



Test Monitoring Center

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<http://astmtmc.cmu.edu>
412-365-1000

MEMORANDUM: 17-011

DATE: May 9, 2017

TO: Mike Birke,
Chairman, Engine Oil Elastomer Compatibility Surveillance Panel

FROM: Michael T. Kasimirsky *Michael T. Kasimirsky*

SUBJECT: EOEC Testing from October 1, 2016 through March 31, 2017

A total of 378 EOEC tests were reported from 5 labs to the Test Monitoring Center during the period from October 1, 2016 through March 31, 2017.

Please find attached a summary of testing activity this period.

MTK/mtk/mem17-011.mtk.doc

cc: Frank Farber

Jeff Clark

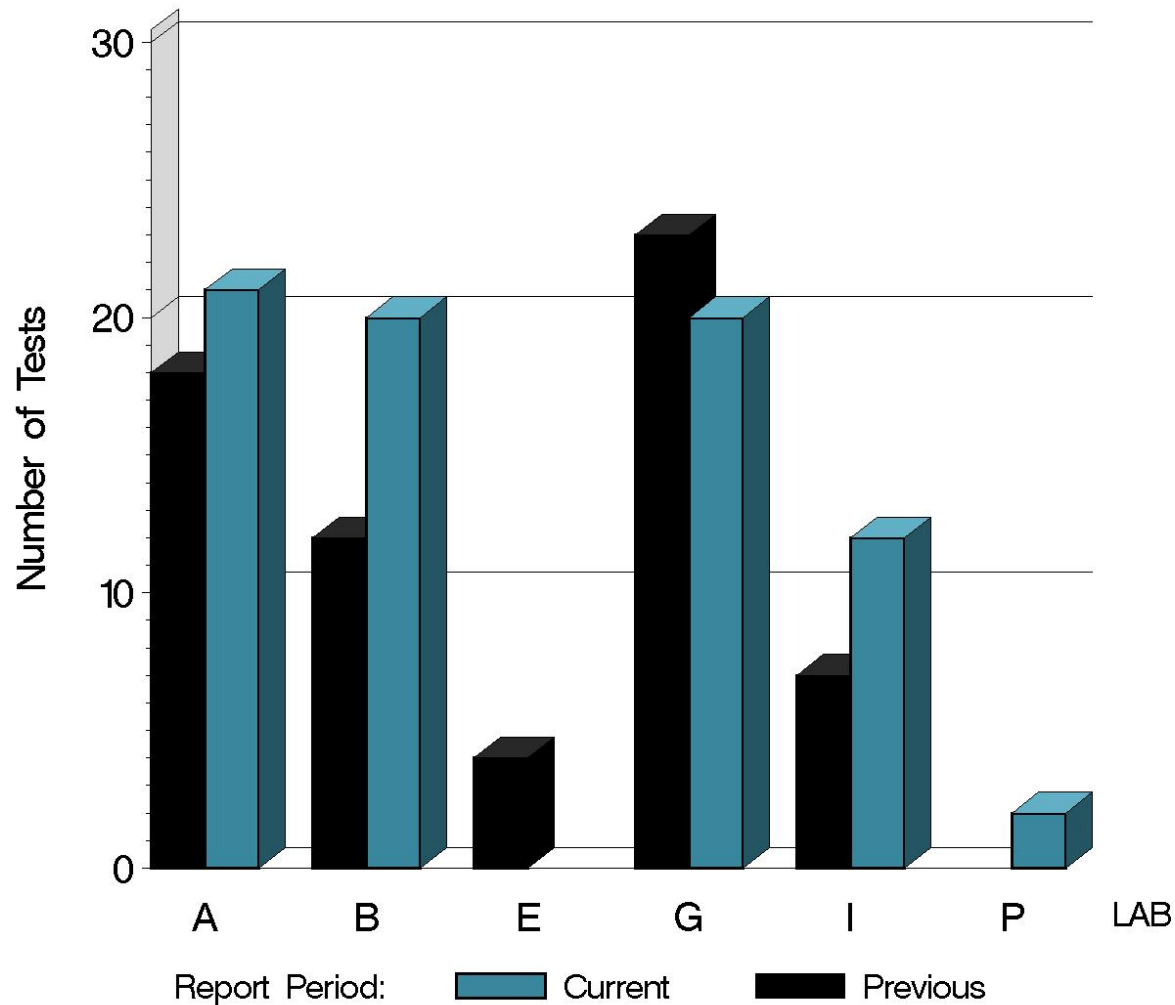
EOEC Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/bench/eoec/semiannualreports/eoec-04-2017.pdf>

