

HEAVY-DUTY ENGINE OIL CLASSIFICATION PANEL
OF
ASTM D02.B0.02
June 29, 2010
Westin Crown Center, Kansas City, MO

THIS DOCUMENT IS NOT AN ASTM STANDARD: IT IS UNDER CONSIDERATION WITHIN AN ASTM TECHNICAL COMMITTEE BUT HAS NOT RECEIVED ALL APPROVALS REQUIRED TO BECOME AN ASTM STANDARD. IT SHALL NOT BE REPRODUCED OR CIRCULATED OR QUOTED, IN WHOLE OR IN PART, OUTSIDE OF ASTM COMMITTEE ACTIVITIES EXCEPT WITH THE APPROVAL OF THE CHAIRMAN OF THE COMMITTEE HAVING JURISDICTION AND THE PRESIDENT OF THE SOCIETY. COPYRIGHT ASTM, 100 BARR HARBOR DRIVE, WEST CONSHOHOCKEN, PA 19428-2959.

ACTION ITEMS

1. Mack Surveillance Panel needs to respond in 60 days on the T-11 mild trend

MINUTES

1.0 Call to order

- 1.1 The Heavy Duty Engine Oil Classification Panel (HDEOCP) was called to order by Chairman Jim McGeehan at 1:30 p.m. on Tuesday, June 29, 2010, in the Pershing Place North room of the Westin Crown Center Hotel, Kansas City, MO.
- 1.2 There were 14 members present and 45 guests present. The attendance list is included as **Attachment 2**.

2.0 Agenda

- 2.1 The agenda circulated prior (included as **Attachment 1**) was not changed.

3.0 Minutes

- 3.1 The minutes from the prior meeting were approved as written by unanimous voice vote.

4.0 Membership

- 4.1 Chris Castanien has the proxy vote for Lubrizol / Dave Duncan. Robert Stockwell has the proxy vote for ConocoPhillips / Dave Taber. Barb Goodrich has the proxy vote for John Deere / Ken Chao. Scott Harold asked that his company name should reflect the change to BASF from CIBA.

5.0 Test Succession Plan to Support Active Categories – Mark Cooper (**Attachment 3**)

- 5.1 Mark Cooper made a presentation regarding the life of API 'C' Category tests. Regarding Caterpillar tests, Hind Abi-Akar commented that they do not have plans to cease support after 2015. Life of the older single cylinder tests is less certain, however. The C13 is a production engine and should be available beyond 2015. Availability of 500 ppm sulfur fuels may be an issue as off-road fuels have transitioned to 15 ppm sulfur.
- 5.2 The Engine Oil Aeration Test (EOAT) is only referenced at one laboratory and availability of critical engine components is still being determined. Only one set of critical hardware remains.
- 5.3 A large batch of piston/rings/liners/bearings to support the T-11 and T-12 through 2015 has been ordered. This is considered to be the last batch purchase of hardware – the tooling will no longer be available. Other engine components are available as service parts.

- 5.4 The Roller Follower Wear Test utilizes a flush and run engine, but the engine injection pump is replaced every 15 runs. Availability of injection system hardware is a concern as the injection pump is critical to test severity.
 - 5.5 The Sequence III will have an adequate supply through 2015 to support GF-5. Supply is questionable beyond 2015.
- 6.0 Mack T-12A: Mark Cooper (**Attachment 4**)
- 6.1 Mark Cooper made a presentation to adopt the used oil MRV of the "T-12A" as a substitute for the T-10A. The 100 hour MRV result in the T-12 is comparable to the 75 hour MRV result in the T-10 with the T-10A being approximately 500 mPa-s higher than the T-12 data. A procedure has been developed and was adopted by the Mack Surveillance Panel. A detailed summary of results on reference oil 820-2 was provided. A question on the accuracy of the MRV was posed and Joe Franklin commented that the reproducibility of the test is approximately 19% at the limit range or approximately 3800 mPa-s.
 - 6.2 **Greg Shank moved to accept the proposed T-12A method as an alternative for the T-10A at the existing T-10A limits. Chris Castanien seconded the motion.** Steve Kennedy asked if we are changing the performance level given the difference between reference results. Hearing no further discussion, Chairman McGeehan called the question. **12 For, 0 Against, 2 Waive. Motion carried.**
- 7.0 T-11 Report: Mark Cooper
- 7.1 T-11 Severity Trend – Mark Cooper provided an update on the actions of the Mack Surveillance Panel to address the mild trend. Results from two recent extended length reference tests indicate more work needs to be done. Kevin Ferrick asked if there are any referenced T-11 stands at the independent laboratories. Currently, there are not. One of the dependent laboratories has a referenced stand. Kevin indicated that this could be an issue if someone other than the dependent test lab needs to conduct a test. Greg Shank believes the shift may be fuel related. He is asking for 60 days to conduct further testing to restore test severity. Barb Goodrich asked about the aromatic content of the reference fuels.
- 8.0 Cummins ISM Update: Shawn Whitacre (**Attachment 5**)
- 8.1 Oil filters – Concern over 2009 batch regarding filter plugging severity (much higher). A new batch was produced in Q1 2010 with retargeted media. The 2010 batch reference oil test results are in line with historical performance. The 2009 filters will be sequestered and no longer used for testing. A 5+ year supply of 2010 filters is on-hand.
 - 8.2 Crossheads – New batch producing results in line with historical data, but trending slightly mild. The Surveillance Panel will monitor and consider correction factor adjustment as necessary. A recent motion to adjust the correction factor based on existing data failed to carry.
 - 8.3 Injector Adjusting Screws – An industry correction factor of 19.1 mg was imposed June 28, 2007. The magnitude still looks appropriate but impacts the merit calculation. Full merits are no longer possible as the correction factor exceeds the 16 mg minimum. The Surveillance Panel has been deliberating a variety of proposals but none that they are ready to bring to the HDEOCP at this time.
- 9.0 EMA Report: Greg Shank (**Attachment 6**)
- 9.1 CJ-4 oil performance in the field has been good. The chemical limits appear to be ok - no issues to report. The 2015 timeline for test development was mentioned as were concerns about clashing with the GF-6 timeline. EMA does not know if a performance change is needed. A new heavy duty fuel economy specification may challenge the current 3.5 cP HTHS limit. Actual implementation dates for a fuel economy specification are unknown but EMA is using 2016-2017 timeframe. Additional performance requirements are still on the

table: Oxidation, TBN Depletion, Shear Stability, Aeration Severity, Turbo Deposits, and Fuel Economy. EMA will continue to look at the wear tests and any other tests for redundancy.

- 9.2 New tests may be required to maintain API CJ-4. Chairman McGeehan posed the question about meeting more frequently to address the tests that have limited life. It was suggested that the RFWT and the EOAT be examined first as they currently have hardware availability issues. Caterpillar is working with the EOAT and may have an alternative engine that can be used. Greg commented that he could provide timing for a "T-13" by the December 2010 meeting. Caterpillar will have an update on the emulsion phenomenon.

10.0 The meeting was adjourned at 3:10 PM.