

# Cheminert® fittings

INERT AND BIOCOMPATIBLE

Cheminert fittings are available for high and low pressure applications, and are ideally suited for applications requiring an inert, biocompatible, metal-free flowpath. Wetted materials are PFA, FEP, CTFE, or PEEK, and uniform flow passages minimize mixing. All connections have zero dead volume.

## High pressure fittings

Cheminert high pressure fittings are rated at 5000 psi with fingertight nuts, well beyond the burst strength of most PEEK tubing. These fittings are machined from high quality inert polymers to the same exacting tolerances as our popular Valco zero dead volume fittings, and the taper angle and detail design conform to the industry standard established by the Valco line.

## High pressure Nanovolume® fittings

VICI Nanovolume® fittings generally have bore sizes of 100-150 µm (.004" - .006"), with some as small as 50 µm (.002"). The minimal transfer volume contributed by Nanovolume® components makes them especially beneficial in applications with flow rates in the µl/min range, when the transfer volume can be critical.

### 360 Micron Nanovolume® Fittings

Our newest high pressure fittings permit direct connection of 360 micron OD fused silica, PEEK, stainless, or electroformed nickel tubing without the use of liners. The ferrule snaps into the nut so that the fitting is "one-piece"; but the ferrule remains free to rotate as the nut is tightened so that the tube doesn't twist. Because of the compact size and fine 2-56 threads, a leak-free connection that seals at pressures in excess of 20,000 psi can be easily formed with the available manual tool.

### 1/32" Nanovolume® Fittings

1/32" fittings, with 50 - 150 µm bore, are ideal for high resolution capillary chromatography. Rated at 5,000 psi with fingertight nuts, they will remain leak-tight well beyond the burst strength of most PEEK tubing. These fittings are machined from high quality inert polymers to the same exacting tolerances as our popular Valco zero dead volume fittings, and the taper angle and detail design conform to the industry standard established by the Valco line.

#### TECH TIP

For optimal zero dead volume connections, make sure your tubing meets the best industry standards. OD tolerance should be nominal dimension ± .002".

Fractional dimension	Nominal dimension
1/32"	.031
1/16"	.062
1/8"	.125
1/4"	.250
3/8"	.375
1/2"	.500

#### MORE INFORMATION

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Low pressure Cheminert fittings ..... 68-77  
Nanovolume® fittings ..... 57-61  
Valco fittings ..... 6-55

#### CONVERSIONS

10,000 psi = 689.5 bar  
20,000 psi = 1,378.9 bar



## CHEMINERT FITTINGS



- For direct connection of 360 µm tubing
- Work with metal, fused silica, or PEEK
- Up to 20,000 psi (liquid) with metal or fused silica tubing
- Snap-in rotating ferrule for "one-piece" fitting with no tubing twist
- Eliminate use of liners

Our new high pressure fittings permit direct connection of 360 micron OD fused silica, PEEK, stainless, or electro-formed nickel tubing without the use of liners. The ferrule snaps into the nut so that the fitting is "one-piece," but the ferrule remains free to rotate as the nut is tightened so that the tube doesn't twist. Because of the compact size and fine 2-56 threads, a leak-free connection that seals at pressures in excess of 20,000 psi can be easily formed with the available

manual tool. 360 µm fittings are dedicated for use with either fused silica, metal, or PEEK tubing; components cannot be mixed or used with a different tubing material. Tees and crosses offer a choice of three bore sizes, and feature a "quick-mount" base with adhesive backing to make sure that the fitting is stable and fragile tubing doesn't get broken. There is also a quick-mount PEEK union.

## For PEEK or fused silica tubing — up to 10,000 psi liq\*

These fittings are constructed from premium grade natural PEEK material. They are intended for use with PEEK or fused silica tubing at pressures up to 10,000 psi, or the maximum pressure for which the tubing is rated, whichever is lower. Quick-mount versions have an integral base with double stick tape to secure fittings to a surface.

\*or burst pressure of tubing

### DIRECT CONNECTIONS TO 1/32" AND 1/16"

Valco 360 micron reducers directly connect 360 µm tubing to 1/16" or 1/32" Valco valve or fitting details, providing a positive leak-free seal with zero dead volume.

Internal fittings . . . pg 38



### MORE INFORMATION

Nanovolume® fittings  
For fused silica tubing,  
10,000+ psi liq . . pg 58  
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### CONVERSIONS

50 µm	= .002"
100 µm	= .004"
150 µm	= .006"
0.25 mm	= .010"
0.50 mm	= .020"
0.75 mm	= .030"
1/32"	= 0.8 mm
1/16"	= 1.6 mm




### Nut/ferrules, caps, plugs, tightening tool

for 360 µm tubing

	Prod No
 Nut/ferrule	C360NFPK
 Cap	C360CPK
 Plug	C360PPK
 Tightening tool	C360ET



### Unions and reducing unions

for 360 µm tubing

	Bore size:	50 micron Prod No	100 micron Prod No	150 micron Prod No
 Union, quick mount		C360QUPK2	C360QUPK4	C360QUPK6
 Union		C360UPK2	C360UPK4	C360UPK6
 Reducing union, 1/16" to 360 µm		—	—	C360RU1PK6

### Tees and crosses

for 360 µm tubing

	Bore size:	50 micron Prod No	100 micron Prod No	150 micron Prod No
 Tee, quick mount		C360QTPK2	C360QTPK4	C360QTPK6
 Cross, quick mount		C360QXPK2	C360QXPK4	C360QXPK6



## CHEMINERT FITTINGS

### For fused silica tubing — 10,000 psi liq and above\*




These fittings are constructed from HPLC grade stainless steel, with a stainless steel nut and a special ferrule which is precision machined from electroformed nickel. For optimal sealing characteristics, the ferrule is gold plated.

\*or burst pressure of tubing

#### Nut/ferrules and caps *for 360 µm FS tubing*

		<i>Prod No</i>
	Nut/ferrule	C360NFFS
	Cap	C360CFS

#### Unions and reducing unions *for 360 µm FS tubing*



	<b>Bore size:</b>	<b>50 micron</b>	<b>100 micron</b>	<b>150 micron</b>
		<i>Prod No</i>	<i>Prod No</i>	<i>Prod No</i>
	Union	C360UFS2	C360UFS4	C360UFS6
	Reducing unions, 1/32" to 360 µm	C360RU.5FS2	C360RU.5FS4	C360RU.5FS6
	Reducing union, 1/16" to 360 µm	—	—	C360RU1FS6

### For metal tubing — up to 40,000 psi liq\*\*




Our highest pressure Nanovolume® fittings are constructed of HPLC grade stainless steel, including stainless steel nut and ferrule. These fittings are optimized for use with stainless or electroformed nickel tubing.

\*\*or burst pressure of tubing. Higher pressures may be possible with smaller IDs. Consult factory.

#### Nut/ferrules and caps *for 360 µm tubing*

		<i>Prod No</i>
	Nut/ferrule	C360NFS6
	Cap	C360C

#### Unions and reducing unions *for 360 µm tubing*

	<b>Bore size:</b>	<b>50 micron</b>	<b>100 micron</b>	<b>150 micron</b>
		<i>Prod No</i>	<i>Prod No</i>	<i>Prod No</i>
	Union	C360US62	C360US64	C360US66
	Reducing unions, 1/32" to 360 µm	C360RU.5S62	C360RU.5S64	C360RU.5S66
	Reducing union, 1/16" to 360 µm	—	—	C360RU1S66

#### DIRECT CONNECTIONS TO 1/32" AND 1/16"

Valco 360 micron reducers directly connect 360 µm tubing to 1/16" or 1/32" Valco valve or fitting details, providing a positive leak-free seal with zero dead volume.

Internal fittings . . . p 38

External fittings . . . . . 39



#### TECH TIP

Use these **metal 360 micron nuts** with nano injectors:

C72MU . . . . . p 154

C72MX . . . . . 154

#### MORE INFORMATION

360 µm Nanovolume® fittings for use below 10,000 psi liq. . 57  
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#### CONVERSIONS

50 µm = .002"  
100 µm = .004"  
150 µm = .006"

1/32" = 0.8 mm  
1/16" = 1.6 mm

#### NOTE

For metal 360 µm tees and crosses, contact the factory.

## CHEMINERT FITTINGS



Designed for high resolution capillary HPLC, Cheminert Nanovolume® connectors include our one-piece 1/32" fingertight fittings, with a patented\* collapsible ferrule that makes fingertight nanovolume connections a snap. These fittings work with a variety of tubing,

including PEEK, fused silica, and 1/32" electroformed nickel. Liners adapt the fittings for use with fused silica.

To avoid potential confusion, all fittings utilizing the Cheminert collapsible ferrule are made of black PEEK; fittings with a standard Valco ZDV fitting detail are natural PEEK.

### Nuts, ferrules, and plugs

for 1/32" tubing

Valves and fittings are supplied with the appropriate quantity of nuts and ferrules. However, if additional fittings are required, they may be ordered separately. The two internal nuts include collapsible ferrules as an integral part of the fitting; the external nut must be used with the separate ferrule listed below.



