



## FILTERS & FRITS

Our Filters offer an optimal way to filter your solvents, preventing pump cavitation and system damage. We offer different style filters for specific system specifications. Our filters protect your system from particulate matter from the solvent that may otherwise damage expensive hardware.

We offer a complete line of Frits manufactured from two different materials: PEEK and stainless steel. Both materials offer a variety of sizes of frit discs, as well as being available in numerous porosities. All our frits are designed with exceptional uniform porosity and a long filtration life.

- 95** FRITS
- 100** FILTERS
- 111** BOTTLE CAPS & PLUGS



# Stainless Steel Frits

Our Analytical-scale 316 Stainless Steel Frits are available in 0.5  $\mu\text{m}$  or 2  $\mu\text{m}$  porosity—the most common HPLC filtration ratings. Each frit includes a PCTFE or PEEK polymer sealing ring.

Many of the frits shown have the common 0.250" (0.64 cm) and 0.254" (0.64 cm) ODs, which allow them to be used in many of the Precolumn and Inline Filters found starting on page 103. Choose the larger diameter faces and/or larger porosity frits for faster flow rates. Choose frits with a smaller diameter face and/or smaller porosity for applications sensitive to extra flow path volume.

## APPLICATION NOTE

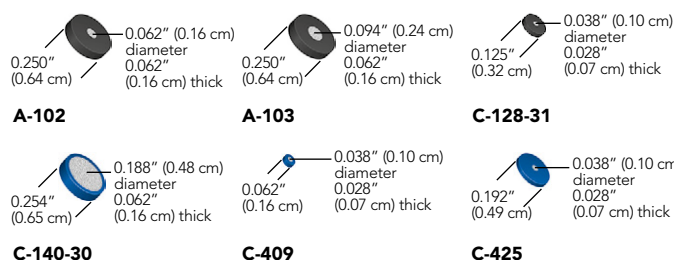
### To Clean Or Not To Clean?

It is rarely worth the time and effort to clean frits, given the relatively low cost of replacements. Furthermore, cleaning may leave some debris embedded in the frit pores. If the washed frit is accidentally returned to your instrument in a reverse orientation, any remaining debris could be flushed out and deposited further down the fluid path. If this frit is being used as a column head frit, the debris may be washed directly onto the column bed.

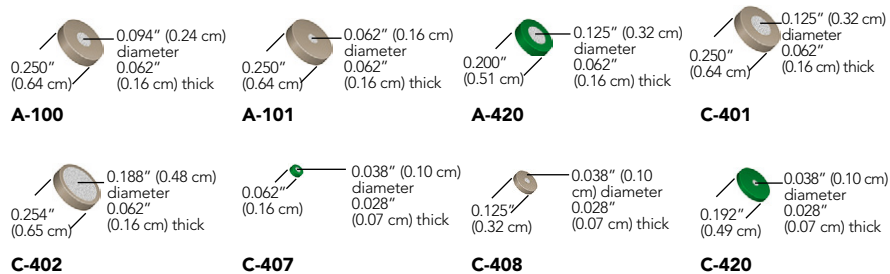
## NOTE

Frits without the polymer rings cannot be used with our standard Precolumn and Inline Filter assemblies.

### 0.5 $\mu\text{m}$ Stainless Steel Frits



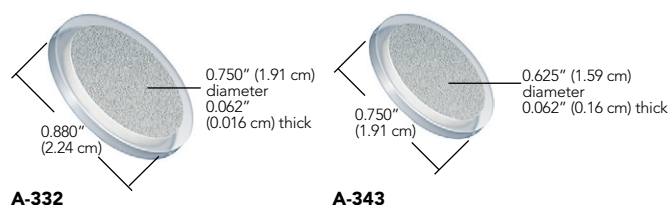
### 2 $\mu\text{m}$ Stainless Steel Frits



### Semi-Prep Stainless Steel Frits

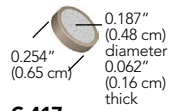
Many of these frits come complete with a PCTFE, ETFE, or PTFE sealing ring. Choose from 2  $\mu\text{m}$ , 5  $\mu\text{m}$ , 10  $\mu\text{m}$ , and 20  $\mu\text{m}$  filtration porosities and a range of diameters to match your intended flow rate and filtration requirements.

### 2 $\mu\text{m}$ Semi-Prep Stainless Steel Frits



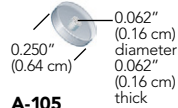
# Stainless Steel Frits (Cont.)

## 5 µm Semi-Prep Stainless Steel Frits

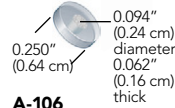


C-417

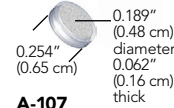
## 10 µm Semi-Prep Stainless Steel Frits



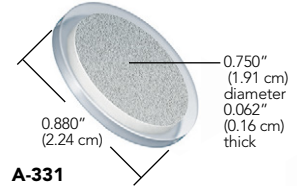
A-105



A-106

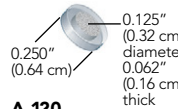


A-107

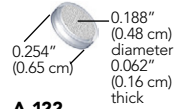


A-331

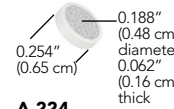
## 20 µm Semi-Prep Stainless Steel Frits



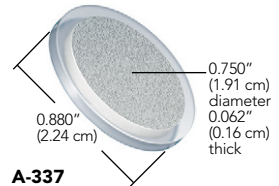
A-120



A-122



A-224



A-337

## Stainless Steel Frits

Part No.	Porosity	Disc Diameter	Disc Thickness	Ring OD	Ring Material	Frit Volume	Qty.
<b>STAINLESS STEEL FRITS</b>							
A-100	2 µm	0.094" (0.24 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PEEK	1.7 µL	ea.
A-101	2 µm	0.062" (0.16 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PEEK	0.7 µL	ea.
A-102	0.5 µm	0.062" (0.16 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PEEK	0.6 µL	ea.
A-103	0.5 µm	0.094" (0.24 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PEEK	1.4 µL	ea.
A-420	2 µm	0.125" (0.32 cm)	0.062" (0.16 cm)	0.200" (0.51 cm)	PCTFE	3.0 µL	ea.
C-128-31	0.5 µm	0.038" (0.10 cm)	0.028" (0.07 cm)	0.125" (0.32 cm)	PEEK	0.1 µL	ea.
C-140-30	0.5 µm	0.188" (0.48 cm)	0.062" (0.16 cm)	0.254" (0.65 cm)	PCTFE	6.5 µL	ea.
C-401	2 µm	0.125" (0.32 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PEEK	3.0 µL	ea.
C-402	2 µm	0.188" (0.48 cm)	0.062" (0.16 cm)	0.254" (0.65 cm)	PEEK	7.8 µL	ea.
C-407	2 µm	0.038" (0.10 cm)	0.028" (0.07 cm)	0.062" (0.16 cm)	PCTFE	0.1 µL	ea.
C-408	2 µm	0.038" (0.10 cm)	0.028" (0.07 cm)	0.125" (0.32 cm)	PEEK	0.1 µL	ea.
C-409	0.5 µm	0.038" (0.10 cm)	0.028" (0.07 cm)	0.062" (0.16 cm)	PCTFE	0.1 µL	ea.
C-420	2 µm	0.038" (0.10 cm)	0.028" (0.07 cm)	0.192" (0.49 cm)	PCTFE	0.1 µL	ea.
C-425	0.5 µm	0.038" (0.10 cm)	0.028" (0.07 cm)	0.192" (0.49 cm)	PCTFE	0.1 µL	ea.
<b>SEMI-PREP STAINLESS STEEL FRITS</b>							
A-105	10 µm	0.062" (0.16 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	0.9 µL	ea.
A-106	10 µm	0.094" (0.24 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	2.0 µL	ea.
A-107	10 µm	0.189" (0.48 cm)	0.062" (0.16 cm)	0.254" (0.65 cm)	PCTFE	9.1 µL	ea.
A-120	20 µm	0.125" (0.32 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	3.7 µL	ea.
A-122	20 µm	0.188" (0.48 cm)	0.062" (0.16 cm)	0.254" (0.65 cm)	PCTFE	9.7 µL	ea.
A-224	20 µm	0.188" (0.48 cm)	0.062" (0.16 cm)	0.254" (0.65 cm)	PTFE	9.7 µL	ea.
A-331	10 µm	0.750" (1.91 cm)	0.062" (0.16 cm)	0.880" (2.24 cm)	ETFE	141.9 µL	ea.
A-332	2 µm	0.750" (1.91 cm)	0.062" (0.16 cm)	0.880" (2.24 cm)	ETFE	141.9 µL	ea.
A-337	20 µm	0.750" (1.91 cm)	0.062" (0.16 cm)	0.880" (2.24 cm)	ETFE	152 µL	ea.
A-343	2 µm	0.625" (1.59 cm)	0.062" (0.16 cm)	0.750" (1.91 cm)	PCTFE	112.6 µL	ea.



