

HPLC Accessories

In-Line Filters

A precolumn filter is essential for protecting HPLC columns against particulate matter which can accumulate on the column frit, leading to split peaks and high back pressure. Sources of particles include mobile phases (especially when buffers are used), leaking pump and injector seals, and samples. Use a 2.0µm frit to protect columns containing 5µm or larger particles. Use a 0.5µm frit for columns with particles smaller than 5µm.



Supelco Filter

Direct-connect; protects analytical and guard columns. Our precolumn filter can be connected directly, hand-tight, into any HPLC column or guard column that has Valco-compatible endfittings. PEEK cap and body, 2µm stainless steel frit. For a metal-free system, order PEEK/Teflon replacement frits (Cat. No. 57430-U).

DESCRIPTION	QTY.	CAT. NO.	PRICE
Supelco Precolumn Filter	1	Z227323	
Replacement Frits			
0.5µm pores	5	Z290874	
2µm pore	5	Z227331	
PEEK/Teflon, 2µm ¹	5	57430-U	

¹ Biocompatible, metal-free.



SSI High Pressure Precolumn Filter

In-line installation. The 316 stainless steel filter disc (0.5µm pores) is easily replaced without removing the column end fitting. Maximum operating pressure: 15,000psi (1054kg/cm²). For 1/16" tubing.

DESCRIPTION	QTY.	CAT. NO.	PRICE
SSI High Pressure Precolumn Filter			
10-32 Threads ²	1	59269	
Waters Threads	1	59271	

Replacement Filter Elements

0.5µm pores	10	59273	
2µm pores	10	59272	

² Most HPLC fittings, except SSI and some Waters fittings, have 10-32 threads.



Isolation Technologies Precolumn Filter

In-line installation. High capacity inlet filter minimizes dead volume and band broadening, to prevent loss of column efficiency while protecting your column. Frit porosity: 0.5µm. Complete as shown.

DESCRIPTION	QTY.	CAT. NO.	PRICE
Isolation Technologies Precolumn Filter			
3mm frit (4.6mm columns)	1	57675-U	
1.5mm frit (2.1mm columns)	1	57676-U	
Replacement Frits			
3mm	5	57677	
1.5mm	5	57678	



Upchurch Precolumn Filter

In-line installation. Stainless steel body with inert polyetherether-ketone (PEEK) endfittings and a 0.5µm or 2µm PEEK frit in one endfiting.

DESCRIPTION	QTY.	CAT. NO.	PRICE
Upchurch Precolumn Filter			
0.5µm frit	1	55079	
2µm frit	1	55078	

Replacement Frits

0.5µm	10	55080-U	
2µm	10	55081	



SSI High Pressure Preinjector Filter

Place between the pump and injector to provide final filtration for the mobile phase. Easily replaced 316 stainless steel filter element (0.5µm pores). Maximum operating pressure: 15,000psi (105MPa). For 1/16" OD tubing, 10-32 threads.

DESCRIPTION	CAT. NO.	PRICE
SSI High Pressure Preinjector Filter	59262-U	
Replacement Filter Elements (pk. of 2)		
0.5µm pores	59264	
2µm pores	59265	

Upchurch Mini MicroFilter Assembly

Ultra-low swept volume – 0.85µL. Use with Microtight tubing sleeves. Available with 1µm or 2µm frit capsules (stainless steel frit in color-coded PEEK capsule). Includes 2 MicroFingertight II fittings, 3 filter capsules.

DESCRIPTION	CAT. NO.	PRICE
Mini MicroFilter Assembly		
with 1µm Frit	54722-U	
with 2µm Frit	54721-U	
Replacement Mini MicroFilter Capsules		
with 1µm Frit (black PEEK)	54724-U	
with 2µm Frit (natural PEEK)	54723-U	



Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

HPLC Accessories

In-Line Filters, Back-Pressure Regulators



Upchurch In-Line MicroFilter

Install between 2 pieces of capillary tubing, using Microtight tubing sleeves. Special PEEK fitting encases 0.5µm PEEK frit. 0.006" thru hole, 0.24µL swept volume. Includes 2 MicroFingertight nuts, 5 frits (1 installed).

DESCRIPTION	CAT. NO.	PRICE
In-Line MicroFilter	502707	
Replacement Frits (pk. of 10)	502715	



Upchurch Precolumn MicroFilter

In-line filter connects capillary tubing (using Microtight tubing sleeves) or 1/16" OD tubing to female 10-32 fitting. 0.5µm frit, 0.3µL swept volume. Includes 5 frits (1 installed).

DESCRIPTION	CAT. NO.	PRICE
MicroFilter for 0.025" OD Tubing with PEEK Frits	502677	
with Stainless Steel Frits	502669	
MicroFilter for 1/16" OD Tubing with PEEK Frits	502693	
with Stainless Steel Frits	502685	
Replacement Frits, pk. of 10 PEEK, 0.5µm	502790	
Stainless Steel, 0.5µm	502731	
Stainless Steel, 2.0µm	502723	

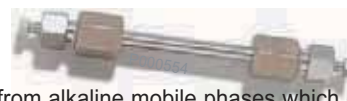
Valco Precolumn Frit and Screen Filters³

In-line installation. Efficient, low dead volume filters protect your columns from particles without reducing column performance. The replaceable 1/8" frit has 0.5µm pores to protect 3µm or 5µm column packings, the replaceable screen has 2µm pores. Choose the frit filter for higher filtration capacity (most applications) or the screen filter for less dead volume (e.g., with microbore columns). Use with 1/16" OD tubing; 1/16" fittings included.

DESCRIPTION	QTY.	CAT. NO.	PRICE
Valco Precolumn Filters			
Frit Filter	1	58420-U	
Screen Filter	1	58279-U	
Replacement Frits			
0.5µm pores	10	59037	
2.0µm pores	10	59129	
Replacement Screens	10	58284	

³ Frits and screens should not be interchanged in these filters.

Supelco Silica and C18 Saturator Columns



To protect your column from alkaline mobile phases which can dissolve silica (pH>7.0), saturate the mobile phase with silica by passing it through a silica saturator column. Similarly, to protect your column from acidic mobile phases which can strip bonded phase (pH<2.0), use a C18 saturator column.

Each kit consists of 10g of packing (12µm spherical particles, 180m²/g surface area), a 7.5cm x 4.6mm column, two frits, and fittings to connect the column to 1/16" tubing. The optional plastic funnel is helpful for filling these columns.

DESCRIPTION	CAT. NO.	PRICE
Supelco Silica Saturator Column Kit	58410	
Supelco C18 Saturator Column Kit	58418	
Replacement Components and Accessories		
Spherical Silica, 10g	58411	
C18 packing, 10g	58419	
Funnel and Tubing	20390-U	

SSI Back-Pressure Regulator

Prevents bubbles and improves baseline stability. This 1/16" flange type unit (4 x 1.3cm) has a unique mechanism that ensures constant back-pressure over a wide range of mobile phase flows and viscosities. It is immune to clogging and other problems common to restrictor-type devices. Easily adjusts from 1-4 atm (15-60psi/1-4kg/cm²).

DESCRIPTION	CAT. NO.	PRICE
SSI Back-Pressure Regulator	58788	



SSI Flow-Through Back-Pressure Regulator

Designed to apply constant pressure to an HPLC detector outlet, over a wide range of mobile phase flows and viscosities. Can be used with flowmeters.

Minimizes bubble formation in the detector cell, improves baseline stability. Flow-through design minimizes band spreading. Immune to clogging. Adjustable from 0.3 to 5 atmospheres (factory set at 4 atmospheres), for compatibility with any detector. Small, inert to common HPLC solvents, biocompatible flow path.

DESCRIPTION	CAT. NO.	PRICE
SSI Flow-Through Back-Pressure Regulator	59284	

Upchurch In-Line Check Valve

Place in the flow system where you wish to restrict fluid flow to one direction. Complete with wrench.

DESCRIPTION	CAT. NO.	PRICE
Upchurch In-Line Check Valve	55085-U	

HPLC Accessories

Syringe-Tip Filters

Minisart Syringe-Tip Filter Units

Minisart-PLUS Filters - An integral glass fiber prefilter greatly reduces the clogging associated with typical disposable syringe filtration units. Cellulose acetate filters with 0.2 μ m or 0.45 μ m pores. Sterile; individually packaged.

Minisart filters have a Luer Lock inlet and outlet, for positive attachment to the syringe. Suitable for clear aqueous solutions not requiring preliminary filtration.



16534K

DESCRIPTION	CAT. NO.	PRICE
MINISART-PLUS FILTERS (BOX OF 50)		
0.2 μ m Pores	17823K	
0.45 μ m Pores	17829K	
MINISART FILTERS (BOX OF 50)		
0.2 μ m Pores	16534K	
0.45 μ m Pores	16555K	
0.8 μ m Pores	16592K	
1.2 μ m Pores	17593K	
5 μ m Pores	17594K	



54120-U

Iso-Disc Syringe-Tip Filter Units

Sample filtration can prolong column life and minimize downtime. Use Iso-Disc syringe filters to protect your HPLC column and instrument. Filters are available in Nylon, PTFE, PVDF.

RECOMMENDATIONS

Nylon Membrane:	General filtration, especially for aqueous or other hydrophilic samples. Not recommended for use with acids.
PTFE Membrane:	General filtration for hydrophobic samples. High solvent resistance.
PVDF Membrane:	Similar to PTFE, but recommended where low protein binding is important.
0.45 μ m Pores:	Most HPLC applications.
0.2 μ m Pores:	Use when using 3 μ m HPLC columns or when suspended particles must be minimized.

SPECIFICATIONS

Housing:			
Polypropylene			
Connectors:			
Female luer lock inlet; Male luer outlet			
Pressure Rating:			
	PTFE	Nylon	PVDF
25mm	100psi	90psi	50psi
13mm	100psi	100psi	50psi
4mm	75psi	75psi	n/a
Typical Sample Volume (depends on condition of sample):			
25mm:	<100mL		
13mm:	<10mL		
4mm:	<2mL		
Typical Holdup Volume (with air purge):			
25mm:	<100 μ L		
13mm:	<10 μ L		
4mm:	<10 μ L		

B-D disposable syringes are available from Aldrich

Iso-Disc Syringe-Tip Filter Units

ISO-DISC UNIT	MEMBRANE	DIAMETER (mm)	PORE SIZE (μ m)	COLOR OF LETTERING	QUANTITY	CAT. NO.	PRICE
PTFE-25-2	PTFE	25	0.2	Green	50	54120-U	
PTFE-25-4	PTFE	25	0.45	Green	50	54121-U	
PTFE-25-10	PTFE	25	1	Green	50	54128-U	
PTFE-13-2	PTFE	13	0.2	Green	50	54131-U	
PTFE-13-4	PTFE	13	0.45	Green	50	54132-U	
PTFE-4-2	PTFE	4	0.2	Natural Body*	100	54143-U	
PTFE-4-4	PTFE	4	0.45	White/Red Body*	100	54144-U	
N-25-2	Nylon	25	0.2	Orange	50	54122-U	
N-25-4	Nylon	25	0.45	Orange	50	54123-U	
N-13-2	Nylon	13	0.2	Orange	50	54133-U	
N-13-4	Nylon	13	0.45	Orange	50	54134-U	
N-4-2	Nylon	4	0.2	Natural Body*	100	54145-U	
N-4-4	Nylon	4	0.45	Natural Body*	100	54146-U	
PVDF-25-2	PVDF	25	0.2	Red	50	54124-U	
PVDF-25-4	PVDF	25	0.45	Red	50	54125-U	
PVDF-13-2	PVDF	13	0.2	Red	50	54135-U	
PVDF-13-4	PVDF	13	0.45	Red	50	54136-U	

* No lettering.

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PEEK HPLC Fittings

PEEK (polyetheretherketone) fingertight fittings are convenient, inert, and bio-compatible. Use these fittings with 1/16" PEEK, PE stainless steel, titanium, Tefzel, or Teflon tubing. PEEK fittings are compatible with all HPLC solvents (avoid concentrated nitric acids), and can be used at temperatures to 150°C.

Unlike stainless steel ferrules, PEEK ferrules do not permanently lock into place on the tubing. This allows you to move the ferrule from one manufacturer's fitting to another (e.g., from Upchurch to Waters), and still form a zero dead volume leak-free connection.

All fittings on this page can be used in any internal fittings, including Altex, Parker, Supelco, Swagelok, Upchurch, Valco, and Whatman fittings.



Supelco PEEK Fittings- Biocompatible PEEK fittings for all 1/16" tubing connections.

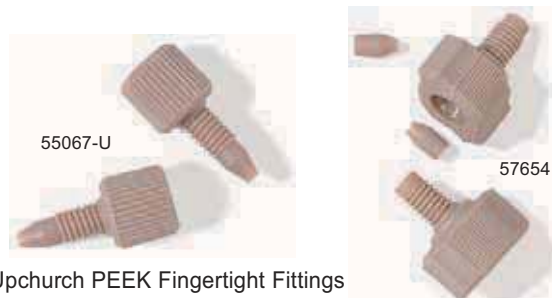
One-Piece Fingertight Fittings: Hold to 6000psi (420kg/cm²)

Two-Piece Fingertight Fittings: Has wings to make finger-tightening easier. Holds to 6000psi/420kg/cm². Ferrules included.

Two-Piece Fingertight/Wrenchtight Fittings: Hold to 6000psi/420kg/cm² when finger-tightened or 10,000psi/700kg/cm² when wrench-tightened. Double-tapered ferrules included.

Two-Piece Wrenchtight Fittings: Have a special double-tapered ferrule which is leak-free to 10,000psi/700kg/cm² hexagonal head. Double-tapered ferrules included.

DESCRIPTION	QTY.	CAT. NO.	PRICE
SUPELCO PEEK FITTINGS			
One-Piece Fingertight Fittings	5	Z227250	
Two-Piece Fingertight Fittings	5	Z227269	
Ferrules	5	Z227277	
Two-Piece Fingertight/Wrenchtight Fittings	5	Z227285	
Ferrules	5	Z226858	
Two-Piece Wrenchtight Fittings			
Short Fittings	5	Z226874	
Long Fittings	5	Z226866	



Upchurch PEEK Fingertight Fittings

One-piece fittings are convenient (there is no ferrule to drop onto the floor); two-piece fittings have lower replacement cost (the nut generally has a longer life than the ferrule). Except where noted, Upchurch PEEK Fingertight fittings can be used to 6000psi/420kg/cm²

DESCRIPTION	QTY.	CAT. NO.	PRICE
One-Piece Fittings			
10-32	10	55067-U	
Two-Piece Fittings			
Nuts & ferrules, 10-32	10	57654	
Ferrules for 10-32	10	57655-U	
Nuts & ferrules, 1/4-28	10	57656	
Ferrules for 1/4-28	6	57657	

Upchurch Two-Piece Stainless Steel /PEEK Fingertight Fittings



Hold to 6000psi/420kg/cm² when finger-tightened or 10,000psi/700kg/cm² when wrench-tightened.

