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Sequence IIIH Information Letter 19-1
Sequence Number 10
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ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Sequence III Surveillance Panel

SUBJECT: Addition of IIIH 60 hour and IIIH 70 hour test procedures and test results.

During the April 25, 2019 conference call, the Sequence III Surveillance Panel approved the addition of Appendices X4 and X5. These appendices allow the use of IIIH 60 hour and 70 hour tests, in support of the ASTM Heavy Duty Engine Oil Classifications.

Test Method D8111-18a has been revised to incorporate these changes and are effective with the issuance of this letter.

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Attachment

c: http://www.astmtmc.cmu.edu/ftp/docs/gas/sequenceiii /procedure_and_ils/IIIH/il19-1_IIIH.pdf

Distribution: Email

(Revises D8111-18 as amended by Information Letters 18-3, 18-4 and 18-5)

X4. SEQUENCE IIIH60 TEST PROCEDURE

X4.1 Overview —The Sequence IIIH60 test was developed to replace the viscosity increase portion of the Sequence IIIE test. The Sequence IIIH60 test consists of examining the percent viscosity increase data obtained at 60 h, rather than the normal 90 h for a Sequence IIIH test. No parts ratings or measurements are required in the Sequence IIIH60 test. A separate Sequence IIIH60 report form set is available from the TMC for reporting Sequence IIIH60 test results. Do not use the Sequence IIIH report form set to report Sequence IIIH60 test results.

X4.2 *Preparation of Apparatus*—Prepare the Sequence IIIH60 test engine in the same manner as a Sequence IIIH test engine. No special preparations are required or permitted on test engines for Sequence IIIH60 use.

X4.3 *Calibration*

X4.3.1 There is no stand-alone calibration system for the Sequence IIIH60 test. Consider any stand that is calibrated for Sequence IIIH testing to be calibrated for Sequence IIIH60 testing.

X4.3.2 No special calibration of stand instrumentation is required for Sequence IIIH60 testing.

X4.3.3 The minimum result that will be considered for the percent viscosity increase is 0.1 %. When negative or zero percent viscosity increase results are encountered, substitute 0.1 % for the original unit result and complete the calculations below. A notation is required in the Other Comments and Outliers section of Form 13 (see Annex A9) indicating that the percent viscosity result used for interpolation has been modified for a special case.

X4.3.3.1 Calculate SA for percent viscosity increase at 60 h for all Sequence IIIH reference oil tests by using the 90 h IIIH SA.

X4.3.4 A Sequence IIIH60 test counts as one run against the Sequence IIIH stand calibration period for the stand on which it is run. A test run as a combined Sequence IIIH/Sequence IIIH60 test counts as only one run against the stand calibration period for the stand on which it is run.

X4.4 *Test Procedure*—Conduct the Sequence IIIH60 test in either the Stand-alone (X1.4.1) or Combined Sequence (X1.4.2):

X4.4.1 *Stand-Alone Sequence IIIH60 Test*—If only a Sequence IIIH60 test result is needed, conduct the test in the normal manner as listed in this test method until the test reaches the 60 h point. When the 60 h point is reached, terminate the test. The blowby readings listed in 11.8 for test-hours 61, 66, 71, 76, 81, 86 and 89 are also not required. The MRV and WPD measurements listed in 12.3 and 12.4 are not required for a Sequence IIIH60 test. Analyze the used oil samples for viscosity increase according to 12.4. Perform ICP Analyses through Test Hour 60 and report according to 12.5. No other ratings or measurements are required.

X4.4.2 *Combined Sequence IIIH/Sequence IIIH60 Test*—If both Sequence IIIH and Sequence IIIH60 test results are desired on a non-reference oil, conduct the test in the normal manner as listed in this test method, including all ratings, measurements, and used oil analyses. Once completed, report the percent viscosity increase results at 60 h as the Sequence IIIH60 results and report the Sequence IIIH results in the normal manner.

