

Kromasil[®]
SFC

Kromasil SFC

Designed for green technology

Introducing Kromasil SFC XT



Nouryon

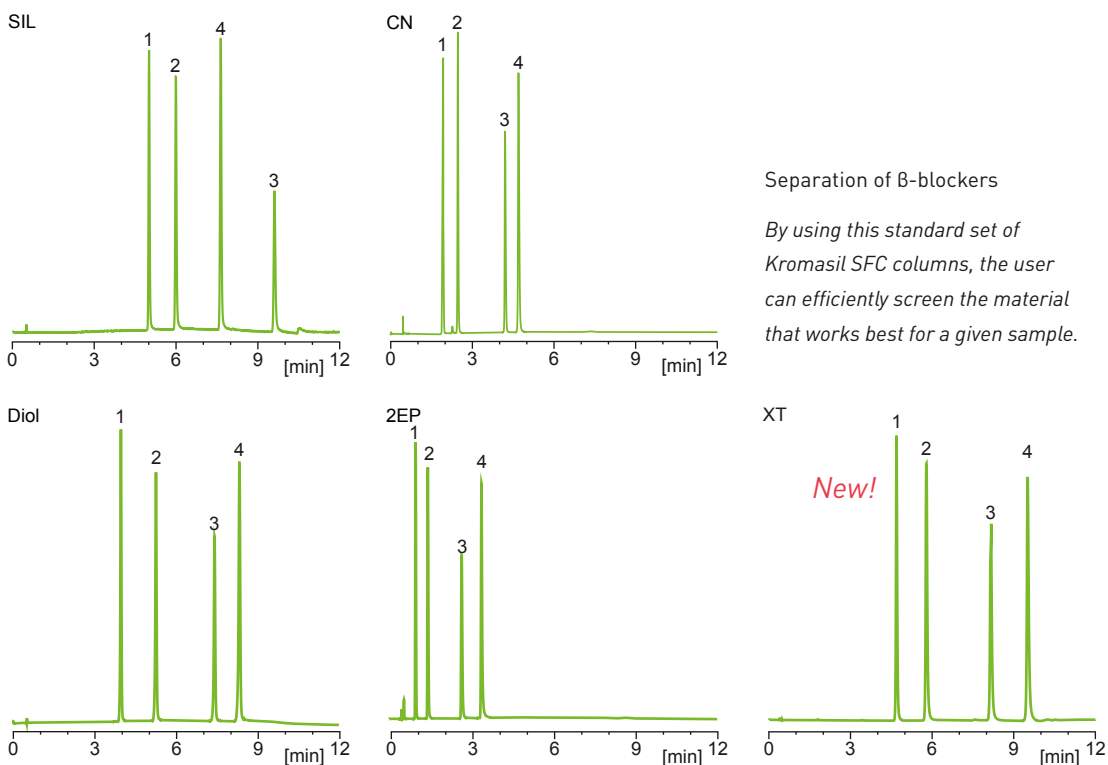
SFC columns for analysis and isolation

Based on 100 Å pore size, 2.5 and 5 µm particles, Kromasil SFC columns give users the opportunity of fast separations. The columns are tailor-made for research, discovery and routine analysis.

Many options

Kromasil SFC columns are the answer for fast separations. These columns are now being delivered in cyano, diol, silica, 2-ethylpyridine and fused organo-silane chemistries for the laboratory scientist to separate a wide range of substances, from non-polar to strongly polar compounds.

