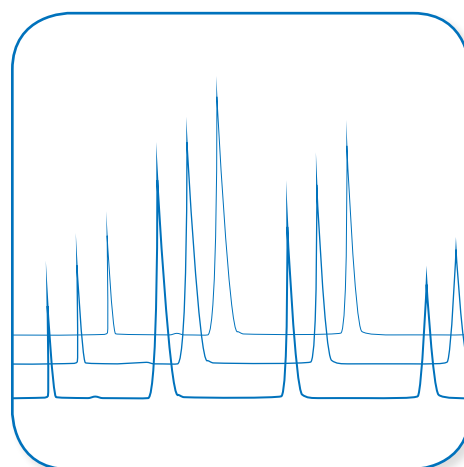




Meteoric  
Core



# Contents

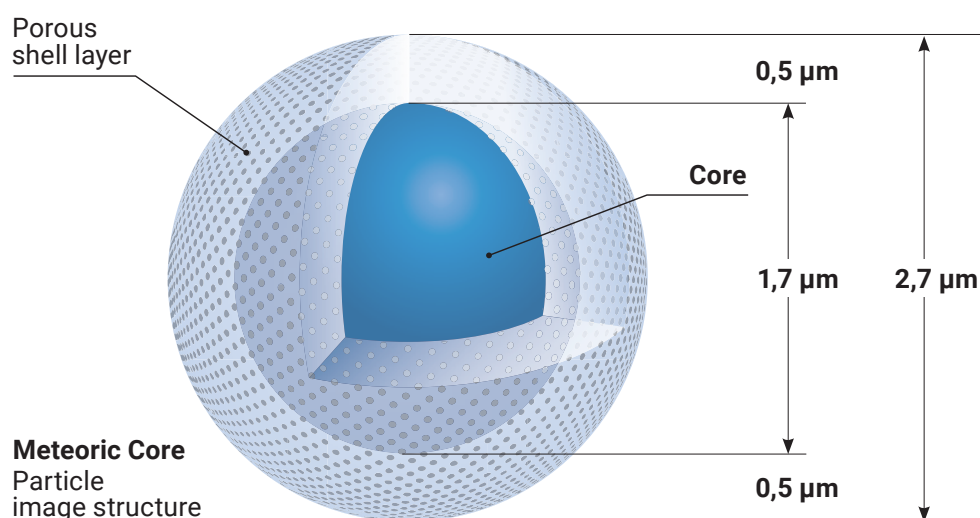
Features and Specifications .....	16
Selectivity Chart .....	17
Applications.....	18–20
QC-Data.....	21
Ordering Information.....	22

# Meteoric Core

## Introduction

### Core Shell Columns for UHPLC and HPLC

Meteoric Core is a core-shell material optimised for ultra fast separations with outstanding resolution. Excellent peak shapes for basic and coordinating compounds are possible due to a large pH-range of 1.5 to 10 (to pH 9 for C8). It is also an ideal choice for LC/MS applications due to low column bleeding.



