

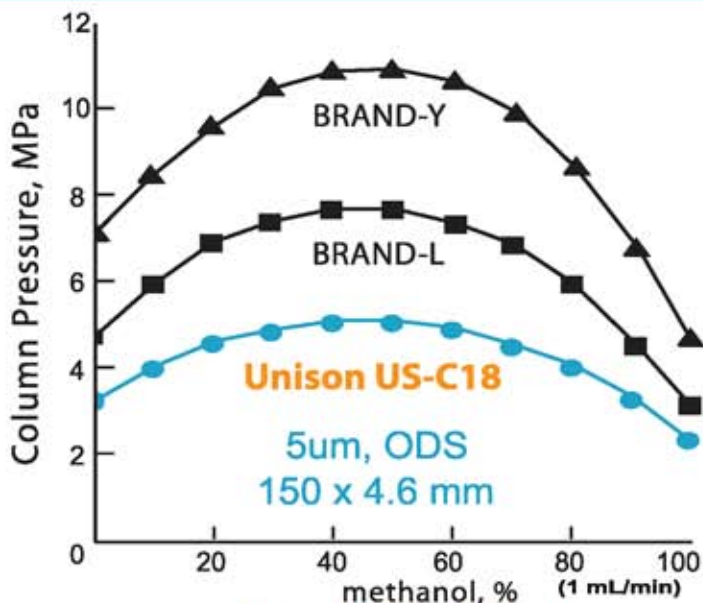
Unison Series

Higher Resolution and Lower Back Pressure for HPLC

Lower Back Pressure

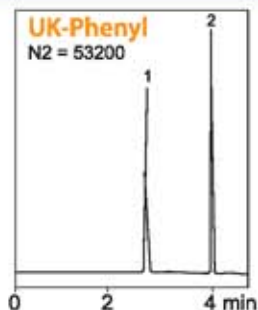
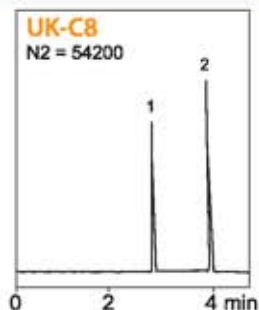
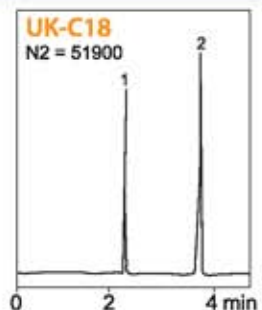
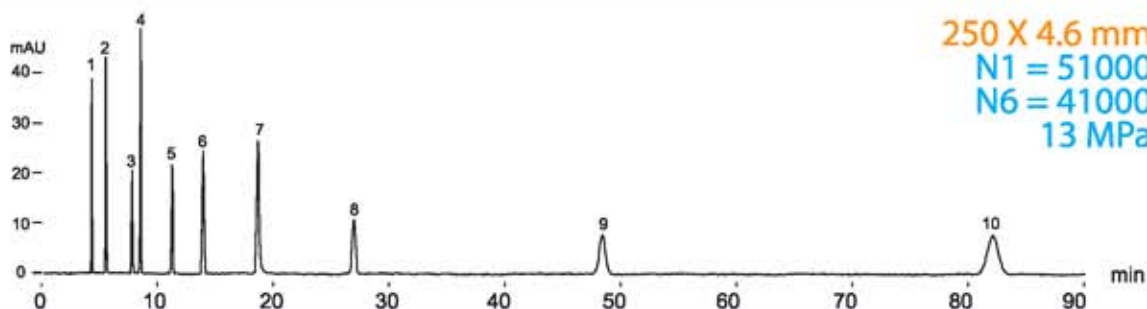
Unison Series columns offer:

- ▲ Higher Column Efficiency
- Lower Back Pressure
- Better Separation of Polar Compounds
- ◆ Variety of Phases
- No Phase Collapse in 100% Aqueous Elution



