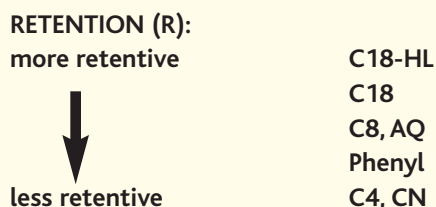


Choosing the Bonded Phase that's Best for Your Application

As a general rule, retention increases with chain length of the bonded phase, that is:



We recommend starting most method development projects with C18 or C8, knowing that if more retention and hence more resolution is needed, your next choice is C18-HL (Hi-Load). Starting with C8 offers the benefit of shorter analysis times and/or lower organic solvent use. The elution order for most compounds will be the same on the aliphatic (C18, C8, C4) phases. If a different elution order is required for compound verification or to resolve matrix components, changing to a phenyl or CN phase is far simpler than trying to change selectivity by mobile phase changes. In many cases, the ACE CN and ACE Phenyl phases will offer a significant difference in selectivity from the aliphatic phases. ACE AQ (see p.10) is particularly recommended for applications requiring high aqueous content mobile phases. Improved resistance to phase collapse is seen compared to standard C18 phases.

Need even more resolution?

- Choose 3 micron ACE columns

With today's increased pace of drug discovery, fast and efficient methods are the rule. Short, narrow-bore columns are replacing the conventional 250 x 4.6mm versions. ACE HPLC columns are available in both 3µm and 5µm particle sizes. Although 5µm particles are sufficient for most applications, greater efficiency can be obtained by using smaller particles. This increased efficiency enables the use of shorter (<150mm) column lengths, resulting in decreased analysis times. Due to the excellent flow characteristics of ACE silica, you will not experience the high back pressures often encountered with other columns.

ACE LC/MS and rapid analysis columns are highlighted on pages 28-31.

Narrow-bore? Rapid analysis? LC/MS? Preparative? - No problem!

ACE bonded phases are available in 3µm, 5µm, 10µm and 15µm particle sizes, so regardless of your application, you can scale up or scale down and be assured of the same selectivity. For fast, high resolution preparative chromatography, a range of pre-packed ACE preparative and combinatorial chemistry columns are highlighted on pages 32-34.

Application Summary

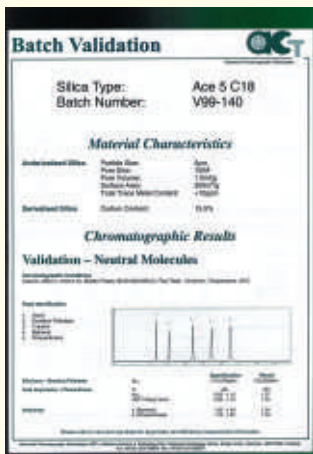
PHASE	DESCRIPTION	APPLICATION
C18	Optimised for maximum efficiency, superior peak shape and resolution. Utilises the same ultra high purity silica as all ACE phases.	A C18 phase for most HPLC applications. Available in a range of particle sizes, from LC/MS and microbore applications through to preparative scale separations.
C8	Increased bonding density compared to ACE C18. Similarly optimised for maximum efficiency, superior peak shape and resolution.	Recommended starting point for method development. Also suited to high aqueous conditions and for rapid analysis applications.
C4	Combines lower hydrophobicity with excellent chromatographic performance. Improved hydrolytic stability compared to conventional C4 phases.	Use for rapid analysis optimisation, when less retention than C8 or C18 is required. Also suitable for analysis of small proteins.
CN	Suitable for use in both normal - and reversed-phase modes. Greatly improved performance, stability and reproducibility compared to conventional CN phases.	Use to increase retention of polar compounds. Ideal for gradients and rapid screening applications due to fast equilibration capabilities.
Ph	Hydrophobicity between C4 and C8 phases, with increased polar selectivity. Improved performance, stability and reproducibility compared to conventional phenyl phases.	Offers alternative selectivity for aromatic, amine or polar compounds.
AQ	A unique C18 bonded phase with integral polar functionality. Resistant to phase collapse even with 100% aqueous mobile phase.	Recommended for applications where 100% aqueous mobile phases are required. Ideal for fast gradients due to rapid re-equilibration properties.
C18-HL	High surface area, high carbon load phase, leading to increased retention and loading compared to ACE C18.	Suitable for LC/MS due to increased retention characteristics. Availability of particle sizes up to 15µm ensures easy scale-up for preparative and process scale applications.

Reproducibility and Validation

Subtle changes in silanol activity are one of the primary causes of column to column selectivity changes. Base deactivated columns generally have better reproducibility than other column types due to fewer interactions

between silanols and polar compounds. ACE columns, by virtually eliminating silanol interactions, provide an outstanding level of column to column reproducibility for polar compounds.

Complete Validation



SILICA MANUFACTURE

Ultra pure reagents and strict control of the manufacturing process result in a high purity silica with uniform surface characteristics.

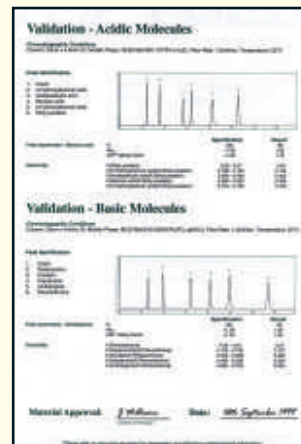
Advanced bonding techniques are then employed, resulting in a range of highly base deactivated phases that combine superb reproducibility with excellent robustness.



BATCH VALIDATION

Every batch is extensively tested for selectivity and surface activity with a range of acidic, basic and neutral molecules.

ACE HPLC columns have the most stringent batch validation specification of any reversed-phase material.



COLUMN VALIDATION

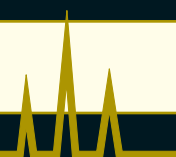
All columns are tested with a multi-component mixture to ensure excellent performance and peak shape are obtained.



ACE 5 C18 - Basic Molecule Validation Parameters;

Parameter	Unit	Specification	Result
Peak Asymmetry - Amitriptyline	%	>90	97
	$A_{S_{0.1}}$	<1.30	1.02
	USP Tailing Factor	<1.20	1.05
Selectivity	k' (Phenanthrene)	4.08 - 4.42	4.35
	k' (Desipramine)/ k' (Phenanthrene)	0.120 - 0.130	0.125
	k' (Doxepin)/ k' (Phenanthrene)	0.340 - 0.368	0.352
	k' (Imipramine)/ k' (Phenanthrene)	0.496 - 0.538	0.517
	k' (Amitriptyline)/ k' (Phenanthrene)	0.654 - 0.708	0.678

Sample: 1) Uracil 2) Desipramine 3) Doxepin 4) Imipramine 5) Amitriptyline 6) Phenanthrene, Mobile Phase: 80:20 MeOH/25mM KH_2PO_4 (pH6.0)
Column Dimensions: 250 x 4.6mm i.d., Flow Rate: 1.0ml/min Temperature: 22°C, Wavelength: 215nm



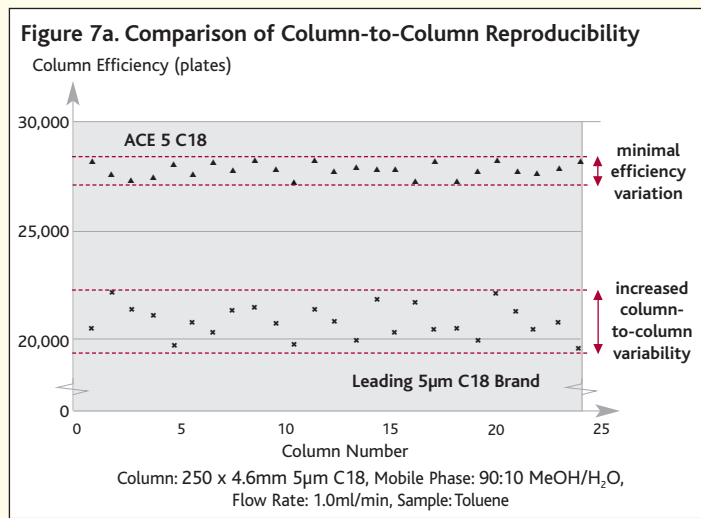
Benefits of Validated Columns

Method development and validation in regulated industries, including pharmaceutical and environmental, rely on the use of multiple columns and stationary phase batches. Production changes or batch differences in the HPLC column will have an adverse effect on method ruggedness. The use of fully validated ACE HPLC columns will ensure excellent column performance is maintained over the lifetime of an analytical method.

#1 Improved Column-to-Column Reproducibility

ACE ultra-inert columns consistently exhibit higher efficiencies and greater column-to-column reproducibility than leading competitor columns characterized by single validation procedures. Figure 7a demonstrates the increased performance and reduced column-to-column variation obtained with ACE columns compared to a leading brand. This indicates a higher degree of packing integrity with the ACE columns, which can in turn lead to increased column lifetime.

