

# GLENCO Syringes

As a complement to the Spectra/Chrom chromatographic products, Spectrum manufactures precision syringes for sample injection and collection. These syringes are designed specifically to adapt to the Spectra/Chrom injection ports for columns and fittings. Using these highly accurate instruments, even microliter quantities can be accurately and precisely measured.

## Spectrum Double Action Syringes

- Precision Glass Upper Guide Chamber
- Reinforced Upper plunger assembly
- Fixed or Removable Needles

Many syringes not specifically designed for chromatographic applications are delicate instruments easily damaged when used with valves and fittings. Spectrum has overcome this problem by introducing the double action plunger guide chamber. This feature eliminates the possibility of bending the plunger and insures the chromatographer against a short syringe life. An enlarged upper guide chamber, made of borosilicate glass, is fused to the lower barrel and houses the extra heavy duty plunger fitted with 2 Teflon guides. This portion of the overall syringe assembly acts as a handle for holding the syringe, eliminating heat transfer from the hand to the actual sample area. The natural balance of the syringe is also greatly improved resulting in a smooth, positive injection stroke. After injection, the guide chamber can be filled with solvent so the successive plunger strokes completely clean the syringe.

The lower glass barrel has an individually matched, precision ground tungsten plunger. All plungers are hand assembled to extremely close tolerances to insure exact measurements.

The Double Action micro syringes are supplied with either a fixed (cemented) needle or with a removable screw hub needle. The design of the removable needle retains fluid and allows needle replacement with ease. A Teflon seal in the hub of the needle ensures a liquid- and gas-tight assembly.

## Spectrum Double Action Removable Needle Micro Syringes

### Glenco® Series 19913

#### Ordering Information

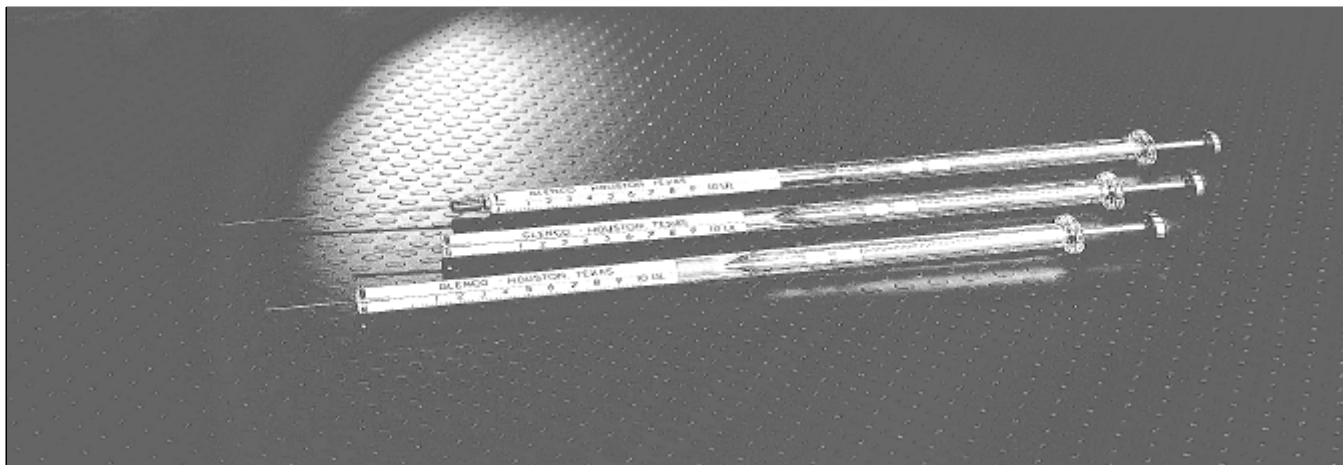
Part No.	Size (µl)	Grad.Div. (µl)	Needle Length (in) and Gauge	Needle ID x OD (in)
185500	10	0.1	1 x 26	.006 x .018
185501	10	0.1	1 x 24	.006 x .022
185101	10	0.1	2 x 26	.006 x .018
185102	10	0.1	2 x 24	.006 x .022
185502	10	0.1	3 x 26	.006 x .018
185503	10	0.1	3 x 24	.006 x .022
185103	20	0.2	2 x 26	.006 x .018
185504	20	0.2	2 x 24	.006 x .022
185104	50	1.0	2 x 26	.006 x .018
185505	50	1.0	2 x 24	.006 x .022

