

SOLOCATH™ CATHETERS

Instech Solomon has over 20 years experience designing and manufacturing laboratory animal catheters. This expertise translates into dependable designs, high-quality manufacturing and strong technical support.

A vital feature of an Instech Solomon finished catheter is the rounded distal tip. Data suggest the rounded tip is less traumatic to the intimal lining of blood vessels. Square cut or bevel cut catheters have edges which irritate the blood vessel's intimal lining, hastening the host's thrombogenic response.

SoloCath catheters are available in silicone, polyurethane or heparin-coated polyurethane and in sizes for mice to large animals. Most catheter models include moveable suture bulbs as a standard feature, and many other options are available on a customized basis.

Specifications

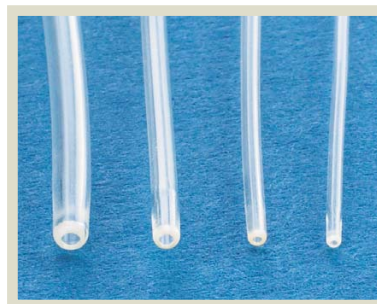
Silicone	2Fr	3Fr	3.5Fr	5Fr	7Fr	
OD (inches)	.025	.037	.047	.065	.085	
ID (inches)	.012	.020	.025	.030	.040	
OD (mm)	0.64	0.94	1.19	1.65	2.16	
ID (mm)	0.30	0.51	0.64	0.76	1.02	
PU / CBAS	1.2Fr ¹	2Fr	3Fr	3.5Fr	5Fr	7Fr
OD (inches)	.016	.025	.036	.047	.065	.096
ID (inches)	.009	.013	.023	.027	.040	.052
OD (mm)	0.41	0.64	0.91	1.19	1.65	2.43
ID (mm)	0.23	0.33	0.58	0.69	1.02	1.32

Applications

Mouse	●	●				
Rat <100g	●	●				
Rat 100-200g		●				
Rat 200-300g		●	●			
Rat 300-350g			●	●		
Cat				●	●	
Rabbit				●	●	●
Dog >8kg					●	●
Mini-Pig, adult					●	●
Pig, adult						●
NHP <1kg			●			
NHP 1-2kg				●		
NHP >2kg				●	●	

Catheter application guide approximate for jugular v, carotid a, femoral a/v.
¹ 1.2Fr indicates dimensions of distal end of PU FunnelCath.

Polyurethane Catheters



Polyurethane has supplanted silicone as the catheter material of choice for chronic vascular access because of its ease of insertion, durability and biocompatibility. Unless otherwise indicated, PU catheters are clear with rounded tips, two

moveable suture bulbs and attachment sleeve (no depth markings). Individually packaged and EtO sterilized. Minimum order quantity is 5 pieces.

Part No.	Description	Unit
PU-C20	2 French, 60 cm, no luer	ea
PU-C30	3 French, 60 cm, no luer	ea
PU-C35	3.5 French, 60 cm, no luer	ea
PU-C50	5 French, 60 cm, no luer	ea
PU-C70	7 French, 60 cm, no luer	ea

☎ <http://www.instechlabs.com/Infusion/catheters/PU.php>

CBAS® Heparin-Coated Polyurethane Catheters

Consider using CBAS® heparin-coated catheters for improved patency in long-duration studies, blood sampling applications, and when working with high-value animals. CBAS (Carmeda BioActive Surface) is a patented process from Carmeda AB, a W.L. Gore company, for applying heparin to the surfaces of biomaterials. The active sequence of the heparin molecule serves to halt the clotting cascade.

CBAS has been used in a number of medical device applications including coronary stents (Cordis/J&J), vascular grafts (Gore), oxygenator circuits (Medtronic), artificial hearts, and others.

CBAS is the most respected thromboresistant coating available in the human-use medical device industry. It is under license to Solomon Scientific for laboratory animal research applications.

