



# ProntoSII

HPLC Columns

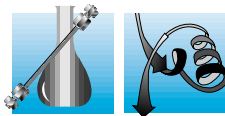


***German Engineered Performance***

# ProntoSIL HPLC Columns



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# ProntoSIL C18-EPS Reversed-Phase HPLC Columns

- Provides excellent separation of polar compounds
- Better peak shape for acids and bases
- Stabilized bonded phase for rugged, robust HPLC methods
- More retentive than ordinary polar embedded phases

## Enhanced Polar Selectivity for High Resolution Separations of Polar Compounds

A high performance base deactivated column with enhanced polar selectivity specifically designed for high resolution separation of polar compounds.

## Provides Excellent Separation of Polar Compounds

Base deactivated stationary phases generally provide better peak shape, increased column efficiency, and improved lot-to-lot reproducibility when separating polar compounds. They have been particularly useful in improving the separation of samples containing basic compounds. However, there are occasions when typical base deactivated phases lack adequate selectivity.

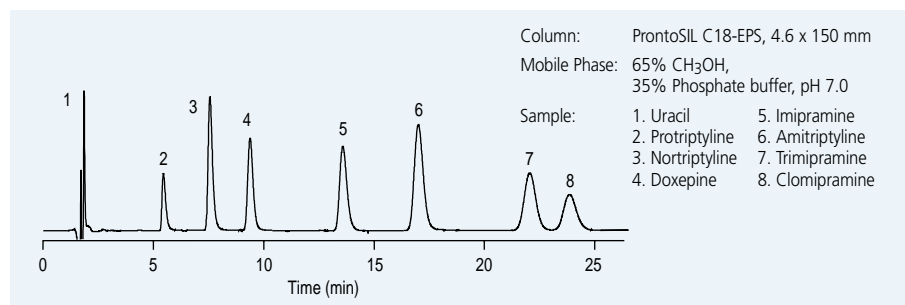
Stationary phases that permit polar-polar interaction through silanol activity offer alternate selectivity to base deactivated phases, but it often comes at a cost of poor peak shape and uncertain reproducibility. ProntoSIL C18-EPS solves this problem by providing both enhanced polar selectivity and excellent peak shape (Figure 1).

## Enhanced Polar Selectivity

The ProntoSIL C18-EPS has an amide group strategically placed in the bonded phase (Figure 2). This polar amide group adds polar characteristics to this very hydrophobic stationary phase (Figure 3). With this enhanced polar selectivity, ProntoSIL C18-EPS provides a powerful alternate selectivity to typical base deactivated phases.



FIGURE 1  
Enhanced Polar Selectivity and Excellent Peak Shape for Basic Compounds



ProntoSIL C18-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.

## Specifications

**Phase:** C18 with amide embedded group

**Particle Size:** 3 and 5  $\mu\text{m}$

**Pore Size:** 120Å

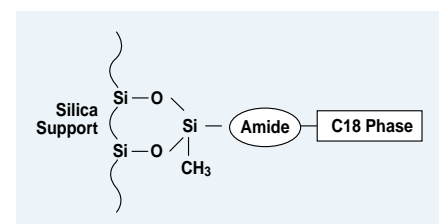
**Surface Area:** 300 m<sup>2</sup>/g

**Carbon Load:** 18%

**pH Range:** 1 - 10

Manufacturers of base deactivated columns try to minimize polar-polar interactions between analytes and the stationary phase. Because of this, most base deactivated columns have similar selectivity for polar compounds. This means that if one brand of base deactivated column lacks selectivity to adequately separate a pair of polar solutes, other brands of base deactivated columns will also probably lack adequate selectivity for these solutes.

FIGURE 2  
ProntoSIL C18-EPS Bonded Phase

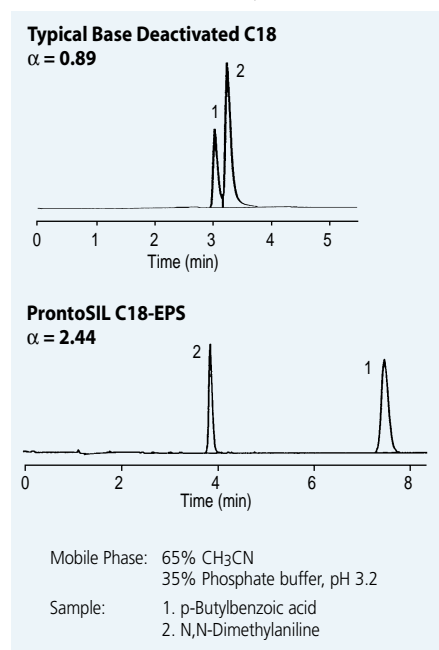


The ProntoSIL C18-EPS uses an amide group to add polar selectivity to this highly hydrophobic stationary phase.

## Better Peak Shape for Acids and Bases

ProntoSIL C18-EPS has an amide group strategically placed close to the surface of the silica support. This not only permits the amide group to provide polar characteristics to the stationary phase, it also shields the silica surface and inhibits polar interactions between solutes and silanols. This "shielding" allows for exceptionally good peak shape for bases. Unlike some other polar embedded phases, ProntoSIL C18-EPS also provides excellent peak shape for acids.

FIGURE 3  
Enhanced Polar Selectivity



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

## Stabilized Bonded Phase for Rugged, Robust HPLC Methods

A major cause of column failure is the loss of bonded phase from the silica support due to hydrolysis of the siloxane bond. ProntoSIL C18-EPS uses a unique, proprietary bidentate bonding chemistry that provides a dual bond to the silica surface that stubbornly resists loss of bonded phase (Figure 4). This stabilized bonded phase greatly extends the lifetime of ProntoSIL C18-EPS columns.

