AGILENT 1200 INFINITY SERIES SUPPLIES

INFINITELY BETTER

Agilent 1200 Infinity Series Supplies

The Measure of Confidence

Agilent Technologies

Agilent Technologies

AGILENT 1200 INFINITY SERIES SUPPLIES

Push your UHPLC performance to infinite limits and run your conventional methods with confidence

The Agilent 1200 Infinity Series is infinitely better. It offers a comprehensive portfolio of LC solutions that give you uncompromised chromatographic performance. Agilent instruments, supplies, and critical instrument parts are essential for confidence in your results.

Agilent 1290 Infinity LC:
Infinitely more powerful

With the Agilent 1290 Infinity LC, you're no longer limited in your choice of column dimension, particle type, mobile and stationary phase, flow rate, or pressure. That is because the 1290 Infinity LC is the first system that gives you the foundation for method transfer to or from any Agilent or non-Agilent UHPLC or HPLC system. You also get the confidence that comes with:

- Most adaptive – emulates other HPLC and UHPLC systems, connects to most non-Agilent software
- Highest performance & flexibility – by any measure
- HPLC-like service costs – UHPLC productivity

Agilent 1260 Infinity LC:
Infinitely more confident

Finally – an LC system that meets your demands for chromatographic performance while matching the constraints of your budget. The Agilent 1260 Infinity LC gives you the confidence that comes with:

- Raising the standard in analytical HPLC with a 600 bar, high-speed 80Hz detector, and up to 10x greater sensitivity
- 100% compatibility with HPLC and RRLC
- RRLC performance at an HPLC price
- Ships with a Poroshell 120 column

Agilent 1220 Infinity LC:
Infinitely more affordable

An affordable, high quality solution that maximizes uptime, minimizes maintenance and provides the highest return on your investment. It features:

- Agilent quality – highly affordable price
- HPLC and RRLC compatibility – 600 bar and high-speed 80Hz detector
- Integrated design – robust and easy-to-use

For more information on the LC instrument portfolio, visit **www.agilent.com/chem/LC**

Table of Contents

Maintenance recommendations, view further procedures at **www.agilent.com/chem/LCmaintenancenotes**

Find everything you need to maintain top LC performance – in one place

Noisy baselines. Shorter column life. Lower sensitivity. Variable retention times.

Any – or all – of these problems can be caused by a lack of preventive maintenance. That's why it's critical to set up an LC instrument maintenance program, and to keep essential supplies in stock for regular replacement of worn or damaged components.

You can keep LC pumps, autosamplers, and detectors operating at their best with Agilent preventive maintenance kits. They contain the seals, frits, stators, fittings, connections, and other components needed to maximize LC instrument uptime – plus complete instructions on how to access parts for cleaning or replacement.

Options include:

- **Agilent pump kits** contain the fittings, tubing, valves, and seals that keep pumps operating efficiently – while preventing leaks and pressure fluctuations that can damage columns.
- **Agilent autosampler kits** feature the seals, needle seats, and cartridges necessary to avoid loss of valuable samples.
- **Agilent detector kits** provide the windows, gaskets, screw kits, and rings needed for VWD equipment – with options for standard, micro, semi-micro, and high-pressure flow cells.
- **DAD/MWD kits** offer a range of options for flow cells of varying capacities, and include all the ferrules, seals, wrenches, and torque adaptors required for DAD/MWD applications.

To learn more about catching LC system problems before they lead to long periods of costly downtime, visit **agilent.com/chem/pmkits**

Pump Kits

Regular pump maintenance helps lower operating costs and generates precise results that make you feel confident.

You can count on Agilent isocratic, binary, quaternary, capillary, and preparative pumps for superior flow and composition stability. And by following a regular maintenance routine, you can also count on maximum uptime and a steady, accurate solvent flow for the life of the pump.

Routine Pump Maintenance Procedures

- Replace the seals and pistons
- Replace the PTFE frit
- Replace the cartridge in the Active Inlet Valve
- Clean the outlet ball valve
- Clean or replace the solvent inlet frits

Routine pump maintenance should be done on a regular basis to keep your Agilent LC system performing at its optimum. You can perform all maintenance procedures at once or as needed. Some parts may need to be replaced more than others depending upon your application and solvent preparation procedures.

Routine Pump Maintenance Procedures

Symptom	Cause	Solution
Solvent dripping out of waste outlet when valve closed	Leak on pump head	Exchange the purge valve frit or the purge valve
Pressure ripple unstable	Dirty active inlet valve cartridge	Run leak test for verification and exchange the active inlet valve cartridge
	Leak on pump head	Run leak test for verification and exchange the outlet ball valve sieve or the complete valve
Gradient performance problems, intermittent pressure fluctuations	Solvent filter is blocked	Change the solvent filter
A pressure drop of >10 bar across the frit (5 mL/min H_2O with purge valve open) indicates blockage	Dirty frit	Exchange the purge valve frit or the purge valve
Leaks at lower pump head side Unstable retention time Pressure ripple unstable	High seal wear	Run leak test for verification and exchange the pump seals
Seal lifetime shorter than normally expected	Scratch on plunger	Check plungers while changing the seals
Loss of wash solvent	Leaky wash seals	Exchange the wash seals

Agilent preventive maintenance kits

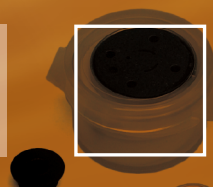
Outlet ball valve, G1312-60067

Pump Kits

Description	Kit Contents	Part No.
Preventive Maintenance Kits		
Extended PM kit For 1100/1050/1200 pumps	Includes 2 piston seals, PTFE frits, 5/pk, cartridge active inlet valve, outlet ball valve, 2 pistons	5065-4499
For 1100/1200 and 1260 Infinity LC prep pump	Includes 1 filter cup, 4 seal prep flange, 1 filter assembly, 1 peristaltic pump	G1361-68710
For 1100/1200 binary pump	Includes 4 piston seals, PTFE frits, 2 sieves, 3 seal caps	G1312-68730
For 1260 Infinity LC binary pump	Includes 1 PTFE pump seals, PTFE frits, 5/pk, 1 seal cap, sieves for outlet valve, 10/pk	G1312-68741
For G1376A capillary pump	Includes 4 pump seals, 1 stainless steel frit, 4 seal cap assemblies	G1376-68710
For 1100/1200 isocratic or quaternary pumps	Includes piston seal, PTFE frits, 2 seal caps	G1310-68730
For 1260 Infinity LC isocratic or quaternary and 1220 pumps	Includes 1 PTFE pump seal, PTFE frits, 5/pk, 1 seal cap	G1310-68741
For 1120 automated injector systems	Includes 2 piston seals, 5 PTFE frits, 1 Vespel rotor seal, 1 needle, 1 needle seat, 2 seal cap assemblies	G4280-68730
For 1120 manual injector systems	Includes 2 piston seals, 5 PTFE frits, 1 PEEK rotor seal, 2 seal cap assemblies	G4280-68710
For 1220 automated injector systems	Includes 2 piston seals, PTFE frits, rotor seal, 2 seal cap assemblies, needle and needle seat	G4280-68770
For 1220 manual injector systems	Includes 2 piston seals, PTFE frits, rotor seal, 2 seal cap assemblies	G4280-68750
1290 Infinity pump tools kit. Contains tools for servicing 1290 pump heads. For 1290 Infinity LC pump	Includes pump seal exchange tool, torque wrench, hex bit	5067-4699
For Bio-inert quaternary pump	Includes bio-inert piston seal, 5/pk PTFE frits, seal cap assembly, film washer, peristaltic pump, silicone tubing, Bio-inert wash seal	G5611-68741
Seal Wash Kits		
PM kit for seal wash option*	Includes 2 wash seals, 1/pk of 6 wash seal gaskets	G1310-68731
Seal wash PM kit For 1260 Infinity LC pumps	Includes 2 PTFE wash seals (P/N 0905-1175), 2 gasket wash seals (P/N 01018-07102)	G1310-68742

*Only required for pumps with seal wash option

PM kit for 1220 automated injector systems, G4280-68770



Autosampler Kits

Autosampler Maintenance Schedule		
Procedure	**When to Perform**	**Time Required**
Exchanging the needle assembly	When needle shows indication of damage or blockage	15 minutes
Exchanging the seat assembly	When the seat shows indication of damage or blockage	10 minutes
Exchanging the metering seal	When autosampler reproducibility indicates seal wear	30 minutes

Autosampler Kits

Description	Kit Contents	Part No.
Preventive Maintenance Kits		
For G1313A, G1329A samplers	Includes Vespel rotor seal, needle seat, needle, peristaltic pump cartridge, seal-tight nut	G1313-68730
For G1313A, G1329A autosamplers	Includes 1 Vespel rotor seal, 1 needle seat, 1 needle, and 15 finger caps	G1313-68709
For G1313A, G1329A autosamplers	Includes 1 Vespel rotor seal, 1 needle seat, 1 needle, 1 isolation seal, 1 stator face	5065-4498
For G1329B autosamplers	Includes rotor seal, two grooves, max 600 bar, needle, seat assembly, 0.17 mm id, pump seal	G1313-68719
For G1329B 1200 autosampler SL	Includes PEEK rotor seal, needle seat, needle, 2 seals and 15 finger caps	G1329-68719
For G1367C/D autosamplers	Includes 1 needle assembly, 1 low carry over seat, 1 peristaltic pump, 1 rotor seal, seal-tight nut	G1367-68734

(Continued)

Maintenance kit, G1313-68709

Agilent preventive maintenance kits

Autosampler Kits

Description	Kit Contents	Part No.
Preventive Maintenance Kits		
For G1367E autosampler	Includes 1 PEEK rotor seal, 1 needle seat, 1 needle, 1 peristaltic pump cartridge, 1 metering seal	G1367-68741
For G1367A/B autosamplers	Includes 1 Vespel rotor seal, 1 needle seat, 1 needle, 1 peristaltic pump cartridge, 1 seal tight nut	G1367-68730
For G4226A HiP autosampler	Includes 1 needle seat, 1 needle, 1 rotor 2 position/6 port, 1 peristaltic pump, 1 metering seal	G4226-68735
For 1120 manual injector systems	Includes 2 piston seals, 5 PTFE frits, 1 PEEK rotor seal, 2 seal cap assemblies	G4280-68710
For 1220 manual injector systems	Includes 2 piston seals, PTFE frits, rotor seal, 2 seal cap assemblies	G4280-68750
For 1220 automated injector systems	Includes 2 piston seals, PTFE frits, rotor seal, 2 seal cap assemblies, needle and needle seat	G4280-68770
For 1120 automated injector systems	Includes 2 piston seals, 5 PTFE frits, 1 Vespel rotor seal, 1 needle, 1 needle seat, 2 seal cap assemblies	G4280-68730
For G4277A, G4278A autosamplers	Includes, 1 injection unit tension cord black, 280 mm, 1 tension cord for GC/HTC needle guide, 1 2 pcs drive belt for Incubator CombiPAL, 1 PAL lub kit with brush, 1 needle seal, Rheodyne 7991, 22 g, 10/pk, 1 10 pcs O-ring for PAL syrHS 2.5 mL, 1 foam over cotton swab, 10/pk, 1 4x4 optiwipes, 100/pk	G6500-88088

PM kit for 1220 manual injector systems, G4280-68750

Detector Maintenance Kits

Detector Maintenance Tips		
Symptom	**What To Do**	**Additional Information**
Lamp does not ignite	Exchange the lamp	Perform a wavelength calibration test and an intensity test after lamp replacement
Noise exceeds application limit	Check lamp and flow cell. Maintain or exchange the flow cell. Replace lamp.	Perform a wavelength calibration test after replacement
Drift exceeds application limit	Exchange the lamp	Perform a wavelength calibration test and an intensity test after lamp replacement
Leaky flow cell (For G4212 only)	Flush or exchange the flow cell	Perform a wavelength calibration test after flow cell replacement
Leaky flow cell (For all G1314/G1315/G1365 detectors)	Clean, replace parts or exchange the flow cell	Perform a wavelength calibration test after flow cell replacement
Lower intensity (For G4212 only)	Flush or exchange the flow cell	Perform a wavelength calibration test after flow cell replacement
Lower intensity (For all G1314/G1315/G1365 detectors)	Clean, replace parts or exchange the flow cell	Perform a wavelength calibration test after flow cell replacement

Agilent preventive maintenance kits

Detector Maintenance Kits

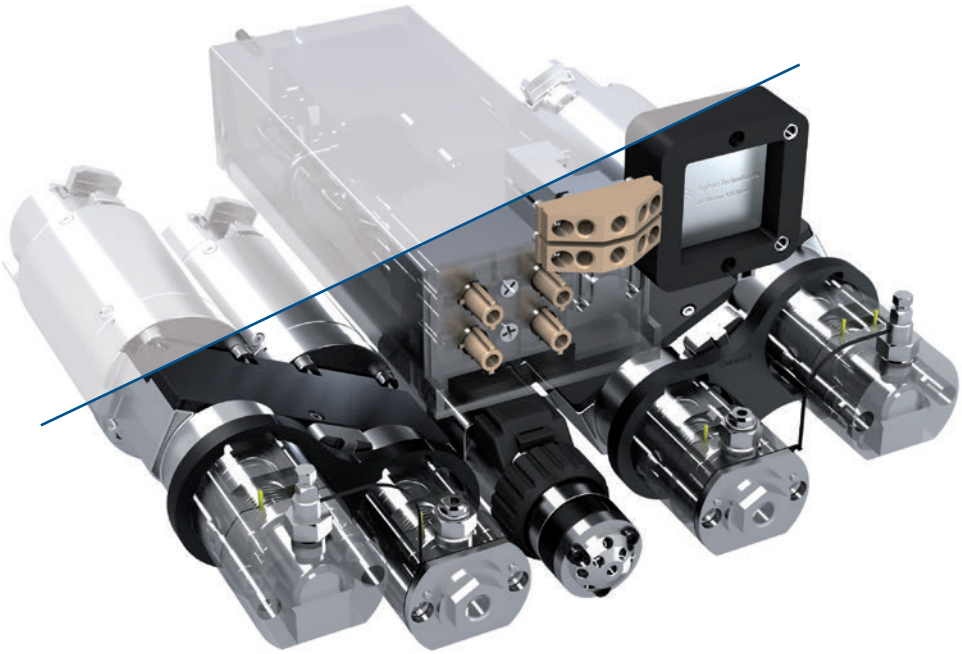
Description	Kit Contents	Part No.
Variable Wavelength Detector (VWD)		
High-pressure flow cell kit	Includes 2 windows, 2 Kapton gaskets, 2 PEEK rings	G1314-65054
Micro flow cell kit	Includes 2 windows, 2 gaskets #1, 2 gaskets #2	G1314-65052
Semi-micro flow cell kit	Includes 2 windows, 4 gaskets: 2 standard #1, 1 semi-micro #1, 1 semi-micro #2	G1314-65056
Standard "D" type flow cell kit	Includes 2 windows, 2 gaskets #1, 2 gaskets #2	G1314-65050
Standard "D" type flow cell kit For G1314/A/B/C/D/E/F	Includes 2 windows, 2 gaskets #1, 2 gaskets #2	G1314-65061
Cell screw kit	Includes 2 window holders assembled with windows and washers	79883-68703
Cell screws		G1314-65062
G1314A VWD accessory kit	Includes 1/4 in waste tubing, 2 hex keys, 2 wrenches, outlet tubing, 1/16 in PEEK male fitting	G1314-68705
Diode Array Detector (DAD)/Multiple Wavelength Detector (MWD)		
Inline pressure relief valve kit For G4220A, G4220B	Includes Pressure Relief Valve, fittings, tubing and instructions.	G4212-68001
Cell repair kit for standard cell For G1315A/B, G1365A/B, G1315C/D, G1365C/D	Includes window screw kit, 4 mm hexagonal wrench, seal kit	G1315-68712
Cell repair kit, semi-micro cell For G1315A/B, G1365A/B, G1315C/D, G1365C/D	Includes window screw kit, 4 mm hexagonal wrench, seal kits	G1315-68713
High-pressure cell repair kit	Includes 1 quartz window, 5 spring washers, 2 seal rings	79883-68700
Sealing kit for 500 nL flow cell	Includes torque adapter, 2 cell seal assemblies, 5 LiteTouch front and back ferrules	G1315-68715
Sealing kit for 80 nL flow cell	Includes torque adapter, 2 cell seal assemblies, 5 LiteTouch front and back ferrules, 5 sleeves for 360 µm od capillaries	G1315-68725
Standard cell repair kit, 1050/1090	Includes 12 gaskets, 2 window holders assembled with windows and washers, 2 cell screws, 10 washers, hex key	79883-68701
1200 Series Evaporative Light Scattering Detector		
Seal kit for nebulization chamber	Includes seal kits	G4218-68010
Analog cable		PL0880-0310
Gas inlet tube (2 m)		PL0890-0305
Rear exhaust hose (PVC 2 m)		PL0890-0310
Solvent waste tube (2 m)		PL0890-0315
RS232 communication cable		PL0890-0325
Trigger cable for Dimension software		PL0890-0345
Remote start cable (third party LCs only)		PL0890-0350

Pump Supplies

Agilent pumps feature superior stability and composition precision. LC pumps include isocratic, binary, quaternary, capillary and preparative; all key components can be accessed by simply removing the front cover.

Agilent quality parts are designed, tested, and manufactured with the same attention to detail you expect from Agilent instruments.

That means your LC or LC/MS system will deliver superior qualitative and quantitative results and consistent reproducibility and reliability.



Purge Valves

Description	Comments	Part No.
Purge valve, 400 bar	For G1310A, G1311A, G1312A, G1376A, G2226A, compatible to 1260 Infinity 400 bar pumps	G1311-60009
Purge valve, 600 bar, short	For 1220 Infinity pumps	G4280-60061
Purge valve, 600 bar	For 1260 Infinity pumps (G1310B, G1311B/C, G1312B/C), compatible to all 1260 Infinity, 1200 Series and 1100 Series pumps	G1312-60061
Capillary, damper to purge valve	Damper	G1312-67301
PTFE frits, 5/pk	For 1290 Infinity binary pumps (G4220A/B) and all 1260 Infinity/1200 Series/1100 Series and analytical pumps	01018-22707
Seal cap	For all purge/inlet/outlet valves without integrated seal	5067-4728
Bio-inert purge valve head	Bio-inert quaternary pump (G5611A)	G5611-60061
Purge valve head	For 1290 Infinity binary pump	5067-4119
5 position/7 port rotor seal	For purge valve head of 1290 Infinity binary pumps	5068-0005
5 position/7 port stator	For purge valve head of 1290 Infinity binary pumps	5068-0004
Multi-purpose valve head	For G4204A	5067-4174
Stator 8 position/9 port, 1200 bar	For G4204A	5068-0001
Rotor for 5067-4174 multi-purpose valve head	G4204A	5068-0123
Stainless steel filter assembly with PEEK ring, 2 µm pore size	For G1361A	5022-2192
Purge valve assembly for 1120 Infinity LC	For 1120 Infinity LC	G4280-60031
1200 Series purge valve with PTFE frit, 600 bar	For 1200 Series G1312B pump, compatible to all 1260 Infinity pumps	G1312-60023
Purge valve actuator for 1120 Infinity LC	For 1120 Infinity LC	G4280-60033
Open end wrench, 14 mm	To remove purge valve	8710-1924

Purge valves include a PTFE frit.

PTFE frits, 01018-22707

Seal cap, 5067-4728

Purge valve assembly, G1311-60009

Purge valve with PTFE frit, G4280-60061

TIPS & TOOLS

Information on maintenance procedures can be found at **www.agilent.com/chem/LCmaintenancenotes**

Inlet and Outlet Valves

Inlet Valves

Description	Comments	Part No.
Seal cap	For all purge/inlet/outlet valves without integrated seal	5067-4728
Active inlet valve without cartridge	For G1310A, G1311A, G1312A/B, G1376A, G2226A, compatible to 1260 Infinity pumps G1310B and G1311B/C	G1312-60025
Cartridge for active inlet valve, 400 bar	For G1310A, G1311A, G1312A/C, G1376A, G1322A, compatible to G1311C	5062-8562
Cartridge for active inlet valve, 600 bar	For G1312B, compatible to G1310B and G1311B	G1312-60020
Bio-inert active inlet valve	For G5611A	G5611-60025
Bio-inert cartridge for active inlet valve, 600 bar	For G5611A	G5611-60020
1260 Infinity LC inlet valve, type N	For normal phase applications on 1260 Infinity/1200 Series/1100 Series pumps	G1312-60166
1290 Infinity LC inlet valve, type N	For normal phase applications on 1290 Infinity pumps	G4220-60122
Passive Inlet Valve 1290 Infinity Quaternary Pump	For G4204A	G4204-60022*
Valve assemblies (inlet/outlet) for prep pumps	For G1361A	G1361-60012
Passive inlet valve for 1260 Infinity pumps	For G1310B, G1311B, G1311C, 1120, 1220	G1312-60066*
Passive inlet valve for 1290 Infinity binary pumps	For G4220A, G4220B	G4220-60022*
Passive inlet valve replacement kit	For 1120/1220	G4280-60500
Inlet valve for SFC pump	For G4309A	G4302-60066

*Inlet valve with integrated seal.

Active inlet valve without cartridge, G1312-60025

Cartridge, 400 bar, 5062-8562

Passive inlet valve, G1312-60066

Seal cap, 5067-4728

Outlet valve, G1312-60067

Outlet valve, G4220-60028

Outlet Valves

Description	Comments	Part No.
Outlet valve, 600 bar	For all 1260 Infinity, 1220 Infinity, 1200 Series and 1100 Series analytical pumps	G1312-60067*
1260 Infinity LC outlet valve, type N	For normal phase applications on 1260 Infinity/1200 Series/1100 Series pumps	G1312-60167
1290 Infinity LC outlet valve, type N	For normal phase applications on 1290 Infinity pumps	G4220-60128
Outlet valve 1290 Infinity pump	For 1290 Infinity pumps	G4220-60028*
Bio-inert outlet valve	For G5611A	G5611-60067*
Capillary, outlet valve to damper		G1311-81601
Valve assemblies (inlet/outlet) for prep pumps	For G1361A	G1361-60012
Seal cap	For all purge/inlet/outlet valves without integrated seal	5067-4728
Internal gold seal for 1290 outlet valve		G4220-20020
Binary pump outlet valve SS sieve	For G1312-60012 valve	5063-6505

*Outlet valve with integrated seal.

In case you are using other instrument brands in your lab, Agilent can help you as well.

Learn more about Agilent CrossLab HPLC supplies at **agilent.com/chem/crosslab**

Pistons and Seals

Agilent pistons are made from a high purity, monocrystalline sapphire for maximum durability. Although ceramic pistons can be manufactured at a lower cost, ceramic is a sintered, polycrystalline material, which can cause undesirable variations during the production process. Agilent sapphire pistons are:

- Meticulously cut at just the right angle, making them durable – and long lasting
- Precisely aligned in their stainless steel holder to minimize wear on the piston and seal

Agilent seals are designed to fit snugly around our pistons, and are capable of adapting to a wide range of flow rates and pressures. Agilent piston seals are:

- Spring-loaded and engineered to deliver optimal performance over highly dynamic flow and pressure ranges
- Manufactured from a proprietary polymer blend, and feature a spring made from the same high-quality stainless steel that is used in our pump's flow path

The combination of our piston and seal has undergone extensive testing under temperature stress, with all common HPLC solvents, and in many instruments. More importantly, they yield consistent, reproducible results.

Sapphire piston, 5063-6586, and seals

Pistons

Description	Comments	Part No.
Sapphire piston, slim base	For G5611A, G4302A, G4226A, G1376A	5067-4695
Sapphire piston (standard base size)	For G1310A, G1311A, G1312A, G1376A, G2226A, 1120, 1220, G1310B, G1311B, G1312B, G1311C, G1312C	5063-6586
Sapphire piston	For G1361A	G1361-22402
Sapphire piston	For 1090 system	3980-0672
Wash pump piston assembly		G4301-60130
Ceramic piston for 1290 Infinity LC pumps (binary and quaternary)	For G4220A, G4220B, G4204A	5067-5678

Piston seals, 5063-6589

Seals

Description	Comments	Part No.
Pump seal PE for 1290 Infinity LC, 1/pk (normal and reversed-phase)	For G4220A, G4220B, G4204A	0905-1719
Piston seal PTFE (reversed-phase)	For G1310A, G1311A, G1312A, G1376A, G2226A, 1120, 1220, G1310B, G1311B, G1312B, G1311C, G1312C, G4302A	5063-6589
Piston seal Polyethylene (normal phase)	For G1310A, G1311A, G1312A, G1376A, G2226A, 1120, 1220, G1310B, G1311B, G1312B, G1311C, G1312C, G4302A	0905-1420
Piston seal	For G1361A	5022-2188
Piston seal, for use with buffered solvents, 1/pk		0905-1194
Piston seal, 2 mm	For G1367D, G1389A, G1377A	5022-2175
Piston seals, 4/pk		5062-2494
Bio-inert piston seal	For G5611A	G5611-21503
Wash seal PTFE (reversed-phase), 1/pk	For 1100/1200/1200 RRLC, 1120 and 1260/1220 Infinity LC pumps	0905-1175
Seal wash gasket	For 1100/1200/1200 RRLC, 1120 and 1260/1220 Infinity LC pumps	5062-2484
Active seal wash kit	For 1100/1200 isocratic or quaternary pumps	G1311-68711
Active seal wash kit	For 1100/1200 binary pumps	G1312-68711
Support ring for 1290 Infinity LC with seal wash	For 1290/1260 Infinity LC pump	G4220-63010
Wash seal PE for 1290 Infinity LC, 1/pk	For 1290/1260/1220 Infinity LC pump	0905-1718
Bio-inert wash seal	For G5611A	0905-1731
Wash pump seal kit	For 1260 Infinity SFC	G4301-60140
Seal wash kit	For 1260 Capillary/Nano pump	G1376-60005

TIPS & TOOLS

Information on maintenance procedures can be found at **www.agilent.com/chem/LCmaintenancenotes**

Seal Wash

The routine use of highly concentrated buffer solutions (100 mM) will reduce the life of seals and pistons in your pump. Counteract the problem with one of Agilent's seal wash kits, which flush the back of the seal with a wash solvent.
Note: Water/isopropanol (90/10) is recommended as the wash solvent.