Note: 1MPa = 145 psi

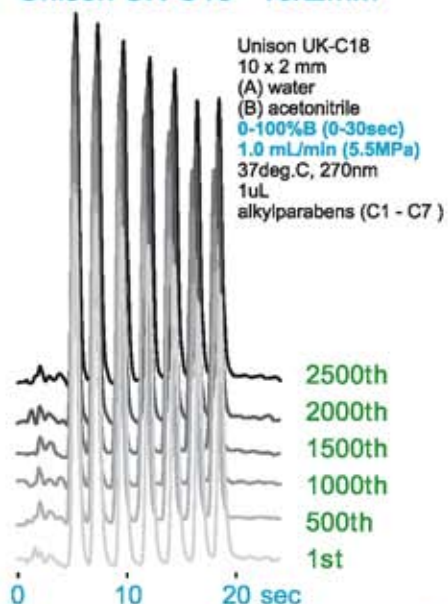
Higher Resolution Analysis For Polar Compounds



water / ACN / AcOH = 40 / 60 / 0.1. 1 mL/min, 270 nm, 1. uracil, 2. methylbenzoate

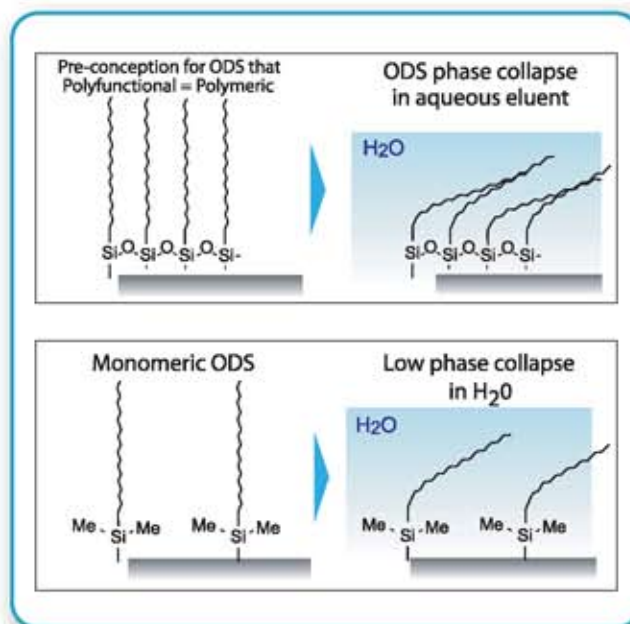
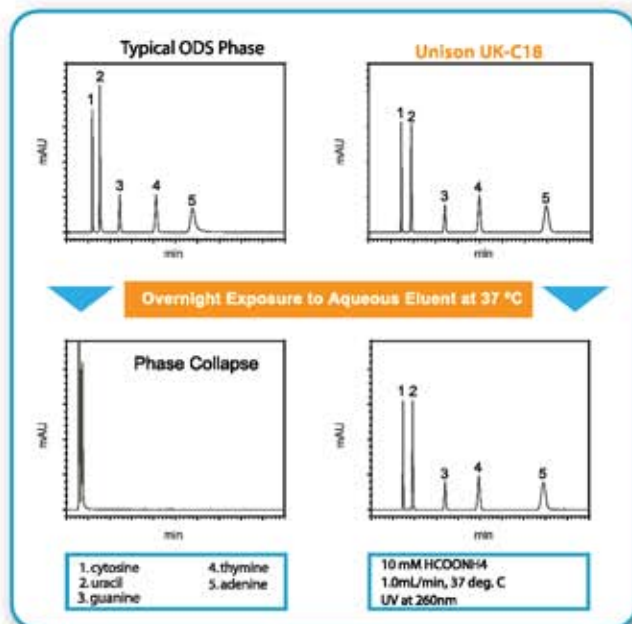
Experience Faster Throughput

Unison UK-C18 10x2mm



For superior throughput, utilize Unison's high efficiency and use a shorter column. Many customers have cut their run times drastically by using our 10mm, 20mm, and 30mm column lengths, while still achieving satisfactory separation. All of these column lengths come with 3µm silica packing material. We advise our customers to test increasingly shorter columns until they find the optimal trade-off between speed and separation.

