



## Rubber Interlaboratory Testing Program

### Summary Report #187- 1st Qtr 2016

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## **ABOUT THE PROGRAM**

The Collaborative Reference Program for RUBBER, which was initiated in 1969, is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance provided by the Rubber Division of the American Chemical Society. The program allows laboratories to compare periodically the level and uniformity of their testing with that of other participating laboratories. It also provides a realistic assessment of the state of rubber testing proficiency.

For each test there are summary statistics and a graphical representation of the data. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations. Please refer to the section KEY TO TABLES AND GRAPHS for an explanation of terms and guidelines to interpreting the results.

## **ABOUT CTS**

Founded in 1971, CTS is a privately-owned company that specializes in interlaboratory tests for a wide variety of industrial sectors, including rubber, plastics, fasteners and metals, containerboard, paper and color, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in CTS programs.

If there are any questions on the report or testing program, please contact:

**Collaborative Testing Services, Inc.  
21331 Gentry Drive  
Sterling, Virginia 20166 USA**

**+1-571-434-1925  
FAX #: +1-571-434-1937  
rubber@cts-interlab.com**

**Office Hours: 8:00 a.m. - 4:30 p.m. ET**

<b>WebCode</b>	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Rubber Report published on the CTS Web site. The WebCode for each analysis can be found in the Performance Analysis Report mailed to each participant.
<b>Lab Mean</b>	Tensile & Hardness: the average of the median values obtained for each sample. All other tests: the average of the test results obtained by the participant.
<b>Grand Mean</b>	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
<b>Difference from Grand Mean</b>	The difference of the LAB MEAN from the GRAND MEAN.
<b>Between-Lab Standard Deviation</b>	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
<b>Comparative Performance Value</b>	An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.
<b>Inst Code</b>	If instruments are tracked in a test, a code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).
<b>Data Flag</b>	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	<b>CAUTION</b> - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	<b>STOP</b> - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	<b>PROCEED</b> - lab was unable to report data for at least one sample. However, a lab receiving two of more M flags for a test may need to stop and review its testing procedures.

**Graph** - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above.

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### Common Problems Highlighted in Footnotes

1. **Extreme data** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. (The data usually vary by more than three standard deviations from the grand mean.) The participant is advised to immediately review his data and/or testing procedure.
2. **Systematic bias** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.
3. **Inconsistency in testing between samples/sample sets** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an \* that falls on the edge of the ellipse.
4. **Inconsistency in testing within a sample** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.
5. **Data appeared to be off by a factor of # and was corrected by CTS** - In tests that involve computations, the results reported to CTS may be off by a factor. If this factor can easily be determined, CTS may correct the data and flag the participant. Occasionally CTS will correct a laboratory's results even though the data are still high or low when compared to the other participants. This is done so that the laboratory may be alerted to other possible errors in its testing procedure.
6. **Data for two samples (or two tests) appeared to be switched by the lab, and the error was corrected by CTS.**

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Labs flagged with an \* are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An \* should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.

