

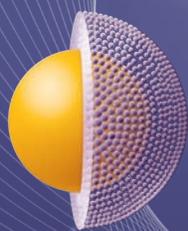
Agilent InfinityLab Poroshell 120 Columns for HPLC and UHPLC

**PERFORM RUGGED, FAST LC
WITH CONFIDENCE**

Part of the
InfinityLab
family



 **Agilent Technologies**



AGILENT INFINITYLAB POROSHELL 120 COLUMNS CAN MAKE EVERY LC AND LC/MS IN YOUR LAB WORK EVEN HARDER

"We choose InfinityLab Poroshell 120 because of its rugged performance"

"InfinityLab Poroshell 120 provides reliably excellent performance—it's the new 'standard' in our lab"

"For complicated samples, which I face most, InfinityLab Poroshell 120 columns save me a lot of time"

"InfinityLab Poroshell 120 is my go-to column"

QUOTES FROM
INFINITYLAB POROSHELL 120 USERS

InfinityLab Poroshell 120 columns provide exceptional efficiency for standard HPLC, and significantly boost performance from all instruments, whether you have older 400 bar or newer 1300 bar UHPLC systems. Their advanced features include:

- **Excellent lot-to-lot reproducibility:** A proprietary, single-step porous shell process dramatically reduces tiny differences between lots and columns, giving you confidence in your separation results.
- **A scalable family of particles:** 1.9 μm , 2.7 μm , and 4 μm superficially porous particles enable you to get the best from your methods and instruments, and allow easy transfer between HPLC and UHPLC methods.
- **Easy method development:** Up to TWELVE chemistries, depending on particle size, provide selectivity options for fast method development. What's more, alignment with ZORBAX chemistries makes it easy to transfer your methods.
- **Long column life:** Robust particles are stable at required pressures. In addition, 2.7 μm and 4 μm columns with standard 2 μm frits resist plugging with dirty samples. UHPLC guard columns further extend the life of your analytical column.
- **Superior peak shape:** High-purity silica and advanced bonding chemistries reduce peak tailing—especially at pH 6-7—and give you faster, more accurate results.
- **Easy traceability:** A preprogrammed ID tag allows you to track various column properties and usage parameters on your InfinityLab Series LC. This ensures analytical traceability, and simplifies routine documentation of columns and conditions.



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To learn more about Agilent InfinityLab Poroshell 120 columns, visit www.agilent.com/chem/poroshell120

INFINITELY BETTER LIQUID CHROMATOGRAPHY



Reach new levels of efficiency and confidence with the Agilent InfinityLab LC family

Agilent InfinityLab is an optimized portfolio of LC instruments, columns, and supplies that work together in perfect harmony. It's designed to provide the highest efficiency in your liquid chromatography workflow—regardless of application area.

Learn more at www.agilent.com/chem/InfinityLab



InfinityLab Poroshell 120 columns

Exceptional speed and resolution for reliable, reproducible results

- **Analytical efficiency:** A porous outer layer and solid core limit diffusion distance and improve separation speed, while narrow particle size distributions improve resolution.
- **Excellent lot-to-lot reproducibility:** InfinityLab Poroshell 120 columns are manufactured using a proprietary single-step porous shell process that dramatically reduces tiny differences between columns and lots.
- **Up to 12 chemistries:** Includes SB-C18 and SB-C8 for low-pH applications and HPH-C18 and HPH-C8 for high-pH applications.
- **Preprogrammed ID tag** allows you to track various column properties and usage parameters, such as column identity, lot and batch number, last injection date, number of injections, and maximum temperature used.



Enhance traceability and simplify documentation

InfinityLab Poroshell 120 columns with Column ID make it easy to document columns and conditions for routine analysis. Benefits include:

- Usability—find column details easily
- Traceability—know exactly which column is/was installed
- Security—avoid running methods incompatible with the column

InfinityLab LC Series

Run conventional and UPLC methods efficiently and confidently

From routine analysis to cutting-edge research, the Agilent InfinityLab LC Series offers the broadest portfolio of highly efficient LC systems for any application and budget.



Agilent 1220 Infinity II LC

Agilent 1260 Infinity II LC

Agilent 1290 Infinity II LC

The Agilent 1220 Infinity II LC

is an affordable, high-quality, integrated system that puts you on the fast track to productivity.

The Agilent 1260 Infinity II LC

is a trusted platform with the broadest choice of instrumentation, taking you to the next level of efficiency.

The Agilent 1290 Infinity II LC

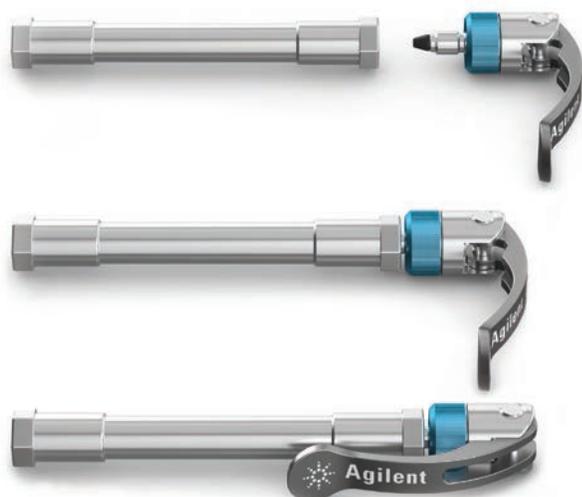
embodies the next generation of LC instrumentation, giving you the ultra-high performance for ultimate lab productivity.

What's more, you get 100% compatibility with all of your conventional methods, ensuring nondisruptive replacement of current instruments.

Save time and minimize troubleshooting with InfinityLab Quick Connect fittings

With Quick Connect fittings, you can be sure you're getting a perfect column connection, every time.

- Truly finger-tight connection: No special training is needed, so differences in user style will not affect your chromatography.
- Spring-loaded design pushes the tubing against the receiving port for zero-dead-volume connections.
- Compatible with all types of columns by simply adjusting the ferrule.
- Reusable for more than 200 reconnections: Quick Connect fittings are long lasting, reseal tightly, and are stable up to 1300 bar (18,850 psi).
- Fast, easy connections save you time and trouble—particularly during method development and column testing.



Note: These fittings can only be used with capillaries using a long socket.

In a tight spot?

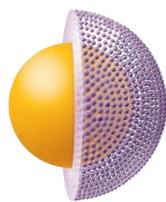
Try an InfinityLab Quick Turn fitting

For instrument connections that are too tight for Quick Connect fittings, you can rely on Agilent InfinityLab Quick Turn fittings. Like our Quick Connect fittings, they leverage a proprietary spring-loaded design for zero dead volume and a sure connection.

As easy as closing a lever: The proprietary Agilent design features a spring-loaded mechanism for zero dead volume and a sure, tight connection.



WHAT MAKES INFINITYLAB POROSHELL 120 COLUMNS DIFFERENT?



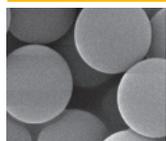
InfinityLab Poroshell 120 columns are based on superficially porous particle technology, which features a solid silica core and a porous outer layer. Compared to traditional totally porous particles of the same (or similar) size, InfinityLab Poroshell particles deliver higher chromatographic efficiencies and enable fast, high-resolution separations.

How is an InfinityLab Poroshell 120 particle made?

Agilent uses a unique manufacturing process for InfinityLab Poroshell 120 particles. Specifically, we minimize the number of manufacturing steps to ensure maximum particle—and chromatographic—reproducibility.

STEP 1

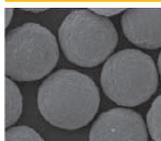
Make the solid core



InfinityLab Poroshell 120 cores have a very smooth surface and a uniform particle size—both of which contribute to a tight overall particle size distribution. As a result, you get a more tightly packed column bed and higher efficiency than with totally porous particles.

STEP 2

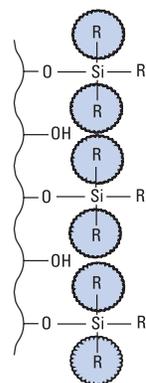
Apply the porous shell



At Agilent, we **apply the porous shell in one single step**—similar to the coacervation techniques used to make traditional ZORBAX columns. This unique single-step process delivers higher yields and more column-to-column reproducibility than other vendors' columns.

STEP 3

Apply the bonded phase

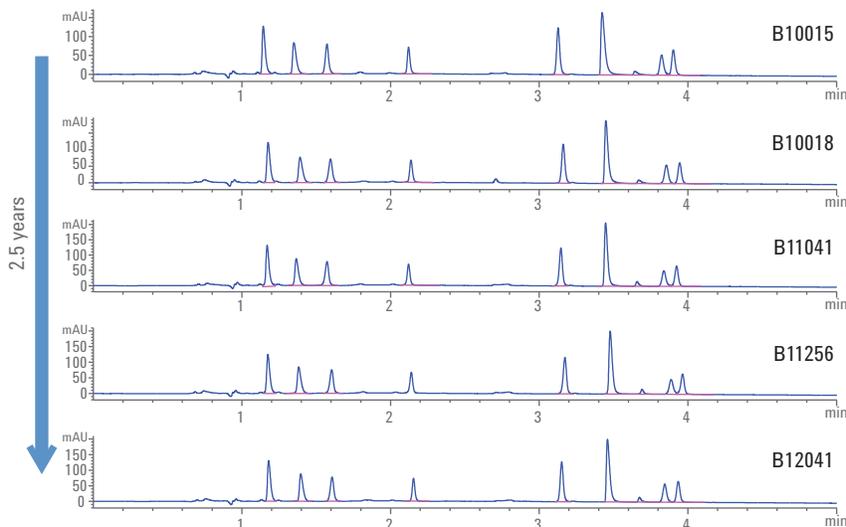


The family of Agilent InfinityLab Poroshell 120 phases aligns with the ZORBAX family for easy method development and transfer.

Reproducible performance—lot to lot and year to year—minimizes workflow disruption

The simpler the manufacturing process, the more consistent the column

A single-step shell process creates a highly reproducible column, as you can see in this comparison of five lots.

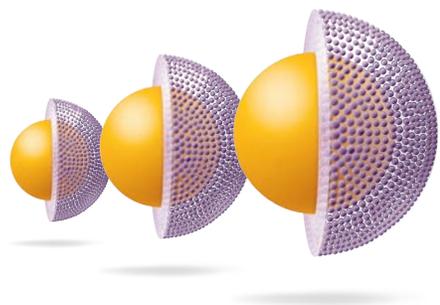


InfinityLab Poroshell 120 EC-C18, 3.0 x 100 mm, 2.7 μm (p/n 695975-902) from five different lots

A scalable family of particles for faster method transfer

InfinityLab Poroshell 120 columns are available in three different particle diameters—allowing you to choose the size that best fits your separation needs, and is most compatible with your LC systems.

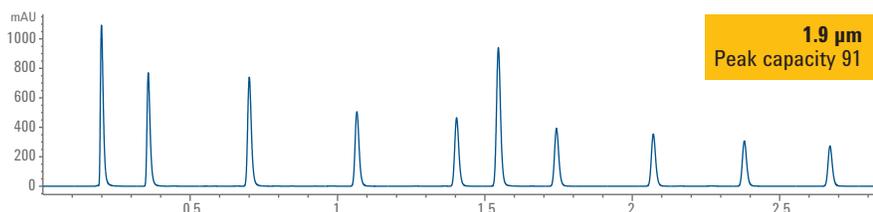
Because the different particles are engineered with a consistent core-to-particle size ratio, you can easily transfer a method developed on one particle size to any of the others.



Solid Core	Porous Layer	Particle	Best for
1.2 μm	0.35 μm	1.9 μm	Highest UHPLC performance
1.7 μm	0.5 μm	2.7 μm	UHPLC performance at lower pressures
2.5 μm	0.75 μm	4 μm	Improved HPLC performance

Scalability saves time when transferring your methods. As particle size is decreased, performance improves, while selectivity is maintained

InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 1.9 μm (p/n 699675-902)



Conditions:

Mobile phase A: Water

Mobile phase B: Acetonitrile

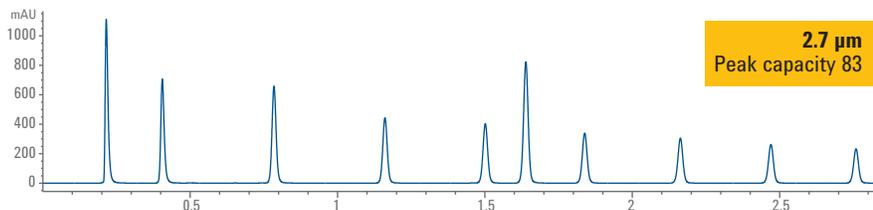
Gradient: 35-95% B in 3-min

Flow rate: 0.5 mL/min

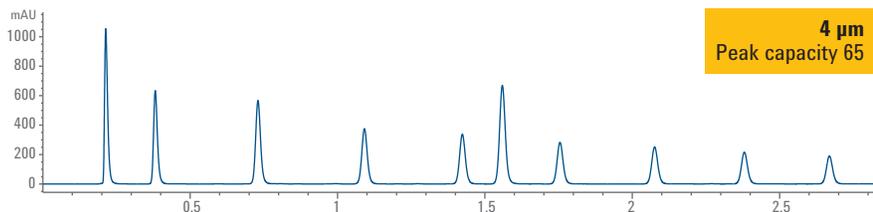
Detection: 254 nm @ 80 Hz

Sample: 1 μL of alkylphenones mix (p/n 5188-6529) + 0.1 mL 1 mg/mL thiourea

InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 2.7 μm (p/n 699775-902)

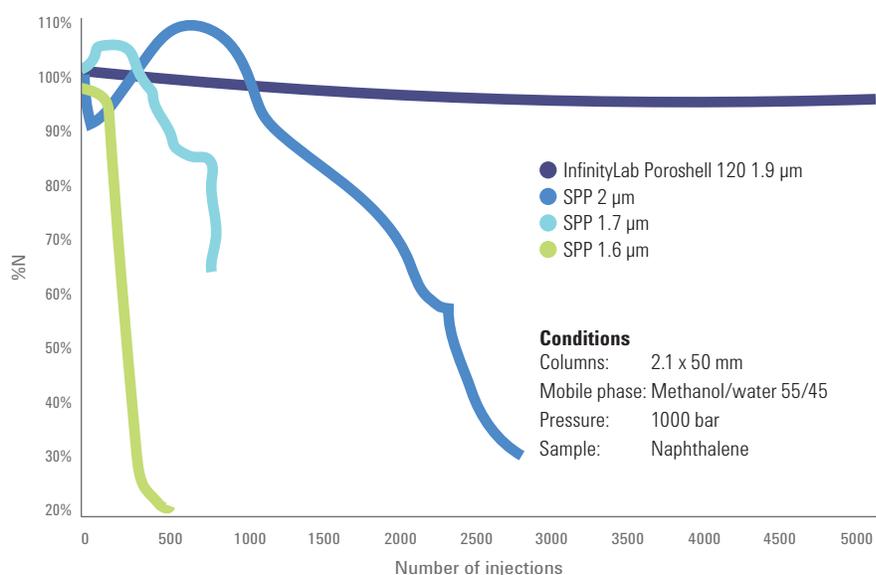


InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 4 μm (p/n 699770-902)



Long column lifetimes reduce costs and minimizes re-work

You can count on InfinityLab Poroshell 120 particles to be robust under the most demanding operating conditions.



