



# Test Monitoring Center

6555 Penn Avenue  
Pittsburgh, PA 15206-4489  
(412) 365-1000

**MEMORANDUM:** 01-043

**DATE:** April 30, 2001

**TO:** Joe Kaperick, Chairman, OSCT Surveillance Panel

**FROM:** Richard Grundza

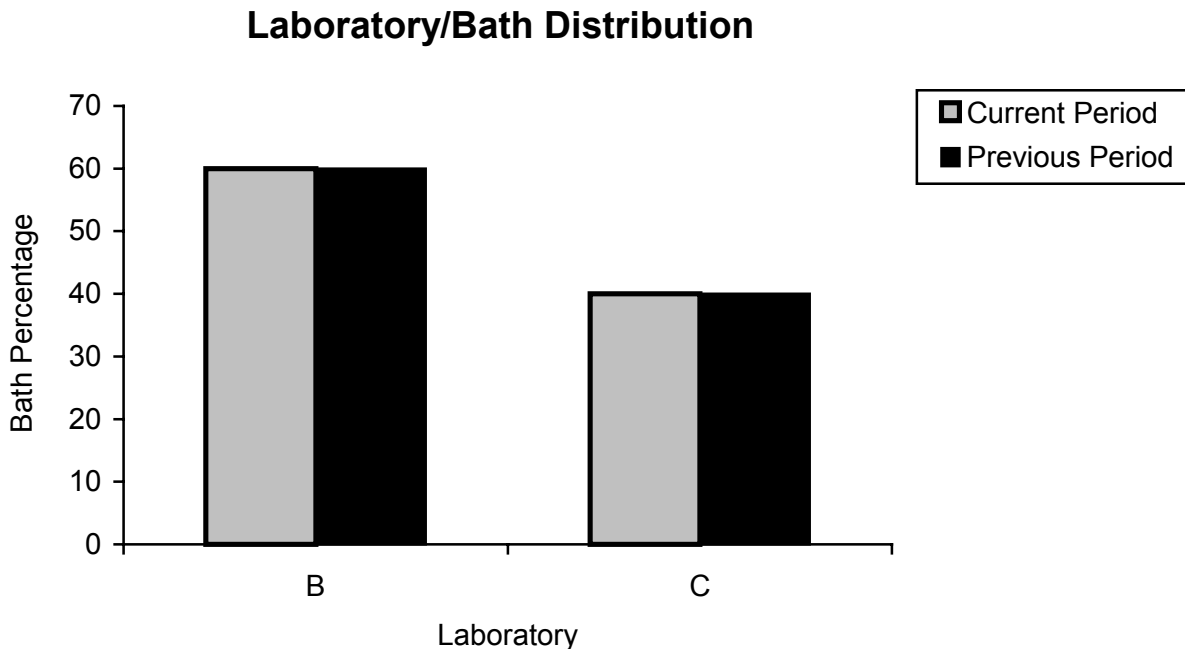
**SUBJECT:** OSCT Reference Oil Test Results from October 1, 2000 through March 31, 2001

A total of 94 OSCT reference oil results from 2 laboratories were completed during the period October 1, 2000 through March 31, 2001.

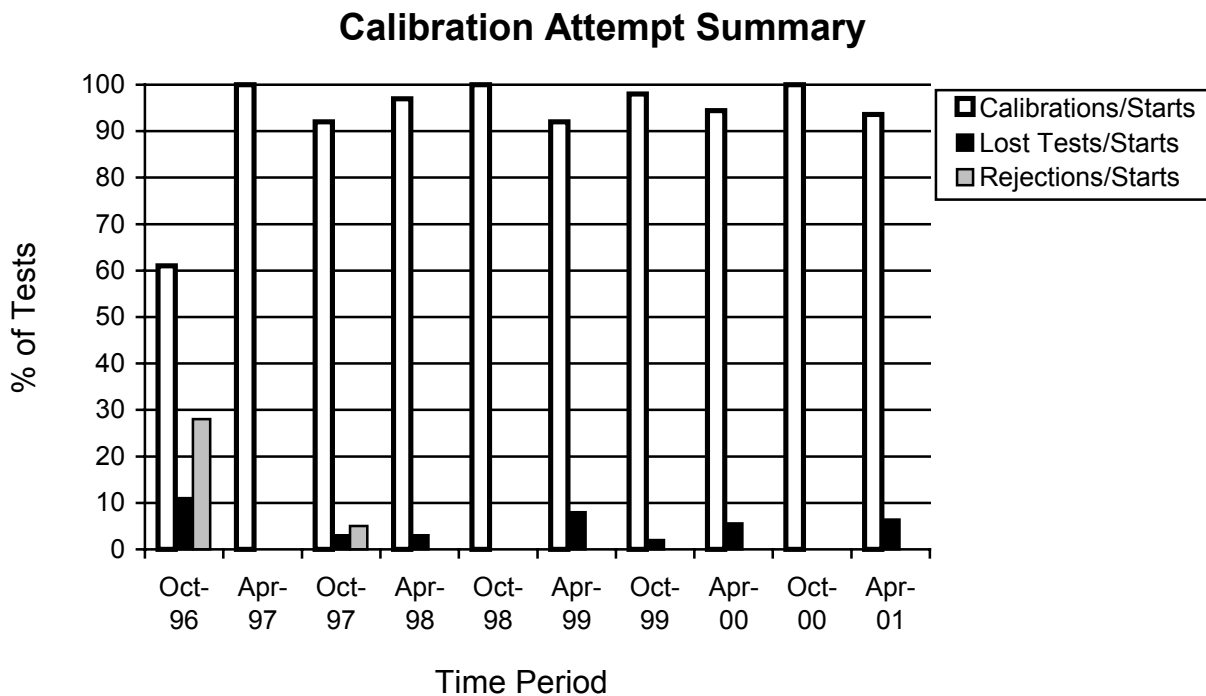
The following table summarizes the status of the reference oil test results reported to the TMC this report period:

Elastomer Type		TMC Validity	No. of Test Oil Results
Fluoroelastomer	Operationally and Statistically Acceptable	AC	28
	Statistically Unacceptable	OC	0
	Operationally Invalid	LC	0
	Aborted	XC	4
	Information Only	NN	0
Polyacrylate	Operationally and Statistically Acceptable	AC	32
	Statistically Unacceptable	OC	0
	Operationally Invalid	LC	0
	Aborted	XC	0
	Information Only	NN	0
Nitrile	Information Only	NI	28
	Operationally Invalid	LI	0
	Information Only	NN	0
	Aborted	XI	2
	TOTAL		94

The following chart shows the laboratory bath distribution for data reported during this report period:



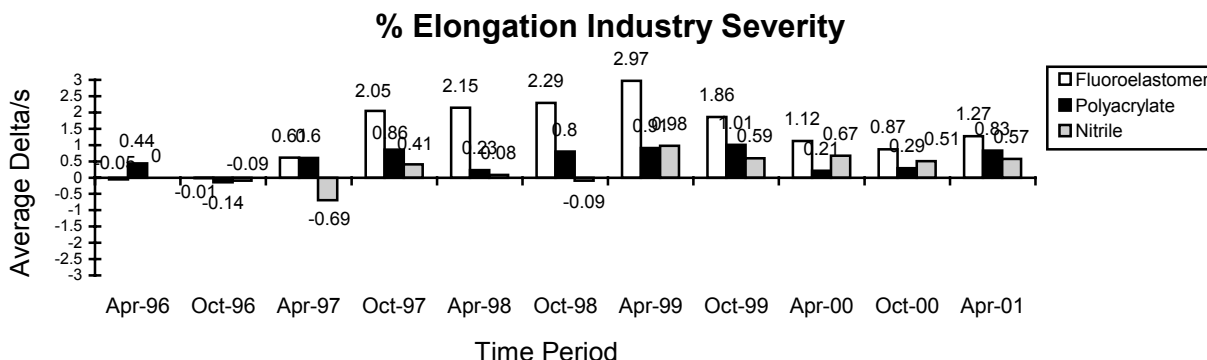
Attempted calibration tests are depicted graphically below by report period:



