



Standard Test Method for Automated Separation and Collection of Particulate and Acidic Gaseous Fluoride in the Atmosphere (Double Paper Tape Sampler Method)¹

This standard is issued under the fixed designation D3266; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This test method describes the automatic separation and collection on chemically treated paper tapes of particulate and gaseous forms of acidic fluorides in the atmosphere by means of a double paper tape sampler. The sampler may be programmed to collect and store individual air samples obtained over time periods from several minutes to 3 h. A 30.5-m (100-ft) tape will allow unattended operation for the automatic collection of up to 600 samples.

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.

1.3 *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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

- D1071 Test Methods for Volumetric Measurement of Gaseous Fuel Samples
- D1193 Specification for Reagent Water
- D1356 Terminology Relating to Sampling and Analysis of Atmospheres
- D1357 Practice for Planning the Sampling of the Ambient Atmosphere
- D3195 Practice for Rotameter Calibration
- D3268 Test Method for Separation and Collection of Particulate and Gaseous Fluorides in the Atmosphere (Sodium Bicarbonate-Coated Glass Tube and Particulate Filter Method)

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D3269 Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Manual Procedures) (Withdrawn 2010)³

D3270 Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method)

D3609 Practice for Calibration Techniques Using Permeation Tubes

D3614 Guide for Laboratories Engaged in Sampling and Analysis of Atmospheres and Emissions

3. Terminology

3.1 *Definitions*—For definitions of terms used in this test method, refer to Terminology D1356.

4. Summary of Test Method

4.1 Air is drawn through an air inlet tube (see Practice D1357) and is first passed through an acid-treated prefilter paper tape to remove particulate matter which may contain fluoride and then through an alkali-treated paper tape to remove acidic fluoride gases.

4.2 The exhaust air is filtered through soda lime-glass wool, and the cleaned air is used to pressurize the front compartment to prevent fluoride contamination of the paper tapes from the ambient air.

4.3 Automatically, at the end of the preset sampling period, the vacuum pump is turned off, the tapes are indexed, and after indexing the vacuum pump is turned on. Indexing results in a “dead time” of several seconds.

4.4 The paper tapes are removed from the sampler after a selected period of operation and taken to an analytical work

¹ This test method is under the jurisdiction of ASTM Committee D22 on Air Quality and is 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.

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