

# BULK TUBING

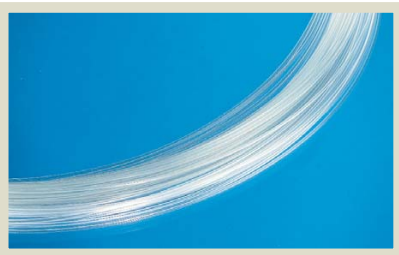
Instech Solomon offers a range of bulk tubing for laboratory animal infusion and microdialysis, including co-extruded PE/PVC, polyethylene, polyurethane, PVC and FEP tubing.

See *Tubing Size Reference Chart and Guide to Tubing Fit at the end of this catalog.*

## TUBING MATERIAL COMPARISON

	Silicone	Polyurethane	Polyethylene	Polyvinyl-chloride
Hemocompatibility	Excellent	Excellent	Fair	Fair
Compound Compatibility	Possible reactivity	Possible reactivity	Inert	Possible reactivity
Stiffness	Soft	Soft	Stiff	Soft or stiff
Ease of Insertion	Difficult	Moderately easy	Easy	Moderately easy
Sizes Available	Many	Many	Many	Few
Ease of Bonding	Excellent	Fair	Poor	Fair
Memory	Excellent	Poor	Poor	Poor
Tear Strength	Poor	Excellent	Excellent	Excellent
Sterilization	EtO or steam	EtO	EtO	EtO

## Polyethylene Tubing



Instech Solomon's PE tubing solves one of the biggest problems with PE—the price. The low density formulation (LDPE) is comparable to the product offered by the large catalog suppliers.

Part No.	Compare	Fits	OD (in)	OD (mm)	ID (in)	ID (mm)
BPE-T10	PE-10		.024	0.60	.011	0.28
BPE-T20	PE-20		.043	1.09	.015	0.38
BPE-T25		25ga	.036	0.91	.018	0.46
BPE-T50	PE-50	22ga	.038	0.97	.023	0.58
BPE-T60	PE-60	20ga	.048	1.22	.030	0.76
BPE-T90	PE-90		.050	1.27	.034	0.86

Milky, 100 ft. (30.5 m) per bag, non-sterile. Do not autoclave.

[www.instechlabs.com/Infusion/tubing/polyethylene.php](http://www.instechlabs.com/Infusion/tubing/polyethylene.php)

## Silicone (SILASTIC®) Tubing



This tubing, made from Dow Corning SILASTIC®, is the same platinum-cure material that has been implanted in laboratory animals for years. Sterilize by EtO gas or steam/autoclave.

Part No.	Approx. Size	OD (in)	OD (mm)	ID (in)	ID (mm)
BTSIL-T025	2 French	.025	0.64	.012	0.31
BTSIL-T037	3 French	.037	0.94	.020	0.51
BTSIL-T047	3.5 French	.047	1.2	.025	0.64
BTSIL-T065	5 French	.065	1.7	.030	0.76
BTSIL-T085	7 French	.085	2.2	.040	1.0

Clear, 50ft (15m) length, non-sterile

[www.instechlabs.com/Infusion/tubing/silastic.php](http://www.instechlabs.com/Infusion/tubing/silastic.php)

## Polyurethane Intravascular Tubing



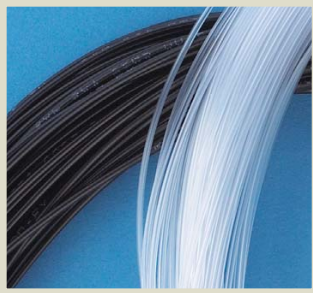
This is the most commonly used formulation of polyurethane for laboratory animal research. This same tubing is used to manufacture SoloCath PU and CBAS finished catheters. Sterilize by ethylene oxide gas.

Part No.	Size	OD (in)	OD (mm)	ID (in)	ID (mm)
BPU-T20	2 French <sup>1</sup>	.025	0.64	.013	0.33
BPU-T30	3 French <sup>1</sup>	.036	0.91	.023	0.58
BPU-T35	3.5 French <sup>1</sup>	.047	1.20	.027	0.69
BPU-T50	5 French <sup>2</sup>	.065	1.65	.040	1.02
BPU-T70	7 French <sup>2</sup>	.096	2.44	.052	1.32

<sup>1</sup> Clear, 108ft (33m) per bag, 9ea of 12ft (3.65m) lengths, non-sterile  
<sup>2</sup> Clear, 100ft (30.5m) per bag, 24in (60cm) lengths, non-sterile

[www.instechlabs.com/Infusion/tubing/polyurethaneIntra.php](http://www.instechlabs.com/Infusion/tubing/polyurethaneIntra.php)

## CO-EX™ External Infusion Tubing

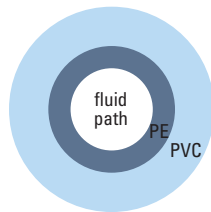


Instech Solomon's CO-EX™ tubing is co-extruded with PE on the inside for compound compatibility and PVC on the outside for durability.