**Internal nut** with collapsible ferrule

For use with: Fittings on pages 59-61

Prod No

C-NNFFPK



**External nut**

For use with: Unions on page 60

C-EN.5FPKB

Column end fittings on page 61

Note: Requires collapsible PEEK ferrule, below



**Collapsible PEEK ferrule**

For use with: External nut, above

ZGF.5PK



**Internal plug**

For use with: Fittings on page 59-60

C-NPFPK

#### TECH TIP

Our liners adapt Nanovolume® tees, Y's, and crosses for use with fused silica tubing. They must be ordered separately.



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1/32" Nanovolume®

column end fittings . . 61

Tubing

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### Unions

for 1/32" tubing



Union for 1/32" PEEK or electroformed nickel tubing

Does not require or include liners.

**100 µm bore 150 µm bore**

Prod No

Prod No

C-NEU.5XFPK

C-NEU.5FPK

### Reducing unions

1/16" to 1/32" tubing



Reducing union, 1/16" to 1/32" tubing

**150 µm bore**

Prod No

C-NERU1FPK

#### TECH TIP

Use our internal nuts with collapsible ferrules for old style Cheminert CN2 and CN4 valves.

C-NNFFPK

For use with:

6 port valve CN2-4346

4 port internal sampling

injector CN4-4344



C-NNFLFPK

For use with:

10 port valve CN2-4340



C-NVISF fill port

for 26 gauge needles

For use with: CN2 valves.



Consult factory regarding CN2 and CN4 valves.

### Tees, y's, and crosses

for 1/32" tubing or FS\* tubing

**100 µm bore 150 µm bore**

Prod No

Prod No

Tee 1/32" tubing or fused silica\*

C-NTXFPK

C-NTFPK

Y 1/32" tubing or fused silica\*

C-NYXFPK

C-NYFPK

Cross 1/32" tubing or fused silica\*

C-NXXFPK

C-NXFPK

\*A liner is needed for use with fused silica.  
Order 27 mm length, page 60.



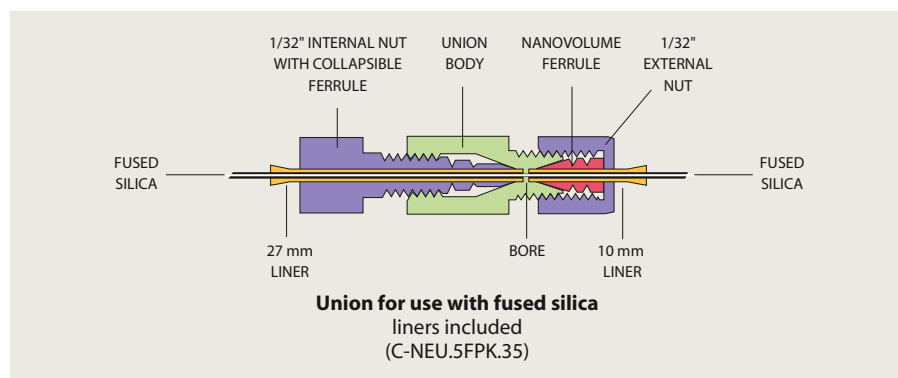
\*U.S. patent no. 6,575,501

## CHEMINERT FITTINGS

### Unions

for fused silica tubing

	FS tubing OD	100 µm bore Prod No	150 µm bore Prod No
Union for fused silica tubing Includes liners.	125 - 175 µm	C-NEU.5XFPK.15	C-NEU.5FPK.15
	175 - 225 µm	C-NEU.5XFPK.20	C-NEU.5FPK.20
	225 - 275 µm	C-NEU.5XFPK.25	C-NEU.5FPK.25
	275 - 325 µm	C-NEU.5XFPK.30	C-NEU.5FPK.30
	325 - 375 µm	C-NEU.5XFPK.35	C-NEU.5FPK.35



### Liners for 1/32" connectors


for use with fused silica tubing

Use these natural PEEK liners to adapt 1/32" connectors to the most common sizes of fused silica tubing.

The 27 mm liners are for internal nuts with collapsible ferrules. 10 mm liners are for use with external nuts. Sold in packages of 5.


#### 27 mm liners

Use with internal nuts C-NNFFPK or C-NNFLFPK

	For tubing OD	Prod No
	125 - 175 µm	C-NL.15L-5
	175 - 225 µm	C-NL.20L-5
	225 - 275 µm	C-NL.25L-5
	275 - 325 µm	C-NL.30L-5
	325 - 375 µm	C-NL.35L-5

#### 10 mm liners

Use with external nut C-EN.5FPKB

	For tubing OD	Prod No
	125 - 175 µm	C-NL.15S-5
	175 - 225 µm	C-NL.20S-5
	225 - 275 µm	C-NL.25S-5
	275 - 325 µm	C-NL.30S-5
	325 - 375 µm	C-NL.35S-5

### 1/32" Nanovolume® frits

These frits are the answer to filtration of 1/32" Nanovolume® fitting connections. A mere .25 mm (0.010") thin and 1/32" in diameter, they can be placed in any 1/32" fitting detail and add minimal volume. Price is for a package of 5 frits.

Pkg/5:	Pore size	Prod No
	0.2 micron	.2FR.5-5
	0.5 micron	.5FR.5-5
	2 micron	2FR.5-5

#### TECH TIP

Use **27 mm liners**

with internal nuts with collapsible ferrules:



Use **10 mm liners**

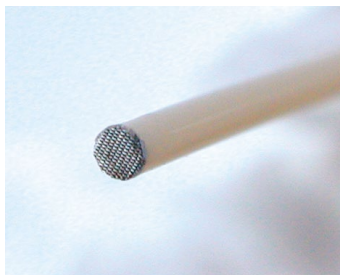
with external nuts:



#### MORE INFORMATION

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1/32" Nanovolume®  
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Internal nuts with  
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Liners for column end  
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silica . . . . . 19, 58





Screen embedded in end of liner for column end fittings

Nanovolume® column end fittings include two liners to adapt the 1/32" fitting to fused silica. The 27 mm liner, used inside the internal nut, has a 1 µm 316 stainless steel screen embedded in the PEEK to provide closure for fused silica columns. The 10 mm liner is used with the external nut.

The design utilizes our one-piece 1/32" fingertight fittings, with a patented\* collapsible ferrule. To avoid potential confusion, all fittings utilizing the Cheminert collapsible ferrule are made of black PEEK. The liners are natural PEEK.

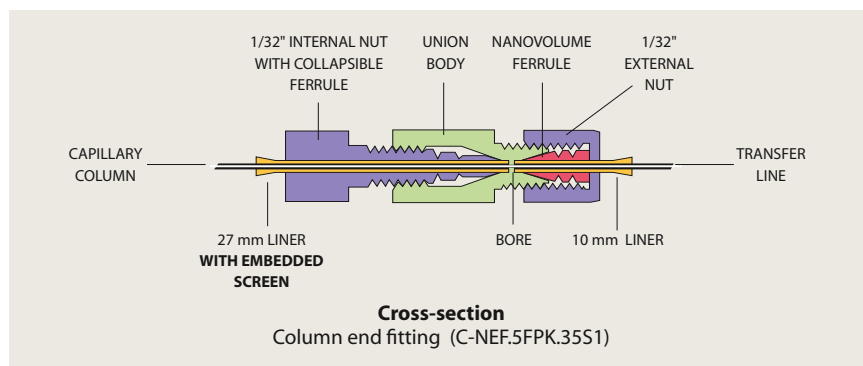
\*U.S. patent no. 6,575,501.



### Column end fittings

for fused silica capillary columns

Each:	For tubing OD	100 µm bore Prod No	150 µm bore Prod No
Column end fitting	125 - 175 µm	C-NEF.5XFPK.15S1	C-NEF.5FPK.15S1
for fused silica tubing	175 - 225 µm	C-NEF.5XFPK.20S1	C-NEF.5FPK.20S1
Includes liners	225 - 275 µm	C-NEF.5XFPK.25S1	C-NEF.5FPK.25S1
	275 - 325 µm	C-NEF.5XFPK.30S1	C-NEF.5FPK.30S1
	325 - 375 µm	C-NEF.5XFPK.35S1	C-NEF.5FPK.35S1



### TECH TIP

Liners with embedded screens are also available for 1/16" PEEK tubing. Consult the factory for sizes and product numbers.

