

**Ambient air - Sampling and analysis of airborne pollen grains and fungal spores for networks related to allergy - Volumetric Hirst method**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 16868:2019 sisaldab Euroopa standardi EN 16868:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 16868:2019 consists of the English text of the European standard EN 16868:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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English Version

**Ambient air - Sampling and analysis of airborne pollen  
grains and fungal spores for networks related to allergy -  
Volumetric Hirst method**

Air ambiant - Échantillonnage et analyse des grains de  
pollen en suspension dans l'air et des spores fongiques  
pour les réseaux relatifs à l'allergie - Méthode  
volumétrique de Hirst

Außenluft - Probenahme und Analyse luftgetragener  
Pollen und Pilzsporen für Allergienetzwerke -  
Volumetrische Hirst-Methode

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN 16868:2019) has been prepared by Technical Committee CEN/TC 264 “Air quality”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2019, and conflicting national standards shall be withdrawn at the latest by November 2019.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 16868:2015.

The main changes with respect to the previous edition are listed below:

- a) the title has been changed;
- b) modifications have been made to the Introduction, the Scope and Clauses 3, 4, 5 and 6;
- c) new paragraphs have been added to Clauses 7 and 8;
- d) modifications have been made to all Annexes;
- e) Figures D.2 and D.3 have been modified;
- f) the Bibliography has been readjusted;
- g) editorial changes have been made.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## Introduction

Biological particles (pollen and fungal spores) are present in the air, causing health impacts at various levels. In Europe, a lot of people suffer from pollinosis due to pollen and/or fungal spores (EFA, European Federation of Allergy and Airways Diseases Patients Association, 2017). Pollen grains and fungal spores are considered in some Member States as an air pollutant as well as particles suspended in the air (PM<sub>10,2,5</sub>). In Europe, European Aerobiology Society (EAS) in coordination with International Association for Aerobiology (IAA) manage the methodology of sampling, analysis, quality control, development and information.

Persons and institutions involved in pollen forecasting have a scientific and public health responsibility. A pollen forecast is a guideline for allergen avoidance with a direct influence on pollen allergy sufferers and their behaviour. Pollen allergy sufferers are in need of such information since pollen allergy affects their quality of life and pollen and spores are an abundant, environmental allergen. The health state of pollen allergy sufferers should never be risked due to inadequate forecasts, financial interests or deficient working routines applied in the fundamental work such as pollen data evaluation and all involved processes (maintenance of the device, preparation, evaluation, handling and processing of data).

Further pollen data should be included in therapy (immunotherapy at least for one year) to objectify the benefit of the personal therapy.

For the sampling and analysis of biological particles different methodology and operating procedures are used.

Information on airborne pollen and spore concentration (counts and analyses) plays an important role in aerobiology, as well as in other disciplines and fields of application, such as biodiversity, agriculture, forestry, phytopathology, meteorology, climatology, paleo-ecology/-climatology, forensic science, bioterrorism and health (sensitization and allergy). The method described in this European Standard is aimed for the purposes of networks related to allergy. Besides, it may also be useful for other applications mentioned above.

## 1 Scope

This document specifies the procedure to sample continuously and to analyse the concentration of airborne pollen grains and fungal spores in ambient air using the volumetric Hirst type sampler [1] [2] [3] (see Annex A) or an even equivalent method assuring comparable data.

This document describes both the sampling and the analysis procedures for the purpose of networks related to allergy. For the other tasks mentioned in the introduction, other specifications may be required.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

NOTE For general terms, see [4] [5].

### 3.1

#### **measurement accuracy** **accuracy of measurement** **accuracy**

closeness of agreement between a measured quantity value and a true quantity value of a measurand

Note 1 to entry: The concept 'measurement accuracy' is not a quantity and is not given a numerical quantity value. A measurement is said to be more accurate when it offers a smaller measurement error.

Note 2 to entry: The term "measurement accuracy" should not be used for measurement trueness and the term "measurement precision" should not be used for 'measurement accuracy', which, however, is related to both these concepts.

Note 3 to entry: Measurement accuracy is sometimes understood as closeness of agreement between measured quantity values that are being attributed to the measurand.

[SOURCE: JCGM 200:2012]

### 3.2

#### **clockwork**

mechanism with a spring and toothed gearwheels, used to drive a mechanical clock, toy or other device