



Standard Specification for 1-Propanol (*n*-Propyl Alcohol)¹

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ε¹ NOTE—Editorial change was made in 6.2 in May 2000.

1. Scope

1.1 This specification covers *n*-propyl alcohol (1-propanol) 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 Material²

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 1296 Test Method for Odor of Volatile Solvents and Diluents²

D 1353 Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products²

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

D 1476 Test Method for Heptane Miscibility of Lacquer Solvents²

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 Meter³

E 1 Specification for ASTM Thermometers⁴

E 300 Practice for Sampling Industrial Chemicals⁵

2.2 U.S. Federal Specification:

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

3. Properties

3.1 *n*-propyl alcohol shall conform to the following requirements:

Apparent specific gravity:	
20/20°C	0.804 to 0.807
25/25°C	0.801 to 0.804
Color, Pt-Co scale, max	10
Distillation range	^A
Nonvolatile matter, max, mg/100 mL	5
Odor	^B
Water, max, weight %	0.1 ^C
Acidity (free acid as acetic), max, weight %	0.003 ^D

^A Shall distill entirely within a 2°C range which shall include 97.2°C

^B Optional: Test for odor only when agreed upon as necessary between the supplier and the customer.

^C This quantitative water limit ensures miscibility without turbidity when 1 volume is diluted with 19 volumes of 99 % heptane at 20°C.

^D Equivalent to 0.028 mg of KOH per gram of material

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 specimen 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 *Odor*—Test Method D 1296.

5.1.6 *Water*—Test Methods D 1364 or D 1476.

5.1.7 *Acidity*—Test Method D 1613.

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

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 05.02.

⁴ Annual Book of ASTM Standards, Vol 14.03.

⁵ Annual Book of ASTM Standards, Vol 15.05.

6. Packaging and Package Marking

6.1 Package size shall be 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 *n*—propyl alcohol; 1-propanol

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