

CHEMINERT FITTINGS

INERT AND BIOCOMPATIBLE

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

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.

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 $\mu\text{l}/\text{min}$ range, when the transfer volume can be critical.

360 MICRON NANOVOLUME® FITTINGS

These 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 100 μm or 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.

MORE INFO

Cheminert fittings
High
pressure 42-51
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Nanovolume® 42-47
Valco fittings 8-41

TECH TIP

For instructions on making up our 360 μm fittings, see Technical Note 509 in the Support section of vici.com.

TECH TIP

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

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

CONVERSIONS

10,000 psi \approx 689.5 bar
20,000 psi \approx 1,378.9 bar

360 MICRON NANOVOLUME® FITTINGS

- For direct connection of 360 µm tubing
- Work with metal, fused silica, or PEEK
- Up to 40,000 psi (liquid) with metal tubing
- Snap-in rotating ferrule for “one-piece” fitting with no tubing twist
- Eliminate use of troublesome liners

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.

SEE ALSO

360 µm fittings
For fused silica tubing,
10,000+ psi liq ...pg 44
For metal tubing, up to
40,000 psi liq..... 44

up to 10,000 psi liq* FOR PEEK OR FUSED SILICA TUBING

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 integral base with double stick tape to secure fittings to a surface, making sure that the fitting is stable and fragile tubing isn't broken.

*or burst pressure of tubing

Nut/ferrules, caps, plugs, tightening tool

FOR 360 µm TUBING

		Prod No
	Nut/ferrule	C360NFPKG
	Cap	C360CPKG
	Plug	C360PPK
	Tightening tool	C360ET

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

360 µm internal reducers (IZRs) connect 360 µm tubing to 1/16" or 1/32" details in Valco valves or fittings, providing a positive leak-free seal with zero dead volume.

IZRs page 37

MORE INFO

1/32" Nanovolume® fittings45-47
Injectors with 360 micron fittings. . 134

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

Unions and reducing unions

FOR 360 µm TUBING

	Bore size:	50 micron	100 micron	150 micron
		Prod No	Prod No	Prod No
	Union	C360UPKG2	C360UPKG4	C360UPKG6
	Union, quick mount	C360QUPKG2	C360QUPKG4	C360QUPKG6
	Reducing union, 1/16" to 360 µm	—	—	C360RU1PK6

Tees and crosses

FOR 360 µm TUBING

	Bore size:	50 micron	100 micron	150 micron
		Prod No	Prod No	Prod No
	Tee, quick mount	C360QTPKG2	C360QTPKG4	C360QTPKG6
	Cross, quick mount	C360QXPKG2	C360QXPKG4	C360QXPKG6

360 MICRON NANOVOLUME® FITTINGS

10,000 psi liq and above* FOR FUSED SILICA TUBING

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

SEE ALSO

360 µm fittings
For PEEK or FS tubing,
10,000 psi liq. pg 43

Nut/ferrules and caps

FOR 360 µm FS TUBING

		Prod No
	Nut/ferrule	C360NFFS
	Cap	C360CFS

Unions and reducing unions

FOR 360 µm FS TUBING

		50 micron bore Prod No	100 micron bore Prod No	150 micron bore Prod No
	Union	C360UFS2	C360UFS4	C360UFS6
	Reducing union, 1/32" to 360 µm	C360RU.5FS2	C360RU.5FS4	C360RU.5FS6
	Reducing union, 1/16" to 360 µm	—	—	C360RU1FS6

up to 40,000 psi liq ** FOR METAL TUBING

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

		Prod No
	Nut/ferrule	C360NFS6
	Cap	C360C

Unions and reducing unions

FOR 360 µm TUBING

		50 micron bore Prod No	100 micron bore Prod No	150 micron bore Prod No
	Union	C360US62	C360US64	C360US66
	Reducing union, 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 internal reducers (IZRs) 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.

IZRs page 37

TECH TIP

Use these **metal 360 micron nuts** with nano injectors:
C72MX page 134

MORE INFO

360 µm tubing
Electroformed
nickel 67
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1/32" Nanovolume®
fittings 45-47

CONVERSIONS

50 µm ≈ .002"
100 µm ≈ .004"
150 µm ≈ .006"
1/32" ≈ 0.8 mm
1/16" ≈ 1.6 mm



5,000 psi*

1/32" NANOVOLUME® 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.