The proprietary bonding chemistry also inhibits dissolution of the silica. The result is an unusually stable column that can confidently be used over a pH range much wider than other reversed phase columns, 1 to 10!

## More Retention than Ordinary Polar Embedded Phases

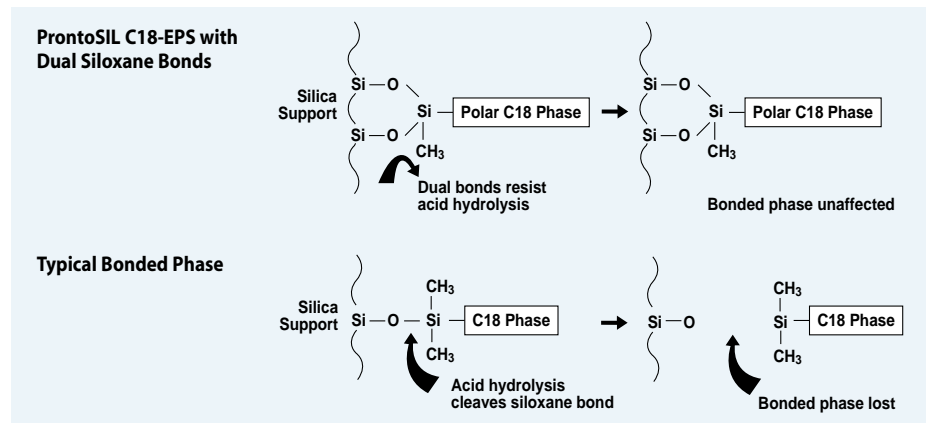
Other polar embedded phases use either less hydrophobic C14 or C16 phases, or have part of their alkyl phase shielded by their polar embedded group. ProntoSIL C18-EPS is a true C18 phase with an octadecyl phase placed after the polar amide group. As a result, ProntoSIL C18-EPS provides more retention than other polar embedded phases (Figure 5).

## Summary

ProntoSIL C18-EPS columns with enhanced polar selectivity give you a powerful advantage when developing separations of polar compounds. Not only will this column provide you with excellent peak shape for both acids and bases, its stabilized bonded phase will allow you to develop rugged,

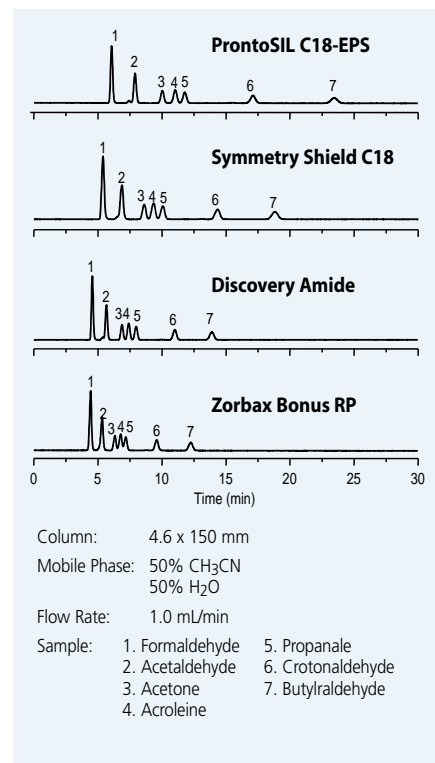
robust HPLC methods over a broad pH range – 1 to 10! Best of all, ProntoSIL columns are sold and supported by MAC-MOD Analytical, the people you have come to trust when it comes to HPLC columns.

FIGURE 4  
Dual Bonding Resists Loss of Bonded Phase



Acid hydrolysis of the siloxane bond and the resulting loss of bonded phase (i.e., C18 Phase) is one of the major reasons for column failure. ProntoSIL C18-EPS uses bidentate bonding chemistry to secure the polar C18 phase to the silica support through a dual siloxane bond. The dual bonding inhibits the loss of bonded phase and makes these columns unusually stable, even under conditions that quickly kill other columns.

FIGURE 5  
Comparison of Retention



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

## ProntoSIL C18-EPS Ordering Information

Dimensions (mm)	Particle Size (µm)	Part Number	Price
2.0 x 50	3	0502F18APS030	\$ 286
2.0 x 50	5	0502F18APS050	286
2.0 x 75	3	0702F18APS030	314
2.0 x 75	5	0702F18APS050	314
2.0 x 100	3	1002F18APS030	446
2.0 x 100	5	1002F18APS050	407
2.0 x 150	3	1502F18APS030	495
2.0 x 150	5	1502F18APS050	440
2.0 x 250	5	2502F18APS050	495
4.6 x 50	3	0546F18APS030	286
4.6 x 50	5	0546F18APS050	286
4.6 x 75	3	0746F18APS030	314
4.6 x 75	5	0746F18APS050	314
4.6 x 100	3	1046F18APS030	446
4.6 x 100	5	1046F18APS050	407
4.6 x 150	3	1546F18APS030	495
4.6 x 150	5	1546F18APS050	440
4.6 x 250	5	2546F18APS050	495
8.0 x 250	5	2580F18APS050	785
20.0 x 250	5	2520F18APS050	2,252

**Analytical Guard Cartridges (Guard Cartridge Holder required)**

Dimensions (mm)	Particle Size (µm)	Part Number	Price
2.0 x 10 (5pk)	5	6321F18APS050	275
4.0 x 10 (5pk)	5	6301F18APS050	275
Guard Cartridge Holder		15010508	105

**Semi-Preparative and Preparative Guard Columns**

Dimensions (mm)	Particle Size (µm)	Part Number	Price
8.0 x 30	5	0480F18APS050G	165
8.0 x 30	10	0480F18APS100G	132
20.0 x 33	5	0320F18APS050G	385
20.0 x 33	10	0320F18APS100G	303





# ProntoSIL C30 Reversed-Phase HPLC Columns

- Unique “planar selectivity” for carotenoids and structural isomers
- Excellent reproducibility
- Multi-valent silane bonding for enhanced stability

## Reversed Phase HPLC Columns for the Separation of Hydrophobic Structural Isomers

ProntoSIL C30 HPLC columns are particularly recommended for the separation of hydrophobic, long-chain, structural isomers. They are often a better alternative to normal phase columns for the separation of isomers since they are not as sensitive as normal phase columns to water content of the mobile phase and are not as susceptible to column fouling. ProntoSIL C30 columns show significantly greater shape selectivity compared to C18 phases due to their rigid, highly ordered C30 alkyl groups (Figure 6). This shape selectivity advantage makes them the ideal HPLC column to use for the separation of carotenoids (Figure 7) and tocopherol derivatives (Figure 8).

