Designation: D 6709 – 03a

An American National Standard

Standard Test Method for Evaluation of Automotive Engine Oils in the Sequence VIII Spark-Ignition Engine (CLR Oil Test Engine)[1]

This standard is issued under the fixed designation D 6709; 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.

INTRODUCTION

This test method can be used by any properly equipped laboratory without outside assistance. However, the ASTM Test Monitoring Center (TMC)[2] offers a very valuable service to the test laboratory; the Center provides reference oils and an assessment of the test results obtained on those oils by the laboratory (see Appendix X1). By this means, the laboratory will know whether their use of the test method gives results statistically similar to those obtained by other laboratories. Furthermore, various agencies require that a laboratory utilize the TMC services in seeking qualification of oils against specifications. For example, the American Petroleum Institute (API) imposes such a requirement, in connection with several engine lubricating oil specifications.

Accordingly, this test method is written for use by laboratories that utilize the TMC services. Laboratories that choose not to use those services may simply ignore those portions of the test method that refer to the TMC.

This test method may be modified by means of Information Letters issued by the TMC. In addition, the TMC may issue supplementary memoranda related to the test method (see Annex A3).

1. Scope

1.1 This test method covers the evaluation of automotive engine oils (SAE grades 5W, 10W, 20, 30, 40, and 50, and multiviscosity grades) intended for use in spark-ignition gasoline engines. The test procedure is conducted using a carbureted, spark-ignition Cooperative Lubrication Research (CLR) Oil Test Engine (also referred to as the Sequence VIII test engine in this test method) run on unleaded fuel. An oil is evaluated for its ability to protect the engine and the oil from deterioration under high-temperature and severe service conditions. The test method can also be used to evaluate the viscosity stability of multiviscosity-graded oils. Companion test methods used to evaluate engine oil performance for specification requirements are discussed in the latest revision of Specification D 4485.

1.2 Correlation of test results with those obtained in automotive service has not been established. Furthermore, the results obtained in this test are not necessarily indicative of results that will be obtained in a full-scale automotive spark-ignition or compression-ignition engine, or in an engine operated under conditions different from those of the test. The test can be used to compare one oil with another.

1.3 The values stated in SI units are to be regarded as standard, except for (*1*) volume which is given in the metric, but non-SI, litre, (*2*) certain tube measurements which are given in inch-pound units, (*3*) cylinder bore and stroke in both SI and inch-pound units (the inch-pound being the standard) and (*4*) piston displacement given in metric (non-SI) and inch-pound units (the inch-pound being the standard). In respect to (*3*) and (*4*) the inch-pound units are shown first and the SI units in parentheses.

1.4 *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.* Specific precautionary statements are provided throughout this test method.

1.5 This test method is arranged as follows:

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[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.B0 on Automotive Lubricants.

Current edition approved Nov. 1, 2003. Published January 2004. Originally approved in 2001. Last previous edition approved in 2003 as D 6709–03.

[2] Until the next revision of this test method, the ASTM Test Monitoring Center will update changes in this test method by means of Information Letters. Information Letters may be obtained from the ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA 15202-4489, Attention: Administrator. This edition incorporates revisions in all Information Letters through No. 02-2.

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