



Test Monitoring Center

@ Carnegie Mellon University
6555 Penn Avenue, Pittsburgh, PA 15206, USA

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

MEMORANDUM: 14-039

DATE: November 21, 2014

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

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

SUBJECT: EOEC Testing from April 1, 2014 through September 30, 2014

A total of 204 EOEC tests were reported from 4 labs to the Test Monitoring Center during the period from April 1, 2014 through September 30, 2014.

Please find attached a summary of testing activity this period.

MTK/mtk/mem14-039.mtk.doc

cc: Frank Farber

Jeff Clark

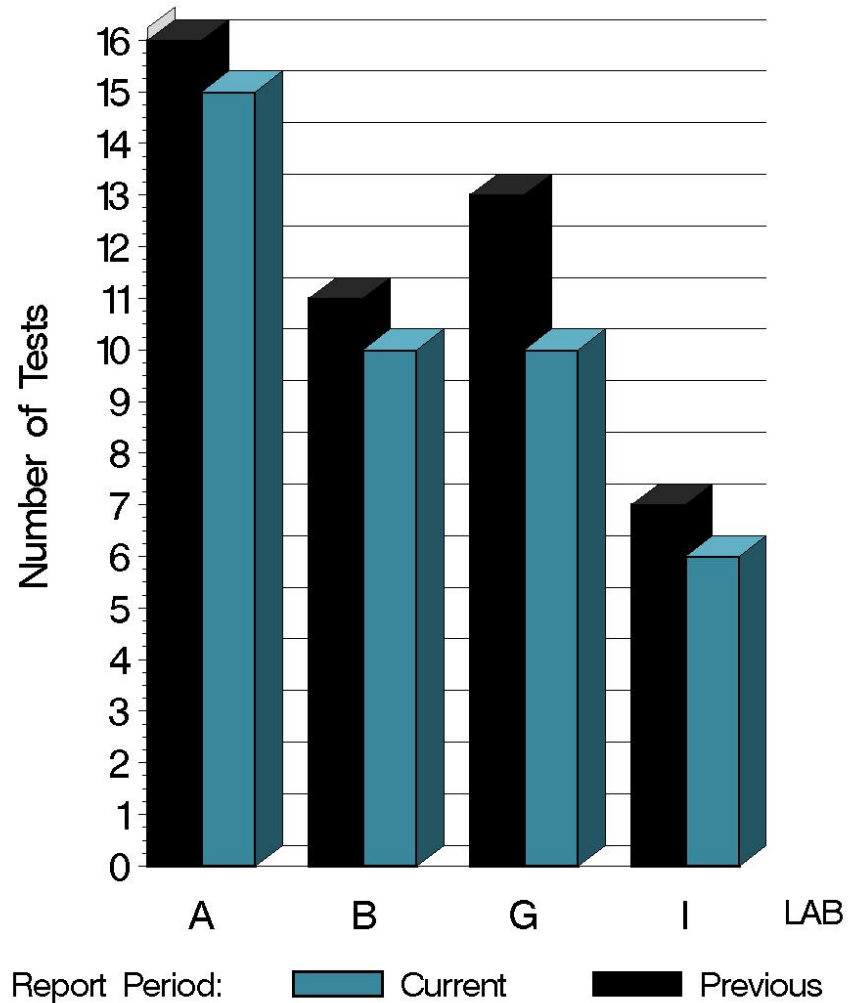
EOEC Surveillance Panel

<ftp://ftp.astmtmc.cmu.edu/docs/bench/eoec/semiannualreports/eoec-10-2014.pdf>

Distribution: email

EOEC (D 7216)

