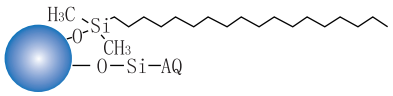
Ultisil™ AQ-C18
--The most widely used column in food industry

Ultisil™ AQ-C18 columns are designed to have extended retention and selectivity for hydrophilic and polar compounds, which are poorly or not at all retained on other phases. A proprietary bonding chemistry, Ultisil™ AQ-C18 avoids so-called "phase collapse", even when 100% water is used, a phenomenon that conventional C18 columns typically exhibit at high water content in the mobile phase. Ultisil™ AQ-C18 phase is fully end-capped to ensure the best peak shapes of polar and basic compounds and longer lifetime. Typical applications are separations of water soluble compounds that cannot be retained on traditional C18 phase. Examples include biomolecules, metabolites, and pharmaceutical degradants such as organic acids, water-soluble vitamins, oligosaccharides, amino acids, and small peptides and nucleotides.

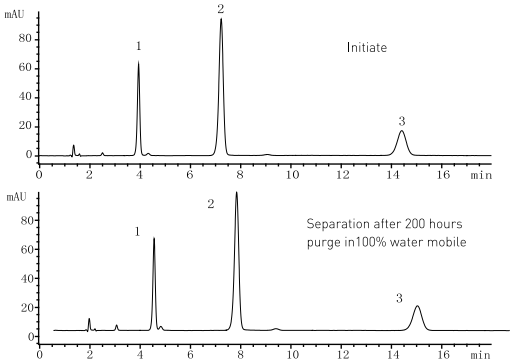
Features:

- **No phase collapse, suitable for high aqueous mobile phase**
- **Less retentive than XB-C18 for non-polar compounds**
- **Increased retention for polar and water-soluble compounds**

Ultisil™ AQ-C18

Structural Formula	
pH Range	1.5-10.0
Particle Size	3 μm, 5 μm, 10 μm
Surface Area(m^2/g)	320(120 Å)
Carbon Loading(%)	12(120 Å)
USP List	L1
Endcapped	Yes

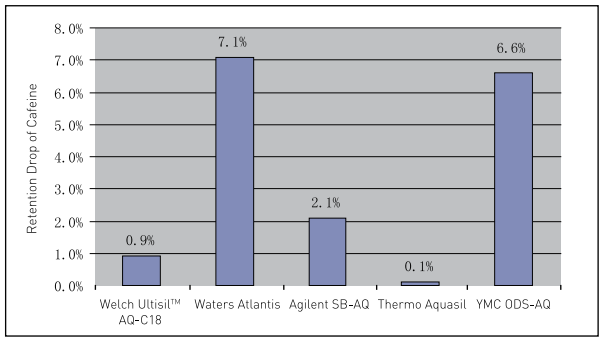
Phase collapse research

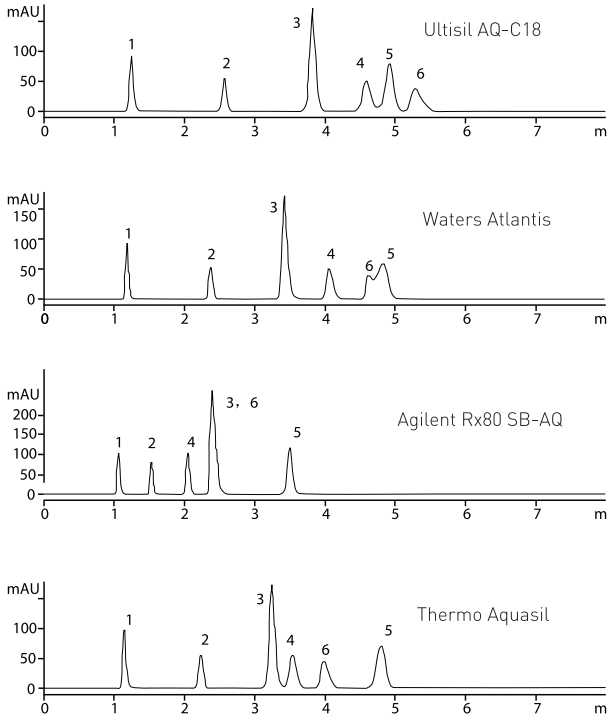


Column:	Ultisil™ AQ-C18, 4.6 ×100 mm, 5 μm
Mobile Phase:	Acetonitrile/50 mM phosphate(pH 3.5)=10/90
Detector:	215nm
Temperature:	25°C
Flow Rate:	1.0 mL/min
Samples:	1.Theophylline 2.Caffeine 3.Phenol

