MEMORANDUM: 02-024

**DATE:** April 26, 2002

TO Clair Whitton, Chairman, OSCT Surveillance Panel

**FROM:** Donald Lind

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

March 31, 2002

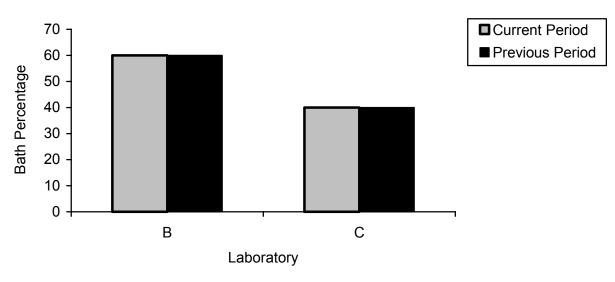
A total of 74 OSCT reference oil results from 2 laboratories were completed during the period October 1, 2001 through March 31, 2002.

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

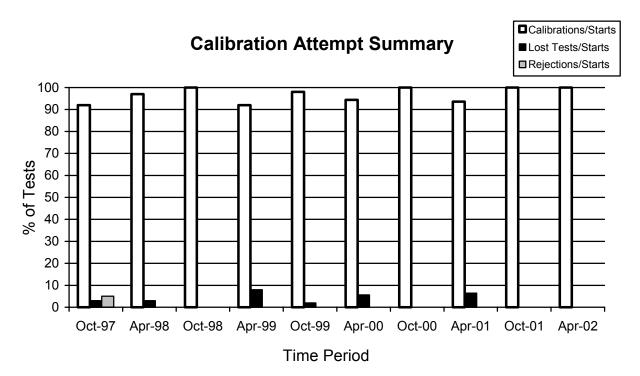
|                 |  | TMC      | No. of Test |
|-----------------|--|----------|-------------|
| Elastomer Type  |  | Validity | Oil Results |
|                 | Operationally and Statistically Acceptable | AC       | 24          |
|                 | Statistically Unacceptable                 | OC       | 0           |
| Fluoroelastomer | Operationally Invalid                      | LC       | 0           |
|                 | Aborted                                    | XC       | 0           |
|                 | Information Only                           | NN       | 0           |
| Polyacrylate    | Operationally and Statistically Acceptable | AC       | 26          |
|                 | Statistically Unacceptable                 | OC       | 0           |
|                 | Operationally Invalid                      | LC       | 0           |
|                 | Aborted                                    | XC       | 0           |
|                 | Information Only                           | NN       | 0           |
| Nitrile         | Information Only                           | NI       | 24          |
|                 | Operationally Invalid                      | LI       | 0           |
|                 | Information Only                           | NN       | 0           |
|                 | XI   | 0        |             |
|                 | TOTAL                                      | -        | 74          |

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





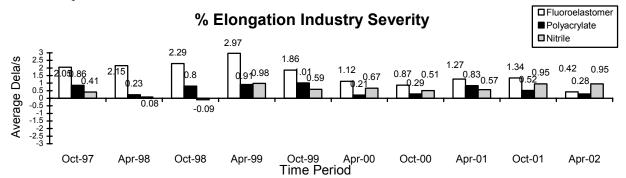
Attempted calibration tests are depicted graphically below by report period:



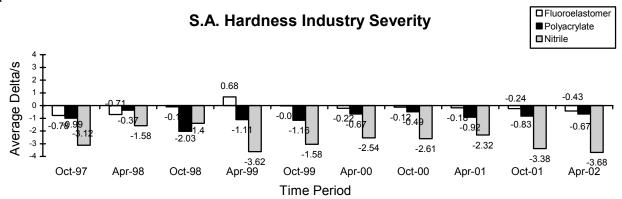
The calibrations per start rate remains the same as the previous period. There were no statistically rejected or lost tests this report period. All rates are well within historical levels.

#### INDUSTRY TEST SEVERITY

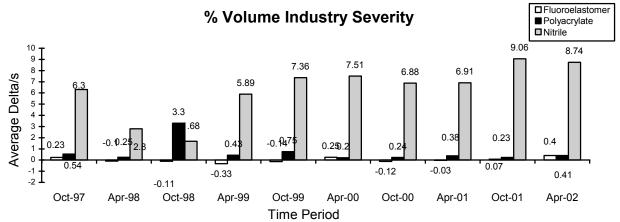
Percent elongation industry mean delta/s bar charts for each elastomer material are shown below by report period. Percent elongation for all three materials (fluoroelastomer, nitrile and polyacrylate) trended mild for the period.



