



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 13649:2002

ICS 13.040.40

**STATIONARY SOURCE EMISSIONS -  
DETERMINATION OF THE MASS  
CONCENTRATION OF INDIVIDUAL  
GASEOUS ORGANIC COMPOUNDS -  
ACTIVATED CARBON AND SOLVENT  
DESORPTION METHOD**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 13649**

November 2001

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

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## EN 13649:2001 (E)

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## 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 1999/13/EEC.

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

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 13649:2001 (E)

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.

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