



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

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

2. Referenced Documents

2.1 ASTM Standards:²

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 Oct. 1, 2015. Published October 2015. Originally approved in 2010. Last previous edition approved in 2010 as D7659 – 10. DOI: 10.1520/D7659-10.

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.

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 Metals Determination

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

E1216 Practice for Sampling for Particulate Contamination by Tape Lift

E1370 Guide for Air Sampling Strategies for Worker and Workplace Protection

E1402 Guide for Sampling Design

E1542 Terminology Relating to Occupational Health and Safety

E1605 Terminology Relating to Lead in Buildings

E1613 Test Method for Determination of Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry