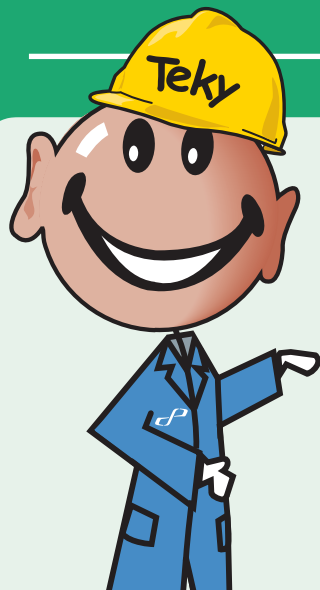




Selecting a Filter

1. Determine the particle size to be retained or filtered. Membranes will retain all particles equal to, and larger than their designated pore size.
2. Assess the chemical compatibility of the membrane filter with the liquid or gas to be filtered. Consider the chemical resistance properties of all the parts that will contact the filtrate.
3. Depending on the procedure performed, the membrane color or surface pattern may be important.
4. Also consider hydrophilic or hydrophobic membranes, temperature, flow rate, throughput, and sterilization needs.

Filtration Types

Use this guide to determine the optimal type of filtration for your particle sizes. Each type of filtration is designed to separate differing ranges of microparticles and particles:

Ultrafiltration is best with particles of roughly 10,000 to 1,000,000 MW. **Microfiltration** is best with particle sizes of roughly 0.1 to 10 μm . **Macrofiltration** is best with particle sizes greater than 50 μm .

Type of filtration	Ultrafiltration	Microfiltration	Macrofiltration
Units	Dalton (MW)	Microns (μm)	50 μm or greater, visible to the human eye
Particle examples and sizes	Trypsin (24,000) Serum albumin (67,000) Gamma globulin (169,000) Viruses (600,000 to 30,000) Endotoxins (500,000 to 12,000)	Mycoplasma (0.08 to 0.4) Proteins (0.0005 to 0.5) Fungi (0.7 to 3) Yeasts (0.6 to 4) Bacteria (0.3 to 12)	Spores Pollen Human hair Sands

Chemical Compatibility for Membrane Selection



Membrane Materials

Cellulose Nitrate (CN) membrane is the most popular membrane used in analytical and laboratory filtration. CN membrane has excellent wetting properties and gives fastest flow rates with aqueous solutions.

Cellulose Acetate membrane is a mixture of cellulose triacetate and diacetate that creates a strong membrane in both lateral and longitudinal directions. In addition, the membrane has a low static charge, a very low aqueous extractability, and good solvent resistance to low molecular weight alcohols.

Mixed Cellulose Ester membrane provides a more uniform and smoother surface compared to pure nitrocellulose membrane. This membrane is typically used to count or analyze particles contained in liquids or captured from aerosols.

Nylon membrane is strong, inherently hydrophilic, and compatible with a broad range of aqueous solutions including alcohols and solvents used in HPLC work.

Polyethersulfone (PES) membrane is hydrophilic and low protein binding. No external wetting agents are required, resulting in low extractables. PES membrane generally offers fast flow rate and better chemical resistance than cellulose acetate membranes.

PTFE membrane is strong, highly porous, and inert to most chemically aggressive solvents, strong acids, and bases. Chemical and thermal limitations are imposed by the backing material.

Terms to Know

Bubble Point: the amount of air pressure that is required to force liquid from the largest wetted pore of the membrane.

Hydrophilic: or “water-loving”, refers to a filter’s ability to naturally absorb water.

Hydrophobic: or “water-hating”, refers to a filter’s ability to naturally repel water.

Molecular Weight Cut Off (MWCO): lowest molecular weight solute that is 90% retained by the membrane. For rapid filtration where some sample loss is acceptable, a membrane with MWCO the same as the molecular weight of the solute can be used. When loss of material of interest is undesirable, the membrane MWCO should be less than the molecular weight of the compound.

Pore Size (absolute): the point at which a particle of defined size will be retained with 100% efficiency under specified conditions.

Prewet: membranes that are inherently hydrophobic need to be specially wetted before use with aqueous filtrations. This can be done by using approximately 5 mL of chromatography-grade methanol, acetone, or compatible fluid with low viscosity (>0.6 cp) and rinsing with approximately 25 mL of water.

Throughput: refers to dirt handling capacity before membrane clogs.

Glass and Quartz Fiber Filters

Ideal for analytical or gravimetric studies

Borosilicate Glass Fiber Filters create a biologically inert filter matrix that is resistant to both chemicals and pH extremes. Use as prefilters to extend membrane life, for water/air pollution analysis, or liquid clarification. Filters without binder withstand up to 932°F (500°C); filters with binder withstand up to 250°F (120°C). Grades GC90, GS25, and DP70 with binder offer higher wet strength and lower fiber release.

Quartz Fiber Filters have very low trace metal content and can withstand temperatures up to 1832°F (1000°C). Use to sample acidic gases at high temperatures or for air pollution analysis.



Filter 06646-35 shown with stainless steel filtration holder 29900-05 (holder sold separately on page 291)

Specifications

Grade	Characteristics/applications
Borosilicate glass fiber filters	
GA55	General purpose; air pollution monitoring
GB140	Low absorption; slower filtration speed for industrial waste analysis
GC50	Membrane prefilter (<0.45 µm), for industrial and wastewater analysis and scintillation counting
GD120	Membrane prefilter (<1.2 µm), high wet strength and high loading capacity
GF75	Highest retention; filtering very fine protein precipitates and clarifying chemically aggressive solutions
GA100	General purpose; filtering cells and precipitated proteins; air pollution monitoring
GA200	Thick filter; filtering viscous fluids such as liquid sugars and gels
GB100R	Low trace metal content; sampling high and low volume aerosols for airborne dust and metal contaminants
GC90	High wet strength
GS25	Membrane prefilter (<0.65 µm), high wet strength
DP70	High wet strength and very high loading capacity; dust and fine particulate sampling
Quartz fiber filters	
QR200	Low adsorption; high-temperature filtration and monitoring airborne particulates
QR100	Superior chemical resistance, will not absorb acidic gases

Grade	Retention	Thickness	Water flow rate†	Binder	25-mm dia Cat. no. / Price	47-mm dia Cat. no. / Price	90-mm dia Cat. no. / Price	125-mm dia Cat. no. / Price	142-mm dia Cat. no. / Price	293-mm dia Cat. no. / Price
Borosilicate glass fiber filters										
GA55	0.6 µm	0.21 mm	23	None	GY-06657-00	GY-06646-02	GY-06646-04	GY-06646-05	GY-06657-07	—
GB140	0.4 µm	0.56 mm	58	None	GY-06646-84	GY-06646-12	GY-06646-14	GY-06646-15	GY-06657-17	GY-06657-18
GC50	0.5 µm	0.19 mm	28	None	GY-06647-95	GY-06646-22	GY-06646-24	GY-06646-25	GY-06657-27	GY-06657-28
GD120	0.9 µm	0.51 mm	14	None	GY-06657-30	GY-06646-32	GY-06646-34	GY-06646-35	GY-06657-37	GY-06656-13
GF75	0.3 µm	0.35 mm	84	None	GY-06656-24	GY-06646-42	GY-06646-44	GY-06646-45	GY-06656-23	GY-06656-25
GA100	1.0 µm	0.44 mm	11	None	GY-06657-50	GY-06646-54	GY-06657-54	GY-06657-56	GY-06657-57	GY-06657-58
GA200	0.8 µm	0.74 mm	15	None	GY-06646-63	GY-06657-62	GY-06657-64	GY-06657-66	GY-06657-67	GY-06657-68
GB100R	0.6 µm	0.40 mm	15	None	GY-06657-70	GY-06646-75	GY-06646-83	GY-06657-76	GY-06657-77	GY-06657-78
GC90	0.5 µm	0.30 mm	20	Organic	GY-06657-80	GY-06657-82	GY-06656-12	GY-06657-86	GY-06657-87	GY-06656-05
GS25	0.6 µm	0.21 mm	15	Organic	GY-06657-90	GY-06657-92	GY-06657-94	GY-06657-96	GY-06657-97	GY-06656-33
DP70	0.6 µm	0.52 mm	20	Organic	GY-06658-00	GY-06646-53	GY-06658-04	GY-06658-06	GY-06658-07	GY-06658-08
Quartz fiber filters										
QR200	—	1.0 mm	—	Inorganic	GY-06658-10	GY-06658-12	GY-06658-14	GY-06658-16	—	—
QR100	—	0.38 mm	—	None	GY-06658-20	GY-06649-52	GY-06658-24	GY-06658-26	—	—

†Time (in seconds) required to filter one liter of deionized water at 68°F (20°C) through 9.6 cm² using a 300 mm Hg vacuum.

Filtration

Qualitative Filter Papers

Easily clarify solutions with pH up to 12

- Low ash alpha cotton cellulose—ash content of 0.1%
- Fits your range—use in pH of 0 to 12 and temperatures to 248°F (120°C)
- Packs of 100

Specifications

Grade	Nominal rating (µm)	Thickness (mm)	Weight (g/m ²)	Flow time [†] (sec)	Absorption speed [‡] (cm)	Wet strength ^{††} (cm H ₂ O)
No. 1	Coarse (6)	0.2	90	45	9.0	15
No. 2	Medium (5)	0.26	125	80	8.0	18
No. 231	Medium	0.18	95	130	7.5	—
No. 232	Medium / medium-fine	0.18	90	250	5.0	—
No. 235	Very fine	0.17	95	1200	4.0	—
No. 131	Medium-fine (3)	0.25	140	240	6.0	20
No. 101	Coarse / gelatinous	0.21	80	50	8.0	15



Grade	Applications	55 mm	70 mm	90 mm	110 mm	125 mm	150 mm	185 mm
No. 1	Coarse retention; retains large crystalline particles and gelatinous precipitates. Fast flow rate, smooth surface, normal hardness	GY-81048-04	GY-81048-06	GY-81048-08	GY-81048-10	GY-81048-12	GY-81048-14	GY-81048-16
No. 2	Medium retention; retains medium crystalline precipitates, fast flow rate, smooth surface, normal hardness	GY-81048-34	GY-81048-36	GY-81048-38	GY-81048-40	GY-81048-42	GY-81048-46	GY-81048-48
No. 231	Medium retention; retains crystalline precipitates, moderate flow rate, smooth surface, normal hardness	GY-81048-64	GY-81048-66	GY-81048-68	GY-81048-70	GY-81048-72	GY-81048-74	GY-81048-80
No. 232	Retains medium to medium-fine particulates, slow flow rate, smooth, normal hardness	GY-81048-84	GY-81048-86	GY-81048-88	GY-81048-90	GY-81048-92	GY-81048-94	GY-81049-90
No. 235	Highest retention efficiency, retains very fine particulates, very slow flow rate, smooth	—	GY-81050-22	GY-81050-24	GY-81050-26	GY-81050-28	GY-81050-30	GY-81050-32
No. 131	High retention efficiency for medium-fine crystalline precipitates like barium sulfate, slow flow rate, smooth surface, normal hardness	GY-81050-04	GY-81050-10	GY-81050-12	GY-81050-14	GY-81050-16	GY-81050-18	GY-81050-20
No. 101	Coarse retention; seed germination, retains large particles	GY-81050-36	GY-81050-38	GY-81050-40	GY-81050-42	GY-81050-50	GY-81050-52	GY-81050-54

Quantitative Filter Papers

Get accurate results—virtually ashless and ultrapure

- Get pure results—quality alpha cotton cellulose papers are double acid washed and neutralized for 0.01% ash content
- Packs of 100

Specifications

Grade	Nominal rating (µm)	Thickness (mm)	Weight (g/m ²)	Flow time [†] (sec)	Absorption speed [‡] (cm)	Wet strength ^{††} (cm H ₂ O)
No. 3	Medium (5)	0.23	113	130	7.5	20
No. 4A	Very fine (1)	0.12	96	915	4.0	90
No. 5A	Coarse / gelatinous (7)	0.22	97	60	9.5	15
No. 5B	Medium (4)	0.21	108	195	7.0	20
No. 5C	Fine (1)	0.22	118	570	6.0	25
No. 6	Medium-fine (3)	0.2	103	300	6.0	15
No. 7	Medium (4)	0.18	87	200	7.0	12



Grade	Applications	55 mm	70 mm	90 mm	110 mm	125 mm	150 mm	185 mm
No. 3 Ashless	Medium retention (5 to 10 µm), fast flow rate analysis of soils, fertilizers, cement, and minerals	GY-81050-56	GY-81050-58	GY-81050-60	GY-81050-62	GY-81050-64	GY-81050-66	GY-81050-68
No. 4A Hardened ashless	High wet strength, suitable for use under high pressure, high chemical and pH resistance, retains fine crystalline precipitates (<5 µm), slow flow	GY-81051-90	GY-81051-92	GY-81051-94	GY-81051-96	GY-81051-98	GY-81052-00	GY-81052-02
No. 5A Ashless	Fast flow rate, retains coarse particulates and gelatinous precipitates (>10 µm); filter hydroxides and metallic aerosols, environmental monitoring, silica in steel	GY-81050-80	GY-81050-82	GY-81050-86	GY-81050-88	GY-81050-90	GY-81050-92	GY-81051-10
No. 5B Ashless	Retains medium particles (5 to 10 µm) such as CaCO ₃ , PbSO ₄ , CaCO ₃ , MnCO ₃ , ZnCO ₃ , ZnS, AgCl	GY-81051-12	GY-81051-14	GY-81051-16	GY-81051-18	GY-81051-20	GY-81051-22	GY-81051-24
No. 5C Ashless	Collect fine precipitates (<5 µm) such as SrSO ₄ , BaSO ₄ , HgCrO ₄ , and colloidal dispersions; gravimetric analysis	GY-81051-42	GY-81051-44	GY-81051-46	GY-81051-48	GY-81051-50	GY-81051-52	GY-81051-54
No. 6 Ashless	Retains medium-fine particulates (2 to 10 µm), trace and precious metals	GY-81051-56	GY-81051-58	GY-81051-60	GY-81051-62	GY-81051-70	GY-81051-72	GY-81051-74
No. 7 Ashless	Highest purity for retaining medium particles (5 to 10 µm), precise gravimetric analysis	GY-81051-76	GY-81051-78	GY-81051-80	GY-81051-82	GY-81051-84	GY-81051-86	GY-81051-88

[†]Flow time is the time in seconds required to filter 100 mL of distilled water at 68°F (20°C) under pressure supplied by a 10-cm water column through a 10 cm² section of filter paper.

