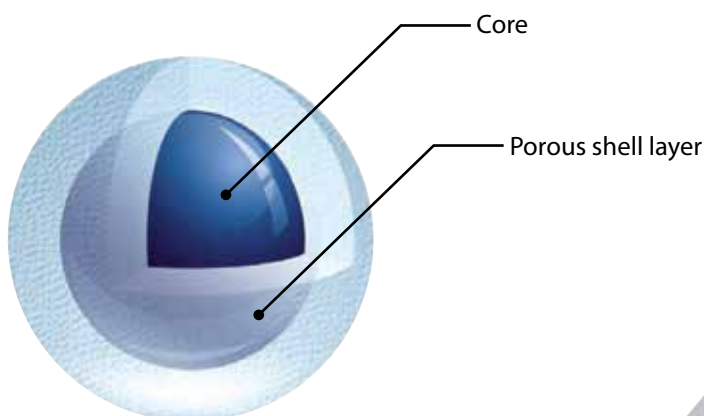

Core-Shell Columns for UHPLC & HPLC

Meteoric Core

Easy Method Optimization!
Excellent Chromatography with Fast Separation!



Meteoric Core
Particle Image Structure





Meteoric Core

Core-Shell Columns for UHPLC & HPLC

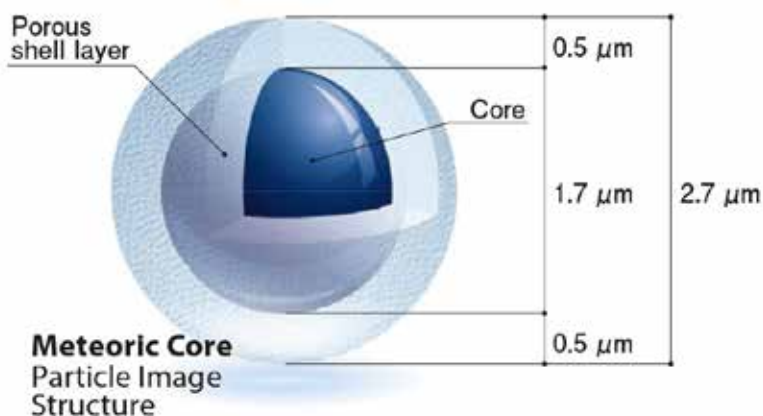
YMC
EUROPE GMBH

Features

- Ultra fast separation with outstanding resolution
- Excellent peak shape for basic and coordination compounds
- Wide pH application range
- Low column bleed, ideal for LC/MS