Avoid Phase Collapse

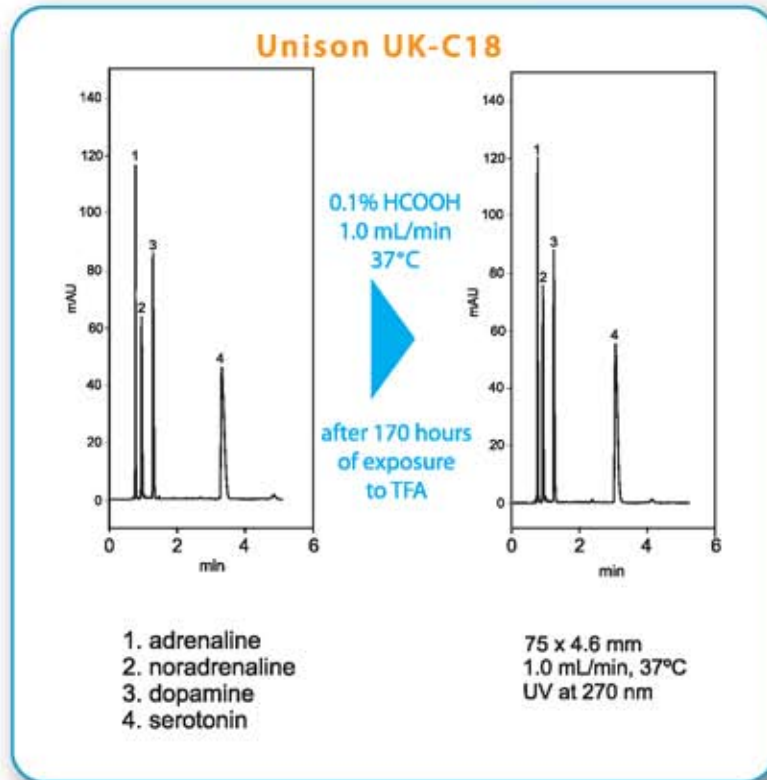


Conventional ODS silica phases, which are designed for the separation of polar compounds, usually have lower coverage than silica stationary phases. This is necessary to avoid phase collapse.

However, Unison provides a medium coverage ODS phase, employing a trifunctional component and a proprietary endcapping technique, which results in a phase that is stable under pH 1.5. Imtakt, Unison's manufacturer, was the first to develop such a novel approach in 1999.

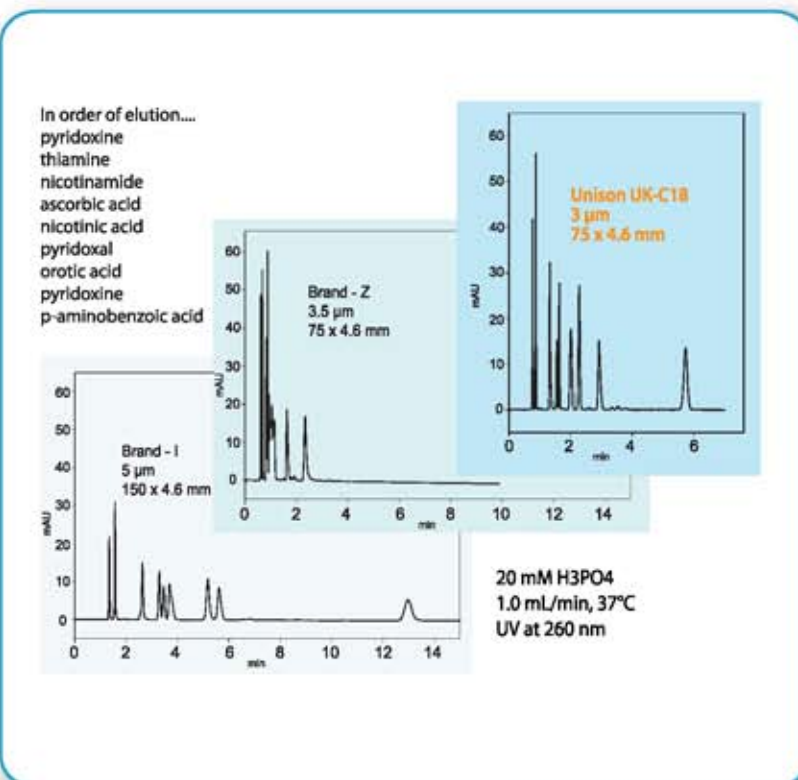
Typical C18 column experience phase collapse in 100% aqueous eluent, which result in loss of retention, leading to poor separation and reproducibility. However, Unison UK-C18 prevents phase collapse and provides stable retention, even for nucleic bases under hydrophilic conditions.