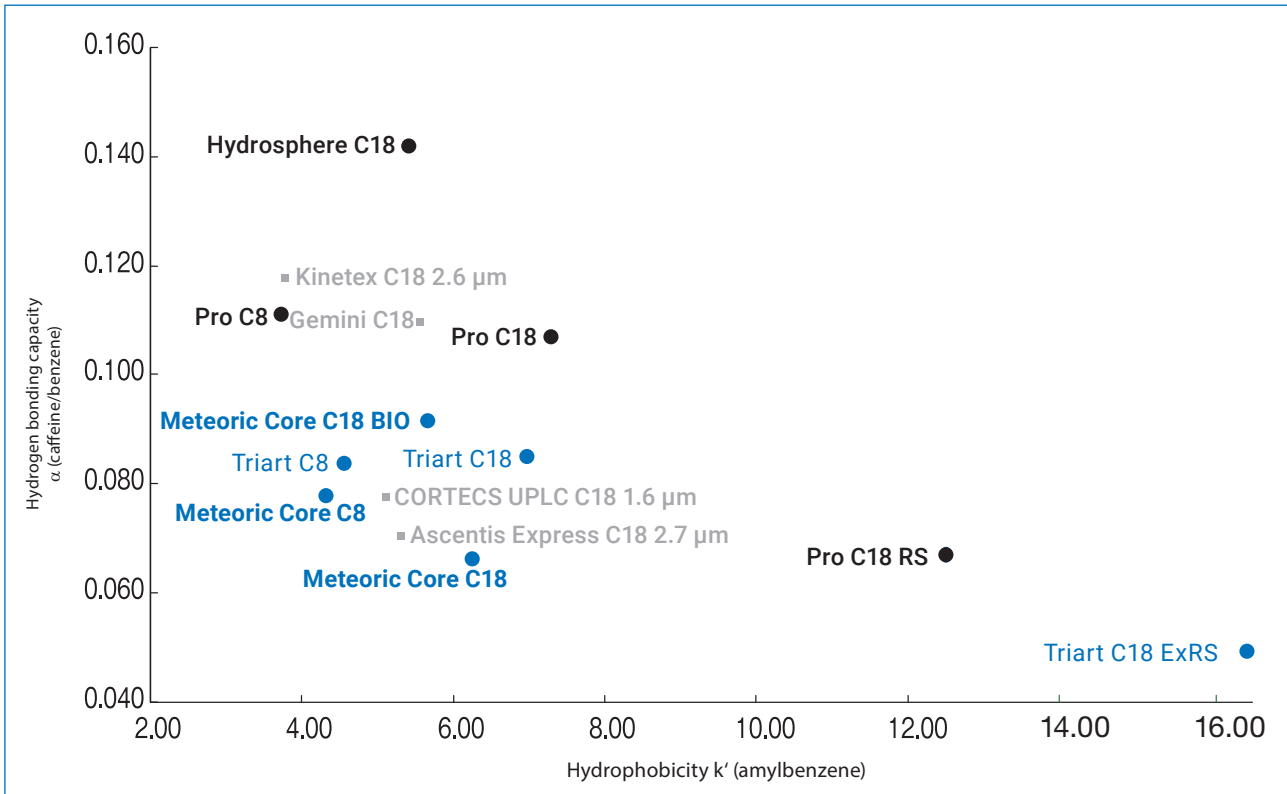
## Core-Shell columns for UHPLC & HPLC

- *ultra fast separation with outstanding resolution*
- *excellent peak shape for basic and coordinating compounds*
- *wide pH application range*
- *high lot-to-lot reproducibility*

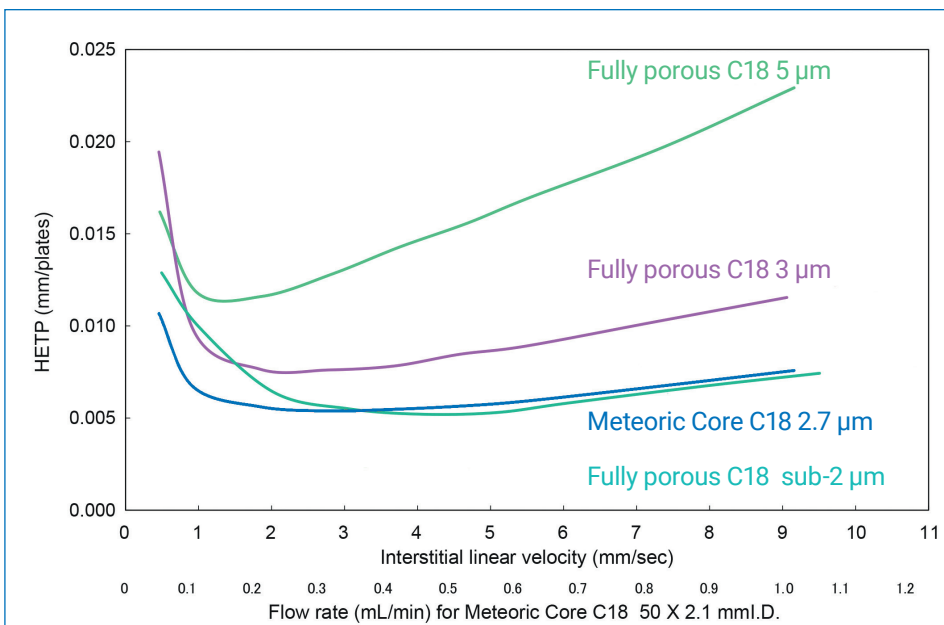
Specifications	Meteoric Core C18	Meteoric Core C18 BIO	Meteoric Core C8
Base particle	Core-Shell type silica gel		
Particle size / $\mu\text{m}$	2.7	2.7	2.7
Pore size / nm	8	16	8
Specific surface area / $\text{m}^2/\text{g}$	150	90	150
Bonding	Trifunctional	Trifunctional	Trifunctional
Carbon content / %	7	5	5
End capping	Yes	Yes	Yes
Pressure limit	60 MPa (8,700 psi)	60 MPa (8,700 psi)	60 MPa (8,700 psi)
pH range	1.5–10	1.5–10	1.5–9
Temperature	pH < 7: 70 °C pH > 7: 50 °C	pH < 7: 70 °C pH > 7: 50 °C	pH < 7: 60 °C pH > 7: 40 °C
USP Classification	pH > 7: 50 °C	L1	L7

# Meteoric Core

## Selectivity Chart



## Van Deemter Curves: Correlation between linear velocity and column efficiency



Column: 50 x 2.0 or 2.1 mm ID  
 Eluent: acetonitrile / water (60/40)  
 Temperature: 25 °C  
 Sample: butyl benzoate  
 Detection: UV at 270 nm

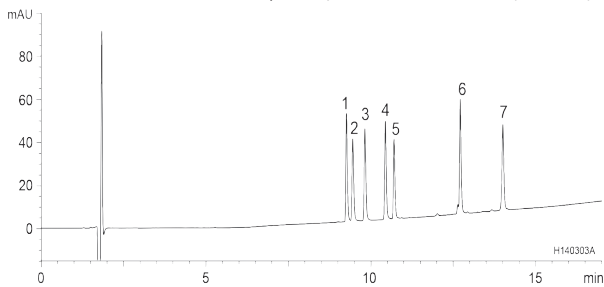
Meteoric Core C18 has high column efficiency which is almost equivalent to sub-2  $\mu\text{m}$  columns over a wide range of flow rates.