DESCRIPTION	QTY.	CAT. NO.	PRICE
Two-Piece Fitting	1	58478-U	
Ferrules	5	58479	

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HPLC Accessories

PEEK Fittings



Upchurch PEEK LiteTouch Fittings

Unique design prevents twisting of PEEK tubing. The fitting consists of a special PEEK ferrule, a stainless steel ring, and a PEEK or stainless steel nut for 1/16" tubing. The fitting will not leak at pressures to 5000psi/340 bar with the PEEK nut, 2500psi/175 bar with the stainless steel nut finger-tightened or 7000psi/480 bar with wrench tightening. After wrench-tightening the stainless steel nut, subsequent finger-tightening will hold to 5000psi. Compatible with all manufacturers' stainless steel nuts. Order nuts and ferrules separately.

DESCRIPTION	QTY.	CAT. NO.	PRICE
Nuts, PEEK	10	57651	
Nuts, Stainless Steel	10	22990-U	
Ferrules ¹	10	57650-U	

¹ Includes stainless steel ring.



Upchurch Fingertight Fittings Kit

High pressure fittings. Includes Delrin Fingertight fittings, 4000psi/280kg/cm² (5); Stainless steel Fingertight fittings, 6000psi/420kg/cm²; 10,000psi/700kg/cm² when wrench-tightened (5); PEEK gripping ferrules (10).

DESCRIPTION	CAT. NO.	PRICE
Fingertight Fittings Kit	58632	



Dynaseal Fittings

Dynaseal hand-tight fittings will seal against pressures to over 7000psi/490kg/cm². Each fitting consists of a reusable nut, collet, and ferrule. The ferrule will not deform stainless steel seats and can be reused. Except for the fitting for Rheodyne valves, these fittings are compatible with all 1/16" female compression-type fittings now used on HPLC columns. Spacers are helpful for leak-free sealing with some column end fittings where thread-depth varies.

DESCRIPTION	CAT. NO.	PRICE
Dynaseal Fittings (pk. of 2)	58462	
Collets (pk. of 2)	58464	
Ferrules (pk. of 5)	58463	
Ferrules, KEL-F Polymer (pk. of 10)	58468	
Spacers (pk. of 2)	58679	



RheFlex PEEK Fittings

For Rheodyne valves. Hold to 5000psi/350kg/cm².

DESCRIPTION	CAT. NO.	PRICE
1/16" RHEFLEX FITTING SETS		
Long Fitting Sets (5 nuts, 5 ferrules)	57690-U	
Short Fitting Sets (5 nuts, 5 ferrules)	57691	
1/16" Ferrules (pk. of 5)	57692	
1/8" RHEFLEX FITTING SETS		
Fitting Set (1 nut, 1 ferrule)	57477	



Upchurch PEEK Fingertight Unions

Operate the carbon-filled PEEK zero dead volume unions to 5000psi/352kg/cm², the PEEK tees and crosses to 4000psi/281kg/cm². All items include Fingertight III nuts and ferrules.

DESCRIPTION	CAT. NO.	PRICE
10-32 THREADS		
Union, 0.010" ID	57658	
Union, 0.020" ID	57659	
Tee, 0.020" ID	57661	
Cross, 0.020" ID	57663	
1/4-28 THREADS		
Union, 0.020" ID	57660-U	
Tee, 0.020" ID	57662-U	

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Upchurch PEEK Microtight Fittings

These fittings are designed for connecting fused silica or other capillary tubing, using Upchurch PEEK Microtight tubing sleeves.



P000598

MicroFingertight I Fitting: 6-32 fitting connects capillary tubing to Microtight union, adapter, or filter. Pack of 10.



P000597

MicroFingertight II Fitting: Connects capillary tubing to MicroTee or MicroCross assembly. Order nut and MicroFerrule separately.



P000599

Microtight Union: Connects 2 pieces of capillary tubing. True zero-dead volume design – tubing pieces butt together. Use gauge plug (included) to properly seat tubing. Includes 2 MicroFingertight fittings.



P000600

Microtight Adapter: Connects capillary tubing to 1/16" OD tubing. True zero-dead volume design. Use gauge plug (included) to properly seat tubing. Includes 1 MicroFingertight fitting, 1 standard Fingertight fitting.



P000601

MicroTee: Connects 3 capillary tubes, using MicroFingertight II fittings. Includes 3 MicroFerrules for 0.025" OD tubing, 3 female nuts.



P000602

MicroCross: Connects 4 capillary tubes, using MicroFingertight II fittings. Includes 4 MicroFerrules for 0.025" OD tubing, 4 female nuts.



P000626

Upchurch Microtight Tubing Sleeves/Kit

Microtight Tubing Sleeves -Use these PEEK sleeves with all Microtight fittings, to connect capillary tubing. All are 0.025" OD; normally, choose an ID that is 0.002-0.003" larger than the OD of the capillary tubing. Package of 10 sleeves.

Microtight Sleeve Kit - Contains 6 each of the PEEK Microtight tubing sleeves described.

DESCRIPTION	COLOR	CAT. NO.	PRICE
Microtight Tubing Sleeves			
0.005"/125µm	red	502510	
0.007"/178µm	yellow	502561	
0.013"/330µm	orange	502618	
0.015"/380µm	green	502626	
0.018"/460µm	black	502634	
Microtight Sleeve Kit		502650	



P000635

Upchurch Microtight Fittings Kit

10 Microtight tubing sleeves, 2 Microtight unions, 2 Microtight adapters.

DESCRIPTION	CAT. NO.	PRICE
Microtight Fittings Kit	502804	

DESCRIPTION	CAT. NO.	PRICE
MicroFingertight I Fitting	502405	
MicroFingertight II Fitting Nut	502464	
Microtight Union	502413	
Microtight Adapter	502421	
MicroTee	502472	
MicroCross	502480	

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HPLC Accessories

Stainless Steel Fittings

Stainless Steel HPLC Fittings

Each connection requires one ferrule and one male nut. The long Rheodyne nut has a longer hex portion for easier wrench access.



Rheodyne Fittings

DESCRIPTION	CAT. NO.	PRICE
Nuts, 1/16" (pk. of 10)	58256	
Long Nuts, 1/16" (pk. of 10)	58257	
Extra Long Nuts, 1/16" (pk. of 5)	58687	
Ferrules, 1/16" (pk. of 10)	58258	
Fitting Set, 1/8" (1 nut, 1 ferrule)	57479	
Ferrules, 1/8" (pk. of 5)	57480-U	



Valco Fittings

DESCRIPTION	CAT. NO.	PRICE
Nuts, 1/16" (pk. of 10)	22990-U	
Nuts, 1/8" (pk. of 10)	22991	
Ferrules, 1/16" (pk. of 10)	22988	
Ferrules 1/8" (pk. of 10)	22989	
Ferrules, 1/4" (pk. of 10)	58245-U	



Waters Fittings

DESCRIPTION	CAT. NO.	PRICE
Nuts and Ferrules, 1/16" (5 each)	58458	



SSI Fittings

DESCRIPTION	CAT. NO.	PRICE
Nuts, 1/16" (pk. of 10)	58760-U	
Ferrules, 1/16" (pk. of 10)	58762	
Plug, 1/16" (nut required)	58764	
Cap, 1/16" (nut and ferrule required)	58766	



SSI Fittings Kit

Save time when looking for the fitting you need. This kit contains everything you need to connect most columns to a 1/16" tubing system, regardless of the column manufacturer. It is designed for easy storage and easy parts identification – everything is clearly labeled to help you quickly locate what you need.

The kit contains:

SSI ferrules (5)	E-Z Grip gland nuts (3)
SSI gland nuts (5)	CPI fittings, KEL-F (2)
CPI ferrules (5)	SSI coupling, 0.10" ID (1)
CPI gland nuts (5)	SSI to CPI couplings (2)
E-Z Grip ferrules (3)	

DESCRIPTION	CAT. NO.	PRICE
SSI Column Fittings Kit	59280-U	



Ferrule Saver Tool

- Quickly and simply dislodges swaged ferrule from 1/16" OD (0.010-0.030" ID) tubing
- Saves time, money, and needless aggravation

Removes high pressure CPI-type stainless steel ferrules without the need for disassembling your HPLC system plumbing or cutting the tubing. Eliminates the need for opening, filing, and passivating tubing before installing a new ferrule. Opens and permits reuse of the removed ferrule.

Not recommended for self-locking SSI and Rheodyne ferrules (could damage ferrule or tool).

DESCRIPTION	CAT. NO.	PRICE
Ferrule Saver Tool	58647	

HPLC Accessories Stainless Steel Fittings

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Upchurch Fittings Kits

If you've ever been caught without the fitting you need to install a column, new plumbing line, etc., you'll appreciate these kits. They contain all the fittings and tubing you normally need to operate your HPLC system, conveniently stored in a plastic case.



P000587

each

COMPONENT	HPLC SYSTEM/CAT. NO. OF KIT						
	AGILENT/ HP 58635-U	BECKMAN/ RHEODYNE 58634	PERKIN- ELMER 58636	SPECTRA-PHYSICS/ RHEODYNE 58637	VARIAN/ RHEODYNE 58638	WATERS 58639	BIORAD/ RHEODYNE 58640-U
S.S. ZDV Union, 0.020"	2	2	2	2	2	2	2
S.S. ZDV Union, 0.050"	—	—	—	—	—	—	2
S.S. Waters ZDV Union, 0.020"	—	—	—	—	—	2	—
Perkin-Elmer Male Nut (SSI)	—	—	5	—	—	—	—
Perkin-Elmer Ferrule (SSI)	—	—	5	—	—	—	—
Rheodyne Short Male Nut	—	4	4	4	4	—	4
Rheodyne Long Male Nut	—	2	2	2	2	—	2
Rheodyne Extra-Long Male Nut	—	2	2	2	2	—	2
Rheodyne Ferrule	—	10	10	10	10	—	10
Waters Male Nut	—	—	—	—	—	10	—
Waters Ferrule	—	—	—	—	—	10	—
S.S. Male Nut	10	5	5	5	5	5	5
S.S. Female Nut	10	5	5	5	5	5	5
S.S. Ferrule	20	10	10	10	10	—	10
Tefzel Cap	2	2	2	2	2	2	2
Delrin Plug	2	2	2	2	2	2	2
Fingertight II Male Nut (Delrin)	2	2	2	2	2	2	—
Fingertight I Male Nut (one piece)	—	—	—	—	—	—	2
PEEK Replacement Ferrule	4	4	4	4	4	4	—
1/16" Flangeless Male Nut, Black, Delrin	6	6	6	6	6	6	—
1/16" Flangeless Ferrule, Tefzel	6	6	6	6	6	6	—
STAINLESS STEEL TUBING							
5cm x 0.01" ID	4	4	4	4	4	4	4
10cm x 0.01" ID	4	4	4	4	4	4	4
20cm x 0.01" ID	4	4	4	4	4	4	4
5cm x 0.02" ID	4	4	4	4	4	4	4
10cm x 0.02" ID	4	4	4	4	4	4	4
20cm x 0.02" ID	4	4	4	4	4	4	4

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Liquid
Chromatography

SUPELCO

HPLC Accessories

Stainless Steel Unions, Tubing

Amersham Biosciences Tube Unions

M6 to 1/16".

54866



DESCRIPTION	CAT. NO.	PRICE
M6 to Waters, Stainless Steel	54866	
Valco Adapter, Male 10-32 to Female M6, TFE	54868	

SSI Unions

Stainless steel, 1/4-28 threads.

DESCRIPTION	TUBING OD	BORE	CAT. NO.	PRICE
Coupling (nuts and ferrules included)				
	1/16"	0.043"	58768	
	1/16"	0.015"	58769	
	1/16"	0.010"	58770	
Adapter Coupling SSI to Waters				
	1/16"	0.015"	58774-U	
Tee (nuts and ferrules included)				
	1/16"	0.043"	58780-U	
	1/16"	0.015"	58781	

Valco Column Endfittings (Unions)

Stainless steel. Nuts and ferrules included.

DESCRIPTION	TUBING OD	BORE	CAT. NO.	PRICE
Internal Reducing Union (zero dead volume)				
	1/16" to 1/32"	0.25mm	59026	
	1/8" to 1/16"	0.75mm	22999	
	1/4" to 1/16"	0.75mm	58249	
External Reducing Union				
	1/4" to 1/16"	0.25mm	59110-U	

Valco Unions

Stainless steel, unless noted otherwise. All items include nuts and ferrules.

DESCRIPTION	TUBING OD	BORE	CAT. NO.	PRICE
Internal Union				
	1/16"	0.75mm	22997-U	
	1/16"	0.25mm	58627	
Internal Reducer				
	1/16" to 1/32"	0.25mm	59025-U	
	1/8" to 1/16"	0.25mm	22949	
Tee				
	1/16"	0.75mm	58283	
	1/16"	0.25mm	58626	
Cross				
	1/16"	0.25mm	58625-U	
Union, PEEK				
	1/16"	0.25mm	Z227242	
Union				
	1/16"	0.25mm	Z226807	

Waters Union

Stainless steel. 1/16".

58289



DESCRIPTION	CAT. NO.	PRICE
Waters Union	58289	

Stainless Steel Capillary Tubing

316 stainless steel, 1/16" OD. One piece each. 5 cm, 10 cm and 20 cm lengths are straight, all others dimensions are coiled.

TUBING ID/LENGTH	CAT. NO.	PRICE
0.005" ID ¹		
5cm	56707	
10cm	56708	
20cm	56709	
30cm	56710-U	
0.5m	56711	
1.0m	56712-U	
0.007" ID ¹		
5cm	56713	
10cm	56714	
20cm	56715-U	
30cm	56716	
0.5m	56717	
1.0m	56718-U	
0.010" ID ¹		
5cm	56719	
10cm	56720-U	
30cm	56722	
0.5m	56723	
1.0m	56724	
0.020" ID ¹		
20cm	56727	
30cm	56728	
0.5m	56729	
1.0m	56730-U	
0.030" ID ¹		
5cm	56731	
10cm	56732	
20cm	56733-U	
30cm	56734-U	
1.0m	56736	
0.040" ID ¹		
5cm	56737	
10cm	56738	
20cm	56739	
30cm	56740-U	
0.5m	56741-U	
1.0m	56742-U	

¹ ±0.001".

Stainless Steel Tubing Kits

Ready-to-use lengths. Each kit contains ten 5cm and ten 10cm pieces of 1/16" tubing.

1/32" Stainless Steel Tubing Kit -316 stainless steel, 1/32" OD x 0.005" ID, for narrowbore HPLC. Two 6"/15cm and two 12"/30cm pieces.

DESCRIPTION	CAT. NO.	PRICE
1/16" OD x 0.005" ID	502839	
1/16" OD x 0.007" ID	502820	
1/16" OD x 0.010" ID	502812	
1/16" OD x 0.020" ID	502847	
1/32" OD x 0.005" ID	58404	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco



P000817

PEEK Tubing

Polyetheretherketone (PEEK) tubing has become a popular replacement for stainless steel tubing in various places in the HPLC system. It is especially useful when contact between the sample and metal components must be avoided, such as when working with metal complexing agents or certain biochemical compounds. PEEK tubing also offers other advantages: it is flexible, easy to cut, has excellent mechanical stability and chemical compatibility, and can be used to 100°C.

Tetrahydrofuran (THF), dimethyl sulfoxide (DMSO), methylene chloride, and concentrated nitric and sulfuric acids should not be used with PEEK tubing. Our PEEK tubing is color coded for easy identification of the internal diameter.

10-foot/3m length.

