



# Test Monitoring Center

6555 Penn Avenue  
Pittsburgh, PA 15206-4489  
(412) 365-1000

MEMORANDUM: 05-001

DATE: January 14, 2005

TO: D02.B07 TEOST Surveillance Panel  
D02.B07 TEOST Mailing List  
D02.B07 TEOST Participants

FROM: Tom Schofield

SUBJECT: MTEOS Technical Update: Change in Selected Reference Oils

At the ASTM D02.B0.07 TEOST Surveillance Panel meeting of December 5, 2004, the TMC was directed to change the slate of MTEOS (MHT-4 TEOST) reference oils by adding TMC oil 434 and dropping TMC oils 433 & 1006. Effective immediately, Table 1 shows the current approved MTEOS reference oils, performance targets and acceptance bands:

Table 1  
MTEOS Reference Oil Performance Targets and Acceptance Bands  
Using Test Method Version 2 or D7097  
Effective January 12, 2005

| Oil ID | n  | Target Mean* | Target sR* | Acceptance Bands |         |
|--------|----|--------------|------------|------------------|---------|
|        |    |              |            | 95% Min*         | 95%Max* |
| 74     | 14 | 13.59        | 3.97       | 5.8              | 21.4    |
| 432    | 8  | 45.18        | 2.73       | 39.8             | 50.5    |
| 434    | 8  | 30.51        | 2.89       | 24.8             | 36.2    |

\*Total Deposits, mg

Pooled Target Total Deposits sR is now 3.42 mg

Note that while oil 434 has been added, performance targets and acceptance bands for oils 74 and 432 remain unchanged from the October 15, 2003 and February 18, 2004 approved updates (see TMC technical memos 03-101 and 04-007). The participating labs have been contacted about disposing of obsolete reference oil samples and the TMC is presently shipping new reference oil samples.

Note that the mean performance for the three selected reference oils provides a range of performance up to the GF-3/SL MHT-4 TEOST limit of 45 mg Total Deposits and around the GF-4/SM limit of 35 mg Total Deposits. Oil 434 is also considered to be an updated chemistry and is a current

Sequence IIIG (engine test) reference oil. (There is a history of using Sequence III reference oils in MTEOS monitoring.)

TMC Memo 05-001  
January 14, 2005  
Page 2 of 2

Performance targets for oil 74 were estimated using selected data (TMC monitored labs only) from a Subcommittee 9 Task Group round-robin (see TMC MTEOS technical memo 03-101, October 15, 2003). Performance targets for 432 and 434 were estimated from separate mini-round robins among the four TMC calibrated labs.

Because of the small initial n-sizes for establishing the targets and acceptance bands for each oil in Table 1, it is expected that all of the targets and acceptance bands will need to be re-evaluated (and then fixed) after additional calibration data is collected on each of the oils. (This was to have already been done for oils 74 and 432, but unexpected test imprecision in the TMC's calibration data, possibly due to variability in Batch D test rods, prevented an accurate performance estimate update. The TMC and the surveillance panel will evaluate if reference oil performance adjustments based on reference tests using Batch E rods will provide more accurate performance target estimates as well as a more rigorous data set.)

Please direct any inquiries to my attention.

Tom Schofield  
Supervisor, Analytical Testing  
ASTM Test Monitoring Center  
Carnegie Mellon University  
6555 Penn Avenue  
Pittsburgh, PA 15206-4489  
Voice: 412-365-1011  
Fax: 412-365-1049  
Email: [tms@astmtmc.cmu.edu](mailto:tms@astmtmc.cmu.edu)

TMS/tms

c: M. Lane  
J. Zalar  
<ftp://ftp.astmtmc.cmu.edu/docs/bench/mteos/memos/mem05-001.pdf>

Distribution: Email