PALL Laboratory

Air Monitoring and Sampling Filtration Products

Membrane discs and filter holders designed specifically for environmental air applications

Air quality is a concern worldwide due to its known impact on health and environmental issues. Globally, government regulators set standards to control pollution in the air we breathe. Pall began research on the development and production of filters for air sampling and analysis more than 60 years ago. We are now one of the world's largest suppliers of membranes and glass fiber filters designed specifically for environmental monitoring and testing.

As knowledge about the impact of industrial by-products and the need for monitoring have increased, so has Pall's commitment to supplying products for air analysis. You will find Pall environmental testing products referenced and recommended by regulatory agencies worldwide for air monitoring and hazardous waste analysis of both organic and inorganic matrices.

For the most accurate results in your air analysis, use this guide to select the membrane or filter media optimized for your application. Then choose from our wide selection of complementary products, including filter holders, cassettes, and convenient accessory products.

*Filtration. Separation. Solution.*SM

Air Monitoring Cassettes and Accessories

25 mm Air Monitoring Cassettes

Conductive, non-static cowl prevents adherence of particles to cassette walls for more accurate analysis

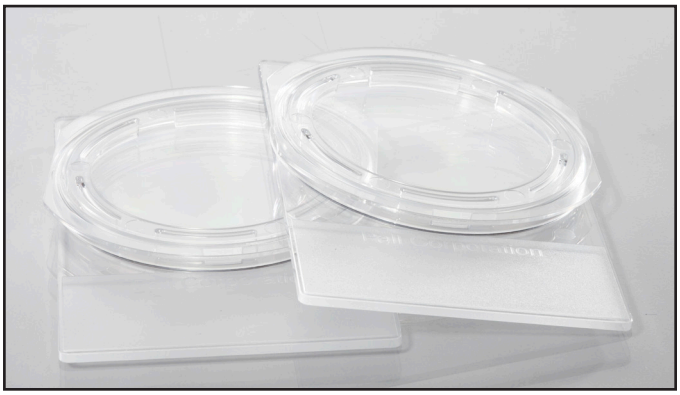
- 0.8 µm GN-4 Metricel® (mixed cellulose esters) membrane has a low fiber background count. It is widely accepted for air monitoring of fibers, asbestos fibers, and metals, and complies with NIOSH Methods 7400 and 7402.
- Can be used to monitor respirable constituents such as silica, metal, and dusts.
- Leak proof and tamper resistant. Banded cassettes assure air-tight seal for critical applications.
- Consistent performance. 100% inspected for complete membrane assembly and secure unit sealing.

37 mm Air Monitoring Cassettes

GN-4 Metricel membrane assures consistent performance for industrial hygiene sampling

- Designed to meet NIOSH and other regulatory requirements for industrial hygiene sampling using vacuum filtration.
- Widely accepted for air monitoring of fibers, asbestos fibers, and metals.
- For open- or closed-face monitoring methods.
- 0.8 µm GN-4 Metricel membrane has a low fiber background count.
- Leak proof cassettes are available in two or three-piece units.

Analyslide® Petri Dish



Like a Petri dish on a slide

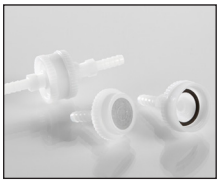
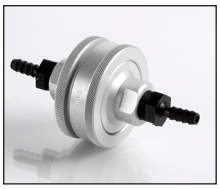
- Stores disc filters and protects filter integrity during microscopic examination.
- Rectangular base fits most microscope stages.
- Inner cover ring for air-tight securing of sample does not interfere with viewing.
- Frosted area on base permits identification of the sample with pencil or marker.
- Convenient packaging simplifies collecting samples in the field.

Stainless Steel Forceps

Make filter handling easy

- Tips have a flat, smooth surface.
- Polypropylene finger grips provide a comfortable, secure hold.
- Choose traditional black or multicolored finger grips. Bright colors make forceps easy to identify, track, and see on the lab bench.