SUPERIOR PERFORMANCE AND PEAK SHAPE - GUARANTEED



100Å

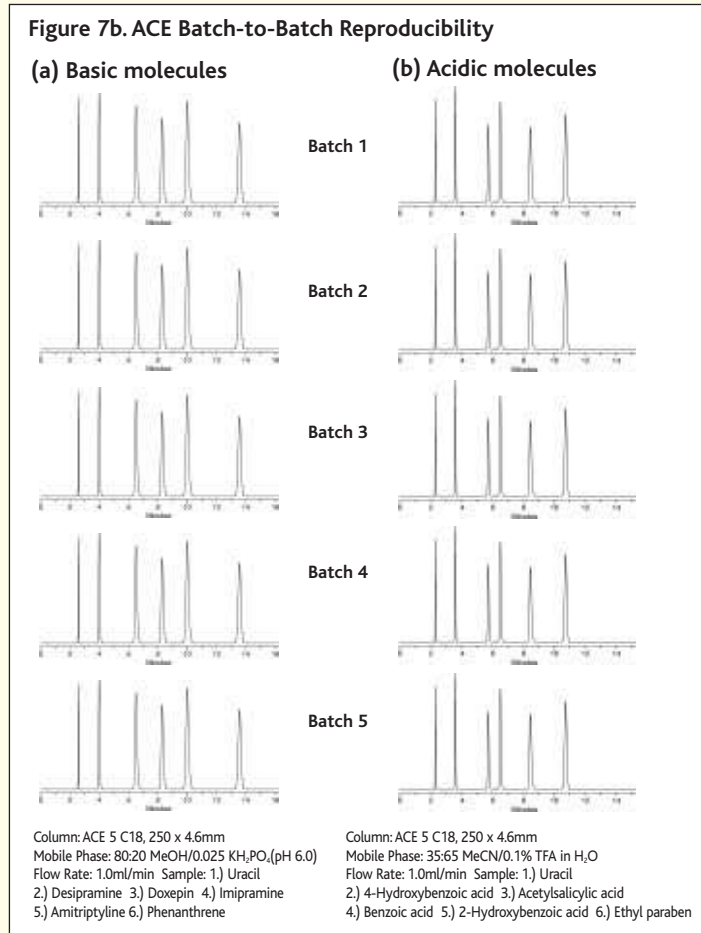
#2 Improved Batch-to-Batch Reproducibility

Variations between different batches of stationary phase are the most common cause of customer concern. ACE stationary phases virtually eliminate the unpredictable negative effects of silanols on HPLC separations, by maintaining a rigid control of the manufacturing process and establishing tight specifications for purity, selectivity, retention, efficiency and asymmetry. Therefore, absolute batch-to-batch reproducibility is guaranteed with ACE ultra-inert HPLC columns. Figure 7b demonstrates the excellent batch reproducibility for both basic and acidic molecules.

SUPERIOR REPRODUCIBILITY - GUARANTEED



ACE® Stationary Phases Virtually Eliminate the Negative Effects of Silanols on HPLC Separations



Acidic Conditions

At low pH, column deterioration is caused by hydrolysis of the bonded phase, with a decrease in retention observed. The nature of the silica surface and bonding density are critical parameters. Conventional bonded phases are more susceptible to hydrolysis due to the lower purity silica and a low surface coverage. However, ACE phases combine an ultra high purity silica with dense bonding techniques to effectively prevent ligand cleavage under such conditions.

ACE - pH 1.8 Robustness

The high stability of ACE C18, C8, C4, CN, Phenyl and AQ phases is demonstrated in Figure 8b. After three months usage at pH 1.8, no retention loss is observed with any ACE phase. Even cyano bonded columns (regarded to be most vulnerable to hydrolysis) show excellent resistance, as also shown by Figure 8d.

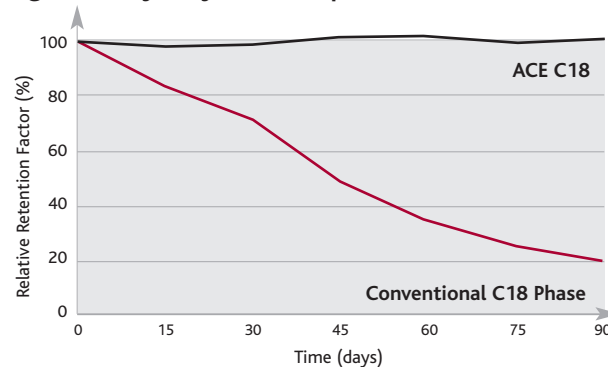
Evaluation Conditions (Figures 8b,c & d)

Column Dimensions: 150 x 4.6mm id
 Sample: 1) Uracil 2) Dimethyl phthalate 3) Toluene
 4) Biphenyl 5) Phenanthrene
 Mobile Phase: 50:50 MeCN/H₂O
 Flow Rate: 1.0 ml/min
 Temperature: 22°C

Acidic Exposure Conditions (Figures 8b,c & d)

Mobile Phase: 50:50 MeCN/0.1% TFA in H₂O (pH 1.8)
 Flow Rate: 1.0 ml/min
 Temperature: 22°C

Figure 8a. Hydrolysis at low pH



Acidic Exposure Conditions:

Mobile Phase: 50:50 MeCN/0.1% TFA in H₂O (pH1.8)
 Flow Rate: 1.0ml/min Temperature: 22°C

Figure 8b. Acidic Robustness at pH 1.8

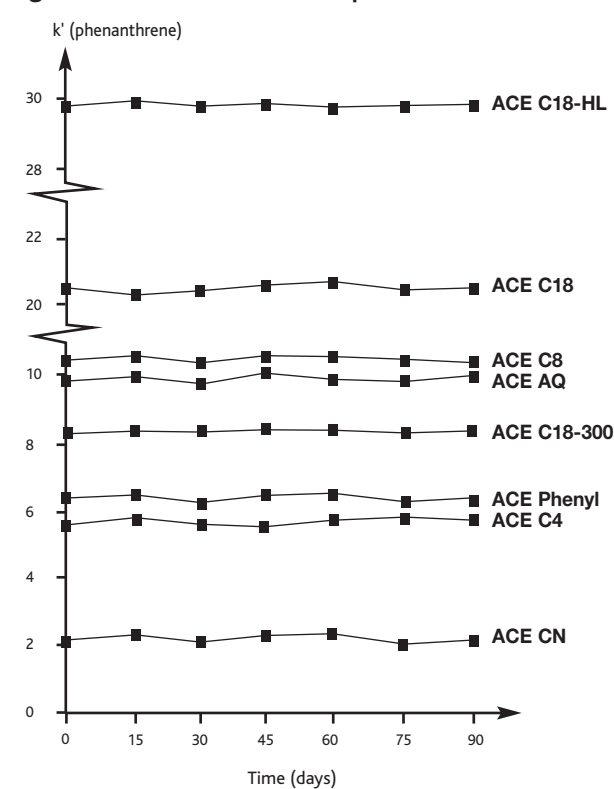


Figure 8c. ACE 5 C18 Acidic Robustness at pH 1.8

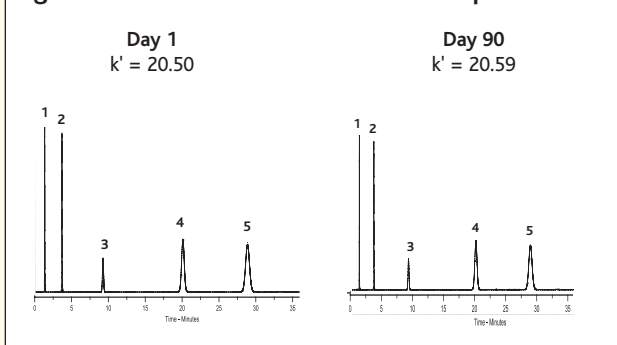
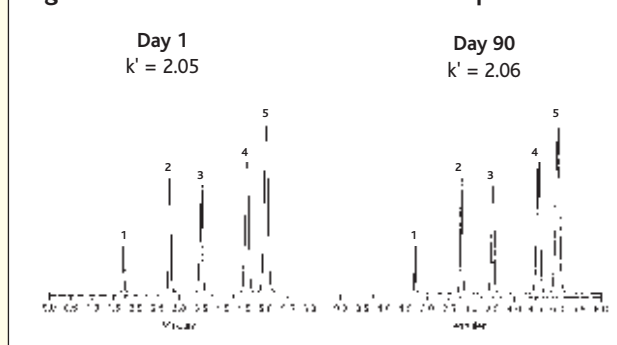
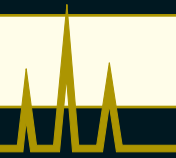


Figure 8d. ACE 5 CN Acidic Robustness at pH 1.8

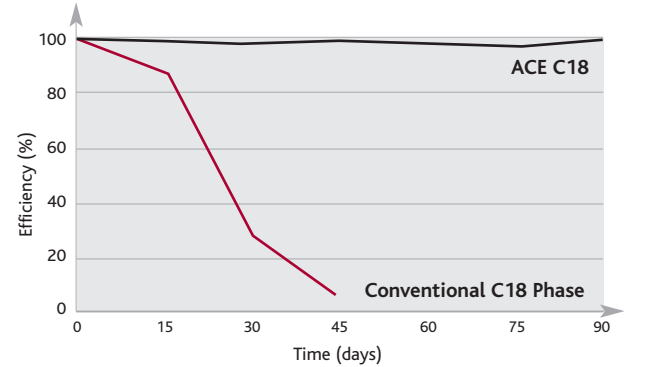




Basic Conditions

At high pH, column degradation is caused by dissolution of the silica support, resulting in a decrease of column efficiency. Conventional bonded phases are more susceptible to dissolution due to the lower purity silica and low surface coverage. Again, the ultra high purity ACE silica coupled with unique dense bonding technology effectively prevents silica dissolution.

