

# Savillex

Your Fluoropolymer Solutions Partner



PFA Labware



PFA Sample Introduction



Custom Molding

Currently Serving Over 60 Countries Worldwide

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# Savillex Corporation

Savillex Corporation has been in the business of manufacturing high-quality fluoropolymer laboratory and custom molded products for over thirty years. Our goal is to remain the leader in high-value advanced PFA labware, PFA sample introduction and custom molding solutions at an affordable price.

The performance of our products has been demonstrated in applications requiring the highest level of purity and safety. Whenever there is a need to protect the environment from the media, or the media from the environment, an application for our products can be found.

Our products are universally accepted in applications ranging from sample collection to analysis and we are proud to serve thousands of customers in over 60 countries around the world.

We know our products meet many of your requirements; however, we also understand there are occasional needs for modified or custom products. Please contact us and we will be happy to discuss your specific application and partner with you to produce a product that meets your specific requirements.



Note: Dimensions listed in this catalog are approximate.  
Please call for exact dimensions.

# Jars



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## Standard Jars



- Jars are molded of PFA with radiused inside design for easy sample removal
- Store samples in easily cleaned wide-mouth translucent jars
- Recessed closures (page 52) and Nomex® write-on tabs (page 9) are available for archiving samples
- Jars with volumes of 60 ml up to 500 ml have a wall thickness of 2.5 mm
- Jars with volumes of 1000 ml and greater have a wall thickness of 3.0 mm

Part Number	Volume	Description	Diameter x Height
100-0060-01	60 ml	Jar only	51.0 mm x 44.0 mm 1.99" x 1.74"
101-0060-053-01	60 ml	Jar with 53 mm threaded closure	59.0 mm x 48.0 mm 2.33" x 1.87"
<b>A</b> 101-0060-053-71	60 ml	Jar with 53 mm recessed closure	59.0 mm x 48.0 mm 2.32" x 1.87"
100-0090-01	90 ml	Jar only	51.0 mm x 63.0 mm 1.99" x 2.47"
101-0090-053-01	90 ml	Jar with 53 mm threaded closure	59.0 mm x 67.0 mm 2.33" x 2.62"
100-0120-01	120 ml	Jar only	66.0 mm x 50.0 mm 2.61" x 1.97"
<b>B</b> 101-0120-070-01	120 ml	Jar with 70 mm threaded closure	76.0 mm x 53.0 mm 2.99" x 2.10"
100-0180-01	180 ml	Jar only	66.0 mm x 71.0 mm 2.59" x 2.80"
100-0180-02	180 ml	Jar only	51.0 mm x 121.0 mm 1.99" x 4.77"
<b>C</b> 101-0180-053-01	180 ml	Jar with 53 mm threaded closure	59.0 mm x 125.0 mm 2.33" x 4.93"
101-0180-053-71	180 ml	Jar with 53 mm recessed closure	59.0 mm x 125.0 mm 2.32" x 4.93"
<b>D</b> 101-0180-070-01	180 ml	Jar with 70 mm threaded closure	76.0 mm x 76.0 mm 2.99" x 2.99"
100-0240-01	240 ml	Jar only	66.0 mm x 92.0 mm 2.58" x 3.61"
101-0240-070-01	240 ml	Jar with 70 mm threaded closure	76.0 mm x 96.0 mm 2.98" x 3.76"
100-0300-01	300 ml	Jar only	85.0 mm x 72.0 mm 3.35" x 2.83"
101-0300-089-01	300 ml	Jar with 89 mm threaded closure	96.0 mm x 77.0 mm 3.79" x 3.03"
100-0350-01	350 ml	Jar only	107.0 mm x 58.0 mm 4.21" x 2.30"
101-0350-110-01	350 ml	Jar with 110 mm threaded closure	119.0 mm x 65.0 mm 4.68" x 2.54"
100-0360-01	360 ml	Jar only	85.0 mm x 84.0 mm 3.34" x 3.29"



**Closures are available separately; see pages 49-57.**

## Standard Jars, continued



	Part Number	Volume	Description	Diameter x Height
<b>E</b>	101-0360-089-01	360 ml	Jar with 89 mm threaded closure	96.0 mm x 89.0 mm 3.79" x 3.50"
	100-0480-01	480 ml	Jar only	85.0 mm x 107.0 mm 3.34" x 4.21"
	101-0480-089-01	480 ml	Jar with 89 mm threaded closure	96.0 mm x 112.0 mm 3.79" x 4.42"
	100-0500-01	500 ml	Jar only	85.0 mm x 115.0 mm 3.34" x 4.53"
	101-0500-089-01	500 ml	Jar with 89 mm threaded closure	96.0 mm x 119.0 mm 3.79" x 4.70"
<b>F</b>	100-0500-03	500 ml	Jar with 3/8" OD x 7/8" long drain tube molded at bottom	85.0 mm x 143.0 mm 3.34" x 5.63"
	100-1000-01	1000 ml	Jar only	107.0 mm x 146.0 mm 4.23" x 5.74"
<b>G</b>	100-1000-03	1000 ml	Jar with 1/2" OD x 7/8" long drain tube molded at bottom	107.0 mm x 167.0 mm 4.23" x 6.57"
<b>H</b>	101-1000-110-01	1000 ml	Jar with 110 mm threaded closure	119.0 mm x 151.0 mm 4.68" x 5.96"
	100-2000-01	2000 ml	Jar only	107.0 mm x 265.0 mm 4.23" x 10.44"
	101-2000-110-01	2000 ml	Jar with 110 mm threaded closure	119.0 mm x 271.0 mm 4.68" x 10.67"
	100-2200-01	2200 ml	Jar only	107.0 mm x 289.0 mm 4.23" x 11.37"
<b>I</b>	101-2200-110-01	2200 ml	Jar with 110 mm threaded closure	119.0 mm x 295.0 mm 4.68" x 11.62"
	100-3000-01	3000 ml	Jar only	107.0 mm x 403.0 mm 4.23" x 15.88"
	101-3000-110-01	3000 ml	Jar with 110 mm threaded closure	119.0 mm x 410.0 mm 4.68" x 16.14"
	100-4000-01	4000 ml	Jar only	107.0 mm x 514.0 mm 4.23" x 20.25"
	101-4000-110-01	4000 ml	Jar with 110 mm threaded closure	119.0 mm x 540.0 mm 4.68" x 21.26"



Jar bottoms can be machined flat upon request for hot plate heat transfer

## Fluid Transfer Jars



- Fluid transfer jars are molded of PFA
- Intended for low pressure transfer
- Use with stainless steel pressure fixture for higher pressure applications- see page 9
- Ferrule nuts are included with each transfer closure
- Ferrule cap nuts for sealing off ports are available on page 66
- Fluid transfer closures with one, two or three ports have one port that allows tubing to pass through to jar bottom
- Fluid transfer closures with seven ports allow tubing to pass through at all port locations
- All tube ports can be drilled out upon request to allow tubing to pass through

Part Number	Volume	Description	Diameter x Height	Ports Accept
101-0060-053-20	60 ml	Jar with 53 mm fluid transfer closure	59.0 mm x 65.0 mm 2.33" x 2.55"	(2) 1/8" OD tube
<b>A</b> 101-0060-053-28	60 ml	Jar with 53 mm fluid transfer closure	59.0 mm x 69.0 mm 2.33" x 2.70"	(2) 1/4" OD tube
<b>B</b> 101-0090-053-20	90 ml	Jar with 53 mm fluid transfer closure	59.0 mm x 84.0 mm 2.33" x 3.30"	(2) 1/8" OD tube
<b>C</b> 101-0090-053-28	90 ml	Jar with 53 mm fluid transfer closure	59.0 mm x 87.0 mm 2.33" x 3.44"	(2) 1/4" OD tube
<b>D</b> 101-0120-070-13	120 ml	Jar with 70 mm fluid transfer closure	76.0 mm x 73.0 mm 2.98" x 2.88"	(1) 1/4" OD tube
101-0120-070-28	120 ml	Jar with 70 mm fluid transfer closure	76.0 mm x 74.0 mm 2.98" x 2.90"	(2) 1/4" OD tube
101-0180-053-20	180 ml	Jar with 53 mm fluid transfer closure	59.0 mm x 152.0 mm 2.33" x 6.00"	(2) 1/8" OD tube
<b>E</b> 101-0180-053-28	180 ml	Jar with 53 mm fluid transfer closure	59.0 mm x 156.0 mm 2.33" x 6.14"	(2) 1/4" OD tube
101-0180-070-13	180 ml	Jar with 70 mm fluid transfer closure	76.0 mm x 94.0 mm 2.98" x 3.70"	(1) 1/4" OD tube
101-0180-070-28	180 ml	Jar with 70 mm fluid transfer closure	76.0 mm x 95.0 mm 2.98" x 3.73"	(2) 1/4" OD tube
<b>F</b> 101-0240-070-13	240 ml	Jar with 70 mm fluid transfer closure	76.0 mm x 115.0 mm 2.98" x 4.53"	(1) 1/4" OD tube
101-0240-070-28	240 ml	Jar with 70 mm fluid transfer closure	76.0 mm x 116.0 mm 2.98" x 4.55"	(2) 1/4" OD tube
<b>G</b> 101-0300-089-28	300 ml	Jar with 89 mm fluid transfer closure	96.0 mm x 98.0 mm 3.79" x 3.84"	(2) 1/4" OD tube
<b>H</b> 101-0360-089-28	360 ml	Jar with 89 mm fluid transfer closure	96.0 mm x 110.0 mm 3.79" x 4.31"	(2) 1/4" OD tube



Note: Dimensions listed in this catalog are approximate. Please call for exact dimensions.



## Fluid Transfer Jars, continued

	Part Number	Volume	Description	Diameter x Height	Ports Accept
<b>I</b>	101-0480-089-28	480 ml	Jar with 89 mm fluid transfer closure	96.0 mm x 133.0 mm 3.79" x 5.24"	(2) 1/4" OD tube
	101-0500-089-28	500 ml	Jar with 89 mm fluid transfer closure	96.0 mm x 141.0 mm 3.79" x 5.53"	(2) 1/4" OD tube
<b>J</b>	101-1000-110-28	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 171.0 mm 4.68" x 6.73"	(2) 1/4" OD tube
	101-1000-110-38	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 177.0 mm 4.68" x 6.97"	(2) 3/8" OD tube
	101-1000-110-41	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 174.0 mm 4.68" x 6.85"	(2) 1/2" OD tube
	101-1000-110-51	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 171.0 mm 4.68" x 6.74"	(3) 1/4" OD tube
	101-1000-110-52	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 177.0 mm 4.68" x 6.97"	(3) 3/8" OD tube
	101-1000-110-60	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 171.0 mm 4.68" x 6.73"	(7) 1/4" OD tube
	101-1000-110-61	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 177.0 mm 4.68" x 6.97"	(7) 3/8" OD tube
<b>K</b>	101-1000-110-62	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 177.0 mm 4.68" x 6.97"	(2) 1/4" OD tube (5) 3/8" OD tube
	101-1000-110-63	1000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 177.0 mm 4.68" x 6.97"	(4) 1/4" OD tube (3) 3/8" OD tube
	101-2000-110-28	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 291.0 mm 4.68" x 11.45"	(2) 1/4" OD tube
	101-2000-110-38	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 293.1 mm 4.68" x 11.54"	(2) 3/8" OD tube
	101-2000-110-41	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 294.0 mm 4.68" x 11.58"	(2) 1/2" OD tube
	101-2000-110-51	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 291.0 mm 4.68" x 11.45"	(3) 1/4" OD tube
	101-2000-110-52	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 293.1 mm 4.68" x 11.54"	(3) 3/8" OD tube
<b>L</b>	101-2000-110-60	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 291.0 mm 4.68" x 11.45"	(7) 1/4" OD tube
	101-2000-110-61	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 293.1 mm 4.68" x 11.54"	(7) 3/8" OD tube
	101-2000-110-62	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 293.1 mm 4.68" x 11.54"	(2) 1/4" OD tube (5) 3/8" OD tube
	101-2000-110-63	2000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 293.1 mm 4.68" x 11.54"	(4) 1/4" OD tube (3) 3/8" OD tube
<b>M</b>	101-2200-110-28	2200 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 312.0 mm 4.68" x 12.29"	(2) 1/4" OD tube
	101-2200-110-38	2200 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 315.0 mm 4.68" x 12.41"	(2) 3/8" OD tube
	101-2200-110-51	2200 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 312.0 mm 4.68" x 12.29"	(3) 1/4" OD tube



## Fluid Transfer Jars, continued

Part Number	Volume	Description	Diameter x Height	Ports Accept
101-3000-110-28	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 425.4 mm 4.68" x 16.75"	(2) 1/4" OD tube
101-3000-110-38	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 431.8 mm 4.68" x 17.00"	(2) 3/8" OD tube
101-3000-110-41	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 431.8 mm 4.68" x 17.00"	(2) 1/2" OD tube
101-3000-110-51	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 425.4 mm 4.68" x 16.75"	(3) 1/4" OD tube
101-3000-110-52	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 431.8 mm 4.68" x 17.00"	(3) 3/8" OD tube
101-3000-110-60	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 425.4 mm 4.68" x 16.75"	(7) 1/4" OD tube
101-3000-110-61	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 431.8 mm 4.68" x 17.00"	(7) 3/8" OD tube
101-3000-110-62	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 431.8 mm 4.68" x 17.00"	(2) 1/4" OD tube (5) 3/8" OD tube
101-3000-110-63	3000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 431.8 mm 4.68" x 17.00"	(4) 1/4" OD tube (3) 3/8" OD tube
101-4000-110-28	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 581.2 mm 4.68" x 22.88"	(2) 1/4" OD tube
101-4000-110-38	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 584.2 mm 4.68" x 23.00"	(2) 3/8" OD tube
101-4000-110-41	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 584.2 mm 4.68" x 23.00"	(2) 1/2" OD tube
<b>N</b> 101-4000-110-51	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 581.2 mm 4.68" x 22.88"	(3) 1/4" OD tube
101-4000-110-52	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 584.2 mm 4.68" x 23.00"	(3) 3/8" OD tube
101-4000-110-60	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 581.2 mm 4.68" x 22.88"	(7) 1/4" OD tube
101-4000-110-61	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 584.2 mm 4.68" x 23.00"	(7) 3/8" OD tube
101-4000-110-62	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 584.2 mm 4.68" x 23.00"	(2) 1/4" OD tube (5) 3/8" OD tube
101-4000-110-63	4000 ml	Jar with 110 mm fluid transfer closure	119.0 mm x 584.2 mm 4.68" x 23.00"	(4) 1/4" OD tube (3) 3/8" OD tube

3000 ml and 4000 ml jars are made by joining jars using an infrared fusion process. A small raised bead remains at the outside/inside surfaces of the bonded area.



## Sealed Jars



- Sealed jars are molded of PFA
- All sealed jars have two connecting tube ports
- 10 ml sealed jar has standard integral ferrule nuts
- Jars with volume of 125 ml or greater have ferrule gripper style nuts

Part Number	Volume	Description	Diameter x Height	Ports Accept	Pressure Rating at 100°F*
<b>A</b> 102-0010-01	10 ml	Sealed jar	27.0 mm x 72.0 mm 1.08" x 2.83"	(2) 1/8" OD tube	100 PSI
<b>B</b> 102-0125-01	125 ml	Sealed jar	48.0 mm x 127.0 mm 2.07" x 5.00"	(2) 1/4" OD tube	50 PSI
102-0475-01	475 ml	Sealed jar	88.9 mm x 139.7 mm 3.50" x 5.50"	(2) 3/8" OD tube	25 PSI
<b>C</b> 102-0475-03	475 ml	Sealed jar with 3/8" OD x 7/8" long drain tube molded at bottom	88.9 mm x 139.7 mm 3.50" x 5.50"	(2) 3/8" OD tube	25 PSI
<b>D</b> 102-1100-01	1100 ml	Sealed jar	104.9 mm x 174.8 mm 4.13" x 6.88"	(2) 1/4" OD tube	75 PSI
102-1100-03	1100 ml	Sealed jar with 1/2" OD x 7/8" long drain tube molded at bottom	104.9 mm x 174.8 mm 4.13" x 6.88"	(2) 1/4" OD tube	75 PSI



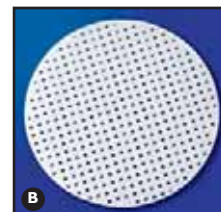
**\*CAUTION:** For every 2°F/-17°C rise above 100°F/38°C, reduce pressure rating by 1 PSI.

## Jar Accessories

### Support Screens

- PFA screens can be used in jars to hold solid samples in solutions or act as a coarse filter

Part Number	Description	Use With	Measurements
<b>A</b> 730-0046	Concave support screen	101-0060-053-01 101-0090-053-01 101-0180-053-01	44.5 mm OD x 21.0 mm height 1.75" OD x .83" height
<b>B</b> 700-650	PFA screen		82.5 mm OD x 3.5 mm thick 3.35" OD x .14" thick



### Nomex® Tabs

- Record important data on tabs of Nomex® which can be snapped into recessed closures for jars
- Nomex® is suitable for use in a wide temperature range
- Nomex® tabs are rated to 428°F/220°C

Part Number	Description	Additional Description
<b>C</b> 730-0100	Snap-in tabs	Packaged in bags of 100



### Pressure Fixtures

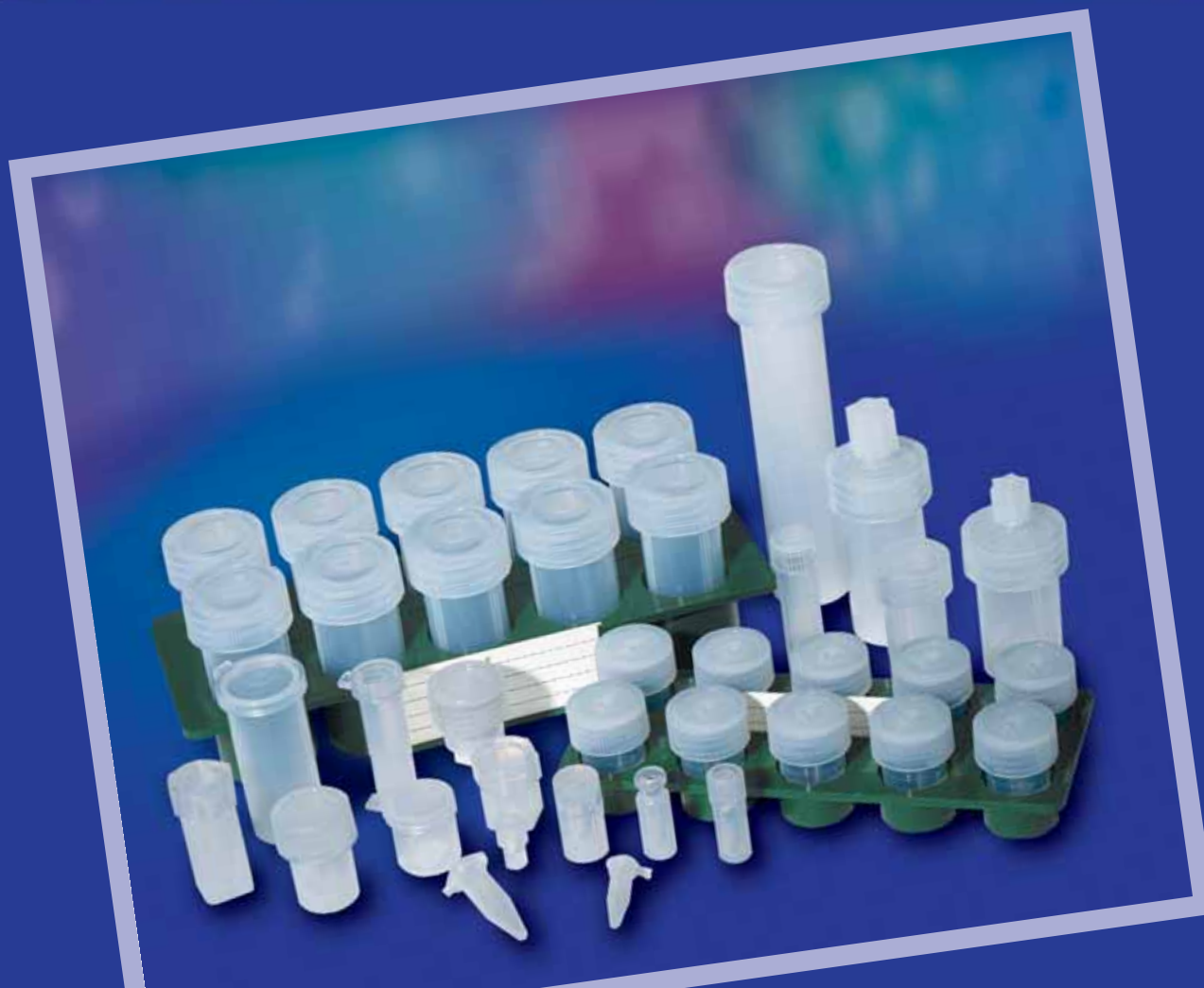
- Pressure fixtures can be used with wide mouth jars, segmented column components and all containers under 2.50" diameter
- Fixtures have stainless steel end plates, bolts and nuts

Part Number	Description	Use with	Pressure Rating at 100°F*
<b>D</b> 730-1000	Pressure fixture	1000 ml fluid transfer jars	75 PSI
730-2000	Pressure fixture	2000 ml fluid transfer jars	75 PSI
730-2200	Pressure fixture	2200 ml fluid transfer jars	75 PSI
730-3000	Pressure fixture	3000 ml fluid transfer jars	35 PSI
730-4000	Pressure fixture	4000 ml fluid transfer jars	35 PSI
<b>E</b> 730-0590	Pressure fixture	Segmented column components	100 PSI



**\*CAUTION:** For every 2°F/-17°C rise above 100°F/38°C, reduce pressure rating by 1 PSI.

# Vials



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## Standard Vials



- Vials are molded of PFA
- Service temperature range of PFA is -370°F/-200°C to 500°F/260°C
- Recessed closures (pages 50-51) and Nomex® write-on tabs (page 17) are available for archiving samples
- Standard vials have a 2 mm wall thickness
- Flat outside bottom designed for hot plate heat transfer
- Vials can be autoclaved

Part Number	Volume	Description	Diameter x Height	Vial Design
200-003-20	3 ml	Vial only	18.3 mm x 23.1 mm .72" x .91"	Rounded inside Flat outside bottom
<b>A</b> 201-003-20-023-01	3 ml	Vial with 23 mm threaded closure	24.0 mm x 26.4 mm .94" x 1.04"	Rounded inside Flat outside bottom
200-005-32	5 ml	Vial only	23.7 mm x 32.0 mm .93" x 1.26"	Conical inside Fin-type bottom
<b>B</b> 201-005-32-024-01	5 ml	Vial with 24 mm threaded closure	27.4 mm x 36.1 mm 1.08" x 1.42"	Conical inside Fin-type bottom
201-005-32-024-72	5 ml	Vial with 24 mm septum closure	27.4 mm x 36.1 mm 1.08" x 1.42"	Conical inside Fin-type bottom
200-005-11	5 ml	Vial only	22.1 mm x 23.6 mm .87" x .93"	Flat inside Standard outside bottom
<b>C</b> 201-005-11-024-88	5 ml	Vial with 24 mm snap on closure	30.5 mm x 25.4 mm 1.20" x 1.00"	Flat inside Standard outside bottom
200-006-20	6 ml	Vial only	18.3 mm x 42.9 mm .72" x 1.69"	Rounded inside Flat outside bottom
<b>D</b> 201-006-20-023-01	6 ml	Vial with 23 mm threaded closure	24.0 mm x 46.7 mm .94" x 1.84"	Rounded inside Flat outside bottom
200-007-10	7 ml	Vial only	23.7 mm x 33.3 mm .93" x 1.31"	Flat inside Standard outside bottom
201-007-10-024-01	7 ml	Vial with 24 mm threaded closure	27.4 mm x 36.6 mm 1.08" x 1.44"	Flat inside Standard outside bottom
200-007-20	7 ml	Vial only	22.3 mm x 33.3 mm .93" x 1.31"	Rounded inside Flat outside bottom
201-007-20-024-01	7 ml	Vial with 24 mm threaded closure	27.4 mm x 37.1 mm 1.08" x 1.46"	Rounded inside Flat outside bottom
201-007-20-024-72	7 ml	Vial with 24 mm septum closure	27.4 mm x 37.1 mm 1.08" x 1.46"	Rounded inside Flat outside bottom
<b>E</b> 201-007-10-024-72	7 ml	Vial with 24 mm septum closure	27.4 mm x 38.1 mm 1.08" x 1.50"	Flat inside Standard outside bottom
200-015-10	15 ml	Vial only	31.8 mm x 37.3 mm 1.25" x 1.47"	Flat inside Standard outside bottom
200-015-20	15 ml	Vial only	31.8 mm x 36.3 mm 1.25" x 1.43"	Rounded inside Flat outside bottom
200-015-21	15 ml	Vial only	31.8 mm x 36.1 mm 1.25" x 1.42"	Rounded inside Cored outside bottom



Designed with more thread engagement for long term sealing. Precision buttress thread. Square outside vial body and hex closure for wrench set torquing. Socket type closure slips over PFA cap for additional holding in pressure applications.

