



Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers¹

This standard is issued under the fixed designation D6329; 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 Many different types of microorganisms (for example, bacteria, fungi, viruses, algae) can occupy indoor spaces. Materials that support microbial growth are potential indoor sources of biocontaminants (for example, spores and toxins) that can become airborne indoor biopollutants. This guide describes a simple, relatively cost effective approach to evaluating the ability of a variety of materials to support microbial growth using a small chamber method.

1.2 This guide is intended to assist groups in the development of specific test methods for a definite material or groups of materials.

1.3 Static chambers have certain limitations. Usually, only small samples of indoor materials can be evaluated. Care must be taken that these samples are representative of the materials being tested so that a true evaluation of the material is performed.

1.4 Static chambers provide controlled laboratory microenvironment conditions. These chambers are not intended to duplicate room conditions, and care must be taken when interpreting the results. Static chambers are not a substitute for dynamic chambers or field studies.

1.5 A variety of microorganisms, specifically bacteria and fungi, can be evaluated using these chambers. This guide is not intended to provide human health effect data. However, organisms of clinical interest, such as those described as potentially allergenic, may be studied using this approach.

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

1.7 *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

D1193 Specification for Reagent Water

D1356 Terminology Relating to Sampling and Analysis of Atmospheres

E104 Practice for Maintaining Constant Relative Humidity by Means of Aqueous Solutions

2.2 *APHA Standards:*³

Standard Methods for the Examination of Water and Wastewater

3. Terminology

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

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *amplification*—the act or result of increasing the quantity of microorganisms.

3.2.2 *CFU*—colony forming unit, which may arise from a single organism or multiple units, such as spores, in the case of the fungi.

3.2.3 *colony*—macroscopically visible growth.

3.2.4 *inoculation*—the act of introducing a microorganism (inoculum) into the test material.

3.2.5 *inoculum*—viable test microorganism introduced onto a material by implanting a small amount on the surface or substrate.

3.2.6 *plate*—petri dish containing microbiological agar media on which microorganism are grown.

¹ This guide is under the jurisdiction of ASTM Committee **D22** on Air Quality and is the direct responsibility of Subcommittee **D22.08** on Sampling and Analysis of Mold.

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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 Available from American Public Health Association (APHA), 800 I St., NW, Washington, DC 20001, <http://www.apha.org>.