

Standard Specification for Isobutyl Alcohol^{1,2}

This standard is issued under the fixed designation D 1719; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers isobutyl alcohol for use in paint, varnish, lacquer, and related products.

1.2 For specific hazard information and guidance, see the supplier's Material Safety Data Sheets for materials listed in this specification.

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 Materials³
- D 1078 Test Method for Distillation Range of Volatile Organic Liquids³
- D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)³
- D 1353 Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products³
- D 1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)³
- D 1476 Test Method for Heptane Miscibility of Lacquer Solvents³
- D 1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products³
- D 4052 Test Method for Density and Relative Density of Liquids by Digital Density Meter⁴
- E 1 Specification for ASTM Thermometers⁵
- E 300 Practice for Sampling Industrial Chemicals⁶

2.2 U.S. Federal Specification:

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.

Current edition approved April 15, 1995. Published June 1995. Originally published as D 1719 – 60 T. Last previous edition D 1719 – 90.

² This compound is also known under the names 2-methyl-1-propanol and isobutanol.

³ *Annual Book of ASTM Standards*, Vol 06.04.

⁴ *Annual Book of ASTM Standards*, Vol 05.02.

⁵ *Annual Book of ASTM Standards*, Vol 14.03.

⁶ *Annual Book of ASTM Standards*, Vol 15.05.

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of⁷

3. Properties

3.1 Isobutyl alcohol shall conform to the following requirements:

Apparent specific gravity:	
20/20°C	0.802 to 0.804
25/25°C	0.794 to 0.801
Color, Pt-Co Scale, max	10
Distillation range	A
Nonvolatile matter, max, g/100 mL	0.005
Water, max, weight %	0.2 ^B
Acidity (free acid as acetic), max, weight %	0.003 ^C

^A Shall distill entirely within a 2°C range which shall include 107.9°C.

^B This quantitative water limit ensures that the material is miscible without turbidity with 19 volumes of 99 % heptane at 20°C.

^C Equivalent to 0.028 mg of KOH per gram of sample.

4. Sampling

4.1 This 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 ASTM 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 material and water being 20 or 25°C. See Guide D 268 or Test Method D 4052.

5.1.2 *Color*—Test Method D 1209.

5.1.3 *Distillation Range*—Test Method D 1078, using an ASTM Solvents Distillation Thermometer 40C having a range from 72 to 126°C and conforming to the requirements in Specification E 1.

5.1.4 *Nonvolatile Matter*—Test Method D 1353.

5.1.5 *Water*—Test Methods D 1364 and D 1476.

5.1.6 *Acidity*—Test Method D 1613.

6. Packaging and Package Marking

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

⁷ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

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 isobutanol; isobutyl alcohol; 2-methyl-1-propanol

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