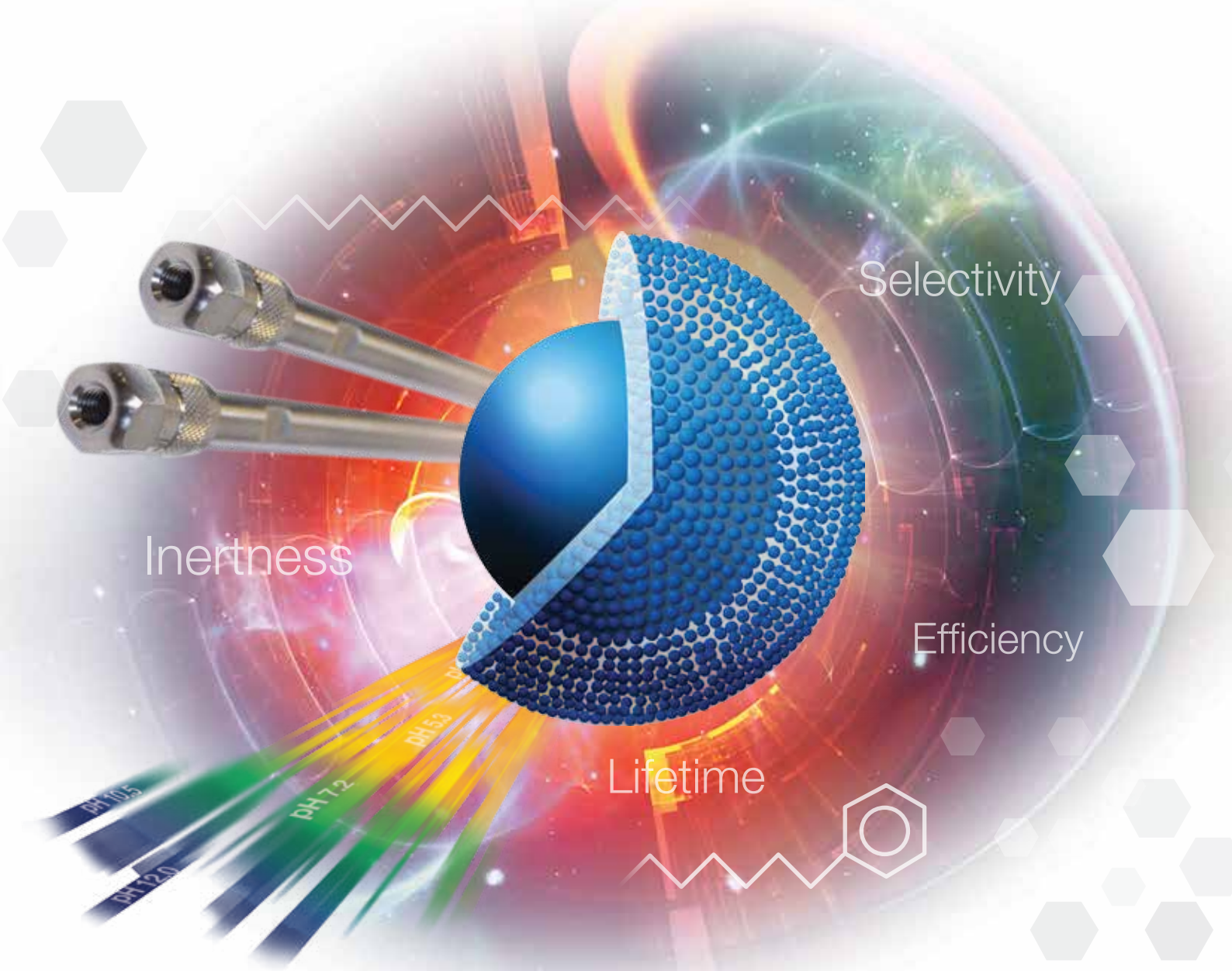
ACE® UltraCore™

All the proven advantages of ACE UHPLC / HPLC columns...
...now available with solid-core particles



- Ultra-inert solid-core UHPLC / HPLC columns
- High efficiency 2.5µm and 5µm solid-core particles
- SuperC18 and SuperPhenylHexyl phases with extended pH stability

