

DIN EN 1822-5:2011-01 (E)

High efficiency air filters (EPA, HEPA and ULPA) - Part 5: Determining the efficiency of filter elements

Contents		Page
Foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	Description of the method	7
4.1	General	7
4.2	Measurement method using fixed sampling probe	8
4.3	Scan method	8
4.4	Statistical efficiency test method for EPA filters (Group E)	8
5	Test filter	9
6	Test apparatus	9
6.1	General	9
6.2	Test duct	9
6.2.1	Test air conditioning	9
6.2.2	Adjustment of the volume flow rate	9
6.2.3	Measurement of the volume flow rate	9
6.2.4	Aerosol mixing section	9
6.2.5	Test filter mounting assembly	9
6.2.6	Measuring points for the pressure drop	10
6.2.7	Sampling	10
6.3	Aerosol generation and measuring instruments	11
6.3.1	General	11
6.3.2	Apparatus for testing with a monodisperse test aerosol	11
6.3.3	Apparatus for testing with a polydisperse test aerosol	12
7	Conditions of the test air	17
8	Test procedure	17
8.1	Preparatory checks	17
8.2	Starting up the aerosol generator	17
8.3	Preparation of the test filter	17
8.3.1	Installation of the test filter	17
8.3.2	Flushing the test filter	17
8.4	Testing	18
8.4.1	Measuring the pressure drop	18
8.4.2	Testing with a monodisperse test aerosol	18
8.4.3	Testing with a polydisperse test aerosol	18
9	Evaluation	18
10	Test report	20
11	Maintenance and inspection of the test apparatus	22

Annex A (informative) Testing and classification method for filters with MPPS 0,1 µm (e.g. membrane medium filters)	23
A.1 Background	23
A.2 MPPS of filters with Membrane filter medium	23
A.3 Penetration consistency and uniformity of Membrane filter medium	23
A.4 Procedure for testing and classification of filters with Membrane filter media	23
A.4.1 Integral Penetration	23
A.4.2 Classification	24
A.4.3 Local Penetration	24
A.5 Publication of data and labelling of products with membrane filter media	24
Annex B (normative) Testing and classification of filters using media with (charged) synthetic fibers	26
B.1 Background	26
B.2 Scope	26
B.3 Procedure for testing and classification of HEPA and ULPA filters using media with (charged) synthetic fibres	26
B.4 Publication of data and labelling of products for HEPA and ULPA filters using media with (charged) synthetic fibres	27
Bibliography	28