The InfinityLab Poroshell 120 columns showed stability for 5,000 injections under high-pressure UHPLC conditions.

Stability for high-pH mobile phases

InfinityLab Poroshell HPH-C18 and HPH-C8 particles are made by chemically modifying the porous layer using proprietary technology that provides high-pH stability. That means you can use the InfinityLab Poroshell 120 family for all your fast LC method development needs—regardless of mobile phase pH.

Conditions:

Instrument: 1260 Infinity II Binary LC

Mobile phase: A: 10 mM Ammonium bicarbonate adjusted to pH 10.0 in water
 B: Acetonitrile

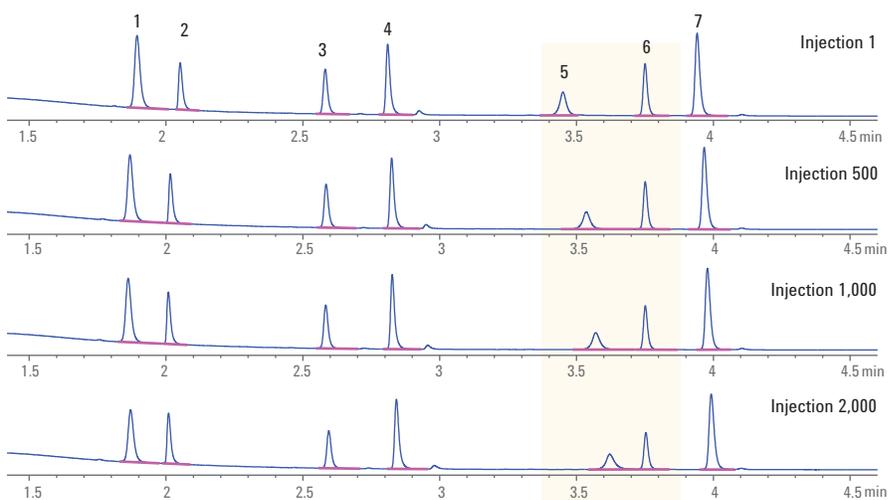
Flow rate: 0.4 mL/min

Gradient:	Time	% B
	0	5
	5	95
	5.1	5

Sample:

1. Methyl salicylate
2. 4 Chlorocinnamic acid
3. Acetophenone
4. Quinine
5. Nortryptiline
6. Heptanophenone
7. Amitriptyline

Agilent InfinityLab Poroshell HPH-C18, 2.1 x 50 mm, 2.7 µm (p/n 699775-702)



After 2,000 injections at pH 10, InfinityLab Poroshell 120 columns showed no change in performance.

Easy method development saves time and money

With 12 different chemistries, InfinityLab Poroshell 120 columns provide a range of selectivities that makes your method development fast and easy.

InfinityLab Poroshell 120 chemistries

Best all around	Best for low-pH mobile phases	Best for high-pH mobile phases	Best for alternative selectivity	Best for more polar compounds
EC-C18 USP L1 1.9, 2.7, 4 μ m	SB-C18 USP L1 2.7 μ m	HPH-C18 USP L1 1.9, 2.7, 4 μ m	Bonus-RP USP L60 2.7 μ m	SB-Aq USP L96 2.7 μ m
EC-C8 USP L7 1.9, 2.7, 4 μ m	SB-C8 USP L7 2.7 μ m	HPH-C8 USP L7 2.7, 4 μ m	PFP USP L43 1.9, 2.7, 4 μ m	EC-CN USP L10 2.7 μ m
Phenyl-Hexyl USP L11 1.9, 2.7, 4 μ m				HILIC USP L3 1.9, 2.7, 4 μ m

In addition, the alignment of InfinityLab Poroshell 120 and ZORBAX chemistries allows easy transfer of your legacy methods.

InfinityLab Poroshell 120 Family	Aligned Chemistry	
Best all around	EC-C18	ZORBAX Eclipse Plus C18
	EC-C8	ZORBAX Eclipse Plus C8
	Phenyl-Hexyl	ZORBAX Eclipse Plus Phenyl-Hexyl
Best for low-pH mobile phases	SB-C18	ZORBAX StableBond SB-C18
	SB-C8	ZORBAX StableBond SB-C8
Best for alternative selectivity	Bonus-RP	ZORBAX Bonus-RP
Best for more polar compounds	SB-Aq	ZORBAX StableBond SB-Aq
	EC-CN	ZORBAX Eclipse XDB-CN
	HILIC	ZORBAX HILIC-Plus

Superior peak shapes improve the accuracy and precision of your results

The high-quality particles and advanced bonding technology of InfinityLab Poroshell 120 columns provide exceptional peak shape—especially at pH 6 to 7—when compared to other superficially porous columns.

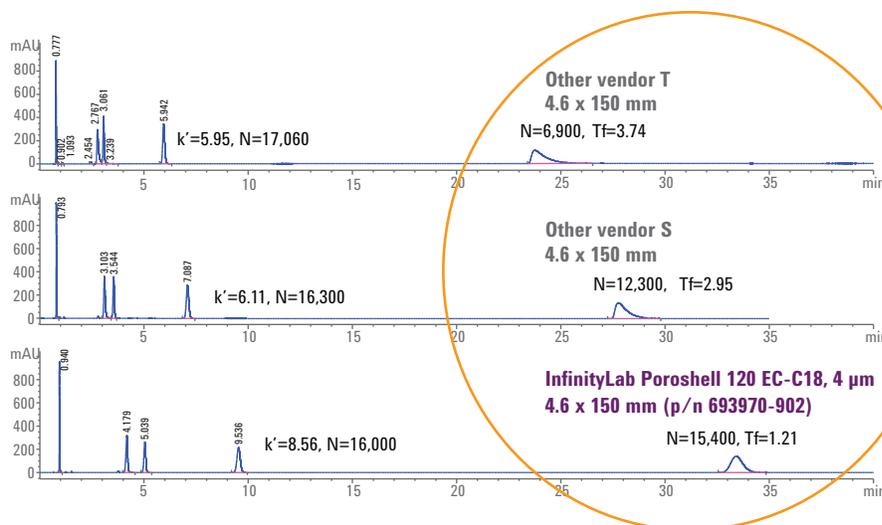
Conditions:

Mobile phase: 20 mM 40% K_2HPO_4 / KH_2PO_4
pH 7, 60% methanol

Flow rate: 1.2 mL/min

Sample:

1. Uracil
2. Propranolol
3. Butyl Paraben
4. Dipropylphthalate
5. Amitriptyline



InfinityLab Poroshell 120 columns outperform other columns for challenging analytes.

WHICH INFINITYLAB POROSHELL 120 COLUMNS SHOULD I CHOOSE?

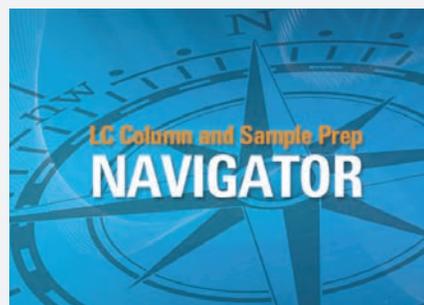
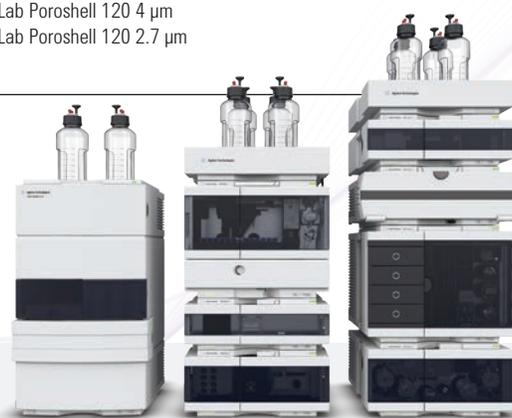
Particle size guidelines

InfinityLab Poroshell 120 columns are available in three particle diameters—1.9 µm, 2.7 µm and 4 µm. The chart below will help you select the size that offers the best fit for your separation needs.

Particle Size	Best For	Maximum Pressure	Typical Pressure	Efficiency
1.9 µm	Highest UHPLC performance	1300 bar	Similar to sub-2 µm totally porous	~120% of sub-2 µm totally porous
2.7 µm	UHPLC performance at lower pressures	600 bar	50% of sub-2 µm totally porous	~90% of sub-2 µm totally porous
4 µm	Improved HPLC performance	600 bar	Typically < 200 bar	~200% of 5 µm totally porous

Get more from every LC system in your lab

If your lab has this mix of LC instruments...	We recommend...
UHPLC only <ul style="list-style-type: none"> • Maximum pressure: High (> 600 to 1000+ bar) • Dispersion volume: Very low Example: Agilent 1290 Infinity II	InfinityLab Poroshell 120 1.9 µm InfinityLab Poroshell 120 2.7 µm
HPLC and UHPLC <ul style="list-style-type: none"> • Maximum pressure: Low to high (400 to 1000+ bar) • Dispersion volume: Medium to very low Examples: Agilent 1260 Infinity II, Agilent 1290 Infinity II	InfinityLab Poroshell 120 2.7 µm InfinityLab Poroshell 120 4 µm
HPLC only <ul style="list-style-type: none"> • Maximum pressure: Low to mid (400 to 600 bar) • Dispersion volume: High to low Examples: Agilent 1220 Infinity II, Agilent 1260 Infinity II	InfinityLab Poroshell 120 4 µm InfinityLab Poroshell 120 2.7 µm



LC Column Navigator tool

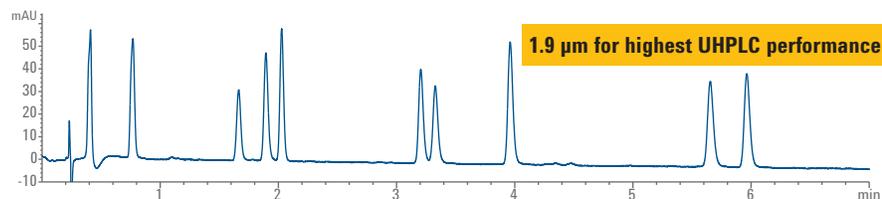
Find a more efficient replacement for your current column—or get recommendations for a new column, based on method parameters.

www.agilent.com/chem/navigator

This separation of catechins in green tea demonstrates how scaling the method from larger to smaller particles increases pressure and improves resolution

Particle sizes

InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 1.9 μm (p/n 699675-902)



Conditions:

Mobile phase A: 0.2% formic acid in water

Mobile phase B: Acetonitrile

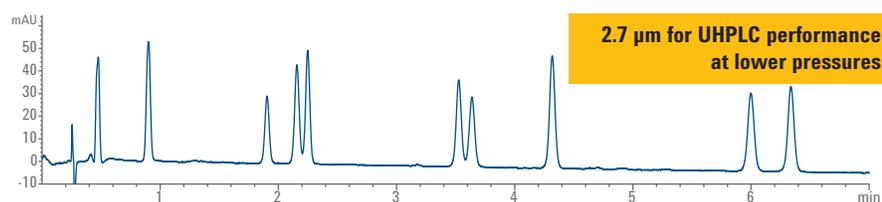
Gradient: 5-16% B in 7 min

Flow rate: 0.5 mL/min

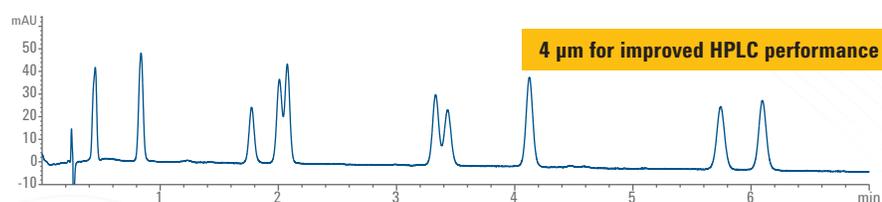
Detection: 240 nm @ 80 Hz

Sample: 1 μL of 0.06 mg/mL each of gallic acid, gallocatechin, epigallocatechin, catechin, caffeine, epicatechin, epigallocatechin gallate, gallocatechin gallate, epicatechin gallate, catechin gallate

InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 2.7 μm (p/n 699775-902)

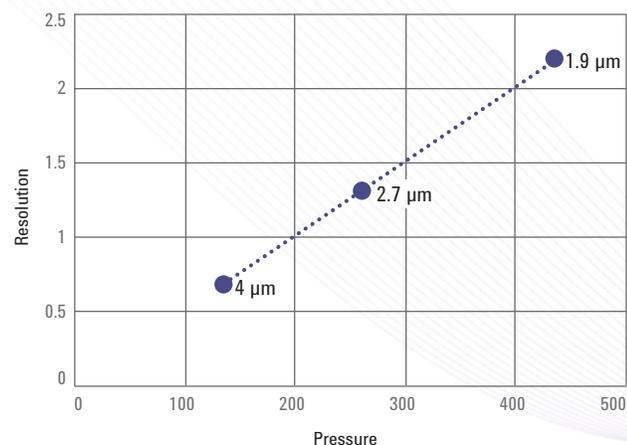


InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 4 μm (p/n 699770-902)



Remember... scalability means that you can easily transfer methods developed on one particle size to any of the others.

Pressure and performance



Particle	Pressure	R _{smin}
1.9 μm	226 bar	2.2
2.7 μm	131 bar	1.3
4 μm	53 bar	0.7

DEVELOP METHODS QUICKLY AND EASILY WITH THE RIGHT SELECTIVITIES

InfinityLab Poroshell 120 columns are available in 12 different chemistries. This provides a range of selectivities that makes your method development fast and easy. See ordering information for chemistry specifications.

Best all around

InfinityLab Poroshell 120 EC-C18, EC-C8, and Phenyl-Hexyl

Agilent InfinityLab Poroshell 120 EC-C8 is less retentive for faster analysis of nonpolar compounds

Conditions:

Mobile phase: 60% CH₃CN, 40% H₂O

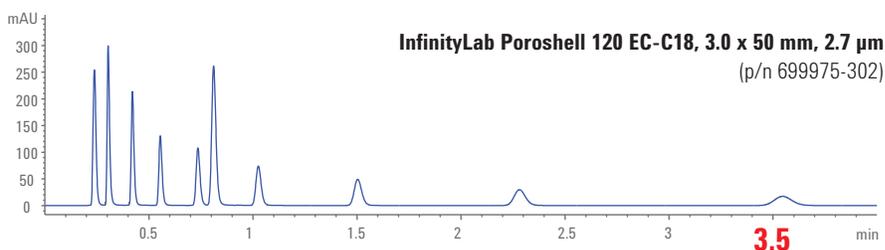
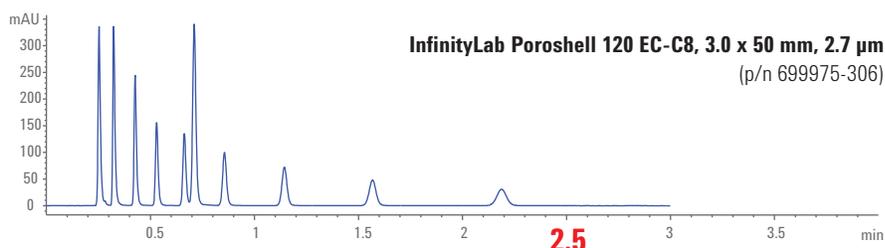
Flow rate: 0.85 mL/min

Temperature: 26 °C

Detection: 254 nm

Sample: 2 µL of RRLC checkout sample (p/n 5188-6529), alkylphenones

EC-C18 is an excellent starting point. Use EC-C8 for less retention with a variety of samples.



