



Standard Specification for Commercial Hexanes¹

This standard is issued under the fixed designation D 1836; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope *

1.1 This specification covers the range of products commonly referred to as hexanes, which find uses in the preparation of adhesives, coatings, and printing inks, as raw materials in chemical synthesis operations, and as solvents in various kinds of extraction operations.

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 *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.*

1.4 For specific hazard information and guidance consult supplier’s Material Safety Data Sheet.

2. Referenced Documents

2.1 ASTM Standards:

- D 156 Test Method for Saybolt Color of Petroleum Products (Saybolt Chromometer Method)²
- D 268 Guide for Sampling and Testing Volatile Solvents and Chemical Intermediates for Use in Paint and Related Coatings and Materials³
- D 611 Test Methods for Aniline Point and Mixed Aniline Point of Petroleum Products and Hydrocarbon Solvents²
- D 1078 Test Method for Distillation Range of Volatile Organic Liquids³
- D 1133 Test Method for Kauri-Butanol Value of Hydrocarbon Solvents³
- 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 2710 Test Method for Bromine Index of Petroleum Hydrocarbons by Electrometric Titration⁴
- D 3120 Test Method for Trace Quantities of Sulfur in Light Liquid Petroleum Hydrocarbons by Oxidative Microcoulometry⁴
- D 4367 Test Method for Benzene in Hydrocarbon Solvents By Gas Chromatography³
- 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 Commercial hexanes shall conform to the following requirements:

Aniline point, min	57°C
Apparent specific gravity 15.6/15.6°C	0.660–0.686
Bromine index, max	100
Color	not darker than + 28 on the Saybolt Scale or 10 on the Pt-Co Scale
Distillation range:	
Initial boiling point, min	63°C
Dry point, max	71°C
Kauri-butanol value, max	33
Nonvolatile matter, mg/100 mL, max	1
Odor	nonresidual
Sulfur, ppm, max	5
Benzene content, weight %, max	0.1

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.

Current edition approved Dec. 10, 2002. Published February 2003. Originally approved in 1961. Last previous edition approved in 1999 as D 1836 – 99.

² *Annual Book of ASTM Standards*, Vol 05.01.

³ *Annual Book of ASTM Standards*, Vol 06.04.

⁴ *Annual Book of ASTM Standards*, Vol 05.01.

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

*A Summary of Changes section appears at the end of this standard.

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 test methods:

5.1.1 *Aniline Point*—Test Methods D 611.

5.1.2 *Apparent Specific Gravity*—Determine apparent specific gravity by any method that is accurate to the third decimal place, the temperature of both specimen and water being 15.6°C. See Guide D 268. If measurement is by hydrometer, the instrument must be calibrated at the test temperature.

5.1.3 *Benzene Content*—Test Method D 4367.

5.1.4 *Bromine Index*—Test Method D 2710. Bromine index is defined as the number of milligrams of bromine which will react with a 100-g sample under test conditions.

5.1.5 *Color*—Test Method D 156 or D 1209. In case of dispute, Test Method D 156 shall be the referee method.

5.1.6 *Distillation*—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.

5.1.7 *Kauri-Butanol Value*—Test Method D 1133.

5.1.8 *Nonvolatile Matter*—Test Method D 1353.

5.1.9 *Odor*—Test Method D 1296. Samples of particular types of products being tested, having odor characteristics satisfactory to consumer and producer, are to be used as reference standards for comparison.

5.1.10 *Sulfur*—Test Method D 3120.

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 commercial hexanes; hexanes; solvents

SUMMARY OF CHANGES

Committee D01.35 has identified the location of selected changes to this standard since the last issue (D 1836 - 99) that may impact the use of this standard.

- (1) Added Practice E 29 on significant digits to the Scope.
- (2) Added Practice E 29 to the Referenced Documents section.
- (3) Corrected typographical errors.

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