### CONVERSIONS

100 µm	= .004"
150 µm	= .006"
0.25 mm	= .010"
0.50 mm	= .020"
0.75 mm	= .030"
1.0 mm	= .040"
1.5 mm	= .060"
2.0 mm	= .080"
4.6 mm	= .180"
6.0 mm	= .236"
6.4 mm	= .253"
7.0 mm	= .275"
10.0 mm	= .400"
27.0 mm	= 1.08"
1/32"	= 0.8 mm
1/16"	= 1.6 mm
1/8"	= 3.2 mm
1/4"	= 6.4 mm
3/8"	= 9.5 mm
1/2"	= 12.7 mm

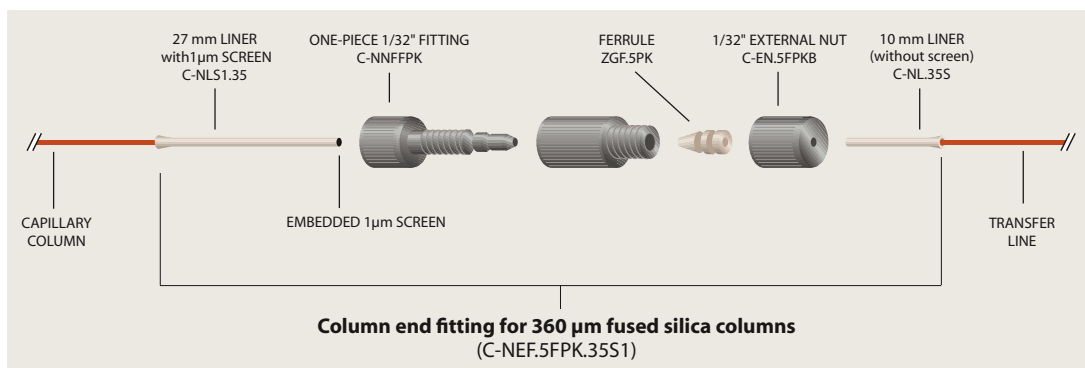
### Replacement liners for column end fittings

for FS capillaries

Use these liners with Nanovolume® column end fittings to adapt to the most common sizes of fused silica tubing. Natural PEEK, with embedded screen to provide full closure for fused silica capillaries. Sold individually.

#### 27 mm liners for column end fittings

For tubing OD	Prod No
125 - 175 µm	C-NL S1.15
175 - 225 µm	C-NLS1.20
225 - 275 µm	C-NLS1.25
275 - 325 µm	C-NLS1.30
325 - 375 µm	C-NLS1.35



CHEMINERT FITTINGS

No twist one-piece fittings *for 1/32" and 1/16" tubing*

These patented\* fittings offer the convenience of a one-piece fitting while solving a problem inherent to such designs. In other one-piece designs, the ferrule rotates against the fitting detail, creating particulates. The no twist design has a separate ferrule that snaps into the nut, so it's attached but still free to avoid rotation during tightening.

Since the ferrule is not machined onto the nut, it can be made from a different material; PEEK nut with PEEK ferrule, or PEEK nut with CTFE ferrule – the possibilities are endless.

Optional ferrule materials available – FEP, PFA, PTFE, and glass-filled PTFE. Call for availability.



Package of 5:		Glass-filled PEEK ferrule Prod No	PEEK ferrule Prod No	CTFE ferrule Prod No
	Length			
1/32" hex	Short	ZNF.5PKG-5	ZNF.5PK-5	—
1/16" hex	Short	ZNF1PKG-5	ZNF1PK-5	ZNF1KF-5
	Medium	MZNF1PKG-5	MZNF1PK-5	MZNF1KF-5
	Long	LZNF1PKG-5	LZNF1PK-5	LZNF1KF-5
1/16" fingertight		ZNF1FPKG-5	ZNF1FPK-5	ZNF1FKF-5

\* Patent No. 7,316,777

CONVERSIONS

0.25 mm	=	.010"
0.50 mm	=	.020"
0.75 mm	=	.030"
1.0 mm	=	.040"
1.5 mm	=	.060"
2.0 mm	=	.080"
4.6 mm	=	.180"
6.0 mm	=	.236"
6.4 mm	=	.253"
7.0 mm	=	.275"
10.0 mm	=	.400"
27.0 mm	=	1.08"
1/32"	=	0.8 mm
1/16"	=	1.6 mm
1/8"	=	3.2 mm
1/4"	=	6.4 mm
3/8"	=	9.5 mm
1/2"	=	12.7 mm



### Internal nuts – high pressure PEEK

PEEK nuts are used in Cheminert polymeric valves with zero dead volume fittings. They can also be used as alternatives to standard stainless steel Valco nuts when polymeric ferrules are used (up to approximately 125°C). Fingertight nuts have a knurled surface designed to provide sufficient sealing force on the ferrule without wrenches. Hex style nuts allow wrench tightening; however, since they are polymeric, they can break and are recommended for use only when space is limited and fingers won't fit.

**Caution:** PEEK nuts are intended for use only with polymeric ferrules, which seal with lower force than their stainless steel counterparts. Overtightening can result in breakage.

Package of 10:	Prod no	Length
1/32" fingertight	ZN.5FPK-10	.42"
1/32" fingertight	LZN.5FPK-10	.54"
1/16" fingertight	ZN1FPK-10	.88"
1/16" hex	ZN1PK-10	.45"
1/16" hex	MZN1PK-10	.62"
1/16" hex	LZN1PK-10	.87"
1/8" hex	ZN2PK-10	.62"



### Ferrules – high pressure PEEK and glass-filled PEEK

PEEK ferrules seal by the increased friction from compression. Use PEEK ferrules with PEEK fittings and glass-filled PEEK with stainless steel fittings.

	PEEK Prod No	Glass-filled PEEK Prod No
Package of 10:		
1/32"	ZF.5PK-10	ZF.5PKG-10
1/16"	ZF1PK-10	ZF1PKG-10
1/8"	ZF2PK-10	ZF2PKG-10
1/4"	ZF4PK-10	ZF4PKG-10
3/8"	ZF6PK-10	ZF6PKG-10
1/2"	ZF8PK-10	ZF8PKG-10



### Ferrules – grooved PEEK

These patented ferrules\* feature a grooved design that permits the ferrule to grip the tube in multiple places. They work great on tubing that is softer than the ferrule material. For example, PEEK grooved ferrules work well on PTFE or FEP tubing. They are not recommended for use with PEEK tubing.

Package of 10:	Prod No
1/32"	ZGF.5PK-10
1/16"	ZGF1PK-10

\* Patent no. 6,575,501.

#### POLYMERS AT A GLANCE

PEEK .....PK  
Chemical resistance;  
up to 125°C

#### MORE INFORMATION

Tightening tool for  
hex-head PEEK nuts. . 67



## CHEMINERT FITTINGS

## Plugs and caps – high pressure PEEK

PEEK plugs and caps are available in knurled fingertight and wrench-tight hex nut designs, for use in valves or fittings. (See discussion of PEEK nuts on page 63.) PEEK caps include a PEEK nut and ferrule.

Description	Length of nut*	PEEK plugs	PEEK caps
		Prod No	Prod No
1/32" fingertight	.42"	ZP.5FPK	ZC.5FPK
1/32" fingertight	.54"	LZP.5FPK	—
1/16" fingertight	.87"	ZP1FPK	ZC1FPK
1/16" hex	.62"	MZP1PK	ZC1PK
1/16" long hex	.87"	LZP1PK	—
1/8" hex	.62"	ZP2PK	ZC2PK



## PEEK plugs for high pressure polymeric valves

These PEEK plugs are for use **only** in Cheminert HPLC PEEK valves (C1-C5 series) since the fitting detail in these valves has an extended pilot length.

Description	Length of nut*	Prod No
1/16" hex	.62"	C-MZP1PK
1/16" long hex	.87"	C-LZP1PK
1/16" fingertight	.88"	C-ZP1FPK



## Tees and crosses – high pressure PEEK

Tees connect three lines. Crosses connect four lines. The 1/32" and 1/16" nuts are fingertight; 1/8" nuts are hex, for wrench tightening.

Tubing OD    Bore	PEEK tees		PEEK crosses	
	Prod No		Prod No	
1/32"	0.25 mm	ZT.5FPK	ZX.5FPK	
	0.50 mm	ZT.5LFPK	ZX.5LFPK	
1/16"	0.25 mm	ZT1CFPK	ZX1CFPK	
	0.50 mm	ZT1MFPK	ZX1MFPK	
	0.75 mm	ZT1FPK	ZX1FPK	
	1.00 mm	ZT1LFPK	ZX1LFPK	
1/8"	0.75 mm	ZT2PK	ZX2PK	
	2.00 mm	ZT2LPK	ZX2LPK	

POLYMERS  
AT A GLANCE

PEEK (PK) . . . . . page 256  
Chemical resistance;  
up to 125°C

## TECH TIP

Ferrules for high pressure PEEK fittings are available in PEEK and PFA.

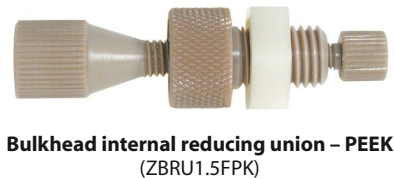
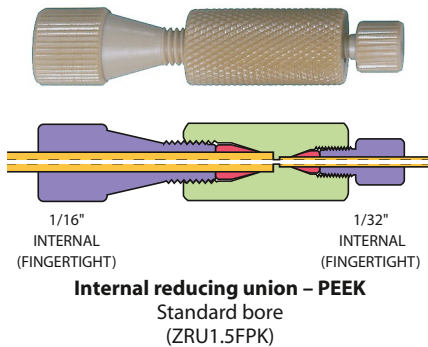
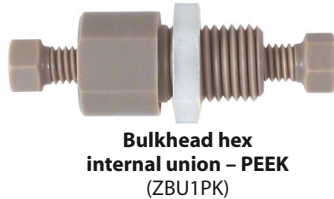
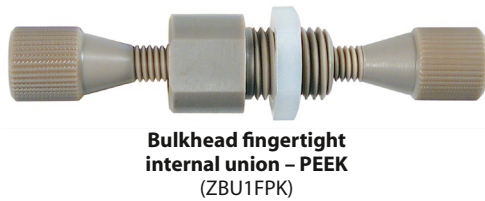
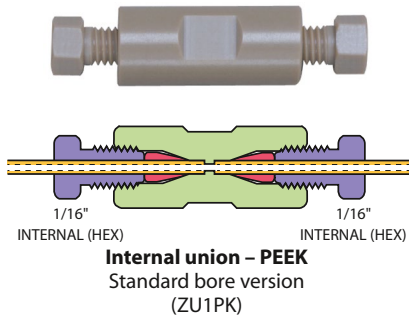
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## CONVERSIONS

0.25 mm	=	.010"
0.50 mm	=	.020"
0.75 mm	=	.030"
1.0 mm	=	.040"
1.5 mm	=	.060"
2.0 mm	=	.080"
4.6 mm	=	.180"
6.0 mm	=	.236"
6.4 mm	=	.253"
7.0 mm	=	.275"
10.0 mm	=	.400"
27.0 mm	=	1.08"
1/32"	=	0.8 mm
1/16"	=	1.6 mm
1/8"	=	3.2 mm
1/4"	=	6.4 mm
3/8"	=	9.5 mm
1/2"	=	12.7 mm



### Internal unions – high pressure PEEK

The 1/32" nuts are fingertight; 1/16" nuts are available in a choice of fingertight or hex; and 1/8" nuts are hex, for wrench tightening.

