

# *Filtration Apparatus*

An Improved Apparatus for Laboratory Vacuum Filtration



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# *An Improved Apparatus for Laboratory Vacuum Filtration*



A safer, more stable solution to Vacuum Filtration. Out with silicone stoppers, collars and clamps. In with Ace-Thred™ funnel to filter flask couplings and Ace-Safe™ hose connections. Not only does the threaded connection between the funnel and the filter flask increase the effectiveness of the vacuum seal, it also offers a rigidity between the two that will increase the safety aspect of the entire apparatus if chain clamped to a stand.

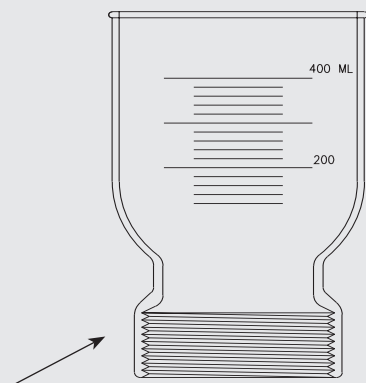
The funnel to filter flask couplings are designed to accept 25mm, 47mm or 75mm filter membranes. Choose the apparatus size that fits your need.

The complete unit is supplied with a porosity B (70-100 micron) fritted glass filter membrane support, however one may optionally order from a variety of glass, polypropylene, nylon or PTFE supports.

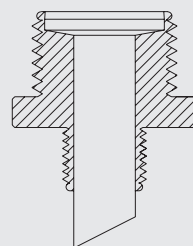
## **Features:**

- No Clamps, no leakage, no misalignment
- Easy to remove filter support, simple to clean, simple to change porosity
- Better membrane surface area utilization, e.g. 45mm of 47mm membrane will be exposed
- Funnel/flask coupling is available in either Nylon or PTFE
- Designed for 25mm, 47mm and 75mm membrane filters

# A Unique Concept in Lab Filtration Apparatus



Nylon adapters are standard, PTFE is optional.



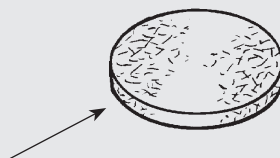
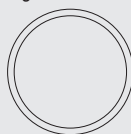
## No clamp, no leakage!

Using Ace-Thred design, filter funnel and filter flask thread together without the silicone stopper and troublesome clamping device.

## Better membrane utilization!

Accommodates the 47mm and 25mm membranes and uses 45mm of the 47mm grid vs. only 35-40mm in older designs.

Nylon membrane retaining ring completes seal.



## Removable frits!

Unit disassembles completely for easy cleaning. Uses removable frits of different porosities, from extra coarse to extra fine, instead of expensive, sealed-in frits.

ACE Designation	Porosity Maximum Pore Dia. Range (micron)	Corning, Kimble & ChemGlass Equivalent	Most Frequent Uses
A	145-174	EC (170-220)	Coarse filtration. Gas Dispersion
B	70-100	—	Coarse filtration. Gas Dispersion
C	25-50	C (40-60)	Filtration. Gas Dispersion
D	10-20	M (10-15)	Filtration and extraction
E	4-8	F (4-5.5)	Filtration and extraction

## Fritted Glass Discs Filtration Apparatus

Fritted filter disks for Ace Membrane Filtration Apparatus. Special tight outside diameter and tolerance to fit 3702-10 and 3700-10 filter adapters.

Disc O.D.	Porosity A (145-174 microns)	Porosity B (70-100 microns)	Porosity C (25-50 microns)
	Order Code	Order Code	Order Code
25mm	89083-446	89083-448	89083-450
47mm	89083-452	89083-454	89083-456
75mm	—	—	89427-880





## 25mm Membrane Filters *Filtration Apparatus*

A unique concept for lab filtration apparatus. Using our famous Ace-Thred™ design, we are able to thread the filter funnel and filter flask together without the silicone stopper and troublesome clamping device. This design also eliminates leakage problems.

The filter unit has four basic parts; the funnel, flask, nylon adapter piece and a removable glass fritted disk. The unit can be completely disassembled for easy cleaning. Instead of a sealed-in glass fritted support, the disks can be easily removed and cleaned, and offer the availability of different frit sizes, from extra coarse to extra fine. The adapters are also available in PTFE or other polymers on special order. Choose PTFE optional accessories for an autoclavable apparatus.