		Prod No
	Internal nut with collapsible ferrule <i>For use with:</i> Fittings below, and on pages 46-47	C-NNFFPK
	External nut <i>For use with:</i> Unions on page 46 Column end fittings on page 47 <i>Requires collapsible PEEK ferrule, below</i>	C-EN.5FPKB*
	Collapsible PEEK ferrule <i>For use with:</i> External nut, above	ZGF.5PK
	Internal plug <i>For use with:</i> Fittings on pages 45-46	C-NPFPK*

* Not a stock item. Please contact us for a quote.

Unions


FOR 1/32" TUBING

		100 µm bore Prod No	150 µm bore Prod No
	Union for 1/32" PEEK or EFNi tubing. <i>Does not require liners.</i>	C-NEU.5XFPK	C-NEU.5FPK

Reducing unions

1/16" TO 1/32" TUBING


Please contact us for a quote on this non-stock item.

		150 µm bore Prod No
	Reducing union, 1/16" to 1/32" tubing	C-NERU1FPK

Tees, y's, and crosses

FOR 1/32" TUBING OR FS* TUBING

Please contact us for a quote on these non-stock items.

		100 µm bore Prod No	150 µm bore Prod No
	For 1/32" tubing or fused silica*	Tee C-NTXFPK	C-NTFPK
		Y C-NYXFPK	C-NYFPK
		Cross C-NXXFPK	C-NXFPK
* A liner is needed for use with fused silica. Order 27 mm length, page 46.			

TECH TIP

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



Liners page 46

MORE INFO

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Electroformed nickel 67
PEEK 69
Unions for fused silica tubing 43-44, 46

* or burst pressure of tubing

** U.S. Patent No. 6,575,501

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.



Nanovolume® unions and liners • for FS tubing

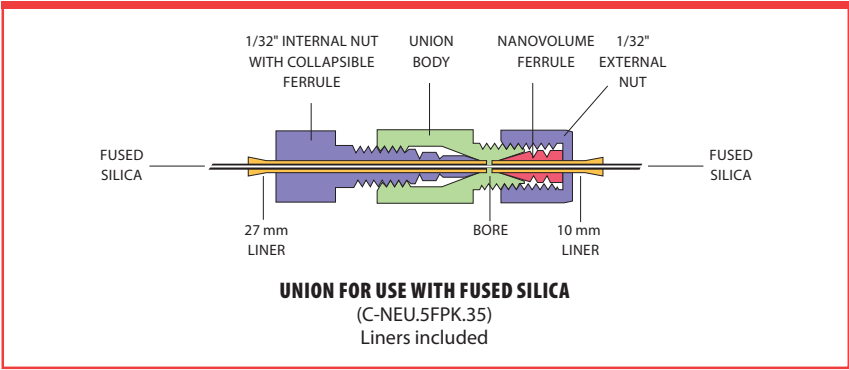
CHEMINERT FITTINGS

Unions

FOR FUSED SILICA TUBING

Please contact us for a quote on these non-stock items.

	FS tubing OD	100 µm bore	150 µm bore
		Prod No	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.

	For tubing OD	Prod No
27 mm liners Use with internal nuts C-NNFFPK or C-NNFLFPK 	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 	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*

* Not a stock item. Please contact us for a quote.

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. Sold in packages of 5 frits.

Pore size	Prod No
0.2 micron	.2FR.5-5*
0.5 micron	.5FR.5-5
2 micron	2FR.5-5

* Not a stock item. Please contact us for a quote.