[‡]Absorption speed is the distance in cm that water will travel in an upright strip of filter paper in ten minutes at 68°F (20°C).

^{††}Wet strength is the height in cm of a water column that will rupture a 10 cm² section of filter paper.

Mixed Cellulose Filter Membranes

Presterilized membranes in convenient single-, multi- or continuous-feed packs

Ideal for microbiological analysis of water, wastewater, pharmaceuticals, or beverages. Offered with or without grid lines; grid lines facilitate counting colonies on the membrane surface. Grid squares measure 3.1 mm and represent $\frac{1}{100}$ of the area of a 47-mm membrane. Black membranes maximize contrast between colonies and the filter; green membrane enables viewing of black, white, and colorless colonies on a single filter. Presterilized by EtO, these 47-mm diameter filters are available in envelopes of 10, individually packaged or individually wrapped continuous feed.

Order membranes with absorbent pad for use with broth media. **STERILE**

Pore size	Surface	Absorbent pad	Catalog number	Qty/pk	Price/pk
White membranes, packaged 10 per envelope					
0.45 µm	Gridded	Included	GY-06644-08	100	
		Not included	GY-06644-10	200	
0.65 µm	Gridded	Included	GY-06644-06	100	
White membranes, individually packaged					
0.20 µm	Plain	Not included	GY-06644-21	100	
		Included	GY-06644-19	100	
0.20 µm	Gridded	Not included	GY-06644-23	100	
		Included	GY-06644-27	100	
0.45 µm	Plain	Not included	GY-06644-28†	100	
		Included	GY-06644-16	100	
0.45 µm	Gridded	Included	GY-06644-25	1000	
		Included	GY-06644-14	100	
0.45 µm	Gridded	Not included	GY-06644-29†	100	
		Included	GY-06644-33	200	
		Included	GY-06644-31	1000	
0.65 µm	Plain	Not included	GY-06644-38	100	
0.65 µm	Gridded	Included	GY-06644-43	100	
		Not included	GY-06644-12	100	
0.80 µm	Plain	Not included	GY-06644-47	100	
		Included	GY-06644-45	100	
0.80 µm	Gridded	Not included	GY-06644-49	100	
		Not included	GY-06644-52	1000	
Black membranes, individually packaged					
0.45 µm	Gridded	Included	GY-06644-37	100	
		Not included	GY-06644-39	100	
		Not included	GY-06644-44	1000	
0.80 µm	Gridded	Included	GY-06644-51	100	
		Not included	GY-06644-53	100	
Green membranes, individually packaged					
0.45 µm	Gridded	Not included	GY-06644-54	100	
White membranes, individually packaged—continuous feed					
0.45 µm	Gridded	Not included	GY-16644-14	100	
0.08 µm	Gridded	Not included	GY-16644-45	100	
Black membranes, individually packaged—continuous feed					
0.45 µm	Gridded	Not included	GY-16644-39	100	
0.08 µm	Gridded	Not included	GY-16644-53	100	

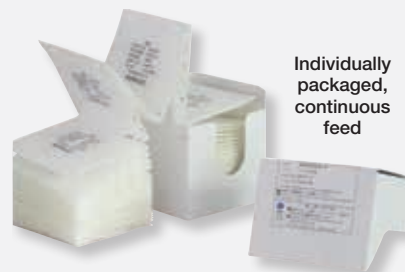
†With hydrophobic edge



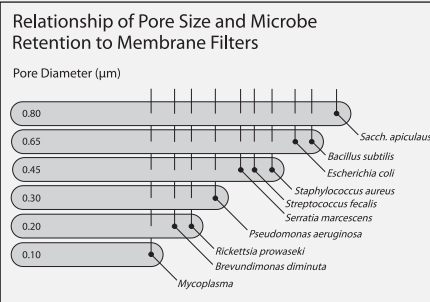
Pack of 10



Individually packaged



Individually packaged, continuous feed



Ultrafiltration Disc Membranes

Ideal for stirred cells and micropartition system

These high-recovery hydrophilic membranes are made of regenerated cellulose. The tight microstructure ensures the highest possible retention with the lowest possible adsorption of protein, DNA, or other macromolecules. Use when concentrating or desalting extremely dilute solutions or whenever your sample is hydrophobic.



NMWL†	25 mm		44.5 mm		63.5 mm		76 mm		150 mm	
	Cat. no.	Price/10 pk	Cat. no.	Price/10 pk	Cat. no.	Price/10 pk	Cat. no.	Price/10 pk	Cat. no.	Price/5 pk
1000	GY-29949-00		GY-29949-02		GY-29949-04		GY-29949-06		GY-29949-08	
3000	GY-29949-10		GY-29949-12		GY-29949-14		GY-29949-38		—	
10,000	GY-29949-16		GY-29949-18		GY-29949-20		GY-29949-22		GY-29949-40	
30,000	GY-29949-24		GY-29949-26		GY-29949-28		GY-29949-30		GY-29949-32	
100,000	GY-29949-34		GY-29949-36		—		—		—	

†Nominal molecular weight limit.

Membranes

High quality at low prices

A. Cellulose Acetate Membranes

Cellulose acetate (CA) membranes have lower binding affinities for charged macromolecules than cellulose nitrate. Retention is primarily based on precipitate size—use to separate bound and unbound proteins. Membranes also have low-swelling properties making them ideal for use with alcohol-based solutions. Membranes withstand temperatures to 356°F (180°C).



Pore size (µm)	Bubble point (psi)	Flow (L/min/cm²)		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (25/pk)	
		H ₂ O	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.20	>37.1	0.016	2.0	GY-06645-00		GY-06645-02		GY-06645-04		GY-06645-06		GY-06645-08		GY-36230-34	
0.45	>25.9	0.035	4.0	GY-06645-10		GY-06645-12		GY-06645-14		GY-06645-16		GY-06645-18		GY-36230-66	
0.80	>10.0	0.160	14.0	GY-06645-20		GY-06645-22		GY-06645-24		GY-06645-26		GY-06645-28		GY-36230-68	
3.00	>5.0	0.500	54.0	GY-36230-70		GY-36230-72		GY-36230-74		GY-36230-76		GY-36230-78		GY-36230-80	

[†]Using water prefiltered to 0.1 µm at 10 psi.

B. Mixed Cellulose Ester Membranes

Mixed cellulose ester (MCE) membranes are made from over 90% cellulose nitrate for strength and thermostability. These membranes can be exposed to temperatures up to 266°F (130°C). Can be used for many laboratory applications including filter sterilizing biological fluids, microbiology, contamination analysis, and air monitoring.

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm²)		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (25/pk)	
		H ₂ O [†]	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.10	35.3	0.027	0.67	GY-06639-25		GY-06639-28		GY-06639-31		GY-06639-34		GY-06639-41		GY-36230-81	
0.20	54.5	0.018	2.4	GY-06639-01		GY-06639-05		GY-06639-13		GY-06639-35		GY-06639-17		GY-36230-82	
0.45	35.0	0.045	3.7	GY-06639-02		GY-06639-06		GY-06639-14		GY-06639-36		GY-06639-18		GY-36230-83	
0.80	16.4	0.165	15.0	GY-06645-30		GY-06645-32		GY-06645-34		GY-06645-36		GY-06645-38		GY-36230-84	
1.00	13.9	0.220	20.4	GY-06639-47		GY-06639-49		GY-06639-51		GY-06639-55		GY-06639-53		GY-36230-85	
3.00	10.2	0.300	28.3	GY-06639-26		GY-06639-29		GY-06639-32		GY-06639-39		GY-06639-42		GY-36230-86	
5.00	8.5	0.400	40.9	GY-06639-27		GY-06639-30		GY-06639-33		GY-06639-40		GY-06639-43		GY-36230-87	

[†]Using water prefiltered to 0.1 µm at 10 psi.

C. Hydrophilic PTFE Membranes (not shown)

Hydrophilic PTFE membranes offer maximum chemical and pH resistance with minimal aqueous extractables (<0.3 wt%). Since the filter is optically clear when wet, it is ideally suited for culture and microscopic examination of cells/particles captured without requiring a separate step. Maximum operating temperature is 212°F (100°C). Autoclaving and allowing filter to dry will render it hydrophobic.

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm²)		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (10/pk)	
		H ₂ O [†]	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.10	55.1	0.014	1.6	GY-36229-50		GY-36229-52		GY-36229-54		GY-36229-56		GY-36329-47		GY-36329-51	
0.20	34.8	0.021	2.1	GY-36329-40		GY-36329-42		GY-36329-44		GY-36329-46		GY-36329-48		GY-36329-52	
0.50	20.3	0.039	2.9	GY-36229-58		GY-36229-60		GY-36229-62		GY-36229-64		GY-36329-49		GY-36329-53	
1.00	12.0	0.073	5.7	GY-36229-66		GY-36229-68		GY-36229-70		GY-36229-72		GY-36329-50		GY-36329-54	

[†]Using water prefiltered to 0.1 µm at 10 psi.

D. Hydrophobic PTFE Membranes (not shown)

This thin, highly porous PTFE membrane is inert to most chemically aggressive solvents, strong acids, and bases that may be incompatible with supported PTFE filters. Ideal for sterilizing gases because it will trap aqueous aerosols on the surface. Operating temperature range is -184 to 500°F (-120 to 260°C).

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm²)		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (10/pk)	
		Acetone	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.10	17.4	0.027	—	GY-36229-74		GY-36229-76		GY-36229-78		GY-36229-80		GY-36229-82		GY-36329-33	
0.20	13.2	0.055	—	GY-36329-04		GY-36329-06		GY-36329-08		GY-36329-10		GY-36329-12		GY-36329-34	
0.50	9.1	0.100	—	GY-36329-14		GY-36329-16		GY-36329-18		GY-36329-20		GY-36329-22		GY-36329-35	
0.80	5.7	0.200	—	GY-36229-84		GY-36229-86		GY-36229-88		GY-36229-90		GY-36229-92		GY-36329-36	
1.00	4.5	0.300	—	GY-36329-24		GY-36329-26		GY-36329-28		GY-36329-30		GY-36329-32		GY-36329-37	
3.00	1.9	0.750	—	GY-36229-94		GY-36229-96		GY-36229-98		GY-36329-00		GY-36329-02		GY-36329-38	

E. Hydrophobic PTFE Membranes with Support

A laminated polypropylene support offers improved handling characteristics to this PTFE membrane filter. Use to sterilize and clarify strong acids, bases, and aggressive solvents. Ideal for air and gas venting. Protects vacuum pumps and critical samples by blocking aqueous liquids. Operating temperature range is -31 to 266°F (-35 to 130°C).

Pore size (µm)	Bubble point (psi)	Flow (L/min/cm²)		13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)		293 mm (10/pk)	
		Acetone	Air	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.10	20.3	0.0391	2.5	GY-36329-60		GY-36329-62		GY-36329-64		GY-36329-66		GY-36230-40		GY-36329-70	
0.20	14.1	0.0614	4.5	GY-02916-50		GY-02916-52		GY-02916-54		GY-02916-56		GY-02916-58		GY-36329-71	
0.50	8.5	0.110	7.5	GY-02916-60		GY-02916-53		GY-02916-64		GY-02916-66		GY-02916-68		GY-36329-72	
1.00	4.3	0.445	17.0	GY-02916-70		GY-02916-72		GY-02916-74		GY-02916-76		GY-02916-78		GY-36329-73	

Membranes

Get better results in pressure or vacuum filtration

- Express PES® (polyethersulfone) is the fastest filtration; specifically designed for HTP
- Durapore® PVDF (polyvinylidene fluoride) provides the lowest protein binding (99% recovery)
- MF-Millipore® (mixed cellulose esters) is the most widely used membrane for sterilization
- PTFE (polytetrafluoroethylene) is ideal for filtration of nonaqueous solutions

Material	Diameter	Pore size	Flow (mL/min/cm²)	Bubble point (bar²)	Catalog number	Qty/pk	Price/pk
Express; 125 µm thickness							
PES	47 mm	0.22 µm	40	—	GY-29960-20	100	
	90 mm				GY-29960-22	50	
	142 mm				GY-29960-24	50	
Durapore; 125 µm thickness; operating temperature 185°F (85°C) max							
PVDF	47 mm	0.22 µm	6.9	3.40	GY-29960-00	100	
	90 mm				GY-29960-10	50	
PVDF	47 mm	0.45 µm	29	1.55	GY-29960-02	100	
	90 mm				GY-29960-12	50	
MF Millipore; 150 µm thickness; operating temperature 167°F (75°C) max							
Mixed cellulose ester	47 mm	0.22 µm	18	3.52	GY-29959-00	100	
	90 mm				GY-29959-10	50	
Mixed cellulose ester	47 mm	0.45 µm	60	2.20	GY-29959-02	100	
	90 mm				GY-29959-12	50	
Fluoropore; 150 µm thickness							
PTFE	47 mm	0.22 µm	24	1.00	GY-29958-00	100	
	90 mm				GY-29958-10	50	
PTFE	47 mm	0.50 µm	60	0.63	GY-29958-02	100	
	90 mm				GY-29958-12	50	
PTFE	47 mm	1.00 µm	110	0.50	GY-29958-06	100	
	90 mm				GY-29958-16	50	

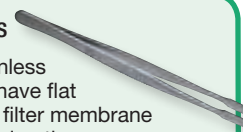


Four different membrane types to match your application.