## Spectrum Double Action Fixed Needle Micro Syringes

### Glenco Series 19909

#### Ordering Information

Part No.	Size (µl)	Grad.Div. (µl)	Needle Length (in) and Gauge	Needle ID x OD (in)
185506	10	0.1	1 x 26	.006 x .018
185507	10	0.1	1 x 24	.006 x .022
185108	10	0.1	2 x 26	.006 x .018
185109	10	0.1	2 x 24	.006 x .022
185508	10	0.1	3 x 26	.006 x .018
185509	10	0.1	3 x 24	.006 x .022
185110	20	0.2	2 x 26	.006 x .018
185510	20	0.2	2 x 24	.006 x .022
185111	50	1.0	2 x 26	.006 x .018
185511	50	1.0	2 x 24	.006 x .022



## Spectrum Conventional Micro Syringes

- Precision Ground Tungsten Plunger
- Hand Assembled to Extremely close tolerances
- Fixed or Removable Needles
- Precision Bore Borosilicate Glass Barrel. Highest degree of resistance to chemical attack. Bore uniformity  $\pm 0.002$ " assures the utmost accuracy in sample volume delivery.
- Precision Ground Tungsten Plunger. Individually matched to each barrel. Syringes are individually lapped and hand assembled to extremely close tolerances.
- Removable Screw Hub Needles. Recommended over fixed needle arrangement. Design of needle and stainless steel end piece eliminates dead volume, yet allows easy replacement of plugged needle.
- Fixed Needle. Epoxy cemented to the center bore of the syringe barrel terminating at a point exactly corresponding to the zero calibration mark.

### Conventional Removable Needle Micro Syringes Glenco Series 19905

#### Ordering Information

Part No.	Size ( $\mu$ l)	Grad.Div. ( $\mu$ l)	Needle Length (in) and Gauge	Needle ID x OD (in)
185115	10	0.1	2 x 26	.006 x .018
185116	20	0.2	2 x 26	.006 x .018
185117	50	1.0	2 x 26	.006 x .018

### Conventional Fixed Needle Micro Syringes Glenco Series 19901

#### Ordering Information

Part No.	Size ( $\mu$ l)	Grad.Div. ( $\mu$ l)	Needle Length (in) and Gauge	Needle ID x OD (in)
185120	10	0.1	2 x 26	.006 x .018
185121	10	0.1	2 x 24	.006 x .022
185122	20	0.2	2 x 26	.006 x .018
185124	20	0.2	2 x 24	.006 x .022
185123	50	1.0	2 x 26	.006 x .018



## Replacement Screw Hub Needles for Micro Syringes

Screw Hub Needles are offered as accessory or replacement parts for Spectrum Micro Syringes. Needles are manufactured from type 304 stainless steel, and are fixed into a stainless steel screw hub assembly. A Teflon seal at the base of the hub seats against a stainless steel end piece on the syringe, eliminating dead volume and ensuring a liquid- and gas-tight assembly.

Standard needles have ends precision ground to a 22° bevel point. Flat end needles are also readily available. Other needle lengths or diameters can be supplied by special order, contact Spectrum Chromatography at (800) 459-9700 for assistance.

**The following 22° bevel point needles will fit series 19905 and 19913 syringes. The Teflon seal is included in the hub.**

#### Ordering Information

Part No.	Needle Length (in) and Gauge	Needle ID x OD(in)	Qty/pk
185128	1 x 26	.006 x .018	2
185129	1 x 24	.006 x .022	2
185130	2 x 26	.006 x .018	2
185131	2 x 24	.006 x .022	2
185132	3 x 26	.006 x .018	2
185133	3 x 24	.006 x .022	2
185498	4 x 24	.006 x .022	2
185496	6 x 24	.006 x .022	2

**The following flat end (90°) needles will fit series 19905 and 19913 syringes. The Teflon seal is included in the hub.**

#### Ordering Information

Part No.	Needle Length (in) and Gauge	Needle ID x OD(in)	Qty/pk
185140	1 x 26	.006 x .018	2
185136	2 x 26	.006 x .018	2
185137	2 x 24	.006 x .022	2
185138	2 x 22	.006 x .028	2
185139	3 x 26	.006 x .018	2

## HPLC Injection Syringes for Valco® Sample Injection Valves

These HPLC Sample Injection Syringes are specially calibrated for use with high pressure Valco injection valves. The sample loop may be filled with a partial volume read directly from the syringe calibration scale, since the scale is offset by the volume left in the connecting flow path in the valve. Because the 3000 and 7000 psi valves have different internal passage volume, it is important that the proper model syringe be used. All of these syringes have special 22 gauge flat-end needles, 0.028" OD, 0.006" ID, and 0.75" length.

