

Maximize System Performance with Easy-to-Use HPLC Accessories



Interconnects

Fittings

Adapters

Tubing

A Select Group of HPLC Accessories designed to Maximize the Performance of your HPLC System

Introduction

The use of HPLC systems to achieve faster analyses and increased resolution pushes systems toward higher operating pressures. For instance, faster flow rates, longer column lengths, and reduced particle sizes gain a performance advantage in HPLC, but at a cost of increased operating pressures. With these current trends, it is important to choose the correct products when replacing fittings, tubing, and other similar parts to maximize performance and reliability.

High(er) Performance Liquid Chromatography columns containing particles that are smaller than 3.5 micron creates very narrow peak widths that can no longer be routinely measured by all HPLC systems. The quality of separations performed with these columns is dependent on the system having components designed to minimize instrument bandwidth (IBW). It is good

laboratory practice to install the proper fittings, ferrules, and other accessories to ensure the analytical results show no peak broadening from extra column effects created by excessive volume or improper assembly.

To serve this rapidly growing area of High(er) Performance Liquid Chromatography, we have selected products from the most trusted names in the industry, making product selection easy. This selection of accessories for high speed and high sensitivity analytical applications, maximize the efficiency and reliability of the analysis while protecting the column investment. Please note that this represents only a brief listing of the HPLC Accessories that we offer. For a complete listing please refer to our catalog and/or web site, sigma-aldrich.com/hplc

IBW Measurement Guide

Purpose

Obtain a reliable measurement of instrument bandwidth.

Materials

Calibrated flow meter
ZDV union (52087-U)

Conditions

Mobile Phase: 40:60, water:methanol
Sample: 1.0% acetone (v/v) in mobile phase
Flow: 100 μ L/min. (0.1 mL/min.)
Data Sampling Rate: \geq 10 Hz
Filter Response Time: \leq 0.1 sec.
Inj. Vol.: 0.5 μ L

Method

1. Connect ZDV union in place/position of column
2. Start flow; allow ample time for flow to stabilize and flow meter to obtain stable reading
3. Inject sample

Alternate Method

(To be used if column inlet and outlet tubing is not long enough to connect to the ZDV union)

1. Connect the ZDV unions (52807-U) to the column inlet and outlet tubing.
2. Install the high performance double-ended fitting (53682-U) to the ZDV unions connected in Step 1. The high performance double-ended fitting should now be connected in place of a column.

3. Start flow; allowing ample time for flow to stabilize and flow meter to obtain stable reading.
4. Inject sample.

Record

- a) retention time (t_r)
- b) efficiency by peak width-at-half-height method (N)

Be sure baseline drawn is flat to insure an accurate measurement of peak height; (may need to adjust integration parameters to achieve this).

Results

$\sigma = (t_r \cdot \text{flow}) / \sqrt{N}$ [make sure flow is in units of μ L/min.]
Instrument Bandwidth (IBW) = $4 \cdot \sigma$

Discussion

If $IBW \leq 25 \mu$ L, well-retained peaks ($k \geq 2$) can display efficiencies $\geq 90\%$ of specified column performance for 10 or 15 cm columns of 4.6 mm I.D.; if the length is 5 cm, peak efficiencies may be somewhat lower.

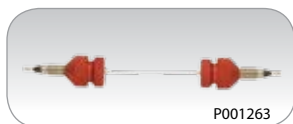
If $IBW \geq 25 \mu$ L, well retained peaks ($k \geq 2$) can display efficiencies of 80-90% of specified column performance only for 10 or 15 cm columns of 4.6 mm I.D. If smaller columns are desired, system volume must be reduced by use of smaller flow cells and smaller I.D. tubing.

Description	Cat. No.
HPLC Dispersion Measurement Kit	52806-U
High Performance Double-Ended Fitting	53682-U
Nano Tight Union with 0.007 in. Thru-Hole (1 ea.)	52807-U

Supel™-Connect High Performance Interconnects

- Eliminate dead volume that contributes to peak broadening
- Sliding ferrule design allows for use in any port
- Fingertight fittings, no tools required
- Rated to 15,000 psi
- 316 stainless steel construction

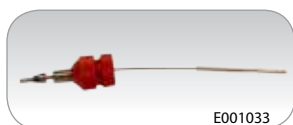
Supel-Connect Double-Ended Interconnects



High performance interconnects are available in a double-ended configuration, with either flexible or rigid stainless tubing. They are especially useful to couple two columns, column to guard, or column to injector when connections must be made and released on a regular basis.