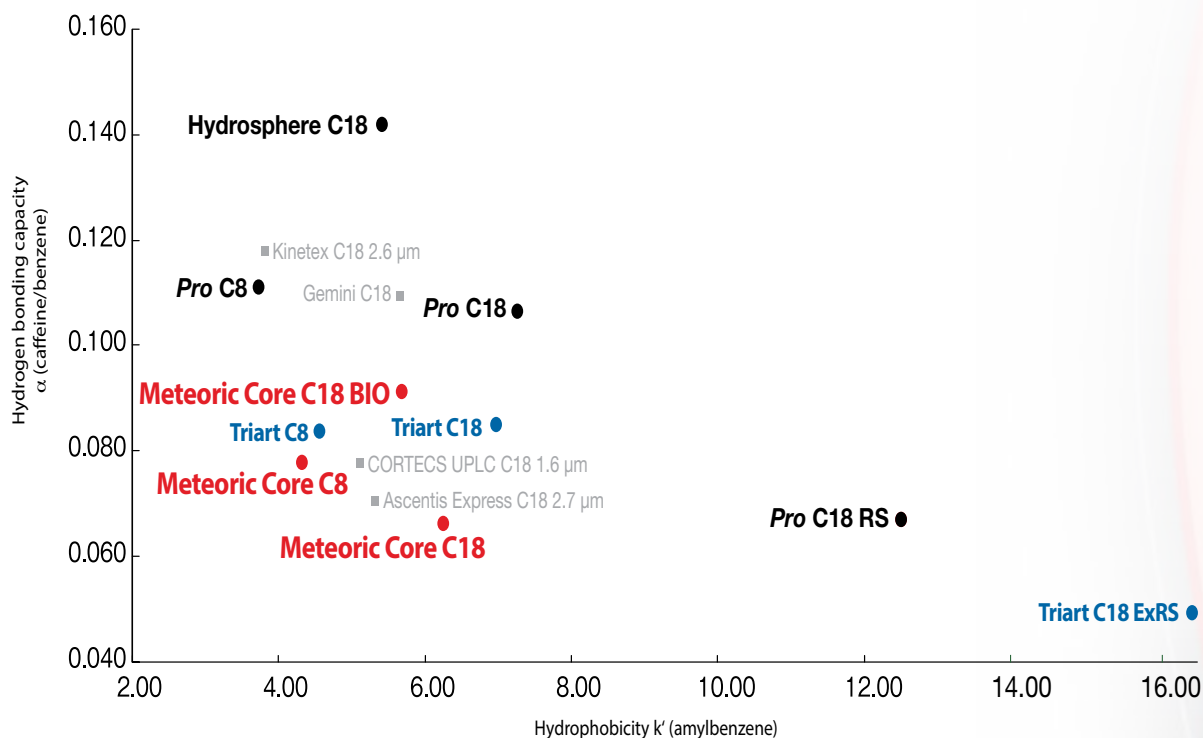
Specifications

	Meteoric Core C18	Meteoric Core C18 BIO	Meteoric Core C8
Base particle	Core-Shell type silica gel		
Particle size (μm)	2.7		
Pore size (nm)	8	16	8
Specific surface area (m²/g)	150	90	150
Bonding	Trifunctional		
Carbon content (%)	7	5	
End capping	Yes		
Pressure limit	60 MPa / 8700 psi		
pH range	1.5-10		1.5-9
Temperature	70 °C (< pH 7), 50 °C (> pH 7)		60 °C (< pH 7), 40 °C (> pH 7)
USP Classification	L1		L7

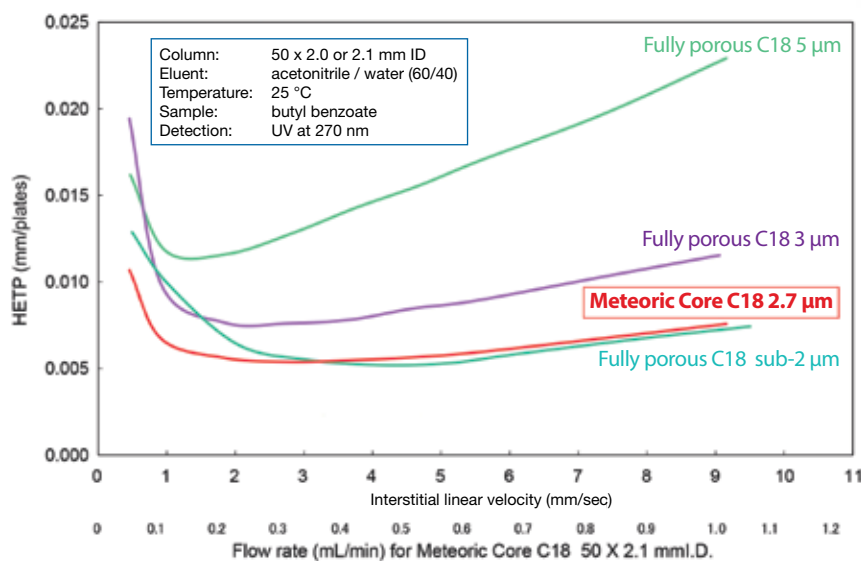




Selectivity Chart



Van Deemter Curves: Correlation between linear velocity and column efficiency



Meteoric Core C18 has high column efficiency which is almost equivalent to sub-2 μ m columns over a wide range of flow rate.



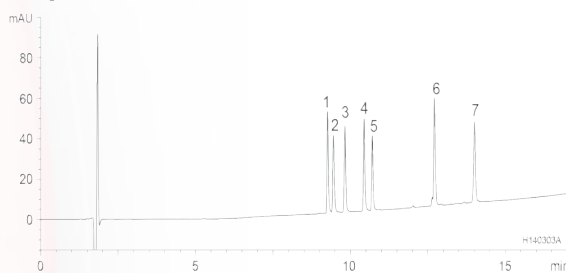
Meteoric Core

Core-Shell Columns for UHPLC & HPLC

YMC
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Applications

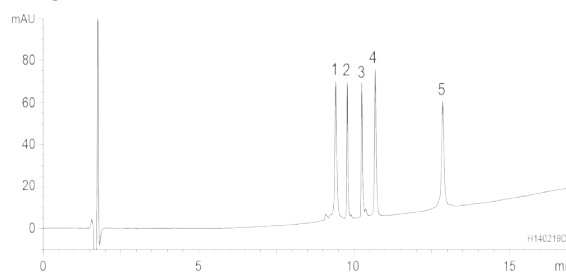
Peptides



1. BAM-12P (MW 1,425)
2. [D-Ala²,Met⁵]-Enkephalinamide (MW 587)
3. Met-Enkephalin (MW 574)
4. [D-Ala²,Met⁵]-Enkephalin (MW 588)
5. α-Endorphin (MW 1,746)
6. β-Endorphin (MW 1,859)
7. γ-Endorphin (MW 3,465)

