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Designation: D 1969 – 91 (Reapproved 1996)^{e1}



Designation: D 1969 – 01

Standard Specification for 2-Ethylhexanol (Synthetic)¹

This standard is issued under the fixed designation D 1969; 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.

~~ε¹ Note—Editorial changes made throughout in January 1996.~~

¹ This specification is under the jurisdiction of ASTM Committee D-01 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 May 15, 1994; 10, 2001, Published July 2001. Originally published as D 1969-91. Last previous edition D 1969-91 (1996)^{ε1}.

1. Scope*

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

1.2 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:

~~D-1078 Test 2119 Test Method for Distillation Range of Volatile Organic Liquids Aldehydes in Styrene Monomer²~~

~~D-2119 Test Method for Aldehydes in Styrene Monomer²~~

Ø 4052 Test Method for Density and Relative Density of Liquids by Digital Density Meter³

D 5008 Test Method for Ethyl Methyl Pentanol Content and Purity Value of 2-Ethylhexanol by Gas Chromatography²

~~E-1 Specification 300 Practice for ASTM Thermometers Sampling Industrial Chemicals⁴~~

~~E-300 Practice for Sampling Industrial Chemicals⁵~~

E 852 Test Methods for C₄-C₁₃ Plasticizer Grade Alcohols⁴

2.2 U.S. Federal Specifications:

PPP-C-2020 Chemicals, Liquid, Dry and Paste: Packaging of⁵

² Annual Book of ASTM Standards, Vol 06.04.

³ Annual Book of ASTM Standards, Vol 05.02.

⁴ Annual Book of ASTM Standards, Vol 14.03: 15.05.

~~Annual Book of ASTM Standards, Vol 15.05:~~

⁵ Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, ATTN: NPODS.

3. Properties

3.1 The physical and chemical properties of 2-ethylhexanol shall conform to the requirements specified 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 *Acidity*—Test Methods E 852.

5.1.2 *Apparent Specific Gravity*—Test Methods E 852 or Test Method D 4052.

5.1.3 *Assay*—Test Method D 5008.

5.1.4 *Color*—Test Methods E 852.

5.1.5 *Carbonyl*—Test Method D 2119. 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 *Distillation Range*—Test Method D 1078. Use ASTM Thermometer No. 104C (see specification E 1).

5.1.7 *Ethyl Methyl Pentanol*—Test Method D 5008.

5.1.8 *Sulfuric Acid Color*—Test Methods E 852.

5.1.9 *Water*—Test Methods E 852.

NOTE 1—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.

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 has identified the location of selected changes to this standard since the last date of issue that may impact the use of this standard.

(1) Deletion of the word “Synthetic” from the title of this specification. Other synthetic materials do not contain “Synthetic” in the title.

(2) Deletion of the standard distillation test from the specification requirements for this material. The capillary column gas chromatographic analysis already specified, adequately characterizes this material. For reference, the distillation parameters are shown in Note 1.

TABLE 1 Physical and Chemical Properties of 2-Ethylhexanol

Grade	Monomer Grade	Regular
Acidity (free acid as acetic acid, max, weight %)	0.01 ^A	0.01 ^A
Apparent specific gravity 20/20°C	0.8325 to 0.8345	0.8325 to 0.8345
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	5	5
Carbonyl (as 2-ethylhexanal), max, weight %	0.06	0.1
Distillation range 760 mm Hg, °C as		
—Initial boiling point, min.	182	182
—Dry point, max.	186	186
Distillation range	entirely within a —2°C range	NA
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

^A Equivalent to 0.093 mg of KOH per gram of sample.

■ (3) Revision of 6.2 to include appropriate commas.

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