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ASTM Section D02.B07
Engine Oil Volatility Tests Surveillance Panel (EOVTSP)

Unapproved Minutes of the Test Method D5800 Workshop Held at PAC's Facility in Pasadena, TX on March 13 – 14, 2002

At the direction of the D02.B07 EOVTSP at the general section meeting of December 3, 2001 (Miami) a Test Method D5800 workshop was held to attempt to discuss procedural differences between the users of the method and ambiguities in the method itself. The goal of the workshop is to improve D5800 Procedure A & B test precision and severity by improving operational conformity among the users of the method. A list of recommended practices was developed from the workshop discussions. The workshop focused primarily on D5800 Procedures A and B. (The minutes from the EOVTSP teleconference of January 4, 2002 also make reference to the workshop).

The workshop was conducted over two days, March 13 & 14, 2002. PAC, equipment manufacturer for Procedure A & B instruments, graciously hosted the workshop.

The following people were in attendance at the workshop:

Steve Balfe (Pennzoil-Quaker State)
Brian Cermak (Pennzoil-Quaker State)
Ron Chapman (Conoco, Inc.)
Dan Dotson (Valvoline)
Chris Harper (PAC)
Michael Holzer (Southwest Research Inst.)
Kay Lao (Pennzoil-Quaker State)
George Pickles (Citgo)
Didier Pigeon (PAC)
Scott McQueen (Conoco, Inc.)
Jeff Presley (The Valvoline Co.)
Mary Rodriguez (PerkinElmer AR)
Tom Schofield (ASTM Test Monitoring Center)
Ted Selby (Savant, Inc.; B0.07 Section Chair)
Jamie Stuller (PerkinElmer AR)
Debbie Tremont (Shell Oil Products US)
Cliff Venier
(Pennzoil-Quaker State; EOVTSP Chair)
Stefan von Lukawiecki (Safety-Kleen)
Jeffery Winfield (The Lubrizol Corp.)
Joe Zhou (ExxonMobile)

The workshop started on the afternoon of March 13 with a presentation by Didier Pigeon showing the instrument designs and history as well as discussion of the test method (D5800-00a). Didier's presentation opened several discussions among the participants about procedural variations between the participants. Ted Selby also made a presentation about the selection of an appropriate QC check sample. After a final review of the instruments the attendees adjourned for the day.

The workshop resumed on the morning of March 14 with another discussion of the procedure and review of the instruments (Wood's metal and Non-Wood's metal). Both Procedures A and B were run twice with the attendees watching or participating in the running of the methods. Discussions and comments were ongoing through every step of the procedures. At the end of the testing, all of the participants gathered together and developed the attached list of recommended practices. It was also agreed that a matrix would be run among the participants using the three TMC reference oils, an oil supplied by Savant and an oil supplied by PAC.

Respectfully submitted March 27, 2002,

Tom Schofield

TMS/tms

Attachment

c: ftp://astmtmc.cmu.edu/docs/bench/minutes/EOVTSP_20020314_D5800_Workshop_Minutes.pdf

Distribution: Email (D02.B07 EOVTSP and Contacts)

List of Recommended Practices for Test Method D5800 Procedures A & B

As Developed by the D5800 Workshop Attendees March 14, 2001
Under the Auspices of the ASTM D02.B07 Engine Oil Volatility Tests Surveillance Panel (EOVTSP)

1. Be sure to use the correct manometer fluid to fill the manometer (the density of the fluid is critical and must be of the type designed for the manometer; see Section 6.11, Note 1). Just because the manometer readout is in mm H_2O does not mean the manometer fluid should be water. Consult the manual or manufacturer for the correct manometer fluid properties.

2. Be sure the manometer reservoir is filled so that the manometer is reading exactly zero with no external vacuum or pressure. This should be checked before each run. Evaporation may require occasional refilling of the manometer reservoir. It is also important that the unit be properly leveled.

3. For inclined manometers, be sure to read the meniscus at the same position at both 0 and 20 mm H_2O.

4. Strong air drafts or turbulence around the pressure transducer or the heated crucible may adversely affect test precision and accuracy.

5. Vacuum pump should be cleaned out daily using a hydrocarbon solvent (consult manufacturer for a compatible solvent recommendation).

6. Run a pressure test daily; let the vacuum run until the pressure stabilizes.

7. Temperature circuit electronics should be verified at least monthly using a calibrated Temperature Probe Simulator.

8. Instrument electronics must be on for at least 30 minutes prior to the start of the first test to warm up the vacuum transducer. (Leaving the electronics on overnight satisfies this recommendation.)

9. All tubing should allow all flow to travel downhill to the vacuum pump (no low points).

10. Verify that the temperature probe holder spring is working properly to seat the probe correctly.

11. The temperature probe should be cleaned to remove varnish.

12. At all times while handling the sample crucible, be careful not to splash the test sample onto the crucible lid, especially when removing the lid. Use of a table mounted holder to hold the crucible may help prevent splashing while opening the crucible. (See section 20.10 of the test method D5800-00a).

13. Do not over-tighten the crucible lid and do not use the extraction tube as a handle to tighten or open the lid.

14. Make sure the correct reference oil performance certificate is being used. There was some confusion among the participants about the "correct" performance limits of RL 172/4; some suppliers may not be correctly updating their reference oil performance certificates. The most current limits for RL 172/4 are available from PAC (1-800-444-8378). Note that the evaporation mean differs for Procedure A and B.

Updated 20020327 TMS