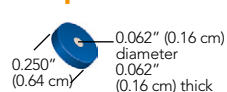
# PEEK Frits

- › Inert, biocompatible, and metal-free
- › Uniform porosity, longer filtration life
- › Sealing rings manufactured from PCTFE

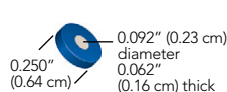
Patented IDEX Health & Science PEEK Frits offer exceptionally uniform porosity. This property ensures longer filtration life and consistent frit-to-frit swept volumes. The PEEK polymer frit discs are biocompatible and inert to most solvents, making them well-suited for bioanalytical applications. PEEK's robust properties make these products suitable for low and high pressure applications.

Disc rings, included on all PEEK frits, are made of PCTFE and are slightly thicker than the frit disc, providing enhanced sealing and excellent chemical resistance. PCTFE surrounded PEEK frits can be used up to 80 °C.

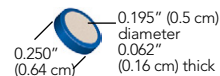
## 0.5 µm PEEK Frits



**A-701**

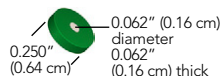


**A-703**

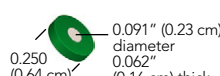


**A-707**

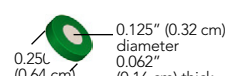
## 2 µm PEEK Frits



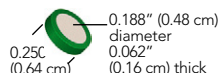
**A-700**



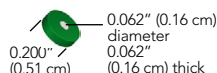
**A-702**



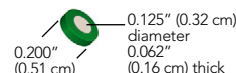
**A-704**



**A-706**

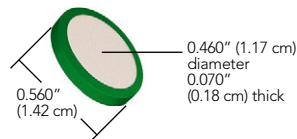


**A-708**



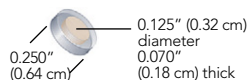
**A-710**

## 2 µm Semi-Prep PEEK Frits

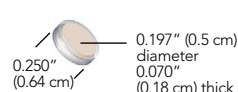


**OC-802**

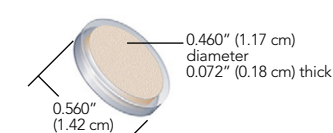
## 5 µm and 10 µm PEEK Frits



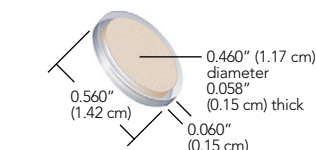
**A-720**



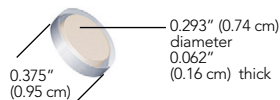
**A-722**



**OC-803**



**OC-805**



**OC-815**

## PEEK Frits (Cont.)

### NOTE

- › The thickness dimension in the part drawings and the pricing tables represents the thickness of the frit disc not the frit ring. Frit rings are often slightly thicker to ensure a proper seal. When tightened into a filter holder the ring compresses to nearly match the thickness of the frit disc.
- › The manufacturing process may cause some slight color variance in our PEEK frits. This does not affect their quality or performance. Frit dimensions are approximate. Actual batch-to-batch frit dimensions may vary slightly.

### RELATED PRODUCTS

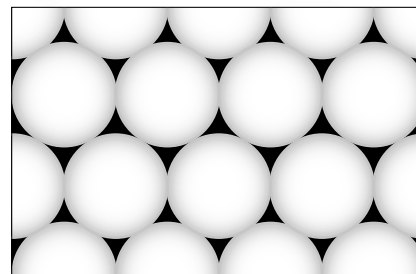
Any 0.247" to 0.254" diameter frit (including polymer ring) can be used with the Standard HPLC Inline Solvent Filters on page 102 and the Standard Precolumn Filters on page 105.

### APPLICATION NOTE

#### Frit Volume

The term "frit volume" refers to the volume of the various fluid pathways that comprise the matrix of a frit. A standard frit is a mass of small particles fused together through a controlled process of compression and heat. Because of their shape, there are gaps between the fused particles. Fluid makes its way through these gaps, creating a pathway from one side of the frit to the other (see the diagram, below, where the white circles represent frit particles, and the black area represents the void between the particles.)

Generally, when the frit particles increase in size, the frit's porosity increases as well. The larger the particles, the larger the gaps between particles. Cumulatively, these gaps comprise what is known as "frit volume." Using gravimetric determination, it has been experimentally shown that the total volume of any given frit may range from 18%–30%, depending upon the porosity of the frit.



Frit volume is calculated by determining what the mass of the frit would be if it were a solid block of material of equal size. Then the solid mass of the frit is multiplied by the percentage assigned to the porosity to determine the theoretical frit volume.

20% for 0.5 µm frits      26% for 5 µm frits      30% for 20 µm frits  
24% for 2 µm frits      28% for 10 µm frits

From a chromatographic perspective, it's important to know the volume of the frit used in your system. It is possible for a frit to negatively impact your chromatography if the total frit volume is too large and if it is placed in an area through which the sample will pass. To avoid frit-related problems like band broadening and loss of resolution, most inline filters placed after the sample introduction point (e.g., between the injection valve and the column) are smaller in size and porosity than inline filters that are placed in areas before the sample is introduced into the flow path (e.g., between the pump and the injection valve).

## PEEK Frits

Part No.	Porosity	Disc Diameter	Disc Thickness	Ring OD	Ring Material	Frit Volume	Qty.
<b>PEEK FRITS</b>							
A-700	2 µm	0.062" (0.16 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	0.7 µL	ea.
A-701	0.5 µm	0.062" (0.16 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	0.6 µL	ea.
A-702	2 µm	0.091" (0.23 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	1.7 µL	ea.
A-703	0.5 µm	0.092" (0.23 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	1.4 µL	ea.
A-704	2 µm	0.125" (0.32 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	3.0 µL	ea.
A-706	2 µm	0.188" (0.48 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	7.1 µL	ea.
A-707	0.5 µm	0.195" (0.5 cm)	0.062" (0.16 cm)	0.250" (0.64 cm)	PCTFE	6.1 µL	ea.
A-708	2 µm	0.062" (0.16 cm)	0.062" (0.16 cm)	0.200" (0.51 cm)	PCTFE	0.7 µL	ea.
A-710	2 µm	0.125" (0.32 cm)	0.062" (0.16 cm)	0.200" (0.51 cm)	PCTFE	3.0 µL	ea.
<b>SEMI-PREP PEEK FRITS</b>							
A-720	10 µm	0.125" (0.32 cm)	0.070" (0.18 cm)	0.250" (0.64 cm)	PCTFE	4.2 µL	ea.
A-722	10 µm	0.197" (0.5 cm)	0.070" (0.18 cm)	0.250" (0.64 cm)	PCTFE	9.9 µL	ea.
OC-802	2 µm	0.460" (1.17 cm)	0.070" (0.18 cm)	0.560" (1.42 cm)	PCTFE	46.4 µL	ea.
OC-803	10 µm	0.460" (1.17 cm)	0.072" (0.18 cm)	0.560" (1.42 cm)	PCTFE	57.2 µL	ea.
OC-805	5 µm	0.460" (1.17 cm)	0.058" (0.15 cm)	0.560" (1.42 cm)	PCTFE	41.1 µL	ea.
OC-815	5 µm	0.293" (0.74 cm)	0.062" (0.16 cm)	0.375" (0.95 cm)	PCTFE	17.8 µL	ea.

