

Nederlandse norm

NEN-EN 13649 (en)

Emissies van stationaire bronnen - Bepaling van de massaconcentratie van individuele gasvormige organische componenten - Geactiveerde koolstof en vloeistofmethode

Stationary source emissions - Determination of the mass concentration of individual gaseous organic compounds - Activated carbon and solvent desorption method

Vervangt NEN-EN 13649:1999 Ontw.

ICS 13.040.40
december 2001

Als Nederlandse norm is aanvaard:
- EN 13649:2001, IDT

VOORBEELD
Preview

Normcommissie 390 146 "Luchtkwaliteit"

Apart from exceptions provided by the law, nothing from this publication may be duplicated and/or published by means of photocopy, microfilm, storage in computer files or otherwise, which also applies to full or partial processing, without the written consent of the Netherlands Standardization Institute.

The Netherlands Standardization Institute shall, with the exclusion of any other beneficiary, collect payments owed by third parties for duplication and/or act in and out of law, where this authority is not transferred or falls by right to the Reproduction Rights Foundation.

Auteursrecht voorbehouden. Behoudens uitzondering door de wet gesteld mag zonder schriftelijke toestemming van het Nederlands Normalisatie-instituut niets uit deze uitgave worden veeelvoudigd en/of openbaar gemaakt door middel van fotokopie, microfilm, opslag in computerbestanden of anderszins, hetgeen ook van toepassing is op gehele of gedeeltelijke bewerking.

Het Nederlands Normalisatie-instituut is met uitsluiting van ieder ander gerechtigd de door derden verschuldigde vergoedingen voor veeelvoudiging te innen en/of daartoe in en buiten rechte op te treden, voor zover deze bevoegdheid niet is overgedragen c.q. rechtens toekomt aan de Stichting Reprerecht.

Although the utmost care has been taken with this publication, errors and omissions cannot be entirely excluded. The Netherlands Standardization Institute and/or the members of the committees therefore accept no liability, not even for direct or indirect damage, occurring due to or in relation with the application of publications issued by the Netherlands Standardization Institute.

Hoewel bij deze uitgave de uiterste zorg is nagestreefd, kunnen fouten en onvolledigheden niet geheel worden uitgesloten. Het Nederlands Normalisatie-instituut en/of de leden van de commissies aanvaarden derhalve geen enkele aansprakelijkheid, ook niet voor directe of indirecte schade, ontstaan door of verband houdend met toepassing van door het Nederlands Normalisatie-instituut gepubliceerde uitgaven.

Nederlands voorwoord

Voor de in deze norm vermelde normatieve verwijzingen bestaan in Nederland de volgende equivalenten:

<u>vermelde norm</u>	<u>Nederlandse norm</u>	<u>titel</u>
EN 13526:2001	NEN-EN 13526:2001	Emissies van stationaire bronnen - Bepaling van de massaconcentratie van totaal gasvormig organisch koolstof in verbrandingsgassen uit processen waar oplosmiddelen gebruikt worden - Continue methode met vlamionisatiedetector (en)
ISO 5725-1	-	-
ISO 9169	-	-

Voorbeeld
Preview

Voorbeeld
Preview

ICS 13.040.40

English version

Stationary source emissions - Determination of the mass concentration of individual gaseous organic compounds - Activated carbon and solvent desorption method

Emissions de sources fixes - Détermination de la concentration massique en composés organiques gazeux individuels - Méthode par charbon actif et désorption des solvants

Emissionen aus stationären Quellen - Bestimmung der Massenkonzentration von einzelnen gasförmigen organischen Verbindungen - Aktivkohleadsorptions- und Lösemitteldesorptionsverfahren

This European Standard was approved by CEN on 29 September 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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

Contents

	page
Foreword	3
1 Scope	3
2 Normative references	3
3 Terms and definitions	4
4 Principle	4
5 Apparatus and materials	5
6 Sampling procedure	9
7 Analytical procedure	11
8 Calculation	13
9 Report	13
Annex A (informative) Measurement uncertainty and associated statistics	15
Annex B (informative) Typical desorption efficiencies of selected organic components on activated carbon	17
Annex C (informative) Procedure for control of leakage	19
Annex D (informative) Procedure for dilution sampling	20
Annex E (informative) Safety measures	21

Foreword

This European Standard 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 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

This European Standard has been prepared under a mandate given to CEN by the European Commission and European Free Trade Association.

The annexes A, B, C, D and E are informative.

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

1 Scope

This European Standard specifies procedures for the sampling onto activated carbon, the preparation and the analysis of samples of volatile organic components such as those arising from solvent using processes. It can be used as a reference method.

NOTE See Council Directive 1992/43/EEC.

The results obtained using this Standard are expressed as the mass concentration (mg/m^3) of the individual gaseous organic components. This Standard is suitable for use in the range of about $0,5 \text{ mg}/\text{m}^3$ to $2000 \text{ mg}/\text{m}^3$.