Distribution: email

EOEC (D 7216)

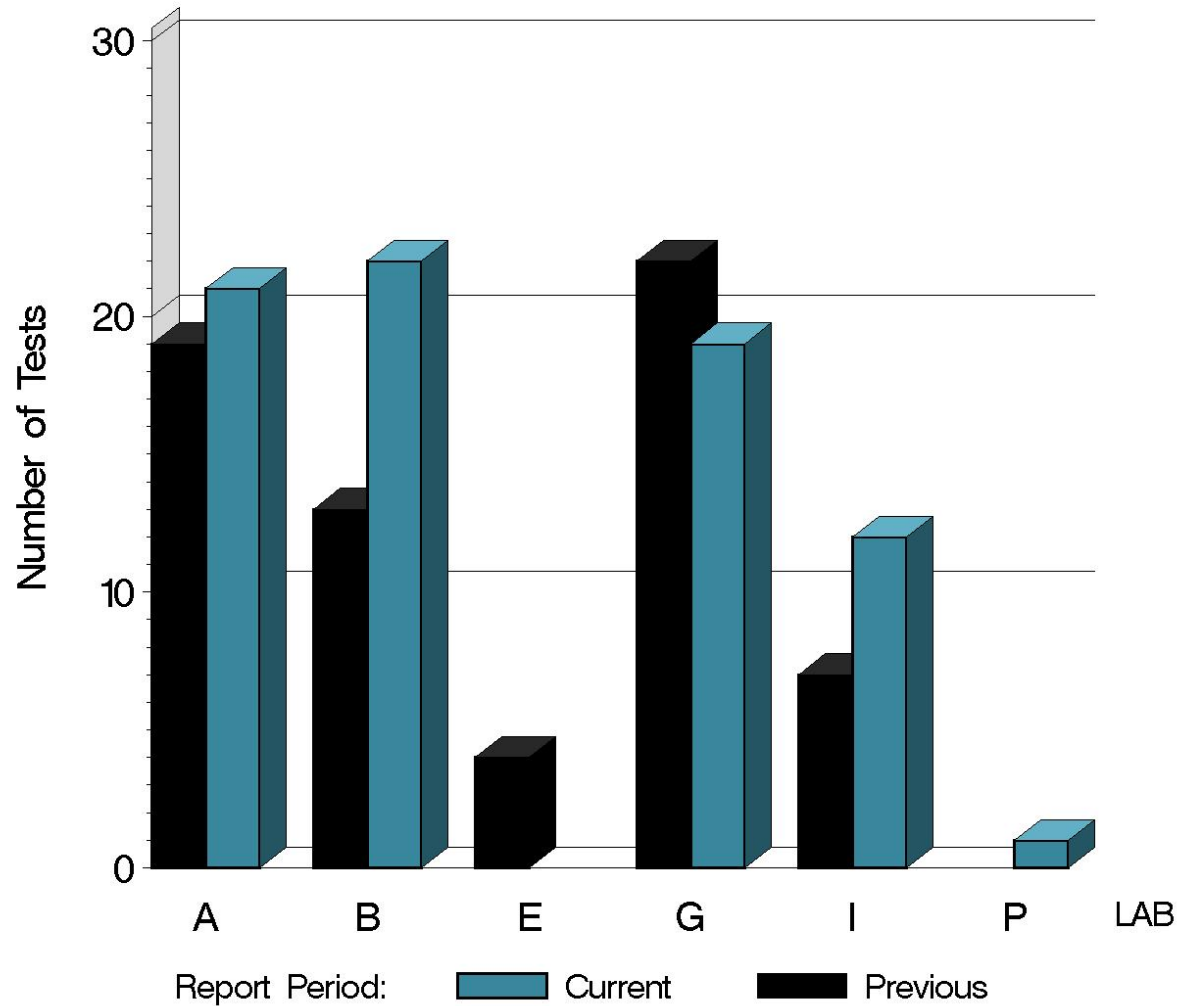
NUMBER OF FLUOROELASTOMER TESTS
REPORTED BY LAB AND REPORT PERIOD



10:46:52 09MAY2017

EOEC (D 7216)