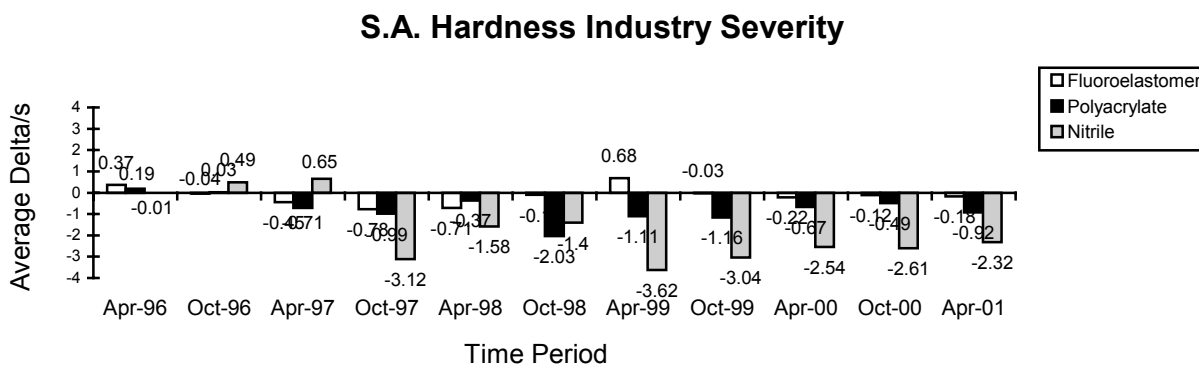
The calibrations per start rate has decreased slightly when compared to the previous period, while the lost test per start rate has increased slightly with respect to the previous period. There were no statistically rejected tests this report period, for the seventh period in a row. All rates are well within historical levels.

INDUSTRY TEST SEVERITY

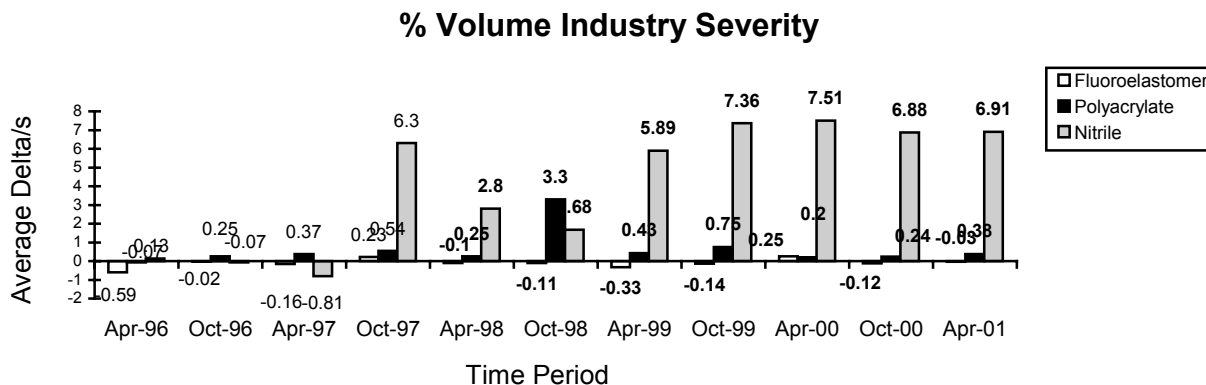
Percent elongation industry mean delta/s bar charts for each elastomer material are shown below by report period. Percent elongation for all three materials (fluoroelastomer, nitrile and polyacrylate) trended mild for the period.



S.A. hardness industry mean delta/s bar charts for each elastomer material are shown below by report period. Both polyacrylate and nitrile materials are mild, while fluoroelastomer is on target for this report period.

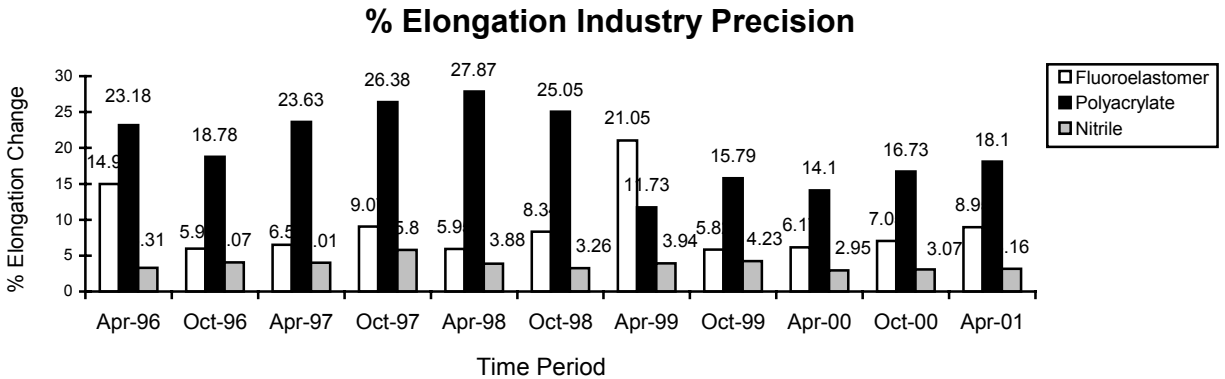


Percent volume industry mean delta/s bar charts for each elastomer material are shown below by report period. Nitrile materials were significantly mild of target. Fluoroelastomer was on or near target and polyacrylate materials trended slightly mild this period. Both labs experienced mild results with the nitrile elastomer, some as high as 13 standard deviations from target.