The stationary phase quintet



Conditions

Stationary phase: Kromasil SFC, 2.5 µm phase chemistry as in figure

Column size: 3.0 x 150 mm

Part numbers: FH2SIC15, FH2CNC15, FH2DIC15, FH2EPC15 and FH2XTC15

Eluent: CO₂ / methanol + 20 mM ammonia

Gradient: 0 min: 5%, 10 min: 30% methanol

Flow rate: 2.0 ml/min

Temperature: 40°C

Outlet pressure: 120 bar

Detection: UV @ 220 nm

Substances: 1 = alprenolol

2 = propranolol

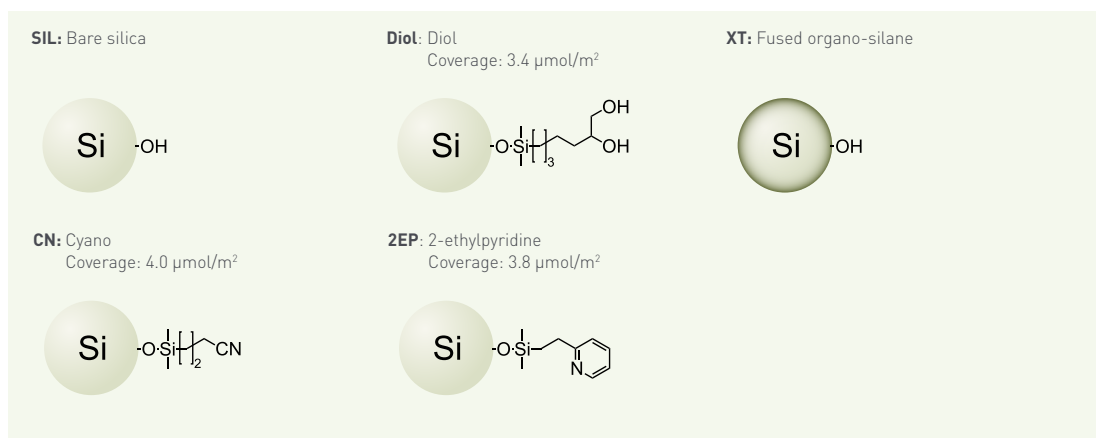
3 = acebutolol

4 = pindolol

Chromatograms for SIL, CN, Diol and 2EP in this figure are a courtesy of AstraZeneca, Mölndal, Sweden

Product characteristics

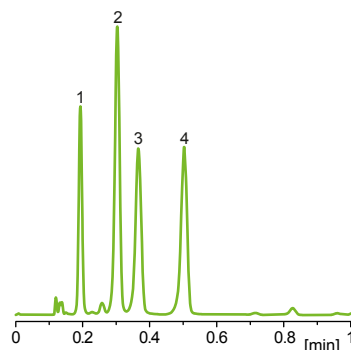
Kromasil SFC is based on first-in-class, perfectly spherical, porous Kromasil silica particles with 100 Å pore size and particle sizes of 2.5 and 5 µm. Furthermore, Kromasil SFC XT is the result of a patented organic/inorganic merged silica technology.



Fast separations

Medium and high-throughput laboratories working with green technology and seeking to improve turnaround time are now able to take advantage of the separation power of the new Kromasil SFC 2.5 µm family of columns. With the chromatographic power of Kromasil SFC phases available in short and narrow columns, users can easily achieve baseline resolution and ultra-fast separations.

Separation of steroids



Conditions

Column: Kromasil SFC, 2.5 µm, 2EP, 3.0 x 50 mm
Part number: FH2EPC05
Eluent: CO₂ / methanol
Gradient: 0 min: 10%, 1 min: 20% methanol
Flow rate: 2.5 ml/min