### Ordering Information

#### For 3000 psi valves - Valco CV-6-HPax

Part No.	Capacity	Grad.Div.
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185142	10 µl	0.1 µl
185143	20 µl	0.2 µl
185144	50 µl	1.0 µl

#### For 7000 psi valves - Valco CV-6-UHPa-N60

Part No.	Capacity	Grad.Div.
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185145	10 µl	0.1 µl
185146	20 µl	0.2 µl
185147	50 µl	1.0 µl

## Solvent Flushing Syringes for Valco Valves

These syringes are used to flush out the injection port, valve passages, and sample loop before loading a new sample. All of these syringes are fitted with 22 gauge flat-end needles, 0.028" OD, 0.016 " ID, and 0.75" length.

### Ordering Information

Part No.	Description
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185155	1 ml Solvent Flushing Syringe for Valco
185156	5 ml Solvent Flushing Syringe for Valco
185157	Replacement needle and seal for 185155 and 185156



## HPLC Syringes for Rheodyne® and Altex® Injection Valves

These syringes are fitted with special 22 gauge needles for use with Rheodyne and Altex sample injection valves. These needles are 0.028" OD, 0.006" ID, and 2" long.

### Ordering Information

Part No.	Size	Grad.Div.	Type
185345	10 µl	0.1 µl	Micro Injection
185350	50 µl	1.0 µl	Micro Injection
185138	Replacement Micro Injection Needle, 2/pk		
185355	1 ml	10 µl	Solvent Flushing
185384	Replacement Solvent Flushing Needle, 2/pk		

## HPLC Syringes for Waters® U6K Injection System

These syringes are fitted with special tapered 22 gauge needles especially required for the Waters U6K system. These needles are 0.028" OD, 0.006" ID and 1.97" long. They taper to 0.017" OD at their domed tip.

### Ordering Information

Part No.	Size	Grad.Div.	Type
185360	10 µl	0.1 µl	Micro Injection
185365	20 µl	0.2 µl	Micro Injection
185370	50 µl	1.0 µl	Micro Injection
185380	Replacement Micro Injection Needle, 2/pk		
185375	1 ml	10 µl	Solvent Flushing
185385	Replacement Solvent Flushing Needle, 2/pk		

## Syringe Guard Station

Store syringes in a convenient and organized manner. The new Syringe Guard Station puts all those misplaced syringes at your fingertips. No more syringe breakage or loss. Each Syringe Guard Station holds ten (10) micro syringes on a rigid metal frame. Its rubber feet securely grip the bench top to prevent sliding.

### Ordering Information

Part No.	Description
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186221	Syringe Guard Station
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## Conventional Gas/Liquid Syringes

- Capacities from 50 ml to 100 ml
- Ideally Suited for Handling Almost any Gas or Liquid
- Fixed or Removable Needle Models
- Interchangeable Plungers
- **Highest Degree of Resistance to Chemical Attack.** Only borosilicate glass and Teflon are exposed to the gas or liquid in the syringe.
- **Flat Plunger Face Contacts Bottom of Glass Barrel.** This assures that all of the liquid or gas is displaced from the measuring chamber.
- **Fixed Needle Models.** Fixed needles are permanently cemented flush with the inside flat bottom of the barrel at the zero calibration mark.
- **Removable Needle Models.** A 1/4" x 28 tpi threaded glass tip at the end of the barrel permits quick attachment or removal of any screw hub needle or accessory.
- **Accessories Feature a Flat Teflon Seal.** The Teflon seal in contact with the flat face of the glass tip of the syringe assures a leak-proof connection. The seal has been tested to 2000 psi. Continued attachment and removal of the accessories has no effect on seal performance.
- **Interchangeable Plunger with Stationary Teflon Seals at Tip.** The plungers of any given size can be interchanged between any glass barrels of the same size.

