Agilent Columns and Supplies

Productivity and accuracy enhancements

for your LC and LC/MS instruments

Our measure is your success.

products | applications | software | services

Agilent Technologies

Optimize your LC and LC/MS analyses

with Agilent Technologies columns and certified supplies.

Get the best possible performance from your new LC and LC/MS instrument with Agilent columns and supplies.

When you set out to complete an analysis, you're relying not just on the sensitivity of the instrument you're using, but on the quality of the column you select and on all the supplies that are being used at each stage of the analysis.

Sometimes the smallest part of the analysis can have a big impact on your results. Using vials that aren't created to the specifications of your instrument can cause downtime and lost samples or expensive autosampler repairs. Agilent vials are quality controlled to conform to tight specifications, so they don't get dropped or become jammed in the autosampler. The bottoms of the vials are also manufactured to strict specifications, so the syringe can accurately withdraw the sample.

When it comes to columns, you don't want to worry about inconsistencies in the silica in the columns, which can impact resolution and reproducibility. The silica particles in Agilent ZORBAX HPLC columns are manufactured at Agilent's U.S. manufacturing plant, under careful control, so your lot-to-lot reproducibility is reliable and traceable. For customers who need it, Agilent can even provide customized lot control, so you have fewer variables and consistent control in your labs worldwide.

Using Agilent columns and Agilent certified supplies enhances the sensitivity and performance you get from your instrument. *That adds up to less worry, less rework and more productivity for your lab.*

Go to **www.ZORBAXmethod.com** to receive customized column recommendations and information.

Essential LC and LC/MS Supplies List

These are the parts and supplies we recommend you order with your LC system to be equipped to operate and maintain the system. For a full review of all the parts and supplies available, please consult ***The Essential Chromatography and Spectroscopy Catalog*** or visit our online store.
(See the back of this brochure for more information.)

LC Supplies

	Part #	Notes
Agilent ZORBAX Eclipse Plus C18 Column	959933-902	The ideal column for method development. 4.6 x 75 mm, 3.5 µm (use p/n 959933-902). For full range of sizes, visit **www.agilent.com/chem/ZORBAXep**
Standard Autosampler Maintenance Kit	G1313-68730	Includes Vespel rotor seal, standard needle seat and needle.
Wellplate Autosampler Maintenance Kit	G1367-68730	Includes Vespel rotor seal, needle, needle seat, peristaltic pump cartridge and seal-tight nut.
Pump Maintenance Kit: Binary Pump	G1312-68730	Includes 4 piston seals, PTFE frits, 3 gold seals and 2 sieves and 3 outlet caps. For isocratic/quaternary pump, use G1310-68730 (included parts vary to suit pump).
Flow Cell	Varies	For Flow Cell choices and part numbers, please consult *The Essential Chromatography and Spectroscopy Catalog* or check **www.agilent.com/chem/store** for more information.
Solvent Inlet Filter, 20 µm size	5041-2168	Glass filter, 20 µm pore size. Frit adapter. PTFE 3 mm, 4/pk use p/n 5062-8517. For 40 µm filter size, use p/n G1361-23204.
500 Screw Top Certified Vials and Caps Kit	5182-0868	Clear vials with write-on spot, blue screw caps, blue PTFE silicone septa. Blue storage cabinet included. Amber vials available, p/n 5182-0735.
Capillary Fitting Starter Kits: 17 mm ID (Color-Coated Green) 0.12 mm ID (Color-Coated Red)	5065-9939 5065-9937	See Capillary Section of this brochure for details.
HPLC Solvent Filter/ Degasser Assembly	3150-0577	Assembly filters the mobile phase by removing contaminants and degassing solvents to support optimum performance of your LC system.
Regenerated Cellulose Filter Membranes, Pore size 0.45 µm, 100/pk.	3150-0576	
Outlet Ball Valve (Quaternary, Isocratic)	G1311-60012	Replace periodically to maintain optimum performance. For binary valve, use p/n G1312-60012.
Active Inlet Valve Cartridge (400 bar)	5062-8562	For 600 bar, use p/n G1312-60020.
Certified Deuterium Lamp	2140-0820 with RFID tag	This lamp corresponds with the following detectors: DAD (G1315D), DAD SL (G1315C), MWD (G1365D) and MWD SL (G1365C). Model numbers can be found on the front of the unit.
	G1314-60101 with RFID tag	This lamp corresponds with the VWD detector (G1314D) and VWD SL Plus (G1314E).