## Analysis 605

## Tensile Strength (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		3,149.4	-26.6	-0.21	3,102.4	-86.6	-0.76	ZZ
2BCNG8		3,398.0	222.1	1.74	3,298.8	109.7	0.97	ZZ
3BUW73	X	2,869.5	-306.4	-2.40	2,654.5	-534.5	-4.72	ZZ
3JLFKB		3,088.3	-87.6	-0.69	3,215.0	25.9	0.23	ZZ
3XJRTE		3,292.4	116.5	0.91	3,379.4	190.4	1.68	ZZ
4H9684		3,335.9	160.0	1.25	3,227.1	38.1	0.34	ZZ
4P9P8D		2,920.0	-255.9	-2.00	3,140.0	-49.0	-0.43	ZZ
6PMBGF		3,082.0	-93.9	-0.73	3,091.0	-98.0	-0.86	ZZ
6VNMEX		3,254.0	78.1	0.61	3,230.0	41.0	0.36	ZZ
6ZJEKA		3,106.0	-69.9	-0.55	3,251.0	62.0	0.55	ZZ
6ZL4P7		3,111.1	-64.8	-0.51	3,176.4	-12.6	-0.11	ZZ
7V8TC3		3,166.0	-9.9	-0.08	3,228.0	39.0	0.34	ZZ
832H7C		3,200.5	24.5	0.19	3,336.5	147.4	1.30	ZZ
87KD94		3,200.1	24.2	0.19	3,148.8	-40.3	-0.36	ZZ
8FQE8A		3,413.0	237.1	1.85	3,272.0	83.0	0.73	ZZ
94CH37		3,110.0	-65.9	-0.52	3,052.0	-137.0	-1.21	ZZ
9LUG84		3,298.4	122.4	0.96	3,297.6	108.5	0.96	ZZ
9YX2BT		3,011.5	-164.4	-1.29	3,057.0	-132.0	-1.17	ZZ
A6YFUA	M	3,166.0	-9.9	-0.08	3,074.0	-115.0	-1.02	ZZ
A92GU7		3,145.5	-30.4	-0.24	3,217.0	28.0	0.25	ZZ
AHP8GY		3,127.5	-48.4	-0.38	3,229.5	40.5	0.36	ZZ
B2WW72		3,121.0	-54.9	-0.43	3,163.5	-25.5	-0.23	ZZ
B8JMTW		3,218.1	42.2	0.33	3,279.3	90.3	0.80	ZZ
BLKJP4		2,934.5	-241.4	-1.89	2,928.5	-260.5	-2.30	ZZ
C8J7U6		3,037.5	-138.4	-1.08	2,990.0	-199.0	-1.76	ZZ
CCAG43		3,015.5	-160.4	-1.25	3,017.5	-171.5	-1.51	ZZ
CGKUL2		3,000.9	-175.0	-1.37	3,040.7	-148.3	-1.31	ZZ
CGMJPY		3,247.5	71.6	0.56	3,318.5	129.5	1.14	ZZ
CLZ6Y7		3,079.3	-96.6	-0.76	3,074.7	-114.4	-1.01	ZZ
DBUKB4		3,388.4	212.5	1.66	3,238.4	49.3	0.44	ZZ
DKJ6G2		3,064.0	-111.9	-0.88	3,314.3	125.2	1.11	ZZ
E489DT		3,188.0	12.1	0.09	3,221.5	32.5	0.29	ZZ
EDZH4B		3,162.0	-13.9	-0.11	3,057.0	-132.0	-1.17	ZZ
EERKN7		3,276.2	100.3	0.78	3,280.1	91.0	0.80	ZZ
EHTNFR		3,167.4	-8.5	-0.07	3,215.2	26.2	0.23	ZZ
ELBNW9		3,250.5	74.6	0.58	3,252.5	63.5	0.56	ZZ
ENFBBX		3,275.3	99.4	0.78	3,289.2	100.1	0.88	ZZ
ETA9ZN		3,296.0	120.1	0.94	3,359.0	170.0	1.50	ZZ