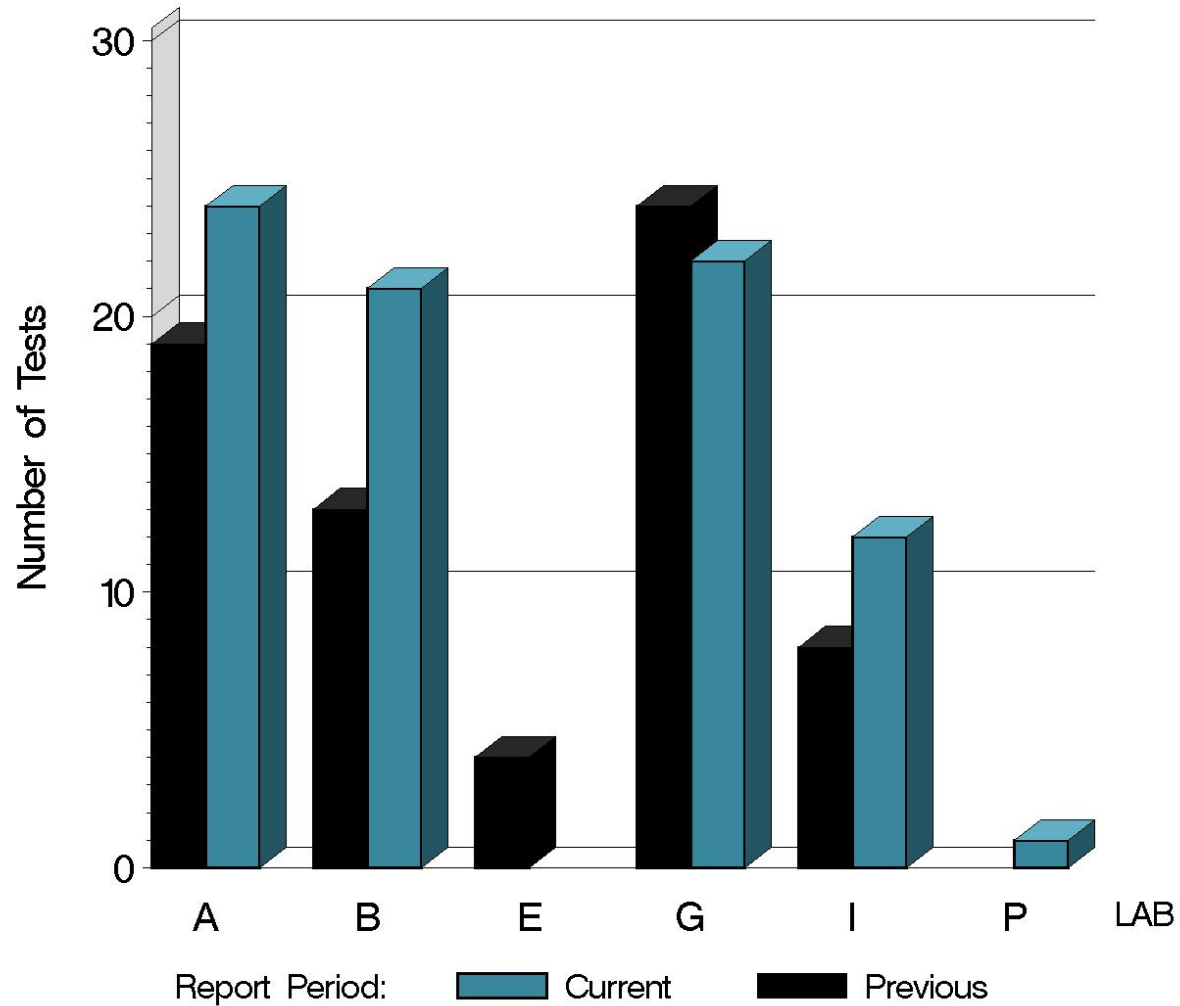
NUMBER OF NITRILE TESTS REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

