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.

Designation: D7794 – 18

Standard Practice for Blending Mid-Level Ethanol Fuel Blends for Flexible-Fuel Vehicles with Automotive Spark-Ignition Engines[1]

This standard is issued under the fixed designation D7794; 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 practice applies to the blending of automotive spark-ignition engine fuels with ethanol concentrations greater than those suitable for conventional-fuel vehicles and less than the minimum ethanol content specification limits of Specification D5798. These mid-level ethanol fuel blends are for use in flexible-fuel vehicles and are sometimes referred to at retail as "Ethanol Flex Fuel."

1.2 These mid-level ethanol fuel blends are only suitable for use in ground flexible-fuel vehicles equipped with spark-ignition engines. Flexible-fuel vehicles are designed to operate on gasoline or gasoline-ethanol blends that meet the requirements of Specification D4814, ethanol fuel blends that meet the requirements of Specification D5798, or any combination of these. In the United States, these vehicles are certified by the U.S. EPA as emissions compliant with these types of fuels.

1.3 The mid-level ethanol fuel blend shall be blended from either:

1.3.1 Denatured fuel ethanol conforming to the requirements of Specification D4806 with a reduced limit on inorganic chloride content that will ensure no more than 1 mg/kg inorganic chloride in the finished fuel and from spark-ignition engine fuel conforming to Specification D4814 (often at a distribution terminal or bulk plant), or

1.3.2 Ethanol fuel blends conforming to Specification D5798 and from spark-ignition engine fuel conforming to Specification D4814 (often at a retail site).

1.4 This practice describes the required procedures for blending various mid-level ethanol fuel blends for flexible-fuel vehicles at the bulk distribution point or retail/commercial delivery site. These requirements may be applied at other points in the production and distribution system when provided by agreement between the purchaser and the supplier.

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

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.*

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

D4806 Specification for Denatured Fuel Ethanol for Blending with Gasolines for Use as Automotive Spark-Ignition Engine Fuel

D4814 Specification for Automotive Spark-Ignition Engine Fuel

D4815 Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C_1 to C_4 Alcohols in Gasoline by Gas Chromatography

D5191 Test Method for Vapor Pressure of Petroleum Products (Mini Method)

D5501 Test Method for Determination of Ethanol and Methanol Content in Fuels Containing Greater than 20% Ethanol by Gas Chromatography

D5599 Test Method for Determination of Oxygenates in

[1] This practice is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.A0.02 on Oxygenated Fuels and Components.

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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.

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

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