

Oil Seal Compatibility Test (OSCT) Surveillance Panel Meeting Minutes

May 8, 2024

Don Bell

Participants listed on attachment in Appendix.

An OSCT Surveillance Panel meeting was called to order by D. Bell at 10:00 am on 5/8/2024.

A motion made by D. Bell and 2nd by J. Carowick was unanimously approved with 12 votes to approve the previous OSCT Surveillance Panel minutes from meetings held on 2/7/2024, 3/27/2024, and 4/2/2024.

The OSCT membership voting list was reviewed. The 14 voting members as listed on the attached attendance sheet is a good representation of OEM, oil companies, additive companies, Army, and testing facilities, thus no changes were recommended.

Lab C has 3 baths and Lab G has 1 bath for testing PA, FL and NI with no bath issues.

The inventory of elastomer batches at Test Engineering Institute (TEI) was reviewed as follows:

Polyacrylate (PA):

- PA369 TEI has 49 approved slabs, but 20 on hold by TEI in case additional testing is requested. A motion from the 4/2/2027 Panel meeting was to review additional testing on PA369 when available since PA369 was higher than all other prior batches for %volume change and % elongation change in only TMC 169. The additional data only included two more data points; one in each reference oil. The added data did not significantly change the results from previous analysis. The new data can be found in the Appendix.
- PA370 259 unapproved slabs at TEI, but both labs submitted qualification data for review.

		testkey	ltmslab	val	ind	ltmsdate	CHART	PVCA	SAHA	PELA	EBC	PELAYI	SAHAYI	PVCAYI
171	Approval Run	183489-OSCT	G	NI	171	20240408	N	-0.3	3.4	35.8	PA370	0.938239	1.709903	-0.19343
	Accompanying Ref	183498-OSCT	G	AC	169	20240408	Y	13	-10.9	55.2	PA368	0.274977	1.80212	-0.06993
	Approval Run	182392-OSCT	C	NI	171	20240408	N	0.1	-0.2	23.1	PA370	-0.17433	-0.22766	0.171533
	Accompanying Ref	182380-OSCT	C	AC	169	20240408	Y	12.9	-12.5	16.8	PA368	-1.48488	1.236749	-0.13986
169	Approval Run	182379-OSCT	C	NI	169	20240408	N	13.2	-15.8	51.9	PA370	0.12374	0.070671	0.06993
	Accompanying Ref	182380-OSCT	C	AC	169	20240408	Y	12.9	-12.5	16.8	PA368	-1.48488	1.236749	-0.13986
	Approval Run	183497-OSCT	G	NI	169	20240314	N	13.8	-16.7	79.6	PA370	1.393217	-0.24735	0.48951
	Accompanying Ref	183496-OSCT	G	AC	169	20240314	Y	13.8	-15.2	73	PA369	1.090742	0.282686	0.48951

The plots of the PA370 data can be found in the Appendix. The qualification data from both labs is within the PA limits in both reference oils with results comparable to prior batches. A motion made by B. Grinfield and 2nd by S. Carr to effective immediately approve PA370 for ASTM D5662 testing was unanimously approved with 14 votes. TEI was instructed to release PA370 for sale.

- PA371 TEI has 259 unapproved slabs that were sent out 5/2/2024 to both labs for qualification testing.

Since the PA369 data was more variable in only TMC169 and it is 14 years old, well beyond the newly recommended 5 year shelf life, some concerns were raised regarding the quality of it. TMC169 cannot be reblended since the base oils are no longer available, but it can be replaced with same additive. A motion made by D. Bell and 2nd by T. Muransky was unanimously approved with 14 votes to have the TMC request the supplier of TMC169 to blend a replacement reference oil for the TMC.

Fluoroelastomer (FL):

- FL417 TEI has 84 approved slabs
- FL418 TEI has 182 unapproved slabs, but both labs submitted qualification data to TMC to review.

		testkey	lmslab	val	ind	lmsdate	PVCA	SAHA	PELA	EBC	PELAYI	SAHAYI	PVCAYI
171	Approval Run	182393-OSCT	C	NI	171	20240415	1.4	1.8	-47	FL418	0.160	0.489	-0.639
	Accompanying Ref	182382-OSCT	C	AC	169	20240415	4.3	-1.4	-44.2	FL417	-0.672	-1.154	-0.141
	Approval Run	183490-OSCT	G	NI	171	20240408	3.7	1.1	-51.1	FL418	-0.530	0.068	1.276
	Accompanying Ref	187193-OSCT	G	AC	171	20240408	2.2	3	-54.5	FL417	-1.102	1.210	0.027
169	Approval Run	186969-OSCT	C	NI	169	20240415	4.2	-1	-46.9	FL418	-1.059	-0.846	-0.282
	Accompanying Ref	182382-OSCT	C	AC	169	20240415	4.3	-1.4	-44.2	FL417	-0.672	-1.154	-0.141
	Approval Run	183499-OSCT	G	NI	169	20240408	4.6	2.2	-44.3	FL418	-0.687	1.615	0.282
	Accompanying Ref	187193-OSCT	G	AC	171	20240408	2.2	3	-54.5	FL417	-1.102	1.210	0.027

The plots of the FL418 data can be found in the Appendix. The qualification data from both labs is within the FL limits in both reference oils with results comparable to prior batches. A motion made by S. Carr and 2nd by B. Grinfield to effectively immediately approve FL418 for ASTM D5662 testing was unanimously approved with 14 votes. TEI was instructed to release FL418 for sale.

Nitrile (NI):

- NI354 122 approved slabs
- NI355 278 unapproved slabs, sent to both labs on 1/17/20224 for qualification testing

The supplier's Certificate of Analysis (CofA) data for the past six of each elastomer was reviewed with the Panel. It was decided that TEI should make CofA data available to the Chairman for each new lot received so that it can be reviewed with the Panel.

A motion made by D. Bell and 2nd by T. Muransky was unanimously approved with 14 votes to adjourn the OSCT Panel at 10:44 am.

Respectfully submitted,


Donald R. Bell/Chairman

Appendix

Oil Seal Compatibility Surveillance Panel

Date: May 8, 2024

Initials	V = voting NV = Non-voting	Name	Company & Address	e-Mail	Phone #
NA	V	Nick Ariemma	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	nick.ariemma@lubrizol.com	
RB	V	Rob Banas	ExxonMobil Technology and Engineering Co. 535 Thomas Lane Waleska, GA 30183	rob.banas@exxonmobil.com	770-833-5920
DB	V	Dylan Beck	TMC 203 Armstrong Dr. Freeport, PA	djb@astmtmc.org	412-365-1037
DB	V	Don Bell (Chairman)	Afton Chemical 500 Spring St. Richmond, VA 23219	don.bell@aftonchemical.com	804-788-6332
TB	NV	Tobias Bender	Fuchs Lubricants	tobias.bender@fuchs.com	708-737-1681
MB	NV	Maxim Burgman	Fuchs Lubricants	maxim.burgman@fuchs.com	248-846-3120
BC	NV	Bob Campbell	Afton Chemical	bob.campbell@aftonchemical.com	
MC	NV	Margaret Caridi	BASF 500 White Plains Rd. Tarrytown, NY 10591	margaret.caridi@basf.com	845-216-5535
JAC	V	Jessica Carowick	Cummins-Meritor 2135 W. Maple Rd. Troy, MI 48084	jessica.carowick@cummins.com	248-872-3055
	V	Steve Carr	Dana	steve.carr@dana.com	
	NV	Michael Charron	SWRI	michael.charron@swri.org	
AC	V	Allen Comfort	US Army CCDC-GVSC RDTA- DP/MS110 6501 E. 11 Mile Rd. Warren, MI 48307- 5000	allen.s.comfort.civ@army.mil	586-282-4225

