CAS Courtage Analyses Services

Labware

Acid Purification

Savillex

Your Fluoropolymer Solutions Partner

Custom Molding

ICP Sample Introduction

Savillex

Ordering from Savillex is Fast ▸ Easy ▸ Convenient

Ordering Information

Savillex products are sold direct and through Savillex authorized distributors.
Visit www.savillex.com to place your order, or to find the nearest authorized distributor.

Online: www.savillex.com
Telephone: 952.935.4100
Email: info@savillex.com
Fax: 952.936.2292

- Payment terms are net 30 days with established credit
- Savillex accepts Visa®, MasterCard® and American Express® credit cards
- Products not appearing in this catalog that were previously purchased may still be available. Contact Savillex for details.

Prices

Prices quoted and shown online are in U.S. dollars and are subject to change without notice. Price quoted are FOB and do not include any applicable shipping, duties, taxes or other fees for delivery outside the U.S.

For the best pricing and service outside the U.S., we recommend contacting your local authorized Savillex product distributor. A list of authorized distributors can be found online at www.savillex.com.

Product Descriptions

Savillex products are molded of 100% PFA, unless otherwise stated, and are sold as individual components unless otherwise stated in the product description. Savillex closures are purchased separately from vessels unless noted in the product description. Product photos may be a representation and not the actual product.

Made in the USA

Product Specifications

Product specifications in this catalog are approximate and current at the time of printing. Detailed specifications are available from www.savillex.com or by contacting Savillex at info@savillex.com.

Technical Support

If you require technical assistance in the use, operation or maintenance of Savillex products, please contact us at 952.935.4100 or by email at info@savillex.com.

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About Savillex

Savillex Corporation has been manufacturing fluoropolymer products since 1976, supplying some of the world's largest companies and universities. Our main business groups consist of Labware, Packaging, ICP Sample Introduction Systems and Custom Molding.

Throughout all of our businesses, our goal remains the same: to apply our know-how in fluoropolymer molding and machining to develop the world's best fluoropolymer products – whatever the application. We manufacture the widest range of PFA labware, from vials and columns through to pressure vessels and filter holders. For pharmaceutical and chemical packaging applications our PFA and FEP Purillex™ bottles are produced using proprietary blow molding technology which gives them unique properties. Our PFA Sample Introduction Systems for ICP-OES and ICP-MS expand the capabilities of these techniques, allowing chemists to measure metals at lower levels, in a wider range of sample matrices. And finally, our Custom Molding business group has solved some of the biggest technological challenges for some of the world's most advanced technology companies.

Savillex Eden Prairie, MN Facility

Our 35+ years of experience in the molding and machining of fluoropolymers enables us to develop products and solutions unavailable elsewhere. With a melting point of 260°C, PFA is one of the most difficult polymers to mold, and requires highly specialized molding tools and a great deal of experience and expertise. Unlike other companies, we design and manufacture all of our molding tools in-house which gives us great speed, flexibility and complete control of product quality.

We are able to design and mold products with very small production runs and can also modify many of our standard products, so if what you are looking for is not in this catalog, please email us your request.

Savillex Corporation is based in Eden Prairie, Minnesota, USA.

LABWARE

www.savillex.com

Labware

Savillex labware products can be found throughout laboratories around the world. From collection through processing and storage, laboratories have turned to Savillex fluoropolymer labware products for their most critical applications and demanding processes for over 35 years.

Purillex™ Bottles

Purillex™ PFA Bottles

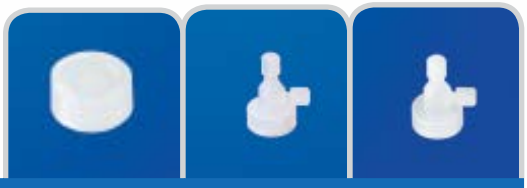
- No secondary sealing required
- Easy pour, drip-proof lip
- Bottles include plain threaded closure
- 100 ml - 2000 ml bottles accept GL45 closure. 50 ml bottle accepts 33mm closure.
- USP class VI certified
- Bottle and closure made of PFA

	Volume	Part Number	Includes Closure	Base Diameter x Height (mm)	Replacement Closure Thread Size
A	50 ml	150-01-0050	600-033-01 plain threaded	36.6 x 79.9	33mm
B	100 ml	150-01-0100	600-045-01 GL45 plain threaded	55.6 x108.5	GL45
C	250 ml	150-01-0250	600-045-01 GL45 plain threaded	69.9 x 146.1	GL45
D	500 ml	150-01-0500	600-045-01 GL45 plain threaded	85.1 x 160.3	GL45
E	1000 ml	150-01-1000	600-045-01 GL45 plain threaded	101.1 x 218.4	GL45
F	2000 ml	150-01-2000	600-045-01 GL45 plain threaded	127.3 x 248.1	GL45

Purillex™ bottles are manufactured in a clean room environment.

Replacement Closures for Purillex™ PFA Bottles

Thread	Part Number PFA Plain threaded	Part Number PFA (2) 1/8" OD tube ports	Part Number PFA (2) 1/4" OD tube ports	Part Number PFA (2) 1/4" OD tube ports with vent nut
GL45	600-045-01	600-045-26	600-045-36	600-045-46



Thread	Part Number PFA Plain threaded	Part Number PFA (2) 1/8" OD tube ports	Part Number PFA (2) 1/4" OD tube ports
33mm	600-033-01	600-033-26	600-033-36

Additional bottle information is available online at www.savillex.com.

Dimensions available online for download

Purillex™ Bottles

Purillex™ FEP Bottles

- No secondary sealing required
- Easy pour, drip-proof lip
- Bottles include plain threaded closure
- 100 ml - 2000 ml bottles accept GL45 closure. 50 ml bottle accepts 33mm closure.
- USP class VI certified
- Bottle and closure made of FEP

	Volume	Part Number	Includes Closure	Base Diameter x Height (mm)	Replacement Closure Thread Size
A	50 ml	150-02-0050	600-033-02 plain threaded	36.6 x 79.9	33mm
B	100 ml	150-02-0100	600-045-02 GL45 plain threaded	55.6 x108.5	GL45
C	250 ml	150-02-0250	600-045-02 GL45 plain threaded	69.9 x 146.1	GL45
D	500 ml	150-02-0500	600-045-02 GL45 plain threaded	85.1 x 160.3	GL45
E	1000 ml	150-02-1000	600-045-02 GL45 plain threaded	101.1 x 218.4	GL45
F	2000 ml	150-02-2000	600-045-02 GL45 plain threaded	127.3 x 248.1	GL45

Replacement Closures for Purillex™ FEP Bottles

Thread	Part Number FEP Plain threaded	Part Number PFA (2) 1/8" OD tube ports	Part Number PFA (2) 1/4" OD tube ports	Part Number PFA (2) 1/4" OD tube ports with vent nut
GL45	600-045-02	600-045-26	600-045-36	600-045-46

Thread	Part Number FEP Plain threaded
33mm	600-033-02

Additional bottle information is available online at www.savillex.com.

Dimensions available online for download

Column Components

Column Component Vessels

- 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/38°C
- Maximum service temperature of PFA is 500°F/260°C
- Glass polypropylene wrench set is recommended for tightening

	Volume	Part Number	Side Port	Base Diameter x Height (mm)	Accepts Closure
A	60 ml	500-060-02	None	53.3 x 53.1	58 mm with 1-1/2" FNPT threads
B	120 ml	500-120-02	None	53.3 x 118.4	58 mm with 1-1/2" FNPT threads
C	120 ml	500-120-11	1/8" OD tube port	53.3 x 118.4	58 mm with 1-1/2" FNPT threads
	120 ml	500-120-15	1/4" OD tube port	53.3 x 118.4	58 mm with 1-1/2" FNPT threads
D	120 ml	500-120-17	1/4" FNPT port	53.3 x 118.4	58 mm with 1-1/2" FNPT threads
	120 ml	500-120-31	3/8" FNPT port	53.3 x 118.4	58 mm with 1-1/2" FNPT threads
E	375 ml	500-375-02	None	53.9 x 298.0	58 mm with 1-1/2" FNPT threads
	375 ml	500-375-06	None (Grooved Exterior)	53.9 x 298.0	58 mm with 1-1/2" FNPT threads

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

See Closures on page 11.

Column Components

Column Component Segments

- 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/38°C
- Glass polypropylene wrench set is recommended for tightening
- Use connector (Part Number 730-0502) to connect segments

	Volume	Part Number	Side Port	Threaded for 47 mm Filter	Diameter x Height (mm)	Accepts Closure
A	100 ml	531-100-05	None	No	50.3 x 74.9	58 mm with 1-1/2" FNPT threads
B	150 ml	531-150-05	None	No	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
	150 ml	531-150-11	1/8" OD tube port	No	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
C	150 ml	531-150-15	1/4" OD tube port	No	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
	150 ml	531-150-17	1/4" FNPT port	No	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
D	150 ml	531-150-31	3/8" FNPT port	No	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
	150 ml	531-150-33	3/8" OD tube port	No	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
E	150 ml	531-150-40	None	Yes	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
F	150 ml	531-150-41	1/8" OD tube port	Yes	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
	150 ml	531-150-42	1/4" OD tube port	Yes	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
	150 ml	531-150-43	3/8" OD tube port	Yes	53.3 x 122.2	58 mm with 1-1/2" FNPT threads
G	375 ml	531-375-05	None	No	50.3 x 295.4	58 mm with 1-1/2" FNPT threads
H	Connector	730-0502	None	No	58.2 x 49.8	NA

Part Number 531-150-40 (150 ml segment)

Filter holder thread adapts to any 47 mm or 50 mm filter

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

See Closures on page 11.

Column Components

Column Component Closures

- Closures can be used with column segments or vessels
- Assembled columns are rated to 75 PSI at 100°F/38°C
- Glass polypropylene wrench set is recommended for tightening

	Style	Part Number	Ports
A	58 mm with 1-1/2" FNPT threads	600-058-06	None
B	58 mm with 1-1/2" FNPT threads	600-058-16	(1) 1/4" OD tube port
C	58 mm with 1-1/2" FNPT threads	600-058-17	(1) 1/4" FNPT port
	58 mm with 1-1/2" FNPT threads	600-058-19	(1) 3/8" OD tube port
	58 mm with 1-1/2" FNPT threads	600-058-24	(2) 1/8" OD tube ports
	58 mm with 1-1/2" FNPT threads	600-058-33	(2) 1/4" OD tube ports
D	58 mm with 1-1/2" FNPT threads	600-058-42	(2) 1/2" OD tube ports
	58 mm with 1-1/2" FNPT threads	600-058-87	Pressure relief closure with Ultem® clamp

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

Column Component Accessories

	Part Number	Description
E	730-0055	Glass polypropylene wrench set
F	730-0504	Column component screen

Column Components

How to Use Column Components

Build your own column component assembly by interchanging the vessels, segments and closures.

Individual Components	Assembled Column Component
 600-058-06 closure 500-120-02 vessel	
 600-058-06 closure 531-150-15 segment 730-0502 connector 500-120-02 vessel	
 600-058-17 closure 531-150-40 segment 412-10-47 filter clamp 47 mm filter membrane 414-47 grid 411-21-47 outlet	

Digestion Vessels

Digestion Vessels

- Use digestion vessels directly in a microwave, oven or on a hotplate for rapid sample dissolution
- Glass polypropylene wrench set #730-0057 is recommended for tightening
- For best results, always order complete sets of vessels and closures
- Closures sold separately

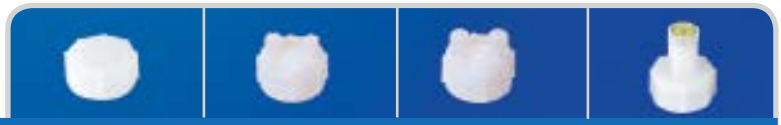
	Volume	Part Number	Side Ports	Interior	Diameter x Height (mm) (with plain closure)	Accepts Closure	Pressure Rating at 100°F/38°C*
A	60 ml	300-060-03	NA	—	53.9 x 62.2	58 mm buttress threaded	75 PSI
	60 ml	300-060-04	NA	V	53.9 x 69.1	58 mm buttress threaded	75 PSI
	120 ml	300-120-03	NA	—	53.6 x 124.7	58 mm buttress threaded	75 PSI
B	120 ml	300-120-04	NA	V	53.6 x 119.4	58 mm buttress threaded	75 PSI
C	120 ml	300-120-16	(1) FNPT	—	53.6 x 124.0	58 mm buttress threaded	75 PSI
	120 ml	300-120-20	(2) 1/8" tube ports	—	53.6 x 124.0	58 mm buttress threaded	75 PSI
D	120 ml	300-120-22	(2) 1/4" tube ports	—	53.6 x 124.0	58 mm buttress threaded	75 PSI

V = Conical Interior — = Flat Interior

*** CAUTION: For every 2°F/1°C increase above 100°F/38°C, reduce PSI rating by 1 PSI.**

The pressurized digestion process can produce extremely high 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 Technical Note TN008. You can view this Technical Note online at www.savillex.com under "Digestion Vessels."

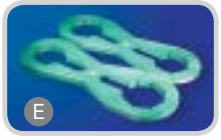
Digestion Vessel Closures



	Part Number	Part Number	Part Number	Part Number
	Plain Buttress Threaded	Buttress Threaded (2) 1/8" OD tube ports	Buttress Threaded (2) 1/4" OD tube ports	Buttress Threaded with Pressure Relief Valve
58 mm	600-058-04	600-058-22	600-058-31	600-058-86

Digestion Vessel Accessories

	Part Number	Description
E	730-0055	Glass polypropylene wrench set



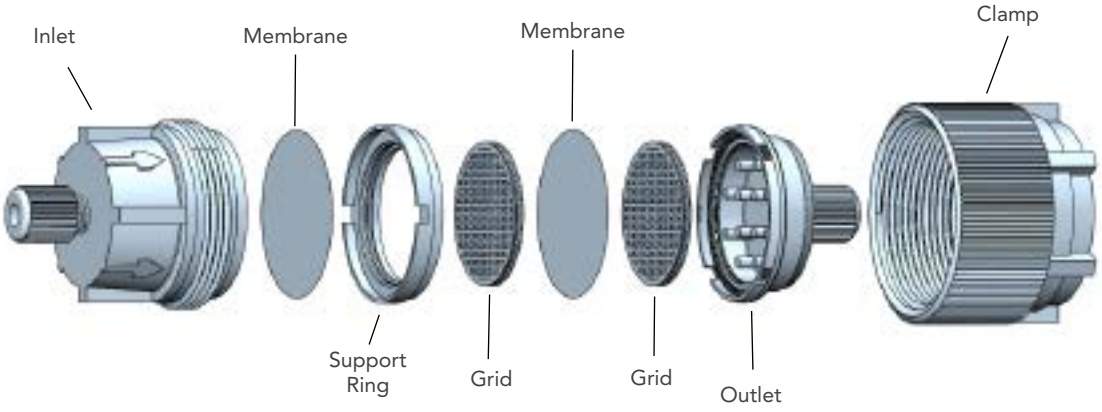
Filter Holders

Filter Holders

Savillex offers many pre-assembled filter holders for your convenience. You can also build your own application-specific filter by ordering the necessary components. The components needed to build your own filter include:

- Inlets
- Outlets
- Grids
- Support rings (47 mm multi-stage filters only)
- Clamps
- Membranes (use only PTFE membranes)

Build Your Own Filter Holder Components



Inlets

- Available in various styles
- Glass polypropylene wrench set recommended for tightening (not required for 25 mm)


