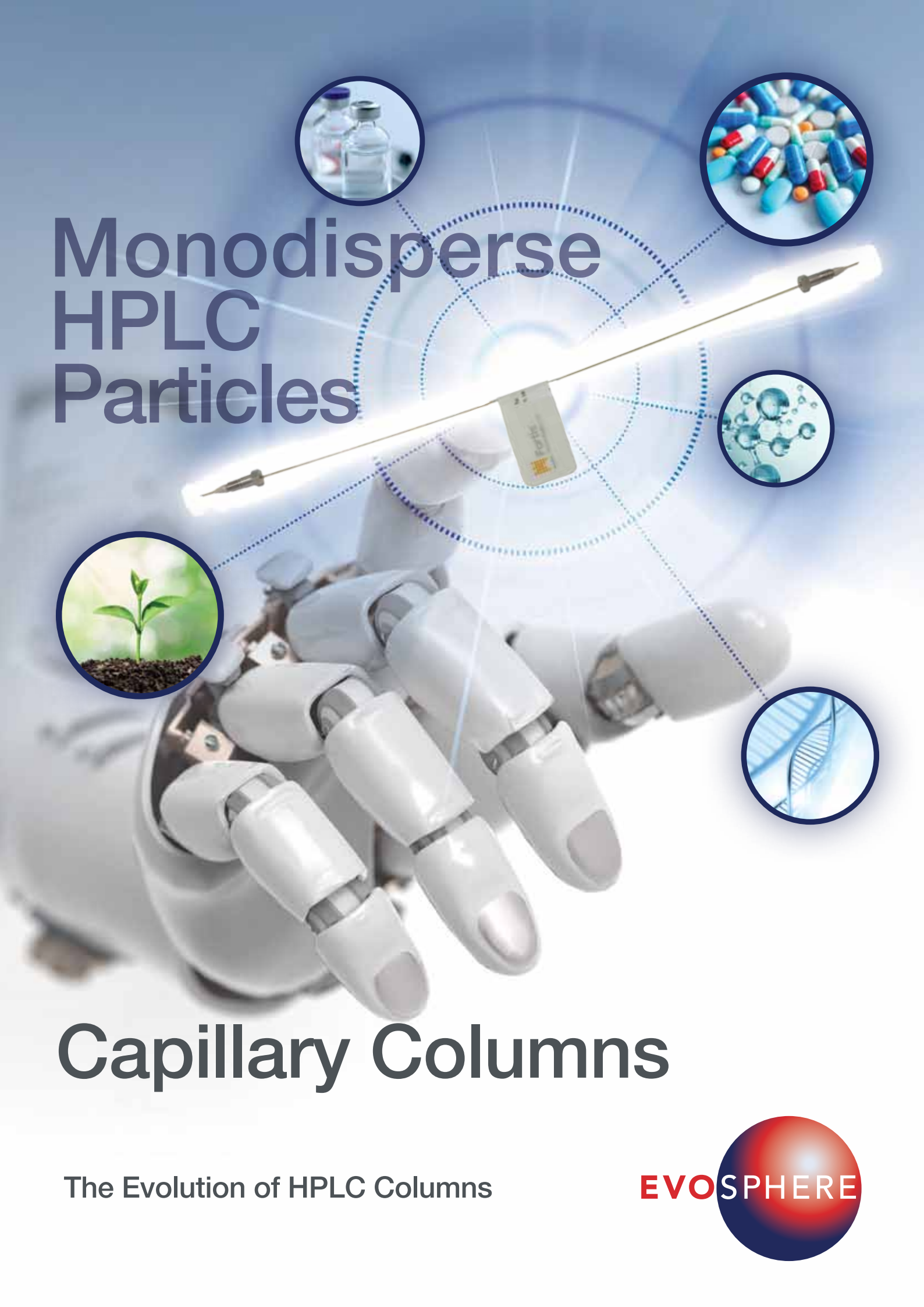


Monodisperse HPLC Particles

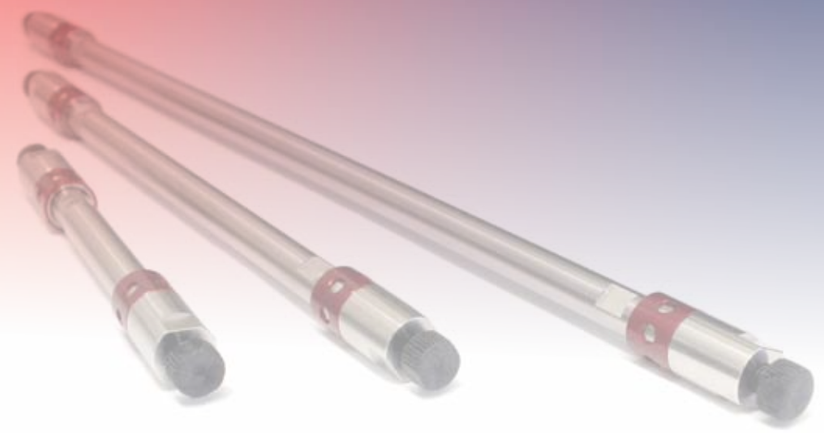
Capillary Columns

The Evolution of HPLC Columns

EVOSPHERE

EVOSPHERE

Capillary Columns



EVOSPHERE

Monodisperse HPLC Capillaries

Fortis Technologies now provides its monodisperse fully porous particles in all capillary dimensions:

- 75µm
- 150µm
- 300µm
- 0.5mm
- 1.0mm

Capillary columns allow for higher sensitivity analysis of low abundance analytes within metabolomics and biological workflows such as peptides and proteins.

Enhancing peak shapes leads to increased peak height, resulting in greater sensitivity. Combining a capillary with Monodisperse HPLC particles provides ultimate sensitivity

Based upon a fully porous silica monodisperse particle, Evosphere® is the evolution of particle technology.

Combine a high efficiency particle with low backpressure, high loadability, scaleability and reproducibility and you have the ultimate combination.

Then add in novel selectivity options to provide enhanced resolution and selectivity and you have the capability to separate more compounds in less time with greater sensitivity.

Evosphere Capillaries

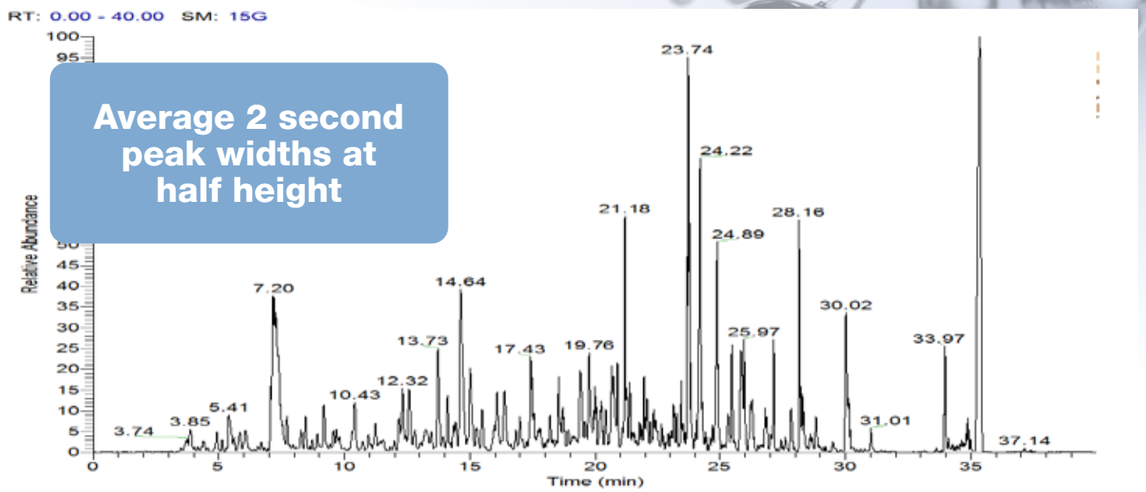
Evosphere capillaries are available in 75µm, 150µm, 300µm, 0.5mm, 1mm i.d. with any phase chemistry and any particle size from the Evosphere range. Request a quote from your local distributor.