**Closures are available separately; see pages 49-57.**

## Standard Vials, continued

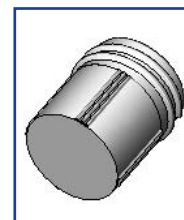
Part Number	Volume	Description	Diameter x Height	Vial Design
200-015-30	15 ml	Vial only	31.8 mm x 36.8 mm 1.25" x 1.45"	Conical inside Flat outside bottom
200-015-31	15 ml	Vial only	31.8 mm x 36.1 mm 1.25" x 1.42"	Conical inside Cored outside bottom
201-015-10-033-01	15 ml	Vial with 33 mm threaded closure	36.6 mm x 42.4 mm 1.44" x 1.67"	Flat inside Standard outside bottom
<b>F</b> 201-015-10-033-71	15 ml	Vial with 33 mm recessed closure	36.6 mm x 42.4 mm 1.44" x 1.67"	Flat inside Standard outside bottom
201-015-10-033-72	15 ml	Vial with 33 mm septum closure	36.6 mm x 42.4 mm 1.44" x 1.67"	Flat inside Standard outside bottom
201-015-20-033-01	15 ml	Vial with 33 mm threaded closure	36.6 mm x 41.4 mm 1.44" x 1.63"	Rounded inside Flat outside bottom
201-015-21-033-01	15 ml	Vial with 33 mm threaded closure	36.6 mm x 41.4 mm 1.44" x 1.63"	Rounded inside Cored outside bottom
201-015-21-033-72	15 ml	Vial with 33 mm septum closure	36.6 mm x 41.4 mm 1.44" x 1.63"	Rounded inside Cored outside bottom
201-015-30-033-01	15 ml	Vial with 33 mm threaded closure	36.6 mm x 42.0 mm 1.44" x 1.65"	Conical inside Flat outside bottom
201-015-31-033-01	15 ml	Vial with 33 mm threaded closure	36.6 mm x 41.4 mm 1.44" x 1.63"	Conical inside Cored outside bottom
200-022-10	22 ml	Vial only	31.8 mm x 52.3 mm 1.25" x 2.06"	Flat inside Standard outside bottom
200-022-20	22 ml	Vial only	31.8 mm x 51.3 mm 1.25" x 2.02"	Rounded inside Flat outside bottom
<b>G</b> 201-022-10-033-01	22 ml	Vial with 33 mm threaded closure	36.6 mm x 57.2 mm 1.44" x 2.25"	Flat inside Standard outside bottom
<b>H</b> 201-022-20-033-01	22 ml	Vial with 33 mm threaded closure	36.6 mm x 56.4 mm 1.44" x 2.22"	Rounded inside Flat outside bottom
200-030-10	30 ml	Vial only	31.8 mm x 66.8 mm 1.25" x 2.63"	Flat inside Standard outside bottom
200-030-20	30 ml	Vial only	31.8 mm x 65.3 mm 1.25" x 2.57"	Rounded inside Flat outside bottom
200-030-21	30 ml	Vial only	31.8 mm x 65.3 mm 1.25" x 2.57"	Rounded inside Cored outside bottom
200-030-30	30 ml	Vial only	31.8 mm x 74.4 mm 1.25" x 2.93"	Conical inside Flat outside bottom
200-030-31	30 ml	Vial only	31.8 mm x 73.7 mm 1.25" x 2.90"	Conical inside Cored outside bottom
201-030-10-033-01	30 ml	Vial with 33 mm threaded closure	36.6 mm x 71.6 mm 1.44" x 2.82"	Flat inside Standard outside bottom
<b>I</b> 201-030-10-033-72	30 ml	Vial with 33 mm septum closure	36.6 mm x 71.6 mm 1.44" x 2.82"	Flat inside Standard outside bottom
<b>J</b> 201-030-20-033-01	30 ml	Vial with 33 mm threaded closure	36.6 mm x 69.6 mm 1.44" x 2.74"	Rounded inside Flat outside bottom
201-030-21-033-01	30 ml	Vial with 33 mm threaded closure	36.6 mm x 69.1 mm 1.44" x 2.72"	Rounded inside Cored outside bottom
201-030-30-033-01	30 ml	Vial with 33 mm threaded closure	36.6 mm x 79.2 mm 1.44" x 3.12"	Conical inside Flat outside bottom
201-030-31-033-01	30 ml	Vial with 33 mm threaded closure	36.6 mm x 77.5 mm 1.44" x 3.05"	Conical inside Cored outside bottom
200-060-12	60 ml	Vial only	31.8 mm x 129.0 mm 1.25" x 5.08"	Flat inside Flat outside bottom
<b>K</b> 201-060-12-033-01	60 ml	Vial with 33 mm threaded closure	36.6 cm x 133.9 mm 1.44" x 5.27"	Flat inside Flat outside bottom
201-060-12-033-72	60 ml	Vial with 33 mm septum closure	36.6 cm x 133.9 mm 1.44" x 5.27"	Flat inside Flat outside bottom



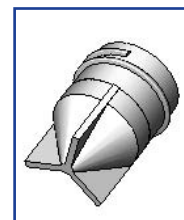
Rounded inside bottom allows for easy removal of entire sample



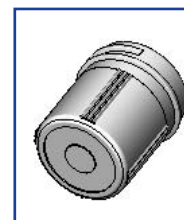
Conical inside bottom allows for sample concentration



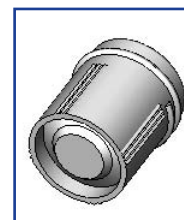
Flat outside bottom



Fin-type bottom



Standard outside bottom



Cored outside bottom

Note: Dimensions listed in this catalog are approximate. Please call for exact dimensions.

## Vials with Trays



- Vials are molded of PFA
- Service temperature range of PFA is -370°F/-200°C to 500°F/260°C
- Polypropylene trays offer chemical and heat resistance to 248°F/120°C
- Includes one tray, ten vials and two identification cards
- Ten PTFE/silicone laminates included with septa vials
- Vials can be autoclaved
- Tray dimensions given on page 17

Part Number	Volume	Description	Vial Design
202-003-20-023-01	3 ml	Vials with 23 mm closures and tray	Rounded inside Flat outside bottom
<b>A</b> 202-005-11-024-88	5 ml	Vials with 24 mm snap-on closures and tray	Flat inside Standard outside bottom
202-005-32-024-01	5 ml	Vials with 24 mm closures and tray	Conical inside Fin-type bottom
202-005-32-024-72	5 ml	Vials with 24 mm septa closures and tray	Conical inside Fin-type bottom
<b>B</b> 202-006-20-023-01	6 ml	Vials with 23 mm closures and tray	Rounded inside Flat outside bottom
202-007-10-024-01	7 ml	Vials with 24 mm closures and tray	Flat inside Standard outside bottom
202-007-10-024-72	7 ml	Vials with 24 mm septa closures and tray	Flat inside Standard outside bottom
202-007-20-024-01	7 ml	Vials with 24 mm closures and tray	Rounded inside Flat outside bottom
<b>C</b> 202-007-20-024-72	7 ml	Vials with 24 mm septa closures and tray	Rounded inside Flat outside bottom
202-015-10-033-01	15 ml	Vials with 33 mm closures and tray	Flat inside Standard outside bottom
202-015-10-033-72	15 ml	Vials with 33 mm septa closures and tray	Flat inside Standard outside bottom
<b>D</b> 202-015-20-033-01	15 ml	Vials with 33 mm closures and tray	Rounded inside Flat outside bottom
202-015-21-033-01	15 ml	Vials with 33 mm closures and tray	Rounded inside Cored outside bottom
202-015-21-033-72	15 ml	Vials with 33 mm septa closures and tray	Rounded inside Cored outside bottom
202-015-30-033-01	15 ml	Vials with 33 mm closures and tray	Conical inside Flat outside bottom
<b>E</b> 202-022-10-033-01	22 ml	Vials with 33 mm closures and tray	Flat inside Standard outside bottom
202-022-21-033-01	22 ml	Vials with 33 mm closures and tray	Rounded inside Cored outside bottom
202-030-10-033-01	30 ml	Vials with 33 mm closures and tray	Flat inside Standard outside bottom
202-030-10-033-72	30 ml	Vials with 33 mm septa closures and tray	Flat inside Standard outside bottom





## Vials with Trays, continued

Part Number	Volume	Description	Vial Design
202-030-20-033-01	30 ml	Vials with 33 mm closures and tray	Rounded inside Flat outside bottom
202-030-21-033-01	30 ml	Vials with 33 mm closures and tray	Rounded inside Cored outside bottom
<b>F</b> 202-030-30-033-01	30 ml	Vials with 33 mm closures and tray	Conical inside Flat outside bottom
202-030-31-033-01	30 ml	Vials with 33 mm closures and tray	Conical inside Cored outside bottom
202-030-31-033-72	30 ml	Vials with 33 mm septa closures and tray	Conical inside Cored outside bottom
202-060-12-033-01	60 ml	Vials with 33 mm closures and tray	Flat inside Flat outside bottom



## Fluid Transfer Vials



- Fluid transfer vials are molded of PFA
- Intended for low pressure transfer
- Service temperature range of PFA is -370°F/-200°C to 500°F/260°C
- Ferrule nut included with each transfer closure
- Ferrule cap nuts for sealing off ports are available on page 66
- Upon request, port may be drilled out to allow tubing to pass through to vial bottom
- Vials can be autoclaved
- One port per closure

Part Number	Volume	Description	Diameter x Height	Vial Design	Port Accepts
<b>A</b> 201-005-32-024-13	5 ml	Vial with 24 mm fluid transfer closure	27.4 mm x 54.1 mm 1.08" x 2.13"	Conical inside Fin-type bottom	1/4" OD tube
<b>B</b> 201-007-10-024-10	7 ml	Vial with 24 mm fluid transfer closure	27.4 mm x 52.8 mm 1.08" x 2.08"	Flat inside Standard outside bottom	1/8" OD tube
201-007-10-024-13	7 ml	Vial with 24 mm fluid transfer closure	27.4 mm x 55.1 mm 1.08" x 2.17"	Flat inside Standard outside bottom	1/4" OD tube
<b>C</b> 201-015-10-033-10	15 ml	Vial with 33 mm fluid transfer closure	36.6 mm x 57.2 mm 1.44" x 2.25"	Flat inside Standard outside bottom	1/8" OD tube
201-015-10-033-13	15 ml	Vial with 33 mm fluid transfer closure	36.6 mm x 61.7 mm 1.44" x 2.43"	Flat inside Standard outside bottom	1/4" OD tube
201-022-10-033-10	22 ml	Vial with 33 mm fluid transfer closure	36.6 mm x 72.6 mm 1.44" x 2.86"	Flat inside Standard outside bottom	1/8" OD tube
<b>D</b> 201-022-10-033-13	22 ml	Vial with 33 mm fluid transfer closure	36.6 mm x 77.2 mm 1.44" x 3.04"	Flat inside Standard outside bottom	1/4" OD tube
<b>E</b> 201-030-10-033-10	30 ml	Vial with 33 mm fluid transfer closure	36.6 mm x 86.4 mm 1.44" x 3.40"	Flat inside Standard outside bottom	1/8" OD tube
201-030-10-033-13	30 ml	Vial with 33 mm fluid transfer closure	36.6 mm x 91.2 mm 1.44" x 3.59"	Flat inside Standard outside bottom	1/4" OD tube

## Autosampler Vials



- Autosampler vials are molded of PFA
- Service temperature range of PFA is -370°F/-200°C to 500°F/260°C
- Autosampler vials with conical inside bottoms provide low contamination and low absorption of ultratrace metals for critical analyses
- Crimp top vials accept standard 11 mm crimp caps

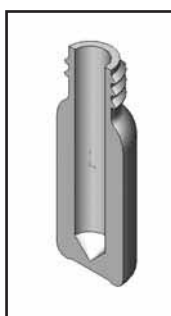
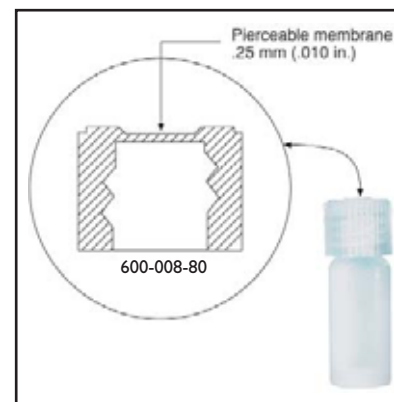
Part Number	Volume	Description	Diameter x Height	Vial Design
<b>A</b> 201-902-40-008-01	0.2 ml	Vial with 8 mm threaded closure	12.4 mm x 34.3 mm .49" x 1.35"	Conical inside Threaded top
201-902-40-008-80	0.2 ml	Vial with 8 mm pierceable threaded closure	12.4 mm x 34.3 mm .49" x 1.35"	Conical inside Threaded top
200-902-40	0.2 ml	Vial only	11.4 mm x 32.5 mm .45" x 1.28"	Conical inside Threaded top
<b>B</b> 200-902-41	0.2 ml	Vial only	11.4 mm x 32.5 mm .45" x 1.28"	Conical inside Crimp top
200-902-60	0.2 ml	Vial only	7.9 mm x 17.8 mm .31" x .70"	Ludwig style
<b>C</b> 201-902-60-010-82	0.2 ml	Vial with 10 mm push-on closure	10.7 mm x 19.3 mm .42" x .76"	Ludwig style
<b>D</b> 201-902-40-008-72	0.2 ml	Vial with 8 mm open septum closure	12.4 mm x 34.3 mm .49" x 1.35"	Conical inside Threaded top
200-904-61	0.35 ml	Vial only	15.7 mm x 23.4 mm .62" x .92"	Parrish style
<b>E</b> 201-904-61-015-84	0.35 ml	Vial with 15 mm push-on closure	16.0 mm x 30.5 mm .63" x 1.20"	Parrish style
<b>F</b> 200-905-42	0.5 ml	Vial only	11.4 mm x 32.5 mm .45" x 1.28"	Straight inside Threaded top
<b>G</b> 200-905-43	0.5 ml	Vial only	11.4 mm x 32.5 mm .45" x 1.28"	Straight inside Crimp top
201-905-42-008-01	0.5 ml	Vial with 8 mm threaded closure	12.4 mm x 34.3 mm .49" x 1.35"	Straight inside Threaded top
201-905-42-008-80	0.5 ml	Vial with 8 mm pierceable threaded closure	12.4 mm x 34.3 mm .49" x 1.35"	Straight inside Threaded top
201-905-42-008-72	0.5 ml	Vial with 8 mm open septum closure	12.4 mm x 34.3 mm .49" x 1.35"	Straight inside Threaded top
200-913-44	1.3 ml	Vial only	14.7 mm x 26.9 mm .58" x 1.06"	Conical inside Open top
<b>H</b> 201-913-44-013-85	1.3 ml	Vial with 13 mm pick-up knob closure	14.7 mm x 39.6mm .58" x 1.56"	Conical inside Open top
<b>I</b> 200-915-44	1.5 ml	Vial only	15.0 mm x 24.0 mm .59" x .94"	Conical inside Open top
201-915-44-012-81	1.5 ml	Vial with 12 mm push-on closure	16.2 mm x 31.8 mm .64" x 1.25"	Conical inside Open top
<b>J</b> 200-002-44	2.0 ml	Vial only	15.0 mm x 36.0 mm .59" x 1.42"	Conical inside Open top
<b>K</b> 201-002-44-012-81	2.0 ml	Vial with 12 mm push-on closure	16.2 mm x 43.9 mm .64" x 1.73"	Conical inside Open top



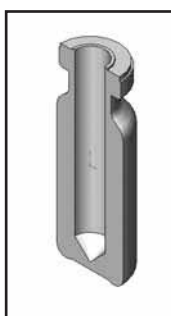
**Closures are available separately; see pages 49-57.**

## Autosampler Vials, continued

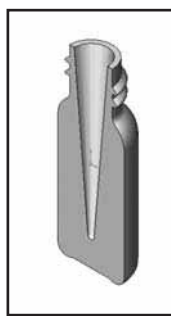
Part Number	Volume	Description	Diameter x Height	Vial Design
<b>L</b> 200-004-44	4.0 ml	Vial only	15.0 mm x 52.3 mm .59" x 2.08"	Conical inside Open top
<b>M</b> 201-004-44-012-81	4.0 ml	Vial with 12 mm push-on closure	16.2 mm x 61.0 mm .64" x 2.40"	Conical inside Open top
200-004-13	4.0 ml	Vial only	15.2 mm x 50.0 mm .60" x 1.97"	Flat inside Snap-on top
<b>N</b> 201-004-13-018-88	4.0 ml	Vial with 18 mm snap-on closure	23.1 mm x 51.8 mm .91" x 2.04"	Flat inside Snap-on top
200-013-14	13.0 ml	Vial only	23.7 mm x 51.8 mm .93" x 2.04"	Flat inside Threaded top
<b>O</b> 201-013-14-024-01	13.0 ml	Vial with 24 mm threaded closure	27.4 mm x 55.6 mm 1.08" x 2.19"	Flat inside Threaded top
200-020-13	20.0 ml	Vial only	27.2 mm x 58.9 mm 1.07" x 2.32"	Flat inside Snap-on top
<b>P</b> 201-020-13-031-88	20.0 ml	Vial with 31 mm snap-on closure	36.8 mm x 61.2 mm 1.45" x 2.41"	Flat inside Snap-on top



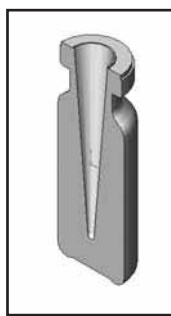
Straight Inside  
Threaded Top



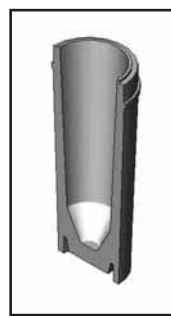
Straight Inside  
Crimp Top



Conical Inside  
Threaded Top



Conical Inside  
Crimp Top



Conical Inside  
Open Top

## Microcentrifuge Vials

- Microcentrifuge vials are molded of PFA
- Available with push-on closures

Part Number	Volume	Description	Diameter x Height
<b>A</b> 200-905-50	0.5 ml	Vial only	10.0 mm x 28.4 mm .39" x 1.12"
<b>B</b> 201-905-50-008-83	0.5 ml	Vial with 8 mm push-on closure	15.7 mm x 30.7 mm .62" x 1.21"
<b>C</b> 200-915-50	1.5 ml	Vial only	12.7 mm x 40.1 mm .50" x 1.58"
<b>D</b> 201-915-50-011-83	1.5 ml	Vial with 11 mm push-on closure	19.3 mm x 42.4 mm .76" x 1.67"



## Vial Accessories

### Heating Jackets

- Stainless steel jackets increase heat transfer through vial walls when used with hot plates
- Fit 15, 22, 30 and 60 ml vials

Part Number	Description	Dimensions
A 730-0331	Stainless steel heating jacket	38 mm OD x 23 mm height
B 730-1331	PFA coated stainless steel heating jacket	38 mm OD x 23 mm height



### Socket Cap

- Socket-type cap is molded of Ultem® for extra strength
- Slips over PFA closure for additional holding in pressure applications

Part Number	Description	Use With
C 730-5132	Socket cap	201-003-20-023-01 201-006-20-023-01



### Wrench Set

- Special glass polypropylene wrench set is used to tighten square vial body and hex closure of specialty vials

Part Number	Description	Use With
D 730-5131	Wrench set	201-003-20-023-01 201-006-20-023-01



### Laminates

- Allows vial contents to be totally enclosed by PTFE while the resealable silicone can be pierced with a syringe
- 10 laminates per package

Part Number	Description	OD	PTFE Thickness	Silicone Thickness
E 730-9924	PTFE/silicone laminates	24 mm	.25 mm	2.3 mm
730-9933	PTFE/silicone laminates	33 mm	.25 mm	2.3 mm
730-9909	PTFE/silicone laminates	9 mm	.25 mm	1.3 mm



### Support Screens

- PFA screens can be used in vial to hold solid samples in solutions or act as a coarse filter

Part Number	Description	Use With	Measurements
F 730-0026	Support screen	15, 22, 30 and 60 ml vials	24.5 mm OD x 14 mm height .96" OD x .55" height



### Nomex® Tabs

- Record important data on tabs of Nomex® which can be snapped into recessed closures for vials
- Nomex® is suitable for use in a wide temperature range

Part Number	Description	Additional Description
G 730-0100	Snap-in tabs	Packaged in bags of 100



### Trays

- Molded green polypropylene trays have numbered compartments and slots for two identification cards
- Used for classifying and storage of samples in inert PFA vials
- Trays are chemical and heat resistant to 248°F/120°C

