BISCHOFF
CHROMATOGRAPHY

ProntoSIL

HPLC Columns

L Notifications	Packing	Phase names
L 1	Octadecyl silane chemically bonded to porous or non-porous silica or ceramic micro-particles, 3 to 10 µm in diameter, or a monolithic rod	ProntoSIL C18 ACE-EPS ProntoSIL C18 AQ ProntoSIL C18 H ProntoSIL C18 SH Pronto I ODS-3 ProntoSIL Spheribond ODS1 ProntoSIL Spheribond ODS 2 ProntoSIL Hypersorb C18 ProntoSIL C18 BDS ProntoSIL KromaPlus C18 ProntoSIL C18 Eurobond ProntoSIL C18 CB ProntoSIL C18 AQ PLUS HAPAK ODS AB ProntoSIL Prontobond ProntoSIL C18 Basic ProntoSIL CB18 MA ProntoSIL CB18 MH
	Porous silica particles, 3 to 10 µm in diameter, or a monolithic silica rod.	ProntoSIL Silica KromaPlus Silica ProntoSIL SpheriBond SI ProntoSIL HyperSorb SI ProntoSIL CB Silica
L7	Octylsilane chemically bonded to totally or superficially porous silica particles, 3 to 10 µm in diameter, or a monolithic silica rod.	ProntoSIL C8 ACE-EPS ProntoSIL C8 SH ProntoSIL KromaPlus C8 ProntoSIL C8 BDS HIPAK C8 AB ProntoSIL CB C8 ProntoSIL Hypersorb C8 ProntoSIL SpheriBond C8
L 8	An essentially monomolecular layer of aminopropylsilane chemically bonded to totally porous silica gel support, 3 to 10 µm in diameter, or a monolithic silica rod.	ProntoSIL AMINO ProntoSIL AMINO EC ProntoSIL AMINO H ProntoSIL CB Amino ProntoSIL KromaPlus AMINO ProntoSIL Hypersorb AMINO ProntoSIL SpheriBond AMINO
L 9	Irregular or spherical, totally porous silica gel having a chemically bonded, strongly acidic cation-exchange coating, 3 to 10 µm in	ProntoSIL SpheriBond SCX
L 10	Nitrile groups chemically bonded to porous silica particles, 3 to 10 µm in diameter, or a monolithic silica rod.	ProntoSIL CN ProntoSIL CB Cyano ProntoSIL SpheriBond NITRILE ProntoSIL Hypersorb CPS (CN)
L 11	Phenyl groups chemically bonded to porous silica particles, 3 to 10 µm in diameter, or a monolithic silica rod.	ProntoSIL Phenyl ProntoSIL Phenyl Hexyl ProntoSIL CB Phenyl
L14	Silica gel having a chemicallly bonded, strongly basic quaternary ammonium anion-exchange coating, 5 to 10 µm in diameter.	ProntoSIL SpheriBond SAX
L16	Dimethylsilane chemically bonded to porous silica particles, 5 to 10 µm in diameter	ProntoSIL C1 KromaPlus C1 ProntoSIL Spheribond C1 ProntoSIL Hypersorb C1 (SAS)
L17	Strong cation-exchange resin consisting of sulfonated cross-linked styrenedivinylbenzene copolymer in the hydrogen form, 6 to 12 µm in diameter	ProntoGel H ProntoGel Su H

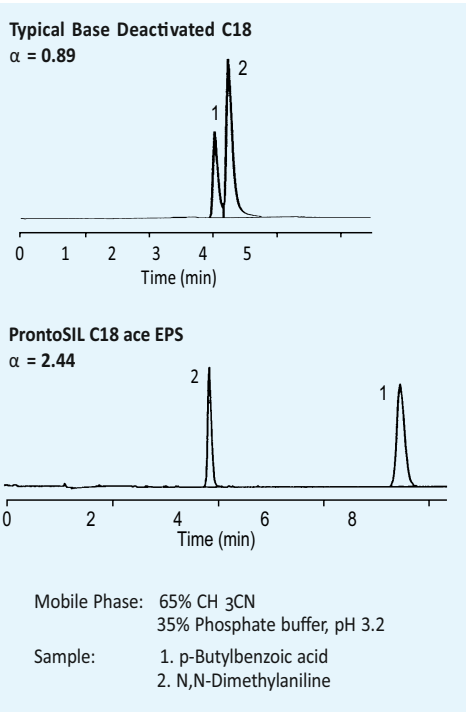
L Notifications	Packing	Phase names
L19	Strong cation-exchange resin consisting of sulfonated cross-linked styrenedivinylbenzene copolymer in the calcium form, about 9 µm in diameter	ProntoGel Ca ProntoGel Su Ca
L20	Dihydroxypropane groups chemically bonded to porous silica or hybrid particles, 3 to 10 µm in diameter, or a monolithic silica rod.	ProntoSIL Diol ProntoSIL CB Diol
L21	A rigid, spherical styrenedivinylbenzene copolymer, 3 to 30 µm in diameter	ProntoGel-P
L22	A cation-exchange resin made of porous polystyrene gel with sulfonic acid groups, about 10 µm in size	ProntoGel Peptide 100A^{0}
L25	Packing having the capacity to separate compounds with amolecular weight range from 100-5000 (as determined by polyethylene oxide), applied to neutral, anionic, and cationic water-soluble polymers. A polymethacrylate resin base, cross-linked with polyhydroxylated ether (surface contained some residual carboxyl functional groups) was found suitable, 3 to 10 µm in diameter, or a monolithic silica rod.	ProntoGel-AQUA-OH
L26	Butyl silane chemically bonded to totally porous silica particles, 3 to 10 µm in diameter	ProntoSIL C4 ProntoSIL KromaPlus C4 ProntoSIL CB Butyl
L34	Strong cation-exchange resin consisting of sulfonated cross-linked styrenedivinylbenzene copolymer in the lead form, 7 to 9 µm in diameter	ProntoGel-PB
L37	Packing having the capacity to separate proteins by molecular size over a range of 2,000 to 40,000 Da. It is a polymethacrylate gel	ProntoGel-AQUA-OH
L38	A methacrylate-based size-exclusion packing for water-soluble samples	ProntoGel-AQUA-OH
L39	A hydrophilic polyhydroxymethacrylate gel of totally porous spherical resin	ProntoGel-AQUA-OH
L40	Cellulose tris-3, 5-dimethylphenylcarbamate coated porous silica particles, 5 µm to 20 µm in diameter	ProntoSIL Chiral POD
L43	Pentafluorophenyl groups chemically bonded to silica particles by a propyl spacer, 2.6 to 10 µm in diameter	ProntoSIL PFP
L51	Amylose tris-3,5-dimethylphenylcarbamate-coated, porous, spherical, silica particles, 5 to 10 µm in diameter	ProntoSIL Chiral PAD
L58	Strong cation-exchange resin consisting of sulfonated cross-linked styrenedivinylbenzene copolymer in the sodium form, about 6 to 30 µm diameter	ProntoGel Su Na
L80	Cellulose tris(4-methylbenzoate)-coated, porous, spherical, silica particles, 5 µ in diameter	ProntoSIL Chiral POJ
L90	Amylose tris(S)-a-methylbenzylcarbamate	ProntoSIL Chiral PAS
L99	Amylose tris(3,5-dimethylphenylcarbamate)	ProntoSIL Chiral PIA
L119	Cellulose tris(3,5-dichlorophenylcarbamate)	ProntoSIL Chiral PIC

The ProntoSIL C18 ace-EPS belongs to the new group of stationary RP-supports with polar embedded groups. The packing is very stable over a wide pH range (pH 1-10). In addition, it offers a maximum of hydrophobicity combined with a maximum of polar selectivity. The silanophilic activity of the support is very low. Ultra strong basic compounds such as amitriptyline can be eluted from the column at neutral pH values with excellent symmetrical peak shapes.

The main application area of these packings is the pharmaceutical industry, where analytes often have basic or acidic groups. For the separation of these compounds these supports exhibit an enhanced polar selectivity. In comparison to a classical bonded C18 column acidic compounds show a higher retention whereas basic compounds show a slight decrease of retention on a polar embedded column. The C18 ace-EPS bonding type is available in several particle and pore sizes.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C18 ace-EPS	1 to 10	3µm	120Å	300 m^2/g	18.5	yes
			200Å	200 m^2/g	12.5	yes
			300Å	100 m^2/g	8.5	yes
		5µm	120Å	300 m^2/g	18.5	yes
			200Å	200 m^2/g	12.5	yes
			300Å	100 m^2/g	8.5	yes
		10µm	120Å	300 m^2/g	18.5	yes
			200Å	200 m^2/g	12.5	yes
			300Å	100 m^2/g	8.5	yes

Enhanced Polar Selectivity

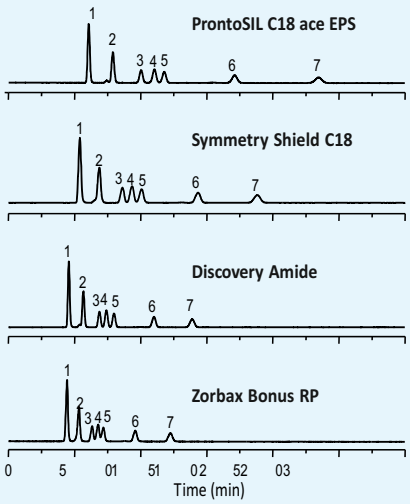


Mobile Phase: 65% CH 3CN
35% Phosphate buffer, pH 3.2

Sample: 1. p-Butylbenzoic acid
2. N,N-Dimethylaniline

The ProntoSIL C18 ace EPS column with enhanced polar selectivity provides significantly better selectivity for this pair of polar solutes than a typical base deactivated column.

Comparison of Retention



Column: 4.6 x 150 mm

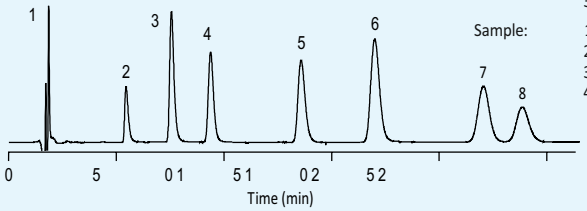
Mobile Phase: 50% CH 3CN
50% H 2O

Flow Rate: 1.0 mL/min

Sample:
1. Formaldehyde
2. Acetaldehyde
3. Acetone
4. Acroleine
5. Propanale
6. Crotonaldehyde
7. Butylraldehyde

ProntoSIL C18 ace EPS is more hydrophobic than other polar embedded phases and, therefore, provides more retention.

