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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JJF 1659-2017

**Calibration Specification for PM2.5 Mass Concentration
Measurement Instruments
(English Translation)**

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Introduction

The nomenclature and technical specifications refer to GB/T 31159-2014 "Aerosol Observation Terms" HJ93-2013 "Ambient Air Particulate Matter (PM10 and PM2.5) Sampler Technical Requirements and Test Methods", HJ653-2013 "Environmental Air Particles (PM10 and PM2.5) Continuous Automatic Monitoring System Technical Requirements and Testing Method" and other technical regulations, standards.

This specification is first released.

PM2.5 mass concentration meter calibration specification

1 Scope

This specification is based on the principle of oscillation balance, b-ray principle and the principle of membrane filtration and sampling flow rate of

16.67 L/min, calibration range of PM2.5 measuring instrument (10 ~ 1000) µg/m3. other

Principle, flow and measuring range of mass concentration measuring instrument can be calibrated with reference to this specification.

2 reference documents this specification cites the following documents.

Atmospheric aerosol observation terminology GB/T 31159-2014 HJ93-2013 Ambient Air Particulate Matter (PM10 and PM2.5) Sampler Technical Requirements and Test Methods HJ653-2013 Environmental Air Particles (PM10 and PM2.5) Continuous Automatic Monitoring System Technical Requirements and Inspection Test method for dated

references, only the dated version applies to this specification; for undated references the latest version of this specification applies to this specification.

3 Terms and measurement units

3.1 Aerodynamic diameter the particles have the same movement speed, the density of 1g/cm³ spherical particles diameter.

3.2 Fine Particle (PM_{2.5}) Aerosol particles with aerodynamic diameters less than or equal to 2.5 μm.

3.3 cutter particleseparatedevice Refers to the separation of particles with different particle size device.

3.4 Working point flowrateraterate Under working conditions, the sample flow remains constant and the flow of cutting characteristics is guaranteed.

4 Overview

PM_{2.5} mass concentration meter (hereinafter referred to as instrument) is used to measure the ambient air aerodynamic diameter is not an instrument with a mass concentration of particles larger than 2.5 μm. According to the different principle of measuring instruments, divided into filter weighing method, Oscillating balance method, beta-ray absorption method. Instrument generally by the sample acquisition unit (including the sampling port, PM_{2.5} cutter and Sampling tube, etc.), sample measurement unit, data processing unit and display unit. Its working principle is. Instruments to constant Constant flow extraction of ambient air samples, the sample collection unit will be cut and separated particles sent to the sample measurement sheet Yuan, the sample measurement unit for PM_{2.5} particulate matter measurement, the data processing unit will measure the results of the analyzer Count, the final output by the display unit measurement results. Instrument structure diagram shown in Figure 1.