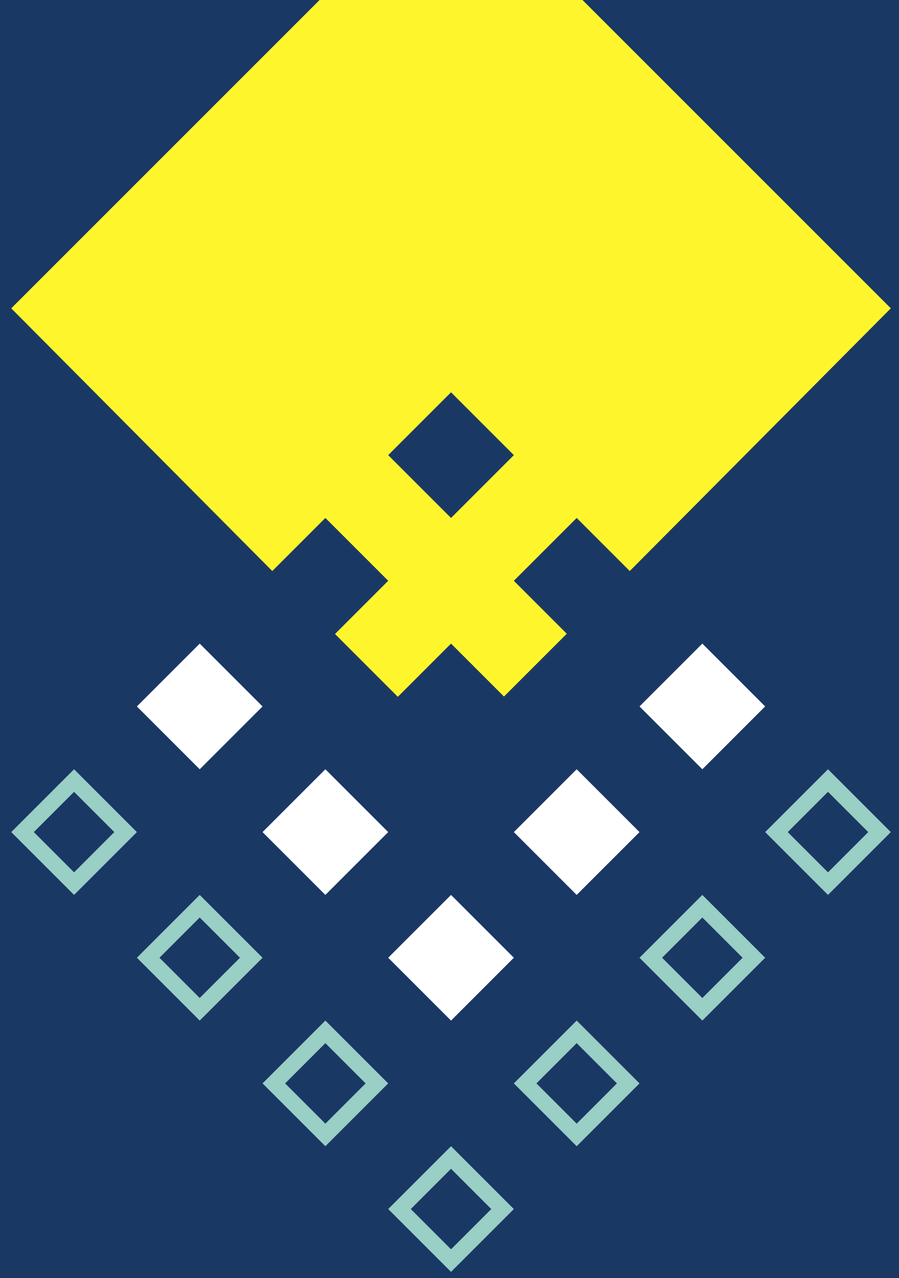
Whatman filters for air particulate sampling and analysis



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PM2.5/ PM10/TSP air particulate sampling

Whatman™ products have been recommended and used for air particulate sampling and analysis since the establishment of air monitoring norms. Air monitoring applications include gravimetric determination of airborne particulates, such as PM2.5/PM10/TSP, stack sampling, absorption methods of air pollution monitoring and subsequent chemical component testing.

