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T-8 INFORMATION LETTER 02-1
Sequence No. 11

September 27, 2002

ASTM consensus has not been obtained on this information letter. An appropriate ASTM ballot will be issued in order to achieve such consensus.

TO: Mack Mailing List

SUBJECT: 1. Relative Viscosity
2. Report Forms and Data Dictionary
3. Precision and Bias
4. Safety Precautions

The Mack Surveillance Panel approved the following changes to test method D 5967:

1. A second relative viscosity measure has been added to the extended length T-8E test. The calculation of the new relative viscosity measure uses 100% of the DIN (D 6278) shear loss value. Section A8.1.2.3 has been added and Sections A8.1.2, A8.1.2.2, A8.2.2, A8.5.1, and Table A8.2 have been modified accordingly. These sections are attached. This change went into effect December 3, 2001.

2. The T-8 Report Forms and Data Dictionary have been removed from Test Method D 5967. The TMC will continue to maintain and revise the T-8 Report Forms and Data Dictionary as done in the past. The current report forms and data dictionary may be downloaded from the ASTM Test Monitoring Center Web Page at http://www.astmtmc.cmu.edu/ or can be obtained in hardcopy format from the TMC. Section 12.1, Annex A1, and Annex A7 have been modified accordingly and are attached. Additionally, throughout the text, all references to Annex A1 Forms and Figures have been replaced with 'See Annex A1'. A list of all affected sections is attached.

3. Section 13, Precision and Bias has been modified in accordance with the current ASTM practice of using intermediate precision. Sections 13.1.1 and 13.1.2 have been modified and sections 13.1.1.1 and 13.1.2.1 have been added. These sections are attached.

4. A statement regarding the reporting and treatment of injuries in Section A6.1.3 in Annex A6, Safety Precautions has been removed. The modified Section A6.1.3 is attached.

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John L. Zalar
Administrator
ASTM Test Monitoring Center

Attachment
c: ftp://ftp.astmtmc.cmu.edu/docs/diesel/mack/procedure_and_ils/t8.il02-1.pdf

Distribution: Email

(Revises Test Method D 5967-99a)

In the following sections, replace all references to Annex A1 Forms and Figures with 'See Annex A1':

8.6.6, 9.4.3, 9.8.1, 10.3, 10.9, 10.11, 11.1.1, 11.2, 12.1.1, 12.1.2, and 12.2

9.8 *Non-Reference Oil Test Requirements* – Non-reference oil tests shall produce a minimum 3.8% TGA soot level at 250 h. Tests shall run to 250 h regardless of meeting the 3.8% soot level prior to 250 h. Test that do not reach 3.8% soot at 250 h are deemed not interpretable.

Note 3 – Fixed candidate oil pass criteria are published in Specification D 4485.

12.1 *Reporting Test Results* – For reference oil tests, the standardized report form and data dictionary for reporting the test results and for summarizing the operational data are required. The report forms and data dictionary are available on the ASTM Test Monitoring Center Web Page at http://www.astmtmc.cmu.edu/ or can be obtained in hardcopy format from the TMC.

13.1.1 *Intermediate Precision (formerly called repeatability) Conditions*—Conditions where test results are obtained with the same test method using the same test oil, with changing conditions such as operators, measuring equipment, test stands, test engines, and time.

13.1.1.1 *Intermediate Precision Limit (i.p.)*—The difference between two results obtained under intermediate precision conditions that would in the long run, in the normal and correct conduct of the test method, exceed the values shown in Table 10 in only one case in twenty.

13.1.2 *Reproducibility Conditions*—Conditions where test results are obtained with the same test method using the same test oil in different laboratories with different operators using different equipment.

13.1.2.1 *Reproducibility Limit (R)*—The difference between two results obtained under reproducibility conditions that would, in the long run, in the normal and correct conduct of the test method, exceed the values in Table 10 in only one case in twenty.

In Table 4, replace "Repeatability (r)" with "Intermediate Precision (i.p.)"

A1. REPORT FORMS

The required report forms are available on the ASTM Test Monitoring Center Web Page at http://www.astmtmc.cmu.edu/ or can be obtained in hardcopy format from the TMC.