Phase Collapse Comparison with Other Brands

Peak shape is excellent for acid, basic and neutral samples on AQ-C18. When in highly aqueous mobile phase, retention for polar compounds such as organic acids, peptides, nucleosides and water soluble vitamins is strong.
Under the same condition, when compared with other brands in highly aqueous mobile phase, Ultisil™ AQ-C18 shows excellent resistance to phase collapse.



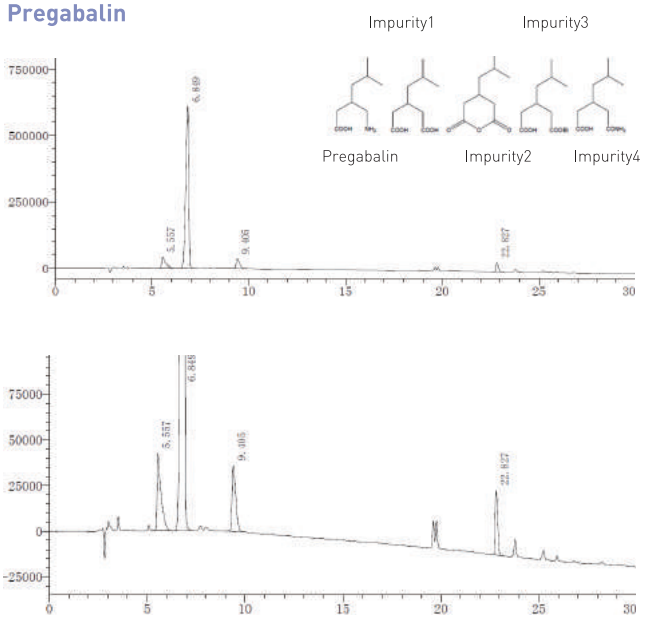


Column:	Ultisil™ AQ-C18, 4.6 ×100 mm, 5 μm
Mobile Phase:	50 mM phosphate, pH2.5
Detector:	210 nm
Temperature:	25°C
Flow Rate:	1.0 mL/min
Samples:	1. Oxalic acid 2. Lactic acid 3. Maleic acid 4. Citric acid 5. Fumaric acid 6. Succinic acid

How to choose XB-C18 and AQ-C18?

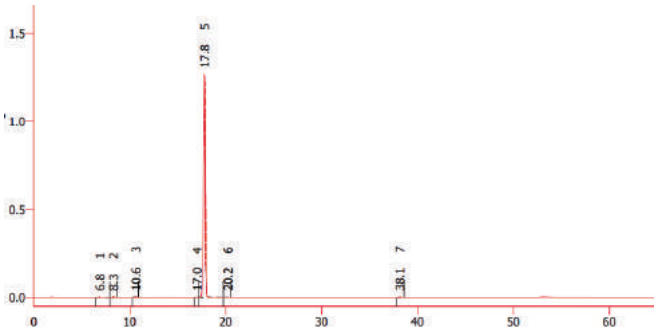
XB-C18	AQ-C18
• Suitable for separation of most pharmaceuticals, environment and chemical compounds • Excellent peak shape for basic and polar samples	• Suitable for water soluble strong polar samples, such as traditional Chinese medicine ingredients, food, beverage, organic acids, peptides, nucleosides and water solution vitamins • Best choice for mobile phase that contains <20% organic content