Filter Holders

Product	Materials of Construction	Inlet/Outlet Connections
13 mm Plastic Swinney Filter Holder		
	Inlet/Outlet Housing and Support Screen: Celcon© (acetal copolymer) Seal Washer: PTFE	Female threaded luer inlet, male slip luer outlet
25 mm In-line Filter Holder, Delrin© Plastic		
	Body: Delrin (acetal resin) Hose Barb Adapters: Nylon O-ring: Viton© Support Screen: Type 316 stainless steel	1/8 in. FNPT; hose barb adapter accepts 6.4 mm (1/4 in.) ID tubing
47 mm In-line Filter Holder, Polycarbonate		
	Body: Polycarbonate Hose Barb Adapters: Nylon Support Screen: Polyphenylsulfone O-ring: Silicone Vent Cap: Polypropylene	1/4 in. -18 FNPT; hose barb adapters accept 6.4 mm (1/4 in.) ID tubing
47 mm In-line Filter Holder, Aluminum		
	Body: Anodized aluminum Hose Barb Adapters: Polyethylene Support Screen, Underdrain Disc: Electropolished type 316 stainless steel O-ring: Viton Thrust Ring: PTFE	3/8 in. FNPT; hose barb adapters accept 6.4 mm(1/4 in.) ID tubing
25, 37, and 47 mm Open-face Filter Holders		
	*Holder* 25 mm: Delrin (acetal resin) 37 and 47 mm: Aluminum Hose Barb Adapter: Nylon *Support Screen* 25 mm: Type 316 stainless steel 37 and 47 mm: Type 304 stainless steel O-ring: Viton Cap, 37 and 47 mm: Polyethylene	1/8 in. -27 FNPT; includes 6.4 mm (1/4 in.) ID hose barb adapter
13, 25, and 47 mm Filter Holders, Stainless Steel		
	*13 mm Swinney Stainless Steel* Body: Type 304 stainless steel Gaskets: PTFE Support Screen: Photoetched type 304 stainless steel	Standard female luer lock inlet, male slip luer outlet
	25 mm In-line Stainless Steel Body, Underdrain Disc, and Support Screen: Type 316 stainless steel Hose Barb Adapters: Nylon Center Ring Collar: Type 303 stainless steel O-ring: Viton	1/8 in. FNPT; hose barb adapters accept 6.4 mm (1/4 in.) ID tubing
	47 mm In-line Stainless Steel Body: Type 316 stainless steel Hose Barb Adapters: Polyethylene Support Screen and Underdrain Disc: Electropolished type 316 stainless steel O-ring: Viton Thrust Ring: PTFE Center Ring Collar: Type 303 stainless steel	3/8 in. FNPT; hose barb adapters accept 6.4 mm (1/4 in.) ID tubing

Filters Optimized for Your Sampling Applications

Media	A/E Glass Fiber	GLA-5000 PVC Membrane	GN-4 Metricel MCE Membrane
Description	Binder-free borosilicate glass fiber is recommended by EPA for high-volume air sampling to collect atmospheric particles and aerosols.	5 µm polyvinyl chloride (PVC) filters feature low ash, low moisture pickup, light tare weight, and are gravimetrically stable. Ideally suited for multiple NIOSH analytical methods including silica monitoring.	GN-4 (0.8 µm) Metricel membranes are mixed cellulose esters that dissolve completely using standard digestion procedures. These membranes clear completely, possess low artifacts, and offer minimal interference in fiber counting.
Filter Media	Borosilicate glass without binder	Polyvinyl chloride (PVC)	Hydrophilic mixed cellulose esters
Pore Size	1 µm (nominal)	5 µm	0.8 µm
Typical Filter Thickness	330 µm (13 mils)	N/A	152 µm (6 mils)
Typical Filter Weight	N/A	N/A	4 mg/cm^2
Typical Aerosol Retention Following ASTM D 2986-95A 0.3 µm (DOP) at 32 L/min/ 100 cm^2 filter media	99.98%	99.94%	N/A
Typical Air Flow Rate	60 L/min/cm^2 at 0.7 bar (70 kPa, 10 psi)	53 L/min/cm^2 at 0.7 bar (70 kPa, 10 psi)	55 L/min/3.7 cm^2 at 0.9 bar (90 kPa, 13.5 psi)
Typical Water Flow Rate	250 mL/min/cm^2 at 0.3 bar (30 kPa, 5 psi)	N/A	129 mL/min/cm^2 at 0.7 bar (70 kPa, 10 psi)
Maximum Operating Temperature	Air 550 °C (1022 °F)	Water 52 °C (125 °F)	Water 74 °C (165 °F)