Enhanced Polar Selectivity and Excellent Peak Shape for Basic Compounds



Column: ProntoSIL C18 ace EPS, 4.6 x 150 mm

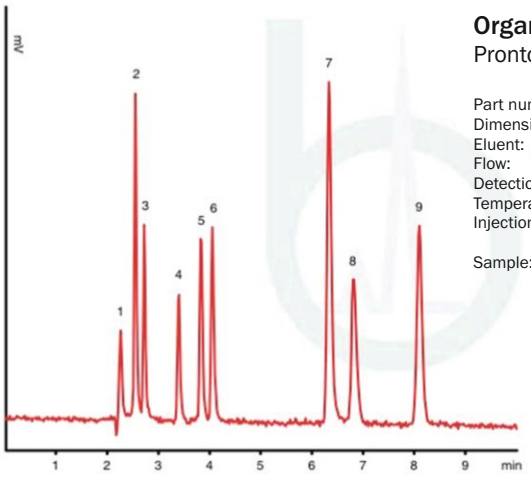
Mobile Phase: 65% CH 3OH,
35% Phosphate buffer, pH 7.0

Sample:
1. Uracil
2. Protriptyline
3. Nortriptyline
4. Doxepine
5. Imipramine
6. Amitriptyline
7. Trimipramine
8. Clomipramine

ProntoSIL C18 ace EPS is specifically designed for high resolution separations of polar compounds. A unique polar embedded group adds polar selectivity to this highly retentive phase and also shields the silica surface so that excellent peak shape for basic compounds can be achieved.

ProntoSIL C18 AQ with its unique bonding technology has been especially developed for the use in aqueous mobile phases with an organic content below 10%. Standard stationary phases with conventional bonding give very poor peak shapes under these chromatographic conditions due to the collapse of C18 brushes in aqueous eluents. ProntoSIL C18 AQ gives excellent peak shapes in these mobile phases resulting in enhanced selectivities. The advantages of the AQ packings can be demonstrated in applications of polar analytes. It is a special reversed phase material for separating a broad spectrum of hydrophilic analytes that show no retention on other reversed phase materials. Strongly polar samples soluble only in water can be separated using ProntoSIL C18 AQ. The eluent can even be water with no added organic solvent. ProntoSIL C18 AQ can also be used to separate hydrophobic compounds like other C18 or ODS phases. In ProntoSIL C18 AQ the primary separation mechanism is hydrophobic interaction. .

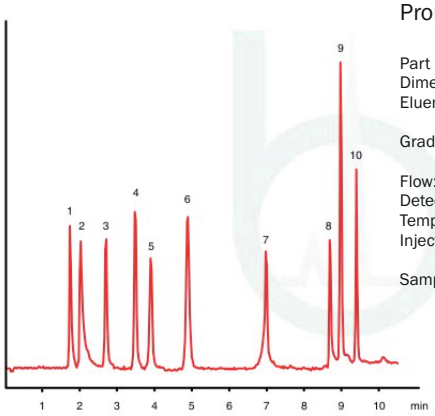
Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C18 AQ	2 to 7	3µm	120Å	300 m^2/g	14	yes
			200Å	200 m^2/g	9	yes
		5µm	120Å	300 m^2/g	14	yes
			200Å	200 m^2/g	9	yes
		10µm	120Å	350 m^2/g	14	yes



Organic Acids I
ProntoSIL 120-3-C18 AQ

Part number: 2503F 184PS030
Dimension: 250 x 3.0 mm
Eluent: 50mM H_3PO_4
Flow: 0.7 ml/min
Detection: UV 205 nm
Temperature: 22° C
Injection: 5 µl

Sample:
1: Glutamic acid
2: Oxalic acid
3: Tartaric acid
4: Malic acid
5: Ascorbic acid
6: Acetic acid
7: Maleic acid
8: Citirc acid
9: Fumaric acid



Water Soluble Vitamins
ProntoSIL 120-3-C18 AQ

Part number: 2003F 184PS030
Dimension: 200 x 3.0 mm
Eluent: A: H_2O/50 mM H_3PO_4
B: ACN
Gradient: 0% B, 0-180 s; 0-30% B, 181-400 s; 30% B, 401-790 s
Flow: 0.7 ml/min
Detection: UV 230 nm
Temperature: 22° C
Injection: 5 µl

Sample:
1: Pyridoxamine
2: Thiamine (Vit. B1) + impurity
3: Ascorbic acid (Vit. C)
4: Nicotinic acid (Niacin)
5: Nicotinamide (Vit. B3)
6: Pyridoxal
7: Pyridoxine (Vit. B6) + impurity of Vit. B12
7: Folic acid
8: Cyanocobalamin (Vit. B12)
9: Riboflavin (Vit. B_2)

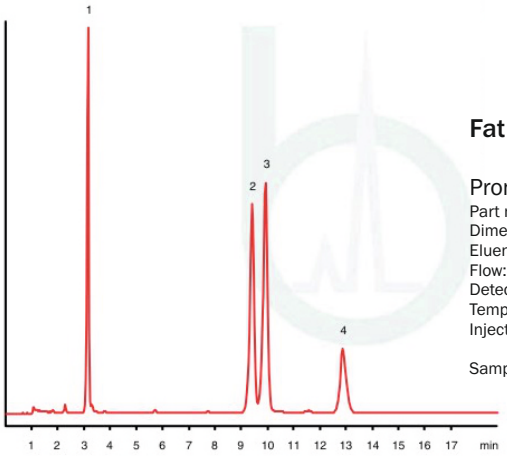
ProntoSIL C18 AQ Plus

ProntoSIL C18 AQ Plus can also be used in aqueous mobile phase with an organic content below 10%. In comparison to ProntoSIL C18 AQ, ProntoSIL C18 AQ Plus shows an enhanced stability at low pH's down to pH 1. Also the packing shows excellent peak shapes in pure aqueous eluents but differs in shape selectivity compared to ProntoSIL C18 AQ. The application field for this support is mainly in combinatorial chemistry where the standard separation conditions are fast gradients from 0-100% organic and where the mobile phases include 0.1% TFA. .

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C18 AQ PLUS	1 to 8	5µm	120Å	300 m^2/g	17	yes

ProntoSIL C18 H is the standard C18 support of the alliance for chromatography. ProntoSIL C18 H is applicable in a wide range of RP- chromatography. The packing is fully endcapped and possesses all of the excellent properties a new generation stationary phase can offer. Keeping in line with all ProntoSIL products, this support is based on an ultra pure silica. The wide pore supports show excellent properties for the separation of biomolecules such as proteins and peptides.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C18 H	2 to 7	3µm	60Å	450 m^2/g	18.5	yes
			120Å	300 m^2/g	17.5	yes
			200Å	200 m^2/g	11	yes
			300Å	100 m^2/g	7	yes
		5µm	60Å	450 m^2/g	18.5	yes
			120Å	300 m^2/g	17.5	yes
			200Å	200 m^2/g	11	yes
			300Å	100 m^2/g	7	yes
		10µm	120Å	300 m^2/g	17.5	yes



Fat Soluble Vitamins I

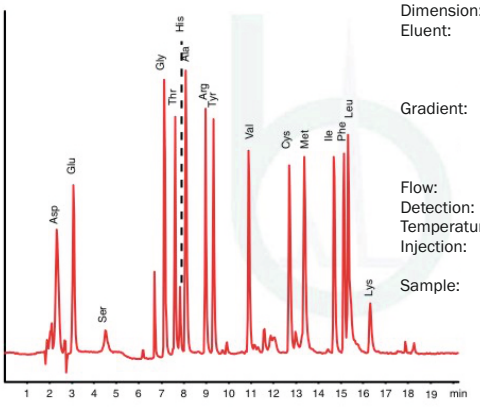
ProntoSIL 120-3-C18 H
Part number: 2003F 185PS030
Dimension: 200 x 3.0 mm
Eluent: Acetonitrile
Flow: 1 ml/min
Detection: UV 280 nm
Temperature: 30° C
Injection: 5 µl

Sample: 1: Vitamin A
2: Vitamin D_2
3: Vitamin D_3
4: a-Tocopherol

Amino Acids I

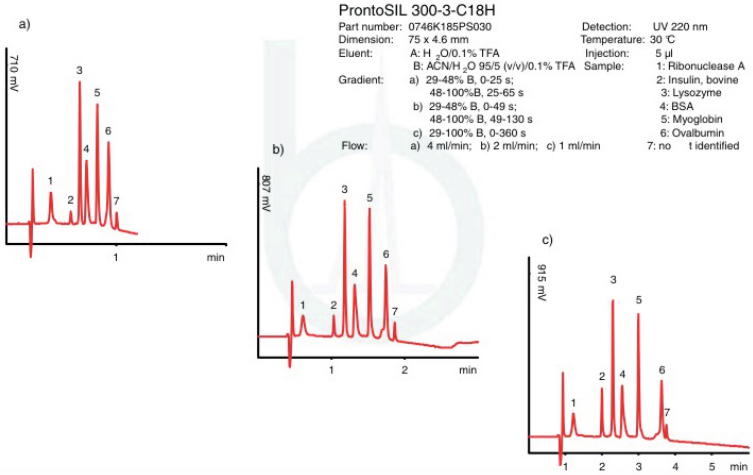
ProntoSIL 120-3-C18 H
Part number: 2003F 185PS030
Dimension: 200 x 3.0 mm
Eluent: A: 20mM CH_3COONa in H_2O/ACN, 97/3 (v/v)
B: 20mM CH_3COONa in H_2O/ACN, 50/50 (v/v)
Gradient: 5-28% B, 0-144 s;
28-45% B, 145-560 s
45-82% B, 561-896 s
82-90% B, 897-1215 s
Flow: 0.6 ml/min
Detection: UV 340 nm
Temperature: 30° C
Injection: 1 µl

Sample: SIGMA standard AA-S-18 (OPA/ Mercapto-propionic acid lebelled)



Fast Separation of Proteins

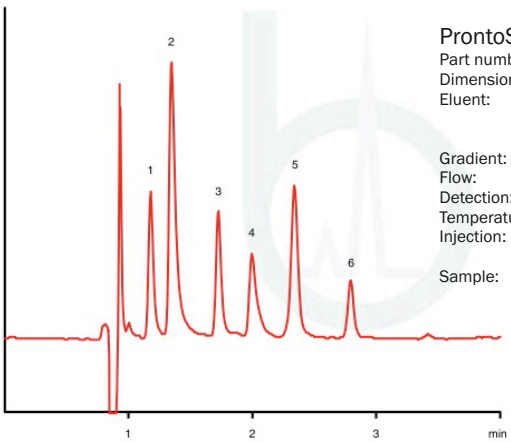
ProntoSIL 300-3-C18H
Part number: 0746K185PS030
Dimension: 75 x 4.6 mm
Eluent: A: H_2O/0.1% TFA
B: ACN/H_2O 95/5 (v/v)/0.1% TFA
Gradient: a) 29-48% B, 0-25 s;
48-100%B, 25-65 s
b) 29-48% B, 0-49 s;
48-100% B, 49-130 s
c) 29-100% B, 0-360 s
Flow: a) 4 ml/min; b) 2 ml/min; c) 1 ml/min
Detection: UV 220 nm
Temperature: 30 °C
Injection: 5 µl
Sample: 1: Ribonuclease A
2: Insulin, bovine
3: Lysozyme
4: BSA
5: Myoglobin
6: Ovalbumin
7: not identified



