

Aichrom Series HPLC Columns

Abel Industries (Canada) Ltd. was established in 1997 with its headquarter in Vancouver, British Columbia, Canada. It is a manufacturer and service company focusing on chromatographic separations and lab supplies. Aichrom series HPLC column is one of the proud products of Abel. Aichrom series HPLC columns provide the superior performance in terms of efficiency, resolution, peak shape and customer application competability. Abel offers a variety of choices for analytical separation solutions.

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AichromBond XB Series Columns

AichromBond XB-1

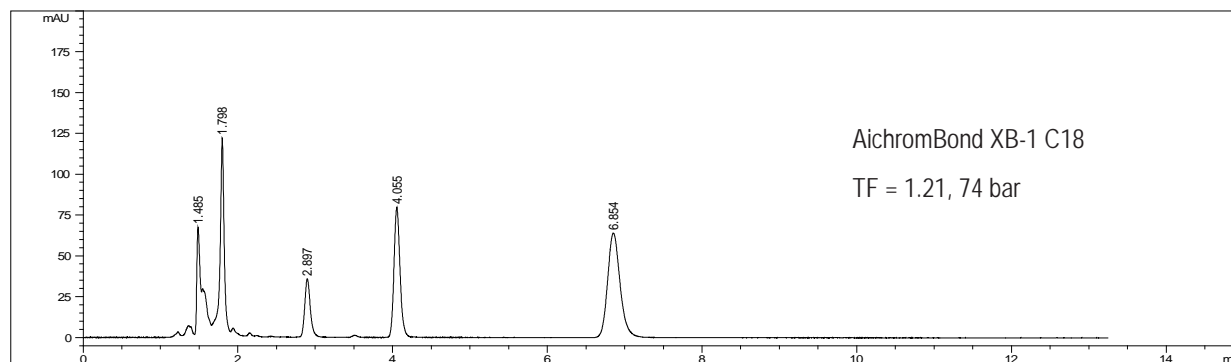
AichromBond XB-1 columns are made from the spherical silica particles, which are the highest purity particles in the market. They have the maximum hydrophobicity and high pH tolerance. The maximum bonding density allows for the least interaction between the analytes and the silanol groups. This makes AichromBond XB-1 columns have extraordinary column stability. AichromBond provides both normal and reverse columns to meet a variety of application requirements, including NH₂, CN, Silica, C18, C8, Phenyl.

■ The characteristics include:

- Extremely inertness at any pH for any compounds
- High stability at high pH (up to 10)
- Good shape selectivity
- High volume and mass loadability.

The highly restrict QA tests ensure the batch-to-batch reproducibility of the remarkable performance.

Figure 1 A typical QA test chromatogram of an AichromBond XB-1 C18 column



Sample: 1. Uracil, 2. 2,3 dihydroxy naphthalene, 3. Propanolol, 4. Naphthalene, 5. Amitriptyline

Injection: 5 μ L

Column: 4.6 mm x 150 mm, 5 μ m

Mobile phase: 10 mmol sodium phosphate buffer (pH=7)/Methanol = 15:85

Flow: 1 mL/min

Temperature: 30 $^{\circ}$ C

Detection: UV 254 nm

■ Ordering Information

AichromBond XB-1

Dimension(mm)	Particle Size(μm)	Part Number		
		XB-1 C18	XB-1 C8	XB-1 Phenyl
2.1x30	5	185XB2031	105XB2031	115XB2031
2.1x50	5	185XB2051	105XB2051	115XB2051
2.1x100	5	185XB2101	105XB2101	115XB2101
2.1x150	5	185XB2151	105XB2151	115XB2151
4.6x50	5	185XB4051	105XB4051	115XB4051
4.6x100	5	185XB4101	105XB4101	115XB4101
4.6x150	5	185XB4151	105XB4151	115XB4151
4.6x200	5	185XB4201	105XB4201	115XB4201
4.6x250	5	185XB4251	105XB4251	115XB4251
2.1x30	3	183XB2031	103XB2031	113XB2031
2.1x50	3	183XB2051	103XB2051	113XB2051
2.1x100	3	183XB2101	103XB2101	113XB2101
2.1x150	3	183XB2151	103XB2151	113XB2151
4.6x50	3	183XB4051	103XB4051	113XB4051
4.6x100	3	183XB4101	103XB4101	113XB4101
4.6x150	3	183XB4151	103XB4151	113XB4151

