

**Maximize System Performance** with Easy-to-Use

# **HPLC** Accessories



of Merck operates as MilliporeSigma in the U.S. and Canada.

Supelco<sub>®</sub> **Analytical Products** 

# A Select Group of HPLC Accessories Designed to Maximize the Performance of Your HPLC System

#### Introduction

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

High Performance Liquid Chromatography columns containing particles that are smaller than 3.5  $\mu$ m create very narrow peak widths that can no longer be routinely measured by all HPLC systems. The quality of separations performed with these columns is dependent on the system having components designed to minimize instrument bandwidth (IBW). It is good laboratory practice to install the proper fittings, ferrules, and other accessories to ensure the analytical results show no peak broadening from extra column effects created by excessive volume or improper assembly.

To serve this rapidly growing area of High Performance Liquid Chromatography, we have selected products from the most trusted names in the industry, making product selection easy. This selection of accessories for high speed and high sensitivity analytical applications maximizes the efficiency and reliability of the analysis while protecting the column investment. Please note that this represents only a brief listing of the HPLC Accessories that we offer.

Merck has brought together the world's leading Life Science brands, so whatever your life science problem, you can benefit from our expert products and services.

### Supelco<sub>®</sub>

The Supelco® portfolio of analytical solutions of Merck is developed by analytical chemists for analytical chemists to ensure your results are accurate, precise and reproducible. Every product is meticulously quality-controlled to maintain the integrity of your testing protocols and, with our dedicated scientists, the expertise you need is always on hand.

### Millipore ®

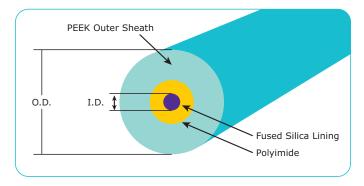
The Millipore® portfolio of Merck offers an ecosystem of industry-leading products and services, spanning preparation, separation, filtration and monitoring – all of which are deeply rooted in quality, reliability and time-tested processes. Our proven products, regulatory and application expertise are a strong foundation you can rely on to consistently perform at the highest level.

### **Tubing**

#### **PEEKsil™ Tubing**

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

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



#### **PEEK Tubing**

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

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

#### **Stainless Steel Tubing**

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

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

### **Tubing Cutters**

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.

### **Upchurch® Polymer Tubing Cutter**

Upchurch® designed this reliable and durable device specifically for cutting PEEK, Teflon $^{TM}$ , and Tefzel $^{TM}$  tubing. Includes four replacement blades.



Description	Cat. No.
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.
PEEK Tubing Cutter	Z290882-1EA
Replacement Blade	Z290947-1EA

### **High-Performance Fittings**

#### **PEEK Fingertight Fittings**

PEEK fingertight fittings are convenient, inert, and biocompatible. When changing out the fitting, the one-piece design prevents the ferrule from sticking in the receiving port. Use these fittings with 1/16'' tubing. Fingertight fittings are compatible with most HPLC solvents.



Description	Qty.	Cat. No.
One Piece PEEK Fitting - (10-32)	Pk/5	Z227250
One-Piece PEEK Fitting- (10-32)	Pk/10	55067-U

### MarvelX™ UHPLC Connector

#### **Key Features and Benefits:**

- · Zero-dead volume
- Compatible with 10-32 coned receiving ports
- Finger-tight to 19,000 psi
- Reusable up to 200 times

MarvelX $^{\text{TM}}$  is the next generation UHPLC connection technology. Designed for easy routing throughout the UHPLC system, the MarvelX $^{\text{TM}}$  UHPLC connection kit provides consistent performance and superior reusability. The connector is made with convenient, removable, stainless steel fittings and comes with either stainless steel or biocompatible PEEK lined stainless steel tubing.