Open Style


Ferrule Nut Style


Tube Style

Outlets

- Available in various styles
- Grid must be ordered separately


MNPT Style

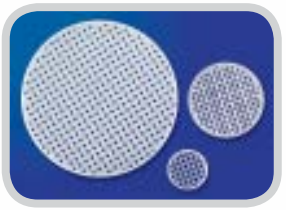

Ferrule Nut Style


Tube Style

Build Your Own Filter Holder Components, continued

Grids

- PFA grid snaps into support ring or outlet to hold filter membrane



Support Rings

- Support rings are required for 47 mm multi-stage filter holders only

Clamps

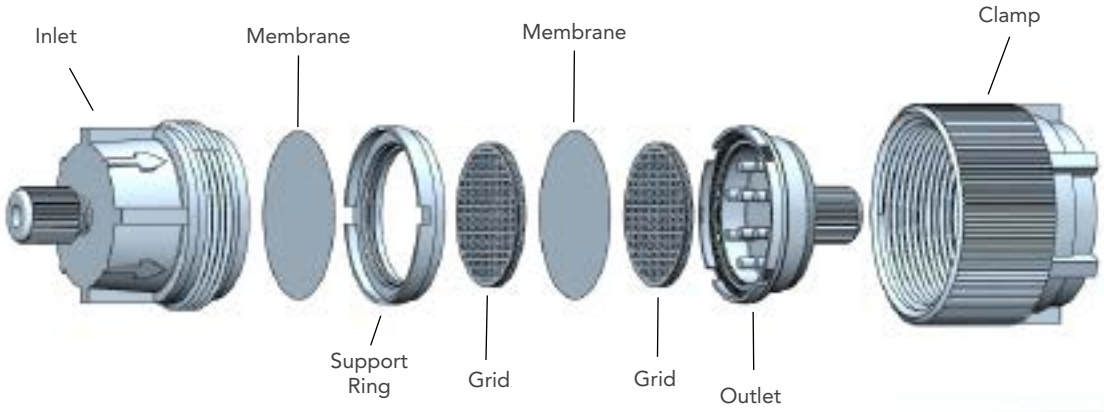
- Available in various sizes and materials
- Extended clamp is required for multi-stage filter holders
- Tefzel® clamps are reinforced with 25% glass fiber for use in higher pressure applications

Grid sold separately

Filter Membranes

- Produced of pure PTFE
- Chemically and biologically inert, stable up to 500°F/260°C, and will withstand most concentrated acids and bases
- Ideal for applications requiring extreme temperatures or aggressive chemicals without adding particulates to the filtrate
- Naturally hydrophobic and very useful for aerosol sampling, air venting and gas filtration
- Nominaly rated filters for submicron filtering of aqueous solutions. Pre-wet with methanol, ethanol or isopropyl alcohol to establish flow with lower pressure differentials.
- Sterilize with steam or bactericidal solutions
- Ten membranes per package

*** CAUTION: For every 2°F/1°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI.**



Filter Holders

25 mm Filter Holders

Pre-Assembled Single Stage Filters (membranes sold separately)

Part Number	Description	Pressure Rating
401-20-25-50-20-2	1/8" inlet x 1/8" outlet with PVDF clamp	65 PSI
401-21-25-50-21-2	1/4" inlet x 1/4" outlet with PVDF clamp	65 PSI

Build Your Own 25 mm Filter Holder

Inlets

Part Number	Description
410-11-25	2-1/2" opening
410-20-25	1/8" OD tube opening with ferrule nut
410-21-25	1/4" OD tube opening with ferrule nut
410-31-25	1/4" MNPT

Outlets

Part Number	Description
411-20-25	1/8" OD tube opening with ferrule nut
411-21-25	1/4" OD tube opening with ferrule nut
411-31-25	1/4" MNPT

Grid

Part Number	Description
414-25	Grid for 25 mm filter membranes

Clamps

Part Number	Description	Pressure Rating
412-50-25	PVDF clamp assembly, blue and white	65 PSI
412-51-25	PVDF clamp, white	65 PSI
412-52-25	PVDF clamp, blue	65 PSI
412-12-25	PVDF clamp, gray	65 PSI

Filter Membranes

Part Number	Pore Size in Microns	Description
450-25-1	0.2	PTFE, 10 per pack
450-25-2	0.45	PTFE, 10 per pack
450-25-3	1-2	PTFE, 10 per pack
450-25-4	5-6	PTFE, 10 per pack
450-25-5	20-30	PTFE, 10 per pack
450-25-6	30-60	PTFE, 10 per pack

*** CAUTION: For every 2°F/1°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI.**

47 mm Filter Holders

Pre-Assembled Single Stage Filters (membranes sold separately)

Part Number	Description	Pressure Rating
401-21-47-10-21-2	1/4" OD tube inlet x 1/4" OD tube outlet with PFA clamp	25 PSI
401-21-47-30-21-2	1/4" OD tube inlet x 1/4" OD tube outlet with Tefzel clamp	65 PSI
401-31-47-10-31-2	1/4" OD MNPT inlet with 1/4" OD MNPT outlet with PFA clamp	25 PSI

Pre-Assembled Two Stage Filters (membranes sold separately)

Part Number	Description	Pressure Rating
402-10-47-22-21-2	1-1/2" open inlet x 1/4" OD tube outlet, PFA clamp	25 PSI
402-10-47-22-22-2	1-1/2" open inlet x 3/8" OD tube outlet, PFA clamp	25 PSI
402-21-47-22-21-2	1/4" OD tube inlet x 1/4" OD tube outlet, PFA clamp	25 PSI
402-31-47-22-31-2	1/4" OD MNPT inlet x 1/4" OD MNPT outlet, PFA clamp	25 PSI
402-10-47-22-31-2	1-1/2" open inlet x 1/4" MNPT outlet, PFA clamp	25 PSI

Pre-Assembled Three Stage Filters (membranes sold separately)

Part Number	Description	Pressure Rating
403-10-47-22-21-2	1-1/2" open inlet x 1/4" OD tube outlet, PFA clamp	25 PSI
403-10-47-22-22-2	1-1/2" open inlet x 3/8" OD tube outlet, PFA clamp	25 PSI
403-21-47-22-21-2	1/4" OD tube inlet x 1/4" OD tube outlet, PFA clamp	25 PSI
403-31-47-22-31-2	1/4" OD MNPT inlet x 1/4" OD MNPT outlet, PFA clamp	25 PSI
403-10-47-22-31-2	1-1/2" open inlet x 1/4" MNPT outlet, PFA clamp	25 PSI

Pre-Assembled Four Stage Filters (membranes sold separately)

Part Number	Description	Pressure Rating
404-10-47-22-21-2	1-1/2" open inlet x 1/4" OD tube outlet, PFA clamp	25 PSI
404-10-47-22-22-2	1-1/2" open inlet x 3/8" OD tube outlet, PFA clamp	25 PSI
404-21-47-22-21-2	1/4" OD tube inlet x 1/4" OD tube outlet, PFA clamp	25 PSI
404-31-47-22-31-2	1/4" OD MNPT inlet x 1/4" OD MNPT outlet, PFA clamp	25 PSI
403-10-47-22-31-2	1-1/2" open inlet x 1/4" MNPT outlet, PFA clamp	25 PSI

*** CAUTION: For every 2°F/1°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI.**

Filter Holders

Build Your Own 47 mm Filter Holder

Inlets

Part Number	Description
410-43-47	1/2" OD x 1" tube
410-31-47	1/4" MNPT
410-41-47	1/4" OD x 1" tube
410-10-47	1-1/2" open
410-12-47	3-1/2" open x 1" tube
410-42-47	3/8" OD x 1" tube
410-21-47	1/4" OD with ferrule nut
410-22-47	3/8" OD with ferrule nut

Outlets

Part Number	Description
411-43-47	1/2" OD x 1" tube
411-31-47	1/4" MNPT
411-41-47	1/4" OD x 1" tube
411-42-47	3/8" OD x 1" tube
411-21-47	1/4" OD with ferrule nut
411-22-47	3/8" OD with ferrule nut

Grid

Part Number	Description
414-47	Grid for 47 or 50 mm filter membranes

Support Ring (for multi-stage only)

Part Number	Description
413-47	Support ring for 47 mm multi-stage filters

Clamps

Part Number	Description	Pressure Rating
412-10-47	PFA clamp, single stage, orange	25 PSI
412-30-47	Tefzel® clamp, single stage, black	65 PSI
412-22-47	PFA clamp, multi-stage, gray	25 PSI

Filter Membranes

Part Number	Pore Size in Microns	Description
450-47-1	0.2	PTFE, 10 per pack
450-47-2	0.45	PTFE, 10 per pack
450-47-3	1-2	PTFE, 10 per pack
450-47-4	5-6	PTFE, 10 per pack
450-47-5	20-30	PTFE, 10 per pack
450-47-6	30-60	PTFE, 10 per pack

* CAUTION: For every 2°F/1°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI.

Filter Holders

50 mm Filter Holders

Pre-Assembled Single Stage Filters (membranes sold separately)

Part Number	Description	Pressure Rating
401-21-50-31-21-2	1/4" OD tube inlet x 1/4" OD tube outlet with Tefzel® clamp	65 PSI
401-21-50-11-21-2	1/4" OD tube inlet x 1/4" OD tube outlet with PFA clamp	25 PSI
401-43-50-31-43-2	1/2" OD x 1" tube inlet x 1/2" OD x 1" tube outlet with Tefzel® clamp	65 PSI
401-43-50-11-43-2	1/2" OD x 1" tube inlet x 1/2" OD x 1" tube outlet with PFA clamp	25 PSI

Build Your Own 50 mm Filter Holder

Inlets

Part Number	Description
410-43-50	1/2" OD x 1" tube
410-31-50	1/4" MNPT
410-10-50	1-1/2" open
410-42-50	3/8" OD x 1" tube
410-21-50	1/4" OD with ferrule nut
410-22-50	3/8" OD with ferrule nut

Outlets

Part Number	Description
411-43-50	1/2" OD x 1" tube
411-31-50	1/4" MNPT
411-42-50	3/8" OD x 1" tube
411-21-50	1/4" OD with ferrule nut
411-22-50	3/8" OD with ferrule nut

Grid

Part Number	Description
414-47	Grid for 47 or 50 mm filter membranes

Clamps

Part Number	Description	Pressure Rating
412-11-50	PFA clamp, single stage, green	25 PSI
412-31-50	Tefzel® clamp, single stage, brown	65 PSI

Membranes

Part Number	Pore Size in Microns	Description
450-50-1	0.2	PTFE, 10 per pack
450-50-2	0.45	PTFE, 10 per pack
450-50-3	1-2	PTFE, 10 per pack
450-50-4	5-6	PTFE, 10 per pack
450-50-5	20-30	PTFE, 10 per pack
450-50-6	30-60	PTFE, 10 per pack

*** CAUTION: For every 2°F/1°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI.**

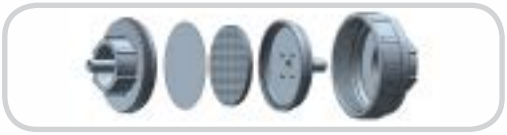
Filter Holders

90 mm Filter Holders

Pre-Assembled Single Stage Filters (membranes sold separately)

Part Number	Description	Pressure Rating
401-43-90-40-43-2	1/2" OD x 1" tube inlet x 1/2" OD x 1" tube outlet with Ultem® clamp	10 PSI
401-44-90-40-44-2	5/8" OD x 1" tube inlet x 5/8" OD x 1" tube outlet with Ultem® clamp	10 PSI

Build Your Own 90 mm Filter Holder



Inlets

Part Number	Description
410-43-90	1/2" OD x 1" tube
410-10-90	1-1/2" open
410-44-90	5/8" OD x 1" tube
410-23-90	1/2" OD with ferrule nut
410-25-90	3/4" OD with ferrule nut

Outlets

Part Number	Description
411-43-90	1/2" OD x 1" tube
411-44-90	5/8" OD x 1" tube
411-23-90	1/2" OD with ferrule nut
411-25-90	3/4" OD with ferrule nut

Grid

Part Number	Description
414-90	Grid for 90 mm filter membranes

Clamps

Part Number	Description	Pressure Rating
412-40-90	Ultem® clamp, single stage, beige	10 PSI

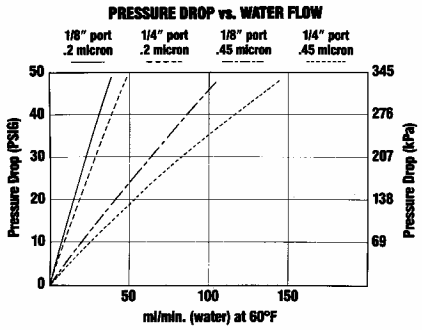
Filter Membranes

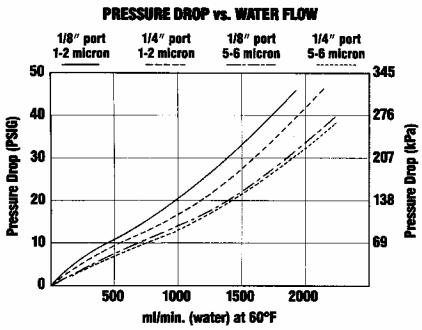
Part Number	Pore Size in Microns	Description
450-90-3	1-2	PTFE, 10 per pack
450-90-4	5-6	PTFE, 10 per pack
450-90-5	20-30	PTFE, 10 per pack
450-90-6	30-60	PTFE, 10 per pack

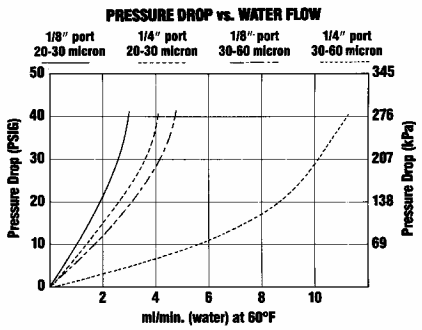
*** CAUTION: For every 2°F/1°C temperature rise above 150°F/66°C, decrease pressure rating by 1 PSI.**

Filter Flow Rates

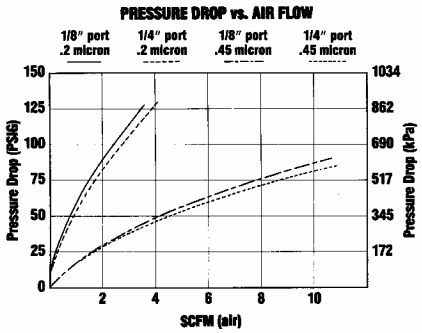
25mm Water

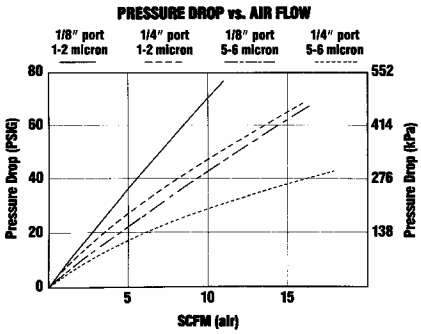


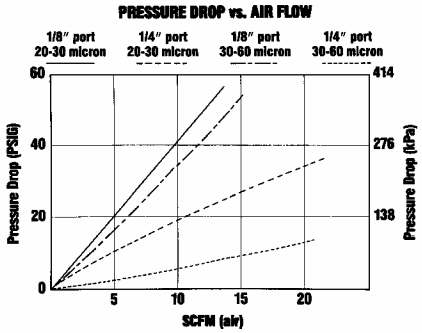




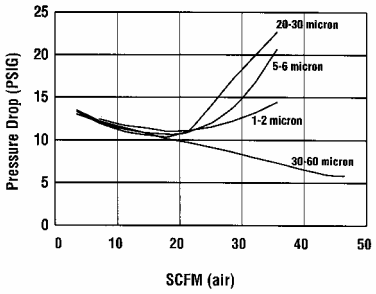
25mm Air



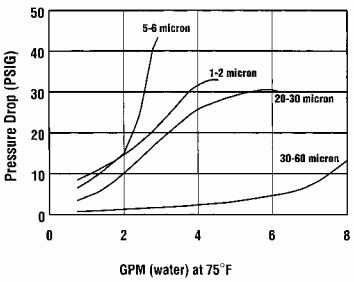




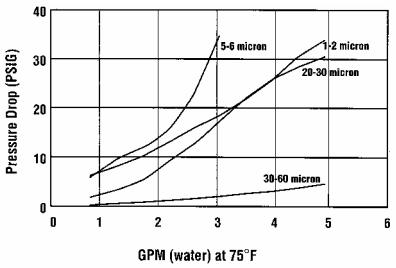
401-25-90-40-25 FILTERS
PRESSURE DROP VS. AIR FLOW