Figure 9a. Silica Dissolution at High pH



Basic Exposure Conditions:

Mobile Phase: 50:50 MeCN/25mM pyrrolidine in H₂O (pH 11.0)
Flow Rate: 1.0ml/min Temperature: 22°C

ACE – pH 11.0 Robustness

Figure 9b demonstrates the ability of an ACE 5 C18 column to withstand highly alkaline conditions without loss of column efficiency after 3 months usage at pH 11.0.

Basic Exposure Conditions

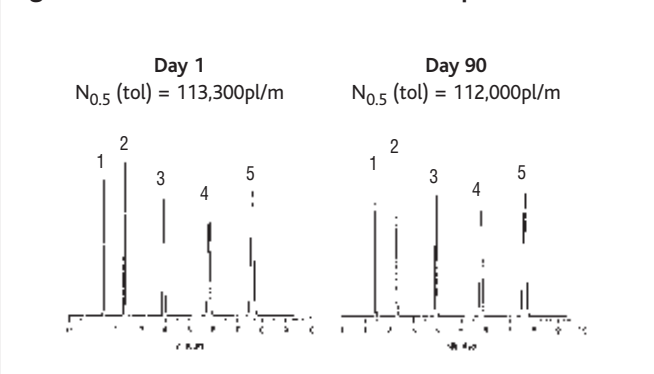
Mobile Phase: 50:50 MeCN/25mM pyrrolidine in H₂O (pH 11.0)
Flow Rate: 1.0ml/min
Temperature: 22°C

Evaluation Conditions

Sample: 1) Uracil 2) Dimethyl phthalate 3) Toluene
4) Biphenyl 5) Phenanthrene

Column Dimensions: 150 x 4.6mm i.d.
Mobile Phase: 70:30 MeCN/H₂O
Flow Rate: 1.0ml/min
Temperature: 22°C

Figure 9b. ACE 5 C18 Basic Robustness at pH 11.0



ACE LC/MS Column Stability at pH 10.5

Figure 9c highlights the stability of 50 x 2.1mm ACE 3 C18 columns when using an LC/MS compatible buffer at pH 10.5 over a 90 day test period.

Basic Exposure Conditions

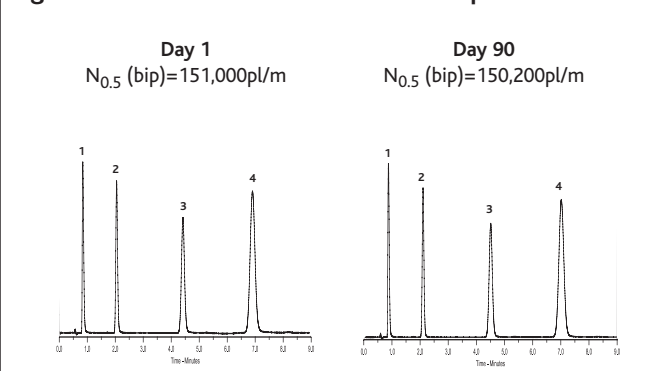
Mobile Phase: 80:20 MeCN/20mM NH₄OH in H₂O (pH 10.5)
Flow Rate: 0.20ml/min
Temperature: 22°C

Evaluation Conditions

Sample: 1) Dimethyl phthalate 2) Toluene 3) Biphenyl
4) Phenanthrene

Column Dimensions: 50 x 2.1mm i.d.
Mobile Phase: 70:30 MeOH/H₂O
Flow Rate: 0.20ml/min
Temperature: 22°C

Figure 9c. ACE 3 C18 LC/MS Robustness at pH 10.5



100Å

ACE AQ

- Retains polar compounds in 100% aqueous mobile phase
- Unique C18 bonded phase with integral polar functionality
- Resistant to retention loss in 100% aqueous mobile phase
- Rapid gradient re-equilibration (0-100%)
- Excellent peak shape with acidic, basic and neutral molecules

- Ideal for LC/MS applications
- Unmatched reproducibility

ACE AQ is an ultra-inert phase designed for the reversed-phase separation of very polar compounds with up to 100% aqueous mobile phase. ACE AQ is ideal for use with fast gradients due to its rapid re-equilibration properties and resistance to retention loss.

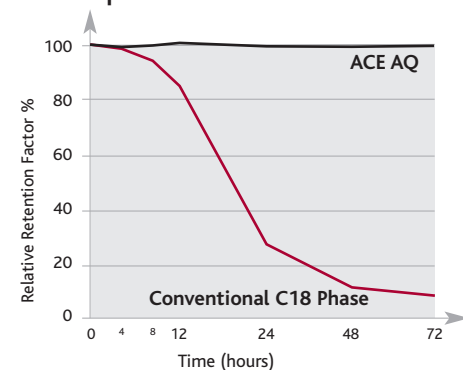
PHASE	FUNCTIONAL GROUP	ENDCAPPED	PARTICLE SIZE (µm)	PORE SIZE (Å)	SURFACE AREA (m ² /g)	CARBON LOAD (%)
AQ	Proprietary	Yes	3, 5, 10	100	300	14.0

Maximum Reproducibility in High Aqueous Mobile Phases

When separating very polar, water-soluble compounds, highly aqueous (>95%) mobile phases are often required to achieve sufficient retention. However, operating a conventional C18 column under such conditions can lead to poor chromatographic reproducibility. Over time peaks will elute with shorter and shorter retention times and resolution between peaks will deteriorate.

ACE AQ columns introduce an integral polar functionality, which prevents this retention loss when using highly aqueous mobile phases.

Figure 10a. Change in Retention with 100% Aqueous Mobile Phase



Ultra-Inert Silica for Excellent Chromatography

Many columns designed for use under high aqueous conditions are compromised by the low purity silica employed and exhibit poor peak shape with polar basic molecules. This results in poor chromatography and

ultimately leads to poor column reproducibility. ACE AQ columns are manufactured from the same ultra-inert, high purity silica as all ACE phases – ensuring excellent chromatography and excellent reproducibility are obtained.

Figure 10b. Leading Competitor Comparison – Hydrophilic Bases



Sample: 1) Nicotine 2) Benzylamine 3) Procainamide 4) Terbutaline 5) Salbutamol 6) Phenol Mobile Phase: 3.3:96.7 MeOH/20mM KH₂PO₄ (pH 2.7) Dimensions: 150 x 4.6mm i.d. Flow Rate: 1.0ml/min, Temperature: 60°C, Wavelength: 210nm

The competitor column (right chromatogram) shows a dramatic loss of performance for peaks 1 and 3, but the ultra-inert ACE AQ column (left chromatogram) maintains excellent peak shape with hydrophilic bases.

ACE C18-HL (Hi-Load)

- High surface area, high carbon load phase
- Increased loading and retention
- Optimised for preparative and process scale applications
- 3µm, 5µm, 10µm and 15µm particle sizes
- Exceptional chemical stability
- Excellent peak shape with acidic, basic and neutral molecules

PHASE	FUNCTIONAL GROUP	ENDCAPPED	PARTICLE SIZE (µm)	PORE SIZE (Å)	SURFACE AREA (m ² /g)	CARBON LOAD (%)
C18-HL	Octadecyl	Yes	3, 5, 10, 15	90	400	20.0



LC/MS to Preparative Scale Applications

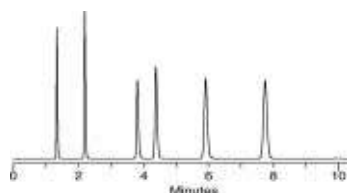
The increased retention characteristics of ACE C18-HL (see Figure 11a) make it an ideal selection for LC/MS applications. Retention can be maintained whilst reducing the aqueous content of the mobile phase, thus increasing sensitivity.

