



BSI Standards Publication

Ambient air — Application of EN 16909 for the determination of elemental carbon (EC) and organic carbon (OC) in PM₁₀ and PM_{coarse}

National foreword

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Ambient air - Application of EN 16909 for the determination of elemental carbon (EC) and organic carbon (OC) in PM10 and PMcoarse

Air ambiant - Application de la norme EN 16909 pour
le dosage du carbone élémentaire (EC) et du carbone
organique (OC) dans les fractions PM10 et PMgrossière

Außenluft - Anwendung der EN 16909 zur
Bestimmung von elementarem Kohlenstoff (EC) und
organischem Kohlenstoff (OC) in PM10 und PMcoarse

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

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European foreword

This document (CEN/TR 17554:2020) has been prepared by Technical Committee CEN/TC 264 “Air quality”, the secretariat of which is held by DIN.

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Introduction

The standard method EN 16909 provides guidance for the determination of organic carbon (OC) and elemental carbon (EC) in airborne particulate matter deposited on filters. It has been developed following the requirement for the EU member states to measure OC and EC in the PM_{2,5} size fraction (less than 2,5 µm in aerodynamic diameter) at background sites [5]. EN 16909 standard states: “The same analysis method may also be used for smaller size fractions than PM_{2,5}. Any possible additional artefacts for larger particles, e.g. pyrolysis or higher concentrations of carbonates, should be assessed.”

1 Scope

This document describes procedures to assess the applicability of the standard method EN 16909 (determination of OC and EC deposited on filters) to particle size fractions up to 10 µm in aerodynamic diameter (50 % cut off).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 16909, *Ambient air - Measurement of elemental carbon (EC) and organic carbon (OC) collected on filters*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 16909 and the following apply. ISO and IEC maintain terminological databases for use in standardization at the following addresses:

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

3.1

PM_x

particulate matter suspended in air which is small enough to pass through a size-selective inlet with a 50 % efficiency cut-off at x µm aerodynamic diameter

[SOURCE: EN 12341:2014 [1], definition 3.1.14]

3.2

PM_{coarse} fraction

the PM₁₀ fraction excluding the PM_{2,5} fraction

3.3

OC_x

organic carbon component of PM_x

3.4

EC_x

elemental carbon component of PM_x

3.5

PC_x

pyrolytic carbon component of PM_x

3.6

TC_x

Total carbon component of PM_x