



HICHROM

Chromatography Columns and Supplies

**LC CONSUMABLES
AND ACCESSORIES
Tubing**

Catalogue 9

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TUBING

Most HPLC systems are plumbed with 1/16" o.d. tubing, which is produced in a range of materials. PEEK™ tubing has proved to be superior to stainless steel in many HPLC applications, especially where biological samples are analysed or where contact between sample and metal components must be avoided. Tubing length and i.d. should be kept to a minimum to minimise extra-column dead volume and band broadening.

Properties of different material tubing

Tubing Material	Tubing o.d.	Max. Recommended Operating Temp. (°C)	Max. Pressure for 1/16" Tubing (psi)	Chemical Resistance
Stainless steel	1/8", 1/16", 1/32"	289	n/a	May corrode with chloride salts or other buffers. May adsorb proteins. pH range 1-14.
PEEK™	1/16", 1/32", 360µm	100	7,000	Inert to almost all organic solvents. Concentrated nitric and sulphuric acids, DMSO, THF and CH ₂ Cl ₂ are not recommended. pH range 0-14.
PEEKsil™	1/16", 1/32", 360µm	100	10,000	Compatible with most organic solvents. Avoid hydrofluoric acid. pH range 0-10.
Fused silica	360µm	100	n/a	pH range 0-10.
PTFE	1/8", 1/16"	100	900	Excellent resistance to all organic solvents, acids and alkalis. pH range 0-14.

High Pressure Tubing

Tubing of 0.007" i.d. is suitable for minimal dead volume injector-column or column-detector connections of microbore (1.0 – 2.1 mm i.d.) columns or short columns containing 3µm material. For material of 2µm particle size, tubing of 0.005" can also be used. Sample and solvent must be filtered to avoid clogging and blockages of very small bore tubing.

The 0.010" tubing is suitable for connection of analytical and semi-preparative columns containing 5µm and 10µm packing material. It should be used in all parts of the system where dead volume needs to be kept to a minimum.

The 0.020" and 0.030" i.d. tubing are suitable for use in preparative systems or in non-critical connections, eg. pump to sample injector, where low flow resistance is more important than low internal volume.

Stainless Steel Tubing

- Precision bore 316 stainless steel
- Passivated for chemical resistance
- Square, burr-free ends
- Continuous coils or precut lengths

Precision bore 1/16" o.d. 316 stainless steel tubing is commonly used to connect HPLC components.

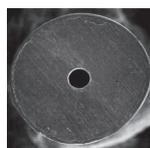
Stainless steel tubing can be supplied in continuous coils up to 25 metres in length or as precut lengths. Precut lengths have the advantage of precision finish and cut, which is especially important where low dead volume connections are required.



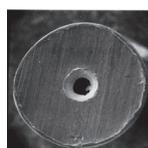
Ordering Information¹

Stainless steel tubing (1/16" o.d.)

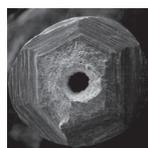
Tubing i.d.		Catalogue No.	Price/metre
Inches	mm		
0.007	0.17	01-SS-07	
0.010	0.25	01-SS-10	
0.020	0.50	01-SS-20	
0.030	0.75	01-SS-30	
0.040	1.00	01-SS-40	



Precut tubing



Tubing cut by a commercially available tubing cutter



File cut tubing

Precut stainless steel tubing (1/16" o.d.)

Tubing i.d.		Length (cm)	Quantity (/pk)	Catalogue No.	Price
Inches	mm				
0.005	0.125	5	5	05-SS-05	
0.005	0.125	10	5	10-SS-05	
0.005	0.125	20	5	20-SS-05	
0.007	0.17	5	5	05-SS-07	
0.007	0.17	10	5	10-SS-07	
0.007	0.17	20	5	20-SS-07	
0.010	0.25	5	5	05-SS-10	
0.010	0.25	10	5	10-SS-10	
0.010	0.25	20	5	20-SS-10	
0.020	0.50	25	2	25-SS-20	
0.020	0.50	50	1	50-SS-20	