TECH TIP

Use 27 mm liners

with internal nuts with collapsible ferrules:

Use 10 mm liners

with external nuts:

MORE INFO

360 µm fittings	43-44
1/32" Nanovolume®	
Fittings	45
External nuts	45
Internal nuts	
with collapsible	
ferrules	45
Liners for column end	
fittings	47
More unions for fused	
silica	43-44

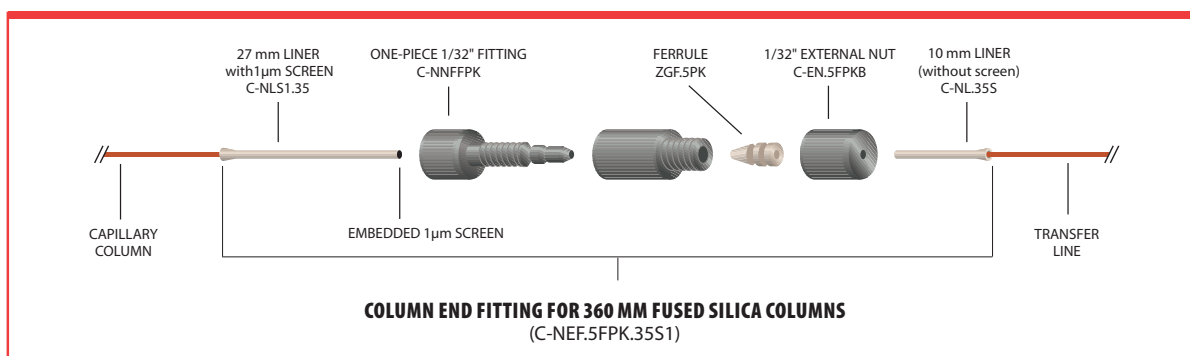
NANOVOLUME® COLUMN END FITTINGS

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, and 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. Sold individually.

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

SCREEN EMBEDDED IN END OF LINER
for column end fittings



Column end fittings

FOR FUSED SILICA CAPILLARY COLUMNS

Please contact us for a quote on these non-stock items.

	100 µm bore		150 µm bore	
	For tubing OD	Prod No	Prod No	
Column end fitting for fused silica tubing Includes liners	125 - 175 µm	C-NEF.5XFPK.15S1	C-NEF.5FPK.15S1	
	175 - 225 µm	C-NEF.5XFPK.20S1	C-NEF.5FPK.20S1	
	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

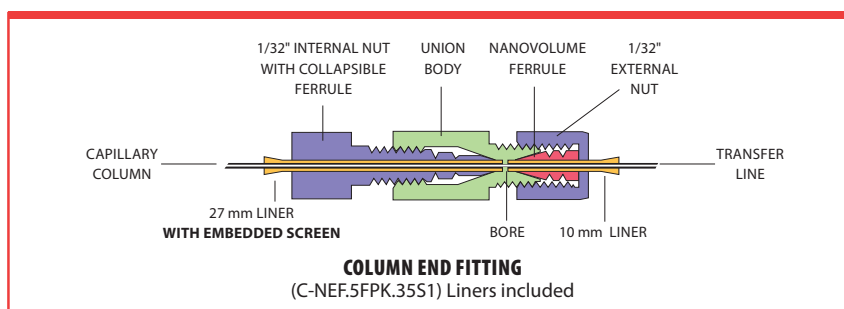
100 µm	≈ .004"
150 µm	≈ .006"
0.25 mm	≈ .010"
0.50 mm	≈ .020"
0.75 mm	≈ .030"
1.0 mm	≈ .040"
1.5 mm	≈ .060"
2.0 mm	≈ .080"
4.6 mm	≈ .180"
6.0 mm	≈ .236"
6.4 mm	≈ .253"
7.0 mm	≈ .275"
10.0 mm	≈ .400"
27.0 mm	≈ 1.08"
1/32"	≈ 0.8 mm
1/16"	≈ 1.6 mm
1/8"	≈ 3.2 mm
1/4"	≈ 6.4 mm
3/8"	≈ 9.5 mm
1/2"	≈ 12.7 mm

Replacement liners for column end fittings

FOR FS CAPILLARIES

Natural PEEK, with embedded screen to provide full closure for fused silica capillaries. Sold individually. Non-stock items. Please contact us for a quote.

	For tubing OD	Prod No
27 mm liners for column end fittings	125 - 175 µm	C-NLS1.15
	175 - 225 µm	C-NLS1.20
	225 - 275 µm	C-NLS1.25
	275 - 325 µm	C-NLS1.30
	325 - 375 µm	C-NLS1.35



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. Sold in packages of 10.