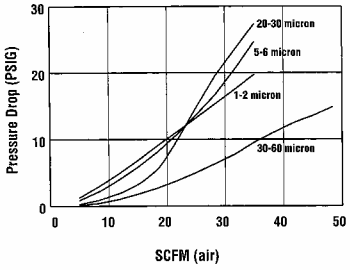
401-25-90-40-25 FILTERS
PRESSURE DROP VS. WATER FLOW



401-23-90-40-23 FILTERS
PRESSURE DROP VS. WATER FLOW



401-23-90-40-23 FILTERS
PRESSURE DROP VS. AIR FLOW

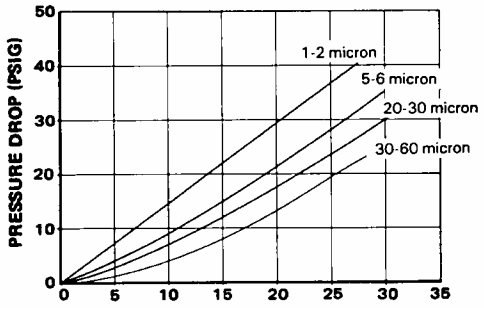


Flow rates provided are for reference only. Actual performance may vary.

Filter Holders

Filter Flow Rates, continued

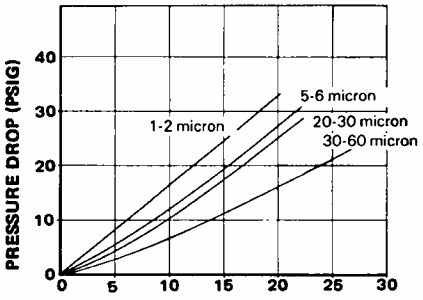
3/8" TUBE END



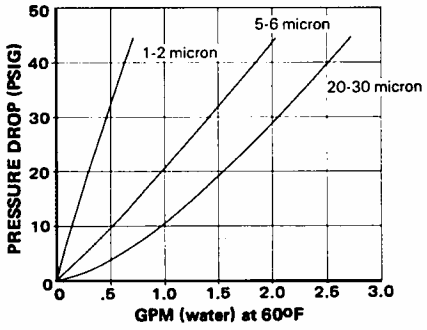
HOLDERS #401-42-50-11-42 and #401-42-50-31-42

(50mm)

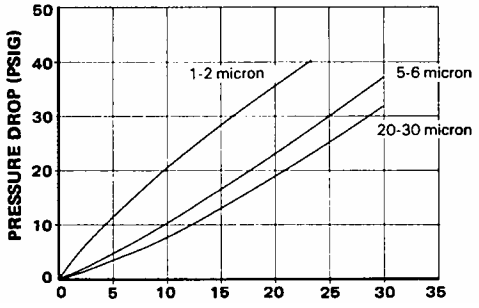
1/4" FERRULE NUT END



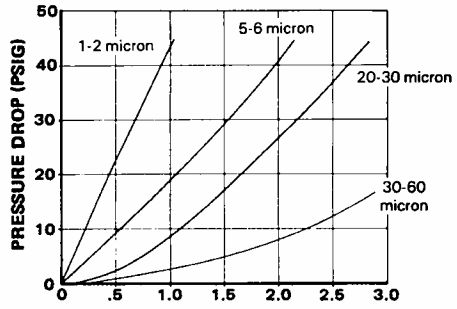
HOLDERS #401-21-50-11-21 and #401-21-50-31-21



CURVES ARE AVERAGE OF TWO HOLDERS LISTED BELOW

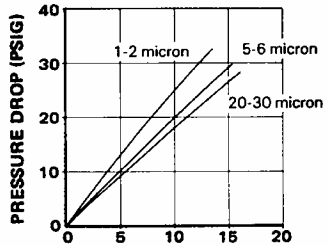


HOLDERS #401-42-47-10-42 3/8" tube end

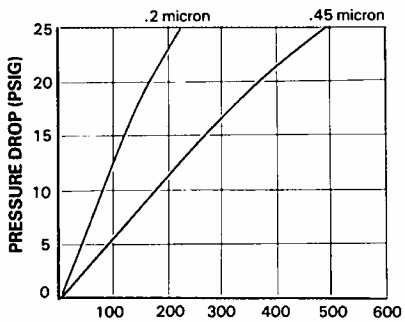


CURVES ARE AVERAGE OF FOUR HOLDERS LISTED ABOVE

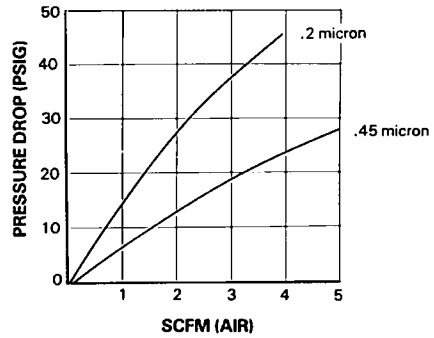
(47mm)



HOLDERS #401-21-47-10-21 3/8" ferrule nut end



SUBMICRON (47 mm) CURVES ARE AVERAGE OF HOLDERS #401-42-47-10-42 and #401-21-47-10-21



Filter Holder Accessories

Wrench Set

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

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

Please refer to the Savillex website for additional specialty filtration assemblies.

Fittings

Ferrule Nuts

- Ferrule nuts provide for leak-free tubing connections
- Ferrule cap nuts are used to seal off tubing connections
- Vent nut accepts 9 mm filter membrane or PTFE/silicone laminated septa
- Gripper made of carbon-filled ETFE
- Tubing can be found on page 40

Tube Size		Part Number	Description
1/8" OD	A	750-FN2	Knurled Ferrule Nut
		751-FN2	Hex Ferrule Nut
	B	750-FP2	Knurled Ferrule Cap Nut
		751-FP2	Hex Ferrule Cap Nut
1/4" OD	C	750-FN4	Knurled Ferrule Nut
	D	751-FN4	Hex Ferrule Nut
		750-FP4	Knurled Ferrule Cap Nut
		751-FP4	Hex Ferrule Cap Nut
	E	751-GN4-1	Hex Ferrule Nut, Gripper Style
		750-FN4V	Knurled Vent Nut (Accepts 9mm vent membrane)
3/8" OD		750-FN6	Knurled Ferrule Nut
		751-FN6	Hex Ferrule Nut
	F	750-FP6	Knurled Ferrule Cap Nut
		751-FP6	Hex Ferrule Cap Nut
		751-GN6-1	Hex Ferrule Nut, Gripper Style
1/2" OD		750-FN8	Knurled Ferrule Nut
		751-FN8	Hex Ferrule Nut
	G	750-FP8	Knurled Ferrule Cap Nut
	H	751-FP8	Hex Ferrule Cap Nut
5/8" OD		750-FN10	Knurled Ferrule Nut
	I	750-FP10	Knurled Ferrule Cap Nut
3/4" OD		751-FN12	Hex Ferrule Nut
4 mm		830-FN4M	Knurled Ferrule Nut
6 mm		830-FP4M	Knurled Ferrule Cap Nut
		830-FN6M	Knurled Ferrule Nut

Connector Fittings

- 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 connnections

	Leg 1	Leg 2	Part Number
A	1/8" OD Tube	1/8" FNPT	751-FC2-2N
	1/4" OD Tube	1/4" FNPT	751-FC4-4N
	1/4" OD Tube	1/8" MNPT	751-C4-2N
B	1/4" OD Tube Knurled Ferrule Nut	1/4" MNPT	750-C4-4N
C	3/8" OD Tube	1/4" MNPT	750-C6-4N
	1/2" OD Tube	3/8" MNPT	751-C8-6N
	1/2" OD Tube	1/2" MNPT	751-C8-8N

Union Fittings

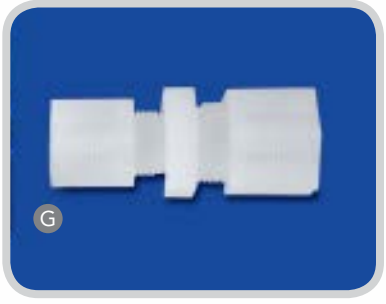
- Straight unions are used to connect same size tubing

	Leg 1	Leg 2	Part Number
	1/8" OD Tube	1/8" OD Tube	751-SU2N
	1/4" OD Tube	1/4" OD Tube	750-SU4N
	1/4" OD Tube Gripper Nut	1/4" MNPT	751-C4-4GN-1
D	3/8" OD Tube	3/8" OD Tube	751-SU6N
E	1/2" OD Tube	1/2" OD Tube	751-SU8N
F	4 mm	4 mm	750-SU4MN

Reducer Fittings

- Straight union reducers are used to connect different size tubing

	Leg 1	Leg 2	Part Number
	1/4" OD Tube	1/8" OD Tube	750-SU4-2N
	1/2" OD Tube	1/8" OD Tube	751-SU8-2N
	3/8" OD Tube	1/4" OD Tube	750-SU6-4N
	1/2" OD Tube	1/4" OD Tube	751-SU8-4N
	1/2" OD Tube	1/4" OD Tube, Gripper Nut	751-SU8-4GN-1
G	1/2" OD Tube	3/8" OD Tube	751-SU8-6N
	5/8" OD Tube	1/2" OD Tube	750-SU10-8N



Fittings

Elbow Fittings

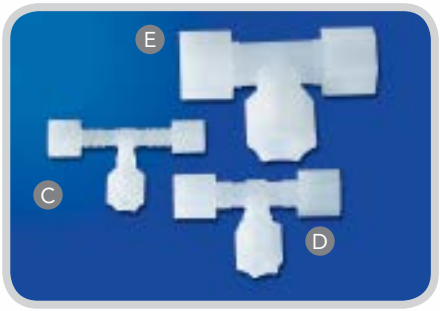
- Male elbow can be added to a vessel or closure to provide a tubing connection
- Union elbow can be used to connect same size tubing
- Union elbow reducer can be used to connect tubing of different sizes

	Fitting Type	Leg 1	Leg 2	Part Number
	Male	1/4" OD Tube, Gripper Nut	1/8" MNPT	751-E4-2GN-1
	Male	1/4" OD Tube	1/4" MNPT	750-E4-4N
A	Male	3/8" OD Tube	1/4" MNPT	751-E6-4N
B	Union	1/4" OD Tube	1/4" OD Tube	751-UE4N
	Union	3/8" OD Tube	3/8" OD Tube	751-UE6N
	Union	1/2" OD Tube	1/2" OD Tube	751-UE8N
	Reducer	1/4" OD Tube	1/8" OD Tube	751-UE4-2N
	Reducer	3/8" OD Tube	1/4" OD Tube, Gripper Nut	751-UE6-4GN-1
	Reducer	1/2" OD Tube	1/4" OD Tube	751-UE8-4N

Tee Fittings

- Union tees are used to connect same size tubing

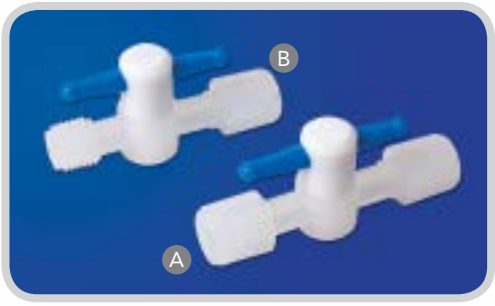
	Leg 1	Leg 2	Leg 3	Part Number
C	1/8" OD Tube	1/8" OD Tube	1/8" OD Tube	751-UT2N
D	1/4" OD Tube	1/4" OD Tube	1/4" OD Tube	750-UT4N
	1/4" OD Tube, Gripper Nut	1/4" OD Tube, Gripper Nut	1/4" OD Tube, Gripper Nut	751-UT4GN-1
	3/8" OD Tube	3/8" OD Tube	3/8" OD Tube	751-UT6N
E	1/2" OD Tube	1/2" OD Tube	1/2" OD Tube	751-UT8N



Stopcock Valves

- Used to control fluid stream between tubing connections
- All parts in contact with the fluid stream are PFA and PTFE
- Stopcocks can be added to the side or bottom of vessels for drainage. Contact Savillex for details.
- Pressure rating: 50 PSI up to 150°F/66°C

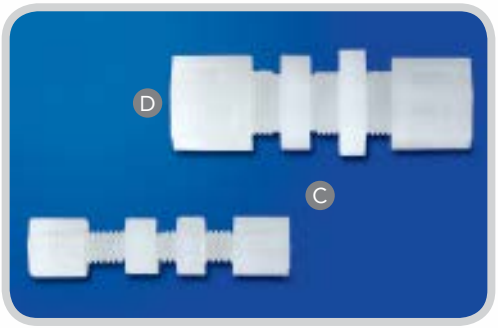
* CAUTION: **Subtract 1 PSI from 50 PSI for every 2°F/1°C rise above 150°F/66°C**



	Leg 1	Leg 2	Part Number
	1/8" OD Tube	1/8" MNPT	751-PVT2-2-2
	1/8" OD Tube	1/8" OD Tube	751-PVT2-T2-2
	1/4" OD Tube	1/8" MNPT	750-PVT4-2-2
	1/4" MNPT	1/4" MNPT	751-PV4-4-2
A	1/4" OD Tube	1/4" OD Tube	750-PVT4-T4-2
B	1/4" OD Tube	1/4" MNPT	750-PVT4-4-2

Panel Mount Fittings

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



	Leg 1	Leg 2	Part Number
C	1/8" OD Tube	1/8" OD Tube	751-PM2N
	1/4" OD Tube	1/4" OD Tube	751-PM4N
D	3/8" OD Tube	3/8" OD Tube	751-PM6N
	1/2" OD Tube	**1/2" OD Tube**	**750-PM8N**

Fittings Accessories

Membranes

- Porous PTFE membranes can be used with 1/4" OD vent nut, #750-FN4V (see page 19)

	Part Number	Description
E	450-09-3	Membranes, 9 mm, 1-2 micron, 10 per pack

General Labware

Beakers

- Griffin-style
- Flat exterior bottom aids in heat transfer

	Volume	Part Number	Description
A	50 ml	700-720	Graduated
B	125 ml	700-730	Graduated
C	250 ml	700-740	Graduated
D	500 ml	700-750	Graduated