Peristaltic pump, 5042-8507

Peristaltic pump with ChemSure tubing, 5065-9952

Seal Wash

Description	Comments	Part No.
Peristaltic pump cassette with silicone tubing	For 1100/1200/1200 RRLC and 1260 Infinity LC pumps	5042-8507
Silicone tubing, 1 mm id, 3 mm od, 5 m		5065-9978
Peristaltic pump with ChemSure tubing	For 1100/1200/1200 RRLC and 1260 Infinity LC pumps	5065-9952
ChemSure tubing for peristaltic pump		5042-8954
Wash Seal and Wash Keeper		
Wash seal PTFE (reversed-phase), 1/pk	For 1100/1200/1200 RRLC, 1120 and 1260/1220 Infinity LC pumps	0905-1175
Seal keeper	For 1100/1200/1200 RRLC and 1120 pumps	5001-3743
Bio-inert seal keeper	For G5611A LC pump	G5611-26210
Bio-inert wash seal	For G5611A	0905-1731
Wash seal gasket, 6/pk	For 1100/1200/1200 RRLC, 1120 and 1260/1220 Infinity LC pumps	5062-2484
Wash seal PE for 1290 Infinity LC, 1/pk	For 1290/1260/1220 Infinity LC pump	0905-1718
Active seal wash kit	For 1100/1200 isocratic or quaternary pumps	G1311-68711
Active seal wash kit	For 1100/1200 binary pumps	G1312-68711
Continuous seal wash kit	For 1100/1200/1200 RRLC pumps	01018-68722
Wash pump seal kit	For 1260 Infinity SFC	G4301-60140
Seal wash kit	For 1260 Capillary/Nano pump	G1376-60005

TIPS & TOOLS

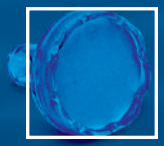
Information on maintenance procedures can be found at **www.agilent.com/chem/LCmaintenancenotes**

Pump Kits

Agilent provides a variety of high quality pump kits for LC systems and applications, containing all fittings and connections required. Pump start-up kits for RRLC pumps and nanoflow LC systems are provided, along with seal wash kits for active, continuous or preventative maintenance seal washing purposes. Pump kits include all relevant fittings, tubing, valves, seals and other components required to produce the highest levels of performance in all LC pumps and systems.

Pump Kits

Description	Kit Contents	Part No.
Start-up Kits		
Pump start-up kit	Includes 1 outlet cap, 5 PTFE frits, 4 piston seals, 1 outlet gold seal, 2 glass solvent inlet filters, 20 µm, 1 cartridge for active inlet valve	G1311-68710
Nanoflow LC start-up kit	Includes PEEK coated fused silica capillaries, column and fittings to start up a Nanoflow LC System	G2228-68700
Seal Wash Kits		
Active seal wash kit	Includes 2 wash seal gaskets, 2 pump seals, peristaltic pump (includes pump cassette and motor), 2 seal keepers, 2 support ring assemblies, seal insert tool, silicone tubing	G1311-68711
Active seal wash kit	Includes 4 wash seal gaskets, 4 pump seals, 2 peristaltic pumps (includes pump cassette and motor), 4 seal keepers, 4 support ring assemblies, seal insert tool, silicone tubing	G1312-68711
Continuous seal wash kit For 1100/1200/1200 RRLC pumps	Includes 2 wash seal gaskets, 4 m flex tubing, 2 pump seals, 1 flow regulator, 2 seal keepers, 2 support ring assemblies, 20 mL Luer-Lok syringe, seal insert tool, abrasive paper	01018-68722
Seal wash kit	Includes 3 adaptor Luer/barbs, 2 film washers, 1 insert tool, 2 seal pumps, 1 clamp hose, 2 seal wash, 1 syringe, 2 support rings, 2 seal keepers, 2 backup rings for 1260 capillary and nano pumps	G1376-60005
Accessory Kits		
1260 Infinity LC binary pump accessory kit	Includes 1 tubing assembly, 1 CAN cable, 1 RRLC system configurator, 1 stainless steel capillary, 400 x 0.17 mm, 1 stainless steel capillary, 700 x 0.17 mm	G1312-68755
1100/1200 pump accessory kit	Includes 3 wrenches, 5 PTFE frits, tubing, capillary and wrist strap	G1311-68705
Pump configuration kit for G1312B with G1158B 2 position/6 port valve	Includes side cover with fixed rail, top and right cover for pump housing, and 6 connecting capillaries. Allows automatic switching between different delay volumes to optimize the system for 2.1 mm id or 4.6 mm id columns	G1312-68726
Capillary pump accessory kit	Includes purge valve and holder, hex keys 2.5 and 3 mm, 2 wrenches 1/2 in x 1/16 in, wrenches 1/4 in x 5/16 in and 14 mm, wrist strap, torque adaptor, stainless steel frit, 0.5 µm	G1376-68705
Accessory kit prep pump/gradient G1361A	Includes stainless steel connecting capillaries, solvent mixer, 2 L solvent bottle, bottle head assembly, filter, glass stop valve, stainless steel union, tubing and other parts	G1361-68707
Online degasser accessory kit	Includes 8 screws, 8 bushings, 4 markers, tubing, syringe and syringe adapter	G1322-68705
Extended flow range kit, 100 µL/min	Includes all parts to go from 20 µL/min to 100 µL/min flow rate in a capillary LC system	G1376-68707
Manual prep injection valve kit, SS	Includes position sensing, 10 mL loop, 25 mL syringe, ring mounting bracket, start cable and SS connecting capillaries, 0.5 mm id, 40 cm and 60 cm	5065-9922



Specific parts for 1290 Infinity LC pumps

Description	Comments	Part No.
Jet Weaver 35 µL/100 µL	For G4220A, G4220B, G4204A	G4220-60006
Jet Weaver 380 µL	For G4220A, G4220B, G4204A	G4220-60012
Accessory kit for 1290 Infinity LC pump		G4220-68705
1290 Infinity LC pump service kit	For 1290 Infinity LC pump	5067-4699
1290 Infinity LC in-line filter (0.3 µm)		5067-4638
In-line filter assembly for 1290 quaternary pump		5067-5407
Internal gold seal for 1290 outlet valve		G4220-20020
Clamp for in-line filter	For G4204A	G4204-40000
Outlet filter 1290 quaternary pump	For G4204A	G4204-60004
Inlet valve for 1290 quaternary pump	For G4204A	G4204-60022
Inlet valve for flush pump	For flexible cube, G4227A	5067-4717
Outlet valve for flush pump	For flexible cube, G4227A	5067-4716
Outlet valve 1290 Infinity LC pump	For 1290 Infinity LC pumps	G4220-60028
Ceramic piston for 1290 Infinity LC pumps (binary and quaternary)	For G4220A, G4220B, G4204A	5067-5678
Pump seal PE for 1290 Infinity LC, 1/pk	For G4220A, G4220B, G4204A	0905-1719
Sapphire piston for 1220/1260/1290	For G5611A, G4302A, G4226A, G1376A	5067-4695
Tubing kit 270 mm, 2/pk		5067-4661
Tubing kit 140 mm, 2/pk		G4220-60035
Shut-off valve	For G4220A, G4220B, G4204A	5067-4124
Inline pressure relief valve kit	For G4220A, G4220B	G4212-68001
Solvent selection valve bridge tube		5067-4697
Pressure relief valve	For G4220A, G4220B	G4212-60022
PEEK seal for inlet weaver assembly	For G4204A	G4204-40005
Support ring integrated for 1290 pump	For G4220A, G4220B	G4220-60015
Support ring for 1290 Infinity LC with seal wash	For 1290/1260 Infinity LC pump	G4220-63010
Wash seal PE for 1290 Infinity LC, 1/pk	For 1290/1260/1220 Infinity LC pump	0905-1718
Seal holder integrated for 1290 pump	For G4220A, G4220B	G4220-60016

1290 Infinity LC in-line filter, 5067-4638

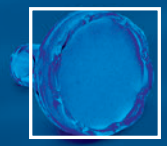
Solvent Reservoir and General Supplies

Prep bottle, 5065-4421

Solvent bottle, amber, 9301-6341

Solvent Reservoir and General Supplies

Description	Part No.
Solvent Reservoir	
Solvent reservoir, 1 L	9301-1420
Solvent reservoir, 1 L, with cap	9301-1421
Solvent reservoir, amber, 1 L	9301-1450
Solvent bottle, clear, 2 L, 2 inlets	5065-4421
Solvent bottle, amber, 2 L	9301-6341
Solvent bottle, clear, 2 L	9301-6342
Bottle Head Assembly	
Bottle head assembly for screw bottle	G1311-60003
Bottle head assembly for F29/32 tapered solvent bottle	G1312-68716
Bottle head assembly with tubing and filter For capillary and nano systems (with stainless steel solvent filter)	G1376-60003
Bottle head assembly for prep system	G1361-60022
Bottle head assembly	G4220-60007
Bottle cap with 3-hole insert	5063-6531



Glass filter, 5041-2168

Solvent inlet filter, 01018-60025

Solvent Filters

Description	Recommended Use	Part No.	Frit Adapter	Part No.	Frit Inlet ID (mm)	Tube OD (mm)
Glass filter, solvent inlet, 20 µm pore size	Analytical scale, micro scale	5041-2168	Frit adapter, PTFE, 3 mm, 4/pk	5062-8517	5	3.2
Glass filter, solvent inlet, 40 µm pore size	Preparative LC	3150-0944	Frit adapter, PTFE for 4.7 mm od tubing	G1361-23205	7	4.7
Glass filter, solvent inlet, 40 µm pore size	Preparative LC	3150-0944	Frit adapter, PTFE, 4 mm	G1361-23204	7	4
Glass filter, solvent inlet, 40 µm pore size	For G2258A Dual Loop Autosampler	3150-0944	Frit adapter, PTFE for 3.2 mm od tubing	G2258-23201	7	3.2
Solvent inlet filter, stainless steel	For use in capillary and nano systems	01018-60025				

Filter frit adapters, 5062-8517

Solvent mixer, 5067-1565

Frits and Adapters

Description	Part No.
Solvent mixer, 1100 Series	G1312-87330
Solvent mixer, short, 200 µL	5067-1565
Frit adapter, PTFE, for 4.7 mm od tubing	G1361-23205
Frit adapter, PTFE, for 3.2 mm od tubing For G2258A Dual Loop Autosampler	G2258-23201
O-ring, Viton, 30 mm	0905-1516
Stainless steel filter assembly with PEEK ring, 2 µm pore size	5022-2192

Cleaning the Solvent Filter

If the filter is in good condition, the solvent will freely drip out of the solvent tube (hydrostatic pressure). If the solvent filter is partially blocked, only very little solvent will drip out of the solvent tube.

Caution: Small particles can permanently block the capillaries and valves of the module.

- Always filter solvents
- Never use the module without solvent inlet filter

Safety Caps

Open or partially covered solvent bottles can lead to the evaporation of solvents and harmful solvent vapors. Prevent solvent evaporation and possible chemical spills with solvent safety caps from Agilent. These safety caps have been designed for optimal sealing with an integrated exhaust valve providing pressurization during solvent extraction and allowing proper solvent flow to your HPLC system. The exhaust valve contains a PTFE membrane to prevent contamination of your solvents from dirt and dust particles.

- Designed to fit all solvent bottles
- Constructed of PTFE and PFA for high chemical resistance
- Caps rotate freely, preventing tube twisting during bottle exchange
- Available in GL40, GL45, S60 and NS29/32 thread sizes

Installation Details for Solvent Safety Caps

Installation Guide for Standard Safety Caps – 4 Simple Steps to Install a Safety Cap

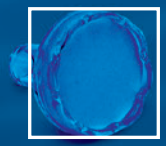
1. Guide the solvent tube through the fitting on the safety cap
2. Re-connect the solvent inlet filter to the solvent tube (open end)
3. Screw the safety cap on top of your solvent bottle
4. Adjust the length of the solvent tube in the solvent bottle and fix the tube by tightening the fitting

Installation Instructions for Safety Caps with Shut-off Valves

These caps have a shut-off valve which can be closed. This keeps the solvent tube in the bottle during maintenance activities with no risk of having solvent dropping out of the flow path.

4 Simple Steps to Install a Safety Cap with Shut-off Valves

1. Cut the solvent tube in 2 parts
2. Connect the upper part to the fitting (red or blue) on the safety cap (Top)
3. Cut a suitable length and connect the lower part to the fitting on the safety cap (Bottom)
4. Screw the safety cap on top of your bottle



Safety Caps and Accessories

Description	Kit Contents	Part No.
Safety Cap II with 2 ports – NS29/32	Includes 1 safety cap, 2 fittings 3.2 mm PFA, 1 shut-off valve with 1 µm PTFE membrane	5043-0221
Safety Cap I with 1 port – GL45	Includes 1 safety cap, 1 fitting 3.2 mm PFA, 1 shut-off valve with 1 µm PTFE membrane	5043-0223
Safety Cap II with 2 ports – GL45	Includes 1 safety cap, 2 fittings 3.2 mm PFA, 1 shut-off valve with 1 µm PTFE membrane	5043-0222
Safety Cap I with 1 port for prep – GL45	Includes 1 safety cap, 1 fitting 4.7 mm PFA, 1 shut-off valve with 1 µm PTFE membrane	5043-0300
Safety Cap I with 1 shut-off valve – GL45	Includes 1 safety cap, 1 fitting 2.3 mm PFA, 1 fitting 2.3 mm PTFE, 1 shut-off valve with 1 µm PTFE membrane	5043-0225
Safety Cap II with 2 shut-off valves – GL45	Includes 1 safety cap, 2 fittings 2.3 mm PFA, 2 fittings 2.3 mm PTFE, 2 shut-off valves	5043-0224
Safety Cap IV with 4 ports – 1 leak port – GL45	Includes 1 safety cap, 4 fittings 2.3 mm PFA, 4 fittings 1.6 mm PFA, 4 fittings 2.3 mm PFA, 1 leak hose. Must be used with charcoal filter, P/N 5043-0230.	5043-0226
Safety Cap IV with 4 ports – 1 leak port – S60	Includes 1 safety cap, 4 fittings 2.3 mm PFA, 4 fittings 1.6 mm PFA, 1 leak hose. Must be used with charcoal filter, P/N 5043-0230.	5043-0227
5 L waste can GL45 with 4 ports and 1 leak port	Includes 5 L waste can, 1 safety cap (P/N 5043-0226), 2 ports collector PTFE. Must be used with charcoal filter, P/N 5043-0230.	5043-0242
10 L waste can S60 with 4 ports and 1 leak port	Includes 10 L waste can, 1 safety cap (P/N 5043-0227), 2 ports collector PTFE. Must be used with charcoal filter, P/N 5043-0230.	5043-0243
Safety waste set S50	Includes 5 L space saving waste can, 1 safety cap, 4 fittings 2.3 mm PFA, 1 x 6.4 mm tubing connector, charcoal filter (48 g)	5043-0831
Shut-off valve with 1 µm PTFE membrane*		5043-0232
Thread adapter GL45-GL40 (PTFE)		5043-0234
Thread adapter PTFE, GL45-GL38		5043-0272
Thread adapter GL45-GPI38-23, (PTFE)		5043-0832
Safety funnel + cover S60, PEHD, conductive		5043-0828
Safety funnel + cover S60, PEHD		5043-0829
Tool for fitting		5043-0830

*Valve change is recommended every six months

Safety Cap II, 5043-0224

Safety Cap IV for GL45 bottles, 5043-0226

Safety Cap IV for S60 threaded waste bottles, 5043-0227

5 L waste can assembly, GL45, 5043-0242

10 L waste can assembly, S60, 5043-0243

Charcoal filter, 48 g, 5043-0230

Screw plug, 1/4 in, PTFE, 5043-0231

Replacement PTFE filter (replace every six months), 5043-0232

Screw plug, 1/8 in, PFA, 5043-0233

2 ports collector (PTFE), 5043-0235

2.3 mm fittings to connect waste tubes from the purge valve, 5043-0228

1.6 mm fitting to connect wash tubes going to the peristaltic pump of the High Performance ALS/Wellplate Sampler, 5043-0229

Replacement Parts for Safety Caps

Description	Unit	Part No.
Fitting for 3.2 mm tube PFA	5/pk	5043-0255
Fitting for 2.3 mm tube PFA	5/pk	5043-0228
Fitting for 1.6 mm tube PFA	5/pk	5043-0229
Charcoal filter (48 g)		5043-0230
Screw plug 1/4 in, PTFE		5043-0231
Shut-off valve with 1 µm PTFE membrane*		5043-0232
Screw plug 1/8 in, PFA	5/pk	5043-0233
2 ports collector (PTFE)		5043-0235
5 L waste can GL45		5043-0236
10 L waste can S60		5043-0237
3 ports collector		5043-0238
Adapter for two 3.2 mm tubes		5043-0239

*Valve change is recommended every six months

Vacuum Degassers

A vacuum degasser is recommended for:

- Maximum sensitivity in the low UV wavelength range
- High injection precision
- High retention time reproducibility
- Flow rates below 0.5 mL/min

Vacuum Degasser Care

- To generally clean the vacuum degasser tubing, flush the system with isopropanol
- Flush the degasser with water after using buffers
- Speed solvent changes by drawing solvent through the degasser and tubing with syringe adapter kit

Mounting tool, 0100-1710

Plastic tubing cutter, 8710-1930

Ferrules and rings, 5063-6598

PPS nuts, 5063-6599

Vacuum Degassers

Description	Comments	Part No.
Tubing kit, degasser to pump, 4/pk, 30 cm pieces of tubing with screws and bushings	For G1322A, G1379A/B	G1322-67300
µ-Vacuum degasser tubing kit	For G1322A, G1379A/B	G1379-67310
µ-Vacuum degasser tubing kit	For G1379B	5042-8922
Online degasser accessory kit Includes 8 screws, 8 bushings, 4 markers, tubing, syringe, and syringe adapter	For G1322A, G1379A/B	G1322-68705
Tubing kit for G1379B	For G1379A, G1379B	5067-5380
Tubing kit for G1379A	For G1379A	5067-5388
Vacuum chamber replacement kit Includes two P/N 5067-4798 and one P/N 5067-5380	For G1379A, G1379B	5067-5383
Vacuum chamber replacement kit	G1379A	5067-5387
Replacement chamber (2 channel)	For G1379A, G1379B	5067-4798
Inlet tubing	For quaternary pumps	5067-5378
Mounting tool for flangeless nut	For G1322A, G1379A/B	0100-1710
Plastic tubing cutter	For G1322A, G1379A/B	8710-1930
Tefzel ferrules and SS lock rings, 1/8 in, 10/pk	For G1322A, G1379A/B	5063-6598
PPS nuts, 1/8 in, 1/4-28 thread, 10/pk	For G1322A, G1379A/B	5063-6599
Union, 1/4-28 thread, polypropylene	For G1322A, G1379A/B	5022-2155
PTFE solvent tubing, 5 m, 1.5 mm id, 3 mm od	For G1322A, G1379A/B	5062-2483
Syringe adapter, 1/16 in od, 2 in long	For G1322A	9301-1337

Autosampler Supplies

Your Agilent autosampler is designed to deliver accurate measurements, precise injection volumes, and high-quality data. Agilent provides a number of injection loops and trays for your application needs.

Sample loop, 01078-87302

Flex loop kit, 20 µL, G4226-60310

Injection Loops

Description	Agilent Autosampler	Part No.
PEEK loop capillary for 100 µL sample	G1213 / 29 A/B	G1313-87309
Loop extension capillary, stainless steel 900 µL	G1329A/B, G2260A	G1313-87303
5 mL Multi draw loop	G2260A	G2260-68711
Extended loop capillary, 0.25 mm, 180 cm	G1389A	G1329-87302
Loop capillary, 8 µL	G1389A	G1375-87303
Capillary loop, 100 µL	G1313A, G1329A/B, 1120, 1220 Infinity LC	01078-87302
Flex loop kit, 20 µL	G1367E, G4226A	G4226-60310
Flex loop kit, 40 µL	G1367E, G4226A	5067-4703
Flex loop kit, 100 µL	G1367E, G4226A	5067-4710
Loop capillary assembly well plate sampler	G1367A/B/C	G1367-87300
Flex loop kit, 20 µL	G1367E, G4226A	G4226-60310
Loop capillary, 40 µL	G1367D	G1377-87310
Loop assembly	G1367E, G4226A	G4226-60310
Loop capillary, 8 µL	G1377A	G1375-87315
Loop capillary, 40 µL	G1377A	G1377-87300

(Continued)

Injection Loops

Description	Agilent Autosampler	Part No.
Piston seal	G2258A Dual Loop ALS	0905-1599
Buffer loop tubing assembly, PTFE	G2258A Dual Loop ALS	G2258-87300
Piston, 5 mL	G2258A Dual Loop ALS	G2258-60003
Needle kit	G2258A Dual Loop ALS	G2258-68710
Buffer loop extension assembly	G2258A	G2258-60002
Capillary loop, 2 µL, stainless steel	G2258A	5068-0031
Capillary loop, 5 µL, stainless steel	G2258A	5068-0032
Capillary loop, 10 µL, stainless steel	G2258A	5068-0051
Capillary loop, 20 µL, stainless steel	G2258A	5068-0033
Capillary loop, 50 µL, stainless steel	G2258A	5068-0034
Capillary loop, 100 µL, stainless steel	G2258A	5068-0035
Loop, 2 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6457
Loop, 10 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6458
Loop, 20 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6459
Loop, 50 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6460
Loop, 100 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6461
Loop, 250 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6462
Loop, 500 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6463
Loop, 1000 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6464
Loop, 2000 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6465
Loop, 5000 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6466
Loop, PEEK 2 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6469
Loop, PEEK 5 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6470
Loop, PEEK 10 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6467
Loop, PEEK 20 µL, Cheminert Injection Valve	G4278A, G4277A	5188-6468

Autosampler Trays

Vial plate, G2255-68700

Vial plate, 5022-6539

Plate for 27 Eppendorf Safe-lock tubes, 5022-6538

Autosampler Trays

Description	Part No.
For G1313A, G1329A/B, 1120, 1220 Infinity LC samplers	
100 position tray for 2 mL vials	G1313-44510
100 position tray for 2 mL vials, thermostattable	G1329-60011
40 position tray for 2 mL vials	G1313-44512
15 position tray for 6 mL vials	G1313-44513
External vial tray for 17 vials (disposal position)	G1313-60004
Disposal tube for external vial tray	G1313-27302
For G1367A/B/C/D/E, G2258A, G4226A	
Well plate tray, 2 well plates, 10 vials (supports 50 mm plates)	G2258-60011
Vial plate for 54 x 2 mL vials, 6/pk	G2255-68700
Vial plate for 15 x 6 mL vials	5022-6539
For G1367A/B/C/D/E	
100 position tray for micro vials Also for G4226A	G4226-60021
Plate for 27 Eppendorf Safe-lock tubes, 0.5/1.5/2 mL	5022-6538
For G2257A	
8.5 in well plate rack, 2/pk For 16 shallow well plates, 4 deep well plates (max 48 mm height), or 6 vial racks	G2255-68709
10 in well plate rack, 2/pk For 20 shallow well plates (max height 16 mm), not compatible with deep well plates	G2255-68710
8.5 in well plate rack extension Includes 3 racks for 3 x 16 shallow well plates, 2 x 4 deep well plates (max 48 mm height), or 3 x 6 vial racks	G2255-68720

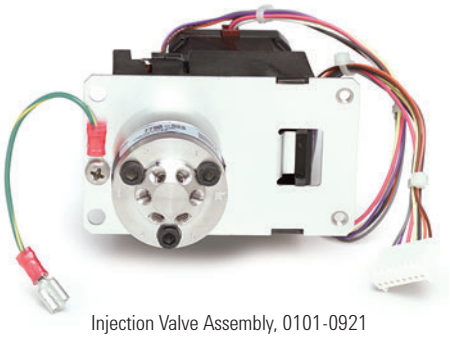
TIPS & TOOLS

Agilent has made vial, cap and septum selection easy with its new Interactive Vial Selection Tool, available online in both desktop and mobile versions. The tool identifies the right vial and closures for your particular application, and provides the rationale for the choices offered. Visit **www.agilent.com/chem/SelectVials**

Injection Valves

Valve	Use With	Part No.	Kit	Rotor Seal Material	Rotor Seal	Stator	Stator Face
2 position/6 port injection valve, 400 bar	G1313A, G1329A, G1367A/B, 1120	0101-0921	0101-1257	Vespel	0100-1853	0100-1850	0100-1851
				Tefzel	0100-1849		
				PEEK	0100-2231		
2 position/6 port micro injection valve, 400 bar	G1377A, G1389A	0101-1050		Vespel	0100-2088	0100-2089	
2 position/6 port injection valve, max 600 bar	G1329B, G1367C SL, G1367D SL Plus, G1367E, 1220 Infinity LC	0101-1422		PEEK	0101-1416	0101-1417	
2 position/10 port injection valve	G2258A	0101-1385		Vespel		0101-1390	
2 position/6 port MBB injection valve, 400 bar	G2260A	0101-1267	0101-1268	PEEK	0101-1268*	0100-2195	
2 position/6 port ultra high pressure valve, 1200 bar	G4226A	5067-4114		Vespel	5068-0007	5068-0006	
2 position/6 port injection valve, 1200 bar PAL Injector (CTC)	G4277A, G4278A	5067-4123		Vespel	5068-0030	5068-0029	

*Includes seal and stator face



Injection Valve Assembly, 0101-0921

2 position/10 port micro valve head, 600 bar, 5067-4144

Stator for 2 position/6 port switching valve, 600 bar, 0101-1417

Stator for 2 position/6 port ultra high pressure valve, 1200 bar, 5068-0006

Needles and Needle Seats

The needle should be replaced when it becomes bent, burred or blunt, or when it is leaking or plugged. You should suspect a leak if you notice a trail of buffer crystals on the needle seat. The needle seat can become blocked if the sample contains particulates, as this is the first restriction that the sample experiences. If this occurs, try backflushing the needle seat capillary.