	NV	Hector DeLaFuente	Chevron Oronite 4502 Cenerview Suite 210 San Antonio, TX 78228	hdelafuente@chevron.com	210-867-8612
<i>AG</i>	NV	Arjun Goyal	BASF 500 White Plains Rd. Tarrytown, NY 10591	arjun.goyal@basf.com	914-330-4362
<i>BG</i>	V	Becky Grinfield	SWRI	becky.grinfield@swri.org	
<i>KG</i>	V	Kimberly Gutierrez	Intertek Automotive Research 5404 Bandera Rd. San Antonio, TX 78238	kimberly.hernandez@intertek.com	
	NV	Hyeok Hahn	Chevron	hyeok.hahn@chevron.com	408-507-2848
	NV	Dan Horvath	Afton Chemical 2000 Town Center Southfield, MI 48075	dan.horvath@aftonchemical.com	
	NV	John Huron	Chevron Oronite 4502 Cenerview Suite 210 San Antonio, TX 78228	john.huron@chevron.com	210-731-5609
<i>AG</i>	NV	Alexander Jackson	Oronite	alexmjack@chevron.com	830-865-6771
	NV	Brad Jordan	Shell	brad.jordan@shell.com	804-516-1238
<i>CK</i>	V	Clayton Knight	Test Engineering Institute 12718 Cimarron Path San Antonio, TX 78249	cknight@tei-net.com	210-690-1958
	NV	Dan Lanctot	Test Engineering Institute 12718 Cimarron Path San Antonio, TX 78249	dlanctot@tei-net.com	
<i>AL</i>	NV	Anthony Lange	Intertek Automotive Research 5404 Bandera Rd. San Antonio, TX 78238	anthony.lange@intertek.com	210-634-1103
<i>MP</i>	NV	Mahdi M-Pour	Tribodens		
<i>JM</i>	V	Jeanelle Morris	Navistar 2701 Navistar Dr. Lisle, IL 60532	jeanelle.morris@navistar.com	

EF

NV

Enia Fry

Daimler Truck NA

enia.fry@daimlerttruck.com 313-802-2835

DM	V	Donna Mosher	BASF 100 Park Ave. Florham Park, NJ	donna.mosher@basf.com	269-217-1715
OL	NV	Caroline Mueller	SWRI	caroline.louis@swri.org	210-522-2671
JM	V	Troy Muransky	AAM 1840 Holbrook Detroit, MI 48212	troy.muransky@aam.com	
	NV	Suzanne Neal	Daimler Trucks/Detroit Diesel	suzanne.neal@daimler.com	
	NV	Michael Portell	Intertek	michael.portell@intertek.com	210-896-8012
	NV	Kevin Rettmann	Chevron Oronite 4502 Cenerview Suite 210 San Antonio, TX 78228	kevin.rettmann@chevron.com	
MS	NV	Matt Sangpeal	Afton Chemical Ashland Technical Center 11289 Central Drive Ashland, VA 23005	matt.sangpeal@aftonchemical.com	804-788-5364
ES	NV	Eric Sattler	US Army CCDC-GVSC RDTA- DP/MS110 6501 E. 11 Mile Rd. Warren, MI 48307- 5000	eric.sattler.civ@army.mil	
NS	NV	Nick Schaup	Lubrizol 29400 Lakeland Blvd. Wickliffe, OH 44092	nick.schaup@lubrizol.com	
	NV	Addison Schweitzer	Shell	addison.schweitzer@shell.com	
	NV	Dale Smith	Intertek		
	NV	Dairene Uy	Shell	dairene.uy@shell.com	
RCW	V	Rebecca Warden	Oronite	rebecca.warden@chevron.com	
	NV	Fatih Yucebilgic	Fuchs Lubricants	fatih.yucbilgic@fuchs.com	708-539-0252
	NV	George Zarins	AAM	george.zarins@aam.com	586-854-8810
	NV	Khaled Zreik	GM	khaled.zreik@gm.com	248-977-9214
AZ	NV	Amy Zyski	Dana Inc. 3939 Technology Dr. Maumee, OH 43537	amy.zyski@dana.com	419-887-3432

HC
WV

NV
NV

Hailey Catania
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cummins-meritor
W. Maple Rd Troy, MI
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Hailey.Catania@cummins.com
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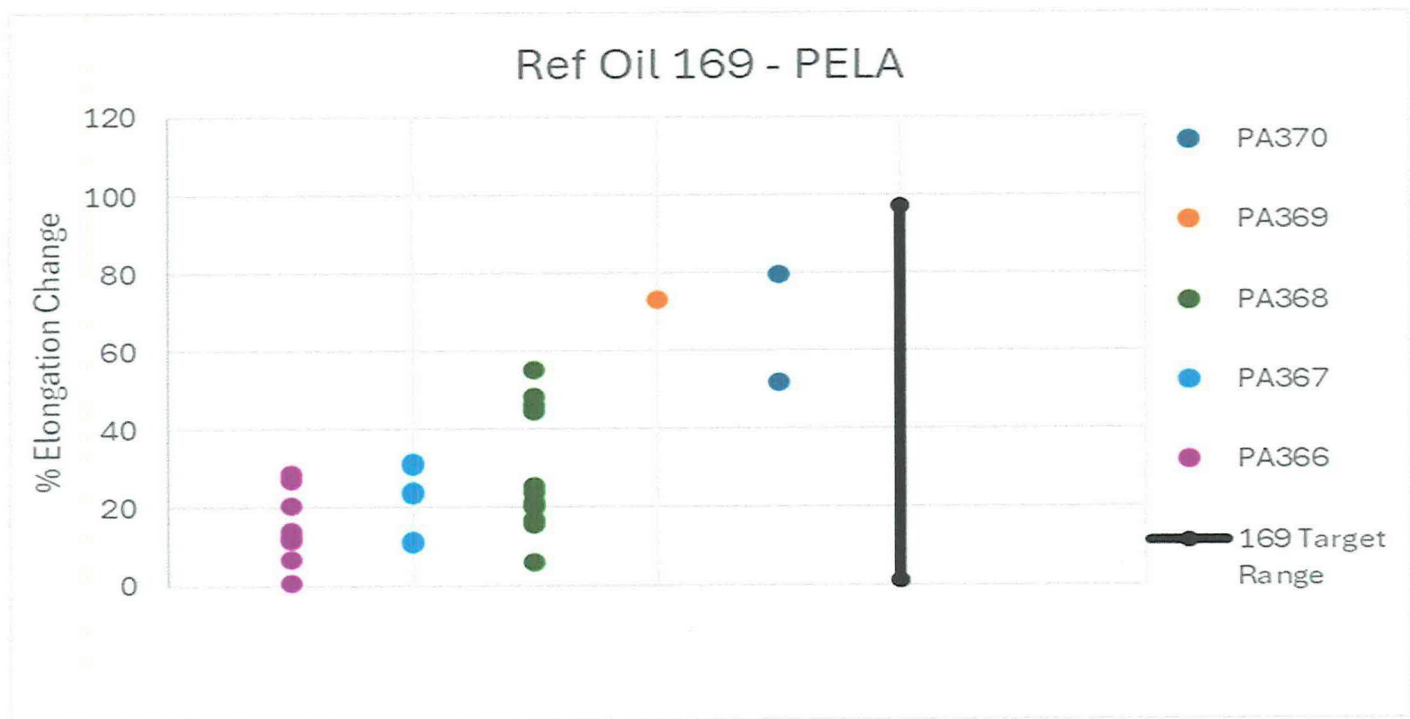
PA370 Approval Runs