#### **Practical Recommendations to Maximum System Performance**

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

### ColumnSaver™ Precolumn Filter

#### **General description**

- Economical protection for your guard or analytical HPLC column
- No wrenches or tools required to install, fingertight to 5,000 psi
- · Lower dead volume than conventional filters with holders
- Universal connection is compatible with all manufacturers' fittings

The ColumnSaver™ precolumn filter offers all of the protection of conventional precolumn filters at much less the cost. With its convenient, direct connect design, changeover time is measured in seconds, and requires no wrenches or tools to install.

The PEEK filter body contains a HiFlo<sup>TM</sup> filter element and is designed for maximum filtration of particulate matter with minimal dead volume or backpressure. As soon as an increase in backpressure is observed, simply remove and dispose of the ColumnSaver<sup>TM</sup> and install a new one. The direct connect design is compatible with all 1/16 in, 10-32 internal fitting ports regardless of the manufacturer.

Description	Cat. No.
ColumnSaver™ Precolumn Filter, 0.5 µm, pkg 10 ea	55214-U
ColumnSaver™ Precolumn Filter, 2.0 μm, pkg 10 ea	55215-U



### **UHPLC Fittings**

#### **Upchurch® UHPLC Fingertight Fittings**

Manufactured from a proprietary PEEK blend, the Upchurch® Scientific UHPLC Fingertight fittings can be used at temperatures up to 200  $^{\circ}$ C and higher pressure than more traditional HPLC fittings. These fittings are available in one piece 10-32.

Description	Qty.	Cat. No.
Ultra-High Pressure Fitting, PEEK		
Fingertight I Nut (Black)	Pk/10	51262-U



#### **Upchurch® PEEK Fingertight Unions**

Operate the carbon-filled PEEK zero dead volume unions to 5000 psi/352 kg/cm $^2$ , the PEEK tees and crosses to 4000 psi/281 kg/cm $^2$ . All items include Fingertight III nuts and ferrules.

Description	Cat. No.
10-32 Threads	
Union, 0.010" ID	57658
Union, 0.020" ID	57659
Tee, 0.020" ID	57661
Cross, 0.020"ID	57663



# **Nonsterile Millex® Syringe Filters**

Setting the standard in small-volume filtration (1-200 mL), the unsurpassed consistency of Millex $^{\circ}$  syringe filters in sample preparation has led to the development of many methods specifying their use.

- Applications include filtration-based sample preparation for dissolution testing, HPLC, UHPLC, LC-MS, ion chromatography (IC), and general particulate removal
- Hydrophilic PTFE Millex® filters are HPLC-certified for low extractables
- Best recovery of protein samples with hydrophilic Durapore® PVDF Millex® syringe filters