With the InfinityLab Poroshell 120 4 μ m columns, you can still take advantage of the flexibility of additional phase chemistries. With five chemistries available, choose the phase that takes advantage of key analyte interactions, such as the pi-pi interactions shown here with a steroid separation.

Isocratic Test

Mobile Phase: 64% MeCN or MeOH
36% Water w/0.1% acetic acid

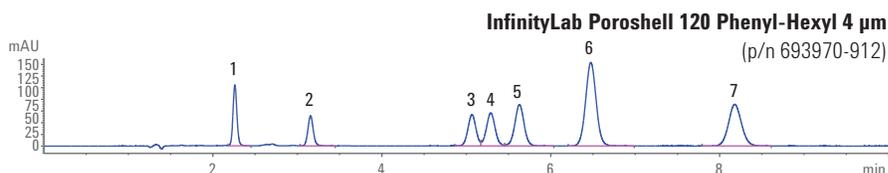
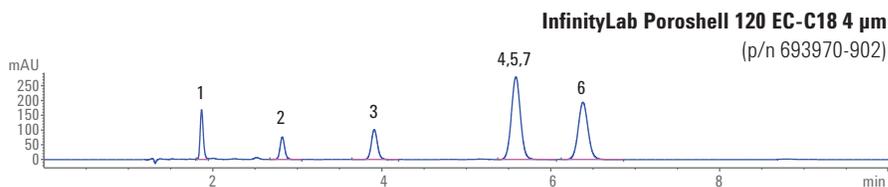
Flow rate: 1.2 mL/min

Temperature: 25 °C

Detection: 220, 4 nm

Sample:

- | | |
|-------------------|------------------------|
| 1. Triamcinolone | 5. DES |
| 2. Prednisolone | 6. Dienestrol |
| 3. Corticosterone | 7. Deoxycorticosterone |
| 4. Estradiol | |



Choose the phase that takes advantage of key analyte interactions. Phenyl-Hexyl provides alternative selectivity to EC-C18 for compounds containing phenyl groups. The different selectivity is due to pi-pi interactions with the analytes, as shown in this steroid separation.

Best for low-pH mobile phases InfinityLab Poroshell 120 SB-C18 and SB-C8

Agilent InfinityLab Poroshell 120 EC-C18 and InfinityLab Poroshell 120 SB-C18 provide different selectivity for optimizing separations

Conditions:

Mobile phase: 35% H₂O, 65% CH₃CN

Flow rate: 1 mL/min

Temperature: 30 °C

MS acquisition: Dynamic MRM

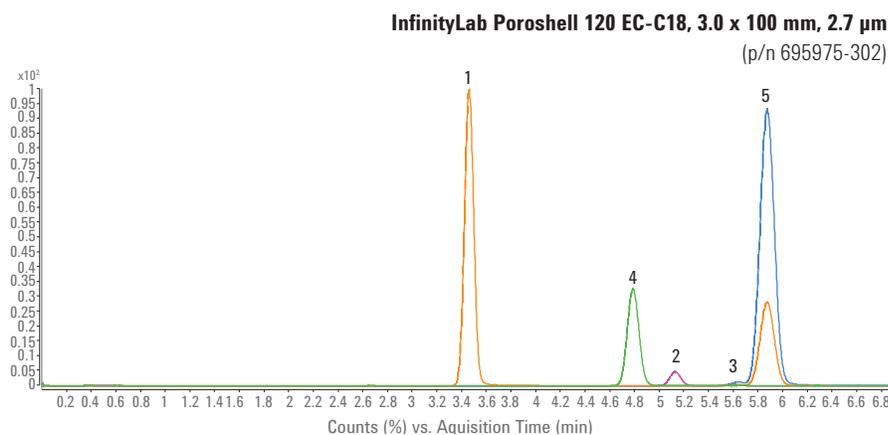
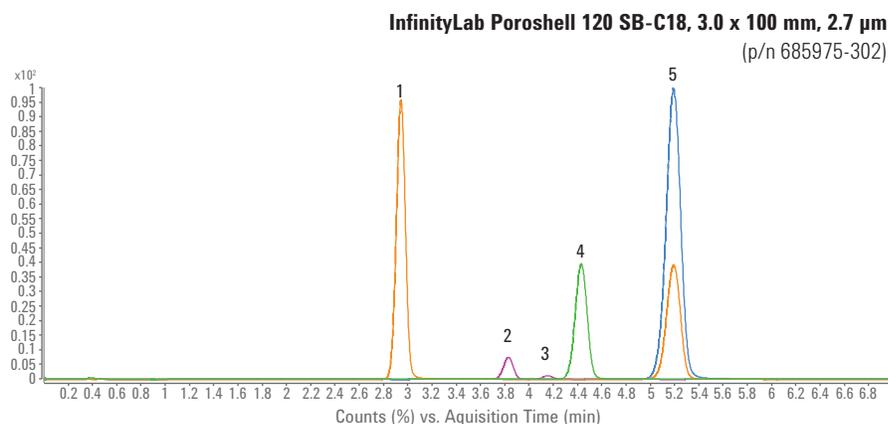
Compound	Precursor ion	Fragmentor voltage
Anandamide	(AEA) 348	135
Palmitoylethanolamide	(PEA) 300	135
2-Arachidonoylglycerol	(2-AG) 379	135
Oleoylethanolamide	(OEA) 326	135

MS Source:

Gas temp: 350 °C
Gas flow: 12 L/min
Nebulizer: 40 psi
Capillary: 4,000 V

Analytes:

- Anandamide (AEA)
- 2-Arachidonoylglycerol
- Impurity
- Palmitoylethanolamide (PEA)
- Oleoylethanolamide (OEA)

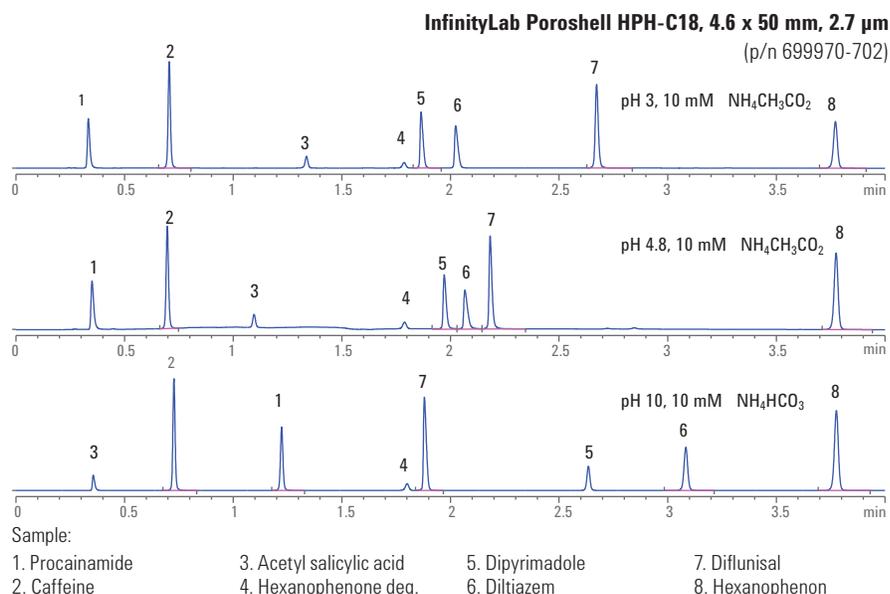


SB-C18 and SB-C8 are made using bulky silanes that sterically protect the siloxane bond. Acid labile endcapping reagents are not used. The result is vastly improved column life and extraordinary chemical and temperature stability at pH 1-6. A lack of endcapping also provides a different selectivity to the endcapped EC-C18 and EC-C8.

Best for high-pH mobile phases

InfinityLab Poroshell HPH-C18 and HPH-C8

HPH-C18 and HPH-C8 are made by chemically modifying InfinityLab Poroshell particles using proprietary technology that provides high-pH stability. That means you can use the InfinityLab Poroshell 120 family for all your method development needs, regardless of mobile phase pH. What's more, the selectivity of the HPH chemistries is very similar to EC-C18 and EC-C8, making method transfer simple.



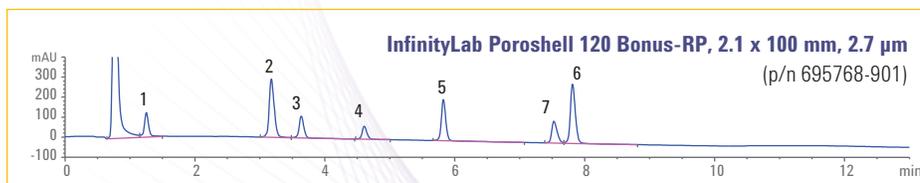
A robust method development process is critical to ensuring that your method is long lasting, stable, and reliable. Because the retention and selectivity of ionizable compounds (such as acids and bases) can change significantly with varying pH, it is becoming standard practice to employ low, medium, and high-pH analyses during method development.

Here, a method using low, medium, and high pH separates the same mixture of acids, bases, and neutrals. The highest resolution for all compounds was obtained under higher-pH conditions; therefore, high pH would be the best choice going forward.

Best for alternative selectivity

InfinityLab Poroshell Bonus-RP and PFP

Bonus-RP provides unique mid pH selectivity and applicability with an embedded amide linkage in the alkyl chain. At pH 7, Bonus-RP provides excellent peak shape for even the most challenging basic compounds.



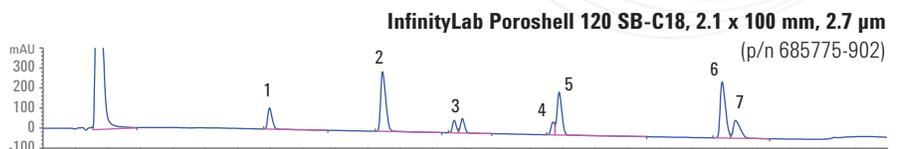
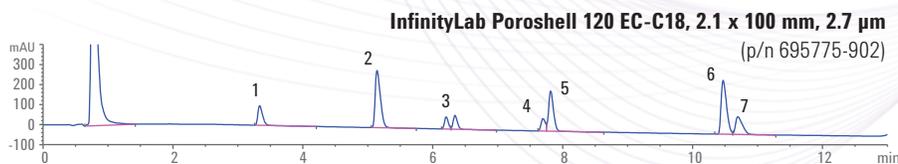
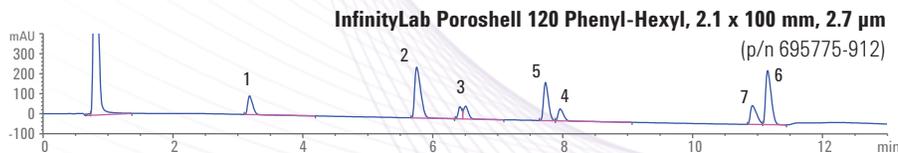
Conditions:

Instrument: 1260 Infinity II Binary LC
 Mobile phase: A: 10 mM NH₄HCO₂, pH 3.8
 B: MeOH
 Flow rate: 0.4 mL/min
 Temperature: 40 °C
 Detection: 260 nm
 Gradient: 10% B to 30% B/12 min

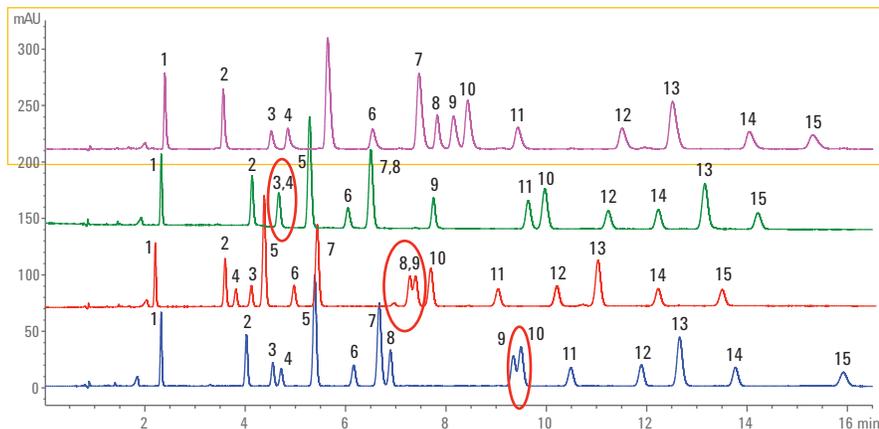
Sample:

1. Atenolol	4. Metoprolol
2. Pindolol	5. Acebutolol
3. Nadolol	6. Propranolol
	7. Alprenolol

Analysis of beta blockers: a comparison of InfinityLab Poroshell 120 phases. This challenging separation demonstrates how different selectivities produce different results. Overall, the Bonus-RP phase delivered the best peak shape and resolution. This was especially true for nadolol, which appeared as a split peak with the C18 and Phenyl-Hexyl phases.