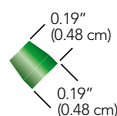


# Frit-in-a-Ferrule™

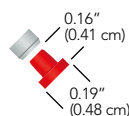
- › Seals and filters simultaneously
- › Less expensive and more convenient than traditional inline filter systems
- › Available in both Flangeless and Super Flangeless™ versions

Now you can filter at any point in your system where 1/16" or 1/8" OD tubing is used in a flat-bottom 1/4-28, M6 or 5/16-24 connection.

Our Frit-In-A-Ferrule product line is designed to seal and filter simultaneously by incorporating a frit into the body of a flat-bottom ferrule. This simple design allows you to eliminate traditional inline filters and reduce the number of additional connections in your system.



**P-372**  
Flangeless Frit-In-A-Ferrule  
for 1/8" OD tubing



**P-276**  
Super Flangeless Frit-In-A-Ferrule  
for 1/16" OD tubing



Part No.	Description	Porosity	Frit Material	Frit Diameter	Frit Thickness	Swept Volume	Maximum Pressure	Qty.
<b>FRIT-IN-A-FERRULE FOR 1/16" OD TUBING</b>								
<b>P-270</b>	Super Flangeless, Natural PEEK, SST lock ring	2 µm	SST	0.062"	0.062"	0.74 µL	2,500 psi (172 bar)	ea.
<b>P-272</b>	Flangeless, Green PCTFE	2 µm	SST	0.062"	0.062"	0.74 µL	2,000 psi (138 bar)	ea.
<b>P-273</b>	Flangeless, Blue PCTFE	0.5 µm	SST	0.062"	0.062"	0.61 µL	2,000 psi (138 bar)	ea.
<b>P-274</b>	Super Flangeless, Natural PEEK, SST lock ring	2 µm	PEEK	0.046"	0.030"	0.20 µL	2,500 psi (172 bar)	ea.
<b>P-275</b>	Super Flangeless, Black PEEK, SST lock ring	0.5 µm	PEEK	0.046"	0.030"	0.16 µL	2,500 psi (172 bar)	ea.
<b>P-276</b>	Super Flangeless, Stainless Steel, Natural ETFE, SST lock ring	10 µm	SST	0.062"	0.062"	0.90 µL	2,500 psi (172 bar)	ea.
<b>FRIT-IN-A-FERRULE FOR 1/8" OD TUBING</b>								
<b>P-372</b>	Flangeless, Green PCTFE	2 µm	SST	0.094"	0.062"	1.69 µL	500 psi (34 bar)	ea.
<b>P-373</b>	Flangeless, Blue PCTFE	0.5 µm	SST	0.094"	0.062"	1.41 µL	500 psi (34 bar)	ea.
<b>P-374</b>	Super Flangeless**, Natural PEEK, SST lock ring	2 µm	PEEK	0.094"	0.042"	1.15 µL	2,500 psi (172 bar)	ea.

\* Swept volumes include/reflect theoretical frit volume values.

\*\* The 1/8" Super Flangeless versions cannot be used in M6 ports.



# Bottom-of-the-Bottle™ Filters

Our uniquely designed Bottom-of-the-Bottle™ Filters effectively protect your system by filtering out particulate matter that may otherwise damage expensive hardware.

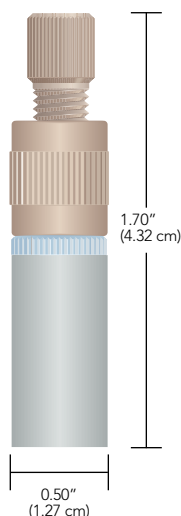
## Stainless Steel Bottom-of-the-Bottle Solvent Filters

- › Draws solvent from within 1/8" of the bottom of the bottle
- › Replaceable stainless steel filter cups
- › Versions for 1/8" and 3/16" OD tubing
- › Materials of construction: PEEK, ETFE, and 316 Stainless Steel

Patented Stainless Steel Bottom-of-the-Bottle Solvent Filter Assemblies feature a 2 µm or 10 µm replaceable stainless steel filter cup and a design that allows solvent to be drawn from within 1/8" of the bottom of your solvent bottle. The filter cups are inexpensive and easy to replace, making this an economical, trouble-free choice.

### A-550 Bottom-of-the-Bottle Inlet Solvent Filter

Maximum Flow Rates:  
2 µm—up to 10 mL/min.  
10 µm—up to 40 mL/min.

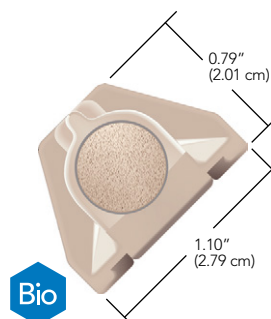
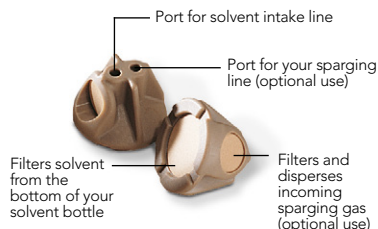


## All-PEEK Bottom-of-the-Bottle Solvent Filters

- › Most recommended filtering unit
- › 100% PEEK polymer construction
- › Easy operation — no fittings required

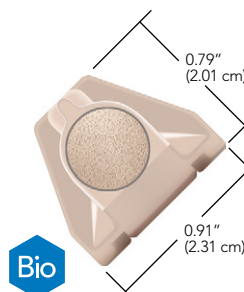
These biocompatible filters are made from 100% PEEK polymer, including the two built-in PEEK frits. The bottom frit (2 µm or 10 µm) will draw solvents from within 0.080" (2.0 mm) of the bottom of the solvent bottle. The 2 µm frit on the side may be used for a 1/8" OD helium sparging line.

To use, simply press fit your appropriately sized fluoropolymer tubing firmly into the top holes. That's it!



**A-435**  
Bottom-of-the-Bottle Filter

Maximum Flow Rate: up to 30 mL/min



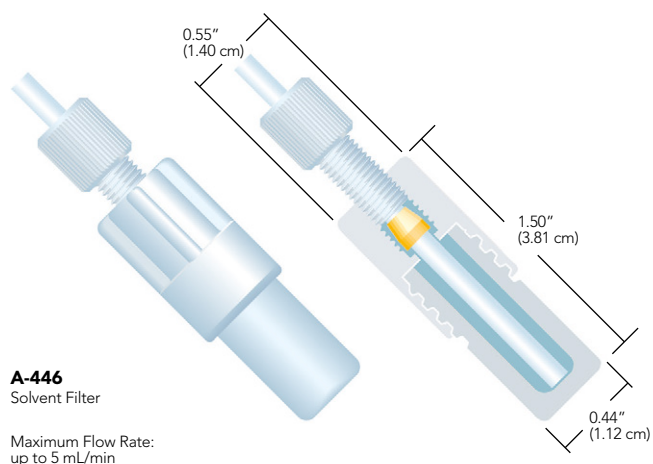
**A-438**  
Bottom-of-the-Bottle Filter  
(for small neck bottles)

## UHMWPE Bottom-of-the-Bottle™ Solvent Filters

- › Replaceable filter cup
- › Economical
- › Materials of construction: UHMWPE, ETFE
- › Versions for 1/16" and 1/8" OD tubing

The design of the UHMWPE solvent filters allows tubing to pass through to the bottom of the filter cup, enabling the filter to draw solvent from within 0.10" (2.5 mm) of the bottom of your solvent bottle.