For preparative applications, the higher surface area leads to increased loading capacity. Available in 3µm, 5µm, 10µm and 15µm particle sizes and a wide range of column dimensions (see pages 14-17), ACE C18-HL columns show reproducible scale up from LC/MS to preparative scale dimensions.

100Å

Figure 11a. Reproducible Scale-Up with ACE C18-HL Columns

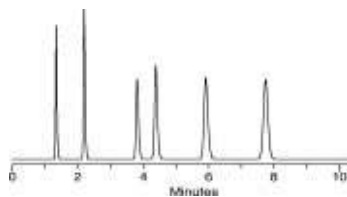
ACE 3 C18-HL



LC/MS

150 x 2.1mm i.d.
0.21ml/min

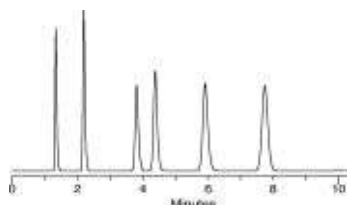
ACE 5 C18-HL



Analytical

150 x 4.6mm i.d.
1.00ml/min

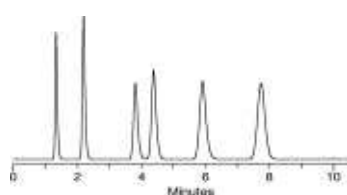
ACE 10 C18-HL



Semi-Preparative

150 x 10mm i.d.
4.7ml/min

ACE 15 C18-HL



Preparative

150 x 30.0mm i.d.
42.5ml/min

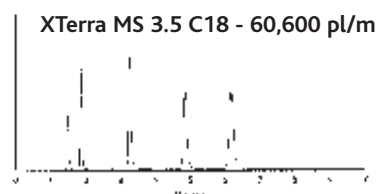
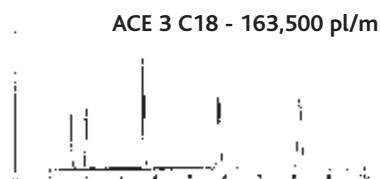
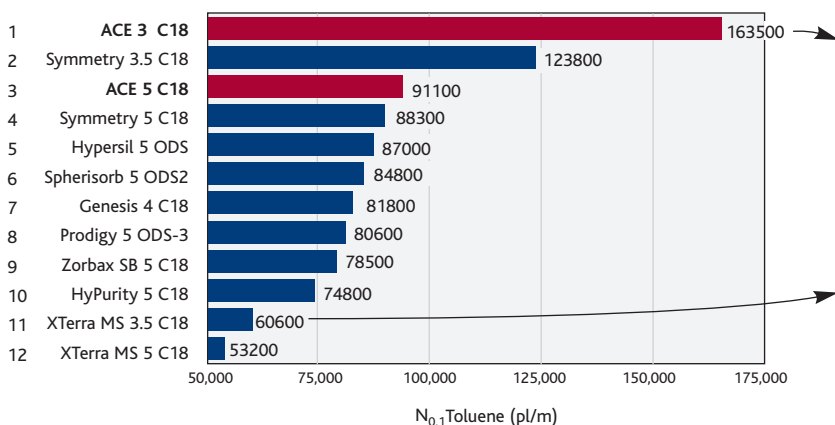
Sample: 1) Uracil 2) 4-Hydroxybenzoic acid 3) Acetylsalicylic acid 4) Benzoic acid 5) 2-Hydroxybenzoic acid 6) Ethyl paraben
Mobile Phase: 35:65 MeCN/0.1% TFA in H₂O, Temperature: 22°C, Wavelength: 254nm

Comparison of Leading 100Å 3µm and 5µm C18 Columns

- Independently tested at the University of Aberdeen, UK

- Leading 3µm and 5µm C18 column brands - 150 x 4.6mm i.d.
- Acidic, basic and neutral molecule tests
- Peak efficiency and asymmetry comparison

Neutral Molecules



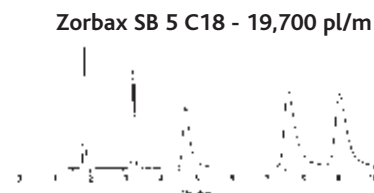
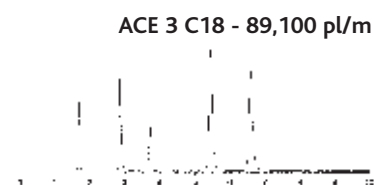
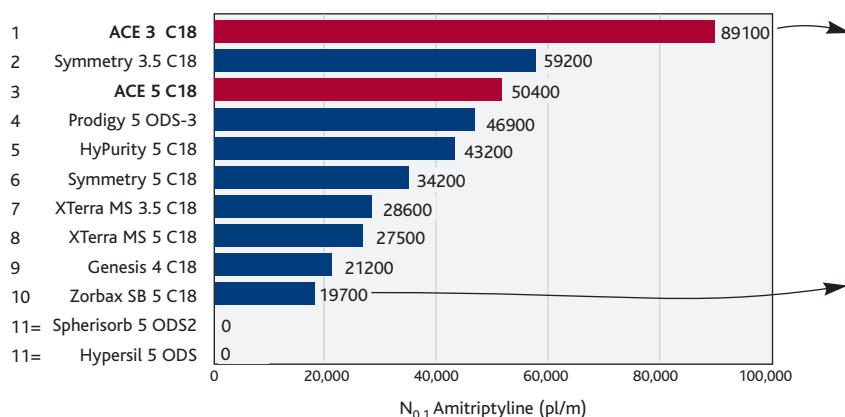
Independently Tested at The University of Aberdeen, UK

Summary:

Column efficiencies were seen to differ greatly. The use of high efficiency columns is recommended to reduce analysis time. Column length can be reduced without loss of resolution.

Column Dimensions: 150 x 4.6mm id
 Sample: 1) Uracil 2) Dimethyl phthalate
 3) Toluene 4) Biphenyl
 5) Phenanthrene
 Mobile Phase: 80:20 MeOH/H₂O
 Flow Rate: 1.0 ml/min
 Temperature: 22°C

Basic Molecules

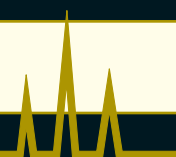


Independently Tested at The University of Aberdeen, UK

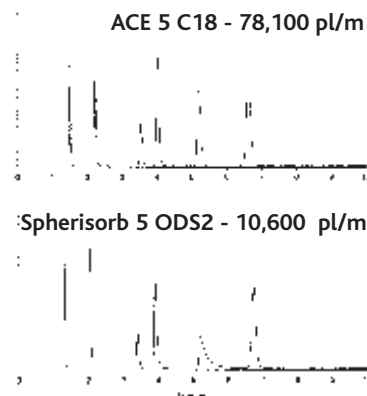
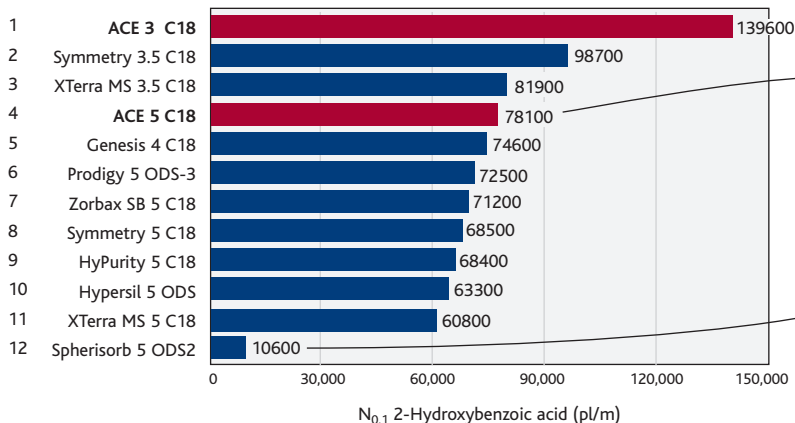
Summary:

C18 bonded columns show significant differences in chromatography for basic compounds. These variations are generally caused by undesirable secondary silanol interactions with the silica surface. Increasing silanol activity results in a deterioration of chromatographic performance. Highly inert "base deactivated" C18 columns with very low levels of silanol activity all exhibit similar selectivity, with differences limited to efficiency and peak shape.

Column Dimensions: 150 x 4.6mm id
 Sample: 1) Norephedrine
 2) Nortriptyline 3) Toluene
 4) Imipramine 5) Amitriptyline
 Mobile Phase: 80:20 MeOH/25mM KH₂PO₄ (pH 6)
 Flow Rate: 1.0 ml/min
 Temperature: 22°C



Acidic Molecules



Independently Tested at The University of Aberdeen, UK

Summary:

Testing with acidic molecules shows similar trends to those seen with basic molecules. Smaller particle size, highly inert "base deactivated" phases are again seen to offer improved separations.

