Glass 47 mm Filter Holder

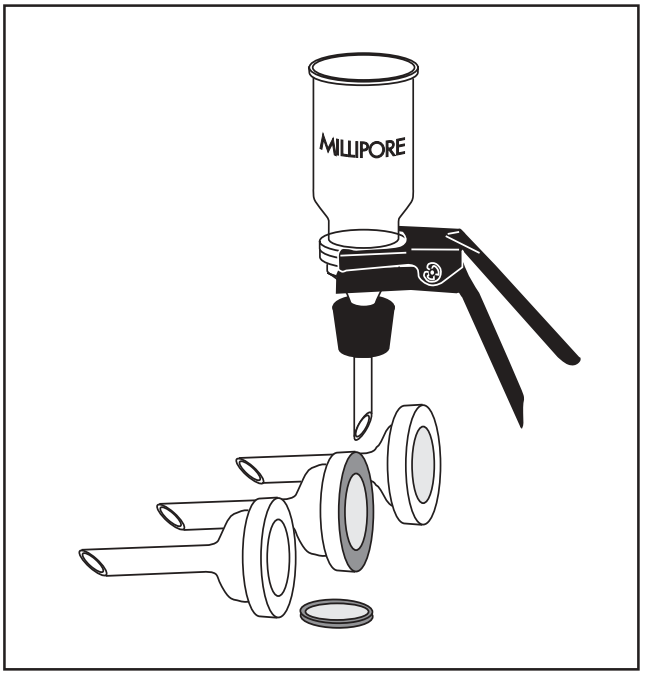
XX10 047 00

Teflon®-faced Glass 47 mm Filter Holder

XX10 047 20

Stainless Screen Glass 47 mm Filter Holder

XX10 047 30



MILLIPORE

Introduction

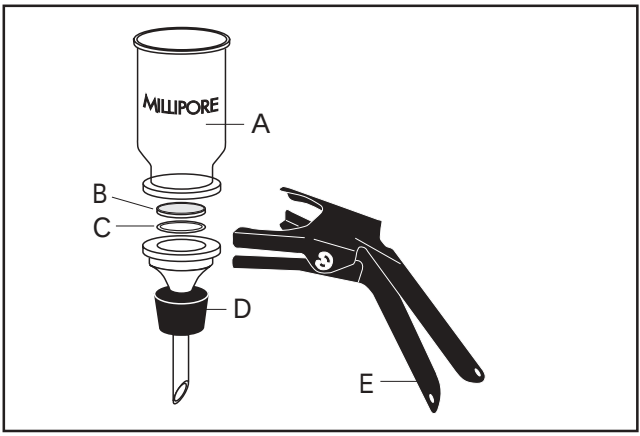
Millipore's glass 47 mm filter holders are used in vacuum filtration of liquids for analysis of particulate or biological contamination retained on the filter surface. You may also use the stainless screen glass filter holder (cat. no. XX10 047 30) to produce small quantities of ultraclean filtrate. Do not use the other filter holders (cat. nos. XX10 047 00 and XX10 047 20) to produce ultraclean filtrates since the fritted glass of the filter support base is difficult to clean thoroughly and may introduce contaminants from previous filtrations. To perform these analyses, you will need stainless smooth-tip filter forceps, a sidearm vacuum filtering flask (or Millipore filter holder manifold for simultaneous multiple filtrations), a portable vacuum pump if central laboratory vacuum is unavailable, and 3/16" I.D. silicone rubber tubing. When using the Glass 47 mm Filter Holder in sterile procedures, you must aseptically install a sterile filter in the separately sterilized holder. The Teflon®-faced Glass 47 mm Filter Holder (XX10 047 29) may be autoclaved with the filter in place.

