

Supercritical Fluid Chromatography



*Sepax Technologies*

**SFC**



**Better Surface Chemistry for Better Separation**

# Sepax Technologies, Inc.

Sepax Technologies, Inc. develops and manufactures products in the area of chemical and biological separations, biosurfaces and proteomics. Sepax product portfolio includes 1) liquid chromatography columns and media, 2) SPE and Flash chromatography columns and tubes, 3) bulk resin for preparative separation and process chromatography, and 4) natural product and Chinese traditional medicine separation and purification.

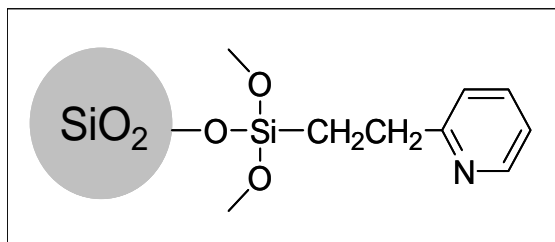


## *Super Critical Fluid Chromatography*

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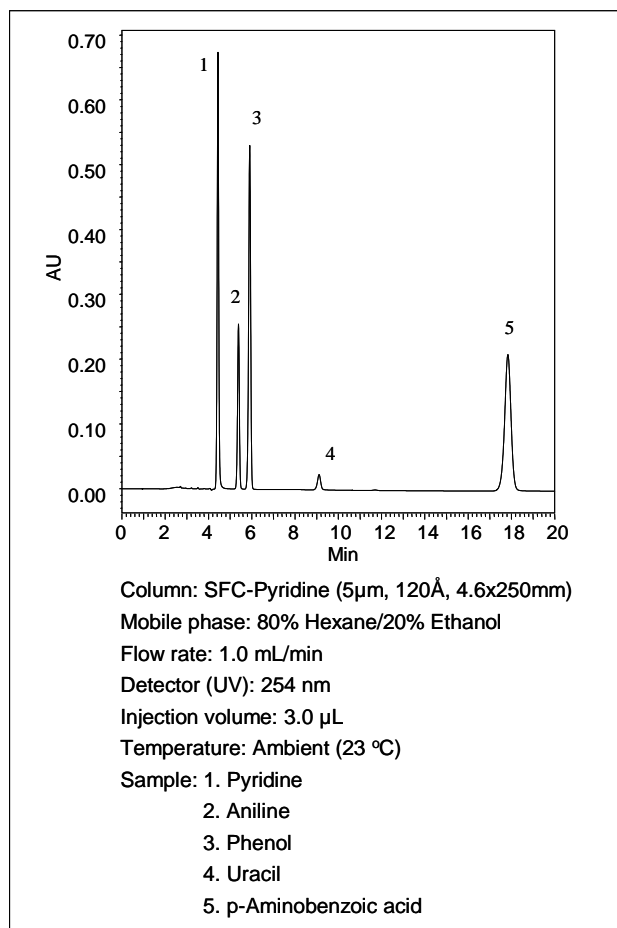


## Sepax SFC-Pyridine

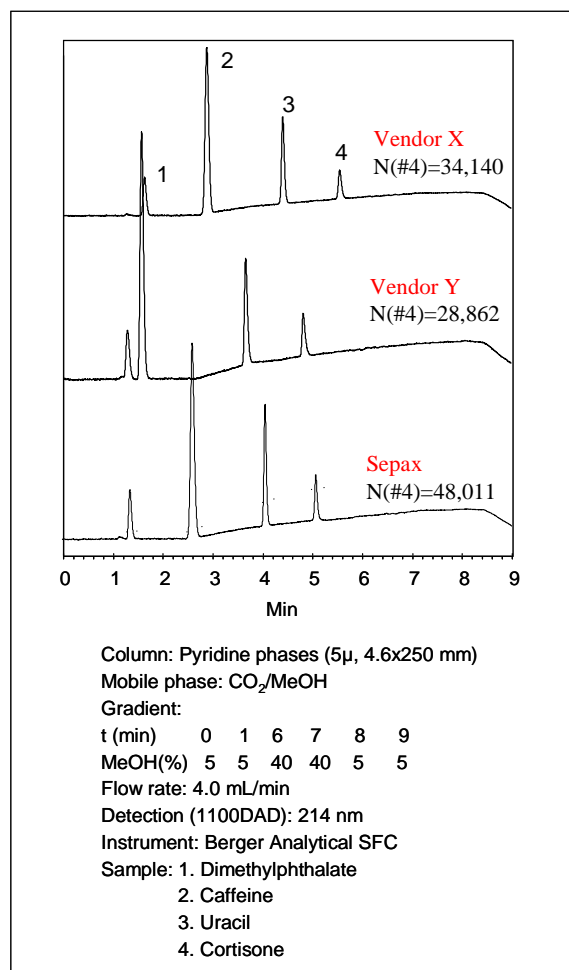


Silica: Spherical, high purity (<10 ppm metals)  
 Pore size: 120 Å  
 Particle size: 1.8, 2.2, 3, 5, 7, and 10 µm  
 Pore volume: 1.0 mL/g  
 Surface area: 300 m<sup>2</sup>/g  
 Phase structure: Polymeric and no endcapping  
 % Carbon: 8.0%  
 Coverage: ~3.3 µmol/m<sup>2</sup>