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

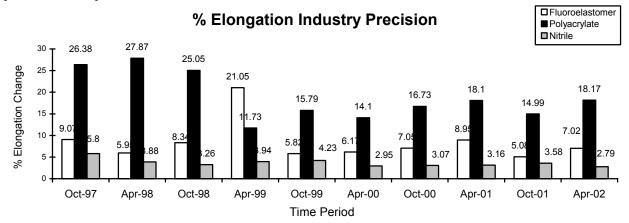


Percent volume industry mean delta/s bar charts for each elastomer material are shown below by report period. Nitrile materials were significantly mild of target. Fluoroelastomer and polyacrylate materials trended slightly mild this period. Both labs experienced mild results with the nitrile elastomer as much as 15 standard deviations from target.

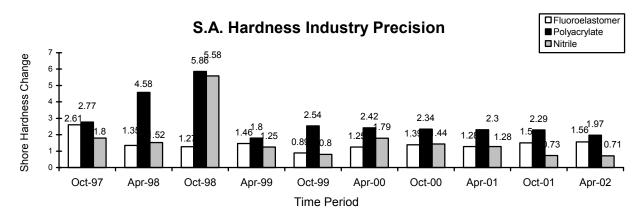


### **INDUSTRY TEST PRECISION**

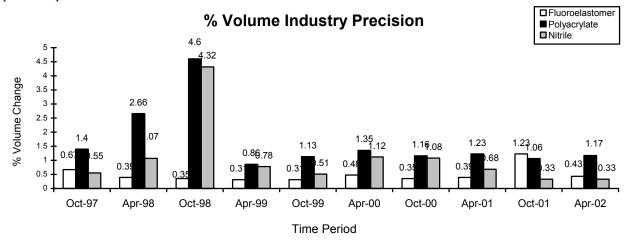
Percent elongation industry precision estimates for elastomer material are shown below by report period. Precision for fluoroelastomer and polyacrylate materials has degraded with respect to the previous period, while nitrile precision has improved slightly with respect to the previous period. Precision 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.

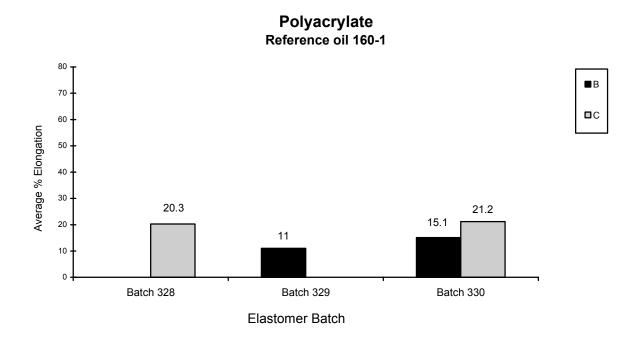


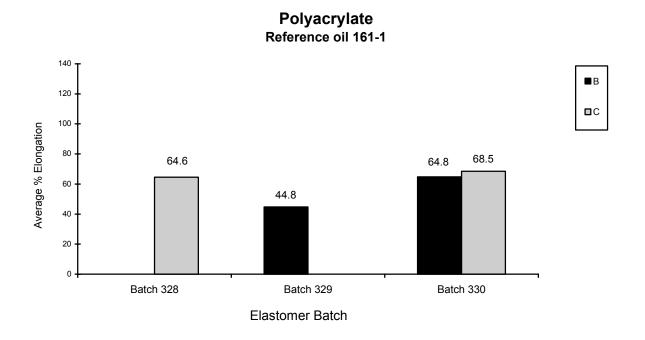
Percent volume industry precision estimates for elastomer materials are shown below by report period. Precision for polyacrylate and nitrile elastomers show very little change with respect to the previous period and precision for the fluoroelastomer material has improved and compares well with respect to the previous periods.



