



Standard Specification for Ethyl Acetate (All Grades)¹

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1. Scope

1.1 This specification covers the various grades of ethyl acetate suitable for use as solvents in paint and related coatings.

1.2 For specific hazard information and guidance, see the supplier's Material Safety Data Sheet for material 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 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 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 (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 3545 Test Method for Alcohol Content and Purity of Acetate Esters by Gas Chromatography²

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

E 1 Specification for ASTM Thermometers⁵

E 300 Practice for Sampling Industrial Chemicals⁶

2.2 U.S. Federal Specification:

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

3. Properties

3.1 Ethyl acetate shall conform to the requirements of one of the grades in Table 1.

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 ASTM methods:

5.1.1 *Purity and Alcohol Content*—Test Method D 3545.

5.1.2 *Apparent Specific Gravity*—Determine the apparent specific gravity by any convenient method that is accurate to the third decimal place, the temperature of both sample and water being 20 or 25°C (see Guide D 268, or Test Methods D 891 or D 4052).

5.1.3 *Distillation Range*—Test Method D 1078, using an ASTM Solvents Distillation Thermometer 39C having a range from 48 to 102°C and conforming to the requirements in Specification E 1.

5.1.4 *Acidity*—Test Method D 1613.

5.1.5 *Water*—Test Method D 1364.

5.1.6 *Color*—Test Method D 1209.

5.1.7 *Nonvolatile Matter*—Test Method D 1353.

5.1.8 *Odor*—Test Method D 1296.

6. Packaging and Package Marking

6.1 Package size to 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 ethyl acetate; ester; solvent

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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.

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

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

TABLE 1 Requirements for Ethyl Acetate

Property	Grades			
	85–88	99	99.5	99.5U ^A
Purity, wt %, min	85.0–88.0	99.0	99.5	99.5
Alcohol, wt %, max	...	0.5	0.2	0.2
Color, Pt-Co units, max	10	10	10	10
Distillation range, ° C	71.0–79.0	75.0–78.0	75.5–78.0	75.5–78.0
Nonvolatile matter, mg/100 mL, max	5	5	5	5
Odor ^B	Non-residual	Non-residual	Non-residual	Non-residual
Water, wt %, max	0.2	0.1	0.1	0.05 ^C
Acidity, wt %, max	0.01	0.01	0.01	0.01
Apparent Specific Gravity:				
20/20°C	0.882–0.887	0.900–0.903	0.900–0.903	0.900–0.903
25/25°C	0.877–0.882	0.895–0.898	0.895–0.898	0.895–0.898

^A Urethane grade material.

^B Test for odor is optional and should be agreed upon between the buyer and the seller.

^C Test method used to determine this value should be agreed on between the buyer and the seller.

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