ACE® UltraCore™

Ultra-Inert Solid-Core Columns with Extended pH Stability

Ultra-Inert Solid-Core Particles

- 2.5µm and 5µm ultra pure solid-core (superficially porous)[1] particles
- Monodisperse particle distribution combines high efficiency with low pressure
- Achieve UHPLC efficiency and performance on HPLC instrumentation

SuperC18™ and SuperPhenylHexyl™ Phases

- Two bonded phases give complementary selectivity for rapid, systematic method development
- Excellent reproducibility and column lifetime
- Ultra-inert phases ensure excellent peak shape

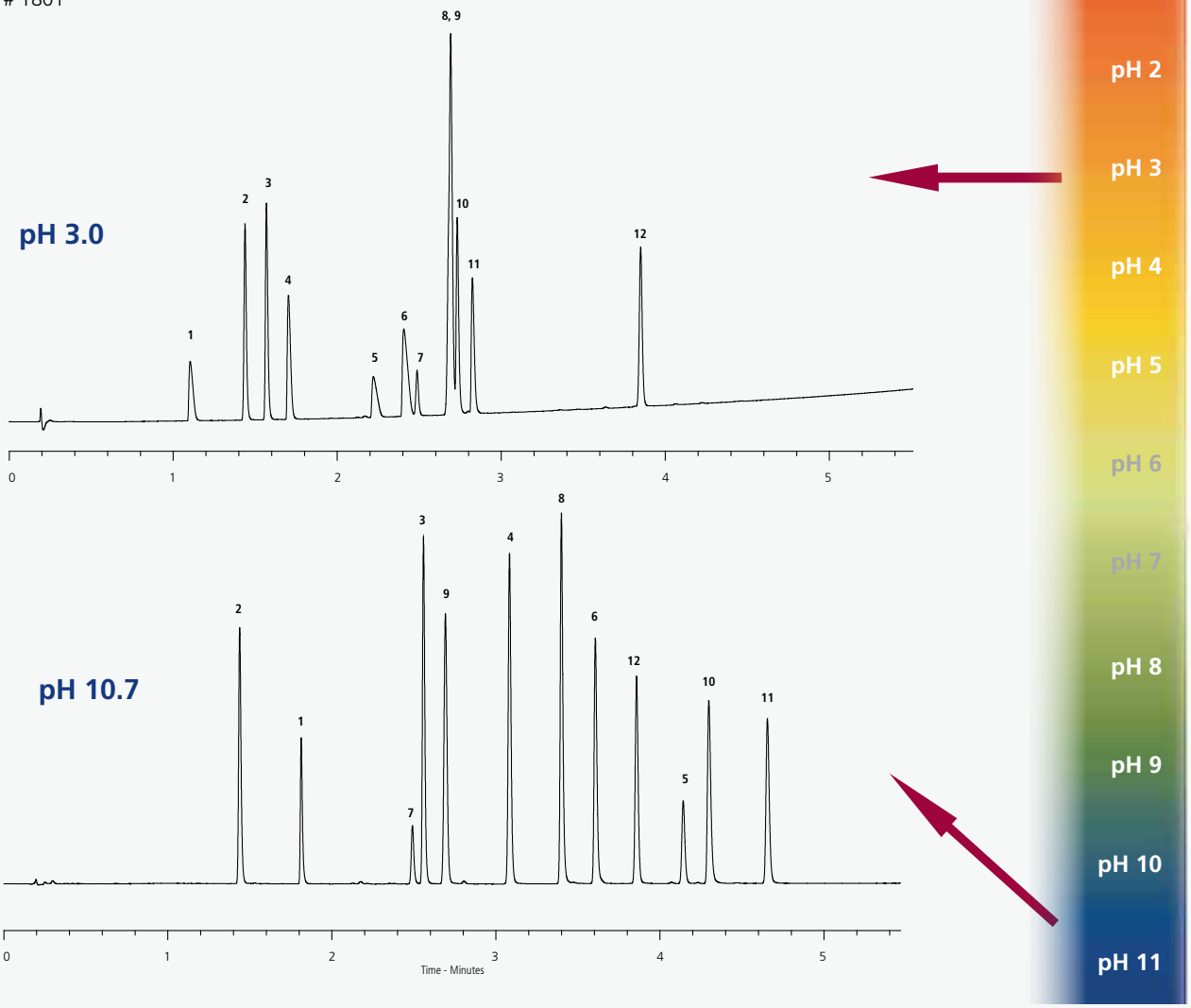
Extended pH Stability

- Exploit selectivity changes at low, intermediate and high pH
- Designed for use with LC/MS compatible buffers
- Recommended pH range 1.5 – 11.0

[1]Also referred to as Fused-Core®, core-shell, SPP or core enhanced particles.