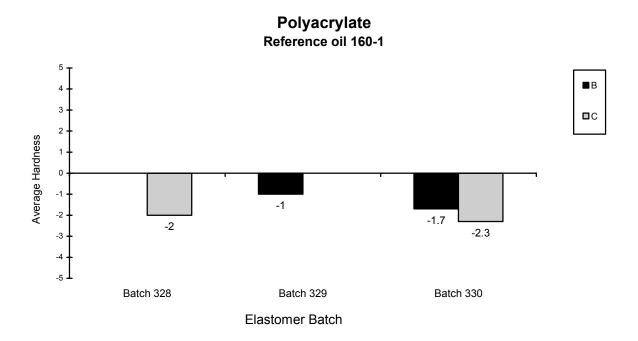
# LABORATORY TEST SEVERITY

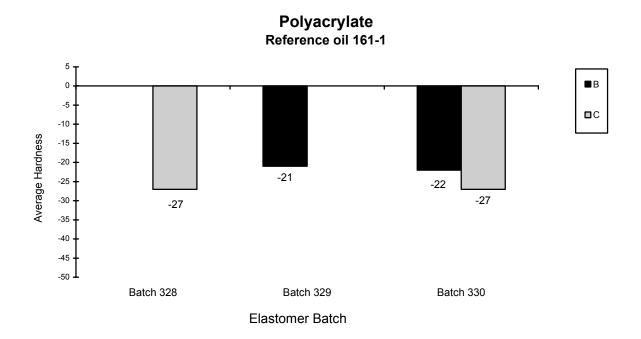
Average percent elongation bar charts for polyacrylate material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate small lab and elastomer batch differences.



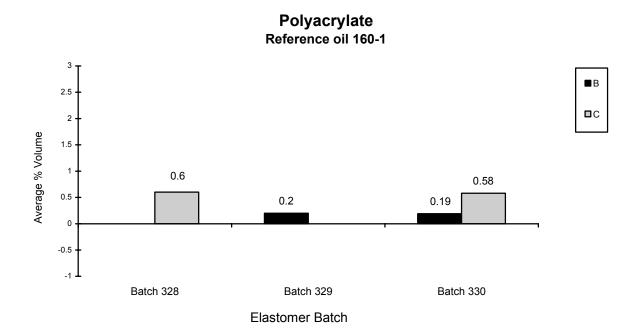


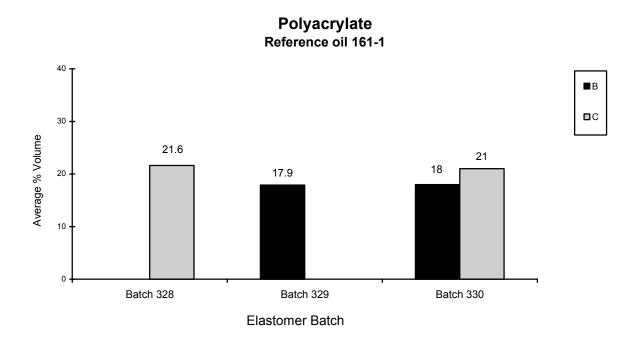
Average hardness bar charts for polyacrylate material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate small lab and elastomer batch differences.



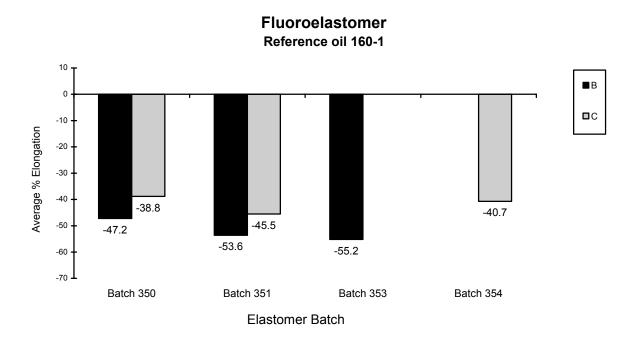


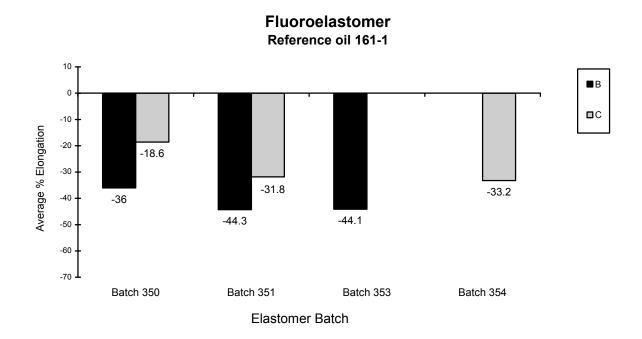
Average percent volume bar charts for polyacrylate material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate small lab and elastomer batch differences.