For best performance, C30 columns should be used at ambient temperature or lower. At elevated temperatures, the C30 alkyl chains will become less ordered and lose their shape selectivity (Figure 9). In addition, C30 phases should be used with mobile phases containing at least 20% organic modifier to avoid phase collapse.

Although you can expect lower plate count on C30 phases compared to C18 phases, the ability of the C30 phases to separate isomers that are not possible to separate on C18 phases make them an attractive choice for many applications. C30 phases have been successfully used for the analysis of plant extracts, food, and biological tissues that contain structurally different carotenoids and mixtures of geometric isomers. They are also commonly used for separating stereoisomers of vitamin E and vitamin A, and for the separation of PAHs.

FIGURE 6  
Comparison of C30 and C18 Phases for the Separation of Lutein Stereoisomers

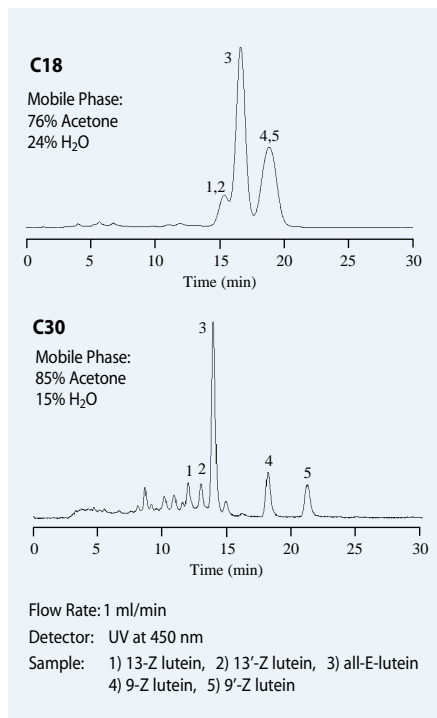


FIGURE 7  
HPLC Separation of Carotenoids

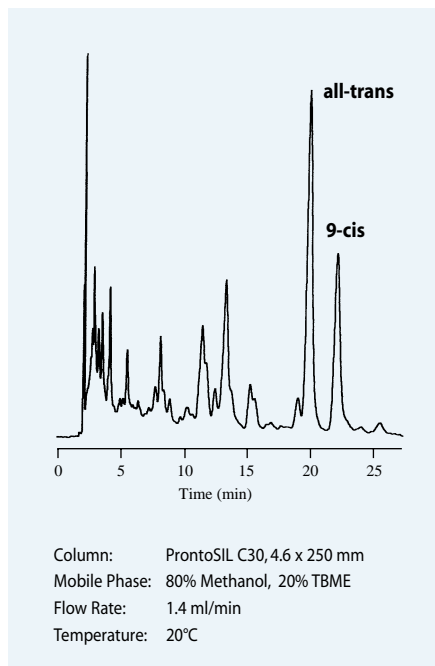
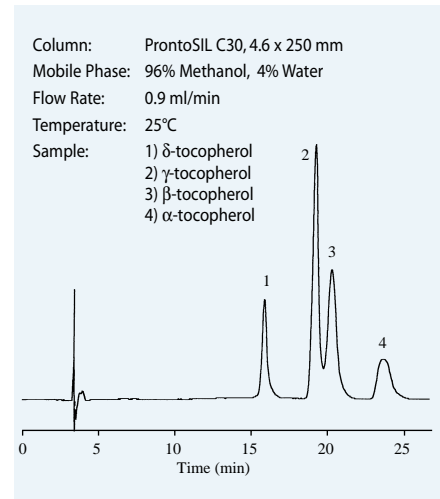


FIGURE 8  
HPLC Separation of Tocopherol Isomers



By courtesy of Prof. Dr. K. Albert et al,  
University Tuebingen, Germany.