Filter Forceps

Solid 304 stainless steel forceps have flat tips to handle filter membrane without damaging them.

[GY-02902-50](#) Filter forceps, 4½" (11.4 cm) long



Screen Discs and Sheets

Four materials ensure chemical and application compatibility

- Nylon mesh filters out particles down to 8 µm
- Polypropylene (PP) mesh offers strength and stability; resists most acids, alkalis, and alcohols
- PEEK mesh holds its shape and features superior chemical resistance
- 304 Stainless Steel woven discs or sheets are ideal for high differential pressures

Cut the 30 x 30-cm sheets to desired dimensions to fit your needs



Mesh opening (µm)	Open area	Thickness (µm)	47-mm discs			55-mm discs			90-mm discs			30 x 30-cm sheets		
			Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk	Catalog number	Qty/pk	Price/pk
Nylon. For finer macrofiltration needs, use with all aqueous solutions.														
10	2%	45	GY-06631-02	10		GY-06635-87	10		GY-06635-37	10		GY-06630-92	3	
20	14%	55	GY-06631-03	10		GY-06635-86	10		GY-06635-36	10		GY-06630-90	3	
30	21%	64	GY-06631-04	10		GY-06635-85	10		GY-06635-35	10		GY-06630-88	3	
41	33%	60	GY-06631-05	10		GY-06635-84	10		GY-06635-34	10		GY-06630-86	3	
53	36%	60	GY-06631-06	10		GY-06635-83	10		GY-06635-33	10		GY-06630-84	3	
60	45%	55	GY-06631-07	10		GY-06635-82	10		GY-06635-32	10		GY-06630-82	3	
70	36%	70	GY-06631-08	10		GY-06635-81	10		GY-06635-31	10		GY-06630-80	3	
100	47%	78	GY-06631-09	10		GY-06635-80	10		GY-06635-30	10		GY-06630-75	3	
200	55%	125	GY-06631-14	10		GY-06631-31	10		GY-06631-51	10		GY-06631-72	3	
300	50%	200	GY-06631-15	10		GY-06631-32	10		GY-06631-52	10		GY-06631-73	3	
Polypropylene. Strength and stability, resists most acids and alkalis, autoclavable.														
105	26%	212	GY-06631-16	10		GY-06631-33	10		GY-06631-53	10		GY-06631-74	3	
149	34%	193	GY-06631-17	10		GY-06635-67	10		GY-06635-17	10		GY-06630-50	3	
210	34%	308	GY-06631-18	10		GY-06631-34	10		GY-06631-54	10		GY-06630-48	3	
350	34%	525	GY-06631-19	10		GY-06635-64	10		GY-06635-14	10		GY-06630-45	3	
500	39%	610	GY-06631-20	10		GY-06635-63	10		GY-06635-13	10		GY-06630-44	3	
1000	45%	1020	GY-06631-21	10		GY-06631-35	10		GY-06631-55	10		GY-06631-75	3	
PEEK. For general filtration, resistant to acidic and alkaline solutions, temperature stability up to 250°C.														
35	22%	71	GY-06631-22	10		GY-06631-36	10		GY-06631-56	10		GY-06631-76	3	
115 x145	56%	50	GY-06631-23	10		GY-06631-37	10		GY-06631-57	10		GY-06631-77	3	
220	56%	128	GY-06631-24	10		GY-06631-38	10		GY-06631-58	10		GY-06631-78	3	
300	36%	370	GY-06631-25	10		GY-06631-39	10		GY-06631-59	10		GY-06631-79	3	
Stainless steel. Extra strength, good chemical resistance.														
30	30%	50	—	—	—	GY-06631-40	5		GY-06631-60	5		GY-06631-80	2	
51	42%	56	—	—	—	GY-06635-94	5		GY-06635-44	5		GY-06630-99	2	
104	45.20%	102	—	—	—	GY-06635-93	5		GY-06635-43	5		GY-06630-97	2	
213	49.80%	178	—	—	—	GY-06635-92	5		GY-06635-42	5		GY-06630-96	2	

Filtration

Membranes

Effective filtration at a great price



Wait! Don't Forget...

Membrane filter holders
see page 277.

A. Cole-Parmer® Nylon (Polyamide) Membranes

High protein binding membranes are ideal for filtering or sterilizing nonprotein-containing biological solutions. Inherently hydrophilic membranes do not require prewetting—filter aqueous solutions and organic solvents. Withstand repeated steam sterilization.

Pore size (µm)	Bubble point (psi)	Flow (L/min/sq cm)	13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.2	49	12	GY-36229-00		GY-36229-02		GY-36229-04		GY-36229-06		GY-36229-08	
0.45	33	26	GY-36229-10		GY-36229-12		GY-36229-14		GY-36229-16		GY-36229-18	

B. Cole-Parmer® PTFE Membranes

Durable-laminated PTFE membranes are unaffected by even the most corrosive compounds, including concentrated acids, alkalis, and propellants. Membranes withstand temperatures from –100 to 130°C (–148 to 266°F). Use these hydrophobic membranes for sterile venting and filtration of gas, air streams, and organic solvents. Prewet with acetone or methanol for aqueous solutions.

Pore size (µm)	Bubble point (psi)	Flow (L/min/sq cm)	13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)		90 mm (25/pk)		142 mm (25/pk)	
			Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
0.2	20	0.2	GY-36229-20		GY-36229-22		GY-36229-24		GY-36229-26		GY-36229-28	
0.45	13	0.3	GY-36229-30		GY-36229-32		GY-36229-34		GY-36229-36		GY-36229-38	
1.2	4	1.6	GY-36229-40		GY-36229-42		GY-36229-44		GY-36229-46		GY-36229-48	

C. Polycarbonate Membranes

A thin, translucent and microporous polycarbonate (PCTE) film with a smooth, flat surface. A two-step process produces precise cylindrical pore sizes. Can be safely exposed to temperatures of 140°C (284°F). Ideally suited for use in high-purity and general filtration. The 0.4 µm pore size is typically used for air sampling.

Pore size (µm)	Bubble point (psi)	Flow (L/min/sq cm)	13 mm (100/pk)		25 mm (100/pk)		47 mm (100/pk)	
			Catalog number	Price	Catalog number	Price	Catalog number	Price
0.2	20	0.2	GY-36230-00		GY-36230-02		GY-36230-04	
0.4	12	0.3	GY-36230-06		GY-36230-08		GY-36230-10	
5.0	1.2	1.6	GY-36230-12		GY-36230-14		GY-36230-16	

Silver Membrane Filters

Protect against microbial contamination

- Excellent chemical and thermal properties
- Intrinsically bacteriostatic
- Resist organic compounds, including solvents and halogenated hydrocarbons
- Can be repeatedly autoclaved, steam or hot air sterilized

High porosity (60% open area) provides exceptionally high flow rates. Adsorption and absorption are virtually nonexistent due to the smooth regular shape of the silver media.

Specifications

Coefficient of thermal expansion: 18.8×10^{-6} per °C

Resistivity: 1.59 µS at 68°F (20°C)

Nominal thickness: 50 µm (0.002")

Specific heat: 0.448 calories/gram at 68°F (20°C)



Pore size (µm) [†]	Bubble point (psi) [‡]	Flow (L/sq cm) ^{††}		Max temperature	13 mm (100/pk)		25 mm (50/pk)		47 mm (25/pk)	
		H ₂ O	Air		Catalog number	Price	Catalog number	Price	Catalog number	Price
0.2	13	17	350	400°F (204°C)	GY-06741-10		GY-06741-12		GY-06741-14	
0.45	9	40	670	400°F (204°C)	GY-06741-16		GY-06741-18		GY-06741-20	
0.8	7	340	1400	400°F (204°C)	GY-06741-22		GY-06741-24		GY-06741-26	
1.2	5	460	2000	400°F (204°C)	GY-06741-28		GY-06741-30		GY-06741-32	
5	2	870	5200	800°F (427°C)	GY-06741-34		GY-06741-36		GY-06741-38	

[†]Verified by bubble point pressure. [‡]Bubble point values are for methanol. ^{††}Using pre-filtered water at a pressure differential of 10 psid (0.7 bar) with methanol pre-wetting.

In-Line and Syringe Filter Holders

Polypropylene Holders

Use these polypropylene (PP) holders for ultracleaning and sterilizing liquids under pressure, or for aseptic sampling of liquids and gases. Maximum operating temperature (liquids) is 176°F (80°C); maximum operating pressure is 42 psi (2.9 bar) for the 25-mm holder and 71 psi (4.8 bar) for the 47-mm holder.

Holders feature PP dual support screens and silicone O-rings. Dual support screens allow for flow in both directions. Assemble holders quickly and efficiently without membrane tears with the specially designed inlet cap and exterior lock.

The 25-mm holder features a female luer-lock on the inlet and a male luer-slip on the outlet. The 47-mm holder features a 1/4" NPT(M) thread on the inlet and a 1/4" NPT(M)-female luer-slip on the outlet. Both are autoclavable.



06623-22



06623-32

Type of holder	Diameter	Catalog number	Qty/pk	Price/pk
Syringe	25 mm	GY-06623-32	6	
In-line	47 mm	GY-06623-22	1	

[GY-02930-95](#) Support screen, 25 mm. Pack of 8

[GY-06645-90](#) Support screen, 47 mm. Pack of 4

PFA Filter Holders

Use the PFA holders with chemically aggressive liquids. Dual support screens allow for flow in either direction. Exterior locking ring lets you quickly assemble without tearing the membrane. They are ideal for sterilizing and filtering ultra clean liquids under positive pressure and filtering small volumes of high-purity acids, alkalis or organic solvents. Body and support screens of the filters are made of PFA; the O-ring is made of perfluoroelastomer.

The 25-mm holder features a female luer lock on the inlet and male luer slip on the outlet. The 47-mm holder has an air/bleed vent and combination 1/4" NPT(M) and 1/4" OD tubing adapter connections. Maximum operating temperature is 250°F (121°C). Autoclavable.

Type of holder	Membrane diameter		Filtration area	Catalog number	Price/ea
	Filter	Prefilter			
Syringe	25 mm	21 mm	3.5 cm ²	GY-06644-60	
In-line	47 mm	42 mm	13.5 cm ²	GY-06644-62	



06644-62

06644-60

PFA In-Line Filter Holders

Nonwetting and nonsticking filter holder is suitable for organic solvents, acids, alkalies, or high-purity filtration. Temperature range is -320 to 500°F. Withstand up to 65 psi.

Change filter without disconnecting tubing with Tefzel® ETFE clamp nut. Prefiltering reservoir creates fluid turbulence to slow membrane clogging. PFA support grid snaps out easily for cleaning. Ferruled nuts accept 1/4" OD PTFE or PFA tubing.



06103-14

Type of holder	Diameter	Catalog number	Price/ea
In-line	47 mm	GY-06103-13	
	50 mm	GY-06103-14	

[GY-06103-23](#) Wrench set. Set of two wrenches for assembly/disassembly of PFA filter holders

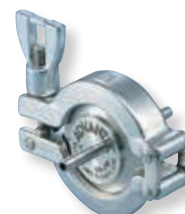
PTFE Membranes for filter holder 06103-14 above. Fibrous, porous structure with 50-mm diameter for screen- and depth-type filtration.

Porosity	Thickness	Catalog number	Price/pk of 10
20 to 30 µm	4.8 mil	GY-06621-10	
5 to 6 µm	5.6 mil	GY-06621-20	
1 to 2 µm	10 mil	GY-06621-30	

Sanitary Stainless Steel In-Line Filter Holders

These sanitary stainless steel (SS) holders are for liquid and gas applications. Use for point-of-use filtration on sterile filling machines, and for lab or pilot-scale sterile filtration applications. The sanitary inlet and outlet connections are nonthreaded and easily disassembled for thorough cleaning.

The 47-mm holder features a vent for air release on the upstream side of the membrane at any time. Body and support screen are 304 SS with PTFE gasket and silicone O-ring. Max pressure at inlet is 71 psi (4.9 bar).



06643-51



06643-53

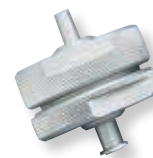
Type of holder	Diameter	Filtration area	Catalog number	Price/ea
Sanitary in-line	25 mm	3.8 cm ²	GY-06643-51	
	47 mm	12.5 cm ²	GY-06643-53	

Stainless Steel Filter Holders

These filter holders have bodies and perforated support screens of 304 SS with PTFE gaskets and silicone O-rings. Autoclave with membrane in place.