Column: YMC Meteoric Core BIO, 2.7 μm, 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: 215 nm

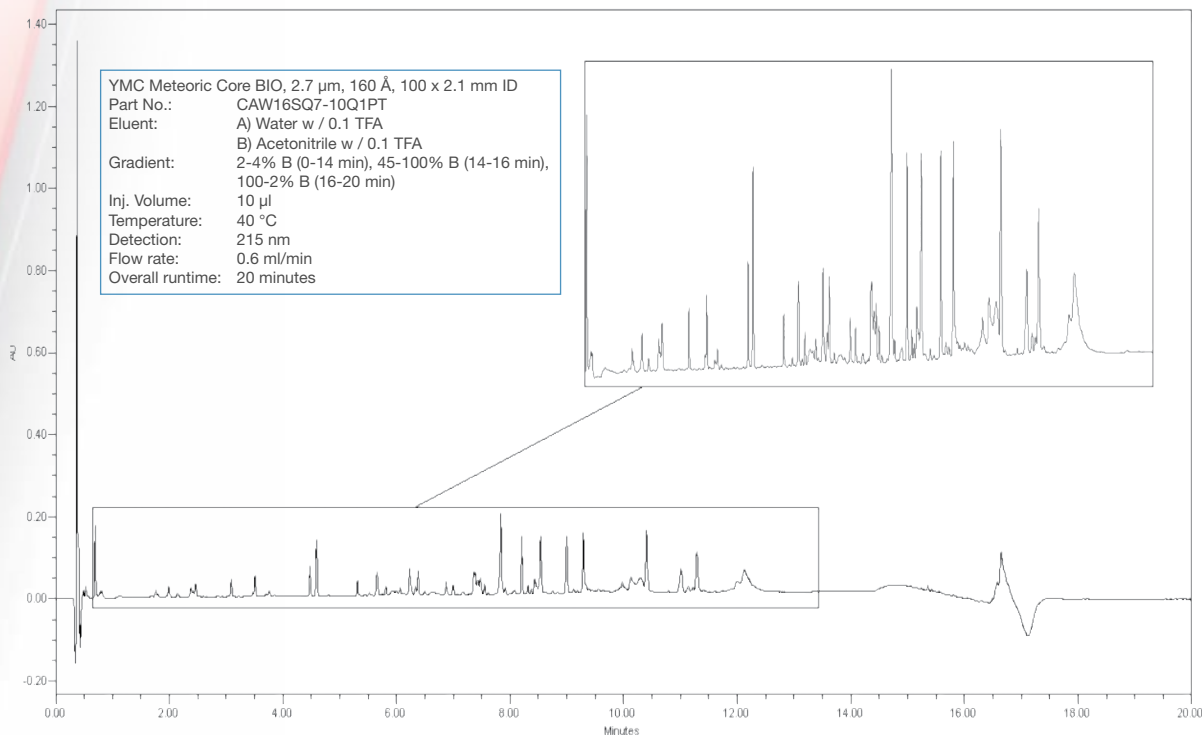
Peptides/Proteins



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

Column: YMC Meteoric Core BIO, 2.7 μm, 160 Å, 100 x 2.1 mm
 Part No.: CAW16SQ7-10Q1PT
 Eluent: A) Water w / TFA (100/0.1)
 B) Acetonitrile w / 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

