Low-Pressure Tubing

Flexon HP Tubing

- Higher pressure rating compared to PTFE tubing

5530

Flexon HP Tubing Specifications	
Material:	Flexon HP
Maximum Temperature:	100°C
Maximum Pressure:	Varies by Size, See Price Block
Typical Use:	Low-Pressure Plumbing

Tefzel® Tubing

o.d.	i.d.	Length	psig	Part No.
1/16"	0.020"	50'	3200	**35672**
1/16"	0.030"	50'	2500	**35673**

Color-Coded PTFE Tubing

- Color-coded for easy identification of i.d.

5532

Color-Coded PTFE Tubing Specifications	
Material:	PTFE
Maximum Temperature:	100°C
Maximum Pressure:	Varies by Size, See Price Block
Typical Use:	Low-Pressure Plumbing

Color-Coded PTFE Tubing

Color	o.d.	i.d.	Length	psig	Part No.
Blue	1/16"	0.010"	10'	1500	**35660**
	1/16"	0.010"	50'	1500	**35661**
Orange	1/16"	0.020"	10'	1200	**35662**
	1/16"	0.020"	50'	1200	**35663**
Green	1/16"	0.030"	10'	900	**35664**
	1/16"	0.030"	50'	900	**35665**

PTFE Tubing

- Maximum inertness

5531

PTFE Tubing Specifications	
Material:	PTFE
Maximum Temperature:	100°C
Maximum Pressure:	Varies by Size, See Price Block
Typical Use:	Low Pressure Plumbing

PTFE Tubing

o.d.	i.d.	Length	psig	Part No.
1/16"	0.007"	10'	1600	**35677**
1/16"	0.007"	50'	1600	**35678**
1/16"	0.010"	10'	1500	**20064**
1/16"	0.010"	50'	1500	**35669**
1/16"	0.020"	10'	1200	**20033**
1/16"	0.020"	50'	1200	**35668**
1/16"	0.030"	10'	900	**20031**
1/16"	0.030"	50'	900	**35670**
1/16"	0.040"	10'	600	**20106**
1/16"	0.040"	50'	600	**3132**
1/8"	0.063"	10'	900	**20063**
1/8"	0.063"	50'	900	**35671**
1/8"	0.100"	10'	300	**20096**
1/8"	0.100"	50'	300	**3134**
0.160"	0.125"	10'	300	**35667**
0.160"	0.125"	50'	300	**35674**
1/4"	0.125"	50'	900	**3136**

Low Permeation Tubing

- Eliminates regassing without sacrificing inertness
- Flexible, convenient, and versatile
- Easy to install and use

5533

This low-pressure tubing has a double wall to prevent mobile phase regassing. The inert inner PTFE wall carries the mobile phase. The non-wetted outer wall is made from a translucent, flexible polymer with extremely low gas permeability. This low permeation tubing cuts regassing rates to negligible levels, while preserving PTFE's chemical resistance, visibility, and handling properties. Use with low permeation fittings kit.

Low Permeation Tubing Specifications	
Material:	PTFE, Proprietary Non-Wetted Outer Layer
Maximum Temperature:	100°C
Maximum Pressure:	900psig
Typical Use:	Low-Pressure Plumbing

Low Permeation Tubing

o.d.	i.d.	Length	Part No.
1/8"	1.5mm	10'	**47100**
1/8"	1.5mm	50'	**47102**

Low Permeation Fittings Kit

Description	Part No.
1/4-28 Low Permeation Fittings Kit*	**47120**

*Includes 10 nuts, 10 ferrules, 10 inserts.

Glass-Lined Stainless Steel Tubing (GLT)


5101

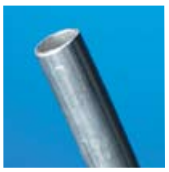
- Flow lines for corrosives
- GC/MS interfaces
- Capillary column connections

Glass-Lined Stainless Steel Tubing

o.d.	i.d.	Length	Part No.
1/16" (1.59mm)	0.5mm	180cm	**3164**
1/8" (3.18mm)	1.8mm	180cm	**3141**
1/4" (6.35mm)	4.0mm	180cm	**3149**