Part Number	Description	Length	Width	Height
H 730-2001	Tray	174.8 mm 6.88"	82.6 mm 3.25"	17.8 mm 0.70"
I 730-2002	Tray	217.7 mm 8.57"	82.6 mm 3.25"	32.3 mm 1.27"



# Tubes



## Tubes Table of Contents

Standard Tubes . . . . .	19
Block Digestion Tubes . . .	20

## Standard Tubes



- Tubes are molded of PFA
- Tubes can be autoclaved
- PFA tubes are non-breakable
- Service temperature range of PFA is -370°F/-200°C to 500°F/260°C

Part Number	Volume	Description	Diameter x Height	Tube Design
<b>A</b> 210-005-21	5 ml	Tube only	12.0 mm x 75.0 mm .47" x 2.95"	Rounded inside Open top
<b>B</b> 210-014-21	14 ml	Tube only	17.8 mm x 100.0 mm .70" x 3.93"	Rounded inside Open top
210-014-20	14 ml	Tube only	17.8 mm x 101.1 mm .70" x 3.98"	Rounded inside Threaded top
<b>C</b> 211-014-20-018-01	14 ml	Tube with 18 mm plain threaded closure	21.3 mm x 104.1 mm .84" x 4.10"	Rounded inside
210-015-20	15 ml	Tube only	17.8 mm x 109.5 mm .70" x 4.31"	Rounded inside Threaded top
<b>D</b> 210-015-30	15 ml	Tube only	17.8 mm x 126.0 mm .70" x 4.96"	Conical inside Threaded top
210-015-31	15 ml	Tube only	16.3 mm x 126.0 mm .64" x 4.96"	Conical inside Open top
211-015-20-018-01	15 ml	Tube with 18 mm plain threaded closure	21.3 mm x 112.5 mm .84" x 4.43"	Rounded inside
<b>E</b> 211-015-30-018-01	15 ml	Tube with 18 mm plain threaded closure	21.3 mm x 129.3 mm .84" x 5.09"	Conical inside
210-026-20	26 ml	Tube only	23.6 mm x 112.5 mm .93" x 4.43"	Rounded inside Threaded top
<b>F</b> 211-026-20-024-01	26 ml	Tube with 24 mm plain threaded closure	27.4 mm x 116.1 mm 1.08" x 4.57"	Rounded inside
210-032-20	32 ml	Tube only	21.6 mm x 149.8 mm .85" x 5.90"	Rounded inside Threaded top
<b>G</b> 211-032-20-022-73	32 ml	Tube with 22 mm valveless threaded closure	26.2 mm x 153.4 mm 1.03" x 6.04"	Rounded inside
210-050-20	50 ml	Tube only	31.5 mm x 118.9 mm 1.24" x 4.68"	Rounded inside Threaded top
210-050-30	50 ml	Tube only	31.5 mm x 115.6 mm 1.24" x 4.55"	Conical inside Threaded top
<b>H</b> 211-050-30-029-01	50 ml	Tube with 29 mm plain threaded closure	35.8 mm x 119.4 mm 1.41" x 4.70"	Conical inside
<b>I</b> 211-050-20-029-01	50 ml	Tube with 29 mm plain threaded closure	35.8 mm x 122.7 mm 1.41" x 4.83"	Rounded inside
<b>J</b> 210-055-21	55 ml	Tube only	26.2 mm x 144.3 mm 1.03" x 5.68"	Rounded inside Open top
210-060-20	60 ml	Tube only	27.4 mm x 164.8 mm 1.08" x 6.49"	Rounded inside Threaded top
<b>K</b> 211-060-20-028-01	60 ml	Tube with 28 mm plain threaded closure	31.8 mm x 167.7 mm 1.25" x 6.60"	Rounded inside



## Block Digestion Tubes



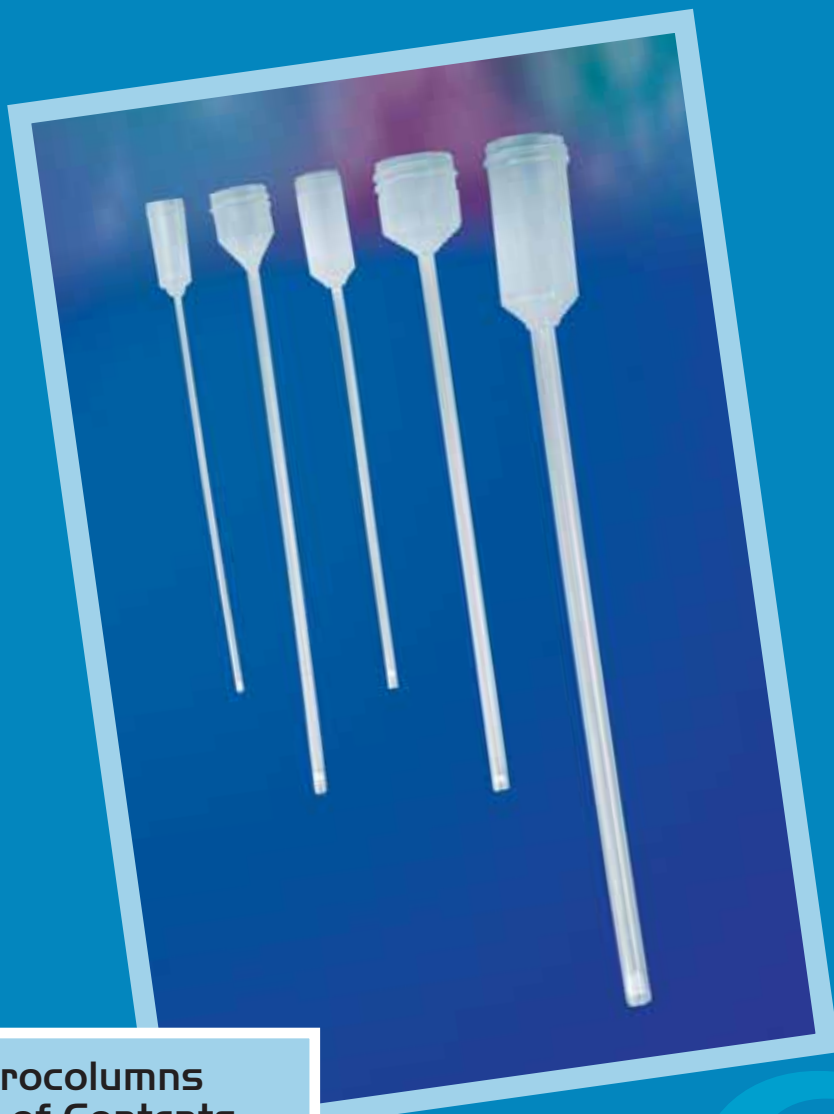
- PFA tubes designed for use in block digestion systems
- Thin wall tubes allow maximum heat transfer
- Threaded tube closures are available on pages 49-52
- Service temperature range of PFA is -370°F/-200°C to 500°F/260°C



Part Number	Volume	Description	Diameter x Height	Tube Design
<b>A</b> 210-004-20	4 ml	Tube only	18.3 mm x 42.7 mm .72" x 1.68"	Rounded inside Threaded top
211-004-20-023-01	4 ml	Tube with 23 mm plain threaded closure	23.9 mm x 45.9 mm .94" x 1.81"	Rounded inside
210-010-30	10 ml	Tube only	31.8 mm x 36.6 mm 1.25" x 1.44"	Conical inside Threaded top
<b>B</b> 211-010-30-033-01	10 ml	Tube with 33 mm plain threaded closure	36.5 mm x 41.7 mm 1.44" x 1.64"	Conical inside
210-017-20	17 ml	Tube only	31.8 mm x 36.1 mm 1.25" x 1.42"	Rounded inside Threaded top
<b>C</b> 211-017-20-033-01	17 ml	Tube with 33 mm plain threaded closure	36.5 mm x 40.9 mm 1.44" x 1.61"	Rounded inside
<b>D</b> 210-025-30	25 ml	Tube only	31.8 mm x 72.9 mm 1.25" x 2.87"	Conical inside Threaded top
211-025-30-033-01	25 ml	Tube with 33 mm plain threaded closure	36.5 mm x 78.7 mm 1.44" x 3.10"	Conical inside
<b>E</b> 210-055-11	55 ml	Tube only	33.5 mm x 109.5 mm 1.32" x 4.31"	Flat inside Open top
210-060-70	60 ml	Tube only	31.8 mm x 129.0 mm 1.25" x 5.08"	Flat inside, flat outside, 1.159" OD, 25 ml and 50 ml graduations
<b>F</b> 211-060-70-033-01	60 ml	Tube with 33 mm plain threaded closure	36.6 mm x 133.9 mm 1.44" x 5.27"	Flat inside, flat outside, 1.159" OD, 25 ml and 50 ml graduations
<b>G</b> 210-060-71	60 ml	Tube only	33.0 mm x 109.2 mm 1.30" x 4.30"	Flat inside with nesting ring
<b>H</b> 210-075-11	75 ml	Tube only	38.1 mm x 98.6 mm 1.50" x 3.88"	Flat inside Open top
211-075-11-038-89	75 ml	Tube with 38 mm push-in closure	38.1 mm x 103.9 mm 1.50" x 4.09"	Flat inside
<b>I</b> 210-150-11	150 ml	Tube only	48.3 mm x 218.5 mm 1.90" x 8.60"	Flat inside Open top

Note: Dimensions listed in this catalog are approximate.  
Please call for exact dimensions.

# Microcolumns



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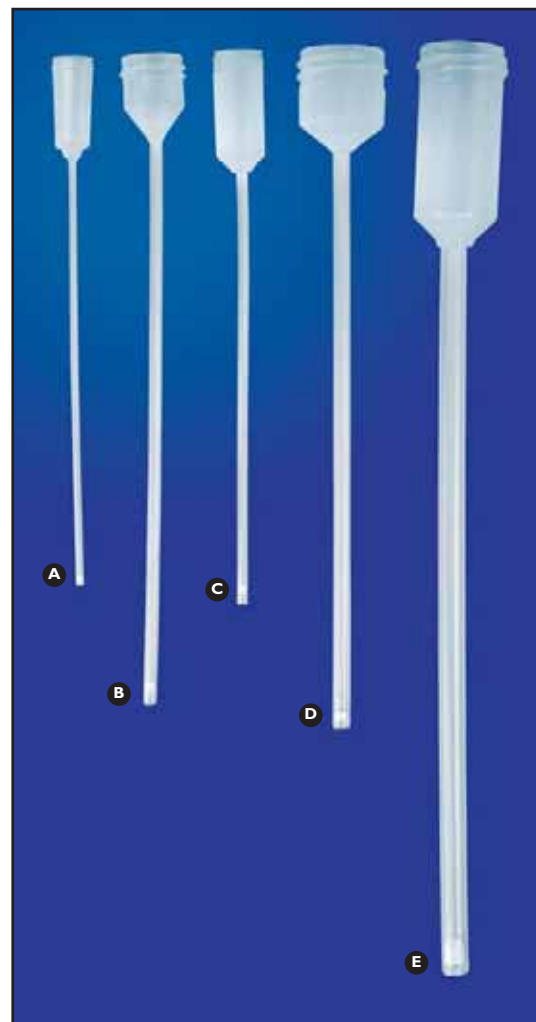
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## Standard Microcolumns

- Microcolumns are made of PFA
- Used for ion exchange chromatography
- Long, narrow capillaries optimize the quality of the separation of one element from another
- Microcolumns can be made from any standard Savillex vial and straight tubing
- Frits not included and can be ordered separately

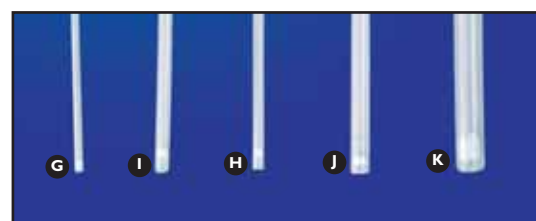
Part Number	Volume	Capillary Dimensions
<b>A</b> 220-002-015-032-15	2 ml	1.5 mm ID x 3.2 mm OD x 15 cm long
<b>B</b> 220-005-032-047-20	5 ml	3.2 mm ID x 4.7 mm OD x 20 cm long
<b>C</b> 220-006-024-040-15	6 ml	2.4 mm ID x 4.0 mm OD x 15 cm long
<b>D</b> 220-015-040-063-20	15 ml	4.0 mm ID x 6.3 mm OD x 20 cm long
<b>E</b> 220-030-064-096-25	30 ml	6.4 mm ID x 9.6 mm OD x 25 cm long
<b>F</b> 220-030-147-173-12	30 ml	14.7 mm ID x 17.3 mm OD x 12 cm long



## Microcolumn Accessories

### Frits

Part Number	Description	Thickness
<b>G</b> 730-0015	1.5 mm diameter frit, PTFE, 30 micron	2.5 mm
<b>H</b> 730-0024	2.4 mm diameter frit, PTFE, 30 micron	2.5 mm
<b>I</b> 730-0032	3.2 mm diameter frit, PTFE, 30 micron	2.5 mm
<b>J</b> 730-0040	4.0 mm diameter frit, PTFE, 30 micron	2.5 mm
<b>K</b> 730-0064	6.4 mm diameter frit, PTFE, 30 micron	8.4 mm
730-0147	14.7 mm diameter frit, PTFE, 30 micron	1.6 mm



**Closures for Microcolumns can be found on pages 49-52.**

# Digestion Vessels



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## Digestion Vessels



- PFA digestion vessels are used for rapid sample dissolution
- Vessels can be placed directly in a microwave oven for controlled high speed heating to drastically reduce time required to dissolve or digest an analytical sample
- Vessels can be supplied with flat outside bottoms for hot plate heating and digestion
- Glass polypropylene wrench set (#730-0055) is recommended for tightening

Part Number	Volume	Description	Diameter x Height	Vessel Design	Closure Port Design	Pressure Rating at 100°F*
300-060-01	60 ml	Vessel only buttness threaded	53.8 mm x 57.4 mm 2.12" x 2.26"	Flat inside Standard outside	-	-
300-060-03	60 ml	Vessel only buttness threaded	53.8 mm x 53.6 mm 2.12" x 2.11"	Flat inside Flat outside	-	-
300-060-04	60 ml	Vessel only buttness threaded	53.8 mm x 57.4 mm 2.12" x 2.26"	Conical inside Cored outside	-	-
<b>A</b> 301-060-01-058-04	60 ml	Vessel with plain buttness threaded closure	58.2 mm x 65.0 mm 2.29" x 2.56"	Flat inside Standard outside	-	75 PSI
<b>B</b> 301-060-01-058-22	60 ml	Vessel with buttness threaded transfer closure	58.2 mm x 82.3 mm 2.29" x 3.24"	Flat inside Standard outside	(2) 1/8" ports	75 PSI
<b>C</b> 301-060-01-058-86	60 ml	Vessel with buttness threaded closure	58.2 mm x 102.9 mm 2.29" x 4.05"	Flat inside Standard outside	Pressure relief valve	100 PSI
301-060-03-058-04	60 ml	Vessel with plain buttness threaded closure	58.2 mm x 62.0 mm 2.29" x 2.44"	Flat inside Flat outside	-	75 PSI
300-120-01	120 ml	Vessel only buttness threaded	53.6 mm x 115.8 mm 2.11" x 4.56"	Flat inside Standard outside	-	-
300-120-03	120 ml	Vessel only buttness threaded	53.6 mm x 112.5 mm 2.11" x 4.43"	Flat inside Flat outside	-	-
<b>D</b> 300-120-04	120 ml	Vessel only buttness threaded	53.6 mm x 115.8 mm 2.11" x 4.56"	Conical inside Cored outside	-	-
<b>E</b> 300-120-16	120 ml	Vessel only buttness threaded	53.6 mm x 115.8 mm 2.11" x 4.56"	Flat inside Standard outside (1) 1/4" FNPT side port	-	-
300-120-20	120 ml	Vessel only buttness threaded	53.6 mm x 115.8 mm 2.11" x 4.56"	Flat inside Standard outside (2) 1/8" side ports	-	-
<b>F</b> 300-120-22	120 ml	Vessel only buttness threaded	53.6 mm x 115.8 mm 2.11" x 4.56"	Flat inside Standard outside (2) 1/4" side ports	-	-

**\*CAUTION:** For every 2°F/-17°C rise above 100°F/38°C, reduce pressure rating by 1 PSI.

The pressurized digestion process can produce extremely high sample temperatures and pressures in a very short period of time, especially when performed in a microwave. Observe all instructions and safety precautions as noted in marketing bulletin #MB003.



# Digestion Vessels

## Digestion Vessels, continued

Part Number	Volume	Description	Diameter x Height	Vessel Design	Closure Port Design	Pressure Rating at 100°F*
<b>G</b> 301-120-01-058-04	120 ml	Vessel with plain buttress threaded closure	58.2 mm x 121.9 mm 2.29" x 4.80"	Flat inside Standard outside	-	75 PSI
301-120-01-058-14	120 ml	Vessel with buttress threaded transfer closure	58.2 mm x 141.5 mm 2.29" x 5.57"	Flat inside Standard outside	(1) 1/4" OD port	75 PSI
301-120-01-058-22	120 ml	Vessel with buttress threaded transfer closure	58.2 mm x 138.2 mm 2.29" x 5.44"	Flat inside Standard outside	(2) 1/8" OD ports	75 PSI
301-120-01-058-31	120 ml	Vessel with buttress threaded transfer closure	58.2 mm x 141.9 mm 2.29" x 5.59"	Flat inside Standard outside	(2) 1/4" OD ports	75 PSI
<b>H</b> 301-120-01-058-86	120 ml	Vessel with buttress threaded closure	58.2 mm x 161.0 mm 2.29" x 6.34"	Flat inside Standard outside	Pressure relief valve	100 PSI
<b>I</b> 301-120-02-058-87	120 ml	Vessel with 1-1/2" FNPT threaded closure	58.2 mm x 160.5 mm 2.29" x 6.32"	Flat inside Standard outside	Pressure relief valve, Ultem® clamp	125 PSI
301-120-03-058-04	120 ml	Vessel with plain buttress threaded closure	58.2 mm x 120.1 mm 2.29" x 4.73"	Flat inside Flat outside	-	75 PSI
<b>J</b> 301-120-11-058-87	120 ml	Vessel with 1-1/2" FNPT threaded closure	58.2 mm x 160.5 mm 2.29" x 6.32"	Flat inside Standard outside (1) 1/8" side port	Pressure relief valve, Ultem® clamp	125 PSI

**\*CAUTION:** For every 2°F/-17°C rise above 100°F/38°C, reduce pressure rating by 1 PSI.



## Digestion Vessel Accessories

Part Number	Description
<b>A</b> 730-0055	Glass polypropylene wrench set
760-1-125-188-005	3/16" OD flexible PFA tubing



For technical assistance, we recommend two books published by the American Chemical Society. Both books contain numerous references to PFA vessels molded by Savillex Corporation. Please visit [www.oup.com](http://www.oup.com) and do a search for the books listed below.

"Microwave-Enhanced Chemistry: Fundamentals, Sample Preparation and Applications"  
ACS Professional Reference Book Series, American Chemical Society,  
Washington, DC, 1997. Edited by H.M. Skip Kingston and Stephen Haswell.

"Introduction to Microwave Sample Preparation, Theory and Practice"  
ACS Professional Reference Book Series, American Chemical Society,  
Washington, DC, 1988. Edited by H.M. Skip Kingston and Lois B. Jassie.

# Filter Holders



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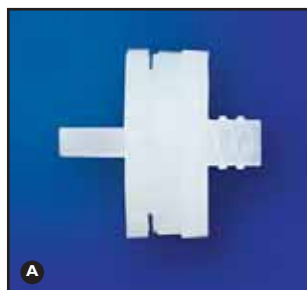
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# Filter Holders

## Single Stage Filter Holders

### 13 mm Diameter

- Two-piece design
- Designed for use with syringe #700-510 (see page 60)
- Bi-directional membrane support
- Can be hand tightened; no wrench needed
- All filter holder components in contact with the fluid stream are molded of PFA
- Membranes may be changed without disconnecting tube lines
- For every 2°F/-17°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI



Part Number	Description	Inlet Type	Membrane Diameter	Outlet Type	Diameter x Length
401-51-13-60-50-2	Single stage	Female leur lock	13 mm	Male leur slip	26.0 mm x 28.2 mm 1.03" x 1.11"

### 25 mm Diameter

- All components contacting fluid stream are molded PFA
- Membranes may be changed without disconnecting tubing lines
- Can be hand tightened; no wrench needed
- PFA clamps are available for high temperature applications
- For every 2°F/-17°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI



Part Number	Description	Inlet Type	Membrane Diameter	Clamp Style	Outlet Type	Pressure Rating	Diameter x Length
401-11-25-50-20-2	Single stage	2-1/2" open inlet	25 mm	White/blue PVDF	1/8" OD ferrule nut outlet	65 PSI	38 mm x 62 mm 1.50" x 2.45"
401-11-25-50-21-2	Single stage	2-1/2" open inlet	25 mm	White/blue PVDF	1/4" OD ferrule nut outlet	65 PSI	38 mm x 62 mm 1.50" x 2.45"
401-20-25-50-20-2	Single stage	1/8" OD ferrule nut inlet	25 mm	White/blue PVDF	1/8" OD ferrule nut outlet	65 PSI	38 mm x 62 mm 1.50" x 2.45"
401-21-25-50-21-2	Single stage	1/4" OD ferrule nut inlet	25 mm	White/blue PVDF	1/4" OD ferrule nut outlet	65 PSI	38 mm x 62 mm 1.50" x 2.45"
401-31-25-50-31-2	Single stage	1/4" OD MNPT inlet	25 mm	White/blue PVDF	1/4" OD MNPT outlet	65 PSI	38 mm x 62 mm 1.50" x 2.45"

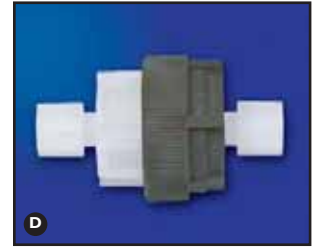
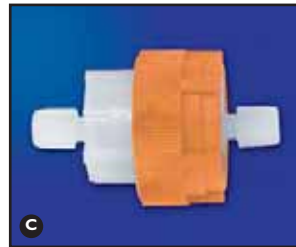
Note: Dimensions listed in this catalog are approximate. Please call for exact dimensions.

