Designation: D2001 – 07

Standard Test Method for Depentanization of Gasoline and Naphthas[1]

This standard is issued under the fixed designation D2001; 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 test method covers the removal of pentanes and lighter hydrocarbons from gasolines, naphthas, and similar petroleum distillates to prepare samples suitable for the determination of hydrocarbon types in accordance with Test Method D2789. In addition, this test method determines the volume percent of bottoms remaining after dependentanization.

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses are for information only.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1250 Guide for Use of the Petroleum Measurement Tables

D2789 Test Method for Hydrocarbon Types in Low Olefinic Gasoline by Mass Spectrometry

3. Summary of Test Method

3.1 A 50-mL sample is distilled into an overhead (C_5 and lighter) fraction and a bottoms (C_6 and heavier) fraction. The volume of bottoms is measured and the volume percent, based on the charge, is calculated.

4. Significance and Use

4.1 The presence of pentane and lighter hydrocarbons in gasolines, naphthas, and similar petroleum distillates interferes in Test Method D2789. Pentane and lighter hydrocarbons are separated by this test method so that the dependentanized residue can be analyzed and so the pentane and lighter hydrocarbons can be analyzed by other methods, if desired.

4.2 Under the conditions specified in the test method some C_5 and lighter hydrocarbons remain in the bottoms, and some C_6 and heavier hydrocarbons carry over to the overhead. Expressed as volume percent of charge, the amounts are typically 2 % or less, which is considered adequate for the purpose designated under Scope. It should be recognized, however, that when expressed as volume percent of overhead or of bottoms the percentages can be higher, making this test method unsuitable for any purposes not designated under Scope.

5. Apparatus

5.1 *Dependentanization Apparatus,* as shown in Fig. 1, consisting of the following parts:

5.1.1 *Distillation Column,*

5.1.2 *Reflux Condenser Head,*

5.1.3 *Light-Ends Trap,*

5.1.4 *Receiver,* graduated, 12.5 mL, and

5.1.5 *Thermometer,* [3,4] 10 to 79°C (50 to 175°F).

5.2 *Column Packing*—Two types are required:

5.2.1 *Heli-Pak Column Packing,* [4,5] 1.27 by 2.54 by 2.54 mm (Size B, 0.050 by 0.100 by 0.100 in.).

5.2.2 *Heli-Pak Column Packing,* [4,5] Size C, 4.4 by 4.4 m (0.090 by 0.175 by 0.175 in.), or *Cannon Protruded Metal Packing*,[4,6] 4.0 by 4.0 mm (0.16 by 0.16 in.).

5.3 *Distillation Flask,* round-bottom, 100 mL, with $^{24}/_{40}$ standard-taper female joint.

5.4 *Distillation Flask Heating Mantle, Glas-Col,* spherical, for 100-mL flask.

[1] This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.04.0C on Liquid Chromatography.

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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.

[3] The sole source of supply of the apparatus known to the committee at this time is Thermometer No. ME510-1 available from Metro Scientific Inc., 11 Willow Park Center, East Farmingdale, NY 11735.

[4] If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,[1] which you may attend.

[5] The sole source of supply of the apparatus known to the committee at this time is Reliance Glass Works Inc., Gateway Rd., PO Box 825, Bensenville, IL 60106.

[6] The sole source of supply of the apparatus known to the committee at this time is Cannon protruded metal packing available from Scientific Development Co., Box 795, State College, PA.

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