Positional isomers (15 compounds)



InfinityLab Poroshell 120 PFP
4.6 x 150 mm, 2.7 μm (p/n 693975-408)

InfinityLab Poroshell 120 EC-C18
4.6 x 150 mm, 2.7 μm (p/n 693975-902)

InfinityLab Poroshell 120 Phenyl-Hexyl
4.6 x 150 mm, 2.7 μm (p/n 693975-912)

InfinityLab Poroshell 120 EC-C8
4.6 x 150 mm, 2.7 μm (p/n 693975-906)

Conditions:

Mobile phase: A, Water (0.1% acetic acid)
B, Acetonitrile
Flow rate: 2 mL/min
Detection: Detection

Sample:

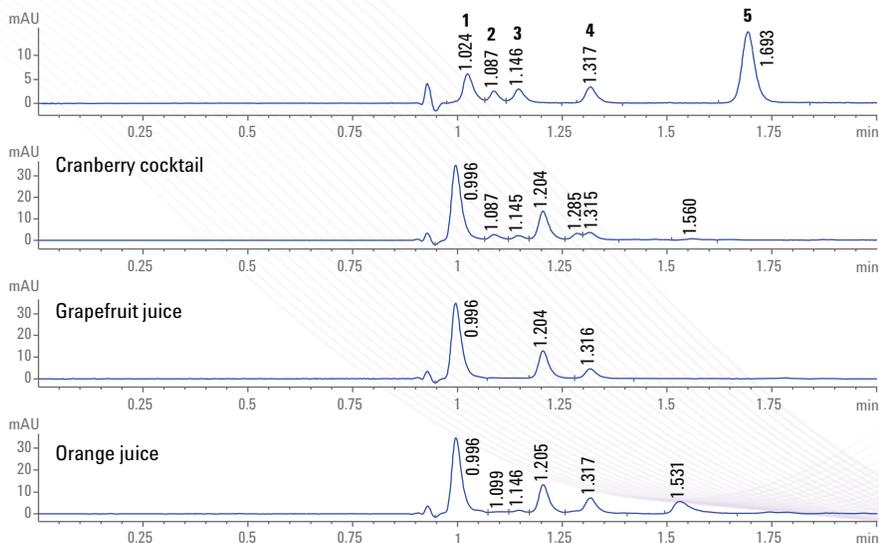
- | | | | |
|------------------------|--|------------------------------|------------------------------|
| 1. 3,4 Dimethoxyphenol | 5. 2,4 Difluorophenol | 9. 3,5 Dimethylphenol | 13. 4 Chloro 2 methyl phenol |
| 2. 2,6 Dimethoxyphenol | 6. 2,3 Difluorophenol | 10. 2,6 Dimethylphenol | 14. 3,4 Dichlorophenol |
| 3. 3,5 Dimethoxyphenol | 7. 3,4 Difluorophenol | 11. 2,6 Dichlorophenol | 15. 3,5 Dichlorophenol |
| 4. 2,6 Difluorophenol | 8. Degradation product 2,6 dimethoxyphenol | 12. 4 Chloro 3 methyl phenol | |

PFP is a pentafluorophenyl ligand, which provides an orthogonal separation mechanism with C18 chemistries. PFP phases can separate analytes based on small differences in structure, substitution, and steric access to polar moieties. The resulting selectivity for positional isomers, halogenated compounds, and polar analytes is particularly useful when analyzing complex mixtures.

Best for more polar compounds InfinityLab Poroshell 120 SB-Aq, EC-CN, and HILIC

SB-Aq is a proprietary alkyl reversed-phase chemistry designed to retain hydrophilic and other compounds when using highly aqueous mobile phases—including 100% water.

InfinityLab Poroshell 120 SB-Aq, 3 × 100 mm, 2.7 μm (p/n 685975-314)



- Peak ID**
1. Tartaric acid
 2. Quinic acid
 3. Malic acid
 4. Citric acid
 5. Fumaric acid

Conditions:
Eluent: 100 mM Potassium phosphate buffer, pH 2.5
Injection volume: 5 μL
Flow rate: 0.5 mL/min
Temperature: 50 °C
Detector: DAD, at 226 nm

Food acids chromatogram produced on an Agilent InfinityLab Poroshell 120 SB-Aq column.

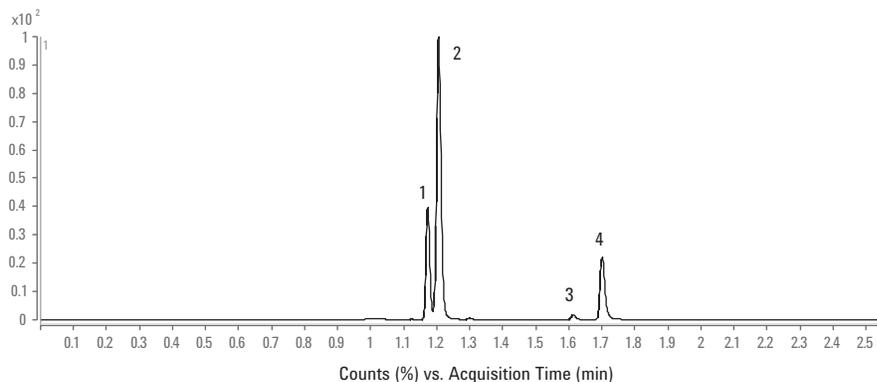
Separation of morphine and metabolites using an InfinityLab Poroshell 120 HILIC column

An increasing number of labs are using HILIC early in drug discovery and development for several reasons:

- To achieve MS compatibility
- To improve retention of polar compounds and their *more* polar degradation products
- To increase LC/MS sensitivity

The separation of morphine and metabolites is one example of a fast, efficient HILIC LC/MS method. Here, you can see that these polar compounds are completely resolved in under 2 minutes with excellent peak shape and efficiency on the InfinityLab Poroshell 120 HILIC column. A reversed-phase method with high aqueous would have limited retention.

InfinityLab Poroshell 120 HILIC, 2.1 x 100 mm, 2.7 µm (p/n 695775-901)

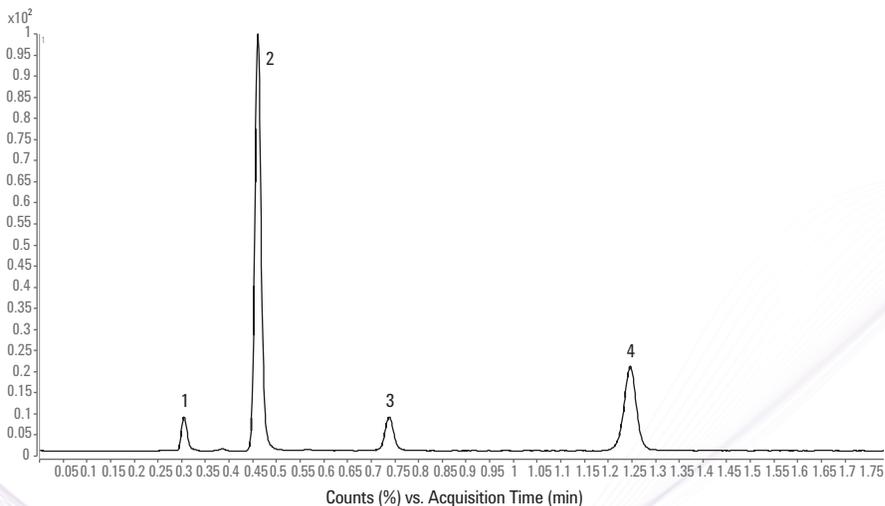


Sample	Conditions:	Time	%B
1. Normorphine	Mobile phase: A: 100 mM NH ₄ HCO ₂ , pH 3.2	0	100
2. Morphine	B: Acetonitrile: 100 mM NH ₄ HCO ₂ , pH 3.2 (9:1)	0.44	100
3. M6G	Flow rate: 0.8 mL/min	1.93	55
4. M3G	Temperature: 25 °C		
	Pressure: 270 to 505 bar		
	System: 1290 Infinity II LC and 6410 Triple Quadrupole LC/MS		

Analysis of vitamin B and related compounds using an InfinityLab Poroshell 120 HILIC column

HILIC eliminates the need for ion-pair reagents, such as the hexane sulfonic acid that is typically used in mobile phases for separating B vitamins. It also increases LC/MS compatibility and retention.

InfinityLab Poroshell 120 HILIC, 2.1 x 100 mm, 2.7 µm (p/n 695775-901)



Sample	Conditions:
1. 4 Aminobenzoic acid	Mobile phase: Acetonitrile: 100 mM NH ₄ HCO ₂ , pH 3.2 (9:1)
2. Nicotinamide	Flow rate: 0.7 mL/min
3. Riboflavin	Temperature: 25 °C
4. Nicotinic acid	Pressure: 240 bar
	System: 1290 Infinity II LC and 6410 Triple Quadrupole LC/MS

MAKE EVERY LC AND LC/MS IN YOUR LAB WORK HARDER

Highest UHPLC performance InfinityLab Poroshell 120 1.9 μm

Finally—columns that let you take full advantage of UHPLC speeds

New Agilent InfinityLab Poroshell 120 1.9 μm columns are uniquely engineered for long life and robustness under the most demanding operating conditions, so you can reduce your operating costs while minimizing disruption and re-work.

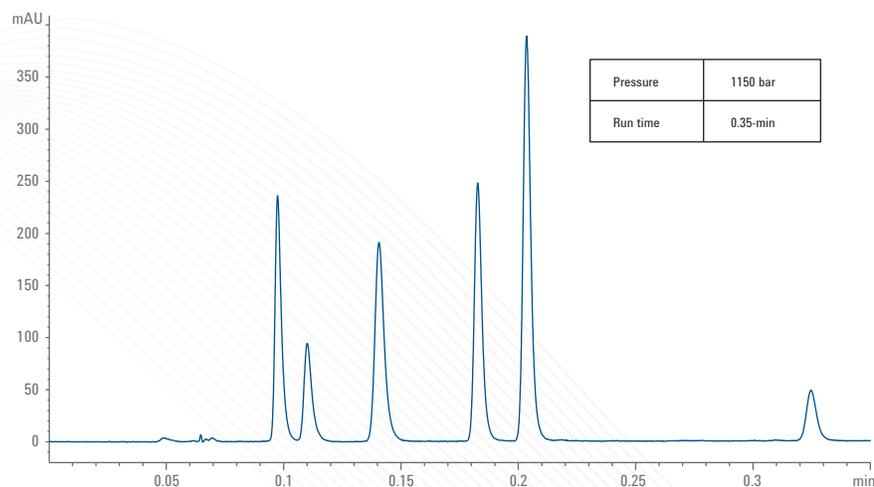
Ultra-fast separations

InfinityLab Poroshell 120 1.9 μm columns generate lower pressures than many other sub-2 μm superficially porous columns. That means you can use high flow rates to drive ultra-fast separations without exceeding the pressure rating of your UHPLC instruments.

In this example, the separation of organic acids is achieved using a 0.3-minute gradient.

InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 1.9 μm

(p/n 699675-902)



Conditions:

Mobile phase A: 0.2% formic acid in water

Mobile phase B: Acetonitrile

Gradient: 8-26% B in 0.3 min

Flow rate: 2.2 mL/min

Temperature: 60°C

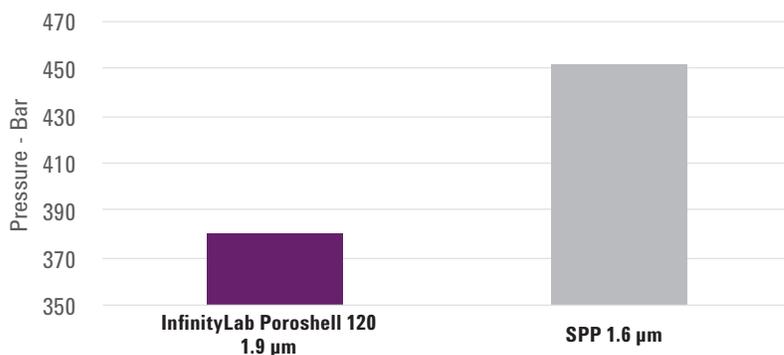
Detection: 280 nm @ 160 Hz

Sample: 5 μL of 0.01 mg/mL each of protocatechuic acid, DOPAC, PABA, vanillic acid, syringic acid, salicylic acid



A low-dispersion UHPLC system, such as the Agilent 1290 Infinity II, is required for ultra-fast separations.

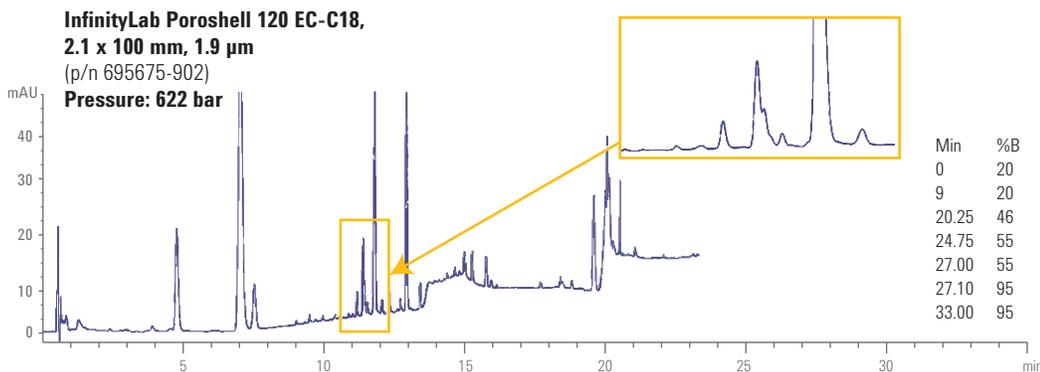
Pressure comparison



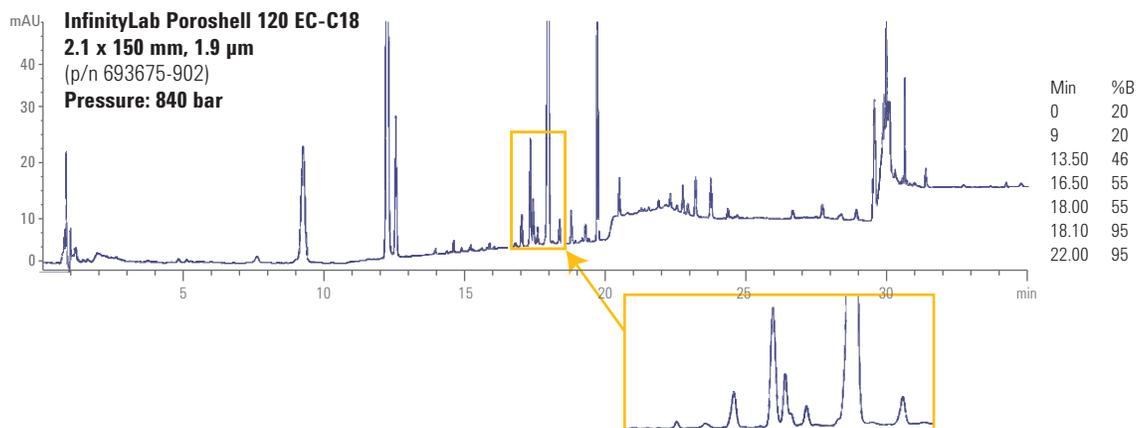
High-resolution separations increase accuracy and precision

Combining manageable pressure with longer, highly efficient InfinityLab Poroshell 120 1.9 µm columns allows you to perform very high-resolution separations on more complex samples.

This example represents a gradient separation of notoginseng.



Conditions:
 Mobile phase A: Water
 Mobile phase B: Acetonitrile
 Gradient: See chromatograms
 Flow rate: 0.42 mL/min
 Temperature: 25° C
 Detection: 203 nm @ 80 Hz
 Sample: 1.5 µL of Notoginsenoside R1, Ginsenoside Rg1, Ginsenoside Re, Ginsenoside Rb1, Ginsenoside Rd



UHPLC performance at lower pressures

InfinityLab Poroshell 120 2.7 μm

Run more samples in less time—using your existing LC instruments

With InfinityLab Poroshell 120 2.7 μm columns, you can achieve up to 90% or more of the efficiency you would expect from a sub-2 μm totally porous particle column, but at lower pressures. That means you can use short columns and achieve fast separations—dramatically enhancing productivity and decreasing cost per sample.

Plus, you can transfer your method seamlessly to higher-specification instruments when you're ready for even greater productivity.

UHPLC efficiency with less pressure

For this sample of neutral alkylphenones, the InfinityLab Poroshell 120 column delivered >90% of the efficiency of the 1.8 μm column. Note, too, that the pressure on the InfinityLab Poroshell 120 column is about 50% of the pressure on the 1.8 μm column.