Membrane	Diameter (mm)	Pore Size (µm)	Process Volume (hold-up)	50 units/pk	100 units/pk	250 units/pk	1000 units/pk
PTFE Hydrophilic	4	0.20	1 mL (<10 $\mu$ L)		SLLGR04NL		
Millipore® LCR Membrane Lowest extractables and	4	0.45	1 mL (<10 μL)		SLLHR04NL		
		0.20	10 mL (≤15 μL)		SLLGX13NL		SLLGX13NK
excellent solvent resistance	13	0.45	10 mL (≤15 μL)		SLCRX13NL SLCRX13TL*		SLCRX13NK
	33	0.20	100 mL (≤80 μL)	SLLG033NS		SLLG033NB	SLLG033NK
	33	0.45	100 mL (≤80 μL)	SLCR033NS		SLCR033NB	SLCR033NK
PTFE Hydrophilic IC	12	0.20	10 mL (≤25 μL)		SLLGC13NL		
Millex® Filters	13	0.45	10 mL (≤25 μL)		SLLHC13NL		
Low IC extractables/Ion Chromatography Certified	25	0.20	100 mL (≤ 100 μL)	SLLGC25NS			
	25	0.45	100 mL (≤ 100 μL)	SLLHC25NS			
PTFE Hydrophobic		0.20	1 mL (<10 μL)		SLFGR04NL		
Fluoropore™ Membrane	4	0.45	1 mL (<10 μL)		SLFHR04NL		
Excellent solvent resistance		0.20	10 mL (≤15 μL)		SLFGX13NL SLFGX13TL*		SLFGX13N
	13	0.45	10 mL (≤15 μL)		SLFHX13NL SLFHX13TL*		SLFHX13NI
	33	0.20	100 mL (≤80 μL)	SLFG033NS		SLFG033NB	SLFG033N
		0.45	100 mL (≤80 μL)	SLFH033NS		SLFH033NB	SLFH033NI
PVDF Durapore® Membrane Low-protein binding	4	0.22	1 mL (<10 μL)		SLGVR04NL		SLGVR04NI
		0.45	1 mL (<10 μL)		SLHVR04NL		SLHVR04N
	13	0.22	10 mL (≤15 μL)		SLGVX13NL SLGVX13TL*		SLGVX13N
		0.45	10 mL (≤15 μL)		SLHVX13NL SLHVX13TL*		SLHVX13NI
	22	0.22	100 mL (≤80 μL)	SLGV033NS		SLGV033NB	SLGV033NI
	33	0.45	100 mL (≤80 μL)	SLHV033NS		SLHV033NB	SLHV033NI
Nylon Membrane Broad chemical compatibility	13	0.20	10 mL (≤15 μL)		SLGNX13NL SLGNX13TL*		SLGNX13NI
	13	0.45	10 mL (≤15 μL)		SLHNX13NL SLHNX13TL*		SLHNX13NI
	33	0.20	100 mL (≤80 μL)	SLGN033NS		SLGN033NB	SLGN033NI
	33	0.45	100 mL (≤80 μL)	SLHN033NS		SLHN033NB	SLHN033N
PES Millipore Express®	12	0.22	10 mL (≤15 μL)		SLGPX13NL		SLGPX13N
Membrane	13	0.45	10 mL (≤15 μL)		SLHPX13NL		SLHPX13N
Fastest flow, high throughput	22	0.22	100 mL (≤80 μL)	SLGP033NS		SLGP033NB	SLGP033N
	33	0.45	100 mL (≤80 μL)	SLHP033NS		SLHP033NB	SLHP033N
MCE		0.22	100 mL (≤100 μL)			SLGS025NB <sup>†</sup>	
General laboratory filtration of aqueous solutions	25	0.45	100 mL (≤100 μL)			SLHA025NB <sup>†</sup>	SLHA025Nk
or aqueous solutions		0.8	100 mL (≤100 μL)			SLAA025NB <sup>†</sup>	SLAA025NF



Preparation, Separation, Filtration & Monitoring Products



### OPTI-SOLV® EXP® Pre-Column Filter

#### **Key Features and Benefits**

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



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

# **OPTI-SOLV® EXP® Pre-Column Filter Holder** with EXP® Titanium Hybrid Ferrule

Description	Qty.	Cat. No.
2 Ferrules, 1 Nut in pack	1 ea.	51163-U
Replacement Titanium Hybrid Ferrule	Pk/10	51391-U

Order cartridges separately.

#### **OPTI-SOLV® EXP® Pre-Column Filter Cartridge**

Frit Porosity	Qty.	Cat. No.
0.5 μm	Pk/5	51164-U
0.5 μm	Pk/10	51165-U
0.2 μm	Pk/10	51167-U

#### **OPTI-GUARD® 1 mm Guard Columns**

OPTI-GUARD® sets the standard for low-impact, easy to use pre-column protection. Designed for use with analytical (4.6 mm, 3.0 mm I.D.) and narrow bore (2.1 mm, 1.0 mm I.D.) columns, the patented floating stem design automatically adjusts to any manufacturer's tube stop depth for a zero-dead volume connection every time. The OPTI-GUARD® 1 mm requires no special connecting hardware or tools for installation.

Description	Qty.	Cat. No.
OPTI-GUARD® C18 (Violet Label)	5 ea.	51177-U
OPTI-GUARD® C18, Biocompatible	5 ea.	51183-U
OPTI-GUARD® C8	5 ea.	51184-U



#### **OPTI-SOLV®** Filter

The OPTI-SOLV® filter provides low-impact filtering with a zero dead volume connection. Use the OPTI-SOLV® filter to prolong the life of your analytical column or before the mass spectrometer as a last defense against debris.

