

ASTM Engine Oil Gelation Test (EOGT) WK86363 Update

EOFT and EOWTT Surveillance Panel Meeting

December 17, 2024

Yong-Li McFarland, Chair



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EOFT and EOWTT Surveillance Panel Membership

21 members

Beth Schwab, Afton Chemical

Michael Kunselman, Center for Quality Assurance

Robert Stockwell, Chevron Oronite

Quanchang Li, ExxonMobil

Michael Deegan, Ford

Melissa Chu, Infineum

Angela Willis, Infineum

Joe Franklin, Intertek

Karina Gil, Intertek

Yuliza Rocha, Intertek

Michael Johnscher, ISP

Litchi Xie, Lubrizol Additive (Zhuhai) Co., Ltd.

Victoria Fein, Lubrizol

Jason Bowden, OH Technologies Inc

Greg Miiller, Savant Group

Sean Alston, SGS North America

Jared Cavaliere, SwRI

Becky Grinfield, SwRI

Yong-Li McFarland*, SwRI

John Loop, TMC

Amy Ross, Valvoline

*Chair



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New EOGT WK86363, ILS# 1854

- Ford request for a new Engine Oil Gelation Test (EOGT): request to add a new test filterability test to better screen oils for field issues
- Status:
 - Method: 1 draft (Afton method V9.2) uploaded on ASTM Collaboration Area
 - Oils: 11 potential reference oils offered; 17 oils received at TMC
 - Screening Tests and ILS: Screening Test and additional Pilot Tests ongoing
 - Timing: ILS tests to be run by March, and test available in June 2025



Afton Method Updates

- Afton: completed Pilot II Plan to run Pilot III
- SwRI: completed Pilot II, over 4.5 funnel inner diameter more affecting Oil K results (may want to give certain funnel inner diameter in Method), looked at overall flow rate and 45 sec flow rate, SwRI K-I RR was another off the shelf fluid and flowed like Oil K, also ran Afton poor oil, ran with I8G and I8G-ST and results were consistent **Plan to run Pilot III tests**
- Savant: hope to have Pilot II results by end of Dec
- Intertek: completed Pilot II
- Valvoline: sent results, some gelling but overheating occurred, plan to rerun
- Infineum: sent results, working on shearing technique, not able to show differentiation currently. Will rerun both oils.
- Lubrizol: Pilot II to run in early Jan (still waiting for equipment)

Criteria to move forward to ILS: Root cause group to finalize method(final result) and Ford to give recommendation to move forward



ILS Oil Matrix –from Oct 6, 2023

Participants	Potential Reference Oils Offered	Oil Sample Received at TMC	Comments
Ford	2 oils (low and high known performance oils) - eligible to be reference oils	2 oil samples received	
Toyota:	2 oils - not eligible to be reference oil	2 oil samples received	Only use sample A
Afton:	4 oils– eligible to be reference oils	4 oil samples received	Adding 5th oil not eligible for reference oil
Lubrizol:	4 oils – eligible to be reference oils	4 oil samples received	Stay same
Infineum:	1 oil – eligible to be reference oil	1 oil sample received	Stay same
Oronite:	3 oils –not eligible to be reference oils	3 oil samples received	Waiting on procedure to be finalized to decide
Subaru:	1 oil – not eligible to be reference oil	1 oil sample received	Waiting on response
Total Oils	<u>11 potential reference oils confirmed</u>	<u>17 oils received</u>	

John Loop to manage Sample Information

12/17/24: Afton and SwRI to run Pilot III on the 17 oils. TMC to send out 5th Afton oil and confirm Toyota oil with labs. Try to have results by next meeting.



ILS Planning

- Goals: Establish precision (repeatability and reproducibility) statement with different levels of performance and different operators, and select reference oil(s)
- Labs: 7 labs: Afton, SwRI, Intertek, Valvoline, Savant, Infineum, Lubrizol
- Oils: Optimal would be 2 good, 2 bad, 2 borderline oils. Each lab runs 24 tests total?
 - We have 11 oils eligible as reference oils and 6 additional oils at TMC
 - Run Pilot III at Afton and SwRI to generate initial data on 17 samples. There will be some lab bias. Select down
 - Include range of Vis grade samples, check with TMC on info supplied
 - Consider combine ILS with BOI-VGRA matrix: three technologies from at least 2 companies in different vis grades and base oils (check with BOI-VGRA group on funding)
- Travis to come up final test matrix
- Procedure notes:
 - All labs should prove they can gel (2?) poor oils before being included in ILS
 - Final Report section and Report form after Pilot II
 - Will EOGT be TMC monitored (like EOFT D6795) or not (like D7563)?
 - Yes, needs to be TMC monitored like D6795 with a quantitative result/acceptance limit on reference oil, based on ACC code of practice and/or Test Readiness recommendations, may need to be run in duplicate for reference oil. Method will include TMC inclusion and LTMS will include reference criteria for this test. Will wait on referencing period once more data comes in.
 - 120 mL volume for duplicate run per oil



Draft Timeline – updated Oct 29, 2024

Draft Timeline	Date												
	5-6 2023	7-8 2023	9-10 2023	11-12 2023	1-2 2024	3-4 2024	5-6 2024	7-8 2024	9-10 2024	Nov-Dec 2024	Jan-Feb 2025	Mar-Apr 2025	May-June 2025
Develop test procedure and ILS report form	█												
Collect and prepare donated oil samples (17 oils)	█	█											
Screening samples shipped to labs (6 labs)		█											
Screening labs run 4 tests			█	█									
Test development (Screening, Proposal tests, Root cause)			█	█	█	█	█	█	█				
Pilot #1										█			
Pilot #2 and #3										█	█		
ILS samples shipped and labs run tests											█	█	
Data analysis for ILS, generate Research Report (RR) & Precision												█	█
Ballot test procedure and RR													█
Test available for industry use													█

Thank you for your support!

Participants		
Method Development (11)	Oil Donations (9)	Testing Labs (9)
Afton	Afton	Afton
ExxonMobil	Ford	Infineum
Ford	Infineum	Intertek
Infineum	Lubrizol	ISP
Intertek	OH Technologies (donate filters only)	Lubrizol
ISP	Oronite	Savant
Lubrizol	Subaru	SwRI
Oronite	TMC (collection, shipping only)	TMC (monitoring system only)
Savant	Toyota	Valvoline
SwRI		
TMC		