Conditions:

Mobile phase: 60% Acetonitrile,
40% water

Flow rate: 0.58 mL/min

Injection volume: 4 μL

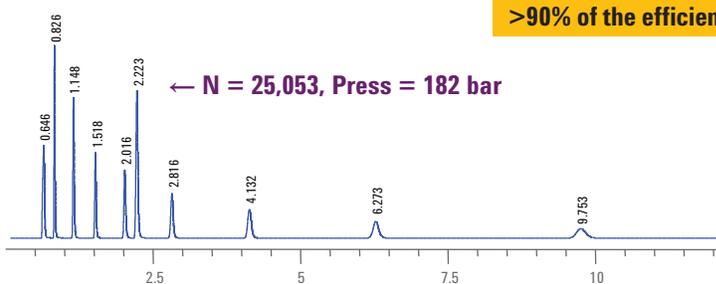
Temperature: 26 $^{\circ}\text{C}$

Detection: DAD Sig = 254.4 nm
Ref = 360.100 nm

Sample preparation: RRILC checkout sample
(p/n 5188-6529) spiked
with 50 μL 2 mg/mL thiourea
in water: acetonitrile (65:35)

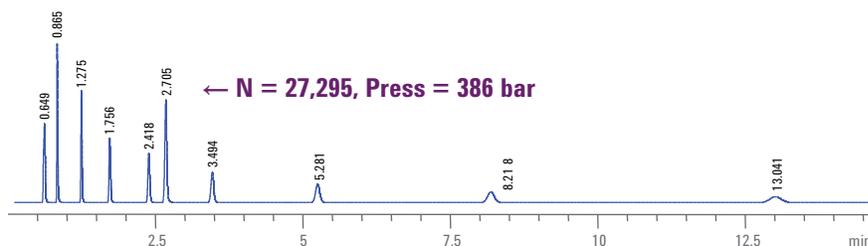
InfinityLab Poroshell 120 EC-C18, 3.0 x 100 mm, 2.7 μm

(p/n 695975-302)



Zorbax Eclipse Plus C18, 3.0 x 100 mm, 1.8 μm

(p/n 959964-302)



Agilent Captiva Premium Syringe Filters

Protect your samples and your results

Even small amounts of particulate can clog your column inlet, causing high column backpressure, retention-time shift, resolution loss, and shorter column life. Agilent Captiva Premium Syringe Filters—developed by chromatographers—remove damaging particulates for optimal performance, column lifetime, and sample integrity.

To order, visit www.chem.agilent.com/store

Increase the accuracy and precision of your results

High-resolution separations: Because InfinityLab Poroshell 120 2.7 μm columns have a pressure limit of 600 bar, you can successfully apply them to your UHPLC methods—including those that use long columns, higher flow rates, and viscous solvents.

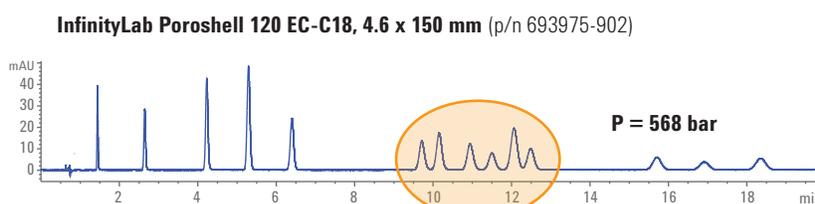
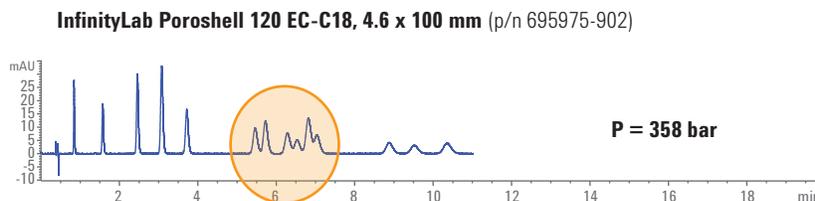
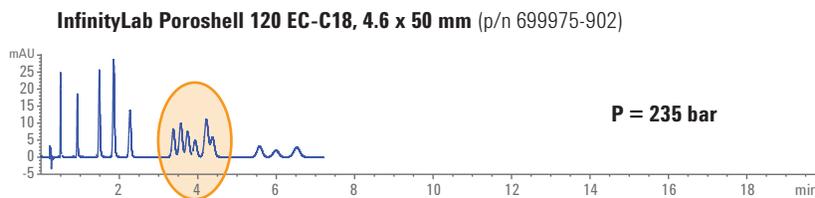
InfinityLab Poroshell 120 for HPLC and UHPLC comparison of EPA 8330 separation on short and long columns

InfinityLab Poroshell columns give you the flexibility to choose longer columns for higher resolution. Here, you can see that as the column gets longer, resolution improves and pressure increases (up to UHPLC pressures for the longest column).

Note that column length affects resolution—not by the batch of material used in the column—proving that InfinityLab Poroshell 120 columns deliver reproducible performance.

Conditions:

Mobile phase: 25% Methanol, 75% water
Flow rate: 1 mL/min
Temperature: 44 °C

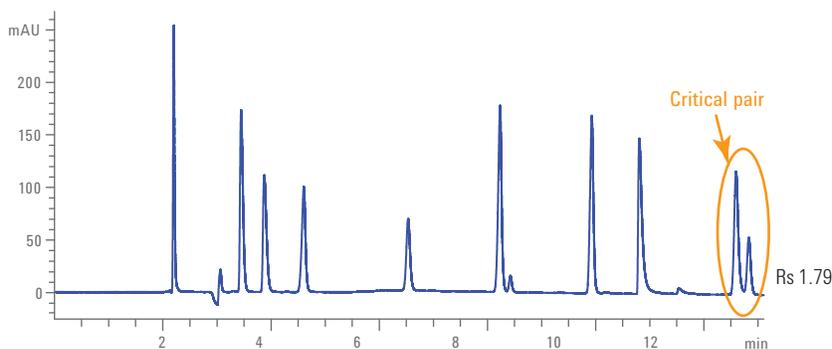


Balancing column length, resolution, and analysis time are important for any separation.

Fast low pressure analysis

Here, a method for analyzing 11 non-nutritive food and beverage additives was transferred from a 5 μm ZORBAX Eclipse Plus C18 column to a InfinityLab Poroshell 120 EC-C18 column, reducing the analysis time from over 13 minutes to less than 3 minutes. Solvent consumption was reduced by more than 80% and resolution of the critical pair improved from 1.8 to 3.0.

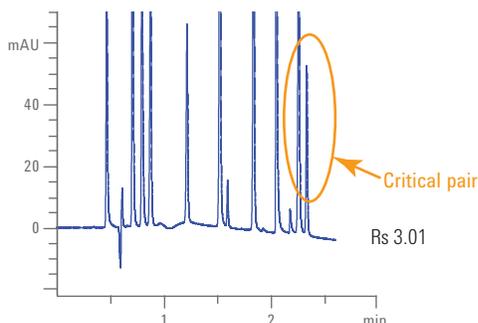
ZORBAX Eclipse Plus C18, 4.6 x 250 mm, 5 μm



Conditions:

Mobile phase: A: 20 mM Ammonium acetate, pH 4.80 Temperature: 30 °C
 B: Acetonitrile Gradient: 14% B at t_0 , ramp to 52% B in 12.0 min
Flow rate: 1 mL/min

InfinityLab Poroshell 120 EC-C18, 3.0 x 100 mm, 2.7 μm



Conditions:

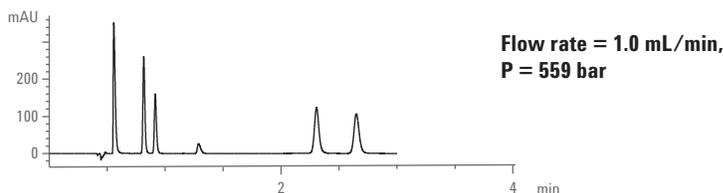
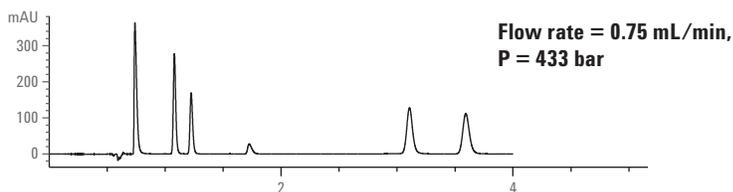
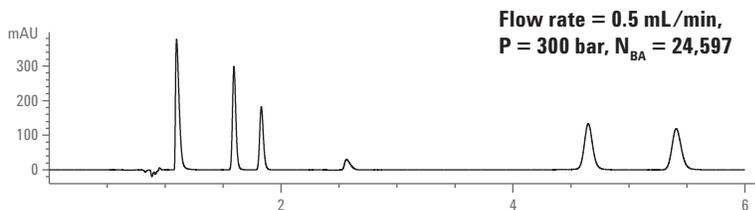
Mobile phase: A: 20 mM ammonium acetate, pH 4.80
 B: Acetonitrile
Flow rate: 0.851 mL/min
Temperature: 30 °C
Gradient: 14% B at t_0 , ramp to 52% B in 2.1 min

Agilent InfinityLab Poroshell 120 EC-C18 for fast UHPLC separations

This example shows a fast separation using a mobile phase that generates higher pressures. In the top chromatogram, a 3.0 mm id column was used, with a flow rate of 0.5 mL/min and a pressure below 400 bar—making this a typical LC separation.

Although the top separation was fast (just under 6 minutes), the middle and bottom chromatograms show that you can reduce run times to **under 3 minutes** by increasing the flow rate. These faster analyses will take your pressure to 400 to 560 bar. Explore the Agilent 1200 Infinity II Series flexible upgrade options to help you take advantage of UHPLC capabilities.

InfinityLab Poroshell 120 EC-C18 3.0 x 100 mm, 2.7 μ m (p/n 695975-302)



More viscous solvents like methanol can be used at HPLC or UHPLC pressures.

Conditions:

Mobile phase: A: 65%, 0.2% Formic acid
B: 5% Methanol isocratic
Flow rate: see chromatograms
Injection volume: 1 μ L
Temperature: 26 °C
Detection: Sig = 220, 4 nm, Ref = Off

Sample:

1. Saccharin
2. Caffeine
3. p-Hydroxybenzoic acid
4. Aspartame
5. Dehydroacetic acid
6. Benzoic acid



Easy-to-use hardware available in all chemistries

High-performance Agilent UHPLC guards are designed for use with fast LC columns. They connect directly to the column inlet; no extra hardware is needed.

Agilent UHPLC guards are available in all InfinityLab Poroshell 120 chemistries—giving you confidence that the guard column will not adversely affect your separations.

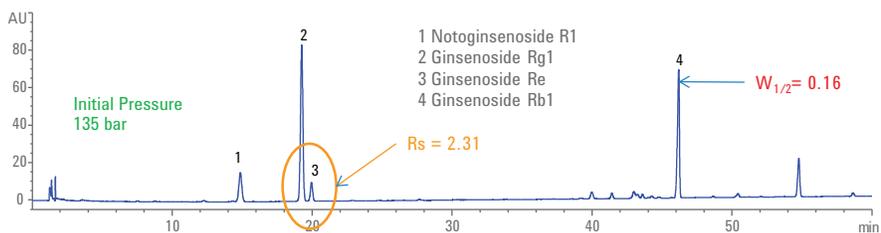
Improved HPLC performance

InfinityLab Poroshell 120 4 μm

With pressures 50% less than 2.7 μm —and efficiencies nearly double those of totally porous 5 μm —InfinityLab Poroshell 120 4 μm columns allow you to easily improve separations using traditional longer column dimensions, or run at pressures well below 400 bar.

InfinityLab Poroshell 120 EC-C18, 4.6 x 150 mm, 4 μm

(p/n 693970-902)



Conditions:

Mobile phase: A) Water
B) Acetonitrile

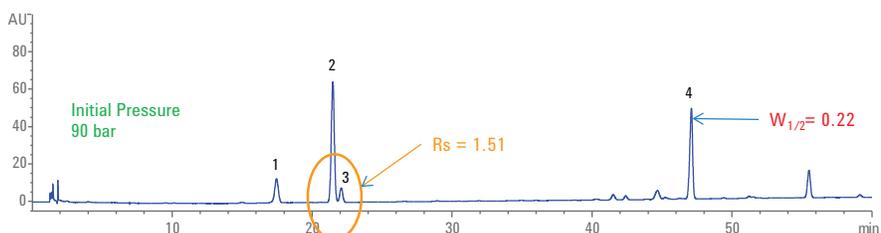
Gradient for 4.6 x 150 mm columns:

Time (min)	%A
0	81
12	81
60	64
61	10
65	10
66	81
70	81

Temperature: 30 $^{\circ}\text{C}$
Flow rate: 1.0 mL/min
Injection volume: 10 μL for 150 mm columns
Detection: UV, 203 nm

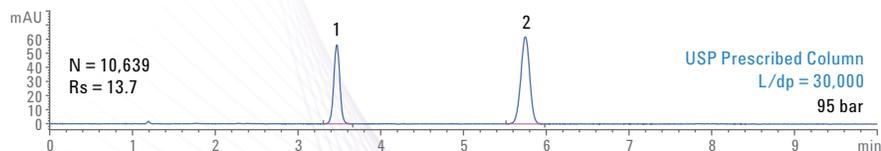
ZORBAX Eclipse Plus C18, 4.6 x 150 mm, 5 μm

(p/n 959993-902)



Improved results with no change to the method conditions, other than the column used. In this example, direct replacement with an InfinityLab Poroshell 120 4 μm column decreased peak width by 50% compared to the 5 μm totally porous column. Although the backpressure increased somewhat, it was still acceptable for most HPLC instruments.