The choice of the filter medium used in the analysis of collected particulate matter is key. The filter medium should have excellent batch-to-batch consistency, give little or no background level for the elements and/or compounds being analyzed, and should cause minimal interference in the determination.

Whatman glass microfiber filters and quartz filters are particularly suitable for air particulate analysis. Each batch of filters is tested to ensure all relevant parameters conform to global air sampling standards.

Filters for heavy metals, organics, and inorganics

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Air pollution monitoring from stacks, flues, and aerosols requires a filter that can withstand chemically harsh environments and high temperatures. High-purity quartz (SiO_2) microfiber filters are favored for these reasons, along with their applicability for heavy metal analysis.

Whatman offers high-purity microfiber quartz filters with a range of thickness and temperature resistance to meet your needs. The low level of alkaline earth metal in these filters virtually eliminates artifact products of sulfates and nitrates from SO_2 and NO_2, respectively. QM-A is a standard quartz filter, and QM-B is twice as thick as QM-A. QM-C is a pure quartz fiber filter with extremely low heavy metal content due to stringent control during manufacture process and final QC release. Quartz thimbles are also available.

Typical properties

Grade	Typical air retention efficiency @0.3µm	Thickness (µm)	Nominal basis weight (g/m²)	Temperature resistance	Binder	Pre-fired
GF/A	99.9%	260	53	550°C	No	No
EPM2000	99.9%	450	85	550°C	No	Yes
QM-A	99.9%	475	85	800°C	No	Yes
QM-B	99.9%	950	170	800°C	No	Yes
QM-C	99.9%	475	85	1200°C	No	Yes
QM-H	99.9%	430	85	900°C	No	No
GF10	99.9%	350	70	180°C	Yes	No
HGF61	99.9%	285	54	180°C	Yes	No

Filters for manual gravimetric analysis and chemical determination

Ordering information

Grade	Catalog number	Description	Qty/pack
GF/A	1820-037	Ø 37 mm	100
	1820-047	Ø 47 mm	100
	1820-090	Ø 90 mm	100
	1820-110	Ø 110 mm	100
	1820-866	8 × 10 in. sheet	100
	18208296	3.2 cm in. holder	100
EPM2000	1882-047	Ø 47 mm	100
	1882-866	8 × 10 in. sheet, prenumbered	100
QM-A	1851-037	Ø 37 mm	100
	1851-047	Ø 47 mm	100
	1851-082	Ø 82 mm	100
	1851-085	Ø 85 mm	100
	1851-090	Ø 90 mm	100
	1851-101	Ø 101 mm	100
	1851-150	Ø 150 mm	100
	1851-865	8 × 10 in. sheet	25
	1851-8866	8 × 10 in. sheet, prenumbered	100

Grade	Catalog number	Description	Qty/pack
QM-B	1852-040	Ø 40 mm	50
	2854-042	Ø 42 mm	50
QM-C	1855-037	Ø 37 mm	100
	1855-047	Ø 47 mm	100
	1855-090	Ø 90 mm	100
	1855-150	Ø 150 mm	100
	1855-865	8 × 10 in. sheet	25
	1855-866	8 × 10 in. sheet	100
QM-H	1853-37-50	Ø 37 mm	50
	1853-47-50	Ø 47 mm	50
	1853-50-50	Ø 50 mm	50
	1853-90-50	Ø 90 mm	50
	1853-150-50	Ø 150 mm	50

For more dimensions please contact us.

