



Designation: D7659 – 21

Standard Guide for Strategies for Surface Sampling of Metals and Metalloids for Worker Protection¹

This standard is issued under the fixed designation D7659; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide provides criteria to be used in defining strategies for sampling for metals and metalloids on surfaces for workplace health and safety monitoring or evaluation.

1.2 Guidance provided by this standard is intended for sampling of metals and metalloids on surfaces for subsequent analysis using methods such as atomic spectrometry, mass spectrometry, X-ray fluorescence, or molecular fluorescence. Guidance for evaluation of data after sample analysis is included.

1.3 Sampling for volatile organometallic species (for example, trimethyl tin) is not within the scope of this guide.

1.4 Sampling to determine levels of metals or metalloids on the skin is not within the scope of this guide.

1.5 Sampling for airborne particulate matter is not within the scope of this guide. Guide E1370 provides information on air sampling strategies.

1.6 Where surface 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.

1.7 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.8 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.9 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- D1356 Terminology Relating to Sampling and Analysis of Atmospheres
- D3670 Guide for Determination of Precision and Bias of Methods of Committee D22
- D5438 Practice for Collection of Floor Dust for Chemical Analysis
- D6399 Guide for Selecting Instruments and Methods for Measuring Air Quality in Aircraft Cabins
- D6620 Practice for Asbestos Detection Limit Based on Counts
- D6966 Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Determination of Metals
- D7035 Test Method for Determination of Metals and Metalloids in Airborne Particulate Matter by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES)
- D7144 Practice for Collection of Surface Dust by Microvacuum Sampling for Subsequent Determination of Metals and Metalloids
- D7202 Test Method for Determination of Beryllium in the Workplace by Extraction and Optical Fluorescence Detection
- D7296 Practice for Collection of Settled Dust Samples Using Dry Wipe Sampling Methods for Subsequent Determination of Beryllium and Compounds
- D7439 Test Method for Determination of Elements in Airborne Particulate Matter by Inductively Coupled Plasma–Mass Spectrometry
- D7440 Practice for Characterizing Uncertainty in Air Quality Measurements
- D7822 Practice for Dermal Wipe Sampling for the Subsequent Determination of Metals and Metalloids
- E1216 Practice for Sampling for Particulate Contamination by Tape Lift

¹ This guide is under the jurisdiction of ASTM Committee D22 on Air Quality and is the direct responsibility of Subcommittee D22.04 on Workplace Air Quality.

Current edition approved Sept. 1, 2021. Published October 2021. Originally approved in 2010. Last previous edition approved in 2015 as D7659 – 10 (2015). DOI: 10.1520/D7659-21.

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.