ZORBAX Eclipse Plus EC-C18, 4.6 x 150 mm, 5 μm

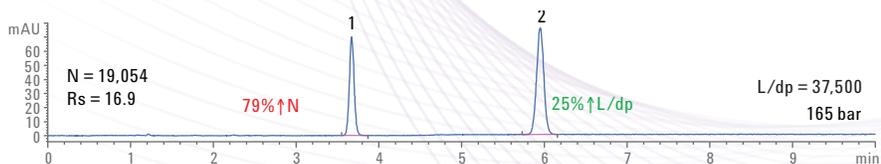


Conditions:

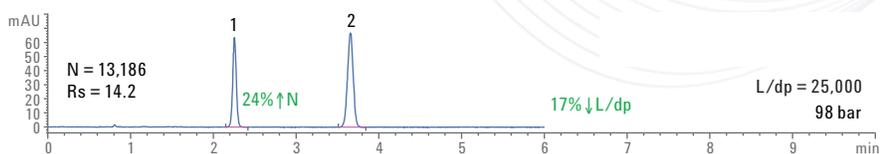
Mobile phase: 50:49:1 MeCN:H₂O:Acetic acid
Flow rate: 1.2 mL/min

Peak ID 1. Naproxen
2. Butyrophenone

InfinityLab Poroshell 120 EC-C18, 4.6 x 150 mm, 4 μm (p/n 693970-902)



InfinityLab Poroshell 120 EC-C18, 4.6 x 150 mm, 4 μm (p/n 693970-902)

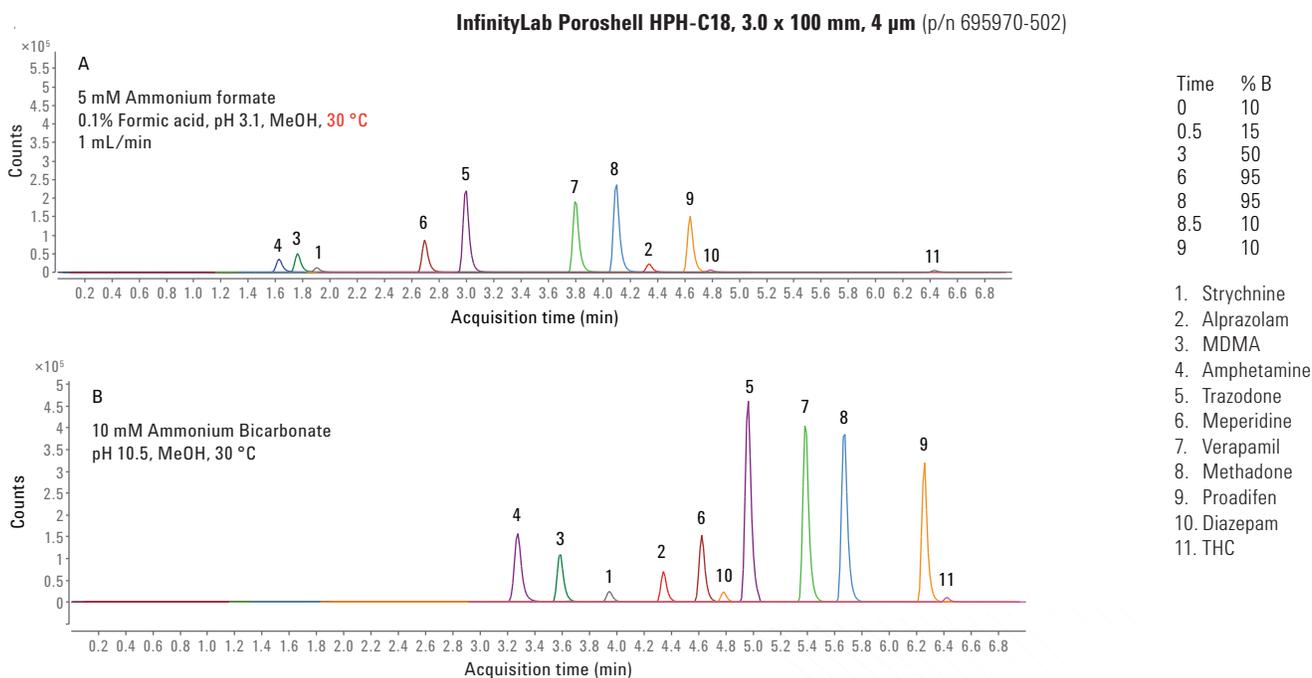


Shorter columns can also be used to decrease run time. The higher efficiency of InfinityLab Poroshell 120 4 μm columns means that resolution is maintained.

Get the very best from your LC/MS methods with InfinityLab Poroshell 120

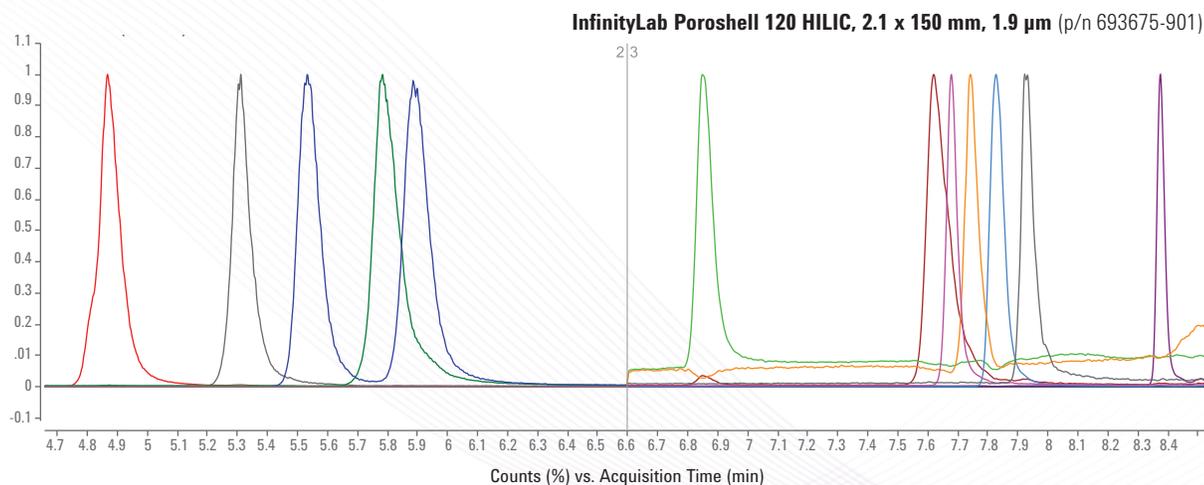
High-efficiency InfinityLab Poroshell 120 columns are ideally suited for LC/MS methods. Use a 2.1 or 3 mm column for the best flow rate compatibility with your MS.

Drugs of abuse at low and high pH



Excellent resolution with the InfinityLab Poroshell HPH column. The high-pH stability of HPH allows the method to be run at pH 10.5—where an increase in response for better-retained basic analytes is observed.

Free amino acids by HILIC



Conditions:

Mobile phase A: 10mM ammonium formate pH 3 in water
 Mobile phase B: 10mM ammonium formate pH 3 in acetonitrile/Water (9:1)
 Gradient: 100-95% B in 5 min, then 95-60% B in 6 min
 Flow rate: 0.4 mL/min
 Temperature: 15 °C

Detection: MS
 Sample: 5 µL 250 µg/mL of each Glycine, L-tyrosine, L-methionine, L-serine, L-alanine, L-phenylalanine, L-glutamic acid, L-proline, L-iso/leucine, L-threonine, L-valine

The InfinityLab Poroshell 120 HILIC column gives excellent retention and peak shape for underivatized amino acids.

COMPLEX METHOD TRANSFERS MADE SIMPLE

Many legacy methods developed on longer 5 μm totally porous columns can quickly be moved to InfinityLab Poroshell 120 columns—significantly increasing throughput and reducing costs.

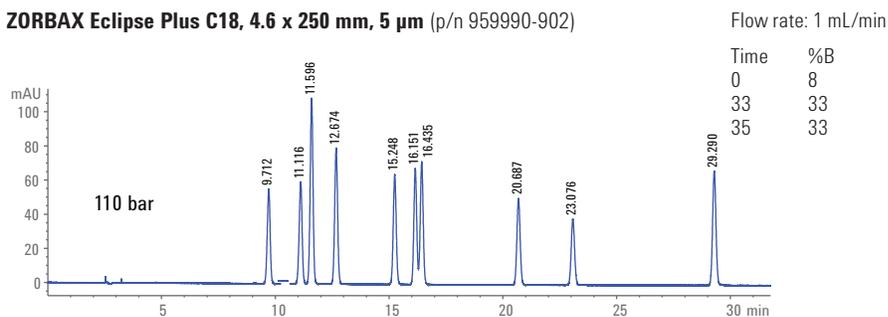
Transfer methods between Agilent InfinityLab Poroshell 120 and ZORBAX for time savings or scalability

In this example, a complex method was transferred from a ZORBAX Eclipse Plus C18 250 mm, 5 μm column to a 100 mm InfinityLab Poroshell 120 EC-C18 column. All conditions were kept the same, except for the gradient time, which was adjusted for the shorter column.

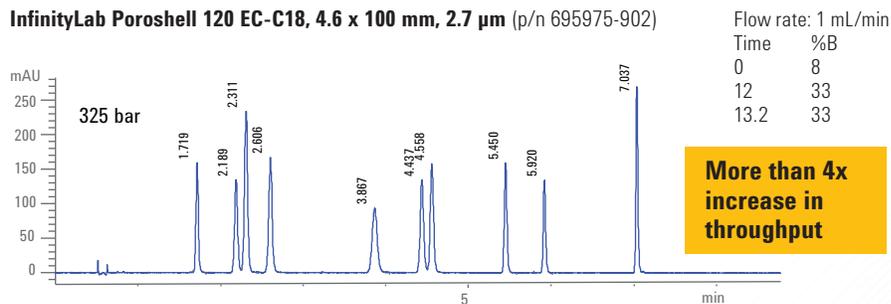
As you can see, both separations are the same. However, the bottom chromatogram was generated in just over 7 minutes instead of 30 minutes for the top chromatogram—an excellent productivity improvement.

Keep in mind that both separations were run on an older Agilent 1100 Series instrument—proving that even gradient methods can be transferred while keeping the pressure below 400 bar.

ZORBAX Eclipse Plus C18, 4.6 x 250 mm, 5 μm (p/n 959990-902)



InfinityLab Poroshell 120 EC-C18, 4.6 x 100 mm, 2.7 μm (p/n 695975-902)



Sample:

1. Sulfadiazine
2. Sulfathiazole
3. Sulfapyridine
4. Sulfamerazine
5. Sulfamethazine
6. Sulfamethazole
7. Sulfamethoxypyridazine
8. Sulfachloropyridazine
9. Sulfamethoxazole
10. Sulfadimethoxine

Mobile phase:

- A: 0.1% Formic acid in water
B: 0.1% Formic acid in acetonitrile

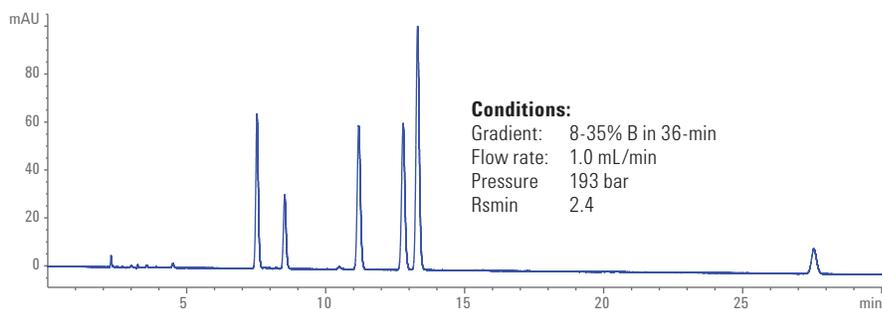
1.9 µm method transfer:

Save even more time and solvent

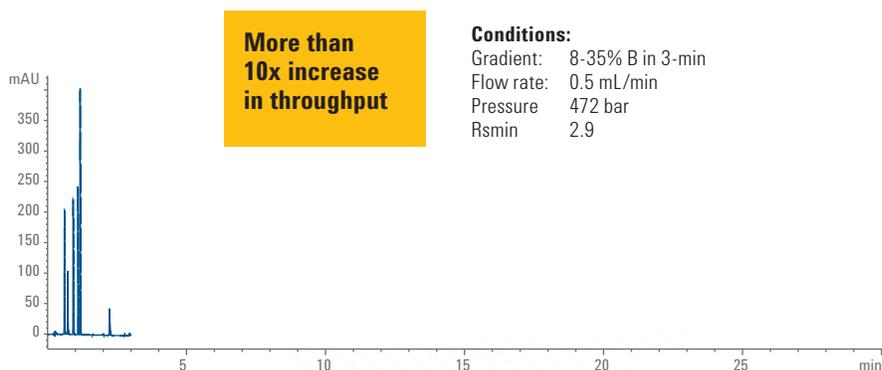
Here, a legacy method was transferred from a 5 µm totally porous column to a shorter, narrower InfinityLab Poroshell 120 1.9 µm column. The run time was reduced by a factor of >10 without loss of resolution.

Even though linear velocity was increased, the narrow I.D. column reduced the amount of solvent used.

ZORBAX Eclipse Plus C18, 4.6 x 250 mm, 5 µm (p/n 959990-902)



InfinityLab Poroshell 120 EC-C18, 2.1 x 50 mm, 1.9 µm (p/n 699675-902)



Mobile phase A: 0.2% formic acid in water

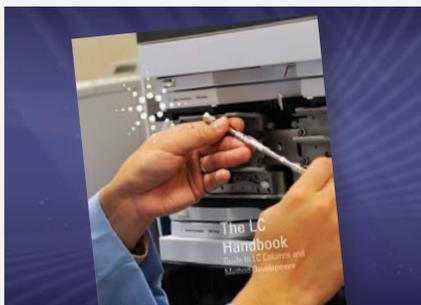
Mobile phase B: Acetonitrile

Temperature: 25° C

Detection: 240 nm @ 80 Hz

Sample: 5 µL of 0.01 mg/mL each of protocatechuic acid, DOPAC, PABA, vanillic acid, syringic acid, salicylic acid

Parameter	Legacy	New	Saving
Time	36-min	3-min	92%
Solvent use	36 mL	1.5 mL	96%



Agilent LC Handbook

Your complete guide to method development and more

Developed through the combined efforts of experienced Agilent chromatographers, the Agilent LC Handbook is filled with tips and tricks to help you succeed with HPLC column selection and method development. Newly updated with chapters on LC and LC/MS.

Download now at www.agilent.de/chem/lc_handbook

Transfer of compendial methods

Alignment of InfinityLab Poroshell 120 and ZORBAX chemistries means that selectivities are very similar between the column families, making it easy to transfer your legacy methods.

USP method for naproxen tablets— 4.5x faster analysis on Agilent InfinityLab Poroshell 120 at HPLC pressures

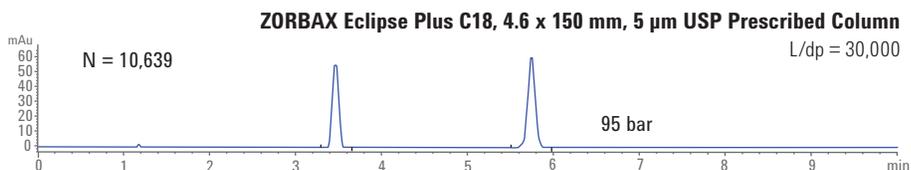
This naproxen separation demonstrates how easy it can be to convert a method to InfinityLab Poroshell 120 columns *without changing the flow rate or mobile phase*.

The 1st chromatogram shows a USP analysis on an Agilent ZORBAX Eclipse Plus C18 column, which delivers sharp peaks, three times the needed efficiency, and a resolution of ~14.

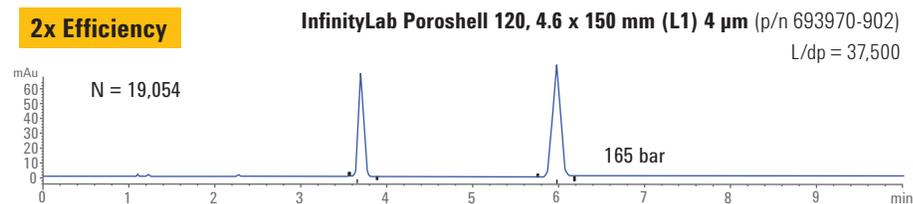
In the 2nd and 3rd chromatograms, the InfinityLab Poroshell 120 EC-C18 4 μ m columns (150 mm and 100 mm) provide greater efficiency and speed of the original method as easy, drop-in replacements. And because the pressure is only 165 bar for the 150 mm column and 98 bar for the 100 mm column, this isocratic method is an excellent HPLC option.

