

PM_{2.5} Filters



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 Teflon®	n/a
Filter Thickness	micrometer	µm	40	± 10
Filter Diameter	micrometer	mm	46.2	± 0.25
Filter Pore Size	ASTM F 316-94	µm	2	maximum
Support Ring Media	n/a	n/a	Polypropylene	PMP or Equivalent
Total Support Ring Thickness	micrometer	mm	0.365	± 0.055
Support Ring - Width	micrometer	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 liters/min.	ASTM D 2986-95a	cm H ₂ O	30	maximum
Alkalinity	EPA/600-R-94/038b, Section 2.12	µeq/g of filter	25	maximum
Weight loss	As Above	µg	<20	maximum
Loose Particles	As Above	µg	<20	maximum
Moisture Pickup	As Above	µg	<10	maximum

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