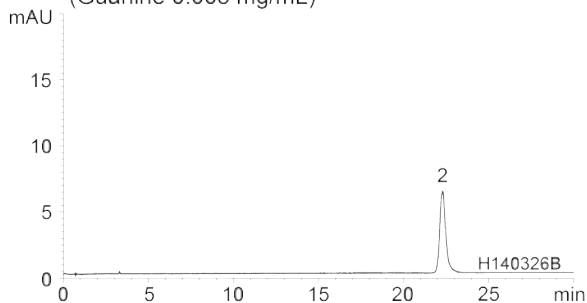




Applications

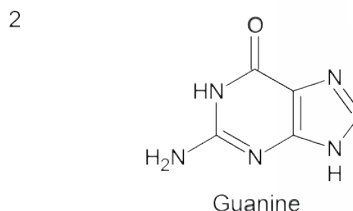
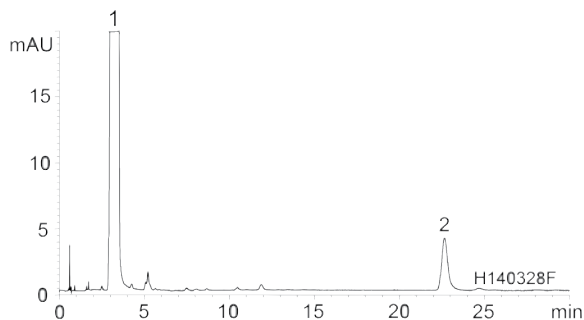
Aciclovir (The Japanese Pharmacopoeia)

(A) Related substances : Standard solution^{*1}
(Guanine 0.005 mg/mL)

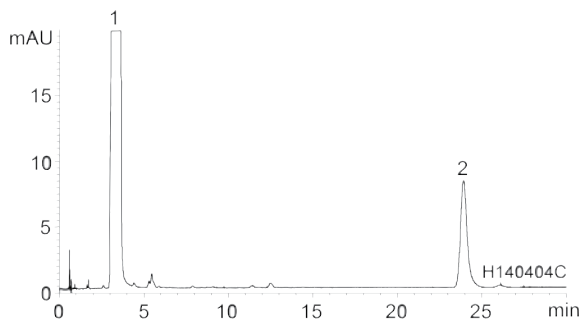


	System suitability requirement	Result
Relative standard deviation of the peak area (Guanine)	$\leq 2.0\%$	1.87%
Relative standard deviation of the peak area (Aciclovir)	$\leq 1.0\%$	0.10%
Resolution (1,2)	≥ 17	42.3

(B) Assay: Standard solution^{*1}
(Aciclovir 1.0 mg/mL)



(C) Assay: System suitability solution^{*1}
(Aciclovir 1.0 mg/mL, Guanine 0.005 mg/mL)



Column: YMC Meteoric Core C18 BIO (2.7 μm , 16 nm)
100 x 4.6 mm ID
Part No.: CAW16SQ7-1046PT
Eluent: phosphate buffer containing 1-decansulfonic acid sodium salt^{*2} / acetonitrile (1000/40)
^{*2} Dissolve 1.0 g of containing 1-decansulfonic acid sodium salt and 5.0 g $\text{NaH}_2\text{PO}_4 \cdot 2\text{H}_2\text{O}$ in 1000 ml of water, adjust pH 3.0 with H_3PO_4
Flow rate: 1.4 mL/min (adjust the flow rate so that the retention time of aciclovir is about 3 min)
Temperature: 20 $^{\circ}\text{C}$
Detection: UV at 254 nm
Injection: 10 μl
(The Japanese Pharmacopoeia 16th; Related substances, Assay)



Meteoric Core

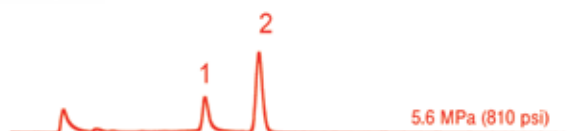
Core-Shell Columns for UHPLC & HPLC

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Applications

Coordination Compounds

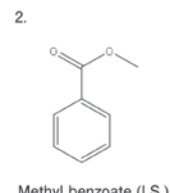
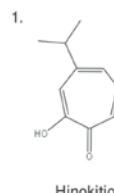
Meteoric Core C18



Kinetex™ C18
1.3 µm



Cortecs C18
1.6 µm

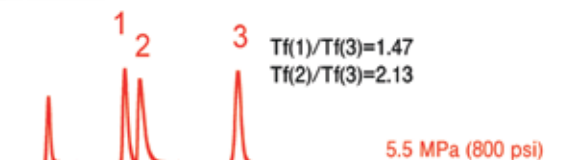


Column: 50 x 2.1 mm ID
Eluent: acetonitrile / 0.1% phosphoric acid (40/60)
Flow rate: 0.2 ml/min
Temperature: 40 °C
Detection: UV at 254 nm

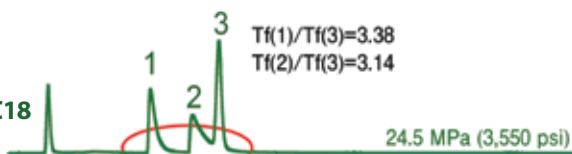
Meteoric Core C18 is able to provide excellent peak shapes for coordination compounds which are often adsorbed by a column, as a result of a strong interaction with impurities such as trace amounts of metal ions. Meteoric Core is suitable for the quantitative analysis of coordination compounds.