ID (IN.)	MAX. PRESSURE (PSI)	COLOR	CAT. NO.	PRICE
1/16" OD				
0.005	8000	Red	Z227307	
0.007	8000	Yellow	Z226688	
0.01	6000	Blue	Z226661	
0.02	6000	Orange	Z227293	
0.03	5000	Green	Z226955	
0.055	1000	Black	54994	
1/8" OD				
0.062	5000	Natural	54995	

TFE Teflon Tubing

Economical, flexible TFE Teflon tubing is ideal for use at pressures up to 500psi/35kg/cm². Use in automatic analyzer, postcolumn reaction, preparative scale systems, in-stream sampling devices, and when monitoring physiologically important compounds.

The maximum recommended operating temperature for TFE Teflon is 200°C, but short term exposure to higher temperature seldom causes damage.

	DIAMETER		CAT. NO.	PRICE
	OD	ID		
10'/3m LENGTH				
1/16"/1.58mm	0.8mm/0.031"	58700-U		
1/16"/1.58mm	0.5mm/0.023"	58701		
1/16"/1.58mm	0.3mm/0.012"	58702		
1/8"/3.2mm	1.5mm/0.063"	58703		
50'/15m LENGTH				
1/16"/1.58mm	0.8mm/0.031"	58696-U		
1/16"/1.58mm	0.5mm/0.023"	58697-U		
1/16"/1.58mm	0.3mm/0.012"	58698-U		
1/8"/3.2mm	1.5mm/0.063"	58699		

FEP Teflon Tubing

For connecting pump to reservoirs. Use 1/8" OD x 0.0625" ID tubing with most pumps, 0.15" OD x 0.118" ID tubing with Waters pumps. 10'/3m length.

DESCRIPTION	CAT. NO.	PRICE
1/8" OD x 0.0625" ID	58694-U	
0.15" OD x 0.118" ID	58695-U	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

HPLC Accessories Tubing Cutters



SSI TC-20 Tubing Cutter

A zero dead volume connection is important for maximum chromatographic performance. Unswept volume, caused by a poor fit between tubing and the mating seat, can cause sample dispersion and unsatisfactory chromatographic results.

The SSI Model TC-20 tube cutter assures a zero dead volume connection. Because the tubing is held securely in a clamp vise on the vertical swing arm, a square cut is produced when the swing arm is lowered against the abrasive cutting wheel, which produces a finished end. No lubricant or cutting fluid is required. The unit, which is CE marked, will cut most common tubing used in chromatography. 1/16", 1/8", and 1/4" outside diameter tubing with inside diameters as small as 0.008" can be smooth-cut and dressed without distortion.

The precision ground dressing tool for the 1/16" OD tubing is included and is attached directly to the swing arm: it cannot be misplaced or lost. Dressing tools for all three diameters can be ordered separately.

DESCRIPTION	CAT. NO.	PRICE
SSI ELECTRIC STAINLESS STEEL TUBING CUTTER		

Voltage Selectable: 110/220 Volts
50-60 Hz, CE Approved

58539-U

REPLACEMENT PARTS

Cutting Wheels, TC-20 (pk. of 3)	58540-U
Dressing Tool for 1/16" Tubing	58804
Needle Insert for 1/16" Deburring Tool	58805

ADDITIONAL PARTS

Dressing Tool for 1/8" Tubing	58806
Needle Insert for 1/8" Dressing Tool	58807
Cutting Wheels, TC-10 (pk. of 3) ¹	58803

¹ Replacement cutting wheels for SSI Model TC-10 tubing cutter. Will not fit Model TC-20.



Manual Cutting Tool

Easily cut 1/16" stainless steel tubing, then deburr the cut end to ensure a uniform flow of gas or liquid. Deburring kit includes deburring tool, tubing holder, file. Order tubing cutter and deburring kit separately.

DESCRIPTION	CAT. NO.	PRICE
Manual Cutting Tool	58692-U	
Cutting Wheels (pk. of 2)	22411	
Deburring Kit	58691-U	
Deburring Tool	58804	



Straightening Pliers

Jaws grooved specifically for 1/16" stainless steel tubing. Grips are spring-loaded for easier operation.

DESCRIPTION	CAT. NO.	PRICE
Straightening Pliers	58646	



Upchurch Polymer Tubing Cutter

Upchurch designed this reliable and durable device specifically for cutting PEEK, Teflon, and Tefzel tubing. Includes 4 replacement blades.

DESCRIPTION	CAT. NO.	PRICE
Polymer Tubing Cutter	57665-U	
Replacement Blades (pk. of 5)	57666-U	



PEEK Tubing Cutter

Makes burr-free, perpendicular cuts through polymer tubing with outside diameters from 1/16" to 1/8". Designed for cutting PEEK tubing, but also easily slices through Teflon and Tefzel capillary tubing. Compact design includes a safety locking mechanism. One spare blade included.

DESCRIPTION	CAT. NO.	PRICE
PEEK Tubing Cutter	Z290882-1EA	
Replacement Blade	Z290947-1EA	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

HPLC Accessories Column Hardware



Column Blanks

Each column blank kit includes a precision-bore polished 316 stainless steel column blank, two zero dead volume external reducing unions (internal unions with 10mm ID blanks) with nuts and ferrules for 1/16" OD tubing, and two 2µm frits.

ID (mm) x OD (in.) x LENGTH (cm)	CAT. NO.	PRICE
2.1 x 1/4 x 25	59127	
4.6 x 1/4 x 15	59101	
4.6 x 1/4 x 25	59102-U	
10 x 1/2 x 25	58217	



Column Frits

Choose frits with 0.5µm pores to retain packings prepared from 3µm particles, frits with 2µm pores to retain larger particles.

FRIT DIAM. (in.)	PORE DIAM (µm)	CAT. NO.	PRICE
FRITS FOR CONVENTIONAL COLUMN HARDWARE (PK. OF 10)			
1/8	0.5	59037	
1/8	2	59129	
1/4	0.5	59038	
1/4	2	58264	
1/2	2	58255	



Frit Assemblies for Supelco Column Hardware

FRIT DIAM. (mm)	PORE DIAM (µm)	CAT. NO.	PRICE
PEEK WITH STAINLESS STEEL FRIT, PK. OF 2			
2.1	0.5	55203	
2.1	2	55204	
3.0	0.5	55207	
3.0	2	55208	
4.0-4.6	0.5	55209	
4.0-4.6	2	55210	



Frit-Removing Tool for Supelco Modular Columns

Removes frits from 2.1mm ID to 4.6mm ID Supelco modular columns.

DESCRIPTION	CAT. NO.	PRICE
Frit-Removing Tool	55216	



Column End Plugs

Use column end plugs with all female 10-32 compression type endfittings, Amersham Biosciences domed nut with M6 male fittings. Inert Delrin construction, compatible with any common HPLC solvent.

DESCRIPTION	CAT. NO.	PRICE
Column End Plugs, 1/16" (pk. of 10)	59031	
Amersham Biosciences Domed Nut (each)	54865	

HELPFUL HINTS

Supelco modular columns contain the following markings:

- 4.6mm ID = 3/8" OD tubing with 2 lines
- 4.0mm ID = 3/8" OD tubing with no lines
- 3.0mm ID = 3/8" OD tubing with 1 line
- 2.1mm ID = 1/4" OD tubing with 2 lines

Supelco frit assemblies are color-coded as follows:

- Gray = 2.0µm pores
- Black = 0.5µm pores

HPLC Accessories

SupelPRO™ Valves

SupelPRO™ Automated Fluidics Instruments

Supelco's SupelPRO series are precision, electronically-controlled, motorized valve instruments for repetitive fluid switching. Each SupelPRO instrument is self-contained and incorporates a 2-position or multi-position port valve. Standard multi-positions include a 4-line BCD port, and the 2-position models include the Level Logic. Power requirements: 100-240VAC, 50-60Hz (auto switching). All units shipped with standard US power cord. Other power cords are available on a custom basis.

All SupelPRO™ units are CE approved.

SupelPRO™ 3-Column or 6-Column Selector

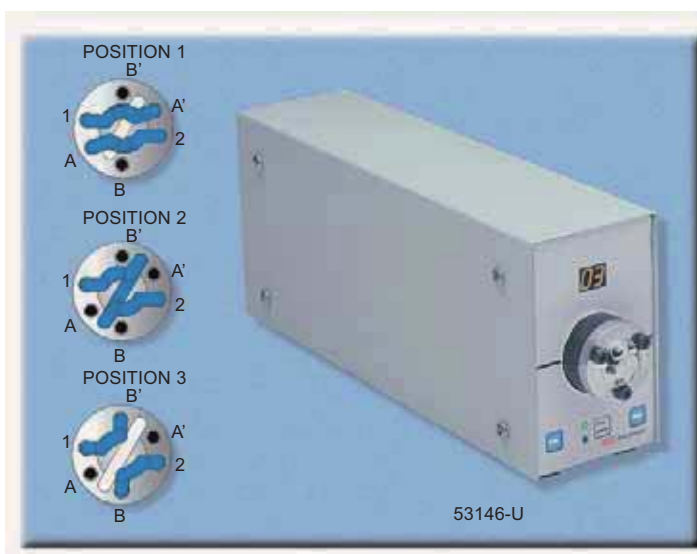
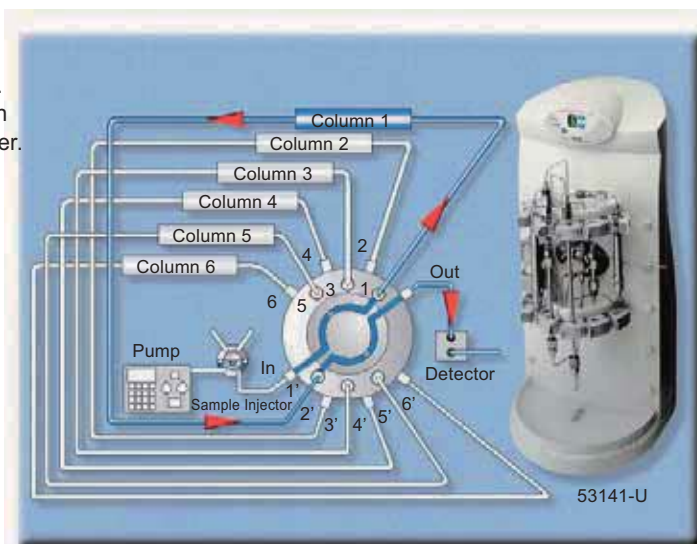
Select from among up to 3 columns or up to 6 columns. Useful for column selectivity comparisons, other column selection applications. Includes mounting clips and cover.

DESCRIPTION	CAT. NO.	PRICE
3-Column		
Stainless Steel	53140-U	
PEEK	53142-U	
6-Column		
Stainless Steel	53141-U	
PEEK	53143-U	

SupelPRO™ 2-Channel Selector with Bypass Valve

This 6-port, 3-position motorized valve is useful for selecting 1 of 2 connected columns, or flush.

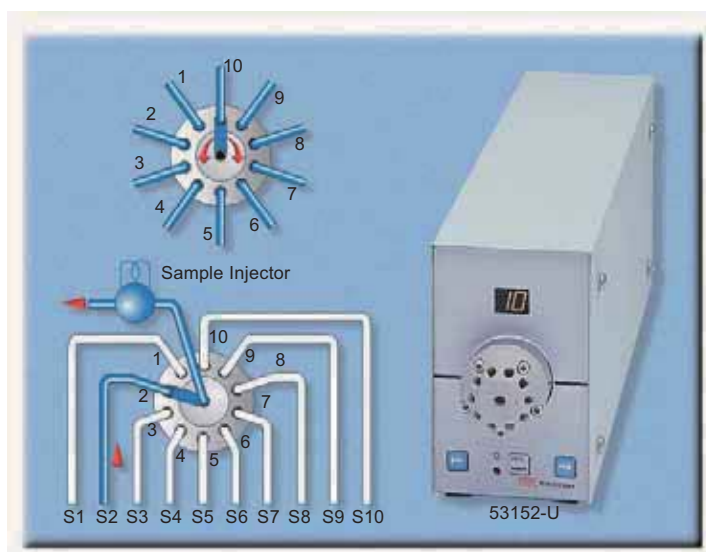
DESCRIPTION	CAT. NO.	PRICE
Stainless Steel	53146-U	
PEEK	53147-U	



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HPLC Accessories

SupelPRO™ Valves



SupelPRO™ 11-Port, 10-Position Valve

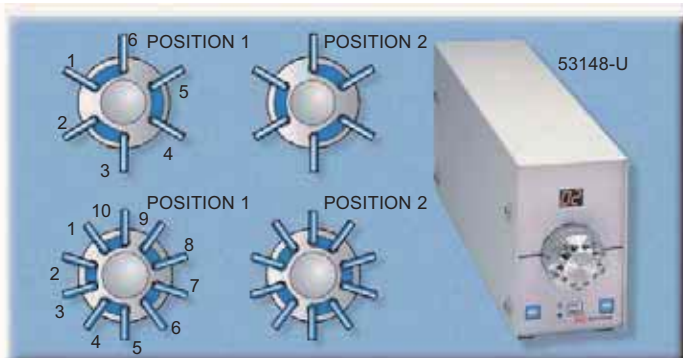
Use this 11-port, 10-position valve to select from up to 10 inputs to 1 output, or select 10 outputs from 1 input.

DESCRIPTION	CAT. NO.	PRICE
Stainless Steel	53152-U	
PEEK	53153-U	

SupelPRO™ 2-Position Valves

Available with 6 or 10 ports. Useful for a wide variety of applications, including sample clean-up and back-flushing.

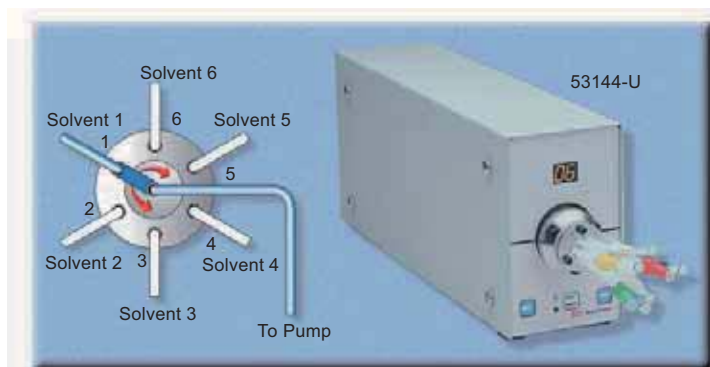
DESCRIPTION	CAT. NO.	PRICE
6-Port		
Stainless Steel	53148-U	
PEEK	53149-U	
10-Port		
Stainless Steel	53150-U	
PEEK	53151-U	



SupelPRO™ Solvent Selector Valve

Allows automation of mobile phase selection from 6 inlet solvents. Comes with factory installed 1/16" or 1/8" OD tubing and 1/4-28 fittings. Rated to 300psi (20 bar).

DESCRIPTION	CAT. NO.	PRICE
1/16"	53144-U	
1/8"	53145-U	



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HPLC Accessories

Rheodyne Injectors



Rheodyne Model 3725i Preparative Sample Injectors

Model 3725i sample injectors for 1-10cm ID HPLC columns combine the ease of use and versatility of Rheodyne's analytical-scale injectors with the ability to handle large samples and high flow rates. Rugged and easily maintained, in a choice of stainless steel or PEEK flowpaths. Includes 10mL sample loop, 1/8" fitting for all ports, 5cm large-bore syringe needle (16 gauge/0.65" OD) for rapid injection of large samples, needle port cleaner, two vent tubes, wrenches, mounting screws, and instructions.