Needles and Needle Seats

Agilent Autosampler	Needle Assembly Description	Part No.	Compatible with Needle Seat	Part No.
G1313A, G1329A/B, 1120, 1220 Infinity LC (automated sampler only)	Needle assembly, standard autosampler	G1313-87201	Standard needle seat, PEEK 0.17 mm id capillary, 2.3 µL	G1329-87017
			Standard needle seat, PEEK 0.12 mm id capillary, 1.2 µL	G1329-87012
G1313A, G1329A, 1120, 1220 Infinity LC (automated sampler only)	Needle assembly for use with PEEK seat	G1313-87203	Standard needle seat, PEEK 0.17 mm id capillary, 2.3 µL	G1313-87102
G1313A, G1329A/B Infinity LC (automated sampler only)	Needle, 900 µL, 1100/1200	G1313-87202	Standard needle seat, PEEK 0.17 mm id capillary, 2.3 µL	G1329-87017
G1313A	Needle seat, PEEK without capillary	G1313-87104		
G1313A, G1329A, G1389A, G2260A, 1120 and 1220 Infinity LC	Seat adapter	G1313-43204		
G1389A	µ-LC needle for G1329 autosampler	G1329-80001	Micro LC needle seat 100 µm id capillary, 1.2 µL	G1329-87101
			Needle seat/capillary, 50 µm id, 0.3 µL 50 µm id capillary, 0.3 µL	G1329-87103
G1367A/B	Needle assembly, well plate autosampler (green)	G1367-87200	Needle seat Vespel, well plate autosampler 0.17 mm id capillary, 2.3 µL	G1367-87101
	Needle assembly, standard well plate sampler	G1367-87201	Needle seat Vespel, well plate autosampler 0.12 mm id capillary, 1.2 µL	G1367-87102

(Continued)

Seat assembly 0.12 mm id
standard autosampler, G1329-87012

Seat assembly 0.17 mm id
standard autosampler, G1329-87017

Needles and Needle Seats

Agilent Autosampler	Needle Assembly Description	Part No.	Compatible with Needle Seat	Part No.
G1367C and G1367D	Needle assembly for G1367D	G1367-87202	Needle seat, 600 bar, with seat capillary 0.17 mm id x 100 mm, 0.8 mm od	G1367-87017
			Needle seat, PEEK 600 bar, with seat capillary 0.12 mm id x 100 mm, 0.8 mm od	G1367-87012
G1367E	Needle assembly, 1290/1260 Infinity LC autosampler	G4226-87201	Needle seat, PEEK 600 bar, with seat capillary 0.12 mm id x 100 mm, 0.8 mm od	G1367-87012
G4226A	Needle assembly, 1290/1260 Infinity LC autosampler	G4226-87201	Seat assembly, 0.12 mm, 1290 Infinity LC	G4226-87012
			Needle seat for 1290 low dispersion	G4226-87020
G1377A	Needle assembly, micro well plate sampler	G1377-87201	Micro needle seat with seat capillary, 100 µm	G1377-87000
			Micro needle seat with seat capillary, 75 µm	G1377-87001
			Micro needle seat with seat capillary, 50 µm	G1377-87002
G2258A	Needle kit	G2258-68710	Twin needle seat, dual loop autosampler	G2258-87102
G2260A	Needle assembly, prep autosampler	G2260-87201	Needle seat, prep autosampler 0.5 mm id, 20 µL	G2260-87101
G4277A, G4278A	PEEK needle seal, Valco, 22 gauge, 10/pk	5188-6476		
G4277A, G4278A	PTFE needle seal, Valco, 22 gauge, 10/pk	5188-6477		
G4277A, G4278A	DLW 1 needle kit, 1/ea	G4277-80125	Needle seal, Rheodyne 7991, 22 g	5188-6478
G4277A, G4278A	DLW 2 holding loop (stainless steel) assembly with needle	G4277-60602	Needle seal, Rheodyne 7991, 22 g	5188-6478
G4270/71 - CTC	Syringe needle	9301-0407		

Needle assembly for 1290/1260 Infinity LC, G4226-87201

Needle seat, PEEK 600 bar, with seat capillary, G1367-87012

Seat assembly for 1290/1260 Infinity LC, G4226-87012

Metering Device Supplies

Infrequently, the metering device seal and piston may need replacement if you see loss in injection volume precision or metering device leaking.

Metering Device Supplies

Piston Description	Use With	Part No.	Seal Description	Part No.
Sapphire piston, 40 µL	G1367D, G1389A, G1377A, G4226A	5064-8293	Piston seal, 2 mm, for G1367D, G1389A, G1377A	5022-2175
			Piston seal for G4226A	0905-1717
Sapphire piston (standard base size), 100 µL	G1313A, G1329A/B, G1367A/B/C, G1367E	5063-6586	Piston seal PTFE (reversed-phase), 2/pk	5063-6589
Sapphire piston, slim base, 100 µL	G5667A	5067-4695	Bio-inert piston seal	G5611-21503
Sapphire piston, 900 µL	G1313A, G1329A/B, G1367E	5062-8587	Metering valve seal	0905-1294
Piston, 5 mL	G2258A	G2258-60003	Piston seal	0905-1599

Sapphire piston, 5062-8587

Piston seals, 5063-6589

Accessories

Description	Use With	Part No.
Seat adapter	G1313A, G1329A, G1389A, G2260A, 1120 and 1220 Infinity LC	G1313-43204
Finger caps, for autosampler gripper, 15/pk	G1313A, G1329A, G1389A, G2260A, 1120 and 1220 Infinity LC	5063-6506
Tool for micro seat capillary mounting	G1377A	G1377-44900
Large volume injection kit for the Agilent 1290 Infinity autosampler G4226A	For G4226A autosampler	G4216-68711
Syringe, 25 µL HPLC injector syringe		9301-0633
Seat extension capillary, 0.5 mL, 0.5 mm id	G1329A/B	G1313-87307

Autosampler Kits

Description	Kit Contents	Part No.
Upgrade Kits		
Multidraw upgrade kit for G1313A/G1327A/G1329A autosamplers	Includes 500 µL capillary, 1500 µL capillary and ZDV union	G1313-68711
Large volume injection kit for the Agilent 1290 Infinity autosampler G4226A	Includes 1200 bar multidraw tech note, capillary seat, 80 µL, 0.5 mm id, 0.9 mm od	G4216-68711
Flex loop kit, 40 µL, for the Agilent flexible cube G4277A	Increases the maximum draw volume of the autosampler	5067-4703
Door Replacement Kits		
Cabinet upgrade kit for 1260 Infinity LC sampler	Includes side panel, top cover and front door	G1329-68736
Cabinet kit for G1367E and G4226A	Includes side panel, base plate and top cover	5067-4662
Door replacement kit for 1260 Infinity LC sampler	Includes front and side doors	G1329-68737
Door repair kit for G1367E and G4226A	Includes front door, carrier bolt	G4226-67001
Light protection kit for G1329A	Includes opaque front and side doors and front cover	G1329-68718
Door replacement kit for G1329A	Includes transparent front and side doors	G1329-68727

Cabinet upgrade kit, G1329-68736

Door replacement kit, G1329-68737

Fraction Collector Supplies

Agilent fraction collectors are designed to process data in real-time for instantaneous and precise fraction collection, while increasing throughput on your purification system. So you can be certain that you are getting the highest degree of recovery and purity for your fractions – even with low flow rates.

Fraction Collector Maintenance Schedule	
Procedure	**When to Perform**
Analytical and Preparative Fraction Collector Maintenance	
Replace the inlet/waste tubing	Once per year, or when you notice signs of damage or wear
Replace the valve-to-needle tubing	Once per year, or when you notice signs of damage or wear
Exchange the preparative needle assembly	When the needle shows signs of damage or blockage
Exchange the analytical needle assembly	When the needle shows signs of damage or blockage, or when using the short needle assembly with tall test tubes (>45 mm)
Exchange the diverter valve	When the valve is leaking or not switching properly
Exchange the internal tray	When the flow delay sensor no longer works
Repair or exchange a funnel within the internal tray or funnel tray	When defective, leaky, blocked or contaminated
Micro Fraction Collector/Spotter Maintenance	
Replace fraction collector capillary	At least every six months or when worn, blocked or damaged
Exchange the capillary guiding assembly	When bent or damaged
Exchange the internal tray	When the flow delay sensor no longer works properly
Exchange the flap septum and waste tubing	At least every six months or when defective or contaminated

Fraction Collector Supplies

Funnel tray for G1364C fraction collector, G1364-84532

Collecting Tubes and Trays

Tray Part No.	Hole Diameter (mm)	No. of Tubes	Tube Dimensions	Unit	Tube Part No.
G1364-84523	30	40	30 x 100 mm	100/pk	5042-6458
			30 x 48 mm	100/pk	5042-6470
G1364-84524	25	60	25 x 100 mm	100/pk	5042-6459
G1364-84525	16	126	16 x 100 mm	250/pk	5022-6532
			16 x 48 mm	100/pk	5022-6533
G1364-84516	12	215	12 x 100 mm	250/pk	5022-6531
			12 x 48 mm	100/pk	5022-6534
G1364-84532	Funnel tray	40	Any size		

Collection plate, showing 96-position closing mat, 5042-1389

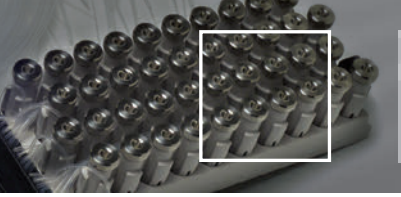
Vial plate, G2255-68700

Plate for 27 Eppendorf Safe-lock tubes, 5022-6538

Vial plate, 5022-6539

Well Plate Trays

Tray Part No.	Description	Well Plate Part No.	Description	Unit
G1364-84521	Tray for 4 well plates, cooled	5042-1385	96-well plates, 0.5 mL, polypropylene	120/pk
		5042-1386	96-well plates, 0.5 mL, polypropylene	10/pk
G1364-84531	Tray for 4 well plates, adjustable, cooled	5042-6454	96-deep well plates, 1 mL, polypropylene	50/pk
		5042-1389	Closing mats for 96-well plates, silicone, pre-slit, fits 96-well plates P/N 5042-1385 and P/N 5042-1386 only	50/pk
G1364-84522	Tray for 2 well plates, 10 funnels, cooled	5042-1388	384-well plates, 90 µL, polypropylene	30/pk
		5065-4402	96-deep well collection plates with glass inserts, caps, and septa, pre-assembled, 0.35 mL	
G1367-60001	Tray for 2 well plates, 10 vials, 2 mL	5188-5321	Glass inserts, 350 µL	1000/pk
		5188-5322	Caps/septa for glass inserts	1000/pk
		5042-8502	96-well plates, 150 µL, conical, polypropylene	25/pk
		G2255-68700	Vial plate for 54 x 2 mL vials	6/pk
		5022-6538	Plate for 27 Eppendorf Safe-lock tubes, 0.5/1.5/2 mL	
		5022-6539	Vial plate for 15 x 6 mL vials	



Fraction Collector Supplies

Fraction Collector Capillary Kits and Needles

Module	Max Flow Rate	Tube Size	Tubing Kit	Needle Length	Needle	Typical Use
G1364B	100 mL/min	0.8 mm id	G1364-68711		G1364-87201	Tubes (max 100 mm)
G1364C	1 mL/min	0.15 mm id	G1364-68723	50 mm	G1367-87200	Tubes (max 48 mm), well plates, vials
	10 mL/min	0.25 mm id	G1364-68712	50 mm	G1367-87200	
	10 mL/min	0.25 mm id	G1364-68712	20 mm	G1364-87202	Funnel tray (tubes max 75 mm)
	100 mL/min	0.8 mm id	G1364-68711	20 mm	G1364-87202	
G1364D	4 µL/min	25 µm id	G1364-87304			MALDI targets, well plates
	4-30 µL/min	50 µm id	G1364-87305			
	30-100 µL/min	100 µm id	G1364-87306			

General Supplies

Agilent Autosampler	Description	Part No.
G1364A	Needle carrier without needle, prep	G1364-60011
	PFA Needle, 0.8 mm id	G3160-65324
For G1364C	Needle assembly analytical scale (20 mm)	G1364-87202
G5664A Bio-inert fraction collector	Bio-inert PEEK tube from valve to needle	G5664-86703

TIPS & TOOLS

Information on maintenance procedures can be found at **www.agilent.com/chem/LCmaintenancenotes**

G1364D Micro Fraction Collector Supplies

Description	Part No.
MALDI spotting adapter for G1364D	G1364-83205
Well plate adapter assembly for G1364C/D	G1364-60021
Flap septum, PEEK, for internal tray	G1364-27107
Fused silica/PEEK capillary, 25 µm, 50 cm	G1364-87304
Fused silica/PEEK capillary, 50 µm, 50 cm	G1364-87305
Fused silica/PEEK capillary, 100 µm, 50 cm	G1364-87306
Waste tube, PTFE, 20 cm, 1.4 mm id, 2.0 mm od	G1364-86711
MALDI plate carrier Bruker	5022-6541
MALDI plate carrier Bruker PAC	5022-6546
MALDI plate carrier ABI	5022-6542
MALDI plate carrier ABI Opti-TOF	5023-0238
MALDI plate carrier Agilent	5022-6543
Target plate for AP-MALDI LC/MS	G1972-60025
Calibration plate Bruker	5023-0208
Calibration plate ABI 192	5023-0209
Calibration plate ABI 10x10 & 20x20	5023-0213
Calibration plate Agilent	5023-0214
On-line matrix kit for MALDI spotting Includes BCD board/cable, syringe, needles, adapters, connector and capillary	G1364-68706
Union, female to female 1/4-28	5042-8517
Adapter, male Luer to female 1/4-28	5042-8518
Micro T-connector, PEEK, swept volume 29 nL, with 1/32 in id fittings	5042-8519
MALDI spotting tips, PTFE, 10/pk	G1364-81701

MALDI spotting adapter, G1364-83205

Well plate adapter assembly, G1364-60021

MALDI plate carrier Bruker, 5022-6541

Calibration plate Bruker, 5023-0208

Union, female to female, 5042-8517

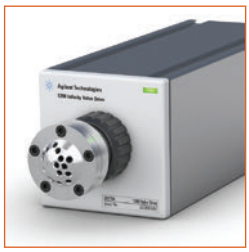
Adapter, male Luer to female, 5042-8518

Micro T-connector, PEEK, 5042-8519

Valve Supplies

Agilent's industry-leading Manual Injection Valves are designed to ensure trouble-free operation with your HPLC System.

Our valves also feature patented "Make-Before-Break" architecture that allows you to switch between LOAD and INJECT positions without interrupting the flow. So you can analyze more samples in less time.



Valve Maintenance Notes

- Vespel is a polyimide with low wear and high chemical resistance. Vespel tolerates a pH range of 0 to 10. More basic solutions dissolve Vespel, which damages the rotor seal
- PEEK offers a high chemical resistance and versatility, and will tolerate the entire pH range from 0 to 14
- Tefzel is recommended for use in applications where PEEK cannot be used, such as methylene chloride or DMSO in higher concentrations

pH Range	0-7	7-10	10-14
Vespel			
PEEK			
Tefzel			

Injection Valves

Injection Valves

Valve	Use With	Part No.	RheBuild Kit	Rotor Seal Material	Rotor Seal	Stator	Stator Face
2 position/6 port injection valve, 400 bar	G1313A, G1329A, G1367A/B, 1120	0101-0921	0101-1257	Vespel	0100-1853	0100-1850	0100-1851
				Tefzel	0100-1849		
				PEEK	0100-2231		
2 position/6 port micro injection valve, 400 bar	G1377A, G1389A	0101-1050		Vespel	0100-2088	0100-2089	
2 position/6 port injection valve, max 600 bar	G1329B, G1367C SL, G1367D SL Plus, G1367E, 1220 Infinity LC	0101-1422		PEEK	0101-1416	0101-1417	
2 position/10 port injection valve	G2258A	0101-1385		Vespel		0101-1390	
2 position/6 port MBB injection valve, 400 bar	G2260A	0101-1267	0101-1268	PEEK	0101-1268*	0100-2195	
2 position/6 port ultra high pressure valve, 1200 bar	G4226A	5067-4114		Vespel	5068-0007	5068-0006	
Bio-inert 2 position/6 port injection valve	G5667A	5067-4131		PEEK	5068-0099	5068-0060	0100-1851

*Includes seal and stator face

Valve head, 2 position/6 port, 600 bar, 5067-4137

Stator for 2 position/6 port ultra high pressure valve, 1200 bar, 5068-0006

Switching Valve and Quick Change Valve Supplies

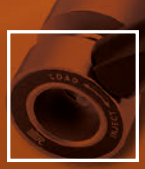
A set of valve types specially designed for Agilent HPLC systems allows you to extend your HPLC applications. New valve offerings give you:

- More flexibility in solvent selection and column selection
- New automation capabilities in sample preparation
- Increased sample throughput through alternating column regeneration
- Increased separation performance with multidimensional chromatography

Internal Switching Valves Replacement Parts

Description	Use With	Part No.	Rotor Seal Material	Rotor Seal	Stator Face	Stator Head	Bearing Ring	Repair Kit
2 position/6 port, 400 bar	G1316A/B	G1316-67005	Tefzel	0100-1854	0100-1851	0100-1850	0100-1852	0101-1258
			Vespel	0100-1855				
			PEEK	0100-2233				
2 position/10 port CSV, 400 bar	G1316A	G1316-67007	PEEK	Repair Kit	Repair Kit	0101-1362	0100-1852	0101-1360
2 position/6 port HP CSV, 600 bar	G1316A 1260 Series/ G1316B	G1353-68750	PEEK	0101-1409		0101-1417	1535-4045	
2 position/6 port micro CSV, 400 bar	G1316A	G1316-67006	Vespel	0100-2087		0100-2089		

Stator for 2 position/6 port switching valve, 600 bar, 0101-1417

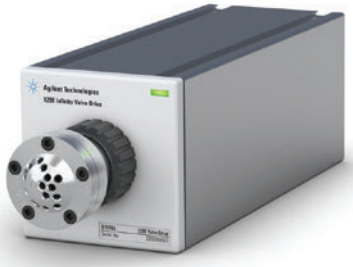


Quick-Change Valves Replacement Parts

Use with G1316C, G1170A, G4227A.

Description	Part No.	Rotor Seal Material	Rotor Seal	Stator Face	Stator Head	Bearing Ring
2 position/6 port valve head, 600 bar	5067-4137	PEEK	0101-1409		0101-1417	1535-4045
2 position/6 port valve head, 1200 bar	5067-4117	Vespel	5068-0008		5068-0006	1535-4045
2 position/10 port micro valve head, 600 bar	5067-4144	PEEK	0101-1415		0101-1421	1535-4045
2 position/10 port valve head, 600 bar	5067-4145	PEEK	0101-1415		5068-0165	1535-4045
2 position/10 port valve head, 1200 bar	5067-4118	Vespel	5068-0012		5068-0011	1535-4045
6-Column selector valve head, 600 bar	5067-4146	PEEK	5068-0076		5068-0077	1535-4045
6-Column selector valve head, 1200 bar	5067-4142	Vespel	5068-0067		5068-0077	1535-4045
8 position/9 port valve head, 600 bar	5067-4107	PEEK	5067-4111		5068-0001	1535-4045
8 position/9 port valve head, 1200 bar	5067-4121	Vespel	5068-0002		5068-0001	1535-4045
2D-LC, valve head, 1200 bar	5067-4214	Vespel	5068-0116		5068-0115	1535-4045
Bio-inert 12 position/13 port valve head, 210 bar	5067-4159	PEEK	0101-1288	0101-1288	5068-0097	1535-4045
Bio-inert 2 position/6 port valve head, 600 bar	5067-4148	PEEK	0101-1409	0100-1851	5068-0060	1535-4045
Bio-inert 4-Column selector, 600 bar	5067-4134	PEEK	5068-0045	5068-0093	5068-0044	1535-4045
Bio-inert 2 position/10 port valve head, 600 bar	5067-4132	PEEK	5068-0041	5068-0095	5068-0040	
Prep scale 2 position/10 port valve head, 600 bar	5067-4193	PEEK	5068-0153		5068-0152	
Prep scale 8 position/9 port valve head, 600 bar	5067-4194	PEEK	5068-0155		5068-0154	
Stream Selection valve head, 1200 bar	5067-4176	Vespel	5068-0125		5068-0124	

Valve head, 2 position/6 port, 600 bar, 5067-4137



6-Column selector valve head, 1200 bar, 5067-4142

Valve head, 2 position/10 port for ultra high pressure, 1200 bar, 5067-4118

Rotor seal, 2 position/6 port, 600 bar for G1316B, 0101-1409

Manual Injection Valves

Agilent provides the latest developments in LC injection technology from Rheodyne.

- Continuous flow path with "Make-Before-Break" design
- Sample capacity
- Choice of stainless or PEEK flow path
- Easy access to fittings due to wide 30° port angles

7725i manual injection valve, 5063-6502

Series 7725i and 9725i Analytical Injection Valves

Stainless steel (SS) 7725i and PEEK 9725i valves are the most popular injection valves for analytical HPLC. Features include:

- A 20 µL loop (installed). Loops are also available in stainless steel or PEEK from 5 µL to 5 mL (10 mL for PEEK)
- Make-Before-Break (MBB) technology allows switching without flow interruption
- Wide 30° port angles offer easier access to fittings
- Built-in position sensing switch provides the chromatograph with a reproducible start signal

Series 3725i-038 and 3725i Preparative Injection Valves

The series 3725i-038 (stainless steel) and 3725i (PEEK) are the most suitable manual valves for large sample volumes, high flow rates, and preparative columns sized 1.0-10 cm in diameter.

