HPLC COLUMNS

QCol

simply Quality

HPLC COLUMNS

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Greyhound CHROMATOGRAPHY AND ALLIED CHEMICALS

GREYHOUND - *setting the standard*

As a trusted name in the supply of chromatography consumables and certified reference standards, Greyhound also offers a comprehensive selection of top quality own brand HPLC columns, Capillary columns, SPE columns and Certified syringe filters.
This catalogue contains details of the Q-Col range of HPLC Columns. Other product catalogues are available on request.

These quality products are backed by the guaranteed reliability and technical support which has become synonymous with the name Greyhound. Visit our website at: www.greyhoundchrom.com

Welcome to a new era in analyte detection and column performance.

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GREYHOUND CHROMATOGRAPHY
Q-Col HPLC COLUMNS

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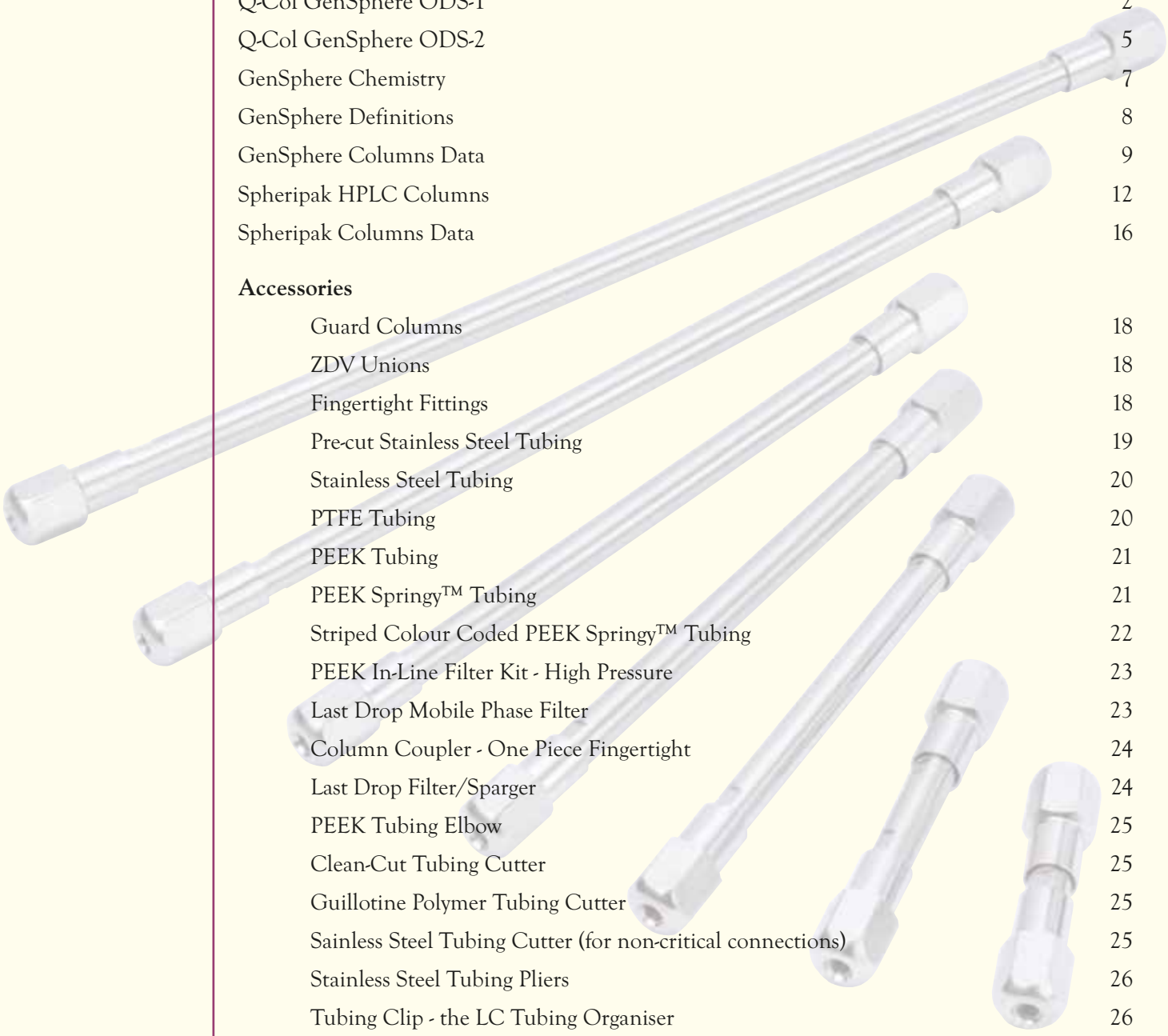


Greyhound Chromatography Q-Col HPLC Columns

Our extensive range of HPLC columns and accessories are designed and manufactured to the most exacting and rigorous standards.

Greyhound have been supplying HPLC columns and consumables for over 30 years, our experience places us in a unique position to offer advice and guidance when choosing the most suitable column for a particular analysis.

The manufacturing of our Q-Col silica is the first critical stage in the production of the high performance columns. Q-Col silica is ultra-pure, totally porous and perfectly spherical, the elimination of surface irregularities and extremely low metals content make it superior to other silica-based packings on the market. The absence of micropores eliminate the chromatographic problems associated with incomplete substitution of the support, a problem found in other manufacturers packings. The manufacturing process of Q-Col silica, the bonding of the phase, right through to the packing and final testing of each column is monitored to meet the most demanding specifications in the industry and strict ISO 9001 procedures. These rigorous processes result in columns of the highest quality, with longer lifespans and reproducible column-to-column results every time - with every column.

Greyhound Q-Col GenSphere™ and Spheripak™ HPLC Columns are individually tested and supplied with a comprehensive test chromatogram and product specification sheet.

The most common size of columns for analytical applications have traditionally been either 4.6 or 4.0mm ID and 150 or 250mm length, however there is a continual move towards shorter columns and narrower IDs.

We offer columns from just 2mmID for high throughput LC/MS analysis right through to large semi-preparative and preparative columns, enabling true scale-up from microbore to preparative HPLC. With column lengths from 3cm to over 30cm, Greyhound offers one of the largest selection of columns on the market

If you have a specific requirement for other manufacturers packing materials, we offer many brands in addition to our own Q-Col range, and the columns are manufactured to the same high standards as with our own materials.

Q-Col GenSphere™ HPLC Columns offer many advanced features including:

- Exceptional batch-to-batch reproducibility
- Extremely low metals content
- Meticulously controlled materials
- Ultra-pure silica
- Perfect spherical particles
- Maximum pH range (between 1.5 and 11.0)
- 3, 5 and 10 µm particle sizes
- Easily scaled-up, from microbore to preparative HPLC.
- Available with 300A pore size for biochromatography.
- Exceptionally long column lifetimes
- Wide range of packings
- Fully deactivated after functional bonding

Q-Col Spheripak™ HPLC silica has been specially developed to replace Waters Spherisorb ™ one of the most popular packings on the market today.

Every parameter of the material has been evaluated to confirm total correlation between the two materials and the results of rigorous testing by users in many different fields confirm the excellent results obtained by using Q-Col Spheripak™

Our strictly controlled manufacturing processes have been specifically designed to ensure the maximum reproducibility and efficiency of every Q-Col Spheripak™ HPLC column.

We are so confident every Q-Col Spheripack™ column will work in an identical manner to the equivalent WS column - **we guarantee it!** If you are dissatisfied in any way with its comparative performance we will refund the price you paid.

GenSphere™ HPLC Columns

Q-Col GenSphere ODS-1

Q-Col GenSphere ODS-1 is a totally endcapped packing with an exceptionally high level of deactivation, which minimises interfering interactions when analysing strongly acidic or basic analytes or chelating compounds. GenSphere ODS-1 is highly stable at pH values of 1.5 to 11.0.

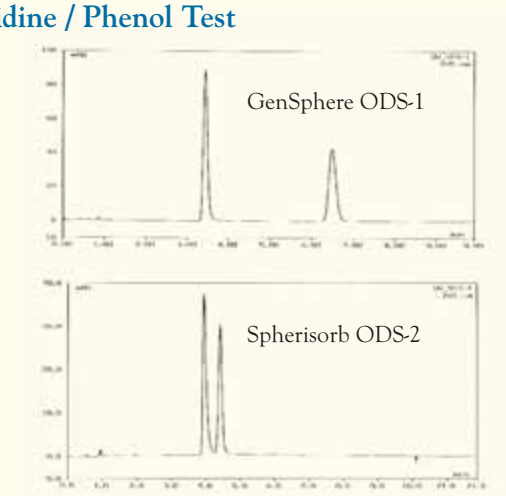
Stability - The advanced manufacturing processes of the Q-Col GenSphere columns ensure extended column life even under extreme conditions where most manufacturers columns would suffer severe degradation.

Deactivation - A major cause of peak tailing and distortion associated with the analysis of basic compounds is caused by free surface silanols which are left exposed during the bonding process. Elevated quantities of metals in the silica will increase the acidity of the surface silanols, keeping them ionised even at low pHs, these conditions can have a seriously detrimental effect on chromatographic peaks. The Pyridine/Phenol test is used as a marker of the presence of these surface silanols. Ideal conditions will show the pyridine peak eluting before the phenol peak, both peaks eluting with total symmetry without any evidence of tailing, likewise a broader separation between the two peaks indicates a superior deactivation process. Q-Col GenSphere ODS-1 columns lead the way with the pyridine/phenol test compared to other manufacturers columns, confirming the exceptional level of deactivation of the GenSphere silica.

Additional confirmation of the exceptional quality of the Q-Col GenSphere ODS-1 columns is the acidic compounds test. Acidic compounds highlight the presence of chelating centres or points of ionic interchange which may be present in the silica particles. Q-Col GenSphere ODS-1 columns have perfectly symmetrical peaks compared to the significant tailing observed when using this test with other columns on the market. Symmetrical peaks are also achieved when separating basic compounds.

The exceptional level of deactivation of the Q-Col GenSphere ODS-1 columns provide perfectly symmetrical peaks time after time where other columns on the market fail badly resulting in peaks with pronounced tailing or irreversible adsorption.

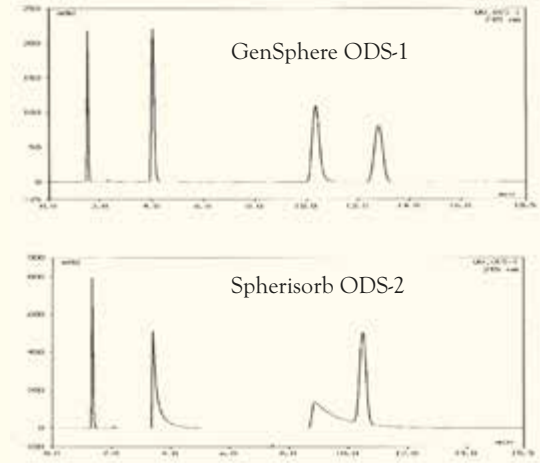
Pyridine / Phenol Test



Test Conditions
Eluant: Acetonitrile/Water 30/70, 1mL/min
Lambda: 265nm

Composition
Pyridine 2.1ul/min
Phenol 14mg.ml

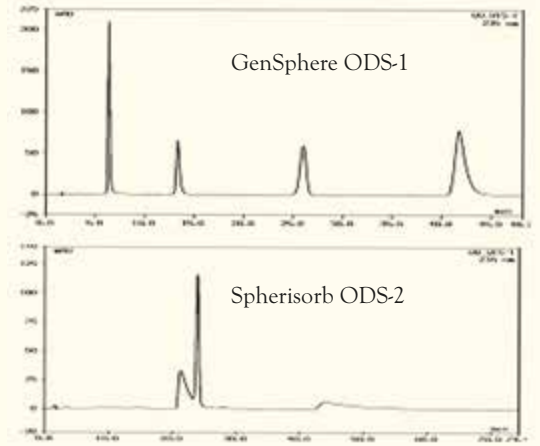
Acid Compounds Test



Test Conditions
Eluant: 20 mM KH2PO4 pH3.2/CH3CN 65:35
1ml/min. Temp. 40°C.
UV 254 nm

Composition
Uracil: 0.5 mg/ml
Benzoic Acid: 3.6 mg/ml
p-Ethylbenzoic acid: 0.9 mg/ml
Methylbenzene: 3.0 mg/ml

Basic Compounds Test



Test Conditions
GenSphere ODS-1
Eluant: 20 mM KH2PO4 pH7/CH2CN 35:65
1ml/min. Temp. 25°C. UV 235 nm

Composition
Propanolol: 0.08 mg/ml
Diphenidramine: 1.28 mg/ml
Acetonaphthalene: 0.2 mg/ml
Amyltryptilene: 0.3mg/ml

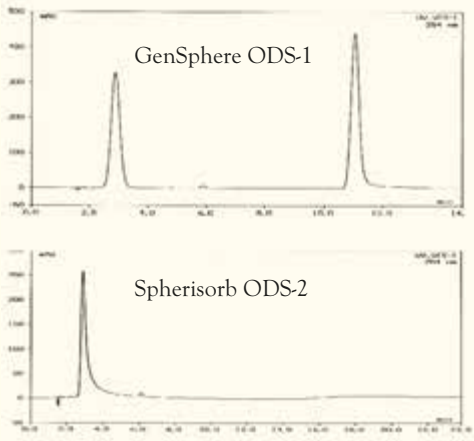
GenSphere™ HPLC Columns

Silica Purity

At the heart of every Q-Col GenSphere HPLC column is its exceptionally pure silica. The elimination of metallic impurities , the precise control of its pore size and pore distribution all result from the stringent quality procedures used in its manufacturing processes, making GenSphere one of the finest chromatography silicas on the market.

