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Standard Specification for AUTOMOTIVE GASOLINE¹

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This specification has been approved for use by agencies of the Department of Defense and for listing in the DoD Index of Specifications and Standards

1. Scope

1.1 This specification guides in establishing the requirements of gasoline for ground vehicles equipped with spark-ignition engines.

1.2 This specification describes various characteristics of gasolines for the user over a wide range of operating conditions. It neither necessarily includes all types of gasolines that are satisfactory for automotive vehicles, nor necessarily excludes gasolines that may perform unsatisfactorily under certain operating conditions or in certain equipment.

1.3 Gasoline is not the only fuel used in ground vehicles equipped with spark-ignition engines. Blends of gasoline with oxygenates such as alcohols and ethers are common in the marketplace. However, some of the test methods referred to in this specification are not applicable to such blends. A specification that encompasses all fuels for automotive spark-ignition engines is under development. It appears as D-2 Proposal P 176, Proposed Specification for Automotive Spark-Ignition Engine Fuel in the "gray" pages of this volume. Refer to D-2 Proposal P 176 for information and for requirements and test methods applicable to gasoline-oxygenate blends.

1.4 The values stated in SI units are the standard.

2. Applicable Documents

2.1 ASTM Standards:

- D86 Method for Distillation of Petroleum Products²
- D130 Method for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test²
- D323 Test Method for Vapor Pressure of Pe-

- troleum Products (Reid Method)²
- D381 Test Method for Existent Gum in Fuels by Jet Evaporation²
- D525 Test Method for Oxidation Stability of Gasoline (Induction Period Method)²
- D1266 Test Method for Sulfur in Petroleum Products (Lamp Method)²
- D2533 Test Method for Vapor-Liquid Ratio of Gasoline³
- D2547 Test Method for Lead in Gasoline, Volumetric Chromate Method³
- D2551 Test Method for Vapor Pressure of Petroleum Products (Micromethod)³
- D2599 Test Method for Lead in Gasoline by X-Ray Spectrometry³
- D2622 Test Method for Sulfur in Petroleum Products (X-Ray Spectrographic Method)³
- D2699 Test Method for Knock Characteristics of Motor Fuels by the Research Method⁴
- D2700 Test Method for Knock Characteristics of Motor and Aviation Fuels by the Motor Method⁴
- D2885 Test Method for Research and Motor Method Octane Ratings Using On-Line Analyzers⁴
- D3116 Test Method for Trace Amounts of Lead in Gasoline⁵
- D3229 Test Method for Low Levels of Lead in Gasoline by X-Ray Spectrometry⁵

¹ This specification is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.A on Gasoline.

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² Annual Book of ASTM Standards, Vol 05.01.

³ Annual Book of ASTM Standards, Vol 05.02.

⁴ Annual Book of ASTM Standards, Vol 05.04.

⁵ Annual Book of ASTM Standards, Vol 05.03.