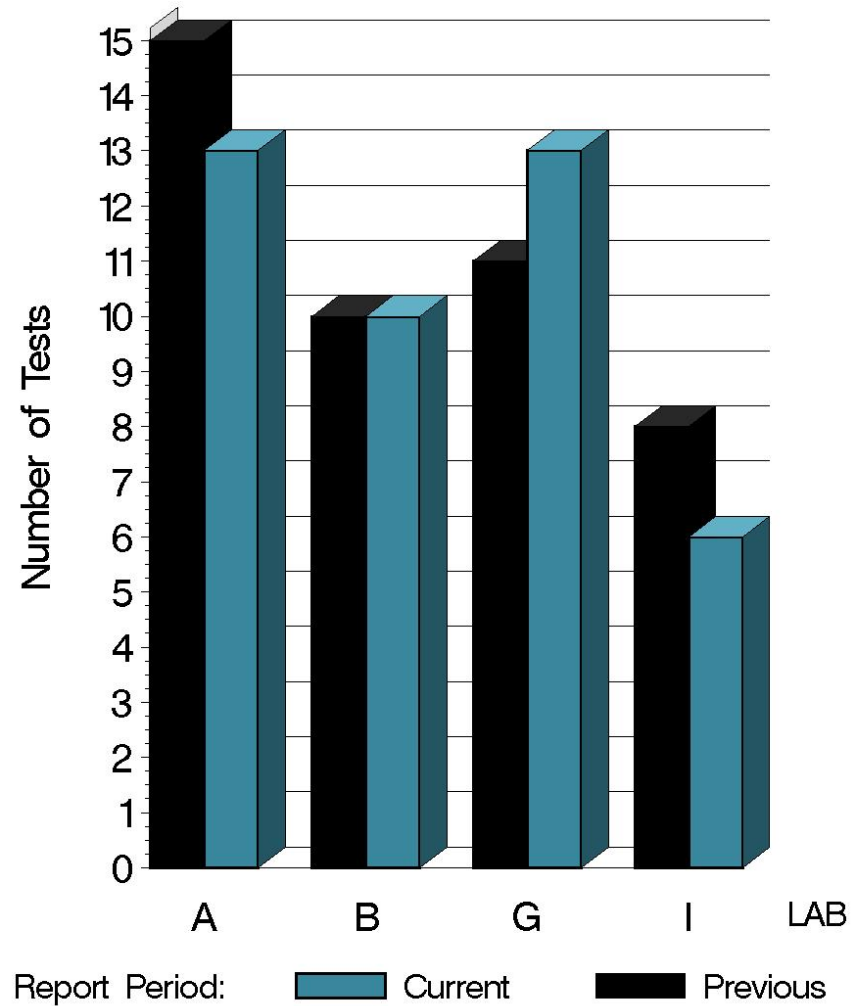
NUMBER OF FLUOROELASTOMER TESTS
REPORTED BY LAB AND REPORT PERIOD



14:50:41 20NOV2014

EOEC (D 7216)

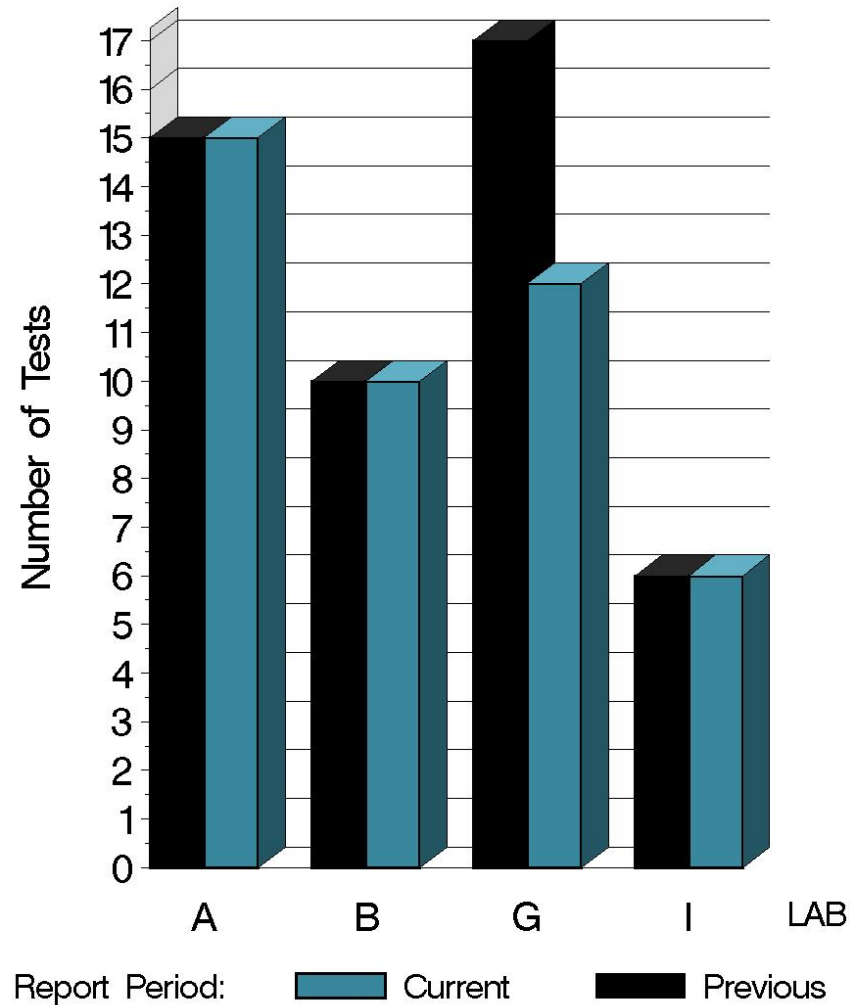
NUMBER OF NITRILE TESTS
REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

