Designation: D 4837 – 02

Standard Specification for Propylene Glycol Monomethyl Ether[1]

This standard is issued under the fixed designation D 4837; 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 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 E 29.

1.3 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:*

D 268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Material[2]

D 1078 Test Method for Distillation Range of Volatile Organic Liquids[2]

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)[2]

D 1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)[2]

D 1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products[2]

D 4052 Test Method for Density and Relative Density of Liquids by Digital Density Meter[3]

D 4773 Test Method for Purity of Propylene Glycol Monomethyl Ether, Dipropylene Glycol Monomethyl Ether, and Propylene Glycol Monomethyl Ether Acetate[2]

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications[4]

E 300 Practice for Sampling Industrial Chemicals[5]

2.2 *U.S. Federal Specification:*

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of[6]

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
25/25°C	0.918 to 0.921
Color, platinum cobalt scale, max	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[A]

[A] Equivalent to 0.1 mg of potassium hydroxide (KOH) per gram of specimen.

4. Sampling

4.1 The material shall be sampled in accordance with Practice E 300.

5. Test Methods

5.1 The properties enumerated in this specification shall be determined in accordance with the following test methods:

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 D 268 and Test Method D 4052.

5.1.2 *Color*—Test Method D 1209.

5.1.3 *Gas Chromatographic Method*—Test Method D 4773.

5.1.4 *Water*—Test Method D 1364.

5.1.5 *Acidity*—Test Method D 1613.

5.1.6 *Distillation Range*—Test Method D 1078.

6. Packaging and Package Marking

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

[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] *Annual Book of ASTM Standards*, Vol 06.04.

[3] *Annual Book of ASTM Standards*, Vol 05.02.

[4] *Annual Book of ASTM Standards*, Vol 14.02.

[5] Discontinued; see *2001 Annual Book of ASTM Standards*, Vol 15.05.

[6] Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098.

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

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 (D 4837 - 97) that may impact the use of this standard.

(1) Added reference to Practice E 29 in Scope section.
(2) Added Practice E 29 to list of Referenced Documents.
(3) Changed specs limits for apparent specific gravity in 3.1.