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.

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

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. Sold in packages of 10.

	PEEK (Package/10) Prod No	Glass-filled PEEK (Package/10) Prod No
1/32"	ZF.5PK-10	ZF.5PKG-10*
1/16"	ZF1PK-10	ZF1PKG-10
1/8"	ZF2PK-10	ZF2PKG-10*

* Not-stock item. Please contact us for a quote.
Also available in other sizes.

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. If you are using PEEK tubing, we recommend our high pressure PEEK ferrules, above. Sold in packages of 10.

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

Grooved PEEK (Package/10) Prod No	
1/32"	ZGF.5PK-10
1/16"	ZGF1PK-10

POLYMERS AT A GLANCE

PEEK (PK)..... page 248
Chemical resistance;
up to 125°C

MORE INFO

Tightening tool
for hex-head
PEEK nuts 49

No twist one-piece fittings**FOR 1/32" AND 1/16" TUBING**

- Snap-in ferrule rotates freely
- Choice of ferrule materials
- Choice of fitting lengths

No-twist 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.

<i>Length</i>			Glass-filled PEEK ferrule (Package/5) <i>Prod No</i>	PEEK ferrule (Package/5) <i>Prod No</i>	CTFE ferrule (Package/5) <i>Prod No</i>
1/32" fingertight		.57"	ZNF5FPKG-5	ZNF5FPK-5	–
1/16" fingertight		1.06"	ZNF1FPKG-5	ZNF1FPK-5*	ZNF1KF-5*
1/16" hex	Short	.64"	ZNF1PKG-5*	ZNF1PK-5*	ZNF1KF-5*
	Medium	.82"	MZNF1PKG-5*	MZNF1PK-5*	MZNF1KF-5*
	Long	1.07"	LZNF1PKG-5*	LZNF1PK-5*	LZNF1KF-5*

* Not-stock item. Please contact us for a quote.

**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

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 43-44.
- The green tool is for any 1/32" fitting with a 3/16" hex head nut.
- 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 C25G selector on page 160.

<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 selectors	CGFT*

* Not-stock item. Please contact us for a quote.

High pressure • PEEK fittings

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 48.) PEEK caps include a PEEK nut and ferrule.

	Length	Prod No	
PEEK plugs			
1/32" fingertight	.610"	ZP5FPK	
	.730"	LZP5FPK	
1/16" fingertight	1.14"	ZP1FPK	
1/16" hex	1.00"	MZP1PK	
1/8" hex	1.005"	ZP2PK	
PEEK caps			
1/16" fingertight	1.290"	ZC1FPK	

Also available in 1/2-20 and other sizes. Please contact us for a quote.

PEEK plugs

FOR HIGH PRESSURE POLYMERIC VALVES

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

	Length	Prod No	
1/16" fingertight	1.210"	C-ZP1FPK	

Also available in hex-head versions. Please contact us for a quote.

POLYMERS AT A GLANCE

PEEK (PK)..... page 248
Chemical resistance;
up to 125°C

TECH TIP

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

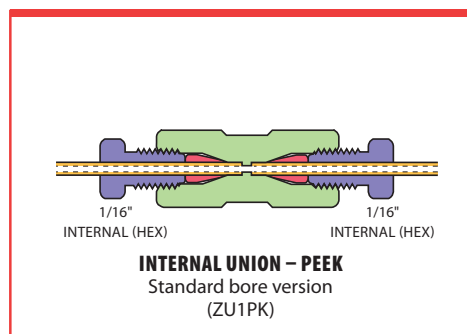
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Low pressure plugs 55
Tightening tool
for hex-head
PEEK nuts 49

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"
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6.4 mm	≈	.253"
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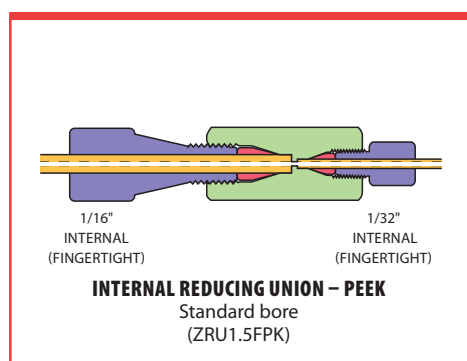
Internal unions

HIGH PRESSURE PEEK

1/16" nuts are available in a choice of fingertight or hex.