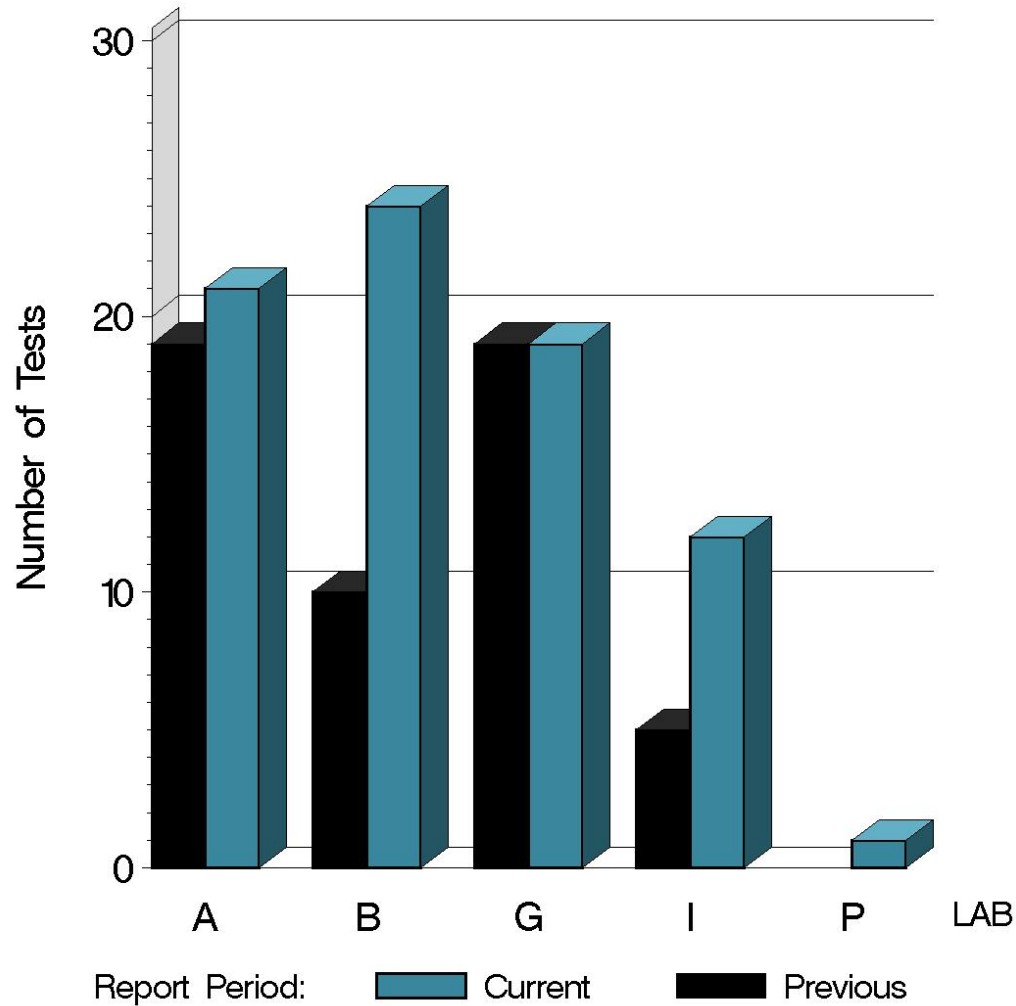
NUMBER OF POLYACRYLATE TESTS REPORTED BY LAB AND REPORT PERIOD



10:46:52 09MAY2017

EOEC (D 7216)