- Versatile ports accommodate 1/8 in (3.2 mm) and 1/16 in (1.6 mm) od tubing.
  Note: 1/16 in od tubing requires an adapter, P/N 5067-1503
- 1.0 mm diameter passages allow flow rates up to 800 mL/min with virtually no pressure drop
- Make-Before-Break technology allows switching without flow interruption
- High reproducibility for both partial-filling and complete-filling methods
- Sample range is 100 µL to 20 mL (10 mL loop is installed)
- Flow range is 10 to 800 mL/min
- Built-in position sensing switch gives the chromatograph a reproducible start signal

Manual Injection Valves with Position Sensing Switches

Description	Comments	Part No.	Rotor Seal Material	Rotor Seal	Stator Face	Stator Head	Bearing Ring	Isolation Seal	Repair Kit	Needle Port Adaptor
2 position/ 6 port valve, 400 bar	Analytical, G1328A/B	5063-6502	Tefzel	0101-0620	0100-1859	0100-1860	1535-4045	1535-4046	0101-1254	
			Vespel	0101-0623						
			PEEK	0101-1255						
2 position/ 6 port valve, 600 bar	Analytical, G1328C	5067-4191	PEEK	5068-0052	0100-1859	5068-0053	1535-4045	1535-4046	0100-1859	0100-1859
Manual injection valve, 400 bar for 1120/1220 Infinity LC	1120/1220 Infinity for 1120 LC System	5067-4104	PEEK	5067-4105		0100-1850				5067-1581
Manual injection valve, 600 bar	Analytical for 1220 LC System	5067-4202	PEEK	5068-0082		0101-1417				
Manual injection valve, 600 bar	Analytical for 1220 LC System	5067-4202	PEEK	0101-1409		0101-1417	1535-4045			5067-1581
Bio-inert 2 position/ 6 port manual injection valve	Analytical, Bio-inert	5067-4158	PEEK	5068-0082	0100-1851	5068-0060	1535-4045			5067-1581
Manual injection valve, 400 bar, (9725i)	Analytical	0101-1253	Tefzel	0101-0620	0100-1859			1535-4046		
Manual prep injection valve, SS	Preparative	0101-1232	PEEK	0101-1233				1535-4046		
Manual prep injection valve, PEEK	Preparative	0101-1231	PEEK	0101-1233				1535-4046		

Manual Injection Valve Replacement Parts

- Rotor seals wear with use and need routine replacement
- Stators only need replacement if the ports are damaged
- PEEK rotor seals are incompatible with concentrated nitric and sulfuric acids

Manual Injection Valve Sample Loops

The right mix of injection valve sample loops are available for your application needs. Agilent offers factory-cut and finished loops of the highest quality.

- Stainless steel loops are square cut and free of burrs for a flush connection
- Flexible PEEK loops have a clean, straight cut for low dead volume connections

Stainless Steel Sample Loops

- Sample loops for Rheodyne 7725 Series and 7125 Series valves are not interchangeable due to the change in port angle
- Actual volumes can differ due to tolerance of metal tubing bore
- Accuracy of large metal loops is ±5%, intermediate loops ±10%, small loops ±30%

PEEK Sample Loops

- Inert to most organic solvents
- Wall thickness, temperature, exposure time and concentration of organic solvents affect the durability of PEEK tubing
- Concentrated nitric acid and sulfuric acid weaken PEEK tubing
- THF, methylene chloride and DMSO cause PEEK to swell
- Actual volumes can differ because of tolerance of tubing bore
- Accuracy of large PEEK loops is ±14%, intermediate loops ±21%, small loops ±65%

Stainless steel sample loops

PEEK sample loops

Manual Injection Valve Sample Loops

Volume	ID (mm)	Material	Use With	Part No.
5 µL	0.18	SS	7125 and 7010	1535-4860
	0.18	SS	7725	0101-1248
	0.18	PEEK	9725	0101-1241
10 µL	0.30	SS	7125 and 7010	0101-0376
	0.30	SS	7725	0100-1923
	0.25	PEEK	9725	0101-1240
20 µL	0.51	SS	7125 and 7010	0101-0377
	0.30	SS	7725	0100-1922
	0.25	PEEK	9725	0101-1239
50 µL	0.51	SS	7125 and 7010	0101-0378
	0.51	SS	7725	0100-1924
	0.51	PEEK	9725	0101-1238
100 µL	0.51	SS	7125 and 7010	0101-0379
	0.51	SS	7725	0100-1921
	0.51	PEEK	9725	0101-1242
200 µL	0.76	SS	7125 and 7010	0101-1252
	0.76	SS	7725	0101-1247
	0.51	PEEK	9725	0101-1237
500 µL	0.76	SS	7125 and 7010	0101-1251
	0.76	SS	7725	0101-1246
	0.76	PEEK	9725	0101-1236
1 mL	0.76	SS	7125 and 7010	0101-1219
	0.76	SS	7725	0101-1245
	0.76	PEEK	9725	0101-1235
2 mL	1.00	SS	7125 and 7010	0101-1250
	1.00	SS	7725	0101-1244
	0.76	PEEK	9725	0101-1234
	1.60	PEEK	3725	0101-1229
5 mL	1.00	SS	7125 and 7010	0101-1249
	1.00	SS	7725	0101-1243
	0.76	PEEK	9725	0101-1230
	1.60	PEEK	3725	0101-1228
10 mL	2.00	PEEK	3725	0101-1227
20 mL	2.00	PEEK	3725	0101-1226

Syringes for Manual Injection

Agilent color-coded manual syringes allow you to determine syringe volume with one quick glance, so you can more efficiently perform manual dilution, extraction, and sample prep. They also give you the advantages of:

- Improved scale readability with a new vertical syringe scale orientation for more intuitive use
- A wide selection of volumes, making Agilent your "one-stop" resource for all of your sample manipulation needs
- Accuracy within ±1% of nominal volume, and precision within 1%, measured at 80% of total scale volume
- Earth-friendly cardboard and plastic packaging that could be recycled to help reduce landfill waste
- A Certificate of Conformance to ensure the highest quality construction and performance, available for viewing and printing anytime
- Lot-traceable for accurate identification

Of course, all Agilent syringes are backed by over 40 years of chromatography expertise, industry-leading technical support, and a 90-day warranty from the date of shipment.

Manual Syringes Color Code Chart

5.0 µL	10 µL 1.0 mL	25 µL 2.5 mL	50 µL 5.0 mL	100 µL 10.0 mL	250 µL 25.0 mL	500 µL 50.0 mL

LC Manual Syringes with Fitted Plungers

Volume (µL)	Description	Unit	Needle	Part No.
5	Fixed		22 gauge/2 in/LC tip	5190-1480
10	Fixed		22 gauge/2 in/LC tip	5190-1484
	Removable		22 gauge/2 in/LC tip	5190-1485
	Replacement needle for 10 µL syringe	3/pk		5190-1486
25	Fixed		22 gauge/2 in/LC tip	5190-1494
50	Fixed		22 gauge/2 in/LC tip	5190-1501
100	Fixed		22 gauge/2 in/LC tip	5190-1508
250	Fixed		22 gauge/2 in/LC tip	5190-1515
500	Fixed		22 gauge/2 in/LC tip	5190-1522

Syringe, 100 µL FN LC tip, 5190-1508

LC Manual Syringes with PTFE-Tipped Plungers

Volume (µL)	Description	Unit	Needle	Part No.
10	Removable		22 gauge/2 in/LC tip	5190-1492
	Replacement needle for 10 µL syringe	3/pk		5190-1486
	Replacement plunger with PTFE tip for 10 µL syringe			5190-1558
25	Removable		22 gauge/2 in/LC tip	5190-1499
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 25 µL syringe			5190-1560
50	Removable		22 gauge/2 in/LC tip	5190-1505
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 50 µL syringe			5190-1561
100	Removable		22 gauge/2 in/LC tip	5190-1512
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 100 µL syringe			5190-1562
250	Removable		22 gauge/2 in/LC tip	5190-1520
	Replacement needle	3/pk		5190-1571
500	Removable		22 gauge/2 in/LC tip	5190-1526
	Replacement needle	3/pk		5190-1571
	Replacement plunger with PTFE tip for 500 µL syringe			5190-1564

Thermostatted Column Compartment (TCC) Supplies

High temperature heat exchanger, G1316-80002

High temperature heat exchanger, G1316-80003

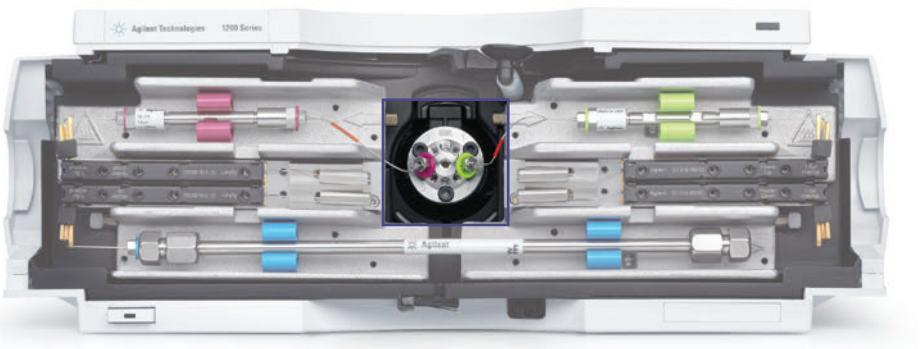
Bio-inert low dispersion heat exchanger, G5616-81000

Heat exchanger/cooler, G1316-80004

Column Identification Module, 5062-8588

Thermostatted Column Compartment Supplies

Description	Part No.
Rapid Resolution High Throughput capillary kit Used for converting an Agilent 1200 instrument to the RRLC configuration, to enable use of high efficiency columns (to 600 bar). Can also be used for Agilent 1100 instruments.	5065-9947
1200 capillary kit for 0.12 mm id	G1316-68716
High temperature heat exchanger, 1.6 µL, 0.12 mm id, "R"	G1316-80002
High temperature heat exchanger, 1.6 µL, 0.12 mm id, "L"	G1316-80003
Bio-inert low dispersion heat exchanger	G5616-81000
Heat exchanger/cooler, 1.5 µL, 0.12 mm id	G1316-80004
Carrier for heat exchanger 1290 Infinity TCC and 1200 Series TCC SL	G1316-83200
Column Identification Module (CIM), 3/pk	5062-8588
Column clamp, 6/pk	5063-6526
Column holder for micro LC columns	5001-3702
Column connecting capillary with fittings, 7 cm, 0.12 mm id, 1/16 in male/male	G1316-87303
Column connecting capillary with fittings, 9 cm, 0.17 mm id, 1/16 in male/male	G1316-87300
Column connecting capillary with fittings, 18 cm, 0.12 mm id, 1/16 in male/male	G1313-87304
Column connecting capillary with fittings, 18 cm, 0.17 mm id, 1/16 in male/male	G1313-87305
PEEK tubing, 1/32 in od, 0.4 mm id, 450 mm, micro valve to waste	5022-6503
Thermal column insulation enclosure kit	G1316-60001
Heat exchanger 1290 Series long down	G1316-80012
Heat exchanger 1290 Series long up	G1316-80013



Capillary Tubing Kits

Capillary kits are available for easy ordering and setup of the switching valves. They include all capillaries and fittings for specific applications, as well as bulk PEEK capillaries and a capillary cutter to add maximum flexibility.

Capillary Tubing Kits

Application	Valve Kit	Part No.
Column regeneration Capillaries: 0.17 mm id	G1157A	G1156-68711
Column regeneration Capillaries: 0.25 mm id	G1157A	G1156-68713
Capillary kit column regeneration intern Capillaries: 0.17 mm id	2 position/10 port, 400 bar valve, for G1316A/B	G1316-68711
Column selection Capillaries: 0.17 mm id	G1159A	G1156-68712
Sample enrichment Capillaries: 0.17 mm id	G1158A	G1156-68714
Solvent selection Flow rate up to 10 mL/min	G1160A	G1160-68706 5067-4601*

*Use for method development applications. Kit contains longer tubing.

Capillary Kits for Internal Switching Valves

Description	Use With	Part No.
Capillary kit column switching valve	2 position/6 port 400 bar valve, for G1316A/B	G1316-68708
Capillary kit column regeneration intern	2 position/10 port 400 bar valve, for G1316A/B	G1316-68711
Column regeneration kit for µ-LC columns	2 position/10 port CSV 600 bar, for G1316B	G1316-68721

Capillary Kits for Quick-Change Valves used in a G1316C

Capillary Kits Part Numbers			Valve Kit		
0.12 mm ID-A	0.17 mm ID	Other	Part No.	Valve Type	Pressure
5067-4646	5067-4730		G4231A	2 position/6 port	600
5067-4646			G4231B	2 position/6 port	1200
5067-4800	5067-5103		G4232A	2 position/10 port	600
5067-4682			G4232B	2 position/10 port	1200
5067-4729			G4234A	6-Column selector	600
5067-4729			G4234B	6-Column selector	1200
		5067-4601	G4235A	12 position/13 port Bio-inert	210
	5067-4767		G5631A	2 position/6 port Bio-inert	600
	5067-5419		G5632A	2 position/10 port, Bio-inert, 600 bar	600
	5067-4769		G5639A	4-Column selector Bio-inert	600
5067-1595			G4230A/B	8 position/9 port	1200
	5067-1596		G4230A/B	8 position/9 port	1200
5067-1597			G4230A/B	8 position/9 port	1200

Capillary Kit Contents

Part No.	Description	Quantity
5067-1595	Heater long-up 0.12 id, 1.6 µL internal	4
	Heater long-down 0.12 id, 1.6 µL internal	4
	Carrier for heat exchanger, TCC SL Plus	4
	Flexible tubing, 280 mm, 0.12 mm id	2
	SS capillary, 340 x 0.12 mm, m/m, ns/ns	1
	SS capillary, 280 x 0.12 mm, ps/ps, 1 long nut, 1 short nut	8
	SS capillary, 280 x 0.12 mm, ps/ns, 2 long nuts, 1 short nut	8
	SS capillary, 280 x 0.17 mm, ps/ps, 1 long nut	1
	Flexible capillary, 0.12 x 500 mm, no fittings	1
	Fitting holder assembly	4
	Column clip set, eight colors	2
	Long fittings and ferrules, SS, 10/pk	1
5067-1596	Capillary, 0.17 x 90 mm, 1/16 in male/male	6
	Flexible tubing, 400 mm, 0.17 mm id	1
	Flexible capillary, 0.17 x 280 mm, no fitting	2
	Plastic fitting	8
	Long fittings and ferrules, SS, 10/pk	2
	SS capillary, 280 x 0.17 mm, ps/ps, 2 long nut	1
	SS capillary, 280 x 0.17 mm, ps/ps, 1 long nut, 1 short nut	6
	SS capillary, 500 x 0.17 mm, ps/ns, 2 long nuts, 1 short nut	6
	Flexible capillary, 0.17 mm id x 600 mm	1
	Column clip set, eight colors	2
	VHP-fitting standard length (10 each = 1/pk)	6
5067-1597	Heater long-up 0.12 id, 1.6 µL internal	3
	Heater long-down 0.12 id, 1.6 µL internal	3
	Carrier for heat exchanger, TCC SL Plus	3
	Flexible tubing, 280 mm, 0.12 mm id	2
	SS capillary, 340 x 0.12 mm, m/m, ns/ns	1
	SS capillary, 280 x 0.12 mm, ps/ps, 1 long nut, 1 short nut	6
	SS capillary, 400 x 0.12 mm, ps/ns, 2 long nuts, 1 short nut	6
	SS capillary, 280 x 0.17 mm, ps/ps, 2 long nut	1
	Flexible capillary, 0.12 x 500 mm, no fittings	1
	Column clip set, eight colors	2
	Fitting holder assembly	3
	Long fittings and ferrules, SS, 10/pk	1

(Continued)

Capillary Kit Contents

Part No.	Description	Quantity
5067-4601	Bottle head assembly	4
	Tefzel ferrules/SS rings, 1/8 in, 10/pk	1
	Flexible tubing, 1 ea, 1 meter	5
	PPS nuts, 1/8 in, 1/4-28 thread, 10/pk	1
	Long fittings and ferrules, SS, 10/pk	5
5067-4646	SS capillary, 0.12 mm id, 340 mm pre-swaged	1
	SS capillary, 0.17 mm id, 700 mm pre-swaged	1
	SS capillary, 0.12 mm id, 90 mm pre-swaged	2
	SS capillary, 0.12 mm id, 150 mm pre-swaged	2
	SS capillary, 0.12 mm id, 280 mm pre-swaged	2
	SS capillary, 0.12 mm id, 120 mm pre-swaged	1
	SS capillary, 0.12 mm id, 200 mm pre-swaged	1
	PTFE flexible tubing	1
	Heat exchanger, long-up, 1.6 µL	1
	Heat exchanger, long-down, 1.6 µL	1
	Carrier for heat exchanger, TCC SL Plus	2
	Fitting holder assembly	1
	Column clip set, eight colors	1
5067-4682	SS capillary, 120 x 0.12 mm, ns/ns, 1 large, 1 large	1
	SS capillary, 150 x 0.12 mm, ns/ns, 1 large, 1 large	2
	SS capillary, 200 x 0.12 mm, ns/ps, 1 short, 1 large	1
	SS capillary, 280 x 0.12 mm, ns/ns, 1 large, 1 large	2
	SS capillary, 340 x 0.12 mm, ps/ns, 1 short, 1 large	1
	SS capillary, 0.17 mm id, 700 mm pre-swaged	1
	SS capillary, 90 x 0.12 mm, ns/ns, 1 short, 1 large	2
	Column clip set, eight colors	1
	Fitting holder assembly	2
	Heater long-up 0.12 id, 1.6 µL internal	1
	Heater long-down 0.12 id, 1.6 µL internal	1
	Carrier for heat exchanger, TCC SL Plus	2

(Continued)

Capillary Kit Contents

Part No.	Description	Quantity
5067-4729	SS capillary, 0.8 x 0.11 mm, 340 mm, RF/M4	1
	SS capillary, 0.8 x 0.11 mm, 500 mm, RF/M4	1
	SS capillary, 0.8 x 0.11 mm, 130 mm, lg RF/M4	8
	SS capillary, 0.8 x 0.17 mm, 150 mm, lg M4/M4	1
	SS capillary, 0.8 x 0.11 mm, 250 mm, lg ps/M4	1
	Flexible PEEK tubing	2
	Heater long-up 0.12 id, 1.6 µL internal	2
	Heat exchanger, long-down, 1.6 µL	2
	Carrier for heat exchanger, TCC SL Plus	2
	Fitting holder assembly	2
	Column clip set, eight colors	1
5067-4730	SS capillary, 340 x 0.17 mm, ps/ns, 1 short, 1 long	1
	SS capillary, 0.17 mm id, 700 mm pre-swaged	1
	SS capillary, 90 x 0.17 mm, ns/ns, 1 short, 1 long	4
	SS capillary, 150 x 0.17 mm, ns/ns, 1 large, 1 large	2
	SS capillary, 280 x 0.17 mm, ns/ns, 1 large, 1 large	2
	SS capillary, 120 x 0.17 mm, ns/ns, 1 large, 1 large	1
	SS capillary, 200 x 0.17 mm, ns/ps, 1 short, 1 large	1
	PTFE flexible tubing	1
	Column clip set, eight colors	1
5067-4800	SS capillary, 340 x 0.11 mm, SW-1/16/M4	1
	SS capillary, 0.17 mm id, 700 mm, SW-1/16/M4	1
	SS capillary, 90 x 0.11 mm, SW-1/16/M4	2
	SS capillary, 0.8 x 0.11 mm, 150 mm, large RF/M4	2
	SS capillary, 0.8 x 0.11 mm, 280 mm, large RF/M4	1
	SS capillary, 0.8 x 0.17 mm, 150 mm, large, M4/M4	1
	SS capillary, 0.8 x 0.12 mm, 250 mm, large ps/M4	1
	PEEK tubing, 1/32 in od, 0.4 mm id, 450 mm	2
	Heat exchanger, long-down, 1.6 µL	1
	Heater long-up 0.12 id, 1.6 µL internal	1
	Carrier for heat exchanger, TCC SL Plus	2
	Fitting holder assembly	2
	Column clip set, eight colors	1

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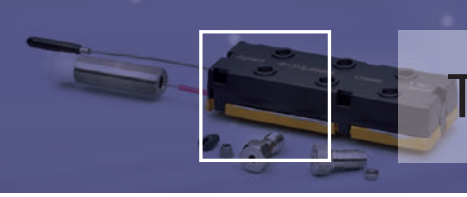


Capillary Kit Contents

Part No.	Description	Quantity
5067-4767	Capillary, 400 x 0.17 mm Bio	1
	Capillary, 300 x 0.17 mm Bio	2
	Fitting holder assembly	2
	Column clip set, eight colors	1
	Finger-tight fittings, long, 1/16 in, 10/pk	1
5067-4769	Capillary, 400 x 0.17 mm Bio	1
	Capillary, 300 x 0.17 mm Bio	4
	Fitting holder assembly	2
	Column clip set, eight colors	1
	Finger-tight fittings, long, 1/16 in, 10/pk	1
5067-5103	SS capillary, 340 x 0.17 mm, ps/ns SW-M4	1
	SS capillary, 0.17 mm id, 700 mm, SW-1/16/M4	1
	SS capillary, 90 x 0.17 mm, SW-1/16/M4	2
	SS capillary, 90 x 0.17 mm, RF/M4	2
	SS capillary, 0.8 x 0.17 mm, 150 mm, lg RF/M4	2
	SS capillary, 0.8 x 0.17 mm, 280 mm, lg RF/M4	2
	SS capillary, 0.8 x 0.17 mm, 150 mm, large, M4/M4	1
	SS capillary, 0.8 x 0.12 mm, 250 mm, large ps/M4	1
	PEEK tubing, 1/32 in od, 0.4 mm id, 450 mm	1
	Column clip set, eight colors	1
5067-5419	Capillary, 700 x 0.17 mm id, titanium	1
	Capillary, 400 x 0.17 mm Bio	1
	Capillary, 300 x 0.17 mm Bio	2
	PEEK tubing, 1.5 m	1
	Finger-tight fittings, long, 1/16 in, 10/pk	1

TIPS & TOOLS

For internal switching valves for your TCC, see page 38

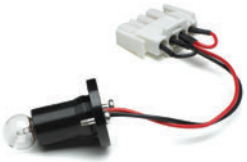
Long-life Deuterium lamp, G1314-60100

Long-life HiS Deuterium lamp, 5190-0917

Deuterium long-life lamp, 2140-0813

Deuterium lamp, 2140-0590

Long-life Deuterium lamp, 5182-1530



Tungsten lamp assembly, G1103-60001

Detector Supplies

Certified Lamps

- All lamps are tested for noise and drift specifications, correct operating voltage, light intensity, and proper alignment
- Improved coating process increases Agilent lamp lifetimes up to 50%
- Agilent deuterium lamps are designed with a much narrower aperture providing increased light intensity and decreased noise – translating into an appreciably higher signal-to-noise ratio
- By providing higher sensitivity, Agilent lamps can extend detection capabilities and improve qualification at trace levels

Agilent's lamps are manufactured in an ISO 9001 certified environment and are fully traceable throughout every step of the production process. Each lamp is then tested to ensure it meets Agilent's performance specifications. Test equipment is regularly calibrated using optical standards certified by NIST (National Institute of Standards and Technology) or PTB (Physikalisch-Technische Bundesanstalt).

