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Standard Methods of Testing URETHANE FOAM POLYOL RAW MATERIALS¹

This standard is issued under the fixed designation D 2849; 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.

^{e1} NOTE—Section 2 was added editorially and subsequent sections renumbered in August 1985.

1. Scope

1.1 These methods cover the testing of polyol raw materials used in preparing urethane foams, including both polyesters and polyethers containing carboxyl, primary or secondary hydroxyl groups, or both.

NOTE 1—Urethane foams are cellular products that vary from soft resilient types to those which are hard and rigid. These foams are made by the interaction of polyhydroxy compounds, water, and an organic polyisocyanate. The reactions involved in the manufacture of these foams can be modified in many ways. Basic materials, especially tertiary amines, act as catalysts and accelerate the reaction, whereas acidic materials retard it. The uniformity and size of the cells are affected by the addition of surface-active agents. Usually nonionic or cationic surfactants are employed. Fillers, plasticizers, and colors are also added in many cases to give specific properties to the foam.

1.2 The procedures appear in the following order:

	Sections
Sampling	4
Sodium and Potassium	6 to 20
Acid and Alkalinity Numbers	21 to 30
Hydroxyl Number	31 to 52
Unsaturation	53 to 60
Water	61 to 70
Suspended Matter	71 to 73
Specific Gravity	74 to 79
Viscosity	80 to 91
Color	92 to 103

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

2. Applicable Documents

2.1 ASTM Standards:

- D 618 Method for Conditioning Plastics and Electrical Insulating Materials for Testing²
- D 1193 Specification for Reagent Water³

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)⁴

E 1 Specification for ASTM Thermometers⁵

E 200 Methods for Preparation, Standardization, and Storage of Standard Solutions for Chemical Analysis⁶

E 203 Test Method for Water Using the Karl Fischer Reagent⁶

E 308 Method for Computing the Colors of Objects by Using the CIE System⁷

3. Purity of Reagents

3.1 *Purity of Reagents*—Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available.⁸ Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

3.2 *Purity of Water*—Unless otherwise indi-

¹ These methods are under the jurisdiction of ASTM Committee D-20 on Plastics and are the direct responsibility of Subcommittee D20.22 on Cellular Plastics.

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² Annual Book of ASTM Standards, Vol. 08.01.

³ Annual Book of ASTM Standards, Vol. 11.01.

⁴ Annual Book of ASTM Standards, Vols. 06.01 and 06.03.

⁵ Annual Book of ASTM Standards, Vol. 14.01.

⁶ Annual Book of ASTM Standards, Vol. 15.05.

⁷ Annual Book of ASTM Standards, Vol. 14.02.

⁸ "Reagent Chemicals, American Chemical Society Specifications," Am. Chemical Soc., Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see "Reagent Chemicals and Standards," by Joseph Rosin, D. Van Nostrand Co., Inc., New York, NY, and the "United States Pharmacopeia."