LC/MS Supplies (In addition to the above)

Quiet Cover for Agilent LC/MS Systems (11.7" wide x 16.5" high x 30"deep)	G3199B	Sound-absorbing cabinet with fire-resistant foam insulation to reduce pump noise. Minimizes vibration. Locking castors for easy movement. LEDs and audible alarm if temperature exceeds 35°C. Removable molded plastic drip pan, a patented design, facilitates easy oil changes.

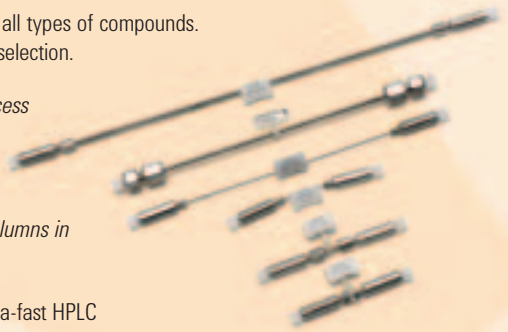
Get your guides! Go to **www.agilent.com/chem/getguides** to order a copy of ***The Essential Chromatography and Spectroscopy Catalog***, the LC column selection guide and LC and LC/MS maintenance guide, or to request support from a columns and supplies specialist.

Agilent ZORBAX Family – tried and true...and growing!

Your Agilent HPLC column is a product of 40 years of experience in HPLC column manufacturing. You can be sure that your Agilent ZORBAX column will deliver as expected, due to Agilent's consistent quality control over every aspect of the column's development.

Agilent's continuous innovation has expanded the ZORBAX choices available to you, and today, there are more than 900 ZORBAX columns to meet your application needs. **Consider these families as your first-line choices:**

Agilent ZORBAX Eclipse Plus columns deliver high resolution and excellent peak shape for all types of compounds. They are a great choice for method development because of their reliable performance and broad selection.



- *Superior performance through extra-dense bonding and a precise double-endcapping process*
- *New endcapping reagents*
- *Unique bonding process optimized for enhanced, high-performance silica*
- *More choices than ever to accommodate your LC/MS analyses: Order Eclipse Plus columns in 1.8, 3.5 or 5 µm particle sizes in C8, C18, Phenyl-Hexyl and PAH*

Agilent ZORBAX RRHT (Rapid Resolution High Throughput) columns support fast and ultra-fast HPLC separations with more resolving power. Look for RRHT columns with 1.8 µm particles in most Agilent ZORBAX phases.

- *Sub-2 µm (1.8 µm), totally porous packing*
- *Small particles provide high resolving power*
- *Short column lengths (15-50 mm) enable high-speed analyses*

ZORBAX Bio-Columns: Consider 300Å StableBond and Extend 300Å C-18 for high-resolution, high-efficiency biomolecule separations. A wide array of additional choices from Agilent are available for reversed-phase separation of proteins and peptides for varying pH levels and methods. *See the LC/MS Bio-Columns section in the chart on the back of this brochure for more information.*

Starting Column Choices

Here are suggestions for columns you can use to start your method development, with part numbers for easy ordering:

Small Molecule		Large Molecule	
Standard Analysis	**Fast Analysis**	**Standard Analysis**	**Fast Analysis**
Eclipse Plus C18, 4.6 x 150 mm, 5 µm, p/n 959993-902	Eclipse Plus C18, 4.6 x 75 mm, 3.5 µm, p/n 959933-902	ZORBAX 300SB-C18, 4.6 x 150 mm, 5 µm, p/n 883995-902	ZORBAX 300SB-C18, 4.6 x 50 mm, 3.5 µm, p/n 865973-902
4.6 x 150 mm, 3.5 µm, p/n 959963-902	Rapid Resolution HT, 600 bar, 4.6 x 50 mm, 1.8 µm, p/n 959941-902		Poroshell 300SB-C18, 2.1 x 75 mm, 5 µm, p/n 660750-902

See the chart on back for more information about the full range of ZORBAX choices that are available.

