

Oil-Side Action Items

ILSAC/Oil Committee

July 30, 2009

ACTION: Oil-side will address the questions on shear stability posed by ILSAC: Why was Kurt Orphan proposed as Seq VIII stripped viscosity alternative?

Example:

- Product is tested per ASTM D 6709 (Evaluation of Automotive Engine Oils in the Sequence VIII Spark-Ignition Engine)
- Product meets requirement for bearing weight loss, but fails 10-hour stripped viscosity
- Product is modified by adding viscosity modifier
- Instead of running another Sequence VIII test, product will be tested by ASTM D6278

- Alternative currently exists in API 1509 Appendix F Table F-2 – Groups I, II, III and IV Viscosity Read Across for L-38/Sequence VIII Tests. Note 6 mentions using ASTM D6278 (30 passes) to support stay-in-grade requirements per the following limits:

SAE Viscosity Grade	cSt @ 100°C
XW-20	≥5.6
XW-30	≥8.5
XW-40	≥11.5
XW-50	≥15.0

ACTION: Oil-side will address the questions on shear stability posed by ILSAC: Why was Kurt Orban proposed as Seq VIII stripped viscosity alternative?

- Intended as alternative bench test (D6278) for 10-hour Sequence VIII stripped viscosity at 100°C, not as replacement for Sequence VIII test
- Extend life of bearing batches
- Aim to reduce testing costs

ACTION: ILSAC wants to understand better the bullet points included in Oil-side's response to ILSAC's motion on the start of the technology demonstration period

- Oil Side is in favor of declaring that the Technology Demonstration Period commenced June 1, 2009. We believe that the Technology Demonstration Period is necessary to generate data for appropriate limit setting. We continue to work toward a first licensing date of 1Oct10.
 - The limits for GF-5 must be achievable based on balanced formulations
 - If there are multiple limits for a given parameter for the Seq. VID they must be statistically different at a confidence level of greater than 90%.
 - Judicious pass/fail ratios for all tests must be supported by statistical analysis *[Oil-side desires to have a pass/fail rate in the Sequence VID in the range of 66% for GF-5 candidate oils (oils able to pass all GF-5 tests). Oil-side wants to avoid a repeat of the Sequence VIB. While oil marketers have the ability to effect performance changes in many tests (not without adverse effects on FE), the ability to effect changes in FE is more limited.]*

ACTION: ILSAC wants to understand better the bullet points included in Oil-side's response to ILSAC's motion on the start of the technology demonstration period

- RE: “List of Technology Items for Resolution”–We all need to work together to resolve as quickly as possible all outstanding technology issues. (i.e. IIIIGB, Emulsion Stability, Seal Limits, WPD severity).
 - *Sequence IIIIGB: Severity correction in place. Test has been registered.*
 - *Emulsion Stability: Test procedure still being discussed by ASTM task group. No recommended practice exists yet. Round Robin scheduled to establish precision of test. No oils yet available to establish 'passing and failing' criteria and to link to field correlation.*
 - *Seal Limits: Round Robin completed and data still being analyzed by Task Force. No recommendation on Pass/Fail limits yet. 50% elongation requirement still being reviewed.*
 - *Sequence IIIG WPD severity: still being addressed by Surveillance Panel. Requires stabilization in time for GF-5 mandatory waiting period (i.e., resolution required by year end)*



ACTION: Oil-side will explain why it does not want the TEOST 33C included in GF-5

- Earlier data supporting TEOST 33C and its field-correlated dyno testing were obtained using non-API approved as well as GF-3 formulated oils. ILSAC GF-4 oils provide significant improvements in oxidation protection over GF-3 oils. This is evident in increase in oil drain intervals that has occurred since GF-4 oils became available. GF-5 will provide this same level of oxidation protection. No data has been shared with industry to show that oils with this level of oxidation protection cause turbocharger problems either in field or in dynamometer test which purportedly simulates field performance
- Only dyno tests conducted on GF-4 oils were either aborted or were indeterminate due to mechanical failures that were not caused by oil-related issues
- TEOST 33C test limits formulating options by discriminating against some friction modifiers

Chrysler cites field issues with turbochargers on some vehicles, but there is no evidence to show that incorporation of the TEOST 33C test in GF-5 will protect against those field failures. Combining this lack of evidence of field correlation with limitations bench test places on friction modification chemistry, Oil-Side does not support including this test in the GF-5 specification.