Detector Lamps

Description	Comments	Part No.
Variable Wavelength Detector (VWD)		
Long-life Deuterium lamp with RFID tag	For G1314D/E/F	G1314-60101
Long-life Deuterium lamp	For G1314A/B/C, 1120 and 1220 Infinity LC	G1314-60100
Diode Array Detector (DAD)/Multiple Wavelength Detector (MWD)		
Long-life HiS Deuterium lamp (8-pin) with RFID tag	For G4212A/B	5190-0917
Long-life Deuterium lamp with RFID tag	For G1315C/D and G1365C/D	2140-0820
Long-life Deuterium lamp	For G1315A/B and G1365A/B	2140-0813
Long-life Deuterium lamp	For G1315A/B and G1365A/B	5182-1530
Deuterium lamp	For G1315A/B and G1365A/B	2140-0590*
Tungsten lamp	For G1315A/B/C/D and G1365A/B/C/D	G1103-60001

*Standard lamp for 1,000 hours of use only

Variable Wavelength Detector (VWD)

VWD Flow Cell Selection						
Typical Column Length (cm)	**Typical Peak Width**	**Recommended Flow Cell**				
< = 5	0.025	Micro Flow Cell				High Pressure Flow Cell for pressure above 100 bar
10	0.05	0.05-0.2 mL/min	Semi-micro Flow Cell			
20	0.1			Standard Flow Cell		
> = 40	0.2					
Typical Flow Rate		0.05-0.2 mL/min	0.2-0.4 mL/min	0.4-0.8 mL/min	1-2 mL/min	0.05-5 mL/min
Internal Column Diameter		1.0 mm	2.1 mm	3.0 mm	4.6 mm	

Flow Cell and Repair Kits for VWD

Description	Use With	Specifications	Part No.	Repair Kit Part No.
Standard flow cell, RFID	G1314D/E/F	10 mm, 14 µL, 40 bar	G1314-60186	G1314-65061
Semi-micro flow cell, RFID	G1314D/E/F	6 mm, 5 µL, 40 bar	G1314-60183	G1315-68713
Micro flow cell, 3 mm, RFID	G1314D/E/F	2 µL, 120 bar	G1314-60187	G1315-68713
Micro flow cell, 5 mm	G1314A/B/C	1 µL, 40 bar	G1314-60081	G1314-65052
High pressure flow cell, RFID	G1314D/E/F	10 mm, 14 µL, 400 bar	G1314-60182	G1314-65054
				G1315-68713

Capillaries for VWD Flow Cell

Flow Cell Description	Part No.	Inlet Capillary	Part No.	Outlet Capillary	Part No.
Standard flow cell, RFID	G1314-60186	Inlet capillary, 0.17 mm id, 600 mm long	5062-8522	Waste capillary, PEEK, 0.25 mm id	5062-8535
				1/16 in finger-tight PEEK fitting, 2/pk	0100-1516
Semi-micro flow cell, RFID	G1314-60183	Inlet capillary, 0.12 mm id, 400 mm long	5021-1823	Waste capillary, PEEK, 0.25 mm id	5062-8535
				1/16 in finger-tight PEEK fitting, 2/pk	0100-1516
Micro flow cell, 3 mm, RFID	G1314-60187	Inlet capillary, 0.12 mm id, 310 mm long	G1314-87301	Outlet capillary, 0.17 mm id, 120 mm long	G1314-87302
Micro flow cell, 5 mm	G1314-60081	Inlet capillary, 0.12 mm id, 400 mm long	5021-1823	Outlet capillary, 0.17 mm id, 120 mm long	G1314-87302
High pressure flow cell, RFID	G1314-60182	Inlet capillary, 0.17 mm id, 380 mm long	G1315-87311	Outlet capillary, 0.17 mm id, 120 mm long	G1314-87302

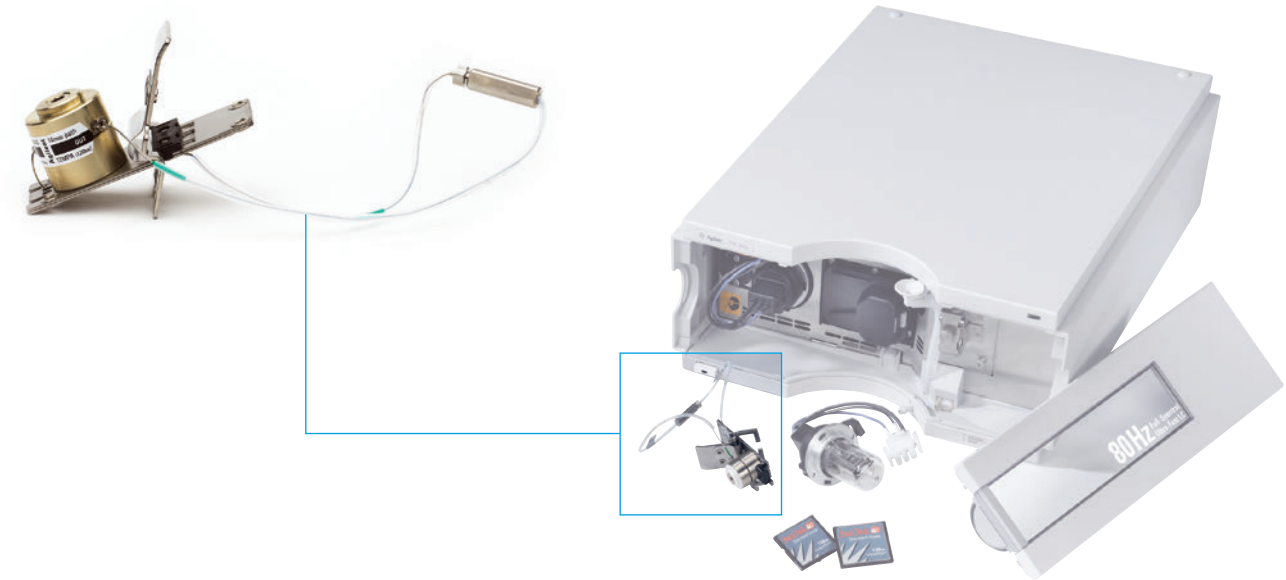
Diode Array Detector (DAD)/Multiple Wavelength Detector (MWD)

Cleaning or Replacing DAD/MWD Flow Cells

- A decrease in detector performance or unusual noise levels may mean you have dirty flow cell windows
- Clean and reassemble one side of the flow cell before beginning the other side to prevent mixing the front and rear gaskets, which have different hole diameters
- While cleaning or replacing flow cell windows, if the washers fall out of the window assembly, they must be inserted in the correct order with a PTFE ring to prevent any leaks from the flow cell window
- Clean the cell body with water or isopropanol
- After opening the cell you should always use a new gasket

DAD/MWD Flow Cell Selection

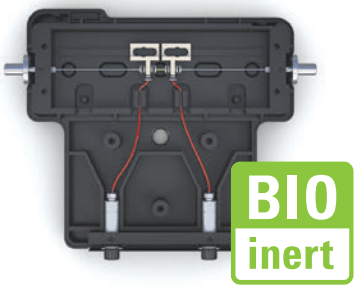
Typical Column Length (cm)	Typical Peak Width	Recommended Flow Cell				
< = 5	0.025	80/500 nL Flow Cell				High Pressure Flow Cell
10	0.05		Semi-micro Flow Cell			
20	0.1			Standard Flow Cell		
> = 40	0.2					
Typical Flow Rate		0.05-0.2 mL/min	0.2-0.4 mL/min	0.4-0.8 mL/min	1-2 mL/min	0.05-5 mL/min
Internal Column Diameter		0.3-1 mm	2.1 mm	3.0 mm	4.6 mm	



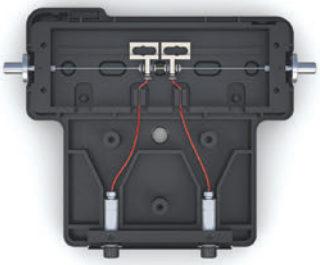
Flow Cell and Repair Kits for DAD/MWD

Description	Use With	Specifications	Part No.	Repair Kit Part No.
Standard flow cell with RFID tag	G1315C/D, G1365C/D	10 mm, 13 µL, 120 bar	G1315-60022	G1315-68712
Standard flow cell	G1315A/B, G1365A/B	10 mm, 13 µL, 120 bar	G1315-60012	
Semi-micro flow cell with RFID tag	G1315C/D, G1365C/D	6 mm, 5 µL, 120 bar	G1315-60025	G1315-68713
Semi-micro flow cell	G1315A/B, G1365A/B	6 mm, 5 µL, 120 bar	G1315-60011	
Micro flow cell with RFID tag	G1315C/D, G1365C/D	3 mm, 2 µL, 120 bar	G1315-60024	G1315-68713
Micro high-pressure flow cell	G1315A/B, G1365A/B	6 mm, 1.7 µL, 400 bar	G1315-60015	
500 nL flow cell		10 mm, 50 bar	G1315-68724	
80 nL flow cell		6 mm, 50 bar	G1315-68716	
Preparative flow cell	G1315A/B, G1365A/B	3 mm, 120 bar, stainless steel	G1315-60016	G1315-68712
Preparative flow cell		0.3 mm, 20 bar, quartz	G1315-60017	
Preparative flow cell		0.06 mm, 20 bar, quartz	G1315-60018	
Max-Light cartridge cell*	G4212A/B Infinity LC DAD	10 mm, σ_v = 1.0 µL, with RFID tags	G4212-60008	
Max-Light cartridge cell*	G4212A/B Infinity LC DAD	60 mm, σ_v = 4 µL, with RFID tags	G4212-60007	
Max-Light cartridge test cell*	Must be used to perform detector build-in tests		G4212-60011	
Max-Light ultra low dispersion flow cell*	G4212A/B Infinity LC DAD	10 mm, σ_v = 0.6 µL, with RFID tags	G4212-60038	
Max-Light High Dynamic Range (HDR) flow cell*	G4212A/B Infinity LC DAD	3.7 mm, σ_v = 0.8 µL, with RFID tags	G4212-60032	

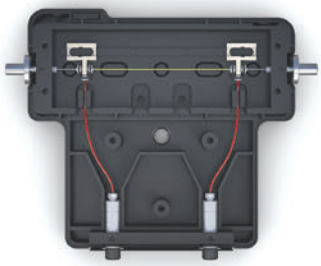
* Maximum Operating Pressure (MPO): 70 bar. Maximum pressure at which a system can operate continuously under normal conditions.
Maximum Incidental Pressure (MIP): 150 bar. The maximum pressure which the system can experience during a short time.



Bio-inert standard flow cell, G1315-60022



Max-Light HDR flow cell, interior view, to show short 3.7 mm path length for high concentrations, G4212-60032



Max-Light cartridge cell, interior view, 60 mm path for high concentrations, G4212-60007

Capillaries for DAD/MWD Flow Cell

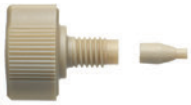
Flow Cell Description	Part No.	Inlet Capillary	Part No.	Outlet Capillary	Part No.
Standard flow cell with RFID tag	G1315-60022	Inlet capillary with heat exchanger, 0.17 mm id, 590 mm long	G1315-87321	Outlet capillary, 0.17 mm id, 200 mm long	G1315-87302
Standard flow cell	G1315-60012				
Semi-micro flow cell with RFID tag	G1315-60025	DAD heat exchanger capillary, 0.17 mm id, 310 mm long	G1315-87319	Outlet capillary, 0.12 mm id, 200 mm long	G1315-87306
				Outlet capillary, 0.17 mm id, 200 mm long	G1315-87302
Semi-micro flow cell	G1315-60011			Outlet capillary, 0.12 mm id, 200 mm long	G1315-87306
				Outlet capillary, 0.17 mm id, 200 mm long	G1315-87302
Micro flow cell with RFID tag	G1315-60024	DAD heat exchanger capillary, 0.12 mm id, 310 mm long	G1315-87339	Outlet capillary, 0.12 mm id, 200 mm long	G1315-87306
				Outlet capillary, 0.17 mm id, 200 mm long	G1315-87302
Micro high-pressure flow cell	G1315-60015	Inlet capillary with heat exchanger, 0.12 mm id, 290 mm long	G1315-87325	Outlet capillary, 0.12 mm id, 200 mm long	G1315-87306

TIPS & TOOLS

Learn more about how different flow cells impact your chromatography, and the High Dynamic Range (HDR) Flow Cell. See application note 5991-0115EN at **www.agilent.com/chem/library**

Detector Supplies

Stainless steel screw, 5063-6593



Double winged PEEK nut & ferrule (WPF), 5065-4422

ZDV universal union, 5022-2184

Wrench, open end, for use with PEEK-coated fused silica capillaries, 8710-1534

80 nL and 500 nL Flow Cell Supplies

Description	Unit	Part No.
Fitting screw	10/pk	5063-6593
Double winged nuts and 1/32 in ferrules	10/pk	5065-4422
1/32 in ferrule and stainless steel lock ring, lite touch	10/pk	5063-6592
Union adjustment tool	2/pk	5022-2146
ZDV universal union, stainless steel, no fittings	1/pk	5022-2184
Open end wrench, 4 mm		8710-1534

500 nL Flow Cell and Replacement Parts

Description	Comments	Part No.
500 nL flow cell	Contains quartz flow cell with 10 mm path length and 500 nL volume and connecting capillaries, max 50 bar pressure	G1315-68724
Sealing kit	Includes torque adapter, 2 cell seal assemblies, 5 LiteTouch front and back ferrules	G1315-68715
Quartz cell body, 10 mm		G1315-80001
Cell seal assembly, 500 nL		G1315-87101
Fused silica/PEEK capillary, 100 µm id, 30 cm long	Inlet	G1315-87333
Fused silica/PEEK capillary, 50 µm id, 40 cm long	Inlet	G1315-87323
Fused silica/PEEK capillary, 100 µm id, 12 cm long	Outlet	G1315-87338
Fused silica/PEEK capillary, 50 µm id, 12 cm long	Outlet	G1315-87328

80 nL Flow Cell and Replacement Parts

Description	Comments	Part No.
80 nL flow cell	Contains quartz flow cell with 6 mm path length and 80 nL volume and connecting capillaries, max 50 bar pressure	G1315-68716
Sealing kit for 80 nL flow cell	Includes torque adapter, 2 cell seal assemblies, 5 LiteTouch front and back ferrules and 5 sleeves for 360 µm od capillaries	G1315-68725
Quartz cell body, 80 nL, 6 mm path length		G1315-80002
Fused silica/PEEK capillary, 50 µm id, 40 cm long	Inlet	G1315-87323
Fused silica/PEEK capillary, 50 µm id, 12 cm long	Outlet	G1315-87328
Fused silica/PEEK capillary, 25 µm id, 20 cm long	Inlet	G1315-87313
Fused silica/PEEK capillary, 25 µm id, 60 cm long	Outlet	G1315-87318

Finger-tight PEEK fitting (SPF), 0100-1516

Preparative Flow Cells and Replacement Parts

Description	Part No.
Preparative flow cell, 0.3 mm, 20 bar, quartz	G1315-60017
Preparative flow cell, 0.06 mm, 20 bar, quartz	G1315-60018
PTFE tubing, 0.8 mm id, 2 m	G1315-67301
PTFE tubing, 0.5 mm id, 0.8 m	G1315-67302
Cell housing	G1315-27705
1/16 in finger-tight PEEK fitting, 2/pk	0100-1516
Quartz body, 0.3 mm	G1315-80004
Preparative flow cell, stainless steel, 3 mm, 120 bar	G1315-60016
Stainless steel connecting capillary, 0.5 mm, 250 mm	G1315-87305

Detector Maintenance Kits

Detector Maintenance Kits

Description	Kit Contents	Part No.
Variable Wavelength Detector (VWD)		
Standard "D" type flow cell kit	Includes 2 windows, 2 gaskets #1, 2 gaskets #2	G1314-65061
Semi-micro flow cell kit	Includes 2 windows, 4 gaskets: 2 standard #1, 1 semi-micro #1, 1 semi-micro #2	G1314-65056
Micro flow cell kit	Includes 2 windows, 2 gaskets #1, 2 gaskets #2	G1314-65052
Cell repair kit, semi-micro cell	Includes window screw kit, hexagonal wrench, 4 mm, seal kits	G1315-68713
High-pressure flow cell kit	Includes 2 windows, 2 Kapton gaskets, 2 PEEK rings	G1314-65054
Diode Array Detector (DAD)/Multiple Wavelength Detector (MWD)		
Cell repair kit for standard cell	Includes window screw kit, 4 mm hexagonal wrench, seal kit	G1315-68712
Cell repair kit, semi-micro cell	Includes window screw kit, 4 mm hexagonal wrench, seal kits	G1315-68713
Sealing kit for 500 nL flow cell	Includes torque adapter, 2 cell seal assemblies, 5 LiteTouch front and back ferrules	G1315-68715
Sealing kit for 80 nL flow cell	Includes torque adapter, 2 cell seal assemblies, 5 LiteTouch front and back ferrules, 5 sleeves for 360 µm od capillaries	G1315-68725

G4260B 1260 Series ELSD

Other Detectors

G4260B 1260 and G4261B 1290 Series Evaporative Light Scattering Detector Supplies

Description	Part No.
ELSD air adapter kit	PL0890-0640
Solvent waste container, 500 mL	PL0890-0320
Gas inlet frit, 10 µm	PL0890-0525

G1362A 1100/1200 Series Refractive Index Detector (RID) Supplies

Description	Part No.
Tubing kit Includes 300 mm recycle valve to recycle port, 200 mm recycle valve to waste port, 120 mm purge valve to recycle valve, 270 mm purge valve to sample cell, 170 mm purge valve to reference cell	G1362-68709
Interface tubing kit Includes 1/8 in ferrule, 1/3 in nut, PTFE tubing	G1362-68706
Interface capillary, 400 mm, 0.17 mm id	G1362-87300
Restriction capillary, 0.17 mm id	G1362-87301

TIPS & TOOLS

For information on our range of GPC/SEC purification solutions, request the new GPC/SEC Wall Chart, visit **www.agilent.com/chem/gpcresources**

Finger-tight PEEK fitting (SPF), 0100-1516

Stainless steel front ferrules, 5180-4108

Back ferrules 1/16 in, 5180-4114

G1321A/B 1100/1200 Series Fluorescence Detector (FLD) Supplies

Description	Part No.
Detector lamp	2140-0600
Flow cell, 8 µL, 20 bar	G1321-60005
Flow cell, 4 µL, 20 bar	G1321-60015
Cuvette kit, 8 µL, 20 bar Includes tubing, stainless steel fitting, front and back ferrule, PEEK fitting, syringe needle and syringe	G1321-60007
Corrugated tubing, polypropylene, 6.5 mm id, 5 m	5062-2463
PTFE tubing, FEP, 0.7 mm id, 5 m	5062-2462
1/16 in finger-tight PEEK fitting, 2/pk	0100-1516
Column connecting capillary with fittings, 380 x 0.17 mm	G1315-87311
1/16 in stainless steel front ferrule, 10/pk	5180-4108
1/16 in stainless steel back ferrule, 10/pk	5180-4114
1/16 in stainless steel fitting, 10/pk	5061-3303
Fluorescence detector calibration sample, 1 g glycogen	5063-6597
Open end wrench, 1/4 and 5/16 in	8710-0510
Glass syringe	9301-1446
Syringe needle	9301-0407
Captiva disposable syringe, 20 mL, 100/pk	5190-5103

Flow cell for G1321A fluorescence detector, G1321-60005

General LC Supplies

Agilent offers a wide range of supplies for operation and maintenance of LC systems. These products have been carefully designed or selected by Agilent to work with your Agilent instruments for maximum performance and uptime.

Bio-inert Supplies

BIO inert

Agilent 1260 Infinity Bio-inert Quaternary LC Supplies

For your challenging bio-molecule analyses, the new 1260 Infinity Bio-inert Quaternary LC System sets new standards in performance, reliability, and robustness. Analysis of proteins and biotherapeutics usually presents the most challenging solvent conditions for any LC instrument. In addition, bio-molecules tend to bind unspecifically to surfaces, requiring tedious procedures. To address these needs, Agilent designed this application-specific LC instrument for bio-molecular analysis – without any compromise in performance – built on the proven Agilent 1200 Infinity platform technology.

The Agilent 1260 Infinity Bio-inert Quaternary LC features bio-inertness for all components without exception. The sample flow path through autosampler, capillaries and a variety of detectors are completely metal-free, with only PEEK and ceramic components coming into contact with your bio-molecule. Thus, the uncertainty of secondary interaction for proteins and peptides with surfaces which can result in peak tailing, low recovery and decreased column lifetime is minimized – and your confidence maximized.

TIPS & TOOLS

For information on the family of complementary Biocolumns, visit **www.agilent.com/chem/advancebio**

1260 Infinity LC Bio-inert Quaternary Pump Parts

Description	Part No.
Bio-inert purge valve	G5611-60061
Bio-inert active inlet valve	G5611-60025
Bio-inert cartridge for active inlet valve, 600 bar	G5611-60020
Bio-inert outlet ball valve	G5611-60067
Sapphire piston for 1220/1260/1290	5067-4695
Bio-inert piston seal	G5611-21503
Bio-inert wash seal	0905-1731
Bio-inert seal keeper	G5611-26210
Bio-inert support ring	G5611-63010

1260 Infinity LC Bio-inert High Performance Autosampler Parts

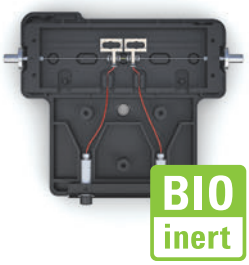
Stator face, ceramic, 0100-1851

Description	Part No.
Bio-inert 2 position/6 port injection valve	5067-4131
Rotor seal, 3 grooves, max 600 bar	0101-1416
Bio-inert stator	5068-0060
Stator face, ceramic	0100-1851
Bio-inert needle assembly	G5667-87200
Tool for needle adjustment	G5667-40500
Seat PK/SS, 0.17 x 105 mm RLO/RLO Bio	G5667-81008
Sapphire piston, slim base	5067-4695
Bio-inert piston seal	G5611-21503
Loop PK/SS, 100 µL RLO/RLO Bio	G5667-81006
Loop flex assembly, 40 µL	G4226-60415

Rotor seal, 2 position/6 port, 600 bar for G1316B, 0101-1409

1260 Infinity LC Bio-inert Valve Parts

Description	Use With	Part No.
Rotor seal, 3 grooves, max 600 bar	Bio-inert 2 position/6 port switching valve	0101-1409
Bio-inert stator	Bio-inert 2 position/6 port switching valve	5068-0060
Stator face, ceramic	Bio-inert 2 position/6 port switching valve	0100-1851
Bio-inert rotor, 2-position/10-port, 600 bar		5068-0041
Bio-inert stator, 2-position/10-port, 600 bar		5068-0040
Bio-inert rotor seal, 4 column PEEK	Bio-inert 4 column selection valve	5068-0045
Bio-inert PEEK tube from valve to needle	G5664A Bio-inert fraction collector	G5664-86703
Bio-inert PEEK tube valve to detector		G5664-86706
Bio inert 12 position/13 port, solvent selection valve	G4235A	5067-4159



Bio-inert standard flow cell, with RFID tag, G5615-60022

1260 Infinity LC Bio-inert Detector Parts

Description	Use With	Part No.
Bio-inert standard flow cell, with RFID tag	G1315C/D and G1365C/D	G5615-60022
Bio-inert max light cartridge cell	G4212A/B	G5615-60017
Bio-inert max light cartridge cell	G4212A/B	G5615-60018
Bio-inert FLD flow cell	G1321B	G5615-60005
PEEK tubing		0890-1763

1260 Infinity LC Bio-inert General Supplies

Description	Use With	Part No.
Bio-inert low dispersion heat exchanger	G1316C	G5616-81000
Bio-inert PEEK tube from valve to needle	G5664A Bio-inert fraction collector	G5664-86703
Bio-inert union, stainless steel with PEEK insert, 600 bar	Bio-applications	5067-4741

TIPS & TOOLS

To learn more about our comprehensive LC instrument portfolio, go to **www.agilent.com/chem/lc**

1100/1200 Series Chip LC Supplies

1100/1200 Series Chip LC Supplies

Description	Part No.
Rotor, inner valve, 3 grooves, chip LC	G4240-23705
Rotor, outer valve, 5 grooves, chip LC	G4240-25206
PEEK fitting, special for chip LC	G4240-43200
Fused silica/PEEK capillary, 15 µm, 90 cm Nano pump to chip cube	G4240-87300
Fused silica/PEEK capillary, 25 µm, 105 cm Micro well plate sampler to chip cube	G4240-87301
Fused silica/PEEK capillary, 100 µm, 100 cm Chip cube to waste	G4240-87302
Fused silica/PEEK capillary, 75 µm, 100 cm Syringe pump to chip cube	G4240-87303
Fused Silica/PEEK capillary, 50 µm, 50 cm	G4240-87304
Inline micro filter kit, 0.5 µm, PEEK Use with chip cube LC system	5067-1582
Fitting with 0.5 µm PEEK frit, 10/pk	5067-1584
PEEK fitting for use with 1/32 in od, 10/pk	5067-1585
PEEK sample transfer capillary, 25 µm, 100 cm Micro inline filter to chip cube (Phospho-Chip application)	G4240-87309
PEEK capillary, 25 µm, 10 cm Micro well plate sampler to micro inline filter (Phospho-Chip application)	G4240-87310

Agilent 1260 Infinity HPLC-Chip Cube Interface
(G4240A)

Mounting tool, 0100-1710

LC Tools

Your Agilent LC system arrives with a full complement of tools needed to perform general maintenance and operation procedures. Should you need additional or replacement tools, Agilent offers a selection of high-precision, high-quality, stainless steel tools, to avoid any deformation of the screws or nuts.

Bio-inert mounting tool, 5043-0915

Hex keys, Rheotool, 5064-8211

Plastic tubing cutter, 8710-1930

Tubing clip, 5042-9967

LC Tools

Description	Part No.
Tool kit hex keys, Rheotool Includes 3 hex keys, 4 mm, 1.5 mm, and 9/64 in, with straight or T-handle plus Rheotool	5064-8211
Insert tool (seal wash option)	01018-23702
Mounting tool for flangeless nut	0100-1710
Bio-inert mounting tool	5043-0915
Velocity regulator	5062-2486
USB memory stick	G4208-68700
Compact flash card	01100-68700
HPLC system tool kit	G4203-68708
Compact tool kit	G4296-68715
Torque wrench, 1 to 25 Nm	5067-5688
Bit kit for torque wrench	5023-0282
PEEK Luer-Lok needle assembly	5190-0924
Plastic tubing cutter	8710-1930
Blades for plastic cutter, 5/pk	8710-1931
Tubing clip	5042-9967
Tubing clip	5042-9954
Open end wrench, 14 mm	8710-1924

HPLC system tool kit, G4203-68708

Compact tool kit, G4296-68715

HPLC In-Line Filters

Column inlet frit contamination can increase column backpressure and reduce efficiency. Microbore column blockages are a particular problem, due to the small diameter of the inlet frit. To prevent blockages, always use the appropriate filters in your LC system. Agilent offers two types of high pressure in-line filter kits for use with any HPLC system.

