



Standard Specification for Diacetone Alcohol¹

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1. Scope *

1.1 This specification covers diacetone alcohol.²

1.2 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 E 29.

1.3 For specific hazard information and guidance, consult the supplier’s Material Safety Data Sheet.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

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 Material³
- 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 1296 Test Method for Odor of Volatile Solvents and Diluents³
- 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 1722 Test Method for Water Miscibility of Water-Soluble Solvents³

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

E 1 Specification for ASTM Thermometers⁵

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁶

E 300 Practice for Sampling Industrial Chemicals⁷

2.2 U.S. Federal Specification:

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of⁸

3. Properties

3.1 Diacetone alcohol shall conform to the following requirements:

Apparent specific gravity	
20/20°C	0.938–0.941 or
25/25°C	0.935–0.938
Color, Pt-Co units, max	25
Distillation, 760 mm Hg	
Initial boiling point, °C, min	135
Dry point, °C, max	172
Nonvolatile matter, g/100 mL, max	0.01
Odor (see Note 1)	nonresidual
Water, wt %, max (see Note 2)	0.1
Acidity (free acid as acetic acid), wt %, max	0.01
Water solubility	miscible with distilled water in all proportions

NOTE 1—Optional: Test for odor only when agreed upon as necessary between the purchaser and the supplier.

NOTE 2—In some cases, Test Method D 1476 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.

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

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² This compound is also known as 4-hydroxy-4-methyl-pentanone-2.

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 14.02.

⁷ Annual Book of ASTM Standards, Vol 15.05.

⁸ Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098.