Applications

For...	Use filter holder...
Bacteriological analysis of water (using 47 mm sterile membrane filters)	XX10 047 00
Analysis of suspended solids in water (using 47 mm depth filters)	XX10 047 00
Bateriological analysis applications where autoclaving filter holder with membrane in place needed	XX10 047 20
Particulate contamination analysis of oils and hydraulic fluids by gravimetric or particulate counting methods	XX10 047 30
Exfoliative cytology applications	XX10 047 30
Filtration of flammable liquids	XX20 047 20

WARNING: Do not use the Glass 47 mm Filter Holders (XX10 047 00, XX10 047 20, and XX10 047 30) for filtering flammable liquids. Use the Hydrosol Stainless Filter Holder (XX20 047 20), fitted with grounding screw and ground wire set, for this use. Occasionally you may need to follow a standard, qualified procedure that specifies the use of one of the glass 47 mm filter holders. In such cases, exercise extreme caution in the proper, safe handling of flammables. In addition, you should ground the filtration unit carefully.

Components of 47 mm Filter Holders



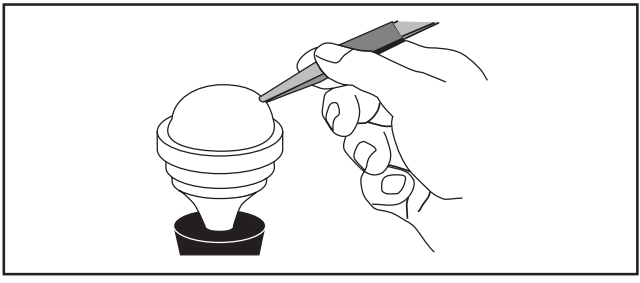
Letter	Description
A	Funnel, 300 mL
B	Stainless filter support screen (XX10 047 30 only)
C	Teflon® support screen gasket (XX10 047 30 only)
D	Base with stopper
E	Spring clamp

Operation

1. Slide the neoprene stopper over the base stem if it is not already in place and seat the stopper and base firmly into the neck of the filtering flask or manifold.
2. **If you are using XX10 047 00 or XX10 047 20:**
   Go to step 3.

   If you are using XX10 047 30:
   Place the **Teflon support screen gasket (C)** in the recess of the holder base (D) and install the **stainless filter support screen (B)** on top of it, with the screen surface up.

   NOTE: The Teflon support screen gasket must be seated under the stainless filter support screen to prevent leakage.
3. With smooth-tip forceps, center a 47 mm diameter Millipore filter on the support surface or screen (with the gridded side up if you are using a gridded filter).

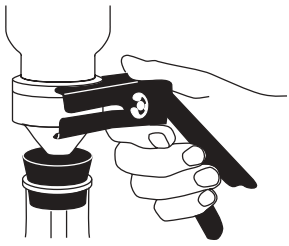


Operation, continued

4. If a prefilter is required, center a 35 mm diameter Millipore prefilter on top of the 47 mm final filter.

   NOTE: Center the prefilter carefully so that the edge does not lie under the sealing rim of the filter holder funnel.

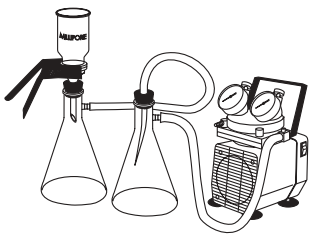
5. Without disturbing the filter (or prefilter), center the flange of the holder on top of the assembly and lock the funnel and base together with the spring clamp.



6. If you are using a filtering manifold, repeat steps 1 through 5 with additional holders for all manifold positions, or seal off unused positions.

7. Connect the filtering flask or manifold to the vacuum source with silicone tubing. Then pour the sample into the funnel and apply vacuum to filter the sample.

   CAUTION: If the vacuum source is a dry-air pump, such as Millipore cat. no. XX55 000 00, make sure liquids do not enter the pump intake by installing a second sidearm flask between filtering flask (or manifold) and the pump. Or, place a Millex®-FG_{50} filter (cat. no. SLFG 050 10) in the vacuum line to protect the vacuum source from contamination.