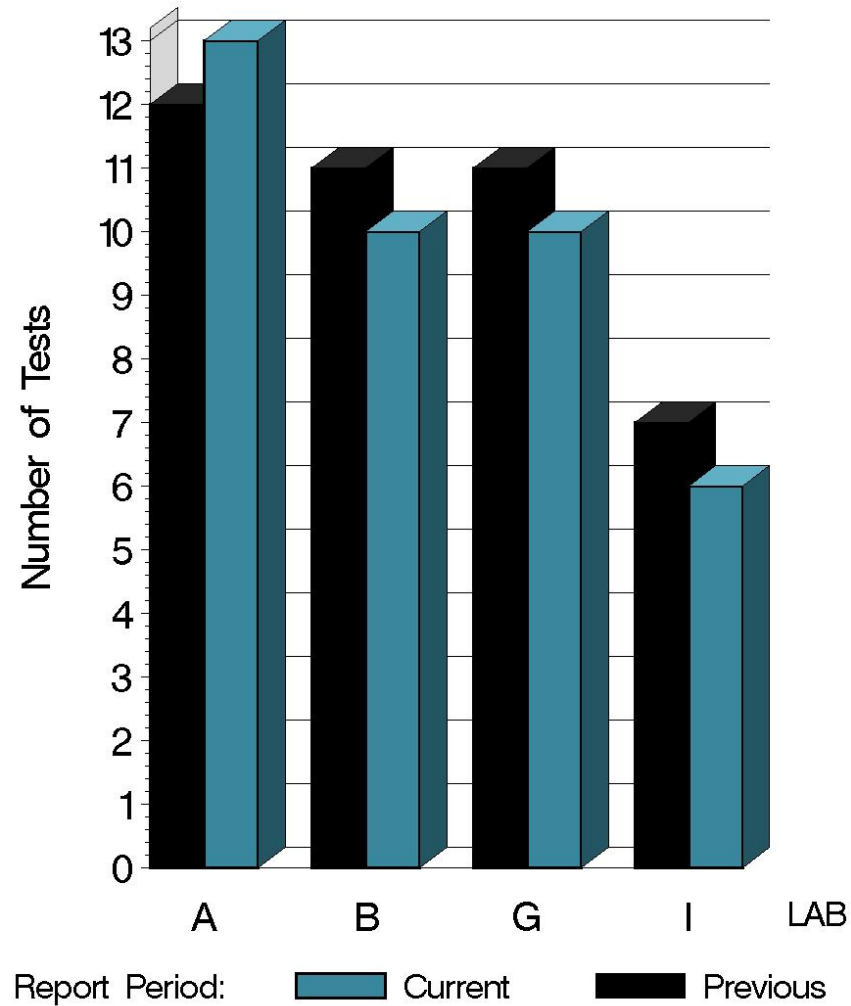
NUMBER OF POLYACRYLATE TESTS
REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

