



Designation: D1763 – 00 (Reapproved 2021)

## Standard Specification for Epoxy Resins<sup>1</sup>

This standard is issued under the fixed designation D1763; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the U.S. Department of Defense.*

### 1. Scope

1.1 This specification covers totally reactive epoxy resins supplied as liquids or solids which can be used for castings, coatings, tooling, potting, adhesives, or reinforced applications. The addition of hardeners in the proper proportions causes these resins to polymerize into infusible products. The properties of these products can be modified by the addition of various fillers, reinforcements, extenders, plasticizers, thixotropic agents, etc. The epoxy resins described also can be used as stabilizers and cross-linking agents; and they can be combined with other reactive products.

1.2 It is not the function of this specification to provide engineering data or to guide the purchaser in the selection of a material for a specific end use. Ordinarily the properties listed in [Table 1](#) and [Table 2](#) are sufficient to characterize a material under this specification, and it is recommended that routine inspection be limited to testing for such properties.

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

NOTE 1—ISO 3673–1:1980(E) is similar but not equivalent to this specification. Product classification and characterization are not the same.

1.4 *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.*

1.5 *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.*

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.16 on Thermosetting Materials.

Current edition approved July 1, 2021. Published July 2021. Originally approved in 1960. Last previous edition approved in 2013 as D1763 - 00(2013). DOI: 10.1520/D1763-00R21.

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

D445 Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity)

D883 Terminology Relating to Plastics

D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

D1544 Test Method for Color of Transparent Liquids (Gardner Color Scale)

D1652 Test Method for Epoxy Content of Epoxy Resins

D3104 Test Method for Softening Point of Pitches (Mettler Softening Point Method)

D3892 Practice for Packaging/Packing of Plastics

2.2 *ISO Standard:*<sup>3</sup>

ISO 3673–1:1980(E) Plastics—Epoxy Resins—Part 1

### 3. Terminology

3.1 *Definitions:*

3.1.1 *General*—Definitions of terms used in this specification are in accordance with Terminology D883.

### 4. Classification

4.1 The resins covered contain no hardeners. Resin types covered are divided into specific groups by their chemical nature:

4.1.1 *Type I*—Bisphenol A and epichlorohydrin.

4.1.2 *Type II*—Reaction product of phenol and formaldehyde (novolac resin) and epichlorohydrin.

4.1.3 *Type III*—Cycloaliphatic and peracid epoxies.

4.1.4 *Type IV*—Glycidyl esters.

4.1.5 *Type V*—Reaction product of epichlorohydrin and *p*-aminophenol.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

\*A Summary of Changes section appears at the end of this standard