In the 4th chromatogram, the InfinityLab Poroshell 120 EC-C18 2.7 μ m column (100 mm) provides greater efficiency and resolution at nearly 2x the speed of the original method. The InfinityLab Poroshell 120 EC-C18 column (50 mm), in the 5th chromatogram still meets the requirements for efficiency and resolution, but is 4.5 times faster than the 5 μ m column.

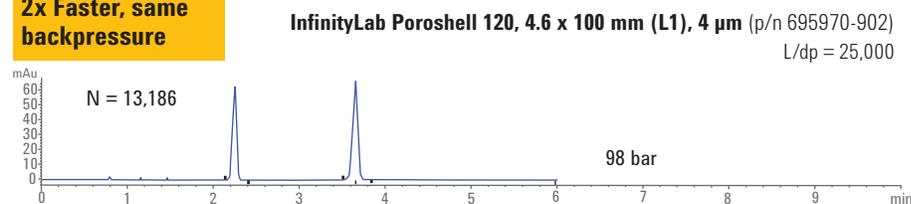
System suitability method requirement: $N > 4,000$, $R_s > 11.5$



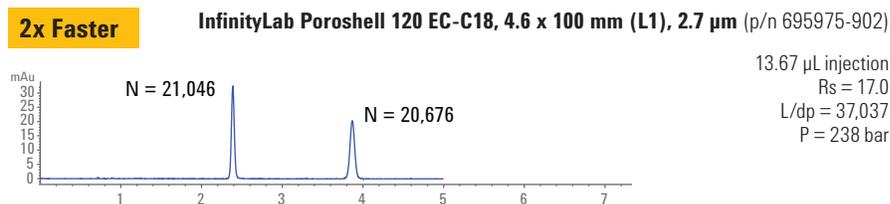
2x Efficiency



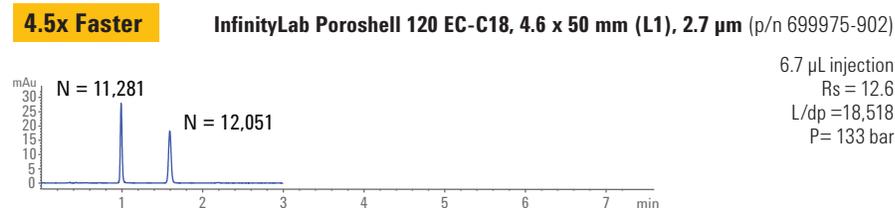
**2x Faster, same
backpressure**



2x Faster



4.5x Faster



InfinityLab Poroshell 120 is an excellent choice for faster methods at HPLC pressures.

Mobile phase: 50:49:1 MeCN:H₂O:acetic acid

Flow rate: 1.2 mL/min

Sample:

1. Naproxen

2. Butyrophenone

Transfer of USP methods

USP methods are widely used in pharmaceutical drug products and raw materials testing. These methods can be updated by making adjustments that follow the recommendations in USP chapter <621> (updated August 2014). Modifications outside these ranges are considered changes and require method revalidation.

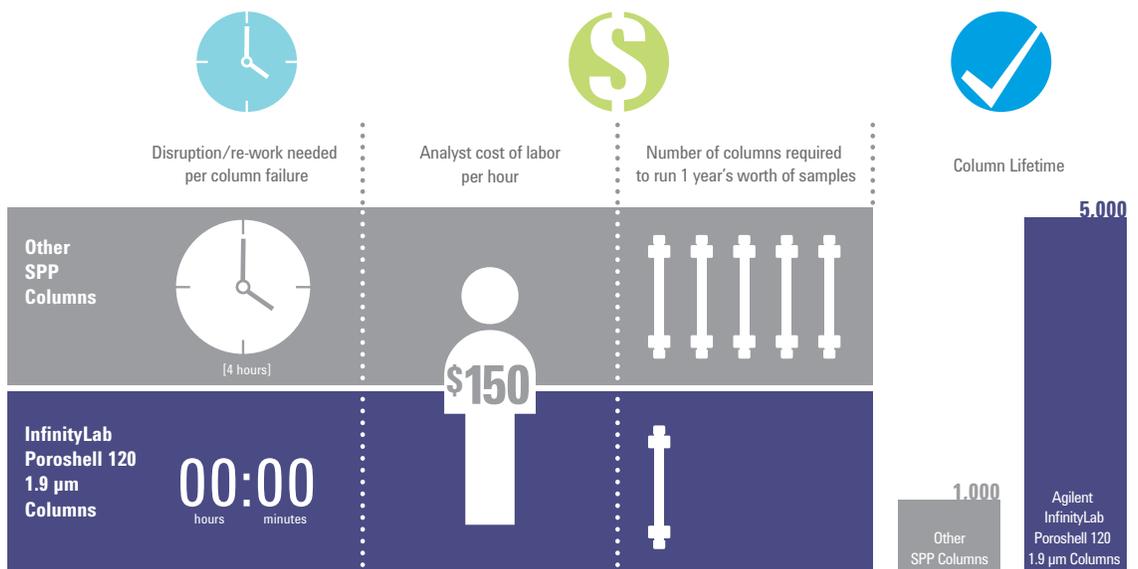
Parameters for System Suitability		USP37-NF32S1
		Isocratic
Particle size (dp)		L/dp: -25% to +50%
Column length (L)		or N: -25% to +50%
Column inner diameter		Flexible, w/ constant linear velocity
Flow rate		Based on dp Additional adjustments: $\pm 50\%$, provided N decreases $\leq 20\%$
Injection volume		May be adjusted as far as is consistent with precision and detection limits
Column temperature		± 10 °C
Mobile phase pH		± 0.2 units
Salt concentration		Within $\pm 10\%$ if the permitted pH variation is met
Ratio of components in mobile phase		Minor component ($\leq 50\%$): $\pm 30\%$ relative, but cannot exceed $\pm 10\%$ absolute May only adjust 1 minor component in ternary mixtures
Wavelength of UV-Visible detector		No changes allowed

L (mm)	Dp (μm)	L/dp	%	N	%	621 compliant
150	5	30,000	100%	10,639	100%	Yes
150	4	37,500	125%	19,054	179%	Yes
100	4	25,000	83%	13,186	124%	Yes
100	2.7	37,037	123%	21,046	198%	Yes
50	2.7	18,519	62%	11,281	106%	Yes

LONG COLUMN LIFETIME: A SIGNIFICANT ECONOMIC VALUE FOR YOUR LAB

Long lifetime at the highest pressures

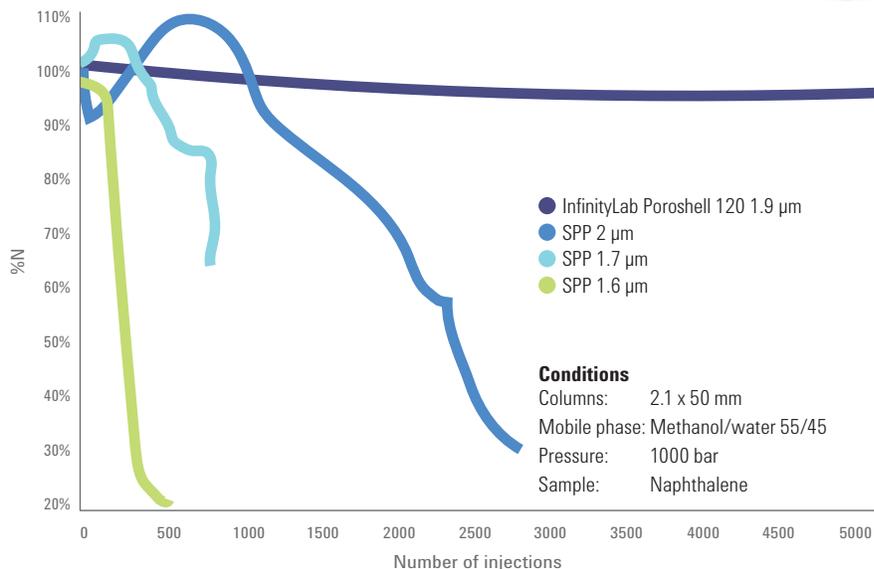
InfinityLab Poroshell 120 1.9 μm columns not only minimize column costs, but also reduce expensive disruption and re-work due to column failure.



Long lifetime minimizes column costs, because you can use up to 10x fewer columns for the same amount of work. It also reduces disruption and rework costs associated with column failure.

Long column lifetimes reduce costs and minimize re-work

You can count on InfinityLab Poroshell 120 particles to be robust under the most demanding operating conditions.



The InfinityLab Poroshell 120 columns showed stability for 5,000 injections under high-pressure UHPLC conditions.

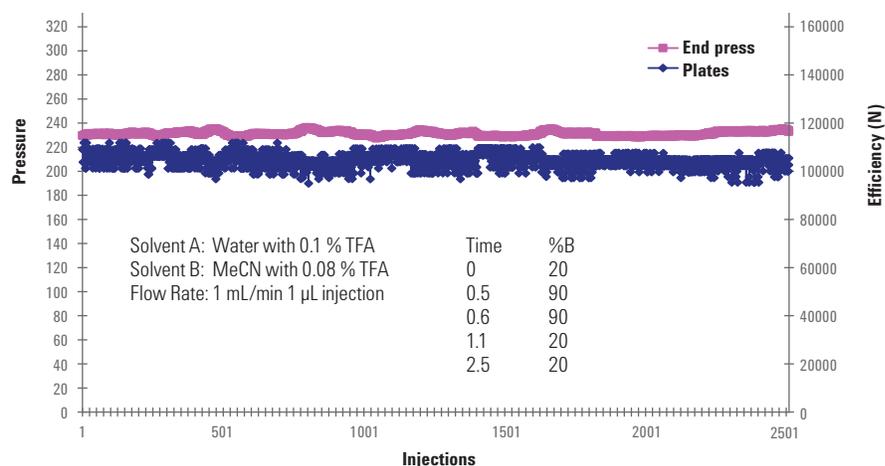
Long lifetime with "dirty" samples

Manufactured with 2 µm frits, InfinityLab Poroshell 120 2.7 µm and 4 µm columns resist plugging—even with "dirty" samples, such as unfiltered plasma.

Here, we precipitated the proteins, but did not centrifuge or filter the sample. Even under these conditions, there was no pressure increase after 2,500 injections.

Diflunisal in plasma

InfinityLab Poroshell 120 EC-C18 3.0 x 50 mm, 2.7 µm (p/n 699975-302)



Conditions:

Injection volume: 1 µL injections
 Instrument: 1200 Infinity RRLC (SL)

Sample:

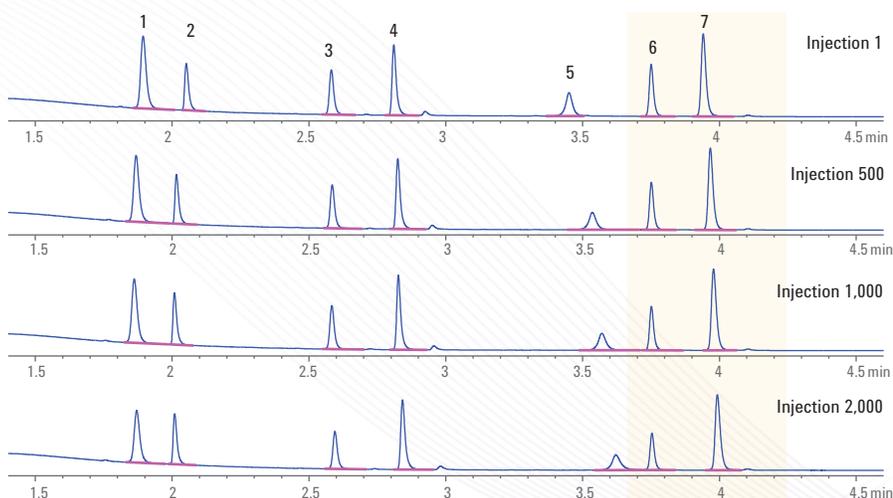
Precipitated plasma: 2 parts plasma, 7 parts 20:80 water:MeCN with 1.0% formic acid with 1 part diflunisal in 50:50 water:MeCN 10 µg/mL (final concentration diflunisal 1 µg/mL) shaken and allowed to settle 10 minutes. 1.0% formic acid aids in the precipitation process.

Not centrifuged and not filtered

Long lifetime in high-pH mobile phases

For consistent performance and longevity—even with high-pH mobile phases—use InfinityLab Poroshell HPH columns. Here, 2,000 injections of a separation mixture containing acidic, basic, and neutral compounds were performed under extreme pH 10 conditions.

InfinityLab Poroshell 120 HPH-C18 2.1 x 50 mm, 2.7 µm (p/n 699775-702)

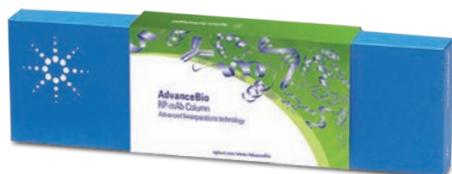


Instrument: 1260 Infinity II Binary LC
 Mobile phase: A: 10 mM Ammonium bicarbonate adjusted to pH 10.0 in water
 B: Acetonitrile

Flow rate: 0.4 mL/min
 Gradient:

Time	% B
0	5
5	95
5.1	5

INFINITYLAB POROSHELL TECHNOLOGY FOR BIOMOLECULE ANALYSIS



Improve your biomolecule characterization with Agilent AdvanceBio columns

Complex biomolecules including monoclonal antibodies (mAbs), other proteins, peptides, and synthetic oligonucleotides are typically separated and characterized slowly to reduce peak broadening of these slow-diffusing analytes. However, InfinityLab Poroshell technology reduces the diffusion distance, allowing higher flow rates and steeper gradients.

Agilent AdvanceBio RP-mAb columns optimize the performance of intact and reduced mAb analysis when analyzing monoclonal antibodies for biopharma discovery, development, and QA/QC applications. Based on 3.5 μm InfinityLab Poroshell particles with a unique 450 \AA pore size—and a range of bonded phase selectivities—AdvanceBio RP-mAb columns deliver higher resolution and faster run times for accurate, reproducible results.

Agilent AdvanceBio Glycan Mapping columns ensure fast, high resolution, reproducible glycan identification using HILIC chromatography. The 2.7 μm InfinityLab Poroshell version is optimized for high resolution and lower backpressure.

Choose from a selection of standards for performance testing and retention mapping of labeled and unlabeled glycans. Our AdvanceBio N-glycan sample preparation kits provide all the components plus a comprehensive procedure to simplify the process.

Agilent AdvanceBio Peptide Mapping columns provide high-resolution peptide maps for protein identification and determination of post-translation modifications. They feature a 120 \AA pore size, which is ideal for analyzing peptides produced by enzymatic protein digest. In addition, their 2.7 μm particle size enables UHPLC performance on HPLC systems.