It is available in two sizes to mate with 22ga or 25ga swivels, couplers and luer stubs. A version with black PVC is available for protection of light sensitive compounds. Not for intravascular use.

### CO-EX MINIMIZES:

- Absorption into tubing
- Adsorption onto tubing
- Evaporation through tubing
- Leaching plasticizers
- Kinks



Part No.	Fits	Color	OD (in)	OD (mm)	ID (in)	ID (mm)
BCOEX-T22	22ga	Clear	.064	1.60	.024	0.61
BCOEX-T22BLK <span style="border: 1px solid red; padding: 2px;">NEW</span>	22ga	Black	.064	1.60	.024	0.61
BCOEX-T25	25ga	Clear	.051	1.30	.017	0.43

Clear, 100 ft. (30.5 m) per bag, non-sterile

[www.instechlabs.com/Infusion/tubing/coex.php](http://www.instechlabs.com/Infusion/tubing/coex.php)

CO-EX is a trademark of Solomon Scientific

## Polyurethane External Infusion Tubing



This PU tubing is designed for a reliable friction fit with 22 or 25 gauge swivels and couplers. The elasticity and thick wall minimizes the chance of accidental disconnection, kinking or perforation. Used in VAH and VAB tethers. Not for intravascular use.

Part No.	Fits	OD (in)	OD (mm)	ID (in)	ID (mm)
VAHBPU-T22	22ga	.055	1.4	.025	0.6
VAHBPU-T25	25ga	.037	0.9	.017	0.4

Clear, 100 ft (30.5 m) per bag, non-sterile

[www.instechlabs.com/Infusion/tubing/pu.php](http://www.instechlabs.com/Infusion/tubing/pu.php)

## PVC Tubing

Durable and resistant to kinks. Not for intravascular use.

Part No.	Size	OD (in)	OD (mm)	ID (in)	ID (mm)
BPVC-T30	3 French	.035	0.89	.025	0.64
BPVC-T35	3.5 French	.047	1.19	.030	0.74

Clear, 100 ft (30.5 m) per bag, non-sterile

[www.instechlabs.com/Infusion/tubing/pvc.php](http://www.instechlabs.com/Infusion/tubing/pvc.php)

# MICRODIALYSIS TUBING

## FEP Microdialysis Tubing NEW



Designed to connect microdialysis probes to swivels, pumps and fraction collectors, this custom-extruded FEP tubing has the same inner and outer diameters as our 22ga quartz-lined swivels: 0.006x0.028in (0.15x0.71mm) with a tolerance of ±0.001in. Internal volume is approximately 0.18µL/cm. Use MC015/10 tubing connectors to make zero dead-volume connections.

Part No.	Description	Unit
BFEP-T22Q	FEP tubing, .006x.028in, 1m lengths, sterile	pkg of 10

[www.instechlabs.com/Infusion/tubing/fep.php](http://www.instechlabs.com/Infusion/tubing/fep.php)

## Microdialysis Tubing Connectors



These silicone tubing segments are sized to connect FEP microdialysis tubing to swivels, probes, and syringes with no added dead volume. They do not need to be swelled by soaking in alcohol prior to installation, as do traditional "blue widgets," which in turn eliminates the possibility of damage to the swivel when removing tubing.

Part No.	Description	Unit
MC015/10	Microdialysis tubing connector, .015inIDx10mm	pkg of 100

[www.instechlabs.com/Infusion/tubing/mc.php](http://www.instechlabs.com/Infusion/tubing/mc.php)

# TUBING CONNECTORS

Luer stubs, couplers, plugs, and injection ports are used to connect and allow access to the various pieces of an infusion system. Instech Solomon supplies these components individually or as part of pre-assembled infusion kits.

