To: API Lubricants Group
Cc: Lubricants Group Mailing List
API

Ballot for Proposal #1 Sequence IVB BOI Read Table Proposal

On May 8, 2019 the Lubricants Standards Group (LSG) reviewed the BOI/VGRA Task Force Proposal #1 Sequence IVB BOI.

Sequence IVB BOI Read Table Proposal

E.2.2.4.x For Sequence IVB tests required for interchanging the base stock, the specific requirements are given in Table E-x.

Table E-x – Sequence IVB Tests Required for Interchanging the Base Stock

Base Stock in Original Test Oil	Interchange Base Stock				
	Group I	Group II	Group III	Group IV	Group V
Group I	Required	Required	Required	Required	Required
Group II	Required	Not Required if Base Oil Viscosity at 100˚C ≥ Original	Not Required if Base Oil Viscosity at 100˚C ≥ Original	Required	Required
Group III	Required	Not Required if Base Oil Viscosity at 100˚C ≥ Original	Not Required if Base Oil Viscosity at 100˚C ≥ Original	Required	Required
Group IV	Required	Required	Required	Not Required provided the interchange Group IV meets the original manufacturer's specifications in all physical and chemical properties	Required
Group V	Required	Required	Required	Required	Required

Note:

1. The guidelines in this table were developed from data generated on oil with Viscosity Grades from SAE 0W-16 to SAE 20W-50. These do not restrict application of the guidelines by the marketer that is responsible for ensuring that each licensed engine oil satisfies all engine and bench test performance requirements.

BOI/VGRA Proposal 1 is given in Attachment 1, page 2. The Motion to Ballot BOI/VGRA Proposal 1 is given on Attachment 1, Page 3. Background Information can be found Attachment 1, pages 4-7.

After review and discussion, the LSG agreed by voice vote to **Ballot Table E-x – Sequence IVB Tests Required for Interchanging the Base Stock.**

Motion

Motion to Ballot Sequence IVB BOI Interchange Table as given in slide 2

Motion : Joan Evans

Second: Greg Raley

- Approve: 18
- Against: 0
- Abstain: 0

Motion Passed

Lubricants Group Members should use the API Ballot System to cast their vote and make comments. The Ballot Link is: http://Ballots.api.org. The Lubricants Group Member votes will be counted, and all received comments reviewed and considered before the ballot results are final.

Non-Lubricants Group Members should comment on the Ballot Motion using the Ballot system. The Ballot Link is: http://Ballots.api.org. All comments on the Ballot Motion will be reviewed before the ballot results are final.

This Ballot will close on June 10, 2019. All Votes and/or Comments must be received by the close date. If approved the balloted change will be effective as of May 8, 2019.

Attachment 1

BOI/VGRA Task Force Proposal 1

Sequence IVB BOI

Detroit

R. C. Dougherty

May 8, 2019

Sequence IVB BOI Read Table Proposal

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Table E-x – Sequence IVB Tests Required for Interchanging the Base Stock

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Group IV	Required	Required	Required	Not Required provided the interchange Group IV meets the original manufacturer's specifications in all physical and chemical properties	Required
Group V	Required	Required	Required	Required	Required

Note:

1. The guidelines in this table were developed from data generated on oil with Viscosity Grades from SAE 0W-16 to SAE 20W-50. These do not restrict application of the guidelines by the marketer that is responsible for ensuring that each licensed engine oil satisfies all engine and bench test performance requirements.

Motion

- Motion to Ballot Sequence IVB BOI Interchange Table as given in slide 2

- Motion : Joan Evans
- Second: Greg Raley

- Approve: 18
- Negative: 0
- Abstain: 0

BOI/VGRA Task Force Proposal #1
Sequence IVB BOI

Additional Information

Statisticians Report

Reviewed by BOI/VGRA Task Force – May 8, 2019

Executive Summary

- The following showed statistically significant effect on AVLI and Fe
  - BO Viscosity
    - *Higher BOV lowers AVLI and Fe*
  - Lab and Stand within Lab
- Run 1 is significantly higher than other Run Number for Fe but not for AVLI
- The following showed no statistically significant effect on AVLI and Fe
  - Technology (300 vs Tech1 vs Tech2)
  - BO Group (II vs III)
  - Base Stock Slate within BO Group (II K vs II B, III I vs III D)
  - BO Viscosity Index
  - Relative VM

