



BSI Standards Publication

# Ambient air — Sampling and analysis of airborne pollen grains and fungal spores for allergy networks — Volumetric Hirst method

### **National foreword**

This Published Document is the UK implementation of CEN/TS 16868:2015.

The UK participation in its preparation was entrusted by Technical Committee EH/2, Air quality, to Subcommittee EH/2/3, Ambient atmospheres.

A list of organizations represented on this committee can be obtained on request to its secretary.

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

Air ambient - Échantillonnage et analyse des grains de pollen et des spores fongiques aériens pour les réseaux aérobiologiques - 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: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>	<b>Page</b>
European foreword.....	3
Introduction .....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions .....	5
4 Principle .....	8
5 Sampling.....	8
5.1 Equipment .....	8
5.1.1 Apparatus.....	8
5.1.2 Scrolling speed of support .....	11
5.1.3 Impaction support .....	11
5.1.4 Wind vane and rain shield .....	13
5.1.5 Complete sampling system .....	14
5.2 Operating procedure .....	14
5.2.1 Preparation of the coating medium [12] .....	14
5.2.2 Support preparation .....	15
5.2.3 Changing of the drum.....	16
6 Analysis.....	16
6.1 Equipment required.....	16
6.2 Operating procedure .....	17
6.2.1 Support .....	17
6.2.2 Mounting medium.....	17
6.3 Methodology for counting.....	18
6.3.1 Glass slide preparation for microscopy analysis for drum tape [13] [14] .....	18
6.3.2 Optical microscopy [14] [16] .....	20
6.3.3 Identification [15] [16].....	20
6.3.4 Counting method .....	20
6.3.5 Data recording.....	20
6.3.6 Conversion factor .....	21
7 Performance characteristics [10] [11] [17] [18] [19] .....	22
7.1 General.....	22
7.2 Performance requirements.....	22
7.2.1 Repeatability.....	22
7.3 Performance recommendations [18] [19] .....	22
7.3.1 Reproducibility and accuracy.....	22
7.3.2 Sensitivity and specificity.....	22
Annex A (informative) Hirst type volumetric trap.....	24
Annex B (informative) Pictures of impaction support.....	25
Annex C (informative) Safety data sheet.....	27
Annex D (informative) Key of determination .....	28
Bibliography .....	32

## **European foreword**

This document (CEN/TS 16868:2015) has been prepared by Technical Committee CEN/TC 264 "Air quality", the secretariat of which is held by DIN.

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## Introduction

Biological particles (pollen and fungal spores) are present in the air, causing health impacts at various levels. In Europe, nearly 18 % to 20 % of people suffer from pollinosis due to pollen and/or fungal spores. 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 problems of sampling, analysis, quality control, development and information.

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

Sampling equipment is diversified (see Annex A). Analysis is based on optical light microscopy for identification and counting pollen grains and fungal spores.

Elements and reagents used during sampling and analysis have very specific properties and require to be handled carefully.

Given the close relationship between aerobiology and other sciences, one of the main aims is that information on airborne biological-particle counts should be of use in a wide range of disciplines and fields of application, including aerobiology, biodiversity, agriculture, forestry, phytopathology, meteorology, climatology, forensic science, bioterrorism, and health (sensitization and allergy).

## 1 Scope

This European Standard specifies the procedure to sample continuously and 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).

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

## 2 Normative references

Not applicable.

## 3 Terms and definitions

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

### 3.1

#### **accuracy**

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

### 3.2

#### **bench**

long work table in a workshop or laboratory

### 3.3

#### **clockwork**

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

### 3.4

#### **combined standard measurement uncertainty**

obtained using the individual standard measurement uncertainties associated with the input quantities in a measurement model

### 3.5

#### **defatted**

surface conditions after clearing with a fat removing substance

### 3.6

#### **drum**

cylindrical device for the mounting of a sticky tape

### 3.7

#### **exine**

outer layer of the wall of a spore or pollen grain, also called an exosporium

### 3.8

#### **eyepiece**

lens or combination of lenses in an optical instrument through which the eye views the image formed by the objective lens or lenses; ocular