Fig. A1.1 (Form 0)	Cover Sheet
Fig. A1.2 (Form 1)	Test Result Summary
Fig. A1.3 (Form 2)	Operational Summary
Fig. A1.4 (Form 3)	Viscosity Increase Versus Time
Fig. A1.5 (Form 4)	Oil Analysis Summary
Fig. A1.6 (Form 5)	Test Fuel Analysis
Fig. A1.7 (Form 6)	Downtime and Comments
Fig. A1.8 (Form 7)	Characteristics of the Data Acquisition System
Fig. A1.9 (Form 8)	Build-up and Hardware Information
Figs. A1.10 – A1.13 (Forms 9 – 12)	Operating Data
Fig. A1.14 (Form 13)	Rotational Viscosity Data

Delete Figures A1.1 through A1.13

A6.1.3 The external parts of the engines and the floor area around the engines should be kept clean and free of oil and fuel spills. In addition, all working areas should be free of tripping hazards. Personnel should be alert for leaking fuel or exhaust gas. Leaking fuel represents a fire hazard and exhaust gas fumes are noxious. Containers of oil or fuel cannot be permitted to accumulate in the testing area.

A7. DATA DICTIONARY

The required data dictionary is available on the ASTM Test Monitoring Center Web Page at http://www.astmtmc.cmu.edu/ or can be obtained in hardcopy format from the TMC.

Delete Figures A7.1 and A7.2

A8.1.2 The specified test parameters for determination of test acceptance are viscosity increase at 3.8% TGA soot; relative viscosity at 4.8% TGA soot, 50% DIN Shear Loss; and relative viscosity at 4.8% TGA soot, 100% DIN Shear Loss.

A8.1.2.2 Calculate relative viscosity at 4.8% TGA soot, 50% DIN Shear Loss (RV48) as follows:

$$RV48 = 2\,(VIS48) / (V_U + V_S) \qquad (A8.1)$$

where:
VIS48 = viscosity at 4.8% soot, as determined by linear interpolation,
V_U = kinematic viscosity of unsheared oil, by Test Method D445, at 100° C, cSt (mm^2/s), and
V_S = kinematic viscosity of sheared oil, by Test Method D445, at 100° C, cSt (mm^2/s). Use Test Method D6278 as the shearing method. Use Test Method D6278 as the shearing method.

A8.1.2.3 Calculate relative viscosity at 4.8% TGA soot, 100% DIN Shear Loss (RV2) as follows:

$$RV2 = (VIS48) / V_S \qquad (A8.2)$$

where:
VIS48 = viscosity at 4.8% soot, as determined by linear interpolation, and
V_S = kinematic viscosity of sheared oil, by Test Method D445, at 100° C, cSt (mm^2/s). Use Test Method D6278 as the shearing method.

A8.2.2 *Non-Reference Oil Test Result Severity Adjustments (SA)* – This test method incorporates the use of a SA for non-reference oil test results. A control chart technique, described in the LTMS, has been selected for the purpose of identifying when a bias becomes significant for viscosity increase at 3.8% TGA soot and for both relative viscosities at 4.8% TGA soot. When calibration test results identify a significant bias, a SA value is determined in accordance with LTMS. Report the SA value (see Annex A1) under the non-reference oil test block in the space for SA. Add this SA value to non-reference oil test results, and enter the adjusted result in the appropriate space. The SA remains in effect until a new SA is determined from subsequent calibration tests, or the test results indicate the bias is no longer significant. SAs are calculated and applied on a laboratory basis.

A8.5.1 *Precision* – The test precision for viscosity increase at 3.8% TGA soot is shown in Table 4. The test precision for both relative viscosities, as of September 1, 2002, is shown in Table A8.2.

TABLE A8.2 T-8E Precision Data

Parameter	Intermediate Precision (ip)	Reproducibility (R)
Relative Viscosity at 4.8% TGA Soot, 50% Shear Loss	0.65	0.69
Relative Viscosity at 4.8% TGA Soot, 100% Shear Loss	0.69	0.73