Description	Length (cm)	I.D. (in.)	Type	Suggested Application	Cat. No.
Double-Ended Interconnects, 1/32" O.D.					
	10	0.005	Flexible	Column coupling, column-to-detector	53681-U
	20	0.005	Flexible	Injector-to-column link, injector-to-heater link	53682-U
	30	0.005	Flexible	Pump to injector link	53683-U
	40	0.005	Flexible	General long length link, pump-to-injector	53684-U
	20	0.010	Flexible	High flow flexible link	53685-U
Double-Ended Interconnects, 1/16" O.D.					
	10	0.005	Rigid	Column coupler, 'U' shaped	53686-U
	10	0.005	Rigid	Column coupler, straight	53687-U
	10	0.010	Rigid	High flow, general purpose	53688-U
	20	0.010	Rigid	High flow, general purpose	53689-U
	55	0.005	Rigid	General long length	54252-U
	55	0.007	Rigid	General long length	54253-U

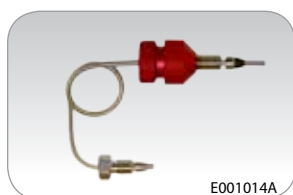
Supel-Connect Single-Ended Interconnects



The single-ended high performance interconnect is useful when only a single-end will have frequent connections allowing the non-fitting end to be permanently connected within the HPLC system or when an instrument specific fitting must be used on one end.

Description	Length (cm)	I.D. (in.)	Type	Suggested Application	Cat. No.
Single-Ended Interconnects, 1/32" O.D.					
	10	0.005	Flexible	Column coupling, column to detector	53613-U
	20	0.005	Flexible	Injector to column link, injector to heater link	53614-U
	30	0.005	Flexible	Pump to injector link	53617-U
	40	0.005	Flexible	General long length link, pump to injector	53625-U
	55	0.007	Flexible	General long length	53627-U
	55	0.005	Flexible	General long length	53628-U

Supel-Connect Agilent® 1100/1200 Interconnect

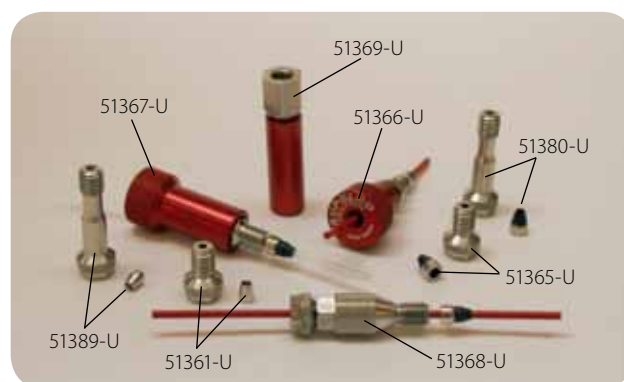


A special high performance interconnect designed for the Agilent 1100/1200 HPLC system. Semi-rigid 316 stainless steel tubing connects to the heater outlet with nut and ferrule (supplied), and allows use of columns by any manufacturer to be completely seated in the column inlet port. An important feature of this fitting is the 'service loop', which improves support for the column.

Description	Length (cm)	I.D. (in.)	O.D. (in.)	Type	Suggested Application	Cat. No.
Agilent 1100/1200 Fitting						
	15	0.005	1/16	Rigid	HPLC column to heater outlet	53629-U

Supel-Connect High-Performance Fittings & Nuts

- For use with PEEK™, PEEKsil™, or stainless steel tubing of your choice
- Sliding ferrule design allows for use in any port
- Knurled area for hand tightening
- Strain relief cone to prevent tube kinking



E001185

Supel-Connect Better Nut



E001130

A standard length conventional HPLC nut for securing 1/16" tubing has two unique performance enhancing features. The 'better nut' has a small knurled area, making it easier to start by hand. A second feature is a cone style strain relief to prevent tubing kink. These features make the 'better nut' a good choice for certain confined spaces. The 1/4" hex allows for final tightening with a wrench.

