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Werkplekatmosfeer - Procedures voor de meting van gassen en dampen met behulp van diffusieve bemonsteraars - Eisen en beproevingsmethoden

Exposition sur les lieux de travail - Procédures pour le mesurage des gaz et vapeurs à l'aide de dispositifs de prélèvement par diffusion - Exigences et méthodes d'essai

Workplace exposure - Procedures for measuring gases and vapours using diffusive samplers - Requirements and test methods

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Workplace exposure - Procedures for measuring gases and vapours using diffusive samplers - Requirements and test methods

Exposition sur les lieux de travail - Procédures pour le mesurage des gaz et vapeurs à l'aide de dispositifs de prélèvement par diffusion - Exigences et méthodes d'essai

Exposition am Arbeitsplatz - Messung von Gasen und Dämpfen mit Diffusionssammlern - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 11 December 2009.

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Foreword

This document (EN 838:2010) has been prepared by Technical Committee CEN/TC 137 “Assessment of workplace exposure to chemical and biological agents”, 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of an identical text or by endorsement, at the latest by July 2010, and conflicting national standards shall be withdrawn at the latest by July 2010.

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 838:1995.

The major technical changes between this European Standard and the previous edition are as follows:

a) adaptation of the framework for assessing the performance of procedures for measuring gases and vapours against the general requirements for the performance of procedures for measuring chemical agents in workplace atmospheres as specified in EN 482;

b) revision of the calculation model for the uncertainty of measurement to comply with EN 482 and ENV 13005;

c) modification of the classification scheme for sampler types;

d) deletion of the informative annexes on the evaluation of diffusive samplers by means of field tests.

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

Introduction

This European Standard provides a framework for assessing the performance of procedures for measuring gases and vapours against the general requirements for the performance of procedures for measuring chemical agents in workplace atmospheres as specified in EN 482. These performance criteria include maximum values of expanded uncertainty achievable under prescribed laboratory conditions for the methods to be used. In addition, the performance criteria should also be met under a wider variety of environmental influences, representative of workplace conditions.

This European Standard enables manufacturers and users of diffusive samplers and developers and users of procedures for measuring gases and vapours to adopt a consistent approach to method validation.

1 Scope

This European Standard specifies performance requirements and test methods under prescribed laboratory conditions for the evaluation of diffusive samplers and of procedures using these samplers for the determination of gases and vapours in workplace atmospheres.

This European Standard is applicable to diffusive samplers and measuring procedures using these samplers in which sampling and analysis are carried out in separate stages.

This European Standard is not applicable to:

— diffusive samplers which are used for the direct determination of concentrations;

— diffusive samplers which rely on sorption into a liquid.

2 Normative references

The following referenced documents are indispensable for the application 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 482:2006, *Workplace atmospheres — General requirements for the performance of procedures for the measurement of chemical agents*

EN 1076, *Workplace exposure — Procedures for measuring gases and vapours using pumped samplers — Requirements and test methods*

EN 1540, *Workplace atmospheres — Terminology*

EN ISO 8655-2, *Piston-operated volumetric apparatus — Part 2: Piston pipettes (ISO 8655-2:2002)*

EN ISO 8655-6, *Piston-operated volumetric apparatus — Part 6: Gravimetric methods for the determination of measurement error (ISO 8655-6:2002)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 482:2006 and EN 1540[1)] apply.

4 Symbols and abbreviations

For the purposes of this document, the following symbols and abbreviations apply.

NOTE See 8.4 and Annex C for symbols used in conjunction with uncertainty of measurement only.

A cross-sectional area of sorption surface, in square centimetres (cm^2)

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1) EN 1540:1998 is currently subject to revision. Until the revised EN is published the definitions given in EN 482:2006 take precedence.