**Other filter holder assemblies can be built by using components listed on pages 31-34**

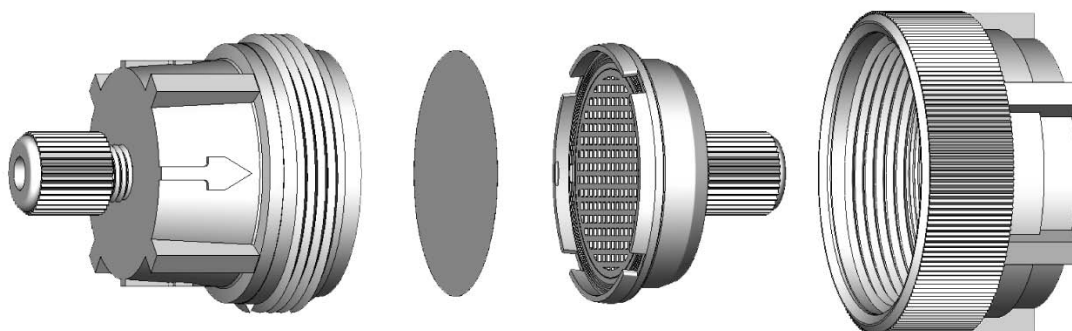
## Single Stage Filter Holders, continued

### 47 mm Diameter

- Available with or without polypropylene wrench set
- Glass polypropylene wrench set recommended with initial order for tightening
- PFA clamp nuts for use in high temperature applications
- Tefzel® clamp reinforced with 25% glass fiber for use in high pressure applications
- Maximum temperature for Tefzel® is 300°F/148°C
- All filter holder components in contact with the fluid stream are molded of PFA
- Membranes may be changed without disconnecting tube lines
- For every 2°F/-17°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI



Part Number with Wrench Set	Part Number without Wrench Set	Description	Inlet Type	Membrane Diameter	Clamp Style	Outlet Type	Pressure Rating	Diameter x Length
401-10-47-10-21-1	401-10-47-10-21-2	Single stage	1-1/2" open inlet	47 mm	Orange PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 73.4 mm 2.44" x 2.89"
<b>C</b> 401-21-47-10-21-1	401-21-47-10-21-2	Single stage	1/4" OD ferrule nut inlet	47 mm	Orange PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 94.8 mm 2.44" x 3.73"
401-21-47-30-21-1	401-21-47-30-21-2	Single stage	1/4" OD ferrule nut inlet	47 mm	Black Tefzel®	1/4" OD ferrule nut outlet	65 PSI	61.2 mm x 94.0 mm 2.41" x 3.70"
401-21-47-30-41-1	401-21-47-30-41-2	Single stage	1/4" OD ferrule nut inlet	47 mm	Black Tefzel®	1/4" OD x 1" tube outlet	65 PSI	61.2 mm x 100.3 mm 2.41" x 3.95"
401-22-47-10-21-1	401-22-47-10-21-2	Single stage	3/8" OD ferrule nut inlet	47 mm	Orange PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 98.8 mm 2.44" x 3.89"
401-22-47-10-22-1	401-22-47-10-22-2	Single stage	3/8" OD ferrule nut inlet	47 mm	Orange PFA	3/8" OD ferrule nut outlet	25 PSI	62.0 mm x 103.6 mm 2.44" x 4.08"
<b>D</b> 401-22-47-30-22-1	401-22-47-30-22-2	Single stage	3/8" OD ferrule nut inlet	47 mm	Black Tefzel®	3/8" OD ferrule nut outlet	65 PSI	61.2 mm x 103.4 mm 2.41" x 4.07"
401-22-47-30-42-1	401-22-47-30-42-2	Single stage	3/8" OD ferrule nut inlet	47 mm	Black Tefzel®	3/8" OD x 1" tube outlet	65 PSI	61.2 mm x 102.9 mm 2.41" x 4.05"
401-31-47-10-31-1	401-31-47-10-31-2	Single stage	1/4" OD MNPT inlet	47 mm	Orange PFA	1/4" OD MNPT outlet	25 PSI	62.0 mm x 78.0 mm 2.44" x 3.07"
401-42-47-10-21-1	401-42-47-10-21-2	Single stage	3/8" OD x 1" tube inlet	47 mm	Orange PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 98.1 mm 2.44" x 3.86"
401-42-47-10-42-1	401-42-47-10-42-2	Single stage	3/8" OD x 1" tube inlet	47 mm	Orange PFA	3/8" OD x 1" tube outlet	25 PSI	62.0 mm x 102.4 mm 2.44" x 4.03"
401-42-47-30-21-1	401-42-47-30-21-2	Single stage	3/8" OD x 1" tube inlet	47 mm	Black Tefzel®	1/4" OD ferrule nut outlet	65 PSI	61.2 mm x 98.3 mm 2.41" x 3.87"
401-21-47-22-41-1	401-21-47-22-41-2	Single stage	1/4" OD ferrule nut inlet	47 mm	Extended Gray PFA	1/4" OD x 1" tube outlet	25 PSI	62.0 mm x 105.9 mm 2.44" x 4.17"



# Filter Holders

## Single Stage Filter Holders, continued

### 50 mm Diameter

- Available with or without polypropylene wrench set
- Glass polypropylene wrench set recommended with initial order for tightening
- PFA clamps for use in high temperature applications
- Tefzel® clamp reinforced with 25% glass fiber for use in high pressure applications
- Maximum temperature for Tefzel® is 300°F/148°C
- All filter holder components in contact with the fluid stream are molded of PFA
- Membranes may be changed without disconnecting tube lines
- For every 2°F/-17°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI



Part Number with Wrench Set	Part Number without Wrench Set	Description	Inlet Type	Membrane Diameter	Clamp Style	Outlet Type	Pressure Rating	Diameter x Length
401-10-50-11-21-1	401-10-50-11-21-2	Single stage	1-1/2" open inlet	50 mm	Green PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 73.4 mm 2.44" x 2.89"
401-21-50-11-21-1	401-21-50-11-21-2	Single stage	1/4" OD ferrule nut inlet	50 mm	Green PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 94.0 mm 2.44" x 3.70"
401-21-50-31-21-1	401-21-50-31-21-2	Single stage	1/4" OD ferrule nut inlet	50 mm	Brown Tefzel®	1/4" OD ferrule nut outlet	65 PSI	61.2 mm x 94.5 mm 2.41" x 3.72"
401-22-50-11-22-1	401-22-50-11-22-2	Single stage	3/8" OD ferrule nut inlet	50 mm	Green PFA	3/8" OD ferrule nut outlet	25 PSI	61.2 mm x 102.9 mm 2.41" x 4.05"
401-22-50-31-22-1	401-22-50-31-22-2	Single stage	3/8" OD ferrule nut inlet	50 mm	Brown Tefzel®	3/8" OD ferrule nut outlet	65 PSI	61.2 mm x 103.1 mm 2.41" x 4.06"
401-22-50-31-42-1	401-22-50-31-42-2	Single stage	3/8" OD ferrule nut inlet	50 mm	Brown Tefzel®	3/8" OD x 1" tube outlet	65 PSI	61.2 mm x 102.6 mm 2.41" x 4.04"
E 401-42-50-11-22-1	401-42-50-11-22-2	Single stage	3/8" OD x 1" tube inlet	50 mm	Green PFA	3/8" OD ferrule nut outlet	25 PSI	62.0 mm x 97.8 mm 2.44" x 3.85"
401-42-50-11-42-1	401-42-50-11-42-2	Single stage	3/8" OD x 1" tube inlet	50 mm	Green PFA	3/8" OD x 1" tube outlet	25 PSI	62.0 mm x 102.1 mm 2.44" x 4.02"
401-42-50-31-21-1	401-42-50-31-21-2	Single stage	3/8" OD x 1" tube inlet	50 mm	Brown Tefzel®	1/4" OD ferrule nut outlet	65 PSI	61.2 mm x 97.8 mm 2.41" x 3.85"
401-43-50-11-42-1	401-43-50-11-42-2	Single stage	1/2" OD x 1" tube inlet	50 mm	Green PFA	3/8" OD x 1" tube outlet	25 PSI	62.0 mm x 102.6 mm 2.44" x 4.04"
401-43-50-11-43-1	401-43-50-11-43-2	Single stage	1/2" OD x 1" tube inlet	50 mm	Green PFA	1/2" OD x 1" tube outlet	25 PSI	62.0 mm x 103.6 mm 2.44" x 4.08"
401-43-50-31-43-1	401-43-50-31-43-2	Single stage	1/2" OD x 1" tube inlet	50 mm	Brown Tefzel®	1/2" OD x 1" tube outlet	65 PSI	61.2 mm x 103.6 mm 2.41" x 4.08"

### 90 mm Diameter

- Available with or without polypropylene wrench set
- Glass polypropylene wrench set recommended with initial order for tightening
- Maximum service temperature 275°F/135°C
- All filter holder components in contact with the fluid stream are molded of PFA
- Membranes may be changed without disconnecting tube lines
- For every 2°F/-17°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI

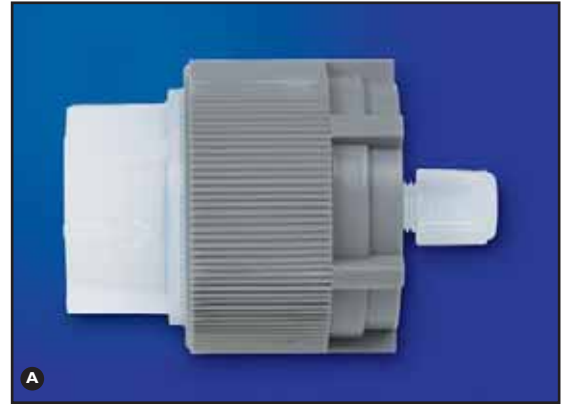


Part Number with Wrench Set	Part Number without Wrench Set	Description	Inlet Type	Membrane Diameter	Clamp Style	Outlet Type	Pressure Rating	Diameter x Length
401-10-90-40-23-1	401-10-90-40-23-2	Single stage	1-1/2" open inlet	90 mm	Ultem®	1/2" OD ferrule nut outlet	10 PSI	110.0 mm x 94.7 mm 4.33" x 3.73"
F 401-23-90-40-23-1	401-23-90-40-23-2	Single stage	1/2" OD ferrule nut inlet	90 mm	Ultem®	1/2" OD ferrule nut outlet	10 PSI	110.0 mm x 122.7 mm 4.33" x 4.83"
401-25-90-40-25-1	401-25-90-40-25-2	Single stage	3/4" OD ferrule nut inlet	90 mm	Ultem®	3/4" OD ferrule nut outlet	10 PSI	110.0 mm x 122.2 mm 4.33" x 4.81"
401-43-90-40-43-1	401-43-90-40-43-2	Single stage	1/2" OD x 1" tube inlet	90 mm	Ultem®	1/2" OD x 1" tube outlet	10 PSI	110.0 mm x 103.9 mm 4.33" x 4.09"
401-44-90-40-44-1	401-44-90-40-44-2	Single stage	5/8" OD x 1" tube inlet	90 mm	Ultem®	5/8" OD x 1" tube outlet	10 PSI	110.0 mm x 102.9 mm 4.33" x 4.05"

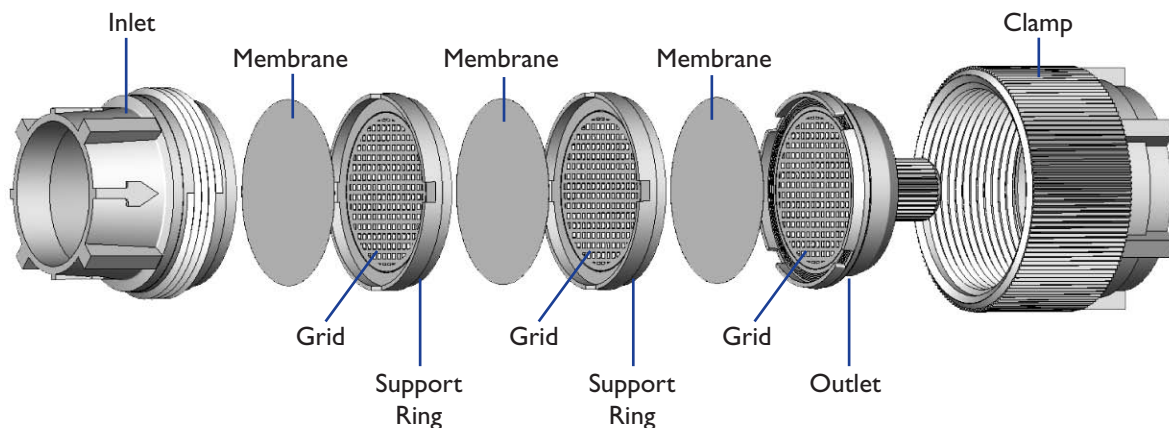


## Multiple Stage Filter Holders

- In-line filter holder components in contact with the fluid stream are molded of PFA
- Extended clamps and additional support rings with snap-in grids combine to create two, three and four stage filter holder assemblies
- Using membranes with differing pore sizes allows filtration of sample from extra coarse to ultra fine particles
- Glass polypropylene wrench set recommended with initial order for tightening
- For every 2°F/-17°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI



Part Number with Wrench Set	Part Number without Wrench Set	Description	Inlet Type	Membrane Diameter	Clamp Style	Outlet Type	Pressure Rating	Diameter x Length
402-42-47-22-42-1	402-42-47-22-42-2	Two stage	3/8" OD x 1" tube inlet	47 mm	extended gray PFA	3/8" OD x 1" tube outlet	25 PSI	62.0 mm x 107.2 mm 2.44" x 4.22"
402-31-47-22-31-1	402-31-47-22-31-2	Two stage	1/4" OD MNPT fitting inlet	47 mm	extended gray PFA	1/4" OD MNPT fitting outlet	25 PSI	62.0 mm x 83.1 mm 2.44" x 3.27"
403-10-47-22-21-1	403-10-47-22-21-2	Three stage	1-1/2" open inlet	47 mm	extended gray PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 84.5 mm 2.44" x 3.33"
403-42-47-22-42-1	403-42-47-22-42-2	Three stage	3/8" OD x 1" tube inlet	47 mm	extended gray PFA	3/8" OD x 1" tube outlet	25 PSI	62.0 mm x 112.5 mm 2.44" x 4.43"
403-22-47-22-22-1	403-22-47-22-22-2	Three stage	3/8" OD ferrule nut inlet	47 mm	extended gray PFA	3/8" OD ferrule nut outlet	25 PSI	62.0 mm x 114.3 mm 2.44" x 4.50"
404-10-47-22-21-1	404-10-47-22-21-2	Four stage	1-1/2" open inlet	47 mm	extended gray PFA	1/4" OD ferrule nut outlet	25 PSI	62.0 mm x 89.2 mm 2.44" x 3.51"

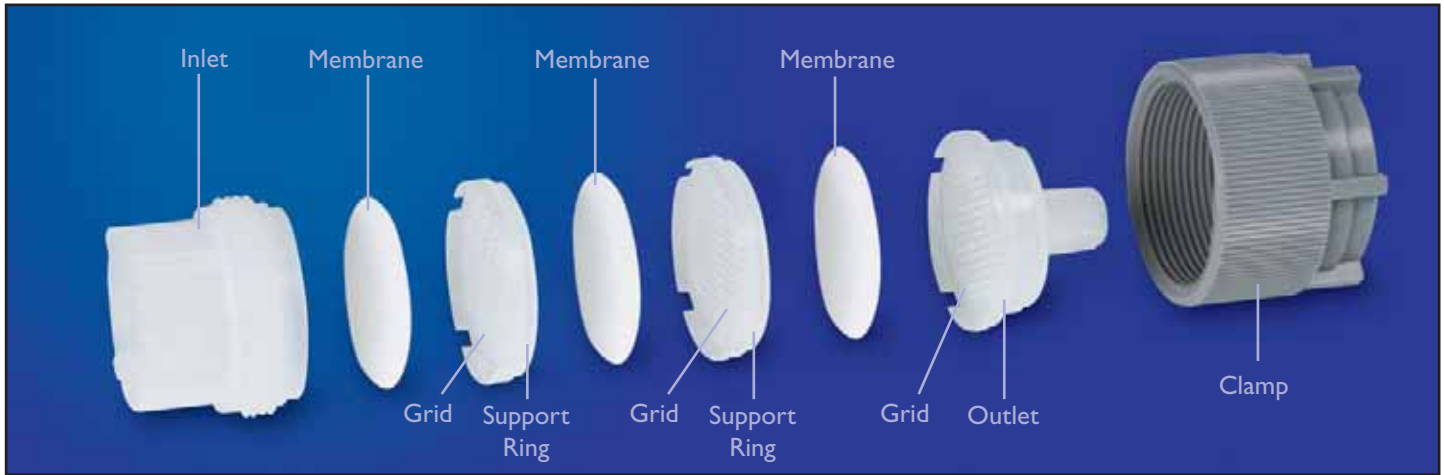


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# Filter Holders

## Components

- Filter holder components may be ordered as spare parts or to build multiple stage filter holders



### Inlets

- Inlets are molded of PFA and are available in various styles for different applications

Part Number	Inlet Type	Membrane Diameter
410-11-25	2-1/2" open inlet	25 mm
410-20-25	Ferrule nut for 1/8" tubing	25 mm
410-21-25	Ferrule nut for 1/4" tubing	25 mm
410-31-25	1/4" OD MNPT fitting	25 mm
<b>A</b> 410-10-47	1-1/2" open inlet	47 mm
410-12-47	3-1/2" open inlet	47 mm
410-21-47	Ferrule nut for 1/4" tubing	47 mm
<b>B</b> 410-22-47	Ferrule nut for 3/8" tubing	47 mm
410-31-47	1/4" OD MNPT fitting	47 mm
410-41-47	1/4" OD x 1" tube	47 mm
410-42-47	3/8" OD x 1" tube	47 mm
410-43-47	1/2" OD x 1" tube	47 mm
410-44-47	5/8" OD x 1" tube	47 mm
410-10-50	1-1/2" open inlet	50 mm
410-21-50	Ferrule nut for 1/4" tubing	50 mm
410-22-50	Ferrule nut for 3/8" tubing	50 mm
410-31-50	1/4" OD MNPT fitting	50 mm
410-42-50	3/8" OD x 1" tube	50 mm
410-43-50	1/2" OD x 1" tube	50 mm
410-10-90	1-1/2" open inlet	90 mm
410-23-90	Ferrule nut for 1/2" tubing	90 mm
410-25-90	Ferrule nut for 3/4" tubing	90 mm
<b>C</b> 410-43-90	1/2" OD x 1" tube	90 mm
410-44-90	5/8" OD x 1" tube	90 mm



### Support Rings

- Support ring is molded of PFA
- Up to three units can be added to a standard filter holder to build a multiple stage filter holder
- Grids must be ordered separately

Part Number	Product Description	Use With
<b>D</b> 413-47	47 mm filter support ring	Filter holders

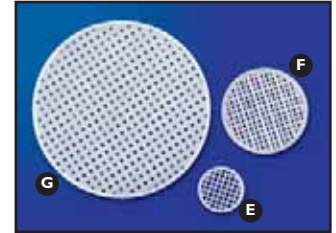
Grid must be ordered separately

## Components, continued

### Grids

- PFA grids snap into the support ring or outlets to hold filter membrane

Part Number	Size	Use With
<b>E</b> 414-25	25 mm	25 mm filter holders
<b>F</b> 414-47	47 mm	47 and 50 mm filter holders
<b>G</b> 414-90	90 mm	90 mm filter holders



### Clamps

- Clamps are available in various sizes and materials for specific applications
- Extended clamp is also available for building a multiple stage filter holder
- PFA clamps withstand a wide temperature range in addition to other PFA properties
- Tefzel® clamps are reinforced with 25% glass fiber for use in higher pressure applications
- Ultem® clamps provide extra strength for 90 mm filter holders
- For every 2°F/-17°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI

Part Number	Clamp Type	Diameter	Pressure Rating
412-50-25	White and Blue PVDF	25 mm	65 PSI
412-51-25	White PVDF	25 mm	65 PSI
412-52-25	Blue PVDF	25 mm	65 PSI
<b>H</b> 412-10-47	Orange PFA	47 mm	25 PSI
412-20-47	Orange PFA, extended	47 mm	25 PSI
412-21-47	Green PFA, extended	47 mm	25 PSI
<b>I</b> 412-22-47	Gray PFA, extended	47 mm	25 PSI
412-23-47	Yellow PFA, extended	47 mm	25 PSI
412-30-47	Black Tefzel®	47 mm	65 PSI
<b>J</b> 412-11-50	Green PFA	50 mm	25 PSI
412-31-50	Brown Tefzel®	50 mm	65 PSI
412-40-90	Ultem®	90 mm	10 PSI



### Outlets

- Outlets are molded of PFA and are available in various styles for different applications
- Grids must be ordered separately

Part Number	Inlet Type	Membrane Diameter
411-20-25	Ferrule nut for 1/8" OD tubing	25 mm
411-21-25	Ferrule nut for 1/4" OD tubing	25 mm
411-31-25	1/4" MNPT fitting	25 mm
411-21-47	Ferrule nut for 1/4" OD tubing	47 mm
411-22-47	Ferrule nut for 3/8" OD tubing	47 mm
<b>K</b> 411-31-47	1/4" MNPT fitting	47 mm
411-41-47	1/4" OD x 1" tube	47 mm
411-42-47	3/8" OD x 1" tube	47 mm
411-43-47	1/2" OD x 1" tube	47 mm
411-44-47	5/8" OD x 1" tube	47 mm
411-21-50	Ferrule nut for 1/4" OD tubing	50 mm
<b>L</b> 411-22-50	Ferrule nut for 3/8" OD tubing	50 mm
411-31-50	1/4" MNPT fitting	50 mm
411-42-50	3/8" OD x 1" tube	50 mm
411-43-50	1/2" OD x 1" tube	50 mm
411-23-90	Ferrule nut for 1/2" OD tubing	90 mm
411-25-90	Ferrule nut for 3/4" OD tubing	90 mm
<b>M</b> 411-43-90	1/2" OD x 1" tube	90 mm
411-44-90	5/8" OD x 1" tube	90 mm



# Filter Holders

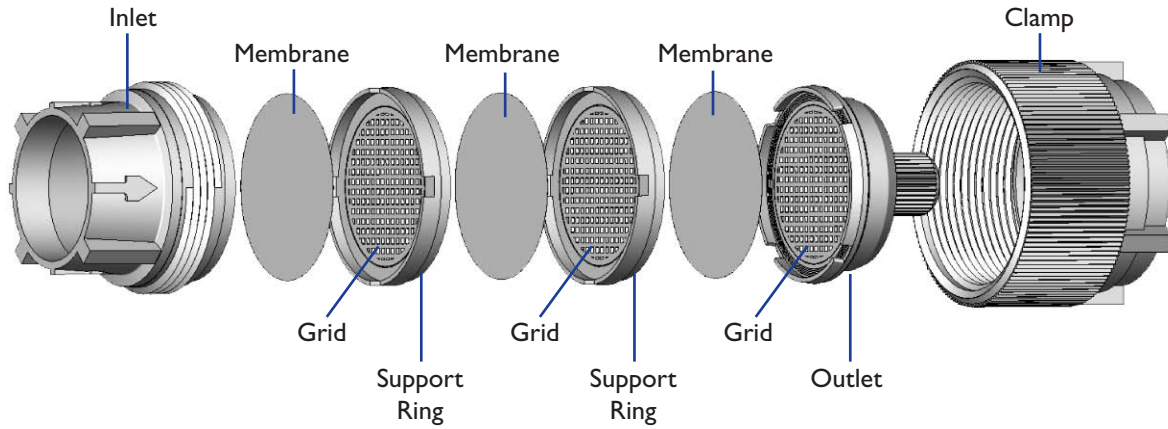
## Membranes



- Membranes are produced of pure PTFE
- Membranes are chemically and biologically inert, stable up to 500°F/260°C and will withstand most concentrated acids and bases
- Membranes are compatible with strong acids, aggressive solvents and high temperatures
- Ideal for applications requiring extreme temperatures or aggressive chemicals without adding particulates to the filtrate
- Naturally hydrophobic, very useful for aerosol sampling, air venting and gas filtration, especially in environments also containing water vapor
- For submicron filtering of aqueous solutions, pre-wetting with methanol, ethanol or isopropyl alcohol to establish flow with lower pressure differentials is required
- Sterilize with steam or bactericidal solutions
- Ten membranes per package