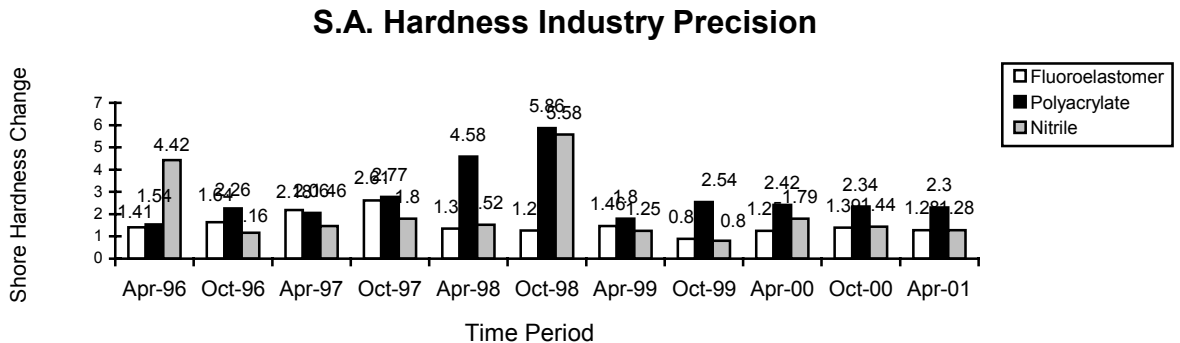


INDUSTRY TEST PRECISION

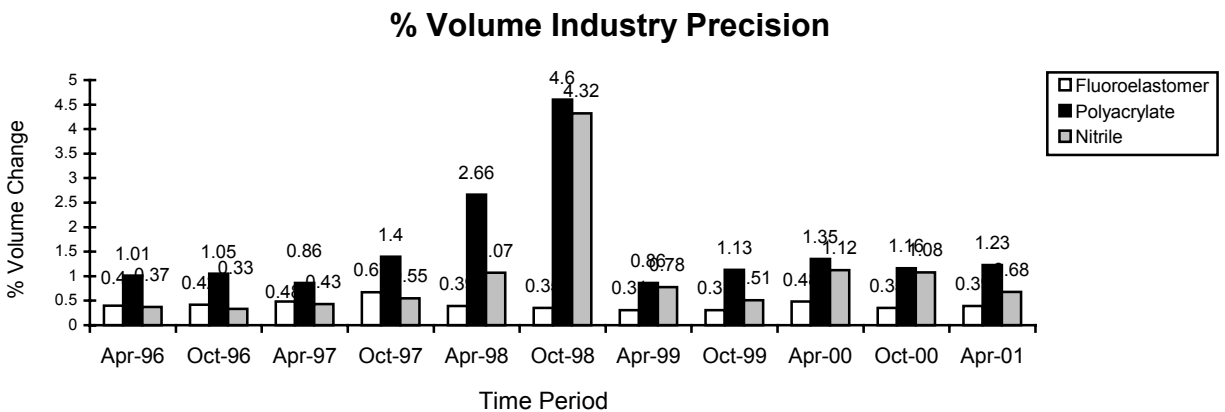
Percent elongation industry precision estimates for elastomer material are shown below by report period. Precision for fluoroelastomer and polyacrylate materials has degraded slightly with respect to the previous period, while nitrile precision has changed little with respect to the previous period. Precision for all parameters compares well with historical rates.



Shore hardness industry precision estimates for elastomer material are shown below by report period. Precision for all elastomers compares well with the previous period and historical rates.

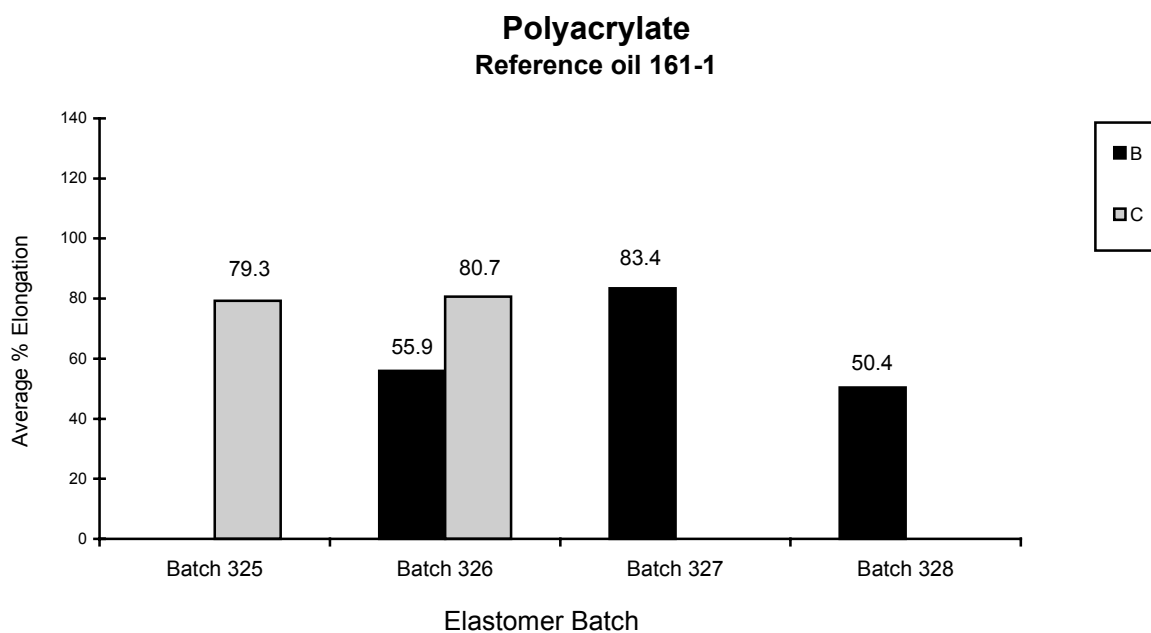
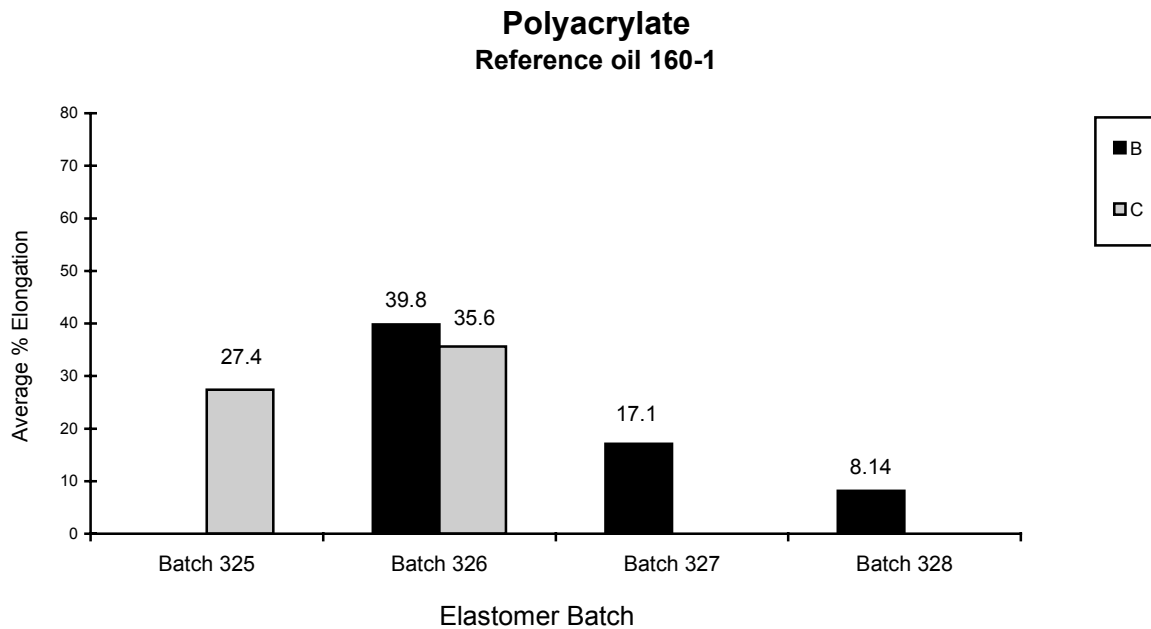


Percent volume industry precision estimates for elastomer materials are shown below by report period. Precision for Nitrile has improved with respect to the previous period and precision for the other elastomers compares well with respect to the previous period and precision for all elastomer types is well within historical performance.

