GL Sciences

Core Shell Technology columns for UHPLC, LC/MS

InertCore™ C18

"Made in Japan" Core Shell Columns

InertCore™ C18

Achieve Maximum Efficiency with Trusted Reproducibility

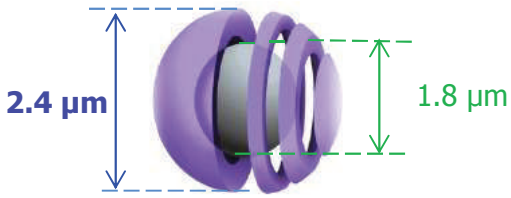
The greatest benefit of InertCore C18 is the trusted long-term reproducibility. Many core shell columns in the market often suffer from batch-to-batch or lot-to-lot reproducibility issues which makes it difficult for researchers to employ in their critical method development.
GL Sciences successfully developed the packing material of InertCore C18 from scratch. The whole entire manufacturing and production of the packing material, bonding of the stationary phase and packing of the column are executed within GL Sciences.
GL Sciences truly believes that this system is the only way to provide trusted long-term reproducible core shell columns to support method developers who expects columns to maintain performance over the lifetime of their method.

Physical Properties

• Silica	: Core Shell Silica	• End-capping	: Yes
• Particle Size	: 2.4 µm	• Carbon Load	: 4 %
• Core Size	: 1.8 µm	• U S P Code	: L1
• Superficially Porous Silica Layer	: 0.3 µm	• pH Range	: 2～7.5
• Surface Area	: 100 m^2/g	• Max. Operating Pressure	: 100 MPa, 1,000 Bar
• Pore Size	: 90 Å		
• Bonded Phase	: Octadecyl Groups		

Benefits

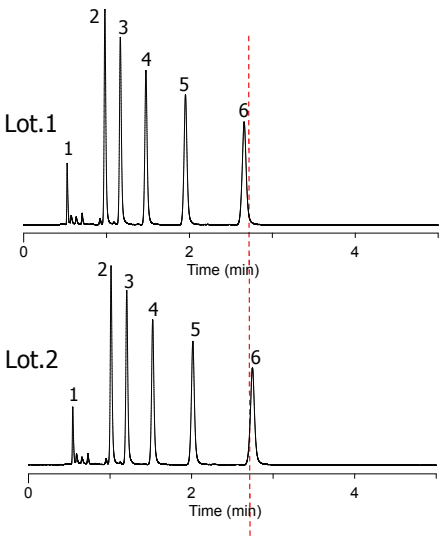
1. Trusted Long-Term Reproducibility
2. Longer Column Lifetimes
3. Highest Column Efficiency
4. Designed for Faster Separations for Higher Throughput



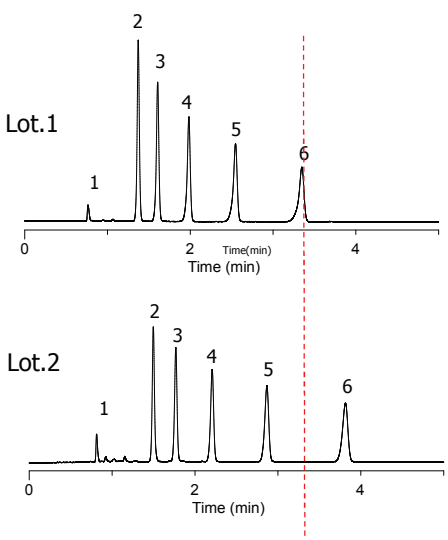
1. Trusted Long-Term Reproducibility

Many core shell columns in the market often show irreproducible chromatographic results on retention time or peak shapes from batch-to-batch. As proven below, by choosing InertCore C18, you can be assured that you are using one of the most trusted and enduring UHPLC, LC/MS columns in the industry.