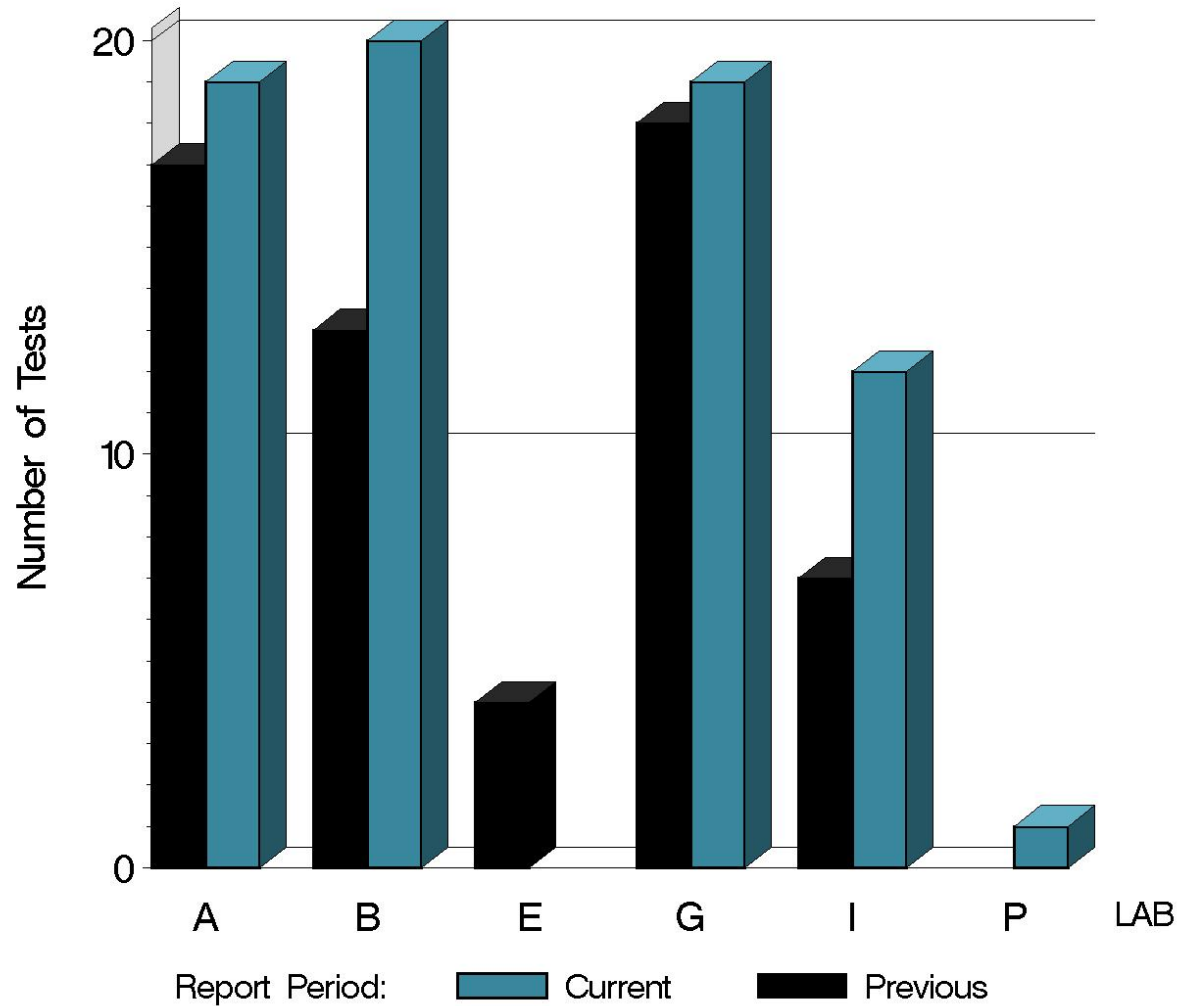
NUMBER OF SILICONE TESTS REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