# Meteoric Core

## Applications

### Peptides

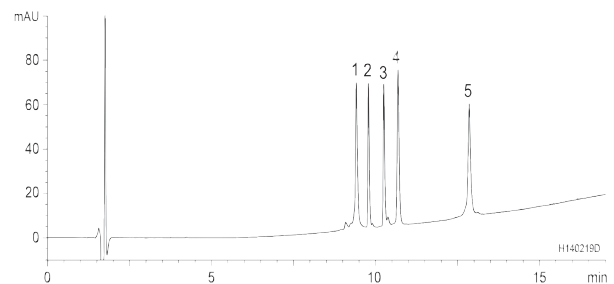
- |  |           |
|--|-----------|
| 1. BAM-12P   | (MW1,425) |
| 2. [D-Ala <sup>2</sup> ,Met <sup>5</sup> ]-Enkephalinamide | (MW 587)  |
| 3. Met-Enkephalin  | (MW 574)  |
| 4. [D-Ala <sup>2</sup> ,Met <sup>5</sup> ]-Enkephalin      | (MW 588)  |
| 5. α-Endorphin   | (MW1,746) |
| 6. β-Endorphin   | (MW1,859) |
| 7. γ-Endorphin   | (MW3,465) |



Column: Meteoric Core BIO (2.7 μm, 6 nm) 150 x 2.1 mm ID  
 Part No.: CAW16SQ7-15Q1PT  
 Eluent: A) Water / TFA (100/0.1)  
 B) Acetonitrile / TFA (100/0.1)  
 Gradient: 15-55%B (0-15 min), 55% B (15-17 min)  
 Flow rate: 0.2 mL/min  
 Temperature: 40 °C  
 Detection: 220 nm