FIGURE 9  
The Effect of Temperature on Shape Selectivity of C30 Phases

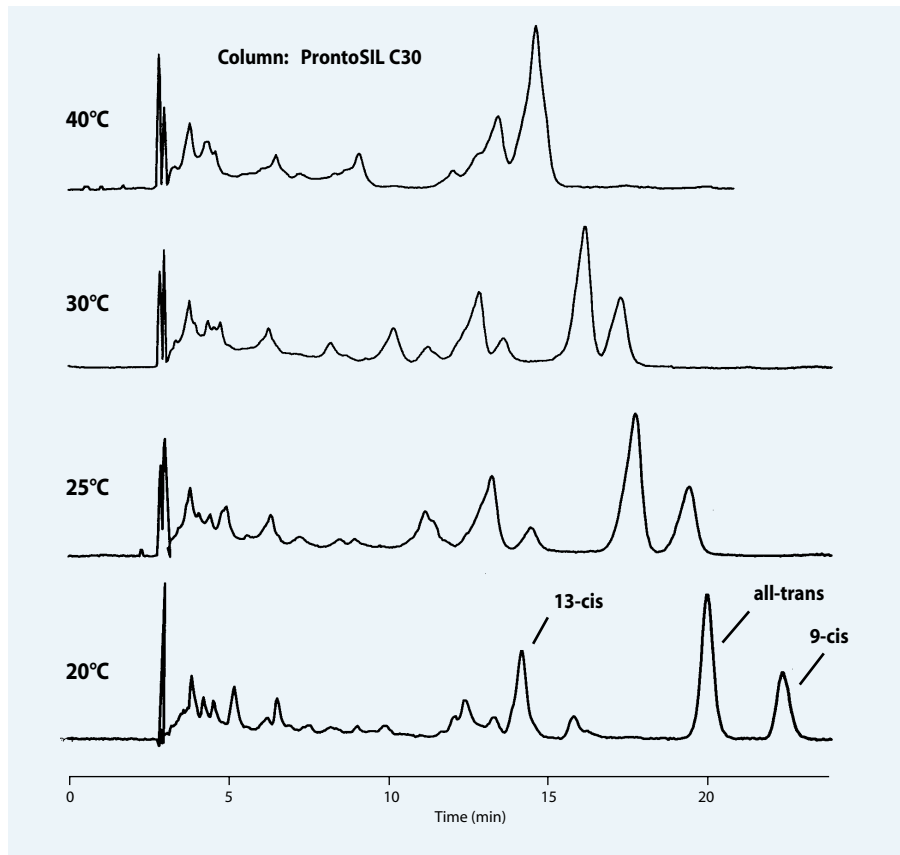
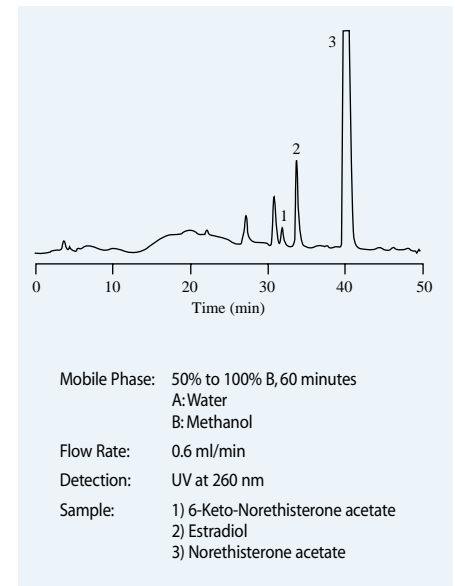


FIGURE 10  
HPLC Separation of Steroids  
(Metabolites of Norethisterone Acetate)



By courtesy of Prof. Dr. K. Albert et al,  
University Tuebingen, Germany.

### ProntoSIL C30 Ordering Information

Dimensions (mm)	Particle Size (µm)	Part Number	Price
2.0 x 50	3	0502H300PS030	\$ 358
2.0 x 50	5	0502H300PS050	358
2.0 x 75	3	0702H300PS030	413
2.0 x 75	5	0702H300PS050	413
2.0 x 100	3	1002H300PS030	523
2.0 x 100	5	1002H300PS050	451
2.0 x 150	3	1502H300PS030	578
2.0 x 150	5	1502H300PS050	495
2.0 x 250	5	2502H300PS050	561
4.6 x 50	3	0546H300PS030	358
4.6 x 50	5	0546H300PS050	358
4.6 x 75	3	0746H300PS030	413
4.6 x 75	5	0746H300PS050	413
4.6 x 100	3	1046H300PS030	523
4.6 x 100	5	1046H300PS050	451
4.6 x 150	3	1546H300PS030	578
4.6 x 150	5	1546H300PS050	495
4.6 x 250	3	2546H300PS030	633
4.6 x 250	5	2546H300PS050	561
8.0 x 250	5	2580H300PS050	950
20.0 x 250	5	2520H300PS050	3,625

### Guard Cartridges (Guard Cartridge Holder required)

4.0 x 10 (5 pk)	5	6301H300PS050	275
2.0 x 10 (5 pk)	5	6321H300PS050	275
Guard Cartridge Holder		15010508	105

### Specifications

#### Stationary Phase Support:

Spherical, ultra-pure, "Type B" silica

- 3 and 5 micron particle size
- 200 Angstrom pore size
- 200 m<sup>2</sup>/gram surface area

#### Bonded Phase:

Polymeric bonding chemistry, non-encapped

- C30 (Triacontylsilane)
- 18.5% carbon load

# ProntoPEARL sub2 HPLC Columns

- **Two particle types**
  - 1.8  $\mu\text{m}$  totally porous (TPP) for high-speed separations of small molecules
  - 1.5  $\mu\text{m}$  non-porous (NPP) for high-speed separation of proteins
- **Multiple bonded phases**
  - TPP available in C18-EPS, C8-EPS, aminopropyl
  - NPP available in C18
- **Optimized hardware design**
  - 14, 20, 25, 30, 50, 75 and 100 mm lengths
  - 2.0, 3.0, 4.6 mm internal diameter

## A New Generation of Columns for Increased Productivity

ProntoPEARL columns are engineered for Ultra Fast Chromatography. Columns of totally porous particles (TPP) are available in lengths from 14 mm to 100 mm. Non-porous columns (NPP) come in lengths of 14 mm to 50 mm. Due to the extraordinary efficiency of these 1.8  $\mu\text{m}$  and 1.5  $\mu\text{m}$  particles (200,000 plates per meter guaranteed), it is possible to drastically reduce analysis times without negatively impacting resolution.

## Reduce Analysis Time 90% Using Standard HPLC Equipment

High back pressure can be a major deterrent to using micro-particle columns. The process used to manufacture ProntoPEARL columns, however, assures a narrow particle size distribution, eliminating "fines" from the packed column bed. A 50 mm ProntoPEARL column can be operated in a conventional HPLC system at flow rates up to 3.0 ml/min. Since a column of this size is equivalent to a conventional 150 mm 5  $\mu\text{m}$  column, you can easily achieve a 90% reduction in analysis time within the pressure and flow limits of your current liquid chromatograph.