## Conventional Gas/Liquid Syringes with Removable Screw Hub Needles and Constant Tension Plunger Glenco Series 19925

### Ordering Information

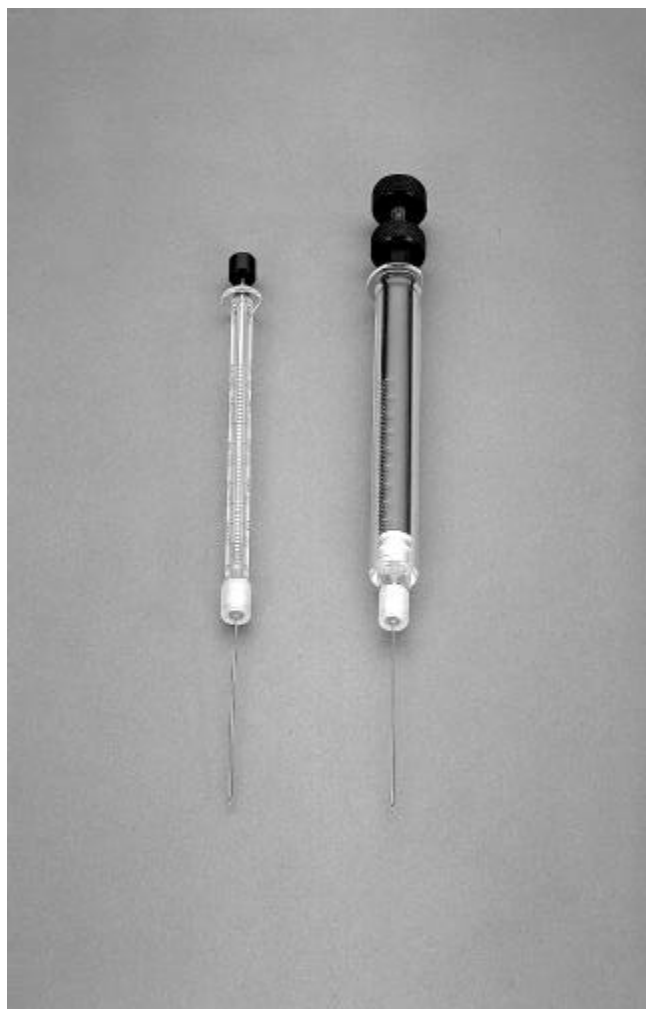
Part No.	Size	Grad. Div.	Needle Length (in) and Gauge	Needle ID x OD(in)
185190	50 µl	1 µl	2 x 22	.006 x .028
185549	50 µl	1 µl	3 x 22	.006 x .028
185191	100 µl	2 µl	2 x 22	.006 x .028
185551	100 µl	2 µl	3 x 22	.006 x .028
185192	250 µl	5 µl	2 x 22	.006 x .028
185553	250 µl	5 µl	3 x 22	.006 x .028
185193	500 µl	10 µl	2 x 22	.016 x .028
185554	500 µl	10 µl	3 x 22	.016 x .028
185194	1 ml	10 µl	2 x 22	.016 x .028
185556	1 ml	10 µl	3 x 22	.016 x .028
185195	2.5 ml	50 µl	2 x 22	.016 x .028
185390	5 ml	0.1 ml	2 x 22	.016 x .028
185391	10 ml	0.5 ml	2 x 22	.016 x .028
185392	20 ml	0.5 ml	2 x 22	.016 x .028
185393	50 ml	1.0 ml	2 x 22	.016 x .028
185394	100 ml	1.0 ml	2 x 22	.016 x .028
185558*	2.5 ml	50 µl	2 x 22	.016 x .028

\*185558 is supplied with a flat end (90°) needle, the others with a sharp (22°) needle.

## Conventional Gas/Liquid Syringes with Fixed (Cemented) Needles and Constant Tension Plunger Glenco Series 19930

### Ordering Information

Part No.	Size	Grad. Div.	Needle Length (in) and Gauge	Needle ID x OD(in)
185200	50 µl	1 µl	2 x 22	.006 x .028
185201	100 µl	2 µl	2 x 22	.006 x .028
185202	250 µl	5 µl	2 x 22	.006 x .028
185203	500 µl	10 µl	2 x 22	.016 x .028
185204	1 ml	10 µl	2 x 22	.016 x .028
185205	2.5 ml	50 µl	2 x 22	.016 x .028
185420	5 ml	0.1 ml	2 x 22	.016 x .028
185421	10 ml	0.1 ml	2 x 22	.016 x .028
185422	20 ml	0.5 ml	2 x 22	.016 x .028
185423	50 ml	1.0 ml	2 x 22	.016 x .028
185424	100 ml	1.0 ml	2 x 22	.016 x .028





## Gas/Liquid Syringes with Adjustable Plunger Seal

These unique syringes offer the same features as the conventional gas/liquid syringes, plus an adjustable expanding seal at the plunger face. Concentric plunger shafts permit the mechanical expansion of the sealing Teflon O-rings, by rotation of the plunger handle knobs in opposite directions.