### LC test chromatogram



### SFC test chromatogram



### Characteristics

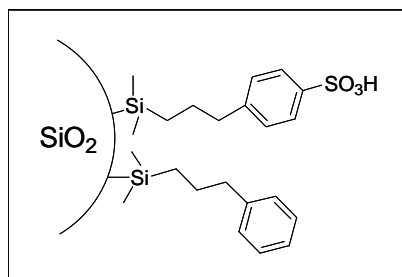
- Well controlled chemistry of polymeric monolayer
- High column-to-column reproducibility
- Recommended for separations of acidic, neutral and basic organic compounds, as well as the pharmaceuticals

### Sepax SFC-Pyridine Products

SFC-Pyridine	Pore size	P/N
5µm, 4.6x250mm	120Å	619255-4625
5µm, 4.6x150mm	120Å	619255-4615
5µm, 4.6x50mm	120Å	619255-4605
5µm, 21.2x250mm	120Å	619255-21225
5µm, 21.2x150mm	120Å	619255-21215
5µm, 21.2x100mm	120Å	619255-21210
5µm, 30x250mm	120Å	619255-30025
5µm, 30x150mm	120Å	619255-30015
5µm, 30x100mm	120Å	619255-30010

# Sepax SFC-SCX

## Phase Structure



## Technical Specifications

Silica: Spherical, high purity (<10 ppm metals)

Pore size: 120 Å

Particle size: 1.8, 2.2, 3, 5, 10 µm

Pore volume: 1.0 mL/g

Surface area: 300 m<sup>2</sup>/g

Phase structure: Polymeric and mixed mode

% Carbon: 11.0%

Coverage: 3.0 µmol/m<sup>2</sup>

## Description

Sepax SFC-SCX is a silica based mixed-mode strong cation exchange phase. Its phase has a mixed chemical structure of sulfonic acid and phenyl group. This mixed mode of strong cation-exchange and hydrophobicity offers high selectivity and high resolution separation for cationic/basic and nitrogen containing compounds as well as desirable retention for a variety of weak cationic and neutral organic compounds. A uniform, polymeric bonding of Sepax SFC-SCX enhances its stability under various separation conditions.

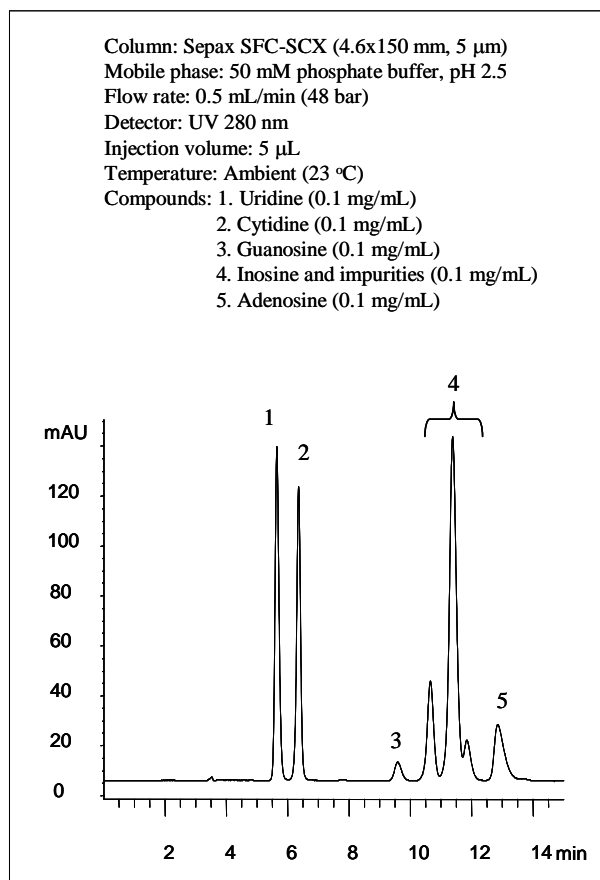
Sepax SFC-SCX has expanded its applications from the traditional SCX separation of cationic and nitrogen containing compounds to weak cationic and neutral organic molecules. Examples include separation of analytes of amines and polyamines, such as alkaloids, peptides, codeine, cough and cold ingredients.

## Characteristics

- Highly controlled chemistry of polymeric monolayer formation and end-capping
- Mixed chemical structure of sulfonic acid and phenyl group
- Mixed-mode of ion-exchange and hydrophobic interaction enabling high selectivity and appropriate retention for a variety of compounds

- Polymeric bonding and end-capping to achieve the exceptionally high stability
- pH stability: 1.5-8.0
- Suitable for separations of a complex of cationic, nitrogen containing, and neutral compounds