Containers/Trays

	Part Number	Description
E	700-100	50 mm petri dish
F	700-125	100 mm petri dish
G	700-150	100 ml evaporating dish
H	700-900	Tray with cover, 1-1/2" x 3-1/4" x 3/4"
I	700-925	Tray, 1" x 4" x 3/4"
J	700-950	Tray, 6" x 4" x 2"
K	700-960	Pot, 2400 ml, 6" diameter
L	700-961	Pot cover for part number 700-960, 6" diameter

Funnels

Volume	Part Number
40 ml	700-440
80 ml	700-480

Wash Bottles

- All PFA construction
- Includes PFA closure and stem for contamination free dispensing
- Part number 200-905-50 can be used as tip cover

	Volume	Part Number	Description
M	500 ml	710-500	PFA bottle with closure

General Labware

Volumetric Flasks

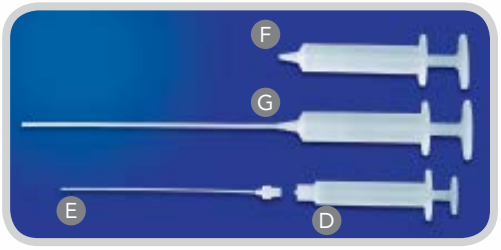
- Class A tolerance rating per DIN EN ISO 1042
- Volumetric flasks include threaded PFA closure

	Volume	Part Number	Description
	10 ml	710-001-010	PFA flask with threaded closure
	25 ml	710-001-025	PFA flask with threaded closure
	50 ml	710-001-050	PFA flask with threaded closure
A	100 ml	710-001-100	PFA flask with threaded closure
	250 ml	710-001-250	PFA flask with threaded closure
	500 ml	710-001-500	PFA flask with threaded closure

Other Labware

	Part Number	Description	Volume
	700-200	Sieve with 12 mm openings	-
B	700-225	Sieve with 1 mm openings	-
C	700-240	Dipper	40 ml
D	700-510	Syringe, with leur lock	10 ml
E	700-511	Syringe dispense tube for 10 ml syringe,male leur lock	-
F	700-520	Syringe with tube connector	20 ml
G	700-521	Syringe with permanent retrieve-dispense tube	20 ml
	700-600	Pipette tip, 8 mm	-
	700-706	Drop-in insert for 6 place well plate	-
H	700-712	Drop-in insert for 12 place well plate	-
	700-724	Drop-in insert for 24 place well plate	-
I	700-850	Tongs, adjustable grip width	-

Shown with Jar #100-0500-01



Impingers

Impingers

- Used for the collection of airborne hazards into a liquid medium
- 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
- 2.3 mm orifice accessory available as a push-in insert for 1/2" tube port
- Impingers include closure

	Volume	Part Number	Includes Closure	Interior	Diameter x Height (mm) (with closure)	Replacement Closure Size
A	60 ml	201-060-12-033-26	600-033-26 (2) 1/8" OD tube ports, one on top, one on side	—	30.7 x 174.0	33 mm
B	60 ml	201-060-12-033-27	600-033-27 (2) 1/8" OD tube ports, PFA insert and Ultem® clamp	—	30.7 x 177.6	33 mm
	60 ml	201-060-12-033-36	600-033-36 (2) 1/4" OD tube ports, one on top, one on side	—	30.7 x 174.0	33 mm
C	60 ml	201-060-12-033-37	600-033-37 (2) 1/4" OD tube ports, PFA insert and Ultem® clamp	—	30.7 x 173.5	33 mm
	375 ml	501-375-02-058-42	600-058-42 (2) 1/2" OD tube ports	—	58.2 x 330.0	58 mm

— = Flat Interior

Replacement Closures for Impingers

	Part Number (2) 1/8" OD tube ports, one top, one side	Part Number (2) 1/8" OD tube ports, PFA insert and Ultem® clamp	Part Number (2) 1/4" OD tube ports, one top, one side	Part Number (2) 1/4" OD tube ports, PFA insert and Ultem® clamp	Part Number (2) 1/4" OD tube ports	Part Number (2) 1/2" OD tube ports
33 mm	600-033-26	600-033-27	600-033-36	600-033-37		
58 mm					600-058-33	600-058-42

Impinger Accessories

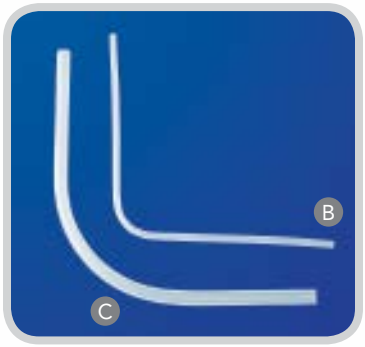
Wrench Set

- Glass polypropylene wrench set used to tighten connections on impingers

	Part Number	Description	Use with
A	730-0057	Wrench set	375 ml impingers

Tube Bends

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



	Part Number	Description	Use with
B	730-2505	90° tube bend with 1/4" OD	60 ml impingers
	730-2506	180° tube bend with 1/4" OD	60 ml impingers
	730-5071	180° tube bend with 1/2" OD, full depth	375 ml impingers
	730-5073	90° tube bend with 1/2" OD, full depth	375 ml impingers
C	730-5075	90° tube bend with 1/2" OD, 6" legs	375 ml impingers

Jars

Standard Jars

- Maximum service temperature of PFA is 500°F/260°C
- Wrench available to assist with tightening
- Closures and vessels sold separately

	Volume	Part Number	Diameter x Height (mm) (with closure)	Accepts Closure	Pressure Rating at 100˚F/38˚C*
	60 ml	100-0060-01	50.5 x 49.5	53 mm	10 PSI
A	90 ml	100-0090-01	50.3 x 68.6	53 mm	10 PSI
	120 ml	100-0120-01	66.3 x 54.6	70 mm	3 PSI
B	180 ml	100-0180-01	66.8 x 75.7	70 mm	3 PSI
C	180 ml (tall)	100-0180-02	50.5 x 127.3	53 mm	10 PSI
	240 ml	100-0240-01	66.8 x 96.8	70 mm	3 PSI
D	300 ml	100-0300-01	85.6 x 78.7	89 mm	3 PSI
E	350 ml	100-0350-01	107.0 x 64.8	110 mm	3 PSI
F	360 ml	100-0360-00	85.6 x 84.0	89 mm	3 PSI
	500 ml	100-0500-01	85.6 x 121.4	89 mm	3 PSI
G	500 ml	100-0500-03	85.6 x 121.9	89 mm	3 PSI
H	1000 ml	100-1000-01	107.7 x 152.9	110 mm	3 PSI
I	1000 ml	100-1000-03	107.7 x 152.9	110 mm	3 PSI
J	2000 ml	100-2000-01	107.1 x 273.4	110 mm	3 PSI

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

Standard Jar Closures

Closure Size	Part Number	Part Number	Part Number	Part Number
	Plain Threaded	(2) 1/8" OD tube ports	(2) 1/4" OD tube ports	Recessed for Nomex® Tabs
53 mm	600-053-01	600-053-20	600-053-28	600-053-71
70 mm	600-070-01	600-070-20	600-070-28	600-070-71
89 mm	600-089-01	600-089-20	600-089-28	600-089-71
110 mm	600-110-01	600-110-20	600-110-28	600-110-71

***Nomex® tabs sold separately**

Modifications may be available upon request

Dimensions available online for download

Sealed Jars

- 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

	Volume	Part Number	Description	Diameter x Height (mm)	Ports Accept	Pressure Rating at 100°F/38°C*
A	10 ml	102-0010-01	Sealed jar	25.9 x 77.7	(2) 1/8" OD tube	100 PSI
B	125 ml	102-0125-01	Sealed jar	50.0 x 128.5	(2) 1/4" OD tube	50 PSI
	475 ml	102-0475-01	Sealed jar	85.1 x 115.6	(2) 1/4" OD tube	25 PSI
C	475 ml	102-0475-03	Sealed jar with 3/8" OD x 7/8" long drain tube molded at bottom	85.1 x 115.6	(2) 1/4" OD tube	25 PSI
D	1100 ml	102-1100-01	Sealed jar	107.2 x 168.1	(2) 1/4" OD tube	25 PSI
	1100 ml	102-1100-03	Sealed jar with 1/2" OD x 7/8" long drain tube molded at bottom	107.7 x 163.8	(2) 1/4" OD tube	25 PSI

*** CAUTION: For every 2°F/1°C increase above 100°F/38°C, reduce PSI 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
E	730-0046	Concave support screen	100-0060-01 100-0090-01 100-0180-01	44.5 mm OD x 21.0 mm height
	700-650	PFA screen	-	82.5 mm OD x 3.5 mm thick

Jars

Jar Accessories, continued

Nomex® Tabs

- Record important data on tabs of Nomex® which can be snapped into recessed closures
- Nomex® tabs are rated to 428°F/220°C

	Part Number	Detail
A	730-0100	Packaged in bags of 100

6" Latex Rubber Gripper

- Aids in handling and securing PFA products

	Part Number	Description
B	730-0059	6" gripper

PFA Marking Pen

- Made by Staedtler®

	Part Number	Description
C	730-0400	Black pen, 0.6 mm line width
D	730-0401	Red pen, 0.6 mm line width

Wrench

- Polypropylene wrench provides assistance in tightening jars

	Part Number	Description
	730-0051	53 mm
E	730-0052	70 mm
	730-0053	89 mm
	730-0054	110 mm

Microcolumns

Standard Microcolumns

- PFA microcolumns commonly used for ion exchange chromatography, geochemistry and nuclear applications
- Other sizes available - contact us for more information
- Frits not included and must be ordered separately

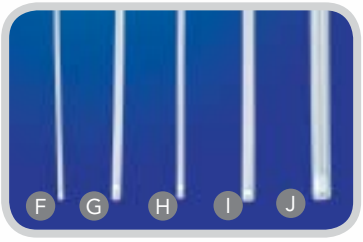
	Reservoir Volume	Part Number	Capillary Dimension	Capillary Length	Accepts Frit	Accepts Closure	
						Part Number	Description
A	2 ml	220-002-015-032-15	1.5mm ID x 3.2mm OD	15 cm	730-0015	600-012-81	Press-on
	2 ml	220-002-024-040-15	2.4mm ID x 4.0mm OD	15 cm	730-0024	600-012-81	Press-on
B	5 ml	220-005-032-047-20	3.2mm ID x 4.7mm OD	20 cm	730-0032	600-024-01	Plain threaded
						600-024-23	(2) 1/8" push-in side ports
						600-024-71	Recessed threaded
C	6 ml	220-006-024-040-15	2.4mm ID x 4.0mm OD	15 cm	730-0024	600-023-01	Plain threaded
D	15 ml	220-015-040-063-20	4.0mm ID x 6.3mm OD	20 cm	730-0040	600-033-01	Plain threaded
						600-033-23	(2) 1/8" push-in side ports
						600-033-71	Recessed threaded
E	30 ml	220-030-064-096-25	6.4mm ID x 9.6mm OD	25 cm	730-0064	600-033-01	Plain threaded
						600-033-23	(2) 1/8" push-in side ports
						600-033-71	Recessed threaded

Microcolumn Accessories

Frits

- Insert a frit into the bottom of the column to retain ion exchange resin
- Hydrophobic (PTFE)
- Choose the frit size to match the column or make your own from frit material listed below

	Part Number	Description	Thickness
F	730-0015	1.5 mm diameter frit, PTFE, 10-30 micron	2.5 mm +/- 0.25 mm
G	730-0024	2.4 mm diameter frit, PTFE, 10-30 micron	2.5 mm +/- 0.25 mm
H	730-0032	3.2 mm diameter frit, PTFE, 10-30 micron	2.5 mm +/- 0.25 mm
I	730-0040	4.0 mm diameter frit, PTFE, 10-30 micron	2.5 mm +/- 0.25 mm
J	730-0064	6.4 mm diameter frit, PTFE, 10-30 micron	8.4 mm +/- 0.25 mm
	730-0065	1 square inch PTFE frit material, 10-30 micron	2.5 mm +/- 0.25 mm
	730-0148	1 square inch PTFE frit material, 15-20 micron	2.0 mm +/- 0.25 mm



Modifications may be available upon request

Pressure Vessels

Pressure Vessels

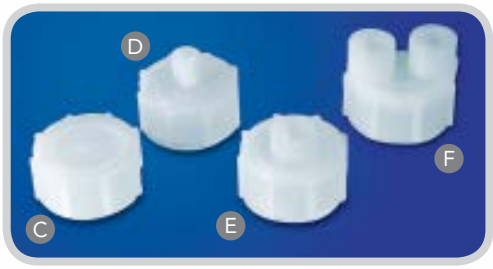
- Heavy wall construction
- Can be used with column components
- Larger volume sizes are available. Contact Savillex for details.
- Closures sold separately
- Grooved tubing or gripper nuts are recommended for pressurized applications

	Volume	Part Number	Pressure Rating	Accepts Closure	Base Diameter x Height (mm)
A	750 ml	325-0075-01	75 PSI	58 mm with 1-1/2" MNPT threads	106.7 x 164.3
	1000 ml	325-1000-01	75 PSI	58 mm with 1-1/2" MNPT threads	106.7 x 220.7
B	2000 ml	325-2000-01	75 PSI	58 mm with 1-1/2" MNPT threads	106.7 x 361.4

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

Pressure Vessel Closures

	Style	Part Number	Ports	Diameter x Height (mm)
C	58 mm with 1-1/2" FNPT threads	600-058-06	None	58.2 x 28.7
D	58 mm with 1-1/2" FNPT threads	600-058-16	(1) 1/4" OD tube port	58.2 x 46.2
E	58 mm with 1-1/2" FNPT threads	600-058-17	(1) 1/4" FNPT port	58.2 x 39.1
	58 mm with 1-1/2" FNPT threads	600-058-19	(1) 3/8" OD tube port	58.2 x 51.8
	58 mm with 1-1/2" FNPT threads	600-058-24	(2) 1/8" OD tube ports	58.2 x 43.4
	58 mm with 1-1/2" FNPT threads	600-058-33	(2) 1/4" OD tube ports	58.2 x 46.5
F	58 mm with 1-1/2" FNPT threads	600-058-42	(2) 1/2" OD tube ports	58.2 x 43.8



Pressure Vessel Accessories

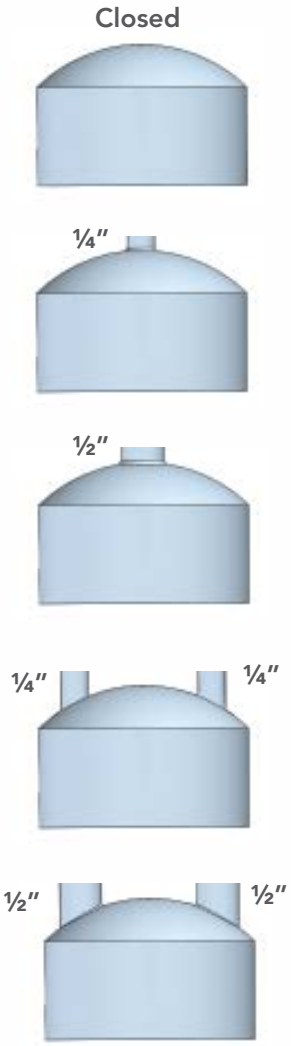
Part Number	Description
730-0055	Glass polypropylene wrench set
730-0059	6" latex rubber gripper