## Analysis 605

## Tensile Strength (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
EU4Y74		3,234.4	58.5	0.46	3,096.6	-92.4	-0.82	ZZ
FENFPM		3,300.0	124.1	0.97	3,266.0	77.0	0.68	ZZ
FH7E63		3,230.5	54.6	0.43	3,170.0	-19.0	-0.17	ZZ
FKEPYL		2,888.5	-287.4	-2.25	3,007.5	-181.5	-1.60	ZZ
GMX4ZZ		3,287.5	111.6	0.87	3,276.5	87.5	0.77	ZZ
GP2WUY		3,022.0	-153.9	-1.20	3,033.0	-156.0	-1.38	ZZ
GT28QY		3,407.7	231.8	1.81	3,325.0	136.0	1.20	ZZ
H4GE3T	*	3,556.5	380.6	2.98	3,473.0	284.0	2.51	ZZ
H8WPFW		3,364.5	188.6	1.48	3,164.5	-24.5	-0.22	ZZ
J68Z9P		3,058.0	-117.9	-0.92	2,981.0	-208.0	-1.84	ZZ
J9MALT		3,245.0	69.1	0.54	3,352.5	163.5	1.44	ZZ
K4NF2W		3,144.5	-31.4	-0.25	3,285.5	96.5	0.85	ZZ
KH9V6W		3,025.0	-150.9	-1.18	3,170.0	-19.0	-0.17	ZZ
KVWXM		3,160.5	-15.4	-0.12	3,156.0	-33.0	-0.29	ZZ
L46RFV		3,077.7	-98.2	-0.77	3,048.0	-141.0	-1.24	ZZ
L9E6YF		3,336.0	160.1	1.25	3,353.5	164.5	1.45	ZZ
LADFTX		3,213.0	37.1	0.29	3,183.0	-6.0	-0.05	ZZ
LKUYCU	X	2,900.1	-275.8	-2.16	2,746.3	-442.7	-3.91	ZZ
LM2GBP	X	2,805.0	-370.9	-2.90	2,792.5	-396.5	-3.50	ZZ
LVRZPX		3,056.7	-119.2	-0.93	3,172.7	-16.3	-0.14	ZZ
M2XWBJ		3,333.7	157.8	1.23	3,305.4	116.4	1.03	ZZ
M6YWBF		3,221.5	45.6	0.36	3,216.5	27.5	0.24	ZZ
M7972R		3,233.5	57.6	0.45	3,308.5	119.5	1.05	ZZ
M9HWQV		3,252.7	76.8	0.60	3,197.6	8.6	0.08	ZZ
MYUXZQ		3,255.0	79.1	0.62	3,288.5	99.5	0.88	ZZ
ND9LNE		3,118.5	-57.4	-0.45	3,256.5	67.5	0.60	ZZ
P69LPC		3,197.4	21.5	0.17	3,230.0	41.0	0.36	ZZ
QC2FZF		3,098.8	-77.1	-0.60	3,079.9	-109.1	-0.96	ZZ
QFJFFV		2,999.5	-176.4	-1.38	3,159.0	-30.0	-0.26	ZZ
QNFBFF	X	2,833.5	-342.4	-2.68	2,779.0	-410.0	-3.62	ZZ
QQJ7YH		3,181.5	5.6	0.04	3,186.5	-2.5	-0.02	ZZ
QVFUFP		3,042.0	-133.9	-1.05	3,185.0	-4.0	-0.04	ZZ
R7RJTL		3,076.5	-99.4	-0.78	3,245.5	56.5	0.50	ZZ
RFH6YJ		3,094.5	-81.4	-0.64	3,204.0	15.0	0.13	ZZ
RGDKAV		3,035.0	-140.9	-1.10	2,968.0	-221.0	-1.95	ZZ
RHNMXE		3,159.5	-16.4	-0.13	3,227.0	38.0	0.34	ZZ
RZ4YNK		3,182.5	6.6	0.05	3,094.5	-94.5	-0.83	ZZ