FIGURE 11  
Separation of Polyphenols

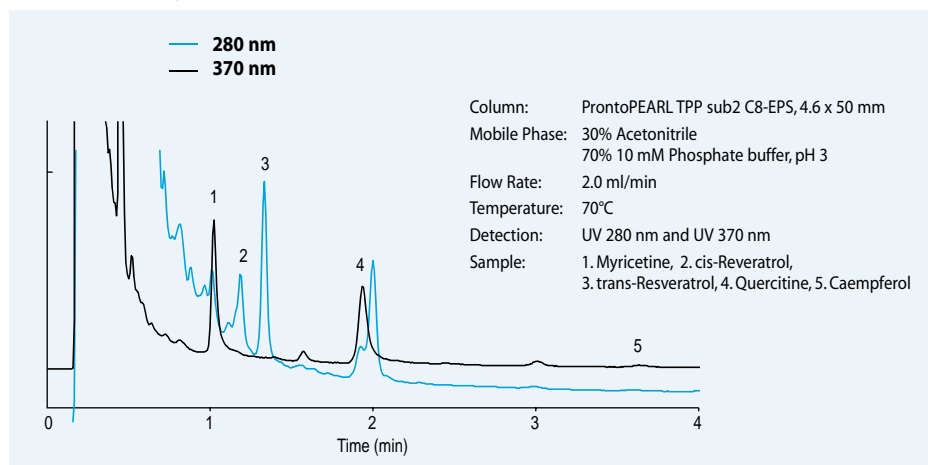


TABLE 1  
ProntoPEARL sub2 Specifications

Phase	Pore Size (Å)	Particle Size ( $\mu\text{m}$ )	Surface area( $\text{m}^2/\text{g}$ )	Carbon Loading (%)
Pronto PEARL sub2 TPP C18-EPS	80	1.8	300	16
Pronto PEARL sub2 TPP C8-EPS	80	1.8	300	8
Pronto PEARL sub2 TPP APS	80	1.8	300	3.5
Pronto PEARL sub2 NPP C18	NA	1.5	2	0.5

FIGURE 12  
Fast Protein Separation

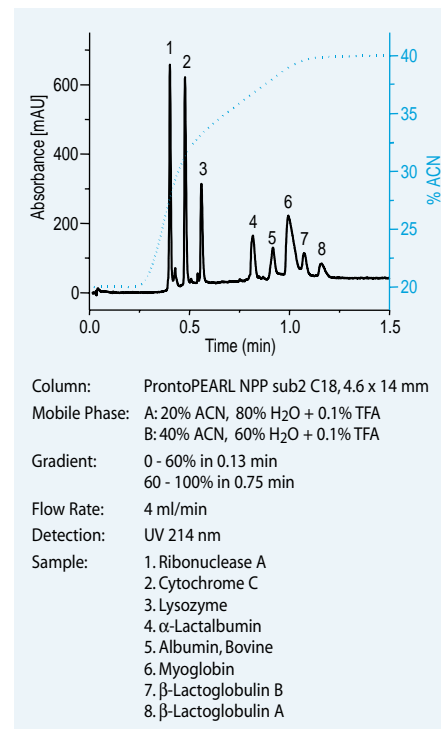
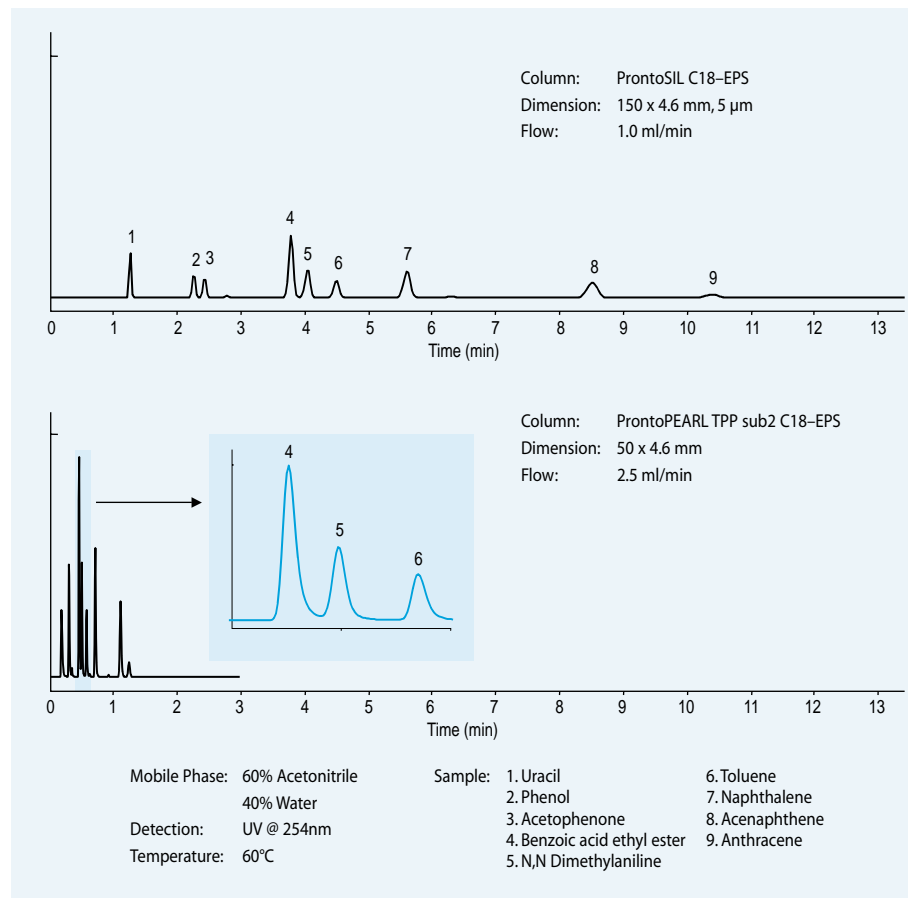