Evosphere Capillary Sensitivity

Reducing diameter of the column increases sensitivity significantly and uses a much lower volume of solvent in the analysis. This reduction in solvent saves on both initial solvent costs and waste removal costs, which is becoming increasingly important for environmental friendly laboratory systems, smaller footprints and sustainability. Sample volume is also significanlty decreased utilising ultra low volume analysis, great when working with highly valuable of limited samples.

Column i.d.	Flow	Sensitivity LOD (fmol)	Max Load (ug)
75µ	0.2 µl/min	0.5	1
100µ	0.5 µl/min	1	2
200µ	2 µl/min	5	10
300µ	5 µl/min	10	25
0.5mm	10 µl/min	25	50
1.0mm	50 µl/min	100	200
2.0mm	0.2 ml/min	400	800
4.6mm	1.0 ml/min	2000	4000

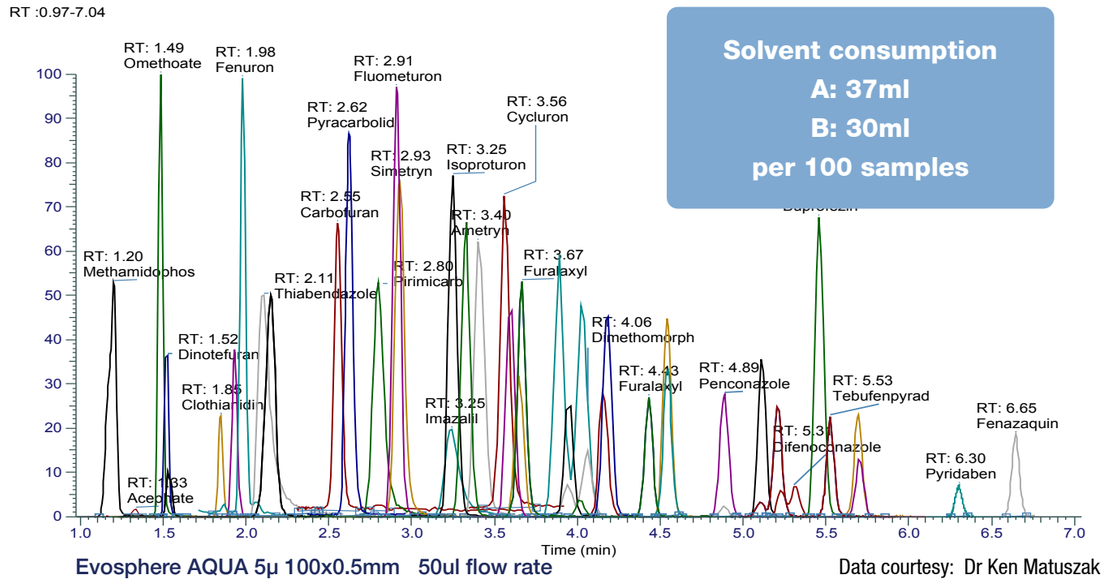
Capillary Peak Capacity - Mixture of 10 protein digests



1 .7µ Evosphere 150x75µm
p/n : C075-150-01-EVO18AR

A: 0.1% formic acid
B: ACN
Gradient: 5-35% in 30minutes
Flow: 300nl
Temp: 25°C

43 PESTICIDES - 0.5mm NARROW BORE

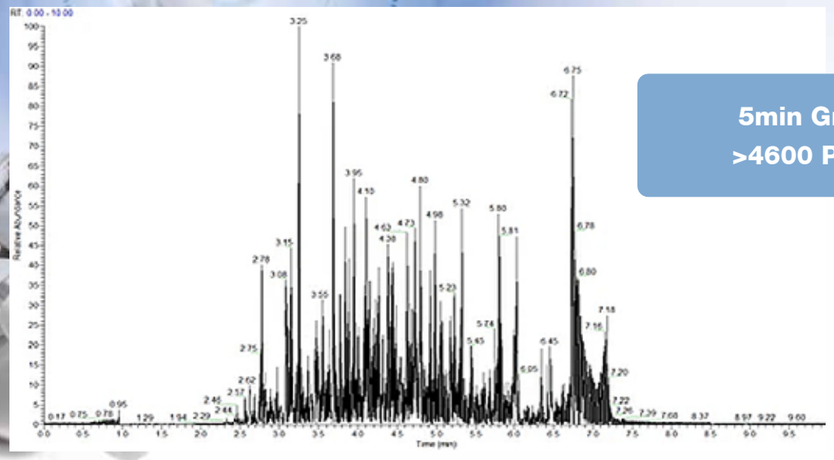


Evosphere AQUA 5µ 100x0.5mm 50ul flow rate

Data courtesy: Dr Ken Matuszak

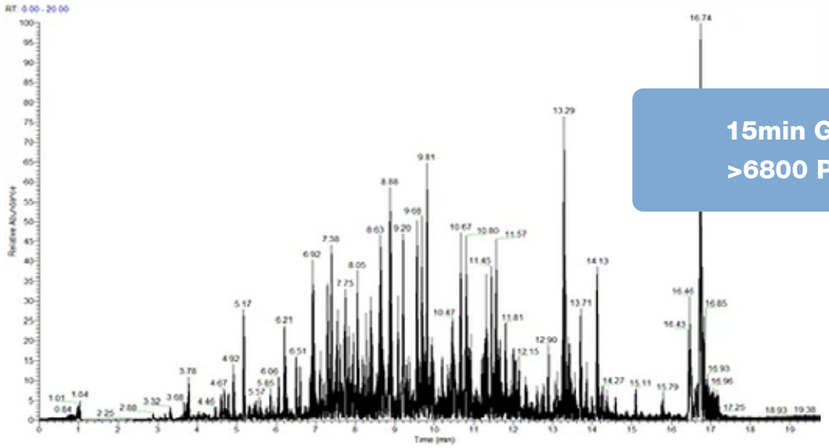
High Throughput Protein Identification

75µm Evosphere C18/AR columns offer ultimate sensitivity and resolution at nano flows, perfect when used on a low volume nanoLC system. High peak capacity can be achieved due to exceptionally sharp peak widths and high resolution from the stationary phase.



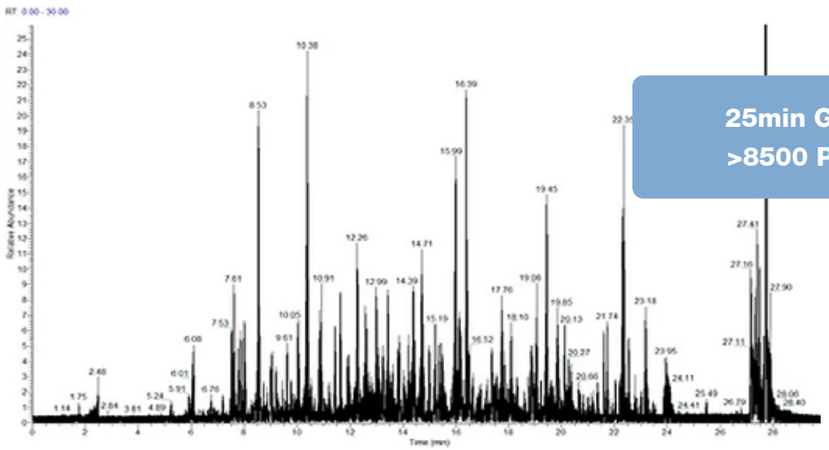
5min Gradient
>4600 Proteins

100ng HeLa Trypic Digest 5-35% gradient in **5mins** at 300nl/min
ID > 4,600 proteins



15min Gradient
>6800 Proteins

100ng HeLa Trypic Digest 5-35% gradient in **15mins** at 300nl/min
ID > 6,800 proteins



