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Workplace atmospheres - Short term detector tube measurement systems - Requirements and test methods (ISO 17621:2015)

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

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Workplace atmospheres - Short term detector tube measurement systems - Requirements and test methods (ISO 17621:2015)

Air des lieux de travail - Systèmes de mesurage par
tube détecteur à court terme - Exigences et méthodes
d'essai (ISO 17621:2015)

Arbeitsplatzatmosphäre - Kurzzeitprüfröhrchen-
Messeinrichtungen - Anforderungen und Prüfverfahren
(ISO 17621:2015)

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European foreword

This document (EN ISO 17621:2015) has been prepared by Technical Committee ISO/TC 146 "Air quality" in collaboration with 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of an identical text or by endorsement, at the latest by March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

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**Workplace atmospheres — Short term
detector tube measurement systems
— Requirements and test methods**

*Air des lieux de travail — Systèmes de mesurage par tube détecteur à
court terme — Exigences et méthodes d'essai*





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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/TC 146, *Air quality*, Subcommittee SC 2, *Workplaces atmospheres*.

Introduction

Many short-term detector tube measurement systems consist of a (length-of-stain) detector tube connected to an associated detector tube pump. When workplace air containing a particular chemical agent is drawn through the detector tube, a colour change takes place corresponding to the concentration.

Such short-term detector tube measurement systems have many applications. This International Standard refers to detector tubes used for workplace air monitoring. These detector tubes can be used for measurement tasks such as follows:

- determination of the presence or absence of an analyte;
- finding the approximate range of concentration;
- determination of the efficiency of control measurements;
- determination of emission sources and emission changes in time;
- determination of compliance with ceiling or short-term limit values, as long as the device covers the reference time period and the precision requirements for the measurement.

To cover the possible range of concentration that can be encountered in the workplace, a combination of two or more measurements using detector tubes with restricted but complementary and overlapping measuring ranges can also be used.

This International Standard will enable the manufacturers, test houses, certification bodies, and the users to adopt a consistent approach to the assessment of performance of short-term detector tube measurement systems.

Workplace atmospheres — Short term detector tube measurement systems — Requirements and test methods

1 Scope

This International Standard specifies requirements and test methods under prescribed laboratory conditions for length-of-stain detector tubes and their associated pump (detector tube measurement system) used for short-term measurements of the concentration of specified chemical agents in workplace air.

This International Standard is not applicable to measurements made to demonstrate compliance with long-term limit values to personal exposure with a reference period of more than 15 min.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 6141, *Gas analysis – Requirements for certificates for calibration gases and gas mixtures*

ISO 6142, *Gas analysis — Preparation of calibration gas mixtures — Gravimetric method*

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

ISO 6144, *Gas analysis — Preparation of calibration gas mixtures — Static volumetric method*

ISO 6145-1, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 1: Methods of calibration*

ISO 6145-4, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 4: Continuous syringe injection method*

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

ISO 6145-10, *Gas analysis — Preparation of calibration gas mixtures using dynamic volumetric methods — Part 10: Permeation method*

ISO 9169, *Air quality — Definition and determination of performance characteristics of an automatic measuring system*

IEC 60079-0, *Explosive atmospheres – Part 0: Equipment – General requirements*

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