Fast Separation of Peptides

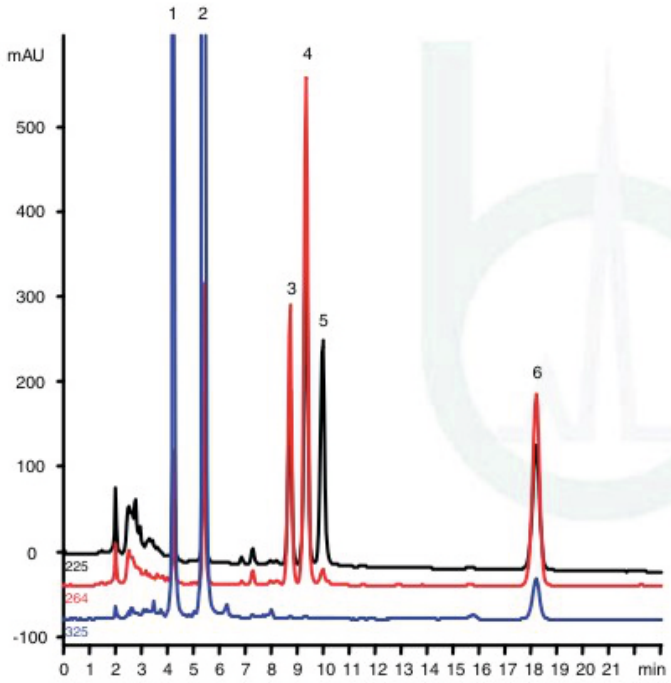
ProntoSIL 300-3-C18 H
Part number: 0746K185PS030
Dimension: 75 x 4.6 mm
Eluent: A: H_2O/0.1% TFA
B: ACN/H_2O 70/30 (v/v), 0.1% TFA
Gradient: 35-80% B, 0-480 s
Flow: 1 ml/min
Detection: UV 220 nm
Temperature: 30° C
Injection: 5 µl

Sample: 1: Oxytocin
2: Bradykinin
3: Angiotensin I
4: Eledoisin
5: Neurotensin
6: Angiotensin II



ProntoSIL C18 SH is applicable in a wide range of RP-chromatography. The packing is fully end-capped. Due to carbon load it shows an excellent shape selectivity and stability even at pH 1. Longer end-capped chains produce packing that are more retentive. In addition, longer chain lengths permit the use of larger samples.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C18 SH	1 to 8	3µm	120Å	300 m^2/g	17	yes
		5µm	120Å	300 m^2/g	17	yes
		10µm	120Å	300 m^2/g	17	yes

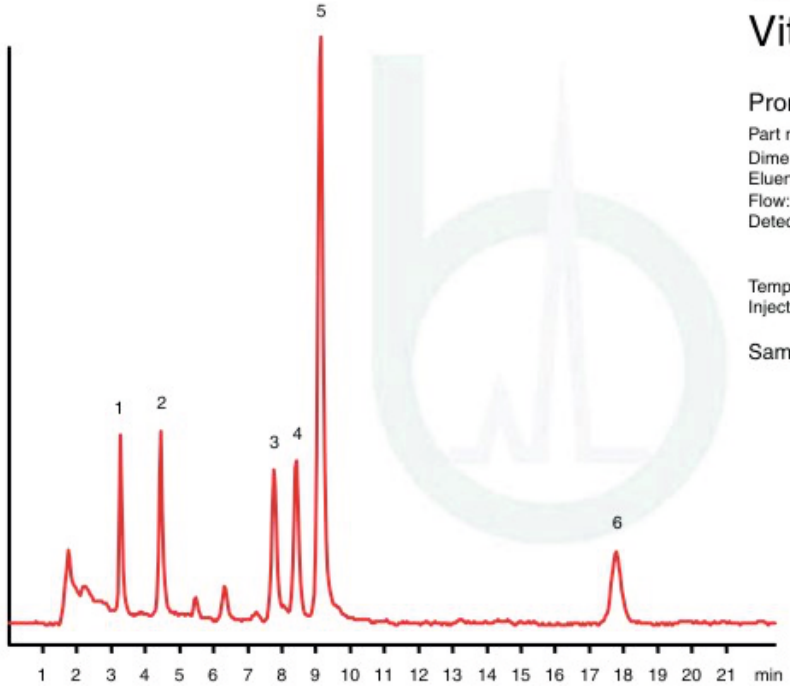


Fat soluble Vitamins

with Multiwavelength Detection

ProntoSIL 120-3-C18 SH
Part number: 2503F180PS030
Dimension: 250 x 3.0 mm
Eluent: MeOH
Flow: 1 ml/min
Detection: Multiwavelength Detector (DAD-3L)
Wavelength: 225, 264, 325 nm
Temperature: 25 °C
Injection: 5 µl

Sample: 180-300 ppm
1: Vitamin A
2: Vitamin A acetate
3: Vitamin D_2
4: Vitamin D_3
5: Vitamin E
6: Vitamin K_1



Fat soluble Vitamins II

ProntoSIL 120-3-C18 SH
Part number: 2503F180PS030
Dimension: 250 x 3.0 mm
Eluent: MeOH
Flow: 1 ml/min
Detection: Evap. Light Scattering Detector (DDL 31) PMT: 600, T: 33 °C
Temperature: 20 °C
Injection: 5 µl

Sample: 50-300 ppm each of
1: Vitamin A
2: Vitamin A acetate
3: Vitamin D_2
4: Vitamin D_3
5: Vitamin E
6: Vitamin K_1

ProntoSIL Pronto I ODS-3	
Particle Size	5 µm
Surface Area	450 m2/g
Pore Size	100 Å (10 nm)
Pore Volume	1.05 mL/g
Functional Group	Octadecyl
End-capping	Yes
Carbon Loading	15.00%
USP Code	L1
pH Range	2 - 8

*Note: ProntoSIL Pronto I ODS-3 Show selectivity for Inertsil ODS 3V and Inertsil ODS 3

Application Area

- Vitamin A in Food.
- VitaminB1 in Food.
- Chloropheniramine.
- Ranitidine.
- Caffeine
- Panta Dom pellets
- Telmisartan (assay)

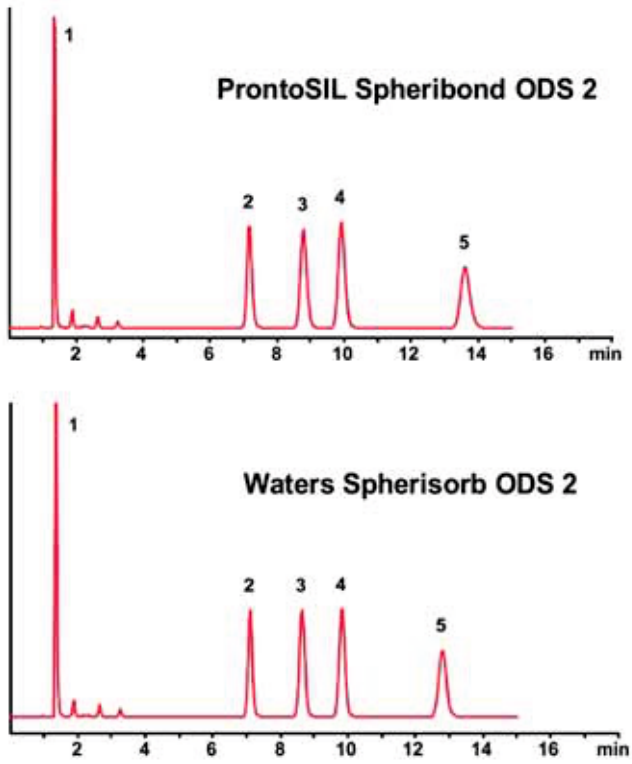
ProntoSIL C-18 Basic

ProntoSIL C18 Basic	
Particle Size	5 µm
Surface Area	320 m2/g
Pore Size	150 Å (10 nm)
Pore Volume	1.20 mL/g
Functional Group	Octadecyl
End - capping	Yes
Carbon Loading	18.50%
USP Code	L1
pH Range	2 – 7.5

Application Area

- Emetine
- Baicalein
- Baicalin
- Epicatechin gallate
- Ethanol
- Paeoniflorin
- Pantothenic acid
- Pentachlorophenol
- Sarpogrelate hydrochloride
- Sebacic acid
- Undecyl sulfate sodium salt
- n-Valeraldehyde
- Vitamin B6 -> Pyridoxine (Vitamin B6)
- Bensulide (Benfluralin)
- Resorcinol

Bischoff Chromatography offers now alternatives for the Waters-Spherisorb product line.



Tananka Test

Comparison of ProntoSIL Spheribond ODS2 and Waters Spheribond ODS2

ProntoSIL Speribond ODS 2 2.5 µm
Part number: 1546D181SB050
Dimension: 150 x 4.6 mm
Eluent: H_2O/MeOH 25/75 (w/w)
Flow: 1 ml/min
Detection: UV 254 nm
Temperature: 40° C

Sample: 1: Uracil
2: Butylbenzene
3: o-Terphenyl
4: Pentylbenzene
5: Triphenylene

Same Selectivity Better Price

No revalidation of your existing method is required

The new packings offer the same selectivity under the same chromatographic conditions like the original columns. You can change without any problem.

Available in almost any column dimension

If your chromatography asks for a column outside the typical column dimensions 250 x 4.6 mm we have it. Like all Bischoff columns the new packings are also available in almost any column dimension

- No revalidation required
- Available in almost any column dimension
- High end packing quality

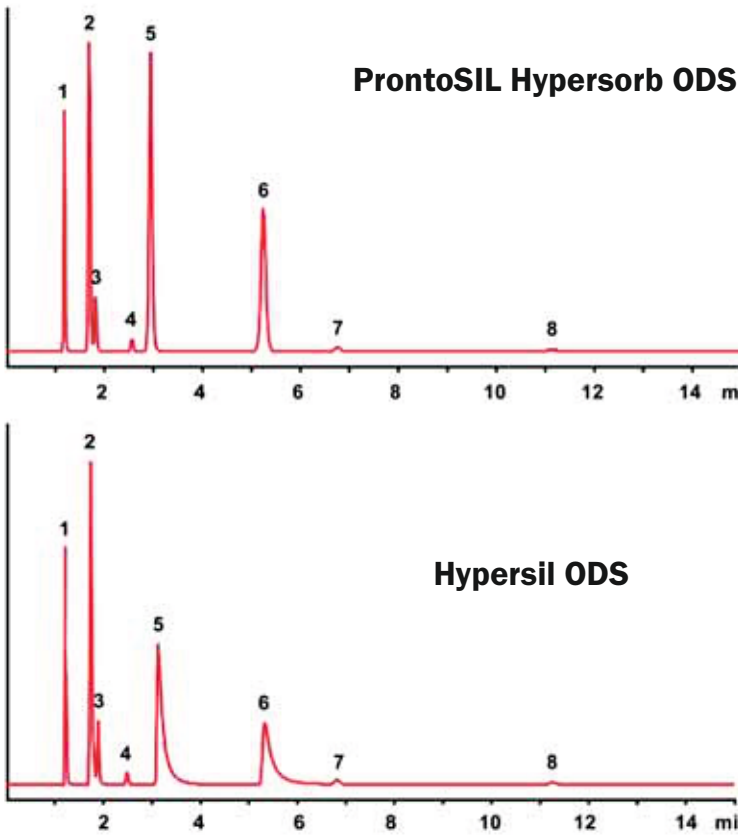
High end column packing

Our experience in the packing of the Waters-Spherisorb supports over years in a very high quality and our superior HYPERCHROME column hardware leads to the high end column packing for those supports.