Unison C18 Columns Excellent Retention in Acidic Aqueous Eluent



Formic acid is important for LC-MS. The new ODS phase, Unison UK-C18, showed excellent stability for catecholides after 170 hours of exposure to 0.1% TFA.

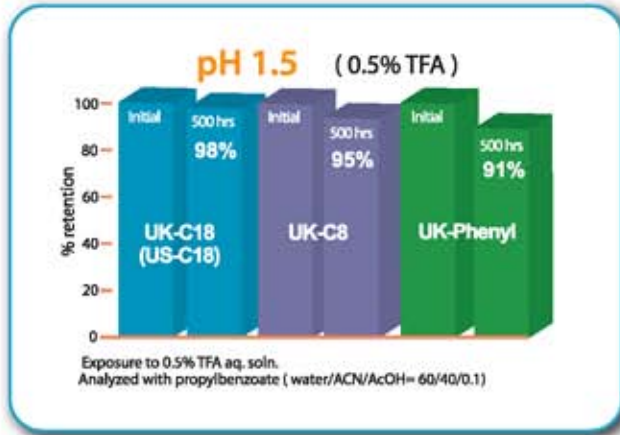
Excellent Vitamin Separation



Hydrophilic vitamins are important analytes and require aqueous eluent under acidic conditions for optimized separation.

Using phosphoric acid eluent, Unison UK-C18 gave excellent peak shapes and rapid separation compared to conventional 5µm, 150mm columns and 3.5µm, 150mm columns.

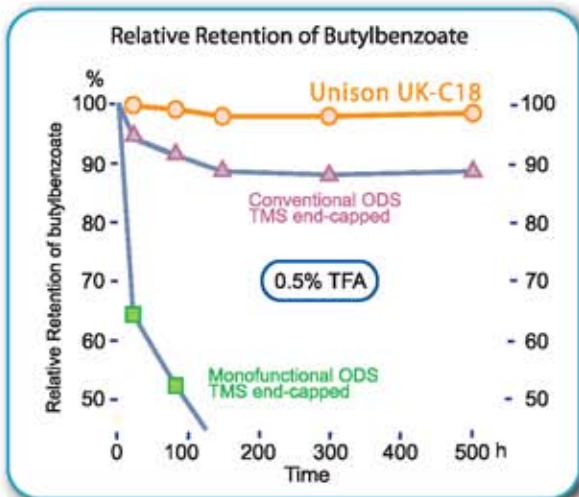
Unison pH Range and Durability



Unison stationary phase possesses high durability, not only with acidic, but also with alkali elutions.

