



Test Monitoring Center

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EOEC Information Letter No. 14-01
Sequence No. 5
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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 Heavy Duty Silicone Elastomer Material
New Elastomer Batch Reporting Requirements
Editorial Correction

New Heavy Duty Silicone Elastomer Material

The Engine Oil Elastomer Compatibility Surveillance Panel previously approved a motion to implement the use of the Light Duty Silicone elastomer used in Test Method D 7216 for testing Heavy Duty engine oils. This elastomer material will now be used for testing both light-duty and heavy-duty engine oils, as the previous heavy duty elastomer material is no longer available. This material change is effective March 10, 2014.

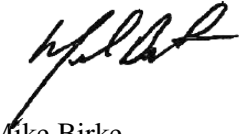
New Elastomer Batch Reporting Requirements

As part of the silicone elastomer material change, the Surveillance Panel approved a pair of motions revising the elastomer batch reporting requirements for both EOEC and LDEOC tests. For all tests, the elastomer batch is to be reported in the format “XXX-YY,” where “XXX” is the three-character letter code (or four to five-character letter code, for reporting the light duty elastomer materials) for the material type (e.g. AEM, VMQ, FKM1, HNBR1, etc.) and “YY” is a two-digit number representing the material batch code (e.g. 01, 08, 12, etc.). This batch reporting change is effective on March 10, 2014 for all EOEC tests and September 1, 2014 for all LDEOC tests.

Editorial Correction

A revision to Table 1 in Test Method D 7216 was published on December 2, 2008, as part of Information Letter 08-1. However, this revised table was omitted from subsequent publications of the Test Method. The correct Table 1 has been included in this Information Letter.

Updated sections of Test Method D 7216 are attached.



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EOEC Surveillance Panel Chairman
Southwest Research Institute

Frank M. Farber
Director
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Attachments

c: ftp://ftp.astmtmc.cmu.edu/docs/bench/eoec/procedure_and_ils/il14-01.pdf

Distribution: Email

{Revises Test Method D 7216-13}

1.4 The several reference elastomer formulations specified in this test method were chosen to be representative of those used in both heavy-duty diesel engines (detailed in Annex A1) and passenger-car spark-ignition engines (the latter are covered in Annex A2). The procedures described in this test method can, however, also be used to evaluate the compatibility of automotive engine oils with different elastomer types/formulations or different test durations and temperatures to those employed in this test method.

TABLE 1 Immersion Temperatures and Times for the Reference Elastomers ^A

Elastomer	Immersion Test Temperature, °C	Immersion Test Time, h
Nitrile (NBR)	100 ± 1	336.0 ± 0.5
Polyacrylate (ACM)	150 ± 1	336.0 ± 0.5
Fluoroelastomer (FKM)	150 ± 1	336.0 ± 0.5
Silicone (VMQ)	150 ± 1	336.0 ± 0.5
VAMAC (MAC)	150 ± 1	336.0 ± 0.5

^A Some lubricant specifications may require immersion times other than 336 h. For times < 70 h the tolerance is ± 0.25 h and for times ≥ 70 h the tolerance is ± 0.5 h (see also 1.4).

7.4 *Reference Seal Elastomers*—Obtain cured prepared sheets of the reference seal elastomers from the Parts Distributor (PD). ⁶ The sheets are at least (152 by 152) mm and have a uniform thickness of (2 ± 0.1) mm. The specific reference elastomers described in this test method are a fluoroelastomer (FKM), a polyacrylate material (ACM), a silicone rubber (VMQ), a nitrile rubber (NBR), and a VAMAC (MAC).

NOTE 4—Elastomer sheets received from the PD are labeled with the elastomer type on the second line of the package label and batch code on the third line of the label. On the second line of the label, the elastomer type is printed, along with the letter code in parenthesis, e.g. Fluoro (FKM), Nitrile (NBR), etc. On the third line, the two-digit numeric batch code is printed following the header “BC” on the label.

11.2.2 Elastomer type and batch number.

11.2.2.1 Report elastomer type and batch number in the format “XXX-YY” where XXX is the three-character letter code for the elastomer type and YY is the two-digit numeric batch number.

11.2.2.2 The letter code for reporting Nitrile (NBR) results is NBR.

11.2.2.3 The letter code for reporting Polyacrylate (ACM) results is ACM.

11.2.2.4 The letter code for reporting Fluoroelastomer (FKM) results is FKM.

11.2.2.5 The letter code for reporting Silicone results (VMQ) is VMQ.

11.2.2.6 The letter code for reporting VAMAC results (MAC) is MAC.

A2.2.2 *Reference Seal Elastomers*—The specific reference elastomers described in this annex are a hydrogenated nitrile rubber (HNBR-1), a polyacrylate rubber (ACM-1), a fluoroelastomer rubber (FKM-1), a silicone rubber (VMQ-1) and an ethylene acrylate rubber (AEM-1). Obtain cured prepared sheets of the reference seal elastomers from the Parts Distributor (PD)⁶. The sheets are at least (152 by 152) mm and have a uniform thickness of (2 ± 0.1) mm. The PD shall mark each elastomer sheet to designate the direction of grain.

NOTE A2.1—Elastomer sheets received from the PD are labeled with the elastomer type on the second line of the package label and batch code on the third line of the label. On the second line of the label, the elastomer type is printed, along with the letter code in parenthesis, e.g. Acrylate (ACM-1), Silicone (VMQ-1), etc. On the third line, the two-digit numeric batch code is printed following the header “BC” on the label.

A2.5.2 Report elastomer type and batch number in the format “XXXX-YY” where XXXX is the four-character (or five-character, for hydrogenated nitrile elastomer) letter code for the elastomer type and YY is the two-digit numeric batch number.

A2.5.2.1 The letter code for reporting Hydrogenated Nitrile (HNBR-1) results is HNBR1.

A2.5.2.2 The letter code for reporting Polyacrylate (ACM-1) results is ACM1.

A2.5.2.3 The letter code for reporting Fluoroelastomer (FKM-1) results is FKM1.

A2.5.2.4 The letter code for reporting Silicone (VMQ-1) results is VMQ1.

A2.5.2.5 The letter code for reporting Ethylene Acrylate (AEM-1) results is AEM1.