



Designation: D4710 – 07

Standard Specification for Acetaldehyde¹

This standard is issued under the fixed designation D4710; 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 acetaldehyde (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 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 specific hazard information and guidance, see the supplier’s Material Safety Data Sheet for materials listed in this specification.

2. Referenced Documents

2.1 *ASTM Standards*:²

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

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

D2086 Test Method for Acidity in Vinyl Acetate and Acetaldehyde

D2192 Test Method for Purity of Aldehydes and Ketones

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

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 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.

2.2 *U.S. Federal Specification*:

PPP-C-2020 Chemicals, Liquid, Dry, and Paste: Packaging of³

3. Properties

3.1 Acetaldehyde shall conform to the following requirements:

| | |
|--|------|
| Purity, wt %, min, as acetaldehyde | 99 |
| Color, Pt-Co units, max (Note 1) | 15 |
| Acidity, wt %, max, (free acid as acetic acid) | 0.05 |
| Nonvolatile matter, wt %, max | 0.5 |

NOTE 1—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 whether acetaldehyde 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 *Purity*—Test Method D2192.

5.1.2 *Color*—Test Method D1209 (see Note 1).

5.1.3 *Acidity*—Test Method D2086.

5.1.4 *Nonvolatile Matter*—Determine the nonvolatile matter or residue after evaporation in accordance with Test Method D1353 except use an oven temperature of $60 \pm 5^\circ\text{F}$.

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.

³ 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