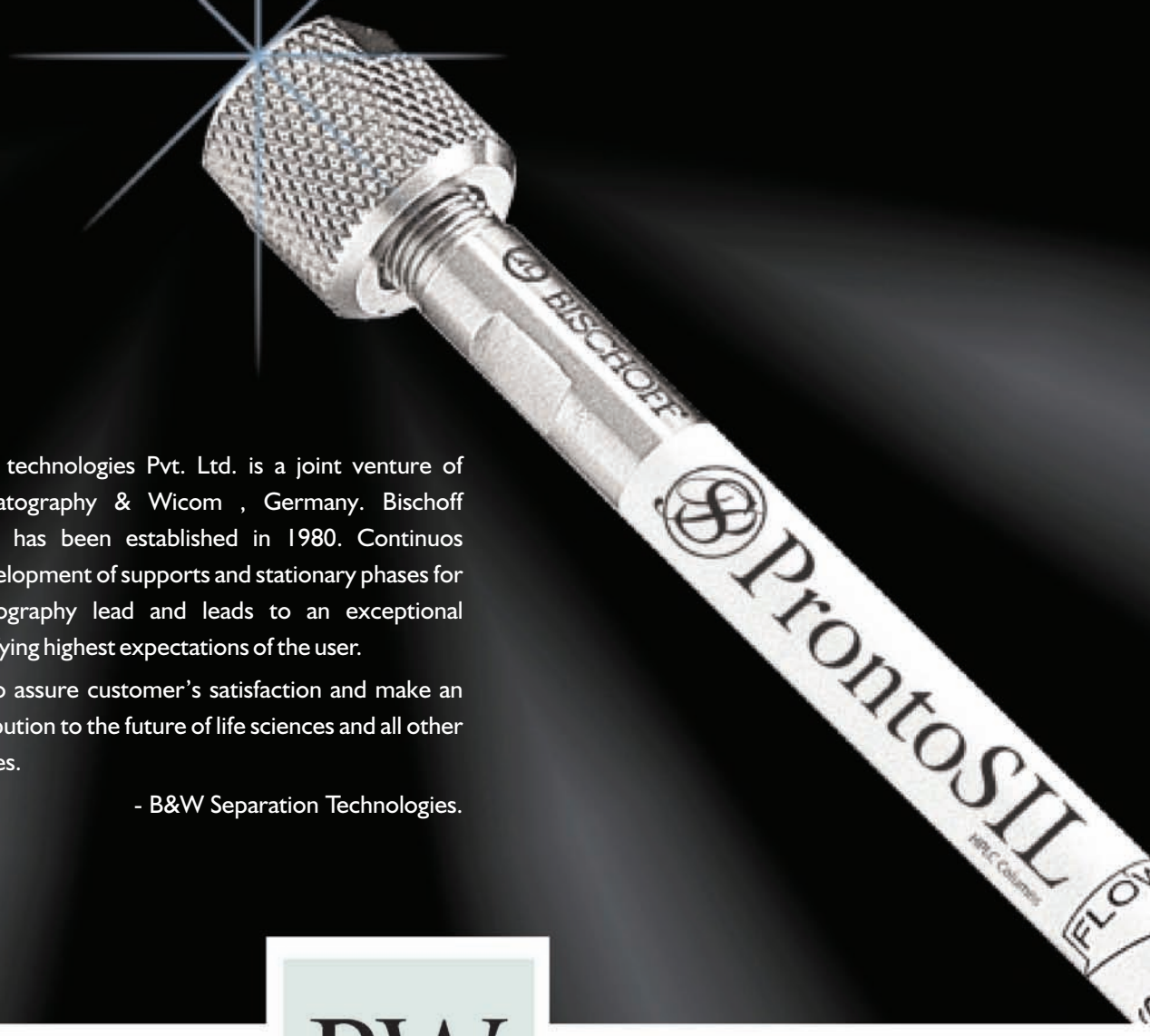
INTRODUCING

ProntoSIL

HPLC Columns

Making Separations Easy



B&W separation technologies Pvt. Ltd. is a joint venture of Bischoff Chromatography & Wicom , Germany. Bischoff Chromatography has been established in 1980. Continuos research and development of supports and stationary phases for Liquid Chromatography lead and leads to an exceptional product line satisfying highest expectations of the user.