Supel-Connect Better Nut with Stainless Steel Ferrule



E001131

The Supel-Connect Better Nut with stainless steel ferrules is recommended for 1/16" diameter stainless steel tubing only. It can withstand up to 15,000 psi when tightened with a wrench.

Description	Qty.	Cat. No.
Supel-Connect Better Nut with Stainless Steel Ferrule	Pk/2	51361-U
Stainless Steel Ferrule	Pk/10	51392-U

Supel-Connect Better Nut with PEEK Ferrule



E001132

The Supel-Connect Better Nut with the PEEK ferrule is recommended for 1/16" diameter PEEK, or stainless steel tubing. Holding strength for PEEK is up to 7,500 psi, and up to 15,000 psi when used with stainless steel tubing.

Description	Qty.	Cat. No.
Supel-Connect Better Nut with PEEK Ferrule	Pk/2	51365-U
PEEK Ferrule	Pk/10	51394-U

Supel-Connect Better Nut, XL with Stainless Steel Ferrule



E001183

The 10-32 Supel-Connect Better Nut, XL (extra long) with a stainless steel ferrule provides extended reach for injector valves and ports that are difficult to reach with a standard HPLC fitting. When used with stainless steel tubing the Supel-Connect Nut and stainless steel ferrule can work up to 15,000 psi.

Description	Qty.	Cat. No.
Supel-Connect Better Nut, XL with Stainless Steel Ferrule	Pk/2	51389-U
Stainless Steel Ferrule	Pk/10	51392-U



Supel-Connect Better Nut, XL with PEEK Ferrule



E001184

The 10-32 Supel-Connect Better Nut, XL (extra long) with a PEEK ferrule provides extended reach for injector valves and ports that are difficult to reach with a standard HPLC fitting. Holding strength for PEEK ferrules is up to 7,500 psi.

Description	Qty.	Cat. No.
Supel-Connect Better Nut, XL with PEEK Ferrule	Pk/2	51380-U
PEEK Ferrule	Pk/10	51394-U

Supel-Connect Short High-Performance Fitting for PEEK/PEEKsil Tubing



E001133

This fitting holds PEEK and PEEKsil tubing to higher pressures than previously possible. Based on a unique 'twin symmetrical ferrule' design, its external and internal ferrules have twice the surface area to grip 1/16" tubing. It is recommended for holding PEEK and PEEKsil tubing to UHPLC pressures. Used with 0.002"-0.005" PEEK tubing, it will hold 10,000 psi minimum. PEEKsil can be held to 15,000 psi. The overall fitting is approximately the same length as standard high-performance fittings and has a generous gripping area, allowing it to be hand tightened.

Description	Qty.	Cat. No.
Supel-Connect Short High-Performance Fitting for PEEK/PEEKsil Tubing	Pk/2	51366-U

Supel-Connect Long High-Performance Fitting for PEEK/PEEKsil Tubing



E001136

This fitting is a long version of the 51366-U. It is operationally identical, except having the additional length to allow it to be inserted into crowded areas (such as injector valves).

Description	Qty.	Cat. No.
Supel-Connect Long High-Performance Fitting for PEEK/PEEKsil Tubing	Pk/2	51367-U

Supel-Connect High-Performance Fitting for Stainless Steel Tubing



E001134

This fitting is the "OEM and field-service" version of the original UHPLC fitting found on Supelco UHPLC links. Unlike the original, the 51368-U is tightened by a 1/4" hex wrench and can be installed on customer supplied 1/16" O.D. stainless steel tubing. These fittings are supplied with two ferrules, a high-performance external PEEK ferrule, and an internal stainless steel ferrule for added holding power and elimination of dead volumes due to 'creep' of tubing. The fitting is permanently affixed to the tubing by the internal ferrule, which is crimped using a separate crimp tool (51369-U). These fittings have a generous textured area for starting into an HPLC port, and are small enough in diameter and length to be used in many situations where space is at a premium. They are tightened to final holding pressures up to 15,000 psi with a 1/4" wrench.