		testkey	ltmslab	val	ind	ltmsdate	CHART	PVCA	SAHA	PELA	EBC	PELAYI	SAHAYI	PVCAYI
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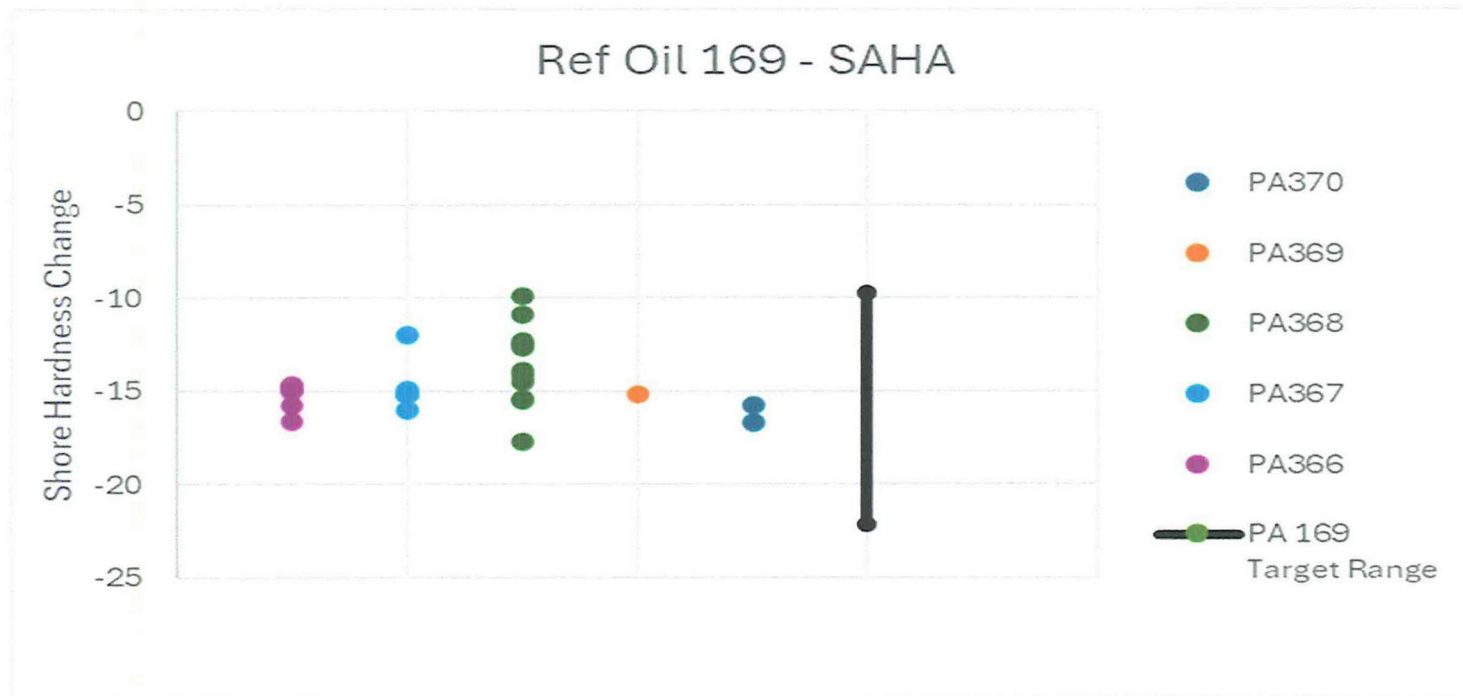
Y(i) limits +/- 2.200



