

# **ASTM E1613 - 12 Standard Test Method for Determination of Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption Spectrometry (FAAS), or Graphite Furnace Atomic Absorption Spectrometry (GFAAS) Techniques**

## **Significance and Use**

This test method is intended for use with other standards (see 2.1) that address the collection and preparation of samples (dried chips, dusts, soils, and air particulates) that are obtained during the assessment or mitigation of lead hazards from buildings and related structures.

This test method may also be used to analyze similar samples from other environments.

## **1. Scope**

1.1 This test method is intended for use with extracted or digested samples that were collected during the assessment, management, or abatement of lead hazards from buildings, structures, or other locations.

1.2 This test method covers the lead analysis of sample extracts or digestates (for example, extracted or digested paint, soil, dust, and airborne particulate) using inductively coupled plasma atomic emission spectrometry (ICP-AES), flame atomic absorption spectrometry (FAAS), or graphite furnace atomic absorption spectrometry (GFAAS).

1.3 This test method contains directions for sample analysis, as well as quality assurance (QA) and quality control (QC), and may be used for purposes of laboratory accreditation and certification.

1.4 No detailed operating instructions are provided because of differences among various makes and models of suitable instruments. Instead, the analyst shall follow the instructions provided by the manufacturer of the particular instrument.

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

1.6 This practice contains notes which are explanatory and not part of the mandatory requirements of this standard.

1.7 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 (*purchase separately*)**

ASTM Standards

D1193 Specification for Reagent Water

D3919 Practice for Measuring Trace Elements in Water by Graphite Furnace Atomic Absorption Spectrophotometry

D4210 Practice for Intralaboratory Quality Control Procedures and a Discussion on Reporting Low-Level Data

D4697 Guide for Maintaining Test Methods in the Users Laboratory

D4840 Guide for Sample Chain-of-Custody Procedures

D6785 Test Method for Determination of Lead in Workplace Air Using Flame or Graphite Furnace Atomic Absorption Spectrometry

D7144 Practice for Collection of Surface Dust by Micro-vacuum Sampling for Subsequent Metals Determination

E456 Terminology Relating to Quality and Statistics

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

E1188 Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator

E1605 Terminology Relating to Lead in Buildings

E1644 Practice for Hot Plate Digestion of Dust Wipe Samples for the Determination of Lead

E1645 Practice for Preparation of Dried Paint Samples by Hotplate or Microwave Digestion for Subsequent Lead Analysis

E1726 Practice for Preparation of Soil Samples by Hotplate Digestion for Subsequent Lead Analysis

E1727 Practice for Field Collection of Soil Samples for Subsequent Lead Determination

E1728 Practice for Collection of Settled Dust Samples Using Wipe Sampling Methods for Subsequent Lead Determination

E1729 Practice for Field Collection of Dried Paint Samples for Subsequent Lead Determination

E1741 Practice for Preparation of Airborne Particulate Lead Samples Collected During Abatement and Construction Activities for Subsequent Analysis by Atomic Spectrometry

E1775 Guide for Evaluating Performance of On-Site Extraction and Field-Portable Electrochemical or Spectrophotometric Analysis for Lead

E1792 Specification for Wipe Sampling Materials for Lead in Surface Dust

E1864 Practice for Evaluating Quality Systems of Organizations Conducting Facility and Hazard Assessments for Lead in Paint, Dust, Airborne Particulate, and Soil in and around Buildings and Related Structures

E1979 Practice for Ultrasonic Extraction of Paint, Dust, Soil, and Air Samples for Subsequent Determination of Lead

E2239 Practice for Record Keeping and Record Preservation for Lead Hazard Activities

**Reference:** <http://www.astm.org/Standards/E1613.htm>