Continuous air monitor tapes

Whatman glass fiber tapes for continuous air monitoring are compatible with air samplers from multiple manufactures globally. GF10 is a standard filter for beta-attenuation method. HGF61 is further developed for high-humidity environments.

Ordering information

Grade	Catalog number	Description
GF10	10370381	30 mm × 20 M core 40 mm 1/pk
	10370384	70 mm × 50 M core 70 mm 1/pk
	10370391	60 mm × 42 M core 28 mm 1/pk
	10370392	35 mm × 30 M core 70 mm 1/pk
	10370393	40 mm × 42 M core 28 mm 1/pk
	10370394	50 mm × 100 M core 70 mm 1/pk
	10370395	70 mm × 40 M core 70 mm 1/pk
	10370429	40 mm × 17 M core 28 mm 1/pk
	10370435	GF10 35 mm × 20 M core 50.8 mm 1/pk
	10370370	GF10 50 mm × 40 M core 25 mm 1/pk
HGF61	1830-6236	HGF61 30 mm × 20 M core 40 mm 1/pk
	1830-10091	HGF61 30 mm × 40 M core 28 mm 1/pk

Whatman PM 2.5 PTFE filters

Whatman PM 2.5 PTFE filters are used for the measurement of fine particulate matter in the atmosphere for the EPA PM 2.5 reference method under the requirements of 40 CFR Part 50 (Appendix L).

Technical specifications

PTFE filters for use in US EPA PM 2.5 ambient air monitoring

Property	Test method	Unit of measure	Value	Range
Filter media	N/A	N/A	PtfE	—
Filter thickness	—	µm	40	± 10
Filter diameter	Template	mm	46.2	± 0.25
Filter pore size	ASTM f 316-94	µm	2.0	Maximum
Support ring media	N/A	N/A	Polypropylene	—
Total support ring thickness	—	mm	0.38	± 0.04
Support ring width	Template	mm	3.68	± 0.00–0.51
Particle retention (0.3 µm)	ASTM D 2986-95a	%	99.7	Minimum
Pressure drop (0.3 µm) @ 16.67 L/min	ASTM D 2986-95a	cm water	30	Maximum
Alkalinity	Section 2.12 EPA/ 600/R-94/038b	µeq/g of filter	< 25	Maximum
Temperature weight loss stability	As above	µg	< 20	Maximum
Drop test weight loss stability	As above	µg	< 20	Maximum
Moisture weight gain stability	As above	µg	< 10	Maximum

Ordering information

PM 2.5 air monitoring membrane circles

Diameter (mm)	Catalog number	Description	Quantity/pack
46.2	7592-104	With support ring, sequentially numbered	50

High-purity glass fiber thimble and quartz microfiber thimble

Whatman high-purity glass thimble can be resistant up to 550°C and quartz microfiber thimble up to 1000°C.

Ordering information

High-purity glass and quartz microfiber thimbles

Glass microfiber thimbles

Dimensions (mm)	Catalog number	Quantity/pack
19 × 90	2814-199	25
25 × 90, tapered	2814-259	25
30 x 100	2814-300	25
43 x123	2814-432	25
33 x 135	2814-533	25

Quartz microfiber thimbles

Dimensions (mm)	Catalog number	Quantity/pack
25 × 90, tapered	2812-259	10
25 × 70, tapered	2812-287	10

Standard glass microfiber thimbles

Grade 603 g (glass fiber with inorganic binder)

Dimensions (mm)	Wall thickness (mm)	Catalog number	Quantity/pack
10 × 38	1.0	10371103	25
16 × 50	1.0	10371005	25
19 × 90	1.0	10371007	25
22 × 80	1.5	10371011	25
23.8 × 68	1.5	10371114	25
25 × 100	1.5	10371019	25
28 × 60	1.5	10371025	25
30 × 100	1.5	10371036	25
33 × 94	1.5	10371042	25
33 × 100	1.5	10371043	25
33 × 118	1.5	10371045	25
35 × 150	1.5	10371055	25
44 × 230	1.5	10371075	25

Glass microfiber (without binder)

Dimensions (mm)	Wall thickness (mm)	Catalog number	Quantity/pack
30 x 80	—	2811-308	25

Grade 72 for radioactivity air particulate sampling

Grade 72 is a composite cellulose/glass filter loaded with activated carbon. It is recommended to be used to absorb radioactive iodine in air pollution monitoring and in nuclear installations.