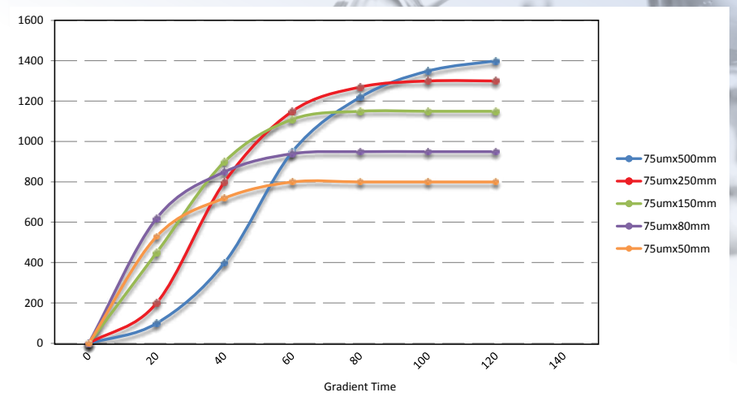
25min Gradient
>8500 Proteins

100ng HeLa Trypic Digest 5-35% gradient in **25mins** at 300nl/min
ID > 8,500 proteins

Peak Capacity

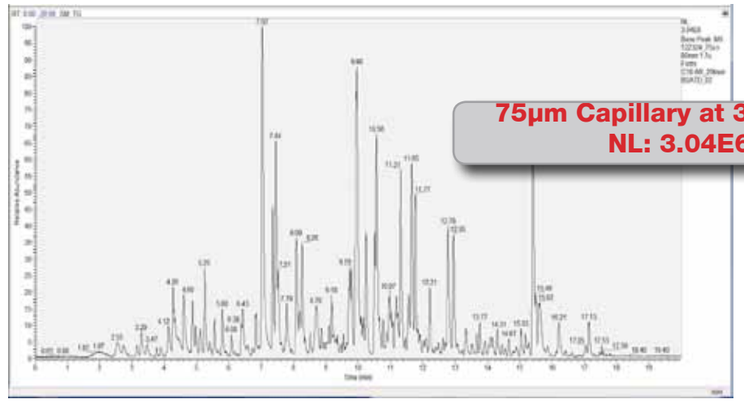
Peak capacity vs gradient time of 75µm Evosphere C18/AR columns, where peak capcity is measured by the gradient time divided by the average peak width (T_G / $PW_{1/2}$).

Evosphere 75µm x 80mm is best for gradient times from 5-30 minutes. Evosphere 75µ x 150mm is best for gradient times from 30-60 minutes. Evosphere 75µm x 250mm is best for gradient times from 60-120 minutes.



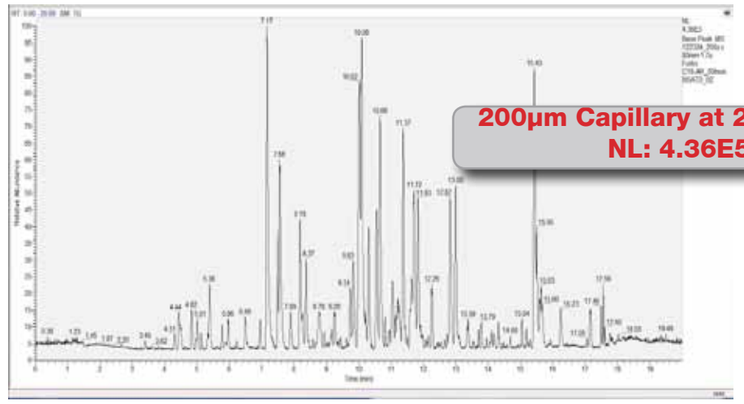
Scalability

The new nano capillary columns with 1.7µm Evosphere C18/AR particles have peak capacities that are 50-100% higher than most commercial nano capillary columns packed with sub 2µm materials. This allows the use of shorter capillary columns with shorter gradient times.



75µm Capillary at 300nl/min
NL: 3.04E6

20fmol BSA Tryptic digest
75µ x 80mm Evosphere C18/AR 1.7µm



200µm Capillary at 2400nl/min
NL: 4.36E5

20fmol BSA Tryptic digest
200µ x 80mm Evosphere C18/AR 1.7µm

Monodisperse Particles

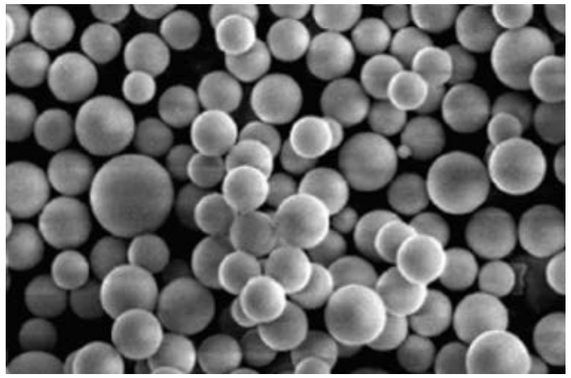
Particle Morphology

Evosphere silica particles are manufactured to provide a high degree of monodispersity with a uniform smooth surface. Monodispersity generates high efficiency HPLC columns due to the reduced flow path dispersion (Eddy diffusion)

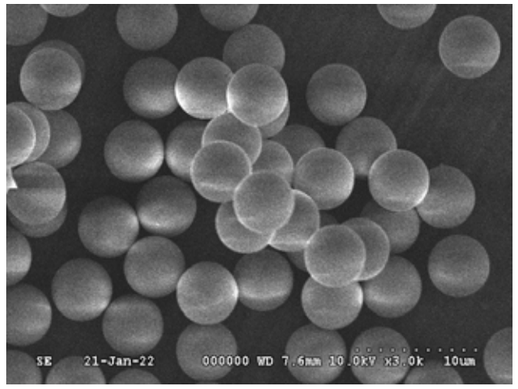
SEM imagery of the Evosphere in comparison with traditional particles highlights the much narrower size distribution.

Monodisperse Evosphere particles are available in 1.7µm, 3µm and 5µm particle sizes.

- **Unique silica particle nature**
- **Monodisperse**
- **High efficiency**
- **Scaling of particle sizes**



Traditional porous particles



Monodisperse porous particles

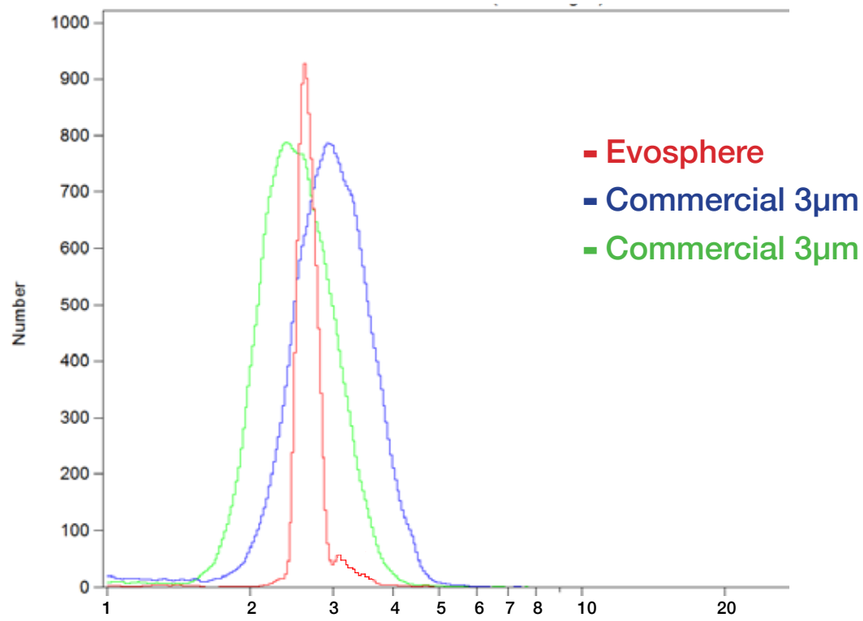
Particle size distribution (D90/10)

When assigning a measurement to characterise a particle size distribution the ratio of D90/10 is often quoted, and as such can be used to gauge the degree of size uniformity of the particles.

The parameter D90 signifies the point in the size distribution, up to and including which, 90% of the total volume of material in the sample is 'contained'. For example; if the D90 is 6µm, this means that 90% of the sample has size of 6µm or smaller. The definition for D50, is then the size point below which 50% of the material is contained. Similarly, the D10 is the size below which 10% of the material is contained. This description has long been used in size distribution measurements.

