



Designation: D2693 – 22

# Standard Specification for Ethylene Glycol<sup>1</sup>

This standard is issued under the fixed designation D2693; 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 ethylene glycol for use in the preparation of surface coatings.

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

1.3 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, in accordance with the rounding-off method of Practice E29.

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

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.*

## 2. Referenced Documents

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

<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> 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.

E202 Test Methods for Analysis of Ethylene Glycols and Propylene Glycols

E300 Practice for Sampling Industrial Chemicals

2.2 *U.S. Federal Specification:*<sup>3</sup>

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

## 3. Properties

3.1 Ethylene glycol shall conform to the following requirements:

Apparent specific gravity 20/20 °C	1.1151 to 1.1156 or 1.1129 to 1.1134
25/25 °C	1.1129 to 1.1134
Color, Pt-Co units, max (Note 1)	15
Distillation range, 760 mm Hg	
Initial boiling point, °C, min	193
Dry point, °C, max	204
Water, wt %, max	0.2
Acidity as acetic acid, wt %, max	0.005
Diethylene glycol, wt %, max	1.0
Iron, ppm, max	1.0

NOTE 1—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 ethylene 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 specific gravity can also be determined in accordance with Test Method D4052.

## 6. Packaging and Package Marking

6.1 Package size shall be agreed upon by the purchaser and the supplier.

<sup>3</sup> Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.

6.2 Packaging shall conform to applicable carrier rules and regulations or when specified shall conform to Fed. Spec. PPP-C-2020.

## 7. Keywords

7.1 ethylene glycol

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