CBAS FEATURES

- Heparin bound to catheter – non-leaching
- Remains bioactive for months
- Provided EtO sterilized (do not resterilize)
- Available on polyurethane catheters only

Documented Performance. Foley et al describe longer patency and fewer positive blood cultures from CBAS-coated catheters in rats.¹ While heparin is not antimicrobial per se, it does reduce the aggregation of blood proteins on catheters, thereby minimizing the nutrients and binding sites for many microorganisms. Appelgren et al demonstrated a substantial reduction in infections from CBAS-coated catheters in humans.²

Longevity. Functional CBAS was detected on the following devices after explantation:

Pig aorta catheter	112 days ³
Human heart pump	855 days ⁴
Dog vascular graft	84 days ⁵

Non-Blood Applications. CBAS has also shown benefits in ophthalmic, urinary, lymphatic and intraperitoneal applications. For example, Zareie describes improved patency of intraperitoneal catheters coated with CBAS (80% catheter survival in rats at 5 weeks with CBAS coated catheters, versus 43% with uncoated silicone; $p < 0.05$).⁶

CBAS catheters are clear with rounded tips, two moveable suture bulbs and attachment sleeve (no depth markings). The 2Fr size is not available with the CBAS coating. Individually packaged and EtO sterilized. Minimum order is 5 pieces.

Part No.	Description	Unit
CBAS-C30	3 French, 60 cm, no luer	ea
CBAS-C35	3.5 French, 60 cm, no luer	ea
CBAS-C50	5 French, 60 cm, no luer	ea
CBAS-C70	7 French, 60 cm, no luer	ea

Ⓢ <http://www.instechlabs.com/Infusion/catheters/CBAS.php>

Silicone Catheters

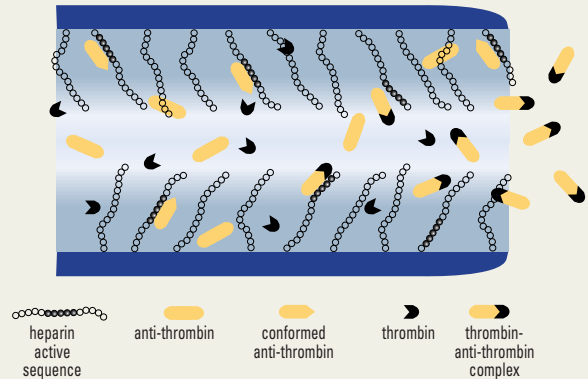


Silicone is the old standard for long-term indwelling central venous catheters in laboratory animals and humans due to its softness and biocompatibility. Unless otherwise indicated, SIL catheters are clear with rounded tips, two moveable suture bulbs, and depth markings. Individually packaged and EtO sterilized. Minimum order quantity is 5 pieces.

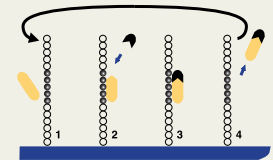
Part No.	Description	Unit
SIL-C20	2 French, 60 cm, no luer, no depth markings	ea
SIL-C30	3 French, 60 cm, no luer	ea
SIL-C35	3.5 French, 60 cm, female luer	ea
SIL-C50	5 French, 60 cm, female luer	ea
SIL-C70	7 French, 60 cm, female luer	ea

Ⓢ <http://www.instechlabs.com/Infusion/catheters/silicone.php>

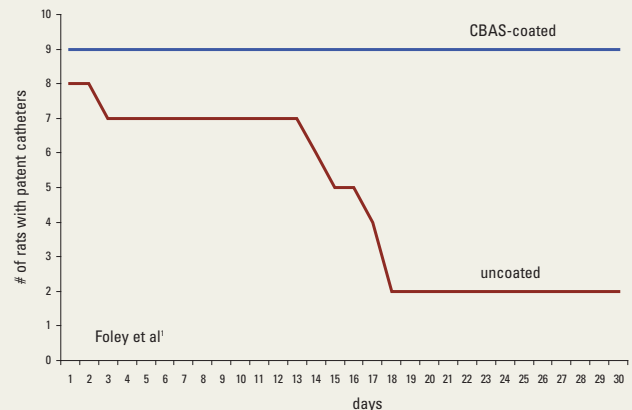
HOW CBAS WORKS



1. CBAS heparin active sequence is available to bind with antithrombin.
2. Antithrombin conforms to accelerate binding with thrombin and other coagulation factors.
3. Coagulation effect of thrombin is neutralized by formation of thrombin-antithrombin complex.
4. Thrombin-antithrombin complex washes away. CBAS heparin "active sequence" remains intact and is available repeatedly to bind with antithrombin.



