Nederlandse norm

NEN-EN 16868

(en)

Buitenlucht - Monsterneming en analyse van pollen en schimmelsporen in de lucht voor allergie netwerken - Volumetric Hirst methode

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

Vervangt CEN/TS 16868:2015;
NEN-EN 16868:2017 Ontw.

ICS 13.040.20

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EUROPEAN STANDARD

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EUROPÄISCHE NORM

EN 16868

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ICS 13.040.20

Supersedes CEN/TS 16868:2015

English Version

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

Air ambiant - Échantillonnage et analyse des grains de pollen et des spores fongiques aériens 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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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of an identical text or by endorsement, at the latest by November 2019, and conflicting national standards shall be withdrawn at the latest by November 2019.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.

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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 ($PM_{10,2,5}$). 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

3.3
combined standard measurement uncertainty
combined standard uncertainty
standard measurement uncertainty that is obtained using the individual standard measurement uncertainties associated with the input quantities in a measurement model

Note 1 to entry: In case of correlations of input quantities in a measurement model, covariances must also be taken into account when calculating the combined standard measurement uncertainty; see also ISO/IEC Guide 98-3:2014 [22].

3.4
defatted
surface conditions after clearing with a fat removing substance

3.5
drum
cylindrical device for the mounting of a sticky tape

3.6
exine
outer wall of pollen grain, also called an exosporium

3.7
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

3.8
flow meter
instrument for measuring the flow rate of a fluid in a pipe

3.9
flow rate
amount of fluid (air volume) that flows in a given time

3.10
fungal spore
sexual or asexual reproductive unit of fungi, capable of developing a new individual

3.11
hood
metal cover or canopy for a stove, ventilator, etc

3.12
impaction
sampling of airborne particles by inertial separation on any surface (e.g. of an adhesive)

3.13
magnetic stirrer
object or mechanical device used for stirring something

3.14
magnification
magnifying power of an instrument

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