Basic Compounds

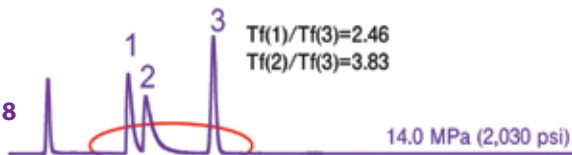
Meteoric Core C18



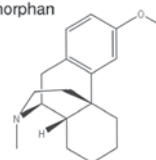
Kinetex™ C18
1.3 µm



Cortecs C18
1.6 µm



Dextromethorphan
(Peak 2)



Column: 50 x 2.1 mm ID
Eluent: 20 mM KH₂PO₄-K₂HPO₄ (pH 6.9) / acetonitrile (65/35)
Flow rate: 0.2 ml/min
Temperature: 40 °C
Detection: UV at 235 nm
Sample: 1. Chlorpheniramine
2. Dextromethorphan
3. Propyl *p*-hydroxybenzoate (I.S.)

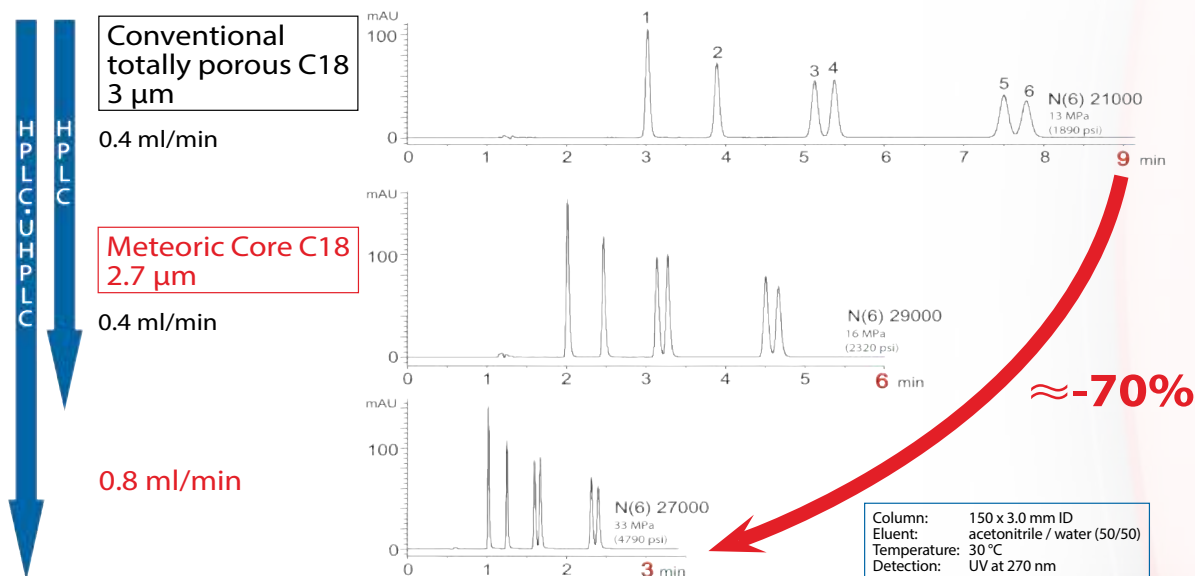
Meteoric Core C18 columns are high resolution columns which provide excellent peak shapes for basic compounds compared to competitors' sub-2 µm core-shell columns. Chromatographers can expect ultrafast analysis of basic compounds with highly quantitative and sensitive analysis when using Meteoric Core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