Syringe holders have luer fittings. Maximum pressure for 13- and 25-mm syringe holders is 99 psi inlet, 42 psi differential. Maximum pressure for 25- and 47-mm in-line holders is 71 psi inlet, 29 psi differential.

In-line holders have 1/4" NPT(F) and 1/4" NPT(M) ports and are supplied with 3/8" hose barb connectors. All holders include two perforated 304 SS support screens. Open holders without disconnecting lines.



02928-20



02929-10

Type of holder	Diameter	Catalog number	Price/ea
Syringe	13 mm	GY-02928-10	
Syringe	25 mm	GY-02928-20	
In-line	25 mm	GY-02929-10	
In-line	47 mm	GY-02929-20	

Polycarbonate Filter Holders

These reusable holders are designed for the filtration of aqueous solutions. Made of clear, autoclavable polycarbonate with silicone gasket or O-rings. The bell-shaped base protects the filtrate from repeated contamination while flowing into the receiver. Maximum operating pressure is 101 psi.

Model 29550-44 has hose nipples which can be replaced by luer connectors to use it as a large-area syringe filter holder.



29550-44



29550-40

Dia	Filtration area	Connection	Catalog number	Qty/pk	Price/pk
13 mm	0.5 cm ²	Female luer lock inlet, luer slip outlet	GY-29550-40	12	
25 mm	3 cm ²		GY-29550-42	12	
50 mm†	12.5 cm ²	M 12 x 1 female thread	GY-29550-44	5	

†Prefilter is 40 mm.

Filtration

Ultra Centrifugal Filters

Get more than 90% recoveries

- Made of low-binding regenerated cellulose membranes for fast processing
- Unique vertical housing

These units are premier tools for protein concentration and desalting. Typical applications include purifying macromolecular components from tissue culture extracts or cell lysates, and concentrating biological samples.

What's included: 24 units pre-assembled with centrifuge tubes and caps.

NMWL†	0.5-mL volume		2-mL volume		4-mL volume		15-mL volume	
	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price	Cat. no.	Price
3000	GY-29968-20		GY-29968-30		GY-29969-90		GY-29969-92	
10,000	GY-29968-22		GY-29968-32		GY-29969-72		GY-29969-82	
30,000	GY-29968-24		GY-29968-34		GY-29969-74		GY-29969-84	
50,000	GY-29968-26		GY-29968-36		GY-29969-76		GY-29969-86	
100,000	GY-29968-28		GY-29968-38		GY-29969-78		GY-29969-88	

†Nominal molecular weight limit.



Stirred Cells

Increase membrane life and speed sample processing

- Dewater and concentrate samples with ultrafiltration membranes
- Filter fluids with heavy particle burden

Pressurized air from an external source (70 psi/4.8 bar max) filters sample through the membrane. Magnetic stir rod/bar is mounted to cell top cap and is preset to clear membrane surface.

Cells include a preset safety relief valve for pressure buildup, a 1/2" NPT(M) cell cap connection, adapters, and pressure tubing. Top cap can be removed on the 25-, 43-, and 62-mm models to load sample; the 76-, 90-, and 150-mm models have a 1/2" NPT(M) port for sample loading. All cells have polyacetal end caps and stir rod, PTFE stir bar, polypropylene support screen, and silicone O-ring.



Reservoir material	Membrane diameter	Filtration area	Cell capacity	Minimum recoverable volume	Downstream holdup volume	Height x bottom diameter	Catalog number	Price
Clear polycarbonate	25 mm	3.5 cm ²	10 mL	0.5 mL	1.3 mL	5 1/2" x 2 3/8" (13.8 x 6.0 cm)	GY-02910-40	
	43 mm	11.5 cm ²	70 mL	2.5 mL	4.6 mL	6 3/8" x 2 5/8" (16.1 x 6.8 cm)	GY-02910-41	
	62 mm	27.0 cm ²	200 mL	4.5 mL	9.1 mL	7 1/2" x 3 1/4" (19.0 x 8.2 cm)	GY-02910-82	
	76 mm	38.5 cm ²	450 mL	10 mL	13 mL	8 1/4" x 4 5/8" (21.1 x 11.7 cm)	GY-02910-42	
Acrylic	90 mm	54.5 cm ²	600 mL	15 mL	20 mL	9" x 5 3/8" (23.0 x 13.5 cm)	GY-02910-43	
	150 mm	162 cm ²	2000 mL	60 mL	41 mL	10 5/8" x 7 3/4" (26.9 x 19.8 cm)	GY-02910-88	

Stirred Cells

Concentrate macromolecules more efficiently

- Five different sizes handle volumes from 3 to 400 mL
- Offer high flow rates with solutions up to 10% macrosolute concentration at room temperature and 55 psi

Maximum operating pressure is 75 psi; recommended operating pressure is 55 psi (<10 psi when using a 100K MWCO membrane or greater). Autoclavable at 121°C for 30 minutes.

What's included: 4 feet of 1/4" pressure tubing and 4" (10.2 cm) of permeate tubing.

Membrane diameter	Process volume		Effective membrane area	Hold-up volume	Catalog number	Price
	Maximum	Minimum				
25 mm	3 mL	75 µL	0.9 cm ²	70 µL	GY-29968-10	
25 mm	10 mL	1.0 mL	4.1 cm ²	0.2 mL	GY-29968-12	
44.5 mm	50 mL	2.5 mL	13.4 cm ²	0.5 mL	GY-29968-14	
63.5 mm	200 mL	5.0 mL	28.7 cm ²	1.2 mL	GY-29968-16	
76 mm	400 mL	10 mL	41.8 cm ²	1.5 mL	GY-29968-18	



Syringe Filters

Maximize sample recovery

These syringe filters are available in a variety of membrane and housing materials to meet your application needs. All syringe filters have a female luer-lock inlet and a male luer slip connector. Sterile, general-purpose filters and ion chromatography filters are individually packaged.

PES (polyethersulfone) offers the fastest filtration. It is specifically designed for HTP and provides low protein binding sterile filtration.

PVDF (polyvinylidene fluoride) provides the lowest protein binding (99% recovery); ideal for filtration of high value biomolecules (e.g. monoclonal antibodies).

MCE (mixed cellulose esters) is the most widely used membrane for sterilization of aqueous solutions and removal of trace protein contamination.

PTFE (polytetrafluoroethylene) is made of unsupported hydrophilic PTFE, compatible with all commonly used HPLC solvents. It can be used for filter aqueous fluids without prior wetting.

Nylon is hydrophilic and compatible with a broad range of solvents.

Fluoropore PTFE is a hydrophobic PTFE membrane bonded to a high-density polyethylene support; ideal for clarification of organic solvents. Sterile, individually packed, pyrogen free.

Specialty Filter Types

HPLC sample preparation filters are nonsterile. The 4-mm filter units feature a stepped outlet. All products have been tested for UV-absorbing extractables. Certificate included.

Ion chromatography filters are tested for low binding and low extractables—certificate is included. They are used for removing particulates from aqueous and mild organic solvents for cleaner IC spectra. Each unit is individually packaged to minimize the risk of extraneous ionic contamination.



HPLC sample preparation filters

Membrane material	Membrane dia	Pore size	Housing material	Sterile	Catalog number	Qty/pk	Price/pk
General-purpose filters							
Glass fiber prefilter	25 mm	—	PVC	No	GY-81053-00	50	
PES	33 mm	0.22 µm	Modified acrylic	Yes	GY-81053-02	50	
PVDF	4 mm	0.22 µm	HDPE	Yes	GY-81053-04	100	
		0.45 µm			GY-81053-06		
	25 mm	5 µm	PVC	Yes	GY-81053-08	50	
	33 mm	0.1 µm	Modified acrylic	Yes	GY-81053-10	50	
0.45 µm		GY-81053-12					
MCE	33 mm	0.22 µm	Modified acrylic	Yes	GY-81053-14	50	
		0.45 µm			GY-81053-16		
		0.8 µm			GY-81053-18		
PTFE	13 mm	0.22 µm	HDPE	Yes	GY-29950-30	100	
	25 mm	0.22 µm	PVC	Yes	GY-29950-32	50	
HPLC sample preparation filters							
PVDF	4 mm	0.22 µm	HDPE	No	GY-81053-20	100	
		0.45 µm			GY-81053-22		
	13 mm	0.45 µm			GY-29950-64	100	
	33 mm	0.45 µm			GY-81053-24	50	
Nylon	13 mm	0.22 µm	HDPE	No	GY-81053-30	100	
		0.45 µm			GY-81053-32		
	25 mm	0.22 µm			GY-81053-34	50	
		0.45 µm			GY-81053-36		
PTFE	4 mm	0.22 µm	HDPE	No	GY-81053-38	100	
		0.45 µm			GY-81053-40		
	13 mm	0.45 µm			GY-81053-42	100	
	25 mm	0.45 µm			GY-81053-44	50	
Fluoropore PTFE	4 mm	0.22 µm	HDPE	No	GY-81053-46	100	
		0.45 µm			GY-81053-48		
	13 mm	0.22 µm			GY-29950-70	100	
		0.45 µm			GY-81053-50		
	25 mm	0.22 µm			GY-29950-72	50	
		0.45 µm			GY-29950-74		
Ion chromatography filters							
PTFE	13 mm	0.22 µm	HDPE	No	GY-29950-40	100	
		0.45 µm			GY-81053-52		
	25 mm	0.22 µm			GY-29950-42	50	
		0.45 µm			GY-81053-54		

Filtration

Cole-Parmer® Syringe Filters

Get easy, reliable filtration—
just slip on and twist

- Easy identification—membrane type and pore size printed on each filter
- Filter more confidently—filters are 100% integrity tested and manufactured in accordance with ISO 9002 standards
- Get a secure fit—bidirectional membrane support and luer lock inlet/outlet
- Sterile filters are sterilized by gamma irradiation and certified nonpyrogenic, noncytotoxic, and blister packed

Glass Prefilters with Final Filter

- Save time—borosilicate glass fiber prefilter and cellulose filter in one
- Prefilter extends life of final filter by removing particulates from sample
- Reduces retention volume and sample loss



Membrane		Pore size	Housing	Retention volume	Qty/ bx	Catalog number	Price/ bx
Type	Dia						
Nonsterile filters							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	100	GY-02915-90	
		0.45 µm				GY-02915-92	
		0.80 µm				GY-02915-94	
Sterile filter							
Cellulose acetate	26 mm	0.20 µm	Acrylic	0.23 mL	50	GY-02915-40	

Cellulose Acetate Filters

- Low protein binding—ideal for biological solutions
- Use for sterilization and clarification of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
Nonsterile filters						
0.22 µm	26 mm	Acrylic	Blue	100	GY-02915-60	
0.45 µm			Clear		GY-02915-58	
0.80 µm			Green		GY-02915-62	
Sterile filters						
0.22 µm	26 mm	Acrylic	Blue	50	GY-02915-12	
0.45 µm			Clear		GY-02915-00	
0.80 µm			Green		GY-02915-10	

Nylon Filters

- Low levels of extractables with no wetting agents
- Hydrophilic nylon for good chemical resistance—ideal for aqueous and most organics



Pore size	Membrane dia	Housing	Color	Qty/bx	Catalog number	Price/bx
Nonsterile filters						
0.22 µm	25 mm	PP	Natural	100	GY-02915-16	
0.45 µm					GY-02915-14	
Sterile filters						
0.20 µm	25 mm	PP	Red	50	GY-02915-04	
0.45 µm			Natural		GY-02915-02	

Cole-Parmer®

Teky's Tips



Choose the Right Filter!

Membrane type	Applications
Glass prefilter	One-step prefiltration and filtration. Choose the final membrane to meet your application needs. High particle loading capacity.
Cellulose acetate	Sterilization and clarification of aqueous solutions. Low protein binding.
Nylon	Filtration of organic and aqueous solutions. Low extractables.
PTFE	Sterilization of gases and alcohols; cleaning acids, alkalis, and organic solvents; venting purposes. For aggressive chemicals.
Nitrocellulose	High protein retention; microbiological analysis, waste water treatment; sterilization of aqueous solutions.

Specifications

Membrane dia	Housing type	Sample volume	Retention volume [†]	Pressure limit at 25°C	Max temp	Effective filtration area
15 mm	PP	≤5 mL	10 µL	87 psi	127°C	1.7 cm ²
25 mm	PP	≤100 mL	0.1 mL	87 psi	127°C	4.8 cm ²
26 mm	Acrylic	≤100 mL	0.1 mL	87 psi	50°C	5.3 cm ²
50 mm	PP	≤2 L	0.5 mL	60 psi	134°C	20 cm ²

[†]Varies for glass prefilters; see glass prefilter table below.