AichromBond XB-1

Dimension(mm)	Particle Size(μm)	Part Number		
		XB-1 CN	XB-1Silica	XB-1 NH ₂
2.1x30	5	CN5XB2031	SI5XB2031	NH5XB2031
2.1x50	5	CN5XB2051	SI5XB2051	NH5XB2051
2.1x100	5	CN5XB2101	SI5XB2101	NH5XB2101
2.1x150	5	CN5XB2151	SI5XB2151	NH5XB2151
4.6x50	5	CN5XB4051	SI5XB4051	NH5XB4051
4.6x100	5	CN5XB4101	SI5XB4101	NH5XB4101
4.6x150	5	CN5XB4151	SI5XB4151	NH5XB4151
4.6x200	5	CN5XB4201	SI5XB4201	NH5XB4201
4.6x250	5	CN5XB4251	SI5XB4251	NH5XB4251
2.1x30	3	CN3XB2031	SI3XB2031	NH3XB2031
2.1x50	3	CN3XB2051	SI3XB2051	NH3XB2051
2.1x100	3	CN3XB2101	SI3XB2101	NH3XB2101
2.1x150	3	CN3XB2151	SI3XB2151	NH3XB2151
4.6x50	3	CN3XB4051	SI3XB4051	NH3XB4051
4.6x100	3	CN3XB4101	SI3XB4101	NH3XB4101
4.6x150	3	CN3XB4151	SI3XB4151	NH3XB4151

AichromBond XB-2

AichromBond XB-2 has an identical bonded phase as XB-1. However, XB-2 has relatively low surface area, 200m²/g, which allows compounds to have shorter retention times and suitable for the separation of large molecules. Abel supplies XB-2 C18, XB-2 C8 and XB-2Silica. These are equivalent to Hypersil BDS and Zorbax XDB. Hypersil BDS and Zorbax XDB relatively could have more retention.

■ AichromBond XB-2

Dimension(mm)	Particle Size(μm)	Part Number		
		XB-2 C18	XB-2 C8	XB-2 Silica
2.1x30	5	185XB2032	105XB2032	SI5XB2032
2.1x50	5	185XB2052	105XB2052	SI5XB2052
2.1x100	5	185XB2102	105XB2102	SI5XB2102
2.1x150	5	185XB2152	105XB2152	SI5XB2152
4.6x50	5	185XB4052	105XB4052	SI5XB4052
4.6x100	5	185XB4102	105XB4102	SI5XB4102
4.6x150	5	185XB4152	105XB4152	SI5XB4152
4.6x200	5	185XB4202	105XB4202	SI5XB4202
4.6x250	5	185XB4252	105XB4252	SI5XB4252

AichromBond AQ Columns

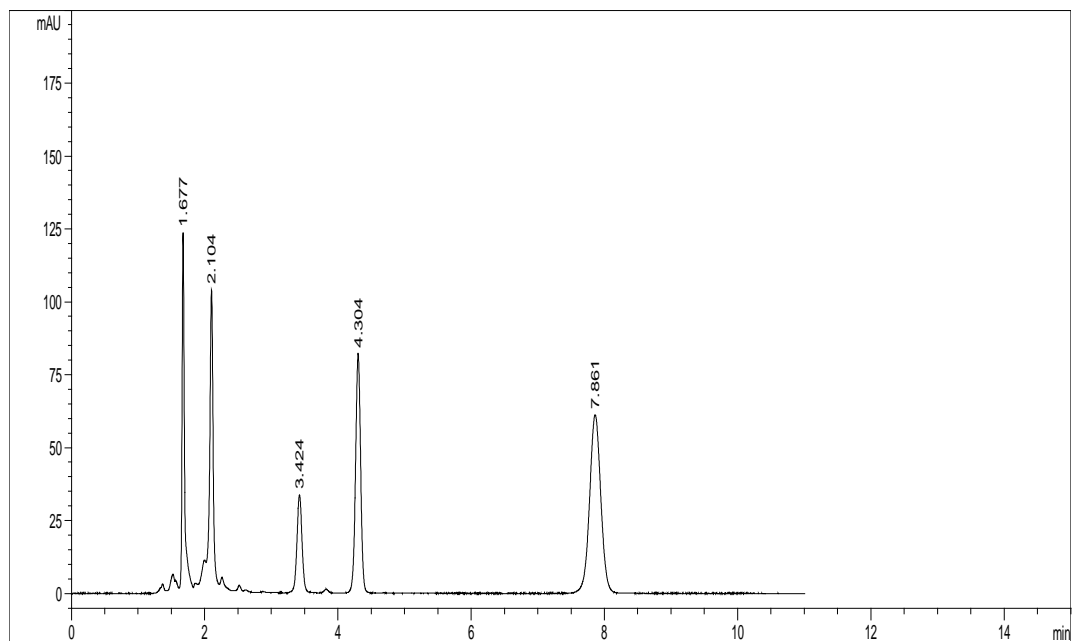
The AichromBond AQ C18 columns are designed to show extended retention and selectivity for hydrophilic and polar compounds at low to medium pH(1.5-9.0), which are poorly retained on other phases. AichromBond AQ C18 columns are made to be compatible with 100% aqueous mobile phases. AichromBond AQ C18 columns are suitable for analysing biomolecules, metabolites, and pharmaceutical degradants such as organic acids, watersoluble vitamins, oligosaccharides, amino acids, small peptides and nucleotides. AichromBond AQ C18 columns are equivalent to Waters Symmetry, Inertsil C18, Zorbax SB, Atlantis dC18, and other AQ columns.