X4.5 *Quality Index*—Calculate the quality index results for Sequence IIIH60 test results, based upon a test length of 60 h, rather than 90 h for a normal Sequence IIIH test. Consider only operational data for the first 60 h (in the case of combined Sequence IIIH/Sequence IIIH60 tests) Sequence IIIH60 quality index calculations.

X4.6 *Test Reporting*—Report Sequence IIIH60 tests using the standard report form set, available from the TMC.

X4.7 *Precision and Bias*

X4.7.1 Test precision is established based on full length (90 hour) IIIH reference oil test results (for operationally valid tests) monitored by the TMC. The Sequence III Surveillance Panel reviews the data semiannually; contact the TMC for current industry data.

X4.7.2 Bias is determined by applying an accepted statistical technique to reference-oil test results. When a bias is determined, an SA is permitted for non-reference oil test results (see X4.3.3.1).

X5. SEQUENCE IIIH70 TEST PROCEDURE

X5.1 *Overview* —The Sequence IIIH70 test was developed to replace the viscosity increase, weighted piston deposits and average piston varnish portion of the Sequence IIIF test. The Sequence IIIH70 test consists of examining the percent viscosity increase, weighted piston and average piston boss varnish deposits data obtained at 70 h, rather than the normal 90 h for a Sequence IIIH test. A separate Sequence IIIH70 report form set is available from the TMC for reporting Sequence IIIH70 test results. Do not use the Sequence IIIH report form set to report Sequence IIIH70 test results.

X5.2 *Preparation of Apparatus*—Prepare the Sequence IIIH70 test engine in the same manner as a Sequence IIIH test engine. No special preparations are required or permitted on test engines for Sequence IIIH70 use.

X5.3 *Calibration*

X5.3.1 There is no stand-alone calibration system for the Sequence IIIH70 test. Consider any stand that is calibrated for Sequence IIIH testing to be calibrated for Sequence IIIH70 testing.

X5.3.2 No special calibration of stand instrumentation is required for Sequence IIIH70 testing.

X5.3.3 The minimum result that will be considered for the percent viscosity increase is 0.1 %. When negative or zero percent viscosity increase results are encountered, substitute 0.1 % for the original unit result and complete the calculations below. A notation is required in the Other Comments and Outliers section of Form 13 (see Annex A9) indicating that the percent viscosity result used for interpolation has been modified for a special case.

X5.3.3.1 Calculate SA for percent viscosity increase at 70 h for all Sequence IIIH reference oil tests by using the 90 h IIIH SA for weighted piston deposits and percent viscosity increase.

X5.3.4 A Sequence IIIH70 test counts as one run against the Sequence IIIH stand calibration period for the stand on which it is run.

X5.4 *Test Procedure*—Conduct the Sequence IIIH70 as a Stand-alone test. When the 70 h point is reached, terminate the test. The blowby readings listed in 11.8 for test-hours 71, 76, 81, 86 and 89 are not required. Rate the pistons and determine weighted piston deposits and average piston boss varnish measurements listed in 12.3. Analyze the used oil samples for viscosity increase according to 12.4. Perform ICP Analyses through Test Hour 70 and report according to 12.5. No other ratings or measurements are required. Adjust final results using the full length IIIH end of test SA's.

X5.5 *Quality Index*—Calculate the quality index results for Sequence IIIH70 test results, based upon a test length of 70 h, rather than 90 h for a normal Sequence IIIH test. Consider only operational data for the first 70 h Sequence IIIH70 quality index calculations.

X5.6 *Test Reporting*—Report Sequence IIIH70 tests using the standard report form set, available from the TMC.

X5.7 *Precision and Bias*

X5.7.1 Test precision is established based on full length (90 hour) IIIH reference oil test results (for operationally valid tests) monitored by the TMC. The Sequence III Surveillance Panel reviews the data semiannually; contact the TMC for current industry data.

X5.7.2 Bias is determined by applying an accepted statistical technique to reference-oil test results. When a bias is determined, an SA is permitted for non-reference oil test results (See X5.3.3.1).