Media	Pallflex® Emfab™ Filters	Pallflex Tissuquartz™ Filters	Teflo Membrane
Description	Borosilicate microfibers reinforced with woven glass cloth and bonded with PTFE. Flushed with DI water to remove water-soluble residue. Low moisture and low air resistance. Withstands folding for weighing and transport. Preferred filter for ambient air sampling and stack emission testing.	Binder-free pure quartz offers superior chemical purity. High flow rate and filtration efficiency. Uniquely designed for air monitoring in high temperatures and aggressive atmospheres.	PTFE with unique polymethylpentene (PMP) support ring for PM-10 dichotomous, PM-2.5, and other air sampling techniques. Offers increased durability and low chemical background for X-ray fluorescence, radiometric or gravimetric techniques of elemental analysis.
Filter Media	Borosilicate glass microfibers reinforced with woven glass cloth and bonded with PTFE	Pure quartz, no binder	PTFE with PMP (polymethylpentene) support ring
Pore Size	N/A	N/A	1, 2, and 3 µm
Typical Filter Thickness	178 µm (7 mils)	432 µm (17 mils)	1 µm: 76 µm (3 mils) 2 µm: 46 µm (1.8 mils) 3 µm: 30.4 µm (1.2 mils)
Typical Filter Weight	5.0 mg/cm^2	5.8 mg/cm^2	N/A
Typical Aerosol Retention Following ASTM D 2986-95A 0.3 µm (DOP) at 32 L/min/ 100 cm2 filter media	99.95%	99.90%	1 and 2 µm: 99.99% 3 µm: 99.79%
Typical Air Flow Rate	68 L/min/cm^2 at 0.7 bar (70 kPa, 10 psi)	73 L/min/cm^2 at 0.7 bar (70 kPa, 10 psi)	L/min/cm^2 at 0.7 bar (70 kPa, 10 psi) 1 µm: 17 2 µm: 53 3 µm: 90
Typical Water Flow Rate	32 mL/min/cm^2 at 0.35 bar (35 kPa, 5 psi)	220 mL/min/cm^2 at 0.35 bar (35 kPa, 5 psi)	N/A
Maximum Operating Temperature	Air 260 ºC (500 ºF)	Air 1093 ºC (2000 ºF)	N/A

See www.pall.com/lab for additional product specifications.

Ordering Information

25 mm Air Monitoring Cassettes

Part Number	Description	Pkg
4382	Three-piece unit with GN-4 Metricel membrane and support pad, banded	50/pkg
4376	Three-piece unit, unassembled	50/pkg
66238	25 mm support pads, non-sterile	100/pkg

37 mm Air Monitoring Cassettes

Part Number	Description	Pkg
4338	Two-piece unit, unassembled	100/pkg
4339	Three-piece unit, unassembled	100/pkg
4336	Three-piece unit with GN-4 Metricel membrane and support pad	50/pkg
66239	37 mm support pads, non-sterile	100/pkg
64747	37 mm support pads, non-sterile	500/pkg

Analyslide Petri Dish

Part Number	Description	Pkg
7231	Analyslide petri dish	100/pkg

Stainless Steel Forceps

Part Number	Description	Pkg
51147	Stainless steel forceps, black grips	1/pkg
4690	Stainless steel forceps, multi-colored grips (1 each of orange, blue, chartreuse)	3/pkg

13 mm Plastic Swinney Filter Holder

Part Number	Description	Pkg
4317	13 mm, plastic Swinney	5/pkg

25 mm In-line Filter Holder, Delrin Plastic

Part Number	Description	Pkg
1109	25 mm, in-line	6/pkg

47 mm In-line Filter Holder, Polycarbonate

Part Number	Description	Pkg
1119	47 mm, in-line polycarbonate	1/pkg

47 mm In-line Filter Holder, Aluminum

Part Number	Description	Pkg
1235	47 mm, in-line aluminum	1/pkg

25, 37, and 47 mm Open-face Filter Holders

Part Number	Description	Pkg
1107	25 mm, open-face Delrin plastic	6/pkg
1220	47 mm, open-face aluminum	1/pkg

13, 25, and 47 mm Filter Holders, Stainless Steel

Part Number	Description	Pkg
4042	13 mm stainless steel Swinney	1/pkg
1209	25 mm stainless steel	1/pkg
2220	47 mm stainless steel	1/pkg