The proprietary bonding process of the packing materials led to unique performance of the AQ C18 columns.

■ **The characteristics include:**

- 1) Extremely base-friendly surface at any pH
- 2) Large volume injection: maintains very high efficiency even if the injection volume is exceptionally large.
- 3) Compatibility with 100% aqueous mobile phase high volume and mass loadability.
- 4) Low pH stability (pH=1.5): better stability than most of the popular brand columns (including other brand AQ columns) on the market.

Figure 1 A typical QA test chromatogram of an AQ C18 column



Sample: 1. Uracil, 2. 2,3 dihydroxy naphthalene, 3. Propanolol, 4. Naphthalene,
5. Amitriptyline

Injection: 5 μ L

Column: 4.6 mm x 150 mm, 5 μ m

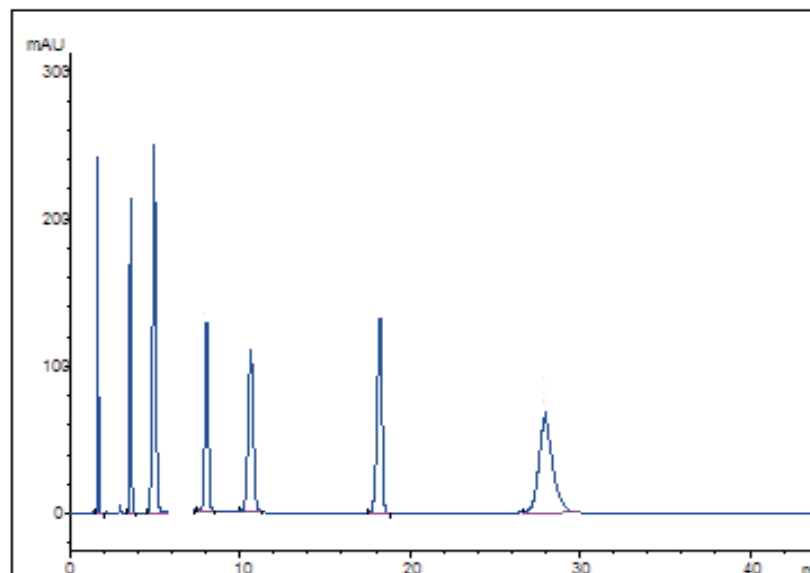
Mobile phase: 10 mmol sodium phosphate buffer (pH=7)/Methanol = 15:85

Flow: 1 mL/min

Temperature: 30 $^{\circ}$ C

Detection: UV 254 nm

Balanced Retention for Hydrophilic and Hydrophobic Compounds



Mobile Phase: 35% v/v 20.0mM KH_2PO_4 / K_2HPO_4 at pH=7.0 / 65% Methanol at 23 °C

Flow Rate: 1mL/min

Detection: UV 254nm

Sample: Uracil, Propranolol, Hydrochloride, Dimethyl Phthalate,
Naphthalene, Acenaphthene, Amitriptyline