Description	Qty.	Cat. No.
High-Performance Fitting for Stainless Steel Tubing	1 ea.	51368-U

Ferrule Crimping (Fitting Installation) Tool for Supel-Connect High-Performance Fitting



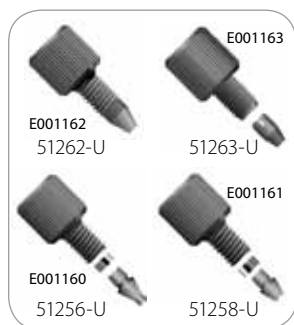
E001135

The fitting installation tool is used to permanently fix 51368-U to user supplied 1/16" stainless steel tubing. The tool is simply inserted with the high-performance fitting over a piece of 1/16" O.D. tubing and tightened to permanently secure the fitting.

Description	Qty.	Cat. No.
Ferrule Crimping Tool for Supel-Connect High-Performance Fitting	1 ea.	51369-U

UHPLC Fittings

Upchurch UHPLC Fingertight Fittings



Manufactured from a proprietary PEEK blend, the Upchurch Scientific® UHPLC Fingertight fittings can be used at temperatures up to 200 °C and higher pressure (to 23,000 psi / 1,585 bar in some cases) than more traditional HPLC fittings. These fittings are available in one piece 10–32 as well as the traditional two-piece design.

Description	Qty.	Cat. No.
Ultra-High Pressure Fitting, PEEK		
Fingertight I Nut (Black)	Pk/10	51262-U
SealTight® Short Fitting (Black)	Pk/10	51263-U
LiteTouch® Nut (Black)	Pk/10	51256-U
LiteTouch Ferrule Assembly (Black)	Pk/10	51258-U

Upchurch UHPLC Stainless Steel Fittings



With new column technology pushing the pressure limits of standard HPLC fittings, Upchurch Scientific has specially designed UHPLC stainless steel that can withstand much higher pressures than standard HPLC analysis.

Description	Qty.	Cat. No.
Ultra-High Pressure Fitting, Stainless Steel		
With Ferrule for 1/16" Tubing	Pk/10	51264-U
With Ferrule for 1/32" Tubing	Pk/10	51265-U

Upchurch UHPLC Unions and Adapters



The design of the UHPLC unions, 51274-U and 51277-U, allows a convenient connection between 1/32" O.D. tubing and 360 µm tubing. The union contains a stainless steel body and capsule, both with excellent chemical compatibility. It is coupled with a direct-connect ferrule made from a proprietary PEEK polymer blend allowing for tubing connections up to 15,000 psi and temperatures of 100 °C or below.

The adapters, 51279-U and 51281-U, have internal threaded ports that feature a zero-dead volume (ZDV) connection between both ends of the tube. The one-piece Ultra High Performance Fingertight fitting allows them to be used in temperature applications up to 200 °C and pressures to 6,000 psi and at room temperatures up to 15,000 psi.

Description	Qty.	Cat. No.
UHPLC Micro Union		
For 1/32" Tubing	1 ea.	51274-U
For 360 µm Tubing	1 ea.	51277-U
For 1/32" Tubing (Fingertight Fittings)	1 ea.	51279-U
UHPLC Adapter		
For 1/32" and 1/16" Tubing (Fingertight Fittings)	1 ea.	51281-U

Optimize Technologies EXP Fitting System



The EXP Fitting System is the premier adjustable nut and ferrule compression fitting for extreme high-pressure connections between 1/16" tubing and any 10-32 port. The Titanium Hybrid ferrule provides a perfect seal with every connection, yet can be released without tools to adjust to the different port depths of various hardware. There is no longer the need to clip off and replace ferrules from tubing.

Description	Qty.	Cat. No.
EXP Hand Tight Nut and Titanium Ferrule 10-32	1 ea.	51384-U
EXP Hand Tight Nut and Titanium Ferrule 10-32	Pk/10	51385-U
Titanium Hybrid Ferrule	Pk/10	51391-U

Tubing

PEEKsil Tubing

Various types of tubing, stainless steel, PTFE, and PEEK, are available to supply a variety of uses for HPLC systems. For the most sensitive applications, chemical compatibility, and extremely low adsorption characteristics PEEKsil tubing is an excellent tubing choice. Capable of withstanding pressures up to 10,000 psi, PEEKsil is fused silica tubing surrounded by a protective PEEK sheath, making it mechanically strong. PEEKsil can be used with either stainless steel or polymer fittings.