Part Number	Membrane OD	Pore Size	Thickness
450-09-3	9 mm	1-2 micron	.25 mm
450-13-1	13 mm	.2 micron	.065 mm
450-13-2	13 mm	.45 micron	.07 mm
450-13-3	13 mm	1-2 micron	.25 mm
450-13-4	13 mm	5-6 micron	.10 mm
450-13-5	13 mm	20-30 micron	.14 mm
450-13-6	13 mm	30-60 micron	.20 mm
450-20-3	20 mm	1-2 micron	.25 mm
450-20-4	20 mm	5-6 micron	.10 mm
450-20-5	20 mm	20-30 micron	.14 mm
450-20-6	20 mm	30-60 micron	.20 mm
450-25-1	25 mm	.2 micron	.065 mm
450-25-2	25 mm	.45 micron	.07 mm
450-25-3	25 mm	1-2 micron	.25 mm
450-25-4	25 mm	5-6 micron	.10 mm
450-25-5	25 mm	20-30 micron	.14 mm
450-25-6	25 mm	30-60 micron	.20 mm
450-37-1	37 mm	.2 micron	.065 mm
450-37-2	37 mm	.45 micron	.07 mm

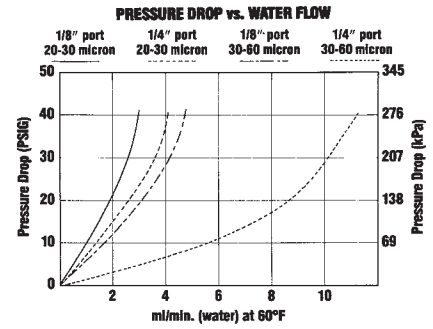
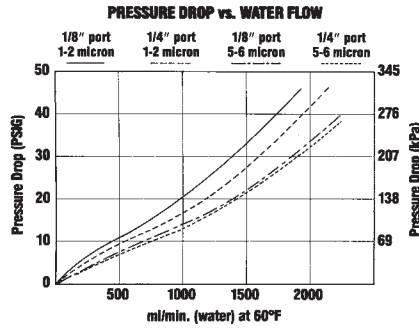
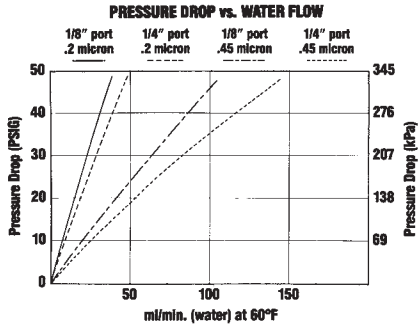
## Membranes, continued



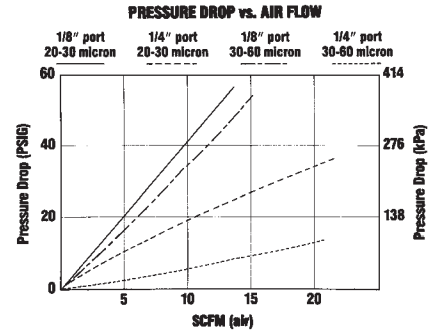
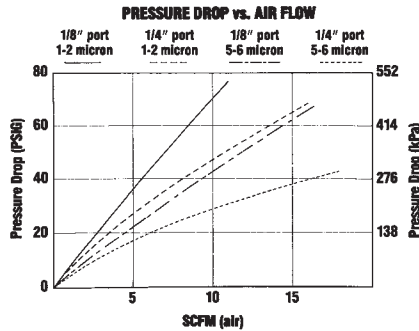
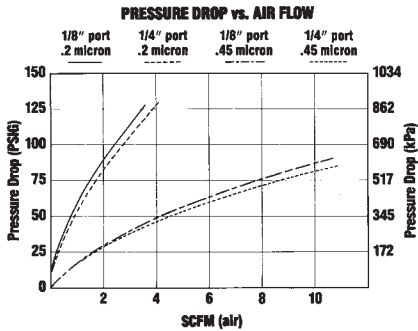
Part Number	Membrane OD	Pore Size	Thickness
450-37-3	37 mm	1-2 micron	.25 mm
450-37-4	37 mm	5-6 micron	.10 mm
450-37-5	37 mm	20-30 micron	.14 mm
450-37-6	37 mm	30-60 micron	.20 mm
450-47-1	47 mm	.2 micron	.065 mm
450-47-2	47 mm	.45 micron	.07 mm
450-47-3	47 mm	1-2 micron	.25 mm
450-47-4	47 mm	5-6 micron	.10 mm
450-47-5	47 mm	20-30 micron	.14 mm
450-47-6	47 mm	30-60 micron	.20 mm
450-50-1	50 mm	.2 micron	.065 mm
450-50-2	50 mm	.45 micron	.07 mm
450-50-3	50 mm	1-2 micron	.25 mm
450-50-4	50 mm	5-6 micron	.10 mm
450-50-5	50 mm	20-30 micron	.14 mm
450-50-6	50 mm	30-60 micron	.20 mm
450-90-3	90 mm	1-2 micron	.25 mm
450-90-4	90 mm	5-6 micron	.10 mm
450-90-5	90 mm	20-30 micron	.14 mm
450-90-6	90 mm	30-60 micron	.20 mm

# Filter Holders

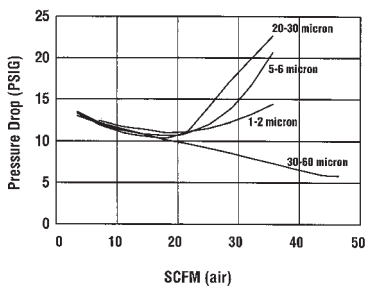
## Filter Flow Rates



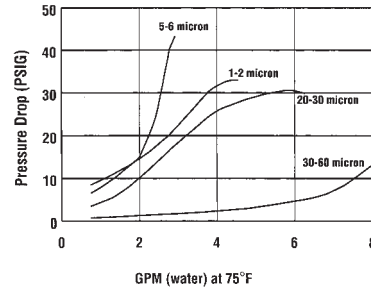
### 25mm Air



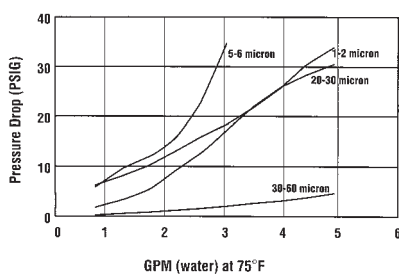
**401-25-90-40-25 FILTERS**  
 PRESSURE DROP vs. AIR FLOW



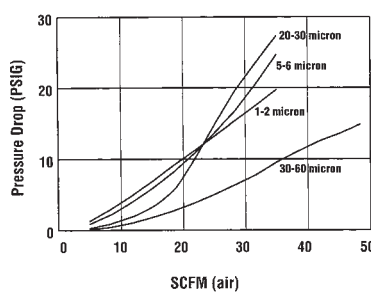
**401-25-90-40-25 FILTERS**  
 PRESSURE DROP vs. WATER FLOW



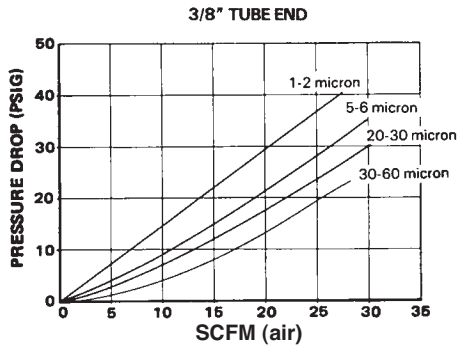
**401-23-90-40-23 FILTERS**  
 PRESSURE DROP vs. WATER FLOW



**401-23-90-40-23 FILTERS**  
 PRESSURE DROP vs. AIR FLOW

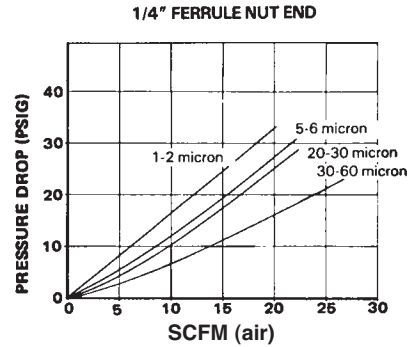


## Filter Flow Rates, continued

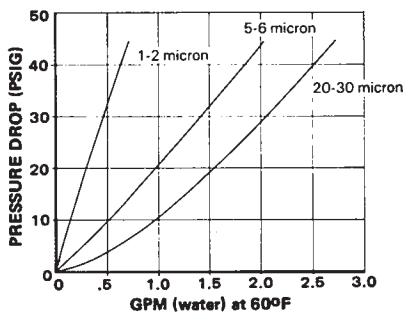


HOLDERS #401-42-50-11-42 and #401-42-50-31-42

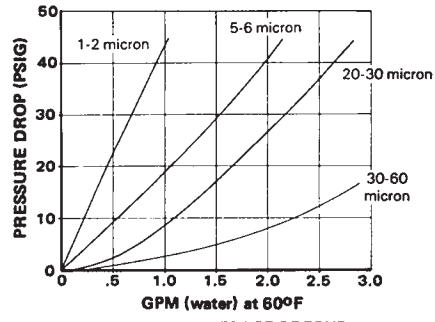
(50mm)



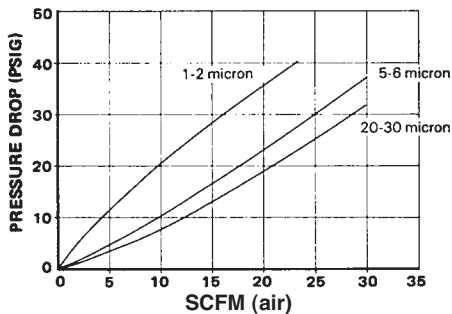
HOLDERS #401-21-50-11-21 and #401-21-50-31-21



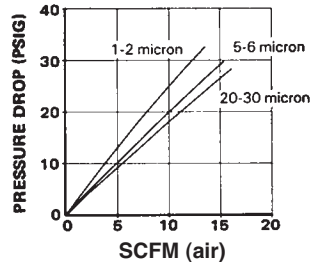
CURVES ARE AVERAGE OF TWO HOLDERS LISTED BELOW



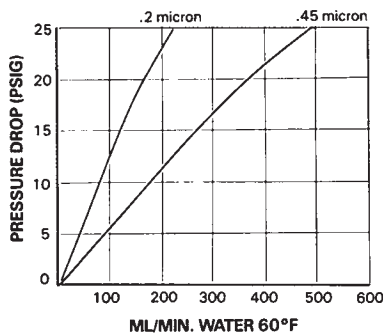
CURVES ARE AVERAGE OF FOUR HOLDERS LISTED ABOVE



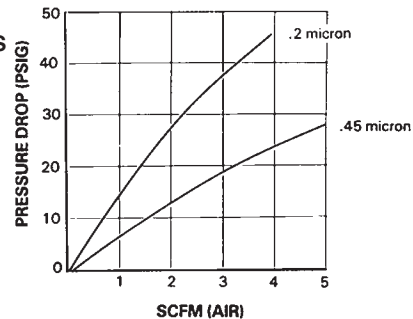
HOLDERS #401-42-47-10-42 3/8" tube end



HOLDERS #401-21-47-10-21 ferrule nut end



CURVES ARE AVERAGE OF HOLDERS #401-42-47-10-42 and #401-21-47-10-21



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# Filter Holders

## Filter Holder Accessories

### Wrench Set

- Glass polypropylene wrench set used to tighten connections between PFA components

Part Number	Description	Use With
730-0056	Wrench set	47, 50 and 90 mm filter holders



### Stopper Assembly

- For use in glass flasks
- Ferrule nut accepts 3/8" OD tube
- Tube #740-400237 sold separately

Part Number	Description	Size
730-0066	Stopper assembly, #6 taper	30.0 mm
730-0076	Stopper assembly, #7 taper	33.3 mm
730-0086	Stopper assembly, #8 taper	37.3 mm



## Special Capabilities

- Filter holders can be modified to fit your specific applications
- Examples shown below use standard Savillex components



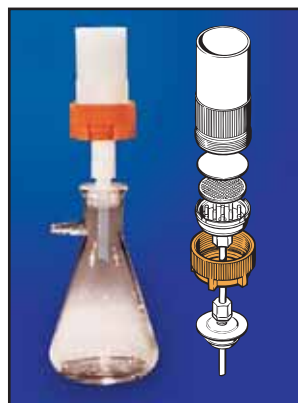
### 401-61-25-53-60-2

- Pressure filtration assembly (25 mm) molded of PFA meets requirements for USEPA method 440.0 "Determination of carbon & nitrogen in sediment and particulates of estuarine/coastal waters using elemental analysis."



### 401-60-47-10-21-1

- Filtering assembly (47 mm) molded of PFA. For processing samples for analysis of dissolved organic carbon. Wilde, F.D.; Radtke, D.B.; Gibs, J.; and Iwatsubo, R.T.; eds., 1998, National Field Manual for Collection Water Quality Data, Chapter A2, Selection of Equipment for Water Sampling, U.S. Geological Survey - TWRI, Book 9, Chapter A2-2.2.3.C.



### 401-12-47-10-26-2

- 47 mm holder used with a side port suction flask
- Shown with stopper #730-0076



# Impingers



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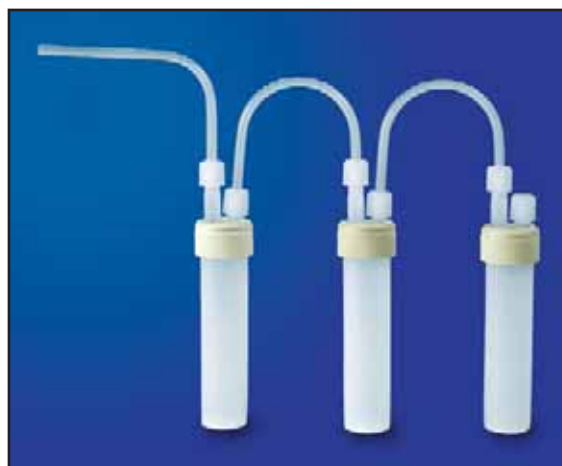
# Impingers

## Impingers



- Molded of PFA
- Impingers are suitable for use in Environmental Protection Agency procedures
- Glass polypropylene wrench set #730-0057 recommended for tightening 375 ml impingers
- Grooved vessel allows for efficient heat transfer
- Top port on 60 ml impingers has through port location that allows tubing to pass through to vessel bottom
- Vertical port allows for close assembly of sampling train
- Ultem® clamp does not contact fluid stream
- Reduced 2.3 mm orifice available as a push-in insert (see Impinger Accessories on page 40)

Part Number	Volume	Description	Diameter x Height	Vessel Design	Port Style
<b>A</b> 201-060-12-033-26	60 ml	Impinger with 33 mm threaded transfer closure	36.8 mm x 174.0 mm 1.45" x 6.85"	Plain	(2) 1/8" tube ports One on top, one on side
<b>B</b> 201-060-12-033-27	60 ml	Impinger with 33 mm threaded transfer closure	37.3 mm x 174.0 mm 1.47" x 6.85"	Plain	(2) 1/8" tube ports PFA insert and Ultem® clamp
201-060-12-033-36	60 ml	Impinger with 33 mm threaded transfer closure	36.8 mm x 173.9 mm 1.45" x 6.83"	Plain	(2) 1/4" tube ports One on top, one on side
201-060-12-033-37	60 ml	Impinger with 33 mm threaded transfer closure	37.3 mm x 173.9 mm 1.47" x 6.83"	Plain	(2) 1/4" tube ports PFA insert and Ultem® clamp
500-375-02	375 ml	Vessel only	53.6 mm x 296.7 mm 2.11" x 11.68"	Plain	-
<b>C</b> 500-375-06	375 ml	Vessel only	53.6 mm x 296.7 mm 2.11" x 11.68"	Grooved	-
<b>D</b> 501-375-02-058-42	375 ml	Impinger with 1-1/2" FNPT threaded transfer closure	58.2 mm x 328.7 mm 2.29" x 12.94"	Plain	(2) 1/2" tube ports
501-375-06-058-42	375 ml	Impinger with 1-1/2" FNPT threaded transfer closure	58.2 mm x 328.7 mm 2.29" x 12.94"	Grooved	(2) 1/2" tube ports



## Impinger Accessories

### Wrench Set

- Glass polypropylene wrench set used to tighten connections on impingers

Part Number	Description	Use With
<b>A</b> 730-0057	Wrench set	375 ml impingers



### Fittings

- Molded of PFA

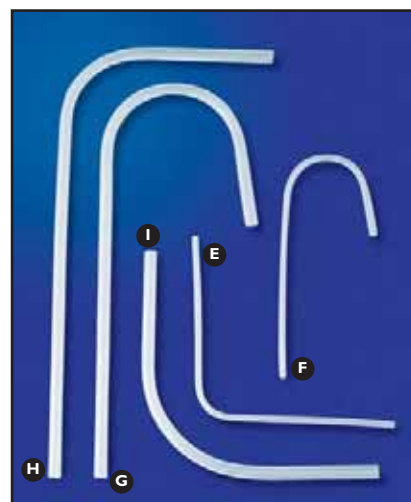
Part Number	Description
<b>B</b> 730-0823	Impinger orifice, 2.3 mm ID, fits into 1/2" port
<b>C</b> 751-SU8N	Straight union, 1/2" OD tube
<b>D</b> 750-SU10-8N	Knurled straight union reducer, 5/8" OD tube to 1/2" OD tube



### Tube Bends

- Formed from PFA
- Tube bends allow for close assembly of sampling train

Part Number	Description	Use With
<b>E</b> 730-2505	90° tube bend with 1/4" OD	60 ml impingers
<b>F</b> 730-2506	180° tube bend with 1/4" OD	60 ml impingers
<b>G</b> 730-5071	180° tube bend with 1/2" OD, full depth	375 ml impingers
<b>H</b> 730-5073	90° tube bend with 1/2" OD, full depth	375 ml impingers
<b>I</b> 730-5075	90° tube bend with 1/2" OD, 6" legs	375 ml impingers



# Sub-boiling Stills

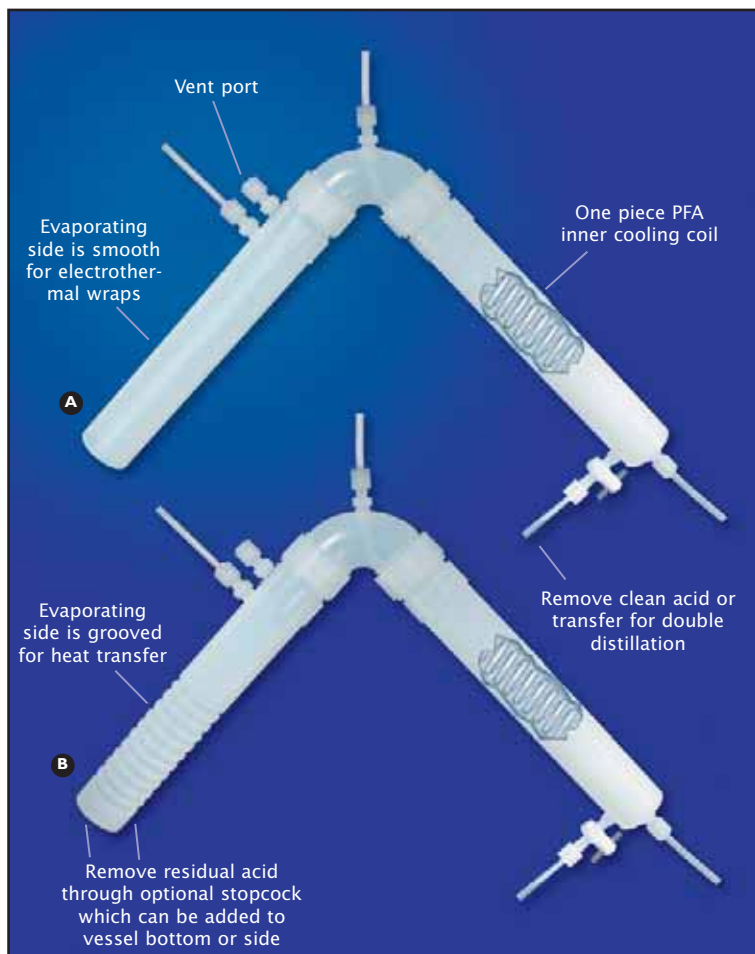


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## Sub-boiling Still Assemblies

- Molded of PFA
- One piece inner PFA coil inserted in cooling side
- Grooved vessel allows for efficient heat transfer on evaporating side
- Plain vessel has smooth surface for use with electrothermal wraps on evaporating side
- Glass polypropylene wrench set #730-0057 (page 43) and a package of ten membranes #450-09-3 (page 33) included with each sub-boiling still

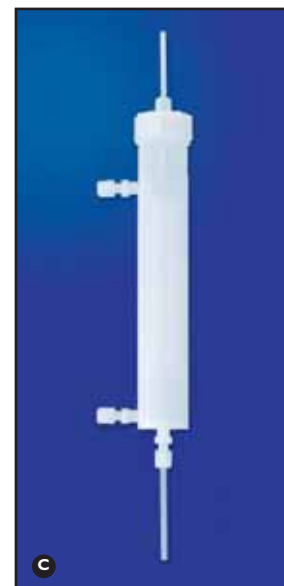


Part Number	Volume	Description
<b>A</b> 520-1-1-2	375 ml each side	Plain vessel with vent port
520-1-2-2	375 ml each side	Plain vessel with bottom stopcock and vent port
520-1-3-2	375 ml each side	Plain vessel with side stopcock and vent port
<b>B</b> 520-2-1-2	375 ml each side	Grooved vessel with vent port
520-2-2-2	375 ml each side	Grooved vessel with bottom stopcock and vent port
520-2-3-2	375 ml each side	Grooved vessel with side stopcock and vent port