Ordering Information

Dimension(mm)	Particle Size(μm)	Part Number
		AichromBond AQ C18
2.1×30	5	185AQ203
2.1×50	5	185AQ205
2.1×100	5	185AQ210
2.1×150	5	185AQ215
4.6×50	5	185AQ405
4.6×100	5	185AQ410
4.6×150	5	185AQ415
4.6×250	5	185AQ425
2.1×30	3	183AQ203
2.1×50	3	183AQ205
2.1×100	3	183AQ210
2.1×150	3	183AQ215
4.6×50	3	183AQ405
4.6×100	3	183AQ410
4.6×150	3	183AQ415

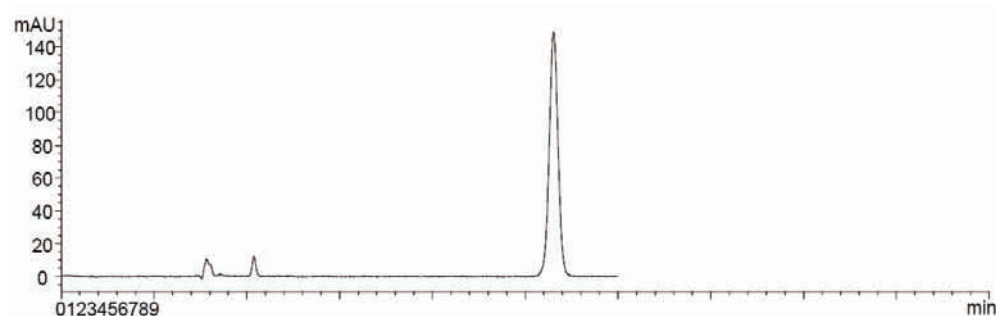
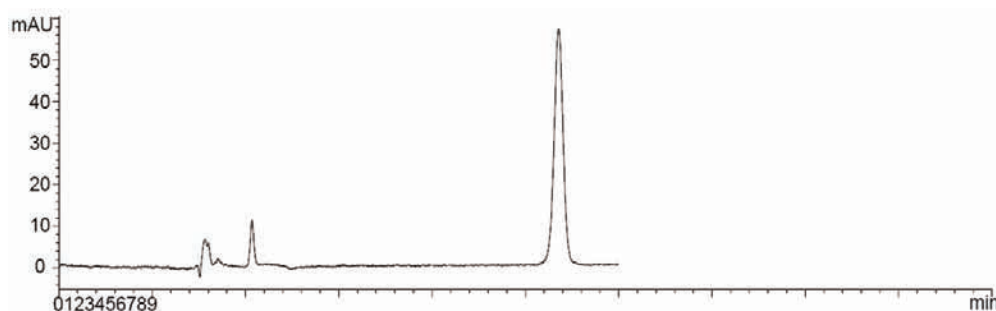
AichromBond SB Series Columns

The AichromBond SB series columns use unique monofunctional silanes with bulky diisobutyl or diisopropyl side chain groups that sterically protect the key siloxane bond from hydrolytic attack at low pH. The AichromBond SB columns are specially designed for the separation of polar compounds from low (extremely stable at pH=1.0) to medium pH. The packing materials are not endcapped. AichromBond SB columns are equivalent to Zorbax SB.

■ The characteristics include:

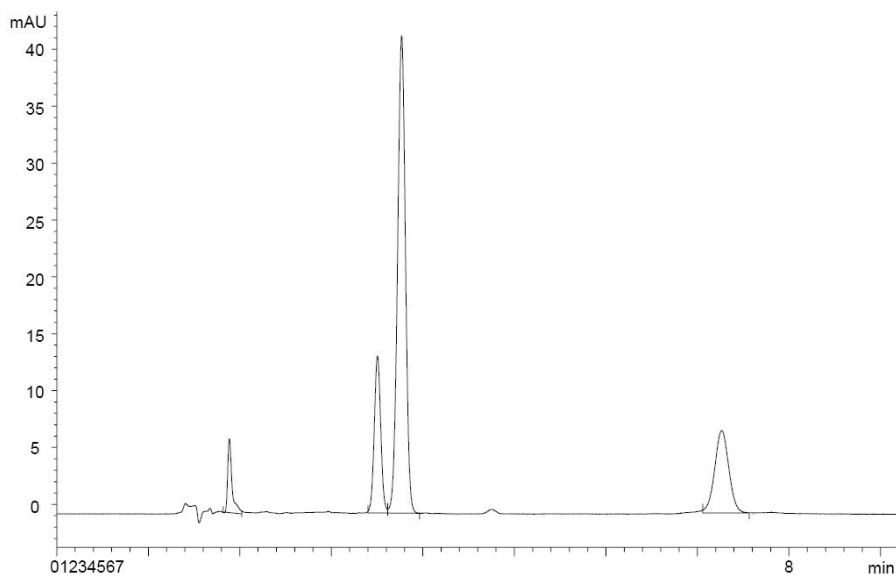
1. Peak shape and efficiency: Excellent peak symmetry for basic compounds comparing to other brand polar phase columns
2. 100% aqueous compatible: Much better peak shape, retention, and efficiency
3. Balanced retention with high efficiency and resolution
4. Low pH application: as low as 1.0