## Gas/Liquid Syringes with Removable Screw Hub Needles and Adjustable Plunger Glenco Series 19925A

### Ordering Information

Part No.	Size	Grad. Div.	Needle	
			Length (in) and Gauge	Needle ID x OD (in)
185210	5 ml	0.1 ml	2 x 22	.016 x .028
185211	10 ml	0.1 ml	2 x 22	.016 x .028
185212	20 ml	0.5 ml	2 x 22	.016 x .028
185213	50 ml	1.0 ml	2 x 22	.016 x .028
185214	100 ml	1.0 ml	2 x 22	.016 x .028

## Gas/Liquid Syringes with Fixed (Cemented) Needles and Adjustable Plunger Glenco Series 19930A

### Ordering Information

Part No.	Size	Grad. Div.	Needle	
			Length (in) and Gauge	Needle ID x OD(in)
185219	5 ml	0.1 ml	2 x 22	.016 x .028
185220	10 ml	0.1 ml	2 x 22	.016 x .028
185221	20 ml	0.5 ml	2 x 22	.016 x .028
185222	50 ml	1.0 ml	2 x 22	.016 x .028
185223	100 ml	1.0 ml	2 x 22	.016 x .028



## Replacement Components for Gas/Liquid Syringes

### Glass Barrels

### Ordering Information

For use with removable needles	Syringe Size	With fixed 2" x 22 Needle
185227	50 µl	185240
185228	100 µl	185241
185229	250 µl	185242
185230	500 µl	185243
185231	1 ml	185244
185232	2.5 ml	185245
185233	5 ml	185246
185234	10 ml	185247
185235	20 ml	185248
185236	50 ml	185249
185237	100 ml	185250

### Plungers:

### Ordering Information

Constant Tension	Syringe Size	Adjustable Tension
185254	50 µl	
185255	100 µl	
185256	250 µl	
185257	500 µl	
185258	1 ml	
185259	2.5 ml	
185260	5 ml	185276
185261	10 ml	185277
185262	20 ml	185278
185263	50 ml	185279
185264	100 ml	185280

## Removable Screw Hub Needles for Gas/Liquid Syringes

Removable stainless steel screw hub needles are supplied with the staked flange and Teflon seal, but without the screw hub nut (see below). The needle points are a deflected 22° bevel to minimize septum coring.

### Ordering Information

Part No.	Needle Length (in) and Gauge	Needle ID x OD(in)	Qty/pk
185284	1 x 22	.006 x .028	2
185285	2 x 22	.006 x .028	2
185281	3 x 22	.006 x .028	2
185282	1 x 22	.016 x .028	2
185286	2 x 22	.016 x .028	2
185287	3 x 22	.016 x .028	2

## Flat End (90°) Needles For Gas/Liquid Syringes

These flat or blunt ended needles are supplied with the same flange and seal as the sharp needles above. They are for use with the removable needle gas/liquid syringes whenever a sharp needle would not be appropriate (e.g. when using an HPLC injection valve).

### Ordering Information

Part No.	Needle Length (in) and Gauge	Needle ID x OD(in)	Qty/pk
185289	1 x 22	.016 x .028	2
185290	2 x 22	.016 x .028	2
185291	3 x 22	.016 x .028	2
185384	2 x 22	.005 x .028	2

## Screw Hub Nut

These screw hub nuts are used to attach the flanged needles to the threaded tip of the gas/liquid syringes. One size fits all removable needle gas/liquid syringes.

### Ordering Information

Part No.	Description	Qty/pk
185158	Screw Hub Nut	6

## Side Port Needle

Side port needles eliminate the risk of coring septa. The side port is superior to even the deflected tip found in other Spectrum needles when the syringe is to be used to pierce a rubber septum.