## Condenser Assembly

- Molded of PFA
- One piece, 1/4" OD inner PFA coil
- Top and bottom ports for cooling water
- Two side ports for condensing process
- Glass polypropylene wrench set #730-0057 recommended for tightening

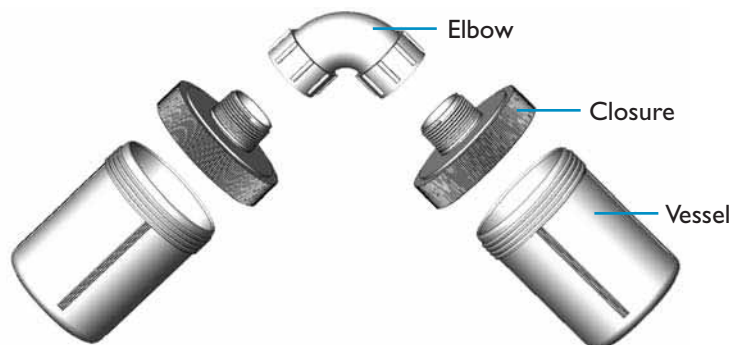
Part Number	Volume	Description
<b>C</b> 523-375	375 ml	Plain vessel



# Sub-boiling Stills

## Sub-boiling Still Components

- Use these components to build stills to fit your specific application



### Vessels

- Molded of PFA
- Two vessels can be connected using 90° elbow to form sub-boiling stills

Part Number	Volume	Description
<b>A</b> 500-120-02	120 ml	Vessel only
<b>B</b> 500-375-02	375 ml	Vessel only
<b>C</b> 100-1000-01	1000 ml	Jar only
<b>D</b> 100-2000-01	2000 ml	Jar only

### Closure

- Molded of PFA
- Modified closure connects elbow to standard 1000, 2000 and 2200 ml jars

Part Number	Description	Use With
<b>E</b> 600-110-70	Closure with integral molded 1-1/2" MNPT threads, screws directly into elbow	1000, 2000 and 2200 ml jars

### Elbow

- Molded of PFA
- 90° elbow is used to connect 120 ml and 375 ml vessels to form sub-boiling stills

Part Number	Description
<b>F</b> 521-1	90° elbow includes two fused end caps

### Condenser Coil

- Molded of PFA
- 1-1/2" coil diameter fits inside standard 375 ml vessel
- 6" tubing tails allow for connection to 1/4" fitting

Part Number	Description	Dimensions
<b>G</b> 522-1	Still condenser coil	5/32" ID x 1/4" OD



## Sub-boiling Still Accessories

Part Number	Description	Use With
730-0055	Glass polypropylene wrench set	120 ml vessels
730-0057	Glass polypropylene wrench set	375 ml vessels

# Column Components



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# Column Components

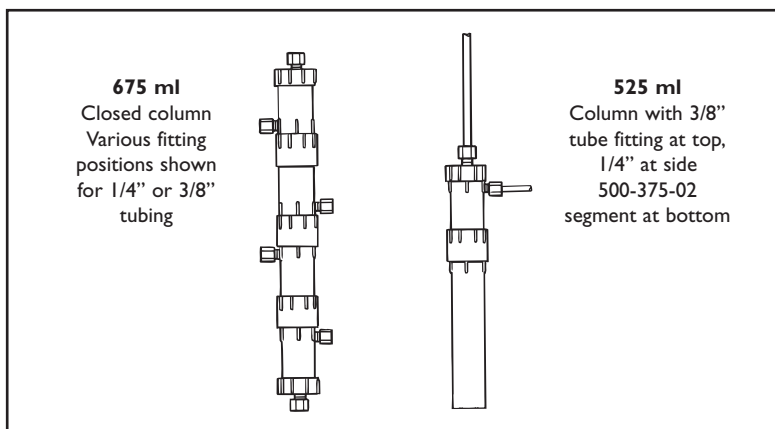
## Column Component Vessels



- Column component vessels are molded of PFA
- Vessels are interchangeable and can be used with other column components to assemble multipurpose columns
- Assembled columns are rated to 75 PSI at 100°F/37°C
- Service temperature range of PFA is -370°F/-200°C to 500°F/260°C
- Glass polypropylene wrench set #730-0055 recommended for tightening



Part Number	Volume	Description	Diameter x Height	Vessel Design
<b>A</b> 500-050-02	50 ml	Column component vessel with 1-1/2" MNPT threads	53.3 mm x 48.5 mm 2.10" x 1.91"	Flat inside Standard outside
<b>B</b> 500-060-02	60 ml	Column component vessel with 1-1/2" MNPT threads	53.3 mm x 53.1 mm 2.10" x 2.09"	Flat inside Standard outside
<b>C</b> 500-120-02	120 ml	Column component vessel with 1-1/2" MNPT threads	53.3 mm x 118.6 mm 2.10" x 4.67"	Flat inside Standard outside
<b>D</b> 500-120-11	120 ml	Column component vessel with 1-1/2" MNPT threads	53.3 mm x 118.6 mm 2.10" x 4.67"	Flat inside, standard outside (1) 1/8" side port
500-120-15	120 ml	Column component vessel with 1-1/2" MNPT threads	53.3 mm x 118.6 mm 2.10" x 4.67"	Flat inside, standard outside (1) 1/4" side port
<b>E</b> 500-120-17	120 ml	Column component vessel with 1-1/2" MNPT threads	53.3 mm x 118.6 mm 2.10" x 4.67"	Flat inside, standard outside (1) 1/4" FNPT side port
500-120-31	120 ml	Column component vessel with 1-1/2" MNPT threads	53.3 mm x 118.6 mm 2.10" x 4.67"	Flat inside, standard outside (1) 3/8" FNPT side port
<b>F</b> 500-375-02	375 ml	Column component vessel with 1-1/2" MNPT threads, plain	53.8 mm x 297.8 mm 2.12" x 11.73"	Flat inside Standard outside
500-375-06	375 ml	Column component vessel with 1-1/2" MNPT threads, grooved	53.8 mm x 297.8 mm 2.12" x 11.73"	Flat inside Standard outside





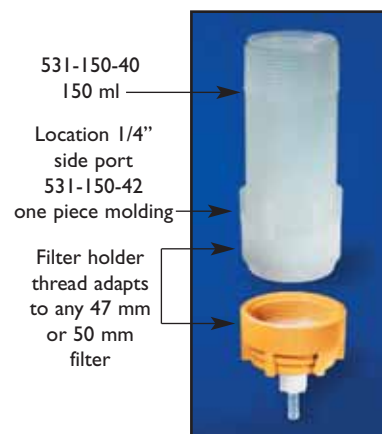
## Column Component Segments



- Column component segments are molded of PFA
- Segments are interchangeable and can be used with other column components to assemble multipurpose columns
- Assembled columns are rated to 75 PSI at 100°F/37°C
- Glass polypropylene wrench set #730-0055 recommended for tightening
- Female connector can be found on page 47



Part Number	Volume	Description	Diameter x Height	Segment Design
<b>A</b> 531-100-05	100 ml	Column component segment with 1-1/2" MNPT threads	50.3 mm x 76.2 mm 1.98" x 3.00"	-
<b>B</b> 531-150-05	150 ml	Column component segment with 1-1/2" MNPT threads	53.3 mm x 122.2 mm 2.10" x 4.81"	-
531-150-11	150 ml	Column component segment with 1-1/2" MNPT threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 1/8" side tube port
<b>C</b> 531-150-15	150 ml	Column component segment with 1-1/2" MNPT threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 1/4" side tube port
531-150-17	150 ml	Column component segment with 1-1/2" MNPT threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 1/4" FNPT side port
<b>D</b> 531-150-31	150 ml	Column component segment with 1-1/2" MNPT threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 3/8" FNPT side port
531-150-33	150 ml	Column component segment with 1-1/2" MNPT threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 3/8" side tube port
<b>E</b> 531-150-40	150 ml	Column component segment with 1-1/2" MNPT and filter holder threads	53.3 mm x 122.2 mm 2.10" x 4.81"	-
<b>F</b> 531-150-41	150 ml	Column component segment with 1-1/2" MNPT and filter holder threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 1/8" side tube port
531-150-42	150 ml	Column component segment with 1-1/2" MNPT and filter holder threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 1/4" side tube port
531-150-43	150 ml	Column component segment with 1-1/2" MNPT and filter holder threads	53.3 mm x 122.2 mm 2.10" x 4.81"	(1) 3/8" side tube port
<b>G</b> 531-375-05	375 ml	Column component segment with 1-1/2" MNPT threads	53.3 mm x 296.4 mm 2.10" x 11.67"	-



Note: Dimensions listed in this catalog are approximate. Please call for exact dimensions.

# Column Components

## Column Component Closures



- Column component closures are molded of PFA
- Closures are interchangeable and can be used with other column components (pages 45 and 46) to assemble multipurpose columns
- Assembled columns are rated to 75 PSI at 100°F/37°C
- Glass polypropylene wrench set #730-0055 recommended for tightening

Part Number	Description	Closure Design
<b>A</b> 600-058-06	Column component closure with 1-1/2" FNPT threads	Plain
600-058-12	Column component closure with 1-1/2" FNPT threads	(1) 1/8" tube port
<b>B</b> 600-058-16	Column component closure with 1-1/2" FNPT threads	(1) 1/4" tube port
<b>C</b> 600-058-17	Column component closure with 1-1/2" FNPT threads	(1) 1/4" FNPT port
600-058-19	Column component closure with 1-1/2" FNPT threads	(1) 3/8" tube port
600-058-24	Column component closure with 1-1/2" FNPT threads	(2) 1/8" tube ports
600-058-33	Column component closure with 1-1/2" FNPT threads	(2) 1/4" tube ports
<b>D</b> 600-058-35	Column component closure with 1-1/2" FNPT threads	(2) 1/4" FNPT ports
600-058-39	Column component closure with 1-1/2" FNPT threads	(2) 3/8" tube ports
<b>E</b> 600-058-42	Column component closure with 1-1/2" FNPT threads	(2) 1/2" tube ports

## Column Component Accessories

Part Number	Description
<b>F</b> 730-0055	Glass polypropylene wrench set
<b>G</b> 730-0590	Pressure fixture for column components
<b>H</b> 730-0502	Female connector for column components
<b>I</b> 730-0504	Column component screen



# Closures



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# Closures

## PFA Closures for Savillex Products



Closure Number/ Description	Closure can be used with these Savillex products:								
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	Column Components
<b>A</b> 600-008-01 8 mm plain threaded	-	-	200-902-40 200-905-42	-	-	-	-	-	-
<b>B</b> 600-008-72 8 mm septum threaded	-	-	same as above	-	-	-	-	-	-
<b>C</b> 600-008-80 8 mm autosampler pierceable threaded	-	-	same as above	-	-	-	-	-	-
<b>D</b> 600-008-83 8 mm microcentrifuge push-on	-	-	-	200-905-50	-	-	-	-	-
<b>E</b> 600-010-82 10 mm Ludwig push-on	-	-	200-902-60	-	-	-	-	-	-
<b>F</b> 600-011-83 11 mm microcentrifuge push-on	-	-	-	200-915-50	-	-	-	-	-
<b>G</b> 600-012-81 12 mm autosampler push-on	-	-	200-915-44 200-002-44 200-004-44	-	-	-	220-002-015-032-15	-	-
<b>H</b> 600-013-85 13 mm pick-up knob	-	-	200-913-44	-	-	-	-	-	-
<b>I</b> 600-015-84 15 mm Parrish push-on	-	-	200-904-61	-	-	-	-	-	-
<b>J</b> 600-018-01 18 mm plain threaded	-	-	-	-	210-014-20 210-015-20 210-015-30	-	-	-	-
<b>K</b> 600-018-88 18 mm snap-on	-	-	200-004-13	-	-	-	-	-	-
600-022-73 22 mm valveless threaded	-	-	-	-	210-032-20	-	-	-	-
<b>L</b> 600-023-01 23 mm plain threaded	-	200-003-20 200-006-20	-	-	210-004-20	-	220-006-024-040-15	-	-
600-023-10 23 mm transfer, (1) 1/8" tube port	-	same as above	-	-	same as above	-	same as above	-	-
600-023-13 23 mm transfer, (1) 1/4" tube port	-	same as above	-	-	same as above	-	same as above	-	-
600-023-18 23 mm transfer, (1) 3/8" tube port	-	same as above	-	-	same as above	-	same as above	-	-

Port dimension given on transfer closure indicates tubing OD.

## PFA Closures for Savillex Products, continued



Closure Number/ Description	Closure can be used with these Savillex products:								
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	Column Components
<b>M</b> 600-024-01	24 mm plain threaded								
	-	200-007-10	200-013-14	-	210-026-20	-	220-005-032-047-20	-	-
	-	200-007-20	-	-	-	-	-	-	-
	-	200-005-32	-	-	-	-	-	-	-
<b>N</b> 600-024-10	24 mm transfer, (1) 1/8" tube port								
	-	same as above	same as above	-	same as above	-	same as above	-	-
600-024-13	24 mm transfer, (1) 1/4" tube port								
	-	same as above	same as above	-	same as above	-	same as above	-	-
600-024-18	24 mm transfer, (1) 3/8" tube port								
	-	same as above	same as above	-	same as above	-	same as above	-	-
<b>O</b> 600-024-23	24 mm transfer, (2) 1/8" tube push-in side ports								
	-	same as above	same as above	-	same as above	-	same as above	-	-
600-024-71	24 mm recessed threaded								
	-	same as above	same as above	-	same as above	-	same as above	-	-
<b>P</b> 600-024-72	24 mm septum threaded								
	-	same as above	same as above	-	same as above	-	same as above	-	-
<b>Q</b> 600-024-88	24 mm snap-on								
	-	200-005-11	-	-	-	-	-	-	-
<b>R</b> 600-028-01	28 mm plain threaded								
	-	-	-	-	210-060-20	-	-	-	-
600-029-01	29 mm plain threaded								
	-	-	-	-	210-050-20	-	-	-	-
	-	-	-	-	210-050-30	-	-	-	-
<b>S</b> 600-031-88	31 mm snap-on								
	-	-	200-020-13	-	-	-	-	-	-

*continued on following page*

*Closures can be modified upon request.*

# Closures

## PFA Closures for Savillex Products, continued



Closure Number/ Description	Closure can be used with these Savillex products:								
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	Column Components
<b>A</b> 600-033-01	<b>33 mm plain threaded</b>								
	-	200-015-10	-	-	210-010-30	-	220-015-040-063-20	-	-
	-	200-015-20	-	-	210-017-20	-	220-030-064-096-25	-	-
	-	200-015-21	-	-	210-025-30	-	-	-	-
	-	200-015-30	-	-	210-060-70	-	-	-	-
	-	200-015-31	-	-	-	-	-	-	-
	-	200-022-10	-	-	-	-	-	-	-
	-	200-022-20	-	-	-	-	-	-	-
	-	200-030-10	-	-	-	-	-	-	-
	-	200-030-20	-	-	-	-	-	-	-
	-	200-030-21	-	-	-	-	-	-	-
	-	200-030-30	-	-	-	-	-	-	-
	-	200-030-31	-	-	-	-	-	-	-
	-	200-060-12	-	-	-	-	-	-	-
<b>B</b> 600-033-10	<b>33 mm transfer, (1) 1/8" tube port</b>								
	-	same as above	-	-	same as above	-	same as above	-	-
600-033-13	<b>33 mm transfer, (1) 1/4" tube port</b>								
	-	same as above	-	-	same as above	-	same as above	-	-
600-033-18	<b>33 mm transfer, (1) 3/8" tube port</b>								
	-	same as above	-	-	same as above	-	same as above	-	-
<b>C</b> 600-033-23	<b>33 mm transfer, (2) 1/8" tube push-in side ports</b>								
	-	same as above	-	-	same as above	-	same as above	-	-
600-033-32	<b>33 mm transfer, (2) 1/4" tube push-in side ports</b>								
	-	same as above	-	-	same as above	-	same as above	-	-
<b>D</b> 600-033-71	<b>33 mm recessed threaded</b>								
	-	same as above	-	-	same as above	-	same as above	-	-
<b>E</b> 600-033-72	<b>33 mm septum threaded</b>								
	-	same as above	-	-	same as above	-	same as above	-	-
600-033-26	<b>33 mm transfer, (2) 1/8" tube ports, one top, one side</b>								
	-	200-015-10	-	-	-	-	220-015-040-063-20	200-060-12	-
	-	200-015-20	-	-	-	-	220-030-064-096-25	-	-
	-	200-015-21	-	-	-	-	-	-	-
	-	200-015-30	-	-	-	-	-	-	-
	-	200-015-31	-	-	-	-	-	-	-
	-	200-022-10	-	-	-	-	-	-	-
	-	200-022-20	-	-	-	-	-	-	-
	-	200-030-10	-	-	-	-	-	-	-
	-	200-030-20	-	-	-	-	-	-	-
	-	200-030-21	-	-	-	-	-	-	-
	-	200-030-30	-	-	-	-	-	-	-
	-	200-030-31	-	-	-	-	-	-	-
	-	200-060-12	-	-	-	-	-	-	-

Port dimension given on transfer closure indicates tubing OD.

## PFA Closures for Savillex Products, continued



Closure Number/ Description	Closure can be used with these Savillex products:								
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	Column Components
<b>600-033-27</b>	<b>33 mm transfer, (2) 1/8" tube ports, PFA insert, Ultem® clamp</b>								
	-	200-015-10	-	-	-	-	220-015-040-063-20	200-060-12	-
	-	200-015-20	-	-	-	-	220-030-064-096-25	-	-
	-	200-015-21	-	-	-	-	-	-	-
	-	200-015-30	-	-	-	-	-	-	-
	-	200-015-31	-	-	-	-	-	-	-
	-	200-022-10	-	-	-	-	-	-	-
	-	200-022-20	-	-	-	-	-	-	-
	-	200-030-10	-	-	-	-	-	-	-
	-	200-030-20	-	-	-	-	-	-	-
	-	200-030-21	-	-	-	-	-	-	-
	-	200-030-30	-	-	-	-	-	-	-
	-	200-030-31	-	-	-	-	-	-	-
	-	200-060-12	-	-	-	-	-	-	-
<b>F</b> <b>600-033-36</b>	<b>33 mm transfer, (2) 1/4" tube ports, one top, one side</b>								
	-	same as above	-	-	-	-	same as above	same as above	-
<b>G</b> <b>600-033-37</b>	<b>33 mm transfer, (2) 1/4" tube ports, PFA insert, Ultem® clamp</b>								
	-	same as above	-	-	-	-	same as above	same as above	-
<b>600-033-44</b>	<b>33 mm transfer, (1) 1/8" tube side port, (1) 1/4" top port</b>								
	-	same as above	-	-	-	-	same as above	same as above	-
<b>600-033-45</b>	<b>33 mm transfer, (1) 1/8" tube top port, (1) 1/4" side port</b>								
	-	same as above	-	-	-	-	same as above	same as above	-
<b>600-038-89</b>	<b>38 mm, push-in</b>								
	-	-	-	-	210-075-11	-	-	-	-
<b>H</b> <b>600-053-01</b>	<b>53 mm plain threaded</b>								
	100-0060-01	-	-	-	-	-	-	-	-
	100-0090-01	-	-	-	-	-	-	-	-
	100-0180-02	-	-	-	-	-	-	-	-
<b>I</b> <b>600-053-20</b>	<b>53 mm transfer, (2) 1/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
<b>600-053-28</b>	<b>53 mm transfer, (2) 1/4" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
<b>J</b> <b>600-053-71</b>	<b>53 mm recessed threaded</b>								
	same as above	-	-	-	-	-	-	-	-

continued on following page

# Closures

## PFA Closures for Savillex Products, continued



Closure Number/ Description	Closure can be used with these Savillex products:									
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	Column Components	
<b>600-058-04</b>	<b>Plain butress threaded</b>									
	-	-	-	-	-	300-060-01	-	-	-	-
	-	-	-	-	-	300-060-03	-	-	-	-
	-	-	-	-	-	300-060-04	-	-	-	-
	-	-	-	-	-	300-120-01	-	-	-	-
	-	-	-	-	-	300-120-03	-	-	-	-
	-	-	-	-	-	300-120-04	-	-	-	-
	-	-	-	-	-	300-120-16	-	-	-	-
	-	-	-	-	-	300-120-20	-	-	-	-
	-	-	-	-	-	300-120-22	-	-	-	-
<b>600-058-11</b>	<b>Transfer, (1) 1/8" tube port, butress threaded</b>									
	-	-	-	-	-	same as above	-	-	-	-
<b>600-058-14</b>	<b>Transfer, (1) 1/4" tube port, butress threaded</b>									
	-	-	-	-	-	same as above	-	-	-	-
<b>600-058-22</b>	<b>Transfer, (2) 1/8" tube ports, butress threaded</b>									
	-	-	-	-	-	same as above	-	-	-	-
<b>600-058-31</b>	<b>Transfer, (2) 1/4" tube ports, butress threaded</b>									
	-	-	-	-	-	same as above	-	-	-	-
<b>600-058-50</b>	<b>Transfer, (3) 1/8" tube ports, butress threaded</b>									
	-	-	-	-	-	same as above	-	-	-	-
<b>600-058-55</b>	<b>Transfer, (5) 1/8" tube ports, butress threaded</b>									
	-	-	-	-	-	same as above	-	-	-	-
<b>600-058-86</b>	<b>Pressure relief valve, butress threaded</b>									
	-	-	-	-	-	same as above	-	-	-	-

Port dimension given on transfer closure indicates tubing OD.

