost than many leading HPLC column brands.

# Phase Availability and Specifications

Phase <sup>a</sup>	Functional Group	Endcapped	Particle Size (µm)	Pore Size (Å)	Surface Area (m <sup>2</sup> /g)	Carbon Load (%)	Maximum pH Range	USP Listing
ACE Generix C18	Octadecyl	Yes	3, 5	110	280	15.0	2.0-8.0 <sup>b</sup>	L1
ACE Generix C8	Octyl	Yes	3, 5	110	280	8.7	2.0-8.0 <sup>b</sup>	L7

<sup>a</sup> ACE HPLC and ACE *Excel* UHPLC columns are available with 2µm, 3µm, 5µm and 10µm particle sizes and a wider range of stationary phase options.

<sup>b</sup> For optimum column lifetime, a pH range of 2-8 is recommended. To increase column lifetime at mid/high pH, organic buffers, low buffer concentrations, high % organic solvent and low temperatures must be considered. Further information is contained within "A Guide to HPLC and LC/MS Buffer Selection" by John Dolan – contact your distributor to request your FREE copy.

## ACE Generix 3µm C18 Columns

Column Diameter	Column Length			Guard Cartridge (5 pack)	PEEK Fingertight Column Connector (10 pack)
	50mm	100mm	150mm		
2.1mm	GEN-3C18-0502	GEN-3C18-1002	GEN-3C18-1502	GEN-3C18-GD2 <sup>1</sup>	ACE-CC10 <sup>2</sup>
4.6mm	GEN-3C18-0546	GEN-3C18-1046	GEN-3C18-1546	GEN-3C18-GD <sup>1</sup>	ACE-CC10 <sup>2</sup>

## ACE Generix 5µm C18 Columns

Column Diameter	Column Length			Guard Cartridge (5 pack)	PEEK Fingertight Column Connector (10 pack)
	100mm	150mm	250mm		
2.1mm	GEN-5C18-1002	GEN-5C18-1502	GEN-5C18-2502	GEN-5C18-GD2 <sup>1</sup>	ACE-CC10 <sup>2</sup>
4.6mm	GEN-5C18-1046	GEN-5C18-1546	GEN-5C18-2546	GEN-5C18-GD <sup>1</sup>	ACE-CC10 <sup>2</sup>

## ACE Generix 3µm C8 Columns

Column Diameter	Column Length			Guard Cartridge (5 pack)	PEEK Fingertight Column Connector (10 pack)
	50mm	100mm	150mm		
2.1mm	GEN-3C8-0502	GEN-3C8-1002	GEN-3C8-1502	GEN-3C8-GD2 <sup>1</sup>	ACE-CC10 <sup>2</sup>
4.6mm	GEN-3C8-0546	GEN-3C8-1046	GEN-3C8-1546	GEN-3C8-GD <sup>1</sup>	ACE-CC10 <sup>2</sup>

## ACE Generix 5µm C8 Columns

Column Diameter	Column Length			Guard Cartridge (5 pack)	PEEK Fingertight Column Connector (10 pack)
	100mm	150mm	250mm		
2.1mm	GEN-5C8-1002	GEN-5C8-1502	GEN-5C8-2502	GEN-5C8-GD2 <sup>1</sup>	ACE-CC10 <sup>2</sup>
4.6mm	GEN-5C8-1046	GEN-5C8-1546	GEN-5C8-2546	GEN-5C8-GD <sup>1</sup>	ACE-CC10 <sup>2</sup>

<sup>1</sup> 5 pack – use with stand alone cartridge holder H0001 and coupler C0001.

<sup>2</sup> PEEK fingertight column connector (10 pack) - recommended for connecting all HPLC columns to all 1/16" od tubing types, slip free to 6,000psi.

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