Description	Qty.	Cat. No.
OPTI-SOLV® Mini Filter 2 μm	5 ea.	51170-U



### Stericup® Quick Release Filtration System

#### At a Glance: Features and Benefits of the Stericup® Quick Release Filtration System

The **Quick Release** filter funnel disconnects from the receiver bottle with just a quarter turn—reducing the likelihood of spillage and making it easier to manipulate on the bench or under the hood.

Frosted, ample writing surface on the receiver bottle and lighter cap color facilitate clear labeling to improve legibility and reduce unreadable smears.

Click seal cap is flanged and modified to enable a firm grip in wet or dry conditions and a tactile stop confirms secure closure. Worry less about the possibility of spilling or contamination of sterilized contents.





**Bold product identification** on the Steritop® filter funnel plainly displays membrane characteristics, including composition and pore size, for rapid, application-appropriate product selection.

Stericup® filters are packaged to ensure sterility during transport and storage. Easy-open packaging sleeve provides a tab on every corner for convenient, quick and easy access.

Improved peel-and-stick label on the sterile bag clearly denotes lot and part number of the filter device. Simply peel and place in a lab notebook for accurate tracking and reference.

Designed for single use – The Stericup® Quick Release filter reduces the risk of inadvertent re-use and ensures that media starts sterile and stays sterile.

#### Choose Stericup® and Steritop® filters based on your volume and pore size requirements:

Product No.	Name	Description	Membrane/Application	Pore Size (µm)	Funnel Capacity (mL)	Qty/Pk
Relea	Release Threaded Release Filter U	Steritop®-GP Quick Release Filter Unit	Millipore Express® PLUS (PES) / fast filtration of tissue	0.22	150	12
	Bottle Top Filter	Bottle Top Filter  Receiver Bottle opening: 45 mm	culture media and buffers			
S2GPT02RE Steritop®-GP Quick Release Threaded Bottle Top Filter		Steritop®-GP Quick Release Filter Unit	Millipore Express® PLUS (PES) / fast filtration of tissue culture media and buffers	0.22	250	12
	Bottle Top Filter	Receiver Bottle opening: 45 mm				
1	Steritop®-GP Quick Release Threaded Bottle Top Filter  Receiver Bottle opening: 45 mm		Millipore Express® PLUS (PES) / fast filtration of tissue	0.22	500	12
		culture media and buffers				
S2GPT10RE	Steritop®-GP Quick Release Threaded	Steritop®-GP Quick Release Filter Unit	Millipore Express® PLUS (PES) / fast filtration of tissue	0.22	1000	12
	Bottle Top Filter  Receiver Bottle opening: 45 mm		culture media and buffers			



Preparation, Separation, Filtration & Monitoring Products

### MX High Pressure Valves

#### **MXT High Pressure Valve for UHPLC**

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

Description	Qty.	Cat. No.
MXT 2-Position, 6-Port Switching Valve	1 ea.	51343-U



#### **MXP High Pressure Valve for HPLC**

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

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



### LC-MS Post Column Flow Splitters

#### **Key Features and Benefits**

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

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

Description	Cat. No.
HPLC Post Column Flow Splitters – Fixed	
Split Ratio = 20:1	56624-U
Split Ratio = 10:1	56625-U
Split Ratio = 5:1	56626-U
Split Ratio = 3:1	56627-U
HPLC Post Column Flow Splitter – Adjustable	
Split Ratio = 1:1 to 20:1	56629-U



## HyperShear™ Static Mixers for UHPLC

ASI Static Mixers help to solve the most demanding high pressure HPLC solvent mixing problems. The HyperShear™ Mixers incorporate a highly efficient, cross-flowing shearing mechanism which produces vortex shear mixing over a wide flow range. The mixing technology typically delivers between 25% to 200% better mixing efficiency compared to conventional packed bed or tortuous path mixers.

