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I.S. EN 14626:2012

Ambient air - Standard method for the measurement of the concentration of carbon monoxide by non-dispersive infrared spectroscopy

I.S. EN 14626:2012

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Údarás um Chaighdeáin Náisiúnta na hÉireann

English Version

Ambient air - Standard method for the measurement of the concentration of carbon monoxide by non-dispersive infrared spectroscopy

Air ambient - Méthode normalisée de mesurage de la concentration en monoxyde de carbone par spectroscopie à rayonnement infrarouge non dispersif

Luftqualität - Messverfahren zur Bestimmung der Konzentration von Kohlenmonoxid mit nicht-dispersiver Infrarot-Photometrie

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Foreword

This document (EN 14626:2012) 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of an identical text or by endorsement, at the latest by February 2013, and conflicting national standards shall be withdrawn at the latest by February 2013.

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 14626:2005.

The technical changes made since EN 14211:2005 are listed in Annex G of this European Standard.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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 continuous measurement method for the determination of the concentration of carbon monoxide present in ambient air based on the non-dispersive infrared spectroscopic measuring principle. This standard describes the performance characteristics and sets the relevant minimum criteria required to select an appropriate non-dispersive infrared spectroscopic analyser 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 carbon monoxide present in ambient air up to 100 mg/m^3 carbon monoxide. This concentration range represents the certification range for the type approval test.

NOTE 1 Other ranges may be used depending on the levels present in ambient air.

NOTE 2 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 carbon monoxide in zones classified as rural areas, urban-background areas and traffic-orientated locations and locations influenced by industrial sources.

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

NOTE 3 100 mg/m^3 of CO corresponds to $86 \text{ } \mu\text{mol/mol}$ of CO.

This standard contains information for different groups of users.

Clauses 5 to 7 and Annexes B, C and D contain general information about the principles of carbon monoxide measurement by non-dispersive infrared spectroscopic analyser and sampling equipment.

Clause 8 and Annex E are specifically directed towards test houses and laboratories that perform type-approval testing of carbon monoxide 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 carbon monoxide 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 carbon monoxide 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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