Now Replace Waters µBondapack with ProntoBond

- No revalidation of existing method required.
- Better Packing quality. Guaranteed Batch to Batch reproducibility
- Each column is tested separately for high quality.
- Also available in any dimensions.

Your Alternative for Hypersil ODS



Engelhardt Test

Comparison of ProntoSIL Hypersorb ODS and HYpersil ODS

ProntoSIL Hypersorbd ODS 5 µm
Part number: 1546F180PY050
Dimension: 150 x 4.6 mm
Eluent: H_2O/MeOH 51/49 (w/w)
Flow: 1 ml/min
Detection: UV 254 nm
Temperature: 40° C
Injection: 5 µl

Sample:
1: Uracil
2: Aniline
3: Phenol
4: Impurity
5: p-Ethylaniline
6: N,N-Dimethylaniline
7: Toluene
8: Ethylbenzene

Same Selectivity
Better Peakshape

Bischoff Chromatography now offers alternatives for Hypersil ODS.

The new clone packings offer the following benefits:

No revalidation of your existing method is required

The new packings offer the same selectivity under the same chromatographic conditions like the original columns. You can change without any problem.

Available in almost any column dimension

If your chromatography asks for a column outside the typical column dimensions 250 x 4.6 mm we have it. Like all Bischoff columns the new packings are also available in almost any column dimension

- No revalidation required
- Available in almost any column dimension
- High end packing quality

High end column packing

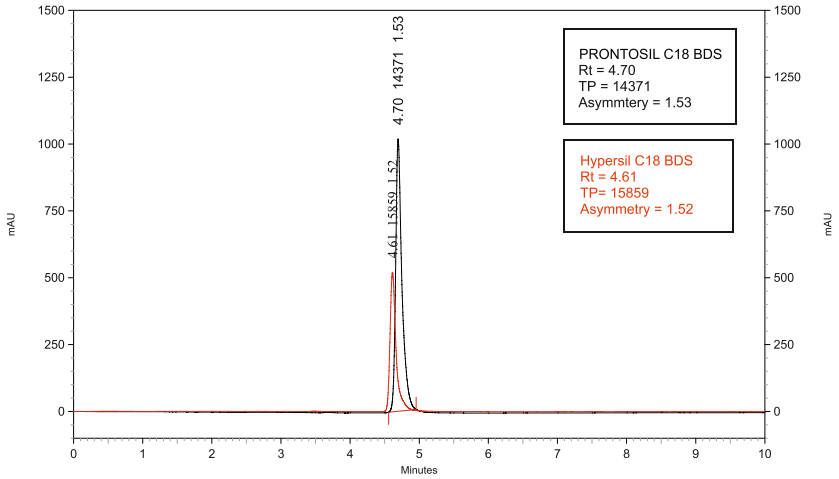
Our experience in the packing of the Waters-Spherisorb supports over years in a very high quality and our superior HYPERCHROME column hardware leads to the high end column packing for those supports.

Corresponding to USP "L" listing ProntoSIL C18 BDS phase falls under L1 category.

"L1" - Octadecyl silane chemically bonded to porous silica or ceramic micro-particles, 3 to 10 µm in diameter.

ProntoSIL C18 BDS is the stationary phase in the ProntoSIL line which is similar to Hypersil C18 BDS & HyperClone BDS. It is fully end-capped. Following table compares the specifications for two phases:

Specifications	PRONTOSIL C18 BDS	Hypersil C18 BDS
L Category	L1	L1
Carbon Load %	11	11
End-capping	Yes	Yes
Temperature ^{0}C	60	60
Pore Size	130Å	130Å
pH	2-8	2-8
Surface Area	170 m2/gm	170 m2/gm

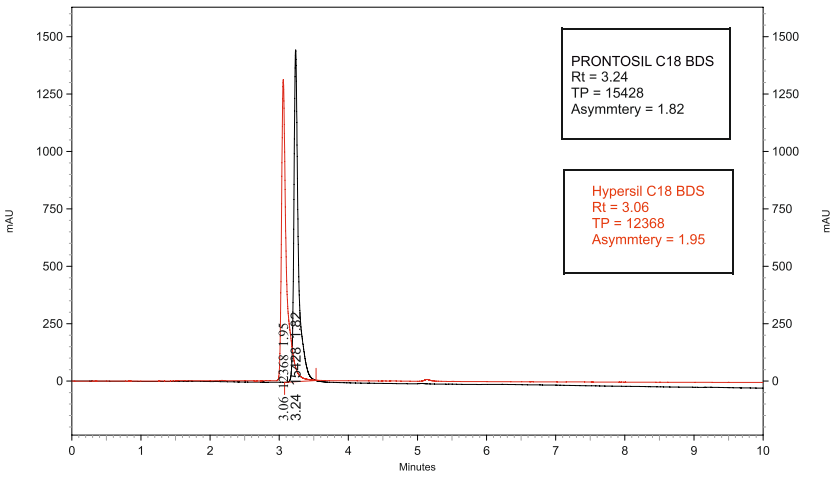


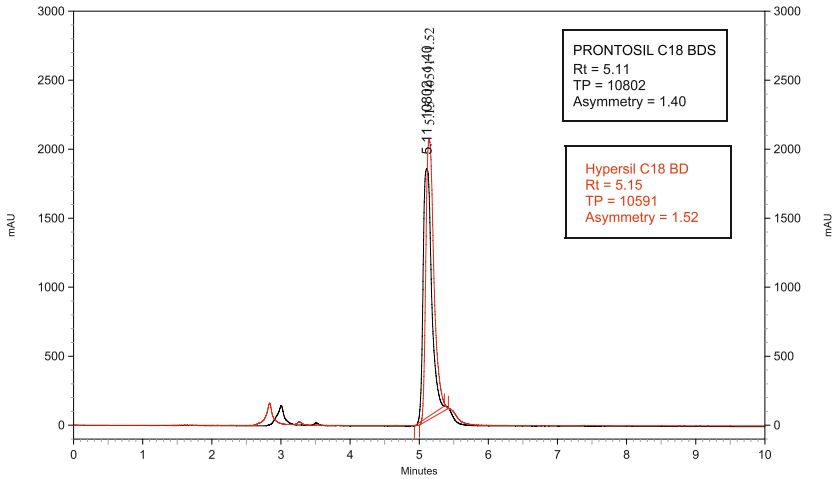
Basic Component Dimethyl aniline on Hypersil C18 BDS and ProntoSIL C18 BDS

- **No revalidation of your existing method**

Acidic Component Phenol on Hypersil C18 BDS and ProntoSIL C18 BDS

- **Better resolution & peak shape**





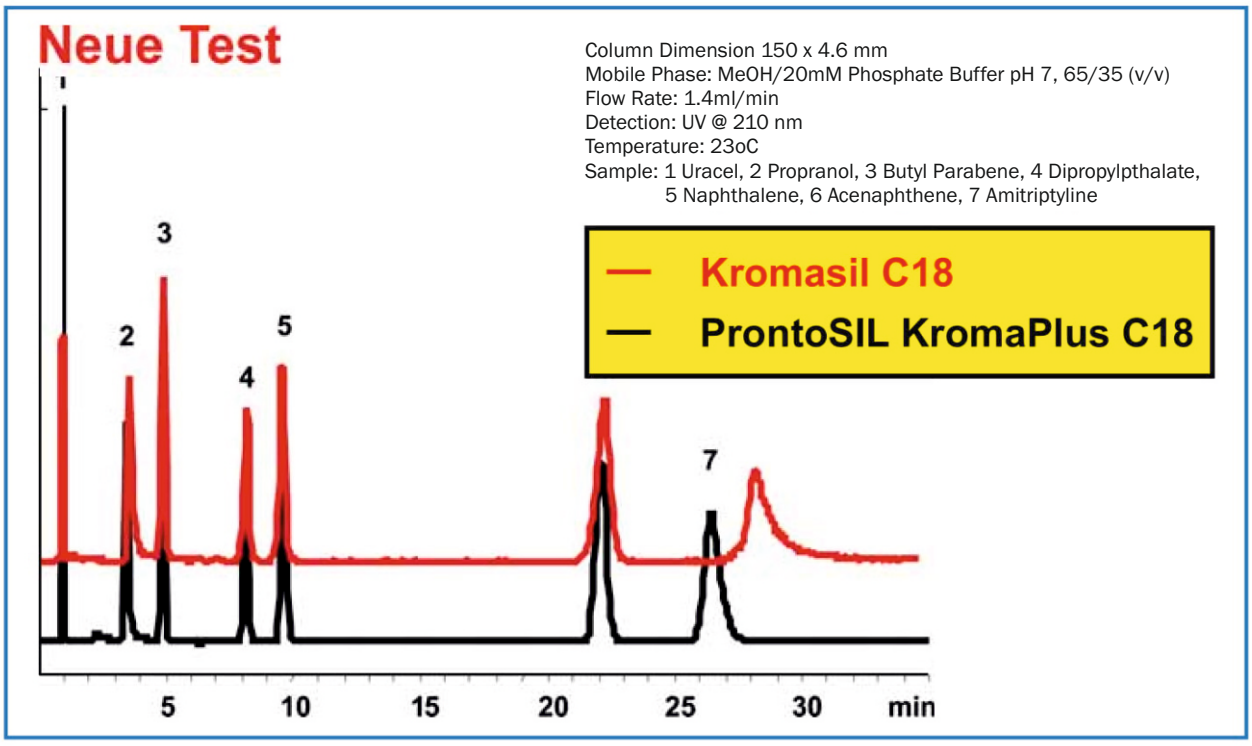
Neutral Component Toluene on Hypersil C18 BDS and ProntoSIL C18 BDS

Now replace KromaSIL by ProntoSIL KromaPlus

ProntoSIL KromaPlus C18 is based on the well known high performance spherical silica for analytical and preparative liquid chromatography. It is ultra pure and gives high reproducibility and chemical stability by using monofunctional silanes and full end-capping. ProntoSIL KromaPlus C18 is stable from pH 1 to 10.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C18 Kromaplus	1 to 10	3.5µm	100Å	330 m^2/g	20	yes
		5µm	100Å	330 m^2/g	20	yes
		10µm	100Å	330 m^2/g	20	yes

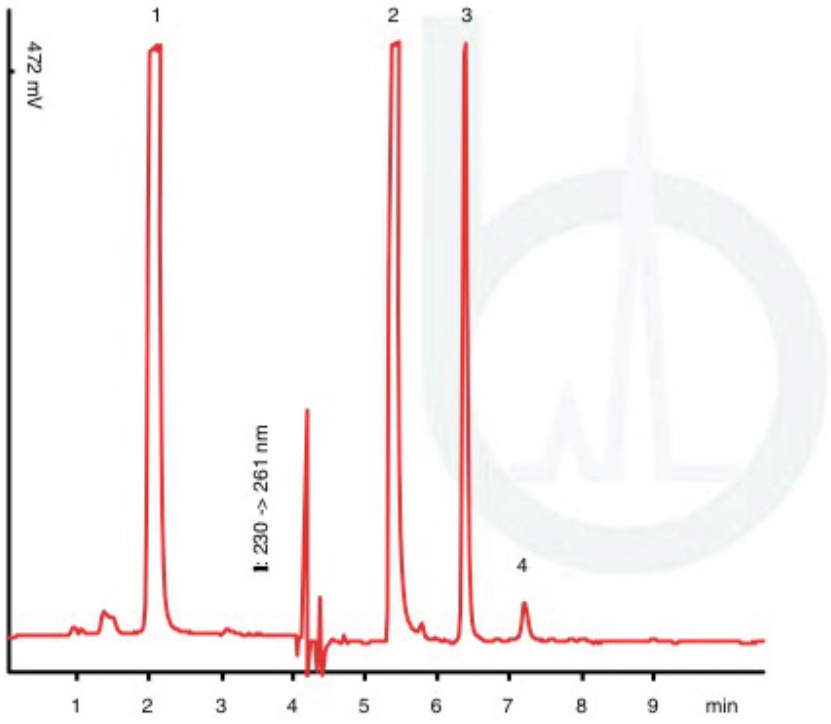
ProntoSIL KromaPlus C18 is based on the well known high performance spherical ProntoSIL for analytical and prep scale liquid chromatography. Our long experience and knowledge about silica gels for HPLC in combination with our outstanding bonding technology led to ProntoSIL KromaPlus C18. It is ultra pure and gives high reproducibity and chemical stability by using monofunctional silanes and full end-capping. ProntoSIL KromaPlus C18 is stable from pH 1 to 10. Without changing the existing method you can replace KromaSIL C18 by ProntoSIL KromaPlus C18. To guarantee the batch reproducibility each batch has to undergo specific tests.