The 8-quinolinol/acetylacetone test demonstrates chromatographic differences between Q-Col GenSphere ODS-1 and a competitors column with a high level of metallic impurities for chelating compound 8-quinolinol.

Metallic Trace Test



Test Conditions
GenSphere ODS-1
Eluant: 10 mM KH2PO4 pH6.8/Methanol 60:40
1 ml/min. Temp 30˚C. UV 254nm

Composition
8-Qunolinol: 0.5mg/ml
Acetylacetone: 0.5 mg/ml

Q-Col GenSphere ODS-2

Similar to the Q-Col GenSphere ODS-1 columns, our GenSphere ODS-2 columns have a high selectivity for hydrophilic and polar compounds, which are often poorly retained on conventional ODS columns.

By modifying the process of functionalising the pure silica particles, the collapsing effect of the C18 chains when working with mainly aqueous eluants is prevented. This adaption enables the chromatographer to achieve excellent performance even with a 100% aqueous phase.

Principal features -

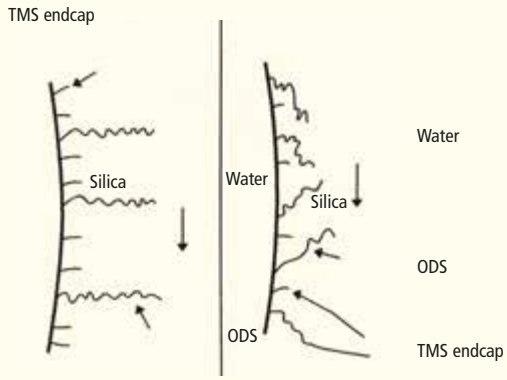
- Compatible with 100% aqueous eluant
- Particularly suitable for the separation of hydrophilic compounds
- Strong retention in aqueous eluants
- Long useful lifespan with aqueous eluants
- Selectivity compliments Q-Col GenSphere ODS-1
- High mechanical stability
- Maximum versatility

Applications for GenSphere ODS-2 columns are generally the same as for the ODS-1 columns. However, this field of applications is extended to include particularly difficult separations such as oligosaccharides, amino acids, nucleotides and organic acids, which conventional reversed phase columns may not be able to separate satisfactorily.

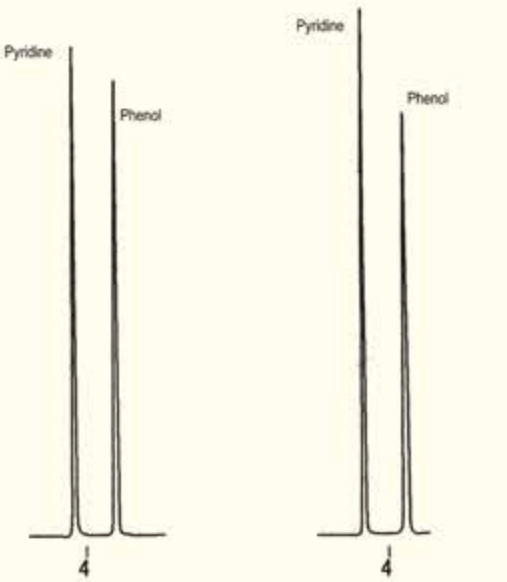
GenSphere ODS-2 columns have a specific selectivity for compounds which contain slightly polar groups in their structure. The columns are especially recommended for LC-MS in that, in many cases, the use of plugs or ionic blocking agents are avoided, which negatively affect detection when this technique is used.

As can be seen in the chromatograms, even after more than 100 hours of operation with water, no alteration is observed in retention times, selectivity or distortion of the pyridine and phenol peaks - a clear indication that no collapse of the bonded phase functionality is adversely achieved with Q-Col GenSphere ODS-2 columns. Notice how the bonded phase functionality has collapsed with the majority of reversed phase columns on the market, which is typical under these conditions.

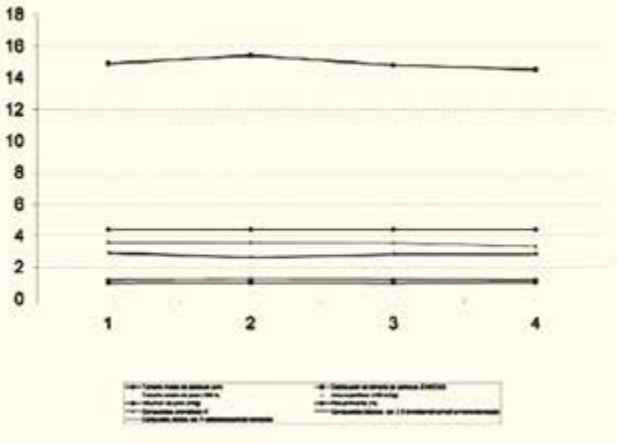
GenSphere ODS-2 ODS Conventional



Initial Chromatogram After 100 hours washed with H_2O



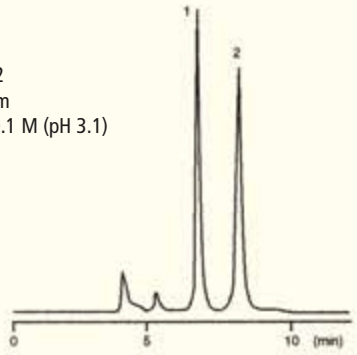
Reproducibility of GenSphere ODS-2



GenSphere™ HPLC Columns

Antioxidants

Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	Phosphate Plug 0.1 M (pH 3.1)
Flow:	0.6ml/min
Detector	ECD
Sample:	1. AscorbicAcid 2. GSH



Water Soluble Vitamins

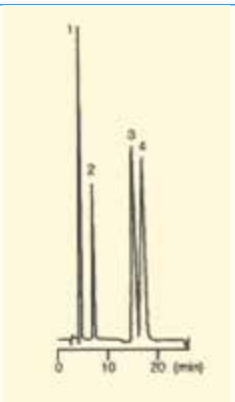
Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	Phosphate Plug 20 mM (pH 7) CH3CN 96/5
Flow:	0.6ml/min
Detector	UV 210 nm
Sample:	1. Calcium Pantothernate 2. Pyridoxine hydrochloride (B6) 3. Nicotinamide

Glycolic Acid and Lactic Acid

Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	H3PO4 0.1%
Flow:	0.6ml/min
Detector	UV 210 nm
Sample:	1. Glycolic Acid 2. Lactic Acid

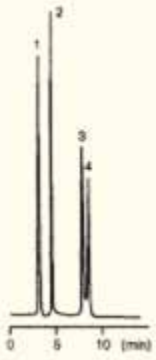
Alcohols

Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	H_2O
Flow:	0.6ml/min
Detector	RID
Temperature:	40°C.
Sample:	1. Methanol 2. Ethanol 3. iso-Propanol 4. n-Propanol



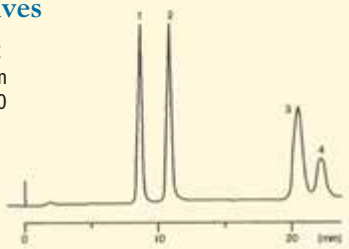
Amino Acids

Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	H_2O
Flow:	0.6ml/min
Detector	RID
Temperature:	40°C.
Sample:	1. Alanine 2. Valine 3. Isoleucine 4. Leucine



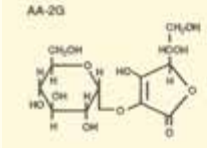
Cyclodextrin derivatives

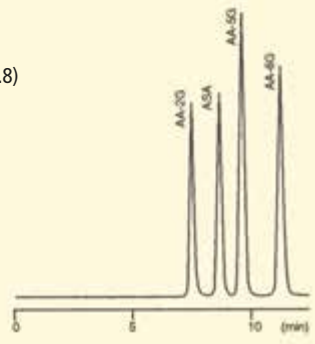
Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	MEOH/H2O 70:30
Flow:	0.6ml/min
Detector	UV 240 nm
Temperature:	ambient
Sample:	1. $6^1,6^5$-di-O-trytyl-cG8 2. $6^1,6^4$-di-O-trytyl-cG8 3. $6^1,6^3$-di-O-trytyl-cG8 4. $6^1,6^2$-di-O-trytyl-cG8



Ascorbic Acid and Glycosides

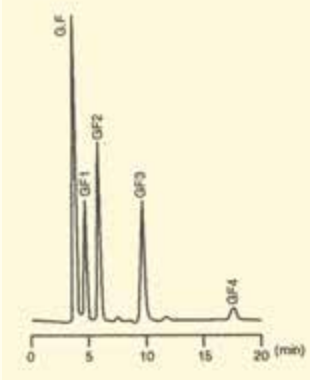
Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	Phosphate Plug (pH 3.8)
Flow:	0.4ml/min
Detector	UV 240 nm
Temperature:	Ambient





Fructo-oligosaccharides

Column	GenSphere ODS-2 5µm, 15 x 0.46 cm
Eluant:	H_2O
Flow:	0.6 ml/min
Detector	RID
Temperature:	Ambient



The exceptional qualities of GenSphere HPLC packings are available in a full range of chemistries

	ODS-1	ODS-2	C1	C4	C8
Pore Size	120Å	120Å	120Å	120Å	120Å
Particle Size	3, 5 and 10 µm	3, 5 and 10 µm	3, 5 and 10 µm	3, 5 and 10 µm	3, 5 and 10 µm
Volume of pores in ml/g	1.0 ml/g	1.0 ml/g	1.0 ml/g	1.0 ml/g	1.0 ml/g
Surface area	300 m^2/g	300 m^2/g	300 m^2/g	300 m^2/g	300 m^2/g
Purity of silica	Ultrapure	Ultrapure	Ultrapure	Ultrapure	Ultrapure
%C	17%	15%	5%	8%	10%
Type of phase	Monofunctional and totally endcapped	Monofunctional and totally endcapped	Monofunctional	Monofunctional and totally endcapped	Monofunctional and totally endcapped
Metallic impurities (Al, Fe, Ti, Zr)	Less than 10ppm of each	Less than 10ppm of each	Less than 10ppm of each	Less than 10ppm of each	Less than 10ppm of each