Description	Length	I.D.	Color	Qty.	Cat. No.
PEEKsil Tubing, 1/32" O.D.					
	10 cm	25 µm (.010")	Orange	Pk/2	51308-U
	50 cm	25 µm (.010")	Orange	Pk/2	51316-U
	10 cm	50 µm (.002")	Natural	Pk/2	51319-U
	50 cm	50 µm (.002")	Natural	Pk/2	51321-U
	20 cm	75 µm (.003")	Black	Pk/2	51324-U
	50 cm	75 µm (.003")	Black	Pk/2	51328-U
	50 cm	150 µm (.006")	Purple	Pk/2	51329-U
PEEKsil Tubing, 1/16" O.D.					
	50 cm	50 µm (.002")	Natural	Pk/2	51332-U
	10 cm	25 µm (.010")	Orange	Pk/5	51333-U
	20 cm	50 µm (.002")	Natural	Pk/2	51334-U
	50 cm	25 µm (.002")	Orange	Pk/2	51335-U
	50 cm	100 µm (.004")	Red	Pk/2	51337-U

PEEK Tubing

A popular replacement for stainless steel tubing, PEEK tubing is especially useful when contact between the sample and metal components must be avoided. PEEK tubing has excellent mechanical stability and chemical compatibility.

Description	Length	I.D.	Color	Qty.	Cat. No.
PEEK Tubing, 1/16" O.D.					
	10'	0.005"	Red	1 ea.	Z227307
	10'	0.007"	Yellow	1 ea.	Z226688
	10'	0.010"	Blue	1 ea.	Z226661
	10'	0.020"	Orange	1 ea.	Z227293
	10'	0.030"	Green	1 ea.	Z226955
	10'	0.055"	Black	1 ea.	54994
PEEK Tubing, 1/8" O.D.					
	10'	0.062"	Natural	1 ea.	54995

Stainless Steel Tubing

Precut 316 stainless steel tubing is ready-to-use with flat burr-free ends and a clean finish that is needed for achieving zero-dead volume connections.

Description	Length	I.D.	Qty.	Cat. No.
Stainless Steel Tubing, 1/16" O.D.				
	5 cm	0.005"	1 ea.	56707
	10 cm	0.005"	1 ea.	56708
	20 cm	0.005"	1 ea.	56709
	30 cm	0.005"	1 ea.	56710-U
	0.5 m	0.005"	1 ea.	56711
	1.0 m	0.005"	1 ea.	56712-U
	5 cm	0.007"	1 ea.	56713
	10 cm	0.007"	1 ea.	56714
	20 cm	0.007"	1 ea.	56715-U
	30 cm	0.007"	1 ea.	56716
	0.5 m	0.007"	1 ea.	56717
	1.0 m	0.007"	1 ea.	56718-U



Ascentis Express Guard Columns

Ascentis® Express Guard Columns provide physical (filtration) and chemical protection for costly analytical columns without compromising the very high performance of modern columns. These Ascentis Express guard columns are capable of continuous use at pressures up to 9000 psi (600 bar) with only hand-tightening. Guard cartridges are easily replaced without removing the guard column holder from the flow path. The cartridges are packed with Ascentis Express Fused-Core® particles.



E001103

- High efficiency, low dead volume
- Hand tighten to 9000 psi
- Direct connection, suitable for all columns and instruments

How the Cartridge Works

The hybrid ferrule forms a leak-tight seal onto the 1/16-inch tubing when tightened into the column inlet port. The ferrule then releases when the unit is unthreaded from the inlet. The ferrule and the holder threads are designed to be robust and are intended to be used for repeat connections. The ferrule is resistant to damage from excessive tightening, however, the PEEK end will deform from repeated excessive tightening. For best results, tighten a maximum of 1/4-turn past hand-tight.