Applications

Parabens

Ultrafast separation of Parabens: difficult to separate geometric isomers

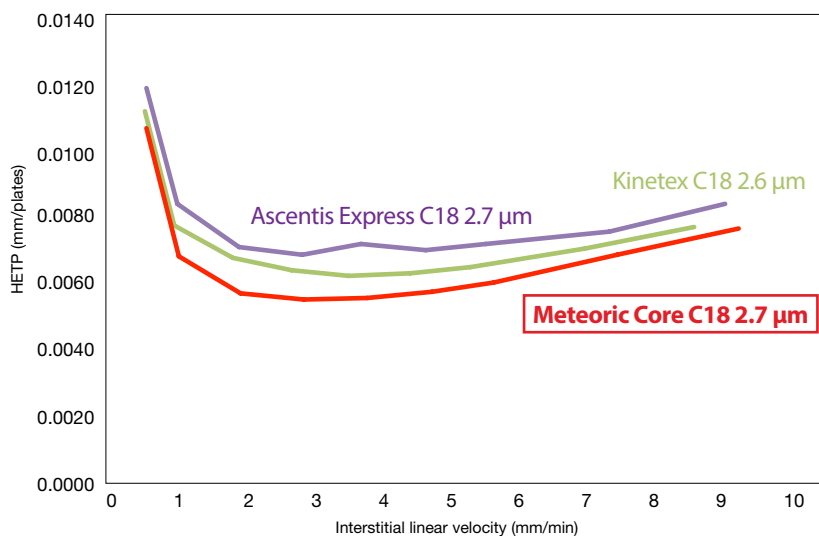


1. Methyl *p*-hydroxybenzoate
2. Ethyl *p*-hydroxybenzoate
3. Isopropyl *p*-hydroxybenzoate
4. Propyl *p*-hydroxybenzoate
5. Isobutyl *p*-hydroxybenzoate
6. Butyl *p*-hydroxybenzoate