Reference Resources

www.agilent.com/chem/getguides – *One-stop request for key guides to get you going*
www.ZORBAXmethod.com – *For customized LC column information*
lc-column-support@agilent.com (E-mail) – *For technical support and help selecting the right column*
www.agilent.com/chem/SampliQ – *Learn about the new Agilent SampliQ SPE line*
www.agilent.com/chem/vialsguide – *Learn about the complete line of Agilent vials*
www.agilent.com/chem/services – *Learn about service plans and preventive maintenance recommendations*
www.agilent.com/chem/store – *Place orders online*

Long-life Agilent Certified lamps improve chromatographic performance

Agilent's deuterium lamps improve the overall sensitivity of your instrument because they are designed with a much narrower aperture than the standard commercial lamps. This narrow aperture increases light intensity and decreases noise, translating into an appreciably higher signal-to-noise ratio.

Most importantly, Agilent lamps are aligned precisely during the manufacturing process with computer-controlled positioning that ensures Agilent lamps fit perfectly into Agilent instruments. So your lamp is not only optimized for performance, but also easier to install and remove.

Please consult the catalog or check ***www.agilent.com/chem/store*** *for more information*

Agilent Capillary Kits give you super-easy connections

Agilent's unique, flexible stainless steel capillary LC connections are ideal for plumbing your LC instrumentation. To make them compatible with standard 1/16 in. end fittings, Agilent welds a tight sleeve at both ends. Agilent's unique laser welding process ensures that the capillary ends are absolutely flat, eliminating any chance of additional dead volume.

- ***Flexible, for easy handling.*** *Agilent's 0.6 mm outer diameter of flexible stainless steel end fittings are much easier to handle than conventional, rigid 1.6 mm outer diameter capillaries.*
- ***Precision cutting.*** *These capillaries, cut with square ends, are burr-free and have no inner-diameter distortion. The electronic discharge cutting process uses only de-ionized water to prevent contamination.*

Plus, you get a Victorinox brand Cybertool – with over 30 tools for use in your lab – with each capillary kit you order.

Capillary Fitting Starter Kit, 0.17 mm ID (Color-Coated Green) Kit includes: *PEEK capillary 0.18 mm, id, 1.5 m (1); 1/16 in. PEEK fittings, color (10); 1/16 in. PEEK fittings, (10); Tubing cutter for PEEK capillaries (1); Stainless steel capillary: 105 x 0.17 mm (4),150 x 0.17 mm (4), 200 x 0.17 mm (2), 280 x 0.17 mm (2), 400 x 0.17 mm (1); 1/16 in. stainless steel fittings (10); ZDV union, stainless steel (3); Rheotool (1); Cybertool (1)*	5065-9939
Capillary/fitting starter kit, 0.12 mm ID *(includes same parts as above, but 0.12 mm ID)*	5065-9937

Plan for Agilent Preventive Maintenance

to keep your LC/MS operating at its peak. During your annual LC/MS PM service, your Agilent service engineer will:

- *Inspect your entire system, detect leaks and perform pressure tests*
- *Replace pump head seal, purge valve seal and filter assembly frits*
- *Clean sampler; replace rotor seal and needle seat assembly*
- *Remove and clean the Mass Spec ion source*
- *Inspect vacuum pumps and replace mechanical pump oil*
- *Maintain service logs*

Studies show that regular Agilent PM visits **decrease failure rates by up to 25%**. For more information, please visit **www.agilent.com/chem/services**

SampliQ High-Performance Solid Phase Extraction (SPE)

Agilent SampliQ SPE will help you confidently extract and concentrate samples from complex matrices – so all your LC analyses are more accurate and reliable.

SampliQ SPE sets you up to be efficient and accurate all through your analysis. SampliQ sorbents and cartridges are made with the same exacting quality you've come to expect from Agilent instruments and columns. Now you can get that superior performance at the very beginning of your analysis. SampliQ SPE products:

- *Offer polymer, silica and other sorbents to meet every SPE requirement*
- *Help ensure reproducible results*
- *Provide cleaner, concentrated samples*

SampliQ polymer sorbents save time in method development and rework. New Agilent SampliQ polymers allow for retention of target molecules over a wide pKa range. And unlike silica-based phases, they yield the same results if they inadvertently dry out during the conditioning stage – so you don't have to start over.

New Agilent SampliQ Optimized Polymer Technology (OPT) cartridges exhibit retention for both polar and non-polar compounds based on their combined hydrophilic and lipophilic characteristics, making it a very versatile SPE option.

