



Standard Specification for Wipe Sampling Materials for Lead in Surface Dust¹

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1. Scope

1.1 This specification covers requirements for wipe materials that are used to collect settled dusts on surfaces for the subsequent determination of lead.

1.2 *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:

E 105 Practice for Probability Sampling of Materials²

E 691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method^{2,3}

E 1605 Terminology Relating to Abatement of Hazards from Lead-Based Paint in Buildings and Related Structures⁴

E 1613 Test Method for Analysis of Digested Samples for Lead by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES), Flame Atomic Absorption (FAAS), or Graphite Furnace Atomic Absorption (GFAAS) Techniques⁴

E 1644 Practice for Hot Plate Digestion of Dust Wipe Samples for Determination of Lead by Atomic Spectrometry⁴

E 1728 Practice for Field Collection of Settled Dust Samples Using Wipe Sampling Methods for Lead Determination by Atomic Spectrometry Techniques⁵

3. Terminology

3.1 For definitions of terms not listed here, see Terminology E1605.

3.2 Definitions:

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² *Annual Book of ASTM Standards*, Vol 14.02.

³ *ASTM Standards on Precision and Bias for Various Applications*, 5th Ed., ASTM, West Conshohocken, PA, 1997.

⁴ *Annual Book of ASTM Standards*, Vol 04.11.

⁵ *Annual Book of ASTM Standards*, Vol 04.12.

3.2.1 *wipe, n*—a disposable towellette that is moistened with a wetting agent.

3.2.1.1 *Discussion*—The towellette is used to collect a sample of settled dust on a surface for subsequent lead analysis.

4. Manufacture

4.1 The wipes shall be made from materials using methods that ensure compliance with the requirements of Sections 5 and 7, and shall be clean and free of imperfections that would affect their performance.

5. General Requirements

5.1 Test data must be provided to assure compliance with all the following requirements. Test procedures for each requirement are found in Section 7.

5.1.1 *Background Lead*—The mean background lead concentration per wipe shall be less than 1.0 μg .

5.1.2 *Ruggedness*—Wipes shall be sufficiently rugged so as to be used on a 2000 cm^2 area of a vinyl tile surface without tearing.

5.1.3 *Moisture Content*—Each wipe, when examined, must be fully wetted upon removal from the package. Wipes shall have a moisture content such that the coefficient of variation for a random sampling of the lot of wipes be no greater than 25 %.

5.1.4 *Sizes*—The mean area of wipes shall not be less than 200 cm^2 and shall not be greater than 625 cm^2 . The mean length of either side shall not be less than 10 cm or larger than 25 cm.

5.1.5 *Thickness*—The dry wipes shall have a mean thickness of at least 0.005 cm but no greater than 0.05 cm.

5.1.6 *Mass*—The coefficient of variation in mass of dry wipes in a lot shall not exceed 10 %.

5.1.7 *Lead Recoveries*—The mean lead recoveries from wipes spiked with Certified Reference Materials (CRMs) having 20 μg , 100 μg , and 500 μg ($\pm 10\%$) of lead per sample shall be 100 % $\pm 20\%$, 95 % confidence level, of the lead recovery from the CRM alone, that is, *sans* wipe material, as per 7.2(1).

NOTE 1—It is not imperative that the wipe be completely dissolved when extracted in accordance with Practice E 1644 or an equivalent procedure to meet the recovery criterion. However, the solution that is to