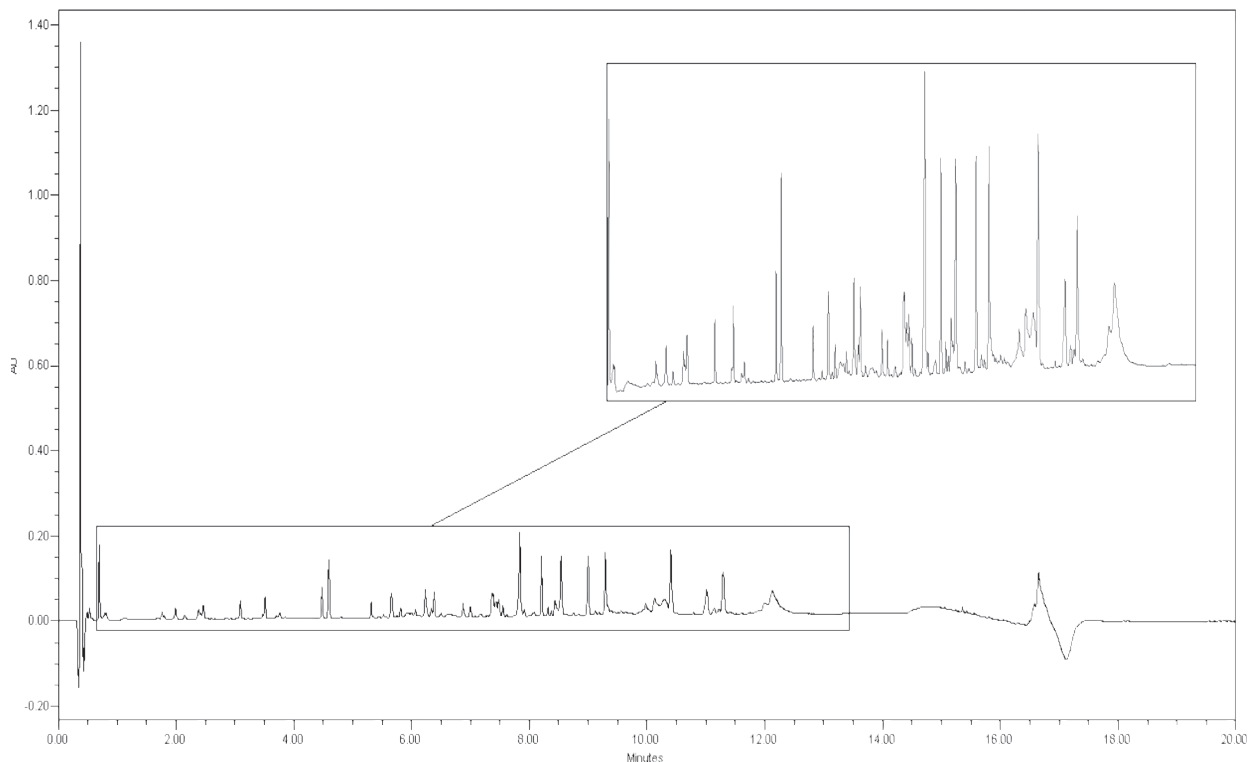
### Peptides/Proteins

- |                         |             |
|-------------------------|-------------|
| 1. Cytochrome c         | (MW 12,400) |
| 2. Insulin (bovine)     | (MW 5,700)  |
| 3. Amyloid β-protein    | (MW 4,300)  |
| 4. Lysozyme             | (MW 14,000) |
| 5. α-Chymotrypsinogen A | (MW 25,700) |



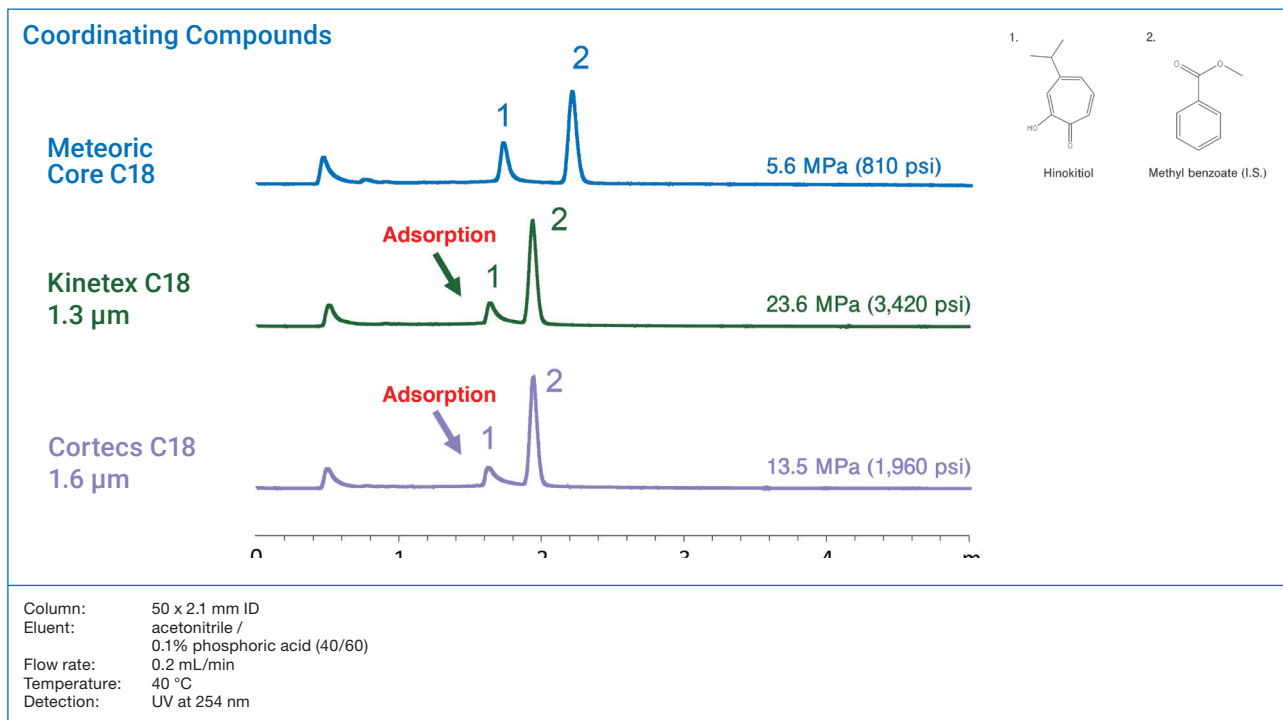
Column: Meteoric Core BIO (2.7 μm, 16 nm) 150 x 2.1 mm ID  
 Part No.: CAW16SQ7-15Q1PT  
 Eluent: A) Water / TFA (100/0.1)  
 B) Acetonitrile / TFA (100/0.1)  
 Gradient: 20-70% B (0-15 min), 70% B (15-17 min)  
 Flow rate: 0.2 mL/min  
 Temperature: 40 °C  
 Detection: 220 nm