	CN	NH_2	Ph	Sl
Pore Size	120Å	120Å	120Å	120Å
Particle Size	3, 5 and 10 µm	3, 5 and 10 µm	3, 5 and 10 µm	3, 5 and 10 µm
Volume of pores in ml/g	1.0 ml/g	1.0 ml/g	1.0 ml/g	1.0 ml/g
Surface area	300 m^2/g	300 m^2/g	300 m^2/g	300 m^2/g
Purity of silica	Ultrapure	Ultrapure	Ultrapure	Ultrapure
%C	7%	4%	9%	
Type of phase	Monofunctional and totally endcapped	Trifunctional		
Metallic impurities (Al, Fe, Ti, Zr)	Less than 10ppm of each	Less than 10ppm of each	Less than 10ppm of each	Less than 10ppm of each

GenSphere HPLC packings definitions

ODS-1	A totally endcapped packing with an exceptionally high level of deactivation, which minimises interfering interactions when analysing strongly acidic or basic analytes or chelating compounds. GenSphere ODS-1 has excellent stability at pH values between 1.5 and 11.0.
ODS-2	Similar to GenSphere ODS-1, GenSphere ODS-2 has a high selectivity for hydrophilic and polar compounds, which are often poorly retained on conventional ODS columns. By modifying the process of functionalising the pure silica particles, the collapsing effect of the C18 chains when working with mainly aqueous eluants is prevented. This adaption facilitates excellent performance even with a 100% aqueous phase.
C1	GenSphere ultrapure silica is given its special function with tri-methylchlorosilane to create a low hydrophobic reversed phase. Its field of applications includes the separation of peptides and proteins by reversed phase HPLC. It can also be used as a packing for normal phase with highly polar compounds.
C4	The same GenSphere ultra pure silica made operative with butyl groups, resulting in a moderately hydrophobic packing. Its principle field of application is the separation of peptides and proteins by reverse phase HPLC. C4 silica is also available with a 300 Å porosity which is more suitable for the larger size of protein molecules. Another field where this packing is highly recommended is where the sample contains compounds of a very different hydrophobic nature. This packing permits perfect separation of a sample with a single injection.
C8	This packing, made operative with octyl groups and totally endcapped, is extremely versatile. Recommended for highly hydrophobic samples,which are retained excessively on ODS type packings. Developed on the same ultrapure silica as ODS-1 and ODS-2, it is extremely reproducible and reliable.
CN	GenSphere ultrapure CN packings are much appreciated as alternatives to ODS-type packings due to their special selectivity , as well as for the possibilities that they offer for working in both normal and reverse phase chromatographic modes. However, in comparison with the latter, they have always been characterised by a lower reproducibility and a notably shorter useful life. Thanks to the exceptional quality of the GenSphere silica and the optimization reached by the actuating processes, the Q-Col GenSphere CN HPLC packing has satisfactorily overcome these limitations, giving the chromatogapher a completely reliable alternative. As a normal phase packing it is an excellent alternative to unsubstituted silica, given that retention times are much more reproducible, equilibration times much more rapid, and it does not suffer the problems of de-activation of the silica itself.
NH_2	The GenSphere NH_2 packing has chemically bonded groups of aminopropyl silane and can be used as a normal phase or reverse phase packing depending on the eluant used. It is recommended for separations of basic compounds under normal phase conditions. Additionally, the reactivity of the amino group makes it very suitable as a support for later modifications as for example in the synthesis of chiral phases. It is also very suitable for SFC applications.
Ph	In the same way as with the CN type packings, our GenSphere Ph packing is substituted with dimethyl phenyl and can be used in normal or reversed phase modes. It is a very useful alternative reversed phase to ODS type packings since its aromatic groups give it a special selectivity when polar compounds are being analysed.
Si	Ultrapure silica, the basis of all the Q-Col GenSphere range of HPLC columns.
300 Å	A range of Q-Col GenSphere packings with a pore diameter of 300 Angstrom which are ideal for undertaking separations of complex molecules with a very high molecular weight, e.g. proteins and peptides.

GenSphere™ Analytical columns 0.46cm I.D. 120Å 5µm

Function	µm	4 cm	10 cm	15 cm	20 cm	25 cm
ODS-1	5	20-105200	20-105201	20-105202	20-105203	20-105204
ODS-2	5	20-105208	20-105209	20-105210	20-105211	20-105212
C1	5	20-105238	20-105239	20-105240	20-105241	20-105242
C4	5	20-105230	20-105231	20-105232	20-105233	20-105234
C8	5	20-105223	20-105224	20-105225	20-105226	20-105227
CN	5	20-105253	20-105254	20-105255	20-105256	20-105257
NH_2	5	20-105245	20-105246	20-105247	20-105248	20-105249
Ph	5	20-105260	20-105261	20-105262	20-105263	20-105264
Si	5	20-105215	20-105216	20-105217	20-105218	20-105219

GenSphere™ Analytical columns 0.46cm I.D. 120Å 3µm

Function	µm	4 cm	10 cm	15 cm	20 cm	25 cm
ODS-1	3	20-105000	20-105001	20-105002	20-105003	20-105004
ODS-2	3	20-105008	20-105009	20-105010	20-105011	20-105012
C1	3	20-105040	20-105041	20-105042	20-105043	20-105044
C4	3	20-105033	20-105034	20-105035	20-105036	20-105037
C8	3	20-105025	20-105026	20-105027	20-105028	20-105029
CN	3	20-105056	20-105057	20-105058	20-105059	20-105060
NH_2	3	20-105048	20-105049	20-105050	20-105051	20-105052
Ph	3	20-105063	20-105064	20-105065	20-105066	20-105067
Si	3	20-105015	20-105016	20-105017	20-105018	20-105019

GenSphere™ Analytical columns 0.4cm I.D. 120Å 5µm

Function	µm	4 cm	10 cm	15 cm	20 cm	25 cm
ODS-1	5	20-105543	20-105544	20-105545	20-105546	20-105547
ODS-2	5	20-105550	20-105551	20-105552	20-105553	20-105554
C1	5	20-105580	20-105581	20-105582	20-105583	20-105584
C4	5	20-105573	20-105574	20-105575	20-105576	20-105577
C8	5	20-105565	20-105566	20-105567	20-105568	20-105569
CN	5	20-105595	20-105596	20-105597	20-105598	20-105599
NH_2	5	20-105588	20-105589	20-105590	20-105591	20-105592
Ph	5	20-105605	20-105606	20-105607	20-105608	20-105609
Si	5	20-105558	20-105559	20-105560	20-105561	20-105562

GenSphere™ Analytical columns 0.4cm I.D. 120Å 3µm

Function	µm	4 cm	10 cm	15 cm	20 cm	25 cm
ODS-1	3	20-105475	20-105476	20-105477	20-105478	20-105479
ODS-2	3	20-105483	20-105484	20-105485	20-105486	20-105487
C1	3	20-105513	20-105514	20-105515	20-105516	20-105517
C4	3	20-105505	20-105506	20-105507	20-105508	20-105509
C8	3	20-105498	20-105499	20-105500	20-105501	20-105502
CN	3	20-105528	20-105529	20-105530	20-105531	20-105532
NH_2	3	20-105520	20-105521	20-105522	20-105523	20-105524
Ph	3	20-105535	20-105536	20-105537	20-105538	20-105539
Si	3	20-105490	20-105491	20-105492	20-105493	20-105494

Other column configurations are available on request

GenSphere™ HPLC Columns

GenSphere™ microbore columns 0.3cm I.D. 120Å 5µm

Function	µm	10 cm	20 cm
ODS-1	5	20-105300	20-105301
ODS-2	5	20-105305	20-105306
C1	5	20-105355	20-105356
C4	5	20-105350	20-105351
C8	5	20-105345	20-105346
CN	5	20-105365	20-105366
NH_2	5	20-105360	20-105361
Ph	5	20-105370	20-105371
Si	5	20-105340	20-105341

GenSphere™ microbore columns 0.3cm I.D. 120Å 3µm

Function	µm	10 cm	20 cm
ODS-1	3	20-105430	20-105431
ODS-2	3	20-105435	20-105436
C1	3	20-105455	20-105456
C4	3	20-105450	20-105451
C8	3	20-105445	20-105446
CN	3	20-105465	20-105466
NH_2	3	20-105460	20-105461
Ph	3	20-105470	20-105471
Si	3	20-105440	20-105441

GenSphere™ microbore columns 0.21cm I.D. 120Å 5µm

Function	µm	10 cm	20 cm
ODS-1	5	20-105340	20-105341
ODS-2	5	20-105344	20-105345
C1	5	20-105320	20-105321
C4	5	20-105315	20-105316
C8	5	20-105311	20-105312
CN	5	20-105330	20-105331
NH_2	5	20-105325	20-105326
Ph	5	20-105335	20-105336
Si	5	20-105375	20-105310

GenSphere™ microbore columns 0.21cm I.D. 120Å 3µm

Function	µm	10 cm	20 cm
OODS-1	3	20-105390	20-105391
ODS-2	3	20-105395	20-105396
C1	3	20-105412	20-105413
C4	3	20-105410	20-105411
C8	3	20-105405	20-105406
CN	3	20-105420	20-105421
NH2	3	20-105417	20-105418
Ph	3	20-105425	20-105426
Si	3	20-105400	20-105401

Other column configurations are available on request

Greyhound Chromatography and Allied Chemicals

www.greyhoundchrom.com

GenSphere™ Semi-preparative columns 0.70cm I.D. 120Å 5µm

Function	µm	15 cm	25 cm
ODS-1	5	20-105155	20-105156
ODS-2	5	20-105160	20-105161
C1	5	20-105180	20-105181
C4	5	20-105175	20-105176
C8	5	20-105170	20-105171
CN	5	20-105190	20-105191
NH_2	5	20-105185	20-105186
Ph	5	20-105195	20-105196
Si	5	20-105165	20-105166

GenSphere™ Semi-preparative columns 1.0cm I.D. 120Å 5µm

Function	µm	15 cm	25 cm
ODS-1	5	20-105157	20-105158
ODS-2	5	20-105162	20-105163
C1	5	20-105182	20-105183
C4	5	20-105177	20-105178
C8	5	20-105172	20-105173
CN	5	20-105192	20-105193
NH_2	5	20-105187	20-105188
Ph	5	20-105197	20-105198
Si	5	20-105167	20-105168

GenSphere™ Analytical columns 0.46cm I.D. 300Å 5µm

Function	µm	4 cm	10 cm	15 cm	20 cm	25 cm
ODS-1	5	20-105268	20-105269	20-105270	20-105271	20-105272
C4	5	20-105283	20-105284	20-105285	20-105286	20-105287
C8	5	20-105275	20-105276	20-105277	20-105278	20-105279

GenSphere™ Analytical columns 0.4cm I.D. 300Å 5µm

Function	µm	4 cm	10 cm	15 cm	20 cm	25 cm
ODS-1	5	20-105613	20-105614	20-105615	20-105616	20-105617
C4	5	20-105628	20-105629	20-105630	20-105631	20-105632
C8	5	20-105620	20-105621	20-105622	20-105623	20-105624

GenSphere™ microbore columns 0.3cm I.D. 300Å 5µm

Function	µm	10 cm	20 cm
ODS-1	5	20-105376	20-105377
C4	5	20-105386	20-105387
C8	5	20-105380	20-105385

Other column configurations are available on request

Q-Col Spheripak HPLC Columns

The new Q-Col Spheripak™ HPLC silica has been specially developed to replace Waters Spherisorb™ one of the most popular packings on the market today.

Every parameter of the material has been evaluated to confirm total correlation between the two materials and the results of rigorous testing by users in many different fields confirm the excellent results obtained by using Q-Col Spheripak™

Our strictly controlled manufacturing processes have been specifically designed to ensure the maximum reproducibility and efficiency of every Q-Col Spheripak™ HPLC column.

We are so confident your Q-Col Spheripack™ column will work in an identical manner to the equivalent WS column - **we guarantee it!** If you are dissatisfied in any way with it comparative performance we will refund the price you paid.

