



Designation: E 1545 – 95a00

Standard Test Method for Assignment of the Glass Transition Temperature by Thermomechanical Analysis¹

This standard is issued under the fixed designation E 1545; 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 procedures for the assignment of the glass transition temperature of materials on heating using thermomechanical measurements under prescribed experimental conditions.

1.2 This test method is applicable to amorphous or to partially crystalline materials that are sufficiently rigid below the glass transition to inhibit indentation by the sensing probe.

1.3 The normal operating temperature range is from – 100 to 600°C. This temperature range may be extended depending upon the instrumentation used.

1.4 Computer- or electronic-based instruments, techniques, or data treatment equivalent to this test method may also be used.

NOTE 1—Users of this test method are ~~expressly~~ advised that all such instruments or techniques may not be equivalent. It is the responsibility of the user of this test method to ~~determine the necessary~~ verify equivalency prior to use. ~~In the case of dispute, only the manual procedures are to be considered valid use.~~

1.5 The values stated in SI units are to be regarded as the standard.

1.6 This test method is related to ISO 11359-2. ISO 11359-2 additionally covers the determination of coefficient of linear thermal expansion not covered by this test method.

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. Specific precautionary statements are given in Section 7.

2. Referenced Documents

2.1 *ASTM Standards:*

D 832 Practice for Rubber Conditioning for Low-Temperature Testing²

¹ This test method is under the jurisdiction of ASTM Committee E-37 on Thermal Measurements and is the direct responsibility of Subcommittee E37.01 on Test Methods and Recommended Practices.

Current edition approved ~~Sept. March 10, 1995; 2000~~. Published ~~December 1995; June 2000~~. Originally published as E 1545 – 93. Last previous edition E 1545 – 95a.