



Designation: C1606 – 10 (Reapproved 2023)

Standard Test Method for Sampling Protocol for TCLP Testing of Container Glassware¹

This standard is issued under the fixed designation C1606; 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 defines the way in which container glassware should be prepared before performing the Toxicity Characteristic Leaching Procedure (TCLP). The method covers the homogenization of the sample, and the selection of a representative portion of the sample to test and get reproducible results.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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

[E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods](#)

[E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method](#)

3. Summary of Test Method

3.1 Container glass articles decorated with ceramic glass decorations are broken to fit the requirements of the TCLP

¹ This test method is under the jurisdiction of ASTM Committee C21 on Ceramic Whitewares and Related Products and is the direct responsibility of Subcommittee C21.03 on Methods for Whitewares and Environmental Concerns.

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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.

protocol by using a disc mill or roll mill apparatus, and then the samples are homogenized using a riffle box. A representative sample of the glass articles can then be put through the TCLP test with reproducible results.

4. Significance and Use

4.1 Sampling of decorated glass containers for the TCLP can vary greatly, resulting from the size and shape of the article relative to the amount of ceramic decoration on the ware. Breaking the glass can cause some of the pieces to have no decoration on them, and others to be heavily decorated and more likely to leach lead and cadmium under the TCLP test. This method provides an effective tool to homogenize the glass containers so that reproducible results can be attained from the TCLP test.

5. Apparatus

5.1 Pre-breaking apparatus, consisting of:

5.1.1 Two L (or larger) polythene bucket with a tightly sealed lid,

5.1.2 One or two clean 35 mm to 40 mm diameter alumina grinding balls,

5.2 Disc mill or roll mill,

5.3 Sieves, as needed,

5.4 Riffle box, and

5.5 Roller or tumbler apparatus.

6. Reagents and Materials

6.1 Glassware to be tested, in two sets of 10 units each.

7. Hazards

7.1 When working with glassware, always be aware and careful of the potential of getting cut by the glass. Personal protective equipment, such as a face shield or goggles, leather gloves, and a protective apron should be worn when working with glass.

Take precautions when working with the samples and apparatus to avoid the possibilities of getting hurt.