### Avastin Peptide Map – Trypsin Digest

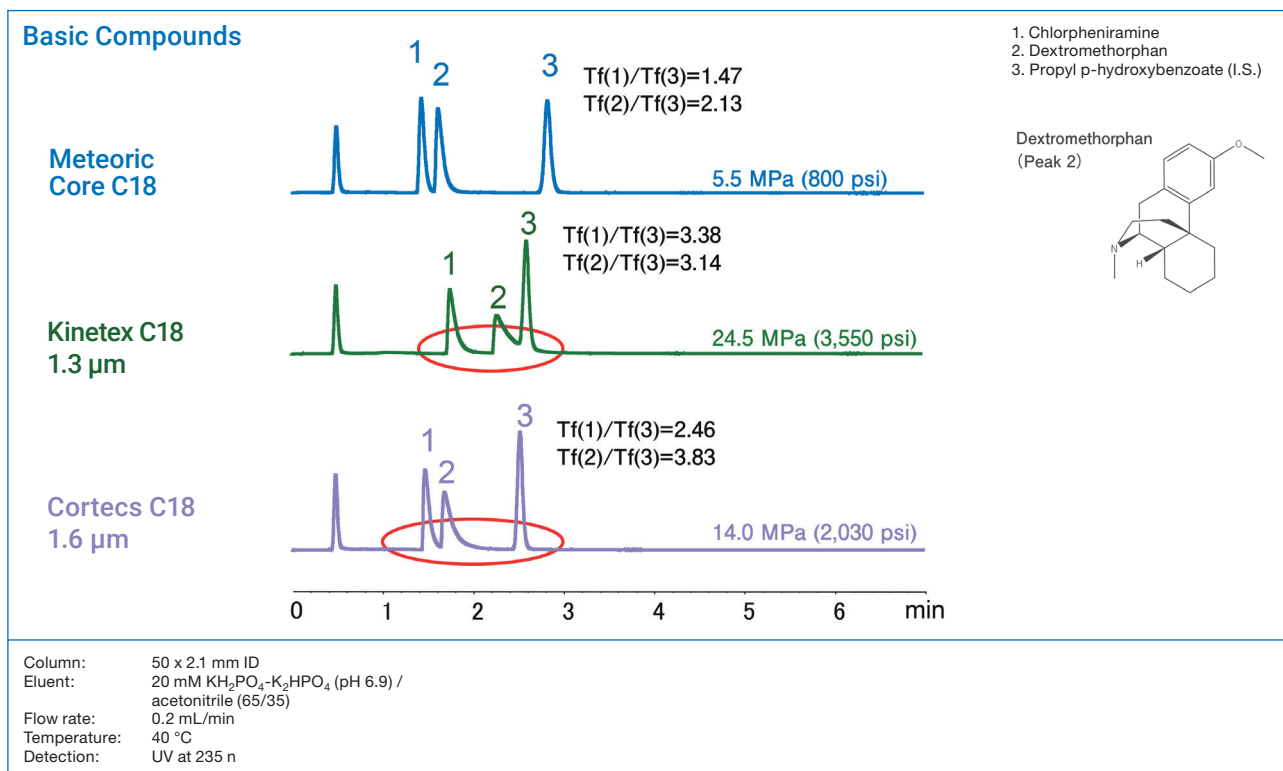


Meteoric Core BIO (2.7 μm, 16 nm) 100 x 2.1 mm ID  
 Part No.: CAW16SQ7-10Q1PT  
 Eluent: A) Water / TFA (100/0.1)  
 B) Acetonitrile / TFA (100/0.1)  
 Gradient: 2-4% B (0-14 min), 45-100% B (14-16 min),  
 100-2% B (16-20 min)  
 Inj. Volume: 10 μL  
 Temperature: 40 °C  
 Detection: 215 nm  
 Flow rate: 0.6 mL/min  
 Overall runtime: 20 minutes

