*Institute of Environmental Sciences and Technology*

# IEST-RP-CC034.4

Contamination Control Division
Recommended Practice 034.4

# HEPA and ULPA Filter Leak Tests

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# HEPA and ULPA Filter Leak Tests
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## CONTENTS

### SECTION



### FIGURES



### TABLES



### APPENDIXES

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Recommended Practice 034.4

# HEPA and ULPA Filter Leak Tests
# IEST-RP-CC034.4

## 1 SCOPE AND LIMITATIONS

### 1.1 Scope

This Recommended Practice (RP) covers definitions, equipment, and procedures for leak testing high-efficiency particulate air (HEPA) filters and ultralow-penetration air (ULPA) filters in the factory as they are produced, at the job site before they are installed, and after they are installed in cleanrooms and in unidirectional-flow, clean-air devices. When used in conjunction with other RPs, including IEST-RP-CC001, IEST-RP-CC002, IEST-RP-CC006, IEST-RP-CC007, IEST-RP-CC021, IEST-RP-CC028, and IEST-RP-CC036, this RP may be used to define the basis of an agreement between the customer and supplier in the specification and procurement of HEPA and ULPA filters, and in the testing of these filters in unidirectional-flow, clean-air devices and cleanrooms. This RP also includes procedures for measuring the uniformity of the aerosol challenge approaching the filter under test.

Although the scanning methods in the factory and *in situ* (in the field) appear similar, they are not identical, mainly due to increased variability for *in-situ* testing. In this revision of the RP, the recommended procedures for factory and *in-situ* testing are separated for ease of use. In factory and *in-situ* testing, if a leak is detected while scanning a filter, it is recommended that the magnitude of the leak be quantified with the scanning probe stationary over the detected leak.

### 1.2 Limitations

This document does not cover in-place testing of banks of filters in nuclear power or nuclear research applications, nor does it cover biological safety or containment cabinets except for scanning of the filters for leaks. This document does not cover leak testing of filters in high-temperature environments. This document provides values of acceptance limits for guidance; however, it is the responsibility of the customer and supplier to specify which leak-test method is used and the acceptance criteria for each application. A brief guideline on *in-situ* leak testing based on the procedures recommended in this RP is provided in section 8.

**CAUTION:** Testing in accordance with this RP may involve hazardous materials, operations, and equipment. This RP does not purport to address all of the safety problems associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use of this RP.

## 2 REFERENCES

The following documents are incorporated into this RP to the extent specified herein. If no specific edition is cited, the most recent edition should be used. Where specific editions are cited, subsequent revisions of these publications do not automatically supersede the cited editions and users should investigate the applicability of revised editions.

### 2.1 Reference documents

*IEST-RP-CC001: HEPA and ULPA Filters*

*IEST-RP-CC002: Unidirectional-Flow, Clean-Air Devices*

*IEST-RP-CC006: Testing Cleanrooms*