Operation, continued

8. When the sample level reaches the neck of the funnel, rinse the funnel walls with about 30 mL of filtered water or appropriate solvent using Millipore's solvent filtering dispenser (cat. no. XX66 025 00), taking care not to splash the filter surface by directing the stream along the sides of the funnel. This flushes residue from the walls and helps to secure a uniform contaminant distribution on the filter surface.
9. After all sample and flushing fluid has passed through the filter, shut off the vacuum and gently rock the holder assembly to break the stopper seal and vent the vacuum flask. Then release the spring clamp and lift off the funnel. Transfer the filter with smooth-tip forceps to a clean petri dish for visual particle counting, or to a prepared media pad or agar plate in a sterile petri dish for microbial contaminant culturing. You can request Millipore publications that describe in detail the analytical procedures for specific applications.

Sterilizing Procedures

Any of these filter holders can be used in bacteriological analysis by presterilizing the holder with dry heat or in an autoclave, then aseptically installing a sterile Millipore filter. Only the Teflon-faced Glass 47 mm Filter Holder can be autoclaved with the filter installed, as follows:

1. Temporarily mount the holder base in the filtering flask or manifold, and complete the filter/funnel assembly as described in steps 1–5 in "Operation."
2. Fit a rubber funnel cover (cat. no. XX25 047 54) to the top of the funnel and place a piece of autoclave tape or Milli-Wrap™ material (cat. no. FW00 050 RJ) over the cover hole. Remove the assembly from the flask and wrap the base outlet with Kraft paper or Tyvek® autoclave paper (to close the funnel opening). This step is essential to proper sterility testing, where the entire test filter is inoculated in culture media.
3. Autoclave the wrapped assembly for 15 minutes at 121 °C (at 15 psi). Since temperatures are known to vary from point to point in an autoclave, and often differ significantly from the autoclave setting, they should be checked occasionally with a maximum registering thermometer.

   CAUTION: Avoid using autoclave steam containing amines, which are often added to boiler feed water to prevent scale. They may cause the filter to become brittle, and also may contaminate product or solutions that come in contact with the autoclaved glassware.

Sterilizing Procedures, continued

4. When the assembly has cooled, unwrap the outlet tube of the holder assembly (if you have wrapped it), taking care not to touch the outlet opening, and replace the assembly in the filtering flask or manifold, making sure the stopper seats firmly. Then remove the funnel cover without touching the edge or interior of the funnel.

Cleaning

1. Immediately after use, disassemble the filter holder and clean its components with a sponge, hot water, and a nonabrasive cleanser. If you are cleaning the Stainless Screen Glass 47 mm Filter Holder, the screen drops out easily when the base is inverted. Take care not to mislay or damage the Teflon gasket that lies under the screen.
2. Use a stiff bristled brush (if available) to remove all traces of stubborn residue from recesses and orifices, but do not use the brush on the filter support screen: it can break the screen mesh and cause a ruptured filter. A test tube brush with detergent solution is helpful in cleaing the inside of the holder outlet tube. Never use steel wool or abrasive materials on any part of the holder.
3. Clean the porous glass frit of the filter support by back-flushing with warm tap water and then soaking overnight in a chromic-acid cleaning solution. Follow the soaking with another back-flushing.
3. After cleaning thoroughly, rinse the components with clean water (see note below) and air dry. Do not wipe with paper or cloth, which may leave traces of fibers and lint. Autoclave the funnel and bases (if desired), wrap separately, and store for later use.

   NOTE: Final rinse water can leave residues that affect critical tests. Biological analysis depends on autoclaving the assembled presterilized holder components and on using a sterile filter. Particulate or chemical analysis depends on an appropriate degree of initial cleanliness. The table below will help you select a rinse water source suitable for your application.

	Typical Tap Water*	Single Distillation	Milli-RO® System	Milli-Q® System
Dissolved inorganics (as ppm $CaCo_3$)	170	1	1–20**	0.036
Silicate (ppm)	1	0.1	0.1	<0.01
Heavy metals (ppm)	1	0.1	<0.01	<0.01
Dissolved organics (ppm)	12	1	<1	<1
Microorganisms/mL	>100	<10	<10	0
Particles/mL, < 5 µm	<10,000	<200	<10	0

*Highly variable, depending on locality and season.

