



Designation: D5011 – 17

Standard Practices for Calibration of Ozone Monitors Using Transfer Standards¹

This standard is issued under the fixed designation D5011; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 These practices describe means for calibrating ambient, workplace or indoor ozone monitors, using transfer standards.

1.2 These practices describe five types of transfer standards:

Practice A—Analytical instruments,

Practice B—Boric acid potassium iodide (BAKI) manual analytical procedure,

Practice C—Gas phase titration with excess nitric oxide,

Practice D—Gas phase titration with excess ozone, and

Practice E—Ozone generator device.

1.3 These practices describe procedures to establish the authority of transfer standards: qualification, certification, and periodic recertification.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* See Section 8 for specific precautionary statements.

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D1071 Test Methods for Volumetric Measurement of Gaseous Fuel Samples

¹ These practices are under the jurisdiction of ASTM Committee D22 on Air Quality and are the direct responsibility of Subcommittee D22.03 on Ambient Atmospheres and Source Emissions.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

D1193 Specification for Reagent Water

D1356 Terminology Relating to Sampling and Analysis of Atmospheres

D3195 Practice for Rotameter Calibration

D3249 Practice for General Ambient Air Analyzer Procedures

D3631 Test Methods for Measuring Surface Atmospheric Pressure

D3824 Test Methods for Continuous Measurement of Oxides of Nitrogen in the Ambient or Workplace Atmosphere by the Chemiluminescent Method

D4230 Test Method of Measuring Humidity with Cooled-Surface Condensation (Dew-Point) Hygrometer

D5110 Practice for Calibration of Ozone Monitors and Certification of Ozone Transfer Standards Using Ultraviolet Photometry

E591 Practice for Safety and Health Requirements Relating to Occupational Exposure to Ozone (Withdrawn 1990)³

2.2 *Other Documents:*

40 CFR Part 50 Environmental Protection Agency Regulations on Ambient Air Monitoring Reference Methods⁴

3. Terminology

3.1 *Definitions*—For definitions of terms used in this standard, see Terminology **D1356**.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *primary standard, n*—a standard directly defined and established by some authority, against which all secondary standards are compared.

3.2.2 *secondary standard, n*—a standard used as a means of comparison, but checked against a primary standard.

3.2.3 *standard, n*—an accepted reference sample or device used for establishing measurement of a physical quantity.

3.2.4 *transfer standard, n*—a type of secondary standard. It is a transportable device or apparatus, which, together with operational procedures, is capable of reproducing pollutant concentration or producing acceptable assays of pollutant concentrations.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, <http://www.access.gpo.gov>.