InertCore C18 (2.4 µm)



Kinetex C18 (2.6 µm)

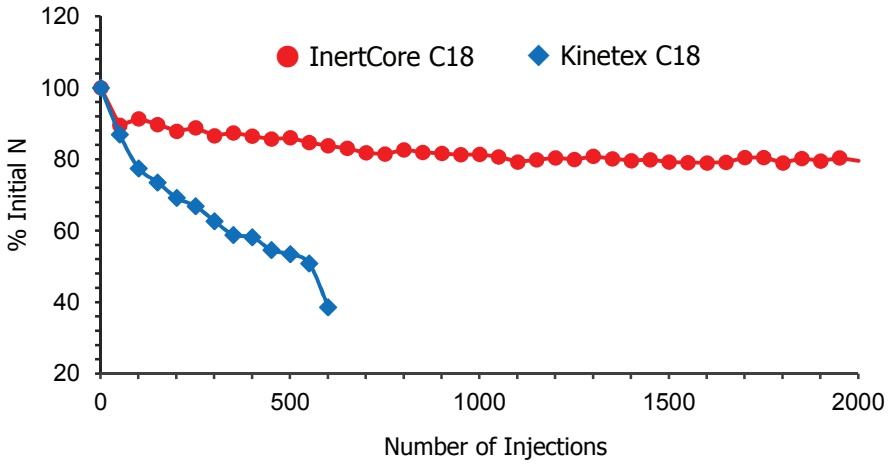


Conditions

Column Size	: 50 x 2.1 mm I.D.
Eluent	: A) CH_3OH
	B) H_2O
	A/B = 80/20,v/v
Flow Rate	: 0.4 mL/min
Col. Temp.	: 40 ℃
Detection	: UV 254 nm
Sample	: 1. Uracil
	2. Toluene
	3. Ethylbenzene
	4. Propylbenzene
	5. *n*-Butylbenzene
	6. *n*-Amylbenzene

2. Longer Column Lifetimes

As shown in the experiment below, InertCore C18 maintained high efficiency over 2,000 injections while other column brand failed.



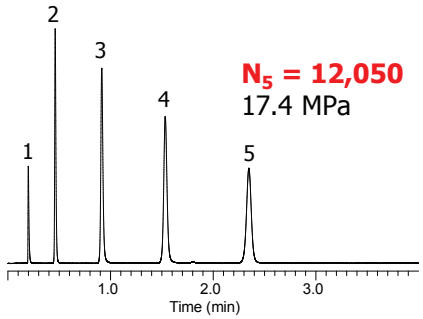
Conditions

Column Size : 100 × 2.1 mm I.D.
Eluent : A) CH_3OH B)H_2O
A/B = 50/50,v/v
Flow Rate : Adjusted to have the system to provide constant pressure at 80 MPa, 800 Bar

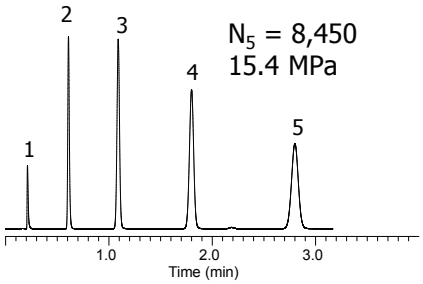
3. Highest Column Efficiency

GL Sciences discovered and developed an optimized size of superficially porous silica layer which provide sharper peaks than ever compared to other brands' core shell columns. In addition, a new column hardware is employed in InertCore C18 columns, further enhancing peak symmetry and maximizing efficiency. As shown below, InertCore C18 50 mm length columns deliver high efficiency and offer increased speed of analysis.