HPLC In-Line Filters

Description	Frit Porosity (µm)	Frit Inlet ID (mm)	Comments	Part No.	Replacement Frits
RRLC in-line filter 4.6 mm, 0.2 µm pore size filter, connecting capillary, max 600 bar	0.2	4.6	max 600 bar	5067-1553	5067-1562, 10/pk
RRLC in-line filter 2.1 mm, 0.2 µm pore size filter, connecting capillary, max 600 bar	0.2	2.1	max 600 bar	5067-1551	5067-1555, 6/pk
Low dispersion in-line filter Includes two frits, 2.1 mm, 2 µm pore size filter holder with inserts, 60 x 0.12 mm connecting capillary	2 0.5	2.1	< 1 mL/min	01090-68702	280959-904, 10/pk 280959-907, 10/pk
Universal in-line filter Includes two frits, 4.8 mm, 2 µm pore size filter holder with inserts, 130 x 0.25 mm connecting capillary	2	4.8	1-5 mL/min	01090-68703	01090-27609, 2/pk
Semi-prep filter	0.5	12.7	1-5 mL/min	5064-8273	5022-2185
High pressure semi-prep filter	10	19	5-10 mL/min	5022-2165	5022-2166, 10/pk
Prep filter	10		10-100 mL/min	5065-4500	5065-9901 Replacement glass cartridge
In-line filter for G1311A	Recommended when high salt concentrations are used			G1311-60006	
1290 Infinity LC in-line filter (0.3 µm)	0.3	2.0	1200 bar	5067-4638	5023-0271, 5/pk

High pressure semi-prep filter, 5022-2165

Low dispersion in-line filter, 01090-68702

RRLC in-line filter, 5067-1551

1290 Infinity LC in-line filter, 5067-4638

Glass solvent filter degasser, 3150-0577

Solvent Filters/Degassers

An added benefit of filtering solvents is that degassing occurs at the same time. This is particularly beneficial if you do not have an on-line degasser in your system. The benefits of solvent filtration:

- Degasses eluents as particulates are removed
- Prevents the formation of spurious peaks within the detector due to solvent outgassing at the low-pressure end of the chromatograph
- Increases solvent inlet lifetime
- Eliminates pump downtime caused by air locks and particulates in check valves
- Decreases piston wear, while increasing column life

Solvent Filters/Degassers

Description	Part No.
HPLC solvent filter/degasser assembly	3150-0577
Replacement Parts for 3150-0577	
Glass funnel, 250 mL	5188-2743
PTFE coated sieve	5188-2744
PTFE seal	5188-2745
Funnel base, glass	5188-2746
Filter Membranes	
Regenerated cellulose filter membranes Diameter 47 mm, pore size 0.45 µm, 100/pk	3150-0576
Nylon filter membranes Diameter 47 mm, pore size 0.45 µm, 100/pk	9301-0895
PTFE filter membranes Diameter 47 mm, pore size 0.45 µm, 10/pk	3150-0509

Agilent Rack for LC Systems

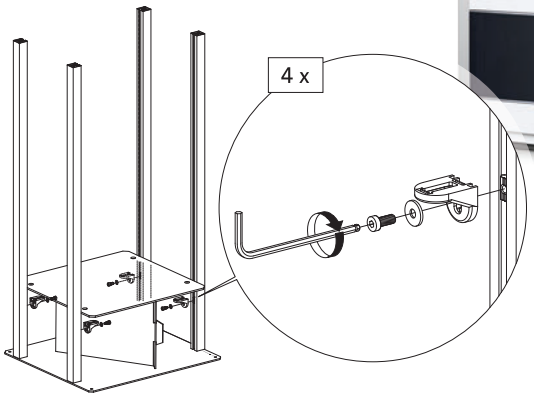
Reclaim critical bench space with the stable, robust rack for LC systems. The sturdy and open design offers complete protection for your sensitive LC system and easy maintenance for fast, safe access to instruments and cables. It is designed for all Agilent LC modules stacks and features:

- Easy assembly saves time and expense (see diagram)
- Adjustable shelves allow full customization for all Agilent LC modules
- Open design ensures proper airflow management and distribution of equipment and cabling

Description	Part No.
Agilent rack for LC systems	5001-3726

TIPS & TOOLS

The Agilent rack can be used to optimize your 1290 Infinity LC for ultra-low dispersion, which can enhance performance of high-efficiency columns. Further information can be found in application note 5990-9502EN at **www.agilent.com/chem/library**



Height 99 cm
Width 48 cm
Depth 43 cm
Weight 27 kg

Caffeine OQ/PV sample for dissolution test, 5042-6476

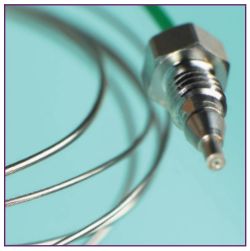
LC Standards

LC Standards

Description	Part No.
Caffeine standards kit for LC OQ/PV Includes one 10 mL ampoule: 125.0 µg/mL; four 5 mL ampoules: 5.0, 25.0, 250.0 and 500.0 µg/mL caffeine in water	8500-6762
Caffeine standards kit for capillary OQ/PV Includes 5 ampoules, 5 mL: 2.0, 4.0, 20.0, 100.0, 200.0 µg/mL caffeine in water	5065-4420
Caffeine OQ/PV sample for dissolution test, 150 mg/L caffeine in water, 500 mL	5042-6476
Caffeine standard, 250 µg/mL	G4218-85000
Enterprise Edition caffeine standard kit	5190-0488
Fluorescence detector calibration sample, 1 g glycogen	5063-6597
RI detector OQ/PV test sample Includes 5 ampoules, 5 mL: 5, 10, 15, 25, and 50 mg/mL glycerin in water	5064-8220
Isocratic and gradient standards Contains 0.15% diethylphthalate, 0.01% biphenyl, and 0.03% terphenyl in MeOH (w/w). Gradient standard includes 0.32% dioctyl phthalate as well. Two 0.5 mL ampoules of each.	01080-68702
Isocratic standard, 0.5 mL ampoule	01080-68704
Check out sample, phenone, 1 mL ampoule	5188-6529
Chip cube high mass reference (HP-1221), 0.5 mL	G1982-85001
Chip cube high mass solvent (FC-70), 25 mL Fluorinert	G1982-85002
Chip cube low mass reference sample, 1 g Methyl stearate	G1982-85003
ESI+APCI LC demo sample Contains 5 x 1 mL ampoules with 33 ng/µL crystal violet, 77 ng/µL carbazole, 300 ng/µL 9-phenanthrol, 1 ng/µL 1-hexanesulfonic acid sodium salt in water/methanol 60:40	G1978-85000
ES-TOF biopolymer reference standard kit Contains 7 x 2 mL ampoules with 5 mM purine, 1 M ammonium formate, 0.5 mM HP-0285, 0.1 mM HP-0321, 0.2 mM HP-1221, 0.2 mM HP-1821, 0.5 mM HP-2421	G1969-85003
HSA peptide standard mix kit 2 vials with 6 lyophilized peptides	G2455-85001

TIPS & TOOLS

Agilent has made vial, cap and septum selection easy with its new Interactive Vial Selection Tool, available online in both desktop and mobile versions. The tool identifies the right vial and closures for your particular application, and provides the rationale for the choices offered. Visit **www.agilent.com/chem/SelectVials**



Agilent's unique laser welding process ensures that the capillary ends are absolutely flat, eliminating any chance of capillary-induced dead volume.

LC Capillaries

Your LC system's components are only as reliable as the connections between them

Think of your LC system as a chain from analyte... to pump... to column... to detector... to waste. Every link must operate at maximum efficiency, or the whole chain risks failure – compromising your results.

Agilent LC capillaries: Your link to analytical success

At Agilent, we invest heavily in the quality of our capillary connections. All are engineered and manufactured to the same quality standards as our columns and instruments, so you can protect the integrity of your results at every step of your LC flow path.

Using our flexible stainless steel and polymer capillaries and fittings can provide:

- Tight, leak-free connections
- Zero dead volume connections
- An inert surface (when using polymer or PEEK/stainless steel bio-inert capillaries)
- High flexibility without sacrificing durability
- Easy cutting to the exact length you need (PEEK tubing)
- Predefined lengths for specific flow path locations (capillaries)

In addition, all Agilent capillaries are precision cut with square ends, are burr-free, have no inner-diameter distortion, and come in a variety of materials to suit your needs.

TIPS & TOOLS

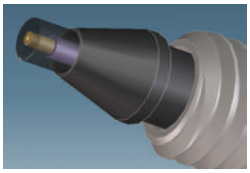
Easily find the right capillaries for your instrument with the Capillaries Selection Tool – go to **www.agilent.com/chem/selectcapillaries**

Engineering of Agilent Capillaries

The same professional engineers in our LC manufacturing facility in Germany who design our industry-leading LC instruments, also play a critical role in developing capillaries and fittings for your instrument. Their attention to detail helps you to get the best performance possible for your applications.

Our LC manufacturing tools – like high-end, special laser-cutting machines – result in completely tight, smooth and perfect-cut capillaries. Our broad selection of capillaries is made only from the highest-quality materials and will meet any of your application needs.

Avoid chromatographic issues – like peak broadening and system leaks – by choosing Agilent's selection of premium capillaries. Agilent is committed to Fast LC and high-productivity performance, together with accurate quantitation.

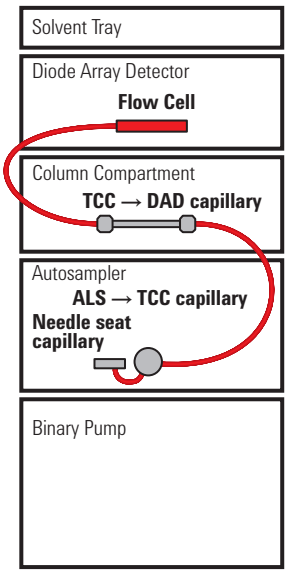


Advantages for Bio Capillaries

- Laser-welded capillary tip for precise capillary cut
- Metal-free connection for all HPLC applications
- PEEK and stainless steel design allows you to exceed typical pressure limit reached with conventional polymer

Recommended HPLC Stack Configuration

Agilent 1290 Infinity LC: default stacking and capillary tubing configuration



Needle Seat capillary:
0.12 x 100 mm = 1.1 µL

ALS → TCC capillary
0.12 x 340 mm = 3.8 µL

TCC → DAD Capillary:
0.12 x 220 mm = 2.5 µL

Flow Cell V(σ)1.0 µL = 2.3 µL

Total extra-column volume = 9.7 µL

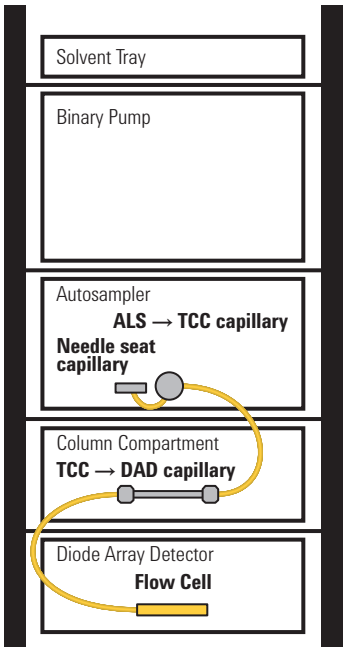
Volume of 2.1 x 50 mm column = 172.3 µL

Void volume of column = 103.9 µL

Percent extra-column volume = 9.3%

60% Reduction in extra-column volume

Agilent 1290 Infinity LC: with LC system rack and ultra-low dispersion optimizations



Needle Seat Capillary:
0.11 x 100 mm = 0.9 µL

ALS → TCC Capillary:
0.08 x 220 mm = 1.1 µL

TCC → DAD Capillary:
0.08 x 220 mm = 1.1 µL

Flow Cell V(σ)0.6 µL = 0.8 µL

Total extra-column volume = 3.9 µL

Volume of 2.1 x 50 mm column = 172.3 µL

Void Volume of Column = 103.9 µL

Percent extra-column volume = 3.7%

Syntax for capillary description

The tables below will be your guide to identifying the proper specifications for your capillary. On all capillaries, dimensions are noted in id (mm), length (mm) and where applicable, volume (µL). When you receive your capillary, these abbreviations are printed on the packaging.

Using the guide: This fitting is coded as "SPF", for Swagelok, PEEK, Finger-tight.

Type

Key	Description
Capillary	Connection capillaries
Loop	Loop capillaries
Seat	Autosampler needle seats
Tube	Tubing
Heat exchanger	Heat exchanger

Material

Key	Description
SS	Stainless steel
Ti	Titanium
PK	PEEK
FS/PK	PEEK-coated fused silica*
PK/SS	Stainless steel-coated PEEK**
PTFE	PTFE
FS	Fused silica

*Fused silica in contact with solvent
**PEEK in contact with solvent

Fitting Left/Fitting Right

Key	Description
W	Swagelok + 0.8 mm Port id
S	Swagelok + 1.6 mm Port id
M	Metric M4 + 0.8 mm Port id
E	Metric M3 + 1.6 mm Port id
U	Swagelok union
L	Long
X	Extra long
H	Long head
G	Small head SW 4 mm
N	Small head SW 5 mm
F	Finger-tight
V	1200 bar
B	Bio
P	PEEK

The **type** gives some indication on the primary function, like a loop or a connection capillary.
The **material** indicates which raw material is used.
The **fitting** left/right indicate which fitting is used on both ends of the capillary.

At-a-glance color-coding keys

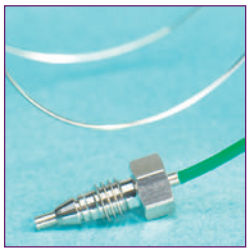
The color of your capillary will help you quickly identify the capillary id – see the chart to the right for reference.

Color-coding key for Agilent capillary tubing

Internal Diameter in mm	Color code
0.015	Orange
0.025	Yellow
0.05	Beige
0.075	Black
0.1	Purple
0.12	Red
0.17	Green
0.20/0.25	Blue
0.3	Grey
0.50	Bone White

Tip: As you move to smaller-volume, high efficiency columns, you'll want to use narrow id tubing, as opposed to the wider id tubing used for conventional HPLC instruments.

Agilent capillary supplies are made from a variety of top-quality materials to suit your lab's every need



Stainless Steel (SS):
good resistance to pitting corrosion

Stainless steel is ideal for most standard applications – except where bio-inertness is required, in which case we recommend PEEK-lined or Bio-inert titanium capillaries. Agilent's 0.6 mm od flexible grade 316L stainless steel capillaries (chrome/nickel/molybdenum bearing grade) are also much easier to handle than conventional, rigid 1.6 mm od capillaries.

Titanium (Ti):
high inertness for biological applications

Analyzing metal-sensitive proteins and biotherapeutics presents challenging solvent conditions for LC instruments. In addition, bio-molecules tend to bind non-specifically to surfaces. For these reasons, bio-inert titanium is the best choice for these applications. Titanium is biocompatible, making Bio-inert Titan capillaries perfect for applications where bio-inertness is paramount.

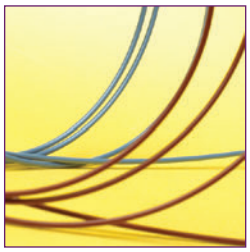
Stainless Steel-coated PEEK (PK/SS):
high-pressure bio-inertness and robustness

In bio-chromatography, capillaries and connectors should be inert to ensure the lowest interaction with protein samples. They must also be highly robust to withstand harsh cleaning procedures.

Unfortunately, metal-free PEEK capillaries can only withstand pressures of up to 200 bar in a thermostatically controlled cabinet with acetonitrile; even then, flexibility is compromised. To meet the growing need for bio-inertness, robustness, and higher operating pressures, Agilent has engineered a bio-inert PEEK liner clad with high-strength stainless steel to withstand pressures of at least 600 bar. This same technology is used in Agilent capillary fittings – giving you a strong, metal-free, capillary/connector flow path for bio-inert applications.

PEEK-coated fused silica (FS/PK):
rugged and pliable

Since their introduction in the early 1980s, fused silica capillaries have become the industry standard for many GC and LC applications – as well as capillary electrophoresis. Agilent fused-silica capillaries are made from high-purity silicon dioxide, and coated with PEEK for strength, durability, and pliability.



PEEK (PK):
durable and abrasion-resistant

Agilent PEEK capillaries are best for standard and bio-inert applications. PEEK (polyetheretherketone) is a thermoplastic polymer that resists mechanical and solvent damage, even at high temperatures. Because it is less vulnerable to corrosion than stainless steel, PEEK can be used in place of stainless steel when the capillary's external diameter is 1/16 in or less. It also resists abrasion, making it an excellent coating for fused silica capillaries. **Tip:** Use our color-coded PEEK fittings to track inlets and outlets of valves, columns, and detectors.

To learn more about Agilent LC capillary supplies, or to order now, visit **www.agilent.com/chem/LCcapillaries**

Agilent capillaries for routine applications

Category	Applications	Internal diameter (mm)	Pressure limit (bar)	pH range	Comments
Stainless steel	• All capillary applications, except where bio-inertness is required • 1/32 in od designed for Agilent 1100 systems • 1/16 in and 1/8 in od for most applications	0.075 0.12 0.17 0.25 0.3 0.5 0.61 0.93	1200	1-14	• Flexible for easy routing • Ready to use: cleaned and passivated to a high standard • Pre-cut capillaries are optimized for the lowest internal volume • Use pre-cut lengths to maintain zero-dead-volume performance
Titanium	• Where ultimate bio-inertness is essential	0.17 0.61	600	1-14	
Stainless-steel-coated PEEK	• Universal for standard and bio-inert applications • UHPLC bio-inert applications	0.17	600	1-14	• Metal-free flow path • Robust • Flexible • Resists corrosion better than stainless steel
PEEK-coated fused silica	• Industry standard for most LC applications	0.025 0.050 0.075 0.100 0.125	690	1-10	• Mechanically strong • Consistent, rigid flow path • Ideal replacement for stainless steel • To avoid permanent tube damage, always use pre-cut lengths
PEEK	• Most HPLC applications	0.13 0.18 0.25 0.50	480* 200**	1-14	• Smooth internal surface minimizes turbulence for improved resolution • Flexible, easily cut to length • Use with PEEK or stainless steel fittings • Excellent solvent compatibility

*At ambient temperature with water

**With acetonitrile at non-ambient temperature

Fittings for a strong, capillary flow path

Agilent offers more than 20 fitting varieties for Swagelok-type or metric M4/M3-type connections. Depending on your application, different materials must be used:

- Stainless steel or PEEK delivers permanent high-pressure sealing performance for connections such as valves, heaters, and columns
- Stainless steel ensures permanent high-pressure sealing and optimal performance throughout your LC system up to 1200 bar
- Finger-tight fittings (polymeric for 400 bar and polyketone for 600 bar) are a convenient option; They allow easy end fitting adjustment, so you can seat the capillary into the column properly, preventing extra-column voids and leaks
- High-pressure fittings, which can be used with pressures up to 1200 bar, can be removed and replaced
- It's a good idea to use stainless steel nuts and ferrules for instrument connections, and PEEK nuts and ferrules for column and guard column connections, since these are changed most frequently

Agilent fittings for leak-free connections

Fitting type	Advantages/Tips

Swagelok-type fittings	• Suitable for most connections
	• Available in a variety of combinations:
	  • One piece or multiple pieces with nut + front and back ferrules
	  • Stainless steel, PEEK, polyketone, or a stainless steel/PEEK combination

Metric M4/Metric M3	• For micro valve connections
Stainless steel	• At least 1200 bar • Most popular material for permanent, high-pressure sealing • Use our slitted socket wrench (P/N 8710-2391 or P/N 5023-0240) for optimal tightness
1200 bar removable fittings for 1290 Infinity LC	• 1200 bar • Available in standard, long, and extra-long sizes for compatibility with columns that have different sized nuts • Removable and replaceable • Use our slotted socket wrench (P/N 8710-2391 or P/N 5023-0240) for optimal tightness
PEEK	• Up to 400 bar (at ambient temperature with water) • Easy, finger-tight column connections • Ideal for frequently changed connections, such as column connections • Pressure is less critical
Polyketone	• <600 bar (600 bar pressure rating) • Easy, finger-tight column connections • Fits stainless steel tubing

TIPS & TOOLS

Tips and tools for creating the best possible connections

See page 98

Agilent 1260/1200/1100 Infinity Series LC Capillaries

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Notes	Part No.
Pump	Autosampler	SS	0.17	900	S	S	Pre-swaged on A	G1329-87300
Pump	Autosampler	SS	0.17	700	S	S	Pre-swaged on A and B	G1312-87304
Pump	Autosampler	SS	0.17	500	S	S	Pre-swaged on A	G1312-67305
Pump	Autosampler	SS	0.17	400	S	S	Pre-swaged on A and B	G1312-87303
Pump	Autosampler	SS	0.17	380	S	S	Pre-swaged on A and B	01090-87306
Manual injector	Column	SS	0.17	180	S	S	Pre-swaged on A	G1313-87305
Manual Injector	TCC	SS	0.17	500	SH	S		G1328-87600
Heater	Column	SS	0.17	90	S	S		G1316-87300
Column	Detector	SS	0.17	380	S	S	Pre-swaged on A; thermal isolation	G1315-87311
TCC\VWD	MS	SS	0.12	500	S	S	Pre-swaged on A	G1316-87309
Column	VWD	PK	0.17	600			Finger-tight fittings not included (0100-1516, 2/pk)	5062-8522
Pump Purge Valve	Waste	PK	1.3	5000*			No fitting needed	5062-2461
Detector	Waste	PTFE	0.8	5000*			Finger-tight fittings not included (0100-1516, 2/pk)	5062-2462
VWD	Waste	PK	0.25	500			Finger-tight fittings not included (0100-1516, 2/pk)	5062-8535
Autosampler	TCC	SS	0.12	180	S	S	Pre-swaged on A; can also be connected to low dispersion heat exchanger	G1313-87304
Thermostatted Autosampler	TCC	SS	0.12	280	S	S	Pre-swaged on A; can also be connected to low dispersion heat exchanger	01090-87610
TCC	Column	SS	0.12	105	S	S	Pre-swaged on A	01090-87611
Column	DAD	SS	0.12	150	S	S	Pre-swaged on A	G1315-87312
Female adapter for connecting long columns		SS	0.17	150	S			G1315-87303
Purge Valve**	Waste	SS and FS	0.17	150	S	U		G1312-67500

*Capillary is intended to be cut to the right length for your need.

**Calibration capillary assembly

Material

Key	Description
SS	Stainless steel
PK	PEEK
PTFE	PTFE
FS	Fused silica
S	Swagelok 1.6 mm port id
SH	Swagelok 1.6 mm port id, long head
U	Swagelok union

Agilent 1290 Infinity Series LC

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Notes	Part No.
Pump	Autosampler	SS	0.17	300	S	S	Pre-swaged on A and B	5067-4657
Pump	Thermostatted Autosampler	SS	0.17	450	S	S	Pre-swaged on A and B	5067-4658
Autosampler	TCC	SS	0.12	340	S	S	Pre-swaged on A	5067-4659
Column	DAD	SS	0.12	220	S	S	Pre-swaged on A	5067-4660
1290 System	CTC Autosampler	SS	0.17	600	S	SH	Pre-swaged on A	5067-4670
CTC Autosampler	Column	SS	0.12	600	S	S		5067-4669
Detector	Waste	PTFE	0.8	5000*			Finger-tight fittings not included (P/N 0100-1516, 2/pk)	5062-2462

*Capillary is intended to be cut to the right length for your need.

Stainless steel fittings (S), 5062-2418

Finger-tight PEEK fitting (SPF), 0100-1516

Stainless steel back ferrule, 5180-4114

Images shown are capillary fittings. For complete information on fittings, turn to page 95.