Description	I.D. (mm)	Qty.	Cat. No.
Ascentis Express Guard Cartridges			
C18	2.1	Pk/3	53501-U
C18	3.0	Pk/3	53504-U
C18	4.6	Pk/3	53508-U
C8	2.1	Pk/3	53509-U
C8	3.0	Pk/3	53511-U
C8	4.6	Pk/3	53512-U
RP-Amide	2.1	Pk/3	53514-U
RP-Amide	3.0	Pk/3	53516-U
RP-Amide	4.6	Pk/3	53519-U
F5	2.1	Pk/3	53594-U
F5	3.0	Pk/3	53597-U
F5	4.6	Pk/3	53599-U
HILIC	2.1	Pk/3	53520-U
HILIC	3.0	Pk/3	53521-U
HILIC	4.6	Pk/3	53523-U
Phenyl-Hexyl	2.1	Pk/3	53524-U
Phenyl-Hexyl	3.0	Pk/3	53526-U
Phenyl-Hexyl	4.6	Pk/3	53531-U
Peptide ES-C18	2.1	Pk/3	53536-U
Peptide ES-C18	3.0	Pk/3	53537-U
Peptide ES-C18	4.6	Pk/3	53542-U

Universal Guard Holder and Ferrule

Description	Qty.	Cat. No.
Holder w/EXP Titanium Hybrid Ferrule (cartridge not included)	1 ea.	53500-U
Replacement Titanium Hybrid Ferrule	Pk/10	51391-U

OPTI-SOLV EXP Pre-Column Filter

The OPTI-SOLV® EXP™ Hand Tight Pre-Column Filter for extreme high-pressure applications is ideal for protecting HPLC columns with small particles employing ultra high pressure techniques. Such techniques analyze samples in the most demanding applications, which can decrease the life of these expensive columns. EXP Pre-Column Filters help extend that life and protect your column investment, without sacrificing performance. EXP Pre-Column Filters are available with Titanium Hybrid ferrules for easy direct connection to any UHPLC column. The filter comes as a complete package including fittings to provide repeated tube stop and zero-dead volume column connections. Use EXP Pre-Column Filters to protect any HPLC column of 2 mm I.D. to 4.6 mm I.D. It can be used up to at least 15,000 psi (1000 bar).



E001075

- Tested to 30,000 psi
- Easily interchangeable with hand tight EXP guard column
- Auto adjusting ZDV column connection
- Hand tight filter replacement - NO TOOLS!
- Low volume, low dispersion cartridges

Description	I.D.	Qty.	Cat. No.
OPTI-SOLV EXP Pre-Column Filter Holder w / EXP Titanium Hybrid Ferrule			
2 Ferrules, 1 Nut in pack		1 ea.	51163-U
Replacement Titanium Hybrid Ferrule		Pk/10	51391-U
Cartridges ordered separately. See below.			
OPTI-SOLV EXP Pre-Column Filter Cartridge			
	0.5 µm	Pk/5	51164-U
	0.5 µm	Pk/10	51165-U
	0.2 µm	Pk/5	51166-U
	0.2 µm	Pk/10	51167-U

Practical Recommendations to Maximum System Performance

- Use 0.005 in. I.D. inlet and outlet tubes. Broadening is much less sensitive to the tube length than to the I.D. Minimize lengths of the inlet and outlet tubes for best performance, but do not worry about having a few extra centimeters of length if it makes maintenance or column installation easier.
- If high pressure becomes a problem, then use acetonitrile as modifier and elevate the column temperature whenever possible. If methanol, THF, or another more viscous modifier is required, then elevating the temperature becomes even more beneficial. Even a modest temperature increase will greatly reduce the mobile phase viscosity and the required pressure while improving mass transfer.
- Keep the sample volumes small — 5 µL or less if the peaks of interest elute early ($k = 1$). Up to 20 µL is acceptable if k exceeds 10.
- Avoid sample solvents that are stronger than the mobile phase.
- Use data rates of 10 Hz or greater and watch out for bunching factors.



Pre-Column Filter

LC-MS Post Column Flow Splitters

The design of the ASI QuickSplit™ Flow Splitter with the fixed or adjustable split ratio allow split flow ratios to remain stable and reproducible, and not affected by changes in viscosity or pressure. Conventional splitters use long lengths of capillary tubing but the QuickSplit Flow Splitter uses two compact fluid resistor elements which are designed as cartridges for easy replacement. The QuickSplit is available in a variety of configurations including fixed split ratios from 3:1 to 20:1 or an adjustable flow splitter with a range of 1:1 to 20:1. The fluid resistors can be purchased separately and are interchangeable so that changes in split ratios can be made quickly and accurately.