Metal Tubing

Aluminum Tubing


5106

- Economical choice for GC gas lines

Aluminum Tubing

o.d.	i.d.	Length	Part No.
1/8" (3.18mm)	0.065" (1.65mm)	50ft	**3090**
3/16" (4.76mm)	0.128" (3.25mm)	50ft	**3100**
1/4" (6.35mm)	0.190" (4.83mm)	50ft	**3110**
3/8" (9.53mm)	0.315" (8.00mm)	50ft	**3120**

Copper Tubing

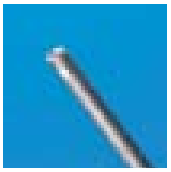

5100

- Economical choice for GC gas lines

Copper Tubing

o.d.	i.d.	Length	Part No.
1/8" (3.18mm)	0.065" (1.65mm)	50ft	**3040**
3/16" (4.76mm)	0.128" (3.25mm)	50ft	**30509**
1/4" (6.35mm)	0.190" (4.83mm)	50ft	**30609**
3/8" (9.53mm)	0.315" (8.00mm)	50ft	**30709**

Nickel Tubing

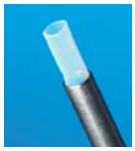

5099

- Pure Nickel 200, more inert than stainless steel
- Acid washed and rinsed for additional inertness

Nickel Tubing

o.d.	i.d.	Part No.
50-Foot Coil		
1/16" (1.59mm)	0.040" (1.02mm)	**3085**
1/8" (3.18mm)	0.083" (2.11mm)	**3080**

PTFE-Lined Stainless Steel Tubing


5102

- Ideal for use with reactive chemicals and for trace quantities of water
- Order PTFE ferrules to grip SS and PTFE portions of tubing below

PTFE-Lined Stainless Steel Tubing

o.d.	i.d.	Length	Qty.	Part No.
1/8" (3.18mm)	0.070" (1.78mm)	6ft	1	**3152**
1/8" (3.18mm)	0.070" (1.78mm)	10ft	1	**3154**
1/4" (6.35mm)	0.180" (4.57mm)	6ft	1	**3156**

Polymeric Tubing

- Maximum Inertness

5104a

PFA (Perfluoroalkoxy) Tubing

PFA (Perfluoroalkoxy) Tubing

o.d.	i.d.	Length	Part No.
1/16" (1.59mm)	0.030" (0.76mm)	25ft	**45734**
1/8" (3.18mm)	0.062" (1.57mm)	25ft	**45735**
1/4" (6.35mm)	0.156" (3.96mm)	25ft	**45736**

FEP (Fluorinated Ethylene Polypropylene) Tubing

FEP (Fluorinated Ethylene Polypropylene) Tubing

o.d.	i.d.	Length	Part No.
1/16" (1.59mm)	0.030" (0.76mm)	25ft	**45739**
1/8" (3.18mm)	0.062" (1.57mm)	25ft	**45740**
1/4" (6.35mm)	0.156" (3.96mm)	25ft	**45741**

Polypropylene/Polyethylene Tubing

Polypropylene/polyethylene Tubing

o.d.	i.d.	Type	Length	Part No.
1/8" (3.18mm)	0.080" (2.03mm)	PP	50ft	**3203**
1/8" (3.18mm)	0.080" (2.03mm)	PP	100ft	**3201**

related products

Need fittings?

See pages 282–285 for a complete selection of GC fittings.

PEEKsil™ Tubing

- Inert fused silica bonded to PEEK
- Square cut and polished tubing ends for zero dead volume connections
- Ideal for plumbing micro, capillary and nano LC systems

6388

SGE's PEEKsil™ tubing maintains the easy handling and convenience of PEEK tubing, but offers the tight i.d. tolerances that can only be offered with fused silica. Each PEEKsil™ tubing end is cut to an exact 90° angle and polished smooth to ensure a true zero dead volume connection. Tubing is color-coded to identify i.d. It is the ideal choice for plumbing capillary and micro LC systems where conventional 1/16" or 1/32" fittings are used.

6389

PEEKsil™ Tubing Specifications	
Material:	Fused Silica-Lined PEEK
Maximum Temperature:	100°C
Typical Use:	Plumbing Capillary LC Systems
Maximum Pressure:	15,000psig

PEEKsil™ Tubing, 1/16 o.d.