Tubing OD	Bore	Standard Prod No	Bulkhead Prod No	Bulkhead panel hole diameter
1/16" fingertight	0.25 mm	ZU1CFPK	ZBU1CFPK	3/8"
	0.50 mm	ZU1MFPK	ZBU1MFPK*	
	0.75 mm	ZU1FPK	ZBU1FPK*	
1/16" hex	0.25 mm	ZU1CPK	ZBU1CPK*	
	0.75 mm	ZU1PK	ZBU1PK*	

* Not-stock item. Please contact us for a quote.
Also available in bulkhead versions and other sizes.



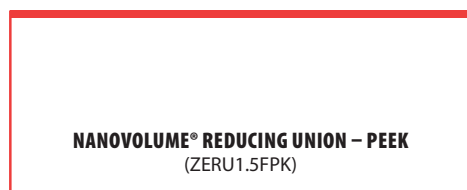
Internal reducing unions

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	Prod No
1/16" to 1/32"	0.25 mm	ZRU1.5FPK
	1/32"	ZRU1.5TFPK
1/8" to 1/16"	0.75 mm	ZRU21FPK

Call for a quote on other sizes and bulkhead versions.



Internal/external reducing union

HIGH PRESSURE PEEK

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

* Not-stock item. Please contact us for a quote.
Also available in bulkhead versions and other sizes.

Tees

HIGH PRESSURE PEEK

1/16" PEEK nuts are fingertight.

PEEK tees		
Tubing OD	Bore	Prod No
1/16"	1.00 mm	ZT1LFPK

Please contact us for a quote on other sizes.

Crosses

HIGH PRESSURE PEEK

Call for a quote on high pressure PEEK crosses.

LOW PRESSURE 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.

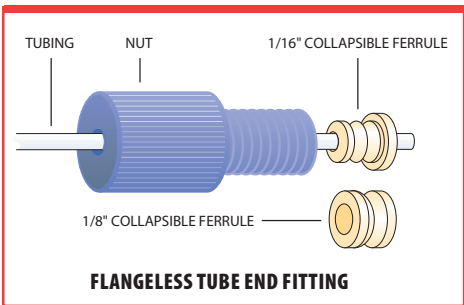
Cheminert flangeless fittings include our patented* collapsible ferrule design. This innovative design utilizes a one-piece ferrule engineered to collapse as it is tightened. The collapse occurs in a narrow area, resulting in a very effective seal with virtually no distortion of the tubing ID and no 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

		1/16" OD	1/8" OD
		Prod No	Prod No
Flangeless fittings with CTFE ferrules (package/5)	Black	CFL-1BK	CFL-2BK
	Blue	CFL-1BE	CFL-2BE
	Brown	CFL-1BR	CFL-2BR
	Green	CFL-1G	CFL-2G
	Natural	CFL-1N	CFL-2N
	Red	CFL-1R	CFL-2R
	White	CFL-1W	CFL-2W
Assorted flangeless fittings (package/12, one of each color)	with CTFE ferrule	CFL-1A	CFL-2A
	with PEEK ferrule	CFL-1A-PK	CFL-2A-PK
Setting tool		CST	CST
Replacements			
PEEK ferrules	(package/10)	CFL-CB1PK	CFL-CB2PK
CTFE ferrules	(package/10)	CFL-CB1KF	CFL-CB2KF
PEEK nuts	(package/10)	CFL-1PK	CFL-2PK

Also available in dark gray, lavender/pink, orange, purple, and yellow.



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

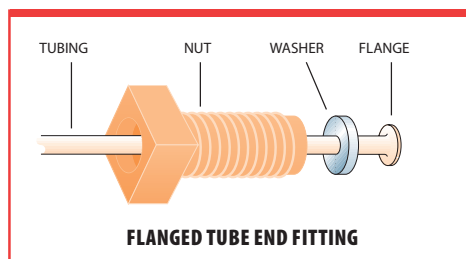
Standard flanged tube end fittings

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 54). 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.



