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

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

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English Version

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

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

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

This European Standard was approved by CEN on 11 November 2024.

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## **European foreword**

This document (EN 14626:2024) 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of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

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

This document will supersede EN 14626:2012.

In comparison with the previous edition, the technical modifications made are listed in Annex H of this document.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## EN 14626:2024 (E)

### 1 Scope

This document 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 document describes the performance characteristics and sets the relevant minimum criteria required to select an appropriate non-dispersive infrared spectroscopic analyser by means of type testing. It also includes the evaluation of the suitability of an analyser for use in a specific fixed site in order to meet data quality requirements (see Annex I of Directive 2008/50/EC [1] for additional information) 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<sup>3</sup> of carbon monoxide. This concentration range represents the certification range for type testing.

NOTE 1 Other ranges can 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 might not apply.

The method covers the determination of ambient air concentrations of carbon monoxide in locations classified as rural areas, urban-background areas, and for sampling points influenced by traffic or industrial sources.

The results are expressed in mg/m<sup>3</sup> (at 20 °C and 101,3 kPa).

NOTE 3 100 mg/m<sup>3</sup> of CO corresponds to 86 µmol/mol of CO.

This document contains information for different groups of users.

Clause 5 to Clause 7 and Annex B, Annex C and Annex 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 testing of carbon monoxide analysers. These sections contain information about:

- type testing conditions, test procedures and test requirements;
- analyser performance requirements;
- evaluation of the type testing results;
- evaluation of the associated uncertainty of the measurement performed by the carbon monoxide analyser based on the type testing results.

Clause 9 to Clause 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 to the measurement results under practical monitoring conditions.

This document represents an evolution of earlier editions (EN 14626:2005 and EN 14626: 2012).

NOTE 4 Analysers type tested prior to the publication of this document can still be used for regulated monitoring purposes. As newer versions of analysers tested under this document become available, discontinue the use of older reference analysers.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 15267-1, *Air quality - Assessment of air quality monitoring equipment - Part 1: General principles of certification*

EN 15267-2, *Air quality - Assessment of air quality monitoring equipment - Part 2: Initial assessment of the manufacturer's quality management system and post certification surveillance for the manufacturing process*

EN ISO 6142-1, *Gas analysis — Preparation of calibration gas mixtures — Gravimetric method (ISO 6142-1)*

EN ISO 6143, *Gas analysis — Comparison methods for determining and checking the composition of calibration gas mixtures (ISO 6143)*

EN ISO 6144, *Gas analysis — Preparation of calibration gas mixtures — Static volumetric methods (ISO 6144)*

EN ISO 6145-6, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 6: Critical flow orifices (ISO 6145-6)*

EN ISO 6145-7, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 7: Thermal mass-flow controllers (ISO 6145-7)*

EN ISO 14956, *Air quality — Evaluation of the suitability of a measurement procedure by comparison with a required measurement uncertainty (ISO 14956)*

ISO 19229:2019, *Gas analysis — Purity analysis and the treatment of purity data*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**