As the particle size distribution for chromatographic silica moves towards monodisperse then the D90 and D10 values become closer together and the D90/10 value tends towards a value of 1.

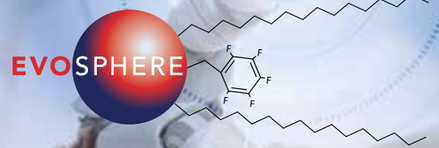
Particle Size Distribution



	Monodisperse Silica	Commercial 3µ Silica-A	Commercial 3µ Silica-B
Median Particle size (d50)*	2.66µm *	2.48µm	2.97µm
SEM Particle Size	3.0µm	2.8µm	3.3µm
D90/10	**1.12**	**1.58**	**1.61**
Pore Volume	0.89	0.88	0.89

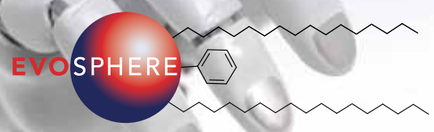
* Measured by Coulter Counter

Stationary Phase Choice



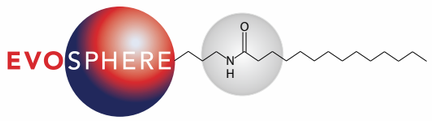
Evosphere C18/PFP
Orthogonal Selectivity
Method development starting point

Evosphere C18/PFP is designed to provide characteristics which will enhance method development. It provides the ability to obtain sharp peak shapes whilst retaining and separating a wide variety of compounds both hydrophobic and hydrophilic.



Evosphere C18/AR
Orthogonal Selectivity
Method development starting point

Evosphere C18/AR is designed to provide increased resolution between compounds, having a combination of hydrophobicity and aromatic selectivity will lead to enhanced resolution. USP L1 column.



Evosphere RP18-Amide
Orthogonal Selectivity
Excellent method development option

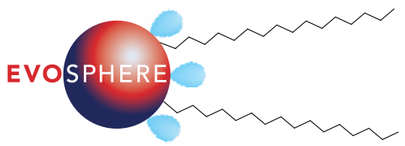
Evosphere RP18-Amide is designed to provide polar characteristics which will enhance resolution in method development. It provides orthogonal selectivity to alkyl chain phases due to its polar-embedded group. Sharp peak shapes, extra selectivity and increased retention can all be obtained.

Evosphere Diphenyl
Separate positional isomers
Stable ligand, No “MS” bleed

Evosphere Diphenyl is designed to provide pi-pi, steric and hydrophobic characteristics which will enhance selectivity and the ability to develop methods. Particularly suited to positional isomers and other closely related species such as metabolites.

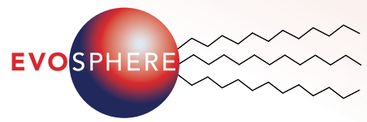
Evosphere Phenyl-Hexyl
Separate metabolites
Excellent resolution

Evosphere Phenyl-Hexyl is designed to provide characteristics which will enhance selectivity. It provides alternate selectivity to a pure hydrophobic stationary phase whilst still maintaining the key attributes of robustness and reproducibility.



Evosphere AQUA
Separate polar species
Excellent stability

Evosphere AQUA is designed to provide characteristics which will enhance retention of highly polar analytes. Reproducible surface characteristics provide robust separations. Combination of hydrophobic and hydrophilic nature.



Evosphere C12
Ultra High Efficiency
Method development starting point

Evosphere C12 is designed to provide characteristics which will enhance method development. The dense C12 ligand provides the ability to obtain sharp peak shapes whilst retaining and separating a wide variety of acid, base and neutral compounds with excellent robustness.

Evosphere PFP
Orthogonal Selectivity
Combined with Ultra High Efficiency particles

Evosphere PFP (PentaFluoroPhenyl) is designed to provide characteristics which will enhance selectivity. It provides alternate selectivity to a hydrophobic stationary phase whilst still maintaining the key attributes of robustness and reproducibility.

Evosphere HILIC
High polarity compounds
Combined with Ultra High Efficiency particles

Evosphere HILIC is designed to provide characteristics which will enhance retention of polar compounds. Hydrophilic interaction chromatography uses partition, ion-exchange and hydrogen bonding to retain high polarity analytes.

Evosphere Physicals

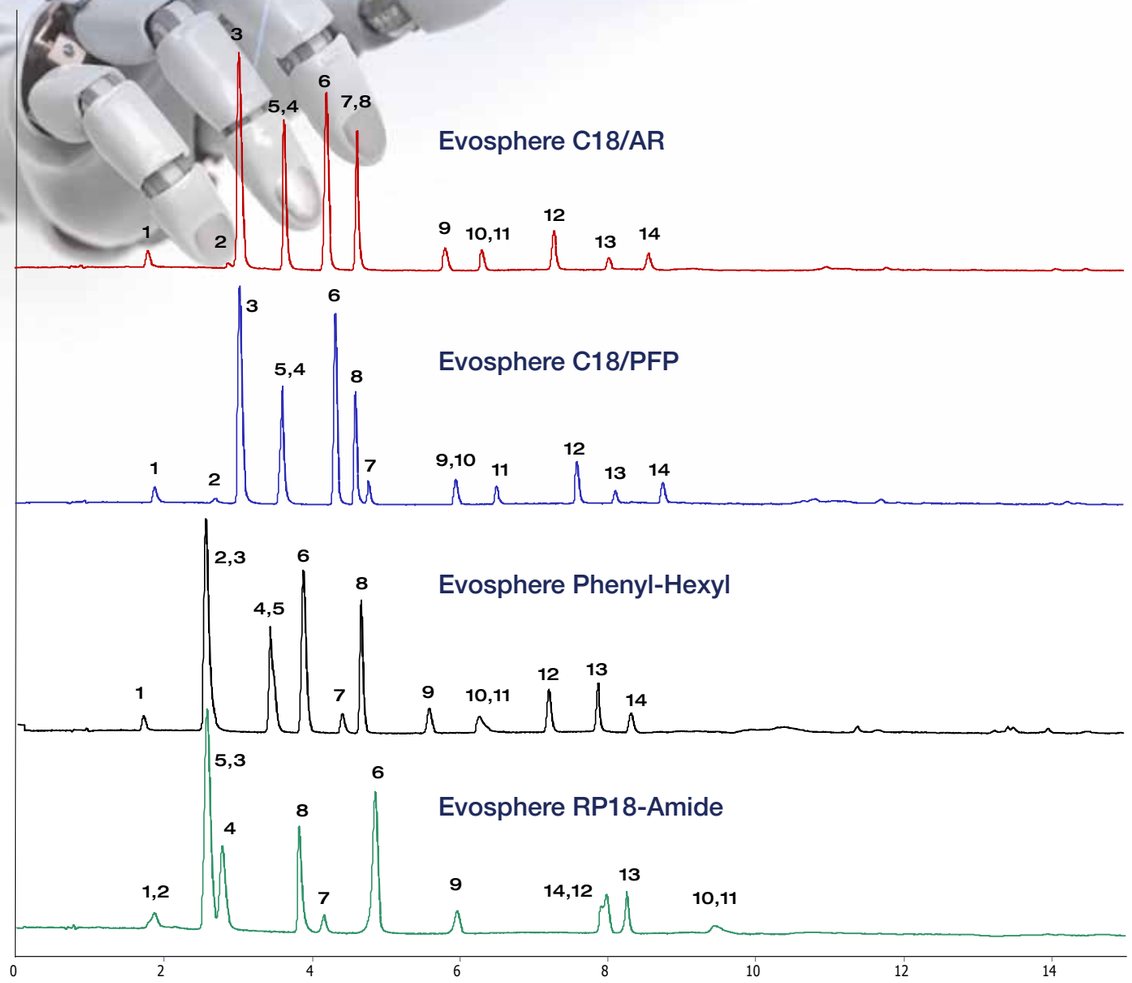
	Particle Size	Surface Area	Pore Size	% C	pH range	USP
Evosphere C12	1.7µm 3µm 5µm	350m²/g	100Å	17	1-11	L87
Evosphere C18/AR	1.7µm 3µm 5µm	350m²/g	100Å	17	2-9	L1
Evosphere C18/PFP	1.7µm 3µm 5µm	350m²/g	100Å	17	2-9	L1
Evosphere RP18-Amide	1.7µm 3µm 5µm	350m²/g	100Å	20	2-9	L60
Evosphere Phenyl-Hexyl	1.7µm 3µm 5µm	350m²/g	100Å	14	2-9	L11
Evosphere Diphenyl	1.7µm 3µm 5µm	350m²/g	100Å	15	2-9	L11
Evosphere PFP	1.7µm 3µm 5µm	350m²/g	100Å	13	2-9	L43
Evosphere AQUA	1.7µm 3µm 5µm	350m²/g	100Å	18	2-9	L96
Evosphere HILIC	1.7µm 3µm 5µm	350m²/g	100Å	n/a	2-7	L3