KromaSIL C18 : ProntoSIL KromaPlus C18
KromaSIL C8 : ProntoSIL KromaPlus C8
KromaSIL C4: ProntoSIL KromaPlus C4
KromaSIL C1 : ProntoSIL KromaPlus C1
KromaSIL Silica : ProntoSIL KromaPlus Silica
KromaSIL Amino : ProntoSIL Kromaplus Amino

Optimized synthesis procedure for this classical bonded C18 phase leads to this best high quality product ProntoSIL C18 Eurobond. The selectivity of the ProntoSIL C18 Eurobond phase is in between the selectivity offered by the two stationary phases ProntoSIL C18 H Phases and ProntoSIL C18 SH. The ProntoSIL C18 Eurobond is fully end-capped and can be used in the broad range of RP-application.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C18 Eurobond	2 to 7	5µm	120Å	300 m^2/g	17	yes
		10µm	120Å	300 m^2/g	17	yes



Cold medicine

ProntoSIL C18 Eurobond 5 µm
Part number: 1204F181PS050
Dimension: 125 x 4.0 mm
Eluent: A: 5mM Li_2 SO_4 in H_2O/H_2SO_4; pH 2.1
B: ACN/50 mM H_3PO_4
Gradient: 0% B, 0-120 s; 0-12% B, 120-184 s:
12-17% B, 184-500 s
17-39% B, 500-720 s
Flow: 1 ml/min
Detection: UV 230 nm, 0-240 s;
UV 261 nm, 240-270 s
Temperature: 20° C
Injection: 3 µl

Sample: 1: Ascorbic acid
2: Paracetamol
3: Coffein
4: Impurity
5: Chlorphenamin

The ProntoSIL Si is the silica support of the Alliance for chromatography. Due to the fact that it is manufactured under very stringent conditions the resulting silica has a purity of 99.999%. The optimum manufacturing process guarantees an excellent batch to batch reproducibility. It has wide range of different applications i.e, in SEC (size exclusion chromatography) but also for the NP HPLC of large molecules is given.

Phase	Particle Size	Pore Size	Surface Area	Endcapping
L3	3µm	60Å	450 m^2/g	No
		120Å	300 m^2/g	No
		200Å	200 m^2/g	No
		300Å	100 m^2/g	No
	5µm	60Å	450 m^2/g	No
		120Å	300 m^2/g	No
		200Å	200 m^2/g	No
		300Å	100 m^2/g	No
	10µm	60Å	450 m^2/g	No
		120Å	300 m^2/g	No
		200Å	200 m^2/g	No
		300Å	100 m^2/g	No

The ProntoSIL C8 ace-EPS belongs to the new group of stationary RP support with polar embeded groups. The packing is stable at pH range 1-10. In comparison to the corresponding C18 packing the ProntoSIL C8 ace-EPS shows higher polar selectivity. Due to the shorter alkyl chain the influence of the polar group in contribution to the retention mechanism of the stationary phase is increased. The silanophilic activity of the support is very low. Ultra strong basic compounds with pka values higher than 9 (like amitriptyline) can be eluted from the column in neutral pH values with excellent symmetrical peak shapes. The main application area of these packings is in the pharmaceutical industry where the analytes often have basic or acidic groups. For the separation of these compounds, these supports are showing an enhanced polar selectivity.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C8 ace-EPS	1 to 10	3µm	120Å	300 m^2/g	12	yes
		5µm	120Å	300 m^2/g	12	yes

Determination of Paracetamol

Method **VPH0025J**

Column: ProntoSIL 120-5 C8 ace-EPS, 250 x 3.0 mm ID

Phase: ProntoSIL 120-5 C8 ace-EPS

Conditions:

Eluent: A: Acetonitrile B: Water (pH 2.75 with H_3PO_4)
Gradient: 0 – 0.65 min 10% A
0.65 – 6.4 min 10% - 60% A
6.4 – 10.4 min 60% A
10.4 –12 min 60% - 10% A
Flow rate: 1.3 ml/min
Temperature: 50 °C
Volume: 5µl

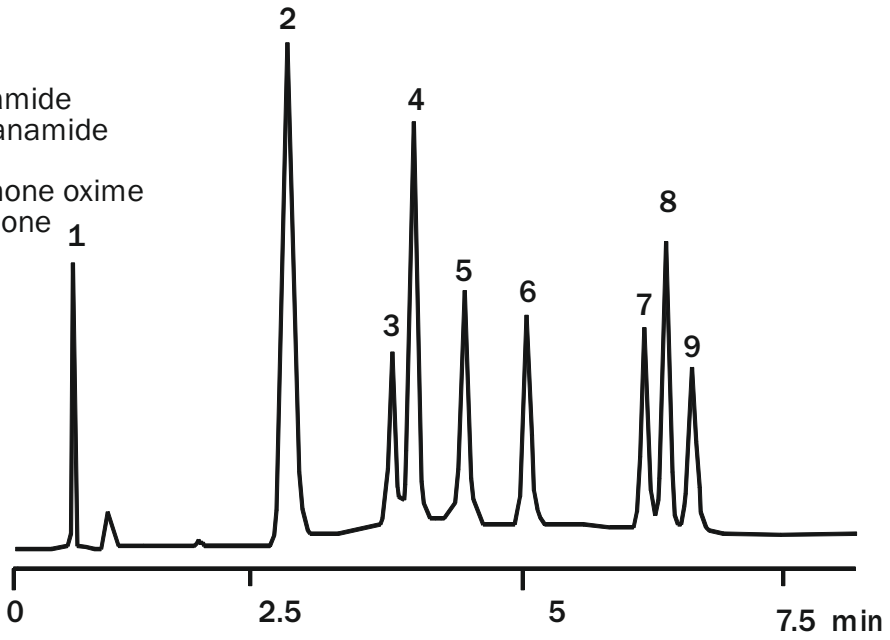
Detection: UV at 245 nm

Substances: Paracetamol, N-(2-hydroxyphenyl)acetamide, N-(4-hydroxyphenyl)propanamide, N-phenylacetamide, Chloracetanilide, 1-(4-hydroxyphenyl)ethanone oxime, 1-(2-hydroxyphenyl)ethanone, 4-Aminophenol, 4-Nitrophenol

Keywords: Paracetamol , Drugs

Chromatogram:

1. 4-Aminophenol
2. Paracetamol
3. N-(2-hydroxyphenyl)acetamide
4. N-(4-hydroxyphenyl)propanamide
5. N-phenylacetamide
6. 1-(4-hydroxyphenyl)ethanone oxime
7. 1-(2-hydroxyphenyl)ethanone
8. Chloracetanilide
9. 4-Nitrophenol



ProntoSIL C8 SH is a classical C8-type stationary phase. It is fully end-capped. Due to the bonding technology it shows an excellent shape selectivity and stability even at pH 1. The packing show excellent properties for the separation of large bio molecules like proteins and peptides.

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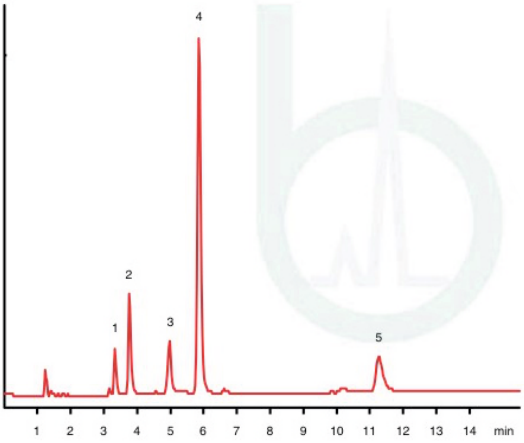
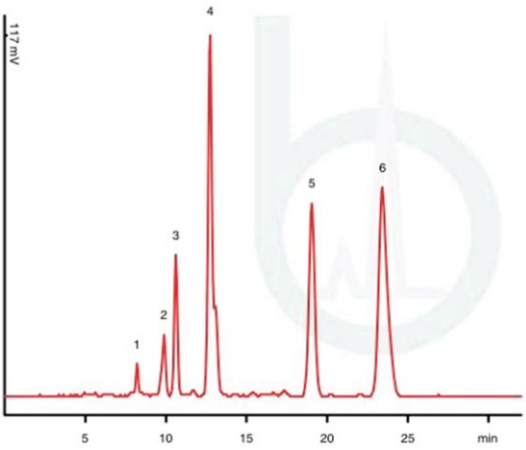
Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C8 SH	1 to 8	3µm	120Å	300 m^2/g	10	yes
			200Å	200 m^2/g	7	yes
			300Å	100 m^2/g	4	yes
		5µm	60Å	450 m^2/g	12	yes
			120Å	300 m^2/g	10	yes
			200Å	200 m^2/g	7	yes
			300Å	100 m^2/g	4	yes
		10µm	120Å	300 m^2/g	10	yes



Weak Anions -
Ion Pair Chromatography
ProntoSIL 120-3-C8 SH

Part number: 2003F080PS030
Dimension: 200 x 3.0 mm
Eluent: 10 mM KH_2PO_2 /10mM TBA-H_3PO_4 pH 2.4
Flow: 0.6 ml/min
Detection: UV 205 nm
Temperature: 25° C
Injection: 5 µl

Sample: 1: Acetic acid
2: Lactic acid
3: Malic acid
4: Iodate acid
5: Citric acid