*Please Note: UHMWPE is a hydrophobic material. To establish proper surface wetting, you may need to prime the filter with methanol or acetonitrile.*



## Bottom-of-the-Bottle Filters

Part No.	Description	Porosity	For Tubing Size	Includes	Qty.
<b>STAINLESS STEEL BOTTOM-OF-THE-BOTTLE SOLVENT FILTERS</b>					
A-550	SST Filter Assembly, with A-520 filter cup	10 µm	1/8" OD	(1) XP-130	ea.
A-551	SST Filter Assembly, with A-522 filter cup	2 µm	1/8" OD	(1) XP-130	ea.
A-520x	SST Replacement Solvent Filter Cups, 10-pk	10 µm	—	—	ea.
A-522x	SST Replacement Solvent Filter Cups, 10-pk	2 µm	—	—	ea.
<b>ALL-PEEK BIOCOMPATIBLE BOTTOM-OF-THE-BOTTLE SOLVENT FILTERS</b>					
A-435	PEEK Filter	2 µm	1/8" OD	—	ea.
A-437	PEEK Filter, for small-neck (GL-38) bottles	2 µm	1/8" OD	—	ea.
A-438	PEEK Filter, for small-neck (GL-38) bottles	10 µm	1/8" OD	—	ea.
A-440	PEEK Filter	10 µm	1/8" OD	—	ea.
A-441	PEEK Filter	10 µm	3/16" OD	—	ea.
A-451	PEEK Filter	10 µm	1/16" OD	—	ea.
<b>UHMWPE BIOCOMPATIBLE BOTTOM-OF-THE-BOTTLE SOLVENT FILTERS</b>					
A-445	UHMWPE Filter Assembly	10 µm	1/16" OD	(1) XP-245	ea.
A-446	UHMWPE Filter Assembly	10 µm	1/8" OD	(1) XP-345	ea.
A-427	UHMWPE Replacement Solvent Filter Cups, 5-pk	10 µm	—	—	ea.





# Inlet Solvent Filters

- ▶ Large surface areas prevent pump cavitation
- ▶ Disposable
- ▶ 2  $\mu\text{m}$ , 10  $\mu\text{m}$ , and 20  $\mu\text{m}$  pore sizes available
- ▶ General use and prep filters for higher flow applications

## APPLICATION NOTE

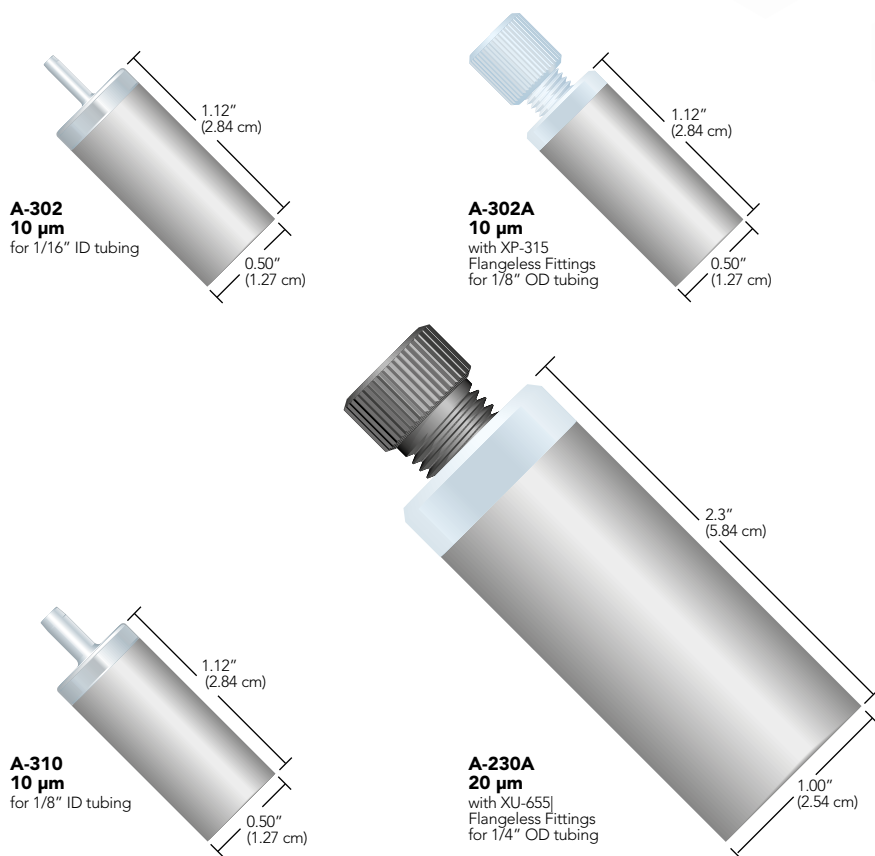
### Why Use An Inlet Solvent Filter?

- ▶ To filter out particulate matter from the solvent that may otherwise damage expensive hardware. (Use a 10  $\mu\text{m}$  or 20  $\mu\text{m}$  version for this purpose. The A-309 and A-230A filters have an added "Bottom of the Bottle"™ feature to help draw solvent to within 1/8" of the bottom of your solvent bottle.)
- ▶ To prevent particulates originating from the sparging system from entering the mobile phase reservoir and to help disperse the sparging gas efficiently. (Use a 2  $\mu\text{m}$  filter for this purpose.)
- ▶ To hold your tubing in place at the bottom of the bottle. (Most stainless steel filter options work best for this purpose.)

*Note: It is usually a good idea to change the inlet filter as part of your semi-annual or annual preventative maintenance program.*

It is good practice to filter your solvents to prevent pump damage. Our 316 stainless steel filters provide that protection.

Because filters should be changed periodically, we make it easy to replace them without tools. For those filters using a plastic fitting, the tubing can be reconnected by finger tightening the fitting into the new filter. The filters with stems allow easy insertion into the inlet tubing.



