

Filtration Products & ACCESSORIES



WHEATON
Science Products

We're Branching Out

FILTRATION

GLASS ASSEMBLIES

Wheaton Science Products offers a wide variety of vacuum filtration glassware to meet most scientific applications. Three major sizes with two major support styles are available to hold the most common membrane filters used in the laboratory. The glassware can be purchased as complete units or as individual accessories, depending on your needs.

Wheaton offers a complete line of accessories such as filtration flasks and transfer funnel bells to meet all your filtration needs. We also offer several sizes of glass funnels to match the volume of your samples.

As an ISO 9001 certified manufacturer, Wheaton Science Products takes great pride in offering products of undeviating quality. All are backed by responsive and knowledgeable customer service. We offer our products with the confidence that they will make your work more productive.

We invite you to examine the products in this brochure, to inquire about customized products for your particular needs, and to contact us anytime for information, service or the location of your closest Wheaton distributor.



FILTRATION
ASSEMBLIES
www.wheatonsci.com

Filtration

Wheaton Science Products offers a wide variety of membrane filter support glassware for most scientific applications that require vacuum filtration. Choosing the appropriate support glassware is as simple as 1-2-3:

1. Choose the appropriate support glassware that fits the diameter of the filter membrane you are using (25, 47 or 90 mm);
2. Select either a fritted glass or stainless steel support;
3. Choose the appropriate connection for the flask or bottle you will collect the filtrate in.

The following information will help you select the most appropriate glassware for your specific application.

1. Filter Size

25 mm Support Glassware is designed for filtering small volumes of liquids in particulate or biological contamination studies.

47 mm Support Glassware is recommended when analyzing up to 500 mL of liquids for particulate or biological contamination, water/wastewater analysis (reference: Standards Methods for the Examination of Water and Wastewater, 18th Edition, 1992), sterility testing of pharmaceuticals by the bacteria retentive filter method (reference: U.S. Pharmacopeia XXIII), and for preparing particulate free or sterile filtrates.

90 mm Support Glassware is recommended for filtering large sample volumes, liquids with a heavy particulate load and viscous liquids when a high flow rate is required. The larger filter area can provide filtration rates up to four times faster than 47 mm assemblies.

2. Support Style

Fritted Glass Supports. Filtration assemblies with fritted glass supports are recommended for general membrane filtration analysis of samples for microbiological or particulate contamination. This support style is recommended when using gridded filters because the glass frit provides the most even distribution of the sample through the filter membrane. All of the fritted glass support bases have a coarse (40-60 μm) porosity.

Stainless Steel Supports. Filtration assemblies with stainless steel supports are recommended when filtering viscous or proteinaceous solutions to give the maximum flow rate. This support style is also recommended for producing ultra clean filtrate since the stainless steel screen will not shed particles into the filtrate.

3. Connection to Flask/Bottle

Silicone Stopper Connections. Silicone or neoprene stoppers are the most common connector from the filtration assembly to a Erlenmeyer style flask, and are recommended for most routine filtration studies of aqueous solutions. Stoppers are not recommended when filtering organic or most corrosive solutions or when preparing HPLC mobile phase.

40/35 Glass Joint Connections. Filtration assemblies with Ts 40/35 outer joint connections are recommended when filtering corrosive solutions and organic solvents. This connection style is also recommended when preparing HPLC mobile phase, since the “all-glass” connection eliminates phthalate contamination that can occur when using silicone or neoprene stoppers.