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Model Regression Summary

Model P-values	Model 1		Model 2	
Source	Sqrt(AVLI_OR)	Ln(Fe_OR)	Sqrt(AVLI_OR)	Ln(Fe_OR)
Tech	0.22	0.38	0.16	0.21
BO Group	0.97	0.30		
BS Slate[BO Group]	0.89	0.70		
BO VI			0.66	0.19
Ln(Ln(BOVCalc+0.7))	0.06	0.00	0.01	0.00
Rel VM	0.85	0.59	0.91	0.57
LTMSLAB	0.02	0.00	0.01	0.00
LTMSAPP[LTMSLAB]	0.07	0.02	0.03	0.01
Run1	0.53	0.32	0.28	0.02

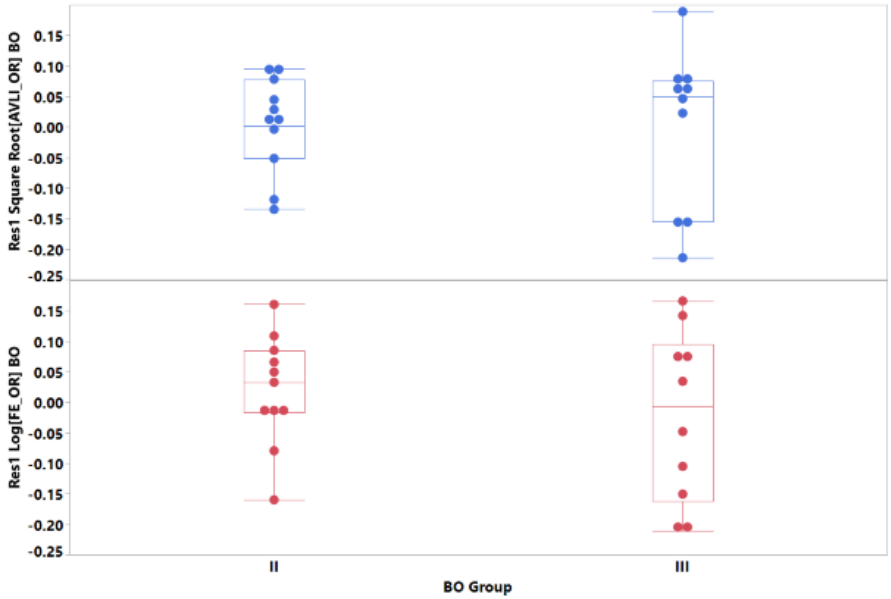
Statistically significant

Statisticians Report

Reviewed by BOI/VGRA Task Force – May 8, 2019

BO Group Effect

- No significant difference between BO Group II and BO Group III for AVLI and Fe



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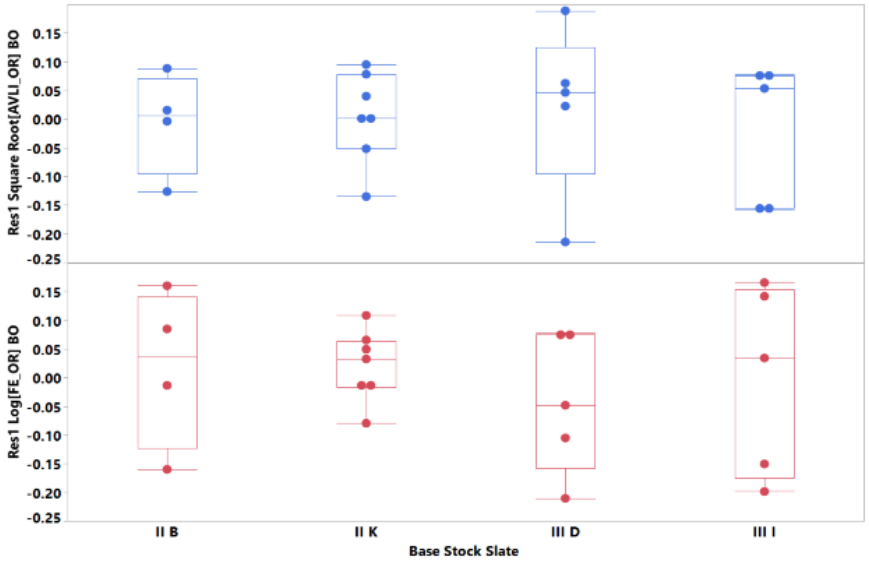
Residuals from models 1 without BO Group and BS Slate(BO Group)

Statisticians Report

Reviewed by BOI/VGRA Task Force – May 8, 2019

BS Slate within BO Group Effect

- No significant Base Stock Slate differences within BO Group for AVLI and Fe
  - No significant difference between II B and II K nor between III D and III I



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Residuals from models 1 without BO Group and BS Slate(BO Group)