T12 DPB & DPB2 ICF Proposal

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02/14/25

T12 DPB & DPB2 ICF

- Feb 4th Surveillance Panel (SP) meeting concluded the following for the T12 DPB & DPB2 parameters:
  - SP agreed to explore DPB and DPB2 ICFs for results with the [New Delo 50/50 coolant, Z/Q hardware]
- Current raw means for the (4) DPBFNL and DPB2FNL (New Coolant, exclusively) test results – using the existing OilCon ICF:

Hardware-ICF-Dataset	Avg(Log[DPBFNL])	Avg(Log[DPB2FNL])	N
NewCoolant	2.6364	1.5171	4

- Please note that the new ICF will be in addition to the existing OilCon correction. The ICF will be updated when more data becomes available

T12 DPB ICF

- Revised DPB_ICF:
  - Deviation from target performance:

Hardware-ICF-Dataset	Avg(Log[DPBFNL])	Avg(Log[DPB2FNL])	N
NewCoolant	2.6364	1.5171	4

$$TRNDPB\_ICF = 3.106_{[Target]} - 2.6364_{[New\ Coolant\ Avg\ with\ OilCon\ ICF]} = 0.4696$$

  - Corrected result:

$$DPBFNL_{corrected} = exp(Ln(DPB) + (65 - OC_{100\text{-}300}) \times 0.03234 + TRNDPB\_ICF)$$

$$DPBFNL_{corrected} = exp(Ln(DPB) + (65 - OC_{100\text{-}300}) \times 0.03234 + 0.4696)$$

If $OC_{100\text{-}300} > 65.0$:

$$DPBFNL_{cor} = exp(Ln(DPB) + (65 - OC_{100\text{-}300}) \times 0.03234 + 0.4696)$$

else:

$$DPBFNL_{cor} = exp(Ln(DPB) + 0.4696)$$

T12 DPB2 ICF

- Revised DPB2_ICF:
  - Deviation from target performance:

Hardware-ICF-Dataset	Avg(Log[DPBFNL])	Avg(Log[DPB2FNL])	N
NewCoolant	2.6364	1.5171	4

$$TRNDPB2\_ICF = 2.125_{[Target]} - 1.5171_{[New\ Coolant\ Avg\ with\ OilCon\ ICF]} = 0.6079$$

  - Corrected result:

$$DPB2FNL_{corrected} = exp(Ln(DPB2) + TRNDPB2\_ICF + (65 - OILCON_{100\text{-}300}) \times 0.04089)$$

$$DPB2FNL_{corrected} = exp(Ln(DPB2) + (65 - OC_{100\text{-}300}) \times 0.04089 + 0.6079)$$

If $OC_{100\text{-}300} > 65.0$:

$$DPB2FNL_{cor} = exp(Ln(DPB2) + (65 - OC_{100\text{-}300}) \times 0.04089 + 0.6079)$$

else:

$$DPB2FNL_{cor} = exp(Ln(DPB2) + 0.6079)$$

T12 DPB & DPB2 ICF

- Revised LTMS Yi Calculations for the 4 results with Delo coolant:

TESTKEY	LTMSLAB	LTMSAPP	STRUN	VAL	CHART	LTMSDATE	TESTLEN	IND	OILCON
181683-T12	A	4	188A	AC	Y	20240911	300	821-4	100.9
183292-T12	D	1	245	OC	Y	20241027	300	821-4	97
184115-T12	G	4	137A	OC	Y	20240909	300	821-4	90.5
191266-T12	G	4	137B	AC	Y	20241009	300	821-4	103.6

New ICF Calculations for DPB Parameter

ICF = 0.4696

DPB+w/New ICF	Target	S	New DPbyi (with +0.4696 ICF)	*DPbyi (Existing)*	*Zi*
3.369	3.106	0.242	1.0868	-0.8537	-0.15473
2.8687	3.106	0.242	-0.9806	*-2.9211*	*-1.23543*
2.9771	3.106	0.242	-0.5326	*-2.4731*	*-0.23188*
3.2286	3.106	0.242	0.5066	*-1.4339*	*-0.47228*

New ICF Calculations for DPB2 Parameter

ICF = 0.6079

DPB2+w/New ICF	Target	S	DPb2yi (with +0.6079 ICF [Feb])	*DPB2yi (Existing)*	*Zi*
2.318	2.125	0.333	0.5796	-1.2459	-0.6958
1.602	2.125	0.333	-1.5706	*-3.3961*	*-1.272*
1.9631	2.125	0.333	-0.4862	*-2.3117*	*-0.2155*
2.3253	2.125	0.333	0.6015	*-1.2237*	*-0.4171*