Custom Pressure Vessels

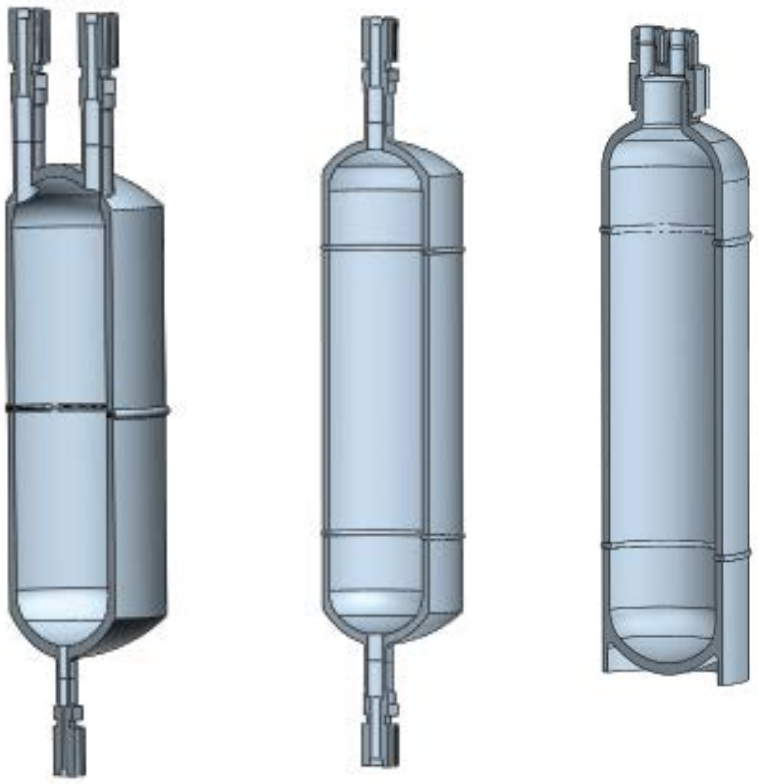
Custom Pressure Vessels

- In addition to our standard pressure vessel product offering, we also have the in-house capability to make custom configured pressure vessels to meet your specific volumes/lengths and fitting needs.
  - Pressure vessels are 4.20" OD x 3.70" ID x customer defined length
  - 75 PSI pressure rating up to 100°F
  - Fittings are ¼" pipe and ½" pipe sizes
  - Welded fitting adaptors available in tubing flare, MNPT, FNPT
- Please see some of our custom capabilities below and contact us to discuss your custom pressure vessel needs.

End Cap Options

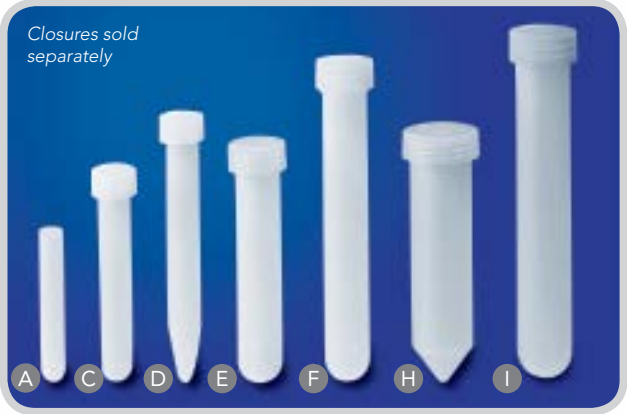


Custom Pressure Vessel Examples



Tubes

Standard Tubes



- Maximum service temperature of PFA is 500°F/260°C
- Tubes can be autoclaved
- PFA tubes are non-breakable
- Closures sold separately

	Volume	Part Number	Top Opening	Interior	Opening Diameter x Height (mm) (with closure)	Accepts Closure	
						Part Number	Description
A	5 ml	210-005-21	Open	U	11.9 x 74.9	NA	-
B	14 ml	210-014-21	Open	U	16.0 x 99.8	NA	-
C	15 ml	210-015-20	Threaded	U	16.0 x 113.0	600-018-01	Plain threaded
D	15 ml	210-015-30	Threaded	V	16.0 x 129.3	600-018-01	Plain threaded
E	26 ml	210-026-20	Threaded	U	21.6 x 116.1	600-024-01 600-024-23 600-024-71	Plain threaded (2) 1/8" ports Recessed
F	32 ml	210-032-20	Threaded	U	20.1 x 153.4	600-024-01 600-024-23 600-024-71	Plain threaded (2) 1/8" ports Recessed
G	50 ml	210-050-20	Threaded		28.4 x 122.7	600-029-01	Plain threaded
H	50 ml	210-050-30	Threaded	V	28.4 x 119.4	600-029-01	Plain threaded
I	60 ml	210-060-20	Threaded	U	25.9 x 168.7	600-028-01	Plain threaded

V = Conical Interior U = Rounded Interior

Recessed closure with Nomex® tab (tabs sold separately)

Dimensions available online for download

Block Digestion Tubes

- PFA tubes compatible with block digestion systems
- Designed for ultratrace applications when traditional polypropylene digestions tubes are not clean enough
- Maximum service temperature of PFA is 500°F/260°C
- Thin walled for maximum heat transfer
- PFA closures sold separately
- Can also be used for long term sample storage

	Volume	Part Number	Top Opening	Interior	Base Diameter x Height (mm) (with closure)	Accepts Closure	
						Part Number	Description
A	4 ml	210-004-20	Threaded	U	15.2 x 46.2	600-023-01	Plain threaded
B	10 ml	210-010-30	Threaded	V	26.2 x 40.6	600-033-01	Plain threaded
						600-033-23	(2) 1/8" push-in side ports
						600-033-26	(2) 1/8" ports, one top, one side
						600-033-71	Recessed
	17 ml	210-017-20	Threaded	U	26.2 x 40.6	600-033-01	Plain threaded
						600-033-23	(2) 1/8" push-in side ports
						600-033-26	(2) 1/8" ports, one top, one side
						600-033-71	Recessed
C	25 ml	210-025-30	Threaded	V	26.2 x 78.5	600-033-01	Plain threaded
						600-033-23	(2) 1/8" push-in side ports
						600-033-26	(2) 1/8" ports, one top, one side
						600-033-71	Recessed
D	55 ml	210-055-11	Open	—	30.2 x 109.5	-	-
E	60 ml	210-060-70	Threaded	—	29.5 x 132.6	600-033-01	Plain threaded
						600-033-23	(2) 1/8" push-in side ports
						600-033-26	(2) 1/8" ports,one top, one side
						600-033-71	Recessed
F	75 ml	210-075-11	Open	—	34.5 x 104.4	600-038-89	Push-in plug
G	150 ml	210-150-11	Open	—	38.1 x 218.4	-	-

V = Conical Interior U = Rounded Interior — = Flat Interior

Microcentrifuge Tubes

See Microcentrifuge Vials, page 44.

Dimensions available online for download

Tubing

PFA Coiled Tubing

- Maximum service temperature of PFA is 500°F/260°C
- Coiled tubing is flexible and translucent
- Most sizes available in 5', 25', or 100' coils
- Fittings can be found on page 24

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

FEP Coiled Tubing

- Maximum service temperature of FEP is 392°F/200°C
- Coiled tubing is flexible and translucent
- Available in 5', 25', or 100' coils
- Fittings can be found on page 24

OD	ID	Part Number	Part Number	Part Number
		5' Length	25' Length	100' Length
1/8"	1/16"	760-2-062-125-005	760-2-062-125-025	760-2-062-125-100
1/4"	5/32"	760-2-156-250-005	760-2-156-250-025	760-2-156-250-100
3/8"	1/4"	760-2-250-375-005	760-2-250-375-025	760-2-250-375-100
1/2"	3/8"	760-2-375-500-005	60-2-375-500-025	760-2-375-500-100

Tubing

PFA Straight Tubing

- PFA straight tube lengths can be used for microcolumn capillaries and rigid tubing applications
- All straight tubing sold in lengths of 24”
- Fittings can be found on page 24

OD	ID	Part Number
3/32”	1/32”	761-1-031-094
1/8”	1/16”	761-1-062-125
5/32”	3/32”	761-1-094-156
3/16”	1/8”	761-1-125-187
1/4”	5/32”	761-1-156-250
1/4”	3/16”	761-1-188-250
3/8”	1/4”	761-1-250-375
3/8”	5/16”	761-1-312-375
1/2”	3/8”	761-1-375-500
5/8”	1/2”	761-1-500-625

Tubing Accessories

Groove Tool

- Forms grooves in PFA and FEP tubing which allows fittings to tighten more securely
- Prevents failure at elevated pressures
- Select the appropriate tool for the tubing OD

Size	Part Number
1/8”	730-0002
1/4”	730-0004
3/8”	730-0006
1/2”	730-0008

Vials

Standard Vials

- Used typically for storage and also digestion in geochemistry
- Flat base for maximum heating efficiency
- Select the interior shape to suit the application
- Square exterior vials with hex closures have higher pressure rating
- Fin exterior vial used for microdistillation
- Maximum service temperature of PFA is 500°F/260°C
- Closures sold separately on page 43. Vial trays available on page 45.

	Volume	Part Number	Interior	Exterior	Base Diameter x Height (with closure)	Accepts Closure Size	Tray Size	Pressure Rating*
	3 ml	200-003-12	—	□	17.3 x 26.4	23 mm	21 mm	60 PSI
A	3 ml	200-003-20	U	□	17.3 x 26.4	23 mm	21 mm	60 PSI
	3 ml	200-003-30	V	□	17.3 x 26.4	23 mm	21 mm	60 PSI
B	5 ml	200-005-12	—	O	22.1 x 33.3	24 mm	21 mm	25 PSI
	5 ml	200-005-20	U	O	22.1 x 33.3	24 mm	21 mm	25 PSI
	5 ml	200-005-30	V	O	22.1 x 33.3	24 mm	21 mm	25 PSI
C	5 ml	200-005-32	V	M	22.1 x 33.3	24 mm	21 mm	25 PSI
D	6 ml	200-006-20	U	□	17.8 x 46.5	24 mm	21 mm	25 PSI
E	7 ml	200-007-10	—	O	22.1 x 37.1	24 mm	21 mm	25 PSI
	7 ml	200-007-20	U	O	22.1 x 37.1	24 mm	21 mm	25 PSI
	7 ml	200-007-30	V	O	22.1 x 37.1	24 mm	21 mm	25 PSI
F	15 ml	200-015-12	—	O	30.5 x 41.1	33 mm	29 mm	10 PSI
	15 ml	200-015-20	U	O	30.5 x 41.4	33 mm	29 mm	10 PSI
	15 ml	200-015-30	V	O	30.5 x 41.4	33 mm	29 mm	10 PSI
G	22 ml	200-022-12	—	O	30.5 x 55.6	33 mm	29 mm	10 PSI
	22 ml	200-022-20	U	O	30.5 x 56.1	33 mm	29 mm	10 PSI
	22 ml	200-022-30	V	O	30.5 x 55.6	33 mm	29 mm	10 PSI
H	30 ml	200-030-12	—	O	30.5 x 69.9	33 mm	29 mm	10 PSI
	30 ml	200-030-20	U	O	30.5 x 70.1	33 mm	29 mm	10 PSI
	30 ml	200-030-30	V	O	30.5 x 79.0	33 mm	29 mm	10 PSI
	60 ml	200-060-12	—	O	30.7 x 133.9	33 mm	29 mm	10 PSI
	60 ml	200-060-20	U	O	30.7 x 132.1	33 mm	29 mm	10 PSI
I	60 ml	200-060-30	V	O	30.7 x 132.1	33 mm	29 mm	10 PSI

V = Conical Interior U = Rounded Interior _ = Flat Interior

O = Round Exterior □ = Square Exterior M = Fin Exterior

*Pressure rating at 100°F/38°C

CAUTION: For every 2°F/1°C increase above 100°F/38°C, reduce pressure rating by 1 PSI.

Shown with wrench set and socket cap (see page 45)

Rounded Interior | Conical Interior | Flat Interior

Round Exterior | Square Exterior | Fin Exterior

Modifications may be available upon request

Dimensions available online for download

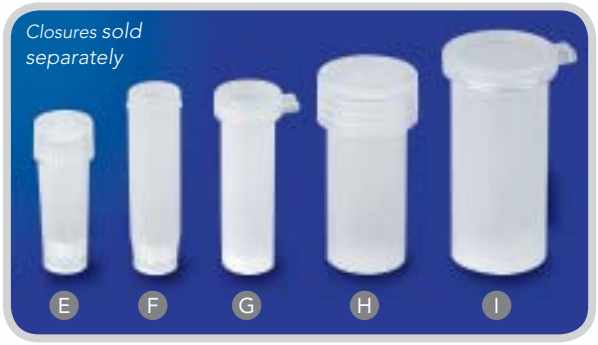
Vials

Standard Vial Closures

Closure Size	Part Number Plain Hex Threaded	Part Number Plain Threaded	Part Number Recessed for Nomex® Tabs*	Part Number (2) 1/8" Push-In Side Ports
23 mm	600-023-01	-	-	-
24 mm	-	600-024-01	600-024-71	600-24-23
33 mm	-	600-033-01	600-033-71	600-033-23

*Nomex® tabs sold separately

Autosampler Vials

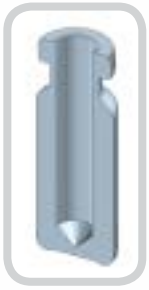


- PFA vials for GFAA and ICP-MS autosamplers
- Significantly lower metal background than polypropylene vials
- Crimp top vials accept standard 11 mm crimp caps

	Volume	Part Number	Interior	Diameter x Height (mm) (with closure)	Accepts Closure	
					Part Number	Description
A	.2 ml	200-902-41	V	11.5 x 32.4	crimp top	
B	.2 ml	200-902-40	V	11.4 x 34.5	600-008-01	standard threaded
					600-008-72	septum
					600-008-80	pierceable
C	.5 ml	200-905-43	U	11.5 x 32.4	crimp top	
D	.5 ml	200-905-42	U	11.4 x 34.3	600-008-01	standard threaded
					600-008-72	septum
					600-008-80	pierceable
	1.3 ml	200-913-44	V	12.2 x 39.4	600-013-85	set-on with knob
	1.5 ml	200-915-44	V	12.7 x 31.5	600-012-81	press on
E	2 ml	200-002-44	V	12.2 x 43.7	600-012-81	press on
F	4 ml	200-004-44	V	14.2 x 60.2	600-012-81	press on
G	4 ml	200-004-13	—	15.0 x 52.3	600-018-88	snap on
H	13 ml	200-013-14	—	22.1 x 56.1	600-024-01	standard threaded
					600-024-23	(2) 1/8" push in side ports
					600-024-71	recessed
I	20 ml	200-020-13	—	26.7 x 61.5	600-031-88	snap on

V = Conical Interior U= Straight Interior — = Flat Interior

Straight Inside Threaded Top



Straight Inside Crimp Top

Conical Inside Threaded Top

Conical Inside Press On Top

Conical Inside Open Top

Vials

Microcentrifuge Vials

	Volume	Part Number	Interior	Diameter x Height (mm) (with closure)	Accepts Closure
A	.50 ml	200-905-50	V	7.8 x 30.9	600-008-83
B	1.5 ml	200-915-50	V	12.7 x 42.3	600-011-83

V = Conical Interior

Specialty Vials

- Low volume digestion vials
- Designed specifically for geochemistry use

	Volume	Part Number	Interior	Diameter x Height (mm) (with closure)	Accepts Closure
C	.20 ml	200-902-60	U	7.9 x 18.7	600-010-82
D	.35 ml	200-904-61	—	15.6 x 30.4	600-015-84