■ The Stability in the Low pH



Column: AichromBond SB C18 4.6×150mm, 5µm
Sample: Naphthol
Aging: 40 °C, TFA in 80% methanol (pH=1.0), 400 hours
Mobile Phase: TFA in 80% methanol (pH=1.5)
Flow Rate: 1mL/min
Injection: 5µL
Temperature: 30 °C

The Separation of Organic Acid



Column: AichromBond SB C18 4.6×150mm, 5 μ m
 Sample: Vc, malonic acid, lactic acid and citric acid
 Mobile Phase: 20mM Phosphate buffer saline(PBS), pH=2.0
 Flow Rate: 1mL/min
 Injection: 5 μ L
 Detection: UV 210nm

Ordering Information

AichromBond SB

Dimension(mm)	Particle Size(μ m)	Part Number	
		SB C18	SB C8
2.1×30	3	183SB203	103SB203
2.1×50	3	183SB205	103SB205
2.1×100	3	183SB210	103SB210
2.1×150	3	183SB215	103SB215
4.6×50	3	183SB405	103SB405
4.6×100	3	183SB410	103SB410
4.6×150	3	183SB415	103SB415
2.1×30	5	185SB203	105SB203
2.1×50	5	185SB205	105SB205
2.1×100	5	185SB210	105SB210
2.1×150	5	185SB215	105SB215
4.6×50	5	185SB405	105SB405
4.6×100	5	185SB410	105SB410
4.6×150	5	185SB415	105SB415
4.6×250	5	185SB425	105SB425

AichromBond HILIC Columns

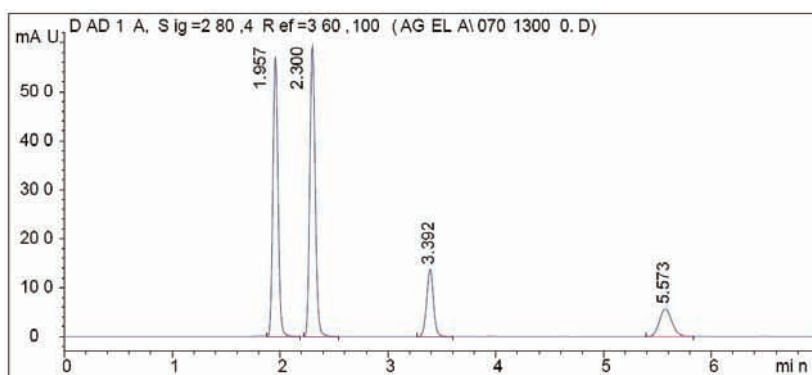
AichromBond HILIC columns are made from high purity spherical silica particles bonded with a neutral hydrophilic amide group. The AichromBond HILIC columns are a good replacement for NH₂ and silica columns that are currently marketed as HILIC. Compared with traditional silica and NH₂ columns, the AichromBond HILIC columns have better reproducibility and column lifetime. They are especially useful for the separation of strong hydrophilic compounds, whether they are acidic, basic or neutral.