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

Correlation between linear velocity and column efficiency



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

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



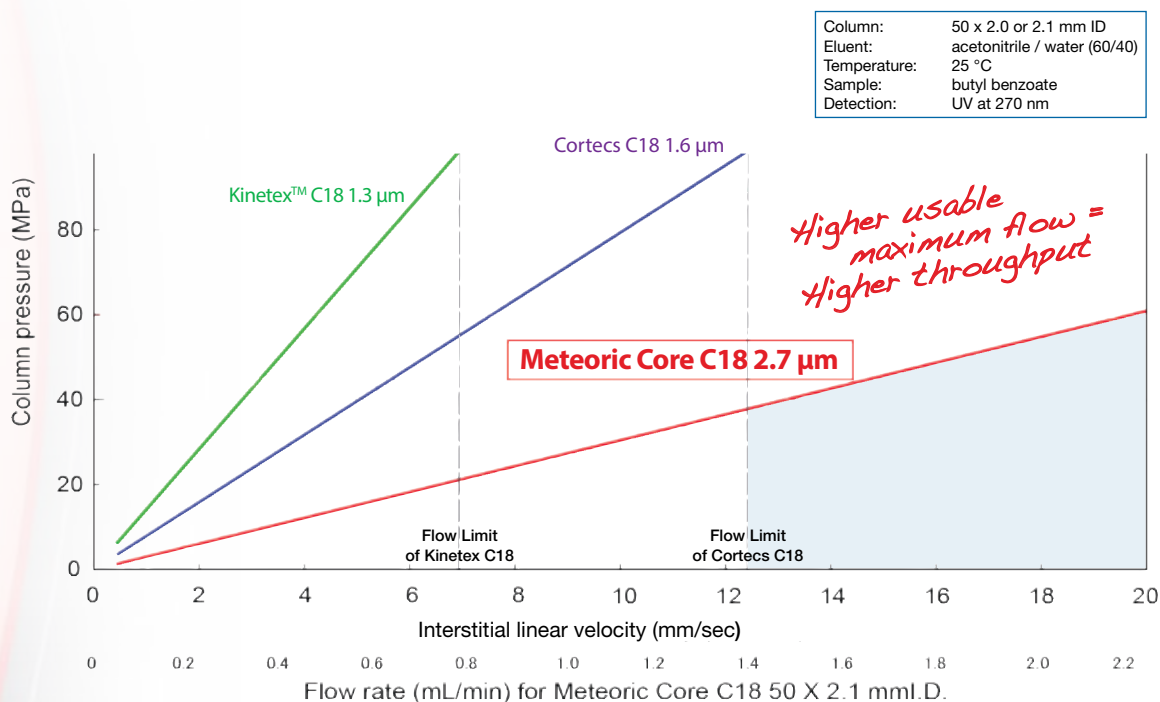
Meteoric Core

Core-Shell Columns for UHPLC & HPLC

YMC
EUROPE GMBH

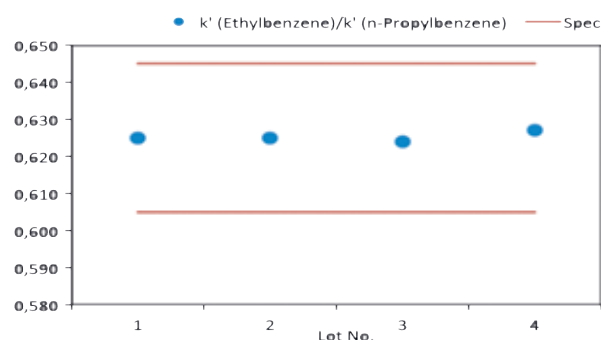
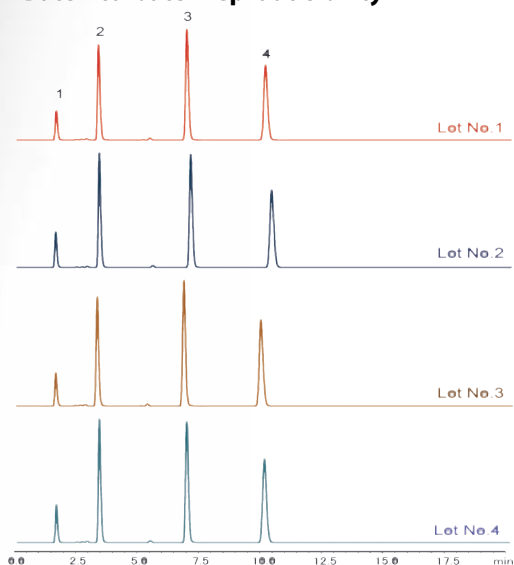
QC-Data

Lower backpressure enables higher throughput



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.

Batch-to-batch reproducibility



Column:	Meteoric Core C18 2.7 µm, 150 x 3.0 mm ID
Part No.:	CAS08SQ7-1503PT
Eluent:	20 mM KH ₂ PO ₄ -H ₃ PO ₄ (pH 3.5) / acetonitrile (40/60)
Flow rate:	0.4 mL/min
Temperature:	37 °C
Detection:	UV at 254 nm
Sample:	1. Uracil 2. 4-n-Butoxybenzoic acid 3. Ethylbenzene 4. n-Propylbenzene

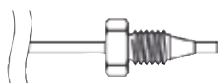


Ordering information

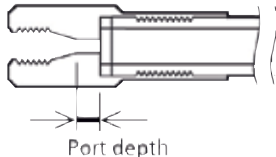
Particle size [μm]	Column size length x ID [mm]	Part number		
		Meteoric Core C18	Meteoric Core C18 BIO	Meteoric Core C8
2.7	30 x 2.1	CAS08SQ7-03Q1PT	CAW16SQ7-03Q1PT	COS08SQ7-03Q1PT
	50 x 2.1	CAS08SQ7-05Q1PT	CAW16SQ7-05Q1PT	COS08SQ7-05Q1PT
	75 x 2.1	CAS08SQ7-L5Q1PT	CAW16SQ7-L5Q1PT	COS08SQ7-L5Q1PT
	100 x 2.1	CAS08SQ7-10Q1PT	CAW16SQ7-10Q1PT	COS08SQ7-10Q1PT
	150 x 2.1	CAS08SQ7-15Q1PT	CAW16SQ7-15Q1PT	COS08SQ7-15Q1PT
	30 x 3.0	CAS08SQ7-0303PT	CAW16SQ7-0303PT	COS08SQ7-0303PT
	50 x 3.0	CAS08SQ7-0503PT	CAW16SQ7-0503PT	COS08SQ7-0503PT
	75 x 3.0	CAS08SQ7-L503PT	CAW16SQ7-L503PT	COS08SQ7-L503PT
	100 x 3.0	CAS08SQ7-1003PT	CAW16SQ7-1003PT	COS08SQ7-1003PT
	150 x 3.0	CAS08SQ7-1503PT	CAW16SQ7-1503PT	COS08SQ7-1503PT
	30 x 4.6	CAS08SQ7-0346PT	CAW16SQ7-0346PT	COS08SQ7-0346PT
	50 x 4.6	CAS08SQ7-0546PT	CAW16SQ7-0546PT	COS08SQ7-0546PT
	75 x 4.6	CAS08SQ7-L546PT	CAW16SQ7-L546PT	COS08SQ7-L546PT
	100 x 4.6	CAS08SQ7-1046PT	CAW16SQ7-1046PT	COS08SQ7-1046PT
	150 x 4.6	CAS08SQ7-1546PT	CAW16SQ7-1546PT	COS08SQ7-1546PT

Column end fitting and column connections

Tubing and connector



Column



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.

