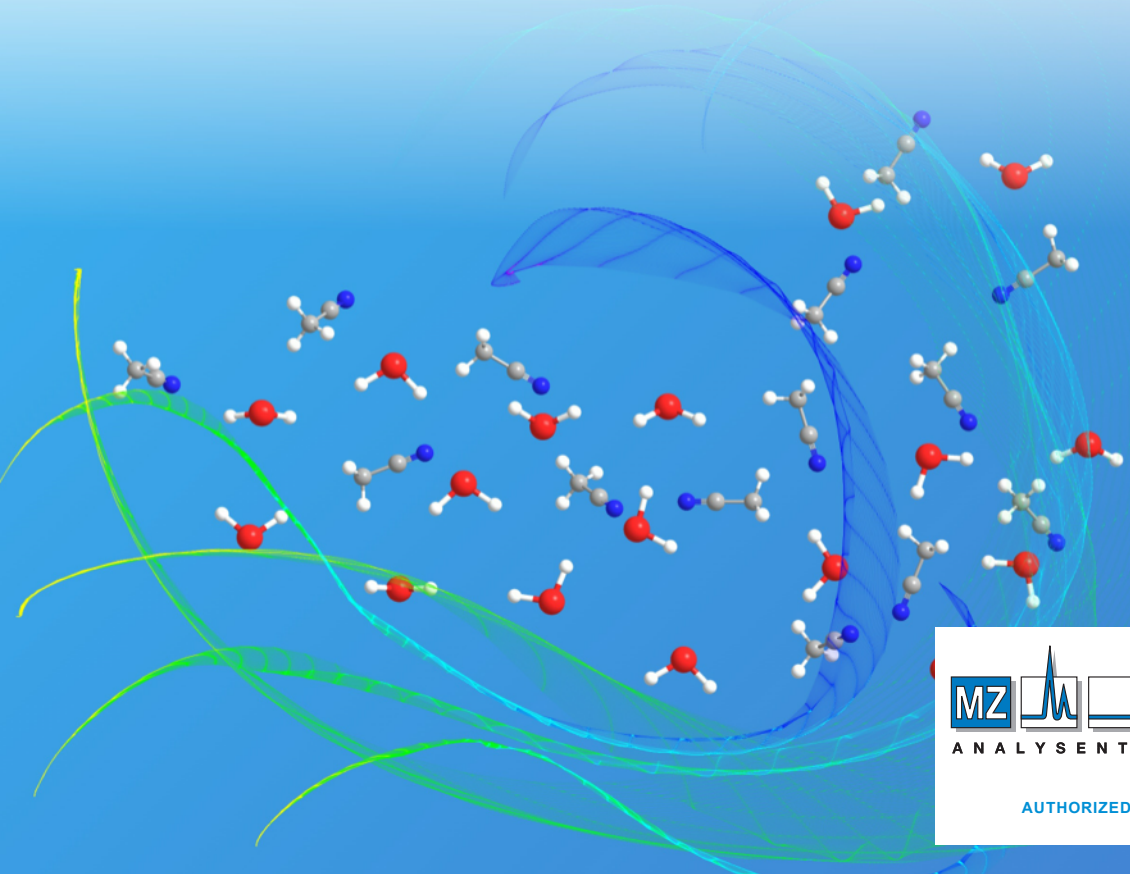
Kromasil

Peak performance in HPLC

Kromasil HILIC

First choice for polar compound separation



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Optimal selectivity of polar compounds with an MS compatible phase

Kromasil HILIC-D is designed for the best selectivity of polar compounds. Traditionally, polar compounds like organic acids, nucleobases, and water soluble vitamins have been a challenge to separate on a standard reversed phase column like C18. Kromasil HILIC-D offers a phase that has true orthogonal selectivity when compared to a C18 column, normally giving an opposite elution order. The diol derivatized Kromasil HILIC-D provides excellent reproducibility when compared to HILIC columns based on standard bare silica.

In addition to the orthogonal selectivity, Kromasil HILIC-D offers a robust column that is 100% MS compatible. The phase is low bleed and the solvents used when running your HPLC in HILIC mode are optimal for MS. Therefore the sensitivity can be 100 times better when using Kromasil HILIC-D over traditional reversed phase columns.

When purifying polar compounds, Kromasil HILIC-D can be scaled up, offering the same great performance as in analytical scale. Take advantage of the generous surface area which can provide high loading capacity.