■ The characteristics include:

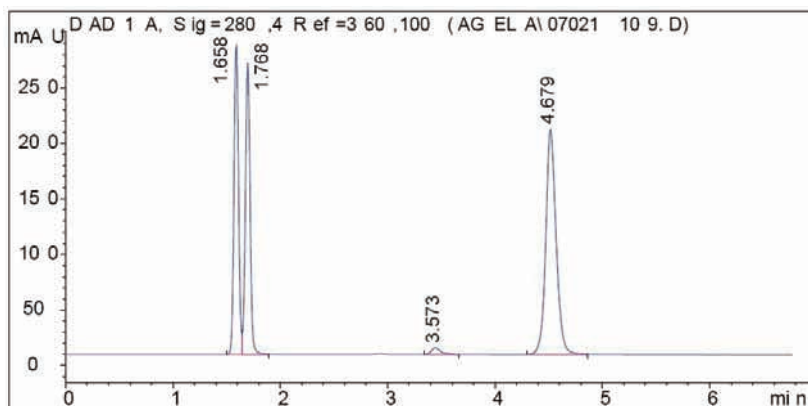
- Strong retention of polar compounds in HILIC mode
- Can be used as reversed phase, normal phase and HILIC phase
- More robust and reproducible performance than silica and amino stationary phase
- 100% aqueous and 100% organic solvents compatible
- pH range: 2.1-8.0

■ Application

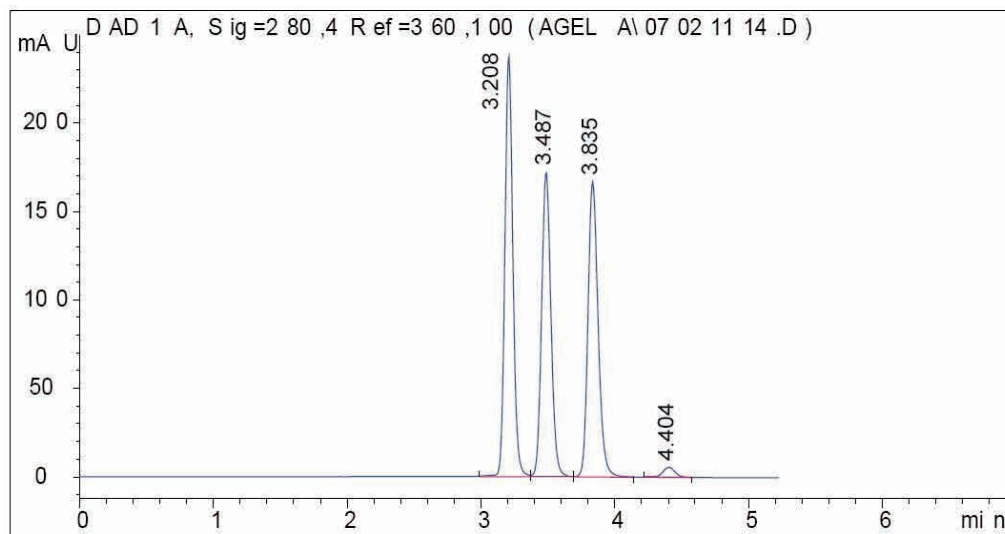
Water-soluble Vitamins
AichromBond HILIC 5 μ m, 4.6mm \times 150mm



Brand W, NH₂ Column, 5 μ m, 4.6 \times 150mm



Brand W Silica Column, 5 μ m, 4.6 \times 150mm



Mobile Phase: A:0.1% TFA in Water; B:0.1% TFA in Acetonitrile

A:B=90:10

Flow Rate: 1mL/min

Temperature: 30 $^{\circ}$ C

Detection: UV 280nm

Sample: VB1+VB6+VC+VB2

Ordering Information

Dimension(mm)	Particle Size(μ m)	Part Number
		AichromBond HILIC
2.1 \times 30	3	3AH203
2.1 \times 50	3	3AH205
2.1 \times 100	3	3AH210
2.1 \times 150	3	3AH215
4.6 \times 50	3	3AH405
4.6 \times 100	3	3AH410
4.6 \times 150	3	3AH415
2.1 \times 30	5	5AH203
2.1 \times 50	5	5AH205
2.1 \times 100	5	5AH210
2.1 \times 150	5	5AH215
4.6 \times 50	5	5AH405
4.6 \times 100	5	5AH410
4.6 \times 150	5	5AH415
4.6 \times 250	5	5AH425

Aichrom Ion Exchange HPLC columns

Aichrom ion exchange columns are available for both Strong Anion Exchange (SAX) and Strong Cation Exchange (SCX) columns.

Aichrom SCX columns are made from spherical silica particles of the highest purity, bonded with aromatic sulfonic acid group. They can be used for the separation of basic, water-soluble compounds and bio-molecules.