Bitter ingredients
of hop II

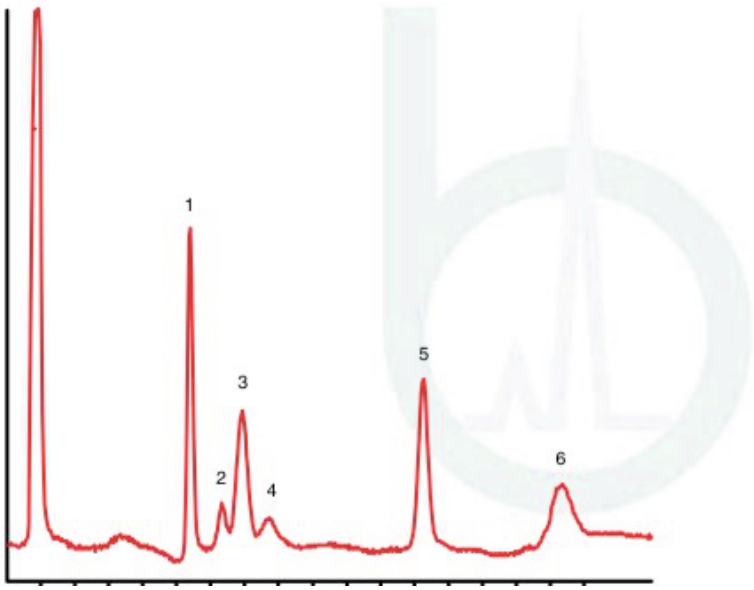
ProntoSIL 120-5-C8 SH

Part number: 2504F080PS050
Dimension: 250 x 4.0 mm
Eluent: H_2O_2 /MeOH 20/80 (v/v) + 50 mM H_3PO_4
Flow: 1 ml/min
Detection: UV 314 nm
Temperature: 21° C
Injection: 10 µl

Sample: Hop CO_2 -extract
1: Not Identified
2: Deoxyhumulon
3: Cohumulon
4: N-Plus Adhumulon
5: Colupulon
6: N-Plus Colupulon

ProntoSIL Amino is an Amino Propyl bonded phase. It can be used in NP mode as alternative to silica but offers different selectivity. In RP-mode it is mainly used for carbohydrate analysis. In IC mode the bonded phase can be used as a weak anion exchanger (WAX) for the analysis of anions and organic acids.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
Amino	2 to 9	3µm	120Å	300 m^2/g	4	No
		5µm	120Å	300 m^2/g	4	No
		10µm	120Å	300 m^2/g	4	No
Amino E	2 to 9	5µm	120Å	300 m^2/g	5	yes
Amino H	2 to 9	5µm	120Å	300 m^2/g	4.5	No

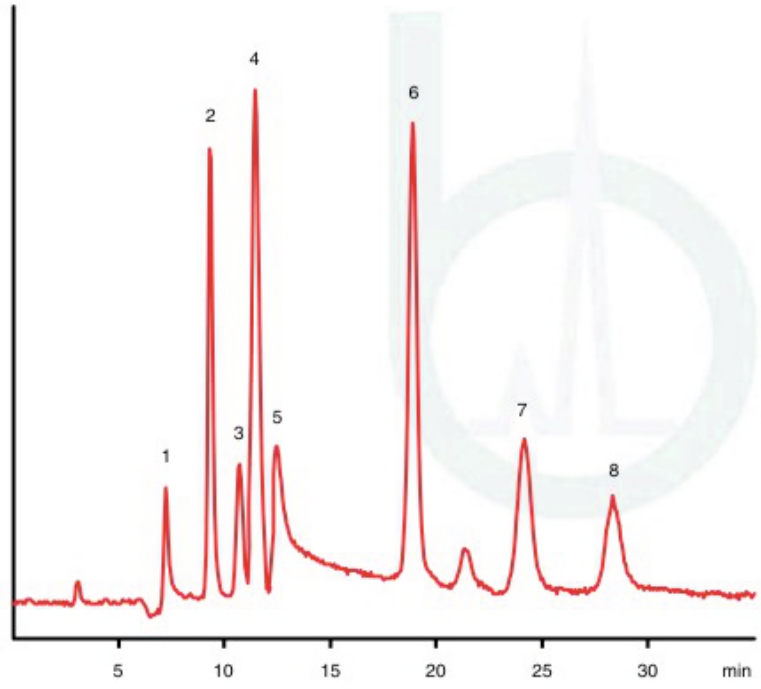


Carbohydrates I

ProntoSIL 120-3-NH_2

Part number: 1246F190PS030
Dimension: 125 x 4.0 mm
Eluent: H_2O/ACN, 20/80 (V/V)
Flow: 1.0 ml/min
Detection: RI
Temperature: ambient
Injection: 5 µl

Sample:
1: Fructose
2: Mannose
3: Glucose
4: Galactose
5: Saccharose
6: Maltose



Carbohydrates II

ProntoSIL 120-5-NH_2

Part number: 2546F190PS050
Dimension: 250 x 4.6 mm
Eluent: H_2O/ACN, 20/80 (V/V)
Flow: 1.2 ml/min
Detection: Evaporative Light Scattering Detection
ELSD (DDL 31) PMT: 500
T: 43°C,
Pressure (air): 0.1 MPa
Temperature: ambient
Injection: 5 µl

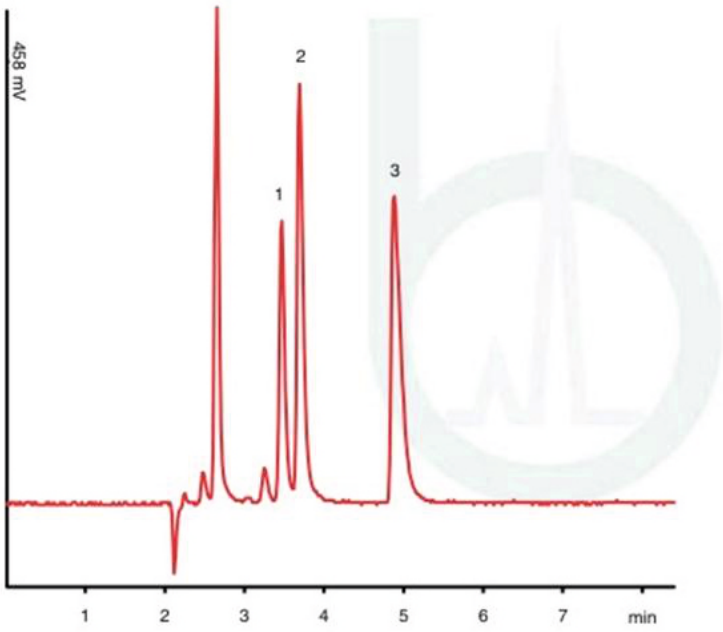
Sample:
1: Xylose
2: Fructose
3: Mannose
4: Glucose
5: Galactose
6: Saccharose
7: Lactose
8: Maltose

1. ProntoSIL SpheriBond SCX columns contain an anionic silica-based sorbent. This strong cation-exchange sorbent is used to separate positively charged ionic species.
2. ProntoSIL SpheriBond SCX HPLC columns are usually used to separate alkaline or soluble compounds. Typical applications are the separation of organic bases, such as basic amino acids, aniline, and medicinal salts.
3. ProntoSIL SpheriBond SCX columns for separation of 1°, 2° and 3° amines from biological fluids. These columns are excellent for the separation of proteins, peptides and other various cationic compounds.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
ProntoSIL SpheriBond SCX	**2 to 8**	5µm	80 Å	220 m^2/g	4	No

ProntoSIL CN is a cyano-propyl bonded phase. It can be used in normal phase mode and reversed phase mode. In RP-mode, the application area is the separation of strong basic solutes. In NP mode it offers a complementary selectivity to the other NP phases Silica, Amino and Diol. Due to quick equilibration time of the CN bonded phase it is the best choice for gradient elution in NP mode

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
ProntoSIL Cyano	2 to 8	3µm	120Å	300 m^2/g	5	no
		5µm	120Å	300 m^2/g	5	no
			120Å	300 m^2/g	5	yes
		10µm	120Å	300 m^2/g	5	no
ProntoSIL Cyano EC	2 to 8	5µm	120Å	300 m^2/g	5	yes

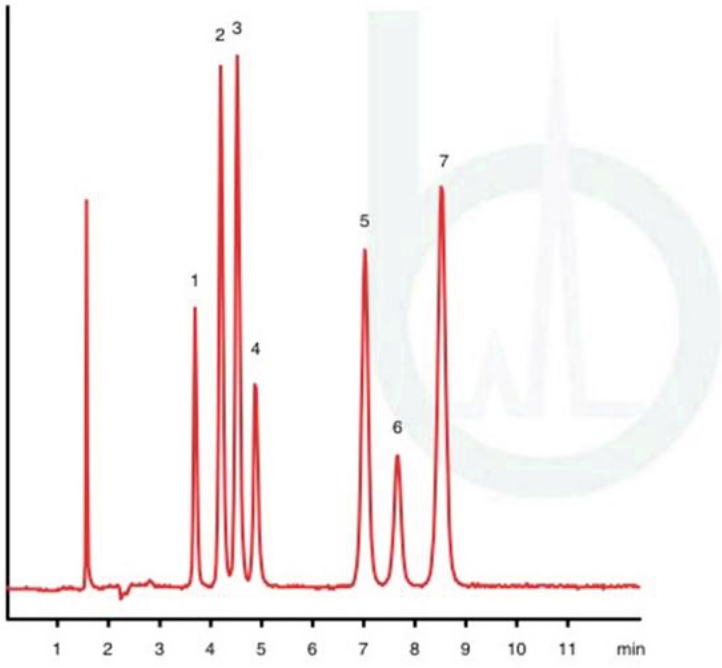


Dihydroxybenzoic Acids

ProntoSIL 120-3-CN

Part number: 2003F200PS030
Dimension: 200 x 3.0 mm
Eluent: 30 mM Sodium acelate/
30 mM Sodium Citrate: pH 4.6
Flow: 0.5 ml/min
Detection: UV 220 nm
Temperature: 20° C
Injection: 5 µl
Concentration: 1.8 mMol each

Sample: 1: 2,3-Dihydroxybenzoic acid
2: 2,5-Dihydroxybenzoic acid
3: Salicylic acid (1.2-DHBA)



Tricyclic Antidepressants

ProntoSIL 120-5-CN

Part number: 2546F200PS030
Dimension: 250 x 4.6 mm
Eluent: A: 25 mM K_2 HpO_4 (pH 7.1)
B: MeOH/ACN (15/65)
25% A, 75% B
Flow: 1 ml/min
Detection: UV 254 nm
Temperature: 40° C
Injection: 5 µl
Concentration: 1.8 mMol each

Sample: 50 ppm each of
1: Trimipramine
2: Doxepin
3: Amitriptyline
4: Imipramine
5: Nortriptyline
6: Desipramine
7: Protriptyline

ProntoSIL Phenyl is a RP packing that offers different selectivities in comparison to brush type stationary phases like C8 or C18. It is fully end-capped. Due to the bonding technology it shows excellent stability even at pH 2. The packing shows an enhanced selectivity and hydrophobicity.