### Ordering Information

Part No.	Description	Qty/pk
185602	Side Port Needle, 2" x 22 gauge 0.013" ID	2

## Accessories for Removable Needle Gas/Liquid Syringes

### Micro Valves

#### Glenco Series 925-MV

A minimum volume, Teflon and Kel-F high pressure accessory with 1/4" x 28 threads, these micro valves may be attached to the threaded tip of a syringe to provide positive "on-off" control. The valve has a straight, clear flow path, minimum dead volume, and has been tested leak-free to 2000 psi. It is ideal for use in storing samples in syringes and for pressurizing samples before injection. The outlet of the valve provides a fitting similar to that of the original syringe so that the same needles and accessories which may be used with the removable needle syringes can be connected to the valve outlet.

### Ordering Information

Part No.	Description	Bore (in)
185314	Micro Valve	0.020
185315	Micro Valve	0.040

### Luer Adapter

The Luer adapter screws onto the threaded glass tip of the removable needle gas/liquid syringes to allow the attachment of standard luer hub needles. The luer adapter has a narrow bore to minimize the connection volume. All wetted parts of the adapter are manufactured of inert fluoroplastics. The male luer has an external stainless steel shell to tightly secure luer hub needles to the Kel-F stem.

### Ordering Information

Part No.	Description	Bore (in)
185320	Male Luer Adapter	0.020
185321	Female Luer Adapter	0.040

### Syringe Closure

Designed for completely sealing off the threaded glass tip of a removable needle gas/liquid syringe. The Kel-F closure is provided with a replaceable Teflon seal that seats against the flat glass tip face of the syringe, providing a closure which has been tested leak-free to 2000 psi.

### Ordering Information

Part No.	Description	Qty/pk
185325	Syringe Closure	5

## Teflon Seals

These Teflon seals are used to provide the seal when attaching needles and accessories to the threaded glass tip of the removable needle gas/liquid syringes. One seal is included with each needle and accessory.

### Ordering Information

Part No.	Description	Qty/pk
185300	Teflon Seal	6

## 1/4-28 Coupler

A fluoroplastic coupler, with 1/4" x 28 tpi female threads, for connecting tubing fittings or other items designed for a 1/4" x 28 flat-bottomed hole to the threaded syringe tips of the removable needle gas/liquid syringes. Hold-up volume is minimized since the bottom of the tubing or other fitting seats flush with the flat end of the syringe tip. These may be used with either the flared-tube connectors or the ferruled connectors to connect tubing to these syringes.

### Ordering Information

Part No.	Description	Qty/pk
185465	1/4-28 Coupler	10

## Teflon Flared-Tube Connectors

Designed for use with 1/8" and 1/16" tubing, these connectors have a leak-free pressure rating of up to 500 psi. Each connector has a 1/4" x 28 tpi male thread and is supplied with a stainless steel washer which fits between the flared tube end and the connector body to provide a tight, leak-proof seal. A flaring tool must be used to heat flare the Teflon tubing.

### Ordering Information

Part No.	Description	Qty/pk
185470	Flared-tube connector for 1/16" tubing	10
185475	Flared-tube connector for 1/8" tubing	10

## Ferruled Connectors

Designed for use with 1/8" and 1/16" tubing, these connectors are similar to the flared tubing connectors, except that no flaring is required. Each connector has a 1/4" x 28 tpi male thread and is supplied with a ferrule used to make the seal to the tubing. These connectors are color coded for easy identification, blue for 1/16" OD tubing and yellow for 1/8" OD tubing.

### Ordering Information

Part No.	Description	Qty/pk
185480	Blue ferruled connector for 1/16" tubing	3
185485	Yellow ferruled connector for 1/8" tubing	3

## High Pressure Teflon Tubing

High pressure Teflon tubing is the final accessory used to form an inert fluid handling system using the gas/liquid syringes. It is ideally suited for handling either corrosive or easily contaminated materials. This flexible tubing makes sampling a simple task, even in hard to reach areas. The tubing is easily connected to the threaded glass tip of the removable needle gas/liquid syringes with a 1/4-28 coupler and either a flared-tube connector or a ferruled connector.