Tubing OD	Bore	Standard Prod No	Bulkhead Prod No	Bulkhead panel hole diameter
1/32" fingertight				
	0.25 mm	ZU.5FPK	ZBU.5FPK	5/16"
	0.50 mm	ZU.5LFPK	ZBU.5LFPK	5/16"
	1/32"	ZU.5TFPK	ZBU.5TFPK	5/16"
1/16" fingertight				
	0.25 mm	ZU1CFPK	ZBU1CFPK	3/8"
	0.50 mm	ZU1MFPK	ZBU1MFPK	3/8"
	0.75 mm	ZU1FPK	ZBU1FPK	3/8"
	1/16"	ZU1TFPK	ZBU1TFPK	3/8"
1/16" hex				
	0.25 mm	ZU1CPK	ZBU1CPK	3/8"
	0.50 mm	ZU1MPK	ZBU1MPK	3/8"
	0.75 mm	ZU1PK	ZBU1PK	3/8"
	1/16"	ZU1TPK	ZBU1TPK	3/8"
1/8" hex				
	0.75 mm	ZU2PK	ZBU2PK	7/16"
	2.0 mm	ZU2LPK	ZBU2LPK	7/16"
	1/8"	ZU2TPK	ZBU2TPK	7/16"

### Internal reducing unions – high pressure PEEK

These unions connect two different sizes of tubing, with zero dead volume internal fittings on each end. In the bulkhead version, the bulkhead nut is on the side with smaller tubing. The 1/32" and 1/16" nuts are fingertight; 1/8" nuts are hex, for wrench tightening. A version with 1/16" and 1/8" hex nuts is also available.

Tubing OD	Bore	Standard Prod No	Bulkhead Prod No	Bulkhead panel hole diameter
1/16" to 1/32"				
	0.25 mm	ZRU1.5FPK	ZBRU1.5FPK	5/16"
	0.50 mm	ZRU1.5LFPK	ZBRU1.5LFPK	5/16"
	1/32"	ZRU1.5TFPK	ZBRU1.5TFPK	5/16"
1/8" to 1/32"				
	0.25 mm	ZRU2.5FPK	ZBRU2.5FPK	3/8"
	0.50 mm	ZRU2.5LFPK	ZBRU2.5LFPK	3/8"
	1/32"	ZRU2.5TFPK	ZBRU2.5TFPK	3/8"
1/8" to 1/16"				
	0.25 mm	ZRU21CFPK	ZBRU21CFPK	3/8"
	0.75 mm	ZRU21FPK	ZBRU21FPK	3/8"
	1.00 mm	ZRU21LFPK	ZBRU21LFPK	3/8"
	1/16"	ZRU21TFPK	ZBRU21TFPK	3/8"

### Internal/external reducing union – high pressure PEEK

Tubing OD	Bore	Prod No
1/16" to 1/32"	0.20 mm	ZERU1.5FPK

## CHEMINERT FITTINGS

### One-piece fingertight fittings – color-coded PEEK

These molded fingertight fittings are rated to 5000 psi (350 bar), so they can be used in virtually any HPLC fitting detail with 10-32 threads. Six colors allow easy identification of tubing lines.

Package of 5:

Color	Prod No
Natural	JR-55020-5
Black	JR-55021-5
Red	JR-55022-5
Yellow	JR-55023-5
Blue	JR-55024-5
Green	JR-55025-5



### One-piece PEEK fingertight fittings – narrow hex-head

This natural PEEK machined fitting has a narrow hex head and 10-32 threads.

Package of 5:

Color	Prod No
Natural	JR-5508-5



### Color-It fingertight adapters

Use Color-It snap-on extensions to color-code our 1/4" hex-head nuts, and turn the nut into a fingertight fitting at the same time. Color-It adapters are available in six different colors, and can be used with PEEK and stainless hex-head nuts.

Package of 5:

Color	Prod No
Blue	JR-55010-5
Yellow	JR-55011-5
Green	JR-55012-5
Black	JR-55013-5
White	JR-55014-5
Red	JR-55015-5



Package of 12:

Color	Prod No
Multi-color (2 of each color)	JR-55016-12

#### CAUTION

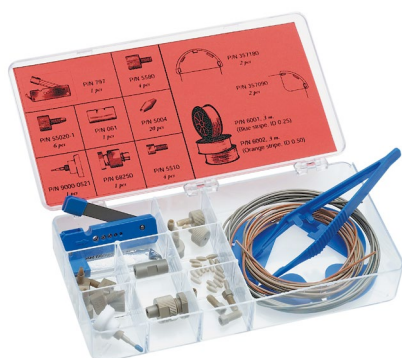
One-piece combination nuts and ferrules are not for high pressure gas service.

#### MORE INFORMATION

Color-coded  
PEEK tubing ... page 91

#### CONVERSIONS

0.25 mm	= .010"
0.50 mm	= .020"
0.75 mm	= .030"
1.0 mm	= .040"
1.5 mm	= .060"
2.0 mm	= .080"
4.6 mm	= .180"
6.0 mm	= .236"
6.4 mm	= .253"
7.0 mm	= .275"
10.0 mm	= .400"
27.0 mm	= 1.08"
1/32"	= 0.8 mm
1/16"	= 1.6 mm
1/8"	= 3.2 mm
1/4"	= 6.4 mm
3/8"	= 9.5 mm
1/2"	= 12.7 mm



### PEEK starter kit

In LC applications involving proteins, peptides, nucleic acids, or other samples of biological origin, metal systems may interact with samples or release transition metals that will deactivate columns. The PEEK starter kit facilitates replacement of stainless steel tubing, fittings, ferrules, mobile phase filters, etc., to create a biocompatible environment for samples and mobile phase.

*Prod No*

PEEK starter kit

JR-35P

#### *Includes:*

- 1 Plastic box
- 10 PEEK one-piece fittings, 10-32
- 5 PEEK fingertight fittings
- 5 PEEK nuts, hex-head, long
- 20 PEEK ferrules, double-ended, 1/16"
- 1 PEEK union, HP body only, 10-32
- 2 Tubing elbows, 90°
- 2 Tubing elbows, 180°
- 1 PEEK filter, in-line,  
incl. PAT frit, 5 µm
- 1 Clean-cut tubing cutter
- 1 Last Drop PTFE filter, 5 µm
- 3m PEEK tubing, 1/16" x 0.25 mm ID,  
blue stripe
- 3m PEEK tubing, 1/16" x 0.50 mm ID,  
orange stripe
- 1 Tweezers



### Tightening tools for Valco and Cheminert fittings

These handy tools make it fast and easy to tighten hex-head fittings. The red version is for use with the C360 series fittings shown on pages 57-58. The green tool is for any 1/32" fitting with a 3/16" hex head nut, and the blue version fits the 1/4" hex common in fittings for 1/16" tubing. The black tool is designed especially for the unique 1/16" tube fittings with 6-40 threads used in the new C25G selector on page 178.

<i>Color</i>	<i>For use with</i>	<i>Prod No</i>
Red	360 µm fittings	C360ET
Green	1/32" fittings (6-40 threads)	CNFT
Blue	1/16" fittings	ZNFT
Black	6-40 fittings for C25G valves	CGFT

#### MORE INFORMATION

Hex-head PEEK fittings

360 µm..... page 57

1/32".....62-63

1/16"

High pressure...62-63

Low pressure ..... 71

C25G selectors .....178

## CHEMINERT FITTINGS

Cheminert low pressure fittings are ideally suited for flow injection analysis, low pressure liquid chromatography, and stream sampling devices. They may be safely used at pressures up to 500 psi and temperatures to 50°C. Two designs of low pressure tube end fittings

are available. *Flangeless* tube end fittings utilize a collapsible ferrule, which grips the tubing as the fitting is tightened without significantly reducing the tube ID. *Standard* tube end fittings are retained on polymeric tubing by a flange formed with a Cheminert flanging tool.