SPECIFICATIONS

Tubing and Fittings:	1/8"
Valve Flow Passages:	1mm/0.04"
Flow Rates:	10-800mL/min
Pressure Rating:	Model 3725i: 276 bar/4000psi*
	Model 3725i-038: 345 bar/5000psi

* Usable pressure depends on sample loop ID, organic solvent concentration, and organic solvent exposure time.

DESCRIPTION	CAT. NO.	PRICE
PREPARATIVE SAMPLE INJECTORS		
Model 3725i, PEEK	57461	
Model 3725i-038, SS	57463	
REPLACEMENT COMPONENTS		
Rotor Seal	57473	
Stator Face Assembly	57474	
Needle, PEEK for model 3725	57475	
Needle, 16-Gauge SS for model 3725	57476	
Fitting Set, 1/8" (1 nut & 1 ferrule)		
RheFlex	57477	
Stainless Steel	57479	
Ferrules, 1/8" (pk. of 5)		
Stainless Steel	57480-U	
RheBuild Kit for 3725/3725i/3725-038/3725i-038	55043	
SAMPLE LOOPS²		
PEEK		
2mL	57464-U	
5mL	57465	
10mL	57466-U	
20mL	57467	
Stainless Steel		
2mL	57468-U	
5mL	57469	
10mL	57470-U	
20mL	57471	

¹ Supplied with unswaged fittings for connection to Model 3721i injector.

² Two 1/8" x 1/16" reducing unions (Cat. No. 22999), two short pieces of 1/16" capillary tubing, and 1/16" nuts and ferrules are needed to connect a preparative sample loop to a valve with 1/16" ports.



Rheodyne Model 7000 Stream Switching Valve

Designed specifically for column selection, sample clean-up and enrichment, column programming, backflushing, and other stream switching operations. Six peripheral ports (no center port) are interconnected through a two-position rotor. Low volume flow passages (0.6mm ID) minimize dead volume that can affect column switching analyses. The pressure limit is factory set at 5000psi (350kg/cm²), but can be adjusted to 7000psi (490kg/cm²). The flat-face seal is easy to adjust.

DESCRIPTION	CAT. NO.	PRICE
Model 7000 Valve	58920-U	
REPLACEMENT COMPONENTS		
VESPEL Rotor Seal	58831	
RheBuild Kit for 7000/7010	55044	



Rheodyne Model 7010 Injector

The original Rheodyne HPLC injector, Model 7010 introduces 5µL-5mL samples onto a column with excellent reproducibility (intended for complete loop filling only). Six clustered ports allow compact interconnections, minimizing tubing volume. The flat-face seal is easy to adjust and service. Operates at pressures to 7000psi (490kg/cm²). Supplied with a 20µL loop; order fill port separately.

DESCRIPTION	CAT. NO.	PRICE
Model 7010 Injector	58827	
REPLACEMENT COMPONENTS		
Loop Fill Port	58825-U	
VESPEL Rotor Seal	58831	
RheBuild Kit for 7000/7010	55044	
SAMPLE LOOPS WITH FITTINGS		
5µL	58840-U	
10µL	58832	
20µL	58833-U	
50µL	58834	
100µL	58835	
200µL	58836	
500µL	58837	
1mL	58838	
2mL	58839	
5mL	57637	

HPLC Accessories Rheodyne Injectors

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Rheodyne Model 7060 Selection Valve



For column or mobile phase selection.

Instead of frequently connecting and disconnecting columns to your system, connect the injector outlet to the common center port of a Model 7060 valve, and connect up to 6 columns to the peripheral ports. (We recommend allowing one port for bypass/flushing operations.) The common port can be sequentially connected to each of the 6 peripheral ports by manually rotating the handle in either direction. Connect the column outlets to a second Model 7060 valve to direct the flow from the columns to the detector.

Low dispersion 0.41mm/0.016" ID passages and an internal volume of less than 2µL ensure minimal extra-column band broadening.

DESCRIPTION	CAT. NO.	PRICE
Model 7060 Selection Valve	58817	



Rheodyne Model 7520 Microsample (Syringe-Loading) Injector

Designed specifically for use with narrow bore HPLC columns. 0.13mm/0.005" ID passages and a built-in needle port (0.3µL hold-up volume) minimize dispersion of small samples. A 0.5µL sample rotor is included; order other rotors separately.

DESCRIPTION	CAT. NO.	PRICE
Model 7520 Microsample Injector	58819	

REPLACEMENT COMPONENTS

RheBuild Kit for 7520/7526	55048	
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SAMPLE ROTORS

0.2µL	58820	
1.0µL	58822-U	



Rheodyne Model 7125 Injector

The Rheodyne Model 7125 syringe loading injector allows injection of the entire contents of the syringe into the sample loop – you won't have to flush the valve between injections, unless you are conducting trace analyses. It also injects samples from a partially filled loop (you save time by not having to change the sample loop).

The Model 7125 injector can be used at pressures to 7000psi (490kg/cm²) and is supplied with a VESPEL rotor seal for operation at pH 0-10. A 20µL sample loop is included; order additional loops separately.

DESCRIPTION	CAT. NO.	PRICE
Model 7125 Injector	58826	

REPLACEMENT COMPONENTS

VESPEL Rotor Seal	58830-U	
Tefzel Rotor Seal	57633	
Needle Port Cleaner	57635	
Valve Angle Bracket (for all metal Rheodyne valves)	57636	
RheBuild Kit for 7125/7126	55045	

SAMPLE LOOPS WITH FITTINGS

5µL	58840-U	
10µL	58832	
20µL	58833-U	
50µL	58834	
100µL	58835	
200µL	58836	
500µL	58837	
1mL	58838	
2mL	58839	
5mL	57637	

Note: Use VESPEL seals to pH 10, Tefzel seals to pH 14.

HPLC Accessories

Rheodyne Injectors

Rheodyne Model 7725 and 7725i Injectors

The Rheodyne Model 7725 injector allows you to inject 1µL-5mL samples with accuracy and precision. The rugged, easily maintainable design offers many advanced features:

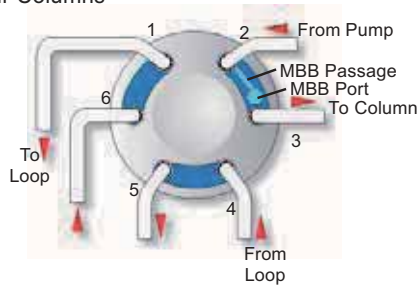
- Patented continuous flow design (Figure A) – flow is uninterrupted when you switch from LOAD to INJECT
- Easy seal adjustment using pressure screw on front of injector
- Easy access to fittings (Figure B)

Injector includes a 20µL sample loop and is supplied with a VESPEL rotor seal that can be replaced with a Tefzel rotor seal for use at pH 0-14. Factory set at 5000psi (345 bar), adjustable to 7000psi (483 bar). Model 7725i has an internal position switching switch.

DESCRIPTION	CAT. NO.	PRICE
Model 7725 Injector	57620-U	
Model 7725i Injector	57621	
REPLACEMENT COMPONENTS		
VESPEL Rotor Seal	58830-U	
Tefzel Rotor Seal	57633	
Stator Face Assembly	57634	
Needle Port Cleaner	57635	
Valve Angle Bracket (for all metal Rheodyne valves)	57636	
RheBuild Kit for 7725/7725i/7726	55049	
SAMPLE LOOPS(WIDE-ANGLE PORTS; FITTINGS INCLUDED)		
2µL	57622	
5µL	57623	
10µL	57624	
20µL	57625	
50µL	57626	
100µL	57627	
200µL	57628-U	
500µL	57629-U	
1mL	57630	
2mL	57631	
5mL	57632	

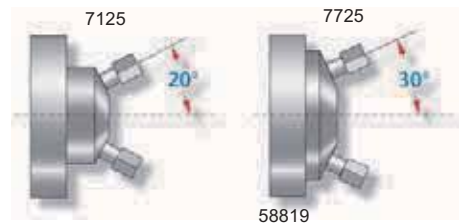
Note: Use VESPEL seals to pH 10, Tefzel seals to pH 14.

Figure A. A Model 7725 Injector Reduces Wear and Tear on Your Columns



A conventional HPLC valve momentarily interrupts flow during sample injection, subjecting your column to repetitive pressure shocks. Rheodyne's patented MBB (make-before-break) design makes the new connection before breaking the old one, providing uninterrupted flow.

Figure B. Model 7725 Injectors also Feature a Wide Port Angle (30°), for Easy Access to the Fittings



Rheodyne Model 8125 Low Dispersion Injector

Inject as little as 0.1µL of sample with high accuracy and zero waste.

Small diameter flow channels in a low-dispersion version of the popular Model 7125 injector. Excellent for use with narrow bore columns (1-3mm ID), but also well suited for larger diameter columns. Resolution is most improved with relatively unretained peaks – the peaks most affected by extra-column effects. Additional features include:

- Built-in zero-holdup needle port
- Built-in position switch to signal injection
- Long rotor seal lifetime – make up to 30,000 injections before replacing seal (VESPEL)
- User-adjustable to 7000psi (490kg/cm²)
- Easy-to-service flat-face rotor design

Supplied with a 5µL sample loop, fittings for all ports, 22-gauge luer hub needles, needle port cleaner, two vent tubes, wrench mounting screws and instructions. Order additional sample loops separately.

DESCRIPTION	CAT. NO.	PRICE
Model 8125 Injector	57950-U	
REPLACEMENT COMPONENTS		
VESPEL Rotor Seal	57955	
RheBuild Kit for 8125/8126	55050-U	
SAMPLE LOOPS		
5µL	57951	
10µL	57952	
20µL	57953	



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HPLC Accessories Rheodyne Injectors

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Biocompatible Rheodyne Injectors

All flow passages in the 6-port injectors on this page are inert PEEK (polyetheretherketone) or alumina-ceramic materials. They are unaffected by buffers, acids, bases, or halide salts, including 1M sodium chloride, over the entire pH range. Both models are rated for pressures up to 5000psi (350kg/cm²), but the usable operating pressure may be lower, depending on the loop and solvents used.



Rheodyne Model 9010 Injector

This injector is similar in function to the Model 7010 stainless steel injector, but is constructed of inert PEEK and Tefzel materials for use in the pH range 0-14. It can be used for HPLC, soft gel chromatography, or ion chromatography.

A position-sensing switch closes in the INJECT position and stays closed until the handle is returned to the LOAD position. Supplied with a 20µL sample loop; order additional loops separately.

DESCRIPTION	CAT. NO.	PRICE
Model 9010 Injector	57695	
REPLACEMENT COMPONENTS		
Tefzel Rotor Seal	57696	
Loop Filler Port	57638	
Needle Port	57639	
RheBuild Kit for 9010/9040	55052	

Rheodyne Model 9725 Injector

The Model 9725 injector is ideal for both HPLC and soft gel LC purification procedures for biomolecules. Performance of this 6-port rotary injector is similar to that of the Model 7725 injector, but no metal contacts the samples. Model 9725 incorporates the patented make-before-break design (see previous page, Figure A).

The 0.25mm ID flow channels provide low dispersion when used with narrow ID columns, but prevent excessive flow resistance at flow rates used with larger analytical columns and preparative columns. Use with Rheodyne HPT fittings and high pressure PEEK tubing. Model 9725i includes a position-sensing switch.

Supplied with a 20µL PEEK sample loop, Tefzel rotor seal, fittings for all ports, 22-gauge luer hub needle, needle port cleaner, two Tefzel vent tubes, wrenches, mounting screws and instructions. Order additional sample loops separately.

DESCRIPTION	CAT. NO.	PRICE
Model 9725 Injector	54432	
REPLACEMENT COMPONENTS		
Tefzel Rotor Seal	57971-U	
RheBuild Kit for 9725/9725i/9726	55053	

PEEK Sample Loops for 9010, 9125, and 9725 Injectors

VOLUME	CAT. NO.	PRICE
5µL	57640	
10µL	57641	
20µL	57642	
50µL	57643	
100µL	57644	
200µL	57645	
500µL	57646	
1mL	57647	
2mL	57648	
5mL	57649	



Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

SUPELCO

HPLC Accessories

Rheodyne RheBuild Kits, Fittings, Tools



RheBuild Kits

These kits include all of the tools and parts you need to repair your Rheodyne injector. The parts included are those most likely to be damaged, worn, or lost. Kits for front-loading injectors include: rotor seal, stator face assembly, isolation seal, needle guide, needle port cleaner, 2 hex keys, operating instructions, and a mini-manual. Parts may vary, depending on valve model.

VALVE MODEL	CAT. NO.	PRICE
3725/3725i/3725-038/3725i-038	55043	
7010	55044	
7010 with stator	504602	
7125/7126	55045	
7125-081	55046	
7410	55047	
7520/7526	55048	
7650/9650 TPMV	504629	
7725/7725i/7726	55049	
7750 TPMV Series	7750999	
8125/8126	55050-U	
9010/9040	55052	
9125/9126	55051	
9725/9725i/9726	55053	
9750 TPMV Series	9750999	
KITS FOR SupelPRO/LabPRO UNITS		
Injector with Purge ¹	54398-U	
2-Channel Selector ¹	54394-U	
3 Column Selector ¹	54388-U	
11-Port/10-Position ¹	57443-U	
2-Position, 6-Port ¹	54395-U	
2-Position, 10-Port ¹	54396-U	
Solvent Selector, 1/16"	54392-U	
Solvent Selector, 1/8"	54393-U	
Low Pressure Switching, 1/16"	54390-U	

¹ Either stainless steel or PEEK unit.



Rheodyne Port Adapter, ValvTool

Use the Port Adapter for connecting 1/16" tubing to a 1/8" valve port. Use the ValvTool for changing sample loops or replacing fittings on Rheodyne valves. The 1/4" end is a uniquely designed slotted socket wrench that provides easy access to many hard-to-reach areas.

DESCRIPTION	CAT. NO.	PRICE
Rheodyne Port Adapter	57472	
ValvTool	55087-U	



Rheodyne Fittings

DESCRIPTION	CAT. NO.	PRICE
Nuts, 1/16" (pk. of 10)	58256	
Long Nuts, 1/16" (pk. of 10)	58257	
Extra Long Nuts, 1/16" (pk. of 5)	58687	
Ferrules, 1/16" (pk. of 10)	58258	
Fitting Set, 1/8" (1 nut, 1 ferrule)	57479	
Ferrules, 1/8" (pk. of 5)	57480-U	



RheFlex PEEK Fittings

For Rheodyne valves. Hold to 5000psi/350kg/cm².

DESCRIPTION	CAT. NO.	PRICE
1/16" RHEFLEX FITTING SETS		
Long Fitting Sets (5 nuts, 5 ferrules)	57690-U	
Short Fitting Sets (5 nuts, 5 ferrules)	57691	
1/16" Ferrules (pk. of 5)	57692	
1/8" RHEFLEX FITTING SETS		
Fitting Set (1 nut, 1 ferrule)	57477	

Rheodyne pH Upgrade Kits

Enables you to use your Rheodyne injector with samples at pH 0-14. Includes Tefzel rotor seal, 2 hex keys, instructions.