Ordering information

Grade 72 for Radioactivity air particulate sampling

Item Code	Diameter	Quantity/pack
1872-047	47 mm	100
1872-055	55 mm	100
1872-050	50 mm	100
1872-060	60 mm	100

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For local office contact information, visit cytiva.com/contact

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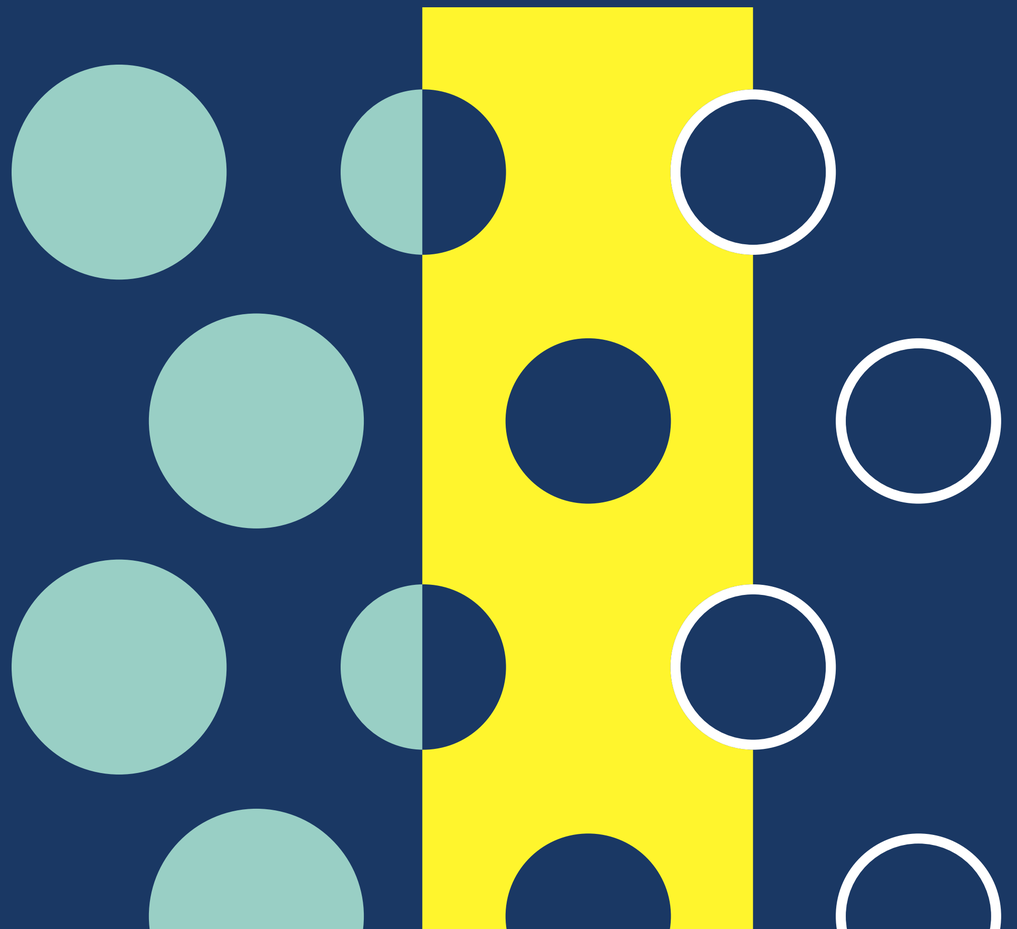

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