



Designation: D7034 – 18

Standard Guide for Deriving Acceptable Levels of Airborne Chemical Contaminants in Aircraft Cabins Based on Health and Comfort Considerations¹

This standard is issued under the fixed designation D7034; 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 This guide provides methodology to assist in interpreting results of air quality measurements conducted in aircraft cabins. In particular, the guide describes methodology for deriving acceptable concentrations for airborne chemical contaminants, based on health and comfort considerations.

1.2 The procedures for deriving acceptable concentrations are based on considerations of comfort and health effects, including odor and irritant effects, of individual chemical contaminants being evaluated. The guide does not provide specific benchmark or guidance values for individual chemicals to compare with results of air quality measurements.

1.3 Chemical contaminant exposures under both routine and episodic conditions for passengers and crew are considered.

1.4 This guide does not address airborne microbiological contaminants, which are also important in consideration of aircraft cabin air quality. This guide also does not address methodologies for investigations of air quality complaints.

1.5 This guide assumes that a list of chemical contaminants of potential concern has been developed based on existing concentration, emission, or material composition data.

1.6 The primary information resources for developing acceptable concentrations are databases and documents maintained or published by cognizant authorities or organizations concerned with health effects of exposure to contaminants.

1.7 Acceptable concentrations developed through this guide may be used as a basis for selecting test methods with adequate reliability and sensitivity to assess the acceptability of aircraft cabin environments.

1.8 Procedures described in this guide should be carried out in consultation with qualified toxicologists and health effects

specialists to ensure that acceptable concentrations developed are consistent with the current scientific understanding and knowledge base.

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

1.10 *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.*

1.11 *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

[D1356 Terminology Relating to Sampling and Analysis of Atmospheres](#)

[D6399 Guide for Selecting Instruments and Methods for Measuring Air Quality in Aircraft Cabins](#)

[E609 Terminology Relating to Pesticides](#)

[E943 Terminology Relating to Biological Effects and Environmental Fate](#)

2.2 Other Standards:³

[14 CFR 25 Airworthiness Standards](#)

[29 CFR 1910 Occupational Safety and Health Standards](#)

[40 CFR 50 National Ambient Air Quality Standards](#)

¹ This guide is under the jurisdiction of ASTM Committee [D22](#) on Air Quality and is the direct responsibility of Subcommittee [D22.05](#) on Indoor Air.

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