A/E Glass Fiber Filters

Part Number	Description	Pkg
61630	25 mm	500/pkg
61652	37 mm	500/pkg
61631	47 mm	100/pkg
61632	50 mm	100/pkg
61663	76 mm	100/pkg
60010	81 mm	100/pkg
60127	82.5 mm	100/pkg
61664	90 mm	100/pkg
61633	102 mm	100/pkg
61655	124 mm	100/pkg
66559	142 mm	25/pkg
61635	142 mm	100/pkg
61638	8 x 10 in.	100/pkg

GLA-5000 PVC Membrane

Part Number	Description	Pkg
66466	25 mm	100/pkg
66469	37 mm	100/pkg
66467	37 mm, with support pads	100/pkg
66468	47 mm	100/pkg

GN-4 Metricel MCE Membrane

Part Number	Description	Pkg
64677	25 mm, plain, with support pads	100/pkg
66276	25 mm, grid, packaged in four cavities	100/pkg
64678	37 mm, plain, with support pads	100/pkg
64679	47 mm, plain	100/pkg
66179	47 mm, grid	100/pkg

Pallflex® Emfab Filters

Part Number	Description	Pkg
7219	TX40HI20WW, 25 mm	100/pkg
7217	TX40HI20WW, 37 mm	100/pkg
7221	TX40HI20WW, 47 mm	100/pkg
7222	TX40HI20WW, 70 mm	100/pkg
7218	TX40HI20WW, 81 mm	100/pkg
7234	TX40HI20WW, 85 mm	100/pkg
7223	TX40HI20WW, 90 mm	100/pkg
7225	TX40HI20WW, 110 mm	100/pkg
7224	TX40HI20WW, 8 x 10 in.	100/pkg
7253	TX40HI45, 82.6 mm	100/pkg

Ordering Information

Pallflex Tissuquartz Filters

Part Number	Description	Pkg
7200	25 mm	100/pkg
7201	37 mm	25/pkg
7202	47 mm	25/pkg
7205	82.6 mm	25/pkg
7206	85 mm	25/pkg
7187	87.5 mm	25/pkg
7203	90 mm	25/pkg
7207	102 mm	25/pkg
7250	110 mm	25/pkg
7204	8 x 10 in.	25/pkg

Non-Heat-Treated Quartz Filters, 2500 QAO-UP

Part Number	Description	Pkg
7194	47 mm	25/pkg

Teflo Membrane

Part Number	Description	Pkg
R2PJ037	2 µm, 37 mm	50/pkg
R2PJ047	2 µm, 47 mm	50/pkg
R2PI025	3 µm, 25 mm	50/pkg
60146	3 µm, 47 mm	50/pkg

Air Analysis Applications

Proper product selection is critical to the integrity of your analysis. Pall's extensive manufacturing and development resources enable us to select the most appropriate materials, optimize them for each unique application, and provide superior products that ensure the most consistent, accurate results possible.

Application	Membranes	Devices and Accessories
Aggressive Environments/ Aerosol Testing	Tissuquartz and Emfab Membranes	47 mm In-line Filter Holders
Asbestos/Fibers	GN-6 Metricel and GN-4 Metricel Membranes	25 and 37 mm Air Monitoring Cassettes, 25 and 37 mm Support Pads, Analyslide Petri Dish
Diesel Fuel	Emfab Membranes	47 mm In-line Filter Holders
Gravimetric	A/E Glass Fiber, GLA-5000, Zefluor, DM Metricel, Emfab, Tissuquartz, and Teflo Membranes	37 mm Air Monitoring Cassettes, 25 mm Open-face Delrins Holder, 37 and 47 mm Open-face Aluminum Holders, Analyslide Petri Dish
Lead	GN-4 Metricel Membrane	37 mm Air Monitoring Cassettes, 37 mm Support Pads
Nuisance Dust	GLA-5000 and DM Metricel Membranes	37 mm Air Monitoring Cassettes, 37 mm Support Pads
PM 10, PM 2.5	A/E Glass Fiber, Tissuquartz, and Teflo Membranes	Analyslide Petri Dish
Silica	GLA-5000, GN-4 Metricel, and DM Metricel Membranes	37 mm Air Monitoring Cassettes, 37 mm Support Pads, Analyslide Petri Dish

For more detailed information on how to select the correct filter for the specific NIOSH method you are using, visit our web site www.Pall.com/lab or contact your local Pall Laboratory representative.

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