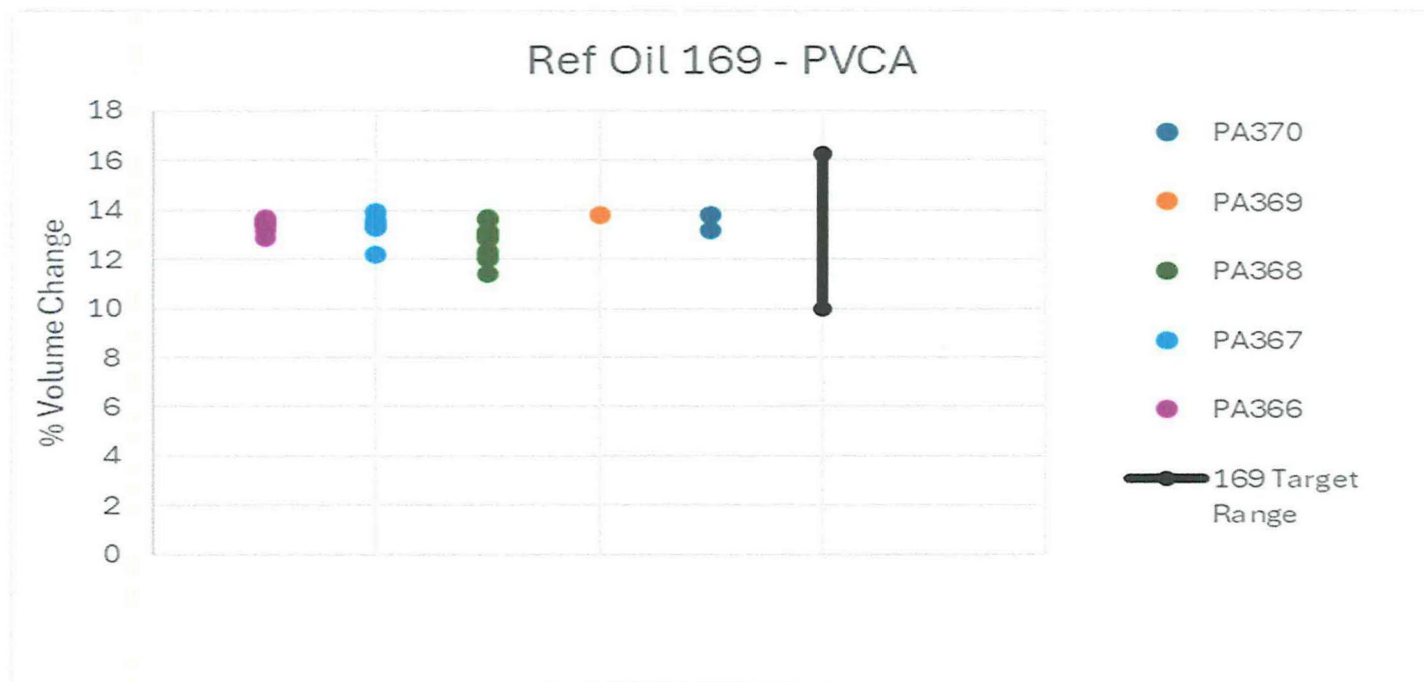
Reference Oil 169 - PELA



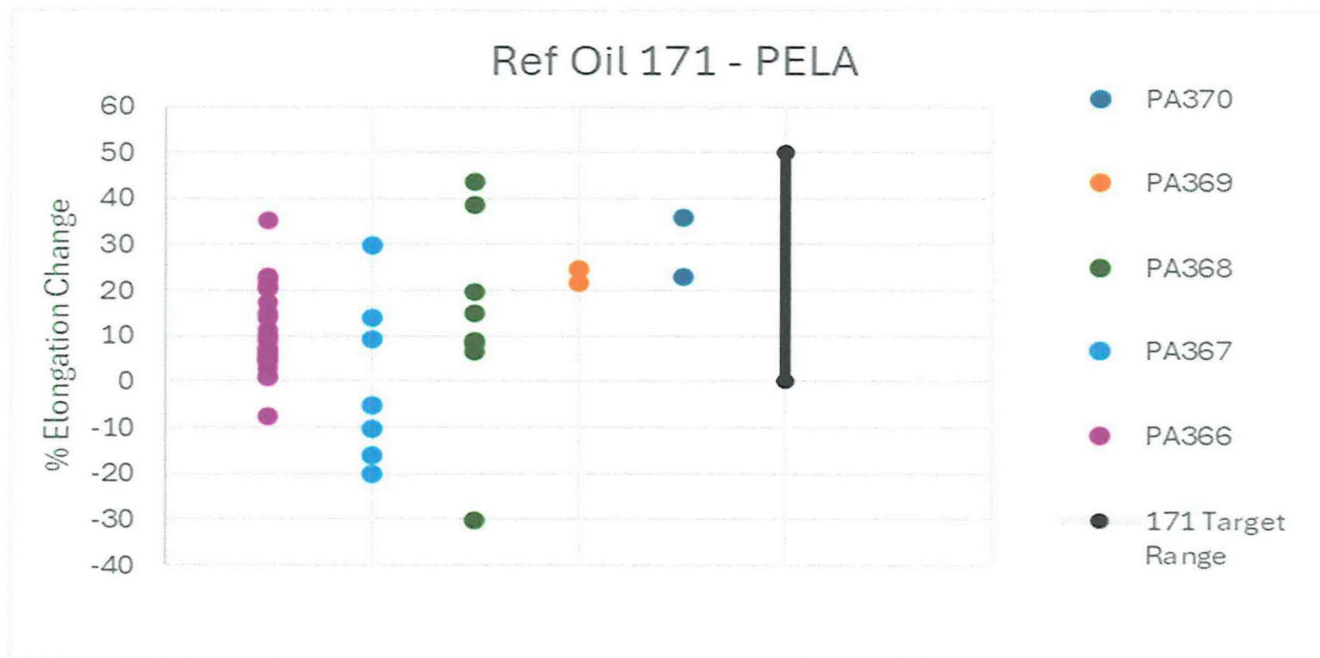
Reference Oil 169 - SAHA



Reference Oil 169 - PVCA



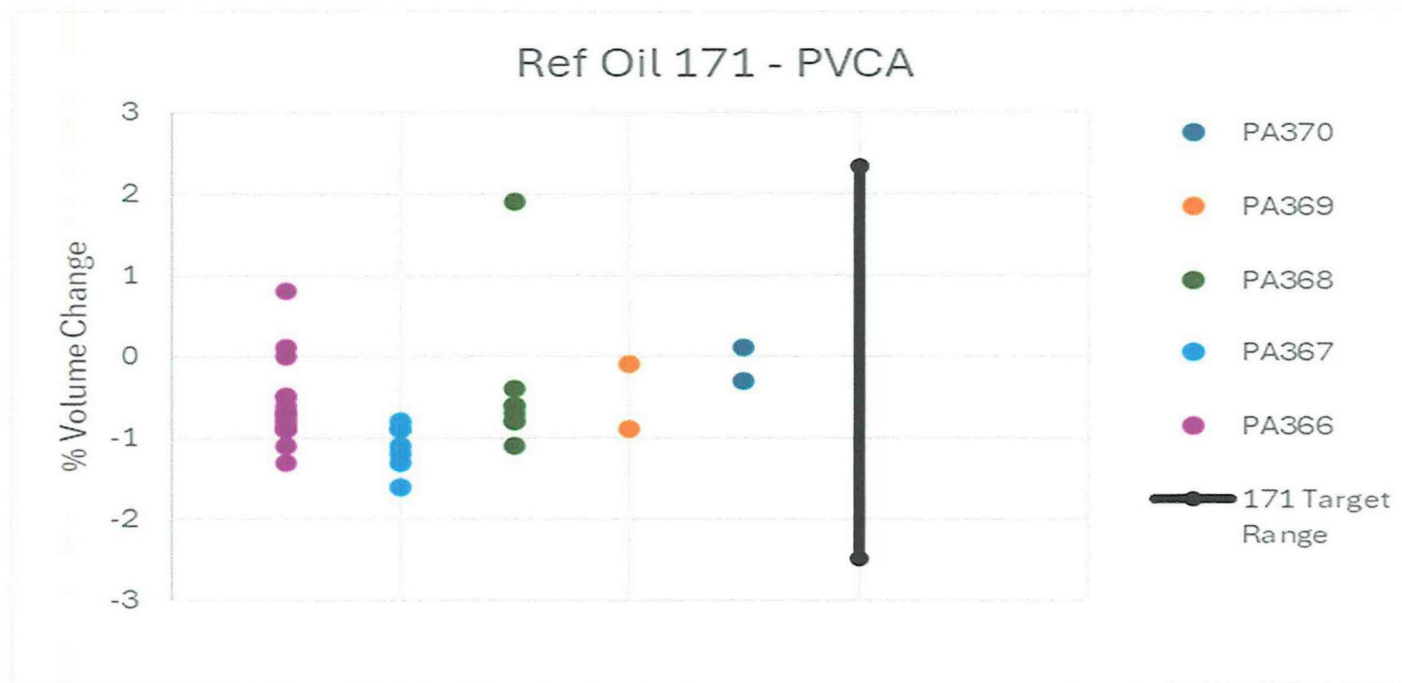
Reference Oil 171- PELA



Reference Oil 171 - SAHA



Reference Oil 171 - PVCA

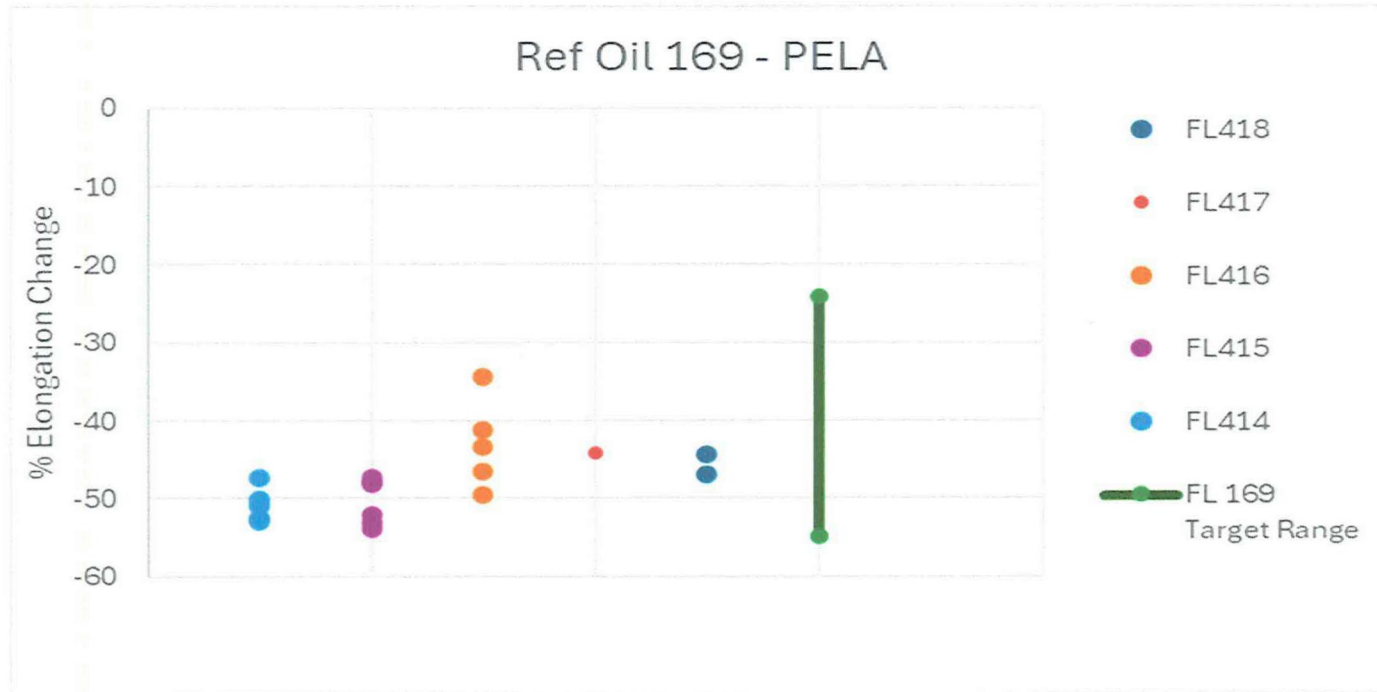


FL418 Approval Runs

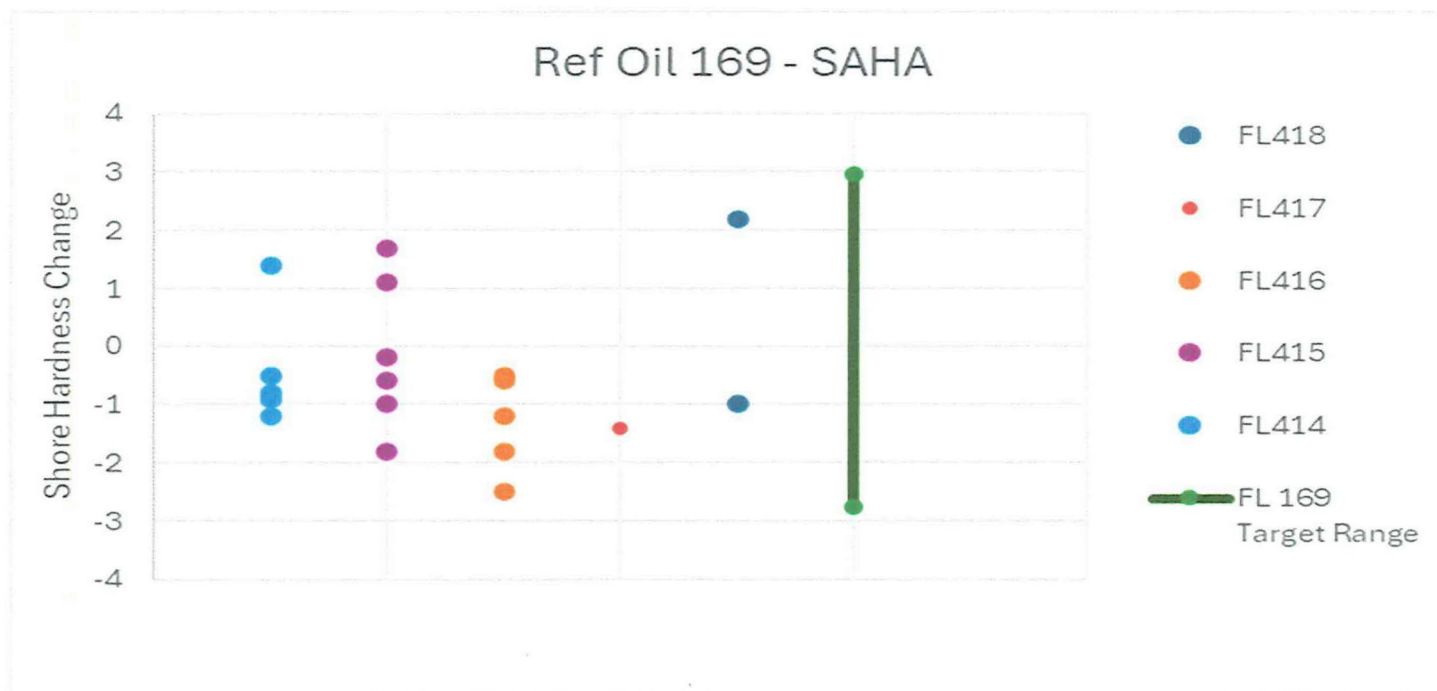
		testkey	ltmslab	val	ind	ltmsdate	PVCA	SAHA	PELA	EBC	PELAYI	SAHAYI	PVCAYI
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	Accompanying Ref	182382-OSCT	C	AC	169	20240415	4.3	-1.4	-44.2	FL417	-0.672	-1.154	-0.141
	Approval Run	183499-OSCT	G	NI	169	20240408	4.6	2.2	-44.3	FL418	-0.687	1.615	0.282
	Accompanying Ref	187193-OSCT	G	AC	171	20240408	2.2	3	-54.5	FL417	-1.102	1.210	0.027

