



Designation: D5482 – 20a

Standard Test Method for Vapor Pressure of Petroleum Products and Liquid Fuels (Mini Method—Atmospheric)¹

This standard is issued under the fixed designation D5482; 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 a procedure for the determination of total vapor pressure of petroleum products and liquid fuels using automatic vapor pressure instruments. The test method is suitable for testing samples with boiling points above 0 °C (32 °F) that exert a vapor pressure between 7 kPa and 110 kPa (1.0 psi and 16 psi) at 37.8 °C (100 °F) at a vapor-to-liquid ratio of 4:1. The test method is applicable to gasolines containing oxygenates. No account is made of dissolved water in the sample.

NOTE 1—Because the external atmospheric pressure does not influence the resultant vapor pressure, this vapor pressure is an absolute pressure at 37.8 °C (100 °F) in kPa (psi). This vapor pressure differs from the true vapor pressure of the sample due to some small vaporization of the sample and dissolved air into the air of the confined space.

1.1.1 Some gasoline-oxygenate blends may show a haze when cooled to 0 °C to 1 °C. If a haze is observed in 8.5, it shall be indicated in the reporting of results. The precision and bias statements for hazy samples have not been determined (see Note 6).

1.2 This test method is a modification of Test Method D5191 (Mini Method) in which the test chamber is at atmospheric pressure prior to sample injection.

1.3 This test method covers the use of automated vapor pressure instruments that perform measurements on liquid sample sizes in the range from 1 mL to 10 mL.

1.4 This test method is suitable for the determination of the dry vapor pressure equivalent (DVPE) of gasoline and gasoline-oxygenate blends by means of a correlation equation (see 13.2). The calculated DVPE is considered equivalent to the result obtained on the same material when tested by Test Method D4953.

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

¹ This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.08 on Volatility.

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1.6 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use. (For specific warning statements, see 7.2 through 7.7.)*

1.7 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:²

- D4057 Practice for Manual Sampling of Petroleum and Petroleum Products
- D4175 Terminology Relating to Petroleum Products, Liquid Fuels, and Lubricants
- D4177 Practice for Automatic Sampling of Petroleum and Petroleum Products
- D4306 Practice for Aviation Fuel Sample Containers for Tests Affected by Trace Contamination
- D4953 Test Method for Vapor Pressure of Gasoline and Gasoline-Oxygenate Blends (Dry Method)
- D5190 Test Method for Vapor Pressure of Petroleum Products (Automatic Method) (Withdrawn 2012)³
- D5191 Test Method for Vapor Pressure of Petroleum Products and Liquid Fuels (Mini Method)
- D5842 Practice for Sampling and Handling of Fuels for Volatility Measurement
- D5854 Practice for Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products

3. Terminology

3.1 Definitions:

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 last approved version of this historical standard is referenced on www.astm.org.

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