Specifications

Catalog Number	Filter Size	Filter Area	Prefilter Size	Support Material	Support Porosity	Connection to Flask/Bottle
419400-47	47 mm	~ 9.6 cm ²	35 mm	Fritted Glass	40-60 μm	40/35 joint
419520-47	47 mm	~ 9.6 cm ²	35 mm	Fritted Glass	40-60 μm	GL 45 thread
419530-47	47 mm	~ 9.6 cm ²	35 mm	Stainless Steel	100 mesh	GL 45 thread
419325	25 mm	~ 2.5 cm ²	20 mm	Fritted Glass	40-60 μm	no. 5 stopper
419327	25 mm	~ 2.5 cm ²	20 mm	Stainless Steel	100 mesh	no. 5 stopper
419347	47 mm	~ 9.6 cm ²	35 mm	Fritted Glass	40-60 μm	no. 8 stopper
419360	47 mm	~ 9.6 cm ²	35 mm	Stainless Steel	100 mesh	no. 8 stopper
419370	47 mm	~ 9.6 cm ²	35 mm	TFE Faced Funnel	40-60 μm	no. 8 stopper
419380	47 mm	~ 9.6 cm ²	35 mm	Fritted Glass	40-60 μm	40/35 joint
419390	47 mm	~ 9.6 cm ²	35 mm	Stainless Steel	40-60 μm	40/35 joint
419450	90 mm	~ 38.5 cm ²	70 mm	Stainless Steel	100 mesh	no. 8 stopper
419451	90 mm	~ 38.5 cm ²	70 mm	TFE	40-60 μm	no. 8 stopper
419452	90 mm	~ 38.5 cm ²	70 mm	Fritted Glass	40-60 μm	no. 8 stopper
419460	90 mm	~ 38.5 cm ²	70 mm	Stainless Steel	100 mesh	40/35 joint
419461	90 mm	~ 38.5 cm ²	70 mm	TFE	40-60 μm	40/35 joint
419462	90 mm	~ 38.5 cm ²	70 mm	Fritted Glass	40-60 μm	40/35 joint



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25 mm Filtration Assemblies

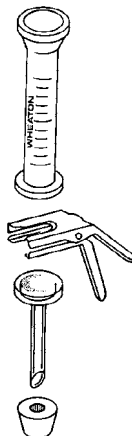
With No. 5 Stopper Connections

Manufactured from Wheaton-33® low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

With Fritted Glass Support, 40-60 µm Porosity

This unit is recommended for general filtration.

Catalog Number	Description	Qty/Case
419325	Complete Unit	1
Components		
419330	Glass Funnel, 25 mm, 15 mL, Graduated	1
419334	Anodized Aluminum Clamp, 25 mm	1
419332	Fritted Support Base, 25 mm	1
419336	Silicone Stopper, No. 5	6
Accessories		
419331	Glass Funnel, 25 mm, 50 mL, Graduated	1
635229	Filter Flask, 125 mL, Graduated	1

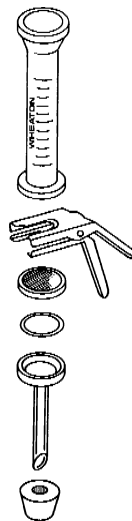


419325

With Stainless Steel Support, 100 Mesh

This unit is designed for filtering viscous or proteinaceous solutions. Recommended when ultra-clean filtrate is needed by eliminating the fritted disc as a source of particulate contamination.

Catalog Number	Description	Qty/Case
419327	Complete Unit	1
Components		
419330	Glass Funnel, 25 mm, 15 mL, Graduated	1
419334	Anodized Aluminum Clamp, 25 mm	1
419337	Stainless Steel Support Screen, 25 mm	1
419338	Support Screen Gasket, 25 mm, PTFE	6
419333	Glass Base, 47 mm, for S.S. Support	1
419336	Silicone Stopper, No. 5	6
Accessories		
419331	Glass Funnel, 25 mm, 50 mL	1
635229	Filter Flask, 125 mL, Graduated	1



419327



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47 mm Filtration Assemblies

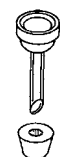
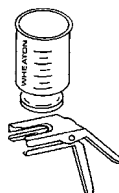
With No. 8 Stopper Connections

Manufactured from Wheaton-33® low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

With Fritted Glass Support, 40-60 µm Porosity

This unit is recommended for general filtration.

Catalog Number	Description	Qty/Case
419347	Complete Unit	1
Components		
419350	Glass Funnel, 47 mm, 300 mL, Graduated	1
419354	Anodized Aluminum Clamp, 47 mm	1
419352	Fritted Support Base, 47 mm	1
419356	Silicone Stopper, No. 8	6
Accessories		
419410	Glass Funnel, 47 mm, 100 mL, Graduated	1
419415	Glass Funnel, 47 mm, 500 mL, Graduated	1
419420	Glass Funnel, 47 mm, 1000 mL, Graduated	1
635232	Filter Flask, 1000 mL, Graduated	1
635245	Filter Flask, 1000 mL, Safety Coated	1



419347

With Teflon® Faced Support Base and Funnel, 40-60 µm Porosity

This unit is recommended when autoclaving with the filter in place. The Teflon® coating prevents the filter from adhering to the ground glass surfaces.