PTFE Filters

- Ideal for aggressive chemicals—organic solvents, concentrated acids and bases, propellants and more
- Use for gas/air filtration
- 50-mm membranes have stepped hose barb connectors for ¼" to ½" ID tubing



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
Nonsterile filters						
0.20 µm	15 mm	PP	Natural	100	GY-29550-08	
0.45 µm					GY-29550-10	
0.20 µm	25 mm	PP	Natural	100	GY-02915-20	
0.45 µm					GY-02915-22	
0.20 µm	50 mm	PP	Natural	20	GY-02915-28	
0.45 µm					GY-02915-30	
Sterile filters						
0.20 µm	25 mm	PP	Natural	50	GY-02915-08	
0.50 µm					GY-02915-06	

Nitrocellulose Filters

- Good for macromolecules—highest protein retention
- Get fast flow rates with aqueous solutions
- Ideal for microbiological analysis, waste water treatment, and sterilization of aqueous solutions



Pore size	Membrane dia	Housing	Color	Qty/bx	Cat. no.	Price/bx
Nonsterile filter						
0.20 µm	26 mm	Acrylic	Blue	100	GY-02915-56	
Sterile filters						
0.20 µm	26 mm	Acrylic	Blue	50	GY-02915-52	
0.45 µm					GY-02915-53	

Disposable Syringe Filters

Minimize sample holdup and maximize recovery

- Nonpigmented acrylic or polypropylene (PP) housings feature integral filter sealing to avoid the risk of contamination from pigments and adhesives
- Housings have standard luer connectors, except for 50-mm filters which have 7 to 13.5 mm hose barb connectors



Mixed Cellulose Ester Filters are hydrophilic with high porosity and fast flow rate. Ideal for general-purpose filtration of aqueous solutions. Offer higher protein binding than cellulose acetate.

Cellulose Acetate Filters feature hydrophilic membranes with low protein binding; suitable for aqueous protein solutions. The filters are nitrate-free, making them suitable for groundwater filtration.

Nylon Filters are strong hydrophilic filters compatible with aqueous and alcoholic solutions and most HPLC solvents. They offer minimal extractables and high binding capacity for proteins, DNA, and RNA.

Pore size	Membrane dia	Housing	Sterile	Cat. no.	Qty/pk	Price/pk
Mixed cellulose ester membrane filters						
0.20 µm	25 mm	Acrylic	No	GY-81054-24	50	
			Yes	GY-81054-26		
0.45 µm	25 mm	Acrylic	No	GY-81054-28	50	
			Yes	GY-81054-72		
Cellulose acetate membrane filters						
0.20 µm	3 mm	PP	Yes	GY-81054-00	100	
0.20 µm	13 mm	PP	No	GY-81054-06	100	
			Yes	GY-81054-08		
0.45 µm	13 mm	PP	No	GY-81054-74	100	
			Yes	GY-81054-76		
0.20 µm	25 mm	Acrylic	No	GY-81054-30	50	
			Yes	GY-81054-32		
0.45 µm	25 mm	Acrylic	No	GY-81054-34	50	
			Yes	GY-81054-36		
0.80 µm	25 mm	Acrylic	No	GY-81054-38	50	
			Yes	GY-81054-40		
0.20 µm	50 mm	PP	No	GY-81054-60	10	
			Yes	GY-81054-62		
0.45 µm	50 mm	PP	No	GY-81054-64	10	
			Yes	GY-81054-66		

PTFE Hydrophilic Filters are versatile, characterized by very good chemical resistance, and are compatible with many aqueous and organic solvent mixtures used in HPLC, including acetonitrile/water.

PTFE Hydrophobic Filters with a laminated polypropylene support can be used to sterilize and clarify strong acids and solvents. Also typically used in gas filtration or venting applications.

PES Polyethersulfone (PES) Filters are hydrophilic and low protein-binding; ideal for pharmaceutical and biological applications where sample recovery and low extractables are essential. Also used for filtration of high-contaminant or viscous liquids.

Membrane Specifications

Diameter	Housing	Filtration area	Sample volume	Holdup volume	Max temp	Max pressure psi (bar)
3 mm	PP	0.06 cm ²	<2 mL	<0.01 mL	140°F (60°C)	74 (5.1)
13 mm	PP	0.9 cm ²	<10 mL	<0.03 mL	140°F (60°C)	74 (5.1) [†]
25 mm	PP	4.0 cm ²	<100 mL	<0.1 mL	140°F (60°C)	74 (5.1) [†]
25 mm	Acrylic	4.0 cm ²	<100 mL	<0.1 mL	113°F (45°C)	74 (5.1)
30 mm	PP	4.8 cm ²	<120 mL	<0.1 mL	356°F (180°C)	127 (8.8)
50 mm	PP	19.6 cm ²	>100 mL	<3.0 mL	140°F (60°C)	49 (3.4)

[†]Max pressure for PTFE hydrophilic is 56 psi (3.9 bar).

Pore size	Membrane dia	Housing	Sterile	Catalog number	Qty/pk	Price/pk
Nylon membrane filters						
0.22 µm	13 mm	PP	No	GY-81054-20	100	
0.45 µm				GY-81054-22		
0.22 µm	25 mm	PP	No	GY-81054-80	100	
0.45 µm				GY-81054-82		
0.22 µm	30 mm	PP	No	GY-81054-52	100	
0.45 µm				GY-81054-54		
PTFE hydrophilic membrane filters						
0.20 µm	13 mm	PP	No	GY-81054-12	100	
0.50 µm				GY-81054-14		
0.20 µm	25 mm	PP	No	GY-81054-42	100	
0.50 µm				GY-81054-44		
PTFE hydrophobic membrane filters						
0.50 µm	3 mm	PP	No	GY-81054-02	100	
0.20 µm	13 mm	PP	No	GY-81054-16	100	
0.50 µm				GY-81054-18		
0.20 µm	25 mm	PP	No	GY-81054-46	50	
0.50 µm				GY-81054-48		
0.20 µm	50 mm	PP	No	GY-81054-68	10	
			Yes	GY-81054-70		
0.50 µm	50 mm	PP	No	GY-81054-78	10	
PES membrane filters						
0.20 µm	25 mm	Acrylic	Yes	GY-81054-92	50	
0.45 µm				GY-81054-94		

Air Sampling Filters

Make sure your work environment is safe

- Ideal for sampling airborne particulates

Glass Fiber Filters are binder-free and have a low trace metals content. Glass fibers are unaffected by humidity, highly resistant to chemical attack, and biologically inert.

Quartz Fiber Filters are unaffected by humidity, highly resistant to chemical attack, and biologically inert. Filters are pre-fired at 1832°F (1000°C) for two hours to reduce organic contamination. Show very low trace metals content and do not absorb nitrous and sulfur dioxides.

Composite Filters are specially developed for the measurement of dusts and particulate matter. These PTFE-coated filters are naturally hydrophobic and unaffected by humidity. Thermostable to 500°F (260°C).

Size	Qty/pk	Cat. no.	Price/pk
Glass fiber filters (Grade GB-100R)			
47-mm dia disc	100	GY-06646-75	
8" x 10" (20 x 25 cm) sheet	50	GY-06646-82	
Quartz fiber filters (Grade QR-100)			
47-mm dia disc	100	GY-06649-52	
8" x 10" (20 x 25 cm) sheet	50	GY-06649-58	
Composite filters (Grade PG-60)			
25-mm dia disc	100	GY-06649-60	
47-mm dia disc	100	GY-06649-61	
110-mm dia disc	50	GY-06649-62	



Filtration

Cole-Parmer® HPLC Syringe Filters

High quality, economical price

These nonsterile syringe filters are tested for physical properties and UV-detectable extractables. Each unit features secure, enhanced female Luer-Lok™ inlet and male luer slip outlet, and solvent-resistant low-extractable polypropylene housing. Select membranes with 1.0 µm binder-free glass prefilter for your high-solids sample. Autoclavable.



Syringe filters come with plastic jar for convenient storage.

Membrane dia	Max temperature	Max pressure	Retention volume
4 mm	212°F (100°C)	75 psi	<15 µL
17 mm		115 psi	<29 µL
30 mm		90 psi	<137 µL

Pore size	Membrane diameter	Catalog number	Qty/pk	Price/pk
Nylon membranes				
0.2 µm	4 mm	GY-32815-00	100	
0.45 µm		GY-32815-02		
0.2 µm	17 mm	GY-32816-02	100	
0.45 µm		GY-32816-00		
0.2 µm	30 mm	GY-32816-08	100	
0.2 µm		GY-32816-10[‡]		
0.45 µm		GY-32816-04		
0.45 µm		GY-32816-06[‡]		
1.5 µm		GY-32816-12		
5.0 µm		GY-32816-14		
PTFE membranes				
0.2 µm	4 mm	GY-32816-22	100	
0.45 µm		GY-32816-20		
0.2 µm	17 mm	GY-32816-26	100	
0.45 µm		GY-32816-24		
0.2 µm	30 mm	GY-32816-32	100	
0.45 µm		GY-32816-28		
0.45 µm		GY-32816-30[‡]		
1.0 µm		GY-32816-34		
PVDF membranes				
0.2 µm	17 mm	GY-32816-46	100	
0.45 µm		GY-32816-44		
0.2 µm	30 mm	GY-32816-50	100	
0.45 µm		GY-32816-48		
Regenerated cellulose membranes				
0.2 µm	17 mm	GY-32816-66	100	
0.45 µm		GY-32816-64		
0.2 µm	30 mm	GY-32816-70	100	
0.45 µm		GY-32816-68		
Polyethersulfone (PES) membranes				
0.2 µm	17 mm	GY-32816-82	100	
0.45 µm		GY-32816-80		
0.2 µm	30 mm	GY-32816-86	100	
0.45 µm		GY-32816-84		
Polypropylene membranes				
0.2 µm	17 mm	GY-32816-96	100	
0.45 µm		GY-32816-94		
0.2 µm	30 mm	GY-32817-02	100	
0.45 µm		GY-32816-98		
0.45 µm		GY-32817-00[‡]		
Cellulose acetate membranes				
0.2 µm	17 mm	GY-32817-16	100	
0.45 µm		GY-32817-14		
0.2 µm	30 mm	GY-32817-20	100	
0.45 µm		GY-32817-18		
Glass microfiber membranes				
0.7 µm	30 mm	GY-32817-30	100	
1.2 µm		GY-32817-32		
3.1 µm		GY-32817-34		

*With prefilter.

Extraction Thimbles

Protect purity during extraction

- Seamless, high-purity filters for extraction and air monitoring
- Used in soxhlet apparatus for dust sampling or for extracting soluble compounds using organic solvents



Used in soxhlet apparatus for sampling and extraction applications

Made of cellulose, glass fiber, or silica fiber. Typical applications include analysis of fats, oils, grease, organics, pesticides, pollutants, and additives in plastic/rubber materials.

Cellulose Thimbles are suitable for extraction of organic compounds and dust sampling. Lipid content is <0.1% by weight; thickness is 1.5 mm.

Glass Fiber Thimbles of borosilicate glass are acid washed for minimum trace metal content. They are acid resistant (except hydrofluoric) and ideal for high-temperature extractions up to 932°F (500°C). Thickness is 1.6 mm.

Quartz Fiber Thimbles are tapered for ease in loading into stack samplers. Heat resistant up to 1832°F (1000°C). Thickness is 2.2 mm.

Dia x H	Qty/pk	Catalog number	Price/pk
Cellulose thimbles (Grade No. 84)			
19 x 90 mm 22 x 65 mm 25 x 60 mm	25	GY-29821-44 GY-29821-08 GY-29821-02	
25 x 80 mm 25 x 90 mm 25 x 100 mm 28 x 100 mm	25	GY-29821-46 GY-29821-10 GY-29821-48 GY-29821-50	
30 x 80 mm 30 x 100 mm 33 x 80 mm 33 x 100 mm 43 x 123 mm	25	GY-29821-14 GY-29821-12 GY-29821-04 GY-29821-52 GY-29821-06	
Glass fiber thimbles (Grade No. 86R)			
19 x 90 mm 25 x 90 mm 25 x 100 mm	25	GY-29821-16 GY-29821-20 GY-29821-18	
30 x 80 mm 30 x 100 mm 33 x 80 mm 43 x 123 mm	25	GY-29821-24 GY-29821-22 GY-29821-26 GY-29821-28	
Quartz fiber thimbles (Grade No. 88R)			
19 x 90 mm 25 x 100 mm 30 x 80 mm 30 x 100 mm	25	GY-29821-30 GY-29821-32 GY-29821-36 GY-29821-34	

Disposable In-Line Gas/Liquid Filters

Easily filter in-line

- Choose PVDF for the best chemical compatibility or nylon for lower cost

Filter gases or liquids with these microfiber filters. All models have a borosilicate glass filter membrane. See table below for applications and efficiency ratings. Liquid efficiency ratings are 98% retention of particles of noted size; gas efficiency ratings are percentage retention of 0.01 µm particles.

Nylon and PVDF filters with ¼" OD and ½" OD ports accept flexible tubing for low-pressure applications; use compression fittings for higher-pressure applications. Models 02909-15, -35, and -55 have a stepped barb connector for secure connection of ¼" and ⅜" ID flexible tubing.

Max pressure for filters with ¼" OD ports is 125 psi (8.5 bar); max pressure for filters with ½" OD ports is 50 psi (3.4 bar). Max differential pressure for all filters is 40 psi (60 psi for 0.01 µm units).