E000955

QuickSplit Flow Splitter Benefits:

- Eliminates tedious adjustments to capillary tubing for split ratio optimization
- Ultra low dead volume design
- Easy-to-use interchangeable fluid resistors
- Rugged stainless steel construction

Description	Cat. No.
HPLC Post Column Flow Splitters - Fixed	
Split Ratio = 20:1	56624-U
Split Ratio = 10:1	56625-U
Split Ratio = 5:1	56626-U
Split Ratio = 3:1	56627-U
Mounting Bracket for HPLC Post Column Flow Splitters - Fixed	56630-U
HPLC Post Column Flow Splitter - Adjustable	
Split Ratio = 1:1 to 20:1	56629-U
HPLC Post Column Resistor Sets - Binary	
Split Ratio = 20:1	56631-U
Split Ratio = 10:1	56632-U
Split Ratio = 5:1	56633-U
Split Ratio = 3:1	56634-U

Supelco Solvent Filtration Systems

Protect your instrument and columns by removing particles and gases from solvents with the Supelco Mobile Phase Filtration systems. Each system comes with Nylon 66 membrane filters compatible with all solvents commonly used in HPLC.



E000779

Includes:

- 250 mL glass reservoir
- Funnel base and stopper
- Clamp
- Stainless steel holder and screen
- 10 PTFE gaskets
- 50 Nylon 66 membrane filters (47 mm, 0.45 µm pores)
- Flask not included



E000780

Includes:

- 250 mL glass reservoir
- 34/45 funnel base
- 34/45 1000 mL flask and glass top
- Clamp
- Stainless steel holder and screen
- 10 PTFE gaskets
- 50 Nylon 66 membrane filters (47 mm, 0.45 µm pores)
- Glass Cap

Apparatus 1	Qty.	Cat. No.	Apparatus 2	Qty.	Cat. No.
Connects to 1000 mL sidearm flask	1 ea.	58061	Connects to aspiration line	1 ea.	58062-U



MXT 2-Position, 6-Port Switching Valve for UHPLC



E001159

The 2-position, 6-port MXT switching valve is ideal for use as a two-column switching valve, allowing it to be used with more than one column and multiple applications. Used also as a traditional injection valve the MXT features the Rheodyne® patented MBB™ (Make-Before-Break) for improved reproducibility and system stability. The valve can withstand pressures up to 15,000 psi (1,034 bar).

Description	Qty.	Cat. No.
MXT 2-Position, 6-Port Switching Valve	1 ea.	51343-U
MXT Stainless Steel Loops		
5 µL	1 ea.	51344-U
10 µL	1 ea.	51345-U
20 µL	1 ea.	51347-U
50 µL	1 ea.	51350-U
100 µL	1 ea.	51353-U

MXP High-Pressure Valve for HPLC

The MXP 2-position, 6-port high-pressure switching valve is designed for traditional HPLC. This standard valve will provide dual-column functionality and can be used for traditional sample injections. The MXP high pressure valve is also available for biocompatible applications is compatible to be used with most HPLC solvents and can withstand pressures up to 6,000 psi (414 bar).

Description	Qty.	Cat. No.
MXP 2-Position, 6-Port Switching Valve	1 ea.	51354-U
MXP 2-Position, 6-Port Biocompatible Switching Valve	1 ea.	51356-U

SGT Super Clean™ LC-MS Gas Purifiers



P001029

For LC-MS gas purification, the SGT Super Clean LC purifier is designed to help avoid MS source damage and eliminate any LC-MS downtime. To totally purify the delicate LC-MS nitrogen carrier gas of hydrocarbons, the system uses two cartridge purifiers in parallel. The purifier is the only fully glass/metal cartridge purifier capable of purifying LC-MS N₂ carrier gases for all major hydrocarbon pollutants.

Description	Qty.	Cat. No.
High Flow LC-MS Super Clean Kit (Includes two hydrocarbon purifiers without indicator and base plate)	1 Kit	SU861046
High Flow LC-MS Super Clean Kit (Kit includes two hydrocarbon purifiers with indicator and base plate)	1 Kit	SU861045
Hydrocarbon Purifier (without indicator)	Pk/2	SU861029
Hydrocarbon Purifier (with indicator)	Pk/2	SU861028
High Flow LC-MS Base Plate	1 ea.	28879-U

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