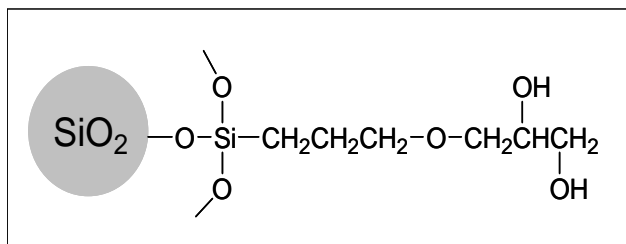
## LC test chromatogram



## Sepax SFC-SCX Products

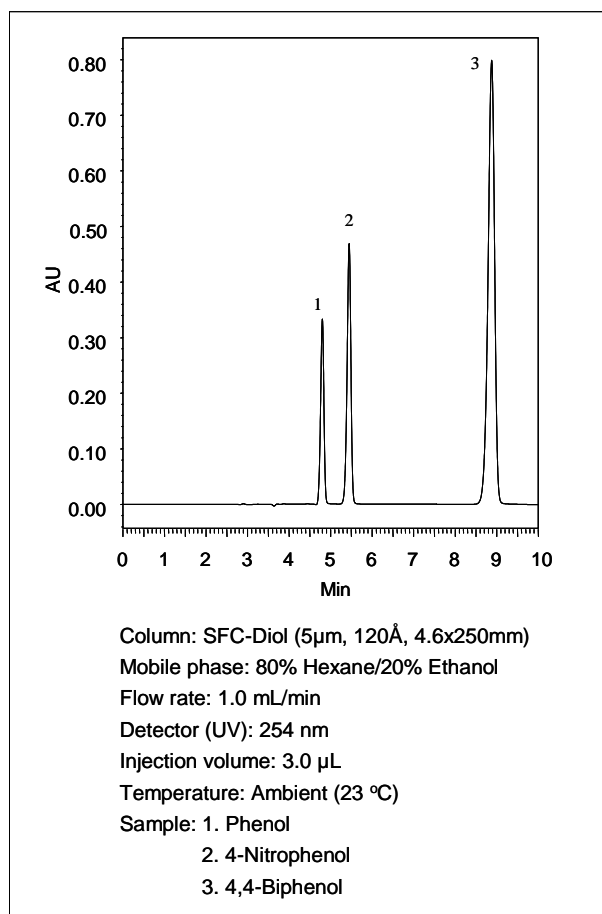
Sepax SFC-SCX	Pore size	P/N
5µm, 4.6x250mm	120Å	620365-4625
5µm, 4.6x150mm	120Å	620365-4615
5µm, 4.6x50mm	120Å	620365-4605
5µm, 21.2x250mm	120Å	620365-21225
5µm, 21.2x150mm	120Å	620365-21215
5µm, 21.2x100mm	120Å	620365-21210
5µm, 30x250mm	120Å	620365-30025
5µm, 30x150mm	120Å	620365-30015
5µm, 30x100mm	120Å	620365-30010

# Sepax SFC-Diol

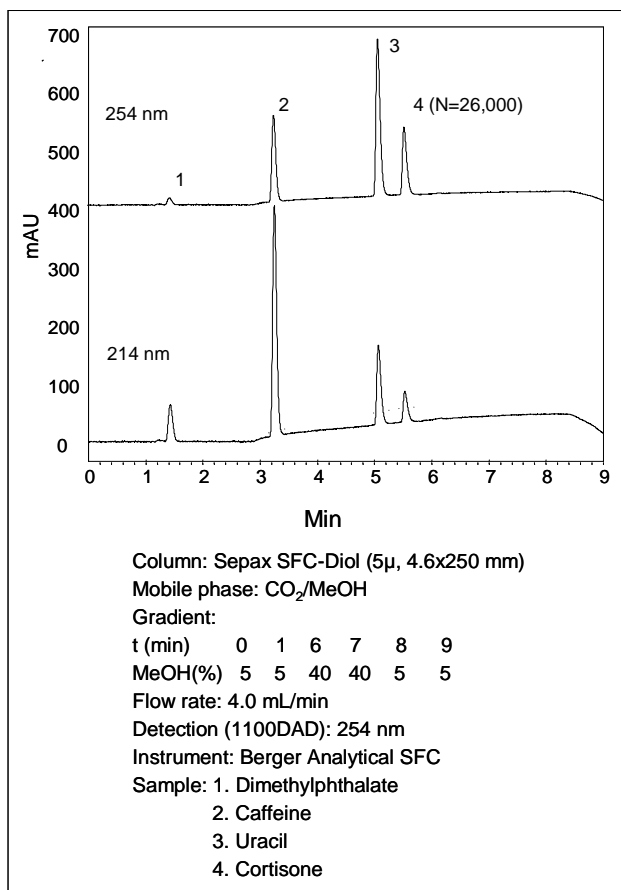


Silica: Spherical, high purity (<10 ppm metals)  
 Pore size: 120 Å  
 Particle size: 1.8, 2.2, 3, 5, 10 µm  
 Pore volume: 1.0 mL/g  
 Surface area: 300 m<sup>2</sup>/g  
 Phase structure: Monomeric and fully endcapped  
 % Carbon: 8.8%  
 Coverage: ~4.0 µmol/m<sup>2</sup>

## LC test chromatogram



## SFC test chromatogram



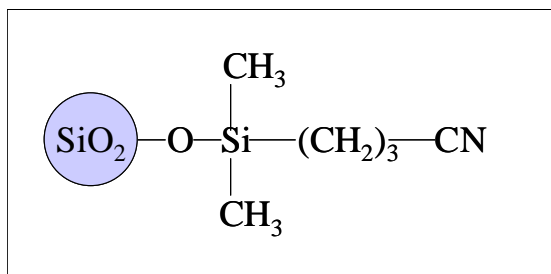
## Characteristics

- Well controlled chemistry of polymeric monolayer
- High column-to-column reproducibility
- Polar phase for separations of acidic, neutral and basic organic compounds, as well as the pharmaceuticals
- High selectivity and efficiency for separations