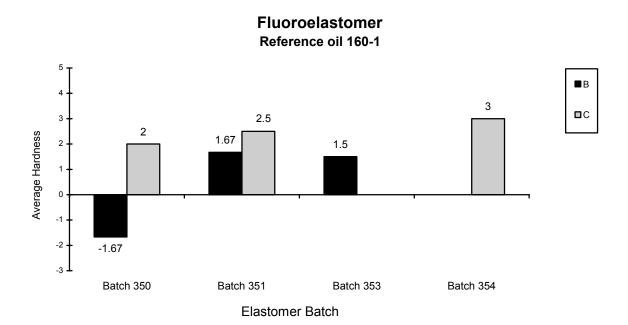


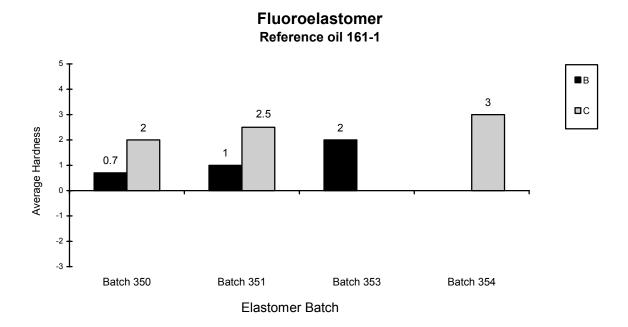
Average percent elongation bar charts for fluoroelastomer material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate small lab and elastomer batch differences.





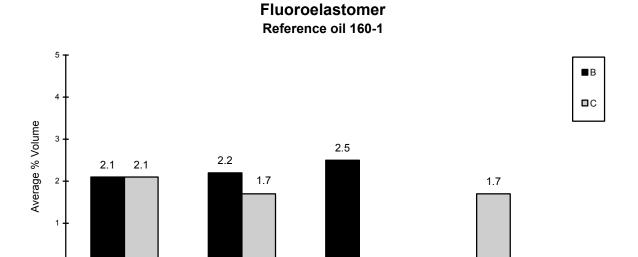
Average hardness bar charts for fluoroelastomer material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate small lab and elastomer batch differences.





Batch 350

Average percent volume bar charts for fluoroelastomer material are shown below by lab, elastomer batch, and reference oil. The bar charts illustrate small lab and elastomer batch differences.