Evosphere BIO physicals

	Particle Size	Surface Area	Pore Size	% C	pH range	USP
Evosphere BIO C12	1.7µm 3µm 5µm	n/a	300Å	5	1-9	L87
Evosphere BIO DIPHENYL	1.7µm 3µm 5µm	n/a	300Å	5	2-9	L11
Evosphere BIO C4	1.7µm 3µm 5µm	n/a	300Å	3	2-9	L26
Evosphere BIO C18/AR	1.7µm 3µm 5µm	n/a	300Å	7	2-9	L1
Evosphere BIO HILIC	1.7µm 3µm 5µm	n/a	300Å	n/a	2-8	L3

Evosphere Selectivity

When developing a new method in chromatography having a diverse range of selectivities to choose from can help in deciding how peaks resolve and which is the best starting point. In this example a gradient run across several stationary phase shows orthogonal selectivity for many of the peaks.



1. Hydroquinone
2. Theobromine
3. Paracetamol
4. Theophylline
5. Paraxanthine
6. 4-Hydroxybenzoic acid
7. 2-Acetamidophenol
8. Caffeine
9. Phenol
10. Aspirin
11. 2-hydroxybenzoic acid
12. 4-nitrophenol
13. 4-Chloracetanilide
14. 2-nitrophenol

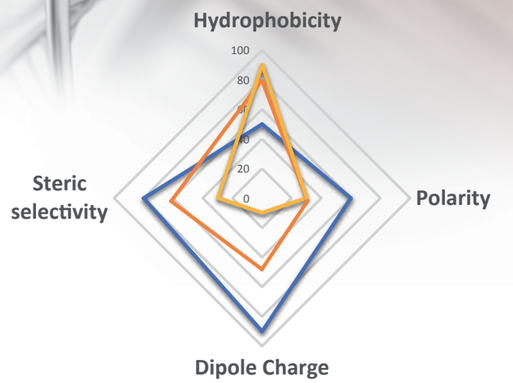
Mobile phase A:
10mM ammonium formate pH3.0
Mobile phase B:
10mM ammonium formate pH3.0 in ACN
Flow rate : 0.4ml/min
Wavelength : 254nm
Temperature : 40°C

* All columns 3µm 100x2.1mm

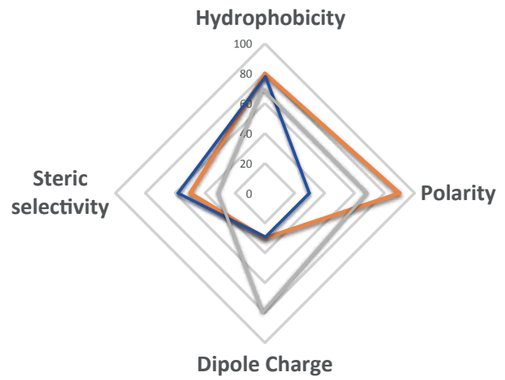
Method development screening kits

When developing a new method in chromatography having a diverse range of selectivities allows a choice to be made dependant upon initial knowledge of the compound types and classes: choose phases based on similarity i.e. Evosphere C18/AR and C18/PFP both having a high hydrophobicity, but subtle changes in steric terms. Or choose stationary phases that are as orthogonal as possible from each other allowing for the best probability of a generic gradient screen to ascertain the best starting column to then be taken forward for further optimisation.

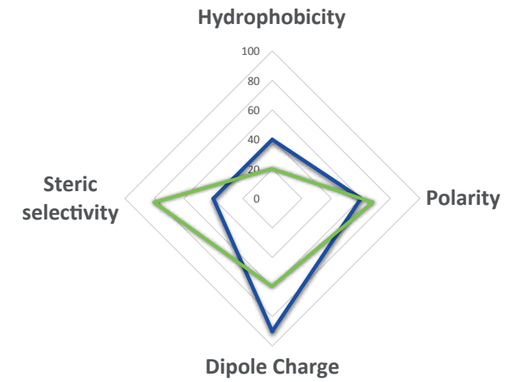
C12
Diphenyl
C18/PFP



AQUA
C18/AR
RP18-Amide



PFP
Phenyl-Hexyl



1.7µm EVOSPHERE® Capillary part numbers

1.7µm EVOSPHERE C12		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-01-EVO12	C075-100-01-EVO12	C075-150-01-EVO12	C075-250-01-EVO12
	150µm	C150-050-01-EVO12	C150-100-01-EVO12	C150-150-01-EVO12	C150-250-01-EVO12
	300µm	C300-050-01-EVO12	C300-100-01-EVO12	C300-150-01-EVO12	C300-250-01-EVO12
	0.5mm	EVO12-550301	EVO12-550501	EVO12-550701	-
	1.0mm	EVO12-010301	EVO12-010501	EVO12-010701	-

1.7µm EVOSPHERE C18/AR		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-01-EVO18AR	C075-100-01-EVO18AR	C075-150-01-EVO18AR	C075-250-01-EVO18AR
	150µm	C150-050-01-EVO18AR	C150-100-01-EVO18AR	C150-150-01-EVO18AR	C150-250-01-EVO18AR
	300µm	C300-050-01-EVO18AR	C300-100-01-EVO18AR	C300-150-01-EVO18AR	C300-250-01-EVO18AR
	0.5mm	EVO18AR-550301	EVO18AR-550501	EVO18AR-550701	-
	1.0mm	EVO18AR-010301	EVO18AR-010501	EVO18AR-010701	-

1.7µm EVOSPHERE C18/PFP		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-01-EVO18FP	C075-100-01-EVO18FP	C075-150-01-EVO18FP	C075-250-01-EVO18FP
	150µm	C150-050-01-EVO18FP	C150-100-01-EVO18FP	C150-150-01-EVO18FP	C150-250-01-EVO18FP
	300µm	C300-050-01-EVO18FP	C300-100-01-EVO18FP	C300-150-01-EVO18FP	C300-250-01-EVO18FP
	0.5mm	EVO18FP-550301	EVO18FP-550501	EVO18FP-550701	-
	1.0mm	EVO18FP-010301	EVO18FP-010501	EVO18FP-010701	-

1.7µm EVOSPHERE AQUA		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-01-EVOAQ	C075-100-01-EVOAQ	C075-150-01-EVOAQ	C075-250-01-EVOAQ
	150µm	C150-050-01-EVOAQ	C150-100-01-EVOAQ	C150-150-01-EVOAQ	C150-250-01-EVOAQ
	300µm	C300-050-01-EVOAQ	C300-100-01-EVOAQ	C300-150-01-EVOAQ	C300-250-01-EVOAQ
	0.5mm	EVOAQ-550301	EVOAQ-550501	EVOAQ-550701	-
	1.0mm	EVOAQ-010301	EVOAQ-010501	EVOAQ-010701	-