Description	Cat. No.
High Pressure Binary Tee Mixer Assembly	
50 μL	56648-U
150 µL	56649-U



### Low Adsorption HPLC Vials

Supelco® Low Adsorption (LA) vials are manufactured using a process that decreases the number of hydroxyl groups on the vial's glass surface, significantly reducing surface activity while improving analytical quantitation and minimizing pH shifts in the sample. This same process also removes unwanted surface metals such as sodium and boron that can contaminate samples and interfere with trace analysis. Unlike other methods used to decrease vial surface activity, the elimination of surface activity in LA vials is integral to the manufacturing process and is not a chemical surface treatment.





# Low Adsorption Sample Vials and Caps

Description	Cat. No.
CD (Center Draining) Vial Kits*	
Clear glass vial, 1.5 mL, PTFE/silicone septa	29655-U
Clear glass vial, 1.5 mL, PTFE/silicone septa with slit	29656-U
MRQ30 Vial Kits*	
Clear glass vial, 1.2 mL, PTFE/silicone septa	29658-U
Clear glass vial, 1.2 mL, PTFE/silicone septa with slit	29659-U
QSertVial™ (0.3 mL) Vial Kits*	
Clear glass, natural PTFE/silicone septa	29661-U
Clear glass, natural PTFE/silicone septa with slit	29662-U
Amber glass vial, natural PTFE/silicone septa	29663-U
Amber glass vial, natural PTFE/silicone septa with slit	29664-U
Low Adsorption 2 mL (12 x 32 mm) Vial Kits*	
Clear glass vial with marking spot, natural PTFE/silicone septa	29651-U
Clear glass vial with marking spot, natural PTFE/silicone septa with slit	29652-U
Amber glass vial with marking spot, natural PTFE/silicone septa	29653-U
Amber glass vial with marking spot, natural PTFE/silicone septa with slit	29654-U
Replacement Mass Spec Quality (MSQ) Caps with Septa	
Caps with septa, 9 mm, natural PTFE/silicone, pack of 100	29665-U
Caps with septa, 9 mm, natural PTFE/silicone with slit, pack of 100	29666-U

<sup>\*</sup> Kits include 100 each of vial, cap and septa

## **HPLC Syringes**

#### **High-Quality Syringes for Any Sample Matrix**

Whether you need a liquid, gastight, manual, or autosampler syringe, we have the appropriate quality and size you need for your application and sample volume.



#### Popular Hamilton® Syringes for Rheodyne®, Valco® VISF-2, Altex™ and SSI™ Injection Valves

Description	Needle Type	Volume	Mfr Model	Pkg. Size	Cat. No.
Hamilton® 700 Series Syringes					
10 μL Syringe with Cemented Needle	22s ga, blunt tip	10 μL	701 SNR	1	58380-U
25 μL Syringe with Cemented Needle	22s ga, blunt tip	25 μL	702 SNR	1	58381
50 μL Syringe with Cemented Needle	22s ga, blunt tip	50 μL	705 SNR	1	58382
100 μL Syringe with Cemented Needle	22s ga, blunt tip	100 μL	710 SNR	1	58383
250 μL Syringe with Cemented Needle	22 ga, blunt tip*	250 μL	725 SNR	1	58384
500 μL Syringe with Cemented Needle	22 ga, blunt tip	500 μL	750 SNR	1	26222-U
Hamilton® 1700 Series Syringes					
100 μL Syringe with Removable Needle	22s ga, blunt tip	100 μL	1710 RNR	1	20888
250 μL Syringe with Removable Needle	22 ga, blunt tip	250 μL	1725 RNR	1	20889
500 μL Syringe with Removable Needle	22 ga, blunt tip	500 μL	1750 RNR	1	20890-U

st The nominal I.D. of the needle is 0.413 mm for a 22 gauge needle and 0.168 mm for 22s gauge.



**Analytical Products** 

Merck KGaA Frankfurter Strasse 250 64293 Darmstadt, Germany

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