VALVE MODEL	CAT. NO.	PRICE
7000/7010/7040	55054	
7125/7126	55055	
7410	55056	
8125/8126	55057	

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HPLC Accessories

Low Pressure Valves, Micro Valves



Rheodyne Model 5011 Low Pressure Mobile Phase Selection Valve

Draw the mobile phase you need simply by rotating a switch. This zero dead volume, 7-port 6-position rotary valve operates to 300psi (21kg/cm²). Inert Teflon tubing (0.8mm ID) ensures contaminant-free mobile phases.

DESCRIPTION	CAT. NO.	PRICE
Model 5011 Valve	58829	
Mounting Bracket for 5011/5020	57460-U	



Rheodyne Model 5020 Low Pressure Sample Injection Valve

A Teflon, fixed volume loop injector with 0.8mm/0.03" ID flow passages. Operates to 300psi (21kg/cm²). Supplied with a 0.5mL sample loop and a female Luer adapter for a Luer tip syringe.

DESCRIPTION	CAT. NO.	PRICE
Model 5020 Injection Valve	58814	
SAMPLE LOOPS		
0.1mL	57680-U	
1mL	57683	
5mL	57684	
10mL	57685	



Upchurch Micro-Valves

- Inert PEEK construction
- Flow rates as low as 3.5µL/minute (water)
- 1/4-28 or 10-32 1/16" fittings

SPECIFICATIONS

Internal Volume
 1/4-28 valves: 4.13µL fully opened; 2.1µL closed.
 10-32 valves: 2.8µL fully opened; 1.2µL closed.
 10-32/6-32 valves: 2.5µL fully opened; 1.2µL closed.
 Thru-Hole
 54720-U: 0.010"
 all others: 0.020"
 Pressure Rating
 low pressure valves: 800psi (54 bar).
 high pressure valves: 5000psi (338 bar).

DESCRIPTION	CAT. NO.	PRICE
MICRO-METERING VALVE (LOW PRESSURE)		
1/4-28 Flangeless Fittings	502367	
10-32 Fingertight Fittings	502375	
MICRO-SPLITTER VALVE (LOW PRESSURE)		
1/4-28 Flangeless Fittings	502383	
10-32 Fingertight Fittings	502391	
MICRO-SPLITTER VALVE (HIGH PRESSURE)		
10-32 Fingertight Fittings	54719-U	
2 x 10-32, 1 x 6-32* Fingertight Fittings	54720-U	
REPLACEMENT FITTINGS		
1/4-28 Flangeless Fittings		
Nuts & Ferrules (5 each)	58685	
Ferrules (pk. of 10)	56700-U	
Fingertight Fittings		
10-32 (pk. of 10)	55067-U	
6-32 (pk. of 10)	502405	

* For capillary tubing.

HPLC Accessories

Priming Valves, Gauge Kits, SSI Valves, Pulse Damper



OPTI-PRIME Priming Valve for Waters Pumps

Makes priming Waters pumps a convenient, one hand operation. Replaces Waters priming system.

DESCRIPTION	CAT. NO.	PRICE
OPTI-PRIME Priming Valve	59425-U	
Priming Valve with Safety Syringe	59426	
Safety Syringe	59451	



SSI Two-Way Shut-Off Valve

For 1/16" tubing; 1/4-28 (SSI style) fittings included. Rated to 15,000psi (1054kg/cm²)

DESCRIPTION	CAT. NO.	PRICE
Two-Way Shut-Off Valve	58789	

SSI Three-Way Stream-Splitting Valve

Each port in this valve can be connected to pressure, as in stream-splitting, or when connecting an in-line pressure gauge (open valve to read pressure, seal off to prevent contamination). The side vent model can replace the injector bypass valve on Altex, LDC, Perkin-Elmer, Spectra-Physics, or other chromatographs, and is recommended for all general applications. The bottom vent model replaces the bypass valve on a Varian 5000 chromatograph. For 1/16" tubing; 1/4-28 (SSI style) fittings included. Rated to 15,000psi (1054kg/cm²)

DESCRIPTION	CAT. NO.	PRICE
Three-Way Stream-Splitting Valve		
Side Vent	58794	
Bottom Vent	58793	

SSI LO-Pulse Damper

A pulse damper controls pump pulsations for a more stable baseline. The LO-Pulse damper is a patented unit compatible with single piston reciprocating HPLC pumps (Altex 110A, Eldex pumps, LDC Mini-Pump VS, SSI Models 200 and 300, etc.). At pressures from 500psi to 6000psi (35-420kg/cm²), it improves precision of quantitative analyses and detection limits for trace sample components. Fittings and instructions included.

DESCRIPTION	CAT. NO.	PRICE
Pulse Damper	58455	
Pulse Damper without Cabinet	58442	



SSI Prime/Purge Valve

The drain port in this valve is incorporated into the valve stem, eliminating the need for extra tubing and fittings. A luer taper on the valve stem accepts a luer syringe for priming. Valve shutoff is provided by a soft-seal tip that withstands back pressures to 8000psi (560kg/cm²). Only Teflon, Tefzel, and 316 stainless steel come in contact with the mobile phase. Order 1/16" SSI nuts and ferrules separately.

DESCRIPTION	CAT. NO.	PRICE
SSI Prime and Purge Valve	58690-U	

Upchurch Prime/Purge Valve

Automatic valve operation with a simple twist of the Luer-Lock syringe. Easy installation, long seal life.

DESCRIPTION	CAT. NO.	PRICE
Upchurch Prime/Purge Valve for Waters Pumps	54716-U	
Upchurch Universal Prime/Purge Valve (1/4 - 28 fittings)	54718-U	

SSI Pressure Gauge Kits

Components already assembled, ready for easy installation. Backed by a three-year warranty, these highly accurate ($\pm 1.5\%$), glycerine-filled gauges have a 2 1/2"/6.4cm face and 1/4" NPT connection. To resist corrosion, the one-piece case and socket and the bourdon tube are made of 316 stainless steel. All fittings and SSI tee are included.

DESCRIPTION	CAT. NO.	PRICE
0-3000psi/210kg/cm ²	58623-U	
0-6000psi/420kg/cm ²	58624	

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HPLC Accessories

Mobile Phase Degassing / Filtration



Supelco Mobile Phase Degassing System

Eliminates:

- Flow instabilities
- Detector noise
- Baseline drift
- Expensive helium tanks
- Sparging problems

Degasses up to four solvents at one time. The Supelco Mobile Phase Degassing System removes dissolved gases from the mobile phase. The mobile phase passes through a gas-permeable membrane inside a vacuum chamber, where dissolved gases are pulled out of the solution. Special tubing, which eliminates regassing from ambient sources, carries the mobile phase from the degasser to the pump. Includes 12' 3/8" of tubing and 8 fittings.

CE approved.

SPECIFICATIONS

Number of Channels:	4
Degassing Efficiency (25°C):	8.1ppm oxygen reduced to 0.5ppm at 1mL/min or 1ppm at 4mL/min
Dead Volume/Channel:	15mL
Maximum Flow/Channel:	10mL/min
Power Requirements:	115VAC/240VAC ±10%, 50/60Hz

DESCRIPTION	CAT. NO.	PRICE
Supelco Mobile Phase Degassing System	55020	



Mobile Phase Reservoir System

This convenient system is made entirely of inert parts: glass, Tefzel, PEEK, and TFE Teflon. Includes 10' 3/8" of 1/8" OD Teflon tubing, a PEEK bottom-of-the-bottle filter/sparger, a plug, and 1-liter or 2-liter safety-coated bottle.

DESCRIPTION	CAT. NO.	PRICE
MOBILE PHASE RESERVOIR SYSTEM		
with 1-liter Bottle	55060-U	
with 2-liter Bottle	55061	
ACCESSORIES AND REPLACEMENT PARTS		
Bottom-of-the-Bottle Filter/Sparger, GL-45	55058	
Luer Plug	54983	
Luer to 1/4-28 Adapter	58722	
Safety-Coated Bottle, 1-Liter, GL-45	59324	
Safety-Coated Bottle, 2-Liter, GL-45	59323	
Replacement Cap for 1- or 2-Liter Reservoir System, 3 holes, GL-45	55062	
Caps for 1- or 2-Liter Bottle ² (pk. of 12), solid, GL-45	23170-U	
Cap for Narrow-Mouth Bottle (fits GL-38) ³ , 3 holes	A622	
TFE Teflon Tubing, 10' 3/8" x 1/8" OD	58703	
Flangeless Fittings for 1/8" Tubing (pk. of 5)	58686	
Two-Way Shut-Off Valve, 1/4-28 threads	56704	
Bottom-of-the-Bottle Filter/Sparger, GL-38	A437	

¹ Cap has a Tefzel core with 3 holes (same as in 55060-U).

² Solid cap, no hole.

³ Use with solvent bottles to eliminate transfer step.

HPLC Accessories

Mobile Phase Degassing / Filtration



Supelco Mobile Phase Filtration Apparatus

Protect your instrument and columns by removing particles and gases from solvents and other mobile phase components. Nylon 66 membrane filters are compatible with all solvents commonly used in HPLC.

Filtration Apparatus 1 (connects to 1000mL sidearm flask) - Includes 250mL glass reservoir, funnel base and stopper, clamp, stainless steel holder and screen, 10 Teflon gaskets, 50 Nylon 66 filters (47mm, 0.45µm pores).

Filtration Apparatus 2 (connects to aspiration line) - Includes 250mL glass reservoirs (3/4 tapered funnel bases), 3/4 tapered 1000mL flask and glass cap, clamp, stainless steel holder and screen, 10 Teflon gaskets, 50 Nylon 66 filters (47mm, 0.45µm pores).

DESCRIPTION	CAT. NO.	PRICE
SUPELCO MOBILE PHASE FILTRATION APPARATUS		
Filtration Apparatus 1	58061	
Filtration Apparatus 2	58062-U	

REPLACEMENT GLASS PARTS

For Filtration Apparatus 1		
Reservoir, 250mL	58063	
Reservoir, 500mL	58074	
Funnel Base and Stopper	58064	
For Filtration Apparatus 2		
Tapered Funnel Base	58068	
Tapered Flask, 1000mL	58070-U	
Tapered Flask, 2000mL	58075	
Cap for Flask	58071	

REPLACEMENT FILTER PARTS FOR BOTH APPARATUS

Filter Holder and Screen, SS	58065	
Gaskets, Teflon (pk. of 10)	58066	
Filter, Nylon 66, 47mm (pk. of 50)		
0.45µm pores	58067	
0.20µm pores	58060-U	
Clamp, Spring Action	58053	
Vacuum Flask, 1000mL, with Sidearm	Z290459-1EA	

Membrane Filter Disks, fits all 47mm Filtration Units

DESCRIPTION	PORE SIZE (µm)	QTY.	CAT. NO.	PRICE
Nylon 66	0.45	50	58067	
	0.20	50	58060-U	
Teflon	1.0	10	58097	
	1.5	10	58086	
Cellulose	0.22	100	58188	

Nylon 46 Membrane Filters

Hydrophilic, compatible with a wide range of chemicals.

DIAMETER (mm)	PORE SIZE (µm)	QTY.	CAT. NO.	PRICE
25	0.45	100	Z290815-100EA	
47	0.2	100	Z290807-100EA	
47	0.45	100	Z290793-100EA	
90	0.45	25	Z290785-25EA	

Solvents and Solutions Compatible with Nylon 66 and Nylon 46 Filters

RECOMMENDATIONS			
ACIDS			
Acetic acid, 1%			
BASES			
Potassium hydroxide, 6N			
ALCOHOLS			
Amyl alcohol	Ethanol	Isopropanol	
Benzyl alcohol	Ethylene glycol	Methanol	
Butyl alcohol	Glycerine (glycerol)	Methyl Cellosolve	
Butyl Cellosolve	Isobutyl alcohol	Propanol	
SOLVENTS			
Acetone	Dimethylformamide	Methyl ethyl ketone	
Acetonitrile	Dimethylsulfoxide	Methyl isobutyl ketone	
Amyl acetate	Dioxane	Nitrobenzene	
Benzene ¹	Ethyl ether	Methylene chloride ¹	
Bromoform	Ethylene dichloride	Pentane	
Butyl acetate	Formaldehyde	Perchloroethylene	
Carbon tetrachloride ¹	Freon 113	Tetrahydrofuran ¹	
Cellosolve (2-ethoxyethanol)	Gasoline	Trichloroethylene	
Chloroform ¹	Hexane	Toluene ²	
Cyclohexane	Isopropyl acetate	Trichlorethane	
Cyclohexanone	Kerosene	Triethylamine	
Diethylacetamide	Methyl acetate	Xylene ¹	

Note: Controlled vacuum is recommended to prevent boiling of volatile solvents.

¹ Limited stability in neat solvent.

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HPLC Accessories

Mobile Phase Degassing / Filtration



Aura Unit
58094



59321

Aura Mobile Phase Filter/Degasser Unit

Attaches to any vacuum line.

Easy-to-use Aura filter/degasser units simultaneously degas solvents and buffers and remove particles. You can eliminate spurious peaks caused by gas bubbles in your detector, and prevent particle damage to check valves and other system components. A clean mobile phase also prolongs column life.

Each unit includes a Teflon filtering/degassing assembly, ten 1.5µm Teflon filter membranes, 40"/1m x 1/4" OD Teflon tubing, and a heavy wall, graduated, borosilicate glass solvent reservoir. Choose either a 1-liter or a 2-liter reservoir.

The standard taper Teflon joint on the filtering assembly fits into Ehrlenmeyer flasks and other containers. The filtering assembly accepts any standard 47mm filter membrane and is compatible with all solvents used in HPLC. Use with appropriate glassware and any vacuum pump.

The Aura filter/degasser is particularly suitable for use with solid phase extraction disks (SPED). It ensures simple disc placement, large filtration area, small restriction to flow from the disk support element, and the convenience and advantages of the liquid inlet tube (allows sediments to be transferred last).

DESCRIPTION	CAT. NO.	PRICE
AURA FILTER/DEGASSER UNIT		
with 1-Liter Reservoir	58094	
with 2-Liter Reservoir	58093	
with No Reservoir	55023	

Inverted Solvent System

- No need to tilt bottle to use the last few milliliters
- Replaceable 2µm frit for in-line filtration
- Vented – maintains reservoir contents at atmospheric pressure
- Built-in sparging frit
- Only solvent-resistant materials (glass, Teflon, KEL-F, stainless steel) contact the mobile phase
- Teflon tubing and low pressure, finger-tight fittings included

DESCRIPTION	CAT. NO.	PRICE
INVERTED MOBILE PHASE RESERVOIR SYSTEM		
with 1-Liter Reservoir	59321	
with 2-Liter Reservoir	59322	
REPLACEMENT PARTS		
Reservoir, 1-Liter	59324	
Reservoir, 2-Liter	59323	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

HPLC Accessories

Mobile Phase Degassing / Filtration, Flow Measurement



ULTRA-WARE Mobile Phase Reservoir System

This five-valve mobile phase reservoir system offers completely integrated filtration, sparging, storage, and delivery of HPLC mobile phases. Valves controlling helium sparge, venting, vacuum (for filtration or degassing), mobile phase recirculation, and mobile phase delivery to the pump inlet are conveniently located on the front of the cap. Tubing connects to the back of the cap, minimizing clutter.