It is our desire to assure customer's satisfaction and make an important contribution to the future of life sciences and all other chemical industries.

- B&W Separation Technologies.

B&W

SEPARATION TECHNOLOGIES

German Engineered Performance

About ProntoSIL

ProntoSIL is ultra pure silica manufactured by Bischoff Chromatography.

The ultimate ultra-pure stationary phase, is a spherical, completely porous silica gel. It is manufactured under the most stringently controlled conditions, guaranteeing constant particle size distribution as well as constant pore size and pore volume. This manufacturing process permits no performance-reducing micropores but yields constant specific surface area. ProntoSIL packing materials have extraordinary purity and are free from metallic contaminants that could hinder optimum peak shape. In the development of ProntoSIL phases, our many years of experience as well as users wishes for more technical information have led to more than the usual physical parameters such as specific surface area, pore size, pore volume and - for bonded phases - carbon content. Parameters controlled include metallic impurities, hydrophobic strength, steric selectivity, peak symmetry for basic analytes, silanophilic activity and ion exchange capacity. These parameters are determined by procedures such as NMR and ICP in addition to chromatographic techniques. This multiplicity of characteristics yields extremely reproducible chromatographic supports providing a basis for reliable, constant, batch-independent, high-performance separation columns.

Ultra-Pure Silica Gel

The silica gel utilized in the manufacture of ProntoSIL is 99.999% pure silica gel. A particle size distribution analyzer is used to test each batch for constant particle size. Surface area, pore size and pore volume are determined by a BET analyzer. AAS and ICP are utilized to test for metallic impurities. The extremely low level of metallic impurities guarantees that the analyte neither interacts nor forms complexes during chromatographic analysis.

Bonding and End-Capping

The silica gel is chemically modified using optimised proprietary procedures. Efficient bonding and the elimination of harmful silanol group residues is monitored by NMR. The absence of silanol group residues is shown by the excellent chromatographic performance with respect to nearly perfect symmetry for basic and acidic analytes.

Packed High-Performance Columns

High-performance columns are packed using the unique HYPERCHROME column hardware developed in-house by Bischoff and Bischoff's own environment-friendly packing process. The spherical, mechanically stable particles of silica gel with extremely narrow particle size distribution ensure reproducible column packing for lowest operating pressures.

Introducing ProntoSIL Validated Columns

The new ProntoSIL Validated Columns are produced to deliver **best** performance column to column, batch to batch. Every validated column must have to pass critically monitored manufacturing & testing. In addition to the certificate of analysis

ProntoSIL SI

ProntoSIL SI is the type B silica support of BISCHOFF Chromatography used by B & W Separation Technology. Type B silica supports are ultra pure silicas based on Tetraethoxysilane (TES). ProntoSIL SI can be used in normal phase chromatography and is the support for most ProntoSIL bonded phases. Due to the fact that it is manufactured under very stringent conditions ProntoSIL SI has a purity of 99,999%. It is available in several particle and pore sizes. Therefore a wide range of application are given, i.e. SEC, NP-HPLC and NP-HPLC of large molecules.

ProntoSIL C30

ProntoSIL C30 is a stationary phase with an extremely high carbon load. The high coverage of the support results in a very dense bonding, excellent shape selectivity and stability even at pH 1. Especially the wide pore supports are showing an enhanced shape selectivity. The application area of ProntoSIL C30 is the separation of isomers, i.e. Carotenoides and other solutes with long alkyl chains that can not be separated on classical C18 columns. The 300 Å packing is also available with endcapping.

ProntoSIL C18 AQ

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%. No collapse of C18 brushes leads to excellent peak shape under those chromatographic conditions. The advantages of AQ - packings can be illustrated in applications with polar analytes. The C18 AQ - bonding type is fully endcapped and available in several particle and pore sizes.

ProntoSIL C18 AQ PLUS

In addition to ProntoSIL C18 AQ, ProntoSIL C18 AQ PLUS has been developed for the use in aqueous mobile phases 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. This packing shows also excellent peak shape in pure aqueous eluents but differs in polar selectivity compared to ProntoSIL C18 AQ. The application area for this support is mainly in combinatorial chemistry where the standard separation conditions are fast gradients from 0 -100% organic solvent and where the mobile phase includes 0.1% TFA.