NUMBER OF VAMAC TESTS
REPORTED BY LAB AND REPORT PERIOD



10:46:52 09MAY2017

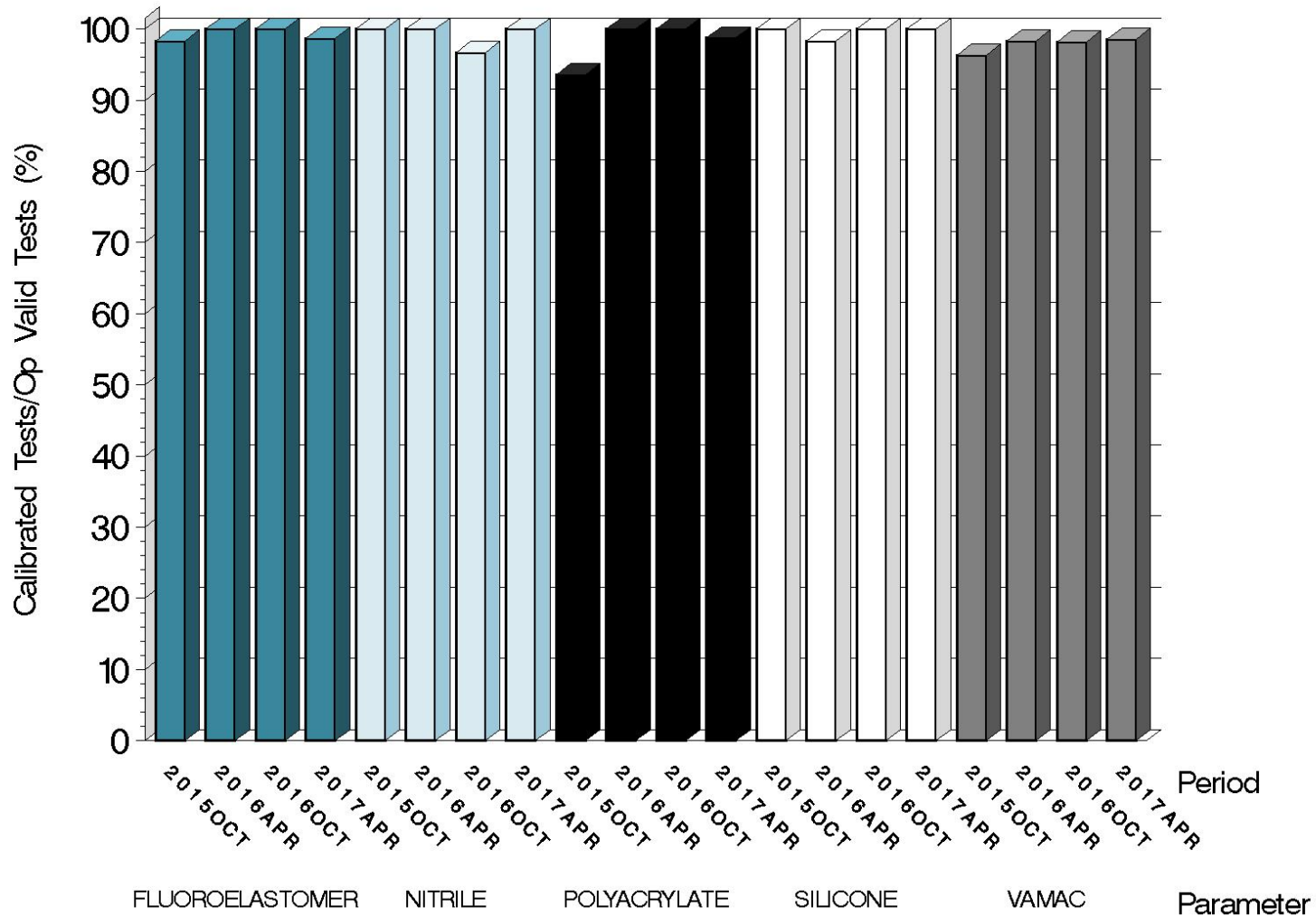
EOEC (D 7216)

Test Distribution by Oil and Validity

		Fluoroelastomer	Nitrile	Polyacrylate	Silicone	Vamac	This Period	Last Period
Accepted for Calibration	AC	73	75	78	77	69	372	286
Rejected	OC	1	0	1	0	1	3	3
Information Run	NI	0	0	0	0	0	0	15
Invalid Information Run	LI	0	0	0	0	0	0	1
Operationally Invalid (lab)	LC	0	0	0	0	0	0	1
Operationally Invalid (lab/TMC)	RC	0	0	0	0	0	0	0
Aborted Calibration	XC	1	0	1	0	1	3	3
Total		75	75	80	77	71	378	309

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OPERATIONALLY VALID TESTS
MEETING ACCEPTANCE CRITERIA



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LOST TESTS PER START BY LAB AND ELASTOMER TYPE

Lab	Fluoroelastomer			Nitrile			Polyacrylate			Silicone			Vamac			Total		
	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%	Lost	Starts	%
A	0	21	0	0	21	0	1	24	4.2	0	21	0	0	19	0	1	106	0.9
B	0	20	0	0	22	0	0	21	0	0	24	0	0	20	0	0	107	0
E	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	0	0
G	1	20	5.0	0	19	0	0	22	0	0	19	0	1	19	5.3	2	99	2.0
I	0	12	0	0	12	0	0	12	0	0	12	0	0	12	0	0	60	0
P	0	2	0	0	1	0	0	1	0	0	1	0	0	1	0	0	6	0
Total	1	75	6.7	0	75	0	1	80	1.3	0	77	0	1	71	1.4	3	378	0.8