PERFORMANCE OF CBAS VS. UNCOATED CATHETERS IN RATS



CBAS Bibliography

1. Foley P, et al. Effect of covalently bound heparin coating on patency and biocompatibility of long-term indwelling catheters in the rat jugular vein. *Comparative Medicine*. 52:243-8.
2. Appelgren P, et al. Surface heparinization of central venous catheters reduces microbial colonization in vitro and in vivo: results from a prospective, randomized trial. *Crit Care Med*. 24(9):1482-9. 1996.
3. Arander C, et al. Long-term stability in vivo of a thromboresistant heparinized surface. *Biomaterials*. 8:496-9. 1987.
4. Riesenfeld R, et al. Analysis of the heparin coating of EXCOR® ventricular assist device after 855 days in a patient. *Transactions of the 32nd Annual Meeting of the Society for Biomaterials*. 2007.
5. Begovac P, et al. Improvements in GORE-TEX® [WL Gore & Associates] vascular graft performance by Carmeda BioActive Surface heparin immobilization. *Eur J Vasc Endovasc Surg*. 25:432-7. 2003.
6. Zareie M, et al. Improvement of a chronic rat model for peritoneal dialysis by using heparin-coated catheters. *Advances in Peritoneal Dialysis*. 20:150-4. 2004.

SOLOCATH™ CATHETERS

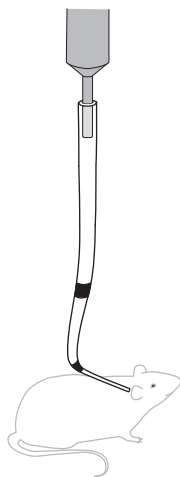
FunnelCath™ Mouse Catheter

The FunnelCath solves a common problem in mouse infusion: attaching a tiny intravascular catheter to conventional swivels or luer stubs.

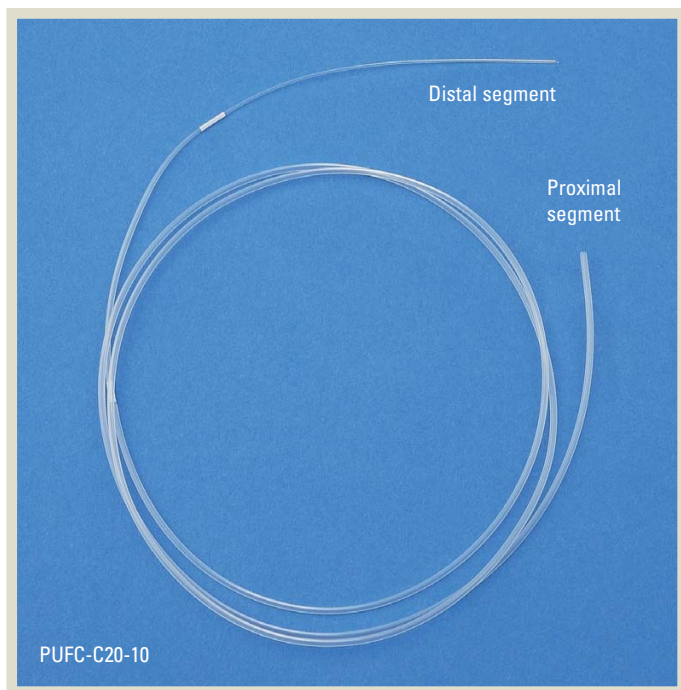
Previously there were two ways of tapering a larger catheter down to a smaller catheter. The first was to “pull down” (stretch) tubing using either an open flame or heated oil. This method was cumbersome and yielded inconsistent results. The second was to bond a smaller catheter to a larger catheter, but this was vulnerable to breakage and leakage. In contrast, FunnelCaths are tapered during the extrusion process, so it is seamless and consistent, catheter to catheter, batch to batch.