Part No.	Description	Porosity	Material	For Tubing Size	Includes	Max. Suggested Flow Rate*	Qty.
<b>INLET SOLVENT FILTERS FOR ANALYTICAL HPLC</b>							
A-242	Inlet Solvent Filter with One-Piece Fitting	2 $\mu\text{m}$	PCTFE, SST	1/8" OD	(1) P-100	10 mL/min	ea.
A-243	A-242, 5-pack	2 $\mu\text{m}$	PCTFE, SST	1/8" OD	(5) P-100	10 mL/min	ea.
A-228	Inlet Solvent Filter with stem	2 $\mu\text{m}$	SST	1/8" ID	—	80 mL/min	ea.
A-302	Inlet Solvent Filter with stem	10 $\mu\text{m}$	SST	1/16" ID	—	40 mL/min	ea.
A-302A	Inlet Solvent Filter with Flangeless Fittings	10 $\mu\text{m}$	PCTFE, SST	1/8" OD	(1) XP-315	40 mL/min	ea.
A-309	Inlet Solvent Filter with stem	10 $\mu\text{m}$	SST	1/16" ID	—	40 mL/min	ea.
A-231A	Inlet Solvent Filter with Flangeless Fittings	20 $\mu\text{m}$	PCTFE, SST	3/16" OD	(1) XP-132	100 mL/min	ea.
A-310	Inlet Solvent Filter with stem	10 $\mu\text{m}$	SST	1/8" ID	—	40 mL/min	ea.
<b>INLET SOLVENT FILTERS FOR PREPARATIVE HPLC SYSTEMS</b>							
A-225	Inlet Solvent Filter with stem	20 $\mu\text{m}$	SST	1/16" ID	—	100 mL/min	ea.
A-225A	Inlet Solvent Filter with Flangeless Fittings	20 $\mu\text{m}$	PCTFE, SST	1/8" OD	(1) P-315, (1) P-300N	100 mL/min	ea.
A-227A	Inlet Solvent Filter with Flangeless Fittings	10 $\mu\text{m}$	PCTFE, SST	1/4" OD	(1) XU-655	100 mL/min	ea.
A-230A	Inlet Solvent Filter with Flangeless Fittings	20 $\mu\text{m}$	PCTFE, SST	1/4" OD	(1) XU-655	100 mL/min	ea.
A-311	Inlet Solvent Filter with stem	10 $\mu\text{m}$	SST	1/16" ID	—	100 mL/min	ea.
A-311A	Inlet Solvent Filter with Flangeless Fittings	10 $\mu\text{m}$	PCTFE, SST	1/8" OD	(1) XP-315	100 mL/min	ea.

\* Maximum suggested flow rates are determined by porosity and surface area.



# Inline Filters

- › Specially engineered for inline filtration
- › Versions include Micro, Standard, and Semi-Preparative
- › Bio-inert and stainless steel options offered
- › Variety of porosities, application appropriate



## RELATED PRODUCTS

### Fittings

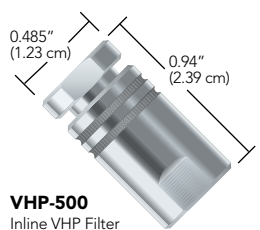
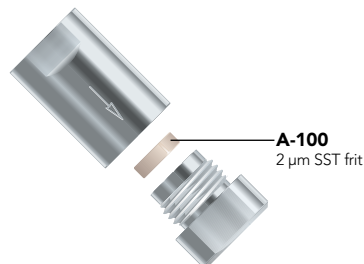
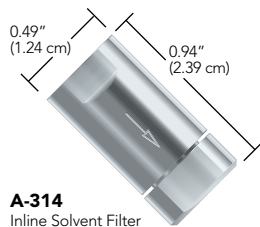
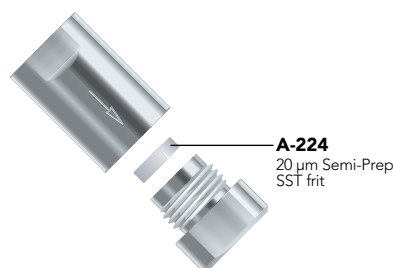
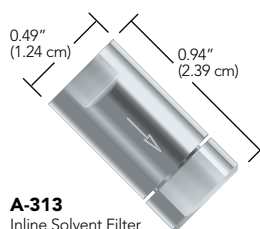
All Standard Inline Solvent Filters have 10-32 threads for 1/16" OD tubing, allowing the use of most standard chromatography high pressure fittings.

Our Inline Filters are specially engineered for inline filtration. It is specifically designed to help prevent particulate contamination from clogging sensitive equipment. It is ideally suited for placement along the flow path line between the pump and injection valve/autosampler. We offer a variety of porosities for your application.

### Standard Inline Solvent Filters

- › For 1/16" OD tubing
- › Versions for Standard HPLC (6,000 psi/414 bar) and UHPLC (25,000 psi/1,725 bar)
- › Replacement frits available Versions for Standard HPLC (6,000 psi/414 bar) and UHPLC (25,000 psi/1,725 bar)
- › Help prevent particulate contamination from clogging sensitive equipment
- › Ideally suited for placement along the flow path line between the pump and injection valve/autosampler

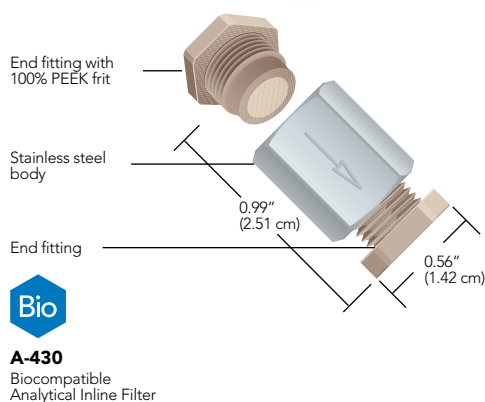
Inline filter assemblies that begin with the letter "A" are engineered for standard HPLC applications (up to 6,000 psi/414 bar). Inline Filter Assemblies that begin with the "VHP" prefix are suitable for use in UHPLC systems, where pressures can reach 25,000 psi (1,725 bar).



## Biocompatible Standard Inline Filters

- › 0.5 µm and 2 µm versions available
- › Features 100% PEEK flow path

Our A-430 and A-431 Inline Filters consist of a stainless steel body and two PEEK end fittings. Maximum recommended flow rate is 25 mL/min for the A-430 Filter and 10 mL/min for the A-431 Filter. And, you get the added benefit of biocompatibility since all wetted surfaces are PEEK. When you need to replace the frit, simply dispose of the end fitting that contains the frit and replace it with a new one.



## Inline Filters

Part No.	Description	Porosity	For Tubing Size	Threads	Includes	Swept Volume	Pressure Rating	Qty.
<b>STANDARD INLINE SOLVENT FILTERS</b>								
<b>A-313</b>	Solvent Filter Assembly	20 µm	1/16" OD	10-32 Coned	(1) A-224	12.3 µL	6,000 psi (414 bar)	ea.
<b>A-314</b>	Solvent Filter Assembly	2 µm	1/16" OD	10-32 Coned	(1) A-100	4 µL	6,000 psi (414 bar)	ea.
<b>A-100</b>	Replacement Frits, Stainless Steel, ea.	2 µm	N/A	—	—	1.4 µL	N/A	ea.
<b>A-224</b>	Replacement Frits, Stainless Steel, ea.	20 µm	N/A	—	—	9.7 µL	N/A	ea.
<b>VHP-500</b>	Inline VHP Filter	0.5 µm	1/16" OD	10-32 Coned	(5) VHP-501	1.2 µL	25,000 psi (1,725 bar)	ea.
<b>VHP-505</b>	Inline VHP Filter	0.2 µm	1/16" OD	10-32 Coned	(5) VHP-506	1.1 µL	25,000 psi (1,725 bar)	ea.
<b>VHP-501</b>	Replacement Inline VHP Frit	0.5 µm	N/A	N/A	N/A	0.60 µL	N/A	ea.
<b>VHP-506</b>	Replacement Inline VHP Frit	0.2 µm	N/A	N/A	N/A	0.54 µL	N/A	ea.
<b>BIOCOMPATIBLE INLINE FILTERS</b>								
<b>A-430</b>	Biocompatible Filter Assembly	2 µm		10-32 Coned	(1) A-429	7.1 µL	6,000 psi (414 bar)	ea.
<b>A-431</b>	Biocompatible Filter Assembly	0.5 µm		10-32 Coned	(1) A-428	5.9 µL	6,000 psi (414 bar)	ea.
<b>A-428x</b>	PEEK Filter End Fittings, Black PEEK body, 10-pk	0.5 µm		10-32 Coned	—	5.7 µL	N/A	10-pk
<b>A-429x</b>	PEEK Filter End Fittings, Natural PEEK body, 10-pk	2 µm		10-32 Coned	—	6.9 µL	N/A	10-pk