See *Tubing Size Reference Chart and Guide to Tubing Fit at the end of this catalog.*

## Luer Stubs (Blunt Needles)

Female luer stubs have blunt tips to connect infusion tubing or catheters to syringes or other male luer connectors. Can be sterilized on request.



Description	Part Numbers	
	100 pcs	1000 pcs
Luer stub, 14ga (dark green), 0.5in (13mm)	LS14	LS14K
Luer stub, 15ga (amber), 0.5in (13mm)	LS15	LS15K
Luer stub, 16ga (violet), 0.5in (13mm)	LS16	LS16K
Luer stub, 17ga (white), 0.5in (13mm)	LS17	LS17K
Luer stub, 18ga (green), 0.5in (13mm)	LS18	LS18K
Luer stub, 20ga (pink), 0.5in (13mm)	LS20	LS20K
Luer stub, 21ga (purple), 0.5in (13mm)	LS21	LS21K
Luer stub, 22ga (blue), 0.5in (13mm)	LS22	LS22K
Luer stub, 22ga (blue), 0.25in (6mm)	LS22/6	LS22/6K
Luer stub, 23ga (orange), 0.5in (13mm)	LS23	LS23K
Luer stub, 25ga (red), 0.5in (13mm)	LS25	LS25K
Luer stub, 27ga (gray), 0.5in (13mm)	LS27	LS27K

Provided in a single tube, non-sterile.

[www.instechlabs.com/Infusion/tubing/luer.php](http://www.instechlabs.com/Infusion/tubing/luer.php)

## Couplers & Plugs



Use couplers to connect catheters to external infusion tubing. Use a plug to seal off an externalized catheter before an infusion experiment begins.

These are made of medical grade stainless steel and deburred to prevent damage to tubing. Can be sterilized on request.

Part No.	Description	Unit
SC17/15	Stainless steel tubing coupler, 17ga x 15mm	pkg of 100
SC20/15	Stainless steel tubing coupler, 20ga x 15mm	pkg of 100
SC22/15	Stainless steel tubing coupler, 22ga x 15mm	pkg of 100
SC22/8	Stainless steel tubing coupler, 22ga x 8mm	pkg of 100
SC23/8	Stainless steel tubing coupler, 23ga x 8mm	pkg of 100
SC25/10	Stainless steel tubing coupler, 25ga x 10mm	pkg of 100
SC27/8	Stainless steel tubing coupler, 27ga x 8mm	pkg of 100
SP20/12	Stainless steel catheter plug, 20ga x 12mm	pkg of 100
SP22/12	Stainless steel catheter plug, 22ga x 12mm	pkg of 100
SP23/12	Stainless steel catheter plug, 23ga x 12mm	pkg of 100
SP25/12	Stainless steel catheter plug, 25ga x 12mm	pkg of 100

100 pieces per package, non-sterile

[www.instechlabs.com/Infusion/tubing/connectors.php](http://www.instechlabs.com/Infusion/tubing/connectors.php)

## Right Angle Coupler NEW



These 22ga couplers are bent to a right angle; one side is approximately 11mm; the other 5mm. Provided with a sealed segment of tubing to close off one end.

Part No.	Description	Unit
SC22/15RA	Right angle couplers, 22ga, sterile	ea

Individually packaged and sterilized by EtO. Minimum order quantity is 5 pieces.

[www.instechlabs.com/Infusion/tubing/ra.php](http://www.instechlabs.com/Infusion/tubing/ra.php)

# TUBING CONNECTORS

## Pin Plugs NEW

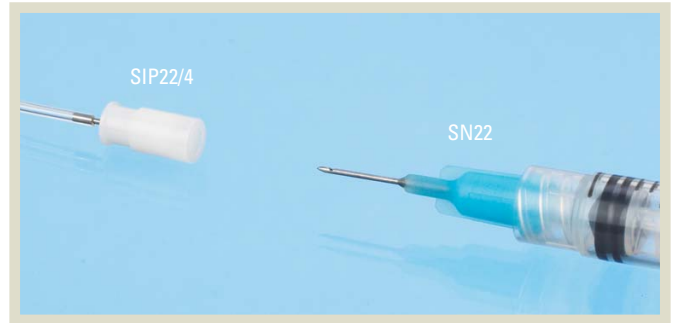


These catheter plugs feature a 22 gauge-12mm medical grade stainless steel plug with a polyethylene handle molded on one end to simplify insertion and removal from catheters.

The pin handle, 3mm diameter x 6mm long, is also designed to fit into the stalk of a DC95 button and thereby seal it when the catheter is not externalized. A raised ring in the middle of the handle prevents the pin plug from advancing too far into the button stalk.