### Flangeless tube end fittings

1/4-28

Flangeless tube end fittings eliminate the flanging tool required with standard tube end fittings. The nut turns on the tubing as freely as with our flanged fitting, eliminating the possibility of cracking or unscrewing that can occur when plastic tubing is subjected to twisting as fittings are connected.

Cheminert flangeless fittings include our patented\* collapsible ferrule design. This innovative design utilizes a one-piece ferrule engineered to collapse as it is tightened. The collapse occurs in a narrow area, resulting in a very effective seal with virtually no distortion of the tubing ID and no dead volume. The assembly is rated at 500 psi liquid when tightened by hand. Since only the tubing and the ferrule come into contact with the solution, the result is an inert system.

Cheminert tube end fittings come in twelve different colors for system color coding, and work with any 1/16" or 1/8" OD polymeric tubing. Use CTFE ferrules for soft tubing (PTFE, FEP, etc.) and PEEK ferrules for harder tubing (PEEK, ETFE, polyurethane, etc.)

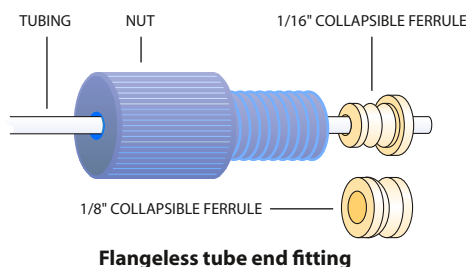
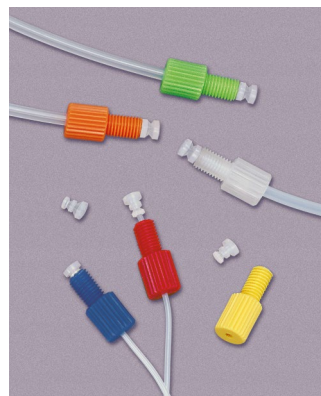
\* Patent No. 6,575,501

Flangeless fittings with CTFE ferrules	1/16" OD	1/8" OD
(pkg/5)	Prod No	Prod No
Black	CFL-1BK	CFL-2BK
Blue	CFL-1BE	CFL-2BE
Brown	CFL-1BR	CFL-2BR
Dark gray	CFL-1DG	CFL-2DG
Green	CFL-1G	CFL-2G
Lavender/pink	CFL-1L	CFL-2L
Natural	CFL-1N	CFL-2N
Orange	CFL-1E	CFL-2E
Purple	CFL-1P	CFL-2P
Red	CFL-1R	CFL-2R
White	CFL-1W	CFL-2W
Yellow	CFL-1Y	CFL-2Y

Assorted flangeless fittings	
(pkg/12, one of each color)	
with CTFE ferrule	CFL-1A
with PEEK ferrule	CFL-1A-PK
	CFL-2A
	CFL-2A-PK

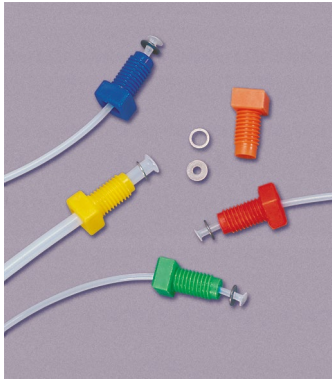
<b>Replacements</b>	
PEEK ferrules (pkg/10)	CFL-CB1PK
CTFE ferrules (pkg/10)	CFL-CB1KF
PEEK nuts (pkg/5)	CFL-1PK
	CFL-2PK

<b>Setting tool</b>	CST
	CST



### CONVERSIONS

0.25 mm	= .010"
0.50 mm	= .020"
0.75 mm	= .030"
1.0 mm	= .040"
1.5 mm	= .060"
2.0 mm	= .080"
4.6 mm	= .180"
6.0 mm	= .236"
6.4 mm	= .253"
7.0 mm	= .275"
10.0 mm	= .400"
27.0 mm	= 1.08"
1/32"	= 0.8 mm
1/16"	= 1.6 mm
1/8"	= 3.2 mm
1/4"	= 6.4 mm
3/8"	= 9.5 mm
1/2"	= 12.7 mm



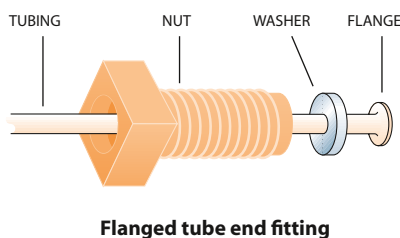
## Standard flanged tube end fittings

1/4-28

The basic component of the Cheminert system is the polypropylene nut, retained on PTFE or FEP tubing by a flange formed with a Cheminert flanging tool (page 70). This is an excellent method for connecting fluorocarbon tubing, as there is no reduction of the inside diameter and no binding or twisting of the tubing when the fitting is tightened. A mating of the parts is achieved with zero dead volume, making this an ideal fitting for biological systems.

Cheminert tube end fittings come in twelve different colors for system color coding, and are available for 1/16" or 1/8" OD fluorocarbon tubing. (While in theory other polymers could be molded to form a flange, only fluorocarbons such as PTFE, PFA, or FEP have low-temperature malleability and good form retention at operating temperatures.) Tube end fittings attach directly to Cheminert valves and fittings, and are easily joined to each other with a union. Tightening by hand is all that is required to make a leak-free seal at 500 psi liquid, although for long term reliability a wrench could be used to apply an additional 1/8 turn.

Packages include the same number of washers as fittings.



Flanged tube end fitting

Flanged fittings (pkg/10)	1/16" OD Prod No	1/8" OD Prod No
Black	CF-1BK	CF-2BK
Blue	CF-1BE	CF-2BE
Brown	CF-1BR	CF-2BR
Dark gray	CF-1DG	CF-2DG
Green	CF-1G	CF-2G
Lavender/pink	CF-1L	CF-2L
Natural	CF-1N	CF-2N
Orange	CF-1E	CF-2E
Purple	CF-1P	CF-2P
Red	CF-1R	CF-2R
White	CF-1W	CF-2W
Yellow	CF-1Y	CF-2Y
Assorted flangeless fittings (pkg/12, one of each color)	CF-1A	CF-2A
Washers (pkg/10)	CF-W1	CF-W2

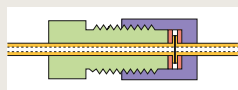
### TECH TIP

To make up standard flanged tube end fittings, use the flanging tool on page 70.

A flanging starter kit, complete with flanging tool, flanging tips, and an array of tubing and fittings, is also available. (See page 70)

### TECH TIP

Use our external nut tube end fittings to make true zero volume butt connections without a coupling.



### MORE INFORMATION

High pressure fittings ..... pp 57-67  
PTFE and FEP tubing ..... 92

## External nuts for flanged tube ends

1/4-28

External nuts with female 1/4-28 threads are designed for use on tubing with a flanged end, just like the standard tube end fittings. Use them instead of a union or coupling to make a zero volume butt connection.

Package of 5:

Tubing OD	PEEK Prod No	CTFE Prod No
1/16"	CEN1PK	CEN1KF
1/8"	CEN2PK	CEN2KF



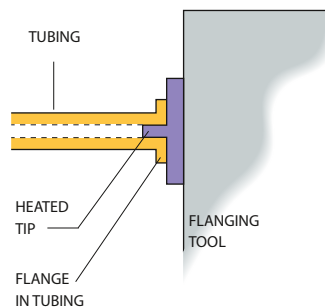


## CHEMINERT FITTINGS

### Cheminert flanging tools (Non-CE)

The flanging tool makes the flange which retains the standard 1/4-28 tube end fitting and washer on PTFE or FEP tubing. With this tool, lengths of tubing may be easily assembled to any required dimension. The time required is approximately 5 to 10 seconds per flange.

Flanging tools are available for 110 VAC or 230 VAC, and come complete with tips for 0.75 mm, 1.0 mm, and 2.00 mm ID tubing, a tubing holder for gripping the tubing during the flanging operation, a razor blade for tube cutting, and instructions.



**Forming a tubing flange**

		<i>Prod No</i>
Flanging tools	110 VAC	CFT-110
	230 VAC	CFT-220
Flanging tool accessories		
Flanging tips		
for tubing ID $\leq 0.25$ mm		CFT-TXC
$\leq 0.75$ mm		CFT-TC
$\leq 1.00$ mm		CFT-TM
$\leq 1.50$ mm		CFT-TL
$\leq 2.00$ mm		CFT-TXL
Razor blades (pkg/10)		CFT-R
Tubing holder		CFT-H



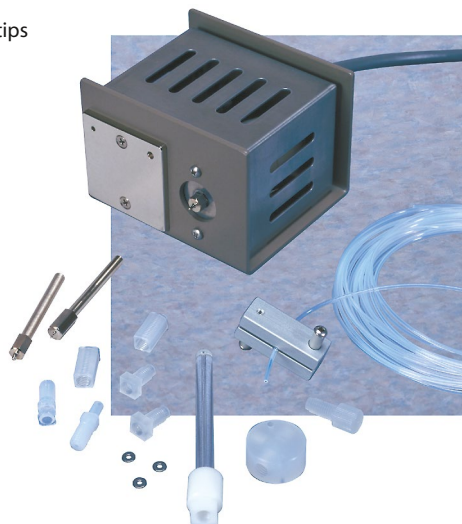
### Cheminert starter kits (Non-CE)

Starter kits come in either 1/16" or 1/8" versions, with flanging tools for 110 VAC or 230 VAC.