Pregabalin



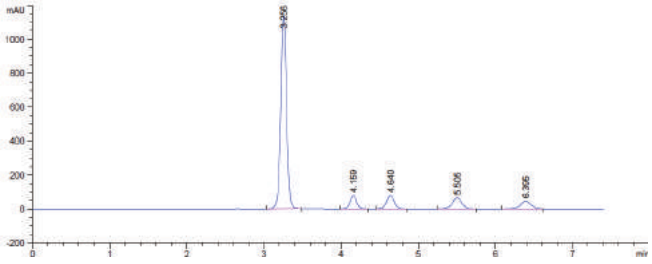
Column:	Ultisil™ AQ-C18, 4.6 ×250 mm, 5 μm
Mobile Phase:	A: 40 mm $(NH_4)_2HPO_4$/methanol=80/20 B: acetonitrile/methanol=90/10
Gradient Program:	Time(min) A B 0 98 2 5 98 2 30 50 50 31 50 2
Flow Rate:	1.0 mL/min
Detector:	210 nm
Temperature:	35°C
Injection Volume:	20 μL

Vilazodone hydrochloride



Column:	Ultisil™ AQ-C18, 4.6 ×250 mm, 5 µm
Mobile Phase:	Mobile phase A: 0.025 mol/L K_2HPO_4, adjust pH 6.0 with H_3PO_4 Mobile Phase B: acetonitrile
Gradient Program:	Time(min) A B 0 75 25 3 75 25 25 60 40 40 35 65 50 35 65 50.1 75 25 65 75 25
Flow Rate:	1.0 mL/min
Detector:	240 nm
Temperature:	40°C
Injection Volume:	20 µL

NMN(nicotinamide mononucleotide)



Column:	Ultisil™ AQ-C18, 4.6 ×250 mm, 5 µm
Mobile Phase:	40mM KH_2PO_4 solution*/methanol=68/32 * Dissolve 2.72 g of KH_2PO_4 and 0.85 g of TBAHS in 500 mL water, adjust pH 6.2 with 1 mol/L KOH
Detector :	259 nm
Temperature :	25 °C
Flow Rate :	1.0 mL/min
Injection Volume	10 µL
Samples:	1. NMN 2. nicotinamide 3. AMP 4. ADP 5. ATP

Ordering Information

Ultisil™ AQ-C18

Particle size	Column ID (mm)	Column Length (mm)										Guard Cartridge	Guard Column Holder
		30	33	50	75	100	125	150	200	250	300	10mm length	
3 µm 120 Å	2.1	00207-21009	09207-21009	00207-21010	00207-21011	00207-21012	00207-21013	00207-21014	00207-21015	00207-21016	-	00808-23003	00808-01107
	3.0	00207-21018	-	00207-21019	00207-21020	00207-21021	00207-21022	00207-21023	00207-21024	00207-21025	-	00808-23003	00808-01107
	4.0	00207-21027	-	00207-21028	00207-21029	00207-21030	00207-21031	00207-21032	00207-21033	00207-21034	-	00808-03003	00808-01101
	4.6	00207-21036	11207-21036	00207-21037	00207-21038	00207-21039	00207-21040	00207-21041	00207-21042	00207-21043	-	00808-03003	00808-01101
5µm 120Å	2.1	00207-31009	09207-31009	00207-31010	00207-31011	00207-31012	00207-31013	00207-31014	00207-31015	00207-31016	-	00808-24003	00808-01107
	3.0	00207-31018	-	00207-31019	00207-31020	00207-31021	00207-31022	00207-31023	00207-31024	00207-31025	-	00808-24003	00808-01107
	4.0	00207-31027	-	00207-31028	00207-31029	00207-31030	00207-31031	00207-31032	00207-31033	00207-31034	00207-31035	00808-04003	00808-01101
	4.6	00207-31036	11207-31036	00207-31037	00207-31038	00207-31039	00207-31040	00207-31041	00207-31042	00207-31043	00207-31044	00808-04003	00808-01101
10 µm 120Å	4.0	-	-	-	-	-	-	00207-41032	00207-41033	00207-41034	00207-41035	00808-05003	00808-01101
	4.6	-	-	-	-	-	-	00207-41041	00207-41042	00207-41043	00207-41044	00808-05003	00808-01101

Don't see your needed size or format? Contact Welch or your local distributor for other dimensions.