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Ambient air — Equivalence of automatic measurements of elemental carbon (EC) and organic carbon (OC) in PM

National foreword

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English Version

Ambient air - Equivalence of automatic measurements of elemental carbon (EC) and organic carbon (OC) in PM

Air ambient - Équivalence des mesurages automatiques du carbone élémentaire (EC) et du carbone organique (OC) dans la matière particulaire

Außenluft - Äquivalenz von automatischen Messungen von elementarem Kohlenstoff (EC) und organischem Kohlenstoff (OC) in PM

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European foreword

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Introduction

The Directive on ambient air quality and cleaner air for Europe [1] requires the chemical speciation of the sub-2,5 µm size fraction of suspended particulate matter (PM_{2,5}) in ambient air, as described in Annex IV. For air quality to be assessed on a consistent basis across the European Union, Member States are required to employ standard measurement techniques and procedures. The aim of the European Standard EN 16909 is to present guidance on the measurement procedures to be followed when monitoring elemental carbon (EC) and organic carbon (OC) by collecting PM_{2,5} on filters, and subsequently performing thermal-optical analyses.

Although EC and OC are only defined in an operational way, measurements according to EN 16909 are reproducible and EC and OC as defined by the standard are commonly applicable variables. But the measurement is time consuming, and automated online measurements of EC and OC is not part of EN 16909. Substitution of OC and EC thermal-optical analyses as described in EN 16909 by automatic methods would be useful, if the equivalence of candidate methods with the standard EN 16909 can be demonstrated.