The solvent pickup adapter allows you to use standard 47mm filter membranes. If you use a solvent recycler, you can close off the reservoir to maintain the helium-sparged environment.

A sparge port check valve prevents mobile phase from backing up into the sparging gas lines, and a built-in pressure relief valve prevents accidental over-pressurization. The screw-cap design allows you to remove the cap without kinking the tubing.

DESCRIPTION	CAT. NO.	PRICE
ULTRA-WARE FIVE-VALVE MOBILE PHASE RESERVOIR SYSTEM		
1-Liter	55024	
2-Liter	55025	
5-Liter	55026	
REPLACEMENT PARTS/ACCESSORIES FOR FIVE-VALVE SYSTEM		
1-Liter Reservoir	55027	
2-Liter Reservoir	55028	
5-Liter Reservoir	55029	
Storage Cap with PTFE Liner	55030	
Lower Screw Cap, GL45	55040-U	
Lower Cap Retainer Ring	55039	
O-ring, TFE/Propylene, size 008 (pk. of 2)	55034	
O-ring, size 122 (pk. of 10)	55041	
Upper Screw Clamp	55032	
Valve Stem, Short, CTFE (sparge or pump)	55035	
Valve Stem, Long, CTFE (filter, vent, or recycle valve)	55036	
Drip Tip, PTFE	55037	
Check Valve with Retainer	55038	
Fittings Kit (included with complete system)	55059	

Membranes - Fit all 47mm filtration units

DESCRIPTION	CAT. NO.	PRICE
TEFLON MEMBRANES(PK. OF 10)		
47mm, 1.0µm pores	58097	
47mm, 1.5µm pores	58086	
NYLON 66 MEMBRANES (PK. OF 50)		
47mm, 0.45µm pores	58067	
47mm, 0.20µm pores	58060-U	
CELLULOSIC MEMBRANES (PK. OF 100)		
47mm, 0.22µm pores	58188	

NOTE: Do not use ULTRA-WARE system with tetrahydrofuran, chlorinated hydrocarbons, ethers, or ketones. Please inquire about units resistant to these solvents.



Humonic's Model 1000 Liquid Flowmeter

- Easy set-up and operation
- NIST traceable

MODEL	FLOW RANGE (mL/min)	RESOLUTION	CALIBRATION POINTS
1000	0.100 - 1.999	0.001	1.5, 3, 5 mL/min
	2.00 - 9.99	0.01	
	10.0 - 30.0	0.1	

Humonic's Digital Liquid Flowmeters are accurate, convenient, NIST-traceable flow measuring devices for validating HPLC pumping systems. Simply connect the detector outlet tubing to the flowmeter, route the waste lines to appropriate containers, and you are ready to measure flow rates.

This flowmeter uses digital electronics and infrared optics to make accurate, true volumetric measurements by measuring a rising volume of liquid within a precision-bore glass tube. Each unit is factory calibrated against an NIST-registered burette. The calibration parameters are stored on an internal circuit which cannot be modified by the user.

CE approved.

DESCRIPTION	CAT. NO.	PRICE
110VAC	55090-U	
220VAC	55093	

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HPLC Accessories

Inlet Filters, Debubbler

10µm Slip-On Inlet Filter

Universal design.

We recommend this filter for solvent inlet applications. The 10µm filter protects the HPLC system from contamination while minimizing pump cavitation problems. Compatible with the 1.5mm ID tubing used with many HPLC pumps. Also fits the 2.2mm ID tubing used with Varian pumps and the 3.0mm ID tubing used with Waters pumps. 316 stainless steel tip and filter element connected by a KEL-F collar.



DESCRIPTION	CAT. NO.	PRICE
10µm Slip-On Inlet Filter	59277	

2µm Stainless Steel Inlet Filter

All stainless steel construction with a 2µm porous filter element, 11/16"/1.7cm diameter. 1/8" pipe.



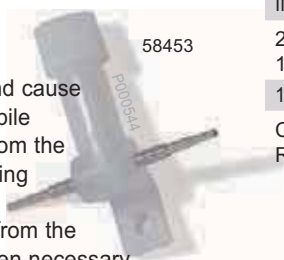
DESCRIPTION	CAT. NO.	PRICE
2µm Stainless Steel Inlet Filter	58267	
1/8" x 1/16" union and fittings	22999	
1/8" x 1/8" union and fittings	22041	

Optional Teflon ferrules:

1/8" front (10 pack)	22058	
1/8" back (10 pack)	22059	
1/16" front (5 pack)	22068	
1/16" back (5 pack)	22069	

Mobile Phase Debubbler

Universal design. Gas bubbles in the mobile phase reduce pump output and cause check valves to malfunction. The mobile phase debubbler removes bubbles from the pump inlet line. Bubbles in the incoming mobile phase rise in the debubbler, displacing an equal volume of liquid from the debubbler reservoir to the pump. When necessary, simply remove the cap and refill the reservoir – the gas-liquid interface is visible through the housing. Compatible with 1.5mm ID and 3.0mm ID Teflon tubing used with Waters and other popular HPLC pumps. KEL-F, Teflon, and 316 stainless steel construction.



DESCRIPTION	CAT. NO.	PRICE
Mobile Phase Debubbler	58453	



Biocompatible Inlet Filters

Bottom-of-the-Bottle 2µm Filters- These Upchurch filters have an integrated 2µm PEEK sparging frit. Connect to 1/8" tubing through push-on connectors.

Integrated 2µm/10µm Filter/Spargers- The unique design of these PEEK and Teflon filter/spargers allows you to use all but the last few milliliters of mobile phase. Two sparging filters in each unit ensure efficient helium sparging. The slip-on design accepts all common 1/8" OD tubing (1.5mm, 2.2mm, and 3.0mm ID).

10µm Inlet Filter - This metal-free Upchurch unit consists of a replaceable 10µm ultra-high molecular weight polyethylene filter that screws into a Tefzel holder. The unit connects to the inlet tubing through a flangeless Tefzel fitting (included).

DESCRIPTION	CAT. NO.	PRICE
BOTTOM-OF-THE-BOTTLE 2µm FILTERS		
28mm Filter Diameter, for GL-45	55058	
23mm Filter Diameter, for GL-38	A437	
INTEGRATED FILTER/SPARGER		
2µm	55021	
10µm	55022	
10µm INLET FILTER		
Complete Assembly	56705	
Replacement Filters (pk. of 5)	56706	

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HPLC Accessories

Vacuum Pumps

PIAB Lab Vac Vacuum Pumps

Safe, maintenance-free air-driven pumping systems for filtering and degassing mobile phases.

PIAB Lab Vac air-driven pumping systems can be used for filtration, degassing, rotary evaporation, and many other applications. Lab Vac units are designed for safe, quiet, efficient, virtually maintenance-free operation – there is no oil and no electric motor to spark or wear out.

The Lab Vac's multi-stage, ejector-style vacuum pump creates vacuum by passing compressed air through a series of nozzles. As it passes from one nozzle to the next, a vacuum is created around the nozzle in each successive chamber, like in a water aspirator. Moving parts are made from ethylene-propylene diene monomer (EPDM), and are designed for long life. In Supelco laboratories, we



SPECIFICATIONS

PIAB Unit	Attainable Absolute Pressure			Inches Hg Below Atmosphere	Air Consumption (scfm)	Optimum Inlet Air (psi)
	Inches Hg	kPa	Torr			
LVX5	2.1	7.1	53	-28.1	0.76	72
LVX10	2.1	7.1	53	-28.1	1.5	72
LVX20	2.1	7.1	53	-28.1	3.1	72
LVX40	1.5	5.1	38	-28.7	5.3	87
LVH40	0.4	1.5	11	-29.5	5.5	87

100% vacuum = 0kPa, -29.9 inches mercury.

have used PIAB vacuum systems for several years with NO maintenance required. Note that we recommend installing a solvent trap on the vacuum line, to avoid drawing solvent vapors into the Lab Vac unit. Add a 40µm particle filter if your air supply might contain particulate matter and/or a 0-100psi pressure regulator if there is no pressure regulation on your air supply.

Each unit includes an inlet pressure gauge and a vacuum gauge, mounted on the unit. A selection of PIAB High Speed quick-connect fittings are included, to enable you to connect the unit to a variety of tubing sizes. Nipple-style adapters are included for vacuum tubing (not included). Also included are 6' (1.8 meters) of compressed air hose, 1' (0.3 meter) of vacuum tubing, and hose clamps for easy connection to your laboratory compressed air supply (with or without the optional in-line pressure regulator). Wall mounting also are included.

Accessories

Vacustat Pressure Monitor/Controller- Any Lab Vac pump can be easily equipped with the Vacustat pressure monitor. The Vacustat monitor shuts off the vacuum pump when the system reaches a set vacuum level. When the vacuum level falls below the setpoint, the Vacustat reactivates the Lab Vac.

Particle Filter - This in-line filter removes particles which can clog a PIAB Lab Vac unit. Use it if your compressed air might contain particles (many house air lines do). Order the filter element repair kit for periodic maintenance.

Pressure Regulator Install this 0-100psi regulator in-line, before the Lab Vac unit, to allow proper regulation of inlet pressure. Includes a 0-100 pressure gauge and PIAB quick-connect hose connections for inlet and outlet tubing.

HELPFUL HINTS

Use a Model PIAB LVX5 Lab Vac with any of the mobile phase filtration units on the previous pages.

Use a Model LVX40 or Model LVH40 with our Visiprep solid phase extraction manifolds.

DESCRIPTION	CAT. NO.	PRICE
PIAB LAB VAC PUMPS		
Model LVX5	506141	
Model LVX10	506168	
Model LVX20	506176	
Model LVX40	506184	
Model LVH40	506192	
ACCESSORIES		
Vacustat Pressure Controller	506206	
Particle Filter, 40µm porosity	24990-U	
Element Repair Kit for 24990-U	24991	
Pressure Regulator, 0-100psi	506214	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

HPLC Accessories Solvent Recovery

Supelco Solvent Recovery Systems

Recover and reuse clean mobile phase,
dispose of only contaminated mobile phase.

- Reduce solvent purchase and disposal costs
- Save money, mobile phase preparation time, and the environment

Supelco SRS-3000 and SRS-1000 Solvent Recovery Systems can save money and time in any isocratic analysis. A microprocessor-controlled solvent switching valve monitors detector output and directs the solvent to the waste reservoir only when a peak is detected (Figure A). When the baseline falls below the threshold you select, the uncontaminated solvent is directed back to the mobile phase reservoir. In a typical isocratic analysis, 80-90% of the mobile phase is uncontaminated and can be recycled (Figure B). Settings for threshold, detection range, and delay time enable you to precisely control the switching valve.

In addition to the basic features mentioned above, the SRS-3000 unit offers validation output (included), an Autoclean option (see below), and storage for up to 10 method files. The validation output provides a continuous, auditable data trail of the solvent recycling valve position, for GMP, GLP, or ISO-9000 protocols. The valve position is recorded by superimposing tick marks over a separate copy of the chromatographic signal.

Autoclean Valve - The SRS-3000 system also is available with a valve that enables you to select a different solvent to flush the HPLC system. The Autoclean valve is especially useful if you are using a single pump with mobile phases containing buffer or other salts. The Autoclean valve installs between the mobile phase reservoir and the pump. It has two inlet lines, one for the mobile phase and one for the wash solvent. The valve can be factory installed, or you can order it separately and install it yourself.

Economy-Priced Unit - The economically priced SRS-1000 includes the same solvent-saving features as the SRS-3000 unit. A simpler display and advanced features (no validation output, Autoclean option, or method storage memory) allow us to keep the price substantially lower.

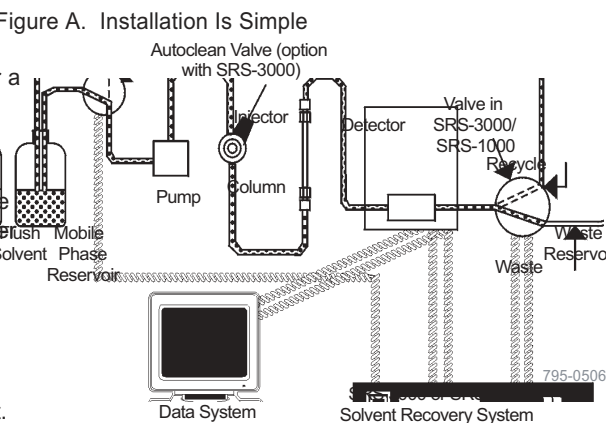
Both Systems are Ready to Use - Both systems include a control unit with switching valve, a power cord, a 2-lead signal cable (+/-), Teflon tubing and fittings, and an instruction manual.

In addition to these components, the SRS-3000 system with the Autoclean valve has the wash valve, additional tubing and fittings, a wash start cable, and a pump remote stop cable.

The SRS-3000 and SRS-1000 units meet all CE requirements. The SRS-1000 units also meet UL and CSA requirements.

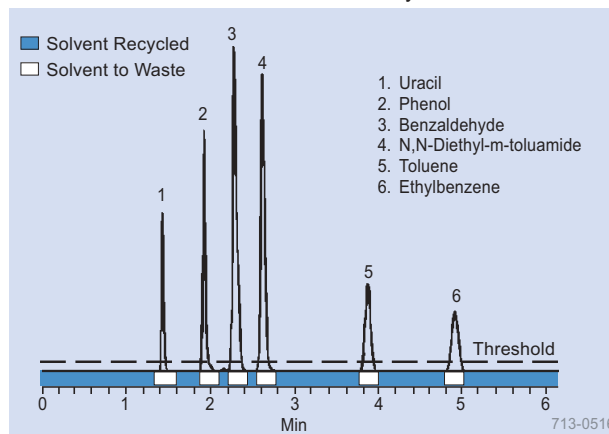
DESCRIPTION	CAT. NO.	PRICE
SRS-3000 Solvent Recovery System	57431	
SRS-3000 System with Autoclean	57432	
Autoclean retrofit kit	57433	
Switching valve assembly for SRS-3000 unit	57435	
<hr/>		
SRS-1000 Solvent Recovery System		
110VAC	506125	
220VAC	506133	

¹CE approved.



1. Connect SRS-3000 or SRS-1000 unit to detector signal output (cable is included).
2. Connect SRS-3000 or SRS-1000 unit to mobile phase and waste reservoirs and detector (Teflon tubing is included).
3. Set the threshold value and begin saving time and money.

Figure B. Recover 80% or More of the Mobile Phase Used In an Isocratic Analysis



HPLC Accessories

Temperature Control

Eppendorf HPLC Temperature Control Systems

Column temperature control leads to:

- More reproducible retention times
- More stable baselines
- Faster analyses
- Less system wear

Column temperature control is essential to reproducible retention times and detector baseline stability in reversed phase, ion exchange, and size exclusion liquid chromatography. The temperature variation in most labs – a 3-4°C daily fluctuation – is sufficient to cause errors in quantification or peak identification, particularly in automated systems and systems incorporating temperature-sensitive detectors.

To enable you to design a temperature control system that best matches your needs, we offer these Eppendorf heaters and control systems. Model CH-500 incorporates both heat and control functions; Models CH-30, CH-430, and CH-460 heaters (next page) MUST be connected to a separate controller.