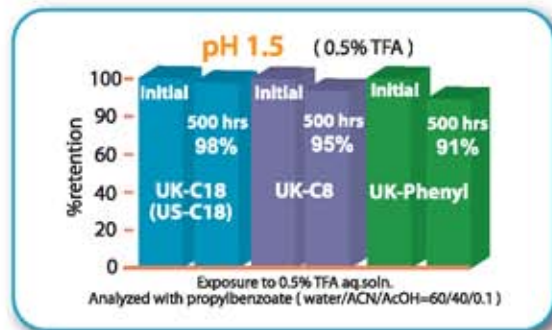
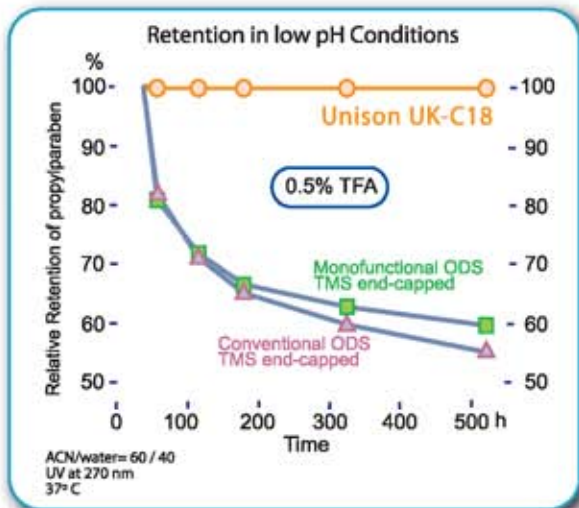
Our unique endcapping provides C8, phenyl, and C18 phases with improved durability for a wide pH range.

Strong Acid Stability



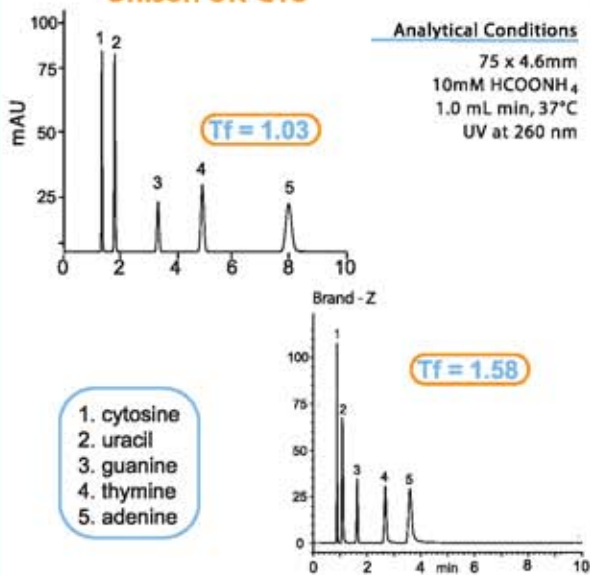
Our studies show that trifunctional, TMS endcapped stationary phases provide greater stability under extreme acidic conditions (pH 1.5) when compared to traditional monofunctional ODS TMS endcapped columns.

However, Unison UK-C18 provides the best stability. Our proprietary endcapping is the key to hydrophilic compound separations under acidic conditions.



