

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

BOI/VGRA Task Force Proposal 2 Sequence IVB VGRA Technical Principles

On May 8, 2019 the Lubricants Standards Group (LSG) reviewed “BOI/VGRA Task Force Proposal 2 Sequence IVB VGRA Technical Principles”. The BOI/VGRA Task Force proposal adds the Sequence IVB to the new “Table F-x – Technical Principles for New Viscosity Grades and Read Across” which applies to oils with an HTHS¹⁵⁰ ≥ 2.3 mPa•s.

Table F-x – Technical Principles for New Viscosity Grades and Read Across is given below and in the Electronic Ballot Attachment.

Table F-x – Technical Principles for New Viscosity Grades and Read Across						
(Applies to oils with HTHS¹⁵⁰ ≥ 2.3 mPa•s)						
Passenger Car Motor Oils		IIIIH	IIIIHB	IVB	VH	X
a	Detergent (dispersant)-inhibitor (DI) content of the read-across viscosity grade shall be equal or higher than that of the original viscosity grade. The increase in DI is limited to the maximum allowed by the ACC Code	✓	✓	✓	✓	✓
b	Base stock blend kinematic viscosity at 100°C of the read-across viscosity grade must be equal to or higher than that of the original viscosity grade, considering the precision of the test method	✓	NA	✓	✓	NA
c	The viscosity modifier (VM) content of the read-across viscosity grade must be equal to or lower than that of the original viscosity grade	✓	NA	NA and Note 5	✓ or Note 3	Note 4

Notes:

- ✓ = principle is applicable; NA = not applicable
- New viscosity grades and associated read-across can only be added after review by the API BOI/VGRA Task Force and approval by the API Lubricants Group
- For dispersant-type VM, the VM content of the read-across viscosity grade must be equal to or higher than that of the original viscosity grade
- Viscosity Modifier content must be no more than 2.5 times higher than the viscosity modifier content in the oil on which the test was run because this was the range of VM tested in the BOI/VGRA Matrix.
- Relative viscosity modifier treat level was not found to be a statistically significant factor impacting Seq. IVB performance. The range of relative VM treat levels evaluated in the BOI/VGRA matrix was 1.0x to 1.7x.
- Read-across viscosity grades must contain an equal amount of the same Group V base stock (e.g., ester) in the finished oil blend if a Group V base stock is used in the original viscosity grade

The LSG discussed BOI/VGRA Task Force Proposal 2 Sequence IVB VGRA Technical Principles. (Ballot Attachment 1)

Subsequently a Motion was made: “The Lubricants Group Ballot the following changes: That the Sequence IVB Column be added to the new Technical Principles Table in API 1509 Annex F” (Attachment 1, Page3)

The Ballot Motion is given below.

Motion

Add the column and Note for the Seq. IVB to the Technical Principles Table F-1.B as noted in Slide 2.

- Motion by Eric Kalberer
- Second by Jim Linden

LSG Hand Ballot:

- Affirmative = 17
- Negative = 0
- Abstain = 1

Motion Passes

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 that date. If approved the balloted change will be effective as of May 8, 2019.

Attachment 1

BOI/VGRA Task Force Proposal 2

Sequence IVB VGRA Technical Principles

Detroit

R. C. Dougherty

May 8, 2019

Sequence IVB VGRA Technical Principles

Table F-x – Technical Principles for New Viscosity Grades and Read Across
(Applies to oils with HTHS¹⁵⁰ ≥ 2.3 mPa•s)

Passenger Car Motor Oils		IIIH	IIHIB	IVB	VH	X
a	Detergent (dispersant)-inhibitor (DI) content of the read-across viscosity grade shall be equal or higher than that of the original viscosity grade. The increase in DI is limited to the maximum allowed by the ACC Code	✓	✓	✓	✓	✓
b	Base stock blend kinematic viscosity at 100°C of the read-across viscosity grade must be equal to or higher than that of the original viscosity grade, considering the precision of the test method	✓	NA	✓	✓	NA
c	The viscosity modifier (VM) content of the read-across viscosity grade must be equal to or lower than that of the original viscosity grade	✓	NA	NA and Note 5	✓ or Note 3	Note 4

Ballot 4801

Ballot 4762

Notes:

- ✓ = principle is applicable; NA = not applicable
- New viscosity grades and associated read-across can only be added after review by the API BOI/VGRA Task Force and approval by the API Lubricants Group
- For dispersant-type VM, the VM content of the read-across viscosity grade must be equal to or higher than that of the original viscosity grade
- Viscosity Modifier content must be no more than 2.5 times higher than the viscosity modifier content in the oil on which the test was run because this was the range of VM tested in the BOI/VGRA Matrix.
- Relative viscosity modifier treat level was not found to be a statistically significant factor impacting Seq. IVB performance. The range of relative VM treat levels evaluated in the BOI/VGRA matrix was 1.0x to 1.7x.
- Read-across viscosity grades must contain an equal amount of the same Group V base stock (e.g., ester) in the finished oil blend if a Group V base stock is used in the original viscosity grade

Motion

- Add the column and Note for the Seq. IVB to the Technical Principles Table F-1.B as noted in Slide 2.
- Motion by: Eric Kalberer
- Second by: Jim Linden
- Approve 17
- Negative 0
- Abstain 1

Motion

That the Lubricants Group ballot:

- The addition to the new technical principles table of the column associated with the IVB
- The addition of Note 5

BOI/VGRA Task Force Proposal #2

Sequence IVB VGRA



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