	<b>110 VAC</b>	<b>230 VAC</b>
	<i>Prod No</i>	<i>Prod No</i>
Starter kits		
1/16" tubing	CFT1K-110	CFT1K-220
1/8" tubing	CFT2K-110	CFT2K-220

The starter kit includes:

- 1 flanging tool with 3 flanging tips
- 1 tubing holder
- 20 standard tube end fittings
- 20 stainless steel washers
- 10 couplings
- 20 feet of PTFE tubing
  - 1/16" OD x 0.030" ID or
  - 1/8" OD x .060" ID
- 1 male luer adapter
- 1 female luer adapter
- 1 plug
- 1 tee
- 1 glass connector



#### **MORE INFORMATION**

Standard tube end fittings .....	page 69
Stainless steel washers .....	69
Couplings .....	72-73
Male luer adapter .....	76
Female luer adapter ...	76
Plug .....	71
Tee .....	74
Glass connector .....	73



### Easy-Flange kit

The Easy-Flange flange-rolling tool uses mechanical force to form a flange on 1/16" - 1/8" OD PTFE tubing, offering an excellent non-electric alternative to the heated flanging tool.

The quality of the flange is excellent, since it is formed without stressing the tubing by heat. The specially designed negative conical profile of the flange-forming component yields an ideal shape for maximum sealing properties.

*Prod No*

Easy-Flange kit JR-201540

*Includes:*

Plastic box

Flanging discs with:

0.5 mm SS pin for PEEK tubing

0.8 mm polymer pin

0.8 mm titanium pin

1.3 mm polymer pin

1.3 mm titanium pin

Clean-cut tubing cutter

6 feet of PTFE tubing, 1/16" x 0.75 mm ID

### Plugs

1/4-28 and 1/2-20

Plugs can be used to close off an unused port in a 1/4-28 valve or manifold.

**PEEK**

*Prod No*

**CTFE**

*Prod No*

**Delrin**

*Prod No*

*Pkg/5:* 1/4-28

CPPK

CPKF

—

*Pkg/1:* 1/2-20

—

CP-4K

CP-4D



### Low pressure PEEK plugs

10-32

These all-PEEK plugs are for use in Cheminert PEEK fittings and low pressure polymeric valves (C20Z and C30Z series). For high pressure polymeric valves (C1-C5 series), use the plugs on page 64.

*Package of 1:*

*Length of nut\**

**PEEK**

*Prod No*

1/16" hex

.62"

MZP1PK

1/16" long hex

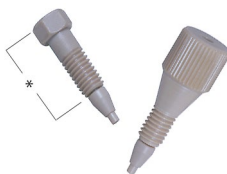
.87"

LZP1PK

1/16" fingertight

.88"

ZP1FPK



### MORE INFORMATION

Clean-cut tubing  
cutter ..... page 92  
Tightening tool for  
hex-head PEEK nuts.. 67

### CONVERSIONS

0.25 mm = .010"

0.50 mm = .020"

0.75 mm = .030"

1.0 mm = .040"

1.5 mm = .060"

2.0 mm = .080"

4.6 mm = .180"

6.0 mm = .236"

6.4 mm = .253"

7.0 mm = .275"

10.0 mm = .400"

27.0 mm = 1.08"

1/32" = 0.8 mm

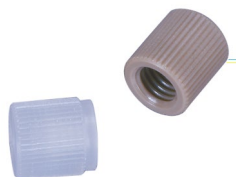
1/16" = 1.6 mm

1/8" = 3.2 mm

1/4" = 6.4 mm

3/8" = 9.5 mm

1/2" = 12.7 mm



### Caps

1/4-28

Caps are used to close off lines with 1/4-28 tube end fittings.

**PEEK**

*Prod No*

**CTFE**

*Prod No*

*Package of 5:*

CCPK-5

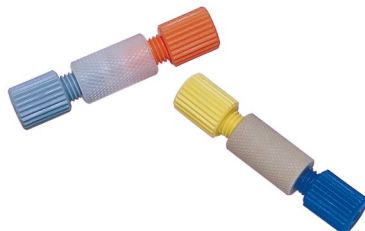
CCKF-5

## CHEMINERT FITTINGS

**Unions** *Cheminert to Cheminert* *1/4-28 to 1/4-28*

PEEK and CTFE unions include flangeless 1/4-28 fittings for tubing OD indicated. Polypropylene union bodies are for use with flanged tubing only and do not include any fittings.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>
1/16"	0.25 mm	CUCPK	CUCKF
1/16"	0.50 mm	CUPK	CUKF
1/16"	0.75 mm	CUMPK	CUMKF
1/8"	1.50 mm	CULPK	CULKF

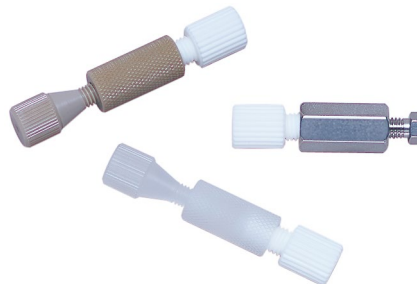


		<b>Polypropylene</b>
<i>Package/5:</i>		<i>Prod No</i>
1/8"	Butt	CUTPP

**Unions** *Cheminert to 1/16" ZDV* *1/4-28 to 10-32*

Include flangeless 1/4-28 and ZDV 10-32 fittings for 1/16" tubing.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>	<b>316 Stainless</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>	<i>Prod No</i>
1/16"	0.25 mm	CZUCPK	CZUCKF	CZUCS6
1/16"	0.50 mm	CZUPK	CZUKF	CZUS6
1/16"	0.75 mm	CZUMPK	CZUMKF	CZUMS6

**Unions** *Cheminert to 1/4" tubing* *1/4-28 to 1/2-20*

Include flangeless 1/4-28 and 1/2-20 fittings.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>
1/8" to 1/4"	1.50 mm	CU4LPK	CU4LKF

<b>Components</b>	<i>Prod No</i>
1/2-20 nut, CTFE	CFL-4KF
1/2-20 nut, Delrin	CFL-4D
CTFE ferrule	CFL-CB4KF-S

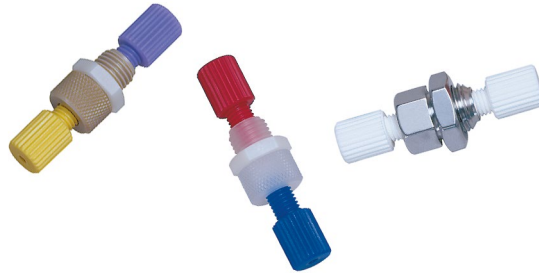
**CONVERSIONS**

0.25 mm	= .010"
0.50 mm	= .020"
0.75 mm	= .030"
1.0 mm	= .040"
1.5 mm	= .060"
2.0 mm	= .080"
4.6 mm	= .180"
6.0 mm	= .236"
6.4 mm	= .253"
7.0 mm	= .275"
10.0 mm	= .400"
27.0 mm	= 1.08"
1/32"	= 0.8 mm
1/16"	= 1.6 mm
1/8"	= 3.2 mm
1/4"	= 6.4 mm
3/8"	= 9.5 mm
1/2"	= 12.7 mm

**CHEMINERT FITTINGS**
**Bulkhead unions**
*Cheminert to Cheminert*
*1/4-28 to 1/4-28*

Include flangeless 1/4-28 fittings for tubing OD indicated.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>	<b>316 Stainless</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>	<i>Prod No</i>
1/16"	0.25 mm	CBUCPK	CBUCKF	CBUCS6
1/16"	0.50 mm	CBUPK	CBUKF	CBUS6
1/16"	0.75 mm	CBUMPK	CBUMKF	CBUMS6
1/8"	1.50 mm	CBULPK	CBULKF	CBULS6


**Bulkhead unions**
*Cheminert to 1/16" ZDV*
*1/4-28 to 10-32*

Include flangeless 1/4-28 and ZDV 10-32 fittings for 1/16" OD tubing.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>	<b>316 Stainless</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>	<i>Prod No</i>
1/16"	0.25 mm	CZBUCPK	CZBUCKF	CZBUCS6
1/16"	0.50 mm	CZBUPK	CZBUKF	CZBUS6
1/16"	0.75 mm	CZBUMPK	CZBUMKF	CZBUMS6



## CHEMINERT FITTINGS

### Tees

1/4-28

Include flangeless 1/4-28 fittings for tubing OD indicated.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>
1/16"	0.25 mm	CTCPK	CTCKF
1/16"	0.50 mm	CTPK	CTKF
1/16"	0.75 mm	CTMPK	CTMKF
1/8"	1.50 mm	CTLPK	CTLKF



### Crosses

1/4-28

Include flangeless 1/4-28 fittings for tubing OD indicated.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>
1/16"	0.25 mm	CXCPK	CXCKF
1/16"	0.50 mm	CXPK	CXKF
1/16"	0.75 mm	CXMPK	CXMKF
1/8"	1.50 mm	CXLPK	CXLKF



### Manifolds

1/4-28

Include flangeless 1/4-28 fittings for tubing OD indicated.

