

ESCIT Minutes----12/12/06

1. Chairman Engels opened the meeting at 9:15 AM on 12/12/06 at GM Powertrain in Pontiac, MI.
2. The minutes of the 9/28/06 meeting were approved as posted to the TMC web site.
3. A sign in sheet was circulated. An updated official membership and mailing list will be posted in the minutes at www.astmtmc.cmu.edu.
4. SWRi gave an update on their efforts to develop a fired engine test for emissions system durability.
 - a. LZ offered to allow their conventional and low impact ZDDP formulations to be run in the SWRi test once SWRi had a workable test.
 - b. SWRi has requested a 6 month extension from their management on the project to allow for further test development.
 - c. See summary and future work slide in the SWRi presentation for details. Presentations are posted to the TMC web site.
5. Ciba gave an update on their work on developing a phosphorus volatility bench test.
 - a. Ciba ran OS 183034F and OS 18499A in the CPVT test.
 - b. Ciba was able to rank the oils correctly in the same way as the LZ/Ford field trial.
 - c. Ciba ran 4 Afton oils and was able to rank them correctly on Phos retention according to Afton. The Ciba test lined up oil 331 and 357 on phos retention but Afton pointed out that oils 331 and 357 have different catalyst performance.
 - d. The Ciba bench test runs for 48 hours at 160 C using a Fe and Cu catalyst with 5l/h O2 flow.
 - e. The phos data from Ciba looks 20% higher than the oil sponsors analysis for the oils. This could be due to Ciba's use of XRay verses ICP. Ciba will look into the phos analysis on their samples.
 - f. See the Ciba presentation for details. Is the accuracy acceptable when the phos numbers are 20% off target?
6. Infineum update on phos retention analysis of TMC ref oils.
 - a. Have we reached agreement on a phos retention analysis equation? ESCIT needs to continue to discuss how to calculate phos retention.
 - b. Infineum analyzed the TMC Seq IIIG ref oil data base for oils 434, 435, and 438.
 - c. Infineum disagrees that the Seq IIIG at 20 hours will work to measure phos retention since phos is still being lost after 20hours.

d. Have the ACC PAPTG TAG group look at the TMC ref oil data. Follow up done on this issue.

e. Infineum stated that the Seq IIIG can be used to ensure a benefit in catalyst/emissions system protection equivalent to that which could be achieved by reducing Phos levels from 0.08 to 0.05 % wt phos.

f. Infineum proposed phos retention of 84.4%.

7. Savant presentation by Ted Selby.

a. See Ted presentation for details.

b. Ted reviewed his previous work on PEI to bring the ESCIT up to speed.

c. Ted showed new data on field tested oils from Afton and Lubrizol.

d. Ted concluded (see conclusions slide) that the PEI should be run at 250 C protocol based on his correlation work to Afton and LZ field test data.

e. A request was made to Ted to clarify his presentation and explain the last slide.

8. Oronite presentation by Jerry Wang.

a. Jerry suggested that ESCIT should define phos elemental limits ASAP.

b. ESCIT chairman said it is not the mission of ESCIT to define chemical limits.

c. Seq IIIG and PEI may have potential as tests for Phos volatility. See the Oronite presentation for details.

d. Jerry agreed to label the axis and make corrections to clarify his presentation before the presentation is posted to the YMC web site.

9. Afton presentation.

a. See Greg's presentation for conclusions.

b. Greg asserted that if you look at enough tests you can separate the Seq IIIG ref oils, but on one off tests you may never be able to separate oils.

c. Greg would prefer a bench test rather than a fired engine test.

d. Afton's position is that their fired engine emissions system durability test is a link between the field and a bench test. Afton is not interested in offering ACT as a test in GF-5. The goal should be to find a suitable bench test for phos retention.

10. Follow Up items for next meeting.

a. Have ACC TAG analyze the Seq IIIG ref oil data and the Seq IIIG candidate oil data. Look at 20,40,60,80 and 100 hour data. Look at r and R.

- b. Andy and Lew, ACC PAPTG will work to define what candidate data to submit to ACC PAPTG and ESCIT. Get ACC PAPTG consensus on what to submit on Candidate data.
 - c. Have the statisticians determine how many Seq IIIG tests are needed to separate candidates if the candidates vary by the same amount as ref oils 434 and 435. The ref oil data on phos retention is posted to the TMC web site. A future consideration is to determine many ROBO, PEI, CPVT, etc tests do we need to run to separate a 73% from an 80% phos retention oil.
 - d. Greg Gunther and Wang Kan Lim will get together and prepare a final calculation sheet.
 - e. Lew Williams/Bob Olree will look into a process to allow for a platform approval or core technology approval for phos retention in GF-5. Would this be a method to allow for multiple test averaging for phos retention?
11. Next meeting is proposed for 2/22/07 in San Antonio. Chairman Engel will send out an email on the next meeting.

Meeting adjourned at 2:10 pm.

Lew Williams