



Standard Test Method for Measurement of the Effects of Automotive Engine Oils on the Fuel Economy of Passenger Cars and Light-Duty Trucks in the Sequence VIB Spark Ignition Engine^{1,2}

This standard is issued under the fixed designation D 6837; 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

The test method described in this standard can be used by any properly equipped laboratory, without outside assistance. However, the STEM Test Monitoring Center (TMC)³ provides reference oils and assessment of the test results obtained on those oils by the laboratory (see Annex A1). 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 U.S. Army engine lubricating oil specifications.

Accordingly, this test method is written for use by laboratories, which utilize the TMC services. Laboratories which choose not to use those services may simply ignore those portions of the test method which 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. Users of this test method shall contact the TMC, Attention: Administrator, to obtain the most recent of these.

1. Scope

1.1 This test method covers an engine test procedure for the measurement of the effects of automotive engine oils on the fuel economy of passenger cars and light-duty 3856 kg (8500 lb) or less gross vehicle weight trucks. The tests are conducted using a specified 4.6-L spark-ignition engine on a dynamometer test stand. It applies to multiviscosity grade oils used in these applications.

1.2 This test method also provides for the running of an abbreviated length test that is referred to as the VIBSJ. The procedure for VIBSJ is identical to the Sequence VIB with the

exception of the items specifically listed in Annex A13. The procedure modifications listed in Annex A13 refer to the corresponding section of the Sequence VIB test method.

1.3 The unit values stated in this test method shall be regarded as the standard. Values given in parentheses are provided for information purposes only. SI units are considered the primary units for this test method. The only exception is where there is no direct SI equivalent such as screw threads, national pipe threads/diameters, tubing size, and so forth.

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.*

1.5 This test method is arranged as follows:

Subject	Section
Introduction	
Scope	1
Referenced Documents	2
Terminology	3
Summary of Test Method	4
Significance and Use	5
Apparatus	6
General	6.1
Test Engine Configuration	6.2
Laboratory Ambient Conditions	6.3
Engine Speed and Load Control	6.4

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 May 1, 2004. Published June 2004. Originally approved in 2002. Last previous edition approved in 2003 as D 6837-03.

² The multi-cylinder engine test sequences were originally developed in 1956 by an ASTM Committee D02 group. Subsequently, the procedures were published in an ASTM special technical publication. The Sequence VIB was published as Research Report RR:D02-1469 dated April 8, 1999.

³ ASTM Test Monitoring Center, 6555 Penn Avenue, Pittsburgh, PA 15206-4489. For other information, refer to Research Report RR: D02:1469, Sequence VIB Test Development. This research report and this test method are supplemented by Information Letters and Memoranda issued by the ASTM TMC. This edition incorporates revisions in all Information Letters through No. 03-3.