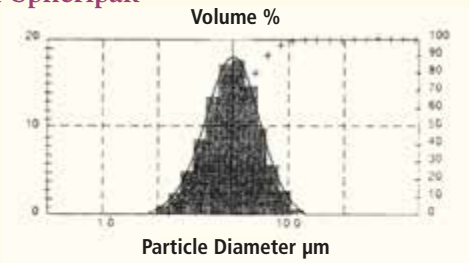
The table below shows the comparative physiochemical characteristics between the Q-Col Spheripak™ and WS materials.

Spheripak 3,5, & 10µm 80A 220m²/g Carbon Content	Packing Particle Size Pore Size Surface Area	WS 3,5 & 10 80A 220m²/g Carbon Content
5%	C1	5%
6%	C6	6%
6%	C8	6%
7%	ODS-1	7%
12%	ODS-2	12%
3.50%	CN	3.50%
2%	NH_2	2%
3.00%	Phenyl	3.00%
-	8AX	-
-	8CX	-

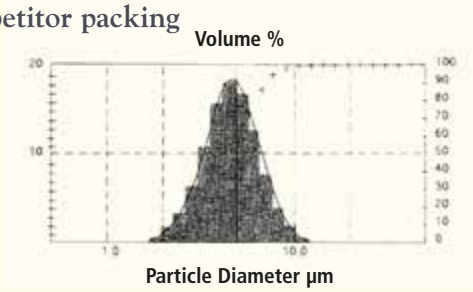
The rigorous manufacturing processes of the Spheripak silica ensure that extreme care is taken in optimisation of the particle size to ensure the maximum efficiency and stability of the packing.

The comparison of the Q-Col Spheripak and WS packings shows the complete correlation between the two packings.

Q-Col Spheripak™

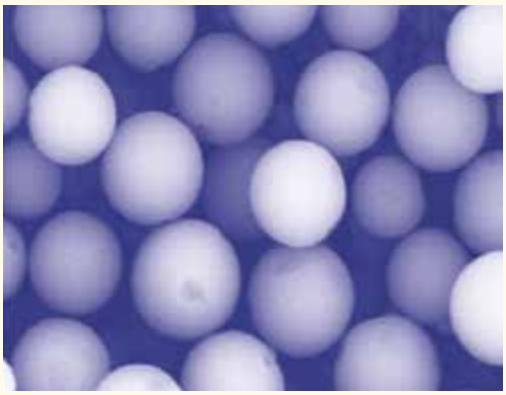


Competitor packing



Comparative scanning electron microscope of Q-Col Spheripak and WS packing materials, shows an almost perfect sphericity in both materials

Q-Col Spheripak™

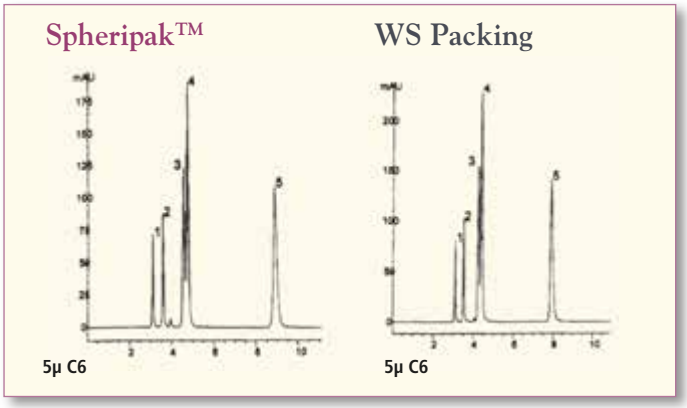


Competitor packing

Applications showing the comparative results between the two packings follow, confirming the benefits of using Q-Col Spheripak HPLC columns.

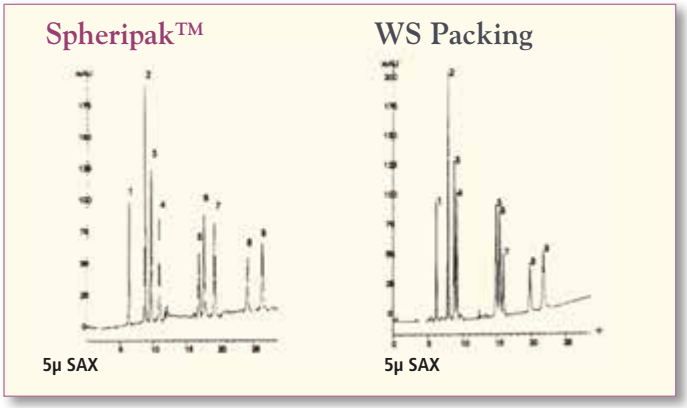
Catecolamines

Dimensions: 250 x 4.6mm
Mobile Phase: CH2OH:25 mM KH2PO4 pH 2.0 (2.98)
Flow Rate: 1.0mL/min
Temperature: 40°C.
Detection: UV @ 270nm
Sample:
1. Norepinephrine
2. Betametasone
3. Dopamine
4. L-DOPA
5. Serotonine



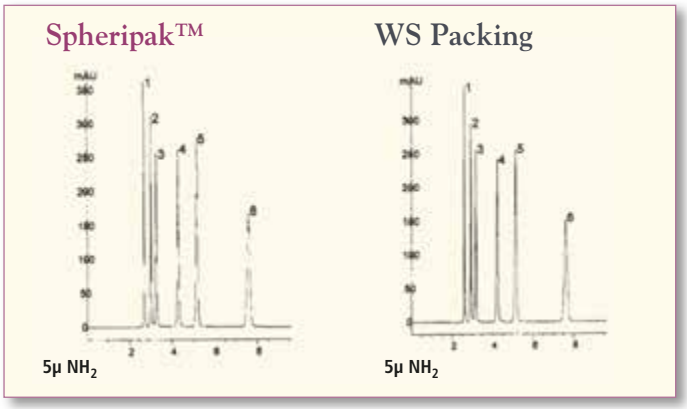
Nucleotides

Dimensions: 250 x 4.6mm
Mobile Phase: A: 0.04M KH2PO4 pH 5.5
B: 0.5M KH2PO4T pH 5.5
Flow Rate: 1.0mL/min
Detection: UV @ 254nm
Sample:
1. β-NAD
2. IMP
3. GMP
4. AMP
5. GDP
6. ADP
7. NADP
8. ITP
9. ATP



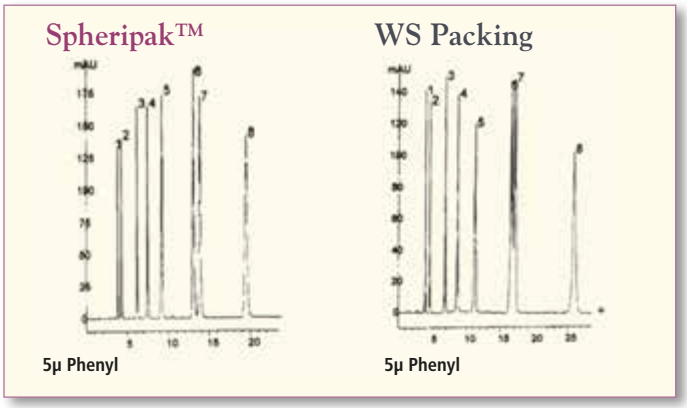
Corticosteroids

Dimensions: 250 x 4.6mm
Mobile Phase: CH2Cl2:CH3OH (95:5)
Flow Rate: 1.0mL/min
Detection: UV @ 254nm
Sample:
1. Deoxicorticosterone Acetate
2. Desoxicorticosterone
3. Hydrocortisone 21-Acetate
4. Corticosterone
5. Cortisone
6. Hydrocortisone



Aromatic Ketones

Dimensions: 250 x 4.6mm
Mobile Phase: CH2 CN : CH2 O (33:67)
Flow Rate: 1.0mL/min
Detection: UV @ 254nm
Sample:
1. Benzamide
2. Benzyl Alcohol
3. Acetophenone
4. Methyl Benzoate
5. Phenetole
6. Naphthalene
7. Benzophenone
8. Biphenyl

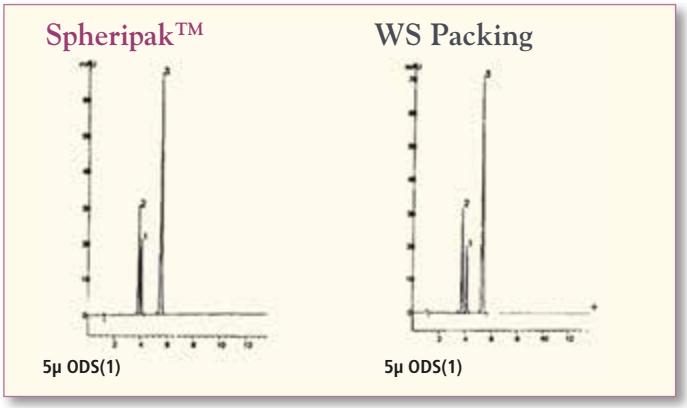


Spheripak HPLC Columns

SRM 869

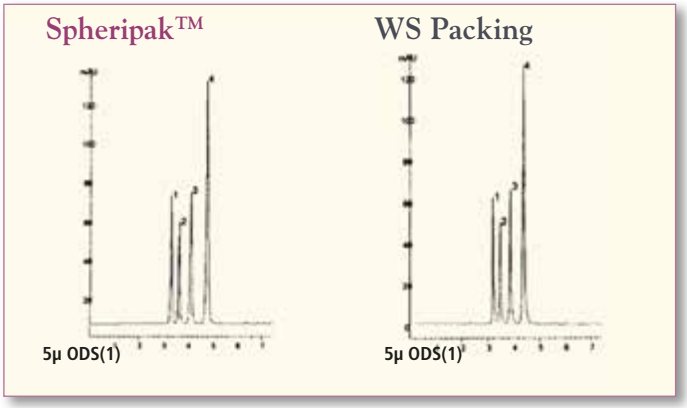
Dimensions: 250 x 4.6mm
Mobile Phase: H2 O:CH3CN (15;85)
Flow Rate: 2.0mL/min
Temperature: 35°C.
Detection: UV @ 260nm
Sample: 1. Benzo(a)pyrene
2. Phenantro (3,4-C)
3. Phenanthrene
4. Tetrabenzonaphthalene

Q-col Spheripak™ ODS-2 a TBN/BaP = 1.77
WS Packing ODS-2 a TBN/BaP = 1.70



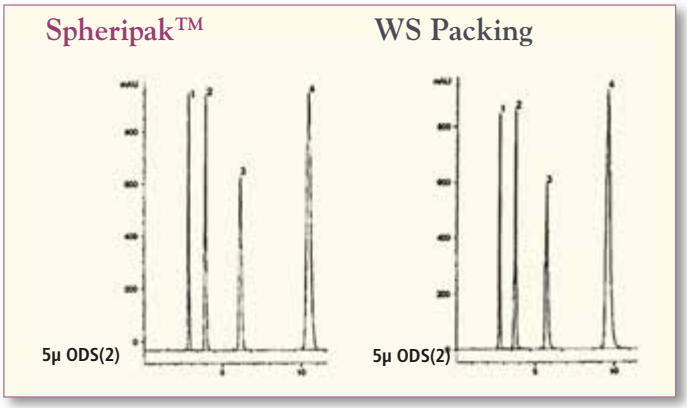
4-Hydroxibenzoates

Dimensions: 250 x 4.6mm
Mobile Phase: H2 O:CH3CN (35:65)
Flow Rate: 1.0mL/min
Detection: UV @ 254nm
Sample: 1. Methyl-4-hydroxybenzoate
2. Ethyl-4-hydroxybenzoate
3. Propyl-4-hydroxybenzoate
4. Butyl-4-hydroxybenzoate