Description	Size	Order Code
<b>Components</b>		
Filter Flask w/#25 Ace-Thred™ & #7 Ace-Thred™ Connector	500mL	<b>89083-542</b>
Nylon Adapter w/#25 Ace-Thred™ bottom & #25 Ace-Thred™ top		<b>89082-470</b>
Nylon Ring	25mm	<b>89084-420</b>
Funnel w/#50 Ace-Thred™ bottom, graduated	100mL	<b>89083-986</b>
Fritted Disk, Porosity B (70-100 micron)	25mm	<b>89083-448</b>

### Complete Apparatus

Includes: 500mL Filter Flask w/Ace-Thred™ top, & #7 Ace-Thred™ & Ace-Safe™ connector, Nylon Adapter w/#25 Ace-Threds, 25mm Porosity B (70-100 micron) fritted disc, Nylon ring, 100mL graduated funnel w/#50 Ace-Thred™ bottom.

**89083-544**

### Optional Accessories

Filter Flask w/#24/40 outer joint top and hose barb side port	500mL	<b>89057-370</b>
Nylon Adapter w/#25 Ace-Thred top and 24/40 inner joint bottom		<b>89082-476</b>
PTFE Adapter w/#25 Ace-Thred™ bottom & #25 Ace-Thred™ top		<b>89428-172</b>
Fritted Disk, Porosity A (145-174 micron)	25mm	<b>89083-446</b>
Fritted Disk, Porosity C (25-50 micron)	25mm	<b>89083-450</b>
PTFE #7 Ace-Safe™ Hose Connection		<b>71001-510</b>
Nylon Filter Support, (36) 3/32" holes		<b>76318-482</b>
PTFE Filter Support, (36) 3/32" holes		<b>76318-484</b>

## The Safest Heating Method...

# Instatherm®

## For Glass Vessels

- Eliminate the need for heating tape, immersion heaters and heating mantles.
- Rapid, even heat – low thermal lag
- More precise than mantles
- Extremely accurate heating
- Eliminates hotspots
- Can be added to custom applications





## 47mm Membrane Filters *Filtration Apparatus*

A unique concept for lab filtration apparatus. Using our famous Ace-Thred™ design, we are able to thread the filter funnel and filter flask together without the silicone stopper and troublesome clamping device. This design also eliminates leakage problems.

The filter unit has four basic parts; the funnel, flask, nylon adapter piece and a removable glass fritted disk. The unit can be completely disassembled for easy cleaning. Instead of a sealed-in glass fritted support, the disks can be easily removed and cleaned, and offer the availability of different frit sizes, from extra coarse to extra fine. The adapters are also available in PTFE or other polymers on special order. Choose PTFE optional accessories for an autoclavable apparatus.

Description	Size	Order Code
<b>Components</b>		
Filter Flask w/#25 Ace-Thred™ & #7 Ace-Thred™ Connector	1000mL	<b>89083-538</b>
Nylon Adapter w/#25 Ace-Thred™ bottom & #50 Ace-Thred™ top		<b>89082-472</b>
Nylon Ring	47mm	<b>89084-422</b>
Funnel w/#50 Ace-Thred™ bottom, graduated	500mL	<b>89083-990</b>
Fritted Disk, Porosity B (70-100 micron)	47mm	<b>89083-454</b>

### Complete Apparatus

**89083-540**

### Optional Accessories

Filter Flask w/#24/40 outer joint top and hose barb side port	1000mL	<b>89057-372</b>
Nylon Adapter w/#50 Ace-Thred top and 24/40 inner joint bottom		<b>89082-480</b>
PTFE Adapter w/#25 Ace-Thred™ bottom & #50 Ace-Thred™ top		<b>71001-494</b>
PTFE Ring	47mm	<b>71001-496</b>
Fritted Disk, Porosity A (145-174 micron)	47mm	<b>89083-452</b>
Fritted Disk, Porosity C (25-50 micron)	47mm	<b>89083-456</b>
Nylon Filter Support, (57) 1/8" holes	47mm	<b>76106-986</b>
PTFE Filter Support, (57) 1/8" holes	47mm	<b>76111-082</b>
PTFE #7 Ace-Safe™ Hose Connection		<b>71001-510</b>



