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Standard Specification for Dipropylene Glycol Monomethyl Ether¹

This standard is issued under the fixed designation D4836; 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.

1. Scope

1.1 This specification covers dipropylene glycol monomethyl ether (DPM).

NOTE 1—Dipropylene glycol monomethyl ether (DPM) is a mixture of isomers, the predominant isomer being 1-(2-methoxy-1-methylethoxy)-2-propanol.

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, in accordance with the rounding-off method 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 Safety Data Sheet for materials listed in this standard.

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:²

- D268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Material
- D891 Test Methods for Specific Gravity, Apparent, of Liquid Industrial Chemicals

¹ 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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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.

- D1078 Test Method for Distillation Range of Volatile Organic Liquids
 - D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)
 - D1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)
 - D1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products
 - D4052 Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter
 - D4773 Test Method for Purity of Propylene Glycol Monomethyl Ether, Dipropylene Glycol Monomethyl Ether, and Propylene Glycol Monomethyl Ether Acetate (Withdrawn 2021)³
 - D5386 Test Method for Color of Liquids Using Tristimulus Colorimetry
 - E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
 - E300 Practice for Sampling Industrial Chemicals
- 2.2 U.S. Federal Specification:⁴
- PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of

3. Properties

3.1 Dipropylene glycol monomethyl ether (DPM) shall conform to the following requirements:

Assay, weight %, min	98.0
Initial boiling point, min	184
Dry point, max	195
Apparent specific gravity:	
20/20 °C	0.953 to 0.956
or	
25/25 °C	0.949 to 0.952
Color, platinum-cobalt scale, max (Note 2)	15
Water, weight %, max	0.15
Acidity (free acid as acetic acid), weight %, max	0.01 ⁴

⁴ Equivalent to 0.1 mg of potassium hydroxide (KOH) per 1 g of specimen.

NOTE 2—Instrumental Pt-Co color determined by Test Method D5386 have been shown to have no statistically significant difference from Pt-Co

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from DLA Document Services, Building 4/D, 700 Robbins Ave., Philadelphia, PA 19111-5094, http://quicksearch.dla.mil.

color determined by Test Method **D1209**. However, it is not known whether dipropylene glycol monomethyl ether 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 the following test methods:

5.1.1 *Assay*—Test Method **D4773**.

5.1.2 *Distillation Range*—Test Method **D1078**, using a temperature measuring device having a range from 173 °C to 227 °C and a resolution of 0.1 °C.

5.1.3 *Apparent Specific Gravity*—Determine the apparent specific gravity by any convenient method that is accurate to

the third decimal place, the temperature of both specimen and water being 20 °C or 25 °C. See Guide **D268** or Test Methods **D891** or **D4052**.

5.1.4 *Color*—Test Method **D1209** (see **Note 2**).

5.1.5 *Water*—Test Method **D1364**.

5.1.6 *Acidity*—Test Method **D1613**.

6. Packaging and Package Marking

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

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 dipropylene glycol monomethyl ether

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