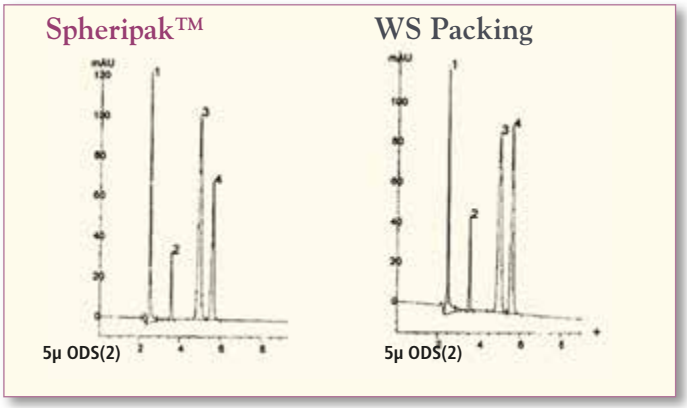
4-Hydroxibenzoates

Dimensions: 150 x 4.6mm
Mobile Phase: H2 O:CH3CN (40:60)
Flow Rate: 1.0mL/min
Temperature: 40°C.
Detection: UV @ 254nm
Sample: 1. Methyl-4-hydroxybenzoate
2. Ethyl-4-hydroxybenzoate
3. Propyl-4-hydroxybenzoate
4. Butyl-4-hydroxybenzoate



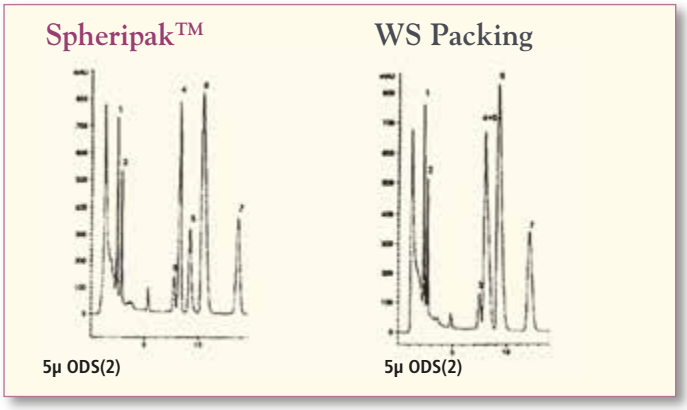
Polar Compounds

Dimensions: 250 x 4.6mm
Mobile Phase: 25mM KH2PO4, pH 2.5
Flow Rate: 1.0mL/min
Temperature: 40°C.
Detection: UV @ 230nm
Sample: 1. L-Cisteine
2. L-Ascorbic Acid
3. Glutathione
4. Uric Acid



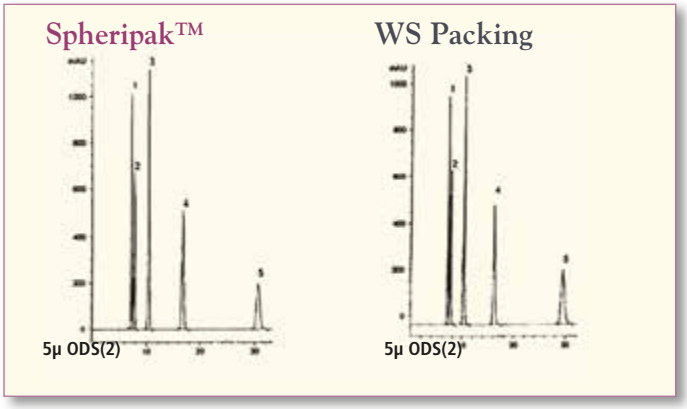
Liposoluble Vitamins

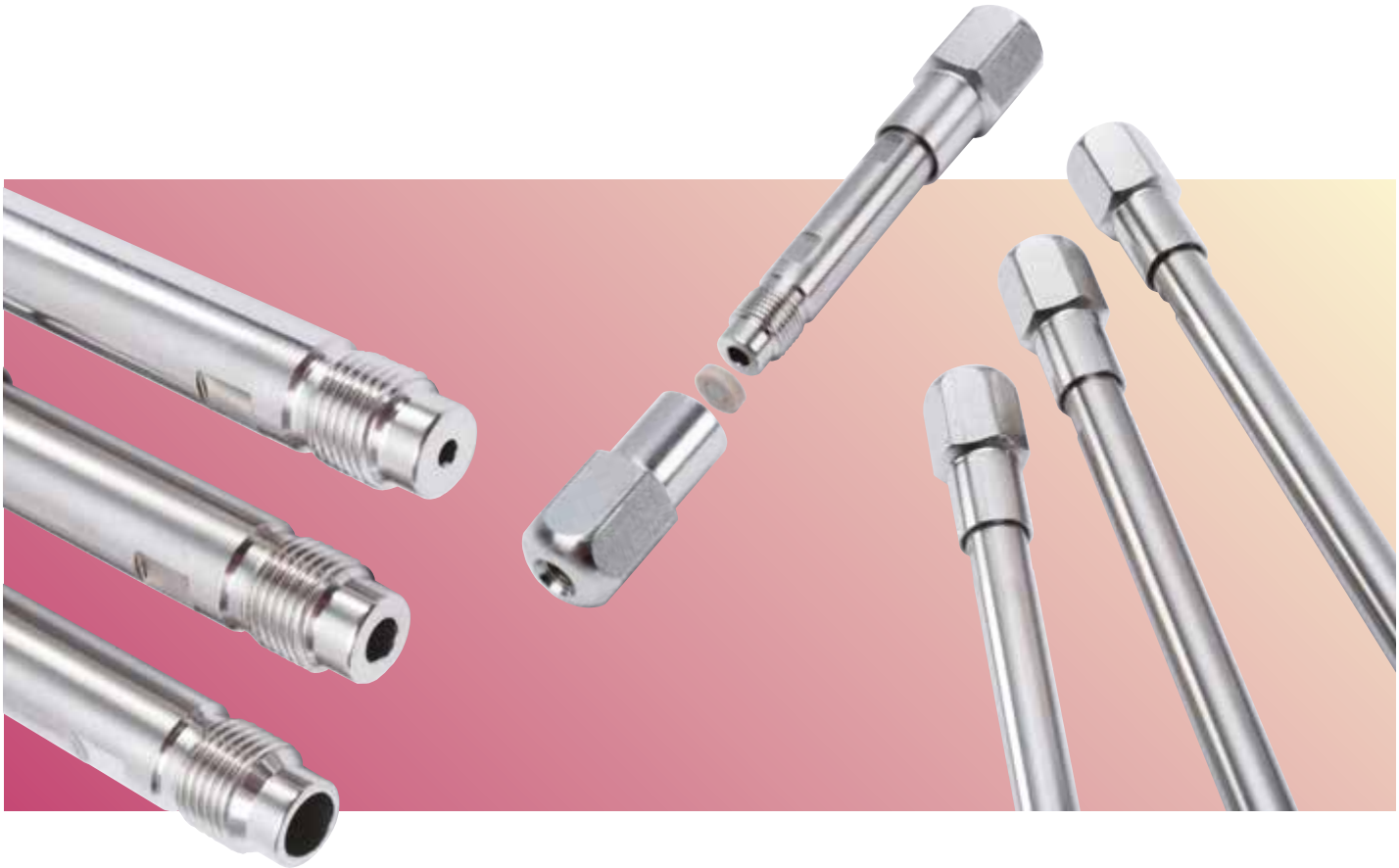
Dimensions:	150 x 4.6mm
Mobile Phase:	CH3CN:CH3OH (75:25)
Flow Rate:	1.3mL/min
Detection:	UV @ 280nm
Sample:	1. Vitamin A
	2. Vitamin A Acetate
	3. Vitamin D2
	4. Vitamin D3
	5. Vitamin E
	6. Vitamin E Acetate
	7. Vitamin K1



Pesticides / Herbicides

Dimensions:	150 x 4.6mm
Mobile Phase:	H2O:CH3CN (70:30)
Flow Rate:	1.0mL/min
Detection:	UV @ 254nm
Sample:	1. Baygon
	2. Carbofuran
	3. Carbaryl
	4. Propham
	5. Captan





Spheripak HPLC Columns

Spheripak™ Analytical Columns

Function	Particle Size (µm)	Dimensions									
		4 x 0.46cm	4 x 0.40cm	10 x 0.46cm	10 x 0.40cm	15 x 0.46cm	15 x 0.40cm	20 x 0.46cm	20 x 0.40cm	25 x 0.46cm	25 x 0.40 cm
ODS-1	3	20-106100	20-105800	20-106101	20-105801	20-106102	20-105802	20-106103	20-105803	20-106104	20-105804
ODS-2	3	20-106120	20-105820	20-106121	20-105821	20-106122	20-105822	20-106123	20-105823	20-106124	20-105824
Si	3	20-106140	20-105840	20-106141	20-105841	20-106142	20-105842	20-106143	20-105843	20-106144	20-105844
C1	3	20-106160	20-105860	20-106161	20-105861	20-106162	20-105862	20-106163	20-105863	20-106164	20-105864
C6	3	20-106180	20-105880	20-106181	20-105881	20-106182	20-105882	20-106183	20-105883	20-106184	20-105884
C8	3	20-106200	20-105900	20-106201	20-105901	20-106202	20-105902	20-106203	20-105903	20-106204	20-105904
CN	3	20-106220	20-105920	20-106221	20-105921	20-106222	20-105922	20-106223	20-105923	20-106224	20-105924
NH_2	3	20-106240	20-105940	20-106241	20-105941	20-106242	20-105942	20-106243	20-105943	20-106244	20-105944
Phenyl	3	20-106260	20-105960	20-106261	20-105961	20-106262	20-105962	20-106263	20-105963	20-106264	20-105964

Function	Particle Size (µm)	Dimensions									
		10 x 0.46cm	10 x 0.40cm	12.5 x 0.46cm	12 x 0.40cm	15 x 0.46cm	15 x 0.40cm	20 x 0.46cm	20 x 0.40cm	25 x 0.46cm	25 x 0.40cm
ODS-1	5	20-106105	20-105805	20-106106	20-105806	20-106107	20-105807	20-106108	20-105808	20-106109	20-105809
ODS-2	5	20-106125	20-105825	20-106126	20-105826	20-106127	20-105827	20-106128	20-105828	20-106129	20-105829
Si	5	20-106145	20-105845	20-106146	20-105846	20-106147	20-105847	20-106148	20-105848	20-106149	20-105849
C1	5	20-106165	20-105865	20-106166	20-105866	20-106167	20-105867	20-106168	20-105868	20-106169	20-105869
C6	5	20-106185	20-105885	20-106186	20-105886	20-106187	20-105887	20-106188	20-105888	20-106189	20-105889
C8	5	20-106205	20-105905	20-106206	20-105906	20-106207	20-105907	20-106208	20-105908	20-106209	20-105909
CN	5	20-106225	20-105925	20-106226	20-105926	20-106227	20-105927	20-106228	20-105928	20-106229	20-105929
NH_2	5	20-106245	20-105945	20-106246	20-105946	20-106247	20-105947	20-106248	20-105948	20-106249	20-105949
Phenyl	5	20-106265	20-105965	20-106266	20-105966	20-106267	20-105967	20-106268	20-105968	20-106269	20-105969
SAX	5	20-106285	20-105985	20-106286	20-105986	20-106287	20-105987	20-106288	20-105988	20-106289	20-105989
SCX	5	20-106305	20-106005	20-106306	20-106006	20-106307	20-106007	20-106308	20-106008	20-106309	20-106009
ODS1	10	20-106110	20-105810	20-106111	20-105811	20-106112	20-105812	20-106113	20-105813	20-106114	20-105814
ODS2	10	20-106130	20-105830	20-106131	20-105831	20-106132	20-105832	20-106133	20-105833	20-106134	20-105834
Si	10	20-106150	20-105850	20-106151	20-105851	20-106152	20-105852	20-106153	20-105853	20-106154	20-105854
C1	10	20-106170	20-105870	20-106171	20-105871	20-106172	20-105872	20-106173	20-105873	20-106174	20-105874
C6	10	20-106190	20-105890	20-106191	20-105891	20-106192	20-105892	20-106193	20-105893	20-106194	20-105894
C8	10	20-106560	20-106570	20-106561	20-106571	20-106562	20-106572	20-106563	20-106573	20-106564	20-106574
CN	10	20-106230	20-105930	20-106231	20-105931	20-106232	20-105932	20-106233	20-105933	20-106234	20-105934
NH_2	10	20-106250	20-105950	20-106251	20-105951	20-106252	20-105952	20-106253	20-105953	20-106254	20-105954
SAX	10	20-106290	20-105990	20-106291	20-105991	20-106292	20-105992	20-106293	20-105993	20-106294	20-105994
SCX	10	20-106310	20-106010	20-106311	20-106011	20-106312	20-106012	20-106313	20-106013	20-106314	20-106014