Column Dimensions: 150 x 4.6mm id
 Sample: 1) Uracil 2) 4-Hydroxybenzoic acid
 3) Acetylsalicylic acid 4) Benzoic acid
 5) 2-Hydroxybenzoic acid 6) Ethyl paraben
 Mobile Phase: 35:65 MeCN/0.1% TFA in H₂O
 Flow Rate: 1.0 ml/min
 Temperature: 22°C

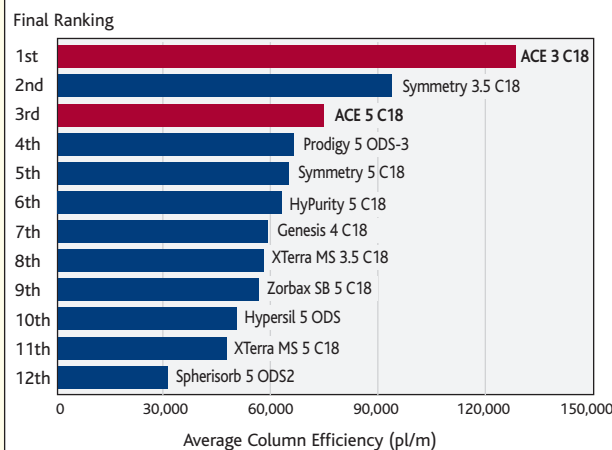
100Å

Final Ranking

The results from all three tests have been analysed and compared. As an aid to column comparison, a final ranking has been determined by averaging the column performance on each test (see Table below). This average ranking of column performance is illustrated by Figure 13.

COLUMN TYPE	COLUMN EFFICIENCY (pl/m)			
	NEUTRAL	BASIC	ACIDIC	AVERAGE
ACE 3 C18	163,500	89,100	139,600	130,700
Symmetry 3.5 C18	123,800	59,200	98,700	93,900
ACE 5 C18	91,100	50,400	78,100	73,200
Prodigy 5 ODS-3	80,600	46,900	72,500	66,700
Symmetry 5 C18	88,300	34,200	68,500	63,700
HyPurity 5 C18	74,800	43,200	68,400	62,100
Genesis 4 C18	81,800	21,200	74,600	59,200
XTerra MS 3.5 C18	60,600	28,600	81,900	57,000
Zorbax SB 5 C18	78,500	19,700	71,200	56,500
Hypersil 5 ODS	87,000	0	63,300	50,100
XTerra MS 5 C18	53,200	27,500	60,800	47,200
Spherisorb 5 ODS2	84,800	0	10,600	31,800

Figure 13 - Final Ranking



Conclusion:

Significant differences in efficiency, peak shape and selectivity are seen with C18 bonded columns when evaluating acidic and basic compounds. These variations are caused by undesirable secondary silanol interactions.

The selection of a high efficiency base deactivated phase with very low silanol activity will prove highly beneficial for the majority of analyses.

ACE C18 materials were the highest performing 3µm and 5µm phases respectively. Superior column efficiency and peak shape are combined to provide excellent separations with acidic, basic and neutral molecules.



ACE® Stationary Phases Virtually Eliminate the Negative Effects of Silanols on HPLC Separations

ACE 100Å HPLC Columns - Part Numbers

ACE 3µm Columns

ACE 3µm C18

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-111-0201	ACE-111-0301	ACE-111-3501	ACE-111-0501	ACE-111-7501	ACE-111-1001	ACE-111-1201	ACE-111-1501	-	ACE-111-0101GD ¹
2.1mm	ACE-111-0202	ACE-111-0302	ACE-111-3502	ACE-111-0502	ACE-111-7502	ACE-111-1002	ACE-111-1202	ACE-111-1502	-	ACE-111-0102GD ²
3.0mm	ACE-111-0203	ACE-111-0303	ACE-111-3503	ACE-111-0503	ACE-111-7503	ACE-111-1003	ACE-111-1203	ACE-111-1503	-	ACE-111-0103GD ³
4.0mm	-	-	ACE-111-3504	ACE-111-0504	ACE-111-7504	ACE-111-1004	ACE-111-1204	ACE-111-1504	-	ACE-111-0103GD ³
4.6mm	ACE-111-0246	ACE-111-0346	ACE-111-3546	ACE-111-0546	ACE-111-7546	ACE-111-1046	ACE-111-1246	ACE-111-1546	-	ACE-111-0103GD ³

ACE 3µm C8

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-112-0201	ACE-112-0301	ACE-112-3501	ACE-112-0501	ACE-112-7501	ACE-112-1001	ACE-112-1201	ACE-112-1501	-	ACE-112-0101GD ¹
2.1mm	ACE-112-0202	ACE-112-0302	ACE-112-3502	ACE-112-0502	ACE-112-7502	ACE-112-1002	ACE-112-1202	ACE-112-1502	-	ACE-112-0102GD ²
3.0mm	ACE-112-0203	ACE-112-0303	ACE-112-3503	ACE-112-0503	ACE-112-7503	ACE-112-1003	ACE-112-1203	ACE-112-1503	-	ACE-112-0103GD ³
4.0mm	-	-	ACE-112-3504	ACE-112-0504	ACE-112-7504	ACE-112-1004	ACE-112-1204	ACE-112-1504	-	ACE-112-0103GD ³
4.6mm	ACE-112-0246	ACE-112-0346	ACE-112-3546	ACE-112-0546	ACE-112-7546	ACE-112-1046	ACE-112-1246	ACE-112-1546	-	ACE-112-0103GD ³

ACE 3µm C4

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-113-0201	ACE-113-0301	ACE-113-3501	ACE-113-0501	ACE-113-7501	ACE-113-1001	ACE-113-1201	ACE-113-1501	-	ACE-113-0101GD ¹
2.1mm	ACE-113-0202	ACE-113-0302	ACE-113-3502	ACE-113-0502	ACE-113-7502	ACE-113-1002	ACE-113-1202	ACE-113-1502	-	ACE-113-0102GD ²
3.0mm	ACE-113-0203	ACE-113-0303	ACE-113-3503	ACE-113-0503	ACE-113-7503	ACE-113-1003	ACE-113-1203	ACE-113-1503	-	ACE-113-0103GD ³
4.0mm	-	-	ACE-113-3504	ACE-113-0504	ACE-113-7504	ACE-113-1004	ACE-113-1204	ACE-113-1504	-	ACE-113-0103GD ³
4.6mm	ACE-113-0246	ACE-113-0346	ACE-113-3546	ACE-113-0546	ACE-113-7546	ACE-113-1046	ACE-113-1246	ACE-113-1546	-	ACE-113-0103GD ³

ACE 3µm CN

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-114-0201	ACE-114-0301	ACE-114-3501	ACE-114-0501	ACE-114-7501	ACE-114-1001	ACE-114-1201	ACE-114-1501	-	ACE-114-0101GD ¹
2.1mm	ACE-114-0202	ACE-114-0302	ACE-114-3502	ACE-114-0502	ACE-114-7502	ACE-114-1002	ACE-114-1202	ACE-114-1502	-	ACE-114-0102GD ²
3.0mm	ACE-114-0203	ACE-114-0303	ACE-114-3503	ACE-114-0503	ACE-114-7503	ACE-114-1003	ACE-114-1203	ACE-114-1503	-	ACE-114-0103GD ³
4.0mm	-	-	ACE-114-3504	ACE-114-0504	ACE-114-7504	ACE-114-1004	ACE-114-1204	ACE-114-1504	-	ACE-114-0103GD ³
4.6mm	ACE-114-0246	ACE-114-0346	ACE-114-3546	ACE-114-0546	ACE-114-7546	ACE-114-1046	ACE-114-1246	ACE-114-1546	-	ACE-114-0103GD ³

ACE 3µm Phenyl

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-115-0201	ACE-115-0301	ACE-115-3501	ACE-115-0501	ACE-115-7501	ACE-115-1001	ACE-115-1201	ACE-115-1501	-	ACE-115-0101GD ¹
2.1mm	ACE-115-0202	ACE-115-0302	ACE-115-3502	ACE-115-0502	ACE-115-7502	ACE-115-1002	ACE-115-1202	ACE-115-1502	-	ACE-115-0102GD ²
3.0mm	ACE-115-0203	ACE-115-0303	ACE-115-3503	ACE-115-0503	ACE-115-7503	ACE-115-1003	ACE-115-1203	ACE-115-1503	-	ACE-115-0103GD ³
4.0mm	-	-	ACE-115-3504	ACE-115-0504	ACE-115-7504	ACE-115-1004	ACE-115-1204	ACE-115-1504	-	ACE-115-0103GD ³
4.6mm	ACE-115-0246	ACE-115-0346	ACE-115-3546	ACE-115-0546	ACE-115-7546	ACE-115-1046	ACE-115-1246	ACE-115-1546	-	ACE-115-0103GD ³