		1/16" OD Prod No	1/8" OD Prod No
Flanged fittings (package/10)	Natural	CF-1N	CF-2N
	White	CF-1W	CF-2W
Washers (package/10)		CF-W1	CF-W2

Also available in black, blue, brown, dark gray, green, lavender/pink, orange, purple, red, and yellow.

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. Sold in packages of 5.

CTFE

Prod No

1/16"	CEN1KF
-------	--------

Please contact us for a quote on 1/8" nuts.

Also available in PEEK.

Nuts and ferrules

1/2-20

Nuts and ferrules for C42 injectors and C45 selectors with 1/2-20 fittings

	Prod No
Delrin nut	CFL-4D
PPS nut	CFL-4PPS
CTFE ferrule	CFL-CB4KF-S

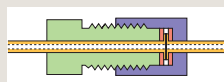
Please contact us for a quote on CTFE nuts.

TECH TIP

To make up standard flanged tube end fittings, use the flanging tool on page 54.

TECH TIP

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



MORE INFO

High pressure fittings pp 42-51
PTFE and FEP tubing 72
C42 injectors 151
C45 selectors 161

Low pressure • Flanging tools and starter kits

CHEMINERT FITTINGS

Cheminert flanging tools

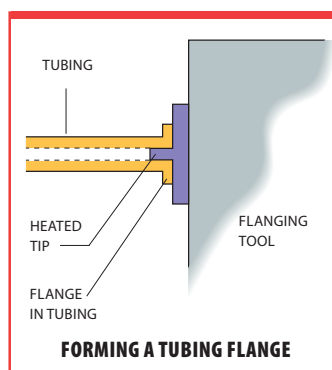
NON-CE

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.

Prod No		
Flanging tools	110 VAC	CFT-110
Flanging tips	for tubing ID ≤ 1.00 mm	CFT-TM
	for tubing ID ≤ 1.50 mm	CFT-TL

Other sizes of replacement flanging tips are also available. Please contact us for a quote.



Easy-Flange kits

FROM VICI JOUR

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 a 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

JR-201540

The Easy-Flange kit includes:

Plastic box	Flanging discs with:
Clean-cut tubing cutter	0.5 mm SS pin for PEEK tubing
6 feet of PTFE tubing, 1/16" x 0.75 mm ID	0.8 mm polymer pin
	0.8 mm titanium pin
	1.3 mm polymer pin
	1.3 mm titanium pin



MORE INFO

Standard tube end fittings page 53
Clean-cut tubing cutter 72

Plugs**1/4-28**

Plugs can be used to close off an unused port in a 1/4-28 valve or manifold. Sold in packages of 5.

Also available with 1/2-20 threads for C42R and C45R valves.

PEEK (Package/5) Prod No	CTFE (Package/5) Prod No
CPPK	CPKF

Low pressure PEEK plugs**10-32**

These all-PEEK plugs are for use in Cheminert PEEK fittings and low pressure polymeric valves (C20Z series). For high pressure polymeric valves (C1-C5 series), use the plugs on page 50. Sold individually.

	PEEK Length of nut* (Sold individually) Prod No
1/16" hex	.62" MZP1PK
1/16" long hex	.87" LZP1PK*
1/16" fingertight	.88" ZP1FPK

* Non-stock item. Please contact us for a quote.

Caps**1/4-28**

Caps are used to close off lines with 1/4-28 tube end fittings. Sold in packages of 5.

PEEK (Package/5) Prod No	CTFE (Package/5) Prod No
CCPK-5	CCKF-5

**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

Low pressure • Unions, bulkhead unions, and tees

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.

OD	Bore	PEEK	CTFE
		Prod No	Prod No
1/16"	0.25 mm	CUCPK*	CUCKF
	0.50 mm	CUPK*	CUKF
	0.75 mm	CUMPK	CUMKF

* Non-stock item. Please contact us for a quote. Also available for 1/8" tubing.

Polypropylene Prod No

1/8" (Pkg/5)	Butt connection	JR-060-5
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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.

OD	Bore	CTFE
		Prod No
1/16"	0.25 mm	CZUCKF

Also available in PEEK and 316 stainless bodies.
Please contact us for a quote.