Agilent 1290 Valve Head

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Notes	Valve Information	Part No.
Autosampler	Valve with Swagelok port	SS	0.17	700	S	SX	Pre-swaged on A		5067-4684
Autosampler	Valve with Swagelok port	SS	0.12	340	S	SX	Pre-swaged on B	G4231A/B 2 Position/6 Port valve head, 600/1200 bar	5067-4647
Autosampler	Valve with M4 port	SS	0.12	340	SLV	M		G4232A 2 Position/10 Port micro valve head, 600 bar	5067-4744
Autosampler	Valve with M4 port	SS	0.12	500	SLV	M		G4234A/B 6 column selector valve, 600/1200 bar	5067-4745
Valve with 10/32 Swagelok port	Heat exchanger	SS	0.12	90	SX	S	Pre-swaged on A and B	G4231A/B 2 Position/6 Port valve head, 600/1200 bar	5067-4649
Valve with M4 port	Heat exchanger	SS	0.12	90	M	SL	Pre-swaged on B	G4232A 2 Position/10 Port micro valve head, 600 bar	5067-5106
Short column	Valve with M4 port	SS	0.12	150	SV	M		G4234A/B 6 column selector valve, 600/1200 bar	5067-4735
Short column	Valve with M4 port	SS	0.12	280	SV	M		G4232A 2 Position/10 Port micro valve head, 600 bar	5067-5104
Long column	Valve with M4 port	SS	0.12	200	SV	M		G4232A 2 Position/10 Port micro valve head, 600 bar	5067-5107
Short column	Valve with Swagelok port	SS	0.12	130	SL	SX	Pre-swaged on B	G4231A/B 2 Position/6 Port valve head, 600/1200 bar	5067-4650
Short column	Valve with 10/32 Swagelok port	SS	0.12	150	SX	SX		G4232B 2 Position/10 Port valve head, 1200 bar	5067-4686
Long column	Valve with Swagelok port	SS	0.12	500	SL	SX	Pre-swaged on B	G4231A/B 2 Position/6 Port valve head, 600/1200 bar	5067-4651

(Continued)

Material

Key	Description
SS	Stainless steel
S	Swagelok 1.6 mm port id
SH	Swagelok 1.6 mm port id, long head
SL	Swagelok 1.6 mm port id, long
SLV	Swagelok 1.6 mm port id, long, 1200 bar
SX	Swagelok 1.6 mm port id, extra-long
M	Metric M4 0.8 mm port id

Agilent 1290 Valve Head

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Notes	Valve Information	Part No.
Long column	Valve with Swagelok port	SS	0.12	280	SX	SX		G4232B 2 Position/10 Port valve head, 1200 bar	5067-4687
Valve with Swagelok port	Detector	SS	0.12	150	SX	S	Pre-swaged on A and B	G4231A/B 2 Position/6 Port valve head, 600/1200 bar	5067-4653
Valve with Swagelok port	Detector	SS	0.12	200	SX	SX	Pre-swaged on A	G4232B 2 Position/10 Port valve head, 1200 bar	5067-4689
Valve with M4 port	Detector	SS	0.12	280	M	SLV		G4232A 2 Position/10 Port micro valve head, 600 bar	5067-4746
Heat exchanger	Valve with M4 port	SS	0.17	90	SL	M	Pre-swaged on A	G4232A 2 Position/10 Port valve head, 1200 bar	5067-5109
Column	Valve with M4 port	SS	0.17	90	SV	M		G4232A 2 Position/10 Port valve head, 1200 bar	5067-5110
Column	Valve with M4 port	SS	0.17	150	SV	M		G4232A 2 Position/10 Port valve head, 1200 bar	5067-5111
Column	Valve with M4 port	SS	0.17	280	SV	M		G4232A 2 Position/10 Port valve head, 1200 bar	5067-5112
G4232A 2 Position/ 10 Port valve head, 1200 bar		SS	0.17	250	SL	M	Pre-swaged on A	G4232A 2 Position/10 Port valve head, 1200 bar	5067-5113

Stainless steel extra long fitting (SX), 5065-9967

Stainless steel fittings (S), 5062-2418

1200 bar removable long fitting (SLV), 5067-4738

Images shown are capillary fittings. For complete information on fittings, turn to page 95.

Agilent 1220/1120 Infinity Series LC

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Notes	Part No.
Pump	Autosampler	SS	0.17	380	S	S	Pre-swaged on A and B	01090-87306
Manual injector	Column	SS	0.17	180	S	S	Pre-swaged on A	G1313-87305
Heater	Column	SS	0.17	90	S	S		G1316-87300
Column	Detector	SS	0.17	380	S	S	Pre-swaged on A; thermal isolation	G1315-87311
VWD	Waste	PK	0.25	500			Finger-tight fittings not included (P/N 0100-1516, 2/pk)	5062-8535
Detector	Waste	PTFE	0.8	5000			Finger-tight fittings not included (P/N 0100-1516, 2/pk)	5062-2462

Material

Key	Description
SS	Stainless steel
S	Swagelok 1.6 mm port id
PK	PEEK
PTFE	PTFE

Stainless steel fittings (S), 5062-2418

Finger-tight PEEK fitting (SPF), 0100-1516

Agilent 1200 and 1100 Prep LC Systems

From	To	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Notes	Part No.
Prep Isocratic	Autosampler	SS	0.6	400	S	S	Pre-swaged on A and B	G1361-67302
Autosampler	Column	SS	0.5	600	S	S/SX		G2260-87300
Autosampler	Column	SS	0.5	400	S	SH		G2260-87301

Stainless steel fittings (S), 5062-2418

1200 bar removable fitting (SV), 5067-4733

PEEK fittings, plugs (MP), 5065-4410

Images shown are capillary fittings. For complete information on fittings, turn to page 95.

Miscellaneous Capillaries

Material	ID (mm)	Length (mm)	Fitting Type From (A)	Fitting Type To (B)	OD (mm) A*	OD (mm) B*	Notes	Part No.
SS	0.12	70	S	S	1.6	1.6		G1316-87303
SS	0.12	2000	U	U			Restriction Capillary	5022-2159
SS	0.12	105			1.6	1.6	Capillary without fitting	5021-1820
SS	0.12	400			1.6	1.6	Capillary without fitting	5021-1823
SS	0.12	150			1.6	1.6	Capillary without fitting	5021-1821
SS	0.12	280			1.6	1.6	Capillary without fitting	5021-1822
SS	0.12	500			1.6	1.6	Capillary without fitting	5065-9964
SS	0.12	200			1.6	1.6	Capillary without fitting	5065-9935
SS	0.12	50	S	U	1.6			G1316-87312
SS	0.12	340	S	S	1.6	1.6		G1316-87319
SS	0.12	170	S	S	1.6	1.6		G1316-87316
SS	0.12	300	S	S	1.6	1.6		G1316-87318
SS	0.12	210	S	S	1.6	1.6		G1316-87317
SS	0.12	70	S	U	1.6			G1316-87313
SS	0.12	90	S	U	1.6			G1316-87314
SS	0.12	60	S	S			Pre-swaged on A and B	79841-87610
SS	0.12	340	S	M		0.8	Pre-swaged on A	G1316-87305

(Continued)

Material

Key	Description
SS	Stainless steel
S	Swagelok 1.6 mm port id
U	Swagelok union
SL	Swagelok 1.6 mm port id, long
SLV	Swagelok 1.6 mm port id, long, 1200 bar
SX	Swagelok 1.6 mm port id, extra-long
M	Metric M4 0.8 mm port id

Miscellaneous Capillaries

Material	ID (mm)	Length (mm)	Fitting Type From (A)	Fitting Type To (B)	OD (mm) A*	OD (mm) B*	Notes	Part No.
SS	0.12	100	M	M	0.8	0.8		G1316-27301
SS	0.12	75	S	M	1.6	0.8		G1316-87306
SS	0.12	90	S	SX	1.6	1.6		5067-4685
SS	0.12	120	SX	SX	1.6	1.6		5067-4688
SS	0.17	105			1.6	1.6	Capillary without fitting	5021-1816
SS	0.17	400			1.6	1.6	Capillary without fitting	5021-1819
SS	0.17	150			1.6	1.6	Capillary without fitting	5021-1817
SS	0.17	280			1.6	1.6	Capillary without fitting	5021-1818
SS	0.17	280	S	S	1.6	1.6	Pre-swaged on A	01090-87304
SS	0.17	200			1.6	1.6	Capillary without fitting	5065-9931
SS	0.17	600			1.6	1.6	Capillary without fitting	5065-9933
SS	0.17	800	S	S	1.6	1.6	Pre-swaged on A	01048-87302
SS	0.17	900			1.6	1.6	Capillary without fitting	5065-9963
SS	0.17	105	S	S	1.6	1.6		G1316-87321
SS	0.17	700			1.6	1.6	Capillary without fitting	5065-9932
SS	0.17	170	S	S	1.6	1.6		G1316-87323
SS	0.17	250	S	S	1.6	1.6	Pre-swaged on A and B	G1367-87304
SS	0.17	150	S	S	1.6	1.6	Pre-swaged on A and B	G1312-87305
SS	0.17	800	SL	S	1.6	1.6	Pre-swaged on A	01078-87305
SS	0.17	105	S	S	1.6	1.6	Pre-swaged on A and B	G1312-87306
SS	0.17	280	SX	S	1.6	1.6	Pre-swaged on A and B	5067-4608
SS	0.17	700	S	SX	1.6	1.6	Pre-swaged on A and B	5067-4648
SS	0.17	150	M	M	0.8	0.8		5067-4737
SS	0.17	700	SL	M	1.6	0.8	Pre-swaged on A	5067-5120

(Continued)

Miscellaneous Capillaries

Material	ID (mm)	Length (mm)	Fitting Type From (A)	Fitting Type To (B)	OD (mm) A*	OD (mm) B*	Notes	Part No.
SS	0.17	280	SX	SX	1.6	1.6	Pre-swaged on A and B	5067-4607
SS	0.17	280	SX	S	1.6	1.6	Pre-swaged on A and B	5067-4608
SS	0.17	400			1.6	1.6	Capillary without fitting	5021-1819
SS	0.17	500	SX	Nut (P/N 0100-2086)	1.6	1.6	Pre-swaged on A	5067-4609
SS	0.17	600			1.6	1.6	Capillary without fitting	5065-9933
PK/SS	0.17	105						G5667-81000
PK/SS	0.17	150						G5667-81001
PK/SS	0.17	200						G5667-81002
PK/SS	0.17	300						G5667-81003
PK/SS	0.17	400						G5667-81004
PK/SS	0.17	500						G5667-81005
SS	0.25	320	S	S	1.6	1.6	Pre-swaged on A and B	79835-87638
SS	0.5	105			1.6	1.6	Capillary without fitting	5065-9927
SS	0.5	150			1.6	1.6	Capillary without fitting	5022-6509
SS	0.5	200			1.6	1.6	Capillary without fitting	5022-6510
SS	0.5	800			1.6	1.6	Capillary without fitting	5065-9926

*1.6 mm = 1/16 in

Material

Key	Description
SS	Stainless steel
PK	PEEK
PK/SS	PEEK and Stainless steel
Ti	Titanium
S	Swagelok 1.6 mm port id
U	Swagelok union
SL	Swagelok 1.6 mm port id, long
SLB	Swagelok 1.6 mm port id, long bio
SV	Swagelok 1.6 mm port id, 1200 bar
SLV	Swagelok 1.6 mm port id, long, 1200 bar
SX	Swagelok 1.6 mm port id, extra-long

Supplies for the Agilent Infinity 1260 Bio-inert LC System

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Notes	Part No.
Pump	Thermostatted autosampler	Ti	0.17	700	SLB	SLV	Pre-swaged on A	G5611-60501
Pump	Manual injection valve	Ti	0.17	900	SLB	SLV	Pre-swaged on A	G5611-60502
Pump	Injector	Ti	0.17	400	SLB	SLV	Pre-swaged on A	G5611-60500
		PK/SS	0.17	400				G5667-81004
		PK/SS	0.17	500				G5667-81005
Autosampler injection valve	Autosampler analytical head	Ti	0.17	160	SLB	SV	Pre-swaged on A	G5611-60503
Damper	Pump head	Ti	0.6	234	SLB	SLB	For pump only. Pre-swaged on A and B	G5611-67301
Outlet ball valve	Damper	Ti	0.6	248	SLB	SLB	For pump only. Pre-swaged on A and B	G5611-67300
		PK/SS	0.17	105				G5667-81000
		PK/SS	0.17	150				G5667-81001
		PK/SS	0.17	200				G5667-81002
		PK/SS	0.17	300				G5667-81003
		PK/SS	0.17	500				G5616-81000

1200 bar removable fitting (SV), 5067-4733

1200 bar removable long fitting (SLV), 5067-4738

Titanium fitting (SLB), G5611-60502

Images shown are capillary fittings. For complete information on fittings, turn to page 95.

PEEK-Coated Fused Silica Capillaries for Nano LC

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Part No.
Switching valve	Column	FS/PK	25	100	MP	WPF	G1375-87320
EMPV	Flow sensor	FS/PK	25	220	WG	MP/WG	G1375-87321
Flow sensor	Injection valve	FS/PK	25	350	MP/WG	MP	G1375-87322
Switching valve	Column	FS/PK	25	550	MP	WPF	G1375-87323
Switching valve	Column	FS/PK	25	700	MP	WPF	G1375-87324
Switching valve	Column	FS/PK	50	100	MP	WPF	G1375-87325
Injection valve	Injector seat or to 2nd pump	FS/PK	75	650	MP	WG/WPF	G1375-87327

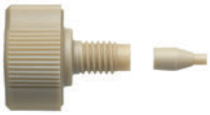
PEEK-Coated Fused Silica Capillaries – 20 µL/min Flow

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Part No.
EMPV	Flow sensor	FS/PK	50	220	WG	WG	G1375-87301
Flow sensor	Injection valve	FS/PK	50	550	WG	MP	G1375-87310
Injection valve	Metering device	FS/PK	50	200	MP	WG	G1375-87302
Injection valve	Column	FS/PK	50	500	MP	WPF	G1375-87304
Column	Detector	FS/PK	50	400	WPF		G1315-68703
Detector	Waste	FS/PK	75	700			G1315-68708
µ-switching valve	Column	FS/PK	50	280	MP	WPF	G1375-87309

Stainless steel screw, 5063-6593

Ferrule and stainless steel lock ring (W), 5065-4423

PEEK fittings, plugs (MP), 5065-4410



Double winged PEEK nut & ferrule (WPF), 5065-4422

Images shown are capillary fittings. For complete information on fittings, turn to page 95.

PEEK-Coated Fused Silica Capillaries – 100 µL/min Flow

From (A)	To (B)	Material	ID (mm)	Length (mm)	Fitting Type From	Fitting Type To	Part No.
EMPV	Flow sensor	FS/PK	100	220	WG	WG	G1375-87305
Flow sensor	Injection valve	FS/PK	100	550	WG	MP	G1375-87306
Injection valve	Metering device	FS/PK	100	200	MP	WG	G1375-87312
Injection valve	Column	FS/PK	75	500	MP	WPF	G1375-87311
Column	Detector	FS/PK	75	400	WPF		G1375-87308
Detector	Waste	FS/PK	75	700			G1315-68708
µ-switching valve	Column	FS/PK	50	280	MP	WPF	G1375-87309

Loop Capillaries

Volume (µL)	Agilent Autosampler	Part No.
8	G1389A	G1375-87303
	G1377A	G1375-87315
20	G1367E, G4226A	G4226-60310
40	G1367D	G1377-87310
	G1367E, G4226A	5067-4703
	G1377A	G1377-87300
	G1389A	G1329-87302
100	G1313A, G1329A/B, 1120, 1220 Infinity LC	01078-87302
	G1367A/B/C	G1367-87300
	G1367E, G4226A	5067-4710
	G5667A	G5667-60310
900	G1329A/B, G2260A	G1313-87303
5000	G2260A	G2260-68711

Material

Key	Description
FS/PK	Fused silica/PEEK
W	Swagelok 0.8 mm port id
WG	Swagelok 0.8 mm port id, small head SW 4 mm
MP	Metric M4 0.8 mm port id, PEEK
WPF	Swagelok 0.8 mm port id, PEEK, finger-tight

Tubing

PEEK Tubing

- Flexible and easy to cut to desired lengths
- Color coded for easy tracking
- Accepts both stainless steel and PEEK fittings
- 1/16 in od

PEEK Tubing

ID (mm)	Length (m)	Color Code	Part No.
0.50	1.5	Bone white	0890-1761
0.25	1.5	Blue	0890-1762
0.25	5	Blue	5042-6463
0.18	1.5	Green	0890-1763
0.18	5	Green	5042-6462
0.13	1.5	Red	0890-1915
0.13	5	Red	5042-6461

Other Tubing

Description	Length (m)	ID (mm)	OD (mm)	Part No.
PTFE tubing, FEP, primary use for valve solutions	5	0.7	1.6	5062-2462
PTFE solvent tubing, primary use for flow path from solvent bottle to degasser, to pump	5	1.5	3.1	5062-2483
Corrugated tubing, polypropylene	5	6.5		5062-2463
Silicone tubing	5	1	3	5065-9978
Clamps and micro clamps, 10/pk				5065-9976
Barbed Y-connector PP for 3/16 in id tube, 10/pk				5065-9971
For G2258A 1100/1200 Series Dual Loop Autosampler				
Front seat tube, SS	0.1	0.5		G2258-87316
Back seat tube, SS	0.12	0.5		G2258-87315
Front seat tube, PTFE	0.1	0.2		G2258-87312
Back seat tube, PTFE	0.12	0.25		G2258-87313
Waste tube	0.15	0.8		G2258-87310
Drawing tube assembly for flush solvent				G2258-87307
Tubing assembly, solvent flush				G2258-87314
For G1313/27/29A 1100/1200 Series Autosampler				
Waste tube				G1313-87300
Corrugated tubing, polypropylene	5	6.5		5062-2463
For G1387A 1100/1200 Series Micro Autosampler				
Waste tube, FEP		0.8	1.6	G1375-87326

Accessories

Description	Part No.
Plastic tubing cutter	8710-1930
Blades for plastic cutter, 5/pk	8710-1931
Fitting screws, stainless steel, 10-32, 4 mm, 5/pk	5065-9948
PEEK ferrule and stainless steel ring for 2 mm tube, 5/pk	5065-9950
Union, PEEK for 1/8 in od tubing	0100-2410
Waste adapter, 1200 Series autosamplers, gray	G1313-43216

Fitting screws, 5065-9948

PEEK ferrules and SS rings, 5065-9950

Rigid Capillary Tubing

- Squarely cut, pre-cleaned and ready to use
- Use with stainless steel fittings and ferrules (P/N 5062-2418) or PEEK fittings (P/N 0100-1516)

Rigid Capillary Tubing

Length (mm)	ID (mm)	Unit	Part No.
100	0.17	10/pk	5061-3361
200	0.17	10/pk	5061-3362

Plastic tubing cutter, 8710-1930

Capillary Kits

Your best value:
Agilent multi-use capillary and fitting kits with FREE cybertool

Agilent starter kits contain the most widely used capillary tubing, Swagelok connectors, and fittings in a variety of sizes, so you can find just the right length to minimize your connections and tubing volume. We've also included our flexible stainless steel capillaries to help you make the best LC connections, regardless of equipment brand. Plus, as a special bonus, all multi-use kits (the first three listed here) feature a FREE cybertool that puts more than 30 lab essentials at your fingertips.

For high-efficiency columns, it's best to use narrow-diameter red tubing (0.12 mm id), instead of conventional green (0.17 mm id) tubing.

Capillary and fittings kits

Description	Contents	Part No.
Capillary/fitting starter kit for 1100 Capillary LC System Multi-use kit, a collection of various capillaries and tools for use in the lab.	Kit includes: Qty 2 – Fused silica/PEEK capillary, 50 µm, 55 cm Qty 1 – Fused silica/PEEK capillary, 50 µm, 20 cm Qty 1 – Fused silica/PEEK capillary, 100 µm, 110 cm Qty 2 – Fused silica/PEEK capillary, 50 µm, 50 cm Qty 2 – Fused silica/PEEK capillary, 50 µm, 40 cm Qty 4 – 4 mm stainless steel fitting, male 10-32 Qty 4 – 1/32 in PEEK ferrule and stainless steel lock ring Qty 4 – PEEK fittings for µ-valves Qty 4 – Double winged PEEK nuts and 1/32 in ferrules Cybertool	5065-9938
Capillary/fitting starter kit, 0.12 mm id Multi-use kit, a collection of various capillaries and tools for use in the lab.	Kit includes: Qty 1 – PEEK capillary, 0.13 mm id, 1.5 m Qty 4 – Stainless steel capillary, 0.12 x 105 mm Qty 4 – Stainless steel capillary, 0.12 x 150 mm Qty 2 – Stainless steel capillary, 0.12 x 170 mm Qty 2 – Stainless steel capillary, 0.12 x 200 mm Qty 2 – Stainless steel capillary, 0.12 x 220 mm Qty 2 – Stainless steel capillary, 0.12 x 280 mm Qty 1 – Stainless steel capillary, 0.12 x 400 mm Qty 3 – Stainless steel ZDV union Tubing cutter for PEEK capillaries 1/16 in Stainless steel fittings, 10/pk 1/16 in PEEK fittings, color, 10/pk 1/16 in PEEK fittings, 10/pk Rheotool Cybertool	5065-9937

(Continued)

Capillary and fittings kits

Description	Contents	Part No.
Capillary/fitting starter kit, 0.17 mm id Multi-use kit, a collection of various capillaries and tools for use in the lab.	Kit includes: Qty 1 – PEEK capillary, 0.18 mm id, 1.5 m Qty 4 – Stainless steel capillary, 0.17 x 105 mm Qty 4 – Stainless steel capillary, 0.17 x 150 mm Qty 2 – Stainless steel capillary, 0.17 x 200 mm Qty 2 – Stainless steel capillary, 0.17 x 280 mm Qty 1 – Stainless steel capillary, 0.17 x 400 mm Qty 3 – Stainless steel ZDV union Tubing cutter for PEEK capillaries 1/16 in Stainless steel fittings, 10/pk 1/16 in PEEK fittings, color, 10/pk 1/16 in PEEK fittings, 10/pk Rheotool Cybertool	5065-9939
Capillary starter kit 0.17 mm Bio-inert	Kit includes: Qty 1 – mounting tool Qty 2 – capillaries, PEEK, stainless-steel clad, 0.17 x 200 mm, removable ferrule, 1.6 mm port id, long, SW 5 mm fittings (P/N G5667-81002) Qty 1 – capillary, 0.17 x 30mm (P/N G5667-81003) Qty 2 – capillaries, 0.17 x 105 mm (P/N G5667-81000) Qty 2 – capillaries, 0.17 x 150 mm (P/N G5667-81001) Qty 1 – 1.5 m tubing, PEEK, 1/16 in od, 0.007 in (0.18 mm) id (P/N 0890-1763) Qty 1 – fittings finger tight, PEEK, 1/16 in, 10/pk (P/N 5063-6591) Qty 1 – fittings, finger tight, PEEK, colored, 10/pk (P/N 5065-4426) Qty 3 – unions, 600 bar (P/N 5067-4741) Qty 1 – Rheotool socket wrench, 1/4 in (P/N 8710-2391) Qty 1 – multifunction tool (P/N 8710-2474) Qty 1 – capillary, Ti, 0.17 x 400 mm (P/N G5611-60500) Qty 1 – tubing cutter (P/N 8710-1930)	G5611-68711
Rapid Resolution High Throughput capillary kit Used for converting an Agilent 1200 instrument to the RRLC configuration, to enable use of high efficiency columns (to 600 bar). Can also be used for Agilent 1100 instruments.	Kit includes: Qty 1 – PEEK fitting long for 1/32 in od capillaries Qty 1 – Stainless steel capillary, 0.12 x 280 mm Qty 1 – Stainless steel capillary, 0.12 x 150 mm Qty 1 – Stainless steel capillary, 0.12 x 70 mm Qty 1 – Needle seat capillary, 12 µL x 0.12 mm Qty 1 – PEEK capillary, 0.125 x 550 mm	5065-9947
Low dispersion capillary kit for G1316C	Kit includes: Qty 1 – Flexible tubing, 280 mm, 0.12 mm id Qty 1 – Heater long down, 0.12 id (1.6 µL internal) Qty 1 – Carrier for heat exchanger TCC SL Plus	5067-4633

(Continued)

Capillary and fittings kits

Description	Contents	Part No.
1200 Infinity Series capillary kit 0.12 mm id, G1316C for installing valves G4231A (2 position/6 port – 600 bar) and G4231B (2 position/6 port – 1200 bar)	Kit includes: Qty 1 – Column clip set, eight colors Qty 1 – Stainless steel capillary 0.12 x 340 mm Qty 1 – Stainless steel capillary 0.17 x 700 mm Qty 2 – Stainless steel capillary 0.12 x 90 mm Qty 2 – Stainless steel capillary 0.12 x 150 mm Qty 2 – Stainless steel capillary 0.12 x 280 mm Qty 1 – Stainless steel capillary 0.12 x 120 mm Qty 1 – Stainless steel capillary 0.12 x 200 mm Qty 1 – Heater long up, 0.12 id (1.6 µL internal) Qty 1 – Heater long down, 0.12 id (1.6 µL internal) Qty 2 – Carrier for heat exchanger TCC SL Plus	5067-4646
1200 Infinity Series capillary kit 0.17 mm id G1316C for installing a 2 position/10 port valve G4232A (600 bar)	Kit includes: Qty 2 – PEEK tubing, 1/32 in od, 0.4 mm id, 450 mm Qty 1 – Column clip set, eight colors Qty 3 – Stainless steel capillary 0.17 x 150 mm Qty 1 – Stainless steel capillary 0.17 x 340 mm Qty 4 – Stainless steel capillary 0,17 x 90 mm Qty 2 – Stainless steel capillary 0.17 x 280 mm Qty 1 – Stainless steel capillary 0.17 x 250 mm Qty 1 – Stainless steel capillary 0.17 x 700 mm	5067-5103
1200 Infinity Series capillary kit 0.12 mm id G1316C for installing a 2 position/10 port valve G4232B (1200 bar)	Kit includes: Qty 1 – Stainless steel capillary 0.12 x 120 mm Qty 2 – Stainless steel capillary 0.12 x 150 mm Qty 1 – Stainless steel capillary 0.12 x 200 mm Qty 2 – Stainless steel capillary 0.12 x 280 mm Qty 1 – Stainless steel capillary 0.12 x 340 mm Qty 1 – Stainless steel capillary 0.17 x 700 mm Qty 2 – Stainless steel capillary 0.12 x 90 mm Qty 1 – Column clip set, eight colors Qty 1 – Heater long up, 0.12 id (1.6 µL internal) Qty 1 – Heater long down, 0.12 id (1.6 µL internal) Qty 2 – Carrier for heat exchanger TCC SL Plus	5067-4682
1200 capillary kit for 0.12 mm id	Kit includes: Qty 1 – Stainless steel capillary, 0.12 x 130 mm Qty 2 – Stainless steel capillary, 0.12 x 170 mm Qty 1 – Stainless steel capillary, 0.12 x 210 mm Qty 1 – Stainless steel capillary, 0.12 x 300 mm Qty 3 – Stainless steel capillary, 0.12 x 500 mm Qty 1 – Stainless steel capillary, 0.12 x 700 mm Qty 1 – Stainless steel capillary, 0.12 x 340 mm Qty 1 – Low carry over seat Qty 1 – DAD heat exchanger capillary, 0.12 x 310 mm	G1316-68716