FIGURE 13  
The Performance Test



### Reach Lower Detection Limits

Because of the high efficiency and lower dispersion rates of ProntoPEARL columns, it is now possible to achieve higher mass sensitivity and therefore lower detection limits than formerly obtained using conventional particles. To realize the full gain in both efficiency and sensitivity, extra column volume in the instrument should be minimized. It is recommended that tubing from the sample injector through the detector be replaced with precision cut 0.005" stainless steel. A data acquisition rate of 60 Hz is also required.

### ProntoPEARL sub2 TPP Ordering Information

Dimensions (mm)	Particle Size (µm)	C18 - EPS	C8 - EPS	NH2	Price (USD)
2.0 x 14	1.8	0102C18ATP018	0102C08ATP018	0102C190TP018	\$ 215
3.0 x 14	1.8	0103C18ATP018	0103C08ATP018	0103C190TP018	215
4.6 x 14	1.8	0146C18ATP018	0146C08ATP018	0146C190TP018	215
2.0 x 20	1.8	A202C18ATP018	A202C08ATP018	A202C190TP018	248
3.0 x 20	1.8	A203C18ATP018	A203C08ATP018	A203C190TP018	248
4.6 x 20	1.8	A246C18ATP018	A246C08ATP018	A246C190TP018	248
2.0 x 25	1.8	0202C18ATP018	0202C08ATP018	0202C190TP018	281
3.0 x 25	1.8	0203C18ATP018	0203C08ATP018	0203C190TP018	281
4.6 x 25	1.8	0246C18ATP018	0246C08ATP018	0246C190TP018	281
2.0 x 30	1.8	0302C18ATP018	0302C08ATP018	0302C190TP018	325
3.0 x 30	1.8	0303C18ATP018	0303C08ATP018	0303C190TP018	325
4.6 x 30	1.8	0346C18ATP018	0346C08ATP018	0346C190TP018	325
2.0 x 50	1.8	0502C18ATP018	0502C08ATP018	0502C190TP018	468
3.0 x 50	1.8	0503C18ATP018	0503C08ATP018	0503C190TP018	468
4.6 x 50	1.8	0546C18ATP018	0546C08ATP018	0546C190TP018	468
2.0 x 75	1.8	0702C18ATP018	0702C08ATP018	0702C190TP018	633
3.0 x 75	1.8	0703C18ATP018	0703C08ATP018	0703C190TP018	633
4.6 x 75	1.8	0746C18ATP018	0746C08ATP018	0746C190TP018	633
2.0 x 100	1.8	1002C18ATP018	1002C08ATP018	1002C190TP018	765
3.0 x 100	1.8	1003C18ATP018	1003C08ATP018	1003C190TP018	765
4.6 x 100	1.8	1046C18ATP018	1046C08ATP018	1046C190TP018	765

### ProntoPEARL sub2 NPP Ordering Information

Dimensions (mm)	Particle Size (µm)	C18	Price (USD)
2.0 x 14	1.5	0102Z189NP015	\$ 655
3.0 x 14	1.5	0103Z189NP015	655
2.0 x 20	1.5	A202Z189NP015	677
3.0 x 20	1.5	A203Z189NP015	677
4.6 x 20	1.5	A246Z189NP015	677
2.0 x 25	1.5	0202Z189NP015	693
3.0 x 25	1.5	0203Z189NP015	693
4.6 x 25	1.5	0246Z189NP015	693
2.0 x 30	1.5	0302Z189NP015	710
3.0 x 30	1.5	0303Z189NP015	710
4.6 x 30	1.5	0346Z189NP015	710
2.0 x 50	1.5	0502Z189NP015	765
3.0 x 50	1.5	0503Z189NP015	765
4.6 x 50	1.5	0546Z189NP015	765

# Additional High Performance ProntoSIL HPLC Columns

## ProntoSIL C18 SH

A highly retentive base-deactivated C18 phase that provides excellent peak shape for basic compounds. The ProntoSIL C18 SH has a stabilized bonded phase that provides rugged, reliable, long-term performance, even at mobile phase pH as low as 1.0.

## ProntoSIL C8 SH

A base-deactivated phase that uses the same stabilized bonding technology as the ProntoSIL C18 SH. The ProntoSIL C8 SH also provides excellent peak shape for basic compounds, but is less hydrophobic than the ProntoSIL C18 SH.

## ProntoSIL Phenyl

The ProntoSIL Phenyl offers an alternate selectivity to the C18 and C8 phases. It also has a stabilized bonded phase that provides long-term reliable performance.

## ProntoSIL CN

A cyano-propyl bonded phase that can be used in either normal phase or reversed-phase mode.

## ProntoSIL C18 AQ

A special C18 phase that is recommended for the separation of polar compounds that require high aqueous mobile phase conditions. Hydrophilic endcapping keeps the C18 chains fully extended into the mobile phase, even when using aqueous mobile phases with no organic modifier. The result is better retention and reproducibility than can be achieved with typical C18 phases when using mobile phases with less than 10% organic modifier.

