



Designation: D6342 – 12 (Reapproved 2017)^{ε1}

Standard Practice for Polyurethane Raw Materials: Determining Hydroxyl Number of Polyols by Near Infrared (NIR) Spectroscopy¹

This standard is issued under the fixed designation D6342; 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.

^{ε1} NOTE—Reapproved with editorial changes in August 2017.

1. Scope

1.1 This standard covers a practice for the determination of hydroxyl numbers of polyols using NIR spectroscopy.

1.2 Definitions, terms, and calibration techniques are described. Procedures for selecting samples, and collecting and treating data for developing NIR calibrations are outlined. Criteria for building, evaluating, and validating the NIR calibration model are also described. Finally, the procedure for sample handling, data gathering and evaluation are described.

1.3 The implementation of this standard requires that the NIR spectrometer has been installed in compliance with the manufacturer's specifications.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *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.*

NOTE 1—This standard is equivalent ISO 15063.

1.6 *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.*

¹ This practice is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.22 on Cellular Materials - Plastics and Elastomers.

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2. Referenced Documents

2.1 ASTM Standards:²

- D883 Terminology Relating to Plastics
- D4274 Test Methods for Testing Polyurethane Raw Materials: Determination of Hydroxyl Numbers of Polyols
- D4855 Practice for Comparing Test Methods (Withdrawn 2008)³
- E131 Terminology Relating to Molecular Spectroscopy
- E168 Practices for General Techniques of Infrared Quantitative Analysis
- E222 Test Methods for Hydroxyl Groups Using Acetic Anhydride Acetylation
- E275 Practice for Describing and Measuring Performance of Ultraviolet and Visible Spectrophotometers
- E456 Terminology Relating to Quality and Statistics
- E1655 Practices for Infrared Multivariate Quantitative Analysis
- E1899 Test Method for Hydroxyl Groups Using Reaction with *p*-Toluenesulfonyl Isocyanate (TSI) and Potentiometric Titration with Tetrabutylammonium Hydroxide

2.2 ISO Standard:

- ISO 15063 Plastics—Polyols for use in the production of polyurethanes—Determination of hydroxyl number by NIR spectroscopy

3. Terminology

3.1 *Definitions*—Terminology used in this practice follows that defined in Terminology D883. For terminology related to

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.