



Designation: D2694 – 05 (Reapproved 2019)

## Standard Specification for Diethylene Glycol<sup>1,2</sup>

This standard is issued under the fixed designation D2694; 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.

### 1. Scope

1.1 This specification covers diethylene glycol for use in the preparation of surface coatings.

1.2 The following applies to all specified limits in this standard: for purposes of determining conformance with this standard, an observed value or a calculated value shall be rounded off “to the nearest unit” in the last right-hand digit used in expressing the specification limit of Practice E29.

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

1.4 For specific hazard information and guidance, consult the supplier’s Material Safety Data Sheet.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

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.*

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>3</sup>

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

D4052 Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter

D5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

E202 Test Methods for Analysis of Ethylene Glycols and Propylene Glycols

E300 Practice for Sampling Industrial Chemicals

2.2 *U.S. Federal Specification:*<sup>4</sup>

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of

### 3. Properties

3.1 Diethylene glycol shall conform to the following requirements:

Apparent specific gravity	
20/20 °C	1.1170 to 1.1200
or	
25/25 °C	1.1147 to 1.1177
Color, Pt-Co units, max <sup>A</sup>	15
Distillation range, 760 mm Hg	
Initial boiling point, °C, min	240
Dry point, °C, max	250
Water, wt %, max	0.2
Acidity as acetic acid, wt %, max	0.01
Ethylene glycol, wt %, max	0.5
Triethylene glycol, wt %, max	1.0
Iron, ppm, max	1.0

<sup>A</sup> Instrumental Pt-Co color determined by Test Method D5386 has been shown to have no statistically significant difference from Pt-Co color determined by Test Method D1209. However, it is not known whether diethylene glycol was part of the sample set included in the interlaboratory study.

### 4. Sampling

4.1 The material shall be sampled in accordance with Practice E300.

### 5. Test Methods

5.1 The properties enumerated in this specification shall be determined in accordance with Test Methods E202.

5.2 The apparent specific gravity can also be determined in accordance with Test Method D4052.

<sup>4</sup> Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://dodssp.daps.dla.mil>.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.35 on Solvents, Plasticizers, and Chemical Intermediates.

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<sup>2</sup> This compound is also known as 2,2’oxydiethanol.

<sup>3</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.