*Closures can be modified upon request.*



## PFA Closures for Savillex Products, continued

Closure Number/ Description	Closure can be used with these Savillex products:								Column Components
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	
<b>B</b> 600-058-06	Plain threaded, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	500-050-02
	-	-	-	-	-	-	-	-	500-060-02
	-	-	-	-	-	-	-	-	500-120-02
	-	-	-	-	-	-	-	-	500-120-11
	-	-	-	-	-	-	-	-	500-120-15
	-	-	-	-	-	-	-	-	500-120-17
	-	-	-	-	-	-	-	-	500-120-31
	-	-	-	-	-	-	-	-	500-375-02
	-	-	-	-	-	-	-	-	500-375-06
	-	-	-	-	-	-	-	-	531-100-05
	-	-	-	-	-	-	-	-	531-150-05
	-	-	-	-	-	-	-	-	531-150-11
	-	-	-	-	-	-	-	-	531-150-15
	-	-	-	-	-	-	-	-	531-150-17
	-	-	-	-	-	-	-	-	531-150-31
	-	-	-	-	-	-	-	-	531-150-33
	-	-	-	-	-	-	-	-	531-150-40
	-	-	-	-	-	-	-	-	531-150-41
	-	-	-	-	-	-	-	-	531-150-42
	-	-	-	-	-	-	-	-	531-150-43
	-	-	-	-	-	-	-	-	531-375-05
600-058-12	Transfer, (1) 1/8" tube port, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
600-058-16	Transfer, (1) 1/4" tube port, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
<b>C</b> 600-058-17	Transfer, (1) 1/4" FNPT port, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
600-058-19	Transfer, (1) 3/8" tube port, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
<b>D</b> 600-058-24	Transfer, (2) 1/8" tube ports, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
600-058-33	Transfer, (2) 1/4" tube ports, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
600-058-35	Transfer, (2) 1/4" FNPT ports, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
600-058-39	Transfer, (2) 3/8" tube ports, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
600-058-49	Transfer, (3) 1/8" tube ports, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
600-058-54	Transfer, (5) 1/8" tube ports, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above
<b>E</b> 600-058-87	Pressure relief valve, Ultem® clamp, 1-1/2" FNPT threads								
	-	-	-	-	-	-	-	-	same as above

*continued on following page*

# Closures

## PFA Closures for Savillex Products, continued



Closure Number/ Description	Closure can be used with these Savillex products:								
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	Column Components
<b>600-058-42</b>	<b>Transfer, (2) 1/2" tube ports, 1-1/2" FNPT threads</b>								
	-	-	-	-	-	-	-	500-375-02	500-050-02
	-	-	-	-	-	-	-	500-375-06	500-060-02
	-	-	-	-	-	-	-	-	500-120-02
	-	-	-	-	-	-	-	-	500-120-11
	-	-	-	-	-	-	-	-	500-120-15
	-	-	-	-	-	-	-	-	500-120-17
	-	-	-	-	-	-	-	-	500-120-31
	-	-	-	-	-	-	-	-	500-375-02
	-	-	-	-	-	-	-	-	500-375-06
	-	-	-	-	-	-	-	-	531-100-05
	-	-	-	-	-	-	-	-	531-150-05
	-	-	-	-	-	-	-	-	531-150-11
	-	-	-	-	-	-	-	-	531-150-15
	-	-	-	-	-	-	-	-	531-150-17
	-	-	-	-	-	-	-	-	531-150-31
	-	-	-	-	-	-	-	-	531-150-33
	-	-	-	-	-	-	-	-	531-150-40
	-	-	-	-	-	-	-	-	531-150-41
	-	-	-	-	-	-	-	-	531-150-42
	-	-	-	-	-	-	-	-	531-150-43
	-	-	-	-	-	-	-	-	531-375-05
<b>A 600-070-01</b>	<b>70 mm plain threaded</b>								
	100-0120-01	-	-	-	-	-	-	-	-
	100-0180-01	-	-	-	-	-	-	-	-
	100-0240-01	-	-	-	-	-	-	-	-
<b>B 600-070-13</b>	<b>70 mm transfer, (1) 1/4" tube port</b>								
	same as above	-	-	-	-	-	-	-	-
<b>600-070-20</b>	<b>70 mm transfer, (2) 1/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
<b>600-070-28</b>	<b>70 mm transfer, (2) 1/4" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
<b>C 600-089-01</b>	<b>89 mm plain threaded</b>								
	100-0300-01	-	-	-	-	-	-	-	-
	100-0360-01	-	-	-	-	-	-	-	-
	100-0480-01	-	-	-	-	-	-	-	-
	100-0500-01	-	-	-	-	-	-	-	-
	100-0500-03	-	-	-	-	-	-	-	-
<b>600-089-20</b>	<b>89 mm transfer, (2) 1/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
<b>D 600-089-28</b>	<b>89 mm transfer, (2) 1/4" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-

Port dimension given on transfer closure indicates tubing OD.

## PFA Closures for Savillex Products, continued



Closure Number/ Description	Closure can be used with these Savillex products:								
	Jars	Vials	Autosampler Vials	Microcentrifuge Vials	Tubes	Digestion Vessels	Microcolumns	Impingers	Column Components
<b>E</b> 600-110-01	<b>110 mm plain threaded</b>								
	100-0350-01	-	-	-	-	-	-	-	-
	100-1000-01	-	-	-	-	-	-	-	-
	100-1000-03	-	-	-	-	-	-	-	-
	100-2000-01	-	-	-	-	-	-	-	-
	100-2200-01	-	-	-	-	-	-	-	-
	100-3000-01	-	-	-	-	-	-	-	-
	100-4000-01	-	-	-	-	-	-	-	-
<b>F</b> 600-110-20	<b>110 mm transfer, (2) 1/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-28	<b>110 mm transfer, (2) 1/4" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-38	<b>110 mm transfer, (2) 3/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-41	<b>110 mm transfer, (2) 1/2" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-51	<b>110 mm transfer, (3) 1/4" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-52	<b>110 mm transfer, (3) 3/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
<b>G</b> 600-110-60	<b>110 mm transfer, (7) 1/4" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-61	<b>110 mm transfer, (7) 3/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-62	<b>110 mm transfer, (2) 1/4" tube &amp; (5) 3/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-63	<b>110 mm transfer, (4) 1/4" tube &amp; (3) 3/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-64	<b>110 mm transfer, (6) 1/4" tube &amp; (1) 3/8" tube ports</b>								
	same as above	-	-	-	-	-	-	-	-
600-110-70	<b>110 mm with molded 1-1/2" MNPT adapter</b>								
	same as above	-	-	-	-	-	-	-	-

*Closures can be modified upon request.*

## PFA Closures for Glass Products



Part Number	Description
600-013-73	13 mm valveless threaded
<b>A</b> 600-015-73	15 mm valveless threaded
<b>B</b> 600-018-73	18 mm valveless threaded
<b>C</b> 600-020-73	20 mm valveless threaded
600-022-73	22 mm valveless threaded
<b>D</b> 600-024-73	24 mm valveless threaded
600-028-73	28 mm valveless threaded
600-033-73	33 mm valveless threaded
<b>E</b> 600-038-03	38 mm plain, 38-430 thread finish
600-038-21	38 mm transfer, (2) 1/8" tube ports, 38-430 thread finish, polypropylene clamp
600-038-26	38 mm transfer, (2) 1/8" tube ports, one top, one side, 38-430 thread finish
<b>F</b> 600-038-30	38 mm transfer, (2) 1/4" tube ports, 38-430 thread finish, polypropylene clamp
<b>G</b> 600-038-36	38 mm transfer, (2) 1/4" tube ports, one top, one side
600-038-44	38 mm transfer, (1) 1/8" tube side port, (1) 1/4" top port, 38-430 thread finish
600-038-45	38 mm transfer, (1) 1/8" tube top port, (1) 1/4" side port, 38-430 thread finish
600-089-02	89 mm plain, 400 thread finish
600-089-29	89 mm transfer, (2) 1/4" tube ports, 400 thread finish
<b>H</b> 600-095-34	95 mm transfer, (2) 1/4" tube ports, wide-mouth mason

*Port dimension given on transfer closure indicates tubing OD.*



*Glass bottles not available from Savillex*



# Specialty Products



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Drop-in Inserts	.59
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# Specialty Products

## Drop-in Inserts

- Molded of PFA
- Drop-in inserts are machined to a uniform height allowing retrieval by forceps

Part Number	Description
700-706	Drop-in insert for six place well plate
<b>A</b> 700-712	Drop-in insert for 12 place well plate
<b>B</b> 700-724	Drop-in insert for 24 place well plate



## Dishes

### Petri Dishes

- Molded of PFA
- Petri dishes are stackable

Part Number	Description	Dimensions
<b>C</b> 700-100	Petri dish	50 mm diameter x 10 mm depth
<b>D</b> 700-125	Petri dish	100 mm diameter x 15 mm depth



### Evaporating Dish

- Molded of PFA
- Evaporating dish has pour spout

Part Number	Description	Volume
<b>E</b> 700-150	Evaporating dish	100 ml

## Sieves/Dippers

- Molded of PFA
- One piece molded hook at base of handle allows sieve to be used in drying position

Part Number	Description
700-200	Sieve with .5 mm square openings
<b>A</b> 700-225	Sieve with 1 mm square openings
<b>B</b> 700-240	Dipper, 40 ml volume

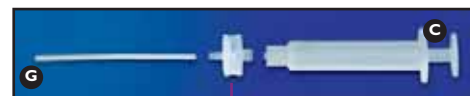


Shown with jar  
#100-0360-01

## Syringes

- Molded of PFA
- Plunger made of PTFE
- Ideal for ultra pure sampling

Part Number	Description	Volume
<b>C</b> 700-510	Syringe with integral seal	10 ml
<b>D</b> 700-520	Syringe with integral seal	20 ml
<b>E</b> 700-511	Syringe dispense tube for 10 ml syringe, male leur lock	-
<b>F</b> 700-521	Syringe with permanent retrieve-dispense tube and integral seal	20 ml
<b>G</b> 700-513	Syringe push-in tube for 10 ml syringe, .8 mm x 100 mm	-



13 mm filter holder  
shown on page 27

## Beakers

- Molded of PFA
- Flat outside bottom designed for hot plate heat transfer

Part Number	Description	Volume
<b>H</b> 700-710	Beaker	2 ml
<b>I</b> 700-720	Beaker, graduated	50 ml
<b>J</b> 700-730	Beaker, graduated	125 ml
<b>K</b> 700-740	Beaker, graduated	250 ml
<b>L</b> 700-750	Beaker, graduated	500 ml
700-700	Beakers, five-piece set	2 ml 50 ml 125 ml 250 ml 500 ml



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# Specialty Products

## Miscellaneous Specialty Products

### Tefzel® Cloth

- Cut from Tefzel® ETFE fluoropolymer resin
- Used for forming container screens and soft dip baskets
- Standard size 11" x 11"; larger sizes available upon request

Part Number	Mesh Opening	Thread Diameter	Cloth Thickness
700-300	.004" (105 micron)	.003" (76 micron)	.0067" (170 micron)



### Funnels

- Molded of PFA
- Funnels have 60° angle

Part Number	Volume	Height	Reservoir OD	Stem Length	Stem ID
700-440	40 ml	82.5 mm	61.9 mm	31.0 mm	4.7 mm
700-480	80 ml	140.0 mm	84.0 mm	76.0 mm	4.7 mm



### Pipette Tip

- Molded of PFA

Part Number	Description
700-600	Pipette tip with standard .8 mm orifice

### Screen

- Molded of PFA
- Can be used in vials and jars to hold samples in solution or act as a coarse filter
- Screen shown on page 9

Part Number	Description	OD	Thickness
700-650	Screen with 1.0 mm openings	82.5 mm	3.5 mm



### Titration Vessel

- PFA volumetric reaction vessel for titration analysis
- Extra sturdy with flanged rim for clamping
- Inside bottom will accept 17.5 mm stir bar

Part Number	Volume	Diameter x Height
700-870	100 ml	70.0 mm x 80.0 mm



### Trays

- Molded of PFA

Part Number	Description	Dimensions
700-900	Tray with cover	1-1/2" x 3-1/4" x 3/4"
700-925	Tray only	1" x 4" x 3/4"
700-950	Tray only	6" x 4" x 2"

### Pots

- Molded of PFA

Part Number	Description	Diameter	Volume
700-960	Pot only	6"	2400 ml
700-961	Pot cover	6"	-



# Tubing



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## Coiled Tubing

- Use heavy wall tubing for permanent connections
- Coiled tubing is flexible and translucent
- Available in 5', 25' or 100' coils
- Maximum service temperature for PFA is 545°F/285°C
- Maximum service temperature for FEP is 400°F/205°C

Part Number	Description	Material	ID	OD	Length
760-1-062-125-005	Coiled tubing	PFA	1/16"	1/8"	5'
760-1-062-125-025	Coiled tubing	PFA	1/16"	1/8"	25'
760-1-062-125-100	Coiled tubing	PFA	1/16"	1/8"	100'
760-1-125-188-005	Coiled tubing	PFA	1/8"	3/16"	5'
760-1-156-250-005	Coiled tubing	PFA	5/32"	1/4"	5'
760-1-156-250-025	Coiled tubing	PFA	5/32"	1/4"	25'
760-1-156-250-100	Coiled tubing	PFA	5/32"	1/4"	100'
760-1-250-375-005	Coiled tubing	PFA	1/4"	3/8"	5'
760-1-250-375-025	Coiled tubing	PFA	1/4"	3/8"	25'
760-1-250-375-100	Coiled tubing	PFA	1/4"	3/8"	100'
760-1-375-500-005	Coiled tubing	PFA	3/8"	1/2"	5'
760-1-375-500-025	Coiled tubing	PFA	3/8"	1/2"	25'
760-1-375-500-100	Coiled tubing	PFA	3/8"	1/2"	100'
760-2-062-125-005	Coiled tubing	FEP	1/16"	1/8"	5'
760-2-062-125-025	Coiled tubing	FEP	1/16"	1/8"	25'
760-2-062-125-100	Coiled tubing	FEP	1/16"	1/8"	100'
760-2-156-250-005	Coiled tubing	FEP	5/32"	1/4"	5'
760-2-156-250-025	Coiled tubing	FEP	5/32"	1/4"	25'
760-2-156-250-100	Coiled tubing	FEP	5/32"	1/4"	100'
760-2-250-375-005	Coiled tubing	FEP	1/4"	3/8"	5'
760-2-250-375-025	Coiled tubing	FEP	1/4"	3/8"	25'
760-2-250-375-100	Coiled tubing	FEP	1/4"	3/8"	100'
760-2-375-500-005	Coiled tubing	FEP	3/8"	1/2"	5'
760-2-375-500-025	Coiled tubing	FEP	3/8"	1/2"	25'
760-2-375-500-100	Coiled tubing	FEP	3/8"	1/2"	100'



## Straight Tubing

- PFA straight tube lengths can be used for microcolumn capillaries and rigid tubing applications

Part Number	Description	Material	ID	OD	Length
761-1-031-094	Straight tubing	PFA	1/32"	3/32"	24"
761-1-031-125	Straight tubing	PFA	1/32"	1/8"	24"
761-1-062-125	Straight tubing	PFA	1/16"	1/8"	24"
761-1-094-156	Straight tubing	PFA	3/32"	5/32"	24"
761-1-125-187	Straight tubing	PFA	1/8"	3/16"	24"
761-1-156-250	Straight tubing	PFA	5/32"	1/4"	24"
761-1-188-250	Straight tubing	PFA	3/16"	1/4"	24"
761-1-250-375	Straight tubing	PFA	1/4"	3/8"	24"
761-1-312-375	Straight tubing	PFA	5/16"	3/8"	24"
761-1-375-500	Straight tubing	PFA	3/8"	1/2"	24"
761-1-500-625	Straight tubing	PFA	1/2"	5/8"	24"



## Monofilament

- Use to sew together soft dip baskets or to suspend articles in corrosive solutions
- Available in 25' coils
- Maximum service temperature for PFA is 545°F/285°C
- Maximum service temperature for FEP is 400°F/205°C
- Maximum service temperature for ETFE is 302°F/150°C

Part Number	Description	Material	OD	Length
760-1-010-025	Monofilament	PFA	.010"	25'
760-2-005-025	Monofilament	FEP	.005"	25'
760-2-032-025	Monofilament	FEP	.032"	25'
760-3-009-025	Monofilament	ETFE	.009"	25'



## Tubing Accessories

- Grooves tubing at fitting locations and prevents tubing blow-out at higher pressures

Part Number	Description
730-0002	Groove tool, 1/8"
730-0004	Groove tool, 1/4"
730-0006	Groove tool, 3/8"
730-0008	Groove tool, 1/2"



# Fittings



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## Ferrule Nuts

- Molded of PFA
- Ferrule nuts provide for leak-free tubing connections
- Ferrule cap nuts are used to seal off tubing connections
- Vent nut with ferrule removed provides for hydrophobic venting of 1/4" ports
- Vent nut has a 9 mm diameter recess
- PTFE membranes and PTFE/silicone laminated septa can be used in vent nut (see fitting accessories on page 69)
- Gripper made of carbon-filled ETFE

Part Number	Description, Tube Size
<b>A</b> 750-FN2	Knurled ferrule nut, 1/8" OD
<b>B</b> 750-FN4	Knurled ferrule nut, 1/4" OD
750-FN6	Knurled ferrule nut, 3/8" OD
750-FN8	Knurled ferrule nut, 1/2" OD
<b>C</b> 750-FN10	Knurled ferrule nut, 5/8" OD
750-FN4M	Knurled ferrule nut, 4 mm OD
750-FN6M	Knurled ferrule nut, 6 mm OD
750-FN4V	Knurled vent nut, 1/4" OD
<b>D</b> 750-FP2	Knurled ferrule cap nut, 1/8" OD
750-FP4	Knurled ferrule cap nut, 1/4" OD
750-FP6	Knurled ferrule cap nut, 3/8" OD
<b>E</b> 750-FP8	Knurled ferrule cap nut, 1/2" OD
750-FP10	Knurled ferrule cap nut, 5/8" OD
751-FN2	Ferrule hex nut, 1/8" OD
<b>F</b> 751-FN4	Ferrule hex nut, 1/4" OD
<b>G</b> 751-FN6	Ferrule hex nut, 3/8" OD
<b>H</b> 751-FN8	Ferrule hex nut, 1/2" OD
751-FP2	Ferrule cap nut, 1/8" OD
751-FP4	Ferrule cap nut, 1/4" OD
751-FP6	Ferrule cap nut, 3/8" OD
751-FP8	Ferrule cap nut, 1/2" OD
<b>I</b> 751-GN4-I	Ferrule hex nut, 1/4" OD, gripper style
751-GN6-I	Ferrule hex nut, 3/8" OD, gripper style



## Straight Unions/Reducers

- Molded of PFA
- Straight unions used to connect same size tubings
- Straight union reducer used to connect different size tubing

Part Number	Description, Tube Size
<b>J</b> 750-SU4MN	Knurled straight union, 4 mm OD x 4 mm OD
750-SU10-8N	Knurled straight union reducer, 5/8" OD to 1/2" OD
751-SU2N	Straight union, 1/8" OD tube x 1/8" OD tube
751-SU4N	Straight union, 1/4" OD tube x 1/4" OD tube
<b>K</b> 751-SU6N	Straight union, 3/8" OD tube x 3/8" OD tube
<b>L</b> 751-SU8N	Straight union, 1/2" OD tube x 1/2" OD tube
751-SU4-2N	Straight union reducer, 1/4" OD tube x 1/8" OD tube
751-SU6-4N	Straight union reducer, 3/8" OD tube x 1/4" OD tube
751-SU8-2N	Straight union reducer, 1/2" OD tube x 1/8" OD tube
751-SU8-4N	Straight union reducer, 1/2" OD tube x 1/4" OD tube
<b>M</b> 751-SU8-6N	Straight union reducer, 1/2" OD tube x 3/8" OD tube



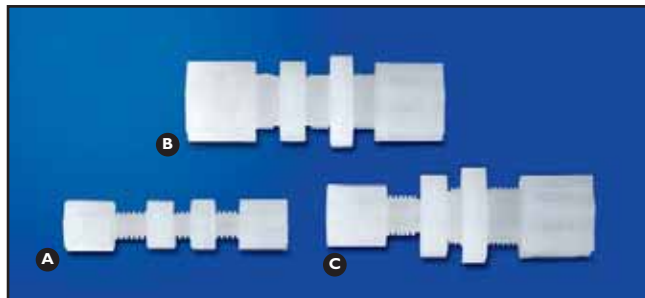
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# Fittings

## Panel Mounts

- Molded of PFA
- Used for attaching tubing to flat sides of closures or vessel surfaces

Part Number	Description, Tube Size
751-PM2GN-I	Panel mount, 1/8" OD tube x 1/8" OD tube, gripper style
751-PM2N	Panel mount, 1/8" OD tube x 1/8" OD tube
751-PM4N	Panel mount, 1/4" OD tube x 1/4" OD tube
751-PM6N	Panel mount, 3/8" OD tube x 3/8" OD tube
751-PM8N	Panel mount, 1/2" OD tube x 1/2" OD tube
751-PM6-4N	Panel mount reducer, 3/8" OD tube x 1/4" OD tube



## Connectors

- Molded of PFA
- Male connectors may be added to vessels or closures to provide tubing connections
- Female connectors can be used with a MNPT fitting to provide tubing connections

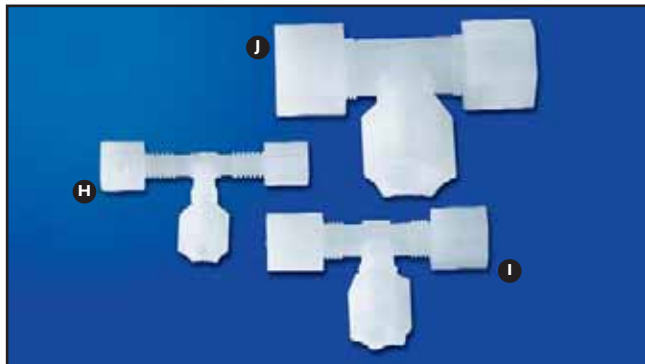
Part Number	Description, Tube Size
751-C2-4N	Male connector, 1/8" OD tube x 1/4" MNPT
750-C4-4N	Knurled male connector, 1/4" OD tube x 1/4" MNPT
751-C4-4GN-I	Male connector, 1/4" OD tube x 1/4" MNPT, gripper style
751-C4-2N	Male connector, 1/4" OD tube x 1/8" MNPT
751-C6-4N	Male connector, 3/8" MNPT x 1/4" OD tube
751-C8-6N	Male connector, 3/8" OD tube x 1/2" MNPT
751-C12-12N	Male connector, 3/4" OD tube x 3/4" MNPT
751-FC2-2N	Female connector, 1/8" OD tube x 1/8" FNPT
751-FC4-2N	Female connector, 1/4" FNPT x 1/8" OD tube
751-FC4-4N	Female connector, 1/4" OD tube x 1/4" FNPT
751-FC6-4N	Female connector, 3/8" FNPT x 1/4" OD tube



## Union Tees

- Molded of PFA
- Union tees are used to connect same size tubing

Part Number	Description, Tube Size
751-UT2N	Union tee, 1/8" OD tube
751-UT4GN-I	Union tee, 1/4" OD tube, gripper style
751-UT4N	Union tee, 1/4" OD tube
751-UT6N	Union tee, 3/8" OD tube
751-UT8N	Union tee, 1/2" OD tube



## Elbows/Reducers

- Molded of PFA
- Male elbow can be added to a vessel or closure to provide a tubing connection
- Union elbow can be used to connect same size tubing
- Union elbow reducer can be used to connect tubing of different sizes