Temperature: 40°C

Outlet pressure: 130 bar

Detection: UV @ 220 nm

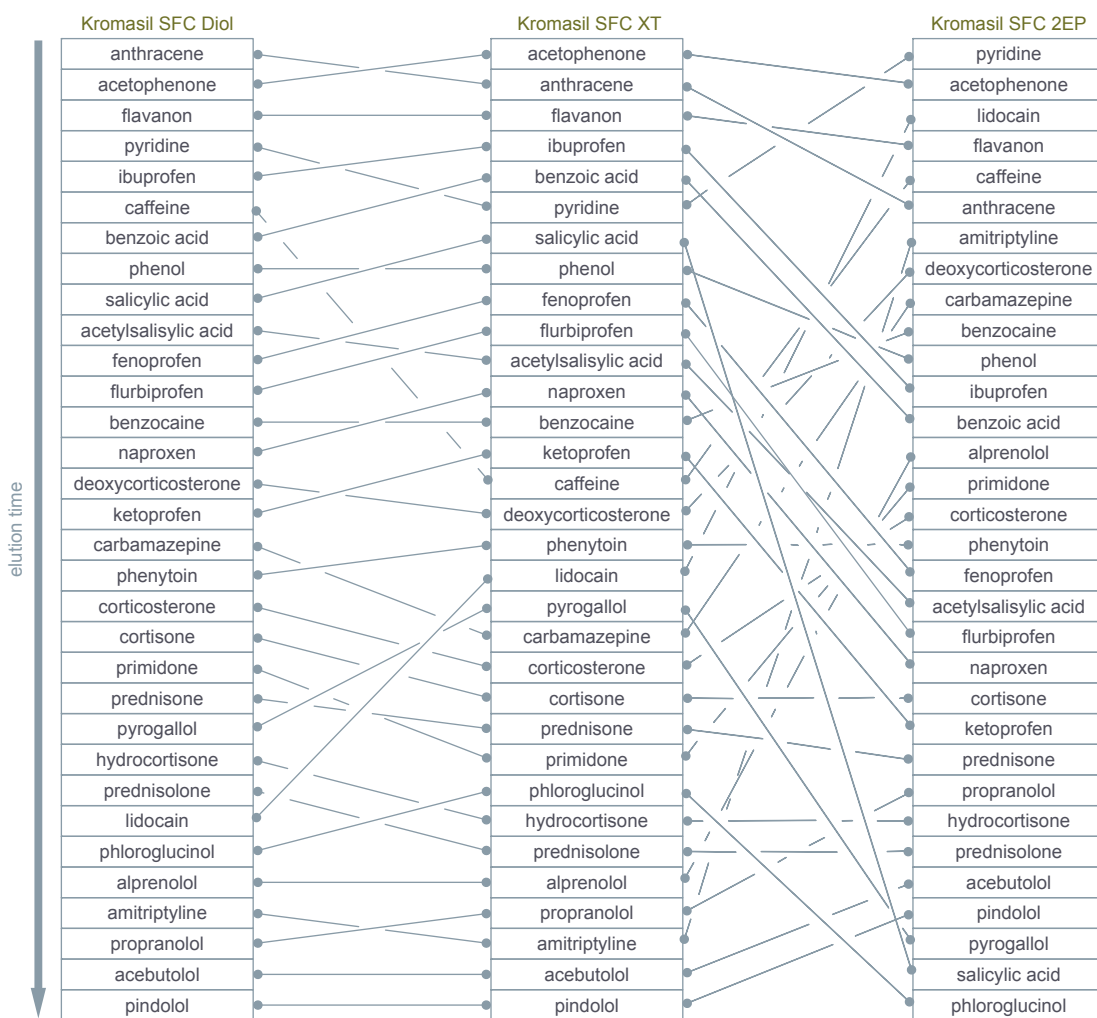
Substances: 1 = deoxycorticosterone
 2 = corticosterone
 3 = cortisone
 4 = hydrocortisone

Orthogonality between phases

In general, the 2EP functionality is known for its benefits in terms of selectivity and retention in SFC, and it has the specific benefits towards the separation of basic compounds, where peak shape is significantly improved. Therefore the 2EP chemistry is seen as the workhorse for SFC.

With the introduction of Kromasil SFC XT we can now offer a SFC phase that greatly complements 2EP showing orthogonality towards 2EP and other common SFC phases when run under standard SFC conditions. This new material provides additional tools to SFC users around the world.

Elution order for common acidic, neutral and basic substances on selected SFC phases. Relative elution time increases downwards in the figure.