ProntoSIL C18 ace-EPS

ProntoSIL C18 ace-EPS belongs to a new group of RP - materials with polar embedded groups. ProntoSIL C18 ace- EPS is very stable over a wide pH range (pH 1-10). In addition, it offers a maximum hydrophobicity combined with a maximum polar selectivity. The silanophilic activity of the support is very low. Ultra strong basic compounds like amitriptyline can be eluted in neutral mobile phases (pH 7) with excellent symmetrical peak shape. The main application area for this bonding is in pharmaceutical industry where the analytes often have basic or acidic groups. For the separation of acidic and basic compounds ProntoSIL C18 ace-EPS shows enhanced polar selectivity. The C18 ace-EPS - bonding type is available in several particle and pore sizes.

ProntoSIL Phases

HIGHEST QUALITY STANDARDS

ProntoSIL

ProntoSIL C18 H

ProntoSIL C18 H is the standard C18 packing. It is applicable in a wide range of RP - chromatography. The packing is fully endcapped and shows all the excellent properties a new generation stationary phase can offer. The C 18 H - bonding type is available in several particle and pore sizes. The wide pore supports show excellent properties for the separation of biomolecules like proteins and peptides.

ProntoSIL C8 ace-EPS

ProntoSIL C8 ace-EPS belongs to the group of RP-packings with polar embedded groups. The bonding is very stable over a wide pH range (pH 1-10). In comparison to ProntoSIL C18 ace-EPS, ProntoSIL C8 ace-EPS even shows a 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 (i.e. amitriptyline) can be eluted under neutral pH conditions with excellent symmetrical peak shape. The main application area of this packing is pharmaceutical industry where analytes often have basic or acidic groups. ProntoSIL C8 ace-EPS offers a unique selectivity to separate pharmaceuticals.

ProntoSIL C4

ProntoSIL C4 is a classical C4-type stationary phase. Due to the bonding technology it shows an enhanced stability even at pH 1. The C4-phases show excellent properties for the separation of large biomolecules like proteins and peptides. In addition to RP - Chromatography ProntoSIL C4 can be used in HIC - mode (Hydrophobic Interaction Chromatography).

ProntoSIL Amino

ProntoSIL Amino is an amino propyl bonded phase. It can be used in three modes : NP - mode, RP - mode and IC - mode. In the NP - mode it is an easy to use alternative to silica packings. Under gradient conditions it equilibrates faster than silica and offers different selectivities. In RP - mode the packing is mainly used for carbohydrate analysis. In IC - mode ProntoSIL Amino can be used as a weak anion exchanger (WAX), ie. analysis of anions and organic acids. Besides HPLC ProntoSIL Amino is the phase of choice for SFC (Supercritical Fluid Chromatography) where dense gases (ie. CO2) are used as mobile phase.

ProntoSIL CN

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 of ProntoSIL CN is the separation of strong basic solutes. In NP - mode, the ProntoSIL CN phase offers a complementary selectivity to the other NP phases as Silica, Amino and Diol. Due to the quick equilibration of CN - bonded phases it is the best choice for gradient elution in NP - mode.

ProntoSIL Phenyl

ProntoSIL Phenyl is an RP packing that offers different selectivities in comparison to brush type stationary phases like C18 or C8. The selectivity differences are based on P - P interaction. It is fully endcapped. Due to the bonding technology it shows excellent stability even at pH 1. The 5 µm support is also available in 60 Å. ProntoSIL 60-5-Phenyl shows enhanced selectivity. The hydrophobicity is comparable to standard C8 packings.

ProntoSIL C1

ProntoSIL C1 shows the lowest retention of all ProntoSIL RP-phases. The application area is mainly the separation of non-polar solutes (ie. lipids). It can also be used for the separation of Proteins in HIC mode (Hydrophobic Interaction Chromatography). Due to the bonding technology the C1 - bonding type is stable down to pH 1.

