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Standard Specification for Dipropylene Glycol Monomethyl Ether¹

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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 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 Materials²

D 891 Test Methods for Specific Gravity, Apparent, of Liquid Industrial Chemicals³

D 1078 Test Method for Distillation Range of Volatile Organic Liquids²

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 Products²

D 4052 Test Method for Density and Relative Density of Liquids by Digital Density Meter⁴

D 4773 Test Method for Purity of Propylene Glycol Monomethyl Ether, Dipropylene Glycol Monomethyl Ether, and Propylene Glycol Monomethyl Ether Acetate²

E 1 Specification for ASTM Thermometers⁵

¹ This specification is under the jurisdiction of ASTM Committee D-1 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 15.05.

⁴ Annual Book of ASTM Standards, Vol 05.02.

⁵ Annual Book of ASTM Standards, Vol 14.03.

E 300 Practice For Sampling Industrial Chemicals³

2.2 U.S. Federal Specification:fnr

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of⁶

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
25/25°C	0.949 to 0.952
Color, platinum-cobalt scale, max	15
Water, weight %, max	0.15
Acidity (free acid as acetic acid), weight %, max	0.01 ^A

^A Equivalent to 0.1 mg of potassium hydroxide (KOH) per 1 g 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 Assay—Test Method D 4773.

5.1.2 Distillation Range—Test Method D 1078, using an ASTM Solvents Distillation Thermometer 104C, having a range from 173 to 227°C and conforming to the requirements of Specification E 1.

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 D 268 or Test Methods D 891 or D 4052.

5.1.4 Color—Test Method D 1209.

5.1.5 Water—Test Method D 1364.

5.1.6 Acidity—Test Method D 1613.

⁶ Available from Standardization Documents, Order Desk, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094.