



Test Monitoring Center

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EOEC Information Letter No. 17-01
Sequence No. 6
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ASTM consensus has not yet been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: EOEC Mailing List

SUBJECT: New Reference Oil
Light Duty Polyacrylate Elastomer Correction Factor for Volume Change

New Reference Oil

The Engine Oil Elastomer Compatibility Surveillance Panel approved a motion to implement the use of TMC reference oil 1006-2 as a replacement for TMC reference oil 1006-1, which is no longer available. This reference oil will be used with the existing 1006-1 test targets. This change is effective September 29, 2016.

Light Duty Polyacrylate Elastomer Correction Factor for Volume Change

The Engine Oil Elastomer Compatibility Surveillance Panel approved a motion to implement the use of an Industry Correction Factor to the Volume Change results obtained in tests run on the Light Duty Polyacrylate elastomer material. This correction factor was implemented due to a change in the elastomer material formulation listed in SAE Standard J2643, *Standard Reference Elastomers (SRE) for Characterizing the Effect of Liquids on Vulcanized Rubbers*. This correction factor applies to all results generated on elastomer batches ACM1-19, with a similar methodology used to determine correction factors for future batches. For all test run on this material, the calculated Volume Change is to have the Industry Correction Factor of -2.65 added to the calculated results and this final value reported as the results of the test.

Updated sections of Test Method D 7216 are attached.

Mike Birke
EOEC Surveillance Panel Chairman
Southwest Research Institute

Frank M. Farber
Director
ASTM Test Monitoring Center

Attachments

c: ftp://ftp.astmtmc.cmu.edu/docs/bench/eoec/procedure_and_ils/il17-01.pdf

Distribution: Email

{Revises Test Method D 7216-15}

INTRODUCTION

Any properly equipped laboratory, without outside assistance, can use the test method described in this standard. However, the ASTM Test Monitoring Center (TMC)² provides reference oil and an assessment of the test results obtained with this oil and the reference elastomers. By these means, the laboratory will know whether their use of the test method gives results statistically similar to those obtained by other laboratories.

The TMC also use the reference oil results on different batches of elastomers from different laboratories to update continually the total and within-laboratory standard deviation estimates. Some specifications, for example, Specification D4485, use the updated TMC standard deviation estimates, pertaining at the time test oils are evaluated, to adjust specification limits for the effects of the industry test variability.

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 this test method.

5.2 This test method requires that non-reference oil(s) be tested in parallel with a reference oil, known to be aggressive for some parameters under service conditions. This *relative* compatibility permits decisions on the anticipated or predicted performance of the non-reference oil in service.

7.1 *Reference Oil*—The reference oil is maintained and distributed by the TMC.² In order to receive reference the oil, individual laboratories shall agree to furnish the TMC with immersion test results obtained with the reference oil.

5.2 This test method requires that non-reference oil(s) be tested in parallel with a reference oil, known to be aggressive for some parameters under service conditions. This *relative* compatibility permits decisions on the anticipated or predicted performance of the non-reference oil in service.

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10. TMC Reference Oil Testing

10.1 As specified in 8.1, a reference oil is evaluated simultaneously with each set of non-reference oil tests.

10.2 Prior to conducting a reference oil test, procure a supply of reference oil directly from the TMC. Each reference oil sample is identified using a unique set of identification codes on the container labels.

10.3 Report the results of the reference oil tests to the TMC (see Section 11).

10.4 *Evaluation of Reference Oil Test Results*—Upon receipt of the transmitted test results, the TMC reviews the test for operational adherence to the published test method.

A2.4.2 In addition to the calculations described in Section 9, carry out the following Volume Change Percent Calculation on all tests run using Polyacrylate (ACM-1) material:

$$\Delta V_{FINAL} = \Delta V_{CALC} + CF \quad (A2.2)$$

where:

ΔV_{FINAL} = Final, Corrected Volume Change Percent result,

ΔV_{CALC} = Volume Change Percent result, and

CF = Industry Correction Factor for the elastomer batch used in the test.

A2.4.2.1 The Industry Correction Factor for the Volume Change Percent Calculation applies to all tests run on the batches shown in Table A2.

A2.4.2.2 The Industry Correction Factor for each batch of elastomer material can be found in Table A2.2.

Table A2.2 – Industry Correction Factor – Light Duty Polyacrylate Elastomer (ACM-1)	
Elastomer Batch	Volume Change Industry Correction Factor
ACM1-19	-2.65

{Tables A2.2 through A2.6 become Tables A2.3 through A2.7, respectively.}