Spheripak™ 5µm Microbore Columns

Function	Particle Size (µm)	Dimensions 10 x 0.21cm	20 x 0.21cm	10 x 0.3cm	20 x 0.3cm
ODS-1	5	20-106500	20-106501	20-106502	20-106503
ODS-2	5	20-106505	20-106506	20-106507	20-106508
C1	5	20-106515	20-106516	20-106517	20-106518
C6	5	20-106520	20-106521	20-106522	20-106523
C8	5	20-106525	20-106526	20-106527	20-106528
CN	5	20-106530	20-106531	20-106532	20-106533
NH_2	5	20-106535	20-106536	20-106537	20-106538
Phenyl	5	20-106540	20-106541	20-106542	20-106543
SAX	5	20-106545	20-106546	20-106547	20-106548
SCX	5	20-106550	20-106551	20-106552	20-106553
Si	5	20-106510	20-106511	20-106512	20-106513

Spheripak™ 5 & 10µm Semi-Preparative Columns

Function	Particle Size (µm)	Dimensions 15 x 0.7cm	25 x 0.7cm	15 x 1.0 cm	25 x 1.0 cm
ODS-1	5	20-106350	20-106351	20-106352	20-106353
ODS-2	5	20-106355	20-106356	20-106357	20-106358
C1	5	20-106365	20-106366	20-106367	20-106368
C6	5	20-106370	20-106371	20-106372	20-106373
C8	5	20-106375	20-106376	20-106377	20-106378
CN	5	20-106380	20-106381	20-106382	20-106383
NH_2	5	20-106385	20-106386	20-106387	20-106388
Phenyl	5	20-106390	20-106391	20-106392	20-106393
SAX	5	20-106395	20-106396	20-106397	20-106398
SCX	5	20-106400	20-106401	20-106402	20-106403
Si	5	20-106360	20-106361	20-106362 2	0-106363
ODS-1	10	20-106420	20-106421	20-106422	20-106423
ODS-2	10	20-106425	20-106426	20-106427	20-106428
C6	10	20-106435	20-106436	20-106437	20-106438
CN	10	20-106440	20-106441	20-106442	20-106443
NH_2	10	20-106445	20-106446	20-106447	20-106448
Phenyl	10	20-106450	20-106451	20-106452	20-106453
SAX	10	20-106455	20-106456	20-106457	20-106458
SCX	10	20-106460	20-106461	20-106462	20-106463
Si	10	20-106430	20-106431	20-106432	20-106433

Accessories

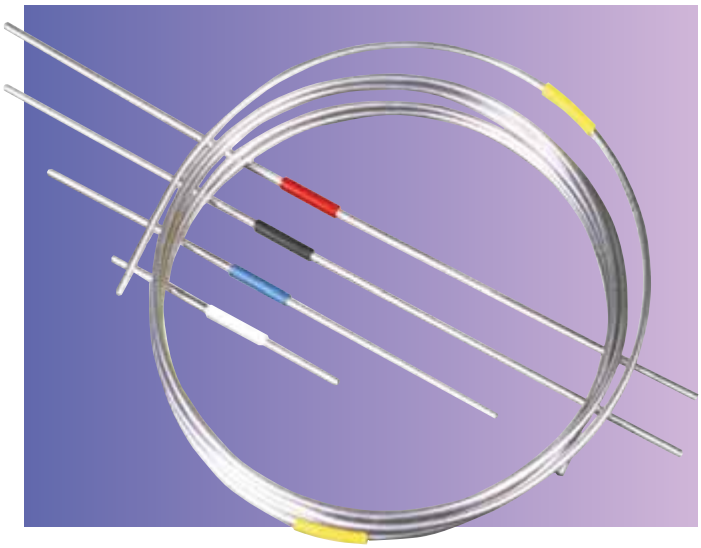
Guard Columns

- 1cm x 3mm ID
- Positioned between the injector and the column, these guard columns extend the life of the analytical column and improve the reproducibility of the results.
- Packed with the latest high performance packings
- Economic and easy to replace
- Ideal for use in any HPLC system
- Packed at high pressure for maximum stability and duration.
- Will not reduce efficiency even when using 3µm packings or 2mm ID columns

Cat. No.	Description	Unit
22-100000	Guard Cartridge Holder	pk/1
22-100001	Guard Cartridges Anon	pk/5
22-100002	Guard Cartridges C1	pk/5
22-100003	Guard Cartridges C2	pk/5
22-100004	Guard Cartridges C4	pk/5
22-100005	Guard Cartridges C6	pk/5
22-100006	Guard Cartridges C6H5	pk/5
22-100007	Guard Cartridges C8	pk/5
22-100008	Guard Cartridges Carbohydrates	pk/5
22-100009	Guard Cartridges CN	pk/5
22-100010	Guard Cartridges DIOL	pk/5
22-100011	Guard Cartridges NH2	pk/5
22-100012	Guard Cartridges ODS	pk/5
22-100013	Guard Cartridges PAH	pk/5
22-100014	Guard Cartridges Peptide C18	pk/5
22-100015	Guard Cartridges PRP-1	pk/5
22-100016	Guard Cartridges SAX	pk/5
22-100017	Guard Cartridges SCX	pk/5
22-100018	Guard Cartridges Si	pk/5
22-100019	Guard Cartridges 300A C18	pk/5
22-100020	Guard Cartridges 300A C4	pk/5
22-100021	Guard Cartridges 300A C8	pk/5

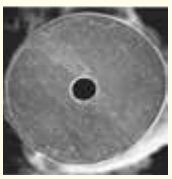
Stainless Steel Tubing

- SS316 welded and annealed
- Variety of sizes for HPLC and GC applications
- Smooth internal surface
- Soft annealed OD for easy ferrule connections

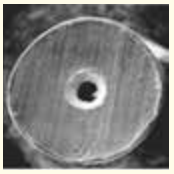


Cat. No.	OD "	ID "	ID mm
18-100100	1/16"	0.005"	0.13
18-100101	1/16"	0.007"	0.18
18-100102	1/16"	0.010"	0.25
18-100103	1/16"	0.020"	0.50
18-100104	1/16"	0.030"	0.75
18-100105	1/16"	0.040"	1.00
18-100106	1/8"		2.10
18-100107	1/4"		4.65

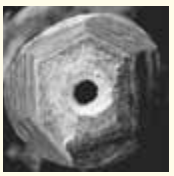
The beauty of pre-cut tubing



Pre-cut tubing



Tubing cut by a commercially available tubing cutter



File cut tubing

Pre-cut Stainless Steel Tubing

- Precision cut 316 SS tubing
- Square, burr-free ends
- Ultra clean
- Colour coded banding for easy identification

Every piece of pre-cut stainless steel tubing is machine cut and polished. The ends are deburred both inside and outside and the tubing is passivated. Finally, reagent grade methanol is flushed through each piece of tubing.

All this is done to provide you with tubing which has flat, burr-free ends to enable you to make true zero dead volume connections.

Cat. No.	Colour	OD"	ID"	IDmm	Length cm
18-100010	Red	1/16"	0.005	0.13	5
18-100011					10
18-100012					20
18-100013					30
18-100020	Black	1/16"	0.007	0.18	5
18-100021					10
18-100022					20
18-100023					30
18-100030	Blue	1/16"	0.010	0.25	5
18-100031					10
18-100032					20
18-100033					30
18-100040	Yellow	1/16"	0.020	0.50	5
18-100041					10
18-100042					20
18-100043					30
18-100050	White	1/16"	0.030	0.75	5
18-100051					10
18-100052					20
18-100053					30
18-100060		1/16"	0.040	1.00	5
18-100061					10
18-100062					20
18-100063					30

PTFE Tubing

- Suitable for mobile phase inlet lines
- Chemically inert

Cat. No.	OD"	ID"	ID mm	Max Pressure (bar/psi)*
18-100300	1/16"	0.007	0.18	60 / 850
18-100301	1/16"	0.01	0.25	55 / 800
18-100302	1/16"	0.02	0.50	50 / 725
18-100303	1/16"	0.03	0.75	35 / 510
18-100304	1/16"	0.04	1.00	25 / 365
18-100305	1/8"	1/16"	1.59	35 / 510
18-100306	1/4"	3/16"	4.75	20 / 290

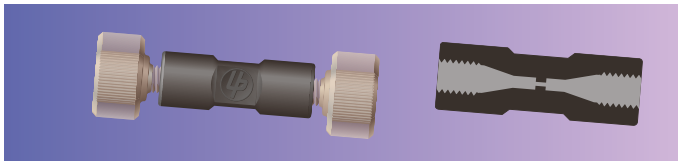
ETFE Tubing (Tefzel)

- Suitable for low and medium laboratory applications
- Relatively high burst pressure

Cat. No.	OD"	ID"	ID mm	Max Pressure (bar/psi)*
18-100330	1/16"	0.067	0.17	200 / 2900
18-100331	1/16"	0.01	0.25	186 / 2900
18-100332	1/16"	0.02	0.50	152 / 2700
18-100333	1/16"	0.03	0.75	117 / 1700
18-100334	1/16"	0.04	1.00	83 / 1200

ZDV Unions

All PEEK ZDV Unions are supplied complete with two F-300 Fingertight fittings for 1/16"OD tubing and are pressure rated to 6,000psi (414 bar).

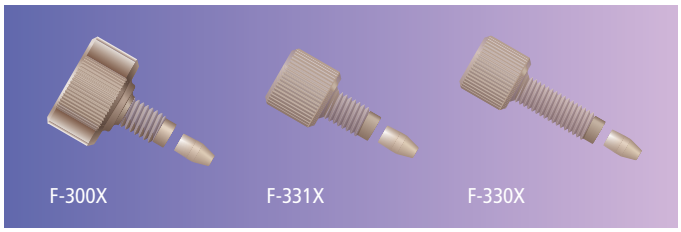


Cat. No.	Description	Unit
P-742	ZDV Union, 0.010 hole, 10-32	Each
P-704	ZDV Union, 0.020 hole, 10-33	Each
P-760	ZDV Union, 0.050 hole, 10-34	Each
P-706	ZDV Union, 0.050 hole, 1/4-28	Each

Fingertight Fittings

Cat. No.	Description	Unit
53-100000	Fingertight fitting, PEEK, One Piece Standard, for 1/16" OD, 10-32	pk/5
53-100001	Fingertight fitting, PEEK, One Piece, Short head, for 1/16" OD, 10-32	pk/5
53-100002	Fingertight fitting, PEEK, One Piece, Long, for 1/16" OD, 10-32	pk/5
53-100003	Fingertight fitting, PEEK, One Piece, Narrow Hexhead, for 1/16" OD, 10-32	pk/5

Cat. No.	Description	Unit
F-120X	Fingertight Fitting, PEEK, natural, 10-32	Pk/10
F-127X	Fingertight Fitting, PEEK natural, 10-32, Short	Pk/10
F-130X	Fingertight Fitting, PEEK, natural, 10-32, Long	Pk/10



Cat. No.	Description	Unit
F-300X	Fingertight Fitting, 2 piece, PEEK nuts, 10-32	pk/10
F-331X	Fingertight Fitting, 2 piece, PEEK nuts, short, 10-32	pk/10
F-330X	Fingertight Fitting, 2 piece, PEEK nuts, long, 10-32	pk/10
F-142X	Fingertight Fitting Ferrules, PEEK for 1/16" OD, 10-32	pk/10

Greyhound Chromatography and Allied Chemicals

www.greyhoundchrom.com

PEEK Tubing

Greyhound Chromatography PEEK tube is extruded from Victrex® virgin raw material and is well known for its very high degree of hardness even at elevated temperatures (+228°C). Coupled with this, our PEEK tube has resistance to extremely high pressures and in many cases has replaced stainless steel tubing HPLC applications.