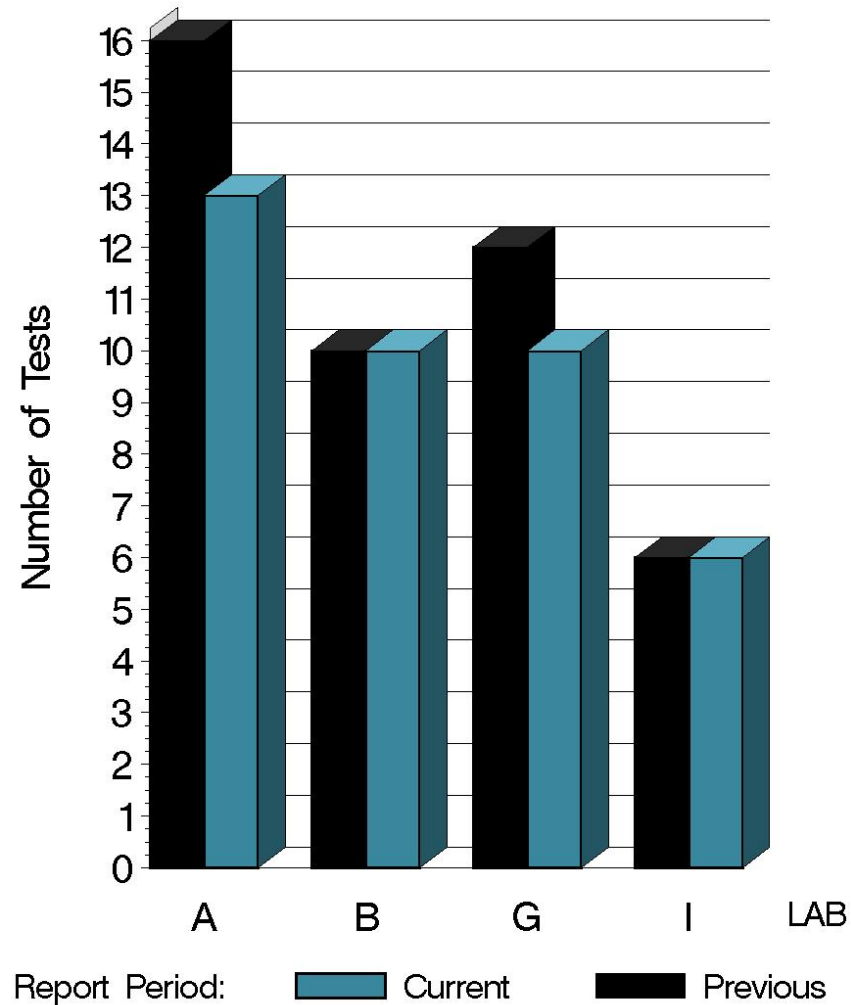
NUMBER OF SILICONE TESTS
REPORTED BY LAB AND REPORT PERIOD



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EOEC (D 7216)

NUMBER OF VAMAC TESTS
REPORTED BY LAB AND REPORT PERIOD



14:50:41 20NOV2014

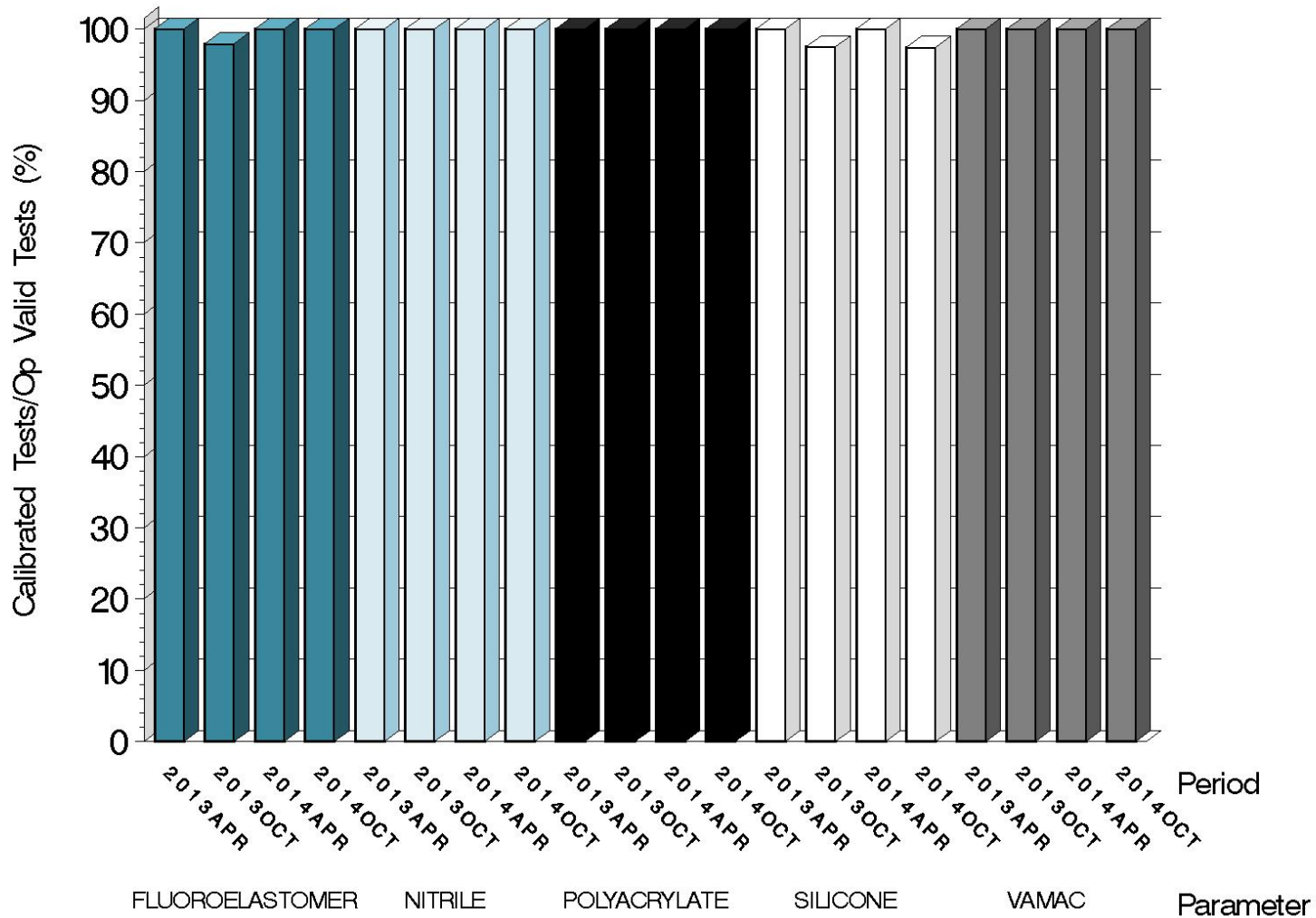
EOEC (D 7216)