POLYMERS

	OPT	DVB	SCX	SAX	PS-DVB
1 ml 30 mg, 100/pk	5982-3013	5982-3113	5982-3213	5982-3313	
3 ml 60 mg, 50/pk	5982-3036	5982-3136	5982-3236	5982-3336	
6 ml 150 mg, 30/pk	5982-3067	5982-3167	5982-3267	5982-3367	
6 ml 500 mg, 30/pk					5982-3165
6 ml 1000 mg, 30/pk					5982-3160

SILICA-BASED

Reversed Phase (Non-Polar)				
	C18	C18EC	C8	Phenyl
1 ml 100 mg, 100/pk	5982-1111	5982-1311	5982-1011	5982-1511
3 ml 200 mg, 50/pk	5982-1132	5982-1332	5982-1032	5982-1532
3 ml 500 mg, 50/pk	5982-1135	5982-1335	5982-1035	5982-1535
6 ml 500 mg, 30/pk	5982-1165	5982-1365	5982-1065	
6 ml 1000 mg, 30/pk	5982-1160	5982-1360		

Normal Phase (Polar)	
Silica	Amino
5982-2211	5982-1811
5982-2232	5982-1832
5982-2235	5982-1835
5982-2265	5982-1865
5982-2260	5982-1860

Visit **www.agilent.com/chem/SampliQ** for more information, part numbers and application notes.

Solvent Filter/Degassers help to keep your system clean

Reduce piston wear, increase column life and eliminate pump downtime caused by air locks and particulates in check valves.

HPLC solvent filter/degasser assembly	3150-0577
Regenerated Cellulose filter membranes, pore size 0.45 µm, 100/pk.	3150-0576

Boost your HPLC performance with Premium Syringe Filters

Agilent Premium Syringe Filters are high-quality, ready-to-use filter units that are tested and certified for the absence of UV-absorbing substances at typical HPLC wavelengths with water, methanol and acetonitrile. Filtering your sample helps increase the efficiency of your analysis and improve column life.

Premium Membrane Filters, 100/pk.			
Description	**Diameter** (mm)	**Pore Size** (µm)	**Part number**
PTFE with Luer Tip	30	.20	3150-0753
PTFE with Luer Tip	30	.45	3150-0754
PTFE with Luer Tip	13	.45	5185-5836
PTFE with Mini Tip	13	.45	5185-5837
Cellulose Acetate with Luer Tip	30	.45	5061-3363

Premium Regenerated Cellulose Membrane Filters, 100/pk.			
Luer Tip	30	.20	5061-3354
Luer Tip	30	.45	5061-3364
Luer Tip	13	.20	5064-8222
Luer Tip	13	.45	5061-8221
Mini Tip	13	.20	5061-3366
Luer Tip	13	.45	5061-3365

For more information, please visit ***www.agilent.com/chem/syringefilters***

Simplify Sample Filtration with Mini-UniPrep

Mini-UniPrep Syringeless Filters are innovative, preassembled filtration devices for removing particulate matter from samples. A single disposable unit can replace the combination of syringe filters, syringes, autosampler vials, transfer containers, septa and caps.

0.45 µm PTFE. For aggressive samples.	5190-1415
0.45 µm Nylon. For aqueous and organic samples, pH 3-10.	5190-1416
0.45 µm PP. For solvent-based samples, low water breakthrough values.	5190-1417
0.45 µm regenerated cellulose. For aqueous or organic solvents, very low non-specific protein binding membrane.	5190-1418
0.20 µm PTFE. For aggressive samples.	5190-1419
0.20 µm Nylon. For aqueous and organic samples, pH 3-10.	5190-1420
0.20 µm PP. For solvent-based samples, low water breakthrough values.	5190-1421
0.20 µm regenerated cellulose. For aqueous or organic solvents, very low non-specific protein-binding membrane.	5190-1422

For more information, see ***www.agilent.com/chem/uniprep***

Use Agilent certified vials and caps to keep your autosampler performing at its best

Why use Agilent vials and caps? It's all about productivity and performance:

- *Tight quality control ensures that height, width, inner and outer diameter for opening, shoulder height and radius, length of neck and bottom are all carefully monitored.*
- *All Agilent vials are made with the highest quality borosilicate available – ASTM Type 1, class A glass – to minimize changes in vial contents.*
- *Agilent chromatographically tests the silicone septa used for our vials to reduce any risk that extractables can contaminate the sample.*
- *Every Agilent vial and cap is shipped with a certificate of quality attached.*