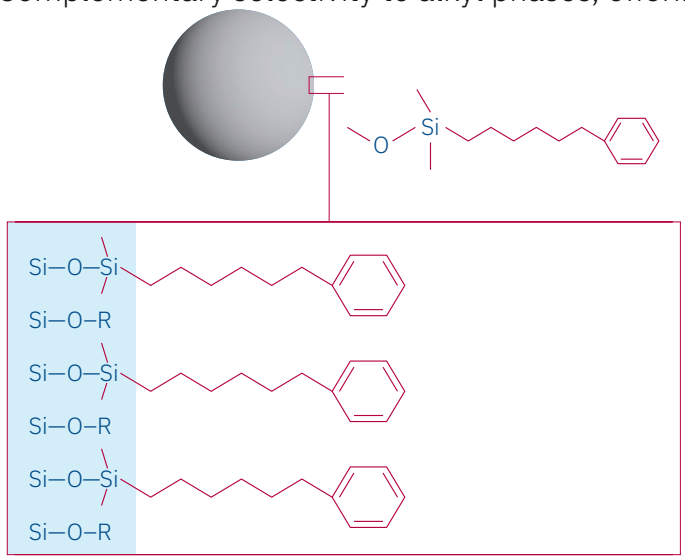
Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
Phenyl	2 to 8	3µm	120Å	300 m^2/g	10	yes
		5µm	60Å	450 m^2/g	12	yes
			120Å	300 m^2/g	9.5	yes
		10µm	120Å	300 m^2/g	9.5	yes

ProntoSIL Phenyl Hexyl

Balanced hydrophobic and aromatic selectivity complimentary selectivity to alkyl phases offering.

Phase	pH	Particle Size	% C	Endcapping
ProntoSIL Phenyl Hexyl	2 to 10	5µm	5 to 6	Yes

Complementary selectivity to alkyl phases, offering balanced hydrophobic and aromatic selectivity



Recommended Application Areas

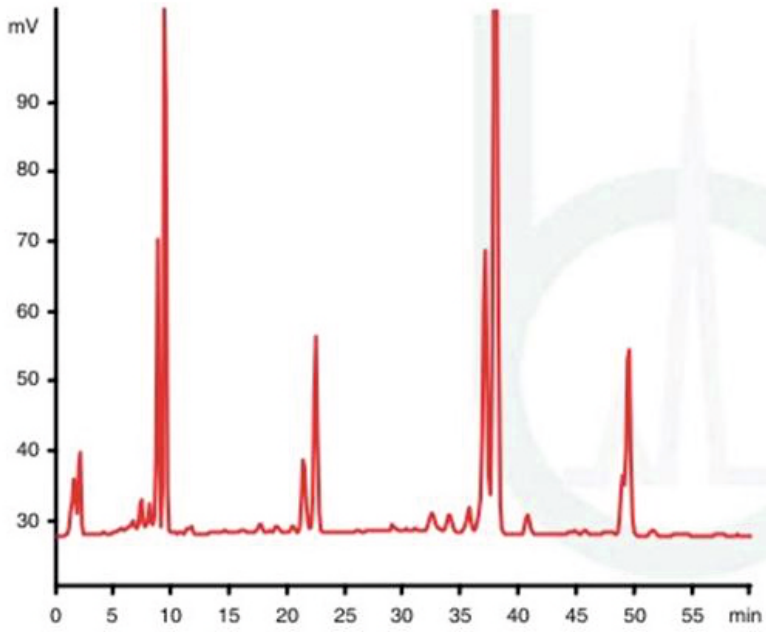
- Proteins, Peptides, Amino Acids
- Hormones
- Polar Acids and Bases
- Nucleosides, Oligonucleotides
- Vitamins

1. Commonly used to separate compounds that are anionic in an aqueous solution;
2. The ProntoSIL SpheriBond SAX HPLC column is compatible with water and organic solvents, and methanol, acetonitrile, and water (including buffer salt solutions) can be used as mobile phases for analysis;
3. The retention capacity of anionic compounds is related to the pH, ionic strength of the mobile phase, the ratio of the organic phase in the mobile phase, and temperature. Generally, the greater the ionic strength, the shorter the retention time, and the greater the proportion of organic phase in the mobile phase, the longer the retention time;
4. Buffer salts such as citrate and phosphate are usually used to adjust the pH and ionic strength of the mobile phase to improve the resolution, but should not exceed its pH range;
5. The equilibrium time of the anion exchange column is longer than that of C18.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
ProntoSIL SpheriBond SAX	**2 to 8**	5µm	80 Å	220 m^2/g	4	No

The ProntoSIL C1 packing shows the lowest retention of the complete product line. The application area is mainly the separation of non polar solutes. It can also be used for the separation of proteins in the HIC (Hydrophobic interaction chromatography). Due to the bonding technology the ProntoSIL C1 bonding type is stable down to pH 2.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
ProntoSIL C1	2 to 8	3µm	120Å	300 m^2/g	3	no
		5µm	120Å	300 m^2/g	3	no



Alkylpolyglycosides

ProntoSIL 120-5-C1 5.0 µm
Part. Number: 2504F010PS050
Dimension: 250 x 4.0 mm
Eluent: A: H_2O/MeOH 80/20 (v/v)
B: MeOH
0 – 50 % B in 60 min
Flow: 1.2 ml/min
Detection: Evap. Light Scattering Detector (DDL31)
PMT: 500, Temp: 60 °C; Pessure (air): 1.5 bar
Temperature: 40 °C
Injection: 10 µl

Sample: Alkylpolyglycosides
30 mg/ml in Eluent A

ProntoSIL C4 L26

Due to the bonding technology it shows an enhanced stability even at pH 2. The C4 packings show excellent properties for the separation of large bio molecules like proteins and peptides not only in the RP-mode but also in the HIC- mode (Hydrophobic Interaction Chromatography).

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
ProntoSIL C4	2 to 8	3µm	120Å	300 m^2/g	5.5	no
			300Å	100 m^2/g	2.5	no
		5µm	60Å	450 m^2/g	7.5	no
			120Å	300 m^2/g	5.5	no
			200Å	200 m^2/g	3.5	no
			300Å	100 m^2/g	2.5	no
		10µm	120Å	300 m^2/g	5.5	no

ProntoSIL Diol is a diol bonded phase. The ProntoSIL Diol packing is an alternative to the silica packings. The equilibration times of the support is shorter. In comparison to the corresponding silica support. The selectivities are comparable. Due to the lower activity of these packings they can also be used for SEC-applications. .

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
ProntoSIL Diol	2 to 8	3µm	120Å	300 m^2/g	4	no
		5µm	120Å	300 m^2/g	4	no
		10µm	120Å	300 m^2/g	4	no

ProntoSIL PFP L43

Unique orthogonal selectivity to alkyl, phenyl and phenyl-hexyl phases with superior steric selectivity can be used in reversed phase and HILIC modes.

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
ProntoSIL PFP	2 to 10	5µm	80 Å	220 m^2/g	4 to 6	yes

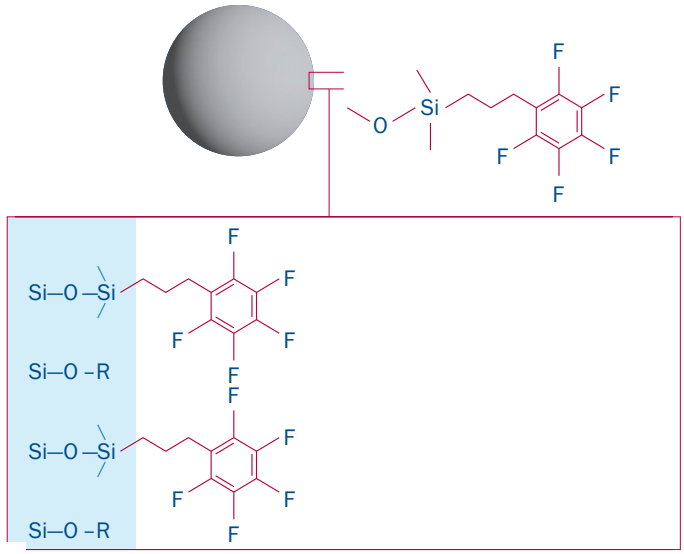
Key Properties

Separation Mechanism: **Hydrophobic Interaction, Aromatic and π-π Interaction, Dipole-dipole Interaction, Hydrogen Bonding**

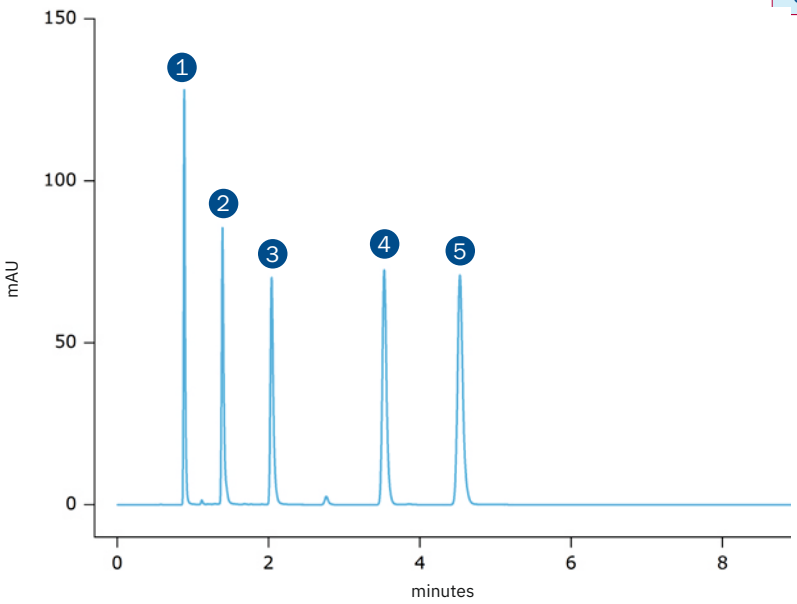
pH Range: **2 to 10**

Carbon Load (100Å Pore Size) : **ProntoSil PFP : 4 – 6%**

Endcapping: **Yes**



PFP Applications



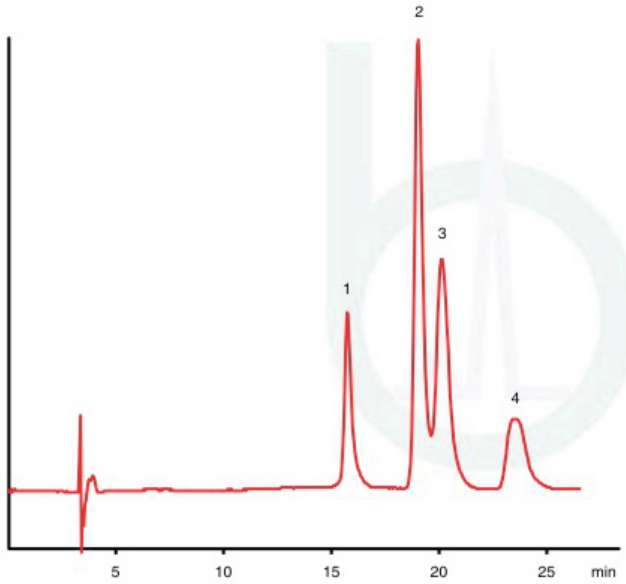
Recommended Application Areas

- Complex natural products
- Steroids and highly polar pharmaceuticals
- Amines, esters and ketones
- Substituted aromatics
- Isomeric compounds

1 – Malic Acid
2 – Doxylamine
3 – Chlorpheniramine
4 – Bromopheniramine
5 – Diphenhydramine

ProntoSIL C30 is a stationary phase with a high carbon load. The high coverage of the support results in a very dense packing and in an excellent shape selectivity and stability even at pH 2. The C30 bonding type is available with several pore sizes and in several particle sizes. Especially the wide pore supports are showing an enhanced shape selectivity. The application field of the C30 packing is the separation of isomers of carotenoids and other long alkyl chain solutes, which can not be separated on classical C18 columns. .