Part No.	Description	Unit
SPP22/12	Stainless steel pin plugs, 22ga x 12mm	pkg of 100
Sterile, in 5 pouches of 20 pieces each.		
<a href="http://www.instechlabs.com/Infusion/tubing/pinplugs.php">www.instechlabs.com/Infusion/tubing/pinplugs.php</a>		

## Miniature Injection Port

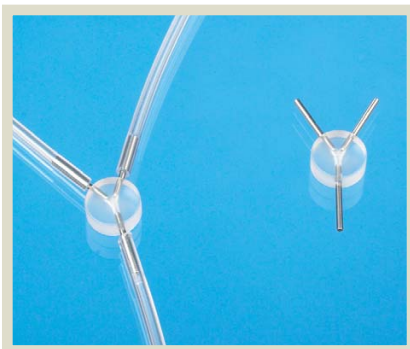


Use the SIP22/4 to terminate infusion tubing or catheters. It is ideal for an intermittent second channel when the primary channel is run through a single channel swivel. Inject, flush or sample using a syringe fitted with an SN22 needle or the mating VAHLS22/30, which offers protection from needle sticks.

The septum is good for approximately 200 sticks. The port measures 5.7mm in diameter by 11.8mm long and weighs 360mg. Dead volume is only 8µl. The 22ga tubing inlet is 4.3mm long and makes a reliable friction fit with 3Fr PU catheters, 3Fr PU tubing, or PE50 tubing.

Part No.	Description	Unit
SIP22/4	Miniature tubing injection port, 22ga x 4mm	pkg of 12
SN22	Septum needle for VAH and SIP, 22ga x 10mm	pkg of 12
VAHLS22/30	Male VAH connector with luer inlet, 3cm tubing	pkg of 12
Individually packaged and EtO sterilized. The SIP22/4 is not designed or intended for implantation.		
<a href="http://www.instechlabs.com/Infusion/tubing/sip.php">www.instechlabs.com/Infusion/tubing/sip.php</a>		

## Y Connector (3-Way Connector) NEW



Instech's Y connectors feature three stainless steel tubes and a hub made of PCTFE, a chemically resistant plastic.

Tubes extend approximately 6mm from the hub. Dead volume of the 22ga version from one channel to the next is less than 3µL.



Part No.	Description	Unit
SCY22	Y connector, 22ga, sterile	ea
SCY25	Y connector, 25ga, sterile	ea
Individually packaged and EtO sterilized		
<a href="http://www.instechlabs.com/Infusion/tubing/y.php">www.instechlabs.com/Infusion/tubing/y.php</a>		

# TUBING SIZE REFERENCE CHART

INSTECH SOLOMON SELLS ONLY THE SIZES LISTED IN RED

## GAUGE

For swivels, needles and cannulae

Gauge	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
13TW	0.095	2.41	0.077	1.96	30.0
13	0.095	2.41	0.071	1.80	25.5
14TW	0.083	2.11	0.067	1.70	22.8
14	0.083	2.11	0.063	1.60	20.1
15TW	0.072	1.83	0.061	1.55	18.9
15	0.072	1.83	0.054	1.37	14.8
16TW	0.065	1.65	0.054	1.37	14.8
16	0.065	1.65	0.047	1.19	11.1
17TW	0.058	1.47	0.048	1.22	11.7
17	0.058	1.47	0.042	1.07	8.99
18TW	0.050	1.27	0.039	0.99	7.70
18	0.050	1.27	0.033	0.84	5.54
19TW	0.042	1.07	0.033	0.84	5.54
19	0.042	1.07	0.027	0.69	3.74
20TW	0.036	0.91	0.026	0.66	3.42
20	0.036	0.91	0.024	0.61	2.92
21TW	0.032	0.81	0.023	0.58	2.64
21	0.032	0.81	0.020	0.51	2.04
22TW	0.028	0.71	0.020	0.51	2.04
22	0.028	0.71	0.016	0.41	1.32
22Q	0.028	0.71	0.006	0.15	0.18
23TW	0.025	0.64	0.017	0.43	1.45
23	0.025	0.64	0.013	0.33	0.86
24TW	0.022	0.56	0.015	0.38	1.13
24	0.022	0.56	0.012	0.30	0.71
25TW	0.020	0.51	0.012	0.30	0.71
25	0.020	0.51	0.010	0.25	0.49
26	0.018	0.46	0.010	0.25	0.49
27	0.016	0.41	0.008	0.20	0.31
28	0.014	0.36	0.007	0.18	0.25
29	0.013	0.33	0.007	0.18	0.25
30	0.012	0.30	0.006	0.15	0.18

