



# Standard Specification for Propylene Glycol Monomethyl Ether<sup>1</sup>

This standard is issued under the fixed designation D4837; 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 propylene glycol monomethyl ether (PM).

NOTE 1—Propylene glycol monomethyl ether (PM) is a mixture of two isomers: 1-methoxy-2-propanol and 2-methoxy-1-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 Material Safety Data Sheet for materials listed in this standard.

## 2. Referenced Documents

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

D268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Material

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

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*:

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of<sup>3</sup>

## 3. Properties

3.1 Propylene glycol monomethyl ether (PM) shall conform to the following requirements:

Purity, min, weight %	99.0
Apparent specific gravity: 20/20°C	0.922 to 0.925 or 0.918 to 0.921
25/25°C	0.918 to 0.921
Color, platinum cobalt scale, max (Note 2)	10
Water, max, weight %	0.25
Distillation Range:	
Initial boiling point, °C min	117
Dry point, °C max	125
Acidity (free acid acetic acid), max, weight %	0.01 <sup>A</sup>

<sup>A</sup> Equivalent to 0.1 mg of potassium hydroxide (KOH) per gram of specimen.

NOTE 2—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 propylene 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:

<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>.

<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.

\*A Summary of Changes section appears at the end of this standard

5.1.1 *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** and Test Method **D4052**.

5.1.2 *Color*—Test Method **D1209**.

5.1.3 *Gas Chromatographic Method*—Test Method **D4773**.

5.1.4 *Water*—Test Method **D1364**.

5.1.5 *Acidity*—Test Method **D1613**.

5.1.6 *Distillation Range*—Test Method **D1078**.

## **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 methoxy propanol; propylene glycol monomethyl ether

## **SUMMARY OF CHANGES**

Committee D01.35 has identified the location of selected changes to this standard since the last issue (D4837 - 02) that may impact the use of this standard. (Approved June 1, 2007.)

(1) Added new **Note 2** in **3.1**.

(2) Added Test Method **D5386** to the list of Referenced Documents.

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