Designation: ~~C895 – 87 (Reapproved 2009)~~ C895 – 87 (Reapproved 2014)

Standard Test Method for Lead and Cadmium Extracted from Glazed Ceramic Tile[1]

This standard is issued under the fixed designation C895; 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 test method covers the precise determination of lead and cadmium extracted by acetic acid from glazed ceramic tile that are intended for use in areas of food preparation. The procedure of extraction may be expected to accelerate the release of lead from the glaze and to serve, therefore, as a severe test that is unlikely to be matched under the actual conditions of usage of such ceramic tile. This test method is specific for lead and cadmium.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *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]

C738 Test Method for Lead and Cadmium Extracted from Glazed Ceramic Surfaces

C1034 Test Method for Lead and Cadmium Extracted From Glazed Ceramic Cookware (Withdrawn 2001)[3]

C1035 Specification for Lead and Cadmium Extracted from Glazed Ceramic Cookware (Withdrawn 2001)[3]

3. Summary of Test Method

3.1 The lead and cadmium extracted from the article under test, by acetic acid at 20 to 24°C (68 to 75°F) after 24 h of leaching, are measured by atomic absorption spectrophotometry using specific hollow-cathode lamps for lead and cadmium, respectively.

4. Significance and Use

4.1 There are several test methods available to measure the lead and cadmium release from dinnerware and cookware (see Test Methods C738 and C1034 and Specification C1035). These standards are used as a control to ensure the protection of the population against a possible health hazard.[4] This potential hazard arises with improperly formulated, applied, fired glazes and decorations. This test method deals specifically with ceramic tile that are intended to come in contact with food during its preparation (for example, counter top tile).

5. Interferences

5.1 Since specific hollow-cathode lamps for lead and cadmium are used, there are no interferences.

6. Apparatus

6.1 *Atomic Absorption Spectrophotometer,* equipped with a 4-in. (102-mm) single slot or Boling burner head and digital concentration readout attachment (DCR) if available. This instrument should have a sensitivity of about 0.5 ppm of lead for 1 % absorption and a sensitivity of about 0.25 ppm of cadmium for 1 % absorption. Use the operating conditions as specified in the instrument manufacturer's analytical methods manual.

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[1] This test method is under the jurisdiction of ASTM Committee C21 on Ceramic Whitewares and Related Productsand is the direct responsibility of Subcommittee C21.06 on Ceramic Tile.

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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] The last approved version of this historical standard is referenced on www.astm.org.

[4] "Lead Industries, Inc.," *Proceedings, International Conference on Ceramic Foodware Safety*, 1975, pp. 8–17.