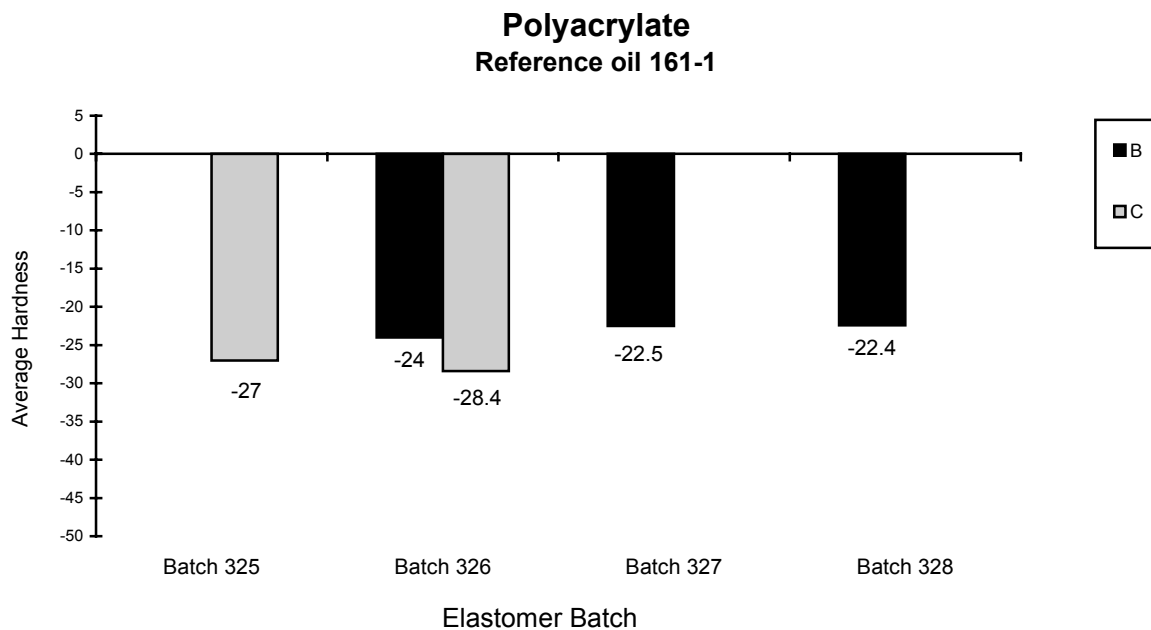
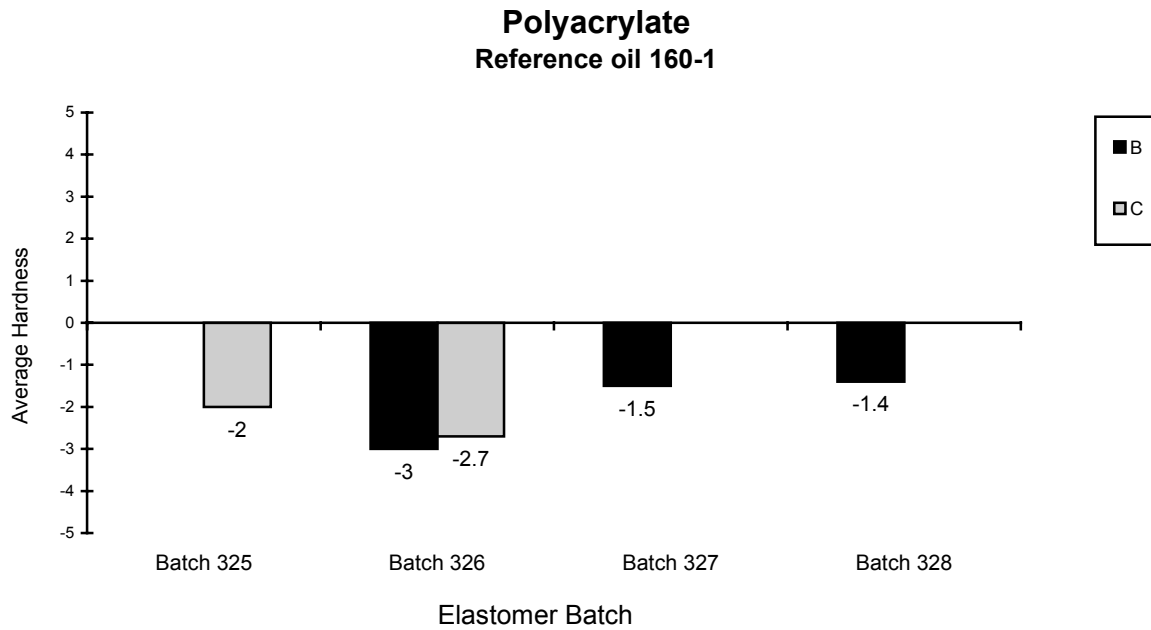


LABORATORY TEST SEVERITY

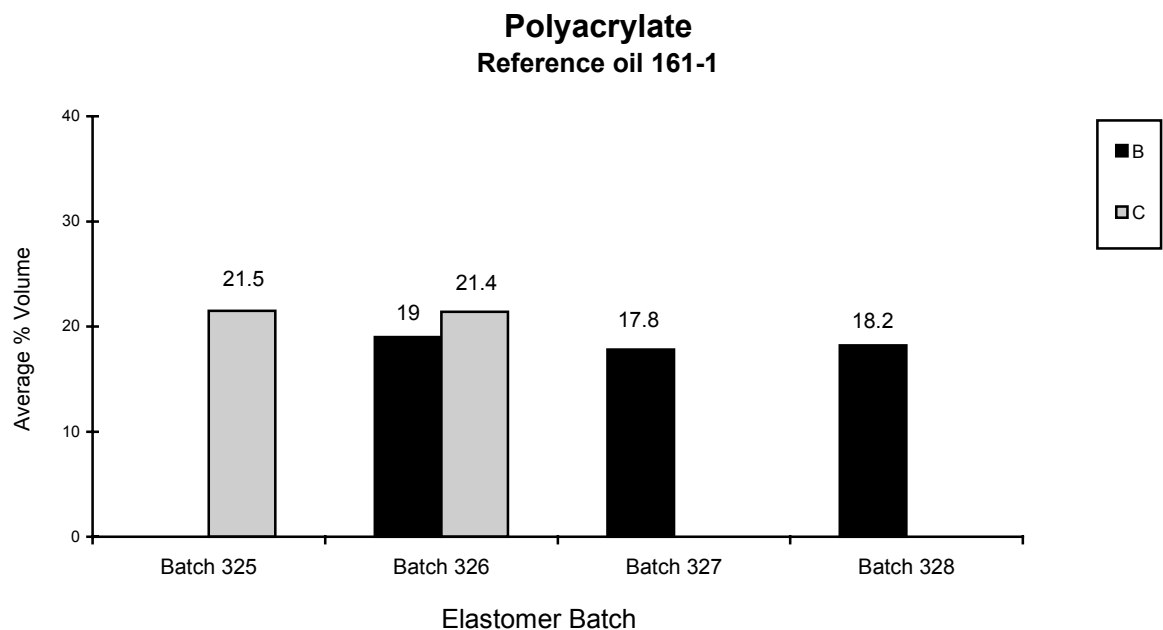
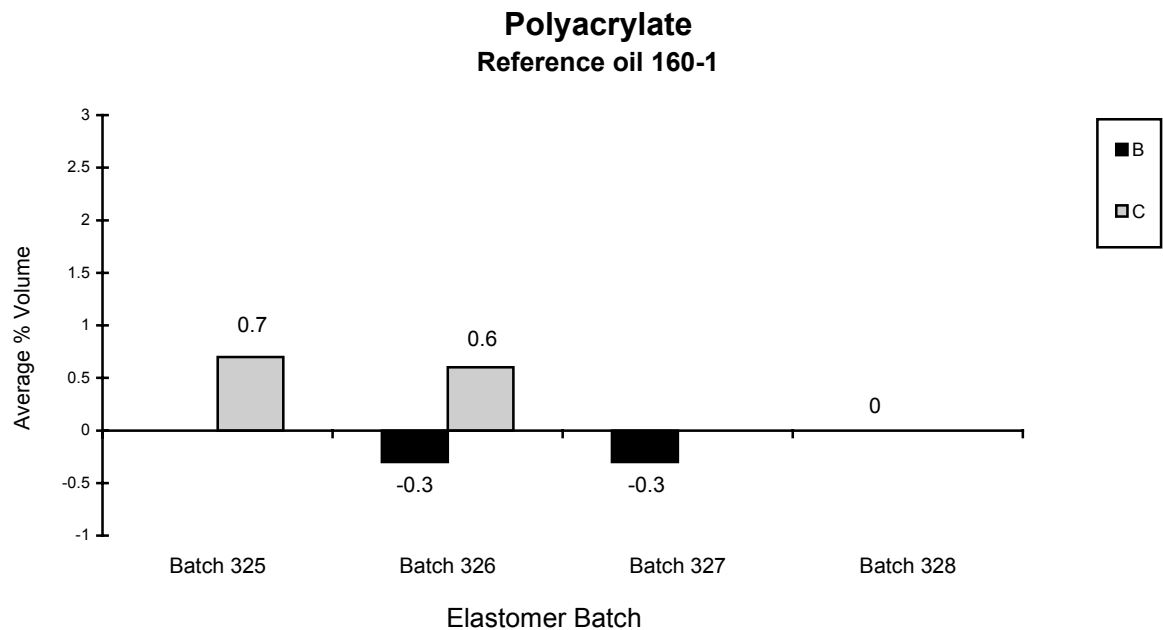
Average percent elongation bar charts for polyacrylate material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate both lab and batch variability, specifically between batches 326, 327 and 328 in lab B. Lab differences are also evident with batch 326, specifically with reference oil 161-1