SPECIFICATIONS				
FOR TEMPERATURE CONTROLLERS				
Model:	CH-500 ¹	TC-45	TC-50	TC-55 ²
Temperature Range:	amb.-150°C	30-65°C	amb.-150°C	amb.-150°C
Readability:	0.1°C	5°C	0.1°C	0.01°C
Setability:	0.1°C	5°C	0.1°C	0.01°C
Set Control:	10 turn potentiometer	8 DIP switches	10 turn potentiometer	membrane switches or RS-232
Typical Stability:	±0.1°C	±0.1°C	±0.1°C	±0.01°C
Absolute Accuracy:	±1°C (50°C)	±1°C (50°C)	±1°C (50°C)	±1°C (50°C)
Display:	3 1/2 digit LED	DIP switches	4 digit LED	5 digit LED each
Power:	120/240VAC	120/240VAC	120/240VAC	120/240VAC
FOR COLUMN HEATERS				
Model:	CH-30, CH-500 ¹	CH-430	CH-460	
Temperature Range:	amb.-150°C	amb.-150°C	amb.-150°C	
Length: ³	≤30cm	≤30cm	≤50cm	
OD:	CH-30: ≤1/2" OD CH-500: two 1/2" OD plus two 1/8" OD	≤1/2" OD (four)	≤1/2" OD (four)	
Injector Heating:	No	Yes (two)	Yes (two)	
Power:	120/240VAC	120/240VAC	120/240VAC	
Sensor:	1000 ohm RTD	1000 ohm RTD	1000 ohm RTD	
Element:	125W	300W	500W	

¹ Heater/controller (combined).

² Model TC-55 can control 2 heaters independently.

³ Not including endfittings.

⁴ Heating channels for 1/8" columns can be used to heat solvent before it enters the injector.



CH-500 HPLC Column Heater System

This heater/controller essentially combines the features of the CH-30 heater and the TC-50 controller in a single unit. It includes Eppendorf's innovative reversible heating blocks and remote heater on/off capability. Alternatively, the heating channels for 1/8" columns can be used to heat solvent before it enters the injector.

CE/CSA/UL approved.

CH-500 HEATING COLUMN COMBINATIONS

- Two 1/4" x <30cm and two 1/8" x <30cm columns.
- One 3/8" x <30cm column and 1/4" x <30cm column and one 1/8" x <30cm column.
- One 1/2" x <30cm column and 1/4" x <30cm column and one 1/8" x <30cm column.
- Two 3/8" x <30cm columns.
- Two 1/2" x <30cm columns.
- One 3/8" x <30cm column and one 1/2" x <30cm column.

DESCRIPTION	CAT. NO.	PRICE
CH-500 COLUMN HEATING SYSTEM		
120V	500844	
240V, with standard European cord	500852	
240V, with UK cord	500860	
REPLACEMENT HEATING BLOCKS FOR CH-500		
4" (pk. of 2)	500879	
1" (pk. of 2)	500895	

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HPLC Accessories Temperature Control



TC-45
56760-U

Eppendorf TC-45 Temperature Controller

This low-cost controller will control a CH-30, CH-430, or CH-460 Eppendorf heater from 30-65°C. Temperature is set via DIP switches in 5°C increments.

DESCRIPTION	CAT. NO.	PRICE
120V	56760-U	
240V ¹	500763	



CH-30
56766

Eppendorf CH-30 Column Heater

Holds one column up to 1/2" OD or two columns up to 3/8" OD. Maximum column length is 30cm (not including endfittings).

DESCRIPTION	CAT. NO.	PRICE
120V	56766	
240V ¹	500801	

TC-50
56762



Eppendorf TC-50 Temperature Controller

Controls a CH-30, CH-430, or CH-460 Eppendorf heater from ambient temperature to 150°C. Temperature is set via a 10 turn potentiometer. The set point and actual temperature are displayed on an LED display. Includes remote heater on/off capability and solid state control.

DESCRIPTION	CAT. NO.	PRICE
120V	56762	
240V ¹	500771	



CH-430
56768

Eppendorf CH-430 Column Heater

The model CH-430 column heater is like the model CH-30, except that it is wider, to accommodate up to four 30cm long columns (not including endfittings). The CH-430 heater also has provisions for heating two 7000 series Rheodyne valves.

DESCRIPTION	CAT. NO.	PRICE
120V	56768	
240V ¹	500828	

TC-55
56764



Eppendorf TC-55 Temperature Controller

This top-of-the-line controller will control up to two CH-30, CH-430, or CH-460 Eppendorf heaters, using microprocessor technology. Proportional heating is used to maintain very stable temperatures. Temperature is set via up/down membrane switches (1 set for each of 2 ovens).

Set point and actual temperature are displayed on an LED display. Includes an RS-232 interface for external control of temperature programming, recording, etc.

DESCRIPTION	CAT. NO.	PRICE
120V	56764	
240V ¹	500798	

Eppendorf CH-460 Column Heater

The model CH-460 is like the model CH-430, except that it is longer, to accommodate up to four 50cm long columns (not including endfittings). The CH-460 heater also has provisions for heating two 7000 series Rheodyne valves.

DESCRIPTION	CAT. NO.	PRICE
120V	56770-U	
240V ¹	500836	
COLUMN ENVELOPES FOR CH-30, CH-430, OR CH-460 COLUMN HEATERS		
1/4 OD (in.)	56772-U	
3/8 OD (in.)	56773	
1/2 OD (in.)	56774-U	

¹ Does not have a CE mark.

HPLC Accessories

Pump Replacement Parts

Optimize Technologies Pump Replacement Parts

A preventative maintenance program that includes routine replacement of pump parts that are subject to wear will help you avoid costly downtime. These Optimize Technologies check valves, seals, and pistons meet or exceed the pump manufacturer's specifications.

If you don't see the parts you need, or your instrument model isn't listed – just call us.

OPTI-MAX Cartridge Check Valves - An economical and very convenient way to maintain and repair check valves –after initially purchasing the stainless steel inlet or outlet housing (one cartridge is included), simply purchase replacement cartridges in packs of two.

We recommend a stainless steel cartridge with a ruby ball/sapphire seat for most applications, but a ceramic ball/seal offers longer life when you are using high concentrations of acetonitrile. Change every 6 months.

Traditional Check Valves- Direct replacements for the manufacturer's original valves, factory assembled in a clean-room environment. Rebuild kits are available. Change every 6 months.

OPTI-SEAL Pump Seals- Made from an inert, ultra-high molecular weight polyethylene material (UHMW-PE). Relative to conventional Teflon seals, these seals show less particle shedding. This reduces the potential for clogged frits, saving you time and system downtime. We recommend these seals for typical reversed phase mobile phases (aqueous to moderate levels of organic). Not recommended for long-term use with highly organic mobile phases, such as typical normal phase solvents.

UHMW-PE seals are relatively hard, and will not seal well on worn plungers. We recommend that you install a new plunger when you initially switch to using UHMW-PE seals. Change every 3 months.

ITB (Teflon) Seals - Made from PTFE, ITB pump seals are especially recommended for mobile phases with a high organic concentration, such as typical normal phase mobile phases. ITB seals are soft and will not last as long as UHMW-PE seals. Unlike UHMW-PE seals, ITB seals will conform to out-of-round plungers. Change every 3 months.

Plungers (Pistons)- Made to exacting standards, these high quality sapphire plungers reduce seal wear, which means less system downtime. Replace once a year, and when you initially switch to using UHMW-PE seals.



Pump Replacement Parts

MANUFACTURER/MODEL	DESCRIPTION	REPLACES MFR. NO.	CAT. NO.	PRICE
AGILENT/HP				
HP-1050, 1100 ²	OPTI-MAX outlet check valve cartridge system, SS	01018-60008	59456	
	OPTI-SEAL pump seal	5062-8516	59409	
	Sapphire plunger	55062-2441	59408	
HP-1090	OPTI-SEAL pump seal	5062-2494	59397	
	OPTI-SEAL pump seal (pk. of 10)		59398	
BECKMAN³				
100A, 110A/B, 112, 112M, 114, 114M, 116, 118, 125, 126, 127, 128	OPTI-MAX inlet check valve cartridge system, SS	240720	59454	
	OPTI-MAX outlet check valve cartridge system, SS	240721	59455	
100A, 110A/110B	OPTI-SEAL pump seal	887138	59405	
110A/110B, 112/112M	Piston	243053	59402	
HITACHI⁴				
655, L6000, L6200, L6200A	OPTI-MAX inlet check valve cartridge system, SS	885-1330	59457	
	OPTI-MAX outlet check valve cartridge system, SS	885-1331	59458	
	OPTI-SEAL pump seal	655-1080	59407	
	Piston	810-1033	59406	

¹ Recommendation for general preventive maintenance. Depending on your applications, more frequent replacement could be necessary.

² Takes 1/8" replacement cartridge. See next page.

³ Takes 3/16" replacement cartridge. See next page.

⁴ Takes 1/16" replacement cartridge. See next page.

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HPLC Accessories Pump Replacement Parts

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Pump Replacement Parts (contd.)

MANUFACTURER/MODEL	DESCRIPTION	REPLACES MFR. NO.	CAT. NO.	PRIC
LDC/MILTON ROY²				
All Analytical Pumps	OPTI-MAX inlet check valve cartridge system, SS	900947001	59490-U	
	OPTI-MAX outlet check valve cartridge system, SS	900947002	59491	
	OPTI-SEAL pumpseal	206234	59492	
	Plunger	801306	500593	
PERKIN-ELMER				
250, Series 4, 200, 400, 410, 620, Integral 400 0	OPTI-MAX inlet check valve cartridge system, SS	0254-0177	59459	
	OPTI-MAX outlet check valve cartridge system, SS	0254-0197	59460	
	OPTI-SEAL pumpseal	0990-7324	59461	
Series 1, 2, 3, 3B,10	OPTI-SEAL pumpseal	0990-7324	59461	
SHIMADZU²				
LC-6A, LC-10AS	OPTI-MAX inlet check valve cartridge system, SS	228-12353-91	59465-U	
	OPTI-MAX outlet check valve cartridge system, SS	228-09054-93	59466	
	OPTI-SEAL pumpseal	228-11999-00/ 228-21975-00	59468	
LC-6A	Plunger	228-12904-93	59467	
LC-10AS	Plunger	228-17019-93	59473	
SPECTRA-PHYSICS				
8700, 8800, 8810, IsoChrom, P-Series	OPTI-MAX inlet check valve cartridge system, SS	A3495-010	59475	
	OPTI-MAX outlet check valve cartridge system, SS	A3490-010	59476	
	OPTI-MAX transducer check valve cartridge system, SS	A3990-010	59493	
8800, 8810, Isochrom, P-Series	Improved ruby piston	A3102-010	59477	
	OPTI-SEAL pumpseal	A2962-010	59478	
8700, 8700XR, 8750	OPTI-SEAL pump seal	A1703-020	59479	
VARIAN²				
2010	OPTI-MAX inlet check valve cartridge system, SS	00-997-261-09	59480-U	
	OPTI-MAX outlet check valve cartridge system, SS	00-997-261-10	59481	
	Sapphire piston	00-997-261-08	59482	
WATERS				
M45, M45G, M501, 510, 515, 590,600, 600E, 610, 6K, 6KA	OPTI-MAX inlet check valve cartridge system, SS	33679	59484	
	OPTI-MAX outlet check valve cartridge system, SS	25216	59485-U	
	OEM inlet check valve (all except 515)	25214	59376	
	Inlet rebuild kit (repairs two OEM valves)	60495	59377	
	OEM outlet check valve (all except 515)	25216	59380-U	
	Outlet rebuild kit (repairs two OEM valves)	26014	59381	
	OEM actuator outlet check valve (510, 590, 610 only)	26016	59378	
	Actuator rebuild kit (repairs 2 OEM valves)	26014	59379-U	
	OPTI-SEAL pumpseal	22934	59388	
	OPTI-SEAL pump seal (pk. of 10)	22934	59389	
M45, M45G, M501	ITB black piston seal	26613	59422	
	ITB red piston seal (pk. of 10)	25638	59369	
	Plunger	26524	59387	
510, 590, 600, 600E, 610, 6K, 6KA	Plunger	25656	59386	
	OPTI-MAX REPLACEMENT CARTRIDGE- ALL MANUFACTURERS			
	PEEK cartridge, 1/8" ruby ball/sapphire seat (pk. of 2)		59370-U	
	PEEK cartridge, 1/8" ceramic ball and seat (pk. of 2)		59371	
	SS cartridge, 1/16" ruby ball/sapphire seat (pk. of 2)		59494	
	SS cartridge, 3/16" ruby ball/sapphire seat (pk. of 2)		59495	
	SS cartridge, 1/8" ruby ball/sapphire seat (pk. of 2)		59496	

² Takes 1/8" replacement cartridge.

Other pump replacement parts are available on request.

HELPFUL HINTS

During replacement, take care to avoid contaminating your check valves with dust or other particles.

Liquid Chromatography

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

SUPELCO

HPLC Accessories

Pump Replacement Parts

ASI Pump Replacement Parts

Analytical Scientific Instruments (ASI) cartridge check valve design offers self-priming convenience, rugged, crush proof construction, rapid response time (ball seats more quickly, for less pulsation and a more stable flow), and replaceable outlet filters (system from particles). If your pump model is not listed, please call us.

MANUFACTURER/MODEL	DESCRIPTION	REPLACES MFR. NO.	CAT. NO.	PRICE
AGILENT/HP				
1090	Inlet cartridge		504734	
BIO RAD				
1330, 1350	Inlet check valve (complete assembly)	125-0306	501190	
	Inlet cartridge		501204	
	Outlet check valve (complete assembly)	125-0307	501891	
	Outlet cartridge		501905	
	UHMW PE pump seal (each)	125-0302	501921	
	Piston	125-0304	501948	
ELDEX				
A, B, E	Inlet check valve (complete assembly)		501956	
	Inlet cartridge		501964	
	Outlet check valve (complete assembly)		501972	
	Outlet cartridge		502006	
	Filters for outlet check valve (pk. of 5)		501913	
GILSON				
5S, 10S, 5SC, 10SC	Inlet check valve (complete assembly)		502855	
	Inlet cartridge		501964	
	Outlet check valve (complete assembly)		502871	
	Outlet cartridge		502006	
	Filters for outlet check valve (pk. of 5)		504068	
5S, 5SC	UHMW PE pumpseal (each)	5463088063	504653	
	Piston	350008	504661	
10S, 10SC	Piston	365009	504696	
SSI				
200, 220, 222, 300	Inlet check valve (complete assembly)		504793	
	Outlet check valve (complete assembly)		504866	
	Outlet cartridge		501905	
	Filters for outlet check valve (pk. of 5)		501913	
200, 220, 222	Piston	120101	505153	
	Piston for pumps with self flush option	120567	505242	
300			505250	
WATERS				
M-45, 501, 510, 590, 600E, 6000	Inlet check valve (complete assembly)		505277	
	Inlet cartridge		501204	
	Outlet check valve (complete assembly) (all EXCEPT M501, 600E)		505382	
	Outlet cartridge		501905	
	Filters for outlet check valve (pk. of 5)		501913	
	UHMW PE pump seal (each)	26613	505420	
	Piston (M-45, 501 ONLY)	26524	505439	
	Piston (M-510, 590, 600, 6000 ONLY)	25656	505447	
Extended Flow 510EF,	Inlet check valve (complete assembly)		505455	
	Outlet check valve (complete assembly)(all EXCEPT 600EF)		505498	
	Outlet check valve (complete assembly) (600EF ONLY)		505609	
	Outlet cartridge		501905	
	Filters for outlet check valve (pk. of 5)		501913	

¹ UHMW PE - ultra-high molecular weight polyethylene¹

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HPLC Accessories Postcolumn Reaction



Postcolumn Reactor

Increase detection sensitivity for amino acids, proteins, carbohydrates, pesticides, inorganic ions, other samples.

