

# 7

## QUESTIONS TO ASK WHEN CHOOSING RESEARCH TUBING

1

### FIT

How well do the tubing dimensions match the rest of your system?

2

### MATERIAL

Do the physical properties of the material make sense for your use?

3

### KINK RESISTANCE

Will the tubing need to make tight turns?

4

### COMPOUND COMPATIBILITY

How compatible is the tube material with the fluid that will be flowing through it?

5

### AIR PERMEABILITY

How important is it that air not permeate through the tube?

6

### IMPLANTATION SUITABILITY

If the tube will be implanted, how suitable is it for use inside the body (animal research only)?

7

### COST

Will it fit your budget?

# TUBING MATERIALS

	Silicone (SI)	Polyethylene (PE)	Co-Extruded PE/PVC	Polyurethane (PU)
Stiff				
Stretchy				
Sticky				
Bondable				
Kink Resistant				
Compound Compatibility				
Low Air Permeability				
Implantable				

# TUBING REFERENCE CHART

## Gauge

For swivels, needles, connectors, ports and cannulae

Gauge	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
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
31	0.010	0.26	0.005	0.13	0.12
32	0.009	0.24	0.004	0.10	0.08

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

# TUBING REFERENCE CHART

## Silicone (SIL)

Item	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
BTSIL-025 (2Fr)	0.025	0.64	0.012	0.30	0.7
BTSIL-037 (3Fr)	0.037	0.94	0.020	0.51	2.0
BTSIL-047 (3.5Fr)	0.047	1.19	0.025	0.64	3.2
BTSIL-065 (5Fr)	0.065	1.65	0.030	0.76	4.5
BTSIL-085 (7Fr)	0.085	2.16	0.040	1.02	8.2

## Polyethylene (PE)

Item	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
BTPE-10	0.024	0.61	0.011	0.28	0.6
BTPE-20	0.043	1.09	0.015	0.38	1.1
BTPE-25	0.036	0.91	0.018	0.46	1.7
BTP-50	0.038	0.97	0.023	0.58	2.6
BTPE-60	0.048	1.22	0.030	0.76	4.5
BTPE-90	0.050	1.27	0.034	0.86	5.8

## Polyurethane (PU)

Item	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
BTPU-010 (32Ga)	0.010	0.25	0.005	0.13	0.13
BTPU-014 (1Fr)	0.014	0.36	0.007	0.18	0.3
BTPU-027 (2Fr)	0.027	0.69	0.017	0.43	1.5
BTPU-040 (3Fr)	0.040	1.01	0.025	0.64	3.2
VAHBPU-T25	0.037	0.94	0.017	0.43	1.5
VAHBPU-T22	0.555	1.40	0.024	0.61	2.9

## Co-Extruded PE/PVC

Item	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
BTCOEX-25	0.051	1.30	0.017	0.43	1.5
BTCOEX-22	0.064	1.60	0.024	0.61	2.9

## FEP

Item	OD (in)	OD (mm)	ID (in)	ID (mm)	Volume (µl/cm)
BFEP-T22Q	0.028	0.71	0.006	0.15	0.18

# GUIDE TO TUBING FIT

INSTTECH

## Flexible Tube

## Rigid Tube

28ga

27ga

25ga

23ga

22ga

20ga

BTPU-010 (32Ga PU)

BTPU-014 (1Fr PU)

PE-10



BTSIL-025



PE-20



BTPU-027 (2Fr PU)



VAHBPU-T25



BTCOEX-25



PE-25



BTSIL-037



PE-50



BTPU-040 (3Fr PU)



VAHBPU-T22



BTCOEX-22



BTSIL-047



PE-60



BTSIL-065



PE-90