### Ordering Information

Part No.	Description
123798	Teflon tubing, 1/16" x 0.010", 3m
123802	Teflon tubing, 1/16" x 0.021", 3m
123806	Teflon tubing, 1/16" x 0.031", 3m
123814	Teflon tubing, 1/8" x 0.030", 3m
123818	Teflon tubing, 1/8" x 0.065", 3m
123822	Teflon tubing, 1/8" x 0.085", 3m

## Spectra/Chrom Laboratory Tubing

In addition to the specially manufactured peristaltic pump tubings, Spectrum Chromatography also provides tubing for general laboratory applications. Both semirigid tubing, made of Teflon or polyethylene, and flexible tubing, made of vinyl, silicone, or fluoroelastomers, are available.

The same features which make Spectra/Chrom peristaltic pump tubing the premier tubing for use in peristaltic pumps make it ideal for general laboratory use. The extra spring in the walls and the mechanical fatigue resistance provide a longer life in most general laboratory applications, as well as in peristaltic pumps.

The semirigid Teflon and polyethylene tubing, while not suited for use in peristaltic pumps, have many general lab applications. Teflon provides unparalleled solvent resistance; nearly any solvent can be used with Teflon tubing. Polyethylene tubing provides a reasonable degree of solvent resistance as well as an increase in the pressure limit of the tubing.

All of Spectrum's laboratory tubing exhibit some gas permeability. In general, silicone is the most permeable to gases and polyethylene and Teflon the least permeable.

Although all of Spectrum's tubing is designed to provide long life, it is also designed only for general laboratory applications. It is not meant to be permanently installed nor is it meant to be placed where it cannot be routinely observed. The flexible tubings will generally contain plasticizers to make them flexible. These will leach out of the tubing in time, making it more brittle, subject to easy breakage, and reducing its tolerance to pressure.

**Silicone Tubing (LPS).** This is the most commonly used material for peristaltic pump tubing. It provides the longest service life and good chemical compatibility for aqueous solvents. Its service life is about 150 hr. at 600 rpm and 825 hr. at 100 rpm. It can usually be left running on experiments during weekends without much danger of rupture. Of course a fresh section of tubing should be pulled though the pump rollers before any running peristaltic pump is left unattended for an appreciable length of time. Silicone tubing can also be autoclaved a single time on a wet cycle without a significant reduction in its life.

**Vinyl Tubing (LPV).** Vinyl tubing has the lowest per-foot cost of the available peristaltic pump tubings. It generally has only fair compatibility for most aqueous solvents and does not have a good tolerance for organic solvents. It has only about a third of the service life of vinyl tubing, 50 hr. at 600 rpm and 275 hr. at 100 rpm. It is not recommended that a peristaltic pump using vinyl tubing be left unattended. If it must be left unattended, a fresh section of tubing should be pulled though the pump rollers immediately prior to leaving. Vinyl tubing cannot be autoclaved and should not be exposed to temperatures above 80°C.

## Fluoroelastomer Tubing (LPF).

Fluoroelastomer tubing is both the most chemically inert peristaltic pump tubing and the shortest lived. It can withstand even halogenated solvents for a limited time. Its service life is only 30 hr. at 600 rpm and 165 hr. at 100 rpm. Because of its short life we do not recommend that a peristaltic pump using fluoroelastomer tubing be left unattended. If it must be left unattended, a fresh section of tubing should be pulled though the pump rollers immediately prior to leaving. Like silicone tubing, fluoroelastomer tubing can be autoclaved a single time on a wet cycle without a significant reduction in its life.

**Teflon Tubing.** Teflon is the most inert of all the tubing supplied by Spectrum. It can withstand nearly any solvent used in a modern laboratory, from distilled water to methylene chloride. Its excellent thermal characteristics allow it to be repeatedly autoclaved. However, it should not be used for fluid transport until it has cooled.

**Polyethylene Tubing.** Spectrum's polyethylene tubing is an inexpensive alternative to Teflon. Like Teflon tubing, polyethylene tubing can handle pressures significantly higher than any of the flexible tubings can. Polyethylene does not have the thermal stability of Teflon, so it should not be autoclaved, although it can be ethylene oxide sterilized.

## Spectrum Tubing Cutter

The Spectrum Tubing Cutter is designed to cut all types of polymer tubing leaving an even, flat edge. The special "V" shape of the tubing holder keeps the tubing perpendicular to the blade. The steel blade remains sharp for many cuts, but it can be easily replaced.

The Spectrum Tubing Cutter can be used on most types of tubing up to 1/2" (13 mm) OD. It is not for use on metallic tubing.

### Ordering information

Part No.	Description
123367	Spectrum Tubing Cutter
123368	Replacement Tubing Cutter Blades, 5/pk