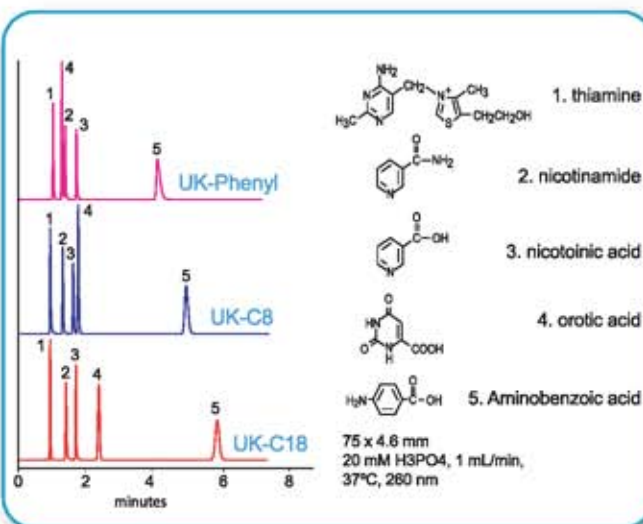
Separation of Polar Compounds

Unison UK-C18



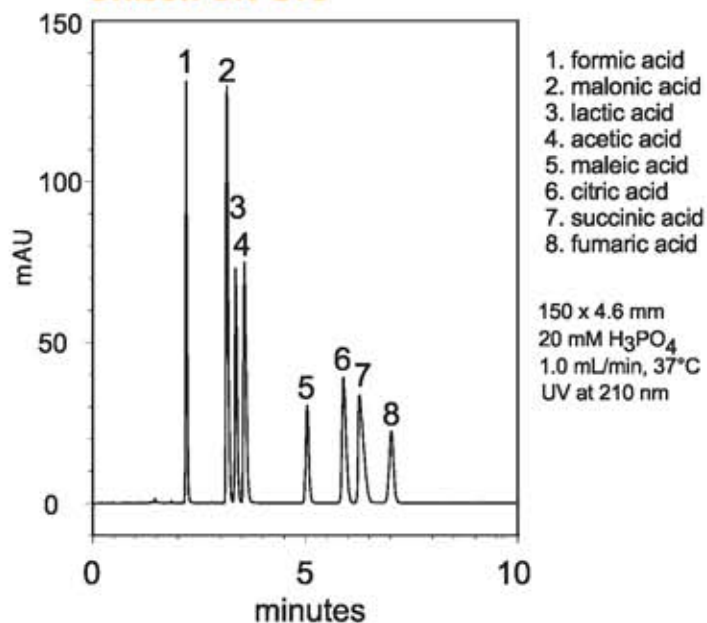
Nucleic bases, especially adenine, frequently give poor peak symmetry on commercial ODS columns under hydrophilic conditions.

Unison UK-C18 provides excellent peak symmetry and separation for these compounds and for other polar compounds. All of the Unison phases excel at the separation of polar compounds.