Y(i) limits +/- 2.200

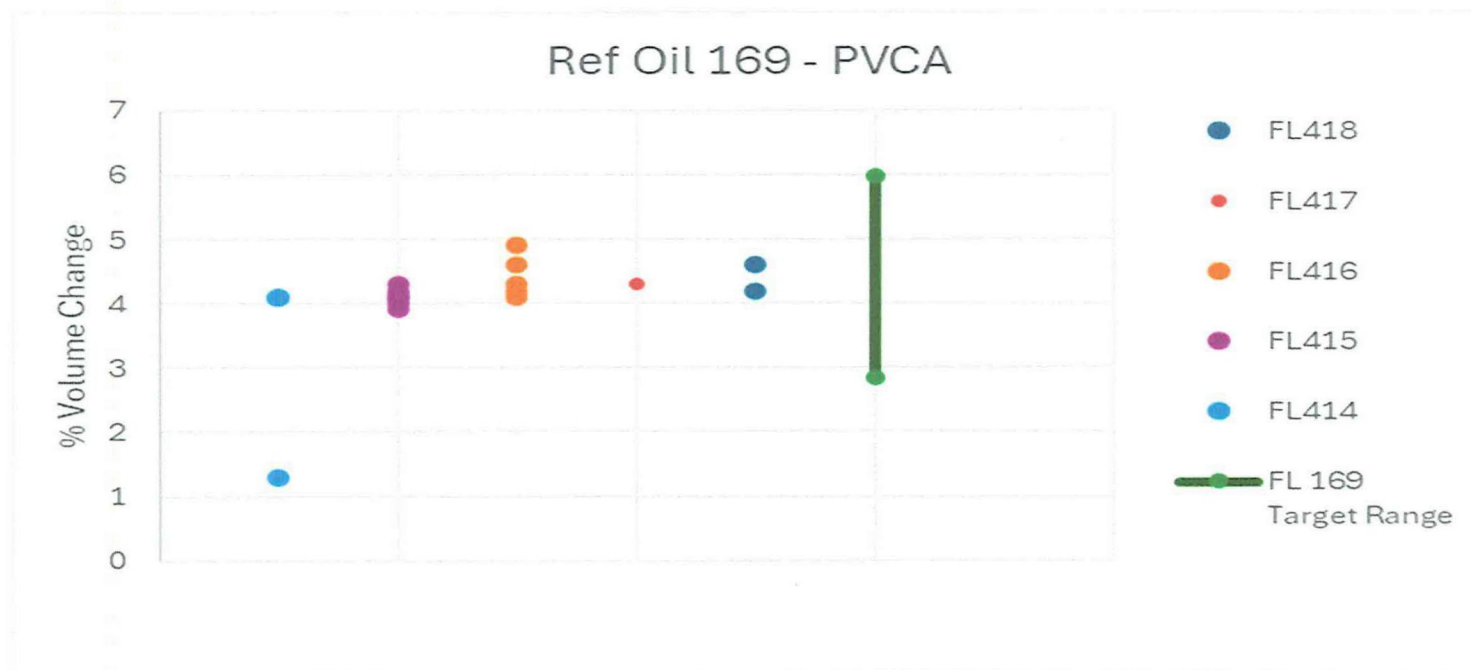
Reference Oil 169 - PELA



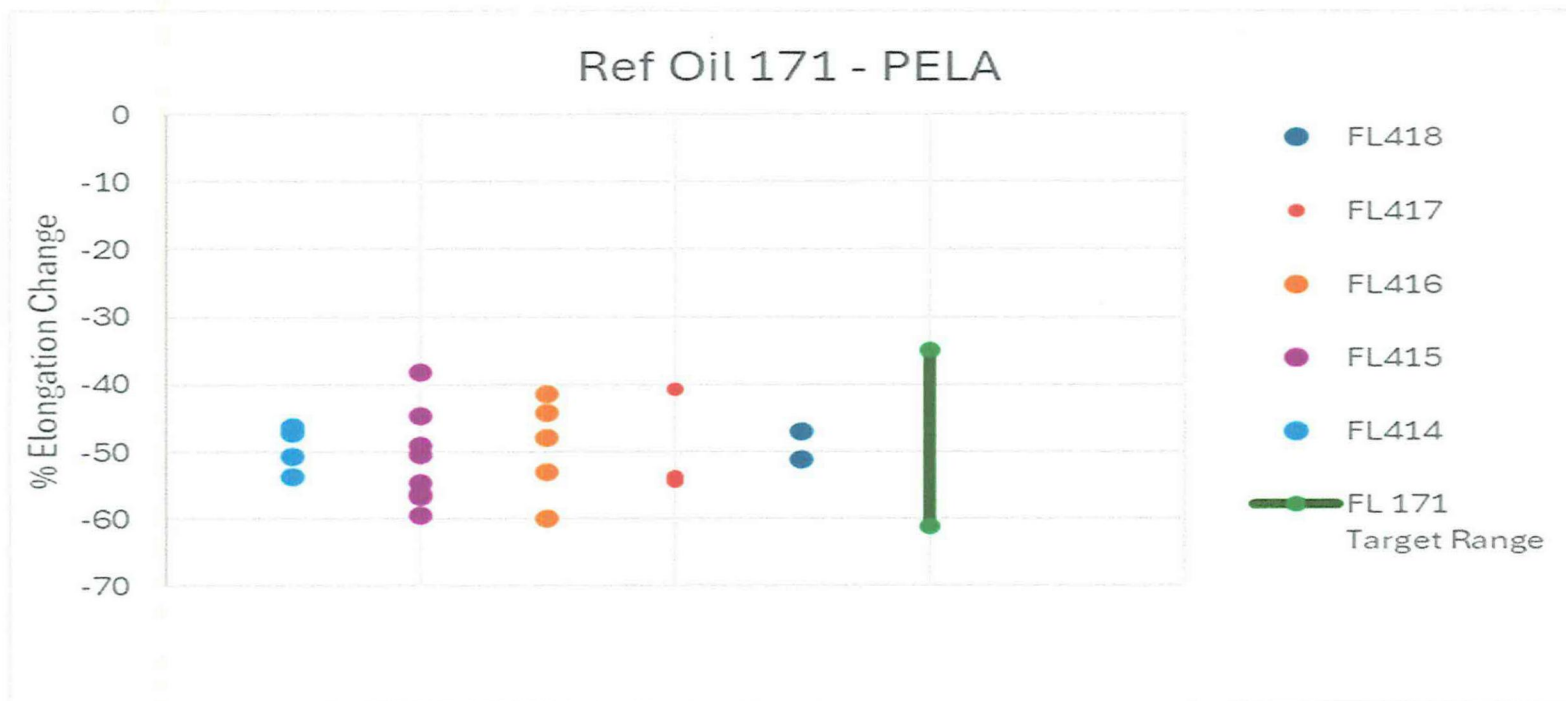
Reference Oil 169 - SAHA



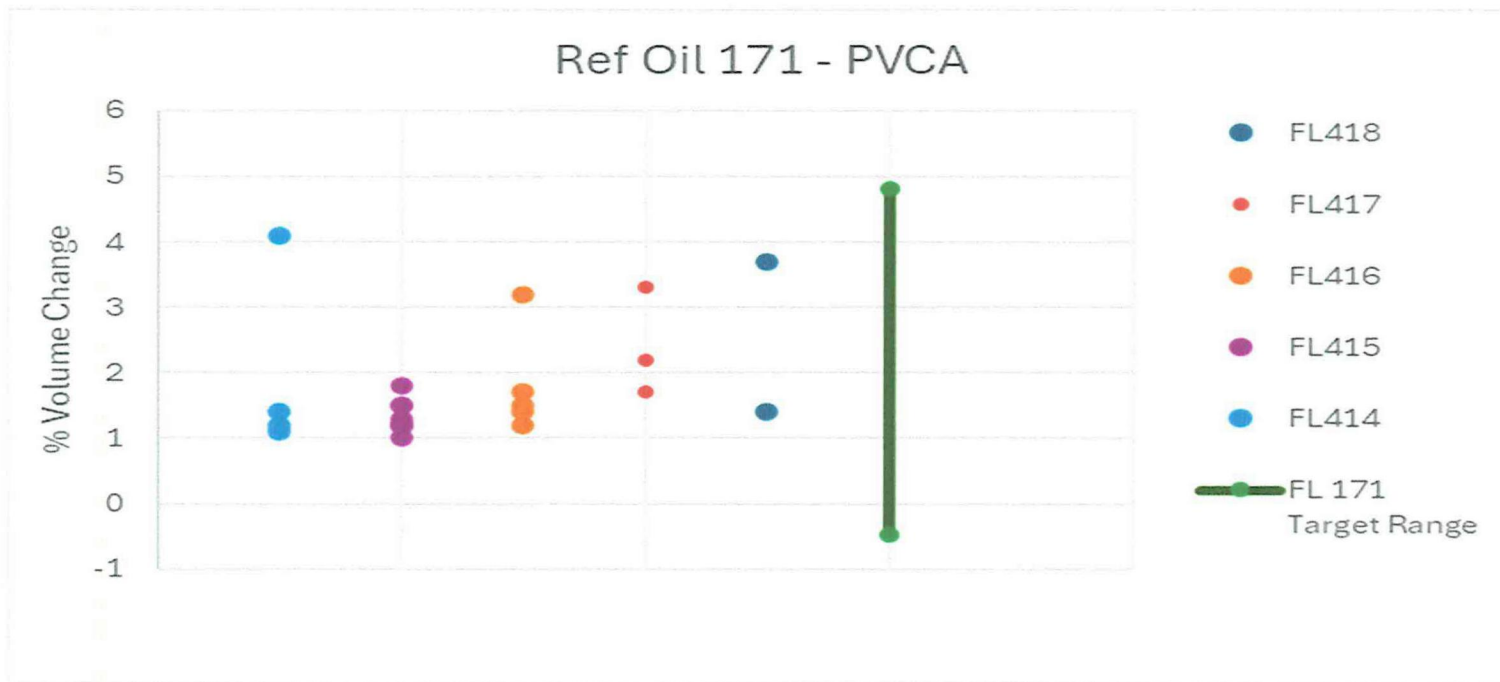
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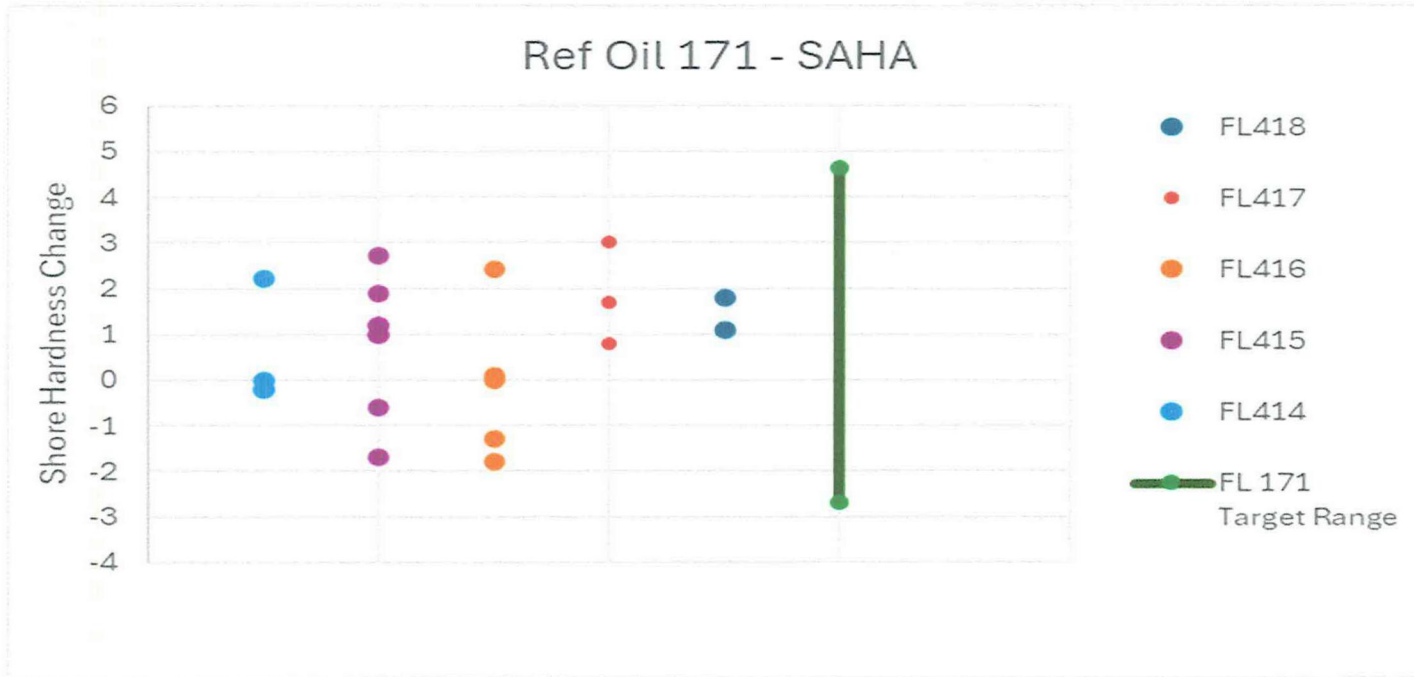
Reference Oil 171- PELA