Application	Material	Gas efficiency	Liquid efficiency	Air flow at 2 psi drop at indicated pressure (scfm)			Water flow at indicated pressure drop (GPH)		Max temp (at 0 psi)	Ports	Catalog number	Qty/pk	Price/pk
				2 psi	60 psi	100 psi	1 psi	5 psi					
High-purity compressed gas; absolute filtration to 0.01 µm	Nylon	100% at 0.01 µm	—	0.3	1.7	2	—	—	230°F (110°C)	¼" OD	GY-02917-60	5	
Gas/air filtration—general-purpose use. Liquid filtration—remove most visible particles.	Nylon	93%	25 µm	1.2	5.4	8.3	12	30	230°F (110°C)	¼" OD	GY-02909-10	5	
	Nylon	93%	25 µm	1.2	5.4	8.3	12	30	230°F (110°C)	¼" and ⅜" barb	GY-02909-15	10	
	Nylon	93%	25 µm	—	—	—	54	129	150°F (66°C)	½" OD	GY-02909-17	1	
	Nylon	98%	8 µm	1.0	125	6.9	10	25	230°F (110°C)	¼" OD	GY-02909-20	5	
	PVDF	93%	25 µm	1.2	5.4	8.3	12	30	275°F (135°C)	¼" OD	GY-02908-40	5	
	PVDF	98%	8 µm	1.0	125	6.9	10	25	275°F (135°C)	¼" OD	GY-02908-50	5	
Gas/air filtration—complete oil and water droplet removal. Liquid filtration—remove all visible particles and most colloidal haze.	Nylon	99.99%	2 µm	0.8	3.6	5.4	3	15	230°F (110°C)	¼" OD	GY-02909-30	5	
			2 µm	0.8	3.6	5.4	3	15	230°F (110°C)	¼" and ⅜" barb	GY-02909-35	10	
	Nylon		2 µm	—	—	—	13	56	150°F (66°C)	½" OD	GY-02909-37	1	
	Nylon		2 µm	0.8	3.6	5.4	—	—	230°F (110°C)	¼" OD	GY-02909-40*	5	
	PVDF		2 µm	0.8	3.6	5.4	3	15	275°F (135°C)	¼" OD	GY-02908-60	5	
Gas/air filtration—with carbon granules for removal of trace oil vapors	Nylon	99%	—	0.5	2.6	4.0	—	—	180°F (82°C)	¼" OD	GY-02908-62	10	
Gas/air filtration—with silica gel for removal of water vapor	Nylon	99%	—	0.5	2.6	4.0	—	—	180°F (82°C)	¼" OD	GY-02908-64*	10	
Gas/air filtration—with mixed sodium and calcium hydroxides for removal of acidic gases	Nylon	99%	—	0.5	2.6	4.0	—	—	180°F (82°C)	¼" OD	GY-02908-66	10	
Gas/air sterilizing. Liquid filtration—remove most bacteria.	Nylon	99.9999+%	0.9 µm	0.4	1.8	2.7	1.5	7.3	230°F (110°C)	¼" OD	GY-02909-50	5	
	Nylon	99.9999+%	0.9 µm	0.4	1.8	2.7	1.5	7.3	230°F (110°C)	¼" and ⅜" barb	GY-02909-55	10	
	Nylon	99.9999+%	0.3 µm	0.1	0.45	0.68	0.4	1.9	230°F (110°C)	¼" OD	GY-02909-60	5	
	PVDF	99.9999+%	0.9 µm	0.4	1.8	2.7	1.5	7.3	275°F (135°C)	¼" OD	GY-02908-80	5	
	PVDF	99.9999+%	0.3 µm	0.1	0.45	0.68	0.4	1.9	275°F (135°C)	¼" OD	GY-02908-90	5	

*Turns red when saturated.

Hollow Fiber Media Filters

Sterilize cell culture media quickly and efficiently

- Filters may be used as pressure filters with peristaltic pumps, pressure vessels, or repeating syringes
- PVC filling bell maintains sterility downstream

Hollow Fiber Media Filter provides biocompatibility, low extractables, and high flow rates for serum-free media and aqueous solutions. Polypropylene autovent prevents air locking. Naturally hydrophilic, 0.2 µm microporous membrane.

Deluxe Hollow Fiber Media Filter offers rapid filtration of serum-bearing media.

Specifications

Maximum temperature: 182°F (83°C) Maximum pressure: 50 psi (3.4 bar)



Water flow rate at 10 psi	Throughput	Connections (inlet/outlet)	Filling bell	Qty/bx	Catalog number	Price/bx
Hollow fiber media filters, sterile						
400 mL/min	0.2 to 2 L [†]	Female luer/male luer	Yes	12	GY-29510-20	
400 mL/min	0.2 to 2 L [†]	Female luer/male luer	No	18	GY-29510-00	
750 mL/min	2 to 5 L [†]	Female luer/male luer	Yes	12	GY-29510-22	
750 mL/min	2 to 5 L [†]	Female luer/male luer	No	18	GY-29510-02	
1000 mL/min	5 to 10 L [†]	¼" hose barbs	Yes	12	GY-29510-14	
1400 mL/min	10 to 25 L [†]	¼" to ⅜" hose barbs	Yes	6	GY-29510-06	
2000 mL/min	25 to 50 L [†]	¼" to ⅜" hose barbs	Yes	3	GY-29510-08	
Deluxe hollow fiber media filters, sterile						
400 mL/min	0.2 to 2 L [‡]	Female luer/male luer	Yes	12	GY-29510-10	
400 mL/min	0.2 to 2 L [‡]	Female luer/male luer	No	18	GY-29510-24	
750 mL/min	2 to 5 L [‡]	Female luer/male luer	Yes	12	GY-29510-12	
750 mL/min	2 to 5 L [‡]	Female luer/male luer	No	18	GY-29510-26	
1000 mL/min	5 to 10 L [‡]	¼" hose barbs	Yes	12	GY-29510-28	
1400 mL/min	10 to 25 L [‡]	¼" to ⅜" hose barbs	Yes	6	GY-29510-16	
2000 mL/min	25 to 50 L [‡]	¼" to ⅜" hose barbs	Yes	3	GY-29510-30	

[†]Serum-free DMEM [‡]DMEM with serum





Hollow Fiber Filter Capsules

Achieve high flow rates with low pressure drop

- Steam sterilize capsules in-line or autoclave off-line
- Polysulfone membrane offers low protein binding

These hollow fiber filters offer superior performance in a compact size. Filters have up to six times more surface area compared to other pleated membrane filters, providing greater capacity and longer filter life. The unique membrane structure helps remove bacteria, high-level endotoxins, spores, and pyrogens†—ideal for a variety of water purification applications. Maximum differential pressure is 30 psi (2 bar). Capsules have a polycarbonate case and end caps and polyurethane end seals. Capsules are provided nonsterile. See page 297 for hollow-fiber cartridge filters in 10" and 20" single-open-end format.

Pore size (absolute)	Effective filtration area	Connections	Catalog number	Qty/ cs	Price/cs
Medium flow: 0.5 to 2.5 LPM					
0.05 µm	1858 cm²	¾" hose barb	GY-29880-06	6	
		¼" NPT(M)	GY-29880-12		
0.1 µm	1858 cm²	¾" hose barb	GY-29880-14	6	
		¼" NPT(M)	GY-29880-08		
0.2 µm	1858 cm²	¾" hose barb	GY-29880-10	6	
		¼" NPT(M)	GY-29880-22		
High flow: 1 to 5.7 LPM					
0.05 µm	5575 cm²	¼" NPT(M)	GY-29880-28	6	
		¾" NPT(M)	GY-29880-30		
0.1 µm	5575 cm²	¼" NPT(M)	GY-29880-32	6	
		¾" NPT(M)	GY-29880-34		
0.2 µm	5575 cm²	¼" NPT(M)	GY-29880-36	6	
		¾" NPT(M)	GY-29880-38		

†Only 0.05 and 0.1 µm pore size membrane filters remove pyrogens.

Sterilized Sampling Bottle Assemblies

Safely transfer, sample, and store biopharmaceutical products and reagents

- Secure, single-piece cap/tubing assembly eliminates contamination and product loss due to loose connections
- Eliminate labor and validation costs associated with assembly and cleaning—pre-sterilized by gamma irradiation

Cap assembly includes a seamless liner with premolded C-Flex® fill and vent tubes to create an unobstructed fluid path. The 18" (45.7 cm) fill tube is plugged at the terminal end to maintain assembly sterility until use. Vent tube includes a 0.2-micron Pall® Acrodisc PTFE vent filter to prevent infiltration by contaminants. Vent filter is hydrophobic to guard against loss of costly product or media during filling or emptying. The one-piece liner eliminates the risk of bacterial entrapment and contamination and forms an elastomeric seal between cap and bottle rim.

C-Flex tubing is manufactured according to cGMP and meets USP Class VI and USDA requirements. Tubing can withstand temperatures from –100 to 275°F (–73 to 135°C). Offers exceptional tensile and tear strength, extremely low extractables, and excellent biocompatibility. The smooth inner surface reduces absorption and protein binding.

What's included: clear PETG bottle, 38-mm cap, C-Flex tube/liner assembly with 1/8" ID x 1/4" OD tubing, and 0.2-micron vent filter.



Bottle volume	Catalog number	Price
125 mL	GY-95644-00	
250 mL	GY-95644-02	
500 mL	GY-95644-04	
1000 mL	GY-95644-06	
2000 mL	GY-95644-08	

Disposable Capsule Filters

Remove more contaminants

- Capsules are sterilizable by autoclave or ethylene oxide (EtO); model 29702-05 is presterilized
- Maximum operating pressure is 57 psi (3.9 bar); maximum operating temperature is 140°F (60°C)
- Capsules are vented at both ends for bleeding trapped air and for draining



Polypropylene Depth-Media Capsules offer high dirt-holding capacity with superior retention. PP fibers are thermally welded to prevent slough-off and to minimize changes in pore size.

PTFE Membrane Capsules are hydrophobic and chemical resistant.

PES Membrane Capsules are designed for biocompatibility.

Polypropylene Depth-Media Capsule Filters

Particle retention		Effective filtration area	Connections	Catalog number	Price/ea
Particle size	(%)				
1.0 µm	>99	500 cm ²	3/8" hose barb	GY-29702-11	
1.0 µm	>99	1000 cm ²	3/8" hose barb	GY-29702-13	
2 to 5 µm	>94	500 cm ²	3/8" hose barb	GY-29702-12	
2 to 5 µm	>94	1000 cm ²	3/8" hose barb	GY-29702-14	
5 to 10 µm	98	600 cm ²	3/8" hose barb	GY-29702-15	
5 to 10 µm	98	1200 cm ²	3/8" hose barb	GY-29702-16	

PTFE and PES Membrane Capsule Filters

Pore size	Effective filtration area	Connections	Catalog number	Price/ea
PTFE (hydrophobic) membrane				
0.1 µm	1150 cm ²	3/8" hose barb	GY-29702-23	
0.2 µm	570 cm ²	3/8" hose barb	GY-29702-21	
0.2 µm	1150 cm ²	3/8" hose barb	GY-29702-24	
0.5 µm	1150 cm ²	3/8" hose barb	GY-29702-25	
1.0 µm	570 cm ²	3/8" hose barb	GY-29702-22	
1.0 µm	1150 cm ²	3/8" hose barb	GY-29702-26	
PES membrane				
0.2 µm	450 cm ²	1/4" NPT(M)	GY-29702-01	
0.2 µm	900 cm ²	1/4" NPT(M)	GY-29702-03	
0.2 µm	900 cm ²	3/8" hose barb	GY-29702-05	
0.45 µm	450 cm ²	1/4" NPT(M)	GY-29702-02	
0.45 µm	900 cm ²	1/4" NPT(M)	GY-29702-04	

†Presterilized

Reusable Polysulfone Bottletop Filter Holders

Maximize your throughput

- Usable with glass media bottles with 33- or 45-mm neck size
- Nominal filter area is 13.3 cm² with sterilization support plate
- Autoclavable and noncytotoxic



PSF bottletop filters feature a vacuum port, molded-in graduations, and silicone O-ring. Use with 47-mm diameter membranes. For a sterile venting plug, put cotton in the polypropylene tubing adapter. Filters accept 1/4" to 5/16" (6- to 8-mm) ID vacuum tubing.

Description	Upper chamber capacity	Catalog number	Price
33-mm neck bottletop filters	500 mL	GY-30408-10	
45-mm neck bottletop filters	250 mL	GY-30408-02	
	500 mL	GY-30408-12	

All-Glass Filtration Assemblies

Preserve purity of sample

- Ideal for high-purity and aggressive chemical applications

Standard 25- and 47-mm holders mount on filtration flask using a ground glass joint. Outlet of support base drip tube is positioned below the side arm connection to prevent sample aspiration into vacuum line.

What's included: funnel, support base, receiving flask, and clamp.



Membrane size	Support	Filtration area	Funnel size	Flask size	Catalog number	Price
25 mm	Glass frit	2.1 cm ²	15 mL	250 mL	GY-06645-19	
	Stainless steel				GY-06645-39	
47 mm	Glass frit	9.6 cm ²	300 mL	1000 mL	GY-06645-49	
	Stainless steel				GY-06645-65	
	PTFE				GY-06645-41	

[GY-06645-51](#) Replacement receiver flask, 1000 mL

Disposable Filterware

Membrane materials and pore sizes to best suit your applications

Filter Units provide a complete vacuum filtration system designed for the filtration of cell culture media, biological fluids, and other aqueous solutions. Each filter unit consists of polystyrene housing with a welded filter membrane mounted to a support plate in the upper structure. Side arms with quick-disconnect tubing adapters simplify vacuum line attachment. The upper structures are easily separated from their receivers and a sterile, leakproof closure is included for filtrate storage.

Bottletop Filters are polystyrene funnels with integrally welded filter membranes designed for direct filtration into sterile glass media bottles. They thread securely onto bottles with 45-mm neck. Side arms with quick-disconnect tubing adapters simplify vacuum line attachment.