** This impurity is largely sodium. Range depends on operating pressure, type of RO cartridge, and feed water quality.

Specifications

Materials	Borosilicate glass funnel base w/coarse-grit glass support for filter (XX10 047 00), Teflon-faced funnel and base (XX10 047 20), stainless screen filter support, Teflon gasket (XX10 047 30); anodized aluminum clamp, neoprene stopper.
Filter Size	47 mm diameter
Filter Area	approx. 9.6 cm^2
Prefilter Size	35 mm diameter
Funnel Capacity	300 mL
Pressure	Vacuum only (50 mbar)
Connection	#8 perforated stopper placed over outlet tube mounts in standard 1-liter filtering flask or Millipore filtering manifolds (available separately)
Dimensions	76 mm (3 in) diameter, 229 mm (9 in) height

Ordering Information

This section lists the catalogue numbers for glass 47 mm filter holders. See the Technical Assistance section for information about contacting Millipore. You can also buy Millipore products on-line at www.millipore.com/purecommerce.

Replacement Parts for Glass 47 mm Filter Holder

Funnel, 300 mL, ground-glass seal	XX10 047 04
Ground-glass base with stopper	XX10 047 02
Anodized aluminum spring clamp	XX10 047 03
#8 neoprene stopper, 9/16" hole, 5/pk	XX10 047 08

Replacement parts for Teflon-faced 47 mm Filter Holder (same as Glass 47 mm Filter Holder except:)

Funnel, 300 mL, Teflon-faced seal	XX10 047 24
Teflon-faced base with stopper	XX10 047 22

Replacement parts for Stainless Screen 47 mm Filter Holder (same as Glass 47 mm Filter Holder except:)

Filter support screen, stainless	XX20 047 08
Support screen gasket, Teflon, 25/pk	XX20 047 03
Glass base with stopper	XX10 047 33
Glass base with screen, gasket, and stopper	XX10 047 32

Accessories for all 47 mm Filter Holders

Vacuum filtering flask, 1 liter	XX10 047 05
Vacuum filtering flask, 4 liter	XX10 047 44
Funnel, 100 mL, ground-glass seal	XX10 047 06
Filter holder stainless steel manifold, 6-place	XX25 047 00
Filter holder stainless steel manifold, 3-place	XX25 047 35

Accessories for all 47 mm Filter Holders, continued

Filter holder PVC manifold, 3-place	XX26 047 35
Vacuum/pressure pump, 115V, 60 Hz	XX55 000 00
Vacuum/pressure pump, 220V, 50 Hz	XX55 220 50
Vacuum/pressure pump, 100V, 50/60 Hz	XX55 100 00
Vacuum hose, silicone rubber 1.4 m (4.5 ft.) with luer adapter	XX71 000 04
Filter forceps, stainless, smooth-tip	XX62 000 06
Solvent filtering dispenser, 25 mm	XX66 025 00
Funnel cover, rubber	XX25 047 54

Technical Assistance

For more information, contact the Millipore office nearest you. In the U.S., call **1-800-MILLIPORE** (1-800-645-5476). Outside the U.S., see your Millipore laboratory catalogue for the phone number of the office nearest you. You can reach us by e-mail at tech_service@millipore.com or visit our web site (www.millipore.com).

Standard Warranty

Millipore Corporation ("Millipore") warrants its products will meet their applicable published specifications when used in accordance with their applicable instructions for a period of one year from shipment of the products. **MILLIPORE MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** The warranty provided herein and the data, specifications and descriptions of Millipore products appearing in Millipore's published catalogues and product literature may not be altered except by express written agreement signed by an officer of Millipore. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and if given, should not be relied upon.

In the event of a breach of the foregoing warranty, Millipore's sole obligation shall be to repair or replace, at its option, the applicable product or part thereof, provided the customer notifies Millipore promptly of any such breach. If after exercising reasonable efforts, Millipore is unable to repair or replace the product or part, then Millipore shall refund to the customer all monies paid for such applicable product or part. **MILLIPORE SHALL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR ANY OTHER INDIRECT DAMAGES RESULTING FROM ECONOMIC LOSS OR PROPERTY DAMAGE SUSTAINED BY ANY CUSTOMER FROM THE USE OF ITS PRODUCTS.**

P36093, Rev. B, 09/03

MILLIPORE