ACE 3µm AQ

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-116-0201	ACE-116-0301	ACE-116-3501	ACE-116-0501	ACE-116-7501	ACE-116-1001	ACE-116-1201	ACE-116-1501	-	ACE-116-0101GD ¹
2.1mm	ACE-116-0202	ACE-116-0302	ACE-116-3502	ACE-116-0502	ACE-116-7502	ACE-116-1002	ACE-116-1202	ACE-116-1502	-	ACE-116-0102GD ²
3.0mm	ACE-116-0203	ACE-116-0303	ACE-116-3503	ACE-116-0503	ACE-116-7503	ACE-116-1003	ACE-116-1203	ACE-116-1503	-	ACE-116-0103GD ³
4.0mm	-	-	ACE-116-3504	ACE-116-0504	ACE-116-7504	ACE-116-1004	ACE-116-1204	ACE-116-1504	-	ACE-116-0103GD ³
4.6mm	ACE-116-0246	ACE-116-0346	ACE-116-3546	ACE-116-0546	ACE-116-7546	ACE-116-1046	ACE-116-1246	ACE-116-1546	-	ACE-116-0103GD ³

ACE 3µm C18-HL

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-311-0201	ACE-311-0301	ACE-311-3501	ACE-311-0501	ACE-311-7501	ACE-311-1001	ACE-311-1201	ACE-311-1501	-	ACE-311-0101GD ¹
2.1mm	ACE-311-0202	ACE-311-0302	ACE-311-3502	ACE-311-0502	ACE-311-7502	ACE-311-1002	ACE-311-1202	ACE-311-1502	-	ACE-311-0102GD ²
3.0mm	ACE-311-0203	ACE-311-0303	ACE-311-3503	ACE-311-0503	ACE-311-7503	ACE-311-1003	ACE-311-1203	ACE-311-1503	-	ACE-311-0103GD ³
4.0mm	-	-	ACE-311-3504	ACE-311-0504	ACE-311-7504	ACE-311-1004	ACE-311-1204	ACE-311-1504	-	ACE-311-0103GD ³
4.6mm	ACE-311-0246	ACE-311-0346	ACE-311-3546	ACE-311-0546	ACE-311-7546	ACE-311-1046	ACE-311-1246	ACE-311-1546	-	ACE-311-0103GD ³

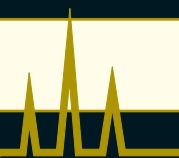
¹ 5 pack - use with cartridge holder H0001 and coupler C0001

² 5 pack - use with integral microbore cartridge holder H0004

³ 5 pack - use with integral analytical cartridge holder H0005

Please enquire for part numbers for SIL columns

ACE 100Å HPLC Columns - Part Numbers



ACE 5µm Columns

ACE 5µm C18

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-121-0201	ACE-121-0301	ACE-121-3501	ACE-121-0501	ACE-121-7501	ACE-121-1001	ACE-121-1201	ACE-121-1501	ACE-121-2501	ACE-121-0101GD ¹
2.1mm	ACE-121-0202	ACE-121-0302	ACE-121-3502	ACE-121-0502	ACE-121-7502	ACE-121-1002	ACE-121-1202	ACE-121-1502	ACE-121-2502	ACE-121-0102GD ²
3.0mm	ACE-121-0203	ACE-121-0303	ACE-121-3503	ACE-121-0503	ACE-121-7503	ACE-121-1003	ACE-121-1203	ACE-121-1503	ACE-121-2503	ACE-121-0103GD ³
4.0mm	-	-	ACE-121-3504	ACE-121-0504	ACE-121-7504	ACE-121-1004	ACE-121-1204	ACE-121-1504	ACE-121-2504	ACE-121-0103GD ³
4.6mm	ACE-121-0246	ACE-121-0346	ACE-121-3546	ACE-121-0546	ACE-121-7546	ACE-121-1046	ACE-121-1246	ACE-121-1546	ACE-121-2546	ACE-121-0103GD ³
7.75mm	-	-	-	ACE-121-0508	ACE-121-7508	ACE-121-1008	ACE-121-1208	ACE-121-1508	ACE-121-2508	ACE-121-0110GD ⁴
10.0mm	-	-	-	ACE-121-0510	ACE-121-7510	ACE-121-1010	ACE-121-1210	ACE-121-1510	ACE-121-2510	ACE-121-0110GD ⁴
21.2mm	-	-	-	ACE-121-0520	ACE-121-7520	ACE-121-1020	ACE-121-1220	ACE-121-1520	ACE-121-2520	ACE-121-0110GD ⁴
30.0mm	-	-	-	ACE-121-0530	ACE-121-7530	ACE-121-1030	-	ACE-121-1530	ACE-121-2530	ACE-121-0220GD ⁵

ACE 5µm C8

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-122-0201	ACE-122-0301	ACE-122-3501	ACE-122-0501	ACE-122-7501	ACE-122-1001	ACE-122-1201	ACE-122-1501	ACE-122-2501	ACE-122-0101GD ¹
2.1mm	ACE-122-0202	ACE-122-0302	ACE-122-3502	ACE-122-0502	ACE-122-7502	ACE-122-1002	ACE-122-1202	ACE-122-1502	ACE-122-2502	ACE-122-0102GD ²
3.0mm	ACE-122-0203	ACE-122-0303	ACE-122-3503	ACE-122-0503	ACE-122-7503	ACE-122-1003	ACE-122-1203	ACE-122-1503	ACE-122-2503	ACE-122-0103GD ³
4.0mm	-	-	ACE-122-3504	ACE-122-0504	ACE-122-7504	ACE-122-1004	ACE-122-1204	ACE-122-1504	ACE-122-2504	ACE-122-0103GD ³
4.6mm	ACE-122-0246	ACE-122-0346	ACE-122-3546	ACE-122-0546	ACE-122-7546	ACE-122-1046	ACE-122-1246	ACE-122-1546	ACE-122-2546	ACE-122-0103GD ³
7.75mm	-	-	-	ACE-122-0508	ACE-122-7508	ACE-122-1008	ACE-122-1208	ACE-122-1508	ACE-122-2508	ACE-122-0110GD ⁴
10.0mm	-	-	-	ACE-122-0510	ACE-122-7510	ACE-122-1010	ACE-122-1210	ACE-122-1510	ACE-122-2510	ACE-122-0110GD ⁴
21.2mm	-	-	-	ACE-122-0520	ACE-122-7520	ACE-122-1020	ACE-122-1220	ACE-122-1520	ACE-122-2520	ACE-122-0110GD ⁴
30.0mm	-	-	-	ACE-122-0530	ACE-122-7530	ACE-122-1030	-	ACE-122-1530	ACE-122-2530	ACE-122-0220GD ⁵

ACE 5µm C4

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-123-0201	ACE-123-0301	ACE-123-3501	ACE-123-0501	ACE-123-7501	ACE-123-1001	ACE-123-1201	ACE-123-1501	ACE-123-2501	ACE-123-0101GD ¹
2.1mm	ACE-123-0202	ACE-123-0302	ACE-123-3502	ACE-123-0502	ACE-123-7502	ACE-123-1002	ACE-123-1202	ACE-123-1502	ACE-123-2502	ACE-123-0102GD ²
3.0mm	ACE-123-0203	ACE-123-0303	ACE-123-3503	ACE-123-0503	ACE-123-7503	ACE-123-1003	ACE-123-1203	ACE-123-1503	ACE-123-2503	ACE-123-0103GD ³
4.0mm	-	-	ACE-123-3504	ACE-123-0504	ACE-123-7504	ACE-123-1004	ACE-123-1204	ACE-123-1504	ACE-123-2504	ACE-123-0103GD ³
4.6mm	ACE-123-0246	ACE-123-0346	ACE-123-3546	ACE-123-0546	ACE-123-7546	ACE-123-1046	ACE-123-1246	ACE-123-1546	ACE-123-2546	ACE-123-0103GD ³
7.75mm	-	-	-	ACE-123-0508	ACE-123-7508	ACE-123-1008	ACE-123-1208	ACE-123-1508	ACE-123-2508	ACE-123-0110GD ⁴
10.0mm	-	-	-	ACE-123-0510	ACE-123-7510	ACE-123-1010	ACE-123-1210	ACE-123-1510	ACE-123-2510	ACE-123-0110GD ⁴
21.2mm	-	-	-	ACE-123-0520	ACE-123-7520	ACE-123-1020	ACE-123-1220	ACE-123-1520	ACE-123-2520	ACE-123-0110GD ⁴
30.0mm	-	-	-	ACE-123-0530	ACE-123-7530	ACE-123-1030	-	ACE-123-1530	ACE-123-2530	ACE-123-0220GD ⁵

