

Workplace atmospheres — Protocol for evaluating the performance of diffusive samplers

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National foreword

This British Standard is the UK implementation of ISO 16107:2007. It supersedes BS ISO 16107:1999 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee EH/2, Air quality, to Subcommittee EH/2/2, Workplace atmospheres.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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*Air des lieux de travail — Protocole pour l'évaluation de la performance
des dispositifs de prélèvement par diffusion*



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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.

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16107 was prepared by Technical Committee ISO/TC 146, *Air quality*, Subcommittee SC 2, *Workplace atmospheres*.

This second edition cancels and replaces the first edition (ISO 16107:1999), which has been technically revised.

Introduction

Gas or vapor sampling is often accomplished by actively pumping air through a collection medium such as activated charcoal. Problems associated with a pump, such as inconvenience, inaccuracy and expense, are inextricable from this type of sampling. The alternative covered by this International Standard is to use diffusion for moving the compound of interest onto the collection medium. This approach to sampling is attractive because of the convenience of use and low total monitoring cost.

However, previous studies have found significant problems with the accuracy of some samplers. Therefore, although diffusive samplers may provide a plethora of data, inaccuracies and misuse of diffusive samplers may yet affect research studies. Furthermore, worker protection may be based on faulty assumptions. The aim of this International Standard is to counter the uncertainties in diffusive sampling through achieving a broadly accepted set of performance tests and acceptance criteria for proving the efficacy of any given diffusive sampler intended for use.

This International Standard is intended specifically for the large-scale evaluation of many diffusive sampler/analyte pairs of practical application and is complementary to EN 838. An affordable, experimental evaluation determines a single performance value indicating how a sampler performs in a typical situation. A sampler can thereby be quickly judged as to acceptability. Additionally, sufficient data are obtained to predict performance in many atypical situations. For example, although sampling may normally be done at room temperature, a particular need may call for use in extreme cold. In such a case, the single performance value would be superseded by the particular needs.