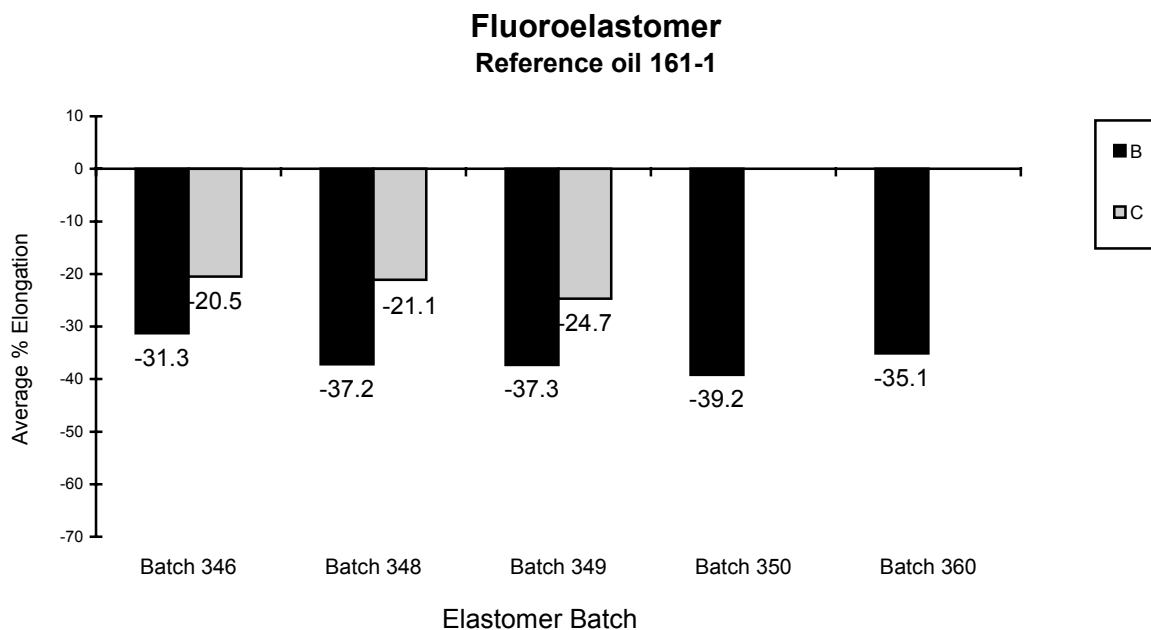
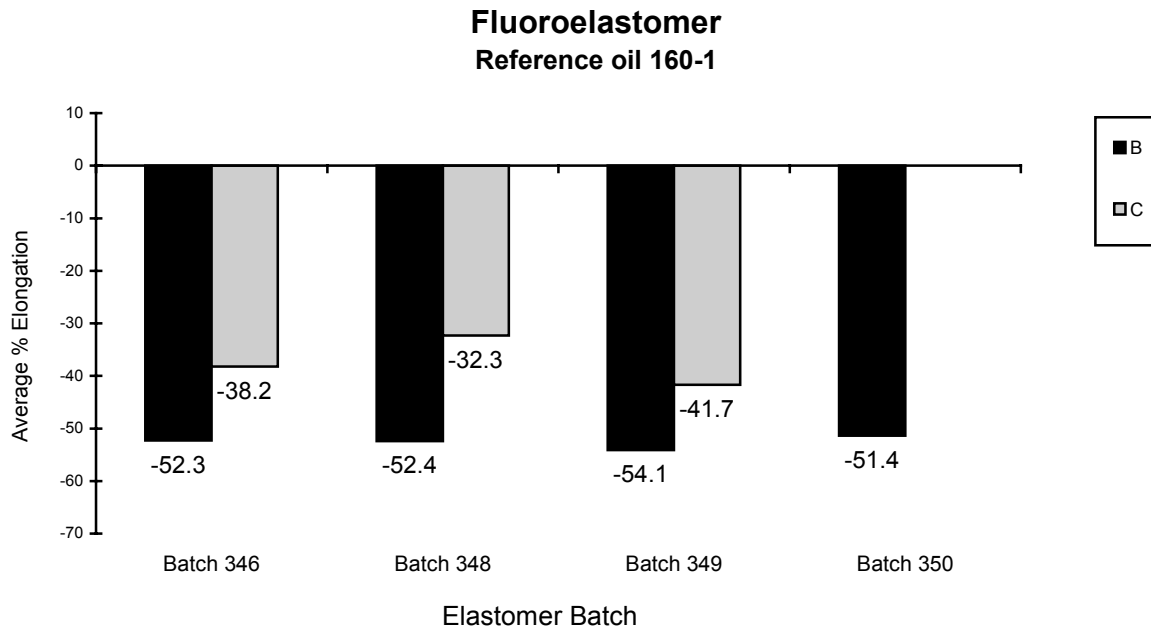
Average hardness bar charts for polyacrylate material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate some small lab to lab difference, especially with oil 161-1 and batch 326. Both labs show some differences between batches.