Cellulose Nitrate (CN) Filter Units

- Provide fast flow rates for buffers, salts, and other aqueous solutions
- Triton-free CN membranes have excellent wetting properties—ideal for filtering and clarifying solutions when protein binding is not a concern

Capacity	Pore size	Membrane dia	Catalog number	Qty/pk	Price/pk
115 mL	0.20 µm	50 mm	GY-06730-22	12	
115 mL†	0.45 µm	50 mm	GY-06730-40	12	
150 mL	0.20 µm	50 mm	GY-06730-46	12	
150 mL†	0.45 µm	50 mm	GY-06730-45	12	
500 mL	0.20 µm	75 mm	GY-06730-80	12	
500 mL†	0.45 µm	75 mm	GY-06730-90	12	
1000 mL†	0.20 µm	90 mm	GY-06730-92	12	
1000 mL	0.45 µm	90 mm	GY-06730-94	12	

†Gridded membrane.



Polyethersulfone (PES) Filter Units and Bottletop Filters

- Supor® MachV aPES membrane provides outstanding throughput
- Low protein binding—excellent for filtering solutions for cell culture applications

Capacity	Pore size	Membrane dia	Catalog number	Qty/pk	Price/pk
Filter units					
115 mL	0.20 µm	50 mm	GY-06730-25	72	
115 mL	0.45 µm	50 mm	GY-06730-34	12	
150 mL	0.20 µm	50 mm	GY-06730-31	12	
150 mL	0.45 µm	50 mm	GY-06730-32	12	
500 mL	0.20 µm	75 mm	GY-06730-43	12	
500 mL	0.45 µm	75 mm	GY-06730-54	12	
1000 mL	0.20 µm	90 mm	GY-06730-56	12	
1000 mL	0.45 µm	90 mm	GY-06730-58	12	
Bottletop filters (fit 45-mm bottle neck size)					
150 mL	0.20 µm	50 mm	GY-06731-11	12	
500 mL	0.20 µm	75 mm	GY-06731-15	12	
500 mL	0.45 µm	75 mm	GY-06731-16	12	
1000 mL	0.20 µm	90 mm	GY-06731-18	12	

Surfactant-Free Cellulose Acetate (SFCA) Filter Units and Bottletop Filters

- Contain no wetting agents that can affect sensitive cells
- Exhibit low protein binding and excellent flow rates



Capacity	Pore size	Membrane dia	Catalog number	Qty/pk	Price/pk
Filter units					
150 mL	0.20 µm	50 mm	GY-06731-20	12	
150 mL	0.45 µm	50 mm	GY-06731-22	12	
500 mL	0.20 µm	75 mm	GY-06731-24	12	
500 mL	0.45 µm	75 mm	GY-06731-26	12	
1000 mL	0.20 µm	90 mm	GY-06731-27	12	
1000 mL	0.45 µm	90 mm	GY-06731-28	12	
Bottletop filters (fit 45-mm bottle neck size)					
150 mL	0.20 µm	50 mm	GY-06731-34	12	
500 mL	0.20 µm	75 mm	GY-06731-30	12	
500 mL	0.45 µm	75 mm	GY-06731-32	12	
1000 mL	0.20 µm	90 mm	GY-06731-33	12	

Filter Unit Receivers

Use these radiation-sterilized receivers to store filtrate. Receivers feature tapered sides and “grip dimples” for easy handling and a 1½-turn threaded screw closure that provides a leakproof seal that prevents pH shift. Both bottles have 45-mm neck. Noncytotoxic. Nonpyrogenic.



Capacity	Catalog number	Qty/pk	Price/pk
150 mL	GY-06731-40	24	
250 mL	GY-06731-41	24	
500 mL	GY-06731-42	12	
1000 mL	GY-06731-44	12	

Features

- Color-coded filter collars for easy identification of membrane type
- 90-mm diameter membranes provide fastest flow rates
- Product specifications, lot number, and expiration date are printed on units with 50, 75 and 90 mm diameter filters
- Convenient easy-to-read graduations on uppers and receivers
- Ergonomic receiver design improves handling
- The 150-mL and larger filterware pass strict performance tests and are “Nalgene certified” nonpyrogenic and noncytotoxic
- Five-year sterile shelf life

Disposable Vacuum-Driven Filter Devices

For vacuum filtering solutions in 50-mL centrifuge tubes

Steriflip filter devices feature high-quality membranes. Millipore Express® (PES) membranes are ideal for low protein binding and exhibit faster flow rates with viscous solutions. Durapore® PVDF membranes offer the lowest protein binding available and are ideal for scale-up applications. Nylon mesh membranes are best for large particle removal.

To filter, attach the unit directly to the 50-mL centrifuge tube containing your sample, flip it, and apply a vacuum. The filtrate collects directly in the attached 50-mL tube eliminating sample transfers between tubes. Disposable devices are sterile and have a 50-mL process volume.



Membrane		Capacity	Catalog number	Qty/pk	Price/pk
Pore size	Material				
0.22 µm	Millipore Express (PES)	50 mL	GY-29969-20	25	
0.22 µm	Durapore (PVDF)	50 mL	GY-29969-24	25	
0.45 µm			GY-29969-26		
100 µm	Nylon mesh	50 mL	GY-29969-28	25	



Disposable Analytical Filter Units

Optimize growth of microorganisms

- Triton free cellulose nitrate membrane
- Upper unit twists off easily for access to 47-mm dia membrane

These filter units and funnels are designed for microbiological analysis testing of water, food and beverage, raw materials, and finished products. Units with 0.45 µm membranes meet requirements for APHA Standard Methods and US EPA water quality testing. All units come presterilized.

Filter units comprise polypropylene upper and high-impact polystyrene lower. Units include a 1/4" to 3/8" ID quick-disconnect tubing adapter for vacuum connection.



Capacity	Pore size	Membrane dia	Membrane color, grid	Catalog number	Qty/pk	Price/pk
150 mL	0.20 µm	47 mm	White, none	GY-06730-02	12	
	0.45 µm		White, gray	GY-06730-04		

[GY-06413-20](#) Tygon® vacuum tubing. 1/4" ID x 5/8" OD. Pack of 10 ft (3.0 m)

[GY-06413-30](#) Tygon vacuum tubing. 3/8" ID x 7/8" OD. Pack of 10 ft (3.0 m)



Reusable Polysulfone Filter Holders

Versatile system with interchangeable components

Polysulfone (PSF) filter holders have an upper chamber with either a receiver or a funnel. Choose from 250- or 500-mL upper chamber and either 250-, 500-, or 1000-mL receivers (all are graduated in 50-mL increments). Holders accept 47- and 50-mm diameter membranes. Filter holders are supplied with two types of membrane supports. Use the sterilization membrane support for fast flow through; use the analytical support to keep the membrane perfectly flat for the analysis of trapped particles.

Transparent polysulfone is autoclavable, break-resistant, and nontoxic. PSF exhibits low protein binding and contains low levels of trace metals and organic leachables. Use holders for vacuum or pressure filtration up to 10 psig. All ports accept 1/4" to 5/16" ID pressure tubing. Funnel models have vacuum gaskets to fit filtering flasks.

Description	Upper chamber capacity	Receiver capacity	Catalog number	Price
Filter holder with receiver	250 mL	250 mL	GY-06730-50	
	500 mL	500 mL	GY-06730-52	
	500 mL	1000 mL	GY-06730-53	
Filter holder with funnel	250 mL	—	GY-06730-55	
	500 mL	—	GY-06730-57	



Disposable Vacuum Filtration Systems

Ideal for filtering cell culture media, biological fluids, and aqueous solutions

- Large membrane diameters (50, 70, and 90 mm) and included glass prefilters increase flow rates
- Provided sterile and certified nonpyrogenic



Vacuum filtration system

Vacuum Filtration Systems

Complete filter/storage system includes a polystyrene (PS) filter funnel joined by a color-coded polyethylene adapter to a removable PS storage bottle. The adjustable, angled hose connector simplifies vacuum-line attachment and ensures stability. Membrane material and pore size are printed on every unit for easy identification. Glass fiber prefilters are included.

Sterile caps for the easy-grip storage bottles are individually wrapped and designed to ensure a secure seal.

Bottletop Filters

Polystyrene funnel with polyethylene neck adapter for use with wide-mouth (45 mm) polystyrene or glass storage bottles. Color-coded and printed with the membrane type and pore size for easy identification. Includes glass fiber prefilter.



Capacity	Membrane			Adapter color	Catalog number	Qty/ cs	Price/ cs
	Dia	Type†	Pore				
150 mL	50 mm	PES	0.22 µm	Yellow	GY-29530-32	48	
		CA	0.22 µm	Orange	GY-29530-34	48	
		CA	0.45 µm	Orange	GY-01937-12	48	
500 mL	70 mm	PES	0.22 µm	Yellow	GY-29530-42	12	
		CA	0.22 µm	Orange	GY-29530-44	12	
		CA	0.45 µm	Orange	GY-01937-14	12	
		CN	0.22 µm	Blue	GY-29530-47	12	
		NYL	0.20 µm	Red	GY-29530-48	12	
1000 mL	90 mm	PES	0.22 µm	Yellow	GY-29530-52	12	
		CA	0.22 µm	Orange	GY-29530-54	12	

†PES—polyethersulfone, CA—cellulose acetate, CN—cellulose nitrate, NYL—nylon

Capacity	Membrane			Adapter color	Catalog number	Qty/ cs	Price/ cs
	Dia	Type†	Pore				
150 mL	50 mm	PES	0.22 µm	Yellow	GY-29530-60	12	
		CA	0.22 µm	Orange	GY-29530-62	12	
250 mL	50 mm	PES	0.22 µm	Yellow	GY-29530-02	12	
		CA	0.22 µm	Orange	GY-29530-04	12	
		CN	0.20 µm	Blue	GY-29530-06	12	
		NYL	0.20 µm	Red	GY-29530-08	12	
500 mL	70 mm	PES	0.22 µm	Yellow	GY-29530-12	12	
		CA	0.22 µm	Orange	GY-29530-14	12	
		NYL	0.20 µm	Red	GY-29530-18	12	
1000 mL	90 mm	PES	0.22 µm	Yellow	GY-29530-22	12	
		CA	0.22 µm	Orange	GY-29530-24	12	
		CN	0.20 µm	Blue	GY-29530-26	12	
		NYL	0.20 µm	Red	GY-29530-28	12	

†PES—polyethersulfone, CA—cellulose acetate, CN—cellulose nitrate, NYL—nylon

Storage Bottles

Store media, buffers, and other aqueous solutions in these disposable polystyrene bottles. The low-profile design with easy-grip handles facilitates handling. Plug-seal cap provides airtight seal and helps minimize the risk of contamination.



Capacity	Neck size	Catalog number	Qty/ pk	Price/ pk
150 mL	45 mm	GY-29531-02	24	
250 mL		GY-29531-04		
500 mL		GY-29531-06		
1000 mL		GY-29531-08		

How Vacuum Filtration Works

Vacuum filtration separates precipitate from an aqueous solution by means of passing solution through filter paper. The process is sped up by placing system under vacuum, pulling the solution through the system more quickly than gravity filtration.

A basic vacuum filtration system is composed of a Büchner funnel with filter paper positioned on bottom. The Büchner funnel is then attached to a vacuum flask by a rubber stopper. The arm of the vacuum flask is attached to a pump via vacuum tubing.

For larger numbers of samples, one may use a manifold to position multiple filtration assemblies in one system.

Teky's Tips



Disposable Bottletop Aspirators

Save time—presterilized disposable filtration units

- Individually wrapped for sterility
- Easy-pouring large cap on reservoir
- Graduations on funnel and reservoir for improved accuracy

NEW

Disposable bottletop aspirators provide a complete vacuum filtration solution for your separation and purification needs. All units come presterilized by gamma irradiation and certified nonpyrogenic, and are individually wrapped in easy-to-open packages.

The large openings on the reservoir and funnel make for easy access. The funnel is made of clear polystyrene for easy viewing; bottle and filter adapter are made of 100% virgin polypropylene.



PES Membrane Filter Units and Bottletop Filters

Capacity	Pore size	Qty/pk	Catalog number	Price/pk
Filter units				
150 mL	0.22 µm	12	GY-07630-01	
	0.45 µm	12	GY-07630-03	
250 mL	0.22 µm	12	GY-07630-02	
	0.45 µm	12	GY-07630-04	
500 mL	0.22 µm	12	GY-07630-06	
	0.45 µm	12	GY-07630-08	
1000 mL	0.22 µm	12	GY-07630-10	
	0.45 µm	12	GY-07630-12	
Bottletop units				
250 mL	0.22 µm	24	GY-07630-91	
	0.45 µm	24	GY-07630-92	
500 mL	0.22 µm	24	GY-07630-93	
	0.45 µm	24	GY-07630-94	
1000 mL	0.22 µm	24	GY-07630-95	
	0.45 µm	24	GY-07630-96	

PVDF Membrane Filter Units

Capacity	Pore size	Qty/pk	Catalog number	Price/pk
250 mL	0.22 µm	12	GY-07630-22	
	0.45 µm	12	GY-07630-24	
500 mL	0.22 µm	12	GY-07630-26	
	0.45 µm	12	GY-07630-28	
1000 mL	0.22 µm	12	GY-07630-30	
	0.45 µm	12	GY-07630-32	

Nylon Membrane Filter Units

Capacity	Pore size	Qty/pk	Catalog number	Price/pk
250 mL	0.22 µm	12	GY-07630-62	
	0.45 µm	12	GY-07630-64	
500 mL	0.22 µm	12	GY-07630-66	
	0.45 µm	12	GY-07630-68	

Mixed Cellulose Ester (MCE) Membrane Filter Units

Capacity	Pore size	Qty/pk	Catalog number	Price/pk
250 mL	0.22 µm	12	GY-07630-42	
	0.45 µm	12	GY-07630-44	
500 mL	0.22 µm	12	GY-07630-46	
	0.45 µm	12	GY-07630-48	

Glass and Stainless Steel Microanalysis Filter Holders

Ideal for small to medium volumes of liquid

- Standard size for microbiology and particulate analysis
- Available with sintered glass, stainless steel, or PTFE support

The glass filter holders feature borosilicate glass funnel and base, silicone rubber stopper, and anodized aluminum clamp. The 90-mm holders are ideal for large-volume viscous samples or those with a heavy particle or bioburden that would clog a 47-mm filter.