Aichrom SAX columns are made from high purity spherical silica particles and bonded with quaternary amine groups. The columns can be used for the separation of acidic, water-soluble compounds and bio-molecules.

■ The characteristics include:

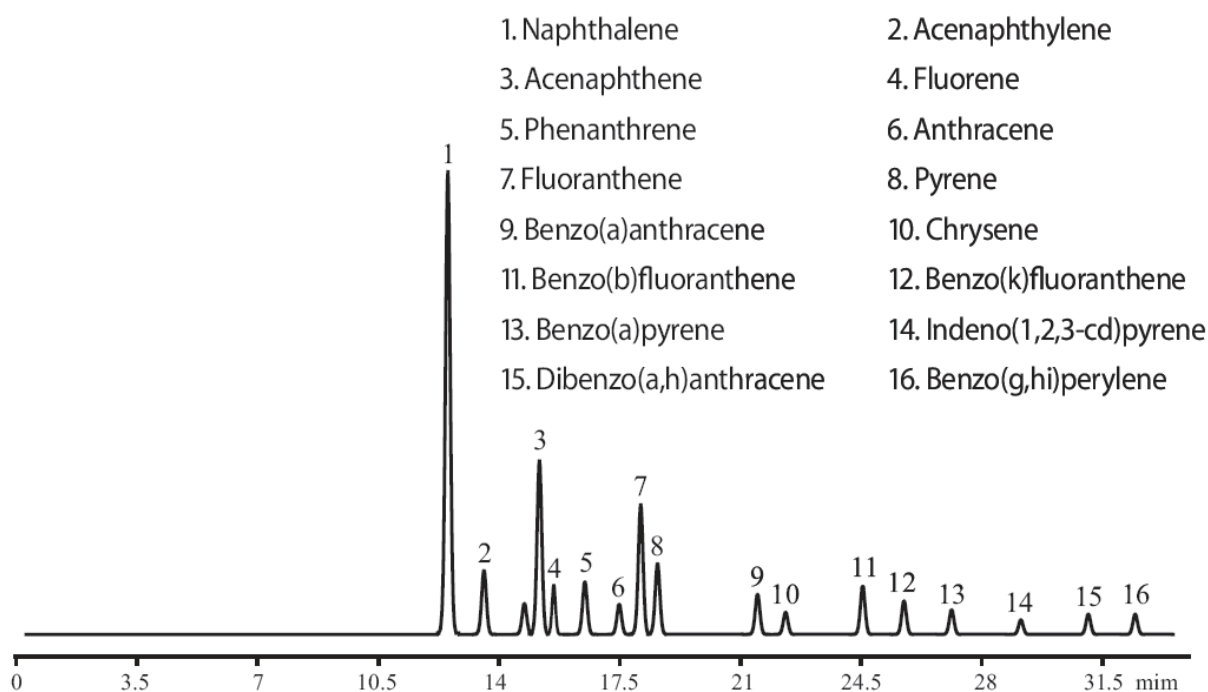
- Organic modifiers such as acetonitrile and methanol may be used with SAX and SCX columns, within organic/buffer solubility constraints
- Retention can be controlled by varying PH, ionic strength and organic modifier content
- Stable PH range from 2.0 – 7.0

■ Ordering Information

Dimension(mm)	Particle Size(μm)	Part Number	
		SCX	SAX
2.1×150	3		3SA215
4.6×150	3		3SA415
4.6×250	3		3SA425
4.6×300	3		3SA430
7.8×300	3		3SA730
2.1×150	5	5SC215	5SA215
4.6×150	5	5SC415	5SA415
4.6×250	5	5SC425	5SA425
4.6×300	5	5SC430	5SA430
7.8×300	5	5SC730	5SA730

Aichrom PAH HPLC Columns

PAHs (Polycyclic Aromatic Hydrocarbon) are considered as priority pollutants. They are potentially carcinogenic compounds existing in water, air, soil and food. Analyzing PAHs has been paid more and more attention. Aichrom PAH columns are recommended for the separation of PAHs and steric isomers of the aromatic compounds. The Aichrom PAH columns separate all of the 16 PAHs in EPA method 610 quickly with high resolution and the best peak shapes.



Ordering Information

Dimension(mm)	Particle Size(μm)	Part Number
2.6x100	3	3PA210
4.6x150	3	3PA415
4.6x250	3	3PA425
4.6x150	5	5PA415
4.6x250	5	5PA425

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