



NSAI
Standards

Irish Standard
I.S. EN 14662-3:2015

Ambient air - Standard method for the measurement of benzene concentrations - Part 3: Automated pumped sampling with in situ gas chromatography

I.S. EN 14662-3:2015

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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National Foreword

I.S. EN 14662-3:2015 is the adopted Irish version of the European Document EN 14662-3:2015, Ambient air - Standard method for the measurement of benzene concentrations - Part 3: Automated pumped sampling with in situ gas chromatography

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EUROPEAN STANDARD

EN 14662-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2015

ICS 13.040.20

Supersedes EN 14662-3:2005

English Version

Ambient air - Standard method for the measurement of benzene concentrations - Part 3: Automated pumped sampling with in situ gas chromatography

Qualité de l'air ambiant - Méthode normalisée pour le mesurage de la concentration en benzène - Partie 3: Prélèvement par pompage automatique avec analyse chromatographique en phase gazeuse sur site

Außenluft - Messverfahren zur Bestimmung von Benzolkonzentrationen - Teil 3: Automatische Probenahme mit einer Pumpe und gaschromatographische In-situ-Bestimmung

This European Standard was approved by CEN on 17 July 2015.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

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EN 14662-3:2015 (E)**European foreword**

This document (EN 14662-3:2015) 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 May 2016, and conflicting national standards shall be withdrawn at the latest by May 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14662-3:2005.

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 the Council Directive 2008/50/EC [1].

Details of significant technical changes between this European Standard and the previous edition are:

- Clause 8 has been brought in line with other Standards dealing with type approval of gas analysers;
- In 9.4 and 9.6, performance requirements have been modified or removed and additional performance criteria and tests have been introduced for repeatability at span level;
- In 9.5, formulae have been introduced for software adjustment of the raw analyser signal after calibration;
- In Annexes E and F, uncertainty calculations have been modified to be in conformity with EN ISO 14956.

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

1 Scope

This European Standard specifies a semi-continuous measurement method for the determination of the concentration of benzene present in ambient air based on automated sampling and analysis by gas chromatography. This European Standard describes the performance characteristics and sets the relevant minimum criteria required to select an appropriate automated gas chromatograph (GC) by means of type approval tests. It also includes the evaluation of the suitability of an analyser for use in a specific fixed site so as to meet the data quality requirements as specified in Annex I of Directive 2008/50/EC [1] and requirements during sampling, calibration and quality assurance for use.

The method is applicable to the determination of the mass concentration of benzene present in ambient air in the range up to 50 $\mu\text{g}/\text{m}^3$ benzene. This concentration range represents the certification range for the type approval test.

Other ranges may be used depending on the levels present in ambient air.

NOTE 1 When the standard is used for other purposes than for measurements required by Directive 2008/50/EC, the ranges and uncertainty requirements may not apply.

The method covers the determination of ambient air concentrations of benzene in zones classified as rural areas, urban-background areas and traffic-orientated locations and locations influenced by industrial sources.

The results are expressed in $\mu\text{g}/\text{m}^3$ (at 20 °C and 101,3 kPa).

NOTE 2 50 $\mu\text{g}/\text{m}^3$ of benzene corresponds to 15,4 nmol/mol of benzene.

This European Standard contains information for different groups of users.

Clauses 5 to 7 and Annexes C and D contain general information about the principles of benzene measurement by automated gas chromatography and sampling equipment.

Clause 8 and Annex E are specifically directed towards test houses and laboratories that perform type-approval testing of benzene analysers. These sections contain information about:

- type-approval test conditions, test procedures and test requirements;
- analyser performance requirements;
- evaluation of the type-approval test results;
- evaluation of the uncertainty of the measurement results of the benzene analyser based on the type-approval test results.

Clauses 9 to 11 and Annex F are directed towards monitoring networks performing the practical measurements of benzene in ambient air. These sections contain information about:

- initial installation of the analyser in the monitoring network and acceptance testing;
- ongoing quality assurance/quality control;
- calculation and reporting of measurement results;
- evaluation of the uncertainty of measurement results under practical monitoring conditions.

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