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CAUSES FOR LOST TESTS

Lab	Cause	Elastomer					Validity			Loss Rate		
		Fluoroelastomer	Nitrile	Polyacrylate	Silicone	VAMAC	LC	RC	XC	Lost	Starts	%
A	Bath Failure	0	0	1	0	0	0	1	1	106	0.9	
G	Bath Failure	1	0	0	0	0	0	1	1	99	1.0	
	Improper Test Length	0	0	0	0	1	0	0	1	99	1.0	
	Lost	1	0	1	0	1	0	0	3			
	Starts	75	75	80	77	71	378	378	378			
	%	1.3	0	1.3	0	1.4	0	0	0.8			

Lost tests are calibration attempts that were either aborted or operationally invalid

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Average Δ 's by Lab						
Elastomer	Lab	n	VOLCYI	HARDYI	TENSYI	ELONYI
Fluoroelastomer	A	21	-0.489	0.751	-0.132	-0.789
	B	20	-0.439	0.068	0.266	-0.467
	E	-	-	-	-	-
	G	19	-0.658	-0.950	0.439	-0.159
	I	12	0.422	0.280	0.978	0.141
	P	2	-0.777	1.682	-0.630	-1.397
	Industry	74	-0.379	0.079	0.289	-0.406
Nitrile	A	21	1.219	1.101	-0.398	-0.496
	B	22	1.679	1.445	-0.700	-0.465
	E	-	-	-	-	-
	G	19	1.251	0.722	-0.331	-0.283
	I	12	2.049	1.646	-0.837	-0.477
	P	1	0.929	0.751	-0.154	0.173
	Industry	75	1.491	1.188	-0.537	-0.421
Polyacrylate	A	23	1.363	0.259	0.164	0.970
	B	21	1.746	-0.352	0.078	0.893
	E	-	-	-	-	-
	G	22	1.039	1.293	0.727	0.973
	I	12	1.943	0.330	-0.007	0.631
	P	1	1.224	-0.828	-0.067	1.082
	Industry	79	1.461	0.382	0.269	0.900
Silicone	A	21	0.277	-0.782	0.676	-0.409
	B	24	0.513	-0.286	-0.105	-0.306
	E	-	-	-	-	-
	G	19	1.497	-0.967	0.319	-0.766
	I	12	-1.014	0.531	-0.822	-0.297
	P	1	-0.288	-0.245	1.070	0.883
	Industry	77	0.443	-0.462	0.116	-0.431
VAMAC	A	19	-0.181	-2.045	0.014	0.275
	B	20	0.041	-1.874	0.192	-0.236
	E	-	-	-	-	-
	G	18	-0.017	-0.306	0.009	-0.098
	I	12	0.498	-1.418	-0.587	-1.085
	P	1	-0.450	-1.768	-1.490	-0.066
	Industry	70	0.037	-1.438	-0.061	-0.205

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Individual test results can be viewed at the links shown in the following table:

<i>Links to Individual Test Result Data</i>	
Elastomer Type	Web Link to Data
Fluoroelastomer	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecf/data/
Nitrile	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecn/data/
Polyacrylate	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecp/data/
Silicone	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecs/data/
VAMAC	ftp://ftp.astmtmc.cmu.edu/refdata/bench/eoecv/data/

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Severity & Precision Analysis

Due to statistically significant lab differences, a meaningful summary of industry level severity and precision cannot be provided.

A more detailed summary of this situation is available from the following link:

<ftp://ftp.astmtmc.cmu.edu/docs/bench/eoec/memos/EOEC%20Baseline%20Analysis.pdf>

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INFORMATION LETTERS

- No EOEC Information Letters were issued this period.

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STATUS OF REFERENCE OIL SUPPLY

Oil	Samples @ Labs	@ TMC	
		Samples (750 mL)	Gallons
1006-1	104	0	0
1006-2	195	9,709	1924
Total	299	9,709	1924

The TMC inventory of oil 1006-1 is depleted.

Reference Oil 1006-2 has been approved for EOEC testing, using the existing test targets for reference oil 1006-1.