



Standard Specification for Isopropyl Acetate (99 % Grade)¹

This standard is issued under the fixed designation D3131; 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 isopropyl acetate (99 % grade).

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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

1.4 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.

2. Referenced Documents

2.1 ASTM Standards:²

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

D1078 Test Method for Distillation Range of Volatile Organic Liquids

D1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)

D1296 Test Method for Odor of Volatile Solvents and Diluents

D1353 Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products

D1364 Test Method for Water in Volatile Solvents (Karl Fischer Reagent Titration Method)

D1476 Test Method for Heptane Miscibility of Lacquer Solvents

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.

Current edition approved June 1, 2013. Published June 2013. Originally approved in 1972. Last previous edition approved in 2007 as D3131 – 07. DOI: 10.1520/D3131-07R13.

² 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.

D1613 Test Method for Acidity in Volatile Solvents and Chemical Intermediates Used in Paint, Varnish, Lacquer, and Related Products

D3545 Test Method for Alcohol Content and Purity of Acetate Esters by Gas Chromatography

D4052 Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter

D5386 Test Method for Color of Liquids Using Tristimulus Colorimetry

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 of ³

3. Properties

3.1 Isopropyl acetate (99 % grade) shall conform to the following requirements:

| | |
|---|---|
| Apparent specific gravity: | |
| 20/20°C | 0.870 to 0.874 |
| | or |
| 25/25°C | 0.865 to 0.869 |
| Color, Pt-Co scale, max (Note 3) | 10 |
| Distillation range, 760 mmHg : (see Note 1) | |
| Initial boiling point, min, °C | 85 |
| Dry point, max, °C | 90 |
| Nonvolatile matter, mg/100 mL, max | 5 |
| Odor (see Note 1) | nonresidual |
| Water, weight %, max (see Note 2) | 0.2. This quantitative water limit ensures that 1 volume of the material is miscible without turbidity with 19 volumes of 99 % heptane at 20°C. |
| Acidity (free acid as acetic acid), weight %, max | 0.01, equivalent to 0.093 mg of KOH per gram of sample |
| Purity, weight %, min | 99.0 |

NOTE 1—Optional as agreed upon between the buyer and the seller.

NOTE 2—In some cases, Test Method D1476 may serve as a useful alternative method to determine the presence of water. Because it is a qualitative test, its use would require agreement between user and supplier.

NOTE 3—Instrumental Pt-Co color determined by Test Method D5386 has been shown to have no statistically significant difference from Pt-Co color determined by Test Method D1209. However, it is not known

³ Available from Metal Powder Industries Federation (MPIF), 105 College Rd. East, Princeton, NJ 08540, http://www.mpif.org.

whether isopropyl acetate was part of the sample set included in the interlaboratory study.

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 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 or 25°C. See either the Specific Gravity section of Guide **D268** or Test Method **D4052**.

5.1.2 *Color*—Test Method **D1209**.

5.1.3 *Distillation Range*—Test Method **D1078**, using a temperature measuring device having a range of 72 to 126°C and a resolution of 0.1°C.

5.1.4 *Nonvolatile Matter*—Test Method **D1353**.

5.1.5 *Odor*—Test Method **D1296**.

5.1.6 *Water*—Test Methods **D1364** and **D1476**.

5.1.7 *Acidity*—Test Method **D1613**.

5.1.8 *Purity*—Test Method **D3545**.

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 ester; isopropyl acetate; solvent

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