Catalog Number	Description	Qty/Case
419370	Complete Unit	1
Components		
419374	Glass Funnel, Teflon-faced, 47 mm, 300 mL	1
419354	Anodized Aluminum Clamp, 47 mm	1
419372	Fritted Support Base, Teflon-faced, 47 mm	1
419356	Silicone Stopper, No. 8	6
Accessories		
635232	Filter Flask, 1000 mL, Graduated	1
635245	Filter Flask, 1000 mL, Safety Coated	1



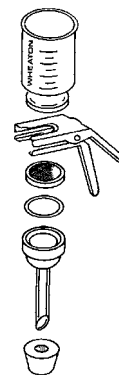
419370

With Stainless Steel Support, 100 Mesh

This unit is designed for filtering viscous or proteinaceous solutions.

Recommended for ultra-clean filtrate by eliminating the fritted disc as a source of particulate contamination.

Catalog Number	Description	Qty/Case
419360	Complete Unit	1
Components		
419350	Glass Funnel, 47 mm, 300 mL, Graduated	1
419354	Anodized Aluminum Clamp, 47 mm	1
419364	Stainless Steel Support Screen, 47 mm	1
419366	Support Screen Gasket, 47 mm, PTFE	6
419362	Glass Base, 47 mm, for S.S. Support	1
419356	Silicone Stopper, No. 8	6
Accessories		
419410	Glass Funnel, 47 mm, 100 mL, Graduated	1
419415	Glass Funnel, 47 mm, 500 mL, Graduated	1
419420	Glass Funnel, 47 mm, 1000 mL, Graduated	1
635232	Filter Flask, 1000 mL, Graduated	1
635245	Filter Flask, 1000 mL, Safety Coated	1



419360



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47 mm All Glass Filtration Assemblies

With 40/35 Connection

Wheaton-33® low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards). Recommended for organic solvents, corrosive liquids and the removal of particulates from HPLC solvents.

- The “all-glass” assembly eliminates the possibility of phthalate contamination from rubber stoppers.
- The drip tip on the support base extends below the hose connection, preventing the filtrate from entering the vacuum line.
- All units have a #2 hose connection for connection to 1/4" (6 mm) I.D. flexible tubing.

With

Fritted Glass Support, 40-60 µm Porosity

This unit is recommended for general filtration.

Catalog Number	Description	Qty/Case
419380	Complete Unit, with 300 mL Funnel, 1L Flask	1
419385-47	Complete Unit, with 500 mL Funnel, 2L Flask	1
Components		
419350	(1) Glass Funnel, 47 mm, 300 mL, Graduated	1
419415	(2) Glass Funnel, 47 mm, 500 mL, Graduated	1
419354	(2) Anodized Aluminum Clamp, 47 mm	1
419382	(3) Fritted Support Base, 47 mm, 40/35	1
635525	(4) Filter Flask, 1000 mL, with 40/35 Inner Joint	1
635526	(4) Filter Flask, 2000 mL, with 40/35 Inner Joint	1
Accessories		
419410	Glass Funnel, 47 mm, 100 mL, Graduated	1
419415	Glass Funnel, 47 mm, 500 mL, Graduated	1
419420	Glass Funnel, 47 mm, 1000 mL, Graduated	1
635527	Filter Flask, 1000 mL, 40/35, Safety Coated	1

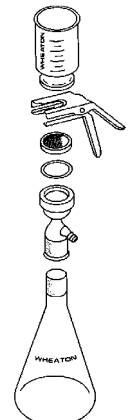


419380

With Stainless Steel Support, 100 Mesh

This unit is designed for filtering viscous or proteinaceous solutions or to produce an ultraclean filtrate. Recommended when ultra-clean filtrate is needed by eliminating the fritted disc as a source of particulate contamination.

