

**Ambient air quality - Standard method  
for measurement of benzene  
concentrations - Part 4: Diffusive  
sampling followed by thermal  
desorption and gas chromatography**

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measurement of benzene concentrations - Part 4:  
Diffusive sampling followed by thermal desorption  
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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14662-4:2005 sisaldab Euroopa standardi EN 14662-4:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 15.07.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14662-4:2005 consists of the English text of the European standard EN 14662-4:2005.</p> <p>This document is endorsed on 15.07.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This part of EN 14662 is in accordance with the generic methodology selected as the basis of the European Union for the determination of benzene in ambient air [1] for the purpose of comparison of measurement results with limit values with a one-year reference period.</p>	<p><b>Scope:</b></p> <p>This part of EN 14662 is in accordance with the generic methodology selected as the basis of the European Union for the determination of benzene in ambient air [1] for the purpose of comparison of measurement results with limit values with a one-year reference period.</p>
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**Võtmesõnad:** air, air quality, ambient air, benzene, carcinogens

ICS 13.040.20

English version

Ambient air quality - Standard method for measurement of  
benzene concentrations - Part 4: Diffusive sampling followed by  
thermal desorption and gas chromatography

Qualité de l'air ambiant - Méthode pour le mesurage des  
concentrations en benzène - Partie 4 - Échantillonnage par  
diffusion suivi d'une désorption thermique et d'une  
chromatographie en phase gazeuse

Luftbeschaffenheit - Standardverfahren zur Bestimmung  
von Benzolkonzentrationen - Teil 4: Diffusionsprobenahme  
mit anschließender Thermodesorption und  
Gaschromatographie

This European Standard was approved by CEN on 21 March 2005.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

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## Foreword

This European Standard (EN 14662-4:2005) 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 2005, and conflicting national standards shall be withdrawn at the latest by November 2005.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 2000/69/EC and EU Directive 96/62 EC.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## 1 Scope

This part of EN 14662 is in accordance with the generic methodology selected as the basis of the European Union for the determination of benzene in ambient air [1] for the purpose of comparison of measurement results with limit values with a one-year reference period.

This part of EN 14662 gives general guidance for the sampling and analysis of benzene in air by diffusive sampling, thermal desorption and capillary gas chromatography.

This part of EN 14662 is valid for the measurement of benzene in a concentration range of approximately 0,5  $\mu\text{g}/\text{m}^3$  to 50  $\mu\text{g}/\text{m}^3$  in an air sample typically collected over a period of 14 days.

The upper limit of the useful range is set by the sorptive capacity of the sorbent and by the linear dynamic range of the gas chromatograph column and detector or by the sample splitting capability of the analytical instrumentation used. The lower limit of the useful range depends on the noise level of the detector and on blank levels of benzene and/or interfering artefacts on the sorbent. Artefacts are typically sub ng for sorbents such as graphitised carbon, but higher levels of aromatic hydrocarbons have been noted in other sorbents.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

ENV 13005:1999, *Guide to the expression of uncertainty in measurement*

EN 13528-2:2002, *Ambient air quality - Diffusive samplers for the determination of concentrations of gases and vapours - Requirements and test methods. Part 2: Specific requirements and test methods*

EN 13528-3:2003, *Ambient air quality - Diffusive samplers for the determination of concentrations of gases and vapours - Requirements and test methods - Part 3: Guide to selection, use and maintenance*

EN ISO 16017-2, *Indoor, ambient and workplace air - Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography - Part 2: Diffusive sampling (ISO 16071-2:2003)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories* (ISO/IEC 17025:1999)

ISO 5725-2:1994, *Accuracy (trueness and precision) of measurement methods and results - Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ISO 5725-3:1995, *Accuracy (trueness and precision) of measurement methods and results - Part 3: Intermediate measures of the precision of a standard measurement method*

## 3 Terms and definitions

For the purposes of this European Standard, the following definitions apply.

NOTE: Attention is drawn to the fact that the terms *Ambient Air* and *Limit Value* are defined in Directive 96/62/EC [2].