Due to its high purity, our PEEK tubing does not leech out damaging "extractables" & is very effective in the trace analysis of complex fluids. Being resistant to high doses of gamma & beta radiation, our PEEK tube can used in nuclear reactor environments without becoming brittle.

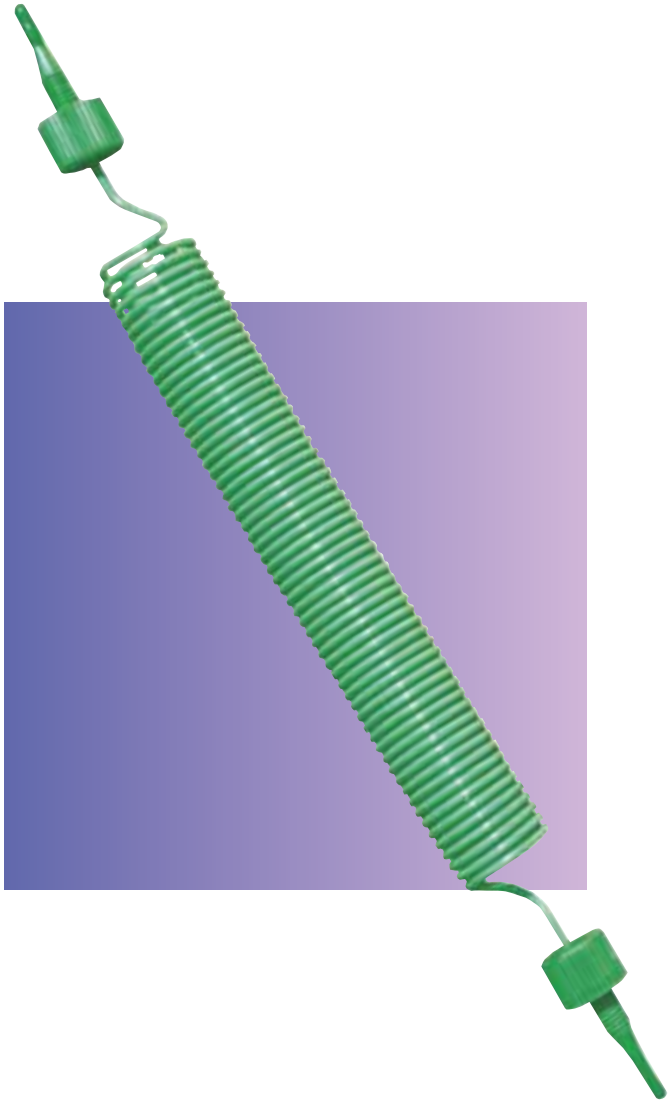
- Ultra hard material.
- Very good chemical resistance.
- Stable at temperatures up to +228°C.
- Excellent abrasion resistance.
- Flame retardant (UL94 V-0).
- Very tight dimensional tolerances.

Cat. No.	Colour	OD"	ID"	IDmm	Max Pressure (bar/psi)
18-100200	Red	1/16"	0.005	0.13	420 / 6100
18-100201	Purple	1/16"	0.006	0.15	410 / 6000
18-100202	Yellow	1/16"	0.007	0.18	400 / 5800
18-100203	Blue	1/16"	0.010	0.25	385 / 5600
18-100204	Orange	1/16"	0.020	0.50	350 / 4500
18-100205	Green	1/16"	0.030	0.75	240 / 3500
18-100206	Grey	1/16"	0.040	1.00	165 / 2400

PEEK Springy™ Tubing

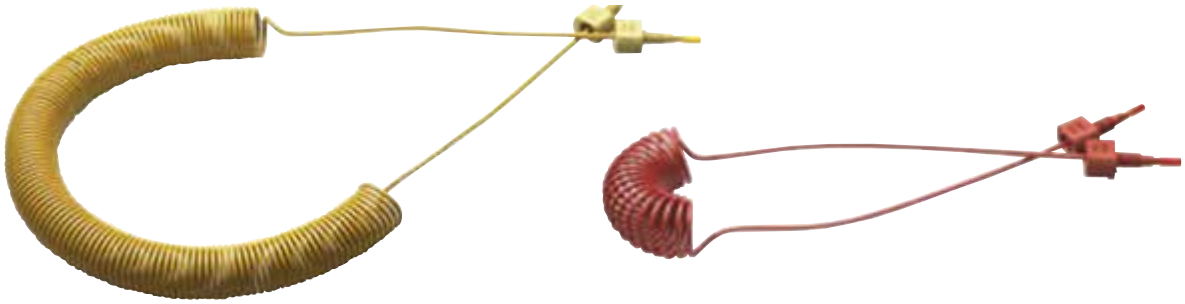
- Will not bend or kink
- Self-adjusts its length
- All PEEK construction

Greyhound Springy™ PEEK tubing is perfect for today's modular LC systems. Springy™ PEEK tubing enables you to move components without breaking the connections. The new coil format 'springs' back to keep the excess tubing out of your way. Each piece has a 6" length of straight tubing at each end and is supplied with two one-piece finger tight fittings. Tubing is colour striped to indicate its ID.



PEEK Springy™ Tubing

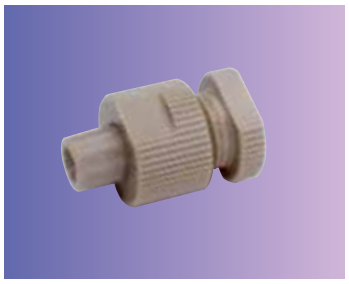
Measurements- all Springy Peek Tubing is 1/16" OD				
Coil Length mm	Coil Resting mm	Extended Coil mm	Tube fully extended mm	Total Tube Length mm
Size 1	10	30	330	710
Size 2	20	120	420	945
Size 3	35	200	500	1225
Size 4	50	300	600	1585
Size 5	100	400	700	2060
Size 6	150	500	900	3150
Size 7	170	800	1100	4710
Size 8	225	1100	1400	6100
Size 9	250	1300	1600	6930

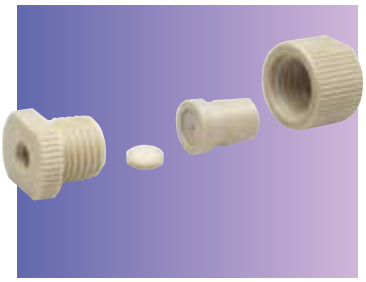


Striped Colour Coded PEEK Springy™ Tubing

Internal Diameter	0.005" 0.13mm	0.007" 0.18mm	0.010" 0.25mm	0.020" 0.50mm	0.030" 0.75mm
Colour	Red	Yellow	Blue	Orange	Green
	Cat. No.	Cat No.	Cat No.	Cat No.	Cat No.
Size 1	18-100400	18-100410	18-100420	18-100430	18-100440
Size 2	18-100401	18-100411	18-100421	18-100431	18-100441
Size 3	18-100402	18-100412	18-100422	18-100432	18-100442
Size 4	18-100403	18-100413	18-100423	18-100433	18-100443
Size 5	18-100404	18-100414	18-100424	18-100434	18-100444
Size 6	18-100405	18-100415	18-100425	18-100435	18-100445
Size 7	18-100406	18-100416	18-100426	18-100436	18-100446
Size 8	18-100407	18-100417	18-100427	18-100437	18-100447
Size 9	18-100408	18-100418	18-100428	18-100438	18-100448

PEEK In-Line Filter Kit - High Pressure





- Replaceable metal-free polyetheylene frits and biocompatible titanium frits
- 100% biocompatible
- Minimal hold-up volume
- Different porosities

The PEEK in-line filter traps fines and other particles from samples and mobile phases before they damage valuable instruments and columns. This female-to-female design is made entirely of PEEK, with PEEK-encased titanium or polyethylene filter elements, for biocompatibility and chemical resistance. The design has virtually no hold-up volume and can be used in analytical applications with virtually no band broadening or loss of efficiency.

Cat. No.	Frit Material	Pore Size	Internal Volume*	Maximum Flow Rate**
JR-68247	Titanium	0.5 µm	9.50 µL	25 ml/min
JR-68253	Titanium	2 µm	11.85 µL	30 ml/min
JR-68257	Titanium	10 µm	13.2 µL	30 ml/min
JR-68257PE	Polyethylene	10 µm	13.9 µL	30 ml/min

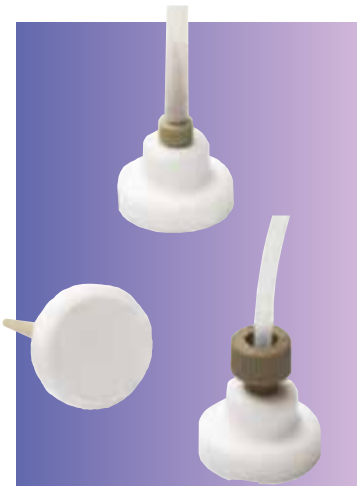
* The internal volume is the total flushed volume between the ends of the connecting tubes, including the frit volume.

** Flowrate measured with methanol/water (1:1), ultrasonic degassed, helium sparging to prevent regassing.

Replacement Frits

JR-1125-05P-5	Titanium	0.5 µm	6.87 µL	5
JR-1125-2P-5	Titanium	2 µm	9.24 µL	5
JR-1125-10P-5	Titanium	10 µm	10.56 µL	5
JR-1151-10P-5	Polyethylene	10 µm	11.31 µL	5

Last Drop Mobile Phase Filter



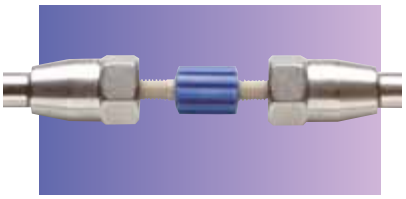
- No Loss of Mobile Phase
- Biocompatible PTFE Frits or SS Frits
- Three Different Porosities
- Two Connector Types

The Last Drop Mobile Phase Filter utilises a flat filter element which sits parallel to the bottom of the reservoir. This design allows the filter to draw all but the last 2% of the mobile phase from the reservoir without drawing air into the system. Conventional cylindrical mobile phase filters begin to draw air into the system when less than 10% of the solvent remains in the reservoir. We recommend the metal free PTFE version for sensitive bio-chromatography applications where metal surfaces may corrode and contaminate the solvent with ions.

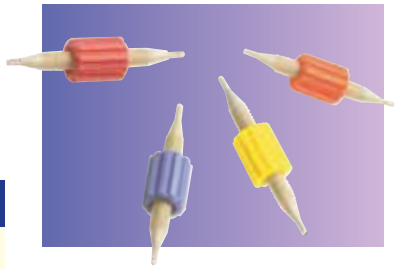
The stepped 'tripod' connector accommodates 1.5, 2.2 and 3.5mm ID tubing. The 1/4"-28 fitting connector is suitable for 1/8" od tubing.

Cat. No.	Filter Material	Pore Size	Maximum Flow Rate*
JR-9000-0602	PTFE	2.5 µm	1.2 ml/min
JR-9000-0603	PTFE	5 µm	2.6 ml/min
JR-9000-0604	PTFE	10 µm	3.5 ml/min
JR-9000-0604H	Polyethylene	10 µm	11 ml/min
JR-9000-0640	Stainless	2 µm	28 ml/min
JR-9000-0641	Stainless	5 µm	30 ml/min
JR-9000-0642	Stainless	10 µm	30 ml/min

Column Coupler - One-Piece, Fingertight



- Zero dead volume connections
- Self-adjusts to fit all column designs
- Biocompatible PEEK construction
- Four bore sizes



The unique feature of the Column Coupler is that it adjusts to fit all 10-32 fitting types. No matter what the fitting type and pilot length – Valco®, Waters®, Upchurch®, Rheodyne®, etc, the coupler adapts to bottom out in the pilot automatically, consequently creating only small void volumes. The column coupler is fingertight to 350 bar (5000 psi).