## 47mm Membrane Filters *Instatherm® Filtration Apparatus*

This apparatus differs from the standard 47mm filter apparatus as it uses proprietary Instatherm® technology to evenly heat the top 500mL funnel, thus keeping the viscous materials in a flowing liquid state. The middle adapter is PTFE with a PTFE snap-ring. The interchangeable fritted disk is the Porosity C, 25-50 micron size. The entire assembly can be easily taken apart for cleaning and the fritted filter disc can easily and in-expensively be cleaned or replaced. This system is excellent for filtering oils or thick slurries and using either 47mm membranes or filter paper disks. Perfect for sample prep for various ASTM petroleum and polymer testing procedures and for new biofuel testing protocols.

Description	Size	Order Code
<b>Components</b>		
Filter Flask w/#25 Ace-Thred™ & #7 Ace-Thred™ Connector	1000mL	<b>89083-538</b>
PTFE Adapter w/#25 Ace-Thred™ bottom & #50 Ace-Thred™ top		<b>71001-494</b>
Instatherm® Coated Funnel w/#50 Ace-Thred™ bottom, graduated (Temperature controller connecting cord included)	500mL	<b>71001-492</b>
Fritted Disk, Porosity C (25-50 micron)	47mm	<b>89083-456</b>
PTFE Ring	47mm	<b>71001-496</b>

### Complete Apparatus

**71001-498**

### Optional Accessories

Filter Flask w/#24/40 outer joint top and hose barb side port	1000mL	<b>89057-372</b>
Nylon Adapter w/#50 Ace-Thred top and 24/40 inner joint bottom		<b>89082-480</b>
Fritted Disk, Porosity A (145-174 micron)	47mm	<b>89083-452</b>
Fritted Disk, Porosity B (70-100 micron)	47mm	<b>89083-456</b>
Nylon Filter Support, (57) 1/8" holes	47mm	<b>76106-986</b>
PTFE Filter Support, (57) 1/8" holes	47mm	<b>76111-082</b>
PTFE #7 Ace-Safe™ Hose Connection		<b>71001-510</b>



New size and design, 75mm OD filtration apparatus. Can be used with membranes or filter paper with 75mm OD. Design gives 99% utilization of the surface area for membranes or filter paper. Can be used with just Porosity C "Coarse" fritted glass disc for solvent recycling. Glass components are all borosilicate and the center adapter is all inert PTFE. The entire assembly threads apart easily for cleaning and filter paper insertion. Available with either a 2L Erlenmeyer flask or a 5L Duran® GL80 bottle. Choose PTFE Ace-Safe™ option for a fully autoclavable apparatus.



## 75mm Membrane Filters *Filtration Flask Apparatus*

Erlenmeyer flask version. Easily threads together and apart for ease of use and easy cleaning. The contents can be easily captured or poured out of the flask. The frit is easily interchanged. Apparatus has #15 Ace-Safe™ connection with 1/2" hose connection for vacuum hook-up.

Description	Size	Order Code
<b>Components</b>		
Filter Flask w/#50 Ace-Thred™ & #15 Ace-Thred™ Connector	2000mL	<b>89427-886</b>
PTFE Adapter w/#80 Ace-Thred™ top w/75mm filter support & #50 Ace-Thred™ bottom, w/drip tip		<b>89428-174</b>
PTFE Ring	75mm	<b>89428-178</b>
Funnel w/#80 Ace-Thred™ bottom, graduated	1000mL	<b>89427-884</b>
Fritted Disk, Porosity C (25-50 micron)	75mm	<b>89427-880</b>

### Complete Apparatus

2L Erlenmeyer Flask w/Ace-Thred™; #15 Ace-Thred™ connector; PTFE Adapter w/#50 Ace-Thred™ bottom & #80 Ace-Thred™ top; 75mm Porosity C (25-50 micron) fritted disc; 75mm PTFE ring; 1000mL graduated funnel w/#80 Ace-Thred™ bottom	<b>89427-882</b>
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### Optional Accessories

Nylon Filter Support, (137) 1/8" holes	<b>76106-988</b>
PTFE Filter Support, (137) 1/8" holes	<b>76111-084</b>
PTFE #15 Ace-Safe™ Hose Connection	<b>71001-520</b>



## 75mm Membrane Filters *Filtration Bottle Apparatus*

Bottle version has a 5L, Duran®, GL80 wide mouth, bottle as the base, 1L graduated funnel, and all-PTFE bottle adapter. The GL80 polypropylene cap is included to seal off the bottle after filtering. Bottle has #15 Ace-Thred™ vacuum port with 1/2" hose connection, and 75mm Porosity C "coarse" glass fritted disc.

