

SEQUENCE VIE/F SP MEETING (Virtual Meeting)

Date: 11 May 2021

ATTENDANCE

SWRI	Dan Engstrom, Christine Eickstead, Travis Kostan, Pat Lang
INTERTEK	Adrian Alfonso
LUBRIZOL	Andrew Stevens
AFTON	Ben Maddock, Todd Dvorak
ORONITE	Robert Stockwell
INFINEUM	Andy Ritchie, Charlie Leverett
TMC	Rich Grundza, Scott Parke
FORD	Mike Deegan
EXXON	Paul Rubas
GM	Aleise Gauer, Mike Raney
SHELL	Jeff Hsu
VALVOLINE	Amol Savant
HALTERMAN	Prasad Tumati
TOYOTA	Hirano Satoshi
WILLIS ADVANCED CONSULTING	Angela Willis
TGI DIRECT	
TEI	Dan Lanctot
OHT	
CHRYSLER	Haiying Tang
HCS GROUP	Izabela Gabrel
GAGE PRODUCTS	Jim Carter
CP CHEM	Jonathan VanScoyoc
TRIBOLOGY TESTING	
BP	
ILA CORP	
AMERICAN REFINING GROUP	

MEETING:

MOTION 1: Approve meeting minutes from last meeting			
Proposed:	Andrew Stevens		
Second:	Charlie Leverett		
Discussion:	None		
Questions:	None		
Votes:	<i>Waive:</i>	0	
	<i>Negative:</i>	0	
	<i>Approve:</i>	N/A	
Outcome:	Motion passes unanimously		

TMC presents proposed spec for BL and flush oils.

Frank Farber – These specs are the result of combination of looking back at TMC’s analysis of blends along with labs that participated in approval matrices for various blends, and discussions with Ford, GM, and the ADCOs.

Proposed spec:

	Method	Baseline Oil			Flush Oil		
		Minimum ³	Target	Maximum ³	Minimum ³	Target	Maximum ³
B ¹ , ppm	D4951	0	0	<4 (0)	0	0	<4 (0)
Ca ² , ppm	D4951	1987	2134	2281	11,170	11,990	12,820
Mg ² , ppm	D4951	2 (4)	4	11 (4)	23(18)	29(19)	35 (21)
Mo, ppm	D4951	0	0	<2	0	0	<2 (0)
P ² , ppm	D4951	462	500	537	462	500	537
Si, ppm	D4951	3	4	7 (4)	23 (3)	25 (4)	27 (4)
Zn ² , ppm	D4951	517	550	583	517	550	583
Kin.Vis. 100°C, cSt	D445	11.85 (9.3)	12.2	12.5	12.5	13.3	14.1 (16.3)
CCS -15°C, cP	D5293	6239	7011 (6530)	7782	7030	7811 (7100)	8592
HTHS150C, cP	D4683	3.60	3.71	3.76	3.93	4.07	4.12

¹ Boron is an element that is considered to be a result of contamination and not part of the formulation package.

Discussion:

Jeff Hsu – The KV 100 window covers an entire visc grade. Should it be that large?

Clarified – The numbers in () are the previous spec, not the proposed spec.

Amol – the ASTM methods have precision specs. The proposed specs are outside these limits.

TMC – The proposed limits are based on historical data.

ASTM method D5185 only used for Ca. Does Ca now get analyzed with D4951?

TMC – uses 5185 predominately

Amol – Is D4951 for Ca mistake? D4951 does not list Si at all, have to use special request to get Si data with D4951.

Frank – The original spec has Ca analyzed via D5185. All other elements via D4951.

Precision matrix used D4951, spec has always called for D4951 (except Ca).

ICP (5185) is what everyone uses – standardize on this?

Hirano-san: D4951 normally used for fresh oil, D5185 normally used for used oil

The difference is in the precision of the measurements.

Paul Rubus of ExxonMobil pointed out that D5185 method specifically states “for used and unused lubricating oils...” and further stated that the precision is different between the D4951 and D5185 methods.

The D4951 method specifically states to use for unused lubricating oil.

Propose change to spec on which method to use?

Andy Ritchie – We have always used D4951. If we change to new method, what would the impact be on the historical data?

TMC – We have historically used both methods, no significant impact noted.

Are we measuring candidate oils with D4951 as well? No, D5185 is used for candidate oils per procedure. Should be consistent.

Hirano san – KV 40 not included in proposed spec; have we looked to see if the KV at

Jeff – This was intentionally left out of the original spec. May not matter anymore, but the original omission was intentional.

Hirano – Include KV 40 to be consistent?

TMC – Will look at historical data to be sure this is stable. Not to add to spec – maybe just a footnote in the spec.

MOTION 2: To accept this as the spec for the baseline and flush oils, using D5185 for all elemental analysis

Proposed: Jeff Hsu
 Second: Robert Stockwell

Discussion: None
 Questions: None

Votes: *Roll Call:*

<i>Company</i>	<i>Voter</i>	<i>Approve</i>	<i>Waive</i>	<i>Disapprove</i>
SwRI	Dan Engstrom	■		
IAR	Adrian Alfonso	■		
Lubrizol	Andrew Stevens	■		
Afton	Ben Maddock	■		
Oronite	Robert Stockwell	■		
Infineum	Andy Ritchie	■		
TMC	Rich Grundza	■		
Ford	Mike Deegan	■		
Exxon	Paul Rubas	■		
GM	Aleise Gauer		■	
Shell	Jeff Hsu	■		
Valvoline	Amol Savant	■		
Halterman	Prasad Tumati	■		
Toyota	Hirano Satoshi	■		
TEI	Dan Lanctot		■	
HCS Group	Izabela Gabrel	■		
Gage Products	Jim Carter	■		
CP Chem	Jonathan VanScoyoc		■	
<i>Totals:</i>		<i>15</i>	<i>3</i>	<i>0</i>

Outcome: The motion passes.

Action: Frank to look at historical KV 40 data to confirm stability

Amol – Does this mean these specs are approved for the next batch? Yes.

Meeting adjourned.