# Meteoric Core

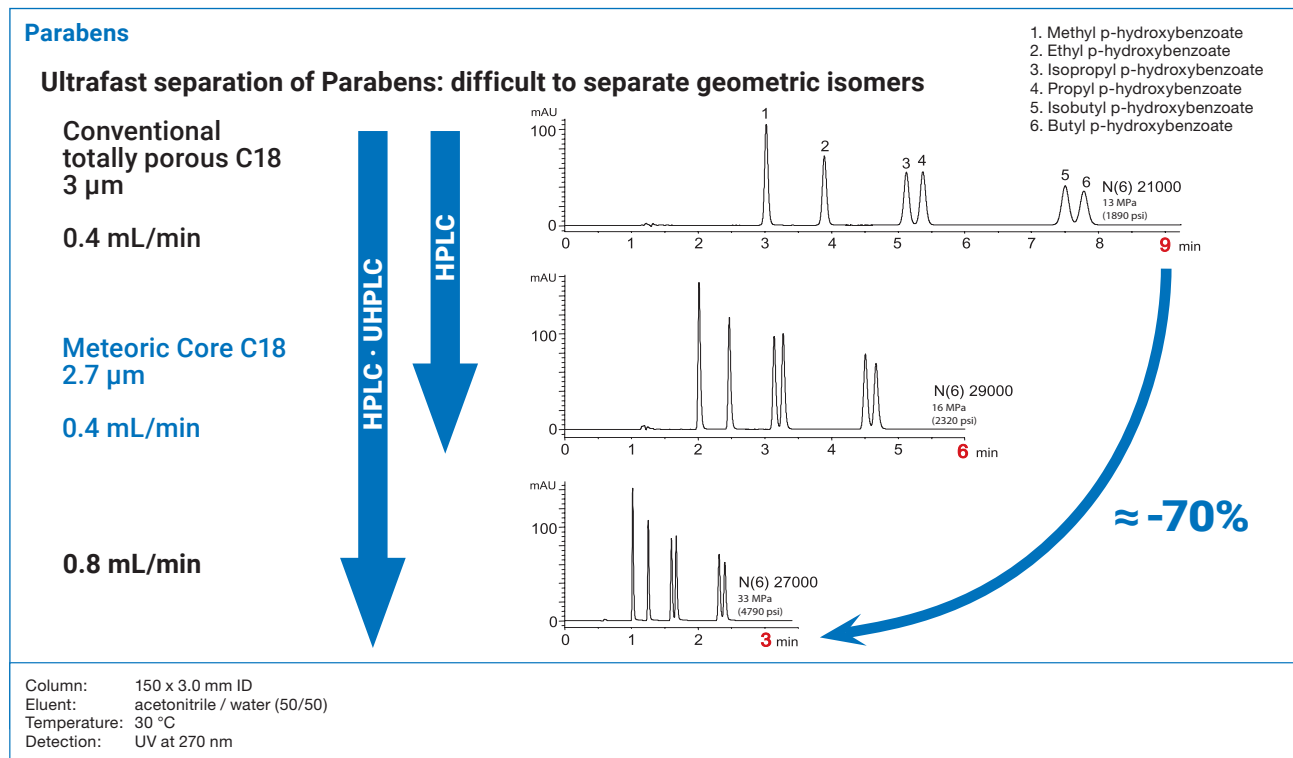


Meteoric Core C18 is able to provide excellent peak shapes for coordinating compounds which are often adsorbed by a column, as a result of a strong interaction with impurities such as trace amounts of metal ions. Meteoric Core is suitable for the quantitative analysis of coordinating compounds.



Meteoric Core C18 columns are high resolution columns which provide excellent peak shapes for basic compounds compared to competitors' sub-2 µm core-shell columns. Chromatographers can expect ultrafast analysis of basic compounds with highly quantitative and sensitive analysis when using Meteoric Core C18.

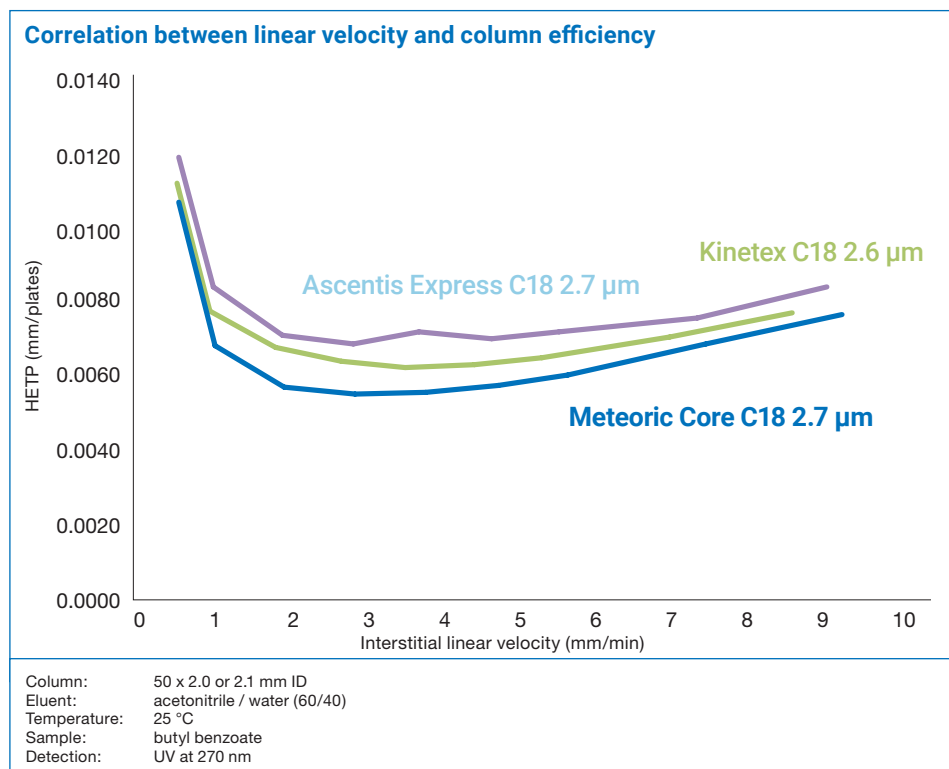
# Meteoric Core



Meteoric Core C18 can shorten the analysis time by two thirds compared to a conventional totally porous C18 column with the same column dimensions and under the same analytical conditions. In addition, it maintains

the same efficiency at double the flow rate. This allows a further decrease in analysis time by one third without loss of resolution, and at an operating pressure of less than 5,000 psi.