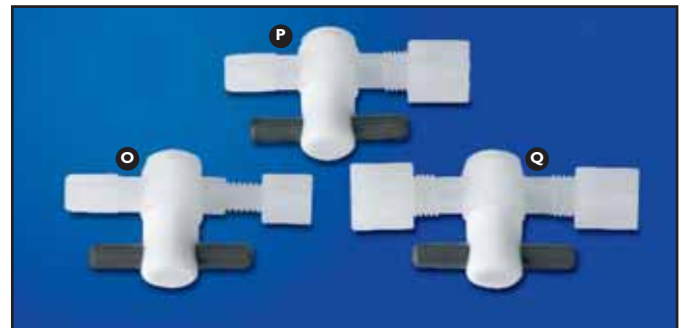
Part Number	Description, Tube Size
<b>K</b> 751-E2-2N	Male elbow, 1/8" OD tube x 1/8" MNPT
751-E2-4N	Male elbow, 1/8" OD tube x 1/4" MNPT
751-E4-4N	Male elbow, 1/4" OD tube x 1/4" MNPT
<b>L</b> 751-E4-2N	Male elbow, 1/4" OD tube x 1/8" MNPT
751-E4-2GN-I	Male elbow, 1/4" OD tube x 1/8" MNPT, gripper style
751-E6-4N	Male elbow, 3/8" OD tube x 1/4" MNPT
751-E6-6N	Male elbow, 3/8" OD tube x 3/8" MNPT
751-E8-8N	Male elbow, 1/2" OD tube x 1/2" MNPT
<b>M</b> 751-UE4N	Union elbow, 1/4" OD tube x 1/4" OD tube
751-UE6N	Union elbow, 3/8" OD tube x 3/8" OD tube
751-UE8N	Union elbow, 1/2" OD tube x 1/2" OD tube
751-UE6-4N	Union elbow reducer, 3/8" OD tube x 1/4" OD tube
751-UE6-4GN-I	Union elbow reducer, 3/8" OD tube x 1/4" OD tube, gripper style
<b>N</b> 751-UE8-6N	Union elbow reducer, 1/2" OD tube x 3/8" OD tube



## Stopcocks

- All parts coming in contact with fluid stream are PFA and PTFE
- Stopcocks can be added to the side or bottom of vessels to be used as a drain
- Can be used to control fluid stream between tubing connections
- Pressure rating 50 PSI up to 150°F/66°C
- Subtract 1 PSI from 50 PSI for every 2°F/-17°C rise above 150°F/66°C

Part Number	Description, Tube Size
<b>O</b> 751-PVT2-2-2	Stopcock, 1/8" OD tube x 1/8" MNPT
751-PVT2-T2-2	Stopcock, 1/8" OD tube x 1/8" OD tube
<b>P</b> 751-PVT4-2-2	Stopcock, 1/4" OD tube x 1/8" MNPT
751-PVT4-4-2	Stopcock, 1/4" OD tube x 1/4" MNPT
<b>Q</b> 751-PVT4-T4-2	Stopcock, 1/4" OD tube x 1/4" OD tube



# Fittings

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## Barb Fittings

- PFA straight adapters have a barb fitting tubing connection on one side and a MNPT port on the other side

Part Number	Description, Tube Size
<b>A</b> 751-BC4-2	Barb fitting, 0.16" ID tube x 1/8" NPT
<b>B</b> 751-BC6-4	Barb fitting, 0.25" ID tube x 1/4" NPT



## Fitting Accessories

### Membranes

- Porous PTFE membranes can be used with 1/4" OD vent nut, #750-FN4V (see page 66)

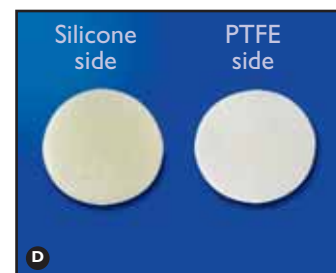
Part Number	Description
<b>C</b> 450-09-3	Membranes, 9 mm, 1-2 micron



### Laminates

- PTFE/silicone laminate can be used with 1/4" OD vent nut, #750-FN4V (see page 66)
- Laminate allows contents to be totally enclosed by PTFE while the resealable silicone can be pierced with syringe

Part Number	Description	OD	PTFE Thickness	Silicone Thickness
<b>D</b> 730-9909	PTFE/silicone laminate	9 mm	.25 mm	1.3 mm





# Sample Introduction Systems



## Sample Introduction Systems Table of Contents

### Nebulizers

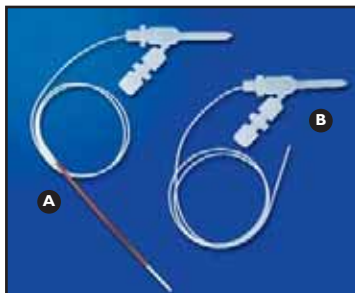
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### Sample Introduction

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## C-Flow Nebulizers



- All molded PFA Concentric Nebulizer
  - 6 mm body fits any standard end cap
  - O-ring free end cap available
- Consistently repeatable performance
- Straight capillary
- Self aspirate or pump
- One-piece gas port

Part Number	Description	Material	Uptake Rate	Uptake Style	Options
800-1-005-01-00	Concentric flow nebulizer	PFA	50 µl	700 mm length tubing x 1.6 mm OD	-
800-1-005-01-01	Concentric flow nebulizer	PFA	50 µl	700 mm length tubing x 1.6 mm OD	Precleaned
800-1-005-02-00	Concentric flow nebulizer	PFA	50 µl	700 mm length tubing with I-AS probe	-
800-1-005-02-01	Concentric flow nebulizer	PFA	50 µl	700 mm length tubing with I-AS probe	Precleaned
800-1-005-03-00	Concentric flow nebulizer	PFA	50 µl	700 mm length tubing with CETAC ASX-100 probe	-
800-1-005-03-01	Concentric flow nebulizer	PFA	50 µl	700 mm length tubing with CETAC ASX-100 probe	Precleaned
800-1-010-01-00	Concentric flow nebulizer	PFA	100 µl	700 mm length tubing x 1.6 mm OD	-
800-1-010-01-01	Concentric flow nebulizer	PFA	100 µl	700 mm length tubing x 1.6 mm OD	Precleaned
800-1-010-02-00	Concentric flow nebulizer	PFA	100 µl	700 mm length tubing with I-AS probe	-
800-1-010-02-01	Concentric flow nebulizer	PFA	100 µl	700 mm length tubing with I-AS probe	Precleaned
800-1-010-03-00	Concentric flow nebulizer	PFA	100 µl	700 mm length tubing with CETAC ASX-100 probe	-
800-1-010-03-01	Concentric flow nebulizer	PFA	100 µl	700 mm length tubing with CETAC ASX-100 probe	Precleaned
800-1-020-01-00	Concentric flow nebulizer	PFA	200 µl	700 mm length tubing x 1.6 mm OD	-
800-1-020-01-01	Concentric flow nebulizer	PFA	200 µl	700 mm length tubing x 1.6 mm OD	Precleaned
800-1-020-02-00	Concentric flow nebulizer	PFA	200 µl	700 mm length tubing with I-AS probe	-
800-1-020-02-01	Concentric flow nebulizer	PFA	200 µl	700 mm length tubing with I-AS probe	Precleaned
800-1-020-03-00	Concentric flow nebulizer	PFA	200 µl	700 mm length tubing with CETAC ASX-100 probe	-
800-1-020-03-01	Concentric flow nebulizer	PFA	200 µl	700 mm length tubing with CETAC ASX-100 probe	Precleaned

## X-Flow Nebulizers



- All molded PFA construction
- Self aspirate or pump
- Resistant to clogging
- O-ring free connections
- Consistently repeatable performance
- Interchangeable uptake lines

Part Number	Description	Material	Uptake Rate	Makeup Gas	Options
810-1-010-00-00	Cross flow nebulizer	PFA	100 µl	-	-
810-1-010-00-01	Cross flow nebulizer	PFA	100 µl	-	Precleaned
810-1-010-01-00	Cross flow nebulizer	PFA	100 µl	4 mm OD fitting	-
810-1-010-01-01	Cross flow nebulizer	PFA	100 µl	4 mm OD fitting	Precleaned
810-1-040-00-00	Cross flow nebulizer	PFA	400 µl	-	-
810-1-040-00-01	Cross flow nebulizer	PFA	400 µl	-	Precleaned
810-1-040-01-00	Cross flow nebulizer	PFA	400 µl	4 mm OD fitting	-
810-1-040-01-01	Cross flow nebulizer	PFA	400 µl	4 mm OD fitting	Precleaned
810-1-100-00-00	Cross flow nebulizer	PFA	1 ml	-	-
810-1-100-00-01	Cross flow nebulizer	PFA	1 ml	-	Precleaned
810-1-100-01-00	Cross flow nebulizer	PFA	1 ml	4 mm OD fitting	-
810-1-100-01-01	Cross flow nebulizer	PFA	1 ml	4 mm OD fitting	Precleaned

## Accessories

### End Caps

- O-ring free connection to standard 35 mm spray chambers

Part Number	Description	Use With
830-010	35 mm end cap with makeup gas port at 90°	4 mm OD and 6 mm OD knurled ferrule nuts
830-011	35 mm end cap without makeup gas	4 mm OD and 6 mm OD knurled ferrule nuts



### Spray Chamber Adapter

- Adapts spray chamber connection from 47 mm to 35 mm

Part Number	Description	Dimensions
830-020	Spray chamber adapter	47 mm x 35 mm



### Tubing

- Used for high purity argon gas line

Part Number	Description	OD	ID	Length
830-030	PTFE tubing	4 mm	2.48 mm	12'
830-031	PFA tubing	4 mm	2.0 mm	10'

### Fittings

- Replacement fittings for nebulizer assemblies

Part Number	Description
750-FP4M	Knurled ferrule cap nut, 4 mm OD
750-SU4MN	Knurled straight union, 4 mm OD
750-FN4M	Knurled ferrule nut, 4 mm OD
750-FN6M	Knurled ferrule nut, 6 mm OD
750-100525	Argon adapter fitting, 4 mm OD

### X-Flow Uptake Lines

- Allows for interchangeable uptake rates

Part Number	Description	Uptake Rate	OD	Length
830-040	X-Flow sample uptake line assembly	100 µl	.062" mm	27.5"
830-041	X-Flow sample uptake line assembly	400 µl	.062" mm	27.5"
830-042	X-Flow sample uptake line assembly	1 ml	.062" mm	27.5"

**Also Available**  
**Inert sample introduction system components:**  
 ▪ **Spray Chambers**  
 ▪ **Injectors**

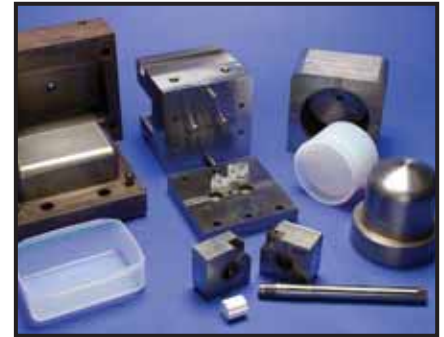
Please call for more information on these products.



## Capabilities & Competencies

As a global leader in the supply and support of PFA and fluoropolymer injection molded solutions, we have developed unique tooling technology. This allows us to provide an economical way to move to an injection molded component instead of more expensive, machined components, even on very short runs. As a vertically integrated company we offer:

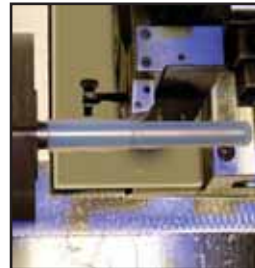
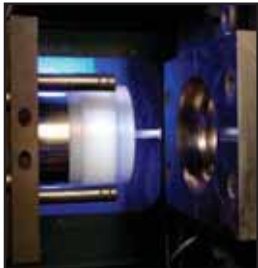
- Injection molding of very small to large sizes
- Ability to manufacture simple to complex designs
- Wide range of materials: PFA, FEP, ETFE, ECTFE, PVDF, PP
- Insert and overmolding capabilities
- In-house tooling including tool design, fabrication, and the ability to make changes and modifications quickly
- Secondary operations including machining and fusion welding
- Assembly and post-cleaning



## Markets Served

Savillex is committed to partnering with you to find reliable, cost-effective solutions for your custom and contract molding needs. Demonstrated by our 30-plus years of experience, we have produced quality custom products and components that support and enable technologies in the following industries:

- Semiconductor
- Medical Technology
- Pharmaceutical
- Analytical Laboratories
- Chemical Processing
- Industrial



## Service & Support

Savillex provides the capabilities, experience and commitment to achieve your product and application requirements every step of the way. Developing custom molded solutions is what we do best. In addition we offer:

- Fast response and turnaround time
- Engineering and design support services
- Prototyping and product qualifications
- Low entry cost for molded solutions
- Cost-effective delivery programs to meet your needs



Submit your request online at [www.savillex.com](http://www.savillex.com).  
Click on *Custom Molding Inquiry*.

# Modified Products



## Modified Products

In addition to our standard line of PFA labware and custom molding capabilities, we are also able to offer our expertise in modifying any of our products to better suit your specific application.

Modified products can include:

- adding fittings
- machining parts to fit specific equipment
- molding in a different color
- welding parts together

If you do not see exactly what you need in our catalog, please contact us and we will be happy to work with you to explore modifications to our existing product line.



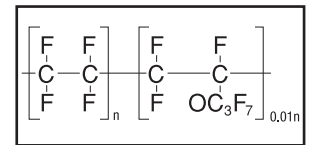
**Standard labware products can be modified upon request.**

## Fluoropolymers

As your fluoropolymer experts, Savillex has experience in processing all of the materials listed below.

### PFA (perfluoroalkoxy)

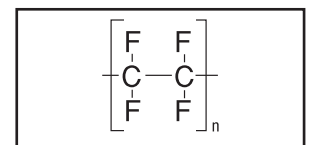
PFA is the material of choice for the majority of Savillex's products due to its superior properties. Of key importance is the purity of the material and its excellent chemical resistance, making it ideally suited for products serving the analytical, semiconductor, medical, pharmaceutical and chemical processing industries. PFA is translucent in color so you can see what is inside the product. It has the widest service temperature range of the fluorocarbons, ranging from -454°F/-270° C to 500°F/260° C. In comparison to PTFE, PFA demonstrates greater strength, stiffness and creep resistance. In addition, it has a low coefficient of friction and beneficial anti-stick properties. PFA is considered by some to be the best melt-processable fluoropolymer.



PFA

### PTFE (polytetrafluoroethylene)

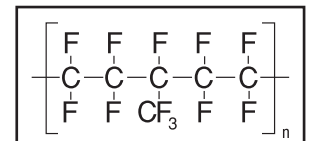
An extremely low coefficient of friction makes PTFE an excellent material where surface wear might be a problem. PTFE exhibits a useful service range from below -100°F/-73°C to temperature of over 500°F/260°C. Its resistance to solvents is excellent throughout a wide range of temperature. Its low dielectric constant and electric resistance also remain constant throughout this range. The major disadvantage with PTFE is the very high melt viscosity that makes processing difficult by normal extrusion and injection molding methods, and its propensity to creep and cold flow. For use in the fabrication of labware products PTFE is not ideal because the material is opaque, which does not allow the user to see inside the product. Parts are typically machined into final use products.



PTFE

### FEP (fluorinated ethylene propylene)

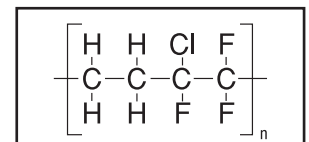
FEP has similar mechanical and chemical properties to PTFE but better impact strength and is melt-processable. The material tends to be translucent in color and fairly rigid. It offers excellent chemical resistance. FEP can withstand temperatures ranging from -454°F/-270°C to 392°F/200°C and may be sterilized repeatedly.



FEP

### ECTFE (ethylene-chlorotrifluoroethylene)

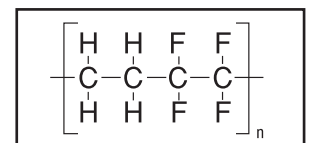
ECTFE is translucent white and is a melt-processable alternating copolymer of ethylene and chlorotrifluoroethylene. It has excellent electrical properties and chemical resistance. ECTFE can withstand continuous exposure to extreme temperatures while maintaining its excellent mechanical properties. In addition, it is non-burning and resistant to radiation.



ECTFE

### ETFE (ethylene-tetrafluoroethylene)

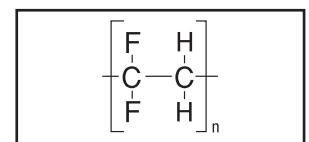
ETFE is a partially fluorinated copolymer that is translucent white in color and has good chemical resistance. Its mechanical properties approach that of fully fluorinated polymers but has a lower maximum service temperature. ETFE is another melt-processable fluoropolymer with greater abrasion resistance and impact strength than FEP and PTFE.



ETFE

### PVDF (polyvinylidene fluoride)

PVDF is a partially fluorinated homopolymer and is made by polymerizing vinylidene monomer. It is opaque in color, resists UV radiation and offers high mechanical strength and abrasion resistance. These properties, along with its chemical resistance, make PVDF a popular choice for molded automotive, electrical and chemical piping products.



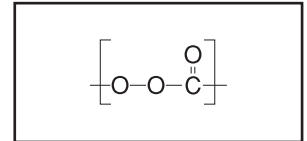
PVDF



## Fluoropolymers, continued

### PEEK (polyetheretherketone)

PEEK is a high temperature thermoplastic with excellent strength, creep and wear resistance properties, even at high temperatures. Though it is resistant to a wide range of organic and inorganic liquids its chemical compatibility is not that of PFA and other fully fluorinated polymers.

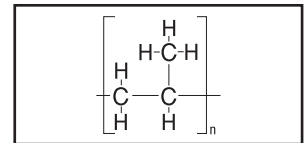


PEEK

## Polyolefins

### PP (polypropylene)

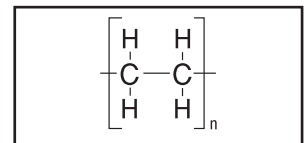
PP is translucent in color, autoclavable and is unaffected by solvents at room temperature. PP products tend to be brittle at 32°F/0°C and may crack or break if dropped. PP does offer the best stress-crack resistance of the polyolefins.



PP

### HDPE (high-density polyethylene)

HDPE is opaque in color, lightweight and provides very low moisture absorption. It has little branching, giving it stronger intermolecular forces and tensile strength than lower density polyethylene. It can withstand temperatures ranging from -148°F/-100°C to 248°F/120°C.



HDPE

## Application Properties

	Fluoropolymers							Polyolefins	
	PFA	PTFE	FEP	ECTFE	ETFE	PVDF	PEEK	PP	HDPE
Continuous Service Temp	260°C 500°F	260°C 500°F	200°C 392°F	150°C 302°F	150°C 302°F	150°C 302°F	250°C 482°F	135°C 275°F	120°C 248°F
Brittleness Temp	-270°C	-100°C	-270°C	-100°C	-105°C	-62°C	n/a	0°C	-100°C
Transparency	translucent	opaque	translucent	translucent white	translucent white	opaque	opaque	translucent	opaque
Microwavability	Yes	Yes	Marginal	Yes	Yes	Marginal	Yes	Yes	No
Autoclaving	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Sterilization Gas	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dry Heat	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Radiation	No	No	No	Yes	Yes	No	Yes	No	No
Disinfectants	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Flexibility	Excellent	Excellent	Excellent	Rigid	Rigid	Rigid	Rigid	Rigid	Rigid
Chemical Solvent Resistance	Excellent	Excellent	Excellent	Very Good	Very Good	Very Good	Very Good	Good	Good
Melting Point	302°-310°C 576°-590°F	320°-330°C 608°-626°F	275°C 527°F	242°C 467°F	265°C 509°F	141°-178°C 285°-352°F	343°C 649°F	160°-176°C 320°-348°F	125°-138°C 257°-280°F

## Mechanical Properties

	Fluoropolymers							Polyolefins	
	PFA	PTFE	FEP	ECTFE	ETFE	PVDF	PEEK	PP	HDPE
Specific Gravity	2.15	2.15	2.15	1.70	1.76	1.78	1.30	.90	.95
Tensile Strength psi	4,000	3,500	3,500	7,000	6,500	5,000	14,500	4,800	4,900
Coefficient of Friction	0.2	0.05 - 0.10	0.08 - 0.3	0.65	0.3 - 0.4	0.2 - 0.4	0.25	0.3 - 0.5	0.29
Flame Rating	V-O	V-O	V-O	V-O	V-O	V-O	V-O	HB	HB
Water Absorption, 24h	<0.03 %	<0.01 %	<0.01 %	<0.01 %	<0.03 %	<0.04 %	<0.50 %	<0.02 %	<0.01 %
Dielectric, constant D 150 at 10 <sup>3</sup> Hz	2.1	2.1	2.1	2.5	2.6	7.2	4.0	2.3	2.3

The tables listed are a generally accepted summary of properties that we believe to be reliable. Please note that many of these resins are produced in several varieties and property characteristics may vary. Therefore, determination of resin is dependent on the application and this table is only meant to serve as a general guideline.

## Materials, continued

### PFA Parts Cleaning Protocol

Typical PFA parts cleaning protocols for low or sub parts-per-billion metals extractable analysis:

#### Method 1

1. Rinse four times inside and out with UHP de-ionized water.
2. Fill with acid mixture HNO<sub>3</sub> and HCl (7+2) or only with HNO<sub>3</sub> (7%) for one day or leave overnight.
3. Rinse four times with UHP de-ionized water.
4. Fill again with acid mixture HNO<sub>3</sub> and HCl (7+2) or only with HNO<sub>3</sub> (7%) for one day or leave overnight.
5. Rinse again four times with UHP de-ionized water and leave the PFA part filled with UHP de-ionized water or dry it (see 6).
6. For drying use a laminar flow clean bench. Then rinse the PFA part with the sample or process liquid before using.

Use only ultra pure acids (purified by sub-boiling distillation), e.g. HF, HNO<sub>3</sub> and HCl.

Note: For more aggressive cleaning, the use of more concentrated acids is recommended.

#### Method 2

1. Fill with 1 + 1 HCl (AR grade).  
Allow to stand one week at 80°C.
2. Empty and rinse with distilled water.
3. Fill with 1 + 1 HNO<sub>3</sub> (AR grade).
4. Allow to stand one week at 80°C.
5. Empty and rinse with distilled water.
6. Fill with purest available distilled water.
7. Allow to stand several weeks or until needed, changing water periodically to ensure continued cleaning.
8. Rinse with purest water and allow to dry in a particle and fume-free environment.

*John R. Moody and Richard M. Lindstrom*  
*Reprinted from ANALYTICAL CHEMISTRY, Vol. 49, Page 2264*

The above information is offered for reference only and is not intended as a specification. This information is based on reports received from customers of Savillex Corporation who have been successful in adopting these protocols for low metals analysis. It is intended for use by persons having technical skill, at their own discretion and risk. It is given with the understanding that those using these protocols will satisfy themselves that their particular conditions of use present no health or safety hazards. We make no warranties, express or implied, and assume no liability in connection with any of this information. As with any process or protocol, evaluation under actual-use conditions prior to specification is essential.

*We would like to take this opportunity to thank Savillex customers around the world for their business and loyalty. We would also like to acknowledge that, since the publication of our previous catalog, Savillex founder Russell Saville passed away. Russ took great pride in the catalog and in serving the many thousands of Savillex customers worldwide. He left a genuine legacy of responsive customer service and product innovation.*

*We look forward to continuing to partner with you and provide you with new and innovative fluoropolymer solutions to help make your job easier and more efficient.*



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