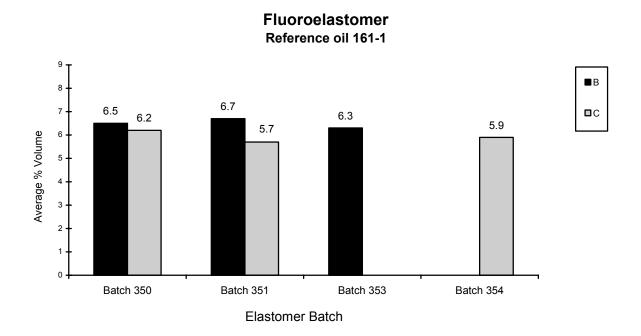


Batch 353

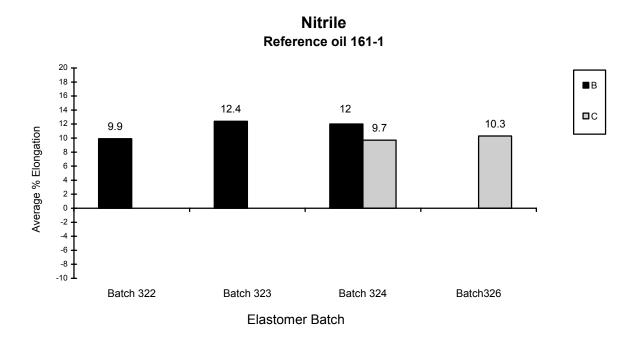
Batch 354

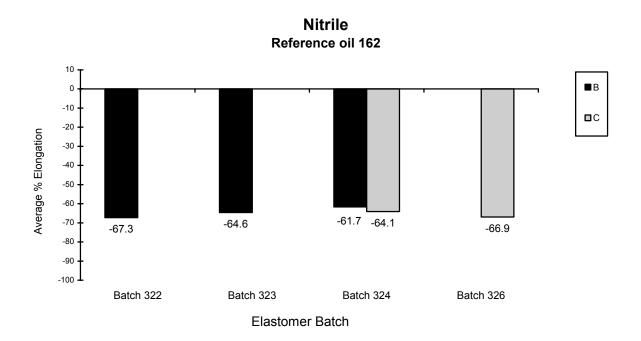
Batch 351

Elastomer Batch

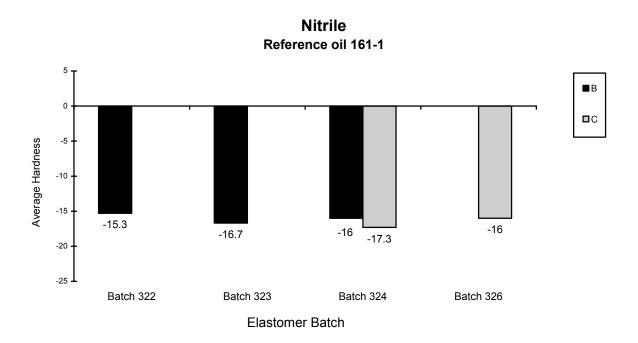


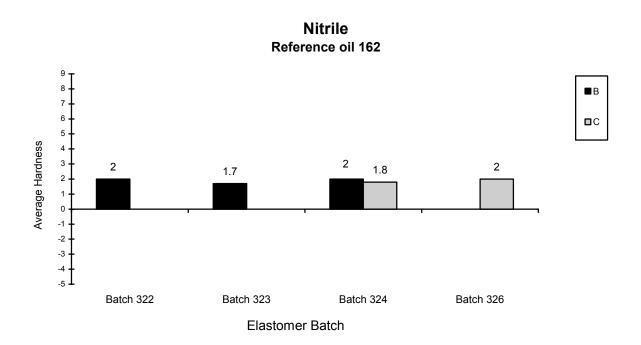
Average percent elongation bar charts for nitrile material are shown below by lab, elastomer batch, and reference oil. The bar charts show comparable results on all batches with little discernable lab difference with both reference oils.



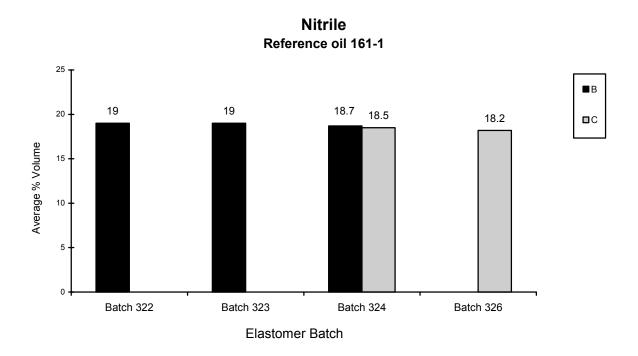


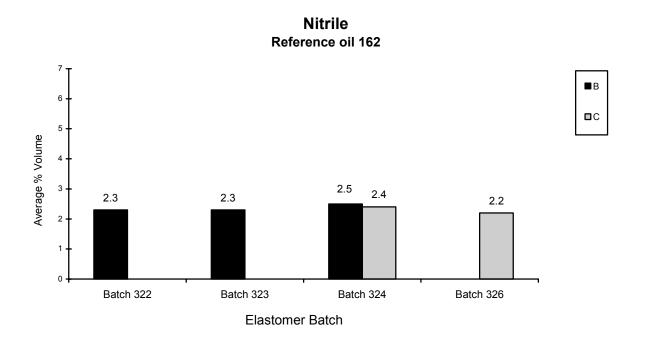
Average hardness bar charts for nitrile material are shown below by lab, elastomer batch, and reference oil. The bar charts show comparable results on all batches with little discernable lab difference with both reference oils.





Average percent volume bar charts for nitrile 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.





# **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 |
|-----|-----|-------|-----|-------|-----|-----|-----|-----|
| В   | 0   | 7     | 0   | 13    | 8   | 0   | 0   | 4   |
| С   | 0   | 11    | 0   | 13    | 8   | 0   | 0   | 3   |
| D   | 0   | 0     | 0   | 3     | 2   | 0   | 0   | 0   |
| TMC | 0   | 913   | 0   | 551   | 75  | 471 | 198 | 515 |

## INFORMATION LETTERS

There were no information letters issued during this report period.

# **TMC ACTIVITIES**

There were no lab visits conducted this report period.

### DML/dml

#### Attachments

c: OSCT Surveillance Panel

F. M. Farber, TMC

ftp://ftp.astmtmc.cmu.edu/docs/gears/osct/semiannualreports/osct-04-2002

Distribution: Email