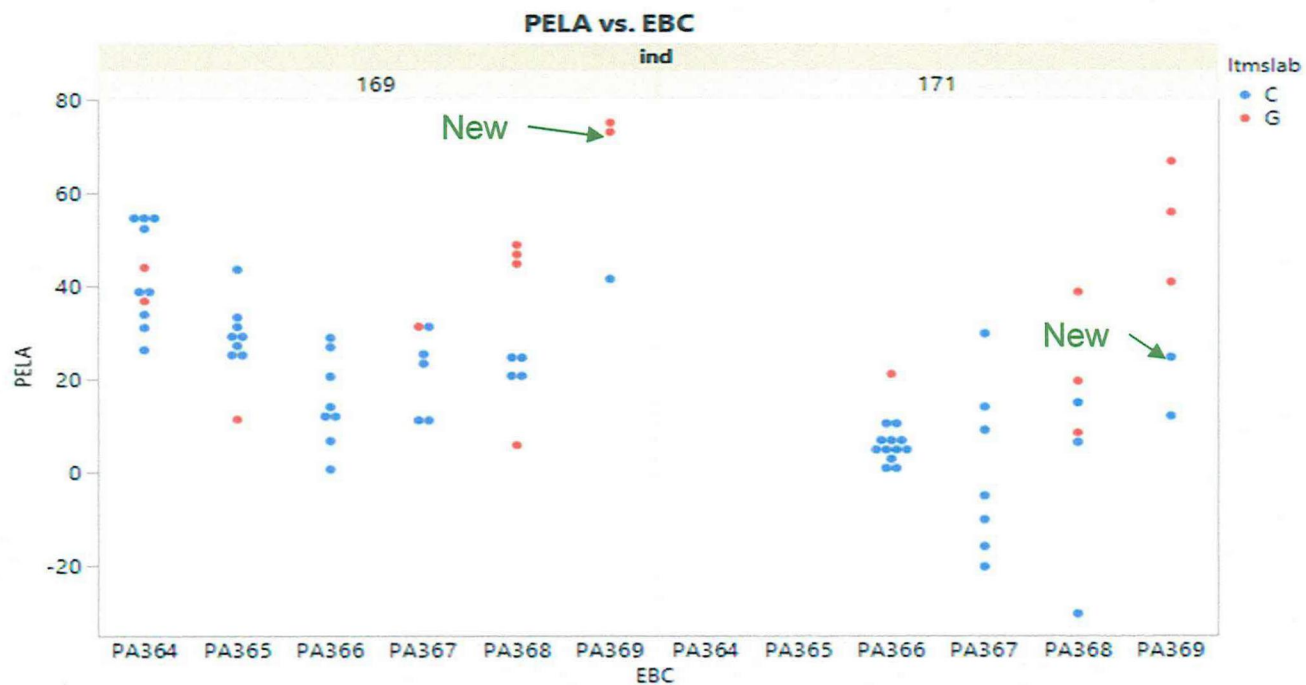
Reference Oil 171 - PVCA



Reference Oil 171 - SAHA

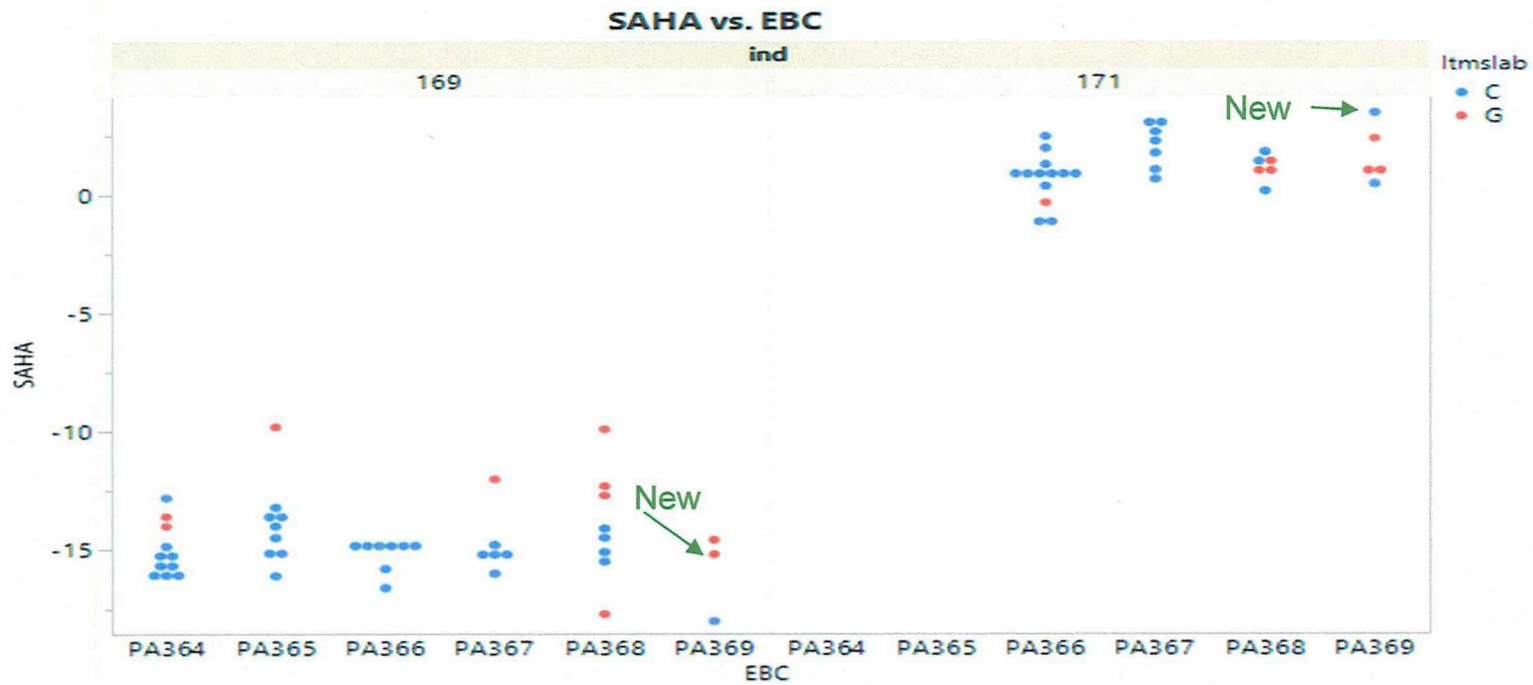


PELA on PA Elastomers



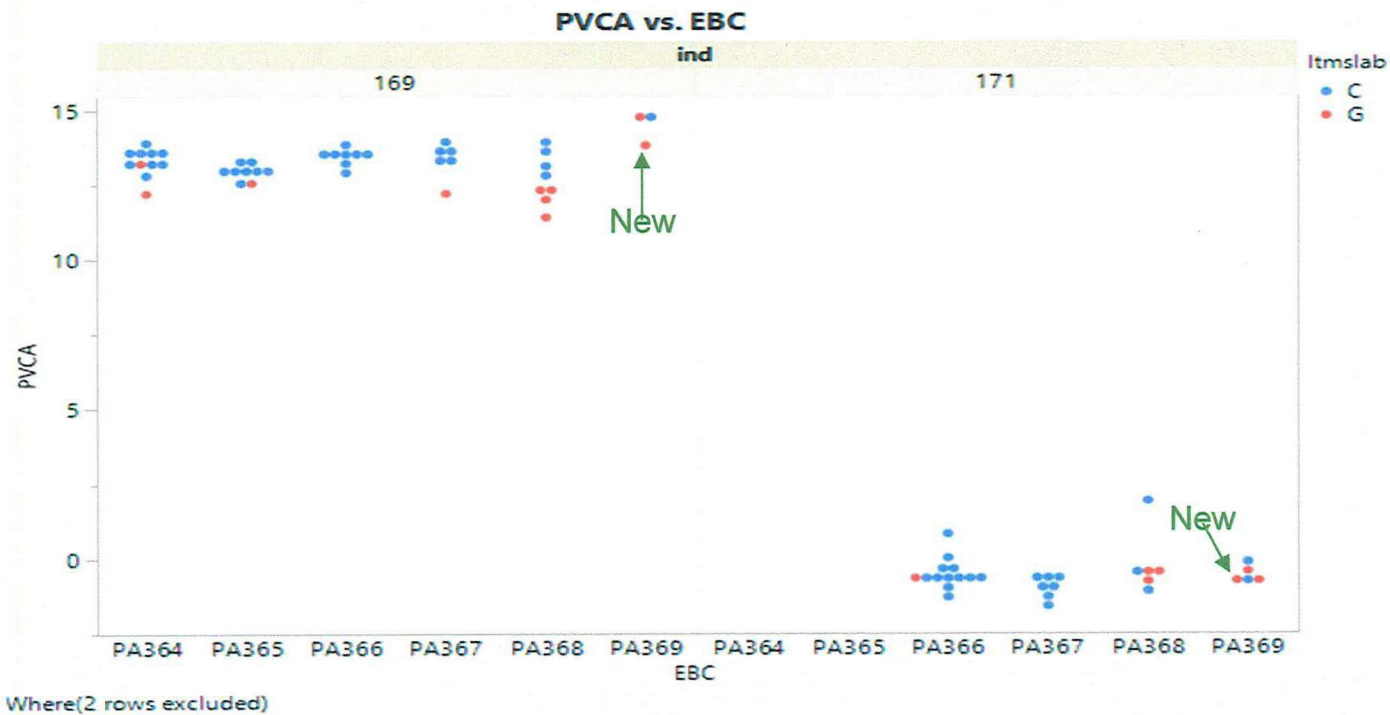
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SAHA on PA Elastomers



Where(2 rows excluded)

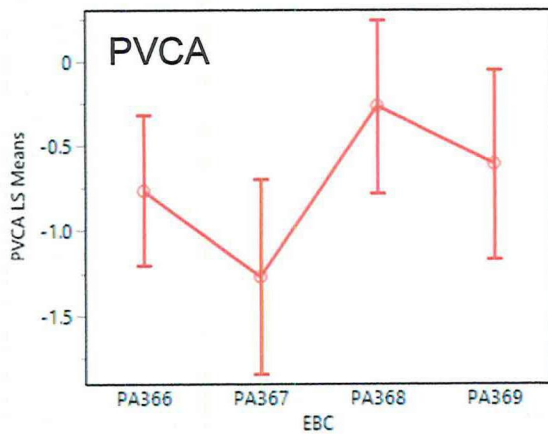
PVCA on PA Elastomers



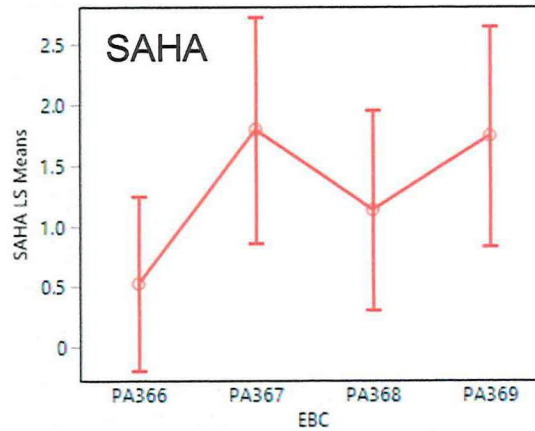
Ref Oil 171

- PVCA and SAHA: PA369 is not significantly different from any other batch