## Sepax SFC-Diol Products

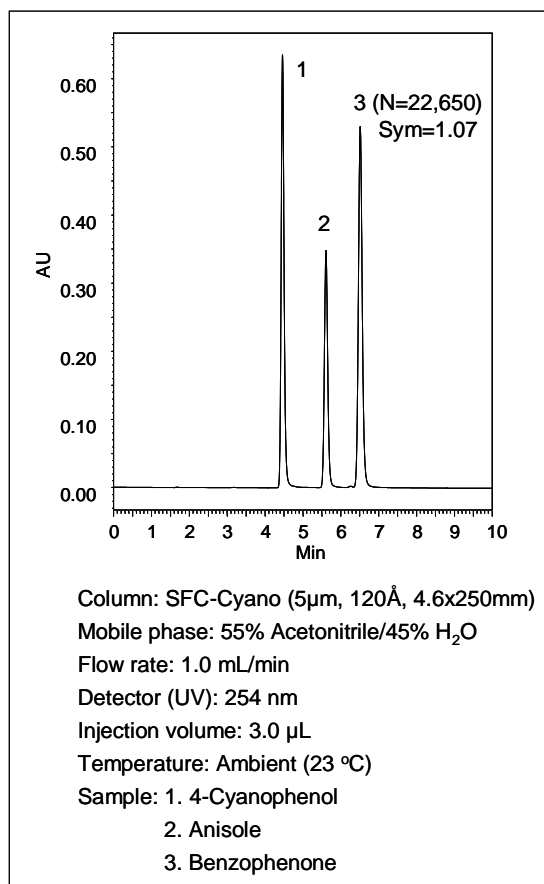
Sepax SFC-Diol	Pore size	P/N
5µm, 4.6x250mm	120Å	616425-4625
5µm, 4.6x150mm	120Å	616425-4615
5µm, 4.6x50mm	120Å	616425-4605
5µm, 21.2x250mm	120Å	616425-21225
5µm, 21.2x150mm	120Å	616425-21215
5µm, 21.2x100mm	120Å	616425-21210
5µm, 300x250mm	120Å	616425-30025
5µm, 300x150mm	120Å	616425-30015
5µm, 300x50mm	120Å	616425-30005

## Sepax SFC-Cyano



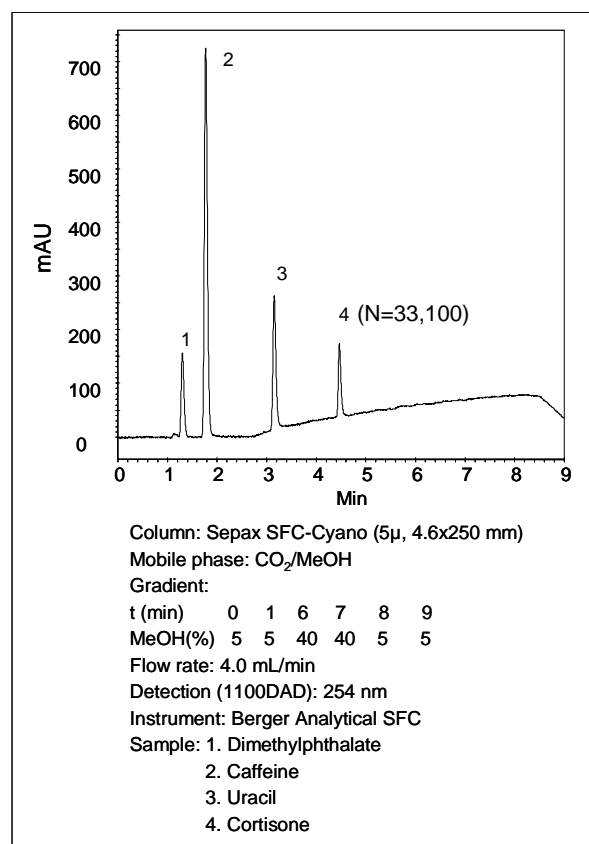
Silica: Spherical, high purity (<10 ppm metals)  
 Pore size: 120 Å  
 Particle size: 1.8, 2.2, 3, 5, 10 µm  
 Pore volume: 1.0 mL/g  
 Surface area: 300 m<sup>2</sup>/g  
 Phase structure: Monomeric and fully endcapped  
 % Carbon: 7.0%  
 Coverage: ~3.5 µmol/m<sup>2</sup>

### LC test chromatogram



The SFC-Cyano packing materials are bonded with propyl cyano functional groups that enable special interaction with polar compounds. The monomeric bonding chemistry produces very high efficiency and high resolution separations.

### SFC test chromatogram



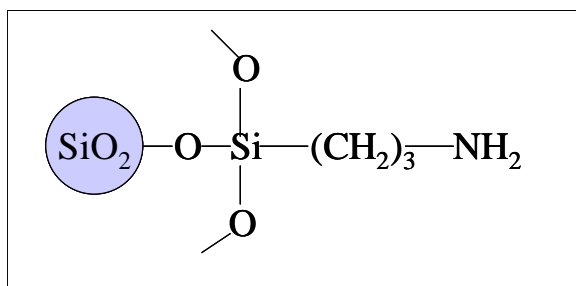
### Characteristics

- Highly controlled chemistry of monolayer formation and end-capping
- Extremely high column-to-column reproducibility
- High selectivity and efficiency for separations
- Suitable for separations of acidic, neutral and basic organic compounds, and pharmaceuticals

### Sepax SFC-Cyano Products

Sepax SFC-Cyano	Pore size	P/N
5µm, 4.6x250mm	120Å	613315-4625
5µm, 4.6x150mm	120Å	613315-4615
5µm, 4.6x50mm	120Å	613315-4605
5µm, 21.2x250mm	120Å	613315-21225
5µm, 21.2x150mm	120Å	613315-21215
5µm, 21.2x50mm	120Å	613315-21205
5µm, 30x250mm	120Å	613315-30025
5µm, 30x150mm	120Å	613315-30015
5µm, 30x50mm	120Å	613315-30005