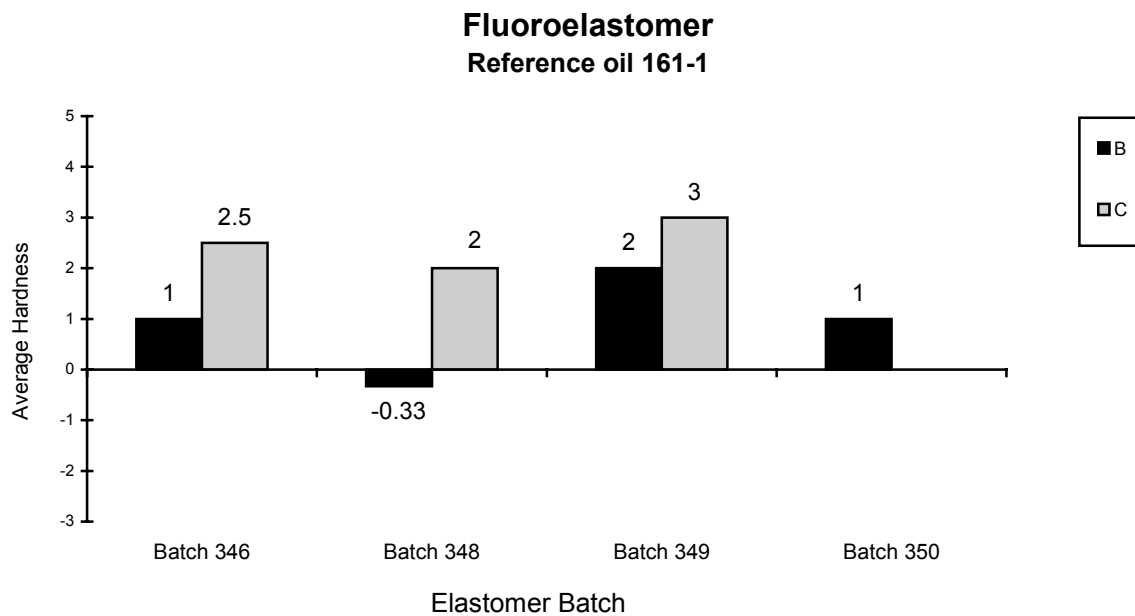
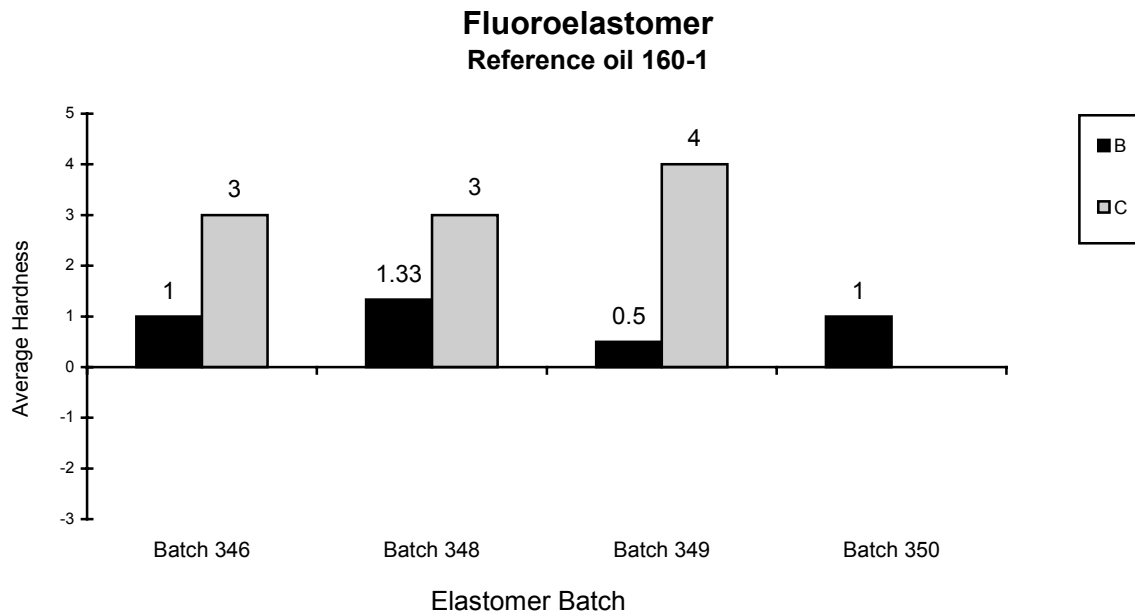
Average percent volume bar charts for polyacrylate material are shown below by lab, elastomer batch, and reference oil. There does appear to be some lab difference, especially with oil 161-1. With the limited data available, there appears to be little difference between batches.



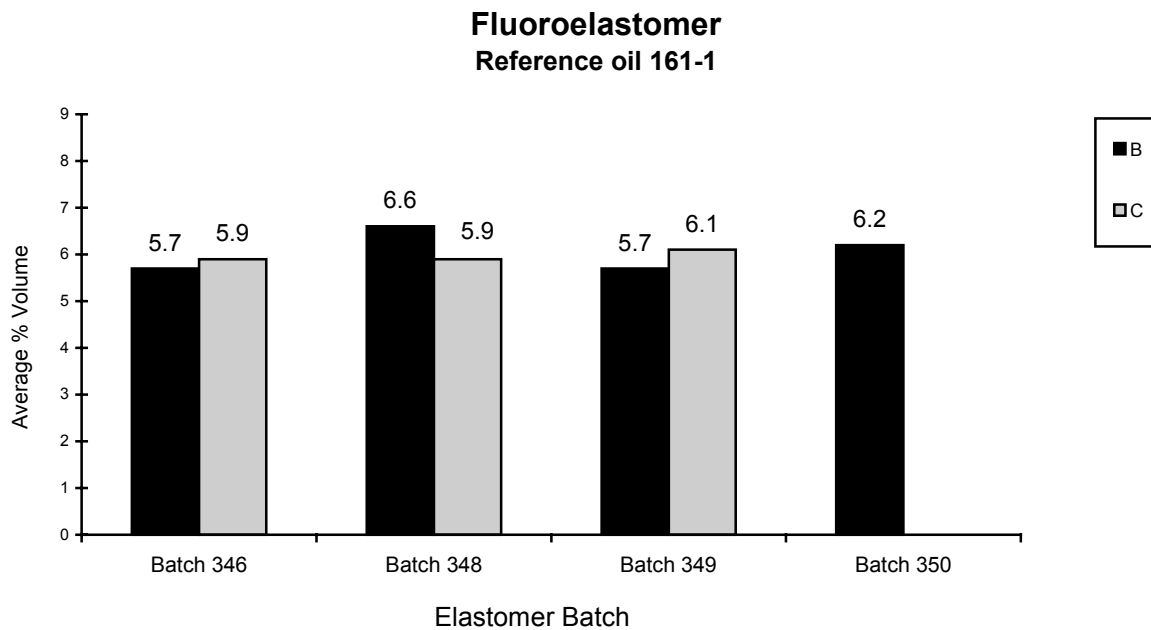
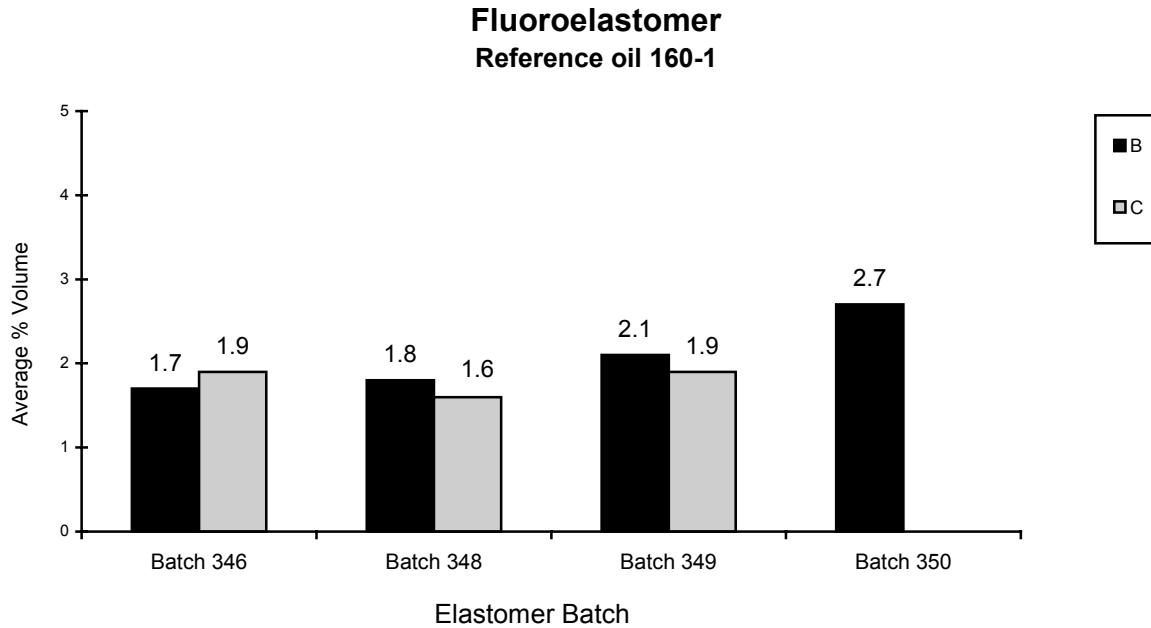
Average percent elongation bar charts for fluoroelastomer material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate small elastomer batch differences. Rather large lab differences were noted on Batches 346, 348 and 349 with both reference oils.