Organic Acids in Low pH

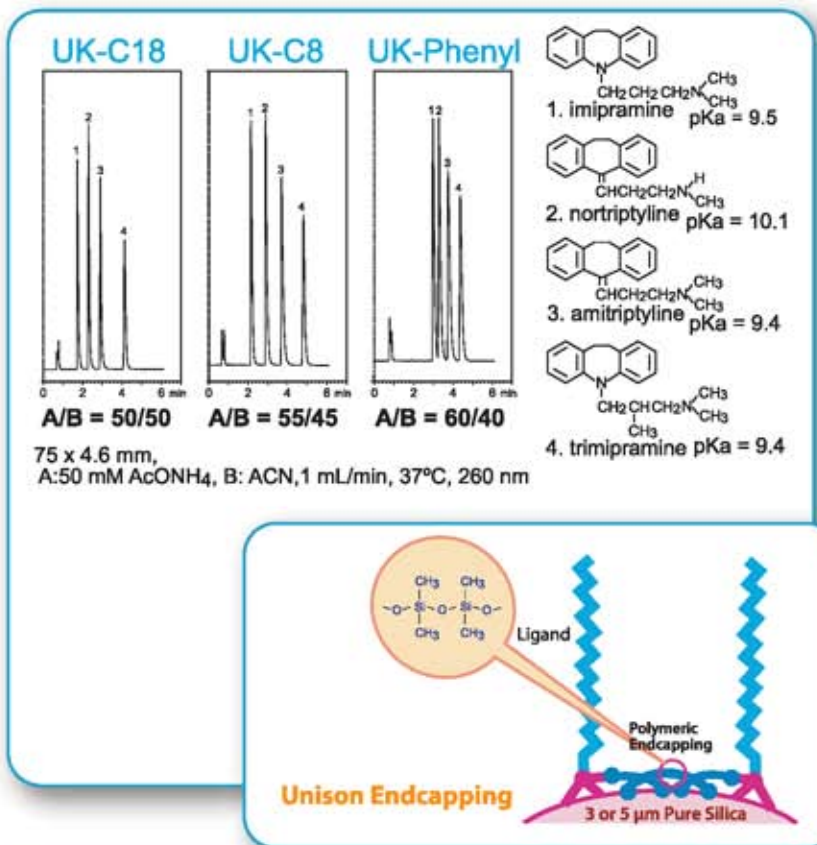
Unison UK-C18



Reverse phase separation of organic acids is difficult. Unison UK-18 provides exceptional separation and peak shapes.

Conventional separations of organic acids use a 250mm column, but Unison delivers comparable separations with a shorter 150mm column.

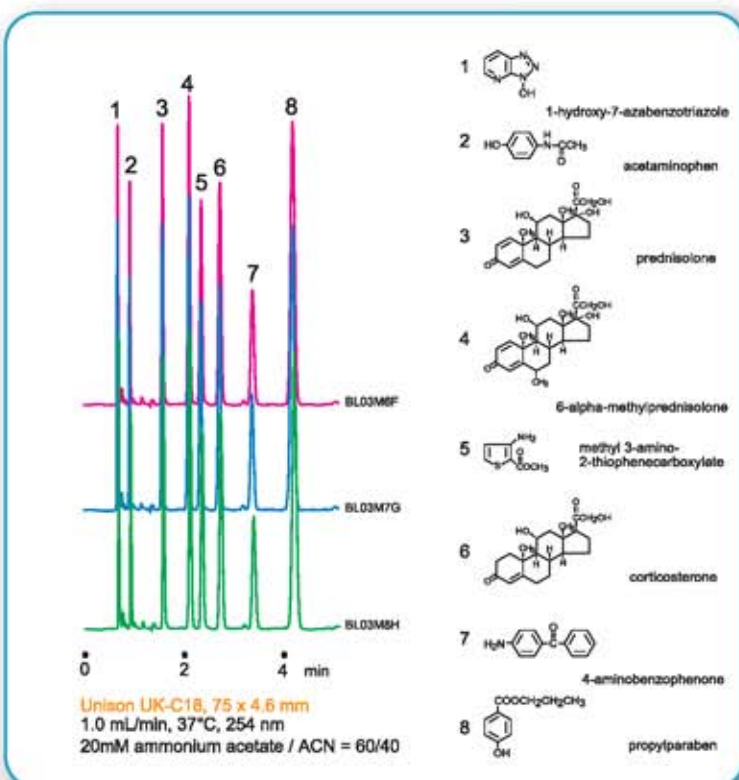
Unique Endcapping



Unison employs a unique endcapping technology. As a result, the column provides excellent elution characteristics for difficult separations, such as that of basic compounds. This applies not only to ODS, but also C8 and phenyl columns.

For basic anti-depressant drugs, which exhibit a high pKa value, all of our stationary phases show excellent peak shape. Separation is possible with the use of ammonium acetate, a volatile buffer for LC-MS. This allows you to avoid using inorganic salts typically used for LC-UV analysis, such as phosphate buffers.