Catalog Number	Description	Qty/Case
419390	Complete Unit	1
Components		
419350	Glass Funnel, 47 mm, 300 mL, Graduated	1
419354	Anodized Aluminum Clamp, 47 mm	1
419364	Stainless Steel Support Screen, 47 mm	1
419366	Support Screen Gasket, PTFE,	6
419392	Glass Base, 47 mm, 40/35 joint, for S.S. Support	1
635525	Filter Flask, 1000 mL, with 40/35 Inner Joint	1
Accessories		
419410	Glass Funnel, 47 mm, 100 mL, Graduated	1
419415	Glass Funnel, 47 mm, 500 mL, Graduated	1
419420	Glass Funnel, 47 mm, 1000 mL, Graduated	1
635527	Filter Flask, 1000 mL, 40/35, Safety Coated	1

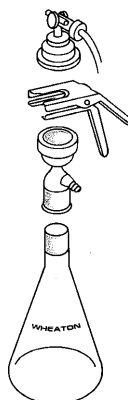


419390

With Transfer Adapter, 40-60 µm Porosity

This unit eliminates the need for “pour & wait” filtration. When a vacuum is applied, the transfer adapter draws the solvent directly from the reagent bottle through a 47mm filter and into the filter flask. When the filtration is complete, the valve on the transfer adapter can be closed to vacuum degas the solvent.

Catalog Number	Description	Qty/Case
419400-47	Complete Unit	1
Components		
419620	Filtration Transfer Adapter, Complete	1
419354	Aluminum Clamp, 47 mm	1
419382	Fritted Support Base, 47 mm, 40/35	1
635525	Filter Flask, 1000 mL, with 40/35 Inner Joint	1



419400-47



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47 mm All Glass Filtration Assemblies

With GL45 Thread Connection

Wheaton-33® low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

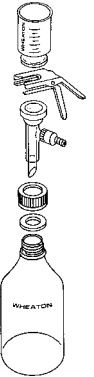
Designed to collect the filtrate directly into a media-type bottle.

- Connection to the bottle is made with a polybutylene terephthalate (PBT) cap and a white Teflon®-faced silicone sealing ring.

With Fritted Glass Support, 40-60 µm Porosity

This unit is recommended for general filtration.

Catalog Number	Description	Qty/Case
419520-47	Complete Unit	1
Components		
419350	Glass Funnel, 47 mm, 300 mL, Graduated	1
419354	Anodized Aluminum Clamp, 47 mm	1
419502	Filtration Base, 47 mm	1
419501	Quick Disconnect Adapter	12
240755	PBT Cap, 45 mm, with 32 mm Opening	10
240780	Sealing Ring for 45mm cap	10
W264730	Reservoir 100mL	1



419520-47

With Stainless Steel Support, 100 Mesh

This unit is designed for filtering viscous or proteinaceous solutions. Recommended when ultra-clean filtration is needed by eliminating the fritted disc as a source of particulate contamination.

Catalog Number	Description	Qty/Case
419530-47	Complete Unit	1
Components		
419350	Glass Funnel, 47 mm, 300 mL, Graduated	1
419354	Anodized Aluminum Clamp, 47 mm	1
419364	Stainless Steel Support Screen, 47 mm	1
419366	Support Screen Gasket, 47 mm	6
419532-47	Glass Base, 47 mm, for S.S. Support	1
419501	Quick Disconnect Adapter	12
240735	PBT Cap, 45 mm, with 32 mm Opening	10
240755	TFE/Silicone Liner, with 26 mm ID	10
W26473	Reservoir, 1000 mL, with Safety Coating	1



419530-47

Filtration Assembly Adapter

The filtration assembly adapter facilitates the connection of standard 47 and 90 mm filtration assemblies with stopper connections to a media type bottle with a GL45 thread. (Part Numbers: 419347, 419370, 419452, 419450, 419451)

- The adapter replaces the stopper to make the connection to the bottle.
- A 32 mm PBT Cap with a Teflon®-faced silicone liner makes the connection to the filtration assembly.
- A PBT hose connection is supplied to make the connection to 1/4" (6 mm) I.D. flexible tubing.

Catalog Number	Description	Qty/Case
419505	Complete Unit	1
Components		
419506	Glass Adapter Only	1
419501	Quick Disconnect Adapter	12
240754	PBT Cap, GL32, with 20 mm opening	10
240776	PTFE/Silicone Sealing Ring, 32 mm, with 16 mm ID	5
240755	PBT Cap, 45 mm, with 32 mm Opening	10
240781	TFE/Silicone Liner, with 26 mm ID	10

* Component parts are available upon request. Please ask your customer service representative for details.



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90 mm All Glass and Stopper Filtration Assemblies

Wheaton-33® low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

- The larger filter area can provide filtration rates up to four times faster than 47 mm assemblies.

- Manufactured with a unique screw color design for connecting the funnel to the support base. This replaces the aluminum clamp and provides a more even seal.