Bulkhead unions CHEMINERT TO CHEMINERT 1/4-28 to 1/4-28

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

OD	Bore	PEEK	CTFE	316 Stainless
		Prod No	Prod No	Prod No
1/16"	0.50 mm	CBUPK*	CBUKF	CBUS6*
	0.75 mm	CBUMPK	CBUMKF*	CBUMS6*
1/8"	1.50 mm	CBULPK	CBULKF	CBULS6

* Non-stock item. Please contact us for a quote.
1/16" OD is also available in 0.25 mm bore.

Tees 1/4-28

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

Tubing OD	Bore	CTFE
		Prod No
1/16"	0.25 mm	CTCKF
	0.50 mm	CTKF
	0.75 mm	CTMKF
1/8"	1.50 mm	CTLKF

Also available in PEEK.

CALL FOR QUOTES

Unions, 1/4-28 to 1/2-20

Bulkhead unions,
1/4-28 to 10-32

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.

CTFE		
<i>Tubing OD</i>	<i>Bore</i>	<i>Prod No</i>
1/16"	0.75 mm	CM1XKF

Also available in PEEK and 1/8" fittings.

Adapter **CHEMINERT 1/4-28 TO VALCO 10-32 ZDV**

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

*
*10-32 NUT
NOT INCLUDED

<i>Bore</i>	<i>Prod No</i>
0.50 mm	ZLCA1PK

Luer adapters **LUER TO 1/4-28 OR 10-32**

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

		PEEK		CTFE	PFA
		<i>Bore</i>	<i>Prod No</i>	<i>Prod No</i>	<i>Prod No</i>
1/4-28 male to	Female luer	1.50 mm	CFLAPK	CFLAKF	CFLAPFA
	Male luer	1.50 mm	CMLAPK	CMLAKF*	CMLAPFA

* Non-stock item. Please call for a quote .

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.

		PEEK		CTFE
		<i>Bore</i>	<i>Prod No</i>	<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	ZBUMLK*

* Non-stock item. Please call for a quote .

CALL FOR QUOTES

Crosses, 1/4-28

Manifolds, 1/4-28

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

Pipe adapters connect 1/4-28 fittings to male or female NPT.

Low pressure • Biocompatible fittings and filters

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

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*

10 micron	C-MPFT10
-----------	----------

Also available in 2 micron. Please contact us for a quote.

Biocompatible filters

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 hand tightened. The filter element is PEEK-encapsulated titanium.

Prod No

Filter for 1/16" tubing	0.5 mm bore	ZU1FPK.5*
Replacement filter element	0.5 micron pore size	C-F1.5TI

* Non-stock item. Please contact us for a quote.

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.

Pore size *Prod No*

2 micron	CFE-S2
10 micron	CFE-S10
75 micron	CFE-S75

Last Drop mobile phase filters

FROM VICI JOUR

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

FROM VICI JOUR

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.

Spargers have a porosity of 10 microns.

The filter/sparger features a PEEK tripod connector for the solvent line, and a 1/4-28 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

**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

No-Met biocompatible mobile phase filters

FROM VICI JOUR

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*.

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

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

Stainless steel mobile phase filters and helium spargers

FROM VICI JOUR

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.

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

<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
	10 µm	35	JR-367016-10
	20 µm	35	JR-367016-20
1/8"	2 µm	35	JR-367008-2
	10 µm	100	JR-367008-10
	20 µm	120	JR-367008-20

**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

VICI caps

FROM VICI JOUR

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

<i>Prod No</i>	
2 ports	JR-S-11001
3 ports	JR-S-11002
4 ports	JR-S-11003

One-piece fingertight column coupler

FROM VICI JOUR

Choose from a variety of coupler IDs, indicated by the color of the sleeve (which parallels the color-coding of our PEEK tubing on pages 70-71). 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. Colors are red, yellow, blue, and orange.

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

COUPLER SHOWN INSTALLED BETWEEN TWO COLUMNS
(columns not included)

t TECH TIP

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

➔ MORE INFO

Bulkhead connectors pages 56-57
Flangeless fittings 52
Plugs, 1/4-28 55
Polymeric tubing 72