ProntoSIL C18 SH

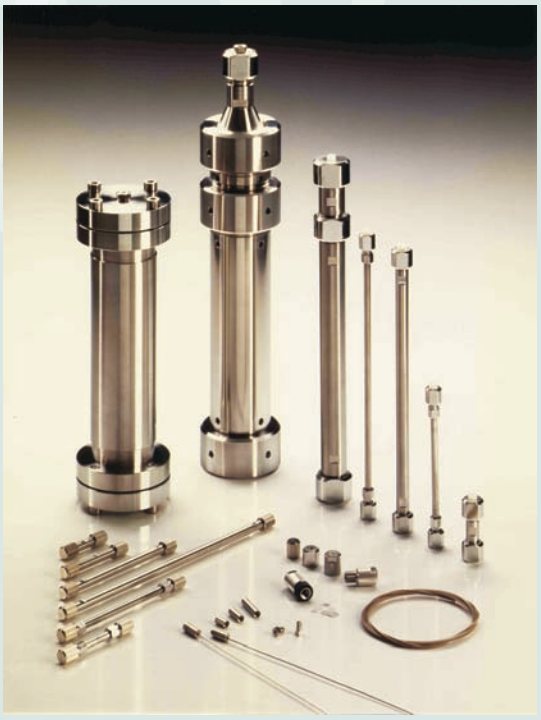
ProntoSIL C18 SH is the stationary phase in the ProntoSIL line with the maximum bonding density. It is fully endcapped. Due to the high bonding density it shows an excellent shape selectivity and stability even at pH 1. Therefore it also can be used in applications to separate cis/trans isomers. The C18 SH - bonding type is available with 120 A pore size and in several particle sizes.

ProntoSIL Eurobond C18

ProntoSIL Eurobond C18 is the stationary phase of the ProntoSIL product line with the best price performance. ProntoSIL Eurobond C18 provides the selectivity of a modern classical bonded C18 phase,it is fully endcapped and can be used in most of the traditional RP applications. ProntoSIL Eurobond is only available in 120 A pore size and is recommended for preparative HPLC.

ProntoSIL C8 SH

ProntoSIL C8 SH is a classical C8 - type stationary phase. It is fully endcapped. Due to the bonding technology it shows an excellent peak shape, selectivity and stability even at pH 1. The C8 SH-bonding type is available in several pore and particle sizes. The 300 A packings show excellent properties for the separation of large biomolecules like proteins and peptides. ProntoSIL 60-5-C8 SH shows enhanced selectivity.



ProntoSIL OH

ProntoSIL OH is a diol bonded phase. The diol packing is an alternative to pure silica packings. The equilibration time of ProntoSIL OH is shorter in comparison to the corresponding silica while the selectivity is comparable. Due to the lower surface activity of diol packings it is recommended for SEC applications.

ProntoSIL Ordering Information

Columns are available in dimensions of 250 x 4.6 mm, 150 x 4.6 mm, 100 x 4.6 mm and 50 x 4.6 mm, other dimensions are available on request.

You can order your ProntoSIL column in the following modifications (✓)

Modification	Particle Size	Pore Size 60 Å	120 Å	200 Å	300 Å
Si (Silica)	3 µm 5 µm 10 µm	☑ ☑ ☑	☑ ☑ ☑	☑ ☑ ☑	☑ ☑ ☑
C30	3 µm 5 µm 10 µm		☑	☑ ☑ ☑	☑ ☑
C18 ace-EPS	3 µm 5 µm 10 µm		☑ ☑ ☑	☑ ☑ ☑	☑ ☑ ☑
C18 AQ	3 µm 5 µm 10 µm		☑ ☑ ☑	☑ ☑ ☑	
C18 AQ Plus	5 µm		☑		
C18 H	3 µm 5 µm 10 µm	☑ ☑ ☑	☑ ☑ ☑	☑ ☑ ☑	☑ ☑ ☑
C18 SH	3 µm 5 µm 10 µm		☑ ☑ ☑		☑
C18 EuroBOND	5 µm 10 µm		☑ ☑		
C8 ace EPS	3 µm 5 µm 10 µm		☑ ☑ ☑		
C8 SH	3 µm 5 µm 10 µm	☑	☑ ☑ ☑	☑ ☑	☑ ☑
C4	3 µm 5 µm 10 µm	☑	☑ ☑ ☑	☑	☑ ☑
C1	3 µm 5 µm		☑ ☑		
Phenyl	3 µm 5 µm 10 µm	☑	☑ ☑ ☑		
Amino	3 µm 5 µm 10 µm		☑ ☑ ☑		
CN (Cyano)	3 µm 5 µm 10 µm		☑ ☑ ☑		
OH (Diol)	3 µm 5 µm 10 µm		☑ ☑ ☑		

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