

Filters for Environmental Monitoring

Environmental Monitoring

Whatman has been a leading supplier of filtration products for environmental monitoring applications for more than 40 years. Regulatory authorities worldwide demand the highest quality from filtration products to ensure accurate results. Whatman products are acknowledged as the standard to which other products are compared and have been used by the EPA.

Convenient

Each filter is individually numbered for easy sample tracking. EPM and QMA filters are individually numbered for easy control.

Precise

Whatman PM 2.5 membranes have low tare mass for accurate gravimetric determinations. The unique thermally stable design eliminates curling, keeps the membrane flat and makes the filter robot-friendly.

Clean

Whatman PM 2.5 PTFE membranes are manufactured under clean-room conditions. These chemically resistant, low chemical background filters permit sensitive, interference-free determinations. No glues or adhesives are used in making these 46.2 mm diameter products.

Proven

Whatman has been supplying filters for air monitoring applications for years; EPM 2000 papers for High Volume PM 10 testing; QM-A quartz filters for high temperature/high SO₂/NO₂ applications and Grade 4 reels for smoke detection instruments.

EPM 2000

High purity borosilicate glass microfiber filter designed for high volume air sampling and detailed analysis of particulates and aerosols.



934-AH

1.5 μ m—smooth surface, high retention borosilicate glass microfiber filter which withstands temperatures over 500°C. Specified in Standard Methods (2540D) for determining total suspended solids in water, removal of turbidity and filtration of bacterial cultures. Particularly recommended for water pollution monitoring, cell harvesting, liquid scintillation counting and air pollution monitoring.

QM-A

Ultrapure quartz (SiO₂) microfiber filter for critical work in air pollution monitoring in stacks, flues and aerosols up to 500°C. The filter is heat-treated, contains 5% borosilicate glass as a binder and is extremely low in heavy metals and alkaline earth metals.

(See [Glass Microfiber Filters](#) on page 20 for more information).

PM 2.5 Air Monitoring Filters

A new, high purity, thin PTFE membrane in a sequentially numbered chemically resistant polypropylene support ring has been developed for PM 2.5 Ambient Air Monitoring.

PTFE Filters for EPA PM 2.5 Reference Method

These filters are manufactured under the requirements of 40 CFR Part 50, Appendix L. Whatman certifies that the required number of filters (0.1 percent or 10, whichever is greater) from each lot of filters offered for sale have been tested as specified for the following tests and meet each of the design and performance specifications.

These include trace metal analysis by XRF and visual inspection for defects such as pinholes, support ring separation, chaff or flashing, loose material, discoloration, filter non-uniformity and any other obvious filter defect. Whatman hereby states that each manufacturing lot that is offered for sale, and is identified for use with the PM 2.5 or TSP reference methods, conforms to EPA acceptance criteria.

Whatman®

Call: 1.800.WHATMAN

Ordering Information

PM 2.5 Air Monitoring Filters			
Diameter (mm)	Product Description	Catalog Number	Quantity/Pack
46.2	PTFE Membrane with Polypropylene Support Ring, Sequentially Numbered	7592-104	50

Technical Specifications

PTFE Filters for Use in US EPA PM 2.5 Ambient Air Monitoring				
Property	Test Method	Unit of Measure	Value	Range
PTFE Filter Media	n/a	n/a	PTFE	—
Filter Thickness	micrometer	µm	40	±10
Filter Diameter	mm	template	46.2	2.5
Filter Pore Size	ASTM F 316-94	µm	2	maximum
Support Ring Media	n/a	n/a	Polypropylene	—
Total Support Ring Thickness	mm	mm	0.38	±0.04
Support Ring Width	mm	template	3.68	+0.00 –0.51
Particle Retention (0.3 µm)	ASTM D 2986-91	%	99.7	minimum
Pressure Drop (0.3 µm) @ 16.67 liters/min.	ASTM D 2986-91	cm H ₂ O	30	maximum
Alkalinity	Section 2.12 EPA/600/R-94/038b	µeq/g of filter	<25	maximum
Temperature Wt. Loss Stability	as above	µg	<20	average
Drop Test Wt. Loss Stability	as above	µg	<20	average
Moisture Wt. Gain Stability	as above	µg	<10	average

Maximum Trace Element Concentration by X-Ray Fluorescence

Ion	ng/cm ²	Ion	ng/cm ²	Ion	ng/cm ²	Ion	ng/cm ²	Ion	ng/cm ²	Ion	ng/cm ²
Al	94.4	Sc	7.2	Ni	3	Br	2	Pd	9.6	Cs	25
Si	32.8	Ti	13.8	Cu	2.8	Rb	2	Ag	9.6	Ba	32.2
P	22.6	V	4.8	Zn	2.2	Sr	2.2	Cd	10.8	La	87.6
S	13.4	Cr	2.2	Ga	1.8	Y	14.6	Sn	15.2	W	5
Cl	9.4	Mn	2.2	Ge	3	Zr	13.2	Sb	14.4	Au	4.4
K	5.6	Fe	5.8	As	2.8	Mo	11.6	Te	16.2	Hg	4.4
Ca	8.2	Co	4	Se	1.6	Rh	9.4	I	18.6	Pb	4.8