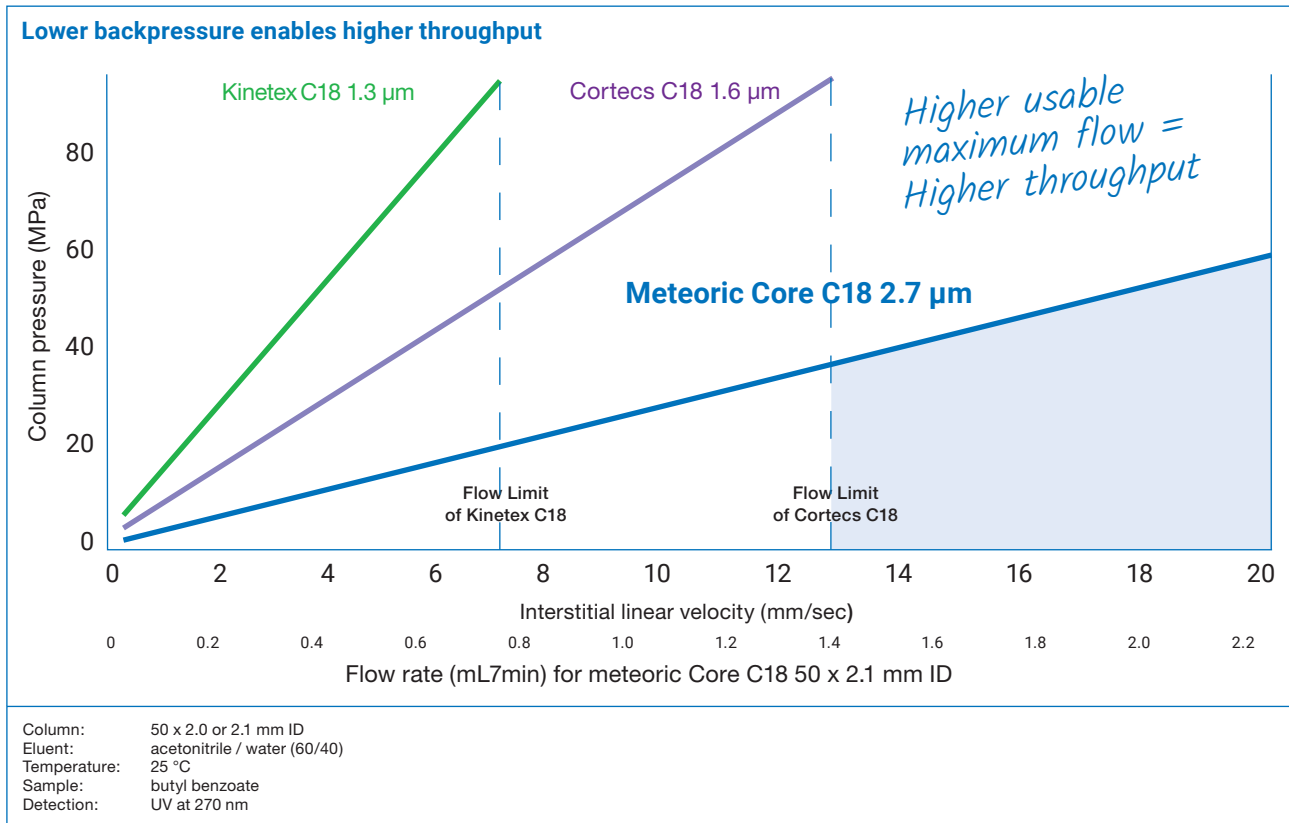
## QC-Data



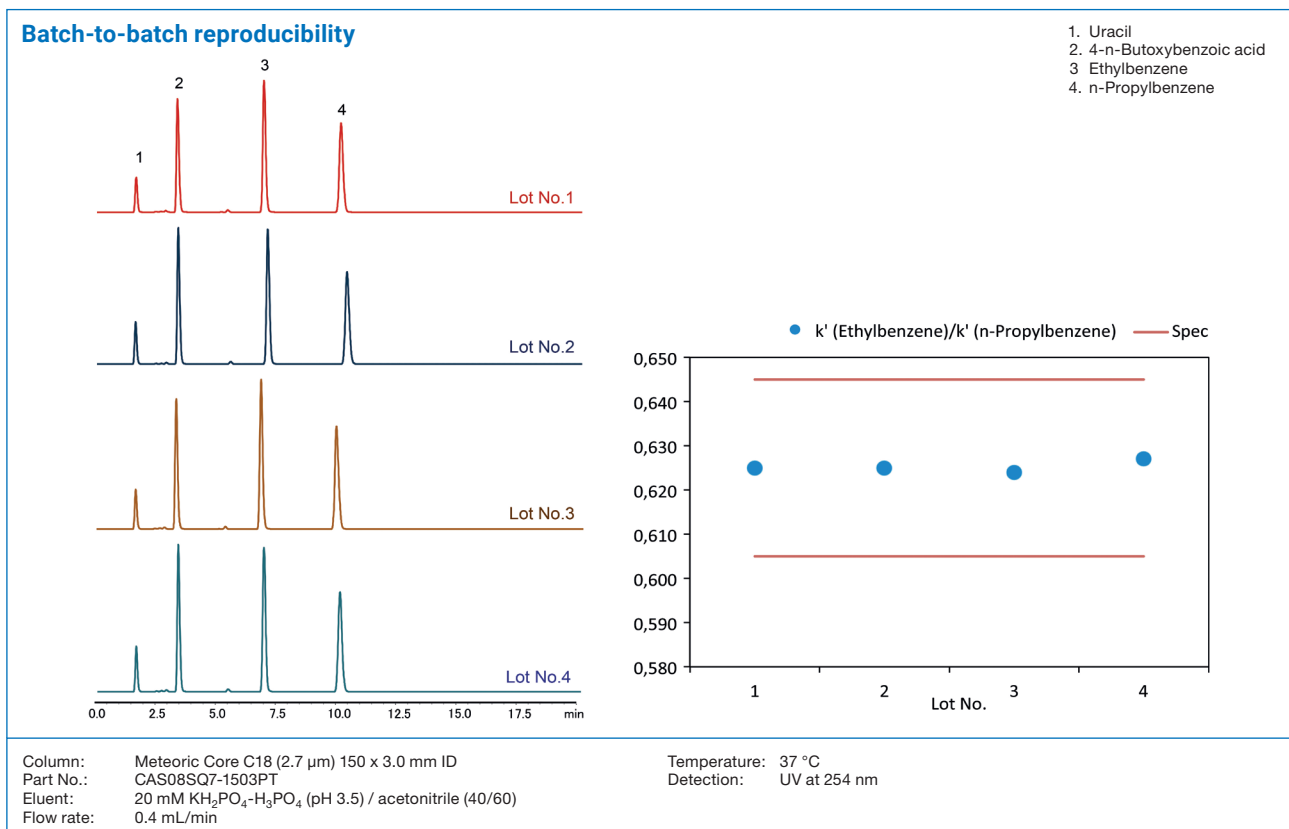
Meteoric Core C18 shows outstanding column efficiencies over a wide flow range.



# QC-Data



The operating pressure of Meteoric Core is one half to one fifth of sub-2 μm Core-Shell type columns. High throughput analysis using Meteoric Core could be expected even with longer length columns since the usable maximum flow rate is higher than that of competitors' sub-2 μm Core-Shell products.



# Ordering Information

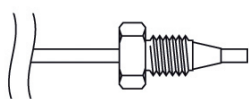
## 2.7 $\mu\text{m}$ (U)HPLC columns

Phase	Column ID [mm]	Column length (mm)					Precolumn filter* 0.5 $\mu\text{m}$ (pack of 3)
		30	50	75	100	150	
Meteoric Core C18	2.1	CAS08SQ7-03Q1PT	CAS08SQ7-05Q1PT	CAS08SQ7-L5Q1PT	CAS08SQ7-10Q1PT	CAS08SQ7-15Q1PT	XRPRCS35
	3.0	CAS08SQ7-03O3PT	CAS08SQ7-05O3PT	CAS08SQ7-L5O3PT	CAS08SQ7-10O3PT	CAS08SQ7-15O3PT	