		Length			
		10cm 5/pk	15cm 5/pk	20cm 5/pk	50cm 2/pk
Color	i.d. (mm)	Part No.	Part No.	Part No.	Part No.
Orange	0.025	**226**	**227**	**228**	**229**
Natural	0.050	**252**	**254**	**253**	**250**
Black	0.075	**291**	**292**	**293**	**294**
Red	0.100	**302**	**304**	**303**	**300**
Purple	0.150	**231**	**232**	**233**	**234**
Yellow	0.175	**352**	**354**	**353**	**350**
Blue	0.200	**403**	**406**	**404**	**401**
Grey	0.300	**416**	**417**	**418**	**419**

Color-Coded PEEK Tubing

- Chemically inert and biocompatible
- High strength polymer replaces stainless steel
- Easy to cut with razor blade or tubing cutters

PEEK tubing is the ideal metal-free tubing. Its mechanical strength, chemical resistance, and biocompatibility make it appropriate for a wide variety of high pressure LC applications. Tubing is color-coded to indicate i.d.


5535

PEEK Tubing Specifications	
Material:	PEEK
Maximum Temperature:	100°C
Maximum Pressure:	Varies by Size, See Price Block
Typical Use:	High-Pressure Plumbing

Striped PEEK Tubing

- No dye contacts fluid path


0753A

Striped PEEK Tubing

Color	o.d.	i.d.	Maximum Pressure (psig)	Length	Striped Part No.
Red	1/16"	0.005"	7,000	10' (3.05m)	**35714**
				50' (15.25m)	**35715**
Yellow	1/16"	0.007"	7,000	10' (3.05m)	**35712**
				50' (15.25m)	**35713**
Blue	1/16"	0.010"	5,000	10' (3.05m)	**35702**
				50' (15.25m)	**35703**
Orange	1/16"	0.020"	5,000	10' (3.05m)	**35708**
				50' (15.25m)	**35709**
Green	1/16"	0.030"	4,000	10' (3.05m)	**35710**
				50' (15.25m)	**35711**
Grey	1/16"	0.040"	3,000	10' (3.05m)	**35705**
				50' (15.25m)	**35707**
Black	1/16"	0.055"	1,000	10' (3.05m)	**35741**
				50' (15.25m)	**35742**

Solid Color PEEK Tubing

- Entire tube is colored for faster identification


0753B

Solid Color PEEK Tubing

Color	o.d.	i.d.	Maximum Pressure (psig)	Length	Solid Part No.
Red	1/16"	0.005"	7,000	10' (3.05m)	**35720**
				50' (15.25m)	**35721**
Yellow	1/16"	0.007"	7,000	10' (3.05m)	**35722**
				50' (15.25m)	**35723**
Blue	1/16"	0.010"	5,000	10' (3.05m)	**35728**
				50' (15.25m)	**35729**
Orange	1/16"	0.020"	5,000	10' (3.05m)	**35726**
				50' (15.25m)	**35727**
Green	1/16"	0.030"	4,000	10' (3.05m)	**35724**
				50' (15.25m)	**35725**
Natural	1/8"	0.062"	5,000	10' (3.05m)	**35716**
				50' (15.25m)	**35717**
	1/8"	0.080"	3,000	10' (3.05m)	**35718**
				50' (15.25m)	**35719**


6673

related products

Need high-pressure polymeric fittings?
See pages 112–114 for our full selection of high-pressure fittings.

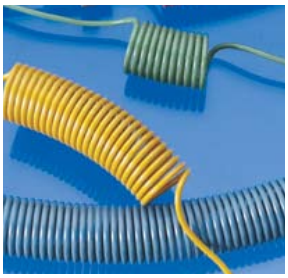
5377

related products

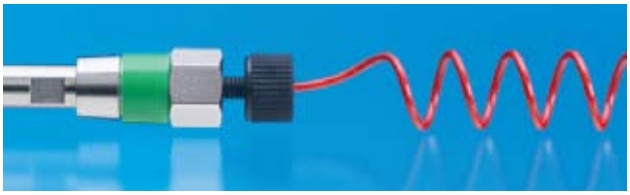
See page 391 for the Clean-cut tubing cutter designed to make clean square cuts on PEEK tubing.