- Filtering large sample volumes
- Liquid with heavy particulate load
- Viscous liquids



With No. 8 Stopper Connections

These filtration assemblies are recommended for routine filtration of aqueous solutions. Each assembly is supplied complete with 1000 mL funnel with screw collar, glass support base, filter support (either fritted glass, stainless steel or Teflon®) and a No. 8 silicone stopper.

Catalog Number	Description	Qty/Case
419452	Complete Unit - 90 mm Filter Assembly with Removable Glass Frit, 40-60 µm	1
419450	Complete Unit - 90 mm Filter Assembly with Stainless Steel Support, 100 Mesh	1
419451	Complete Unit - 90 mm Filter Assembly with Teflon® Support Glass Frit, 90 µm	1

Components

419470	Glass Funnel, 90 mm, 1 Liter, with Screw Collar, Graduated	1
265441	Glass Frit, 90 mm	3
419471	Stainless Steel Support, 90 mm	1
265422	TFE Frit, 90 mm	1
419455	Support Base, 90 mm	1
419356	Silicone Stopper, No. 8	6

Accessories

635232	Filtration Flask, 1 Liter, Graduated	1
635245	Filtration Flask, 1 Liter, Safety Coated	1



With 40/35 Glass Joint Connection

Wheaton-33 low extractable borosilicate glass. (meets type 1 class A and UPS type one standards)

Recommended for organic solvents, corrosive liquids and the removal of particulates from HPLC solvents.

This "all-glass" assembly eliminates the possibility of phthalate contamination from rubber stoppers.

The drip tip on the support base extends below the hose connection, preventing the filtrate from entering the vacuum line.

All units have #2 hose connections for 1/4" (6mm) I.D. flexible tubing.

Catalog Number	Description	Qty/Case
419462	Complete Unit, 90mm Filter Assembly with Removable Glass Frit, 40-60 µm	1
419461	Complete unit, 90 mm Filter Assembly with Teflon® Support, 40-60 µm	1
419460	Complete unit, 90 mm Filter Assembly with Stainless Steel Support, 100 Mesh	1

Components

419470	Glass Funnel, 90 mm, 1 Liter, with Screw Collar, Graduated	1
265441	Glass Frit, 90 mm, Coarse Porosity	3
419471	Stainless Steel Support	1
265422	Teflon® Frit, 90 mm	1
419465	Support Base, 90 mm	1

Accessories

635525	Filter Flask, 1000 mL, with 40/35 Inner Joint	1
635527	Filter Flask, 1000 mL, 40/35, Safety Coated	1

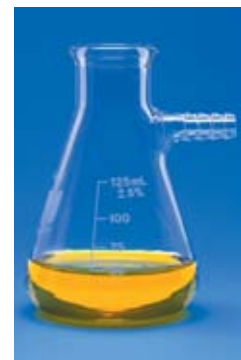
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Filter Flasks

Wheaton-33® low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

Erlenmeyer style flasks are manufactured from heavy-wall glass to provide the mechanical strength required for vacuum filtration. The side arms are a #2 hose connection that accepts standard 1/4" (6mm) I.D. flexible tubing for connection to a vacuum source.

Catalog Number	Description	Qty/Case
635229	Filter Flask, 125 mL, Graduated, No. 5 Stopper Joint	1
635232	Filter Flask, 1000 mL, Graduated, No. 8 Stopper Joint	1



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Filter Flasks, Safety Coated

Same high quality filter flasks as above, but with Wheaton's plastisol safety coating applied to the outside of the flask. This PVC coating is autoclavable (120°C, 15 psi, 15 minutes).

Catalog Number	Description	Qty/Case
635245	Filter Flask, 1000 mL, Safety Coated, No. 8 Stopper Joint	1



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Transfer Funnel

Wheaton-33® low extractable borosilicate glass (meets ASTM Type I Class A and USP Type I standards).

The all-glass transfer funnel is ideal for transferring small volumes (up to 300mL) of sample to a filtration assembly.

Catalog Number	Description	Qty/Case
419430	Glass Transfer Funnel, 300 mL	1





Care and Cleaning

Safety

Glassware that is used under vacuum should be carefully inspected before use. Any glassware that is scratched, chipped, cracked or broken should either be repaired or replaced before using. Also, adequate safety shielding should always be used when working with glass under vacuum.