\*Swept volumes include/reflect theoretical frit volume values.  
SST = Stainless Steel



# Precolumn Filters

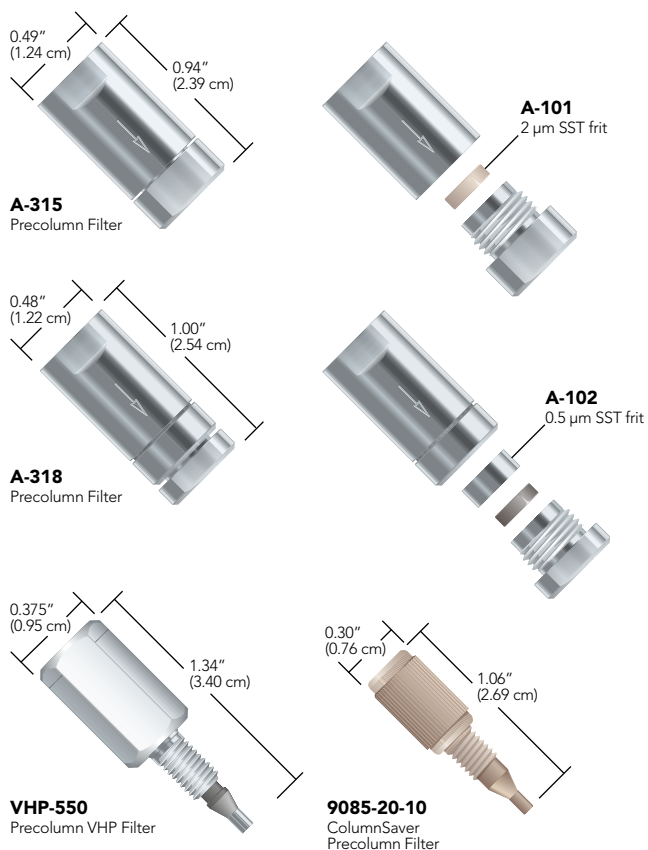
Our economical Precolumn Filters offer secure protection for analytical columns in HPLC and UHPLC. We offer traditional versions that can successfully connect tubing on both sides and our direct-connect versions attach to the inlet port of most standard columns. All versions feature a 10-32 coned ports for 1/16" OD tubing.

## Standard Precolumn Filters

- › Economical protection for larger columns and injections
- › Traditional versions connect tubing on both sides
- › Direct-connect versions attach to the inlet port of most standard columns
- › All versions feature 10-32 coned ports for 1/16" OD tubing

These are designed to protect columns by filtering out particulate matter originating from the sample or from rotor seal wear.

- › Assemblies that begin with the letter "A" are traditional versions for standard HPLC
- › Assemblies that begin with "VHP" are direct-connect versions for UHPLC applications
- › Versions that begin with "9085" are direct-connect for standard HPLC and must be used with polymer fittings

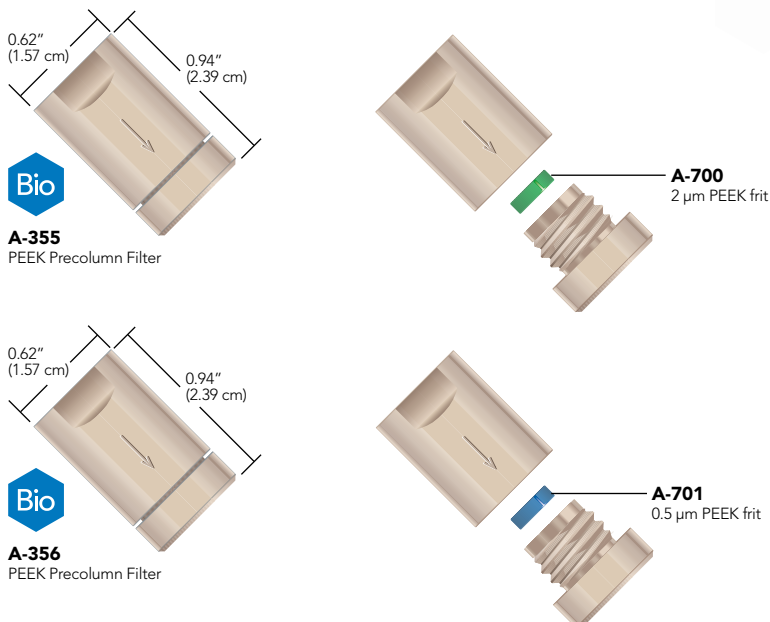


# Precolumn Filters (Cont.)

## Biocompatible Precolumn Filters

- › Pre-assembled with either 0.5 µm or 2 µm porosity frits
- › Great column protection
- › Feature PEEK bodies and PCTFE-surrounded PEEK frits

Biocompatible Precolumn Filters have 0.020" (0.50 mm) diameter thru-holes and 8° distribution cones for minimal band spreading and mixing. The bodies of these filters are manufactured from biocompatible PEEK polymer and are pressure rated to 5,000 psi (345 bar). These filters are designed for use with 1/16" OD tubing, which can be connected to these filters using standard Fingertight fittings.



## Precolumn Filters

Part No.	Description	Porosity	For Tubing Size	Threads	Includes	Swept Volume*	Pressure Rating	Qty.
<b>STANDARD PRECOLUMN FILTERS</b>								
<b>A-315</b>	Solvent Filter Assembly	2 µm	1/16" OD	10-32 Coned	(1) A-101	1.4 µL	6,000 psi (414 bar)	ea.
<b>A-318</b>	Solvent Filter Assembly	0.5 µm	1/16" OD	10-32 Coned	(1) A-102	0.84 µL	6,000 psi (414 bar)	ea.
<b>A-101</b>	Replacement Frits, Stainless Steel, ea.	2 µm	N/A	—	—	0.74 µL	N/A	ea.
<b>A-102</b>	Replacement Frits, Stainless Steel, ea.	0.5 µm	N/A	—	—	0.61 µL	N/A	ea.
<b>VHP-550</b>	Precolumn VHP Filter	0.5 µm	1/16" OD	10-32 Coned	(5) VHP-551	1.9 µL	20,000 psi (1,380 bar)	ea.
<b>VHP-555</b>	Precolumn VHP Filter	0.2 µm	1/16" OD	10-32 Coned	(5) VHP-556	1.8 µL	20,000 psi (1,380 bar)	ea.
<b>VHP-551</b>	Replacement Precolumn VHP Frit Assembly	0.5 µm	N/A	N/A	N/A	1.9 µL	N/A	ea.
<b>VHP-556</b>	Replacement Precolumn VHP Frit Assembly	0.2 µm	N/A	N/A	N/A	1.8 µL	N/A	ea.
<b>9085-05-10</b>	ColumnSaver Precolumn Filter, with SST frit	0.5 µm	1/16" OD	10-32 Coned	N/A	3.1 µL	6,000 psi (414 bar)	10-pk
<b>9085-20-10</b>	ColumnSaver Precolumn Filter, with SST frit	2 µm	1/16" OD	10-32 Coned	N/A	3.1 µL	6,000 psi (414 bar)	10-pk
<b>BIOCOMPATIBLE PRECOLUMN FILTERS</b>								
<b>A-355</b>	Solvent Filter Assembly, Biocompatible	2 µm		10-32 Coned	(1) A-700	1.4 µL	5,000 psi (345 bar)	ea.
<b>A-356</b>	Solvent Filter Assembly, Biocompatible	0.5 µm		10-32 Coned	(1) A-701	1.3 µL	5,000 psi (345 bar)	ea.
<b>A-700</b>	Replacement Frit, PEEK Polymer	2 µm		—	—	0.74 µL	N/A	ea.
<b>A-701</b>	Replacement Frit, PEEK Polymer	0.5 µm		—	—	0.61 µL	N/A	ea.