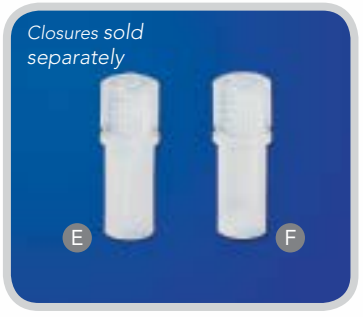
U = Rounded Interior — = Flat Interior

Forensic Vials

- Designed for long-term storage of DNA
- Improves sample recovery over standard PP vials
- Test data available at www.savillex.com

	Volume	Part Number	Interior	Diameter x Height (mm) (with closure)	Accepts Closure	
					Part Number	Description
E	.20 ml	200-702-42	U	10.7 x 34.5	600-008-01	plain threaded
					600-008-80	pierceable
					600-008-72	septum
F	.50 ml	200-705-42	U	10.7 x 34.5	600-008-01	plain threaded
					600-008-80	pierceable
					600-008-72	septum

U = Straight Interior



Vial Accessories

Nomex® Tabs

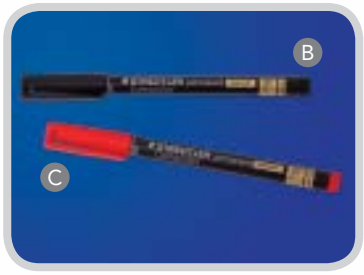
- Write sample information on Nomex® tab and snap tab into recessed closure
- Nomex® can be used over a wide temperature range
- Tabs must be trimmed when used with 24 mm closure

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

PFA Marking Pen

- Write on PFA easily with these pens
- Made by Staedtler®

	Part Number	Description
B	730-0400	Black pen, 0.6 mm line width
C	730-0401	Red pen, 0.6 mm line width



Socket Cap

- Ultem socket cap fits over closure
- Allows higher torque to be applied to closure to increase pressure rating of vial

	Part Number	Description	Use with
D	730-5132	Socket cap	23 mm closure

Wrench Set

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

Part Number	Description	Use with
730-5131	Wrench set	Square exterior vials

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
E	730-0026	Support Screen	15, 22, 30 and 60 ml vials	23.6 mm OD x 14.2 mm height

Trays

- Molded polypropylene trays have 10 numbered compartments and slots for two ID cards
- Trays are heat resistant to 248°F/120°C

	Part Number	Description	Length x Width x Height (mm)
F	730-2001	Tray with 21 mm opening	174.8 x 86.7 x 17.8
G	730-2002	Tray with 29 mm opening	217.7 x 86.7 x 32.3

Closures

Replacement Closures

Product Category	Closure Location
Bottle Closures	Pages 7 & 8
Column Component Closures	Page 11
Digestion Vessel Closures	Page 13
Impinger Closures	Page 30
Microcentrifuge Vial Closures	Page 44
Pressure Vessel Closures	Page 36
Standard Jar Closures	Page 32
Standard Microcolumn Closures	Page 35
Standard Tube Closures	Page 38
Block Digestion Tube Closures	Page 39
Standard Vial Closures	Page 43
Autosampler Vial Closures	Page 43
Specialty Vial Closures	Page 44
Forensic Vial Closures	Page 44

ACID PURIFICATION

www.savillex.com

Acid Purification

DST-1000 Acid Purification System

The DST-1000 produces high purity (10ppt) grade acid from trace metal (1ppb) grade, and can be used to purify HNO3, HCl or HF. Extremely easy to use, compact system that requires no cooling water. The DST-1000 operates unattended, producing 500mL of high purity acid in approximately 12 hours, and quickly pays for itself. All PFA chamber with integrated heater and 1L Purillex™ PFA collection bottle with membrane vent to prevent airborne contamination. Provides a continuous supply of freshly produced, high purity acid suitable for the most demanding semiconductor and geochemical applications.

	Voltage	Part Number	Volume
A	100 Volt	525-1000-100	1000 ml
A	115 Volt	525-1000-115	1000 ml
A	230 Volt	525-1000-230	1000 ml
A	230 Volt	525-1000-230UK (UK "type G" plug)	1000 ml

1L PFA bottle with transfer closure included with system. Additional PFA bottles available on page 7.

DST-1000 Accessories

	Part Number	Description
B	730-0525	Polypropylene tray, 10" x 20" x 1-5/8"
C	730-0660	Bottle bracket (included with system)
	450-09-3	9 mm PTFE membrane, 1-2 micron pore size

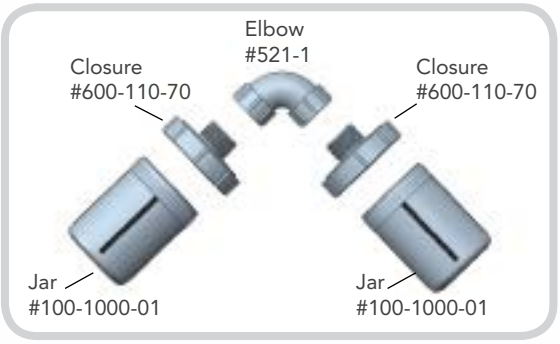
Analyte	Detection Limit (ppt)	Commercial High Purity Acid Analysis	Starting Acid Used for Distillation	DST Distilled Acid Analysis
Li	< 1	< 1	< 1	< 1
Na	< 1	< 1	205	6
Mg	< 1	2	27	< 1
AL	< 1	8	113	6
K	< 1	3	35	3
Ca	< 1	9	39	2
Cr	< 1	1	41	3
Fe	< 1	1	120	9
Ni	< 1	< 1	65	1
Cu	< 1	< 1	43	2
Zn	< 1	2	19	3
W	< 1	< 1	21	2
Mo	< 1	1	2	1
Ti	< 1	3	67	6
Co	< 1	< 1	21	< 1
Mn	< 1	< 1	6	< 1
Zr	< 1	< 1	2	< 1
Ag	< 1	< 1	< 1	< 1
Cd	< 1	< 1	< 1	< 1
Sn	< 1	< 1	2	< 1
Cs	< 1	< 1	< 1	< 1
Ba	< 1	< 1	4	< 1
Pb	< 1	< 1	1	< 1

Performance data available at www.savillex.com.

Acid Purification

Classic Purification Components

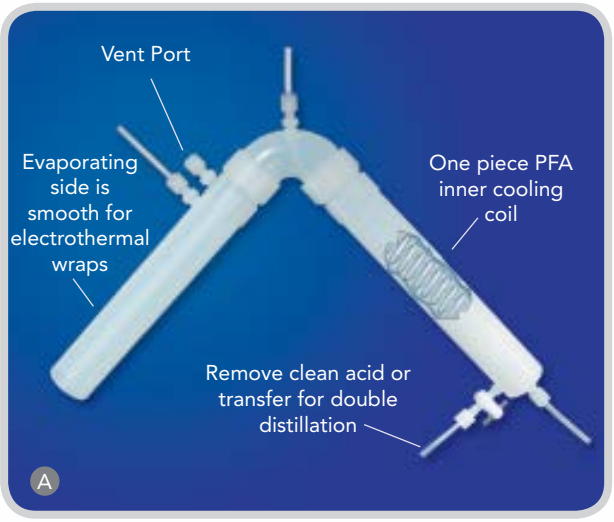
- To build your own sub-boiling still using the 1000 ml jar, select the following components:
  - Jars (quantity 2)
  - Elbow
  - 110 mm closure (quantity 2)
- Classic stills require external heating and cooling (not included)



Classic Purification Assemblies

- One piece inner PFA coil inserted in cooling side
- Plain vessel has smooth surface for use with electrothermal wraps on evaporating side
- Classic assemblies require external heating and cooling (not included)

Part Number	Volume	Description
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



Classic Purification Accessories

Part Number	Description
730-0057	58 mm wrench set for 375 ml assemblies
450-09-03	9 mm PTFE membrane, 1-2 micron pore size

Build your own classic still by choosing from a variety of components.
Visit the "Classic Sub-Boiling Stills" page online at www.savillex.com.

ICP SAMPLE INTRODUCTION

www.savillex.com

Micro-Concentric Nebulizers (C-Flow Range)

The C-Flow PFA microconcentric nebulizers feature a unique, precision molded two-piece construction giving great reproducibility in performance. The C-Flow nebulizers combine high sensitivity with ruggedness and of course are chemically inert. The C-Flow range comprises of four microconcentric versions (35, 50, 100 and 200uL/min uptake rate) for semiconductor and microsample use.

All microconcentric C-Flows feature integrated uptake lines and are available with an integrated polyimide autosampler probe that fits Agilent I-AS, CETAC ASX 110/112 and ESI SC autosamplers. Custom uptake line lengths and probe lengths are available. Special versions of the C-Flow 200, 100 and 50 are also available for use with desolvators. These versions are assembled and tested at 110°C to ensure optimum performance at elevated temperature. They are supplied as standard with the CETAC Aridus II, and can also be used with the ESI Apex or Nu Instruments DSN-100. For desolvator use, the C-Flow versions "for CETAC Aridus II" should be used.

Uptake Rate	Part Number	Description
35µl/min	800-1-003-01-00	C-Flow 35 nebulizer
35µl/min	800-1-003-02-00	C-Flow 35 nebulizer with autosampler probe
50µl/min	800-1-005-01-00	C-Flow 50 nebulizer
50µl/min	800-1-005-02-00	C-Flow 50 nebulizer with autosampler probe
50µl/min	800-1-005-03-00	C-Flow 50 nebulizer for CETAC Aridus II
100µl/min	800-1-010-01-00	C-Flow 100 nebulizer
100µl/min	800-1-010-02-00	C-Flow 100 nebulizer with autosampler probe
100µl/min	800-1-010-03-00	C-Flow 100 nebulizer for CETAC Aridus II
200µl/min	800-1-020-01-00	C-Flow 200 nebulizer
200µl/min	800-1-020-02-00	C-Flow 200 nebulizer with autosampler probe
200µl/min	800-1-020-03-00	C-Flow 200 nebulizer for CETAC Aridus II

C-Flow Micro-Concentric Range – Key Benefits

- Chemically compatible with every sample type that could be analyzed by ICP-MS
- High sensitivity, efficient gas/liquid energy transfer and fine aerosol
- Lower background than glass nebulizers (lower boron DL with ICP-MS)
- Better reproducibility from nebulizer to nebulizer and longer lifetime than other PFA nebulizers
- Designed for use in free-aspiration mode. Narrowest free aspiration uptake rate specification.
- Integrated uptake line - zero dead volume for very fast washout
- Easy to unclog by backflushing - no wires or flushing tools required

Full C-Flow model range guide and technical notes available for download online

Nebulizers

Concentric Nebulizers (C-Flow 700d)

The C-Flow 700d is perhaps the first truly universal nebulizer. Equally suited to both ICP-OES and ICP-MS, the C-Flow 700d has high sensitivity yet is tolerant of very high matrix samples and can be pumped over a wide sample uptake range. It also features the usual C-Flow benefits of high sensitivity, ultra low blank, zero dead volume, fast washout and unmatched chemical inertness.

The C-Flow 700d is designed to be pumped and has a removable uptake line for full flexibility and is connected to the nebulizer body with a Savillex PFA zero dead volume (ZDV) connector which ensures a perfect connection every time. The ID of the uptake line is constant at 0.3mm from the sample to the nebulizer tip, making the nebulizer extremely resistant to blockages. The C-Flow 700d can be operated from 0.6LPM to 1LPM gas flow and is compatible with both ICP-OES and ICP-MS.

C-Flow 700d – Key Benefits

- Chemically compatible with every ICP-OES and ICP-MS sample type
- High sensitivity, efficient gas/liquid energy transfer and fine aerosol
- Lower background than glass nebulizers (lower boron DL with ICP-MS)
- Better reproducibility, longer lifetime than other PFA nebulizers
- Easy to unclog by backflushing - no wires or flushing tools required
- Interchangeable uptake line with Savillex ZDV fitting ensures very fast washout and reproducible connection
- Unmatched salt (25% TDS) and particulate (80uM diameter) tolerance
- Wide range of flow rates: 0.2 - 1.2mL/min
- Free aspirates - can be used for organics that attack pump tubing

C-Flow 700d

Uptake Rate	Part Number	Description
700µl/min	800-2-070-01-00	C-Flow 700d nebulizer

C-Flow 700d Accessories

Description	Part Number
Replacement Uptake Line	830-050

Full C-Flow model range guide and technical notes available for download online

Cross Flow Nebulizers (X-Flow)

X-Flow PFA nebulizers are molded from a single piece of PFA, including the gas and sample orifices, eliminating the need for platinum or sapphire inserts. The nebulizer body has an integrated end cap that fits any 35mm diameter Scott type spray chamber. With unmatched resistance to clogging, the X-Flow is ideal for routine high matrix applications and with HF containing samples. Available with uptake lines in three different internal diameters, and with an optional make-up gas port.

X-Flow Nebulizer without make-up gas port

Uptake Rate	Part Number	Description
100µl/min	810-1-010-00-00	X-Flow 100 nebulizer
100µl/min	810-1-010-01-00	X-Flow 100 nebulizer with make-up gas port
400µl/min	810-1-040-00-00	X-Flow 400 nebulizer
400µl/min	810-1-040-01-00	X-Flow 400 nebulizer with make-up gas port
1000µl/min	810-1-100-00-00	X-Flow 1000 nebulizer
1000µl/min	810-1-100-01-00	X-Flow 1000 nebulizer with make-up gas port

X-Flow Nebulizer with make-up gas port

The available sample uptake lines for the X-Flow are as follows:

Free aspiration uptake rate µ/min	Inner Diameter (mm)
100	0.38
400	0.51
1000	0.76

X-Flow Range – Key Benefits

- All PFA construction for the highest chemical resistance
- PFA gas and sample uptake orifices
- Fully integrated end cap fits any 35mm Scott-type spray chamber
- Can be pumped or free aspirated
- Virtually clog resistant
- Zero dead volume sample line fitting for fast washout

Full X-Flow model range guide and technical notes available for download online

PFA Inert Kits

Agilent Technologies ICP-MS

Inert Kit without O_2 Gas Port

- Kits consist of a PFA Scott-type spray chamber, connecting tube and PFA injector holder, fitted to a genuine Agilent quartz torch
- 35mm ID spray chamber with inner tube creating a true double-pass design, which reduces signal fluctuations, improves RSDs and lowers detection limits
- O-ring free, push fit connector
- Optimized drain fitting design prevents build up of liquid, eliminating signal fluctuation
- 7700 and 8800 Series versions include O_2/HMI gas port on the connecting tube
- Available with solid platinum or high purity sapphire injectors

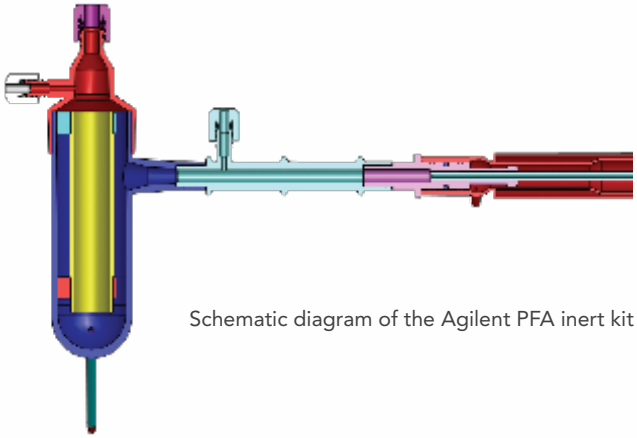
7500 Series

Injector Size	Injector Type	Part Number
1.5mm	Platinum with O_2 gas port	850-011-100637
1.5mm	Sapphire with O_2 gas port	850-011-100636
2.5mm	Platinum	850-011-100635
2.5mm	Sapphire	850-011-100634