Trademark announcement:

Kinetex is a trademark of Phenomenex, Inc.
Cortecs is a trademark of Waters Corp.
Ascentis Express is a trademark of Sigma-Aldrich.



Other brochures available

**„AQ-Validated“ for
stability in 100%
aqueous conditions
(16 p.)**

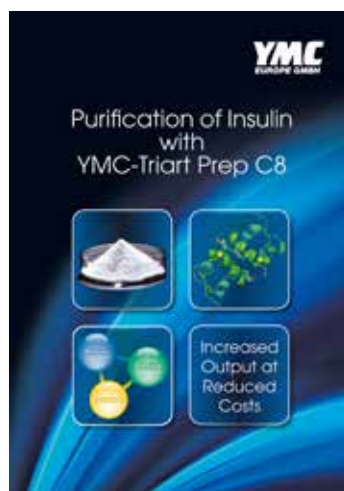
**General Brochure
(52 p.)**

**UHPLC Columns
(24 p.)**



**Prep Brochure
(12 p.)**

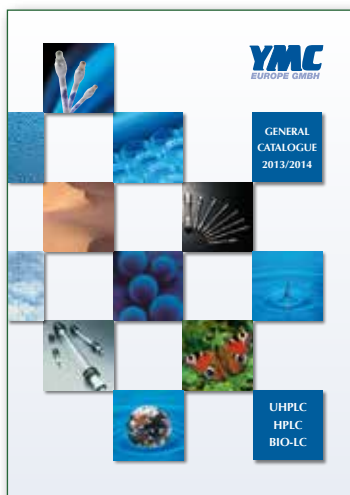
**Insulin Case Study
(16 p.)**



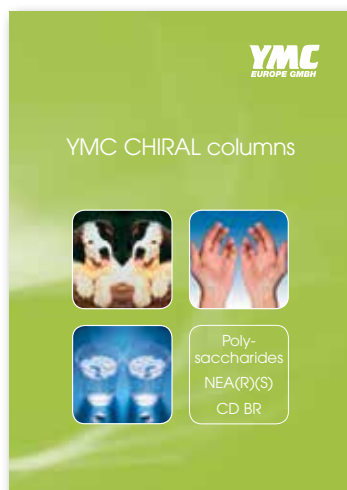


Other brochures available

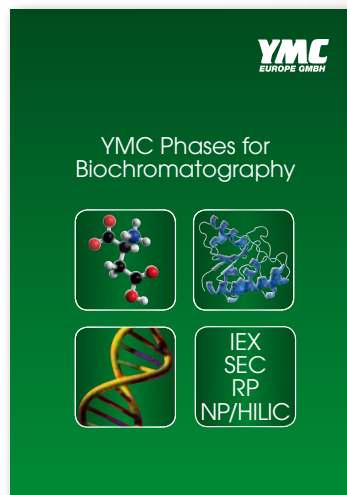
YMC
General Catalogue
UHPLC - HPLC - Bio-LC
(254 p.)



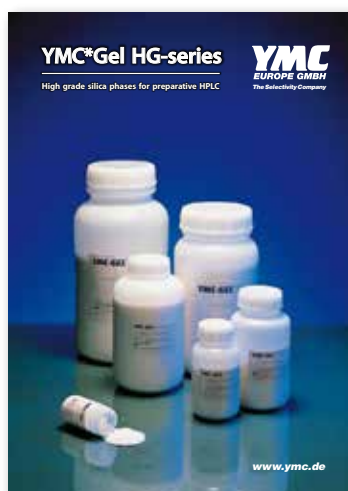
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Chiral Columns
(28 p.)



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Phases for
Biochromatography
(64 p.)



„High Grade“ Silica
Bulk Media (36 p.)



IEX Bulk Media
(16 p.)



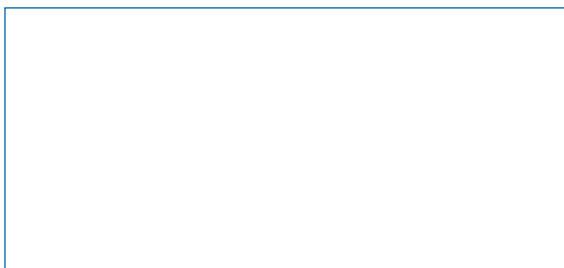


Meteoric Core

Core-Shell Columns for UHPLC & HPLC

YMC
EUROPE GMBH

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