



Standard Guide for Air Sampling Strategies for Worker and Workplace Protection¹

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1. Scope

1.1 This guide describes criteria to be used in defining air sampling strategies for workplace health and safety monitoring or evaluation. Sampling criteria such as duration, frequency, number, location, method, equipment, and timing are all considered.

1.2 Where air sampling is prescribed by law or regulation, this guide is not intended to take the place of any requirements that may be specified in such law or regulation.

1.3 Guidance for surface sampling strategies for metals and metalloids is provided in Guide [D7659](#).

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards*:²

[D1356](#) Terminology Relating to Sampling and Analysis of Atmospheres

[D4840](#) Guide for Sample Chain-of-Custody Procedures

[D7659](#) Guide for Strategies for Surface Sampling of Metals and Metalloids for Worker Protection

[E1542](#) Terminology Relating to Occupational Health and Safety

2.2 *ISO Standards*:³

[ISO 7708](#) Particle Size Fraction Definitions for Health-Related Sampling

[ISO/IEC 17025](#) General Requirements for the Competence of Testing and Calibration Laboratories
[EN 1540](#) Workplace Exposure—Terminology

3. Terminology

3.1 For definitions of terms relating to occupational health and safety, see Terminology [E1542](#).

3.2 For definitions of terms relating to atmospheric sampling and analysis, see Terminology [D1356](#).

3.3 *Definitions*:

3.3.1 *alarm sampler*—sampling device that produces an alarm (audible, visible, or both) when the concentration of a substance exceeds a pre-set value.

3.3.2 *exposure (by inhalation)*—situation in which a chemical or biological agent is present in the air that is inhaled by a person. **EN 1540**

3.3.3 *occupational exposure limit*—upper bound on the acceptable concentration of a hazardous substance in workplace air.

3.3.3.1 *Discussion*—Typically established by national authorities in efforts to protect workers' health.

3.3.4 *professional judgment*—application and appropriate use of knowledge gained from formal education, experience, experimentation, inference, and analogy. **D7659**

3.3.4.1 *Discussion*—The capacity of an experienced professional to draw correct inferences from incomplete quantitative data, frequently on the basis of observations, analogy, and intuition.

3.3.5 *sampling excursion*—duration of time during which active sampling is not being performed, typically between two durations of active sampling.

4. Significance and Use

4.1 This guide describes standard approaches used to formulate air sampling strategies before actual air sampling occurs.

4.2 For most workplace air sampling purposes, and for the majority of materials sampled, air sampling strategies are matters of choice. Air sampling in the workplace may be done for single or multiple purposes, such as health impact, hazard or risk assessment, compliance assessment, or investigation of

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, CP 56, CH-1211 Geneva 20, Switzerland, <http://www.iso.org>.