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**AIR QUALITY - STANDARD METHOD FOR THE  
MEASUREMENT OF THE CONCENTRATION  
OF BENZO[A]PYRENE IN AMBIENT AIR**

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ICS 13.040.20

English Version

## Air quality - Standard method for the measurement of the concentration of benzo[a]pyrene in ambient air

Qualité de l'air - Méthode normalisée pour le mesurage de la concentration de benzo[a]pyrène dans l'air ambiant

Luftbeschaffenheit - Messverfahren zur Bestimmung der Konzentration von Benzo[a]pyren in Luft

This European Standard was approved by CEN on 2 February 2008.

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## **Foreword**

This document (EN 15549:2008) 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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

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## **Introduction**

The European Directive 2004/107/EC prescribes the reference methodology for the measurement of benzo[a]pyrene (BaP) in ambient air and states that the method shall be a method based on manual PM10 sampling systems described in EN 12341 or equivalent.

Hence, this European Standard describes a method in which the sampling systems fulfil this requirement.

However, in the course of drafting this European Standard it became clear that in certain circumstances, in the presence of oxidants such as ozone, BaP may be degraded. In specific situations this may result in losses of BaP of > 50 %. It has been shown that the degradation due to ozone can be substantially reduced by including an ozone denuder in the sampling system.

To date only a limited number of experiments has been performed in order to evaluate the particular conditions under which the denuder systems can be efficiently used. Consequently, the application of ozone denuders lacks sufficient validation to be a normative part of this European Standard.

In order to have a complete picture of the performance of ozone denuder systems further information is required on:

- efficiency under variable atmospheric conditions,
- regeneration time after exposure to high humidity,
- maximum capacity for ozone,
- maximum sample volume and maximum sampling period,
- stability of catalyst,
- maximum period of use,
- particle losses.

Examples of sampling using an ozone denuder are given in Annex A.

The experimental evidence collected so far is presented in Annex F.

It is recommended that further work is undertaken to provide data of BaP comparisons with and without ozone denuders.

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