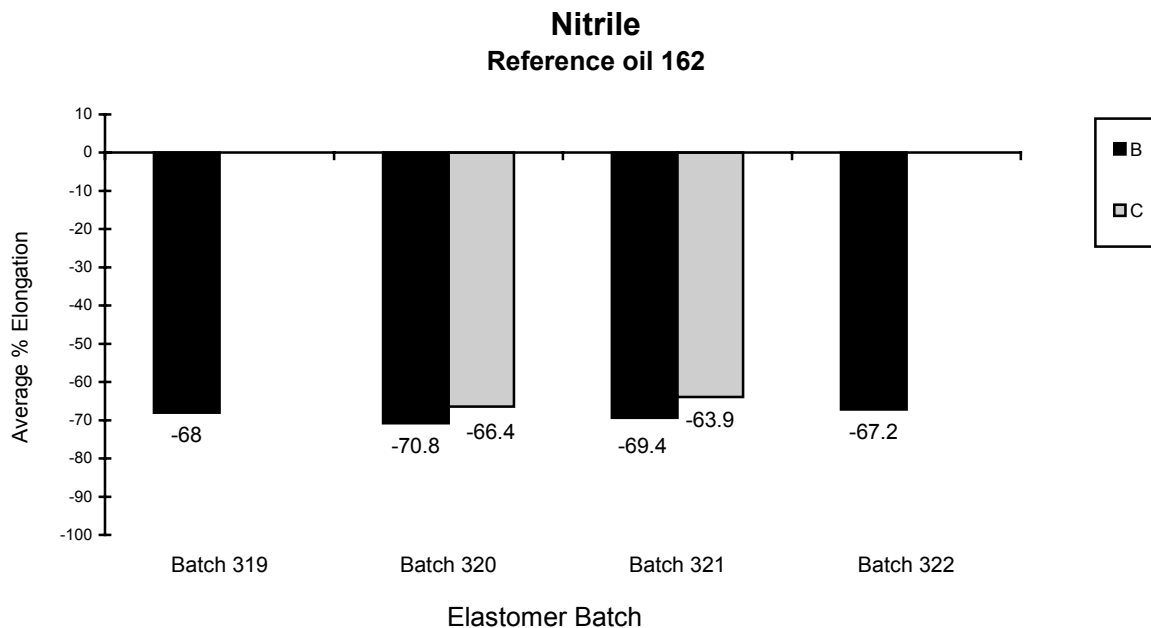
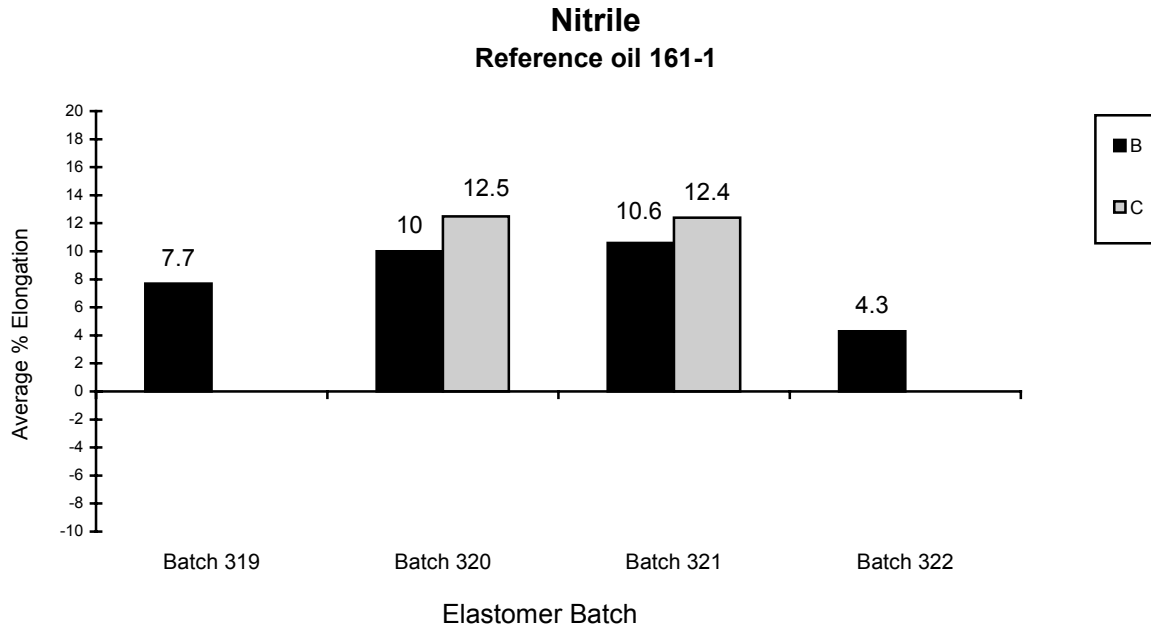
Average hardness bar charts for fluoroelastomer material are shown below by lab, elastomer batch, and reference oil. Some batch to batch variability is evident, and some differences between labs was apparent with the limited data available.



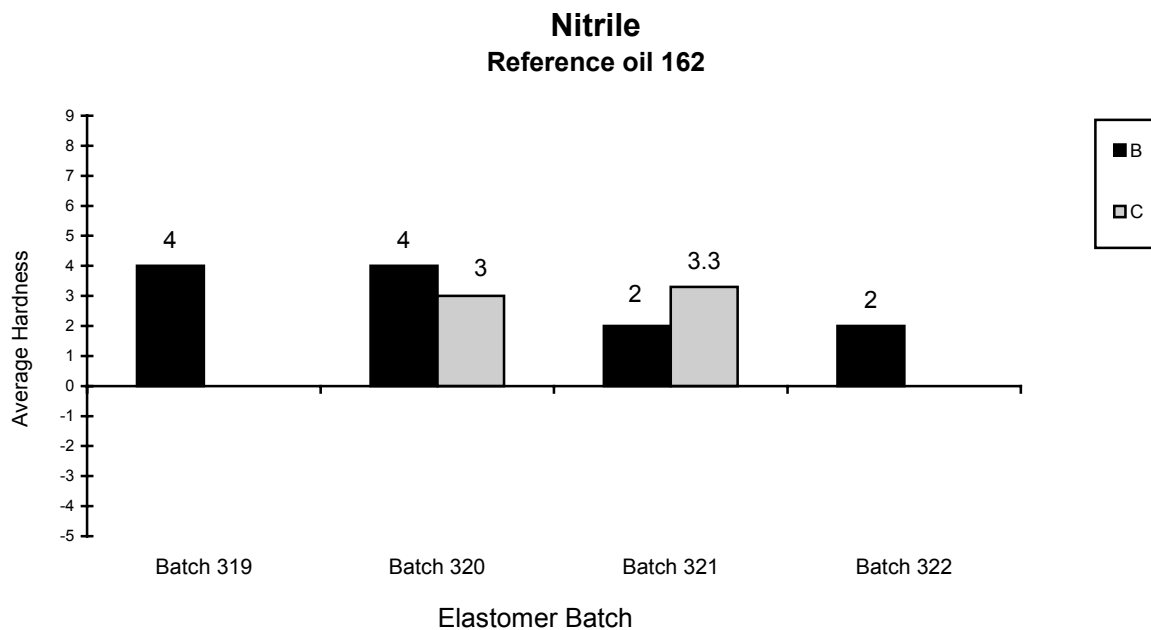
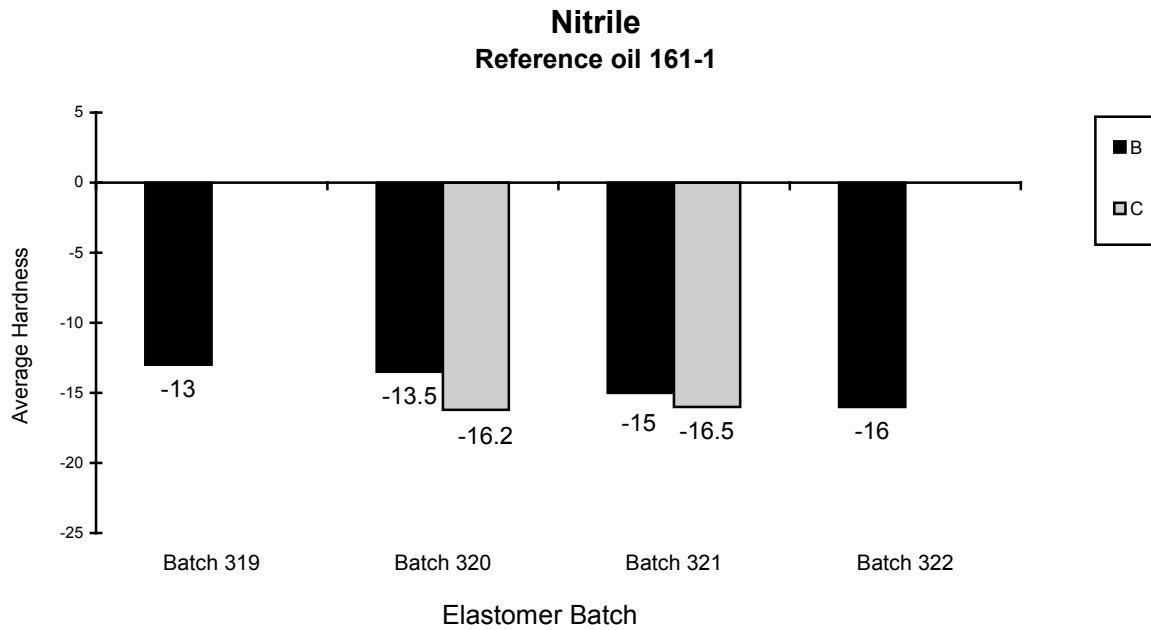
Average percent volume bar charts for fluoroelastomer material are shown below by lab, elastomer batch, and reference oil. The bar charts show comparable results on all batches with little discernable lab difference with both reference oils.