TW=thin wall, Q=quartz-lined swivel channel

## FRENCH

French scale defines catheter OD (3Fr = 1mm)

French	OD (in)	OD (mm)
1Fr	0.013	0.33
2Fr	0.026	0.67
3Fr	0.039	1.00
4Fr	0.053	1.33
5Fr	0.066	1.67
6Fr	0.079	2.00
7Fr	0.092	2.33
8Fr	0.105	2.67
9Fr	0.118	3.00
10Fr	0.131	3.33
11Fr	0.144	3.67
12Fr	0.158	4.00
13Fr	0.170	4.33
14Fr	0.184	4.67
15Fr	0.197	5.00

## POLYURETHANE (PU)

See pages 41, 48

	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
2 French	0.025	0.64	0.013	0.33	0.9
3 French	0.036	0.91	0.023	0.58	2.6
3.5 French	0.047	1.20	0.027	0.69	3.7
5 French	0.065	1.65	0.040	1.02	8.2
7 French	0.096	2.43	0.052	1.32	13.7
VAHBPU-T25	0.037	0.94	0.017	0.43	1.5
VAHBPU-T22	0.055	1.40	0.025	0.64	3.2

## SILICONE (SIL)

See page 41, 48

	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
2 French	0.025	0.64	0.012	0.30	0.7
3 French	0.037	0.94	0.020	0.51	2.0
3.5 French	0.047	1.19	0.025	0.64	3.2
5 French	0.065	1.65	0.030	0.76	4.5
7 French	0.085	2.16	0.040	1.02	8.2
8 French	0.100	2.54	0.054	1.37	14.7
9 French	0.125	3.18	0.062	1.57	19.4

## POLYETHYLENE (PE)

See page 48

	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
PE-10	0.024	0.61	0.011	0.28	0.6
PE-20	0.043	1.09	0.015	0.38	1.1
PE-25	0.036	0.91	0.018	0.46	1.7
PE-50	0.038	0.97	0.023	0.58	2.6
PE-60	0.048	1.22	0.030	0.76	4.5
PE-90	0.050	1.27	0.034	0.86	5.8
PE-100	0.060	1.52	0.034	0.86	5.8
PE-160	0.062	1.57	0.045	1.14	10.2
PE-190	0.067	1.70	0.047	1.19	11.1
PE-200	0.075	1.91	0.055	1.40	15.4
PE-205	0.082	2.08	0.062	1.57	19.4
PE-240	0.095	2.41	0.066	1.68	22.2
PE-260	0.110	2.79	0.070	1.78	24.9
PE-280	0.128	3.25	0.085	2.16	36.6
PE-320	0.138	3.51	0.106	2.69	56.8
PE-350	0.157	3.99	0.125	3.18	79.4
PE-360	0.190	4.83	0.148	3.76	111

## CO-EX™

See page 49

	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
BCOEX-T25	0.051	1.30	0.017	0.43	1.5
BCOEX-T22	0.064	1.60	0.024	0.61	2.9

## PVC (TYGON®)

See page 49

	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
BPVC-T30	0.035	0.89	0.025	0.64	3.2
BPVC-T35	0.047	1.19	0.030	0.74	4.3
S54-HL (stiffer)	0.030	0.76	0.010	0.25	0.5
	0.060	1.52	0.020	0.51	2.0
	0.070	1.78	0.040	1.02	8.2
	0.090	2.29	0.030	0.76	4.5
	0.090	2.29	0.050	1.27	12.7
S50-HL (softer)	0.093	2.36	0.031	0.79	4.9
	0.125	3.18	0.062	1.57	19.4
	0.156	3.96	0.093	2.36	43.7
	0.188	4.77	0.062	1.57	19.4

Values are approximate; in particular IDs of extruded tubing can vary by as much as 15% from nominal value. Tygon is a registered trademark of Saint-Gobain Performance Plastics Corporation. BPVC-T30 and -T35 are not manufactured by Saint-Gobain and do not carry the Tygon trademark. CO-EX is a trademark of Solomon Scientific.

# GUIDE TO TUBING FIT

## RIGID TUBING

## FLEXIBLE TUBING

