



**ANSI/ISEA**

**104-1998 (R2009)**

American National Standard  
for Air Sampling Devices—  
Diffusive Type for Gases  
and Vapors in Working Environments

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**American National Standard for  
Air Sampling Devices**

**Diffusive Type for Gases and Vapors  
in Working Environments**

Secretariat

**International Safety Equipment Association**

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**American National Standards Institute, Inc.**

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**Foreword** (This Foreword is not part of American National Standard ANSI/ISEA 104-1998.)

This standard has been drafted to establish a voluntary standard for diffusive sampling devices. The purpose of this standard is to provide a means of continual testing of these devices for accurate performance in working environments to determine the concentrations of toxic gases and vapors in air.

Suggestions for the improvement of this standard are welcome. They should be sent to the ISEA, 1901 N. Moore Street, Suite 808, Arlington, VA 22209.

This standard was processed and approved for submittal to ANSI by the Canvass Method. The following organizations were contacted prior to the approval of this standard. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

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American Gas Association  
American Industrial Hygiene Association  
American Iron and Steel Institute  
American Mining Congress  
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Safety Equipment Institute  
Sensidyne, Inc.  
United Auto Workers  
United Mine Workers  
United Steel Workers

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## American National Standard for Air Sampling Devices--

### Diffusive Type for Gases and Vapors in Working Environments

#### 1. Purpose, Practice, Rationale and Scope

##### 1.1 Purpose

This standard seeks to provide manufacturers and end users of diffusive samplers with guidance concerning the tests to be used in evaluating samplers for various air sampling applications.

This standard is not intended as a means of sampler classification, nor as a means by which the performance of different samplers can be strictly compared.

##### 1.2 Practice

The standard includes evaluation parameters which are used to characterize diffusive samplers with respect to their ability to determine the concentrations of gases and vapors in working environments. The reporting and labeling requirements of this standard will permit informed users to properly select and use the subject devices in measuring time-weighted-average workplace exposures in compliance with exposure limit values (ELVs) and for other purposes.

##### 1.3 Rationale

While this standard employs test methods similar to those described under Section 3, References, it differs from the others by: a) allowing a greater freedom in selecting the evaluation parameters, b) refraining from mandating specific performance requirements, and c) mandating detailed disclosure of performance results.

Since diffusive samplers will be used under various conditions (from extreme to mild environments) with a variety of objectives (from routine screening by employers to assessments of workplaces by regulators), the standard seeks to include all devices which are useful for a certain purpose rather than requiring that all devices included meet the requirements of all situations and environments. The disclosure features of the standard, including Evaluation Parameters and Test Report, are designed to permit users of samplers/monitors to select those devices meeting the requirements of their particular application.

##### 1.4 Scope

For the purposes of this standard, diffusive sampling devices are categorized as follows:

**Type A.** Devices which provide on-site reading of time-weighted-average (TWA) gas or vapor concentration.

**Type B.** Devices which utilize a sorbent to collect an air sample and use laboratory analysis to determine time-weighted average (TWA) concentrations.

#### 2. Determination of Standard Compliance

Compliance with this standard shall be established by the test report which details the test methods and evaluation parameters used in accordance with this standard. The testing laboratory is free to select test parameters (e.g., temperature, humidity, concentration, sampling time period) for the two-factor or multi-factorial tests listed in Section 6. However, this choice will impose