Inert Kit with O_2 Gas Port

7700/8800 Series

Injector Size	Injector Type	Part Number
1.5mm	Platinum with O_2 gas port	850-011-100700
1.5mm	Sapphire with O_2 gas port	850-011-100698
2.5mm	Platinum with O_2 / HMI gas port	850-011-100701
2.5mm	Sapphire with O_2 / HMI gas port	850-011-100699



Schematic diagram of the Agilent PFA inert kit

Cross-reference guide and technical notes available for download online

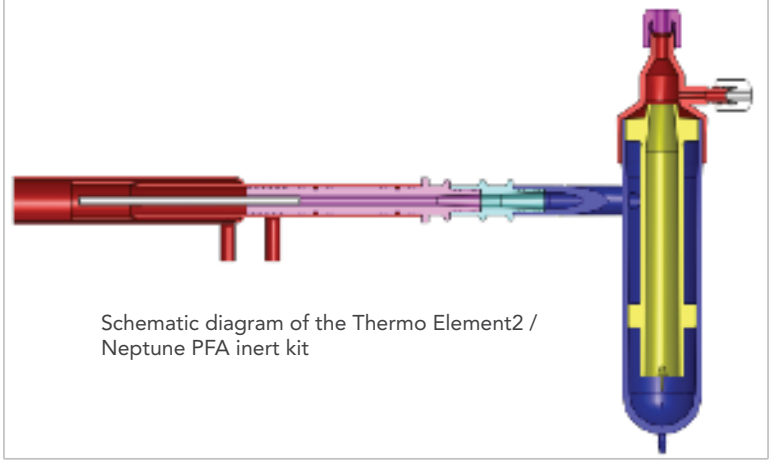
PFA Inert Kits

Thermo Scientific ICP-MS

- Kits consist of a PFA Scott-type spray chamber, connecting tube and PFA injector holder, fitted to a semi demountable quartz torch
- 35mm ID spray chamber with inner tube creating a true double-pass design, which reduces signal fluctuations, improves RSDs and lowers detection limits
- O-ring free, push fit connector
- Optimized drain fitting design prevents build up of liquid, eliminating signal fluctuation
- Available with solid platinum or high purity sapphire injectors

Element 2/Neptune

Injector Size	Injector Type	Part Number
1.8mm	Platinum	850-011-100706
1.8mm	Sapphire	850-011-100707



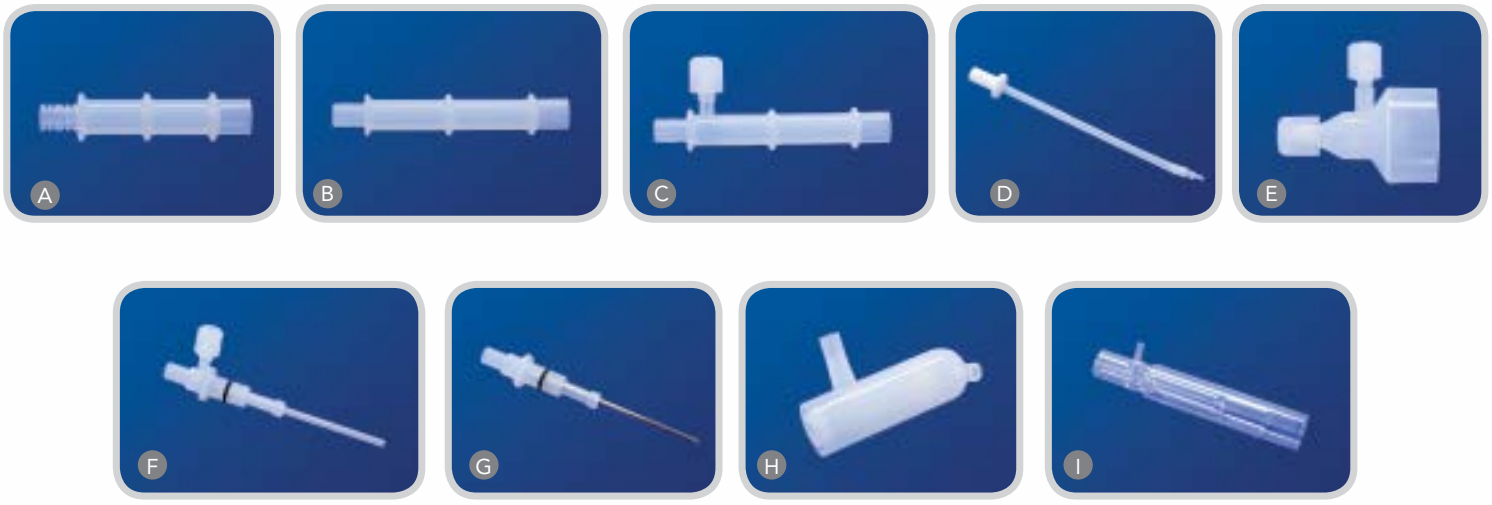
Schematic diagram of the Thermo Element2 / Neptune PFA inert kit

Technical notes available for download online

Spare Parts

Agilent Technologies ICP-MS

	Description	7500	7700/8800	Part Number
A	Connector tube, short	x		851-011-100552
B	Connector tube, long		x	851-011-100622
C	Connector tube with O_2/HMI gas port		x	851-011-100676
D	Drain tube fitting	x		851-011-100551
	Drain tube fitting		x	851-011-100674
E	End cap with make-up gas port	x	x	851-011-100550
	1.5mm platinum injector assembly		x	851-011-100673
F	1.5mm sapphire injector assembly with O_2 port	x		851-011-100629
	1.5mm platinum injector assembly with O_2 port	x		851-011-100639
	1.5mm sapphire injector assembly		x	851-011-100672
	2.5mm sapphire injector assembly	x	x	851-011-100627
G	2.5mm platinum injector assembly	x	x	851-011-100628
H	Spray chamber	x	x	851-011-100549
I	Quartz torch	x		851-011-100581
	Quartz torch		x	851-011-100702



Spare Parts

Thermo Element2/Neptune

	Description	Part Number
	Connector tube	851-011-100712
	End cap with make-up gas port	851-011-100550
	1.8mm platinum injector assembly	851-011-100709
	1.8mm sapphire injector assembly	851-011-100708
A	Spray chamber	851-011-100711
	Quartz torch	**851-011-100713**

General

	Description	Part Number
B	Straight union, 4mm knurled	750-SU4MN
C	Gas tubing, 4mm OD, PFA	830-031
	100µl X-Flow uptake line assembly	830-040
	400µl X-Flow uptake line assembly	830-041
	1000µl X-Flow uptake line assembly	**830-042**

Acid Purification

DST-1000 Acid Purification System

The DST-1000 produces high purity (10ppt) grade acid from trace metal (1ppb) grade, and can be used to purify HNO3, HCl or HF. Extremely easy to use, compact system that requires no cooling water. The DST-1000 operates unattended, producing 500mL of high purity acid in approximately 12 hours, and quickly pays for itself. All PFA chamber with integrated heater and 1L Purillex™ PFA collection bottle with membrane vent to prevent airborne contamination. Provides a continuous supply of freshly produced, high purity acid suitable for the most demanding semiconductor and geochemical applications.

	Voltage	Part Number	Volume
A	100 Volt	525-1000-100	1000 ml
A	115 Volt	525-1000-115	1000 ml
A	230 Volt	525-1000-230	1000 ml
A	230 Volt	525-1000-230UK (UK "type G" plug)	1000 ml

1L PFA bottle with transfer closure included with system. Additional PFA bottles available on page 7.

DST-1000 Accessories

	Part Number	Description
B	730-0525	Polypropylene tray, 10" x 20" x 1-5/8"
C	730-0660	Bottle bracket (included with system)
	450-09-3	9 mm PTFE membrane, 1-2 micron pore size

Analyte	Detection Limit (ppt)	Commercial High Purity Acid Analysis	Starting Acid Used for Distillation	DST Distilled Acid Analysis
Li	< 1	< 1	< 1	< 1
Na	< 1	< 1	205	6
Mg	< 1	2	27	< 1
AL	< 1	8	113	6
K	< 1	3	35	3
Ca	< 1	9	39	2
Cr	< 1	1	41	3
Fe	< 1	1	120	9
Ni	< 1	< 1	65	1
Cu	< 1	< 1	43	2
Zn	< 1	2	19	3
W	< 1	< 1	21	2
Mo	< 1	1	2	1
Ti	< 1	3	67	6
Co	< 1	< 1	21	< 1
Mn	< 1	< 1	6	< 1
Zr	< 1	< 1	2	< 1
Ag	< 1	< 1	< 1	< 1
Cd	< 1	< 1	< 1	< 1
Sn	< 1	< 1	2	< 1
Cs	< 1	< 1	< 1	< 1
Ba	< 1	< 1	4	< 1
Pb	< 1	< 1	1	< 1

Performance data available at www.savillex.com.

Labware for Trace Metal Analysis

Purillex™ PFA Bottles

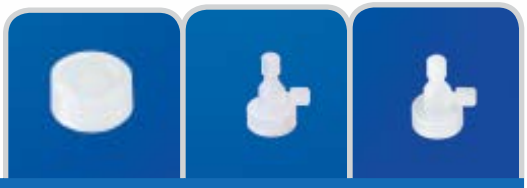
- No secondary sealing required
- Easy pour, drip-proof lip
- Bottles include plain threaded closure
- 100 ml - 2000 ml bottles accept GL45 closure. 50 ml bottle accepts 33mm closure.
- USP class VI certified
- Bottle and closure made of PFA

	Volume	Part Number	Includes Closure	Base Diameter x Height (mm)	Replacement Closure Thread Size
A	50 ml	150-01-0050	600-033-01 plain threaded	36.6 x 79.9	33mm
B	100 ml	150-01-0100	600-045-01 GL45 plain threaded	55.6 x108.5	GL45
C	250 ml	150-01-0250	600-045-01 GL45 plain threaded	69.9 x 146.1	GL45
D	500 ml	150-01-0500	600-045-01 GL45 plain threaded	85.1 x 160.3	GL45
E	1000 ml	150-01-1000	600-045-01 GL45 plain threaded	101.1 x 218.4	GL45
F	2000 ml	150-01-2000	600-045-01 GL45 plain threaded	127.3 x 248.1	GL45

Purillex™ bottles are manufactured in a clean room environment.

Replacement Closures for Purillex™ PFA Bottles

Thread	Part Number PFA Plain threaded	Part Number PFA (2) 1/8" OD tube ports	Part Number PFA (2) 1/4" OD tube ports	Part Number PFA (2) 1/4" OD tube ports with vent nut
GL45	600-045-01	600-045-26	600-045-36	600-045-46



Thread	Part Number PFA Plain threaded	Part Number PFA (2) 1/8" OD tube ports	Part Number PFA (2) 1/4" OD tube ports
33mm	600-033-01	600-033-26	600-033-36

Additional bottle information is available online at www.savillex.com.

Dimensions available online for download

Labware for Trace Metal Analysis

Purillex™ FEP Bottles

- No secondary sealing required
- Easy pour, drip-proof lip
- Bottles include plain threaded closure
- 100 ml - 2000 ml bottles accept GL45 closure. 50 ml bottle accepts 33mm closure.
- USP class VI certified
- Bottle and closure made of FEP

	Volume	Part Number	Includes Closure	Base Diameter x Height (mm)	Replacement Closure Thread Size
A	50 ml	150-02-0050	600-033-02 plain threaded	36.6 x 79.9	33mm
B	100 ml	150-02-0100	600-045-02 GL45 plain threaded	55.6 x108.5	GL45
C	250 ml	150-02-0250	600-045-02 GL45 plain threaded	69.9 x 146.1	GL45
D	500 ml	150-02-0500	600-045-02 GL45 plain threaded	85.1 x 160.3	GL45
E	1000 ml	150-02-1000	600-045-02 GL45 plain threaded	101.1 x 218.4	GL45
F	2000 ml	150-02-2000	600-045-02 GL45 plain threaded	127.3 x 248.1	GL45

Replacement Closures for Purillex™ FEP Bottles

Thread	Part Number FEP Plain threaded	Part Number PFA (2) 1/8" OD tube ports	Part Number PFA (2) 1/4" OD tube ports	Part Number PFA (2) 1/4" OD tube ports with vent nut
GL45	600-045-02	600-045-26	600-045-36	600-045-46

Thread	Part Number FEP Plain threaded
33mm	600-033-02

Additional bottle information is available online at www.savillex.com.

Dimensions available online for download

Labware for Trace Metal Analysis

Volumetric Flasks

- Class A tolerance rating per DIN EN ISO 1042
- Volumetric flasks include threaded PFA closure

	Volume	Part Number	Description
	10 ml	710-001-010	PFA flask with threaded closure
	25 ml	710-001-025	PFA flask with threaded closure
	50 ml	710-001-050	PFA flask with threaded closure
A	100 ml	710-001-100	PFA flask with threaded closure
	250 ml	710-001-250	PFA flask with threaded closure
	500 ml	710-001-500	PFA flask with threaded closure

Containers/Trays

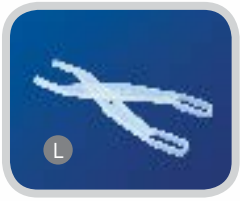
	Part Number	Description
B	700-100	50 mm petri dish
C	700-125	100 mm petri dish
D	700-150	100 ml evaporating dish
E	700-900	Tray with cover, 1-1/2" x 3-1/4" x 3/4"
F	700-925	Tray, 1" x 4" x 3/4"
G	700-950	Tray, 6" x 4" x 2"
	700-960	Pot, 2400 ml, 6" diameter
	700-961	Pot cover for part number 700-960, 6" diameter

Beakers

	Volume	Part Number	Description
H	50 ml	700-720	Graduated
I	125 ml	700-730	Graduated
J	250 ml	700-740	Graduated
K	500 ml	700-750	Graduated

Other Labware

	Part Number	Description
L	700-850	PFA tongs with adjustable grip
M	700-0400	Staedtler® PFA marking pen, Black
N	700-0401	Staedtler® PFA marking pen, Red



Labware for Trace Metal Analysis

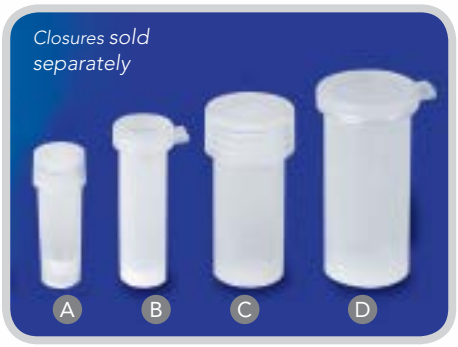
PFA Autosampler Vials - Agilent I-AS Autosampler

The I-AS autosampler is supplied with polypropylene (PP) vials, except for the 1.5ml PFA vials (Agilent part # G3160-65317) for use with Tray type D. PFA is preferred for semiconductor use. Savillex manufactures PFA alternatives for the majority of the polypropylene vials, including the rinse jar. See the table below for original part numbers and Savillex PFA alternatives.