<i>Tubing</i>		<b>PEEK</b>	<b>CTFE</b>
<i>OD</i>	<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>
<b>5 ports</b>			
1/16"	0.75 mm	C5M1PK	C5M1KF
1/8"	1.50 mm	C5M2PK	C5M2KF
<b>9 ports</b>			
1/16"	0.75 mm	C9M1PK	C9M1KF
1/8"	1.50 mm	C9M2PK	C9M2KF



#### MORE INFORMATION

Flangeless tube end  
fittings ..... page 68

#### CONVERSIONS

0.25 mm	=	.010"
0.50 mm	=	.020"
0.75 mm	=	.030"
1.0 mm	=	.040"
1.5 mm	=	.060"
2.0 mm	=	.080"
4.6 mm	=	.180"
6.0 mm	=	.236"
6.4 mm	=	.253"
7.0 mm	=	.275"
10.0 mm	=	.400"
27.0 mm	=	1.08"
1/32"	=	0.8 mm
1/16"	=	1.6 mm
1/8"	=	3.2 mm
1/4"	=	6.4 mm
3/8"	=	9.5 mm
1/2"	=	12.7 mm

**Mixing tees**

1/4-28



Include flangeless 1/4-28 fittings for tubing OD indicated.

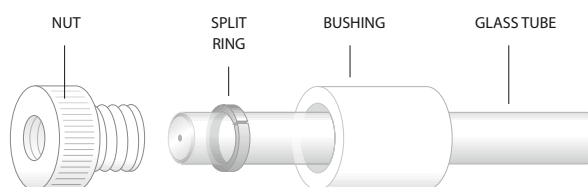
<i>Tubing OD</i>	<i>Bore</i>	<b>PEEK</b> <i>Prod No</i>	<b>CTFE</b> <i>Prod No</i>
1/16"	0.75 mm	CM1XPK	CM1XKF
1/8"	1.50 mm	CM2XPK	CM2XKF

**Glass connectors**

1/4-28 female to 1/4" glass tube

Glass connectors join a Cheminert tube end fitting to 1/4" OD glass tubing. Complete assemblies include a bushing and nut, a polypropylene or CTFE split ring, and a 1/4" OD x 3-1/4" long piece of 1 mm or 2 mm ID glass tube. This connector works only with our glass tubes.

<i>Description</i>	<b>Acetal</b> <i>Prod No</i>	<b>CTFE</b> <i>Prod No</i>
<b>Complete assembly</b>		
1 mm ID glass tubing	CGC41	CGC41KF
2 mm ID glass tubing	CGC42	CGC42KF
<b>Components</b>		
Bushing	CGCB	CGCBKF
Nut	CGCN	CGCNKF
Glass tube, 3-1/4" long		
1 mm ID	CGCG41	—
2 mm ID	CGCG42	—
Split rings (package of 5)	CGCR	CGCRKF

**Glass connector**



**CHEMINERT FITTINGS****Tube adapters***1/4-28*

Tube adapters have male 1/4-28 threads going to 1/4" or 1/8" OD tubing.

<i>Tubing OD</i>	<i>Bore</i>	<b>PEEK</b> <i>Prod No</i>	<b>CTFE</b> <i>Prod No</i>	<b>316 Stainless</b> <i>Prod No</i>
1/8"	1.5 mm	CTA2PK	CTA2KF	CTA2S6
1/4"	1.5 mm	CTA4PK	CTA4KF	CTA4S6

**Luer adapters***Luer to 1/4-28 or 10-32*

Luer adapters make a leak-tight connection from male or female luer to 1/4-28 threads.

<i>Description</i>	<i>Bore</i>	<b>PEEK</b> <i>Prod No</i>	<b>CTFE</b> <i>Prod No</i>	<b>PFA</b> <i>Prod No</i>
Female luer				
to 1/4-28 male	1.50 mm	CFLAPK	CFLAKF	CFLAPFA
to 10-32 female	0.75 mm	ZUFLPK	ZUFLKF	—
Male luer				
to 1/4-28 male	1.50 mm	CMLAPK	CMLAKF	CMLAPFA

**Luer adapter bulkhead unions***Luer to 1/4-28 or 10-32*

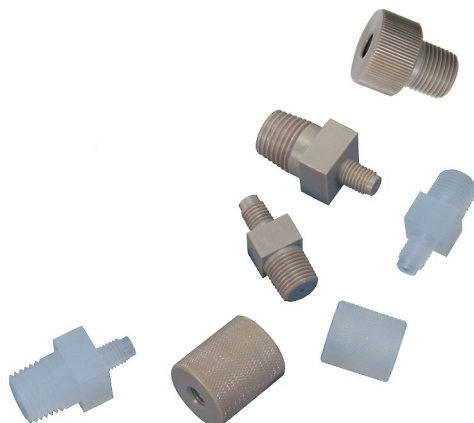
Our luer adapter bulkhead union connects a male or female luer to 1/4-28 or 10-32 fittings. These are the ideal fittings for through-the-panel syringe injections. The 1/4-28 versions include flangeless fittings for 1/16" OD tubing. Versions with 10-32 connections (for 1/16" OD tubing) include a fingertight PEEK nut and a ferrule of the same material as the union.

<i>Description</i>	<i>Bore</i>	<b>PEEK</b> <i>Prod No</i>	<b>CTFE</b> <i>Prod No</i>
Female luer			
to 1/4-28	1.50 mm	CBUFLPK	CBUFLKF
to 10-32	1.00 mm	ZBUFLPK	ZBUFLKF
Male luer			
to 10-32	1.00 mm	ZBUMLPK	ZBUMLFK



**CHEMINERT FITTINGS****Pipe adapters***1/4-28 to NPT*

Versions adapt male or female 1/4-28 fittings to male or female NPT.



<i>NPT</i>	<i>Bore</i>	<b>PEEK</b> <i>Prod No</i>	<b>CTFE</b> <i>Prod No</i>
<b>Female 1/4-28 to male NPT</b>			
1/8"	1.5 mm	CPA2PK	CPA2KF
1/4"	1.5 mm	CPA4PK	CPA4KF
<b>Male 1/4-28 to male NPT</b>			
1/8"	1.5 mm	CEPA2PK	CEPA2KF
1/4"	1.5 mm	CEPA4PK	CEPA4KF
<b>Female 1/4-28 to female NPT</b>			
1/8"	1.5 mm	CFPA2PK	CFPA2KF
1/4"	1.5 mm	CFPA4PK	CFPA4KF



10-32 NUT NOT  
INCLUDED

**Cheminert 1/4-28 to Valco 10-32 ZDV adapter**

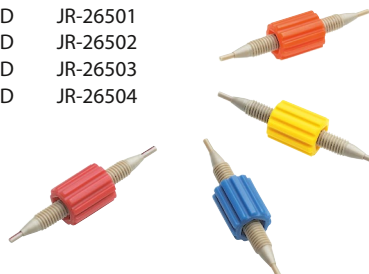
This adapter permits Valco 10-32 fittings to be installed into any 1/4-28 fitting detail. (Nut and ferrule are not included.)

<i>Description</i>	<i>Bore</i>	<i>Prod No</i>
Port adapter	0.50 mm	ZLCA1PK

**One-piece fingertight column coupler**

Choose from a variety of coupler IDs, indicated by the color of the sleeve (which parallels the color-coding of our PEEK tubing on page 91). A unique feature of this column coupler is that it adapts automatically to fit all pilot lengths – Valco, Waters, Upchurch, Rheodyne, etc. Since the tubing bottoms out in any fitting detail, added void volume is minimal. Material is PEEK.

<i>Color</i>	<i>Bore</i>	<i>Prod No</i>
Red	0.13 mm ID	JR-26501
Yellow	0.17 mm ID	JR-26502
Blue	0.25 mm ID	JR-26503
Orange	0.50 mm ID	JR-26504

**CONVERSIONS**

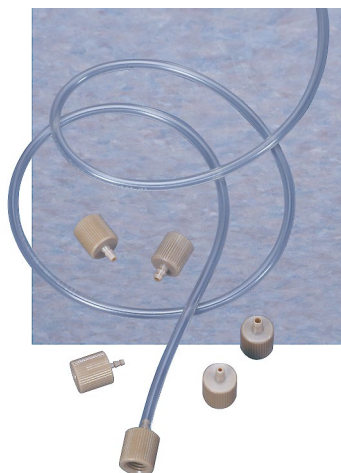
0.25 mm	=	.010"
0.50 mm	=	.020"
0.75 mm	=	.030"
1.0 mm	=	.040"
1.5 mm	=	.060"
2.0 mm	=	.080"
4.6 mm	=	.180"
6.0 mm	=	.236"
6.4 mm	=	.253"
7.0 mm	=	.275"
10.0 mm	=	.400"
27.0 mm	=	1.08"
1/32"	=	0.8 mm
1/16"	=	1.6 mm
1/8"	=	3.2 mm
1/4"	=	6.4 mm
3/8"	=	9.5 mm
1/2"	=	12.7 mm

## CHEMINERT FITTINGS

### Perifit fittings for peristaltic pump tubing

The Cheminert Perifit is a unique fitting with a barb on one end and a 1/4-28 female fitting on the other end, for connecting a FIA line with the most commonly used peristaltic tubing. The fitting is compact and easy to install while providing a secure, trouble-free connection. A Perifit can be used as a "stop" on standard inexpensive Tygon® tubing, eliminating the need to buy the more expensive pre-cut tubing with pre-installed stops. Unlike many competitive systems, Perifits are reusable as the tubing wears.