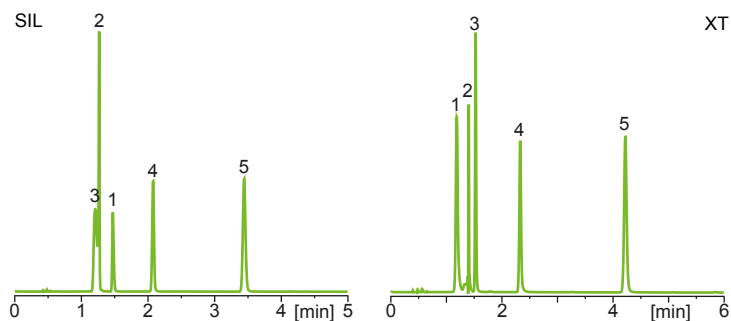


Conditions
Stationary phase: Kromasil SFC, 2.5 µm, phase chemistries as in table
Column size: 3.0 x 150 mm
Part numbers: FH2DIC15, FH2XTC15 and FH2EPC15
Eluent: CO₂ / methanol
Gradient: 0 min: 5%, 15 min: 30% methanol
Flow rate: 1.5 ml/min
Temperature: 40°C
Outlet pressure: 110 bar
Detection: UV @ 254 nm

Alternative selectivity

The new Kromasil SFC XT offers additional interactions with the stationary phase surface, creating alternative selectivities.

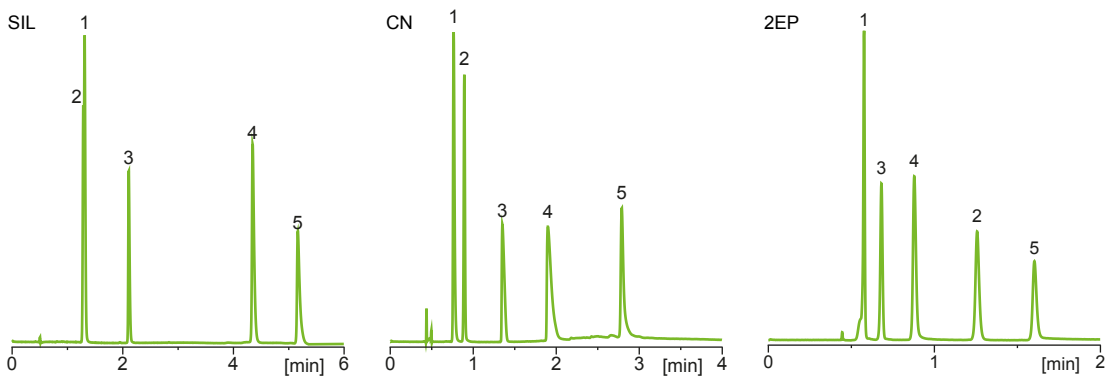
Separation of anilines on Kromasil SFC SIL and XT



Conditions		
Columns: Kromasil SFC, 2.5 µm, SIL and XT, 3.0 x 150 mm	Substances: 1 = aniline 2 = ethylaniline 3 = 2-nitroaniline 4 = 3-nitroaniline 5 = 4-nitroaniline	Flow rate: 2 ml/min
Part numbers: FH2SIC15, FH2XTC15		Temperature: 40°C
Eluent: CO ₂ / methanol		Outlet pressure: 110 bar
Gradient: 0 min: 2%, 7 min: 9% methanol		Detection: UV @ 220 nm

Application

Separation of local anesthetics



Conditions		
Stationary phase: Kromasil SFC, 2.5 µm, phase chemistry as in figure	Outlet pressure: 110 bar	
Column size: 3.0 x 150 mm	Detection: UV @ 230 nm	
Part numbers: FH2SIC15, FH2CNC15 and FH2EPC15	Substances: 1 = lidocaine 2 = benzocaine 3 = bupivacaine 4 = tetracaine 5 = procaine	
Eluent: CO ₂ / methanol + 20 mM ammonia		
Gradient: 0 min: 5%, 5 min: 30% methanol		
Flow rate: 2.0 ml/min		
Temperature: 40°C		