Cat. No.	Description	Unit
JR-26501	Column Coupler, PEEK, universal 0.13mm ID, Red	Each
JR-26502	Column Coupler, PEEK, universal 0.17mm ID, Yellow	Each
JR-26503	Column Coupler, PEEK, universal 0.25mm ID, Blue	Each
JR-26504	Column Coupler, PEEK, universal 0.50mm ID, Orange	Each

Last Drop Filter/Sparger

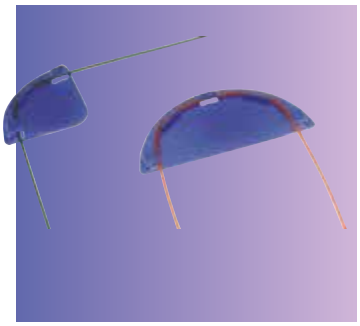
- Parallel Filtering and Sparging
- Biocompatible PTFE Frits or SS Frits
- Three Different Porosities

This Filter/Sparger combines filtration and sparging in one single unit. The PTFE housing contains a mobile phase filter, either a stainless steel or a PTFE filter element. The stepped PEEK connector is for the solvent line, the fitting connection for the Helium line.

The Last Drop Filter/Sparger combines filtration and sparging in a single unit. The PTFE housing contains a mobile phase filter with either a stainless steel or PTFE filter element. Connect the solvent line to the stepped "tripod" connector, which accomodates 1.5, 2.2, and 3.5 mm ID tubing. A 1/4"-28 fitting connector connects a 1/8" helium line to the 10 µm sparger. Both connectors are PEEK. We recommend our 1/8" No-Ox tubing to prevent 'regassing' of helium degassed solvents.

Cat. No.	Description	Unit
JR-9000-0602	Filter/Sparger, PTFE, Last Drop 2.5um filter, 10µm sparger	Each
JR-9000-0603	Filter/Sparger, PTFE, Last Drop 5um filter, 10µm sparger	Each
JR-9000-0604	Filter/Sparger, PTFE, Last Drop 10um filter, 10µm sparger	Each
JR-9000-0640	Filter/Sparger, SS, Last Drop 2um filter, 10µm sparger	Each
JR-9000-0641	Filter/Sparger, SS, Last Drop 5um filter, 10µm sparger	Each
JR-9000-0642	Filter/Sparger, SS, Last Drop 10um filter, 10µm sparger	Each
Replacement Parts		
JR-20116-10	Nut, PEEK, Flangeless, 1/8", natural	pk/10
JR-051-10	Ferrule, ETFE, 1/8"	pk/10
JR-8000-0485	Tripod Adapter, PEEK, universal	Each

PEEK Tubing Elbows



Our Tubing Elbows (90° and 180°) are ideal for routing 1/16"OD PEEK tubing. Simply snap the tubing into the elbow. Prevent pinching of PEEK tubing which can cause high pressure in the system.

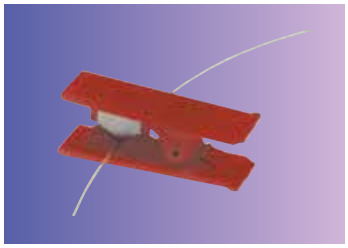
Cat. No.	Description	Unit
70-100039	PEEK Tubing Elbow 90°	Each
70-100040	PEEK Tubing Elbow 180°	Each

Clean-Cut Tubing Cutter

Cuts PEEK, PTFE, ETFE, and other polymeric tubing without burring. There is no distortion of OD or closing of the ID. Incorporates a safety lock to secure the blade. The Clean-Cut Tubing Cutter is supplied with one replacement blade.

Cat. No.	Description	Unit
70-100042	Clean-Cut Tubing Cutter	Each
70-100043	Clean-Cut replacement blade	Each

Guillotine Polymer Tubing Cutter



Cuts PEEK, PTFE, ETFE and other polymeric tubing

Cat. No.	Description	Unit
70-100044	Guillotine Cutter for polymer tubing	Each
70-100045	Guillotine Cutter replacement blade	Each

Stainless Steel Tubing Cutter (for non-critical connections)

This is the ideal tool for cutting 1/16" and 1/8" stainless steel tubing with an ID >0.5 mm for non-critical connections. The smooth, uniform cuts require little deburring or reaming. The easily replaced cutting wheel scores the tubing.

Cat. No.	Description	Unit
70-100046	Tubing Cutter for metal tubing	Each
70-100047	Tubing Cutter replacement cutting wheel	Each

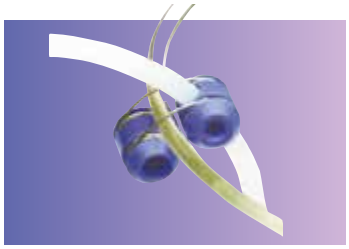
QCol Accessories

Stainless Steel Tubing Pliers

- Ideal for cutting 1/16" tubing.
- Reaches hard-to-get places in an HPLC system
- Cuts quickly, reducing distortion.
- Cuts clean, eliminating the need for deburring

Cat. No.	Description	Unit
70-100048	Tubing Cutter Pliers for Stainless Steel tubing	Each

Tubing Clip - the LC Tubing Organiser



The Tubing Clip holds 1/16" and 1/8" polymer tubing precisely where you want it in a beaker, flask, or bottle, etc., up to 4 mm wall thickness.

Cat. No.	Description	Unit
70-100041	Tubing Clip	Each

Rheodyne Wrench

A double-ended slotted socket wrench which fits over 1/16" and 1/8" OD tubing. It easily loosens and tightens 1/4" and 5/16" SS or PEEK fittings. The 'Z' shape provides ideal leverage for changing sample loops and fittings.

Cat. No.	Description	Unit
70-100049	Rheodyne Wrench, 1/4" x 5/16"	Each

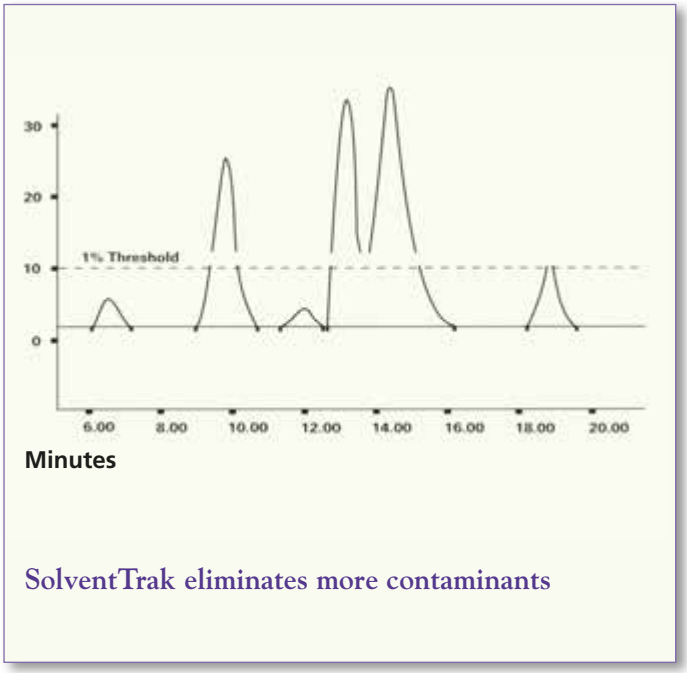
Solvent Recycler, SolventTrak™

- Saves up to 90% of isocratic HPLC solvent consumption
- Unique peak detection algorithm accurately defines peaks
- Diverts them to waste automatically
- Decreases solvent disposal cost
- Easy to use, no complex programming
- Pays for itself in 60 to 90 days

The solvent recycler is a solvent conservation system designed to recycle uncontaminated solvents used in isocratic HPLC systems. In most systems a high proportion of the mobile phase can be recycled and reused, which saves money by reducing solvent consumption and the need for solvent disposal.

Reliably Accurate

The solvent recycler automatically detects eluting peaks and diverts them to waste while sending clean, uncontaminated solvent back to the reservoir for recycling. Traditional recycling systems use a fixed voltage level (or threshold above the baseline) which must be exceeded before peaks can be detected. If the baseline changes, new settings must be applied or contaminants may be recycled instead of being sent to waste. Conversely, pure solvent may be sent to waste instead of being recycled.



SolventTrak eliminates more contaminants

The solvent recycler incorporates a unique integration algorithm to accurately detect peaks in the eluant to ensure that contaminants are eliminated even if chromatography system conditions cause the baseline to drift up or down. Solvents are therefore cleaner and can be used longer.

Important Special Features

The solvent recycler can place a peak marker on the output signal to show exactly where peaks have been detected and sent to waste. This is very useful when initially setting up the system and even more important for validation purposes. Sophisticated circuitry permits the signal to be zeroed automatically via a contact closure or manually by a button on the front panel.

Solvent Recycler, SolventTrak™

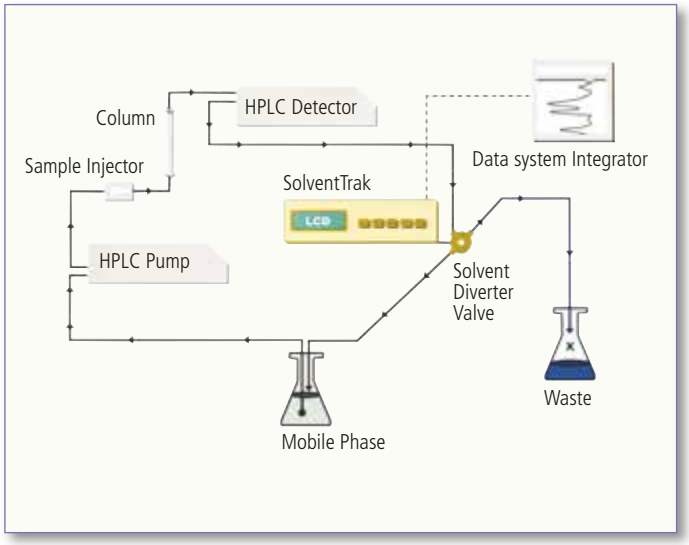
How does it work?

The signal from any HPLC detector is connected to the solvent recycler which monitors and continuously displays the voltage level on a large, easily readable LED panel located on the front of the instrument. The signal is then connected directly to an integrator or data system.

Peak detection sensitivity may be adjusted to control familiar peak width and peak threshold parameters, similar to those found on most integrators and data systems.

When a peak is identified, an additional delay time may be set to allow for volume between the detector and valve. This further enhances the accuracy and purity of the recycling. An LED indicator, as well as a switchable buzzer, alert the operator that a peak has been found.

A reliable and inert electrically actuated solvent diverter valve automatically switches mobile phase to waste when peaks are detected. This valve may also be intentionally switched via contact closure if and when required.



Specifications:

Signal input range:	-1,000V to + 1,000V
Sampling rate:	200Hz, continuous during operation
Peak width range:	1, 5, 15, 30, 45, 60, 75, 90, 105, 120, 150, 18, 21, 24, 270, or 300 sec
Peak slope ranges:	User-settable, 15 to 14,400
Diverter valve delay timer:	0 to 99 seconds, I second increment
Peak waste marker:	(Valve open) Defeatable, duration 0.1 second; tick mark height is user-adjustable
Contact closure outputs:	Normally open/normally closed; Peak waste/valve open, I sec. duration; Clean complete
Contact closure/TTL inputs:	Enable/disable autozero, I sec. duration enable peak waste/valve override (continuous) Clean (Start CleanUp Cycle)
Peak-to-Waste/Valve Open:	LCD Display status, I sec. audio beep (defeatable)
Display: Autozero:	Manual autozero key or contact closure enable (1 sec. duration)
Dimensions:	9" W x 10" D 3.75" H, 7 lbs.
Power:	100 to 240 VAC, 50/60 Hz

The Solvent Recycler is compatible with any isocratic liquid chromatography system.

NOTE: Each SolventTrak is calibrated and certified to an NIST traceable standard and includes a Certificate of Validation. SolventTrak-11 complies with CE requirements. Power requirements are 95 to 250 VAC self switching.

www.greyhoundchrom.com

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