Three sizes of Perifits are available to cover the range of tubing most commonly used in FIA.



For use with tubing sizes	Prod No
0.50 to 1.02 mm ID	C-PFS
1.12 to 1.65 mm ID	C-PFM
1.85 to 2.29 mm ID	C-PFL
Kit with 2 of each size above	C-PF

### In-line filters

1/4-28

These convenient filters can be simply dropped into any 1/4-28 fitting detail. Constructed of PTFE and CTFE, with a 316 stainless low-pressure-drop screen. (Fitting shown is not included.)

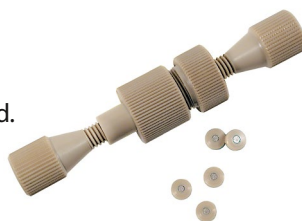
Pore size	Prod No
2 micron	CFE-S2
10 micron	CFE-S10
75 micron	CFE-S75



### Biocompatible filter

This all-PEEK filter can be placed in any 1/16" line, providing filtration to 0.5 microns. The filter can be changed without tools, since both the filter housing and the fittings are designed to be tightened by hand.

Tubing OD	Bore	Prod No
1/16"	0.5 mm	ZU1FPK.5



#### Replacement elements (PEEK-encapsulated titanium)

Pore size	Prod No
0.5 micron	C-F1.5TI

#### CONVERSIONS

0.25 mm	= .010"
0.50 mm	= .020"
0.75 mm	= .030"
1.0 mm	= .040"
1.5 mm	= .060"
2.0 mm	= .080"
4.6 mm	= .180"
6.0 mm	= .236"
6.4 mm	= .253"
7.0 mm	= .275"
10.0 mm	= .400"
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1/32"	= 0.8 mm
1/16"	= 1.6 mm
1/8"	= 3.2 mm
1/4"	= 6.4 mm
3/8"	= 9.5 mm
1/2"	= 12.7 mm



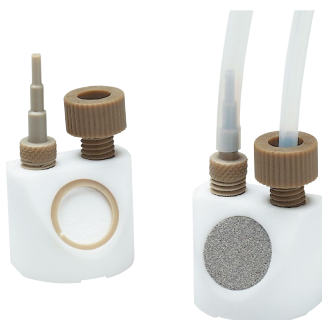
### Last Drop mobile phase filter

The Last Drop mobile phase filter allows more analyses per batch of mobile phase and helps reduce hazardous waste. The flat filter element sits parallel to the bottom of the reservoir, allowing the Last Drop to filter all but the last 2% of the mobile phase from the reservoir without drawing air into the system. Compare this with conventional cylindrical filters that can begin to draw air into the system when nearly 10% of the solvent remains in the reservoir.

The Last Drop mobile phase filter consists of a 316 stainless or PTFE filter element pressed into an inert PTFE housing. The top of the housing has a PEEK tripod which slips into 1.5, 2.2, or 3.5 mm ID pump inlet lines. It will also work with our 1/16" and 1/8" flangeless fittings.

Use the metal-free PTFE version for sensitive biochromatography applications in which metal surfaces may corrode or interact with samples.

	Filter element	Prod No
Last Drop filter, 2.5µm	PTFE	JR-9000-0520
	Stainless steel	JR-9000-0530



### Last Drop filter/spargers

The Last Drop filter/sparger combines filtration and sparging in a single unit. The PTFE housing contains a mobile phase filter with either a stainless steel or a PTFE filter element. The filter/sparger features a PEEK tripod connector for the solvent line, and a nut and ferrule for the sparging line.

	Filter element	Prod No
Last Drop filter/sparger 2.5 µm filter, 10 µm sparger	PTFE	JR-9000-0602
	Stainless steel	JR-9000-0640



### Mobile phase filters

Direct connect

Cheminert mobile phase filters provide point-of-use filtering of common HPLC or FIA solvents. They are designed to connect directly to 1/8" OD PTFE or PEEK tubing using a simple press fit. The filter housing is PTFE and includes a 2 or 10 micron titanium frit.

Pore size	Prod No
2 micron	C-MPFT12
10 micron	C-MPFT110

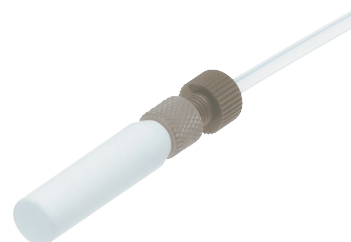
## CHEMINERT FITTINGS

**No-Met biocompatible mobile phase filter**

In the growing number of applications involving the separation of biomolecules, stainless steel in the flowpath is not acceptable. High salt buffers can corrode stainless steel, and the metal ions released from metallic filters may contaminate or otherwise react with the biomolecules of interest.

The No-Met polyethylene filter is designed for these applications, with inert polymeric fittings and 20 µm filter effectively eliminating metal contamination from the fluid path. Use them for IC and biochromatography applications.

Because they are hydrophobic, No-Met filters may initially require some priming with methanol or acetonitrile. They can be used up to a maximum flow rate of 500 ml/min\*.



*Prod No*

No-Met mobile phase filter, 1/8"	JR-32178
Replacement element	JR-32179

\* Flow rates measured with methanol/water (1:1), ultrasonically degassed.  
Flow rates can vary with solvent and tubing ID.

**Stainless steel mobile phase filters and helium spargers**

Mobile phase filters protect your HPLC system from small particles in the mobile phase. These filters are made from 316 stainless and PEEK or PTFE, and are suitable for use with most solvents.

Helium spargers offer an inexpensive way to prepare and maintain mobile phases free of dissolved gases. Connect these spargers to a regulated supply of helium gas (0 - 400 ml/min) to remove dissolved gases from the mobile phase. Spargers are made from 10 micron porosity stainless steel.

<i>Tubing OD</i>	<i>Porosity</i>	<i>Suggested Max. Flow Rate (ml/min)*</i>	<i>Prod No</i>
1/16"	2 µm	35	JR-367016-2
1/16"	10 µm	35	JR-367016-10
1/16"	20 µm	35	JR-367016-20
1/8"	2 µm	35	JR-367008-2
1/8"	10 µm	100	JR-367008-10
1/8"	20 µm	120	JR-367008-20

\* Flow rates measured with methanol/water (1:1), ultrasonically degassed.  
Flow rates can vary with solvent and tubing ID.

**CONVERSIONS**

0.25 mm	=	.010"
0.50 mm	=	.020"
0.75 mm	=	.030"
1.0 mm	=	.040"
1.5 mm	=	.060"
2.0 mm	=	.080"
4.6 mm	=	.180"
6.0 mm	=	.236"
6.4 mm	=	.253"
7.0 mm	=	.275"
10.0 mm	=	.400"
27.0 mm	=	1.08"
1/32"	=	0.8 mm
1/16"	=	1.6 mm
1/8"	=	3.2 mm
1/4"	=	6.4 mm
3/8"	=	9.5 mm
1/2"	=	12.7 mm

## CHEMINERT FITTINGS

**Mobile phase or solvent reservoirs**

1/4-28

These high density polyethylene reservoirs for in-line solvent use come with polypropylene caps, 1/4-28 flangeless fittings, and 1/8" PTFE tubes for one or two lines plus vent. Plugs are included for conversion to solvent storage when the reservoir is removed from the system. Optional PTFE filters with titanium frits are available at the bottom of page 79.

Capacity	Cap	Prod No
0.5 liter	2-hole	C-MPR2
0.5 liter	3-hole	C-MPR3
0.5 liter	plain	C-BOT16
1.0 liter	plain	C-BOT32

**VICI caps**

The VICI cap is the most economical way to helium sparge and deliver HPLC mobile phases. The insert is manufactured from PTFE, with a polypropylene screw cap and an EPDM\* O-ring which is resistant to commonly used HPLC solvents.

VICI caps fit GL45 threaded bottles, and are available with 2, 3, or 4 ports with 1/4-28 threads for 1/8" or 1/16" tubing. Unused ports can be plugged as required.

Each VICI cap includes the cap with insert and o-ring, and the appropriate number of PPS nuts, ETFE ferrules, and colored polypropylene fingertight sleeves for solvent line identification.

\*Ethylene Propylene Diene Monomer

		Prod No
VICI-cap	2 ports	JR-S-11001
	3 ports	JR-S-11002
	4 ports	JR-S-11003

**Valves for vials**

Screw-cap Mininert valves are available in a variety of sizes. The crimp-top valve for 13 mm ID glassware slides into the neck of the vial and features a threaded flange, which is turned to provide a leak-tight fit.

Pkg/12:	Cap/thread size	Prod No
	13 mm-425	PS-614158
	15 mm-425	PS-614160
	18 mm-400	PS-614161
	20 mm-400	PS-614170
	24 mm-400	PS-614163
	Crimp top	PS-614250

**TECH TIP**

The VICI cap is intended only for continuous helium sparging, not for building up a helium atmosphere within the solvent bottle.

**MORE INFORMATION**

Bulkhead  
connectors . . . . page 73  
Flangeless fittings . . . . 68  
Plugs . . . . . 71  
Polymeric  
tubing . . . . . 90-92