¹ Other dimensions available on request

Tubing (continued)

PEEK™ Tubing

- Biocompatible, inert and easily cut
- Good for high pressure applications

PEEK™ (polyetheretherketone) polymer tubing is biocompatible and chemically inert to most solvents. It is completely flexible, can easily be cut to desired lengths and is suitable for a wide range of applications. PEEK tubing can be used with stainless steel or polymer fittings. It has a very smooth internal surface and is the least permeable to gas of all the polymer tubing materials. 1/16" o.d. tubing (commonly 0.010" i.d.) is generally suitable for use throughout an analytical HPLC system. Alternative o.d. tubing, eg. 1/8" for high pressure semi-preparative systems and 360µm for capillary systems, is also available.

Ordering Information – PEEK Tubing

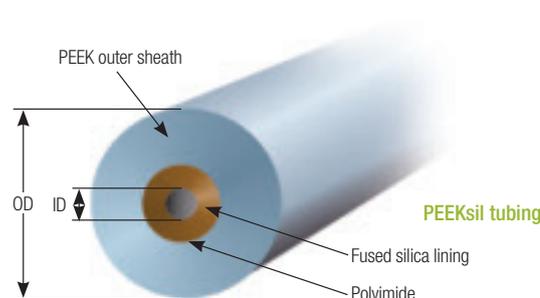
Tubing i.d. (1/16" o.d.)		Catalogue No.	Price/metre
Inches	mm		
0.005	0.13	16-PEEK-05	
0.007	0.17	16-PEEK-07	
0.010	0.25	16-PEEK-10	
0.020	0.50	16-PEEK-20	
0.030	0.75	16-PEEK-30	



PEEKsil™ Tubing

- PEEK covered fused silica
- Withstands high pressures
- Inert smooth flow path, to minimise band broadening

PEEKsil™ tubing maintains the ease of use of PEEK tubing, but offers tight i.d. tolerances. It has excellent chemical compatibility and is square-cut and polished, to make perfect connections. It is ideal for plumbing capillary and micro LC systems where conventional 1/16" or 1/32" fittings (metal or polymer) are used. It is advisable to purchase precut lengths. Please contact Hichrom for further details and ordering information.



Fused Silica Tubing

Fused silica tubing is manufactured from synthetic fused silica with a polyimide coating. It is used for micro- and nano-scale HPLC and capillary electrophoresis, with the most common o.d. being 360µm. Please contact Hichrom for further details and ordering information.

Low Pressure PTFE Tubing

- Economical
- Flexible
- Excellent solvent resistance

PTFE (polytetrafluoroethylene) is widely used in all low pressure laboratory applications. It is the most common tubing used to connect the solvent reservoir to the pump. It is inert to all chemicals used in HPLC. PTFE is relatively porous and low molecular weight compounds can diffuse through the tubing wall.

Ordering Information – Low Pressure PTFE Tubing

Tubing i.d.		Tubing o.d. (Inches)	Catalogue No.	Price/metre
Inches	mm			
0.020	0.50	1/16	16-PTFE-20	
0.030	0.75	1/16	16-PTFE-30	
0.062	1.58	1/8	08-PTFE-62	

Tubing Cutters

Stainless Steel Tubing Cutter

- Ideal for cutting 1/16" and 1/8" stainless steel tubing
- Smooth, uniform cuts



HI-192

Polymer Tubing Cutter

- Standard cutter for 1/16" and 1/8" o.d. tubing
- Compatible with PEEK and PTFE (Teflon) tubing
- Flat burr-free cuts
- Guide holes to ensure precise cutting
- Includes 5 replacement blades



HI-191

Ordering Information – Tubing Cutters

Description	Catalogue No.	Price
Stainless steel tubing cutter	HI-192	
Replacement cutter wheel for HI-192	HI-193	
Standard polymer tubing cutter for 1/16" and 1/8" o.d. tubing	HI-191	
Replacement blades for HI-191, 5/pk	HI-189	