Easy scale up and purification

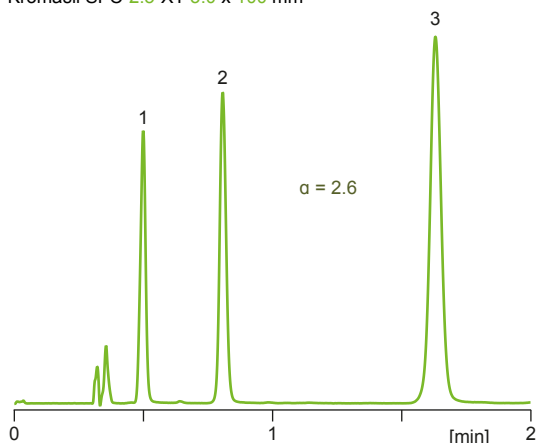
All Kromasil SFC phases are available as 2.5 and 5 μm particles sizes with columns up to 30 mm i.d. In this way we can offer products that give users the possibility to seamlessly transition between different particle and column sizes and easily scale up their separations.

Similarly to LC, almost all preparative separation starts at analytical scale using either smaller particles, more narrow columns or a combination of the two. By developing the preparative method on an analytical scale, SFC users are able to minimize solvent and sample usage while shorten time for method development.

Maintained selectivity

Whether in analytical or preparative scale, 2.5 or 5 μm particles, Kromasil offers the same material produced in a similar way with similar specifications. This means users can be sure that the separation itself will stay identical during scale up.

Kromasil SFC-2.5-XT 3.0 x 100 mm



Conditions

Part number: FH2XTC10

Eluent: CO_2 / 20% methanol

Flow rate: 1.5 ml/min

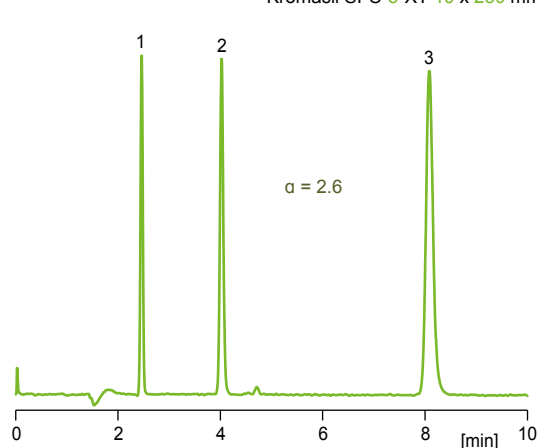
Substance: 1 = phenol, 2 = phenytoin, 3 = hydrocortisone

Temperature: 40°C

Outlet pressure: 110 bar

Detection: UV @ 254 nm

Kromasil SFC-5-XT 10 x 250 mm



Conditions

Part number: F05XTP25

Eluent: CO_2 / 20% methanol

Flow rate: 8.3 ml/min

Substances: 1 = phenol, 2 = phenytoin, 3 = hydrocortisone

Temperature: 40°C

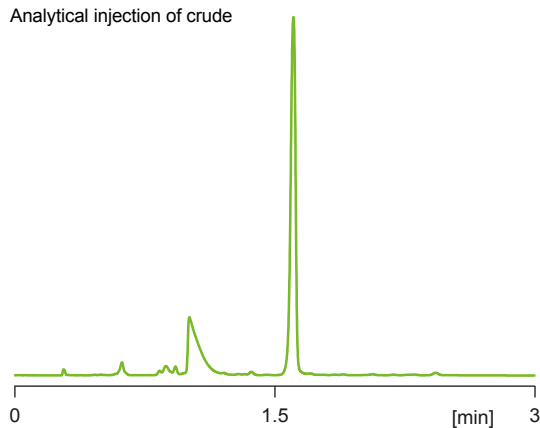
Outlet pressure: 100 bar

Detection: UV @ 254 nm

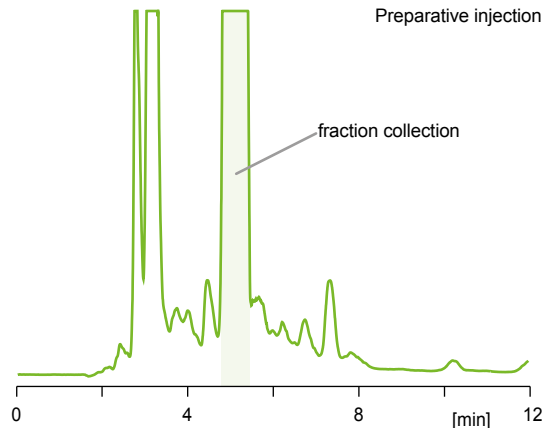
Purification of prednisolone

Because of the high surface availability of our SFC line, our materials show great loadability which makes them excellent choices for preparative purification under overloaded conditions.