Description	Size	Order Code
<b>Components</b>		
Duran Bottle w/wide mouth GL80 & #15 Ace-Thred™ Connector	5000mL	<b>89427-890</b>
PTFE Adapter w/#80 Ace-Thred™ top w/75mm filter support & GL80 bottom, w/drip tip		<b>89428-176</b>
PTFE Ring	75mm	<b>89428-178</b>
Funnel w/#80 Ace-Thred™ bottom, graduated	1000mL	<b>89427-884</b>
Fritted Disk, Porosity C (25-50 micron)	75mm	<b>89427-880</b>

### Complete Apparatus

5L Duran® Bottle w/GL80 thread; #15 Ace-Thred™ connector; PTFE Adapter w/#80 Ace-Thred™ to GL80 thread; 75mm Porosity C (25-50 micron) fritted disc; 75mm PTFE ring; 1000mL graduated funnel w/#80 Ace-Thred™ bottom	<b>89427-888</b>
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### Optional Accessories

Nylon Filter Support, (137) 1/8" holes	<b>76106-988</b>
PTFE Filter Support, (137) 1/8" holes	<b>76111-084</b>
PTFE #15 Ace-Safe™ Hose Connection	<b>71001-520</b>

## ACE-SAFE™ Connections *Tubing*

Tubing connector, used to connect flexible tubing to Ace-Thred™ for easy, safe connect/disconnect. Bushing slides over serrated end and secures polypropylene connector in thread with O-Ring in front groove to make vacuum tight compression seal. Always add or remove tubing from the hose barb while the connector is unthreaded from the glass.

*Note: Temperature range for Polypropylene is -20 to 110°C. Temperature range for PTFE is -40 to 200°C.*



Description	Qty	PTFE Stem / PTFE Bushing		Polypropylene Stem / Nylon Bushing	
		#7 Ace-Thred to 1/4" I.D. Tubing	#15 Ace-Thred to 1/2" ID Tubing	#7 Ace-Thred to 1/4" I.D. Tubing	#15 Ace-Thred to 1/2" ID Tubing
Order Code		Order Code	Order Code	Order Code	Order Code
<b>Components</b>					
Stem, only, w/O-Ring	1	—	—	89052-934	89052-954
Bushing, only	1	—	—	89051-120	89059-218
<b>Complete Connection</b>					
	1	71001-510	71001-520	89052-936	89052-958
<b>Replacement O-Rings</b>					
	12	89060-964	89060-972	89060-648	89060-656

## Filter Flask *Standard Taper Neck, Heavy Wall*

Heavy wall Erlenmeyer style flask with 1/4" side hose barb and reinforced 24/40 top joint. Use with 3/8" I.D. tubing, size D.

*Note: Flask and nylon adapter are optional equipment used in place of the Ace-Thred Filter Flask.*

Capacity, mL	Joint, Standard Taper	Ace-Thred #	Order Code
<b>Flask</b>			
500	24/40	—	89057-370
1000	24/40	—	89057-372
<b>Nylon Adapter (Standard Taper to Ace-Thred)</b>			
for 500	24/40	50	89082-480
for 1000	24/40	25	89082-476



## Vacuum Pump *Aspirator*

Portable, vacuum aspirator pump ideal for use is gel drying, vacuum filtering, distillation and in conjunction with rotary evaporators. Vacuum is created via a pressed recirculation system by water-jet pump.

Maximum vacuum: 8.7mbar @ 5°C, 12.3mbar @ 10°C, 23.mbar @ 20°C. 10L polypropylene tank, 19L/min max flow rate, 3/8" barbed vacuum ports, 3/4" drain and overflow nozzles. Wetted materials: polypropylene, nickel coated brass, 304 stainless steel and silicone. Available in 115v or 230v.



Order Code
89078-178

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