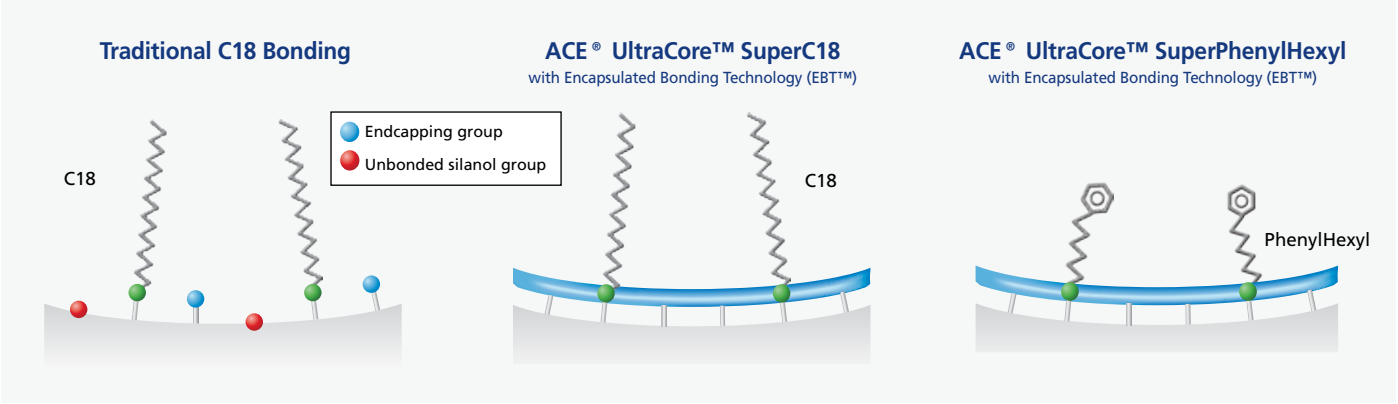
Exploit Selectivity by Adjusting pH

Application # 1801



Column: ACE UltraCore 2.5µm SuperC18, 50 x 2.1mm
Sample: 1) atenolol 2) methylphenylsulphoxide 3) eserine 4) prilocaine 5) bupivacaine 6) tetracaine 7) 1,2,3,4-tetrahydro-1-naphthol 8) carvedilol 9) nitrobenzene 10) methdilazine 11) amitriptyline 12) valerophenone
Temperature: 40°C Flow Rate: 0.60ml/min Wavelength: 254nm Gradient: 3 – 100% B in 5 minutes
Acidic Mobile Phase: A: 20mM ammonium formate in H_2O (pH 3.0) B: 20mM ammonium formate (pH 3.0) in 90:10 (v/v) MeCN/H_2O
Basic Mobile Phase: A: 0.1% NH_3 (= 18mM) in H_2O (pH 10.7) B: 0.1% NH_3 (=18mM), pH 10.7 in 90:10 (v/v) MeCN/H_2O

Encapsulated Bonding Technology (EBT™) for Improved Chromatography and Stability



ACE UltraCore SuperC18 and SuperPhenylHexyl phases are manufactured using our unique Encapsulated Bonding Technology (EBT™).

This technology dramatically increases ligand coverage of the silica surface and effectively eliminates the negative effects of unbonded silanol groups.

The higher ligand coverage results in improved inertness, chromatographic performance and stability.