Every batch of AdvanceBio Peptide Mapping media is tested with a peptide mix to ensure suitability and reproducibility.

Agilent AdvanceBio Oligonucleotide columns feature high-efficiency, 2.7 μm InfinityLab Poroshell particles that have been chemically modified using proprietary HPH technology to make them very resistant to high-pH mobile phases. They are bonded with an end-capped C18 phase, and deliver excellent selectivity for oligonucleotides.

See more at

www.agilent.com/chem/advancebio

ORDERING INFORMATION

InfinityLab Poroshell 120 column specifications

InfinityLab Poroshell Family		Pore Size	Temp. Limits	pH Range	Endcapped	Carbon Load	Surface Area
Best all around	EC-C18	120Å	60°C	2.0-8.0	Double	10%	130 m ² /g
	EC-C8	120Å	60°C	2.0-8.0	Double	5%	130 m ² /g
	Phenyl-Hexyl	120Å	60°C	2.0-8.0	Double	9%	130 m ² /g
Best for low-pH mobile phases	SB-C18	120Å	90°C	1.0-8.0	No	9%	130 m ² /g
	SB-C8	120Å	80°C	1.0-8.0	No	5.5%	130 m ² /g
Best for high-pH mobile phases	HPH-C18	100Å	60°C	3.0-11.0	Double	Proprietary	95 m ² /g
	HPH-C8	100Å	60°C	3.0-11.0	Double	Proprietary	95 m ² /g
Best for alternative selectivity	Bonus-RP	120Å	60°C	2.0-9.0	Triple	9.5%	130 m ² /g
	PFP	120Å	60°C	2.0-8.0	Double	5.1%	130 m ² /g
Best for more polar compounds	SB-Aq	120Å	80°C	1.0-8.0	No	Proprietary	130 m ² /g
	EC-CN	120Å	60°C	2.0-8.0	Double	3.5%	130 m ² /g
	HILIC	120Å	60°C	0.0-8.0	N/A	N/A	130 m ² /g

Specifications represent typical values only

InfinityLab Poroshell 120 1.9 µm columns: Highest UHPLC performance

Size (mm)	EC-C18	EC-C8	Phenyl-Hexyl	HPH-C18	PFP	HILIC
3.0 x 150	693675-302	693675-306	693675-312	693675-502	693675-308	693675-301
3.0 x 100	695675-302	695675-306	695675-312	695675-502	695675-308	695675-301
3.0 x 50	699675-302	699675-306	699675-312	699675-502	699675-308	699675-301
2.1 x 150	693675-902	693675-906	693675-912	693675-702	693675-408	693675-901
2.1 x 100	695675-902	695675-906	695675-912	695675-702	695675-408	695675-901
2.1 x 50	699675-902	699675-906	699675-912	699675-702	699675-408	699675-901

InfinityLab Poroshell 120 1.9 µm Fast Guards: Extend column lifetime even further

Size (mm)	EC-C18	EC-C8	Phenyl-Hexyl	HPH-C18	PFP	HILIC
3.0 x 5	823750-940	823750-941	823750-943	823750-945	823750-942	823750-944
2.1 x 5	821725-940	821725-941	821725-943	821725-945	821725-942	821725-944

Note: Guards supplied as 3/pk

Particle	Pressure Limit
1.9 µm	1300 bar
2.7 µm	600 bar
4 µm	600 bar

All InfinityLab Poroshell 120 1.9 µm columns are supplied with a pre-programmed Column ID

InfinityLab Poroshell 120 2.7 µm columns: UHPLC performance at lower pressures

Size (mm)	EC-C18	EC-C8	SB-C18	SB-C8	HPH-C18	HPH-C8
4.6 x 150	693975-902	693975-906	683975-902	683975-906	693975-702	693975-706
4.6 x 100	695975-902	695975-906	685975-902	685975-906	695975-702	695975-706
4.6 x 75	697975-902	697975-906	687975-902			
4.6 x 50	699975-902	699975-906	689975-902	689975-906	699975-702	699975-706
4.6 x 30	691975-902	691975-906	681975-902			
3.0 x 150	693975-302	693975-306	683975-302	683975-306	693975-502	693975-506
3.0 x 100	695975-302	695975-306	685975-302	685975-306	695975-502	695975-506
3.0 x 75	697975-302	697975-306	687975-302			
3.0 x 50	699975-302	699975-306	689975-302	689975-306	699975-502	699975-506
3.0 x 30	691975-302	691975-306	681975-302			
2.1 x 150	693775-902	693775-906	683775-902	683775-906	693775-702	693775-706
2.1 x 100	695775-902	695775-906	685775-902	685775-906	695775-702	695775-706

Size (mm)	Phenyl-Hexyl	Bonus-RP	PFP	SB-Aq	EC-CN	HILIC
4.6 x 150	693975-912	693968-901	693975-408	683975-914	693975-905	693975-901
4.6 x 100	695975-912	695968-901	695975-408	685975-914	695975-905	695975-901
4.6 x 50	699975-912	699968-901	699975-408	689975-914	699975-905	699975-901
3.0 x 150	693975-312	693968-301	693975-308	683975-314	693975-305	693975-301
3.0 x 100	695975-312	695968-301	695975-308	685975-314	695975-305	695975-301
3.0 x 50	699975-312	699968-301	699975-308	689975-314	699975-305	699975-301
2.1 x 150	693775-912	693768-901	693775-408	683775-914	693775-905	693775-901
2.1 x 100	695775-912	695768-901	695775-408	685775-914	695775-905	695775-901
2.1 x 50	699775-912	699768-901	699775-408	689775-914	699775-905	699775-901

Note: InfinityLab Poroshell 120 2.7 µm columns have a 600 bar/9,000 psi pressure limit.

InfinityLab Poroshell 120 2.7 µm Fast Guards: Extend column lifetime even further



Size (mm)	EC-C18	EC-C8	Phenyl-Hexyl	SB-C18	SB-C8	HPH-C18
4.6 x 5	820750-911	820750-913	820750-914	820750-912	820750-923	820750-921
3.0 x 5	823750-911	823750-913	823750-914	823750-912	823750-923	823750-921
2.1 x 5	821725-911	821725-913	821725-914	821725-912	821725-923	821725-921

Size (mm)	HPH-C8	Bonus-RP	PFP	SB-Aq	EC-CN	HILIC
4.6 x 5	820750-922	820750-925	820750-915	820750-924	820750-927	820750-926
3.0 x 5	823750-922	823750-925	823750-915	823750-924	823750-927	823750-926
2.1 x 5	821725-922	821725-925	821725-915	821725-924	821725-927	821725-926

Note: Guards supplied as 3/pk.

InfinityLab Poroshell 120 2.7 µm columns are not supplied with a pre-programmed Column ID as standard. To order with Column ID, suffix the part number with "T" (example 693975-902T).

InfinityLab Poroshell 120 4 µm columns: Improved HPLC performance

Size (mm)	EC-C18	EC-C8	Phenyl-Hexyl	HPH-C18	HPH-C8	PFP	HILIC
4.6 x 250	690970-902	690970-906	690970-912	690970-702	690970-706	690970-408	690970-901
4.6 x 150	693970-902	693970-906	693970-912	693970-702	693970-706	693970-408	693970-901
4.6 x 100	695970-902	695970-906	695970-912	695970-702	695970-706	695970-408	695970-901
4.6 x 50	699970-902	699970-906	699970-912	699970-702	699970-706	699970-408	699970-901
3.0 x 250	690970-302	690970-306	690970-312	690970-502	690970-506	690970-308	690970-301
3.0 x 150	693970-302	693970-306	693970-312	693970-502	693970-506	693970-308	693970-301
3.0 x 100	695970-302	695970-306	695970-312	695970-502	695970-506	695970-308	695970-301
3.0 x 50	699970-302	699970-306	699970-312	699970-502	699970-506	699970-308	699970-301
2.1 x 250	650750-902	650750-906	650750-912	690770-702	690770-706	650750-408	650750-901
2.1 x 150	693770-902	693770-906	693770-912	693770-702	693770-706	693770-408	693770-901
2.1 x 100	695770-902	695770-906	695770-912	695770-702	695770-706	695770-408	695770-901
2.1 x 50	699770-902	699770-906	699770-912	699770-702	699770-706	699770-408	699770-901

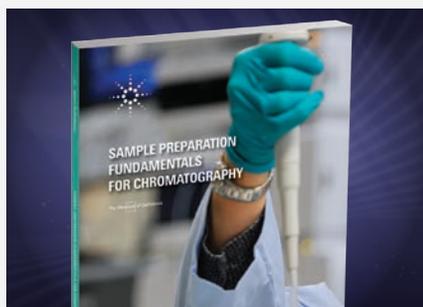
Note: InfinityLab Poroshell 120 4 µm columns have a 600 bar/9,000 psi pressure limit.

Guard columns for 4 µm columns

Size (mm)	EC-C18	HPH-C18	HPH-C8
4.6 x 5	820750-916	820750-930	820750-929
3.0 x 5	823750-916	823750-930	823750-929
2.1 x 5	821725-916	821725-930	821725-929

Note: Guards supplied as 3/pk.

InfinityLab Poroshell 120 4 µm columns are not supplied with a pre-programmed Column ID as standard. To order with Column ID, suffix the part number with "T" (example 690970-902T)



Sample Preparation Fundamentals for Chromatography

By Ron Majors, PhD, LC GC Magazine Editorial Board

This comprehensive reference—which contains hundreds of images and chromatograms—explains some of the most essential sample preparation methodologies in use today.

Download now at www.agilent.com/chem/sampleprepbook

Method Validation Kits

Contain 3 HPLC columns with the same column type (bonded phase, particle size, configuration), but from different manufacturing lots.

Size (mm)	Particle Size (µm)	EC-C18	EC-C8	Phenyl-Hexyl	SB-C18	SB-C8	SB-Aq	Bonus-RP
4.6 x 150	2.7	693975-902K	693975-906K	693975-912K	683975-902K	683975-906K	683975-914K	693968-901K
4.6 x 100	2.7	695975-902K	695975-906K	695975-912K	685975-902K	685975-906K	685975-914K	695968-901K
4.6 x 50	2.7	699975-902K	699975-906K	699975-912K	689975-902K	689975-906K	689975-914K	699968-901K
3.0 x 150	2.7	693975-302K	693975-306K	693975-312K	683975-302K	683975-306K	683975-314K	693968-301K
3.0 x 100	2.7	695975-302K	695975-306K	695975-312K	685975-302K	685975-306K	685975-314K	695968-301K
3.0 x 50	2.7	699975-302K	699975-306K	699975-312K	689975-302K	689975-306K	689975-314K	699968-301K
2.1 x 150	2.7	693775-902K	693775-906K	693775-912K	683775-902K	683775-906K	683775-914K	693768-901K
2.1 x 100	2.7	695775-902K	695775-906K	695775-912K	685775-902K	685775-906K	685775-914K	695768-901K
2.1 x 50	2.7	699775-902K	699775-906K	699775-912K	689775-902K	689775-906K	689775-914K	699768-901K

Size (mm)	Particle Size (µm)	EC-C18	EC-C8	Phenyl-Hexyl	PFP	HILIC
4.6 x 250	4	690970-902K	690970-906K	690970-912K	690970-408K	690970-901K
4.6 x 150	4	693970-902K	693970-906K	693970-912K	693970-408K	693970-901K
4.6 x 100	4	695970-902K	695970-906K	695970-912K	695970-408K	695970-901K
4.6 x 50	4	699970-902K	699970-906K	699970-912K	699970-408K	699970-901K
3.0 x 250	4	690970-302K	690970-306K	690970-312K	690970-308K	690970-301K
3.0 x 150	4	693970-302K	693970-306K	693970-312K	693970-308K	693970-301K
3.0 x 100	4	695970-302K	695970-306K	695970-312K	695970-308K	695970-301K
3.0 x 50	4	699970-302K	699970-306K	699970-312K	699970-308K	699970-301K
2.1 x 250	4	650750-902K	650750-906K	650750-912K	650750-408K	650750-901K
2.1 x 150	4	693770-902K	693770-906K	693770-912K	693770-408K	693770-901K
2.1 x 100	4	695770-902K	695770-906K	695770-912K	695770-408K	695770-901K
2.1 x 50	4	699770-902K	699770-906K	699770-912K	699770-408K	699770-901K

Don't see a validation kit for your column part number?

Validation kits can be assembled for most columns in the Agilent LC column portfolio. Simply send your request to the Agilent customer center in your country, indicating the part number for which you need a validation kit. A customer Service representative will send you a quote within 1-2 business days.

www.agilent.com/chem/contactus

AdvanceBio RP-mAb columns

Size (mm)	C4	SB-C8	Diphenyl
4.6 x 150	793975-904	783975-906	793975-944
4.6 x 100	795975-904	785975-906	795975-944
4.6 x 50	799975-904	789975-906	799975-944
2.1 x 150	793775-904	783775-906	793775-944
2.1 x 100	795775-904	785775-906	795775-944
2.1 x 75	797775-904	787775-906	797775-944
2.1 x 50	799775-904	789775-906	799775-944

AdvanceBio Peptide Mapping, Glycan Mapping and Oligonucleotide columns

Size	Peptide Mapping	Glycan Mapping	Oligonucleotide
4.6 x 250		680975-913	
4.6 x 150	653950-902	683975-913	653950-702
4.6 x 100		685975-913	655950-702
4.6 x 50			659950-702
3.0 x 150	653950-302		
2.1 x 250	651750-902	651750-913	
2.1 x 150	653750-902	683775-913	653750-702
2.1 x 100	655750-902	685775-913	655750-702
2.1 x 50			659750-702

AdvanceBio Peptide Mapping, Glycan Mapping and Oligonucleotide Fast Guards

Size	Peptide Mapping	Glycan Mapping	Oligonucleotide
4.6 x 5	850750-911		820750-921
3.0 x 5	853750-911		
2.1 x 5	851725-911	821725-906	821725-921

AdvanceBio column specifications

Column	Chemistry	Particle	Pore Size	Temp. Limits	pH Range	End-capped
RP-mAb	C4	3.5 µm	450Å	90 °C	1.0-8.0	Yes
RP-mAb	SB-C8	3.5 µm	450Å	90 °C	1.0-8.0	No
RP-mAb	Diphenyl	3.5 µm	450Å	90 °C	1.0-8.0	Yes
Peptide Mapping	C18	2.7 µm	120Å	60 °C	2.0-8.0	Double
Glycan Mapping	Amide-HILIC	2.7 µm	120Å	60 °C	2.0-7.0	No
Oligonucleotide	C18	2.7 µm	100Å	65 °C	3.0-11.0	Double

Specifications represent typical values only

Particle	Pressure Limit
3.5 µm	600 bar
2.7 µm	600 bar



Learn more

www.agilent.com/chem/discoverporoshell

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Agilent InfinityLab is an optimized portfolio of LC instruments, columns, and supplies designed to work together in perfect harmony. Combined with Agilent OpenLAB software and Agilent CrossLab Services, Agilent InfinityLab provides you with end-to-end support to make every day more productive.

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