Get more information about vials at **www.agilent.com/chem/vialsguide**

Quick Guide to Agilent ZORBAX Reversed-Phase Bonded Phases

ZORBAX RP-LC Columns	Recommended Uses and Applications	
Eclipse Plus **RRHT 1.8 µm available**	• Excellent first choice for method development • Available in C18, C8 and Phenyl-Hexyl • Long life from pH 2-9 for reliable separations of basic, acidic and neutral compounds	• Superior peak shape with basic compounds • Rigorous QA/QC testing for greater long-term reproducibility • High resolution and efficiency with 5, 3.5 and RRHT 1.8 µm columns
Poroshell 120 *(Coming soon)*	• Superficially porous particles for high efficiency at low pressure • Sub 2-micron-like efficiency with a 2.7 µm particle • Endcapped and non-endcapped C18 phases for selectivity optimization	• Compatible with 400 bar and 600 bar LCs • Poroshell 120 and Poroshell 300 are good choices for biopharmaceutical separations
Eclipse XDB **RRHT 1.8 µm available**	• Four selectivity choices for flexible method development (C18, C8, Phenyl, CN) • High performance over a wide pH range, pH 2-9 • Good peak shape for acids, bases and neutrals	• Long lifetime with extra-dense bonding and double endcapping • Choices from capillary to prep • Fast, ultra-fast and high-resolution separations using 5, 3.5 and RRHT 1.8 µm columns
StableBond (SB) **RRHT 1.8 µm available**	• Basic, acidic, neutral compounds • Exceptional stability at low pH • 80Å and 300Å for small molecules, proteins and peptides • Use of high temperature at low pH (up to 90°C for C18, 80°C for C8, C3, Phenyl, CN and Aq)	• Widest selection of bonded phases for different selectivity (C18, C8, C3, CN, Phenyl, Aq) • Uses mobile phases for LC/MS with formic acid, acetic acid or TFA • Rapid separations using 3.5 and RRHT 1.8 µm columns
Bonus-RP **RRHT 1.8 µm available**	• Separating basic compounds in higher aqueous mobile phases • General separation of basic, neutral, acidic compounds at mid-range pH or low pH	• Separate peptides for different selectivity • Rapid separations using 3.5 and RRHT 1.8 µm columns
Extend-C18 **RRHT 1.8 µm available**	• Separating basic compounds above their pKa in free base form; separation of basic, acidic, neutral compounds at high pH; up to pH 11.5 • Uses ammonium hydroxide as mobile phase additive with LC/MS with small molecules or peptides	• Separating at high, mid-range and low pH for selectivity changes • ZORBAX 80Å pore size 300Extend for proteins and peptides at pH 10 • Rapid separations using 3.5 and RRHT 1.8 µm columns
Agilent ZORBAX Rx	• General separation of basic, acidic and neutral compounds at low pH • Rx-C18 has different selectivity than SB-C18 due to unique bonding • Rx-C8 is the same as SB-C8	• Rx-Sil is available for normal phase and HILIC applications with excellent peak shape

LC/MS Bio-Columns	Recommended Uses and Applications	
Capillary and Nano	• Highest sensitivity for your smallest sample sizes; packings/phases for both small and large molecules • Compatible with all LC/MS interfaces	• Internal diameters of 0.5, 0.3, 0.1 and 0.75 mm • Ideal for 1-D and 2-D (proteomics) applications
Poroshell 300	• Available in C18, C8, C3 and Extend-C18 for rapid HPLC separations of peptides and proteins up to 500-1,000 kDA	• Ideal for IgG separations • Use for fast separations of large biomolecules
ZORBAX 300Å StableBond	• Available in C18, C8, C3 and CN for unmatched durability at low pH	
ZORBAX 300Å Extend-C18	• For high-efficiency separations of peptides from pH 2-11.5	• For 4.6 x 50 mm, 3.5 µm, use p/n 885973-902

Order our ***Bio-Columns Selection Guide*** and the ***Agilent ZORBAX Column Selection Guide for HPLC*** at **www.agilent.com/chem/getguides**

You can also learn more about ZORBAX columns and receive a column recommendation based on your application at **www.ZORBAXmethod.com**

Find an Agilent customer center in your country
www.agilent.com/chem/contactus

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