ACE® UltraCore™ Stationary Phases Virtually Eliminate the Negative Effects of Silanols on UHPLC & HPLC Separations

Comparison of Column Inertness

- Solid-core columns from leading manufacturers investigated
- Comparison of column efficiency for pyridine, a basic molecule
- Efficiency measured at 50% peak height

Peak Efficiency Comparison

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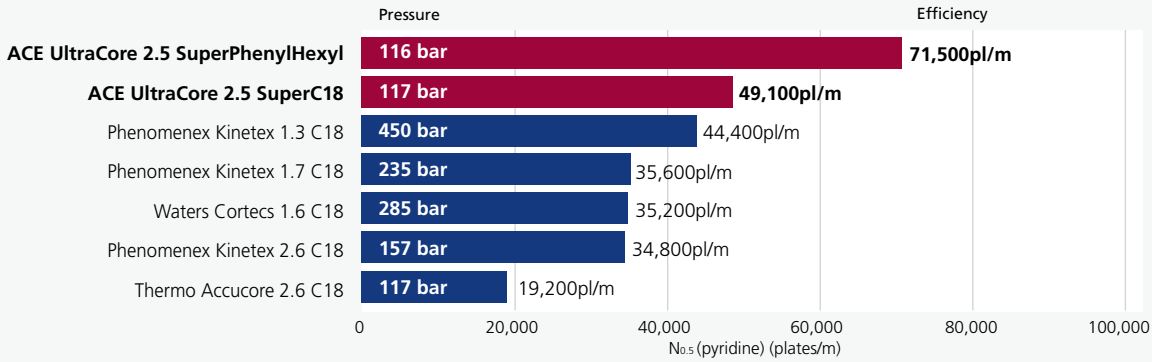
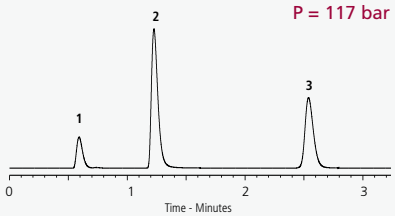
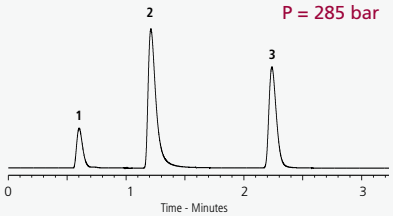
Application # 1802



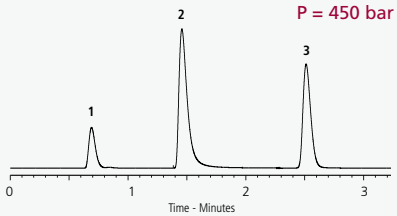
ACE UltraCore 2.5 SuperC18
$N_{0.5}$(pyr) = 49,100pl/m



Waters Cortecs 1.6 C18
$N_{0.5}$(pyr) = 35,200pl/m



Phenomenex Kinetex 1.3 C18
$N_{0.5}$(pyr) = 44,400pl/m



Column Dimensions: 50 x 2.1mm Sample: 1) uracil 2) pyridine 3) phenol
Mobile Phase: 30:70 (v/v) MeOH/10mM NH_4OAc in H_2O (pH 5.8) Flow Rate: 0.20ml/min Temperature: 22°C Wavelength: 254nm
Comparative data may not be representative of all applications. Please see back page for acknowledgement of trademarks.

Product Availability and Specifications

Phase	Functional Group	Particle Size (µm)	Pore Size (Å)	Surface Area (m^2/g)	Carbon Load (%)	Maximum pH Range	USP Listing
ACE UltraCore 2.5 SuperC18	Octadecyl encapsulated	2.5	95	130	7.0	1.5-11.0[a]	L1
ACE UltraCore 2.5 SuperPhenylHexyl	Phenyl-Hexyl encapsulated	2.5	95	130	4.6	1.5-11.0[a]	L11
ACE UltraCore 5 SuperC18	Octadecyl encapsulated	5	95	100	5.4	1.5-11.0[a]	L1
ACE UltraCore 5 SuperPhenylHexyl	Phenyl-Hexyl encapsulated	5	95	100	3.6	1.5-11.0[a]	L11

[a]ACE UltraCore columns are designed for use with LC/MS compatible buffers. Further information is contained within "ACE UltraCore – A Guide to Buffer Selection" - please contact your distributor to request your FREE copy or visit www.ace-hplc.com.

To further extend UHPLC and HPLC column lifetimes, ACE pre-column filters are recommended - for further details please contact your distributor or visit www.ace-hplc.com.
For HPLC column connections up to 5000 psi, PEEK™ fingertight fittings (p/n ACE-CC10) are recommended - for further details please contact your distributor or visit www.ace-hplc.com.
For UHPLC column connections up to 25000 psi, reuseable fittings (p/n EXL-CC10) are recommended - for further details please contact your distributor or visit www.ace-hplc.com.