1.7µm EVOSPHERE DIPHENYL		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-01-EVOPH	C075-100-01-EVOPH	C075-150-01-EVOPH	C075-250-01-EVOPH
	150µm	C150-050-01-EVOPH	C150-100-01-EVOPH	C150-150-01-EVOPH	C150-250-01-EVOPH
	300µm	C300-050-01-EVOPH	C300-100-01-EVOPH	C300-150-01-EVOPH	C300-250-01-EVOPH
	0.5mm	EVOPH-550301	EVOPH-550501	EVOPH-550701	-
	1.0mm	EVOPH-010301	EVOPH-010501	EVOPH-010701	-

1.7µm EVOSPHERE RP-AMIDE		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-01-EVORP18	C075-100-01-EVORP18	C075-150-01-EVORP18	C075-250-01-EVORP18
	150µm	C150-050-01-EVORP18	C150-100-01-EVORP18	C150-150-01-EVORP18	C150-250-01-EVORP18
	300µm	C300-050-01-EVORP18	C300-100-01-EVORP18	C300-150-01-EVORP18	C300-250-01-EVORP18
	0.5mm	EVORP18-550301	EVORP18-550501	EVORP18-550701	-
	1.0mm	EVORP18-010301	EVORP18-010501	EVORP18-010701	-

1.7µm EVOSPHERE PHENYL-HEXYL		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-01-EVOHEX	C075-100-01-EVOHEX	C075-150-01-EVOHEX	C075-250-01-EVOHEX
	150µm	C150-050-01-EVOHEX	C150-100-01-EVOHEX	C150-150-01-EVOHEX	C150-250-01-EVOHEX
	300µm	C300-050-01-EVOHEX	C300-100-01-EVOHEX	C300-150-01-EVOHEX	C300-250-01-EVOHEX
	0.5mm	EVOHEX-550301	EVOHEX-550501	EVOHEX-550701	-
	1.0mm	EVOHEX-010301	EVOHEX-010501	EVOHEX-010701	-

3µm EVOSPHERE® Capillary part numbers

3µm EVOSPHERE C12		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-03-EVO12	C075-100-03-EVO12	C075-150-03-EVO12	C075-250-03-EVO12
	150µm	C150-050-03-EVO12	C150-100-03-EVO12	C150-150-03-EVO12	C150-250-03-EVO12
	300µm	C300-050-03-EVO12	C300-100-03-EVO12	C300-150-03-EVO12	C300-250-03-EVO12
	0.5mm	EVO12-550303	EVO12-550503	EVO12-550703	-
	1.0mm	EVO12-010303	EVO12-010503	EVO12-010703	-

3µm EVOSPHERE C18/AR		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-03-EVO18AR	C075-100-03-EVO18AR	C075-150-03-EVO18AR	C075-250-03-EVO18AR
	150µm	C150-050-03-EVO18AR	C150-100-03-EVO18AR	C150-150-03-EVO18AR	C150-250-03-EVO18AR
	300µm	C300-050-03-EVO18AR	C300-100-03-EVO18AR	C300-150-03-EVO18AR	C300-250-03-EVO18AR
	0.5mm	EVO18AR-550303	EVO18AR-550503	EVO18AR-550703	-
	1.0mm	EVO18AR-010303	EVO18AR-010503	EVO18AR-010703	-

3µm EVOSPHERE C18/PFP		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-03-EVO18FP	C075-100-03-EVO18FP	C075-150-03-EVO18FP	C075-250-03-EVO18FP
	150µm	C150-050-03-EVO18FP	C150-100-03-EVO18FP	C150-150-03-EVO18FP	C150-250-03-EVO18FP
	300µm	C300-050-03-EVO18FP	C300-100-03-EVO18FP	C300-150-03-EVO18FP	C300-250-03-EVO18FP
	0.5mm	EVO18FP-550303	EVO18FP-550503	EVO18FP-550703	-
	1.0mm	EVO18FP-010303	EVO18FP-010503	EVO18FP-010703	-

3µm EVOSPHERE AQUA		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-03-EVOAQ	C075-100-03-EVOAQ	C075-150-03-EVOAQ	C075-250-03-EVOAQ
	150µm	C150-050-03-EVOAQ	C150-100-03-EVOAQ	C150-150-03-EVOAQ	C150-250-03-EVOAQ
	300µm	C300-050-03-EVOAQ	C300-100-03-EVOAQ	C300-150-03-EVOAQ	C300-250-03-EVOAQ
	0.5mm	EVOAQ-550303	EVOAQ-550503	EVOAQ-550703	-
	1.0mm	EVOAQ-010303	EVOAQ-010503	EVOAQ-010703	-

3µm EVOSPHERE DIPHENYL		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-03-EVOPH	C075-100-03-EVOPH	C075-150-03-EVOPH	C075-250-03-EVOPH
	150µm	C150-050-03-EVOPH	C150-100-03-EVOPH	C150-150-03-EVOPH	C150-250-03-EVOPH
	300µm	C300-050-03-EVOPH	C300-100-03-EVOPH	C300-150-03-EVOPH	C300-250-03-EVOPH
	0.5mm	EVOPH-550303	EVOPH-550503	EVOPH-550703	-
	1.0mm	EVOPH-010303	EVOPH-010503	EVOPH-010703	-

3µm EVOSPHERE RP-AMIDE		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-03-EVORP18	C075-100-03-EVORP18	C075-150-03-EVORP18	C075-250-03-EVORP18
	150µm	C150-050-03-EVORP18	C150-100-03-EVORP18	C150-150-03-EVORP18	C150-250-03-EVORP18
	300µm	C300-050-03-EVORP18	C300-100-03-EVORP18	C300-150-03-EVORP18	C300-250-03-EVORP18
	0.5mm	EVORP18-550303	EVORP18-550503	EVORP18-550703	-
	1.0mm	EVORP18-010303	EVORP18-010503	EVORP18-010703	-

3µm EVOSPHERE PHENYL-HEXYL		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-03-EVOHEX	C075-100-03-EVOHEX	C075-150-03-EVOHEX	C075-250-03-EVOHEX
	150µm	C150-050-03-EVOHEX	C150-100-03-EVOHEX	C150-150-03-EVOHEX	C150-250-03-EVOHEX
	300µm	C300-050-03-EVOHEX	C300-100-03-EVOHEX	C300-150-03-EVOHEX	C300-250-03-EVOHEX
	0.5mm	EVOHEX-550303	EVOHEX-550503	EVOHEX-550703	-
	1.0mm	EVOHEX-010303	EVOHEX-010503	EVOHEX-010703	-

5µm EVOSPHERE® Capillary part numbers

3µm EVOSPHERE C12		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-05-EVO12	C075-100-05-EVO12	C075-150-05-EVO12	C075-250-05-EVO12
	150µm	C150-050-05-EVO12	C150-100-05-EVO12	C150-150-05-EVO12	C150-250-05-EVO12
	300µm	C300-050-05-EVO12	C300-100-05-EVO12	C300-150-05-EVO12	C300-250-05-EVO12
	0.5mm	EVO12-550305	EVO12-550505	EVO12-550705	-
	1.0mm	EVO12-010305	EVO12-010505	EVO12-010705	-

3µm EVOSPHERE C18/AR		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-05-EVO18AR	C075-100-05-EVO18AR	C075-150-05-EVO18AR	C075-250-05-EVO18AR
	150µm	C150-050-05-EVO18AR	C150-100-05-EVO18AR	C150-150-05-EVO18AR	C150-250-05-EVO18AR
	300µm	C300-050-05-EVO18AR	C300-100-05-EVO18AR	C300-150-05-EVO18AR	C300-250-05-EVO18AR
	0.5mm	EVO18AR-550305	EVO18AR-550505	EVO18AR-550705	-
	1.0mm	EVO18AR-010305	EVO18AR-010505	EVO18AR-010705	-