(Continued)

Capillary and fittings kits

Description	Contents	Part No.
Stainless steel flexible capillary tubing kit	Kit includes: Qty 10 – 1.6 mm (1/16 in) Stainless steel back ferrules Qty 10 – 1.6 mm (1/16 in) Stainless steel front ferrules Qty 10 – Stainless steel fittings Qty 3 – Stainless steel Swagelok nut, 0.12 x 105 mm Qty 1 – Stainless steel capillary, 0.12 x 150 mm Qty 1 – Stainless steel capillary, 0.12 x 280 mm	5061-3304
Stainless steel flexible capillary tubing kit	Kit includes: Qty 2 – Stainless steel capillary, 0.12 x 35 mm Qty 3 – Stainless steel capillary, 0.12 x 105 mm Qty 1 – Stainless steel capillary, 0.12 x 280 mm	5061-3315
1200 Infinity Series low dispersion capillary kit for installing a 6 position/14 port valve G4234A (600 bar) and G4234B (1200 bar)	Kit includes: Qty 1 – Stainless steel capillary, 0.12 x 250 mm, with removable fitting Qty 1 – Stainless steel capillary, 0.12 x 340 mm, with removable fitting Qty 1 – Stainless steel capillary, 0.12 x 500 mm, with removable fitting Qty 8 – Stainless steel capillary, 0.12 x 130 mm, with removable fitting Qty 1 – Stainless steel capillary, 0.17 x 150 mm, with 2 long pre-swaged fittings Qty 4 – Stainless steel capillary, 0.12 x 170 mm Qty 2 – PEEK tubing, 1/32 in od, 0.4 mm id, 450 mm Qty 2 – PEEK fitting, special for Chip-LC Qty 1 – Column clip set, eight colors Qty 2 – Heater long up, 0.12 mm id (1.6 µL internal) Qty 2 – Heater long down, 0.12 mm id (1.6 µL internal) Qty 2 – Carrier for heat exchanger TCC Qty 2 – Fitting holder assembly	5067-4729
Ultra-low dispersion capillary kit for the 1290 Infinity LC	Kit includes: Qty 1 – Stainless steel capillary, 0.075 x 220 mm SV/SLV Qty 1 – Stainless steel capillary, 0.075 x 340 mm SV/SLV Qty 1 – Low dispersion needle seat for 1290 Infinity LC Qty 1 – Heater long up, 0.075 mm (nominal 1.0 µL) Qty 1 – 1290 Infinity LC low dispersion kit note	5067-5189

Ultra-low dispersion capillary kit, 5067-5189

Fittings and Unions

Stainless steel fittings (S), 5062-2418

Stainless steel long fittings (SL), 5065-4454

Stainless steel extra long fitting (SX), 5065-9967

Stainless steel nut, 5061-3303

Stainless steel front ferrules, 5180-4108

Stainless steel back ferrule, 5180-4114

1200 bar removable fitting (SV), 5067-4733

1200 bar removable long fitting (SLV), 5067-4738

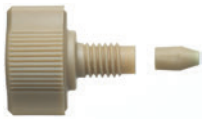
1200 bar removable extra long fitting (SXV), 5067-4739

PEEK fittings (SPF), 0100-1516/5063-6591

Finger-tight PEEK fitting (SPF), 0100-1516

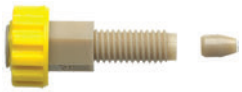
PEEK long fittings (SPFL), 5062-8541

Finger-tight PEEK fittings (SPF), 5065-4426



Double winged fitting (SPF), 5042-6500

PEEK RheFlex fittings (SPF), 0100-1631



PEEK RheFlex fittings (SPF), 0100-2175

Stainless steel blanking nut, 01080-83202

Fittings

Description	Key	Unit	Part No.
Swagelok 1.6 mm stainless steel fitting	S	10/pk	5062-2418
Swagelok 1.6 mm stainless steel fitting, long screw	SL	10/pk	5065-4454
Swagelok 1.6 mm stainless steel fitting, extra long screw	SX	10/pk	5065-9967
Swagelok 1.6 mm screw		10/pk	5061-3303
1.6 mm stainless steel front ferrule		10/pk	5180-4108
1.6 mm stainless steel back ferrule		10/pk	5180-4114
Swagelok 1.6 mm 1200 bar removable fitting	SV	1/ea	5067-4733
Swagelok 1.6 mm 1200 bar removable fitting, long screw	SLV	1/ea	5067-4738
Swagelok 1.6 mm 1200 bar removable fitting, extra long screw	SXV	1/ea	5067-4739
Swagelok 1.6 mm finger-tight PEEK fitting	SPF	10/pk	5063-6591
Swagelok 1.6 mm PEEK finger-tight fitting	SPF	2/pk	0100-1516
Swagelok 1.6 mm PEEK finger-tight long fitting	SPLF	10/pk	5062-8541
Swagelok 1.6 mm PEEK finger-tight fitting (mixed colors)	SPF	10/pk	5065-4426
Swagelok 1.6 mm finger-tight PEEK double winged fitting	SPF	10/pk	5042-6500
Swagelok 1.6 mm finger-tight PEEK RheFlex fitting	SPF	5/pk	0100-1631
Swagelok 1.6 mm finger-tight PEEK RheFlex fitting (mixed color)	SPF	10/pk	0100-2175
Swagelok 1.6 mm stainless steel blanking nut	S	1/ea	01080-83202

Material

Key	Description
S	Swagelok 1.6 mm port id
SL	Swagelok 1.6 mm port id, long
SX	Swagelok 1.6 mm port id, extra-long
SV	Swagelok 1.6 mm port id, 1200 bar
SLV	Swagelok 1.6 mm port id, long, 1200 bar
SLB	Swagelok 1.6 mm port id, long bio
SXV	Swagelok 1.6 mm port id, extra-long, 1200 bar
SPF	Swagelok 1.6 mm port id, PEEK, finger-tight
SPLF	Swagelok 1.6 mm port id, PEEK, long, finger-tight

Stainless steel nut and PEEK ferrule, 5067-1540

PEEK ferrule, 5067-1547

Finger-tight polyketone fitting (SPF), 5042-8957

M4 stainless steel screw, 5067-1558

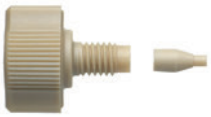
Stainless steel ferrule (M), 5067-1557

Plastic blank nut, 0100-1259

Stainless steel screw, 5063-6593

Ferrule and stainless steel lock ring (W), 5065-4423

PEEK fittings, plugs (MP), 5065-4410



Double winged PEEK nut & ferrule (WPF), 5065-4422

PEEk fitting, long (WPFL), 5022-6536

Fitting screws, 5065-9948

PEEK ferrules and SS rings, 5065-9950

Fittings

Description	Key	Unit	Part No.
Swagelok 1.6 mm stainless steel screw for PEEK ferrule 5067-1547	S	6/pk	5067-1540
1.6 mm PEEK ferrule for 5067-1540 screw	SP	6/pk	5067-1547
Swagelok 1.6 mm finger-tight polyketone fitting	SPF	10/pk	5042-8957
M4 stainless steel screw for stainless steel ferrule 5067-1557	M	6/pk	5067-1558
0.8 mm stainless steel ferrule for 5067-1558 screw	M	6/pk	5067-1557
Swagelok 1.6 mm plastic blank nut	M	1/ea	0100-1259
Swagelok 1.6 mm SS screw, 4 mm head	G	10/pk	5063-6593
0.8 mm PEEK ferrule and stainless steel ring for 5063-6593 screw	W	10/pk	5065-4423
M4 0.8 mm PEEK fitting	MP	6 fittings, 2 plugs	5065-4410
Swagelok 0.8 mm finger-tight PEEK double winged fitting	WPF	10/pk	5065-4422
Swagelok 0.8 mm finger-tight PEEK long fitting	WPFL	1/ea	5022-6536
Swagelok 2.0 mm stainless steel screw, 4 mm head		5/pk	5065-9948
2.0 mm PEEK ferrule and stainless steel ring		5/pk	5065-9950

Material

Key	Description
S	Swagelok 1.6 mm port id
SP	Swagelok 1.6 mm port id, PEEK
SPF	Swagelok 1.6 mm port id, PEEK, finger-tight
W	Swagelok 0.8 mm port id
G	Small head SW 4 mm
WG	Swagelok 0.8 mm port id, small head SW 4 mm
MP	Metric M4 0.8 mm port id, PEEK
WPF	Swagelok 0.8 mm port id, PEEK, finger-tight

ZDV union, 5022-2145

Adapter, PEEK, 0100-2298

ZDV universal union, 5022-2184

Barbed Y-connector PP, 5065-9971

ZDV union with fittings, 0100-0900

Union, female to female, 5042-8517

ZDV union, PEEK with fittings, 0100-2441

High flow union, 5022-2133

Adapter, male Luer to female, 5042-8518

PEEK adapter, 0100-1847

Adapter, female to male, 5023-1803

Bio-inert union, 600 bar, 5067-4741

Micro T-connector, PEEK, 5042-8519

Unions

Description	Use With	Part No.
ZDV union, no fittings	Nano LC	5022-2145
ZDV universal union, stainless steel, no fittings	Standard LC	5022-2184
ZDV union, with fittings	Standard LC	0100-0900
ZDV union, PEEK with fittings	Bio-applications	0100-2441
High flow union, no fittings	Prep LC	5022-2133
PEEK adapter 1/4-28 to 10-32		0100-1847
Adapter, PEEK int. 1/4-28 to ext. 10-32		0100-2298
Barbed Y-connector PP for 3/16 in id tube, 10/pk		5065-9971
Adapter, union PEEK 1/4-28		5042-8517
Adapter, male Luer to female 1/4-28		5042-8518
SS adapter Swagelok to 1/4-28		5023-1803
T-connector, PEEK, swept volume 0.57 µL	For 1/16 in od tubing	5022-2144
Micro T-connector, PEEK, swept volume 29 nL, with 1/32 in id fittings		5042-8519
Bio-inert union, stainless steel with PEEK insert 600 bar	Bio-applications	5067-4741

Tips and tools for creating the best possible connections

How do I tighten fittings correctly?

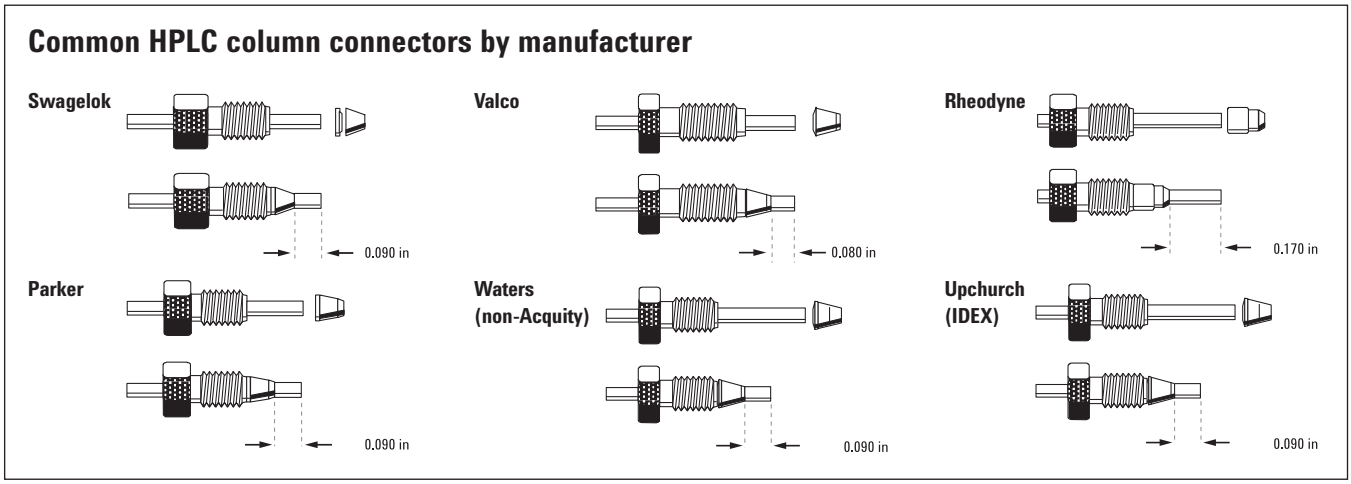
The chart below describes the steps you'll need to follow.

Fitting type	First Connection	Further connection
Stainless steel	1. Slide the screw, along with the back and front ferrules, onto the capillary. 2. Insert capillary into the port until it is completely seated in the end fitting. 3. Finger-tighten the nut until the capillary does not rotate. 4. Tighten the nut ½ to ¾ turn with a slitted socket wrench or Rheotool (P/N 8710-2391). If you are using a torque wrench, tightening torque should be between 1.5 and 3.0 Nm)	Finger-tighten, then tighten an extra ¼ to ½ turn with a slitted socket wrench or Rheotool (P/N 8710-2391). (If using a torque wrench, tightening torque should be between 1.5 and 3.0 Nm).
Polymeric finger-tight: PEEK and polyketone	1. Slide the screw and ferrule onto the capillary. 2. Insert capillary into the port until it is completely seated in the end fitting. 3. Finger-tighten the nut until the capillary does not rotate. 4. Make sure the capillary cannot be easily pulled out.	Additional tightening if necessary See "good connections" step by step
1200 bar removable fitting	1. Slide the screw, along with the back and front ferrules, onto the capillary. 2. Insert capillary into the port until it is completely seated in the end fitting. 3. Finger-tighten the nut until the capillary does not rotate. 4. Tighten the nut about ¾ turn with a socket wrench. 5. For stainless steel capillaries, if using a torque wrench, tightening torque should be between 1.0 and 1.2 Nm. 6. For stainless steel coated PEEK capillaries, do not exceed 0.8 Nm.	Finger-tighten, then tighten an extra ¼ to ½ turn with a socket wrench. For stainless steel capillaries, if using a torque wrench, tightening torque should be between 1.0 and 1.2 Nm. For stainless steel coated PEEK capillaries, if using a torque wrench, do not exceed 0.8 Nm.
PEEK/stainless steel	1. Slide the screw, along with the back and front ferrules, onto the capillary. 2. Insert capillary into the port until it is completely seated in the end fitting. 3. Finger-tighten the nut until the capillary does not rotate. 4. Tighten the nut about ½ turn with a socket wrench.	Finger-tighten, then tighten an extra ¼ to ½ turn with a socket wrench.

How do I prepare the perfect fitting connection?

Problems with stainless steel tubing connections are commonly mistaken for column issues – and are the source of many calls to Agilent's technical support line.

Connection problems often arise because different manufacturers supply different types of fittings, as you can see in the following diagram:



Ideally, you should use the fittings recommended by your column manufacturer. Most analytical reversed-phase columns are compatible with Swagelok or Parker-type fittings when correctly seated in the column.

Stainless steel fittings are the best choice for permanent, high-pressure sealing. Agilent recommends Swagelok-type fittings with front and back ferrules, because they deliver the best performance for Agilent LC systems – and can be used on most instrument connections, including valves, heaters, and column connections.

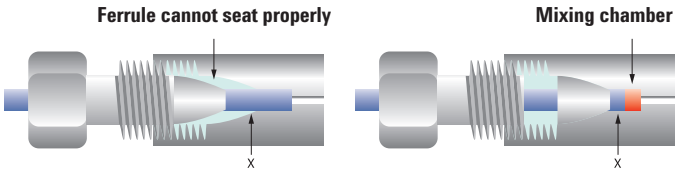
For lower-pressure operation, finger-tight polymeric fittings allow you to easily adjust the end-fitting to seat the capillary into the column properly – helping avoid extra-column voids and leaks. These connectors can be tightened without wrenches. High-pressure fittings, which are designed to be removed and resealed, are also available for pressures up to 1200 bar.

How do I align the connection properly?

The importance of correct tubing length (relative to the distance from the end of the tubing to the bottom of the ferrule) cannot be overstated. If the tubing is too long, the ferrule will not seat properly and leaks will occur. Likewise, if the tubing is not pushed in far enough, a void occurs, creating extra-column volume that acts as a "mixing chamber", which can cause peak tailing, and/or poor peak shape.

Always make sure you use the correct fittings, and that all fittings are properly seated in the column end fitting – especially if you use columns from different manufacturers.

Examples of incorrect fittings



If dimension X is too long, leaks will occur

If dimension X is too short, a dead-volume or mixing chamber, will occur

A good connection, step by step

This connection uses a Swagelok-type fitting which is good for connections to the instrument. For column connections, it is ideal to use polymeric finger-tight fittings, which are removable, or the 1200 bar removable fitting.

1. Select a nut that is long enough for the fitting you'll be using.
2. Slide the nut over the end of the tubing.
3. Carefully slide the ferrule components on after the nut, then finger-tighten the assembly while making sure the tubing is completely seated in the bottom of the end fitting.
4. Use a wrench to gently tighten the fitting; this will force the ferrule to seat onto the tubing, ½ to ¾ turn with a wrench. Do not over-tighten! That will shorten the useful life of the fitting.
5. Once you are sure your fitting is complete, loosen the nut and inspect the ferrule for correct position on the tubing.

Note: Avoid re-using a capillary on a different location. The position of the fitting is done the first time it is screwed on a port and all the ports are not strictly identical.

What are the benefits of a small internal diameter?

The roughness of the internal capillary surface is a function of the capillary's outer diameter. A smaller outer diameter provides better smoothness for the internal capillary surface.

Agilent's unique stainless steel LC capillary connections for liquid chromatography are designed for small inner diameters, reducing backpressure and blocking. To make these connections compatible with standard 1/16 in capillaries, we weld a tight, flat 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.

Which capillary connection size is right for me?

Choose the shortest practical length and narrowest diameter that your application and system allows. For 4.6 mm id columns, 0.17 mm capillaries are usually sufficient, but for narrower id columns like 2.1 mm, 0.12 mm id capillaries are used to keep sample dispersion as low as possible. There are also new ultra-low dispersion capillaries (0.075 mm id) for use with the 1290 Infinity LC.

How can I get rid of extra-column volume effects?

Extra-column volume effects can be caused by capillaries that are too long, so try a shorter length capillary. For low-volume, high efficiency columns (e.g., Agilent ZORBAX Eclipse Plus C18, 2.1 x 50 mm, 1.8 µm), replace 0.17 mm id (green) capillaries with 0.12 mm id (red).

For additional information on extra-column volume and its effect, see our application note *"Reduce Tubing Volume to Optimize Column Performance"* at **www.agilent.com/chem/library/applications/5990-4964EN.pdf**

What should I do about high backpressure?

High backpressure issues are usually not caused by capillaries. However, you should check to make sure the capillary isn't blocked, and replace if necessary, as part of your troubleshooting.

How can I reduce peak broadening, related to my capillary?

In addition to optimizing the length and diameter of the capillary, proper positioning in the fitting is important. The distance between the end of the capillary and the bottom of the ferrule may be too long or too short (creating a void), resulting in a poor connection. This can cause leaks or peak shape issues, such as broadening when the sample mixes in the void. A re-usable fitting can be adjusted, but with stainless steel a new fitting will need to be made.

How do I eliminate detector spikes and bubbles?

Check for air leaks at the capillary connections, and tighten as needed.

You don't stop until it's right, neither do we

With over 40 years in the business of manufacturing HPLC columns, Agilent Technologies offers over 2,000 column configurations, providing chromatographers with global scalability and flexibility for method transfers. The silica that goes into Agilent ZORBAX and Poroshell columns is completely manufactured and controlled by Agilent, and the manufacturing process includes stringent quality controls and rigorous testing before the silica is released for use.

Agilent's HPLC columns R&D team works to better meet changing customer needs for improved data quality, compatibility with LC/MS, and higher productivity. Agilent columns R&D efforts have led to breakthroughs such as the unique bonding and endcapping process that enables ZORBAX Eclipse Plus columns to deliver exceptional peak shapes, and the proprietary loading process that allows ZORBAX Rapid Resolution High Definition (RRHD) columns to withstand pressures up to 1200 bar. This team also developed the proprietary single-step coacervation that simplifies the manufacturing process for Poroshell 120, to improve reproducibility. New Poroshell 120 columns provide exceptional efficiency and take performance to a new level with HPLC and UHPLC.

Agilent's newest HPLC Columns give you more power for your method development

Poroshell 120

- Poroshell 120 is a total lab productivity enhancer – improving speed and resolution of separations on conventional HPLC instruments and enabling you to get the most from your UHPLC instruments up to 600 bar.
- Made with a proprietary single-step porous shell process, for improved consistency.
- Poroshell 120 columns feature standard 2 µm frits, so they are more forgiving for dirty samples.
- Poroshell 120 provides easy method transfer for fast results.

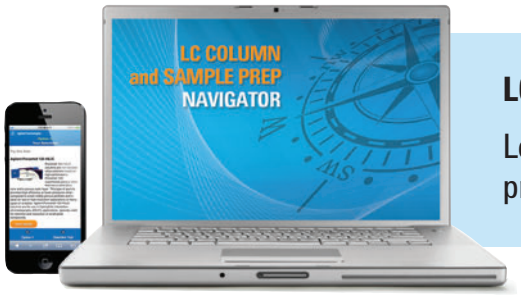
Poroshell 120 is Available in a Variety of Phases

Description	Particle Size (µm)	EC-C18	SB-C18	EC-C8
Analytical	4.6 x 150	693975-902	683975-902	693975-906
Analytical	4.6 x 100	695975-902	685975-902	695975-906
Analytical	4.6 x 75	697975-902	687975-902	697975-906
Analytical	4.6 x 50	699975-902	689975-902	699975-906
Analytical	4.6 x 30	691975-902	681975-902	691975-906
Solvent Saver	3.0 x 150	693975-302	683975-302	693975-306
Solvent Saver	3.0 x 100	695975-302	685975-302	695975-306
Solvent Saver	3.0 x 75	697975-302	687975-302	697975-306
Solvent Saver	3.0 x 50	699975-302	689975-302	699975-306
Solvent Saver	3.0 x 30	691975-302	681975-302	691975-306
Narrow Bore	2.1 x 150	693775-902	683775-902	693775-906
Narrow Bore	2.1 x 100	695775-902	685775-902	695775-906
Narrow Bore	2.1 x 75	697775-902	687775-902	697775-906
Narrow Bore	2.1 x 50	699775-902	689775-902	699775-906
Narrow Bore	2.1 x 30	691775-902	681775-902	691775-906

ZORBAX Rapid Resolution High Definition (RRHD)

- ZORBAX RRHD columns are loaded using a special process that enables them to withstand up to 1200 bar pressure. No other sub-2 µm column is rated to work up to 1200 bar.
- RRHD columns have greater stability and longer lifetimes compared to other UHPLC columns, at higher pressures, which increases reliability.
- Available in a variety of ZORBAX bonded phases – including Eclipse Plus and StableBond – for easy method transfer or method development on sub-2 µm columns.

For a complete list of column part numbers, request your *Agilent HPLC Columns Selection Guide* (publication number 5990-3534EN) at **www.agilent.com/chem**



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- **Faster flow rates:** Uniform particles with a narrow size distribution ensure optimal flow characteristics for sample addition and elution during SPE.
- **Excellent cartridge-to-cartridge reproducibility:** Bond Elut sorbent particles are manufactured using proprietary polymerization techniques to eliminate fines and achieve a very narrow particle size distribution.
- **Less wasted time and sample:** The absence of media fines significantly reduces cartridge clogging. This is critical in high-throughput environments, where SPE must be performed unattended and overnight.
- **More reliable data:** A proprietary QC process confirms the correct particle size while delivering superior flow-through.
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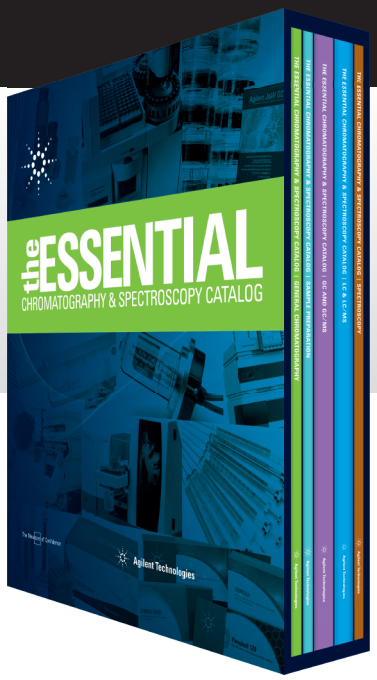

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Printed in Germany April 3, 2014
5991-4102EN

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