To learn more, visit www.kromasil.com/hilic or contact us directly!

Availability

Product codes for Kromasil 60-5-HILIC-D

column diameter	column length 50 mm	100 mm	150 mm	250 mm
2.1 mm	S05HDD05	S05HDD10	S05HDD15	–
3.0 mm	S05HDC05	S05HDC10	S05HDC15	–
4.6 mm	S05HDA05	S05HDA10	S05HDA15	S05HDA25
10 mm	–	–	–	S05HDP25
21.2 mm	–	–	–	S05HDQ25
30 mm	–	–	–	S05HDR25

Other sizes available upon request.
Guard columns available for each column dimension.

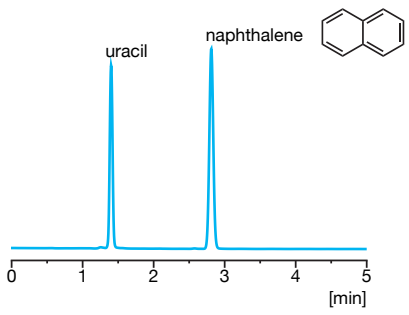
Product characteristics

- Pore size[1]: 60 Å
- Particle size: 5 µm
- Phase: HILIC-D
- Surface area[1]: 540 m²/g

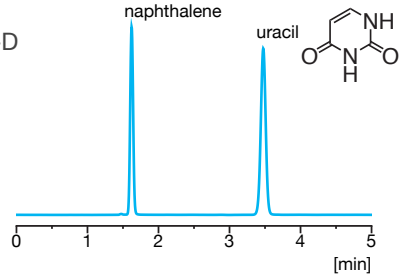
1: bare silica data

Inverted elution compared to reversed phase

Kromasil 100-5-C18



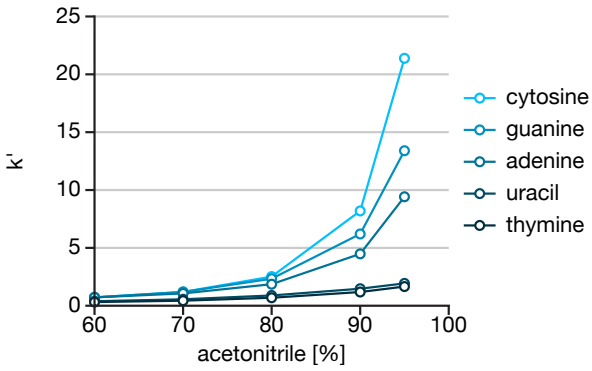
Kromasil 60-5-HILIC-D



Common chromatographic conditions

Column size:	4.6 × 150 mm
Mobile Phase:	acetonitrile/water (90/10)
Flow rate:	1 ml/min
Temperature:	ambient
Detection:	UV @ 254 nm

Tuning retention factor in HILIC mode

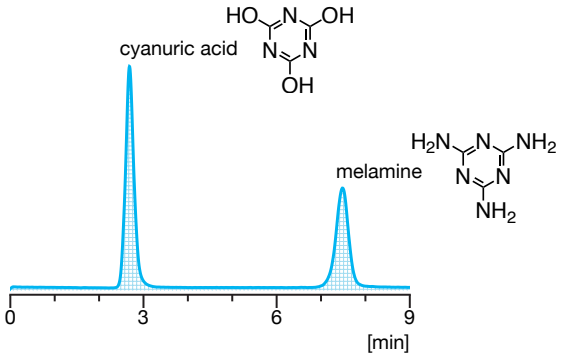


In contrast to reversed phase, retention time is increased with the amount of organic modifier in the mobile phase.

Common chromatographic conditions

Column:	Kromasil 60-5-HILIC-D 4.6 × 150 mm
Sample:	nucleobases (see figure)
Mobile Phase:	acetonitrile/ammonium acetate buffer, 100 mM, pH 6.3
Flow rate:	1 ml/min
Temperature:	ambient
Detection:	UV @ 254 nm