Phase	pH	Particle Size	Pore Size	Surface Area	% C	Endcapping
C30	2 to 8	3µm	120Å	300 m^2/g	25	no
			200Å	200 m^2/g	20	no
			300Å	100 m^2/g	13	no
			300Å	100 m^2/g	13	yes
		5µm	120Å	300 m^2/g	25	no
			200Å	200 m^2/g	20	no
			300Å	100 m^2/g	13	no
			300Å	100 m^2/g	13	yes
		10µm	200Å	200 m^2/g	20	no

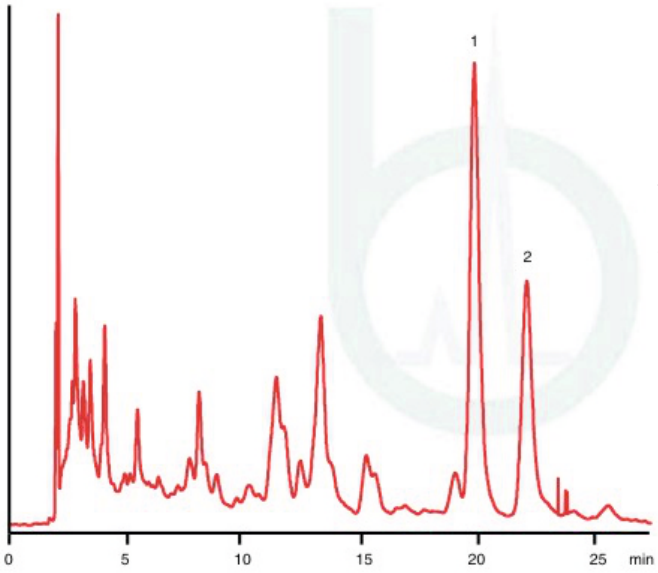


Tocopheroles
(Isomers of Vitamin E)

ProntoSIL 200-3-C30

Part number: 2546H300PS030
Dimension: 250 x 4.6 mm
Eluent: MeOH/$H_2$0, 96/4 (V/V)
Flow: : 0.9 ml/min
Detection: Coulometric
Temperature: 25°C
Injection: 3 µl

Sample: 1: d - Tocopherol
2: g - Tocopherol
3: b - Tocopherol
4: a - Tocopherol



Carotenoids I

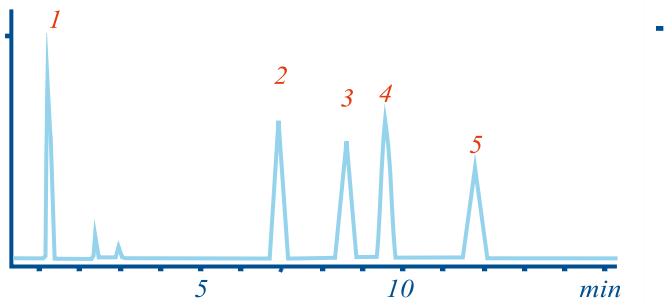
ProntoSIL 200-3-C30

Part number: 2546H300PS030
Dimension: 250 x 4.6 mm
Eluent: MeOH/TBME, 80/20 (V/V)
Flow: : 1.4 ml/min
Detection: VIS 450 nm
Temperature: 20°C
Injection: 5 µl

Sample: b - Carotene
1: all - trans
2: 9 - cis
(isomerized techinical mixture)

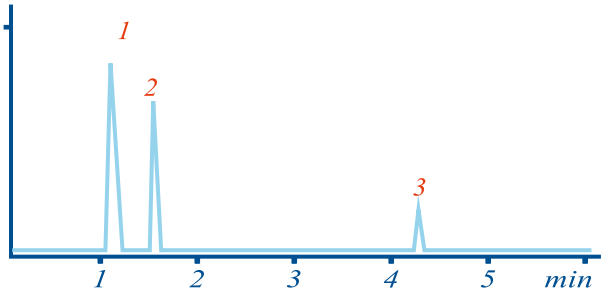
Phases	Bonding	EC	Pore Size	Particle Size	Carbon Load
	Methyloctadecyl	yes	100	5	17
ProntoSIL CB C8	Dimethyloctyl	yes	100	5	9.5
ProntoSIL CB 18 MA	Dimethyloctadecyl	yes	100	5	13
ProntoSIL CB 18 MH	Dimethyloctadecyl	yes	100	5	17
ProntoSIL CB Phenyl	Phenylbutyl	no	100	5	13
ProntoSIL CB Butyl	Butyl	yes	100	5	7
ProntoSIL CB Amino	Aminopropyl	no	100	5	4
ProntoSIL CB Cyano	CYANO	yes	100	5	7
ProntoSIL CB Diol	Diol	no	100	5	5

Tanaka-Test I
Shape Selectivity/Methylene Group Selectivity



Column Size	125 x 4.0mm	1. Uracil
Eluent	Methanol / Water 75/25 (w/w)	2. Pentyl Benzene
Flow Rate	1.0 ml/min	3. Triphenylene
Column Temperature	40 C	4. Butyl Benzene
Sample Size	10 µl	5. o-Terphenyl
Detection	UV @ 254nm	

Tanaka-Test 2
Silanophilic Activity at pH 7



Column Size	125 x 4.0mm	
Eluent	Methanol / TRIS Buffer pH 7 30/70 (w/w)	
Flow Rate	1.0 ml/min	
Column Temperature	40 °C	1. Uracil
Sample Size	10 µl	2. Benzyl Amine
Detection	UV @ 254nm	3. Phenol

Tanaka test 1: Shape selectivity:

Shape selectivity is the ability of the stationery phase to differentiate between planar and non-planer molecules. Molecular recognition is important property exhibited by Chrombudget column. This depends on space requirement of the molecule.

Tanaka test 2: Silanophilic activity:

Silanol group have large influence on the selectivity ofreverse phase. Undesired secondary interactions results from the silanol group. To reduce this effect Chrombudget has been endapped and it has been deactivated. So column possess exceedingly low silanophilic activity.

Bischoff Chromatography is one of the global players in market that meet the challenging demands of preparative chromatography. We aim in providing chromatographic solutions for any compound, right from discovery, scaling up to production and its quality control.

The main aim of preparative chromatography is to produce a quantity of pure compound with ease in the most economical way. The preparative columns by Bischoff chromatography are available in wide range of columns sizes to carry out almost any preparative scale separations. These preparative columns are packed under a very high pressure and in a specialized hardware to increase the bed density as high as possible to obtain sharp peaks and good resolution. This uniform high density packing prevents formation of voids during use. This results in preparative columns with higher efficiency and durability.

Preparative Columns are available in all phases in the following dimensions:

Length (In mm):
500, 300, 250, 200, 100,
150, 125, 75, 50, 30

Inner diameter (In mm):
62, 50, 40, 32, 20, 16, 8

Bischoff chromatography offers achiral phases for supercritical fluid chromatography (SFC) applications to provide the chemist with a number of options for SFC separations. These columns are available in many chemistries. Columns include stationary phases based on silica that are coated or covalently bonded.

These columns are specifically packed in SFC compatible hardware and tested individually to guarantee performance. The low viscosity of supercritical carbon dioxide allows for separations, conversation of organic solvents and more concentrated product fractions make SFC a desirable preparative chromatographic technique for purifying chemical mixtures.

ProntoSIL SFC Semi-Prep columns are available with inner diameters from 10mm to 50mm and in lengths from 50mm to 250mm. Individual SFC documentation is included with every column.

Use ProntoSIL SFC columns for following benefits :

1. Complex samples can be separated with better resolution at a faster rate with shorter run times.

2. Sharp Peak shapes on co-ordination compound.

3. Extremely fast equilibration.

ProntoSIL SFC Bondings :

- ProntoSIL SFC CYANO
- ProntoSIL SFC DIOL
- ProntoSIL SFC Ethylpyridine
- ProntoSIL SFC SILICA
- ProntoSIL SFC PHENYL
- ProntoSIL SFC C8 ace EPS
- ProntoSIL SFC C18 SH
- ProntoSIL SFC C18 ace EPS
- ProntoSIL SFC AMINO
- ProntoSIL SFC C30

High performance HPLC columns are packed using the ORIGINAL MERCK packing along with unique HYPERCHROME column hardware and packed with our own environment friendly packing process. Every single column undergoes a quality control test to check its chromatographic performance. This test report is provided with each column so you can be sure that the column meets highest quality criteria.

Lichrospher and Lichrospher Select B Columns

USP Listing	Description	Code	Particle Size	Pore Size	End capping
L1	Lichrospher 100 RP 18e	...E181LS050	5 µm	100 Å	fully
L1	Lichrospher 100 RP 18e	...E181LS100	10 µm	100 Å	fully
L1	Lichrospher 100 RP 18	...E180LS050	5 µm	100 Å	-
L1	Lichrospher 100 RP 18	...E180LS100	10 µm	100 Å	-
L7	Lichrospher 100 RP 8e	...E081LS050	5 µm	100 Å	fully
L7	Lichrospher 100 RP 8e	...E081LS100	10 µm	100Å	fully
L7	Lichrospher 100 RP 8	...E080LS050	5 µm	100 Å	-
L7	Lichrospher 100 RP 8	...E080LS100	10 µm	100 Å	-
L10	Lichrospher 100 CN	...E200LS050	5 µm	100 Å	-
L10	Lichrospher 100 CN	...E200LS100	10 µm	100 Å	-
L8	Lichrospher 100 NH2	...E190LS050	5 µm	100 Å	-
L20	Lichrospher 100 Diol	...E410LS050	5 µm	100 Å	-
L20	Lichrospher 100 Diol	...E410LS100	10 µm	100 Å	-
L3	Lichrospher 60 Si	...C000LS050	5 µm	100 Å	-
L3	Lichrospher 60 Si	...C000LS100	10 µm	100 Å	-
L3	Lichrospher 100 Si	...E000LS100	10 µm	100 Å	-
L7	Lichrospher 60 RP Select B	...C081LS050	5 µm	60 Å	-
L7	Lichrospher 60 RP Select B	...C081LS100	10 µm	60 Å	-

Lichrosorb and Lichrosorb Select B Columns

USP Listing	Description	Code	Particle Size	Pore Size	End capping
L1	Lichrosorb RP 18	...E680LB050	5 µm	100 A	-
L1	Lichrosorb RP 18	...E680LB100	10 µm	100 A	-
L7	Lichrosorb RP 8	...E580LB050	5 µm	100 A	-
L7	Lichrosorb RP 8	...E580LB070	7 µm	100 A	-
L7	Lichrosorb RP 8	...E580LB100	10 µm	100 A	-
L16	Lichrosorb RP 2	...E510LB070	7 µm	100 A	-
L10	Lichrosorb CN	...E700LB050	5 µm	100 A	-
L8	Lichrosorb NH2	...E690LB070	7 µm	100 A	-
L20	Lichrosorb Diol	...E910LB050	5 µm	100 A	-
L3	Lichrosorb 60 Si	...C500LB100	10 µm	60 A	-
L3	Lichrosorb 100 Si	...E500LB050	5 µm	100 A	-
L3	Lichrosorb 100 Si	...E000LB100	10 µm	100 A	-

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