



# Standard Specification for 2-Ethylhexanol<sup>1</sup>

This standard is issued under the fixed designation D1969; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope\*

1.1 This specification covers regular and monomer grade 2-ethylhexanol.

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 E29.

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

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*:<sup>2</sup>

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

D2119 Test Method for Aldehydes in Styrene Monomer

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

D5008 Test Method for Ethyl Methyl Pentanol Content and Purity Value of 2-Ethylhexanol By Gas Chromatography

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

<sup>1</sup> 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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<sup>2</sup> 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.

E852 Test Methods for C4-C13 Plasticizer Grade Alcohols (Withdrawn 2000)<sup>3</sup>

2.2 *U.S. Federal Specifications*:

PPP-C-2020 Chemicals, Liquid, Dry and Paste: Packaging of<sup>4</sup>

## 3. Properties

3.1 The physical and chemical properties of 2-ethylhexanol shall conform to the requirements specified in Table 1.

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 2-ethylhexanol 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 methods:

5.1.1 *Acidity*—Test Methods E852.

5.1.2 *Apparent Specific Gravity*—Test Methods E852 or Test Method D4052.

5.1.3 *Assay*—Test Method D5008.

5.1.4 *Color*—Test Methods D1209 (see Note 1).

5.1.5 *Carbonyl*—Test Method D2119. Calculate the percent aldehyde as 2-ethylhexanal in Reagent Section 6 by using 0.128 in place of 0.106. “C” is the density of specimen used.

5.1.6 *Ethyl Methyl Pentanol*—Test Method D5008.

5.1.7 *Sulfuric Acid Color*—Test Methods E852.

5.1.8 *Water*—Test Methods E852.

NOTE 2—The following distillation properties are given for information only and are not part of the specification. The initial boiling point is 102°C at 760 mm Hg with all material boiling within a 2°C range.

## 6. Packaging and Package Marking

6.1 Package size shall be agreed upon by the purchaser and the supplier.

<sup>3</sup> The last approved version of this historical standard is referenced on www.astm.org.

<sup>4</sup> 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

**TABLE 1 Physical and Chemical Properties of 2-Ethylhexanol**

Grade	Monomer Grade	Regular
Acidity (free acid as acetic acid, max, weight %)	0.01 <sup>A</sup>	0.01 <sup>A</sup>
Apparent specific gravity 20/20°C	0.8325 to 0.8345	0.8325 to 0.8345
	or	
25/25°C	0.8298 to 0.8318	0.8298 to 0.8318
Assay, weight %, min	99.6	99.0
Color, Pt-Co scale, max ( <b>Note 1</b> )	5	5
Carbonyl (as 2-ethylhexanal), max, weight %	0.06	0.1
Ethyl methyl pentanol, max, weight %	0.4	0.5
Sulfuric acid color, Pt-Co scale, max	20	30
Water, max, weight %	0.10	0.10

<sup>A</sup> Equivalent to 0.093 mg of KOH per gram of sample.

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 2-ethylhexanol; 2-ethylhexyl alcohol; 2-ethyl-1-hexanol

## SUMMARY OF CHANGES

Committee D01.35 has identified the location of selected changes to this standard since the last issue (D1969 - 01) that may impact the use of this standard. (Approved June 1, 2007.)

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| (1) Added reference to Practice <b>E29</b> in Scope section.               | (4) Added new <b>Note 1</b> after <b>Table 1</b> .                  |
| (2) Added Practice <b>E29</b> to list of Referenced Documents.             | (5) Added Test Method <b>D5386</b> to list of Referenced Documents. |
| (3) Changed specs limits for apparent specific gravity in <b>Table 1</b> . | (6) Referenced new <b>Note 1</b> in <b>5.1.4</b> .                  |

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