## Sepax SFC-Amino



Silica: Spherical, high purity (<10 ppm metals)

Pore size: 120 Å

Particle size: 3, 5, 7 and 10 µm

Pore volume: 1.0 mL/g

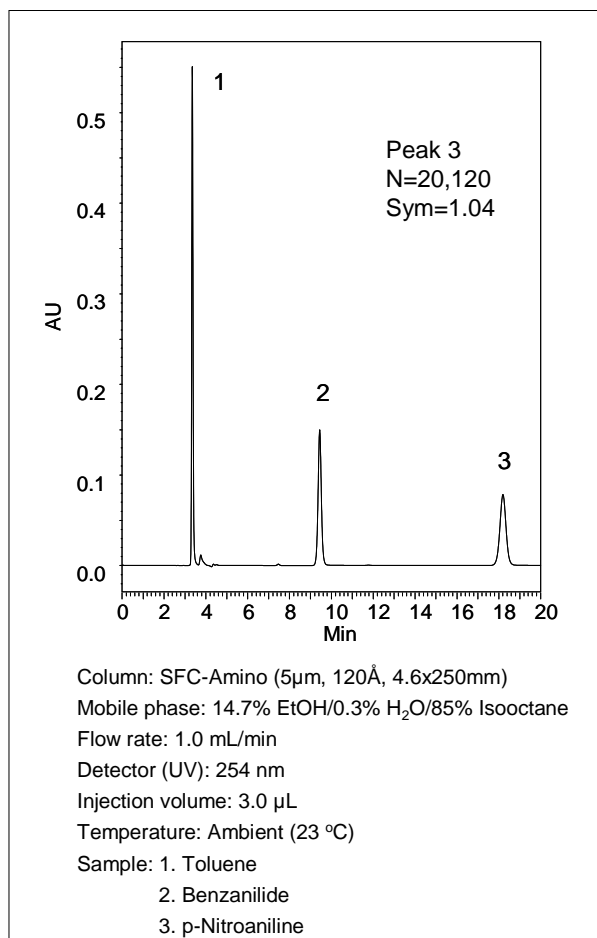
Surface area: 300 m<sup>2</sup>/g

Phase structure: Polymeric and no endcapping

% Carbon: 4.0%

Coverage: ~3.6 µmol/m<sup>2</sup>

### LC test chromatogram



## Characteristics

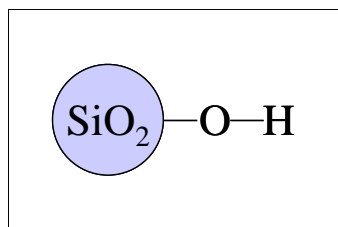
- Well controlled chemistry of polymeric monolayer
- High column-to-column reproducibility
- Utilized as both SFC and LC phases
- Versatile mobile phases: non-aqueous solvents, such as hexane/ethyl acetate and chloroform/methanol, and aqueous solutions
- Recommended for separations of pharmaceuticals, saccharides, nucleotides, and basic organic compounds

## Sepax SFC-Amino Products

Sepax SFC-Amino	Pore size	P/N
5µm, 4.6x250mm	120Å	615305-4625
5µm, 4.6x150mm	120Å	615305-4615
5µm, 4.6x50mm	120Å	615305-4605
5µm, 21.2x250mm	120Å	615305-21225
5µm, 21.2x150mm	120Å	615305-21215
5µm, 21.2x100mm	120Å	615305-21210
5µm, 21.2x50mm	120Å	615305-21205
5µm, 30x250mm	120Å	615305-30025
5µm, 30x150mm	120Å	615305-30015
5µm, 30x100mm	120Å	615305-30010
5µm, 30x50mm	120Å	615305-30005