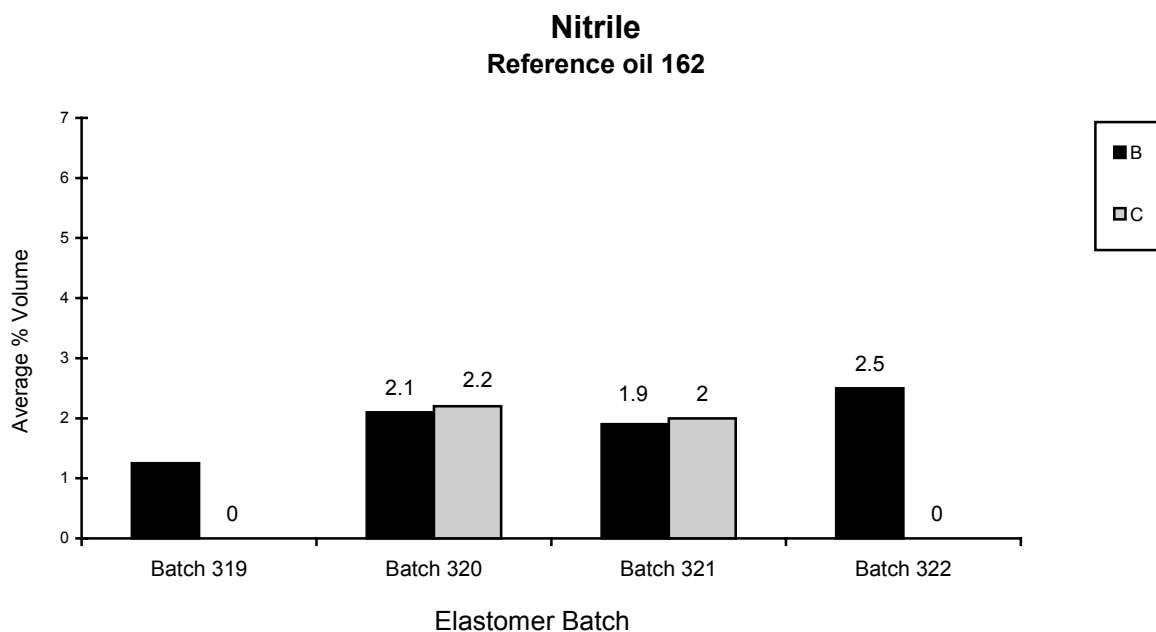
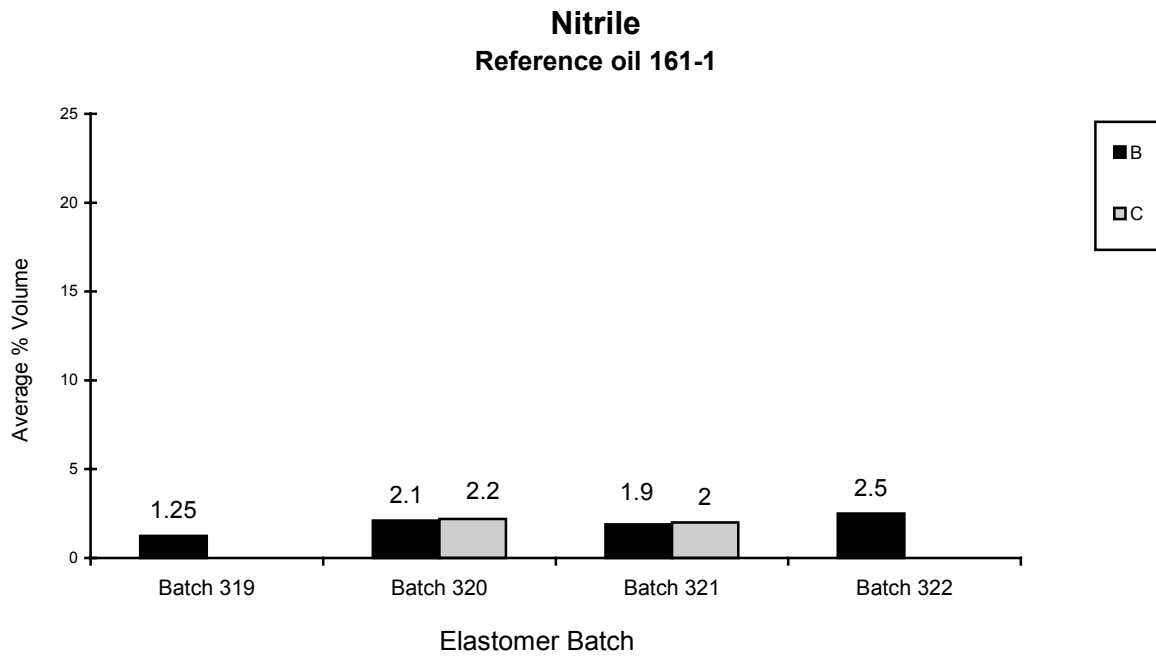
Average percent elongation bar charts for nitrile material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate some batch variability within lab B (Oil 161-1), and some small lab differences with batches 320 and 321.



Average hardness bar charts for nitrile material are shown below by lab, elastomer batch, and reference oil. The bar charts depict some lab and batch differences.



Average percent volume bar charts for nitrile material are shown below by lab, elastomer batch, and reference oil. There does appear to be some slight batch to batch variability noted in both labs, making lab difference difficult to ascertain.



### REFERENCE OILS

The following table quantifies each reference oil by the number of reference oil containers remaining at the TMC and each laboratory. Each reference oil container has 750 ml (0.2 gallons) of oil.

LAB	160	160-1	161	161-1	162	163	164	165
A	15	0	0	5	12	0	0	0
B	0	10	0	18	7	0	0	4
C	0	9	0	12	3	0	1	3
D	0	2	0	3	2	0	0	0
TMC	0	953	0	687	111	471	198	515

### INFORMATION LETTERS

There were no information letters issued during this report period.

### TMC ACTIVITIES

There was one lab visit conducted this report period, with no significant discrepancies were noted during this visit.

REG/reg

Attachments

c: OSCT Surveillance Panel

F. M. Farber, TMC

<ftp://tmc.astm.cmri.cmu.edu/docs/gears/osct/semiannualreports/osct-4-2001>