- PELA: PA369 is significantly higher than PA367 and PA368

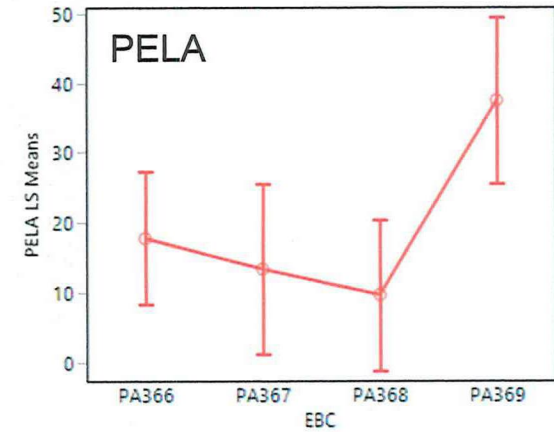
Least Squares Means Plot



Least Squares Means Plot



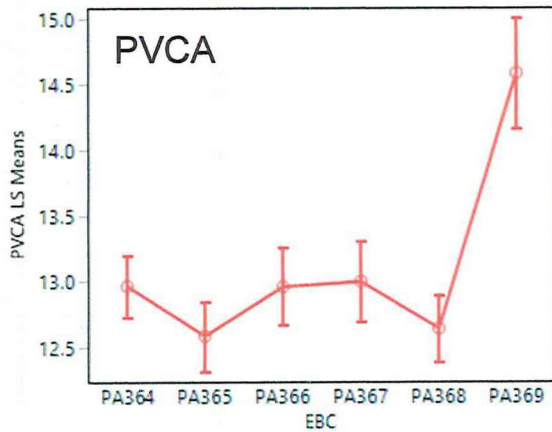
Least Squares Means Plot



Ref Oil 169

- ▶ PVCA: PA369 is significantly higher than all other batches
- ▶ SAHA: PA369 is trending down, but is not significantly different from the last 3 batches
- ▶ PELA: PA369 is significantly higher than the last 4 batches

Least Squares Means Plot



Least Squares Means Plot



Least Squares Means Plot