Flex-Connect™ PEEK Tubing

- Self-adjusting length
- Will not bend or kink
- PEEK construction is biocompatible and inert


5527

Flex-Connect™ is ideal for modular LC systems, giving you the freedom to move components without breaking connections. The coiled format springs back to keep excess tubing out of your way. Each piece has 6" of straight tubing at each end and comes with two 1-piece Hex-Head Fittings. Tubing is color-coded to indicate i.d.


6264

Flex-Connect™ Tubing stretches to make connections easier.

Custom Flex-Connect™ Tubing

Description	Part No.
Custom Flex-Connect™ Tubing*	**C-35800**

*Please specify the following when ordering: color coding (solid or striped), i.d. (0.005"–0.030"), and extended length (cm, 800cm max.).

Striped Flex-Connect™ Tubing

- No dye contacts fluid path


0753A

Striped Flex-Connect™ PEEK Tubing

Color	o.d.	i.d.	Max. Pressure (psig)	Size Range*	Striped Part No.
Blue	1/16"	0.010"	5,000	2–10cm	**35872**
				5–25cm	**35874**
				10–50cm	**35875**
				15–75cm	**35876**
Orange	1/16"	0.020"	4,000	2–10cm	**35882**
				5–25cm	**35884**
				10–50cm	**35885**
				15–75cm	**35886**
Green	1/16"	0.030"	4,000	2–10cm	**35892**
				5–25cm	**35894**
				10–50cm	**35895**
				15–75cm	**35896**

*Size range indicates where coil is completely retracted and pulled to a comfortable distance. Excludes 6" straight piece on each end.

Solid Color Flex-Connect™ Tubing

- Entire tube is colored for fast identification


0753B

Solid Color Flex-Connect™ PEEK Tubing

Color	o.d.	i.d.	Max. Pressure (psig)	Size Range*	Solid Part No.
Blue	1/16"	0.010"	5,000	2–10cm	**35822**
				5–25cm	**35824**
				10–50cm	**35825**
				15–75cm	**35826**
Orange	1/16"	0.020"	4,000	2–10cm	**35832**
				5–25cm	**35834**
				10–50cm	**35835**
				15–75cm	**35836**
Green	1/16"	0.030"	4,000	2–10cm	**35842**
				5–25cm	**35844**
				10–50cm	**35845**
				15–75cm	**35846**

*Size range indicates where coil is completely retracted and pulled to a comfortable distance. Excludes 6" straight piece on each end.

Stainless Steel Tubing

Hi-EFF™ Tubing

Hi-EFF™ grade stainless steel tubing is especially tempered for easy bending and is washed with acetone to remove any residual materials. Type 316 is recommended for plumbing LC systems.

Stainless Steel Tubing

This Stainless Steel Tubing is the same high quality as the Hi-EFF™ grade, but has not been washed with acetone. Type 316 is recommended for LC use.

5562

related product

Looking for tubing cutters?

Refer to page 391.

Hi-EFF™ and Standard Stainless Steel Tubing Specifications	
Material:	300 Series Stainless Steel
Maximum Temperature:	500°C
Maximum Pressure:	Varies according to i.d.
Typical Use:	High-Pressure Plumbing