SST = Stainless Steel

\*Swept volumes include/reflect theoretical frit volume values.

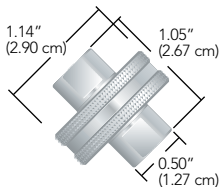


# Semi-Prep Filters

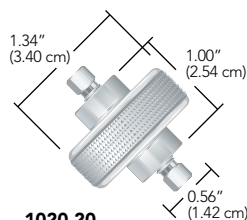
Biocompatible Semi-Prep Filters consist of a stainless steel body, two PEEK end fittings, and a separate PEEK frit. These filters are ideal for many higher flow analytical, semi-prep and preparative applications. Best of all, if the filter becomes clogged, simply unscrew the assembly, remove the frit and replace it. The frits are interchangeable.

## Semi-Prep Inline Filters

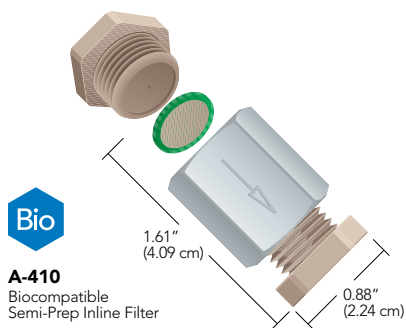
- › Designed for high-flow applications
- › Economical protection for larger columns and injections
- › SFC and HPLC compatible



**A-330**  
High Pressure Semi-Prep Inline Filter



**1020-20**  
Iso-Prep Filter  
Shown with standard 10-32 stainless steel nuts and ferrules (not included)



**A-410**  
Biocompatible  
Semi-Prep Inline Filter

## Biocompatible Semi-Prep Inline Filters

- › Versions for 1/16", 1/8", 3/16", 1/4", and 5/16" OD tubing
- › 100% PEEK flow path

Biocompatible Semi-Prep Filters consist of a stainless steel body, two PEEK end fittings, and a separate PEEK frit. These filters are ideal for many higher flow analytical, semi-prep and preparative applications. Best of all, if the filter becomes clogged, simply unscrew the assembly, remove the frit and replace it. The frits are interchangeable.

Part No.	Description	Porosity	Threads	Includes	Swept Volume*	Pressure Rating	Qty.
<b>SEMI-PREP INLINE FILTERS</b>							
<b>A-330</b>	Semi-Prep Filter Assembly	10 µm	10-32 Coned	(1) A-331	223 µL	7,500 psi (517 bar)	ea.
<b>A-360</b>	Semi-Prep Filter Assembly	10 µm	5/16-24 Flat Bottom	(1) A-331	235 µL	3,500 psi (207 bar)	ea.
<b>A-331</b>	Stainless Steel Frits, Natural ETFE ring	10 µm	N/A	N/A	142 µL	N/A	ea.
<b>A-332</b>	Stainless Steel Frits, Natural ETFE ring	2 µm	N/A	N/A	122 µL	N/A	ea.
<b>A-337</b>	Stainless Steel Frits, Natural ETFE ring	20 µm	N/A	N/A	152 µL	N/A	ea.
<b>ISO-PREP FILTERS</b>							
<b>1020-05</b>	21.2 mm Filter Holder	0.5 µm	10-32 Coned	(1) 7031-05	203 µL	8,000 psi (552 bar)	ea.
<b>1020-20</b>	21.2 mm Filter Holder	2 µm	10-32 Coned	(1) 7031-20	196 µL	8,000 psi (552 bar)	ea.
<b>7031-05</b>	21.2 mm Replacement Filter	0.5 µm	N/A	N/A	122 µL	8,000 psi (552 bar)	ea.
<b>7031-20</b>	21.2 mm Replacement Filter	2 µm	N/A	N/A	115 µL	8,000 psi (552 bar)	ea.
<b>BIOCOMPATIBLE SEMI-PREP INLINE FILTERS</b>							
<b>A-410</b>	Biocompatible Filter Assembly	2 µm	10-32 Coned	(1) OC-802	89 µL	6,000 psi (414 bar)	ea.
<b>A-411</b>	Biocompatible Filter Assembly	10 µm	10-32 Coned	(1) OC-803	103 µL	6,000 psi (414 bar)	ea.
<b>A-510</b>	Biocompatible Filter Assembly	5 µm	5/16-24 Flat Bottom	(1) OC-805	89 µL	500 psi (34 bar)	ea.
<b>OC-802</b>	PEEK Frit, Green PCTFE ring	2 µm	N/A	N/A	46 µL	N/A	ea.
<b>OC-803</b>	PEEK Frit, Natural PCTFE ring	10 µm	N/A	N/A	57 µL	N/A	ea.
<b>OC-805</b>	PEEK Frit, Natural PCTFE ring	5 µm	N/A	N/A	50 µL	N/A	ea.

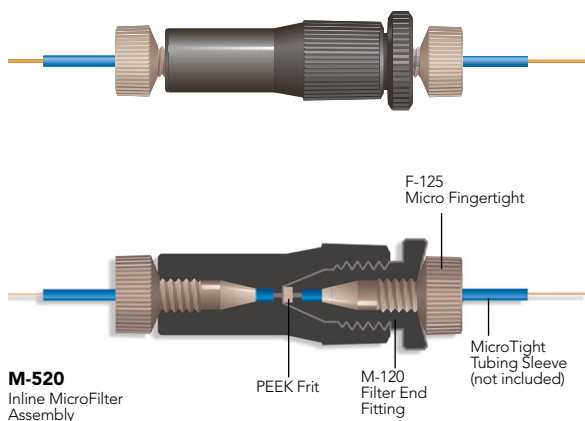
\*Swept volumes include/reflect theoretical frit volume values.



# Inline MicroFilters

- › 100% biocompatible PEEK polymer option available
- › Miniscule 240 nL void volume
- › Two versions: direct connect 1/32" OD tubing or use MicroTight® tubing sleeves for 70–520 µm OD capillary tubing

Our Inline MicroFilters protect your column from particles originating in the mobile phase or sample, or from pump seal and sample injection valve wear. These filters have a 0.006" (150 µm) thru-hole. Choose the M-520 with a 0.5 µm 100% PEEK frit to connect to capillary tubing using the MicroTight tubing sleeves (page 52). You may also directly connect 1/32" OD tubing using the M-525 which contains a 0.5 µm PEEK frit.



**M-520**  
Inline MicroFilter  
Assembly



**M-525**  
Inline MicroFilter  
Assembly

Part No.	Description	Porosity	For Tubing Size	Threads	Includes	Swept Volume	Pressure Rating	Qty.
<b>INLINE MICROFILTERS</b>								
<b>M-520</b>	Inline MicroFilter Assembly, PEEK Frit	0.5 µm	MicroTight Tubing Sleeve	MicroTight Tubing Sleeve	(5) M-120, (2) F-125	240 nL	4,000 psi (276 bar)	ea.
<b>M-525</b>	Inline MicroFilter Assembly, PEEK Frit	0.5 µm	1/32" OD	1/32" OD	(5) M-140, (2) F-126	240 nL	4,000 psi (276 bar)	ea.
<b>REPLACEMENT INLINE MICROFILTER END-FITTINGS</b>								
<b>M-120x</b>	End-Fittings, Black, with PEEK Frit	0.5 µm	MicroTight Tubing Sleeve	MicroTight Tubing Sleeve	N/A	216 nL	N/A	10-pk
<b>M-140x</b>	End-Fittings, Natural, with PEEK Frit	0.5 µm	1/32" OD	1/32" OD	N/A	216 nL	N/A	10-pk



# Mini MicroFilters

- › Total volume as low as 10 nL
- › Conductive version for CEC and mass spectrometry applications

Our Inline Mini MicroFilter Assemblies filter effectively with internal volumes low enough to ensure reliable chromatographic results — even at nanoliter per minute flow rates! Internal volumes of these encapsulated filters are as low as 85 nL with the micro-screen and 10 nL to 22 nL with the frit disc option.