Operating Pressure

Fritted filtration glassware is designed for vacuum filtration. If used for pressure filtration the maximum pressure differential on the fritted disk should not exceed 15 lb./in² (1 kg/cm²).

Drying and Sterilizing

Filtration glassware with a fritted disk should not be subjected to sudden changes in temperature or to a direct flame. This prevents internal strain from developing in the glassware. The strain is caused by excessive temperature differences between the fritted disk and its surrounding glass, and can lead to fracturing of the filtration base. Fritted glassware should be placed in a cold drying oven or autoclave. The speed of heating or cooling should not exceed 8°C per minute. Before filtering hot liquids, the filtration base should be slowly brought up to the temperature of the liquid in a drying oven or hot cabinet. Wet fritted support bases should be slowly heated to 80°C and dried for one (1) hour before the temperature is increased.

Cleaning

Fritted Support Bases. A new fritted glass filtration base should be washed with hot hydrochloric acid followed by several rinses of either distilled or high quality deionized water. This procedure removes dust particles and powdered glass from the pores of the fritted disk. The acid wash and water rinses should be pulled through the fritted disk with a good vacuum. Each successive water rinse should only be started after the preceding one has been completely pulled through.

If no precipitate has entered the pores of the fritted disk, rinsing the surface of the fritted disk under the tap or with a rinse bottle is often sufficient. The fritted disk surface can then be wiped clean with a small brush or squeegee. Do not use paper towels to dry the fritted disk since this can force particulates into the pores of the disk. Many precipitants can be removed from the pores of the fritted disk by backflushing. Connect the stem of the filtration support base to a water tap with a piece of rubber tubing and allow the water to run backwards through the fritted disk.

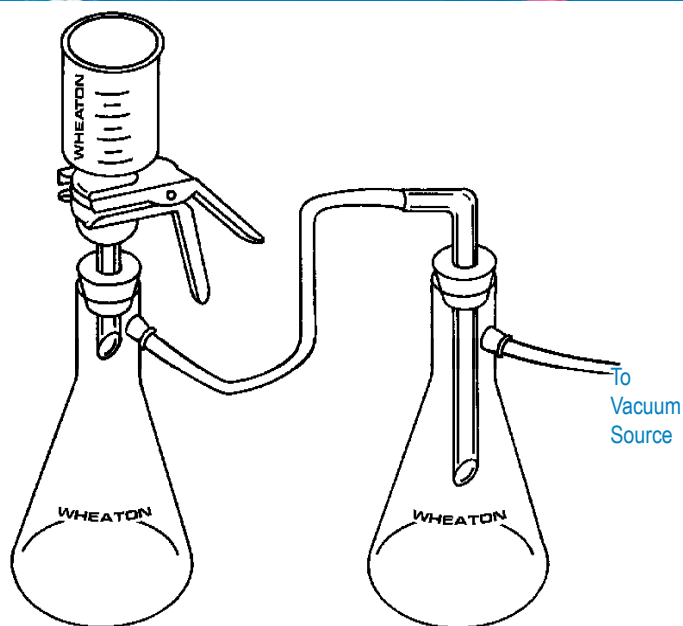
WARNING: the water pressure must not exceed 15 lb./in² (1 kg/cm²).

When working with biological compounds, sulfuric acid with a nitrate or perchloric addition should be used as the cleaning agent. Dichromate sulfuric acid should be avoided as a cleaning agent to prevent the reduction formation of trivalent chromium compounds. Hot, concentrated phosphoric acid and hot alkaline solutions attack the surface of the glass and therefore are not suitable for cleaning.

Stainless Steel Screens. Stainless steel screens can be washed with a laboratory detergent with an initial rinse with tap water and a final rinse with distilled water. Hydrochloric acid is not recommended for cleaning as this can promote corrosion of the stainless steel.

Aluminum Clamps. The aluminum clamps have been hard anodized to prevent corrosion. A wash with a good laboratory detergent followed by an initial rinse with tap water and a final rinse with distilled water should be adequate.

Teflon® is a registered trademark of E.I. DuPont.
Wheaton-33® is registered trademark of Wheaton Science Products



Set-Up

When using a vacuum filtration assembly, a second flask should be connected between the filtering flask and the vacuum source. This helps prevent the accidental entry of the filtrate into the vacuum pump. See the figure above for a suggested vacuum flask setup.

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