

ASTM Engine Oil Gelation Test (EOGT) WK86363 Update

EOFT and EOWTT Surveillance Panel Meeting

January 30, 2025

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: Pilot II and Pilot III tests ongoing
 - Timing: ILS tests to be run by March, and test available in June 2025

Agenda 1-30-25:

1. Review key points from SWRI data
2. Review SWRI/Afton combined data
3. Method edits: define funnel size to be 3.5-4.5 mm for more consistent measurement, reword steps to improve method clarity (Jared to send out modified method and any parts info), describe hot plate in method
4. ILS plan



Afton Method Updates 1-30-25

- Afton: completed Pilot II and Pilot III
- SwRI: completed Pilot II and Pilot III
- Savant: hope to have Pilot II results by end of Dec
- Intertek: completed Pilot II
- Valvoline: running Pilot II (finished Oil F run, plan to run Oil F and K by 1/31/25)
- Infineum: completed Pilot II
- Lubrizol: Pilot II to run by end of Feb (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

- With more than 4 labs able to complete Pilot II, group approved to move forward with ILS.



ILS Oil Matrix –from Oct 6, 2023

Participants	Potential Reference Oils Offered	Oil Sample Received at TMC	Comments Dec 2024
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
<u>Total Oils</u>	<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, Infineum, Valvoline, Savant, Lubrizol
- Oils: Optimal would be 2 good, 2 bad, 2 borderline oils. Each lab runs 12-18 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) – John L to check with oil suppliers if still eligible as ref oil and if they can release viscosity grade and base oil info
- 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



ILS Details

EOGT ILS	Labs	Samples	Repeats	Comments
	Afton	2 poor oil (both able to be reference oils)	Duplicate if not in triplicate per sample	John to send samples out ?
	Infineum	2 borderline oil (both potential reference oils)		Who will analyze results? Entire group
	Intertek	2 good oils (many able to be reference oils)		Report Form?
	Lubrizol			Procedure version ?
	Savant			
	SwRI			
	Valvoline			
	? ISP			



Draft Timeline – updated Jan 30, 2025

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													█

Action Items and Next Meeting

- Valvoline, Savant, and Lubrizol to run Pilot II
- John L to check with oil suppliers if still eligible as reference oil and if they can release viscosity grade and base oil info
- All to review proposed method revisions and make comments by next meeting.
- All to think about how EOGT TMC referencing may look and bring comments to next meeting

- Next Meeting: Tuesday Feb 18 at 10AM CST for 1.5 hr



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		