ACE UltraCore 2.5µm SuperC18 UHPLC/HPLC Columns (UHPLC/HPLC hardware format with 1000 bar/15000 psi pressure limit)

Column Diameter	Column Length							
	20mm	30mm	35mm	50mm	75mm	100mm	125mm	150mm
2.1mm	CORE-25A-0202U	CORE-25A-0302U	CORE-25A-3502U	CORE-25A-0502U	CORE-25A-7502U	CORE-25A-1002U	CORE-25A-1202U	CORE-25A-1502U
3.0mm	CORE-25A-0203U	CORE-25A-0303U	CORE-25A-3503U	CORE-25A-0503U	CORE-25A-7503U	CORE-25A-1003U	CORE-25A-1203U	CORE-25A-1503U
4.6mm	CORE-25A-0246U	CORE-25A-0346U	CORE-25A-3546U	CORE-25A-0546U	CORE-25A-7546U	CORE-25A-1046U	CORE-25A-1246U	CORE-25A-1546U

ACE UltraCore 2.5µm SuperPhenylHexyl UHPLC/HPLC Columns (UHPLC/HPLC hardware format with 1000 bar/15000 psi pressure limit)

Column Diameter	Column Length							
	20mm	30mm	35mm	50mm	75mm	100mm	125mm	150mm
2.1mm	CORE-25B-0202U	CORE-25B-0302U	CORE-25B-3502U	CORE-25B-0502U	CORE-25B-7502U	CORE-25B-1002U	CORE-25B-1202U	CORE-25B-1502U
3.0mm	CORE-25B-0203U	CORE-25B-0303U	CORE-25B-3503U	CORE-25B-0503U	CORE-25B-7503U	CORE-25B-1003U	CORE-25B-1203U	CORE-25B-1503U
4.6mm	CORE-25B-0246U	CORE-25B-0346U	CORE-25B-3546U	CORE-25B-0546U	CORE-25B-7546U	CORE-25B-1046U	CORE-25B-1246U	CORE-25B-1546U

ACE UltraCore 5µm SuperC18 UHPLC/HPLC Columns (UHPLC/HPLC hardware format with 1000 bar/15000 psi pressure limit)

Column Diameter	Column Length								
	20mm	30mm	35mm	50mm	75mm	100mm	125mm	150mm	250mm
2.1mm	CORE-5A-0202U	CORE-5A-0302U	CORE-5A-3502U	CORE-5A-0502U	CORE-5A-7502U	CORE-5A-1002U	CORE-5A-1202U	CORE-5A-1502U	CORE-5A-2502U
3.0mm	CORE-5A-0203U	CORE-5A-0303U	CORE-5A-3503U	CORE-5A-0503U	CORE-5A-7503U	CORE-5A-1003U	CORE-5A-1203U	CORE-5A-1503U	CORE-5A-2503U
4.6mm	CORE-5A-0246U	CORE-5A-0346U	CORE-5A-3546U	CORE-5A-0546U	CORE-5A-7546U	CORE-5A-1046U	CORE-5A-1246U	CORE-5A-1546U	CORE-5A-2546U

ACE UltraCore 5µm SuperPhenylHexyl UHPLC/HPLC Columns (UHPLC/HPLC hardware format with 1000 bar/15000 psi pressure limit)

Column Diameter	Column Length								
	20mm	30mm	35mm	50mm	75mm	100mm	125mm	150mm	250mm
2.1mm	CORE-5B-0202U	CORE-5B-0302U	CORE-5B-3502U	CORE-5B-0502U	CORE-5B-7502U	CORE-5B-1002U	CORE-5B-1202U	CORE-5B-1502U	CORE-5B-2502U
3.0mm	CORE-5B-0203U	CORE-5B-0303U	CORE-5B-3503U	CORE-5B-0503U	CORE-5B-7503U	CORE-5B-1003U	CORE-5B-1203U	CORE-5B-1503U	CORE-5B-2503U
4.6mm	CORE-5B-0246U	CORE-5B-0346U	CORE-5B-3546U	CORE-5B-0546U	CORE-5B-7546U	CORE-5B-1046U	CORE-5B-1246U	CORE-5B-1546U	CORE-5B-2546U

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ACE® UltraCore™ columns are available through our international distributor network

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