Optimized MS sensitivity and compatibility



Melamine & cyanuric acid analysis

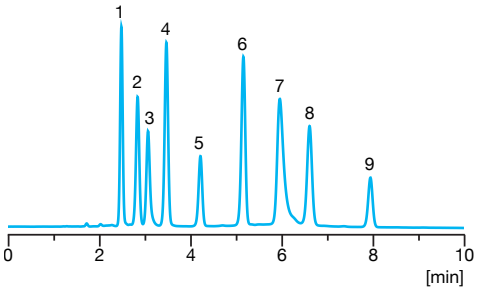
In recent years, there were animal and human deaths due to the contamination of food and milk products with melamine. The addition of melamine to food or milk containing cyanuric acid causes the production of melamine cyanurate which in turn creates kidney problems that can lead to death. Therefore the FDA has mandated that milk and prepared food be tested for melamine. Kromasil HILIC-D provides the proper selectivity and excellent MS compatibility to be able to analyze even the smallest amounts of melamine.

Chromatographic conditions

Column:	Kromasil 60-5-HILIC-D 2.1 × 100 mm
Mobile Phase:	acetonitrile/ammonium acetate buffer, 100 mM, pH 4.5 (95/5)
Flow rate:	0.4 ml/min
Temperature:	25°C
Detection:	+/-ESI TIC SIM

Applications

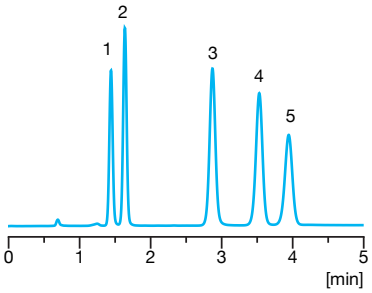
Separation of vitamins



Chromatographic conditions

Column: Kromasil 60-5-HILIC-D 4.6 × 150 mm
Sample: vitamins:
1 = nicotinamide
2 = riboflavin (B_2)
3 = pyroxidine (B_6)
4 = p-aminobenzoic acid (PABA)
5 = nicotinic acid (B_3)
6 = ascorbic acid (C)
7 = thiamine (B_1)
8 = cobalamin (B_{12})
9 = folic acid (B_9)
Mobile Phase: acetonitrile/ammonium acetate buffer, 100 mM, pH 6.3
gradient: 0 min: 75%, 10 min: 55% acetonitrile
Flow rate: 1.0 ml/min
Temperature: ambient
Detection: UV @ 254 nm

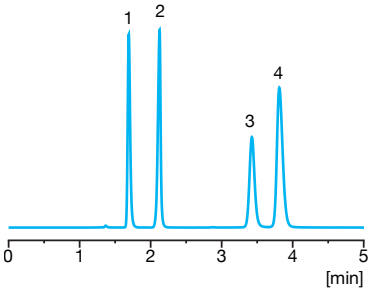
Separation of nucleobases



Chromatographic conditions

Column: Kromasil 60-5-HILIC-D 4.6 × 150 mm
Sample: nucleobases:
1 = thymine
2 = uracil
3 = adenine
4 = guanine
5 = cytosine
Mobile Phase: acetonitrile/ammonium acetate buffer, 100 mM, pH 6.3 (85/15)
Flow rate: 2 ml/min
Temperature: ambient
Detection: UV @ 254 nm

Separation of food additives



Chromatographic conditions

Column: Kromasil 60-5-HILIC-D 4.6 × 150 mm
Sample: food additives:
1 = benzoic acid (E210)
2 = maleic acid (E296)
3 = ascorbic acid (E300)
4 = fumaric acid (E297)
Mobile Phase: acetonitrile/ammonium formate buffer, 20 mM, pH 3.4 (75/25)
Flow rate: 1 ml/min
Temperature: ambient
Detection: UV @ 254 nm

The moment you adopt our Kromasil High Performance Concept, you join thousands of chromatographers who share a common goal: to achieve better separations when analyzing or isolating pharmaceuticals or other substances.

Not only will you benefit from our patented silica technology, but you gain a strong partner with a reliable track record in the field of silica products. For the past 70 years, we have pioneered new types of silica. Our long experience in the field of silica chemistry is the secret behind the development of Kromasil, and the success of our Separation Products group. Kromasil is available in bulk and in high-pressure slurry-packed columns. The development, production and marketing of Kromasil are ISO 9001 certified.

Kromasil is a brand of AkzoNobel, the largest global paint and coatings company and a major producer of specialty chemicals with headquarters in Amsterdam, the Netherlands. With 55 000 people in more than 80 countries around the world, we are committed to sustainability, excellence and delivering Tomorrow's Answers Today™.

Kromasil®

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