The heated reactor cartridge in the ASI Model 310 Postcolumn Reactor Module mixes reagent with column effluent efficiently and with minimum peak dispersion. Unlike conventional Teflon tube coil reactors, the rugged reactor cartridge can be used at pressures up to 3000psi, at 150°C, without rupturing. We recommend using a low volume static mixer, such as the binary input housing/mixer cartridges listed on this page, with the Model 310 module. Install the mixer in line, prior to the reactor cartridge, to combine the reagent with the column effluent. A pump is required for delivering reagent to the system.

SPECIFICATIONS

Reactor Cartridge Volume:	0.15mL, 0.50mL, or 1.0mL
Sample-Contacting Materials:	Teflon, 316 stainless steel
Maximum Pressure:	3000psi at 150°C
Oven Temperature Range:	10°C above ambient to 150°C
Temperature Control:	solid state controller with LED display
Dimensions:	12" x 9" x 6"
Power:	120 VAC (50-60Hz), 220 VAC, or 100 VAC

DESCRIPTION	CAT. NO.	PRICE
HEATER MODULE WITH 0.15mL REACTOR		
120 VAC	54974	
HEATER MODULE WITH 0.50mL REACTOR		
120 VAC	54976	
HEATER MODULE WITH 1.0mL REACTOR		
120 VAC	54973	
220 VAC ¹	54981	
HEATER MODULE ONLY		
120 VAC	54970-U	
220 VAC ¹	54971	
REACTOR CARTRIDGE (FITS ALL HEATER MODULES)		
0.15mL	54978	
0.50mL	54979	
1.0mL	54980-U	

¹ Does not have a CE mark.



ASI Static Mixers for HPLC and Postcolumn Derivatization

- Reduces baseline noise.
- Increases sensitivity.
- Increases reaction efficiency in postcolumn derivatization.
- Improves accuracy in gradient mixing for microbore analyses.

A highly efficient cross-flow shearing mechanism in the ASI static mixer produces vortex mixing over a wide range of flow rates. Use the binary input housing to combine two flowpaths into one, such as in postcolumn or gradient mixing applications. Use the in-line housing when additional mixing is needed in a single flowpath. Within each product series (Micro, Low and High volume) the mixer cartridges are interchangeable. We recommend the 250µL cartridge for large peak volumes, and the 50µL or 150µL sizes for smaller volumes. Use the Micro-Mixer Cartridges only with Micro-Mixer Housings and the Low Volume Mixer Cartridges only with the Low Volume Mixer Housings.

Component Assemblies:

Choose a Housing and a Cartridge within each volume group. In-Line, Binary or Ternary refers to the number of lines going into the mixer Housing 1, 2 and 3 respectively.

DESCRIPTION	VOLUME	CAT. NO.	PRICE
MICRO-MIXER (2 – 25µL)			
Housing, In-Line, SS		56665-U	
Housing, Binary, SS		56666-U	
Housing, Ternary, SS		56667-U	
Cartridge, SS	2µL	56661-U	
Cartridge, SS	5µL	56662-U	
Cartridge, SS	10µL	56663-U	
Cartridge, SS	25µL	56664-U	
LOW VOLUME MIXER (50 – 250µL)			
Housing, In-Line, SS		57548	
Housing, Binary, SS		57549	
Housing, Ternary, SS		500488	
Housing, In-Line, PEEK		500496	
Housing, Binary, PEEK		500518	
Housing, Ternary, PEEK		500526	
Cartridge, SS	50µL	57545	
Cartridge, SS	150µL	57546	
Cartridge, SS	250µL	57547	
Cartridge, PEEK	50µL	500445	
Cartridge, PEEK	150µL	500453	
Cartridge, PEEK	250µL	500461	
HIGH-FLOW (HIGH VOLUME) MIXERS, COMPLETE ASSEMBLIES			
In-Line, SS	350µL	500534	
In-Line, SS	500µL	500550	
Binary, SS	500µL	500569	

HPLC Accessories

Postcolumn Reaction

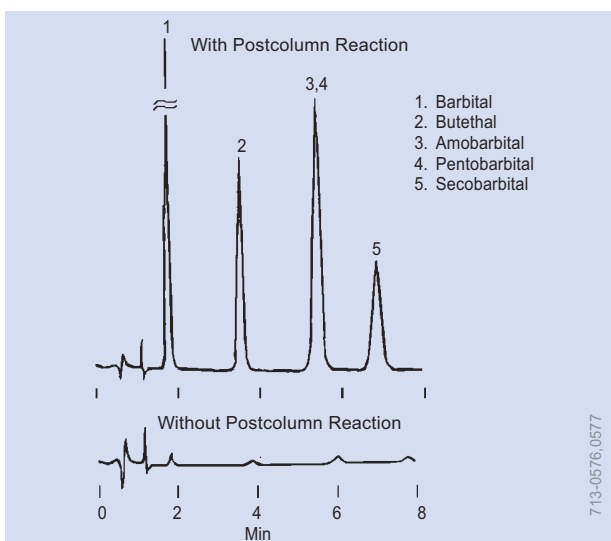
Assemble Your Own System and Save!

The equipment needed to perform postcolumn reactions can be relatively simple. These components enable you to easily and economically construct your own system. We recommend using a 5cm x 4.6mm column filled with 250 μ m beads when peak volumes are large. Our Mixing Column Hardware Kit (Cat. No58319), contains a 5cm x 4.6mm ID column blank, two fittings, two frits, and 2"/5cm of 1/16" tubing. For small peak volumes, use a column filled with 75 μ m beads, or a single bead string reactor (30cm of 0.5mm ID Teflon tubing filled with 250 μ m beads).

Use our ready-to-use single bead string reactors, or prepare your own from our TFE Teflon tubing, 1/16" internal diameter and silicone treated glass wool (for terminating the reactor). The delay tubes (Cat. No59206 and 59207) are knitted Teflon tubing.

Improve sensitivity for amino acids, proteins, carbohydrates, inorganic ions, pesticides, and other samples. In postcolumn reactions, column effluent is mixed with a reagent before it enters the detector. The reaction can increase detection sensitivity or enable you to use more selective conditions (e.g., a different UV wavelength). The reaction can be as simple as changing the pH of the effluent, but the results often are significant. A postcolumn reaction system can be used to perform derivatizations or other reactions. It can be used with fluorescence, electrochemical, conductivity, and UV/visible detectors.

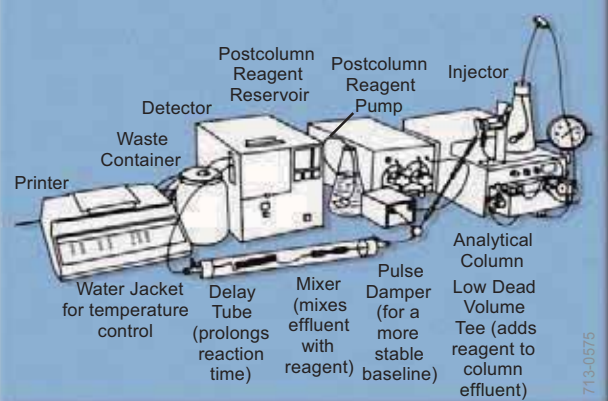
Postcolumn pH Change Greatly Improves Barbiturates Detection



Deprotonization of barbiturates, an instantaneous reaction, gives a twenty-fold increase in sensitivity. The reaction also improves selectivity by shifting the UV absorption maximum from 220nm to 240nm.

Column: SUPELCOSIL LC-8, 15cm x 4.6mm, 5 μ m particles
 Cat. No.: 58220
 Mobile Phase: methanol:water (50:50)
 Flow Rate: 1.5mL/min
 Postcolumn Reagent: 0.05M H₃BO₃, 0.05N NaOH (pH 10.4)
 Reagent Flow Rate: 0.1mL/min
 Mixer: 5cm x 4.6mm column of 75 μ m glass beads
 Det.: UV, 240nm, 0.04 AUFS
 Inj.: 20 μ L mobile phase, 0.1 μ g each drug

Postcolumn Reaction System



Postcolumn Reaction System Components

DESCRIPTION	CAT. NO.	PRICE
GLASS BEADS, 25g		
Acid Washed, 75 μ m	59200-U	
Acid Washed, 250 μ m	59202	
Acid Washed/Silanized, 75 μ m	59201	
Acid Washed/Silanized, 250 μ m	59203	
DELAY TUBES (10'/3m)		
0.5mm ID	59206	
0.8mm ID	59207	
Pulse Damper, LO-Pulse	58455	
Tee, Low Dead Volume	58283	
SINGLE BEAD STRING REACTORS		
Acid Washed Beads	59204	
Acid Washed Silanized Beads	59205	
Mixing Column Hardware Kit	58319	
TFE TEFLON TUBING (1/16"/1.58mm OD, 10'/3m)		
0.3mm ID	58702	
0.5mm ID	58701	
0.8mm ID	58700-U	
ACCESSORIES		
Internal Union, 1/16"	22997-U	
Glass Wool, Silane Treated	20411	
Column Water Jacket	58450-U	

Order: 1.800.325.3010 Technical Service: 1.800.359.3041 Web: www.sigma-aldrich.com/supelco

HPLC Accessories Photochemical Reactor

PHRED: Photochemical Reactor Enhanced Detection

Improve detection of barbiturates (1,5), amino acids, peptides, and proteins (2), and a wide variety of other compounds (3, 4), the presence of interfering matrix components, or when present at low concentrations.

Some pharmaceutical and biological analytes exhibit UV absorption maxima at wavelengths at which impurities are also absorptive. This is especially true at short wavelengths (e.g., 220nm). Serum and urine samples, for example, often contain components that interfere with detection at shorter wavelengths. With post-column photochemical reaction, longer UV wavelengths can be used to detect barbitals (1). In addition, a photochemical reactor potentially can be used to increase detector sensitivity for certain compounds that exhibit limited solubility in a desired solvent, and so must be monitored at unsatisfactorily low concentrations.

Placed between the HPLC column and the detector, the PHRED unit performs continuous on-line photolytic derivatization. The unit consists of a 254nm low-pressure mercury lamp (15W) and lamp holder and a holder for the reactor coil (order the appropriate reactor coil separately).

DESCRIPTION	CAT. NO.	PRICE
PHRED Photochemical Reactor, 110V	57400-U	
Replacement Lamp Bulb	57401	
KNITTED REACTOR COILS		
5m x 0.25mm ID (0.25mL)	57402	
10m x 0.25mm ID (0.5mL)	57403	
15m x 0.25mm ID (0.75mL)	57404	
20m x 0.25mm ID (1.0mL)	57410-U	
5m x 0.50mm ID (1.0mL)	57405	
10m x 0.50mm ID (2.0mL)	57406	
15m x 0.50mm ID (3.0mL)	57407	
20m x 0.50mm ID (4.0mL)	57411	
Reflective Support Plate, Stainless Steel	57408	

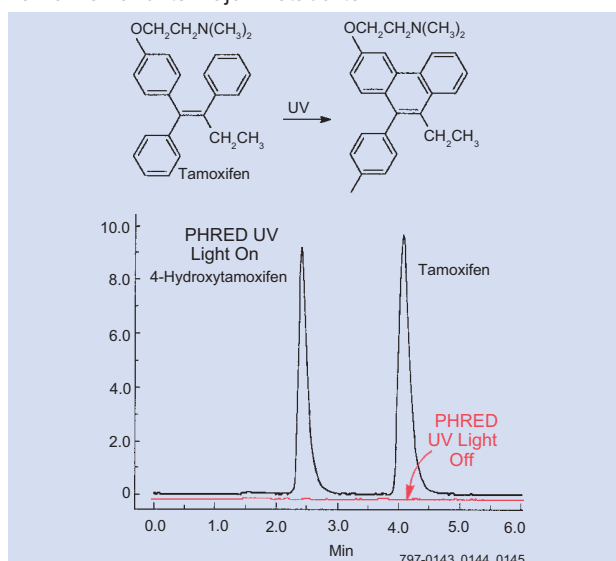
References

1. C. Wolf, R. W. Schmid, J. Liq. Chromatogr.13: 2207 (1990).
 2. L. Dou, I. S. Krull, Anal. Chem.62: 2599 (1990).
 3. W. J. Bachman, J. Stewart LC/GC7: 38 (1989).
 4. Krull, I.S., C.M. Selavka, M. Lookabaugh, W.R. Childress LC/GC7: 758 (1989).
 5. The Reporter XII, #4, pp. 6-7.
 6. H. Joshua, American Laboratory April 1995, p. 36J.
 7. The Reporter, Vol.16, no. 3, p. 9.
- References 1-4, 6 not available from Supelco.

HELPFUL HINTS

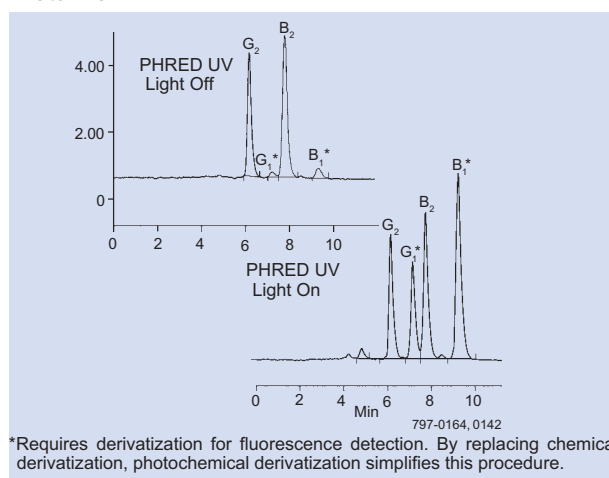
Please inquire about 220VAC, CE approved units.

Tamoxifen and Its Major Metabolite



Column: SUPELCOSIL ABZPlus, 15cm x 4.6mm, 5µm particles
 Cat. No.: 59196
 Mobile Phase: acetonitrile: 0.01M H₃PO₄, 40:60
 Flow Rate: 1mL/min
 Temp.: 40°C
 Det.: fluorescence; 260nm excitation, >418nm emission
 Reactor Coil: 5m x 0.25mm ID
 Inj.: 20µL mobile phase containing
 800ng/mL tamoxifen,
 500ng/mL 4-hydroxytamoxifen

Aflatoxins



*Requires derivatization for fluorescence detection. By replacing chemical derivatization, photochemical derivatization simplifies this procedure.

Column: SUPELCOSIL LC-18, 15cm x 4.6mm, 5µm particles
 Cat. No.: 58230-U
 Mobile Phase: acetonitrile:methanol:water, 20:20:60
 Flow Rate: 1mL/min
 Temp.: 30°C
 Det.: fluorescence; 360nm excitation, >418nm emission
 Reactor Coil: 25m x 0.25mm ID (50°C)
 Inj.: 20µL (aflatoxin mix*:acetonitrile:water (1:3), 1:4)
 *Cat. No. 46304 -U
 1µg/mL B₁, G₁, 0.3µg/mL B₂, G₂