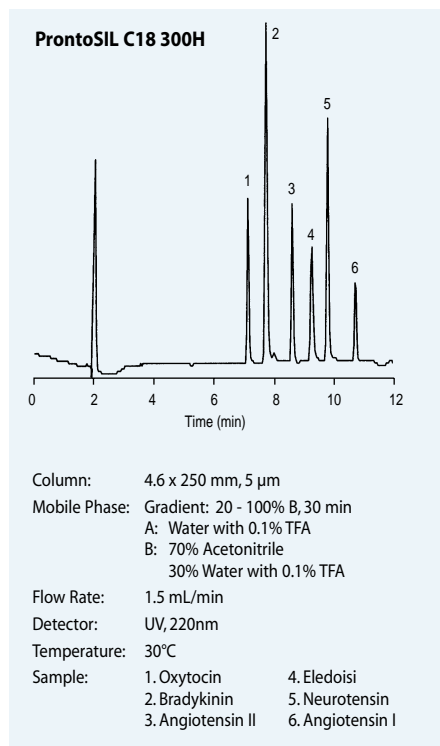
## Additional ProntoSIL Ordering Information

Dimensions (mm)	Particle Size (µm)	C18 SH	C8 SH	Phenyl	CN	C18 AQ	Price (USD)
2.0 x 50	3	0502F180PS030	0502F080PS030	0502F050PS030	0502F200PS030	0502F184PS030	\$ 286
2.0 x 50	5	0502F180PS050	0502F080PS050	0502F050PS050	0502F200PS050	0502F184PS050	286
2.0 x 75	3	0702F180PS030	0702F080PS030	0702F050PS030	0702F200PS030	0702F184PS030	314
2.0 x 75	5	0702F180PS050	0702F080PS050	0702F050PS050	0702F200PS050	0702F184PS050	314
2.0 x 100	3	1002F180PS030	1002F080PS030	1002F050PS030	1002F200PS030	1002F184PS030	446
2.0 x 100	5	1002F180PS050	1002F080PS050	1002F050PS050	1002F200PS050	1002F184PS050	407
2.0 x 150	3	1502F180PS030	1502F080PS030	1502F050PS030	1502F200PS030	1502F184PS030	495
2.0 x 150	5	1502F180PS050	1502F080PS050	1502F050PS050	1502F200PS050	1502F184PS050	440
2.0 x 250	5	2502F180PS050	2502F080PS050	2502F050PS050	2502F200PS050	2502F184PS050	495
4.6 x 50	3	0546F180PS030	0546F080PS030	0546F050PS030	0546F200PS030	0546F184PS030	286
4.6 x 50	5	0546F180PS050	0546F080PS050	0546F050PS050	0546F200PS050	0546F184PS050	286
4.6 x 75	3	0746F180PS030	0746F080PS030	0746F050PS030	0746F200PS030	0746F184PS030	314
4.6 x 75	5	0746F180PS050	0746F080PS050	0746F050PS050	0746F200PS050	0746F184PS050	314
4.6 x 100	3	1046F180PS030	1046F080PS030	1046F050PS030	1046F200PS030	1046F184PS030	446
4.6 x 100	5	1046F180PS050	1046F080PS050	1046F050PS050	1046F200PS050	1046F184PS050	407
4.6 x 150	3	1546F180PS030	1546F080PS030	1546F050PS030	1546F200PS030	1546F184PS030	495
4.6 x 150	5	1546F180PS050	1546F080PS050	1546F050PS050	1546F200PS050	1546F184PS050	440
4.6 x 250	5	2546F180PS050	2546F080PS050	2546F050PS050	2546F200PS050	2546F184PS050	495
8.0 x 250	5	2580F180PS050	2580F080PS050	2580F050PS050	2580F200PS050	2580F184PS050	785
20.0 x 250	5	2520F180PS050	2520F080PS050	2520F050PS050	2520F200PS050	2520F184PS050	2525
<b>Guard Cartridges (Guard Cartridge Holder required)</b>							
2.0 x 10 (5 pk)	5	6321F180PS050	6321F080PS050	6321F050PS050	6321F200PS050	6321F184PS050	275
4.0 x 10 (5 pk)	5	6301F180PS050	6301F080PS050	6301F050PS050	6301F200PS050	6301F184PS050	275
Guard Cartridge Holder		15010508	15010508	15010508	15010508	15010508	105

# ProntoSIL 300Å Wide Pore

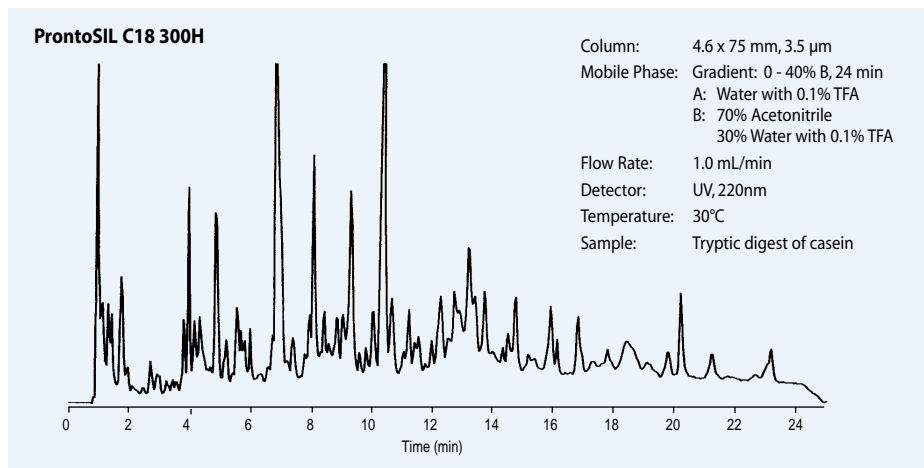
These wide pore phases are recommended for the separation of proteins and peptides. As with all ProntoSIL phases, ultra pure silica is used for the stationary phase support, and the latest bonding technology is used to provide rugged, reliable separations. C18, C8, and C4 bonded phase are available.

FIGURE 14  
Separation of Peptides on  
ProntoSIL C18 300H



The wide pore ProntoSIL C18 300H column is recommended for the separation of peptides.

