A Program of ASTM International

Test Monitoring Center

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Engine Oil Filtration Test Information Letter No. 18-1
Sequence No. 1
December 20, 2018

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: Engine Oil Filtration Test Mailing List

SUBJECT: Refinements to the Test Method

On November 8, 2018, the Surveillance Panel approved an assortment of refinements and clarifications to the wording in the Test Method. These changes highlighted in red are not intended to change the operation of the test, but rather to clarify the wording and methods detailed in it. In addition, a new standardized Introduction has been included. These changes are effective with this information letter.

The updated sections of ASTM Test Method D 6795 are attached.

Yong-Li McFarland
Chairperson
EOFT Surveillance Panel

Frank M. Farber
Director
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Attachment

c: http://www.astmtmc.cmu.edu/ftp/docs/bench/eoft/procedure_and_ils/il18-01.pdf

Distribution: Email

{*The existing INTRODUCTION is replaced with the following text.*}

INTRODUCTION

Portions of this test method are written for use by laboratories that make use of ASTM Test Monitoring Center (TMC)[2] services (see Annexes A1).

The TMC provides reference oils, and engineering and statistical services to laboratories that desire to produce test results that are statistically similar to those produced by laboratories previously calibrated by the TMC.

In general, the Test Purchaser decides if a calibrated test stand is to be used. Organizations such as the American Chemistry Council require that a laboratory utilize the TMC services as part of their test registration process. In addition, the American Petroleum Institute and the Gear Lubricant Review Committee of the Lubricant Review Institute (SAE International) require that a laboratory use the TMC services in seeking qualification of oils against their specifications.

The advantage of using the TMC services to calibrate test stands is that the test laboratory (and hence the Test Purchaser) has an assurance that the test stand was operating at the proper level of test severity. It should also be borne in mind that results obtained in a non-calibrated test stand may not be the same as those obtained in a test stand participating in the ASTM TMC services process.

Laboratories that choose not to use the TMC services may simply disregard these portions.

6.1 The apparatus consists of a 25 mL burette, a filter holder with 25 µm automotive oil filter paper, and a source of 69 kpa ± 2 kPa air pressure. Discs of filter paper are cut to fit the holder and installed (see Fig. 1).

6.1.1 *Burette (glass or plastic),* 25 mL, with polytetrafluoroethylene (PTFE) stopcock and 1.8 mm ± 0.1 mm burette tip opening.

6.1.2 *Air Regulator,* capable of regulating air to a pressure of 69 kPa ± 2 kPa.

6.2.1 *Timer,* capable of timing 30 s ± 1 s.

6.6 *Mechanical Convection Oven,* capable of maintaining 70 °C ± 1 °C.

6.8 *Glass Jars,* 60 mL, wide-mouth, with inert lined lids.

{*New Note 2, below.*}

Note 2: Paperbacked lids may detach from lid and are not suggested for use.

{*Existing Notes 2 & 3 renumbered as Notes 3 & 4*}

6.9 *Tubing,* Inert tubing used to connect to burette.

6.9.1 *Air Regulator Tubing,* Flexible tubing to prevent air from leaking from the air supply to the burette.

6.9.2 *Filter Holder Tubing,* Flexible tubing used to connect burette tip to filter holder.

9.1 Add 49.7 g ± 0.1 g of test oil, 0.3 g ± 0.05 g of deionized water using the 1000 µL syringe, and approximately 10 g of dry ice to the blender, and mix for 30 s ± 1 s at 18,000 rpm ± 10 %. Cover the top of the container loosely to prevent oil spattering while allowing rapid vaporization of the dry ice.

9.2 Transfer the sample to a 60 mL wide-mouth glass jar and place the loosely capped (1⁄4 turn) bottle in an oven at 70.0 °C ± 1.0 °C for 30 min ± 2 min. Remove from the oven, tighten cap and allow to cool to room temperature 20 °C to 24 °C.

9.3 Store the sample in the dark at room temperature 20 °C to 24 °C.

9.4 Within 48 h ± 2 h of removing the sample from the oven, determine the filterability (see 10.1) of the sample.

9.5 Dry filters in an oven at 70 °C ± 2 °C for 30 min ± 2 min and store in a desiccator until used.

10.3 To determine the test oil flow rate, the flow times of the new oil are first determined in accordance with 10.2. Using the same filter disc, filter holder, and burette, reduce the new oil level in the burette to the lowest level that allows no air bubbles below the stopcock. Disconnect the air line and fill the burette with a well-mixed sample of test oil to a level (1 to 2) cm above the 0 mark. Pressurize the system to 69 kPa ± 2 kPa, open the stopcock, and measure the flow time for each successive 5 mL of oil between the (0 and 25) mL graduations.

{*Replace Eq 1 in 11.1 with the following:*}

$$FR = A/B \qquad (1)$$

where:
FR = the flow rate of oil, mL/s
A = volume of oil, mL, and
B = flow time, s

{*Replace Eq (2) in 11.2 with the following:*}

$$\Delta FR = 100(E - D)/D \qquad (2)$$

where:
ΔFR = change in flow rate, %
E = final test oil flow rate, mL/s, and
D = final new oil flow rate, mL/s.