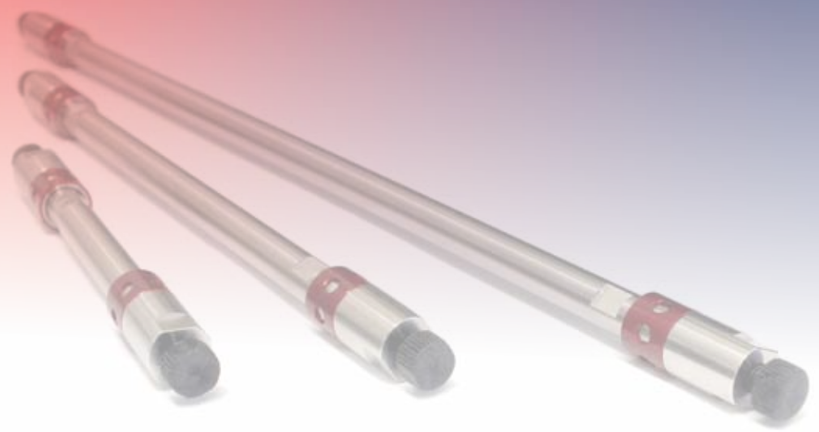
3µm EVOSPHERE C18/PFP		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-05-EVO18FP	C075-100-05-EVO18FP	C075-150-05-EVO18FP	C075-250-05-EVO18FP
	150µm	C150-050-05-EVO18FP	C150-100-05-EVO18FP	C150-150-05-EVO18FP	C150-250-05-EVO18FP
	300µm	C300-050-05-EVO18FP	C300-100-05-EVO18FP	C300-150-05-EVO18FP	C300-250-05-EVO18FP
	0.5mm	EVO18FP-550305	EVO18FP-550505	EVO18FP-550705	-
	1.0mm	EVO18FP-010305	EVO18FP-010505	EVO18FP-010705	-

3µm EVOSPHERE AQUA		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-05-EVOAQ	C075-100-05-EVOAQ	C075-150-05-EVOAQ	C075-250-05-EVOAQ
	150µm	C150-050-05-EVOAQ	C150-100-05-EVOAQ	C150-150-05-EVOAQ	C150-250-05-EVOAQ
	300µm	C300-050-05-EVOAQ	C300-100-05-EVOAQ	C300-150-05-EVOAQ	C300-250-05-EVOAQ
	0.5mm	EVOAQ-550305	EVOAQ-550505	EVOAQ-550705	-
	1.0mm	EVOAQ-010305	EVOAQ-010505	EVOAQ-010705	-

3µm EVOSPHERE DIPHENYL		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-05-EVOPH	C075-100-05-EVOPH	C075-150-05-EVOPH	C075-250-05-EVOPH
	150µm	C150-050-05-EVOPH	C150-100-05-EVOPH	C150-150-05-EVOPH	C150-250-05-EVOPH
	300µm	C300-050-05-EVOPH	C300-100-05-EVOPH	C300-150-05-EVOPH	C300-250-05-EVOPH
	0.5mm	EVOPH-550305	EVOPH-550505	EVOPH-550705	-
	1.0mm	EVOPH-010305	EVOPH-010505	EVOPH-010705	-

3µm EVOSPHERE RP-AMIDE		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-05-EVORP18	C075-100-05-EVORP18	C075-150-05-EVORP18	C075-250-05-EVORP18
	150µm	C150-050-05-EVORP18	C150-100-05-EVORP18	C150-150-05-EVORP18	C150-250-05-EVORP18
	300µm	C300-050-05-EVORP18	C300-100-05-EVORP18	C300-150-05-EVORP18	C300-250-05-EVORP18
	0.5mm	EVORP18-550305	EVORP18-550505	EVORP18-550705	-
	1.0mm	EVORP18-010305	EVORP18-010505	EVORP18-010705	-

3µm EVOSPHERE PHENYL-HEXYL		Column Length			
		50	100	150	250
Column Diameter	75µm	C075-050-05-EVOHEX	C075-100-05-EVOHEX	C075-150-05-EVOHEX	C075-250-05-EVOHEX
	150µm	C150-050-05-EVOHEX	C150-100-05-EVOHEX	C150-150-05-EVOHEX	C150-250-05-EVOHEX
	300µm	C300-050-05-EVOHEX	C300-100-05-EVOHEX	C300-150-05-EVOHEX	C300-250-05-EVOHEX
	0.5mm	EVOHEX-550305	EVOHEX-550505	EVOHEX-550705	-
	1.0mm	EVOHEX-010305	EVOHEX-010505	EVOHEX-010705	-



EVOSPHERE

Monodisperse HPLC Capillaries

1.7µm EVOSPHERE® BIO Capillary part numbers

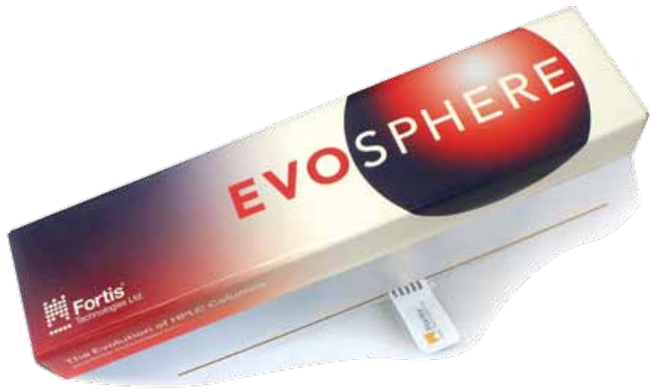
1.7µm EVOSPHERE BIO C12		Column Length			
		50	100	150	250
	75µm	C075-050-01-EVO312	C075-100-01-EVO312	C075-150-01-EVO312	C075-250-01-EVO312
Column Diameter	150µm	C150-050-01-EVO312	C150-100-01-EVO312	C150-150-01-EVO312	C150-250-01-EVO312
	300µm	C300-050-01-EVO312	C300-100-01-EVO312	C300-150-01-EVO312	C300-250-01-EVO312
	0.5mm	EVO312-550301	EVO312-550501	EVO312-550701	-
	1.0mm	EVO312-010301	EVO312-010501	EVO312-010701	-

1.7µm EVOSPHERE BIO DIPHENYL		Column Length			
		50	100	150	250
	75µm	C075-050-01-EVO3PH	C075-100-01-EVO3PH	C075-150-01-EVO3PH	C075-250-01-EVO3PH
Column Diameter	150µm	C150-050-01-EVO3PH	C150-100-01-EVO3PH	C150-150-01-EVO3PH	C150-250-01-EVO3PH
	300µm	C300-050-01-EVO3PH	C300-100-01-EVO3PH	C300-150-01-EVO3PH	C300-250-01-EVO3PH
	0.5mm	EVO3PH-550301	EVO3PH-550501	EVO3PH-550701	-
	1.0mm	EVO3PH-010301	EVO3PH-010501	EVO3PH-010701	-

1.7µm EVOSPHERE BIO C4		Column Length			
		50	100	150	250
	75µm	C075-050-01-EVO304	C075-100-01-EVO304	C075-150-01-EVO304	C075-250-01-EVO304
Column Diameter	150µm	C150-050-01-EVO304	C150-100-01-EVO304	C150-150-01-EVO304	C150-250-01-EVO304
	300µm	C300-050-01-EVO304	C300-100-01-EVO304	C300-150-01-EVO304	C300-250-01-EVO304
	0.5mm	EVO304-550301	EVO304-550501	EVO304-550701	-
	1.0mm	EVO304-010301	EVO304-010501	EVO304-010701	-

1.7µm EVOSPHERE BIO HILIC		Column Length			
		50	100	150	250
	75µm	C075-050-01-EVO3HI	C075-100-01-EVO3HI	C075-150-01-EVO3HI	C075-250-01-EVO3HI
Column Diameter	150µm	C150-050-01-EVO3HI	C150-100-01-EVO3HI	C150-150-01-EVO3HI	C150-250-01-EVO3HI
	300µm	C300-050-01-EVO3HI	C300-100-01-EVO3HI	C300-150-01-EVO3HI	C300-250-01-EVO3HI
	0.5mm	EVO3HI-550301	EVO3HI-550501	EVO3HI-550701	-
	1.0mm	EVO3HI-010301	EVO3HI-010501	EVO3HI-010701	-