FIGURE 15  
Separation of Tryptic Digest of Casein



High efficiency ProntoSIL C18 300H 3 micron material packed in a short column provides high speed, high resolution separation of tryptic digests.

## Specifications for ProntoSIL 300Å Phases

Phase	End capped	Particle Size (µm)	Pore Size Å	Surface Area (m <sup>2</sup> /g)	Carbon Load (%)
C18 300 H	yes	3, 5	300	100	7
C8 300 SH	yes	3, 5	300	100	4
C4 300	yes	3, 5	300	100	2.5

## ProntoSIL 300Å Wide Pore Ordering Information

Dimensions (mm)	Particle Size (µm)	C18 300 H	C8 300 SH	C4 300	Price (USD)
2.0 x 50	3	0502K185PS030	0502K080PS030	0502K040PS030	\$ 358
2.0 x 50	5	0502K185PS050	0502K080PS050	0502K040PS050	358
2.0 x 75	3	0702K185PS030	0702K080PS030	0702K040PS030	413
2.0 x 75	5	0702K185PS050	0702K080PS050	0702K040PS050	413
2.0 x 100	3	1002K185PS030	1002K080PS030	1002K040PS030	523
2.0 x 100	5	1002K185PS050	1002K080PS050	1002K040PS050	451
2.0 x 150	3	1502K185PS030	1502K080PS030	1502K040PS030	578
2.0 x 150	5	1502K185PS050	1502K080PS050	1502K040PS050	495
2.0 x 250	5	2502K185PS050	2502K080PS050	2502K040PS050	561
4.6 x 50	3	0546K185PS030	0546K080PS030	0546K040PS030	358
4.6 x 50	5	0546K185PS050	0546K080PS050	0546K040PS050	358
4.6 x 75	3	0746K185PS030	0746K080PS030	0746K040PS030	413
4.6 x 75	5	0746K185PS050	0746K080PS050	0746K040PS050	413
4.6 x 100	3	1046K185PS030	1046K080PS030	1046K040PS030	523
4.6 x 100	5	1046K185PS050	1046K080PS050	1046K040PS050	451
4.6 x 150	3	1546K185PS030	1546K080PS030	1546K040PS030	578
4.6 x 150	5	1546K185PS050	1546K080PS050	1546K040PS050	495
4.6 x 250	5	2546K185PS050	2546K080PS050	2546K040PS050	561
8.0 x 250	5	2580K185PS050	2580K080PS050	2580K040PS050	950
20.0 x 250	5	2520K185PS050	2520K080PS050	2520K040PS050	3,625
<b>Guard Cartridges (Guard Cartridge Holder required)</b>					
2.0 x 10	5	6321K185PS050	6321K080PS050	6321K040PS050	275
4.0 x 10	5	6301K185PS050	6301K080PS050	6301K040PS050	275
Guard Cartridge Holder		15010508	15010508	15010508	105

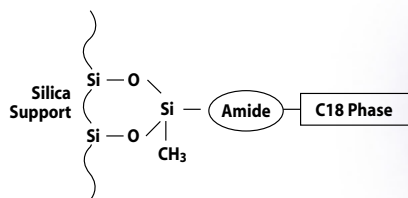
# Demand Flawlessness.



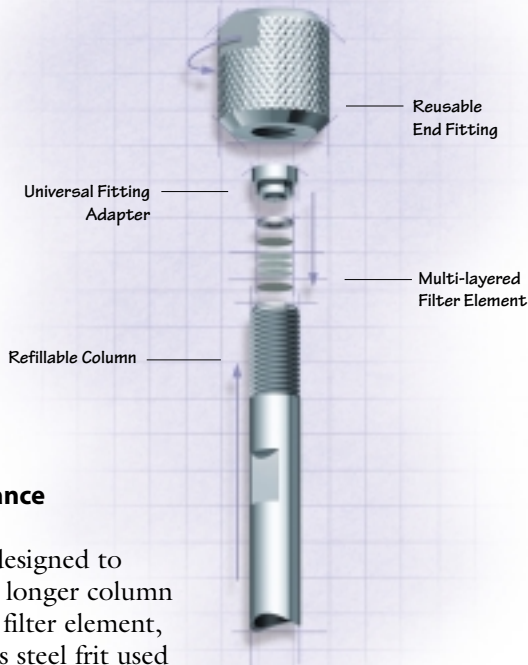
## ProntoSIL

HPLC Columns

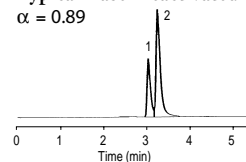
GERMAN ENGINEERED PERFORMANCE



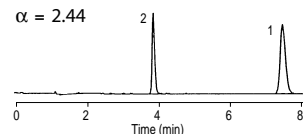
*ProntoSIL C18-EPH is a polar embedded phase with superior stability due to its dual siloxane bonding.*



### Typical Base-Deactivated C18



### ProntoSIL C18-EPH



Mobile Phase: 65% CH<sub>3</sub>CN  
35% Phosphate buffer, pH 3.2  
Sample: 1. p-Butylbenzoic acid  
2. N,N-Dimethylaniline

*ProntoSIL C18-EPH provides enhanced polar selectivity and improved peak shape compared to typical base deactivated phases.*

### Engineered for Better Performance and Longer Column Life.

ProntoSIL HPLC columns are designed to provide higher performance and longer column life. An innovative multi-layered filter element, rather than the common stainless steel frit used by most manufacturers, provides a more efficient transport of sample to the top of the stationary phase. The result is superior chromatography and a dramatically reduced occurrence of column plugging.

### Engineered to be Excellent.

Choose ProntoSIL for German engineering at its best. Demand Flawlessness. Demand ProntoSIL.



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