For the measurement of the mass concentration of total organic carbon arising from solvent using processes then EN 13526 should be used.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 13526:2001, *Stationary source emissions - Determination of the mass concentration of total gaseous organic carbon in flue gases from solvent using processes - Continuous flame ionisation detector method.*

ISO 5725-1, *Accuracy (trueness and precision) of measurement methods and results Part 1: General principles and definitions.*

ISO 9169, *Air Quality – Determination of performance characteristics of measurement methods.*

3 Terms and definitions

For the purposes of this European Standard the following terms and definitions apply.

3.1

desorption efficiency

ratio of the mass of the recovered organic material to the mass of organic material added to the carbon adsorbent expressed as a percentage

3.2

detection limit

minimum concentration of a substance which produces an observable response, as referred to in ISO 9169

3.3

dilution gas

gas used to dilute sampled flue gas to prevent water condensation

3.4

flue gas

gaseous waste product from a solvent using process

4 Principle

4.1 General

There are three steps in the measurement of individual gaseous organic components. They are flue gas sampling, the treatment of sampled material, and the chemical analysis by gas chromatography.

4.2 Flue gas sampling

The principles of sampling are as follows:

- Organic components from a measured volume of gas shall be adsorbable onto the activated carbon.
- Particulate material which might interfere with the measurement should be removed.

- Water condensation should be prevented.

4.3 Treatment of sampled material

The collected organic material shall be desorbed using an extraction solvent.

4.4 Chemical analysis

An aliquot of the sample is injected into a gas chromatography system equipped with a capillary column and an appropriate detector (e.g. flame ionisation detector, mass selective detector etc.). The components are separated by gas chromatography. The detector signals are evaluated using the calibration function.

4.5 Desorption efficiency determination

At the sample preparation stage a known amount of a reference material is introduced on to a blank carbon tube to determine component desorption efficiency.

The desorption efficiency can be determined as shown in annex B.

NOTE The desorption efficiency should be better than 80 %.

5 Apparatus and materials

5.1 Sampling system – general aspects

The sampling system shall be designed to take account of the flue gas characteristics:

- it shall be made of a material that is chemically and physically inert to the constituents of the flue gas;

NOTE 1 Stainless steel, glass, polytetrafluoroethylene and polypropylenefluoride are well proven construction materials.

- the sampling line shall be as short as possible;
- the sampling line shall include a filtering device directly after the probe to trap particles;
- it shall be designed to prevent condensation.

NOTE 2 Many of the solvent using processes covered by the Council Directive 1999/13/EEC produce flue gases which do not have a high water content. Where high solvent concentrations or the condensation of water vapour is expected this CEN Standard recommends the use of dilution sampling systems.

Bestelformulier

NEN

Stuur naar:

NEN Standards Products & Services
t.a.v. afdeling Klantenservice
Antwoordnummer 10214
2600 WB Delft

NEN Standards Products & Services

Postbus 5059
2600 GB Delft

Vlinderweg 6
2623 AX Delft

T (015) 2 690 390
F (015) 2 690 271

www.nen.nl/normshop

Ja, ik bestel

__ ex. NEN-EN 13649:2001 en Emissies van stationaire bronnen - Bepaling van de massaconcentratie van individuele gasvormige organische componenten - Geactiveerde koolstof en vloeistofmethode € 49.30

Wilt u deze norm in PDF-formaat? Deze bestelt u eenvoudig via www.nen.nl/normshop

Gratis e-mailnieuwsbrieven

Wilt u op de hoogte blijven van de laatste ontwikkelingen op het gebied van normen, normalisatie en regelgeving? Neem dan een gratis abonnement op een van onze e-mailnieuwsbrieven. www.nen.nl/nieuwsbrieven

Retourneren

Fax: (015) 2 690 271
E-mail: klantenservice@nen.nl
Post: NEN Standards Products & Services,
t.a.v. afdeling Klantenservice
Antwoordnummer 10214,
2600 WB Delft
(geen postzegel nodig).

Gegevens

Bedrijf / Instelling _____

T.a.v. _____ O M O V

E-mail _____

Klantnummer NEN _____

Uw ordernummer _____

BTW nummer _____

Postbus / Adres _____

Postcode _____

Plaats _____

Telefoon _____

Fax _____

Factuuradres (indien dit afwijkt van bovenstaand adres)

Postbus / Adres _____

Postcode _____

Plaats _____

Datum _____

Handtekening _____

Voorwaarden

- De prijzen zijn geldig tot 31 december 2016, tenzij anders aangegeven.
- Alle prijzen zijn excl. btw, verzend- en handelingskosten en onder voorbehoud bij o.m. ISO- en IEC-normen.
- Bestelt u via de normshop een pdf, dan betaalt u geen handeling en verzendkosten.
- Meer informatie: telefoon (015) 2 690 391, dagelijks van 8.30 tot 17.00 uur.
- Wijzigingen en typfouten in teksten en prijsinformatie voorbehouden.
- U kunt onze algemene voorwaarden terugvinden op: www.nen.nl/leveringsvoorwaarden.