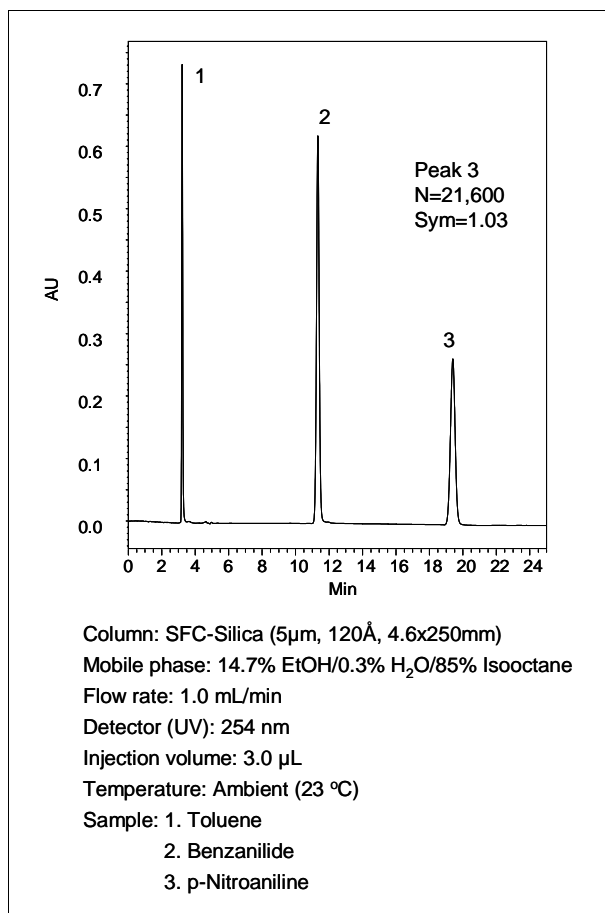


## Sepax SFC-Silica



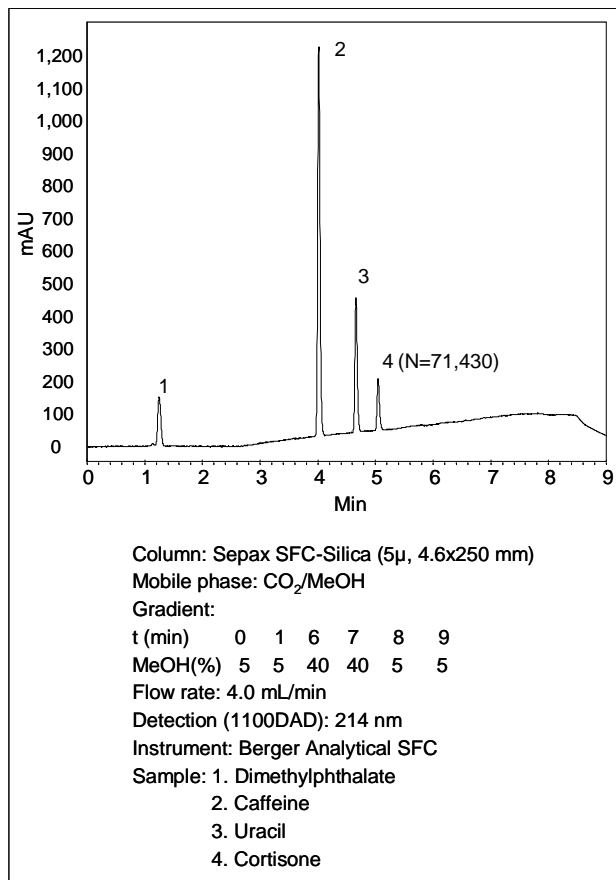
Silica: Spherical, high purity (<10 ppm metals)  
 Pore size: 120 Å  
 Particle size: 3, 5, 7 and 10 µm  
 Pore volume: 1.0 mL/g  
 Surface area: 300 m<sup>2</sup>/g  
 Phase structure: activated hydroxyl (-OH)  
 % Carbon: 0%

### LC test chromatogram



- Suitable for separations in aqueous and non-aqueous mobile phases
- Suitable for separations of polar and basic organic compounds, such as vitamins, steroids, as well as pharmaceuticals

### SFC test chromatogram



## Sepax SFC-Silica Products

Sepax SFC-Silica	Pore size	P/N
5µm, 4.6x250mm	120Å	617005-4625
5µm, 4.6x150mm	120Å	617005-4615
5µm, 4.6x50mm	120Å	617005-4605
5µm, 21.2x250mm	120Å	617005-21225
5µm, 21.2x150mm	120Å	617005-21215
5µm, 21.2x100mm	120Å	617005-21210
5µm, 300x250mm	120Å	617005-30025
5µm, 300x150mm	120Å	617005-30015
5µm, 300x50mm	120Å	617005-30005

## Characteristics

- Activated silica surface
- Ultra high purity
- Enhanced mechanical stability



## Ordering Information

Phases	1.8 $\mu\text{m}$ Analytical Columns (length x ID mm)					
	2.1x30	2.1x50	2.1x100	2.1x150	3.0x30	3.0x50
SFC-Cyano (120 Å)	613311-2103	613311-2105	613311-2110	613311-2115	613311-3003	613311-3005
SFC-NH <sub>2</sub> (120 Å)	615301-2103	615301-2105	615301-2110	615301-2115	615301-3003	615301-3005
SFC-SCX (120 Å)	620361-2103	620361-2105	620361-2110	620361-2115	620361-3003	620361-3005
SFC-Pyridine (120Å)	619251-2103	619251-2105	619251-2110	619251-2115	619251-3003	619251-3005
SFC-Diol (120 Å)	616331-2103	616331-2105	616331-2110	616331-2115	616331-3003	616331-3005
SFC-Silica (120 Å)	617001-2103	617001-2105	617001-2110	617001-2115	617001-3003	617001-3005

Phases	1.8 $\mu\text{m}$ Analytical Columns (length x ID mm)					
	3.0x100	3.0x150	4.6x30	4.6x50	4.6x100	4.6x150
SFC-Cyano (120 Å)	613311-3010	613311-3015	613311-4603	613311-4605	613311-4610	613311-4615
SFC-NH <sub>2</sub> (120 Å)	615301-3010	615301-3015	615301-4603	615301-4605	615301-4610	615301-4615
SFC-SCX (120 Å)	620361-3010	620361-3015	620361-4603	620361-4605	620361-4610	620361-4615
SFC-Pyridine (120Å)	619251-3010	619251-3015	619251-4603	619251-4605	619251-4610	619251-4615
SFC-Diol (120 Å)	616331-3010	616331-3015	616331-4603	616331-4605	616331-4610	616331-4615
SFC-Silica (120 Å)	617001-3010	617001-3015	617001-4603	617001-4605	617001-4610	617001-4615

Phases	2.2 $\mu\text{m}$ Analytical Columns (length x ID mm)					
	2.1x30	2.1x50	2.1x100	2.1x150	3.0x30	3.0x50
SFC-Cyano (120 Å)	613312-2103	613312-2105	613312-2110	613312-2115	613312-3003	613312-3005
SFC-NH <sub>2</sub> (120 Å)	615302-2103	615302-2105	615302-2110	615302-2115	615302-3003	615302-3005
SFC-SCX (120 Å)	620362-2103	620362-2105	620362-2110	620362-2115	620362-3003	620362-3005
SFC-Pyridine (120Å)	619252-2103	619252-2105	619252-2110	619252-2115	619252-3003	619252-3005
SFC-Diol (120 Å)	616332-2103	616332-2105	616332-2110	616332-2115	616332-3003	616332-3005
SFC-Silica (120 Å)	617002-2103	617002-2105	617002-2110	617002-2115	617002-3003	617002-3005

