



Designation: D319 – 04

Standard Specification for Amyl Alcohol (Synthetic)^{1, 2}

This standard is issued under the fixed designation D319; 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 synthetic amyl alcohol.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.3 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.

1.4 For hazard information and guidance, see the supplier’s Material Safety Data Sheet.

2. Referenced Documents

2.1 *ASTM Standards*:³

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

D891 Test Methods for Specific Gravity, Apparent, of Liquid Industrial Chemicals

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)

D1476 Test Method for Heptane Miscibility of Lacquer Solvents

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

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 Amyl alcohol is also known as pentanol. This material is a mixture of the isomers of amyl alcohol.

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

Gravity of Liquids by Digital Density Meter

E1 Specification for ASTM Liquid-in-Glass Thermometers

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 of⁴

3. Properties

3.1 Amyl alcohol (synthetic) shall conform to the following requirements:

Apparent specific gravity 20/20°C	0.812–0.820
or	
25/25°C	0.809–0.817
Color, Pt-Co scale, max	15
Distillation range, 760 mmHg, °C as:	
Initial boiling point, min	127.5
Dry point, max	139.0
Water, max, weight %	0.3 ^A
Acidity, as acetic acid, max, weight %	0.01 ^B

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

^B Equivalent to 0.093 mg of KOH per gram of sample.

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 ASTM methods:

5.1.1 *Apparent Specific Gravity*—Determine the apparent specific gravity at 20 or 25°C by a convenient method that is accurate to the third decimal place. See Guide D268 or Test Methods D891 or D4052.

5.1.2 *Color*—Test Method D1209.

5.1.3 *Distillation Range*—Test Method D1078, using an ASTM Solvents Distillation Thermometer 41C having a range from 98 to 152°C and conforming to the requirements in Specification E1.

⁴ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, http://www.dodssp.daps.mil.

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