Analysis 605

Tensile Strength (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
T7BM2L		3,027.0	-148.9	-1.17	3,009.6	-179.4	-1.58	ZZ
TCYAWQ		3,111.0	-64.9	-0.51	3,079.0	-110.0	-0.97	ZZ
U99MEN		3,314.5	138.6	1.08	3,168.0	-21.0	-0.19	ZZ
ULXM8B		3,284.5	108.6	0.85	3,292.5	103.5	0.91	ZZ
UVJNML		3,156.8	-19.2	-0.15	3,256.2	67.2	0.59	ZZ
V7KE6M		3,162.5	-13.4	-0.10	2,988.5	-200.5	-1.77	ZZ
VTBXXG		3,064.5	-111.4	-0.87	3,025.5	-163.5	-1.44	ZZ
WCHMNF		2,985.0	-190.9	-1.49	3,015.0	-174.0	-1.54	ZZ
WGYM97		3,129.9	-46.0	-0.36	3,292.4	103.4	0.91	ZZ
WRWNKI		3,267.7	91.8	0.72	3,065.4	-123.6	-1.09	ZZ
WX3K4B		2,868.2	-307.7	-2.41	3,048.0	-141.0	-1.24	ZZ
XNRHJA		3,386.7	210.8	1.65	3,350.4	161.4	1.42	ZZ
XVQ6BA		3,127.3	-48.7	-0.38	3,079.1	-110.0	-0.97	ZZ
XW823A		3,370.0	194.1	1.52	3,246.7	57.7	0.51	ZZ
Y7TMLC		3,205.4	29.5	0.23	3,118.3	-70.7	-0.62	ZZ
Z6UYH8		3,232.5	56.6	0.44	3,195.0	6.0	0.05	ZZ
ZEGZZ3		3,142.5	-33.4	-0.26	3,248.0	59.0	0.52	ZZ
ZMA8H9		3,249.7	73.8	0.58	3,349.1	160.1	1.41	ZZ
ZMRYUD		3,233.5	57.6	0.45	3,295.0	106.0	0.94	ZZ
ZQAGP4		3,155.0	-20.9	-0.16	3,252.5	63.5	0.56	ZZ
ZRPHWC		3,236.5	60.6	0.47	3,279.0	90.0	0.79	ZZ
ZVPQ38	*	3,346.6	170.7	1.34	3,108.4	-80.6	-0.71	ZZ
ZYZ2TG		3,080.0	-95.9	-0.75	3,160.0	-29.0	-0.26	ZZ

Summary Statistics	
Grand Means	3,175.90 psi      3,189.00 psi
Std Dev Btwn Labs	127.84 psi      113.30 psi
Statistics based on 93 of 98 reporting participants	

Summary Statistics in SI Units	
Grand Means	21.897 MPa      21.99 MPa
Std Dev Btwn Labs	0.881 MPa      0.78 MPa
Statistics based on 93 of 98 reporting participants	

Samples A61-A62: Polyisoprene compound, batch #1 & A63-A64: Polyisoprene compound, batch #2

Analysis 605

Tensile Strength (psi)

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**Comments on assigned Data Flags for Test #605**

3BUW73 (X) - Data for Sample group A63-A64 are low.

A6YFUA (M) - Data not reported for Sample A61.

LKUYCU (X) - Data for Sample group A63-A64 are low.

LM2GBP (X) - Data for all Samples are low. Possible systematic error.

QNFBBF (X) - Data for Sample group A63-A64 are low.

**Instrument Code Listing**

<b>605</b> Tensile Strength (psi)
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**Instruments:**

