

**Ambient air quality - Standard method
for measurement of benzene
concentrations - Part 1 : Pumped
sampling followed by thermal
desorption and gas chromatography**

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measurement of benzene concentrations - Part 1 :
Pumped sampling followed by thermal desorption
and gas chromatography

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14662-1:2005 sisaldab Euroopa standardi EN 14662-1:2005 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 14662-1:2005 consists of the English text of the European standard EN 14662-1:2005.</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>Käsitlusala:</p> <p>This part of EN 14662 gives general guidance for the sampling and analysis of benzene in air by pumped sampling, thermal desorption and capillary gas chromatography.</p>	<p>Scope:</p> <p>This part of EN 14662 gives general guidance for the sampling and analysis of benzene in air by pumped sampling, thermal desorption and capillary gas chromatography.</p>
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Võtmesõnad: air, benzene, carcinogens, concentration, desorption

ICS 13.040.20

English version

**Ambient air quality - Standard method for measurement of
benzene concentrations - Part 1 : Pumped sampling followed by
thermal desorption and gas chromatography**

Qualité de l'air ambiant - Méthode pour le mesurage des
concentrations en benzène - Partie 1 : Échantillonnage par
pompage suivi d'une désorption thermique et d'une
chromatographie en phase gazeuse

Luftbeschaffenheit - Standardverfahren zur Bestimmung
von Benzolkonzentrationen - Teil 1: Probenahme mit einer
Pumpe 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.

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Foreword

This European Standard (EN 14662-1:2005) 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 gives general guidance for the sampling and analysis of benzene in air by pumped sampling, thermal desorption and capillary gas chromatography.

This part of EN 14662 is in accordance with the generic methodology selected as the basis of the European Union reference method 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 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 24 hours.

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 capacity 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, but higher levels of aromatic hydrocarbons have been noted in other sorbents. The detection limit will be approximately 1/10 of the lower concentration range.

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, *Guide to the expression of uncertainty in measurements*

EN ISO 16017-1:2000, *Indoor, ambient and workplace air – Sampling and analysis of volatile organic compounds by sorbent tube/thermal desorption/capillary gas chromatography – Part 1: Pumped sampling (ISO 16017-1:2000)*

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

3 Terms and definitions

For the purposes of this European Standard the following terms and 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].

3.1

Certified reference material

A reference material [3.5], accompanied by a certificate, one or more of whose property values are certified by a procedure which establishes its traceability to an accurate realisation of the unit in which the property values are expressed, and for which each certified value is accompanied by an uncertainty at a stated level of confidence.

[ISO Guide 30:1992]

3.2

Combined standard uncertainty

Standard uncertainty of the result of a measurement when that result is obtained from the values of a number of other quantities, equal to the positive square root of a sum of terms, the terms being the variances or covariances of these other quantities weighted according to how the measurement result varies with changes in these quantities [ENV 13005:1999]

3.3

Desorption efficiency

Ratio of the mass of analyte desorbed from a sampling device to that applied. [EN 1076:1997]