Test Distribution by Oil and Validity

		Fluoroelastomer	Nitrile	Polyacrylate	Silicone	Vamac	This Period	Last Period
Accepted for Calibration	AC	41	41	43	38	39	202	223
Rejected	OC	0	0	0	1	0	1	0
Information Run	NI	0	0	0	0	0	0	0
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	0	1	0	0	0	1	0
Total		41	42	43	39	39	204	224

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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	15	0	0	13	0	0	15	0	0	13	0	0	13	0	0	69	0
B	0	10	0	0	10	0	0	10	0	0	10	0	0	10	0	0	50	0
G	0	10	0	1	13	8	0	12	0	0	10	0	0	10	0	0	55	0
I	0	6	0	0	6	0	0	6	0	0	6	0	0	6	0	0	30	0
Total	0	41	0	1	42	2	0	43	0	0	39	0	0	39	0	1	204	0.5

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CAUSES FOR LOST TESTS

Lab	Cause	Elastomer					Validity			Loss Rate		
		Fluoroelastomer	Nitrile	Polyacrylate	Silicone	VAMAC	LC	RC	XC	Lost	Starts	%
		G	Wrong Material Run		1					1	1	55
	Lost	0	1	0	0	0	0	1				
	Starts	41	42	43	39	39	204	204	204			
	%	0	2%	0	0	0	0	0.5%				

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	15	0.221	0.500	-0.491	-1.265
	B	10	-0.203	-0.227	-0.045	-0.822
	G	10	-0.196	-0.727	-0.021	-0.779
	I	6	1.092	0.015	0.591	-0.140
	Industry	41	0.143	-0.048	-0.109	-0.874
Nitrile	A	13	1.160	0.751	-0.436	-0.285
	B	10	1.537	0.638	-0.323	-0.485
	G	12	0.912	1.081	-0.361	-0.573
	I	6	2.071	1.316	-0.584	-0.378
	Industry	41	1.313	0.903	-0.408	-0.432
Polyacrylate	A	15	1.154	-0.272	-0.754	0.592
	B	10	1.349	-0.717	-0.500	1.308
	G	12	0.945	0.978	-0.360	1.220
	I	6	1.840	0.283	-0.507	0.591
	Industry	43	1.237	0.051	-0.551	0.933
Silicone	A	13	-0.494	-0.131	0.646	1.112
	B	10	0.881	-0.654	-0.445	0.810
	G	10	1.446	1.373	-0.476	-0.443
	I	6	0.305	0.646	-1.311	0.365
	Industry	39	0.479	0.240	-0.222	0.521
VAMAC	A	13	-1.330	-1.445	-0.430	-0.064
	B	10	-0.991	-1.768	-0.095	0.038
	G	10	-0.662	-0.400	0.314	0.276
	I	6	0.128	-1.593	-0.942	-0.870
	Industry	39	-0.847	-1.283	-0.232	-0.075

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

Test Monitoring Center

<http://astmtmc.cmu.edu>



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<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

EOEC Information Letter 14-1, Sequence No. 5, dated September 18, 2014

- New Heavy Duty Silicone Elastomer Material
- New Elastomer Batch Reporting Requirements
- Editorial Correction

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STATUS OF REFERENCE OIL SUPPLY

		@ TMC	
Oil	Samples @ Labs	Samples (750 mL)	Gallons
1006-1	201	3,335	661
Total	201	3,335	661