ACE 5µm CN

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-124-0201	ACE-124-0301	ACE-124-3501	ACE-124-0501	ACE-124-7501	ACE-124-1001	ACE-124-1201	ACE-124-1501	ACE-124-2501	ACE-124-0101GD ¹
2.1mm	ACE-124-0202	ACE-124-0302	ACE-124-3502	ACE-124-0502	ACE-124-7502	ACE-124-1002	ACE-124-1202	ACE-124-1502	ACE-124-2502	ACE-124-0102GD ²
3.0mm	ACE-124-0203	ACE-124-0303	ACE-124-3503	ACE-124-0503	ACE-124-7503	ACE-124-1003	ACE-124-1203	ACE-124-1503	ACE-124-2503	ACE-124-0103GD ³
4.0mm	-	-	ACE-124-3504	ACE-124-0504	ACE-124-7504	ACE-124-1004	ACE-124-1204	ACE-124-1504	ACE-124-2504	ACE-124-0103GD ³
4.6mm	ACE-124-0246	ACE-124-0346	ACE-124-3546	ACE-124-0546	ACE-124-7546	ACE-124-1046	ACE-124-1246	ACE-124-1546	ACE-124-2546	ACE-124-0103GD ³
7.75mm	-	-	-	ACE-124-0508	ACE-124-7508	ACE-124-1008	ACE-124-1208	ACE-124-1508	ACE-124-2508	ACE-124-0110GD ⁴
10.0mm	-	-	-	ACE-124-0510	ACE-124-7510	ACE-124-1010	ACE-124-1210	ACE-124-1510	ACE-124-2510	ACE-124-0110GD ⁴
21.2mm	-	-	-	ACE-124-0520	ACE-124-7520	ACE-124-1020	ACE-124-1220	ACE-124-1520	ACE-124-2520	ACE-124-0110GD ⁴
30.0mm	-	-	-	ACE-124-0530	ACE-124-7530	ACE-124-1030	-	ACE-124-1530	ACE-124-2530	ACE-124-0220GD ⁵

ACE 5µm Phenyl

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-125-0201	ACE-125-0301	ACE-125-3501	ACE-125-0501	ACE-125-7501	ACE-125-1001	ACE-125-1201	ACE-125-1501	ACE-125-2501	ACE-125-0101GD ¹
2.1mm	ACE-125-0202	ACE-125-0302	ACE-125-3502	ACE-125-0502	ACE-125-7502	ACE-125-1002	ACE-125-1202	ACE-125-1502	ACE-125-2502	ACE-125-0102GD ²
3.0mm	ACE-125-0203	ACE-125-0303	ACE-125-3503	ACE-125-0503	ACE-125-7503	ACE-125-1003	ACE-125-1203	ACE-125-1503	ACE-125-2503	ACE-125-0103GD ³
4.0mm	-	-	ACE-125-3504	ACE-125-0504	ACE-125-7504	ACE-125-1004	ACE-125-1204	ACE-125-1504	ACE-125-2504	ACE-125-0103GD ³
4.6mm	ACE-125-0246	ACE-125-0346	ACE-125-3546	ACE-125-0546	ACE-125-7546	ACE-125-1046	ACE-125-1246	ACE-125-1546	ACE-125-2546	ACE-125-0103GD ³
7.75mm	-	-	-	ACE-125-0508	ACE-125-7508	ACE-125-1008	ACE-125-1208	ACE-125-1508	ACE-125-2508	ACE-125-0110GD ⁴
10.0mm	-	-	-	ACE-125-0510	ACE-125-7510	ACE-125-1010	ACE-125-1210	ACE-125-1510	ACE-125-2510	ACE-125-0110GD ⁴
21.2mm	-	-	-	ACE-125-0520	ACE-125-7520	ACE-125-1020	ACE-125-1220	ACE-125-1520	ACE-125-2520	ACE-125-0110GD ⁴
30.0mm	-	-	-	ACE-125-0530	ACE-125-7530	ACE-125-1030	-	ACE-125-1530	ACE-125-2530	ACE-125-0220GD ⁵

¹ 5 pack - use with cartridge holder H0001 and coupler C0001

² 5 pack - use with integral microbore cartridge holder H0004

³ 5 pack - use with integral analytical cartridge holder H0005

⁴ 3 pack - use with semi-prep cartridge holder H0002 and column coupler C0001

⁵ 1 pack - use with prep cartridge holder H0006 and column coupler C0002

Please enquire for part numbers for SIL columns

100Å

ACE 100Å HPLC Columns - Part Numbers

ACE 5µm Columns - continued

ACE 5µm AQ

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-126-0201	ACE-126-0301	ACE-126-3501	ACE-126-0501	ACE-126-7501	ACE-126-1001	ACE-126-1201	ACE-126-1501	ACE-126-2501	ACE-126-0101GD ¹
2.1mm	ACE-126-0202	ACE-126-0302	ACE-126-3502	ACE-126-0502	ACE-126-7502	ACE-126-1002	ACE-126-1202	ACE-126-1502	ACE-126-2502	ACE-126-0102GD ²
3.0mm	ACE-126-0203	ACE-126-0303	ACE-126-3503	ACE-126-0503	ACE-126-7503	ACE-126-1003	ACE-126-1203	ACE-126-1503	ACE-126-2503	ACE-126-0103GD ³
4.0mm	-	-	ACE-126-3504	ACE-126-0504	ACE-126-7504	ACE-126-1004	ACE-126-1204	ACE-126-1504	ACE-126-2504	ACE-126-0103GD ³
4.6mm	ACE-126-0246	ACE-126-0346	ACE-126-3546	ACE-126-0546	ACE-126-7546	ACE-126-1046	ACE-126-1246	ACE-126-1546	ACE-126-2546	ACE-126-0103GD ³
7.75mm	-	-	-	ACE-126-0508	ACE-126-7508	ACE-126-1008	ACE-126-1208	ACE-126-1508	ACE-126-2508	ACE-126-0110GD ⁴
10.0mm	-	-	-	ACE-126-0510	ACE-126-7510	ACE-126-1010	ACE-126-1210	ACE-126-1510	ACE-126-2510	ACE-126-0110GD ⁴
21.2mm	-	-	-	ACE-126-0520	ACE-126-7520	ACE-126-1020	ACE-126-1220	ACE-126-1520	ACE-126-2520	ACE-126-0110GD ⁴
30.0mm	-	-	-	ACE-126-0530	ACE-126-7530	ACE-126-1030	-	ACE-126-1530	ACE-126-2530	ACE-126-0220GD ⁵

ACE 5µm C18-HL

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
1.0mm	ACE-321-0201	ACE-321-0301	ACE-321-3501	ACE-321-0501	ACE-321-7501	ACE-321-1001	ACE-321-1201	ACE-321-1501	ACE-321-2501	ACE-321-0101GD ¹
2.1mm	ACE-321-0202	ACE-321-0302	ACE-321-3502	ACE-321-0502	ACE-321-7502	ACE-321-1002	ACE-321-1202	ACE-321-1502	ACE-321-2502	ACE-321-0102GD ²
3.0mm	ACE-321-0203	ACE-321-0303	ACE-321-3503	ACE-321-0503	ACE-321-7503	ACE-321-1003	ACE-321-1203	ACE-321-1503	ACE-321-2503	ACE-321-0103GD ³
4.0mm	-	-	ACE-321-3504	ACE-321-0504	ACE-321-7504	ACE-321-1004	ACE-321-1204	ACE-321-1504	ACE-321-2504	ACE-321-0103GD ³
4.6mm	ACE-321-0246	ACE-321-0346	ACE-321-3546	ACE-321-0546	ACE-321-7546	ACE-321-1046	ACE-321-1246	ACE-321-1546	ACE-321-2546	ACE-321-0103GD ³
7.75mm	-	-	-	ACE-321-0508	ACE-321-7508	ACE-321-1008	ACE-321-1208	ACE-321-1508	ACE-321-2508	ACE-321-0110GD ⁴
10.0mm	-	-	-	ACE-321-0510	ACE-321-7510	ACE-321-1010	ACE-321-1210	ACE-321-1510	ACE-321-2510	ACE-321-0110GD ⁴
21.2mm	-	-	-	ACE-321-0520	ACE-321-7520	ACE-321-1020	ACE-321-1220	ACE-321-1520	ACE-321-2520	ACE-321-0110GD ⁴
30.0mm	-	-	-	ACE-321-0530	ACE-321-7530	ACE-321-1030	-	ACE-321-1530	ACE-321-2530	ACE-321-0220GD ⁵

ACE 10µm Columns

ACE 10µm C18

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-131-0246	ACE-131-0346	ACE-131-3546	ACE-131-0546	ACE-131-7546	ACE-131-1046	ACE-131-1246	ACE-131-1546	ACE-131-2546	ACE-131-0103GD ³
7.75mm	-	-	-	ACE-131-0508	ACE-131-7508	ACE-131-1008	ACE-131-1208	ACE-131-1508	ACE-131-2508	ACE-131-0110GD ⁴
10.0mm	-	-	-	ACE-131-0510	ACE-131-7510	ACE-131-1010	ACE-131-1210	ACE-131-1510	ACE-131-2510	ACE-131-0110GD ⁴
21.2mm	-	-	-	ACE-131-0520	ACE-131-7520	ACE-131-1020	ACE-131-1220	ACE-131-1520	ACE-131-2520	ACE-131-0110GD ⁴
30.0mm	-	-	-	ACE-131-0530	ACE-131-7530	ACE-131-1030	-	ACE-131-1530	ACE-131-2530	ACE-131-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