Excellent Batch-to-Batch Reproducibility

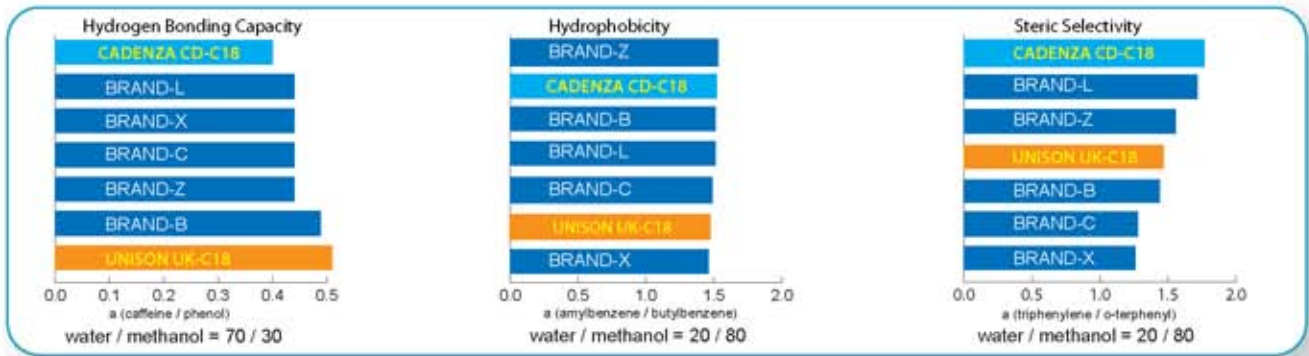


This data shows the exceptional batch-to-batch reproducibility for Unison UK-C18, a column packed with high efficiency 3µm C18 silica particles.

The Unison series packing material is manufactured in a proprietary manner different from conventional methods. This development was completed not only to achieve high-efficiency packing material but also to achieve high levels of batch-to-batch reproducibility.

Our supplier puts incredible consideration into their manufacturing process in order to provide users with the highest product quality.

Hydrogen Bonding Capacity / Hydrophobicity / Steric Selectivity



■ The big difference in hydrogen bonding capacity is that Unison offers longer retention of high polarity compounds. Unison's unique technology offers hydrogen bonding capacity even after a high degree of endcapping.

■ Steric selectivity becomes important when compounds have similar molecular structures. Unison technology makes this area a strength.

■ Hydrophobicity is the key interaction to determine material retention. Other high-polarity column technologies usually have lower hydrophobicity, which lessens retention. However, Unison technology does not require a reduction of hydrophobicity, which is one of the underlying reasons for Unison's superior resolution.

Unison UK-C18 3 µm Particle Size Stationary Phase	Length mm	Analytical Columns				Semi-Prep Columns		Guard Cartridges		
		Internal Diameter						Size	Code	Pieces
		1	2	3	4.6	6	10	1mm	GCUK9C	3
	10		UK020	UK030	UK000			2.6mm	GCUK0S	3
	20		UK029	UK039	UK009			10mm	GCUK0M	2
	30	UK011	UK021	UK031	UK001	UK061	UK0P1			
	50	UK012	UK022	UK032	UK002	UK062	UK0P2			
	75	UK013	UK023	UK033	UK003	UK063	UK0P3			
	100	UK014	UK024	UK034	UK004	UK064	UK0P4			
	150	UK015	UK025	UK035	UK005	UK065	UK0P5			
	250	UK016	UK026	UK036	UK006	UK066	UK0P6			
	500				UK007					

Unison US-C18 5 µm Particle Size Stationary Phase	Length mm	Analytical Columns				Semi-Prep Columns		Prep Columns	
		Internal Diameter							
		1	2	3	4.6	6	10	20	
	30	US011	US021	US031	US001	US061	US0P1		
	50	US012	US022	US032	US002	US062	US0P2	US0Q2	
	75	US013	US023	US033	US003	US063	US0P3		
	100	US014	US024	US034	US004	US064	US0P4	US0Q4	
	150	US015	US025	US035	US005	US065	US0P5	US0Q5	
	250	US016	US026	US036	US006	US066	US0P6	US0Q6	

Guard Cartridges		
Size	Code	Pieces
1mm	GCUK9C	3
2.6mm	GCUK0S	3
10mm	GCUK0M	2

Guard Holders	
Column Coupler Included	
1-6mm	GCH01S
10mm	GCH02M

Guard Cartridges		
Size	Code	Pieces
1mm	GCU50C	3
2.6mm	GCU50S	3
10mm	GCU50M	2

Guard Holders	
Column Coupler Included	
1-6mm	GCH01S
10mm	GCH02M