Agilent Part #	Description	Savillex PFA equivalent	Volume (mL)	Note
G3160-65317	1.5mL Vials (PFA) for Tray D	200-915-44	1.5	
G3160-65315	2mL Vials (PE) for Tray D	200-002-44	2	
G3160-65303	6mL Vials (PP) for Tray A & E	200-004-13	4	Savillex vial is 4mL, Agilent vial is 6mL
G3160-65304	18mL Vials (PP) for Tray B, D, E	200-013-14	13	Savillex vial is 13mL, Agilent vial is 16mL
G3160-65307	100mL rinse jar (PP) with lids	100-0090-01	90	Savillex # is for jar only (90mL)
		600-053-01	na	Savillex # is for lid only (no hole)

	Volume	Part Number	Interior	Diameter x Height (mm) (with closure)	Accepts Closure	
					Part Number	Description
A	1.5 ml	200-915-44	V	12.7 x 31.5	600-012-81	press on
B	2 ml	200-002-44	V	12.2 x 43.7	600-012-81	press on
C	4 ml	200-004-13	—	15.0 x 52.3	600-018-88	snap on
D	13 ml	200-013-14	—	22.1 x 56.1	600-024-01	standard threaded
					600-024-23	(2) 1/8" push in side ports
					600-024-71	recessed

V = Conical Interior — = Flat Interior



CUSTOM MOLDING

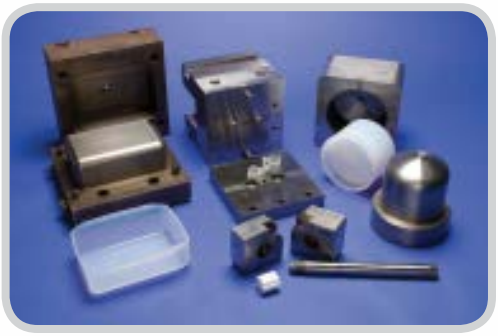
www.savillex.com

Custom Molding

Capabilities and 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:

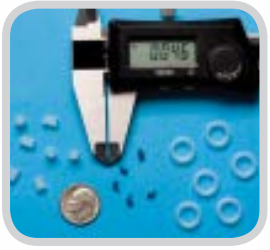
- Injection molding of very small to large sizes
- Ability to manufacture simple to complex designs
- Wide range of materials: PFA, FEP, ETFE, ECTFE, PVDF, PP
- Insert and overmolding capabilities
- In-house tooling including tool design, fabrication, and the ability to make changes and modifications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

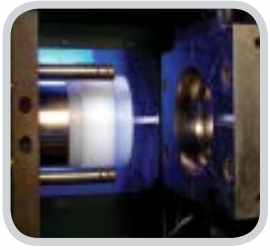


Markets Served

Savillex is committed to partnering with you to find reliable, cost-effective solutions for your custom and contract molding needs. Demonstrated by our 35-plus years of experience, we have produced quality custom products and components that support and enable technologies in the following industries:

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





Service and 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!

Go to www.savillex.com

Click on Custom Molding, then Request a Quote

MODIFIED PRODUCTS

www.savillex.com

Modified Products

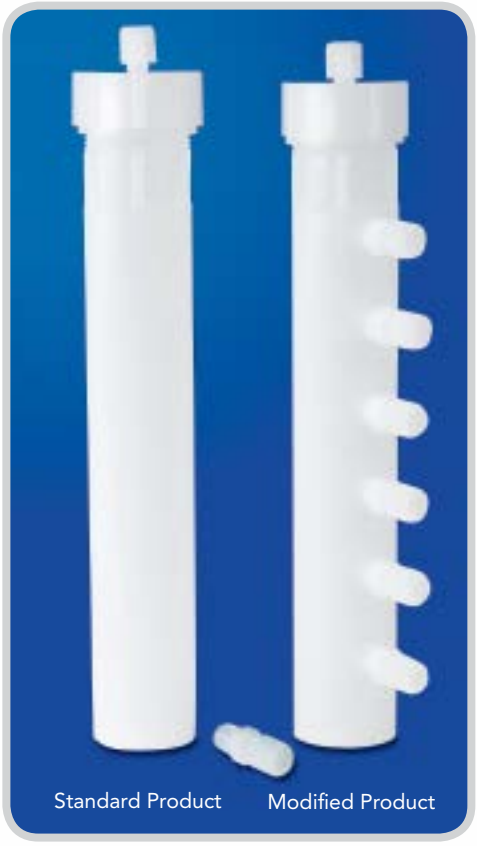
Modified Products

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

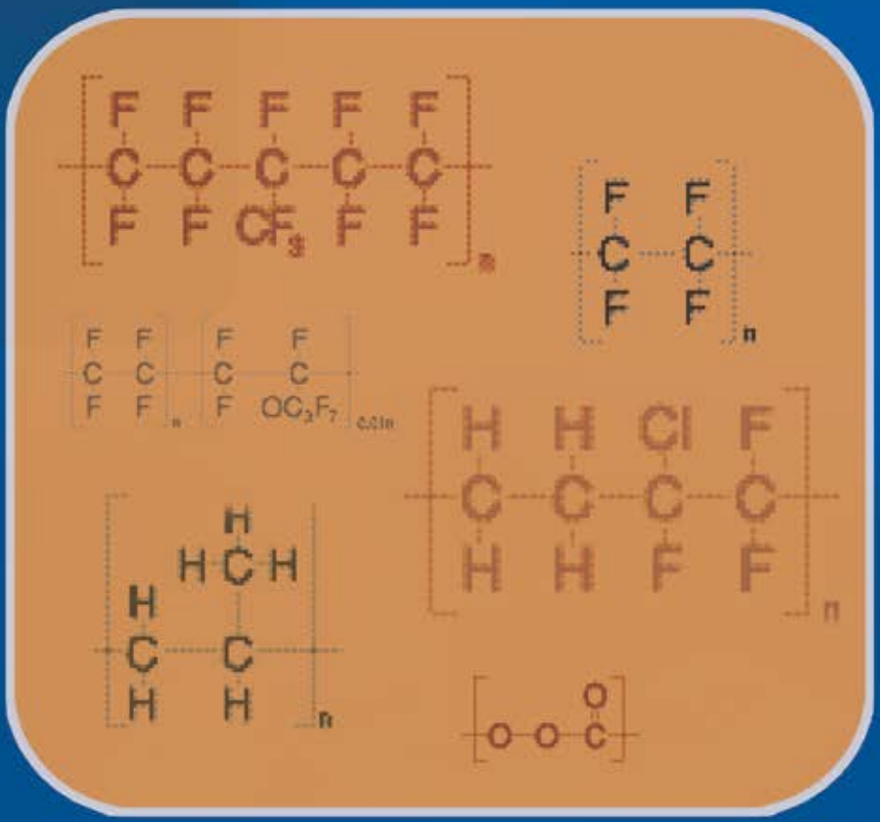
Modified products can include:

- adding fittings
- molding in a different color
- laser marking
- machining parts to fit specific equipment
- 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.**



TECHNICAL GUIDE

www.savillex.com

Technical Guide

General Technical Specifications

Working temperature

The working temperature of PFA is -328°F/-200°C to 500°F/260°C; however, this is dependent upon the specific product being used. Contact Savillex for more information.

PSI ratings

All PSI ratings are given at 100°F/38°C unless otherwise stated. For every 2°F/ 1°C increase above 100°F/ 38°C, reduce pressure rating by 1 PSI.

Wrench tightening of containers and closures

Wrench tightening is defined as utilizing a wrench to tighten a closure a specified amount beyond hand tight to achieve maximum sealing performance. Contact Savillex for specific guidelines if needed.

Sterility and cleaning

Savillex PFA products are not precleaned or sterilized prior to shipping. Please see the table on page 70 for a list of sterilization techniques and page 71 for parts cleaning protocol.

FDA and USP Class VI Compliance for PFA

Raw PFA (Perfluoroalkoxy) resin is manufactured by several companies. Each manufacturer of PFA also has several different grades of PFA resin. Most "high purity" grades of PFA resin are compliant with both FDA and USP Class VI criteria.

Savillex uses numerous suppliers and various grades of PFA in our manufacturing processes, and there is not a specific product or group of products that we manufacture with the goal or intention of meeting USP or FDA guidelines. If you require a specific part or parts manufactured with a PFA resin that meets FDA and USP Class VI criteria, we can work with you to accommodate this request.

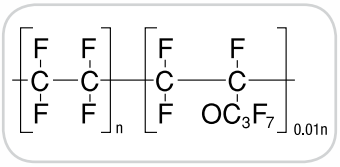
Please note however, that PFA resins that meet FDA or USP Class VI criteria may be significantly more expensive compared to PFA resins that do not meet these criteria. Also, USP Class VI compliance may require that the actual molded part be tested and certified as opposed to only the resin. Any testing or certification of Savillex parts are the responsibility of the end user.

Materials

Fluoropolymers

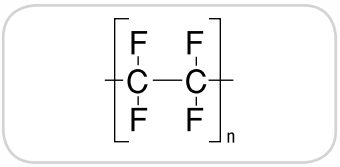
As your fluoropolymer expert, Savillex has experience in processing all of the materials listed below.

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 -328°F/-200°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.



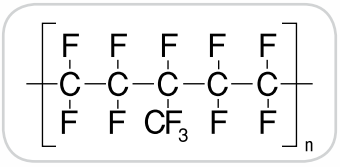
PFA

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 temperatures of over 500°F/260°C. Its resistance to solvents is excellent throughout a wide range of temperatures. 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.



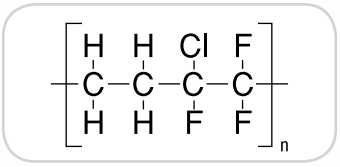
PTFE

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 -328°F/-200°C to 392°F/200°C and may be sterilzed repeatedly.



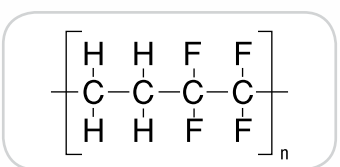
FEP

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.



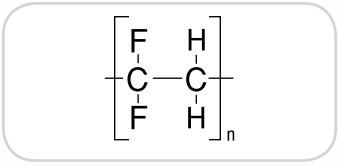
ECTFE

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.



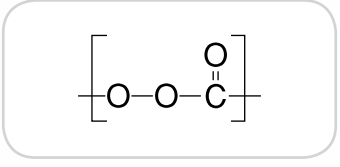
ETFE

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

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.

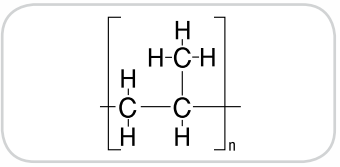


PEEK

Materials, continued

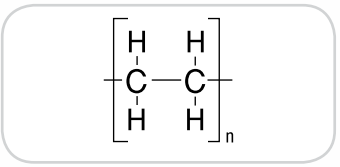
Non-Fluoropolymers

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 inter-molecular 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

	PFA	PTFE	FEP	ECTFE	ETFE	PVDF	PEEK	HDPE	PP
APPLICATION PROPERTIES									
Upper Service Temperature	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	120°C 248°F	135°C 275°F
Lower Service Temperature	-200°C -328°F	-200°C -328°F	-200°C -328°F	-100°C -148°F	-105°C -157°F	-62°C -80°F	NA NA	-100°C -148°F	0°C 32°F
Appearance	Translucent	Opaque	Translucent	Translucent (white)	Translucent (white)	Opaque	Opaque	Opaque	Translucent
Microwave Resistance	Yes	Yes	Marginal	Yes	Yes	Marginal	Yes	No	Yes
STERILIZATION PROPERTIES									
Autoclavable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Dry Heat	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Gas (EtOH)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chemical Disinfection	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Gamma Radiation	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
E-beam	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
MECHANICAL PROPERTIES									
Flex Resistance	Excellent	Excellent	Excellent	Poor	Good	Poor	Poor	Very Good	Good
Organic Solvent Compatibility	Excellent	Excellent	Excellent	Very Good	Very Good	Very Good	Very Good	Good	Good
Acid Resistance	Excellent	Excellent	Excellent	Very Good	Very Good	Very Good	Very Good	Good	Good
Coefficient of Friction	0.2	.05 - 0.1	.08 - 0.3	0.65	0.3 - 0.4	0.2 - 0.4	0.25	0.3	0.3 - 0.5
Water Absorption / 24 h	<0.03%	<0.01%	<0.01%	<0.01%	<0.03%	<0.04%	<0.05%	<0.01%	<0.02%
Melting Point	302°C 576°F	320°C 608°F	275°C 527°F	242°C 467°F	265°C 509°F	141°C 286°F	343°C 649°F	125°C 257°F	160°C 320°F

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 HNO3 and HCI (7+2) or only with HNO3 (7%) for one day or leave overnight.
3. Rinse four times with UHP de-ionized water.
4. Fill again with acid mixture HNO3 and HCI (7+2) or only with HNO3 (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 drying.

   Use only ultra pure acids (purified by sub-boiling distillation), e.g. HF, HNO3 and HCI.

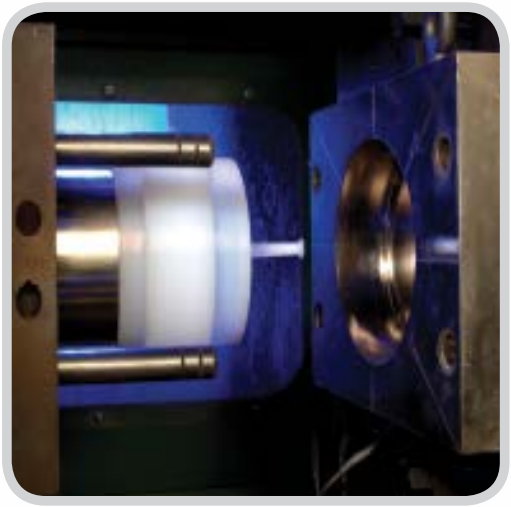
Method 2

1. Fill with 1 + 1 HCI (AR grade).
2. Allow to stand one week at 80°C.
3. Empty and rinse with distilled water.
4. Fill with 1 + 1 HNO3 (AR grade).
5. Allow to stand one week at 80°C.
6. Empty and rinse with distilled water.
7. Fill with purest available distilled water.
8. Allow to stand several weeks or until needed, changing water periodically to ensure continued cleaning.
9. 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

Limited Warranty

Limited Warranty



Savillex warrants its products against defects in materials and workmanship for 90 days from the time of shipment to the end-user. The warranty coverage excludes product damage which Savillex determines is due to accident, misuse, lack of responsible care or physical modification of its product.

Savillex makes no warranty, express or implied, with respect to any components, products, information or services provided by any third party.

The end-user's warranty rights are subject to Savillex being promptly notified in writing upon discovery of a warranty claim with a detailed explanation of the defect and verification of the defect by Savillex. Savillex will consider claims submitted during the warranty period and up to 30 days thereafter. Upon confirmation of defects by Savillex, the end-user's exclusive remedy shall be for Savillex, at its option, to repair or replace the defective product, or to refund the price paid by the buyer for such product. This remedy is subject to return of the defective product to Savillex or its agent, freight prepaid.

Full Terms and Conditions can be found at www.savillex.com.

Savillex

Your Fluoropolymer Solutions Partner

Savillex Corporation
10321 West 70th St. | Eden Prairie, MN 55344-3446
Phone: 952.935.4100 | Fax: 952.936.2292
Email: info@Savillex.com

www.savillex.com