



Standard Test Method for Evaluation of Aeration Resistance of Engine Oils in Direct- Injected Turbocharged Automotive Diesel Engine¹

This standard is issued under the fixed designation D 6894; 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

Any properly equipped laboratory, without outside assistance, can use the procedure described in this test method. However, the ASTM Test Monitoring Center (TMC)² provides reference oils and an assessment of the test results obtained on those oils by the laboratory. By these 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 U.S. Army imposes such a requirement in connection with several Army 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 method. For other information, refer to the research report for this test method.³

1. Scope

1.1 This test method was designed to evaluate an engine oil's resistance to aeration in automotive diesel engine service. It is commonly referred to as the Engine Oil Aeration Test (EOAT). The test is conducted using a specified 7.3L, direct-injection, turbocharged diesel engine on a dynamometer test stand. This test method was developed as a replacement for Test Method D 892 after it was determined that this bench test did not correlate with oil aeration in actual service. The EOAT was first included in API Service Category CG-4 in 1995.

NOTE 1—Companion test methods used to evaluate engine oil performance for specification requirements are discussed in the latest revision of Specification D 4485.

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

1.3 *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.*

1.4 This test method is arranged as follows:

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2. Referenced Documents

2.1 ASTM Standards:

D 86 Test Method for Distillation of Petroleum Products⁴
D 93 Test Method for Flash Point by Pensky-Martens
Closed Cup Tester⁴

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.

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³ Supporting data have been filed at ASTM International Headquarters and may be obtained by requesting Research Report RR: D02-1379.

⁴ *Annual Book of ASTM Standards*, Vol 05.01.