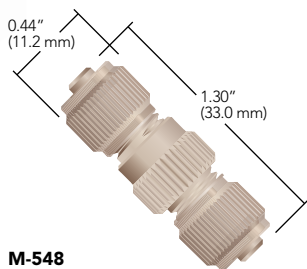


## APPLICATION NOTE

The Mini MicroFilters can be used to pack capillary tubing. Simply place one of these filters on the effluent side of the capillary tubing, then slurry pack. Once packed, place a filter at the head of the tubing. This creates a reliable capillary column without fusing the silica to make frits or pressing filter paper inside the capillary tubing.

### Increase the Life of Your Column

Why use a Precolumn Filter when there is a frit at the head of the column itself? Changing the column frit is extremely difficult to do without disturbing the column packing. A Precolumn Filter provides relatively inexpensive insurance against column damage, and changing its frit is easy. A Precolumn Filter placed between the sample injection valve and the HPLC column protects the column from particles originating in the sample and from pump and valve seal wear.



**M-548**  
Mini MicroFilter Assembly



## SPECIFICATIONS & DETAILS

Because of the size-specific nature of the ferrules included with each Mini MicroFilter assembly, please note that these ferrules are not interchangeable with other MicroFerrules for different tubing sizes.

### Filter Capsule Color Identification



**M-121**



**M-125**



**M-128**



**M-131**



**M-133**

### What's the Difference Between Precolumn & Inline Filters?

You may have noticed that the bodies of Precolumn and Inline Filters look similar, and as such, you may have wondered what the differences are. Because Precolumn Filters, by definition, are typically placed in a volume-sensitive area immediately preceding the column, these filters usually feature smaller thru-holes and smaller frit diameters. In contrast, Inline Filters are often placed where the internal volume is not as critical and where longer life and less fluid restriction is more important.

Part No.	Description	Porosity	Frit Type	For use with Tubing	Includes	Swept Volume	Pressure Rating	Qty.
<b>MINI MICROFILTER ASSEMBLY</b>								
<b>M-547</b>	Mini MicroFilter Assembly	1 µm	SST Frit	1/32" (790 µm) OD	(5) M-133, (2) F-112, (2) P-416	22 nL	4,000 psi (276 bar)	ea.
<b>M-548</b>	Mini MicroFilter Assembly	1 µm	Ti Frit	1/32" (790 µm) OD	(5) M-134, (2) F-112, (2) P-416	22 nL	4,000 psi (276 bar)	ea.
<b>REPLACEMENT MINI MICROFILTER CAPSULES</b>								
Part No.	Description	Porosity	Frit Type	For Use With	Material	Swept Volume		Qty.
<b>M-121</b>	Filter Capsule	1 µm	SST Screen	M-530 and M-531	PEEK	85 nL		2-pk
<b>M-125</b>	NanoFilter Capsule	1 µm	SST Frit	M-537 and M-538	PEEK	10 nL		2-pk
<b>M-126</b>	NanoFilter Capsule	1 µm	Ti Frit	M-537 and M-538	PEEK	10 nL		2-pk
<b>M-131</b>	Filter Capsule	1 µm	SST Screen	M-543	PEEK	85 nL		2-pk
<b>M-133</b>	NanoFilter Capsule	1 µm	SST Frit	M-547 and M-548	PEEK	10 nL		2-pk
<b>M-134</b>	NanoFilter Capsule	1 µm	Ti Frit	M-547 and M-548	PEEK	10 nL		2-pk
<b>M-128</b>	Conductive NanoFilter Capsule	1 µm	SST Frit	M-534	SST/PEEK	10 nL		2-pk

SST = Stainless Steel; Ti = Titanium

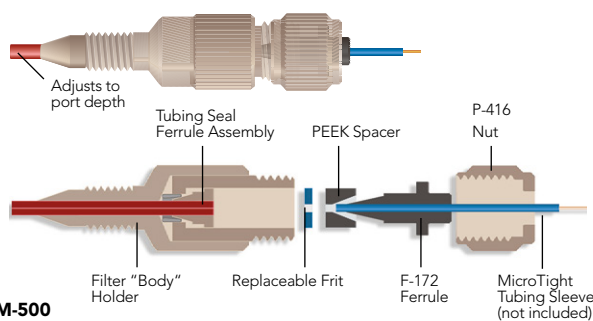




# Precolumn MicroFilters

- › Direct connects to columns with 10-32 threads
- › Total void volume of 0.5  $\mu$ L
- › Two versions: direct connect 1/16" OD tubing or use MicroTight® tubing sleeves for 70–520  $\mu$ m OD capillary tubing

The Precolumn MicroFilters directly connect into your microbore or analytical column. Total theoretical void volume is only 0.5  $\mu$ L (includes frit volume) and the PEEK tubing used in the assembly of these units has a 0.005" (125  $\mu$ m) ID, virtually eliminating any mixing of the sample with the mobile phase.



**M-500**  
Precolumn MicroFilter Assembly  
(Includes indicated products)

Part No.	Description	Porosity For Tubing Size		Threads	Includes	Swept Volume*	Pressure Rating	Qty.
<b>PRECOLUMN MICROFILTER ASSEMBLIES</b>								
<b>M-500</b>	Precolumn MicroFilter Assembly, SST Frit	0.5 $\mu$ m	MicroTight Tubing Sleeve	10-32 Coned	(5) C-425, (1) F-172, (1) P-416	0.5 $\mu$ L	4,000 psi (276 bar)	ea.
<b>M-510</b>	Precolumn MicroFilter Assembly, PEEK Frit	0.5 $\mu$ m	MicroTight Tubing Sleeve	10-32 Coned	(5) A-735, (1) F-172, (1) P-416	0.5 $\mu$ L	4,000 psi (276 bar)	ea.
<b>M-550</b>	Precolumn MicroFilter Assembly, SST Frit	0.5 $\mu$ m	1/16" OD	10-32 Coned	(5) C-425, (1) F-132, (1) P-416	0.5 $\mu$ L	4,000 psi (276 bar)	ea.
<b>M-560</b>	Precolumn MicroFilter Assembly, PEEK Frit	0.5 $\mu$ m	1/16" OD	10-32 Coned	(5) A-735, (1) F-132, (1) P-416	0.5 $\mu$ L	4,000 psi (276 bar)	ea.
<b>REPLACEMENT PRECOLUMN MICROFILTER FRITS (FRIT DIAMETER X FRIT THICKNESS X OVERALL DIAMETER)</b>								
<b>A-735</b>	PEEK Frits, 0.045" x 0.031" x 0.192"	0.5 $\mu$ m	N/A	N/A	N/A	216 nL	N/A	ea.
<b>C-420</b>	SST Frits, 0.038" x 0.028" x 0.192"	2 $\mu$ m	N/A	N/A	N/A	101 nL	N/A	ea.
<b>C-425</b>	SST Frits, 0.038" x 0.028" x 0.192"	0.5 $\mu$ m	N/A	N/A	N/A	101 nL	N/A	ea.