FunnelCaths are extruded from the same implant-grade polyurethane used in our SoloCaths, though a bit stiffer to facilitate placement in mice. Instech Solomon offers two sizes: the first has a proximal end that connects to a 25ga swivel and tapers down to a 1.2 French intravascular segment; the second connects to a 22ga swivel and also tapers down to 1.2 French.

Provided EtO sterilized. Minimum order quantity is 5 pieces.



Attach a 1.2Fr catheter directly to a 22 or 25ga swivel

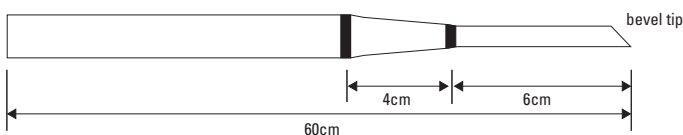


Part No.	Description	Unit
PUFC-C20-10	Polyurethane catheter, tapers from 2Fr to 1.2Fr	ea
PUFC-C30-10	Polyurethane catheter, tapers from 3Fr to 1.2Fr	ea

<http://www.instechlabs.com/Infusion/catheters/funnel.php>

Specifications

Swivel or luer end Transition zone 1.2Fr intravascular segment
 2Fr (ID: 0.46mm, OD: 0.89mm) - connects to 25ga (ID: 0.23mm, OD: 0.41mm)
 3Fr (ID: 0.66mm, OD: 1.07mm) - connects to 22ga



Silicone Gastro-Intestinal Catheter



This special 7Fr catheter includes a suture disk so that it can be anchored to the intestines. The internal lumen is sealed at the tip. A slit valve, which is normally closed to prevent occlusion from ingesta, opens during an infusion.

Part No.	Description	Unit
SIL-INT-C70	GI catheter, 7Fr, slit valve, suture disk @ 2.5cm	ea

Catheter Customization

STANDARD*

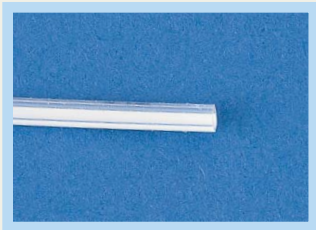
Distal tip

Rounded (recommended)



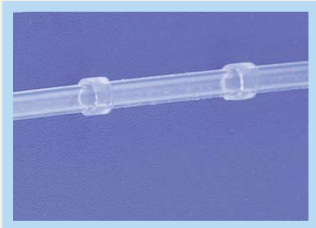
Attachments

None



Modifications

Moveable suture bulbs

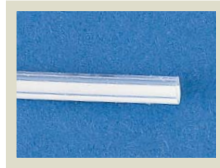


* Unless otherwise indicated in catheter description.

To define a custom catheter, see:
www.instechlabs.com/infusion/catheters/customcatheter.php

ALTERNATIVES

Squared tip



Beveled tip



Luer – pre-attached or attachable



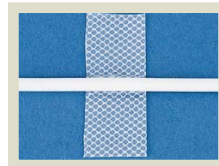
Port – pre-attached or attachable



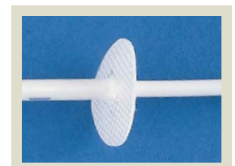
Fixed suture bulbs



Suture flange to anchor in tissue



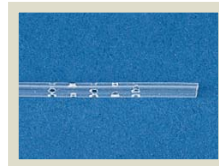
Suture disk to anchor in intestines, bladder, etc.



Dacron® felt for tissue ingrowth



Perfusion holes for catheters in organs



Sleeve for securement and strain relief



Port boot for securement and strain relief