	4.6	CAS08SQ7-0346PT	CAS08SQ7-0546PT	CAS08SQ7-L546PT	CAS08SQ7-1046PT	CAS08SQ7-1546PT	
Meteoric Core C18 BIO	2.1	CAW16SQ7-03Q1PT	CAW16SQ7-05Q1PT	CAW16SQ7-L5Q1PT	CAW16SQ7-10Q1PT	CAW16SQ7-15Q1PT	
	3.0	CAW16SQ7-03O3PT	CAW16SQ7-05O3PT	CAW16SQ7-L5O3PT	CAW16SQ7-10O3PT	CAW16SQ7-15O3PT	
	4.6	CAW16SQ7-0346PT	CAW16SQ7-0546PT	CAW16SQ7-L546PT	CAW16SQ7-1046PT	CAW16SQ7-1546PT	
Meteoric Core C8	2.1	COS08SQ7-03Q1PT	COS08SQ7-05Q1PT	COS08SQ7-L5Q1PT	COS08SQ7-10Q1PT	COS08SQ7-15Q1PT	
	3.0	COS08SQ7-03O3PT	COS08SQ7-05O3PT	COS08SQ7-L5O3PT	COS08SQ7-10O3PT	COS08SQ7-15O3PT	
	4.6	COS08SQ7-0346PT	COS08SQ7-0546PT	COS08SQ7-L546PT	COS08SQ7-1046PT	COS08SQ7-1546PT	

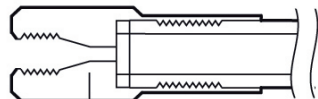
\*Holder required, part no. XRPRCS03

## Column end fitting and column connections

Tubing and connector



Column



Port depth

The end of the product number	Port depth	Style of endfitting
PT	2 mm	UPLC compatible (Parker) style

UPLC is a registered trademark of Waters Corporation.