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Werkplekatmosfeer - Algemene eisen voor de uitvoering van de procedures voor het meten van chemische stoffen

Atmosphères des lieux de travail - Exigences générales concernant les performances des modes opératoires de mesurage des agents chimiques

Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents

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Indice de classement: T 96

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English Version

**Workplace atmospheres - General requirements for the
performance of procedures for the measurement of chemical
agents**

Atmosphères des lieux de travail - Exigences générales
concernant les performances des modes opératoires de
mesurage des agents chimiques

Arbeitsplatzatmosphäre - Allgemeine Anforderungen an die
Leistungsfähigkeit von Verfahren zur Messung chemischer
Arbeitsstoffe

This European Standard was approved by CEN on 7 July 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, 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 United Kingdom.



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Foreword

This document (EN 482:2006) 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of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by February 2007.

This document supersedes EN 482:1994.

The major technical change between this European Standard and the previous edition is the revision of the method of calculating the uncertainty of a measurement procedure to comply with ENV 13005.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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 United Kingdom.

Introduction

National laws and regulations based on European Directives require the assessment of the potential worker exposure to chemical agents in workplace atmospheres. One way of assessing such exposure is to measure the concentration of a chemical agent in the air in the worker's breathing zone. The procedures used for such measurements should give reliable and valid results so that when compared with set occupational exposure limit values a correct decision can be made, for instance, as to whether the exposure level is acceptable or control measures need to be applied.

Because of their importance in the process of exposure assessment, it is required that the measurement procedures should fulfil some general requirements, which are given in this document. Specific European Standards have been prepared for different types of measuring procedures and measuring devices. These include European Standards for dust samplers (EN 13205), diffusive samplers (EN 838), sorption tubes for active sampling (EN 1076), detector tubes (EN 1231), sampling pumps (EN 1232, EN 12919), metals and metalloids (EN 13890), mixtures of airborne particles and vapours (ENV 13936) and direct reading instruments (EN 45544 all parts). In these specific European Standards additional requirements have been included for the procedure or device in question, so that the general requirements of this document are not compromised. Where no specific European Standard exists, only the general requirements apply.

Performance requirements are given in this document for unambiguity, selectivity, expanded uncertainty for minimum specified measuring ranges, averaging time, etc. These requirements are intended to apply under environmental conditions present at the workplace. However, because a wide range of environmental conditions is encountered in practice, this document specifies requirements that have to be fulfilled by measuring procedures when tested under prescribed laboratory conditions.

It is the user's responsibility to choose appropriate procedures or devices that meet the requirements of this document. One way of doing this is to obtain information or confirmation from the provider of a procedure or the manufacturer of a device. Type-testing, or more generally, assessment of the performance of procedures or devices, can be undertaken by the manufacturer, user, test house or research and development laboratory, as is most appropriate. A number of existing procedures for workplace measurements have been tested over part of the required minimum specified measuring range but not over the entire range (see Table 1) or have not been tested for all environmental influences and potential interference's. If these partially validated procedures meet the performance requirements of this European Standard they can nevertheless be used at present. These procedures should be tested over the full ranges as soon as is reasonably practicable. If there is no measuring procedure for a chemical agent, which meet the requirements of this document, a procedure should be used, whose performance is nearest the specified requirements.

1 Scope

This document specifies general performance requirements for procedures for determination of the concentration of chemical agents in workplace atmospheres as required by the Chemical Agents Directive 98/24/EC (see [1]). These requirements apply to all measuring procedures, irrespective of the physical form of the chemical agent (gas, vapour, suspended matter) and of the sampling method and analytical method used.

This document is applicable to all steps of a measuring procedure.

This document is applicable to measuring procedures with separate sampling and analysis steps, and also to direct-reading devices.

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 applies.

EN 838:1995, *Workplace atmospheres – Diffusive samplers for the determination of gases and vapours – Requirements and test methods*

EN 1076:1997, *Workplace atmospheres – Pumped sorbent tubes for the determination of gases and vapours – Requirements and test methods*

EN 1231, *Workplace atmospheres – Short term detector tube measurement systems – Requirements and test methods*

EN 1232, *Workplace atmospheres – Pumps for personal sampling of chemical agents – Requirements and test methods*

EN 1540, *Workplace atmospheres – Terminology*

EN 12919, *Workplace atmospheres – Pumps for the sampling of chemical agents with a volume flow rate of over 5 l/min – Requirements and test methods*

EN 13205:2001, *Workplace atmospheres – Assessment of performance of instruments for measurement of airborne particle concentrations*

EN 13890, *Workplace atmospheres – Procedures for measuring metals and metalloids in airborne particles – Requirements and test methods*

EN 45544 (all parts), *Workplace atmospheres – Electrical apparatus used for the direct detection and direct concentration measurement of toxic gases and vapours*

ISO 78-2, *Chemistry – Layouts for standards – Part 2: Methods of chemical analysis*