Phases	2.2 $\mu\text{m}$ Analytical Columns (length x ID mm)					
	3.0x100	3.0x150	4.6x30	4.6x50	4.6x100	4.6x150
SFC-Cyano (120 Å)	613312-3010	613312-3015	613312-4603	613312-4605	613312-4610	613312-4615
SFC-NH <sub>2</sub> (120 Å)	615302-3010	615302-3015	615302-4603	615302-4605	615302-4610	615302-4615
SFC-SCX (120 Å)	620362-3010	620362-3015	620362-4603	620362-4605	620362-4610	620362-4615
SFC-Pyridine (120Å)	619252-3010	619252-3015	619252-4603	619252-4605	619252-4610	619252-4615
SFC-Diol (120 Å)	616332-3010	616332-3015	616332-4603	616332-4605	616332-4610	616332-4615
SFC-Silica (120 Å)	617002-3010	617002-3015	617002-4603	617002-4605	617002-4610	617002-4615

Phases	3 $\mu\text{m}$ Analytical Columns (length x ID mm)					Guard column
	2.1x30	2.1x50	2.1x100	2.1x150	2.1x250	2.0x10*
SFC-Cyano (120 Å)	613313-2103	613313-2105	613313-2110	613313-2115	613313-2125	613313-2001
SFC-NH <sub>2</sub> (120 Å)	615303-2103	615303-2105	615303-2110	615303-2115	615303-2125	615303-2001
SFC-SCX (120 Å)	620363-2103	620363-2105	620363-2110	620363-2115	620363-2125	620363-2001
SFC-Pyridine (120Å)	619253-2103	619253-2105	619253-2110	619253-2115	619253-2125	619253-2001
SFC-Diol (120 Å)	616333-2103	616333-2105	616333-2110	616333-2115	616333-2125	616333-2001
SFC-Silica (120 Å)	617003-2103	617003-2105	617003-2110	617003-2115	617003-2125	617003-2001

Phases	3 µm Analytical Columns (length x ID mm)					Guard column
	4.6x30	4.6x50	4.6x100	4.6x150	4.6x250	4.0x10*
SFC-Cyano (120 Å)	613313-4603	613313-4605	613313-4610	613313-4615	613313-4625	613313-4001
SFC-NH <sub>2</sub> (120 Å)	615303-4603	615303-4605	615303-4610	615303-4615	615303-4625	615303-4001
SFC-SCX (120 Å)	620363-4603	620363-4605	620363-4610	620363-4615	620363-4625	620363-4001
SFC-Pyridine (120Å)	619253-4603	619253-4605	619253-4610	619253-4615	619253-4625	619253-4001
SFC-Diol (120 Å)	616333-4603	616333-4605	616333-4610	616333-4615	616333-4625	616333-4001
SFC-Silica (120 Å)	617003-4603	617003-4605	617003-4610	617003-4615	617003-4625	617003-4001

Phases	5 µm Analytical Columns (length x ID mm)					Guard column
	2.1x30	2.1x50	2.1x100	2.1x150	2.1x250	2.0x10*
SFC-Cyano (120 Å)	613315-2103	613315-2105	613315-2110	613315-2115	613315-2125	613315-2001
SFC-NH <sub>2</sub> (120 Å)	615305-2103	615305-2105	615305-2110	615305-2115	615305-2125	615305-2001
SFC-SCX (120 Å)	620365-2103	620365-2105	620365-2110	620365-2115	620365-2125	620365-2001
SFC-Pyridine (120Å)	619255-2103	619255-2105	619255-2110	619255-2115	619255-2125	619255-2001
SFC-Diol (120 Å)	616335-2103	616335-2105	616335-2110	616335-2115	616335-2125	616335-2001
SFC-Silica (120 Å)	617005-2103	617005-2105	617005-2110	617005-2115	617005-2125	617005-2001

Phases	5 µm Analytical Columns (length x ID mm)					Guard column
	4.6x30	4.6x50	4.6x100	4.6x150	4.6x250	4.0x10*
SFC-Cyano (120 Å)	613315-4603	613315-4605	613315-4610	613315-4615	613315-4625	613315-4001
SFC-NH <sub>2</sub> (120 Å)	615305-4603	615305-4605	615305-4610	615305-4615	615305-4625	615305-4001
SFC-SCX (120 Å)	620365-4603	620365-4605	620365-4610	620365-4615	620365-4625	620365-4001
SFC-Pyridine (120Å)	619255-4603	619255-4605	619255-4610	619255-4615	619255-4625	619255-4001
SFC-Diol (120 Å)	616335-4603	616335-4605	616335-4610	616335-4615	616335-4625	616335-4001
SFC-Silica (120 Å)	617005-4603	617005-4605	61700-4610	617005-4615	617005-4625	617005-4001

