

# SVENSK STANDARD

## SS-EN ISO 13137:2013



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### **Arbetsplatsluft – Pumpar för personburen provtagning av kemiska och biologiska ämnen – Krav och provningsmetoder (ISO 13137:2013)**

### **Workplace atmospheres – Pumps for personal sampling of chemical and biological agents – Requirements and test methods (ISO 13137:2013)**

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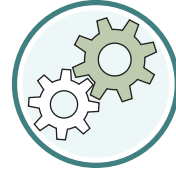
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Denna standard ersätter SS-EN 1232, utgåva 1 och SS-EN 12919, utgåva 1.

The European Standard EN ISO 13137:2013 has the status of a Swedish Standard. This document contains the official version of EN ISO 13137:2013.

This standard supersedes the Swedish Standard SS-EN 1232, edition 1 and SS-EN 12919, edition 1.

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EUROPEAN STANDARD

**EN ISO 13137**

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2013

ICS 13.040.30

Supersedes EN 1232:1997, EN 12919:1999

English Version

**Workplace atmospheres - Pumps for personal sampling of  
chemical and biological agents - Requirements and test  
methods (ISO 13137:2013)**

Air des lieux de travail - Pompes pour le prélèvement  
individuel des agents chimiques et biologiques - Exigences  
et méthodes d'essai (ISO 13137:2013)

Arbeitsplatzatmosphäre - Pumpen für die  
personenbezogene Probenahme von chemischen und  
biologischen Arbeitsstoffen - Anforderungen und  
Prüfverfahren (ISO 13137:2013)

This European Standard was approved by CEN on 28 September 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**



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## **Foreword**

This document (EN ISO 13137:2013) 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 April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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 1232:1997, EN 12919:1999.

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### **Endorsement notice**

The text of ISO 13137:2013 has been approved by CEN as EN ISO 13137:2013 without any modification.

## Introduction

Many different methods are used to determine the concentration of chemical and biological agents in workplace air. Many of these methods involve the use of a pump and sampler connected by a flexible tube. Air is drawn through the sampler and chemical and biological agents are trapped, e.g. on a filter, sorbent tube or long-term detector tube, or in a gas washing bottle. In personal sampling, the pump and sampler are attached to the worker so as to collect chemical and biological agents in the breathing zone.

The volume of air drawn by the pump during the sampling period is one of the quantities in the calculation of the concentration of the chemical and biological agents in air. Therefore, the volume of air sampled should be determined accurately and, in order to facilitate this, the flow rate should be maintained within acceptable limits throughout the sampling period. For particle size selective sampling, the short-term fluctuation of the flow rate should also be maintained within acceptable limits in order to ensure that the sampler exhibits the required collection characteristics.

EN 482<sup>[1]</sup> specifies general performance criteria for methods for measuring the concentration of chemical and biological agents in workplace air. These performance criteria include maximum values of expanded uncertainty that are not to be exceeded under prescribed laboratory conditions. In addition, the performance criteria should also be met under a wider variety of environmental influences, representative of workplace conditions. The contribution of the sampling pump to measurement uncertainty should be kept to a minimum.

This International Standard is intended to enable manufacturers and users of personal sampling pumps to adopt a consistent approach to, and provide a framework for, the assessment of the specified performance criteria. Manufacturers are urged to ensure that pumps meet the requirements laid down in this International Standard, including environmental influences which can be expected to affect performance.

# Workplace atmospheres — Pumps for personal sampling of chemical and biological agents — Requirements and test methods

## 1 Scope

This International Standard specifies performance requirements for battery powered pumps used for personal sampling of chemical and biological agents in workplace air. It also specifies test methods in order to determine the performance characteristics of such pumps under prescribed laboratory conditions.

This International Standard is applicable to battery powered pumps having a nominal volume flow rate above  $10 \text{ ml} \cdot \text{min}^{-1}$ , as used with combinations of sampler and collection substrate for sampling of gases, vapours, dusts, fumes, mists and fibres.

This International Standard is primarily intended for flow-controlled pumps.

## 2 Normative references

The following referenced 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.

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

IEC 61000-6-1, *Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) — Part 6-3: Generic standards — Emission standard for residential, commercial and light-industrial environments*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1

#### **biological agent**

bacteria, viruses, fungi and other micro-organisms or parts of them and their associated toxins, including those which have been genetically modified, cell cultures or endoparasites which are potentially hazardous to human health

Note 1 to entry: Dusts of organic origin, e.g. pollen, flour dust and wood dust, are not considered to be biological agents and are therefore not covered by this definition.

[SOURCE: EN 1540:2011,<sup>2</sup> definition 2.1.1]

### 3.2

#### **chemical agent**

any chemical element or compound on its own or admixed as it occurs in the natural state or as produced, used, or released, including release as waste, by any work activity, whether or not produced intentionally and whether or not placed on the market

[SOURCE: EN 1540:2011,<sup>2</sup> definition 2.1.2]