Analytical injection of crude



Preparative injection



Analytical conditions

Column: Kromasil SFC-2.5-XT 3.0 x 100 mm
Part number: FH2XTC10
Eluent: CO₂ / methanol
Gradient: 0 min: 10%, 3 min: 20% methanol
Flow rate: 2.0 ml/min
Temperature: 40°C
Outlet pressure: 120 bar
Detection: UV @ 230 nm

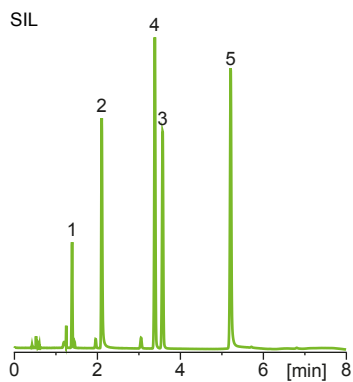
Preparative conditions

Column: Kromasil SFC-5-XT 10 x 250 mm
Part number: F05XTP25
Eluent: CO₂ / 20% methanol
Loading: 16 mg
Flow rate: 8.0 ml/min
Temperature: 40°C
Outlet pressure: 100 bar
Detection: UV @ 254 nm

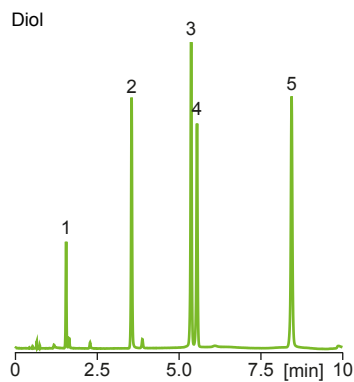
Application

Separation of hydrobenzenes

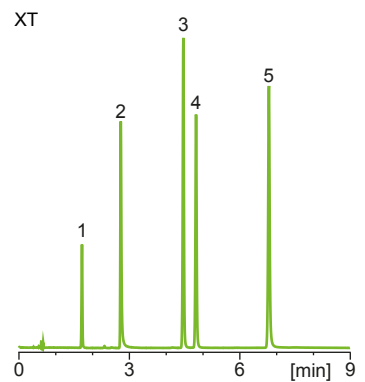
SIL



Diol



XT



Conditions

Stationary phase: Kromasil SFC, 2.5 µm, phase chemistry as in figure
Column size: 3.0 x 150 mm
Part numbers: FH2SIC15, FH2DIC15 and FH2XTC15
Eluent: CO₂ / methanol
Gradient: 0 min: 2%, 10 min: 25% methanol
Flow rate: 2.0 ml/min
Temperature: 40°C

Outlet pressure: 110 bar

Detection: UV @ 220 nm

Substances: 1 = benzyl alcohol
 2 = resorcinol
 3 = catechol
 4 = hydroquinone
 5 = phloroglucinol

Availability

The Kromasil SFC columns are available in sizes from 3.0 to 30 mm i.d. They are packed with stationary phases with 2.5 and 5 μm particle sizes and the following surface chemistries: silica (SIL), cyano (CN), diol (Diol), 2-ethylpyridine (2EP) and fused organo-silane surface (XT).

Visit www.kromasil.com/sfc for all column sizes and part numbers.



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 Kromasil team. Kromasil is available in bulk and in high-pressure slurry-packed columns.

The production of Kromasil is ISO 9001 and ISO 14001 certified.

Kromasil is a brand of Nouryon, a global specialty chemicals leader. Markets and consumers worldwide rely on our essential solutions to manufacture everyday products. The dedication of more than 9700 employees with a shared commitment to our customers, safety, sustainability and innovation has resulted in a consistently strong performance. We operate in over 80 countries around the world with a portfolio of industry-leading brands.



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