



Infineum Presentation to ESCIT

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Infineum Viewpoint on ESCIT Activities

- Support ESCIT efforts to develop a meaningful performance test to measure P volatility effects.
 - Satisfy need expressed for increased emissions system protection
 - Enable P level in GF-5 to remain at 0.08% maximum and thus minimize concern on backward compatibility
 - Help alleviate concern over wear with GF-5 oils in absence of Sequence IIIG wear requirement

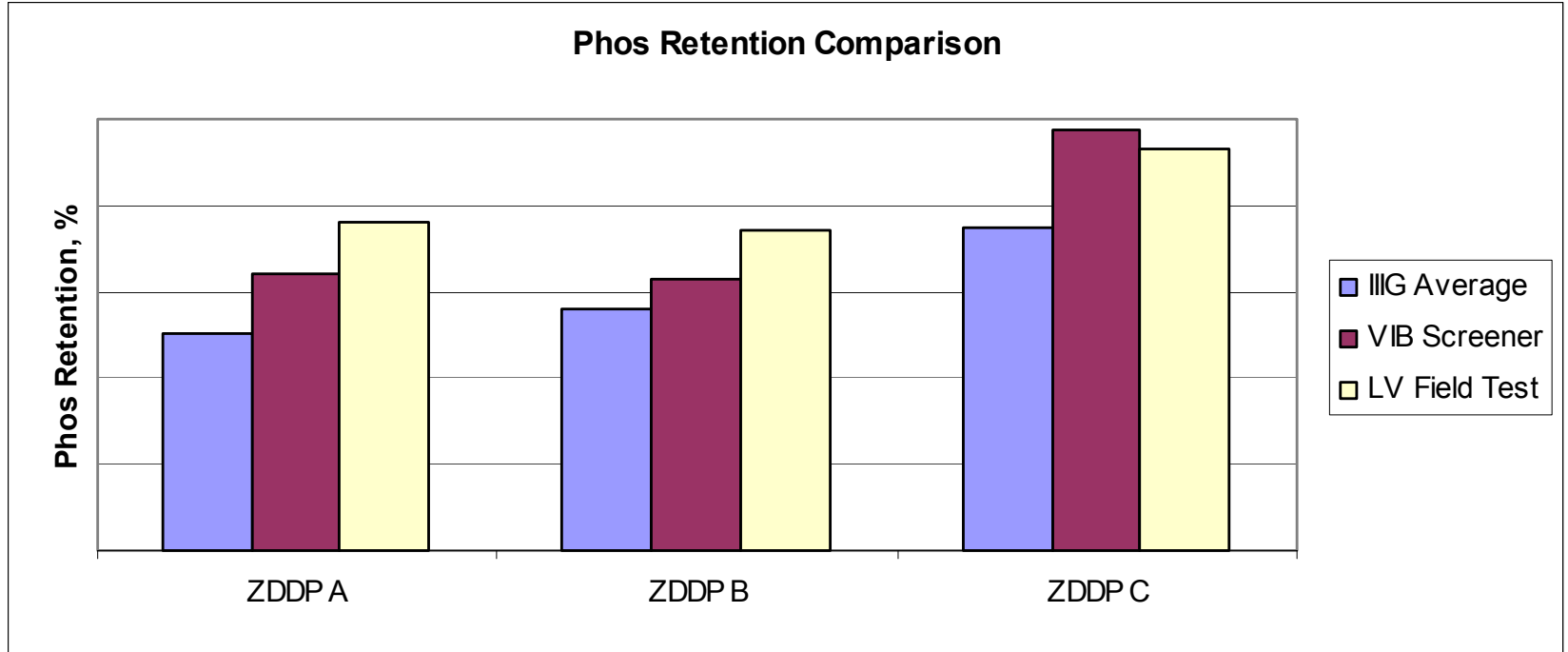
Infineum Viewpoint on Phos Volatility Limits

- Emission compatibility limit can be addressed by different methods.
 1. Engine tests on emission system; Catalyst efficiency is being measured at the end of the test
 - Currently being developed by SwRI and Afton
 - It can be costly and test precision can be an issue
 - Previous OPEST experiences are examples
 2. Bench test
 - Currently being developed by Savant
 - Recognized to over simplify the phos volatility process
 - Field test correlation data is needed
 3. Elemental analysis by existing engine test
 - Easy to measure
 - Can easily be correlated to real field experience

- **Infineum strongly prefers Option 3 if a phos volatility limit is adopted in the industry.**
 - Practical**
 - Easily implemented**
 - Cost effective**
 - Technically robust**

Which engine test type provides the better field correlation?

Comparing Phos Volatility between Engine and Field Tests



- The phos volatility severity is in the order IIIG>VIB>Field Test.

Infineum Viewpoint:

- Which engine test type provides the better field correlation?
- Sequence IIIG test conditions are too severe.
- Sequence VIB test conditions are more than adequate to evaluate the phos volatility against field conditions.
 - Note: Comparison will be shifted to IIIH and VID for GF-5.

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