ACE 10µm C8

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-132-0246	ACE-132-0346	ACE-132-3546	ACE-132-0546	ACE-132-7546	ACE-132-1046	ACE-132-1246	ACE-132-1546	ACE-132-2546	ACE-132-0103GD ³
7.75mm	-	-	-	ACE-132-0508	ACE-132-7508	ACE-132-1008	ACE-132-1208	ACE-132-1508	ACE-132-2508	ACE-132-0110GD ⁴
10.0mm	-	-	-	ACE-132-0510	ACE-132-7510	ACE-132-1010	ACE-132-1210	ACE-132-1510	ACE-132-2510	ACE-132-0110GD ⁴
21.2mm	-	-	-	ACE-132-0520	ACE-132-7520	ACE-132-1020	ACE-132-1220	ACE-132-1520	ACE-132-2520	ACE-132-0110GD ⁴
30.0mm	-	-	-	ACE-132-0530	ACE-132-7530	ACE-132-1030	-	ACE-132-1530	ACE-132-2530	ACE-132-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

ACE 10µm C4

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-133-0246	ACE-133-0346	ACE-133-3546	ACE-133-0546	ACE-133-7546	ACE-133-1046	ACE-133-1246	ACE-133-1546	ACE-133-2546	ACE-133-0103GD ³
7.75mm	-	-	-	ACE-133-0508	ACE-133-7508	ACE-133-1008	ACE-133-1208	ACE-133-1508	ACE-133-2508	ACE-133-0110GD ⁴
10.0mm	-	-	-	ACE-133-0510	ACE-133-7510	ACE-133-1010	ACE-133-1210	ACE-133-1510	ACE-133-2510	ACE-133-0110GD ⁴
21.2mm	-	-	-	ACE-133-0520	ACE-133-7520	ACE-133-1020	ACE-133-1220	ACE-133-1520	ACE-133-2520	ACE-133-0110GD ⁴
30.0mm	-	-	-	ACE-133-0530	ACE-133-7530	ACE-133-1030	-	ACE-133-1530	ACE-133-2530	ACE-133-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

¹ 5 pack - use with cartridge holder H0001 and coupler C0001

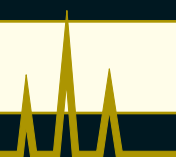
² 5 pack - use with integral microbore cartridge holder H0004

³ 5 pack - use with integral analytical cartridge holder H0005

⁴ 3 pack - use with semi-prep cartridge holder H0002 and column coupler C0001

⁵ 1 pack - use with prep cartridge holder H0006 and column coupler C0002

Please enquire for part numbers for SIL columns



ACE 10µm Columns - continued

ACE 10µm CN

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-134-0246	ACE-134-0346	ACE-134-3546	ACE-134-0546	ACE-134-7546	ACE-134-1046	ACE-134-1246	ACE-134-1546	ACE-134-2546	ACE-134-0103GD ³
7.75mm	-	-	-	ACE-134-0508	ACE-134-7508	ACE-134-1008	ACE-134-1208	ACE-134-1508	ACE-134-2508	ACE-134-0110GD ⁴
10.0mm	-	-	-	ACE-134-0510	ACE-134-7510	ACE-134-1010	ACE-134-1210	ACE-134-1510	ACE-134-2510	ACE-134-0110GD ⁴
21.2mm	-	-	-	ACE-134-0520	ACE-134-7520	ACE-134-1020	ACE-134-1220	ACE-134-1520	ACE-134-2520	ACE-134-0110GD ⁴
30.0mm	-	-	-	ACE-134-0530	ACE-134-7530	ACE-134-1030	-	ACE-134-1530	ACE-134-2530	ACE-134-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

ACE 10µm Phenyl

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-135-0246	ACE-135-0346	ACE-135-3546	ACE-135-0546	ACE-135-7546	ACE-135-1046	ACE-135-1246	ACE-135-1546	ACE-135-2546	ACE-135-0103GD ³
7.75mm	-	-	-	ACE-135-0508	ACE-135-7508	ACE-135-1008	ACE-135-1208	ACE-135-1508	ACE-135-2508	ACE-135-0110GD ⁴
10.0mm	-	-	-	ACE-135-0510	ACE-135-7510	ACE-135-1010	ACE-135-1210	ACE-135-1510	ACE-135-2510	ACE-135-0110GD ⁴
21.2mm	-	-	-	ACE-135-0520	ACE-135-7520	ACE-135-1020	ACE-135-1220	ACE-135-1520	ACE-135-2520	ACE-135-0110GD ⁴
30.0mm	-	-	-	ACE-135-0530	ACE-135-7530	ACE-135-1030	-	ACE-135-1530	ACE-135-2530	ACE-135-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

ACE 10µm AQ

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-136-0246	ACE-136-0346	ACE-136-3546	ACE-136-0546	ACE-136-7546	ACE-136-1046	ACE-136-1246	ACE-136-1546	ACE-136-2546	ACE-136-0103GD ³
7.75mm	-	-	-	ACE-136-0508	ACE-136-7508	ACE-136-1008	ACE-136-1208	ACE-136-1508	ACE-136-2508	ACE-136-0110GD ⁴
10.0mm	-	-	-	ACE-136-0510	ACE-136-7510	ACE-136-1010	ACE-136-1210	ACE-136-1510	ACE-136-2510	ACE-136-0110GD ⁴
21.2mm	-	-	-	ACE-136-0520	ACE-136-7520	ACE-136-1020	ACE-136-1220	ACE-136-1520	ACE-136-2520	ACE-136-0110GD ⁴
30.0mm	-	-	-	ACE-136-0530	ACE-136-7530	ACE-136-1030	-	ACE-136-1530	ACE-136-2530	ACE-136-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

ACE 10µm C18-HL

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-331-0246	ACE-331-0346	ACE-331-3546	ACE-331-0546	ACE-331-7546	ACE-331-1046	ACE-331-1246	ACE-331-1546	ACE-331-2546	ACE-331-0103GD ³
7.75mm	-	-	-	ACE-331-0508	ACE-331-7508	ACE-331-1008	ACE-331-1208	ACE-331-1508	ACE-331-2508	ACE-331-0110GD ⁴
10.0mm	-	-	-	ACE-331-0510	ACE-331-7510	ACE-331-1010	ACE-331-1210	ACE-331-1510	ACE-331-2510	ACE-331-0110GD ⁴
21.2mm	-	-	-	ACE-331-0520	ACE-331-7520	ACE-331-1020	ACE-331-1220	ACE-331-1520	ACE-331-2520	ACE-331-0110GD ⁴
30.0mm	-	-	-	ACE-331-0530	ACE-331-7530	ACE-331-1030	-	ACE-331-1530	ACE-331-2530	ACE-331-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

ACE 15µm Columns

ACE 15µm C18-HL

COLUMN DIAMETER	COLUMN LENGTH									GUARD CARTRIDGE
	20 mm	30 mm	35 mm	50 mm	75 mm	100 mm	125 mm	150 mm	250 mm	
4.6mm	ACE-341-0246	ACE-341-0346	ACE-341-3546	ACE-341-0546	ACE-341-7546	ACE-341-1046	ACE-341-1246	ACE-341-1546	ACE-341-2546	ACE-341-0103GD ³
7.75mm	-	-	-	ACE-341-0508	ACE-341-7508	ACE-341-1008	ACE-341-1208	ACE-341-1508	ACE-341-2508	ACE-341-0110GD ⁴
10.0mm	-	-	-	ACE-341-0510	ACE-341-7510	ACE-341-1010	ACE-341-1210	ACE-341-1510	ACE-341-2510	ACE-341-0110GD ⁴
21.2mm	-	-	-	ACE-341-0520	ACE-341-7520	ACE-341-1020	ACE-341-1220	ACE-341-1520	ACE-341-2520	ACE-341-0110GD ⁴
30.0mm	-	-	-	ACE-341-0530	ACE-341-7530	ACE-341-1030	-	ACE-341-1530	ACE-341-2530	ACE-341-0220GD ⁵
50.0mm	-	-	-	enquire	enquire	enquire	enquire	enquire	enquire	enquire

³ 5 pack - use with integral analytical cartridge holder H0005

⁴ 3 pack - use with semi-prep cartridge holder H0002 and column coupler C0001

⁵ 1 pack - use with prep cartridge holder H0006 and column coupler C0002

Please enquire for part numbers for SIL columns

100Å