Model 06645-98 is for sterility testing of antibiotics and pharmaceuticals; it features a silicone funnel cover and tubing, glass stopcock, stainless steel injector needle, and 13-mm holder.

Model 06644-80 features an unbreakable 304 stainless steel funnel/base/support and a PTFE gasket—the entire holder can be flame sterilized to sanitize between samplings. Set pins and a locking nut on the funnel prevent twisting and tearing of the membrane.



Sintered glass filter holder 06644-84



All-stainless-steel filter holder 06644-80

Membrane size	Support	Filtration area	Funnel size	Stopper size	Catalog number	Price
Standard glass filter holders						
13 mm	Sintered glass	1.2 cm ²	100 mL	No. 5	GY-06644-81	
			500 mL		GY-06644-82	
			1000 mL		GY-06644-83	
			13/100 mL†		GY-06644-84†	
25 mm	Sintered glass	2.1 cm ²	15 mL	No. 5	GY-06645-13	
			150 mL		GY-06645-23	
			300 mL		GY-06645-25	
25 mm	Stainless steel	2.1 cm ²	15 mL	No. 5	GY-06645-95	
			150 mL		GY-06645-96	
			300 mL		GY-06645-31	
47 mm	Sintered glass	9.6 cm ²	100 mL	No. 8	GY-06644-88	
			300 mL		GY-06644-85	
			500 mL		GY-06644-91	
			1000 mL		GY-06644-94	
47 mm	Stainless steel	9.6 cm ²	100 mL	No. 8	GY-06644-89	
			300 mL		GY-06644-86	
			500 mL		GY-06644-92	
			1000 mL		GY-06644-95	
47 mm	PTFE	9.6 cm ²	100 mL	No. 8	GY-06644-90	
			300 mL		GY-06644-87	
			500 mL		GY-06644-93	
			1000 mL		GY-06644-96	
90 mm	Sintered glass	43 cm ²	1000 mL	No. 8	GY-06644-97	
90 mm	Stainless steel	43 cm ²	1000 mL	No. 8	GY-06644-98	
Glass sterility test filter holder (use with sterility test manifold—order separately)						
47 mm	Sintered glass	9.6 cm ²	300 mL	No. 8	GY-06645-98	
All-stainless-steel filter holder with SS funnel and base						
47 mm	Stainless steel	9.3 cm ²	500 mL	No. 8	GY-06644-80	

†Model 06644-84 has a two-part funnel connected by a ground-glass joint.

Filtration

Filtration Assemblies

No more membrane tearing

These filtration assemblies are designed for HPLC, particulate, and microbiological contamination filtrations. Sintered glass support provides even, flat support structure for membrane filters.

What's included: a coarse fritted glass support base, a graduated glass funnel with 300- or 1000-mL capacity, an anodized aluminum clamp, and a no. 8 silicone stopper with $\frac{9}{16}$ " hole. Order filtering flasks separately below.



Filtration assembly 34509-00 with filtering flask 34509-32 (order separately below)

Diameter	Capacity	Catalog number	Price
47 mm	300 mL	GY-34509-00	
90 mm	1000 mL	GY-34509-10	

GY-34509-38 Replacement funnel; 47-mm diameter, 300-mL capacity

GY-34509-40 Replacement funnel; 90-mm diameter, 1000-mL capacity

Filtering Flasks

Attach a $\frac{3}{8}$ " ID vacuum hose to the sidearm of the flask via the no. 2 hose connector. Insert a funnel into the neck of the flask through a no. 8 rubber stopper joint.

Dimensions	Capacity	Catalog number	Price
135 mm OD x 225 mm H	1000 mL	GY-34509-32	
168 mm OD x 292 mm H	2000 mL	GY-34509-34	
208 mm OD x 370 mm H	4000 mL	GY-34509-36	

Vacuum Filtration Manifolds

Significantly reduce process time compared to gravity methods

— Connect three or six filter holders to one vacuum source



Vacuum filtration holder is not included.

Stainless Steel Manifolds have two- or three-way PTFE valves for each branch to provide individual control of vacuum and air venting. Branches accept no. 8 stoppers. Hose barb accepts $\frac{3}{8}$ " ID vacuum tubing. Autoclavable.

PVC Manifolds have branches with two-way PTFE valves for independent control of vacuum. Hose barb accepts $\frac{1}{4}$ " ID tubing. Branches accept no. 8 stoppers. Sanitize with ethanol or formaldehyde; do not autoclave. Max temperature is 140°F (60°C).

Valve type	No. of branches	Dimensions (L x W x H)		Catalog number	Price
		in.	cm		
Stainless steel manifolds					
2-way	3	18 x 4¾ x 7	45.7 x 12.1 x 17.8	GY-02924-20	
	6	28½ x 4¾ x 7	72.4 x 12.1 x 17.8	GY-02924-30	
3-way	3	18 x 4¾ x 7	45.7 x 12.1 x 17.8	GY-02924-85	
	6	28½ x 4¾ x 7	72.4 x 12.1 x 17.8	GY-02924-95	
PVC manifolds					
2-way	3	17¾ x 4¾ x 7	45.1 x 12.1 x 17.8	GY-02924-40	
	6	34½ x 4¾ x 7	87.6 x 12.1 x 17.8	GY-02924-50	

Vacuum Filtration Holders

Optimize your vacuum filtration process

- Model 02923-20 meets EPA specifications for Hazardous Waste Toxicity Test
- Autoclavable
- Supplied with an aluminum clamp and a silicone rubber stopper

No. 5 stoppers fit standard 125-mL flasks; no. 8 stoppers fit 1-L flasks. Order no. 8B stopper 02924-02 separately at right to fit filter holders 02920-00 and 02921-00 to manifolds above.

Filter holder 02923-10 is ideal for sterility testing of antibiotics and pharmaceuticals by bacteria retentive method described in USP XXI. This model includes silicone funnel cover, borosilicate stopcock, silicone tubing for connection to sterile buffer, and SS vent needle with 13-mm SS filter holder. Model 02923-20 with sintered-glass membrane support meets EPA specifications for use in the Hazardous Waste Toxicity Test. Holder 02923-00, with stainless steel (SS) membrane support, provides ultraclean filtrate—screen does not shed particles.



Filter holder 02923-10 shown with stainless steel manifold 02924-20

Membrane size	Filtration area	Membrane support	Includes stopper	Funnel size	Catalog number	Price
25 mm [†]	1.1 cm ²	Sintered	No. 5	100 mL	GY-02920-00	
25 mm	2.1 cm ²	glass	No. 5	15 mL	GY-02921-00	
47 mm [†]	9.6 cm ²	Sintered glass	No. 8	300 mL	GY-02923-10	
47 mm ^{††}	9.6 cm ²		No. 8	300 mL	GY-02923-20	
90 mm	38.5 cm ²	SS	No. 8	1000 mL	GY-02923-30	
47 mm	9.6 cm ²		No. 8	300 mL	GY-02923-00	

[†]Concentrates filtration area to 13 mm².
^{††}Meets EPA specifications for Hazardous Waste Toxicity Test.

[†]Sterility test holder with funnel assembly for specialized testing.

GY-02924-02 Perforated silicone rubber stopper, no. 8B

GY-02923-50 Replacement rubber stopper, no. 8

Pressure Filtration Holders

Stainless steel type 304 or 316 minimizes resistance and maximizes flow rate

– Model 02933-00 meets EPA specifications for EPA Hazardous Waste Toxicity Test

Pressure filtration holders maximize flow rates by applying positive pressure to the fluid over a broad membrane surface. Holders are autoclavable with one filter membrane that is sealed with removable wing nuts. All holders vent to release pressure.

Holders have PTFE gaskets, silicone O-rings, and PTFE-coated photoetched stainless steel support screens[†] to prevent nitrocellulose membranes from sticking. Holders process samples from an in-line system or pressure vessel. Available in stainless steel, stainless steel with a reservoir, and sanitary stainless steel.

Stainless Steel Holders are available in the following sizes: 90, 142, and 293 mm.

Stainless Steel Holders with Reservoir let you filter samples without a separate pressure-dispensing vessel. The 47-mm holder has a 200-mL capacity, the 90-mm holder has a 750-mL capacity, and the 142-mm holders have a 1500-mL capacity.

Sanitary Stainless Steel Holders are best used in-line to filter-sterilize liquids or gases. Sanitary inlet and outlet connections can be completely disassembled for thorough cleaning. Filter from 20 to 100 liters with our model 29900-00 pressure holder. Top plate has knobs for easy positioning over membrane.

Holder material	Filter dia	Prefilter dia	Filtration area	Max pressure psi (bar)	Included adapter size (mm ID)	Dimensions (H x dia)	Catalog number	Price
Stainless steel holders								
304 SS	90 mm	75 mm	45.3 cm ²	100 (7)	¾" NPT ^{††} to 11	13½" x 5¼" (34.3 x 13.3 cm)	GY-02926-50[†]	
316 SS							GY-29902-06	
304 SS	142 mm	124 mm	113.0 cm ²	100 (7)	¾" NPT ^{††} to 11	16¾" x 7¼" (42.5 x 18.4 cm)	GY-02927-50	
316 SS							GY-29900-02	
304 SS	293 mm	257 mm	530.0 cm ²	100 (7)	¾" NPT ^{††} to 16	16" x 14" (40.6 x 35.6 cm)	GY-29900-04	
316 SS							GY-02930-00	
Stainless steel holders with reservoir								
304 SS	47 mm	35 mm	12.5 cm ²	71 (4.9)	¼" NPT(F) to 10	14¼" x 2¾" (36.2 x 7 cm)	GY-02926-32	
304 SS	90 mm	75 mm	45.0 cm ²	71 (4.9)	Inlet: ¼" NPT(F) to 7–13 Outlet: ¾" NPT(F) to 11	17¾" x 5¼" (44 x 13.3 cm)	GY-02926-54	
316 SS							GY-29902-68	
304 SS	142 mm	124 mm	113.0 cm ²	71 (4.9)	Inlet: ¼" NPT(F) to 7–13 Outlet: ¾" NPT(F) to 11	23" x 7¼" (58.4 x 18.4 cm)	GY-02927-00[‡]	
316 SS							GY-02933-00[‡]	
Sanitary stainless steel holders								
316 SS	90 mm	75 mm	45.0 cm ²	100 (7)	1½" sanitary to 11	14" x 5¼" (35.6 x 13.3 cm)	GY-29900-00	
304 SS	142 mm	124 mm	113.0 cm ²	100 (7)	1½" sanitary to 11	16¾" x 7¼" (42.5 x 18.4 cm)	GY-29900-06	
316 SS							GY-29900-05	
304 SS	293 mm	257 mm	530.0 cm ²	100 (7)	1½" sanitary to 11	16" x 14" (40.6 x 35.6 cm)	GY-29900-08	
316 SS							GY-29900-10	

[†]Model 02926-50 has a 304 SS support screen.

[‡]Meets specifications for EPA Hazardous Waste Toxicity Test.

^{††}Includes one NPT(M) adapter and one NPT(F) adapter.



Sanitary holders feature connections that completely disassemble for easy cleaning.



90-mm pressure holder with reservoir 02926-54

Pressure Vessels

Use these electropolished stainless steel pressure vessels to propel filtration fluids through pressure holders by applying external pressure from compressed gases. Increasing pressure increases the efficiency of the EPR (ethylene propylene rubber) O-ring seal.

Vessels feature 5⅞" x 4⅞" (14.9 x 12.3 cm) wide-mouth opening for easy cleaning, SS dip tube, and molded neoprene rubber base for stability. Intake for the dip tube, located at the deepest point in the vessel, minimizes fluid loss to 6.0 mL. Sterilize vessels at 250°F (121°C) for 30 minutes. Make connections to four ¼" NPT(F) ports. Pressure vessels are ASME certified.



Material	304 SS	316 SS	304 SS	316 SS	304 SS	316 SS	304 SS	316 SS
Catalog number	GY-29902-00	GY-29902-90	GY-29902-02	GY-29902-92	GY-29902-04	GY-29902-94	GY-29902-96	GY-29902-98
Capacity	1 gal. (3.78 L)		3 gal. (11.3 L)		5 gal. (18.9 L)		8 gal. (30.2 L)	
Height	8½" (21.6 cm)		15½" (39.4 cm)		22½" (57.2 cm)		21⅞" (53.5 cm)	
Inside diameter	9" (22.9 cm)		9" (22.9 cm)		9" (22.9 cm)		12" (30.5 cm)	
Max temperature	300°F (149°C)		300°F (149°C)		300°F (149°C)		300°F (149°C)	
Max pressure	125 psi (8.5 bar)		125 psi (8.5 bar)		125 psi (8.5 bar)		110 psi (7.5 bar)	
Price								