Stainless Steel Tubing

		o.d.	i.d.	10ft (3m)* Part No.	25ft (7.5m)* Part No.	50ft (15m)* Coil Part No.	200ft Coil Part No.
Hi-EFF™	*Type 316 Stainless Steel*	1/8" (3.18mm)	0.085" (2.16mm)	**5141338**	**5141342**	**30109**	**—**
		1/4" (6.35mm)	0.210" (5.33mm)	**5141337**	**5141343**	**30309**	**—**
	Type 304 Stainless Steel	1/8" (3.18mm)	0.085" (2.16mm)	**5141336**	**5141344**	**30106**	**—**
		1/4" (6.35mm)	0.210" (5.33mm)	**5141335**	**5141345**	**30306**	**—**
Standard	*Type 316 Stainless Steel*	1/32" (0.79mm)	0.007" (0.18mm)	**5141387**	**5141320**	**81951**	**—**
		1/16" (1.59mm)	0.004" (0.10mm)	**5141386**	**5141321**	**30212**	**—**
			0.007" (0.18mm)	**5141385**	**5141322**	**30142**	**—**
			0.010" (0.25mm)	**5141384**	**5141323**	**3005**	**30052**
			0.020" (0.51mm)	**5141383**	**5141324**	**3002**	**300220**
			0.030" (0.76mm)	**5141382**	**5141325**	**3000**	**300020**
			0.040" (1.02mm)	**5141381**	**5141326**	**3003**	**—**
			0.050" (1.27mm)	**5141380**	**5141327**	**3004**	**—**
	Type 304 Stainless Steel	1/8" (3.18mm)	0.085 (2.16mm)	**5141346**	**5141410**	**3010**	**30108**
		3/16" (4.76mm)	0.147" (3.73mm)	**5141332**	**5141413**	**3020**	**—**
		1/4" (6.35mm)	0.210" (5.33mm)	**5141333**	**5141412**	**3030**	**—**
		3/8" (9.53mm)	0.305" (7.75mm)	**5141334**	**5141411**	**3032†**	**—**

*Meters based on closest estimate; feet being exact. †40' coil.

Stainless Steel Tubing

AT™ Steel—Activity Tested Steel Tubing

Delivers the Strength of Stainless Steel and the Inertness of Deactivated Fused Silica

- Flexible, and strong
- Maximum temperature limit of 340°C–350°C


5105

A combination of chemical vapor deposition techniques and silicone chemistries transform durable stainless steel tubing into a chromatographically inert material. AT™ Steel activity tested steel tubing is suitable for sample loops, transfer lines, capillary, and packed GC columns.

AT™ Steel may be cut with standard tubing cutters or high speed wheel cutters and can be rinsed with common solvents to remove particulates and contamination that have built up during use. To ensure a truly inert pathway, use AT™ Steel treated fittings. Sold separately below.

AT™ Steel Tubing

i.d.	6ft Length Part No.	25ft Length Part No.	50ft Length Part No.	100ft Length Part No.
1/16" o.d. Tubing				
0.010"	**11060**	**11061**	**11062**	**11063**
0.020"	**11064**	**11065**	**11066**	**11067**
0.030"	**11068**	**11069**	**11070**	**11071**
0.040"	**11072**	**11073**	**11074**	**—**
1/8" o.d. Tubing				
0.085"	**11076**	**11077**	**11078**	**—**

Straight Stainless Steel Tubing

- Type 304 Stainless Steel
- 6ft or 10ft lengths


5097

Straight Stainless Steel Tubing

o.d.	i.d.	Length*	Qty.	Part No.
1/8" (3.18mm)	0.085" (2.16mm)	6ft	10	**30106ST**
1/8" (3.18mm)	0.085" (2.16mm)	10ft	10	**301010ST**
1/4" (6.35mm)	0.210" (5.33mm)	6ft	10	**30306ST**
1/4" (6.35mm)	0.210" (5.33mm)	10ft	10	**303010ST**

*10ft lengths must ship via motor freight.

PTFE-Coated Stainless Steel Tubing

- Sturdy SS tube with 0.001" thick PTFE coating
- Must be preconditioned at 250°C for three hours


5103

PTFE-Coated Stainless Steel Tubing

o.d.	i.d.	Length	Part No.
1/8" (3.18mm)	0.085" (2.16mm)	50ft	**3142**
1/4" (6.35mm)	0.210" (5.33mm)	50ft	**3144**

*Minimum tubing order is 3ft.

tubing

tech tip

Choosing a tubing material for GC analysis.

A number of options are available for packed column tubing. The most inert material is glass, which should be used for active compounds. Glass-lined tubing and AT™ Steel provide the inert surface of glass combined with the mechanical strength of a metal column.

Metal tubing provides an economical and rugged column for suitable application. Passivated nickel tubing can frequently be used with active compounds such as phenols and amines. Stainless steel tubing is recommended for hydrocarbon, fixed gas, and solvent analyses where column inertness is less of a concern.

PTFE tubing is extremely inert, but due to temperature limitations and poor column efficiency, PTFE is generally only recommended for the analysis of corrosive gases which are too reactive for glass.