

HEAVY-DUTY ENGINE OIL CLASSIFICATION PANEL OF

ASTM D02.B0.02

April 2, 2003

DoubleTree Hotel – O'Hare, Rosemont, IL

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ACTION ITEMS

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| 1. | Send requests for panel voting membership to Jim McGeehan. | Interested Participants |
| 2. | Investigate / Recommend appropriate volatility limit for PC-10. | CCV / TC Task Force |
| 3. | Determine funding available for PC-10 matrix work. | Steve Kennedy/Greg Shank |
| 4. | Recommend old categories to obsolete. | DEOAP |
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MINUTES

- 1.0 Call to Order
 - 1.1 Chairman Jim McGeehan called the meeting to order at 8:03 a.m. on April 2, 2003 in the Mr. Lincoln room of the DoubleTree Hotel O'Hare in Rosemont, Illinois. There were 12 members present or represented and 18 guests present. The attendance list is shown as Attachment 2.
- 2.0 Agenda
 - 2.1 The published agenda (Attachment 1) was reviewed and EMA requested time to talk about the T-11 and aftertreatment before the matrix cost discussion.
- 3.0 Previous Meeting Minutes
 - 3.1 The minutes from the February 19, 2003 meeting were approved as distributed.
- 4.0 Membership
 - 4.1 Charlie Passut has replaced Tom Cousineau as the voting member from Ethyl. See Attachment 3.
- 5.0 NCET Report
 - 5.1 Bill Runkle reported that in accordance with Appendix D of API document 1509 (Attachment 4), the PC-10 NCET has been dissolved and a PC-10 NCDT formed by the API Lubricants Committee.

6.0 Voting Rules

- 6.1 The topic of voting rules for the HDEOCP to move items to sub-committee B ballot and thus provide approval for API action if needed, was reopened. Tom Franklin provided an Excel chart which listed the percentages of affirmative votes cast as a function of total votes and negative votes (Attachment 5).
- 6.2 The EMA stated they felt comfortable going forward with as many as 3 negative votes. Since there seemed to be support for a minimum fixed percent positive, Greg Shank moved and Steve Kennedy seconded a motion to the effect that a 75% affirmative (or positive) vote would be sufficient to move an HDEOCP issue forward to ballot. The motion passed with 11 affirmative, 0 negative & 0 abstain.
- 6.3 Considerable discussion ensued regarding the addition of new members to the panel. In the past Chairman McGeehan has tabled requests for membership because the panel is balanced as it now stands. Given the potential to keep voting balanced like the PCEOCP, he now agrees to accept written requests from those interested in becoming voting members. This issue will be addressed at the June meeting.

7.0 Ballot Results

- 7.1 Chairman McGeehan displayed the results of the "exit ballot" for the proposed 13% NOACK volatility limit for PC-10 oils (See Attachment 6). There were 9 affirmative returns, 1 negative and 4 abstentions. The main concern expressed seemed to center on the ability to blend 10W-30 oils which would pass the limit. Lew Williams suggested moving the issue to the CCV/TC Task Force to determine if 13% is appropriate or best. EMA wants the issue resolved before any matrix test oils are blended.

8.0 PC-10 Aftertreatment Issues

- 8.1 Dave Stehouwer indicated he felt Cummins would have a test developed by the end of this year which could discriminate oil effects on catalysts.
- 8.2 Mike Quinn reviewed the PC-10 timeline and indicated the Caterpillar view to be that any aftertreatment compatibility tests should be ready to go by 2004 or the panel should go forward with chemical limits.
- 8.3 Jim McGeehan presented a slide (Attachment 7) to illustrate the box chemical limits will force on oil formulation.
- 8.4 Greg Shank suggested that a task force be formed to explore the issues with chemical limits and make recommendations on what they should be. He volunteered the EMA staff to collect, sanitize and disseminate available data. Bill Kleiser made and Abdul Cassim seconded a motion to form a task force to recommend chemical limits to protect aftertreatment devices exposed to PC-10 oils. The motion passed via voice vote with no negatives or abstentions. Rick Finn agreed to chair the task force, consisting of Bill Kleiser, Mark Rees, Charlie Passut, Dave Stehouwer, Glenn Mazzamaro, Greg Shank, Mesfin Belay, Ted Selby, Abdul Cassim, Jim McGeehan, Scott Zechiel, Bill Runkle and Chris Laroo. There was a request to ask Shawn Whitacre of NREL to participate if he could.

9.0 Matrix Costs

- 9.1 Jim McGeehan displayed a slide (Attachment 8) which listed some "ballpark" cost estimates of four potential PC-10 tests.
- 9.2 Lew Williams presented an analysis of matrix costs they had done, using various assumptions (See Attachment 9).
- 9.3 There was considerable discussion of the projected matrix costs and whether the Mack T-11 should be included in the matrix testing. At this time, it looks like there would be a Caterpillar C-12/13 test; a Mack T-XX(probably 12) test; a Cummins ISM and an ISB test.

- 9.4 Steve Kennedy and Greg Shank are to report at the June meeting how much funding is anticipated to be available for PC-10 matrix work.
- 10.0 Mack T-11
 - 10.1 Greg Shank displayed slides showing the T-11 reference oil data accumulated so far (Attachment 10). The test seems to be working well.
- 11.0 Fuel Sulfur and Old Categories
 - 11.1 Mike Quinn reminded the panel of the wide variety of fuel sulfur levels that engines could be exposed to on a world wide basis...anywhere from 10 to 5000 ppm of sulfur. He would like somehow to make sure the end user is able to easily match an appropriate engine lubricant with the fuel being used. He would also like to obsolete as many old categories as possible, to cut down on potential confusion.
 - 11.2 The DEOAP was requested to meet and make recommendations on the old category issue before the June HDEOCP meeting.
- 12.0 Shear Stability / HTHS Task Force
 - 12.1 Bill Kleiser presented the task force report (Attachment 11) and indicated the group is close to picking a test which should evaluate the concerns regarding shear stability and high temperature / high shear.
- 13.0 Closed Crankcase Ventilation / Turbo Coking Task Force
 - 13.1 Jim McGeehan gave the task force report (Attachment 12). They are requesting any MTU bench test data available and also any other data that might relate to the problem. Frank Bondarowicz has suggested a small engine test with a heated plate in the engine blow-by stream. Additional suggestions are welcome.
 - 13.2 Ted Selby presented TEOST data from the IOM database and showed distinctly different responses from 40 grades, 30 grades and 15W-40 oils. See Attachment 13. Dave Stehouwer suggested trying to correlate available MTU data with the TEOST data.
- 14.0 Next Meeting
 - 14.1 The next meeting is scheduled for Tuesday afternoon, June 17, 2003 in Norfolk, Virginia.
- 15.0 Adjournment
 - 15.1 This meeting was adjourned at 11:16 a.m.

Submitted by:

Jim Wells
Secretary to the HDEOCP