

TABLE F-1 TO SUBPART F OF PART 53—PERFORMANCE SPECIFICATIONS FOR PM_{2.5} CLASS II EQUIVALENT SAMPLERS

Performance test	Specifications	Acceptance criteria
§ 53.62 Full Wind Tunnel Evaluation	Solid VOAG produced aerosol at 2 km/hr and 24 km/hr.	Dp ₅₀ = 2.5 μm ± 0.2 μm Numerical Analysis Results: 95% ≤ R _c ≤ 105%.
§ 53.63 Wind Tunnel Inlet Aspiration Test	Liquid VOAG produced aerosol at 2 km/hr and 24 km/hr.	Relative Aspiration: 95% ≤ A ≤ 105%.
§ 53.64 Static Fractionator Test	Evaluation of the fractionator under static conditions.	Dp ₅₀ = 2.5 μm ± 0.2 μm Numerical Analysis Results: 95% ≤ R _c ≤ 105%.
§ 53.65 Loading Test	Loading of the clean candidate under laboratory conditions.	Acceptance criteria as specified in the post-loading evaluation test (§ 53.62, § 53.63, or § 53.64).
§ 53.66 Volatility Test	Polydisperse liquid aerosol produced by air nebulization of A.C.S. reagent grade glycerol, 99.5% minimum purity.	Regression Parameters Slope = 1 ± 0.1, Intercept = 0 ± 0.15 mg, r ≥ 0.97.

[72 FR 32209, June 12, 2007]

TABLE F-2 TO SUBPART F OF PART 53—PARTICLE SIZES AND WIND SPEEDS FOR FULL WIND TUNNEL TEST, WIND TUNNEL INLET ASPIRATION TEST, AND STATIC CHAMBER TEST

Primary Partical Mean Size ^a (μm)	Full Wind Tunnel Test		Inlet Aspiration Test		Static Fractionator Test	Volatility Test
	2 km/hr	24 km/hr	2 km/hr	24 km/hr		
1.5±0.25	S	S			S	
2.0±0.25	S	S			S	
2.2±0.25	S	S			S	
2.5±0.25	S	S			S	
2.8±0.25	S	S			S	
3.0±0.25			L	L		
3.5±0.25	S	S			S	
4.0±0.5	S	S			S	
Polydisperse Glycerol Aerosol				L		

^a Aerodynamic diameter.
S=Solid particles.
L=Liquid particles.

TABLE F-3 TO SUBPART F OF PART 53—CRITICAL PARAMETERS OF IDEALIZED AMBIENT PARTICLE SIZE DISTRIBUTIONS

Idealized Distribution	Fine Particle Mode			Coarse Particle Mode			PM _{2.5} /PM ₁₀ Ratio	FRM Sampler Expected Mass Conc. (μg/m ³)
	MMD (μm)	Geo. Std. Dev.	Conc. (μg/m ³)	MMD (μm)	Geo. Std. Dev.	Conc. (μg/m ³)		
Coarse	0.50	2	12.0	10	2	88.0	0.27	13.814
“Typical”	0.50	2	33.3	10	2	66.7	0.55	34.284
Fine	0.85	2	85.0	15	2	15.0	0.94	78.539

TABLE F-4 TO SUBPART F OF PART 53—ESTIMATED MASS CONCENTRATION MEASUREMENT OF PM_{2.5} FOR IDEALIZED COARSE AEROSOL SIZE DISTRIBUTION

Particle Aerodynamic Diameter (μm)	Test Sampler			Ideal Sampler		
	Fractional Sampling Effectiveness	Interval Mass Concentration (μg/m ³)	Estimated Mass Concentration Measurement (μg/m ³)	Fractional Sampling Effectiveness	Interval Mass Concentration (μg/m ³)	Estimated Mass Concentration Measurement (μg/m ³)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
<0.500	1.000	6.001		1.000	6.001	6.001
0.625		2.129		0.999	2.129	2.127
0.750		0.982		0.998	0.982	0.980