InertCore C18 (2.4 µm)



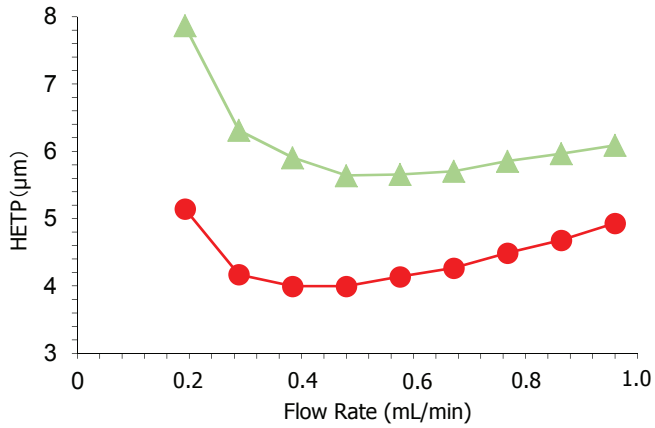
Kinetex C18 (2.6 µm)



Conditions : 50 x 2.1 mm I.D.
Column Size : A) CH_3CN B) H_2O
Eluent A/B = 40/60,v/v
Flow Rate : 0.4 mL/min
Col. Temp. : 40 ℃
Detection : UV 254 nm
Sample : 1. Uracil
2. Acetophenone
3. Benzene
4. Toluene
5. Naphthalene

Comparison of Efficiency using van Deemter Plot

As shown in the following plot, InertCore C18 can be used at a wide flow rate range without sacrificing efficiency and performance.



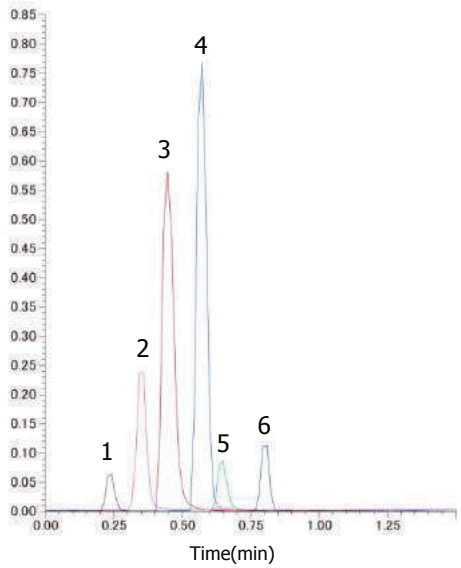
Kinetex C18 (2.6 µm)
InertCore C18 (2.4 µm)

Conditions

Column Size : 50 x 2.1 mm I.D.
Eluent : A) CH_3CN
B) H_2O
A/B = 40/60, v/v
Col.Temp. : 40℃
Sample : Naphthalene

4. Designed for Faster Separations for Higher Throughput

High speed separations were achieved under acetic mobile phase providing balanced retention of bases, acids and neutrals with excellent peak shapes.



Conditions

Column : InertCore C18（2.4 µm ,50 × 2.1 mm I.D.）
Eluent * : A) 0.1% HCOOH in H_2O
B) CH_3CN

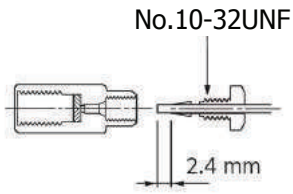
Gradient :

Time(min)	A(%)	B(%)
0	70	30
1.00	20	80
1.50	20	80
1.51	70	30
2.50	70	30

Col. Temp. : 40 ℃
Detection : MS/MS(SRM),ESI,Positive(Peak1-5),Negative(Peak6)
Flow Rate : 0.5 mL/min
Injection Vol. : 2 µL
Sample : 1. Propranolol (Basic)
2. Ethenzamide (Neutral)
3. Verapamil (Basic)
4. Carbamazepine (Neutral)
5. Clemastine (Basic)
6. Ketoprofen (Acidic)

Ordering Information

Particle Size (µm)	I.D. (mm)	Length (mm)	Cat.No.
2.4	2.1	50	5020-17501
		100	5020-17502
		150	5020-17503



UP Type End-fittings

* End-fittings are 1/16" Parker style., UP type.

Worldwide Ordering Information

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