Phases	5 µm preparative and semi-preparative Columns (length x ID mm)				Guard column
	7.8x150	7.8x250	10x150	10x250	4.0x10*
SFC-Cyano (120 Å)	613315-7815	613315-7825	613315-10015	613315-10025	613315-4001
SFC-NH <sub>2</sub> (120 Å)	615305-7815	615305-7825	615305-10015	615305-10025	615305-4001
SFC-SCX (120 Å)	620365-7815	620365-7825	620365-10015	620365-10025	620365-4001
SFC-Pyridine (120 Å)	619255-7815	619255-7825	619255-10015	619255-10025	619255-4001
SFC-Diol (120 Å)	616335-7815	6166335-7825	616335-10015	616335-10025	616335-4001
SFC-Silica (120 Å)	617005-7815	617005-7825	617005-10015	617005-10025	617005-4001

Phases	5 µm preparative and semi-preparative Columns (length x ID mm)					Guard column
	21.2x50	21.2x100	21.2x150	21.2x250	21.2x300	21.2x10**
SFC-Cyano (120 Å)	613315-21205	613315-21210	613315-21215	613315-21225	613315-21230	613315-21201
SFC-NH <sub>2</sub> (120 Å)	615305-21205	615305-21210	615305-21215	615305-21225	615305-21230	615305-21201
SFC-SCX (120 Å)	620365-21205	620365-21210	620365-21215	620365-21225	620365-21200	620365-21201
SFC-Pyridine (120Å)	619255-21205	619255-21210	619255-21215	619255-21225	619255-21200	619255-21201
SFC-Diol (120 Å)	616335-21205	616335-21210	616335-21215	616335-21225	616335-21200	616335-21201
SFC-Silica (120 Å)	617005-21205	617005-21210	617005-21215	617005-21225	617005-21200	617005-21201

Phases	5 µm preparative and semi-preparative Columns (length x ID mm)					Guard column
	30x50	30x100	30x150	30x250	50x250	21.2x10**
SFC-Cyano (120 Å)	613315-30005	613315-30010	613315-30015	613315-30025	613315-50025	613315-21201
SFC-NH <sub>2</sub> (120 Å)	615305-30005	615305-30010	615305-30015	615305-30025	615305-50025	615305-21201
SFC-SCX (120 Å)	620365-30005	620365-30010	620365-30015	620365-30025	620365-50025	620365-21201
SFC-Pyridine (120Å)	619255-30005	619255-30010	619255-30015	619255-30025	619255-50025	619255-21201
SFC-Diol (120 Å)	616335-30005	616335-30010	616335-30015	616335-30025	616335-50025	616335-21201
SFC-Silica (120 Å)	617005-30005	617005-30010	617005-30015	617005-30025	617005-50025	617005-21201

Phases	10 µm preparative and semi-preparative Columns (length x ID mm)				Guard column
	7.8x250	10x100	10x150	10x250	4.0x10*
SFC-Cyano (120 Å)	613319-7825	613319-10015	613319-10015	613319-10025	613319-4001
SFC-NH <sub>2</sub> (120 Å)	615309-7825	615309-10015	615309-10015	615309-10025	615309-4001
SFC-SCX (120 Å)	620369-7825	620369-10015	620369-10015	620369-10025	620369-4001
SFC-Pyridine (120 Å)	619259-7825	619259-10015	619259-10015	619259-10025	619259-4001
SFC-Diol (120 Å)	616339-7825	616339-10015	616339-10015	616339-10025	616339-4001
SFC-Silica (120 Å)	617009-7825	617009-10015	617009-10015	617009-10025	617009-4001

Phases	10 µm preparative and semi-preparative Columns (length x ID mm)					Guard column
	21.2x50	21.2x100	21.2x150	21.2x250	21.2x300	21.2x10**
SFC-Cyano (120 Å)	613319-21210	613319-21210	613319-21215	613319-21225	613319-50025	613319-21201
SFC-NH <sub>2</sub> (120 Å)	615309-21210	615309-21210	615309-21215	615309-21225	615309-50025	615309-21201
SFC-SCX (120 Å)	620369-21210	620369-21210	620369-21215	620369-21225	620369-50025	620369-21201
SFC-Pyridine (120Å)	619259-21210	619259-21210	619259-21215	619259-21225	619259-50025	619259-21201
SFC-Diol (120 Å)	616339-21210	616339-21210	616339-21215	616339-21225	616339-50025	616339-21201
SFC-Silica (120 Å)	617009-21210	617009-21210	617009-21215	617009-21225	617009-50025	617009-21201

Phases	10 µm preparative and semi-preparative Columns (length x ID mm)					Guard column
	30x50	30x100	30x150	30x250	50x250	21.2x10**
SFC-Cyano (120 Å)	613319-30005	613319-30010	613319-30015	613319-30025	613319-50025	613319-21201
SFC-NH <sub>2</sub> (120 Å)	615309-30005	615309-30010	615309-30015	615309-30025	615309-50025	615309-21201
SFC-SCX (120 Å)	620369-30005	620369-30010	620369-30015	620369-30025	620369-50025	620369-21201
SFC-Pyridine (120Å)	619259-30005	619259-30010	619259-30015	619259-30005	619259-50025	619259-21201
SFC-Diol (120 Å)	616339-30005	616339-30010	616339-30015	616339-30005	616339-50025	616339-21201
SFC-Silica (120 Å)	617009-30005	617009-30010	617009-30015	617009-30025	617009-50025	617009-21201

\* Guard column cartridge does not include the cartridge holder

\* Cartridge holder

\*\* Guard column cartridge does not include the cartridge holder

\*\* Cartridge holder

P/N# 102000-2001, \$42.50/EA for 10x20 mm guard cartridge

P/N# 102000-4001, \$42.50/EA for 10x40 mm guard cartridge

P/N# 102000-21201, \$175/EA for 10x21.2 mm guard cartridge