1.7µm EVOSPHERE BIO C18/AR		Column Length			
		50	100	150	250
	75µm	C075-050-01-EVO318AR	C075-100-01-EVO318AR	C075-150-01-EVO318AR	C075-250-01-EVO318AR
Column Diameter	150µm	C150-050-01-EVO318AR	C150-100-01-EVO318AR	C150-150-01-EVO318AR	C150-250-01-EVO318AR
	300µm	C300-050-01-EVO318AR	C300-100-01-EVO318AR	C300-150-01-EVO318AR	C300-250-01-EVO318AR
	0.5mm	EVO318AR-550301	EVO318AR-550501	EVO318AR-550701	-
	1.0mm	EVO318AR-010301	EVO318AR-010501	EVO318AR-010701	-



3µm EVOSPHERE® BIO Capillary part numbers

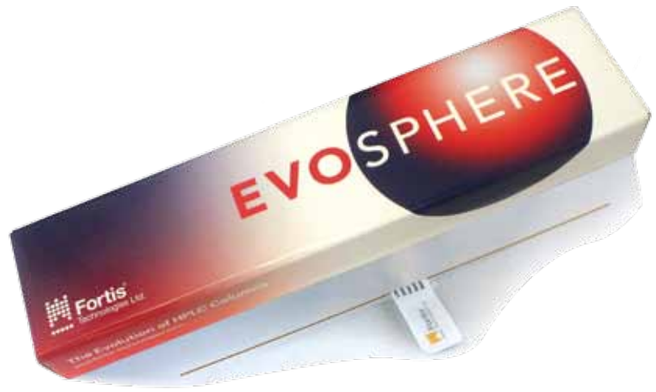
3µm EVOSPHERE BIO C12		Column Length			
		50	100	150	250
	75µm	C075-050-03-EVO312	C075-100-03-EVO312	C075-150-03-EVO312	C075-250-03-EVO312
Column Diameter	150µm	C150-050-03-EVO312	C150-100-03-EVO312	C150-150-03-EVO312	C150-250-03-EVO312
	300µm	C300-050-03-EVO312	C300-100-03-EVO312	C300-150-03-EVO312	C300-250-03-EVO312
	0.5mm	EVO312-550303	EVO312-550503	EVO312-550703	-
	1.0mm	EVO312-010303	EVO312-010503	EVO312-010703	-

3µm EVOSPHERE BIO DIPHENYL		Column Length			
		50	100	150	250
	75µm	C075-050-03-EVO3PH	C075-100-03-EVO3PH	C075-150-03-EVO3PH	C075-250-03-EVO3PH
Column Diameter	150µm	C150-050-03-EVO3PH	C150-100-03-EVO3PH	C150-150-03-EVO3PH	C150-250-03-EVO3PH
	300µm	C300-050-03-EVO3PH	C300-100-03-EVO3PH	C300-150-03-EVO3PH	C300-250-03-EVO3PH
	0.5mm	EVO3PH-550303	EVO3PH-550503	EVO3PH-550703	-
	1.0mm	EVO3PH-010303	EVO3PH-010503	EVO3PH-010703	-

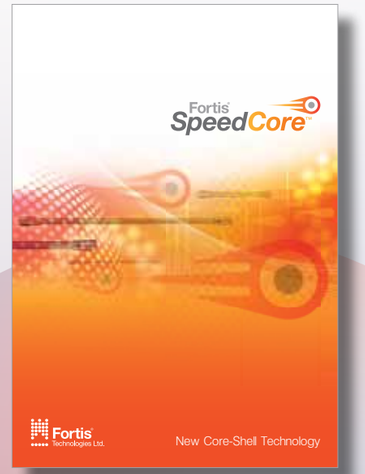
3µm EVOSPHERE BIO C4		Column Length			
		50	100	150	250
	75µm	C075-050-03-EVO304	C075-100-03-EVO304	C075-150-03-EVO304	C075-250-03-EVO304
Column Diameter	150µm	C150-050-03-EVO304	C150-100-03-EVO304	C150-150-03-EVO304	C150-250-03-EVO304
	300µm	C300-050-03-EVO304	C300-100-03-EVO304	C300-150-03-EVO304	C300-250-03-EVO304
	0.5mm	EVO304-550303	EVO304-550503	EVO304-550703	-
	1.0mm	EVO304-010303	EVO304-030503	EVO304-010703	-

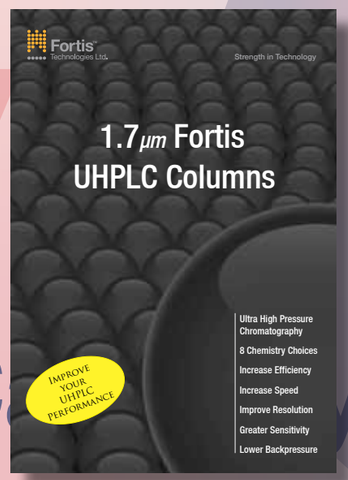
3µm EVOSPHERE BIO HILIC		Column Length			
		50	100	150	250
	75µm	C075-050-03-EVO3HI	C075-100-03-EVO3HI	C075-150-03-EVO3HI	C075-250-03-EVO3HI
Column Diameter	150µm	C150-050-03-EVO3HI	C150-100-03-EVO3HI	C150-150-03-EVO3HI	C150-250-03-EVO3HI
	300µm	C300-050-03-EVO3HI	C300-100-03-EVO3HI	C300-150-03-EVO3HI	C300-250-03-EVO3HI
	0.5mm	EVO3HI-550303	EVO3HI-550503	EVO3HI-550703	-
	1.0mm	EVO3HI-010303	EVO3HI-030503	EVO3HI-010703	-

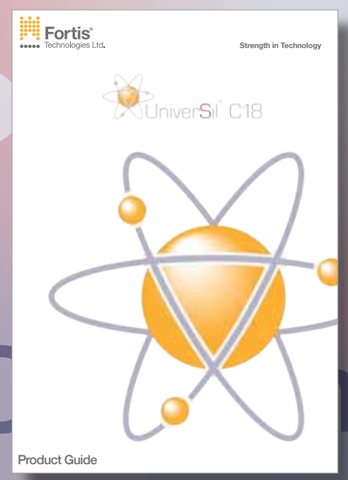
3µm EVOSPHERE BIO C18/AR		Column Length			
		50	100	150	250
	75µm	C075-050-03-EV318AR	C075-100-03-EV318AR	C075-150-03-EV318AR	C075-250-03-EV318AR
Column Diameter	150µm	C150-050-03-EV318AR	C150-100-03-EV318AR	C150-150-03-EV318AR	C150-250-03-EV318AR
	300µm	C300-050-03-EV318AR	C300-100-03-EV318AR	C300-150-03-EV318AR	C300-250-03-EV318AR
	0.5mm	EV318AR-550303	EV318AR-550503	EV318AR-550703	-
	1.0mm	EV318AR-010303	EV318AR-010503	EV318AR-010703	-

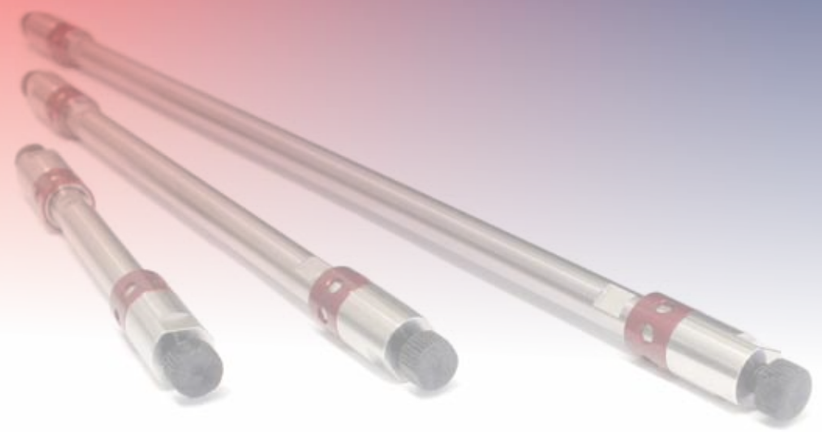


Other Product Guides Available









EVOSPHERE

Monodisperse HPLC Capillaries





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