(ZZ) Instruments No Longer Tracked

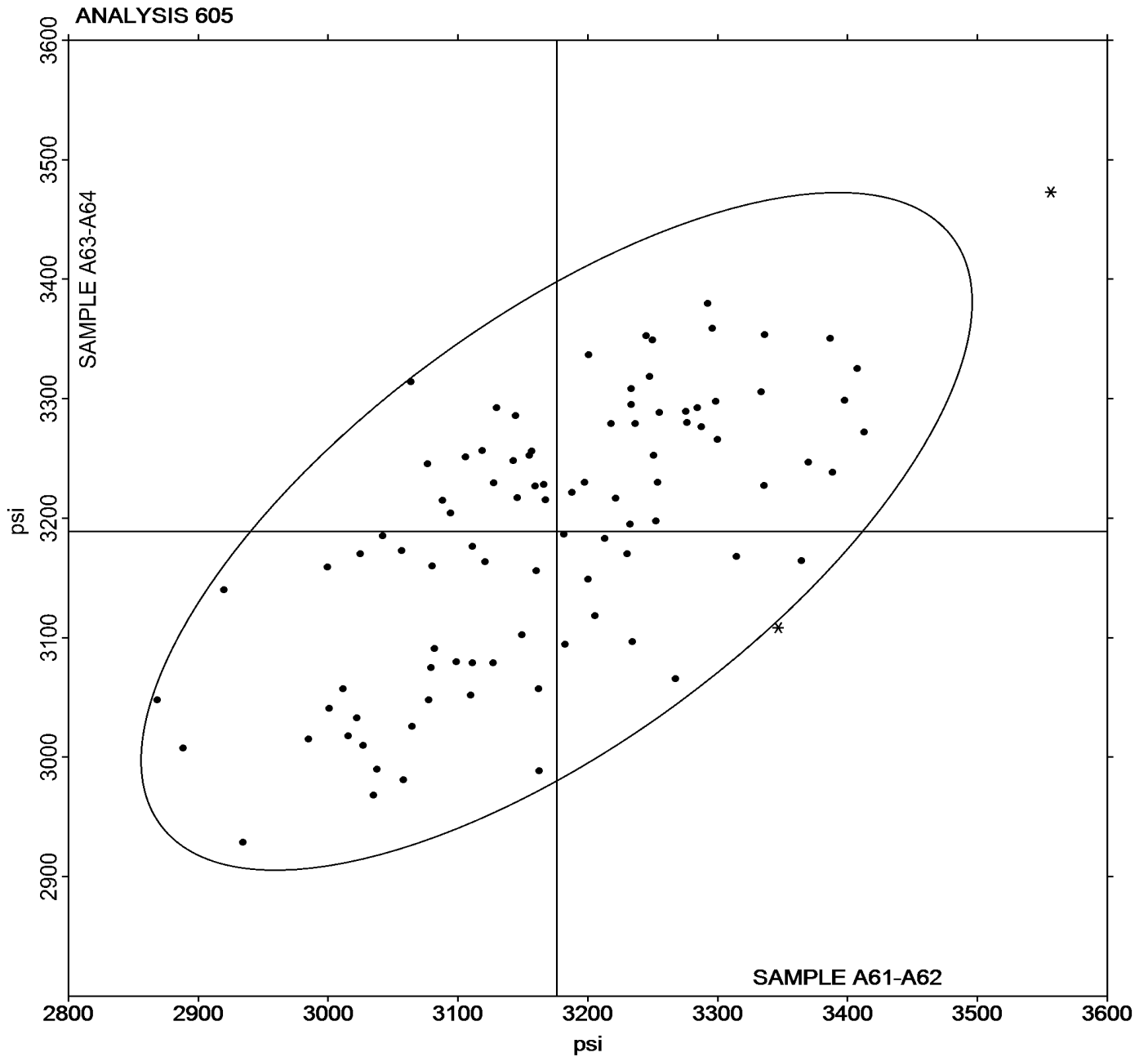


Analysis 605

Tensile Strength (psi)

Grand Mean Sample A61 = 3,175.90 psi

Grand Mean Sample A62 = 3,189.00 psi



## Analysis 606

## Ultimate Elongation (percent)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6	X	527.3	-101.9	-3.43	528.4	-98.9	-3.00	ZZ
2BCNG8		613.0	-16.2	-0.54	602.3	-25.1	-0.76	ZZ
3BUW73	*	571.0	-58.2	-1.96	545.5	-81.8	-2.49	ZZ
3JLFKB		631.5	2.4	0.08	626.7	-0.6	-0.02	ZZ
3XJRTE		642.0	12.8	0.43	629.0	1.7	0.05	ZZ
4H9684	*	607.5	-21.7	-0.73	635.0	7.7	0.23	ZZ
4P9P8D		688.5	59.3	2.00	691.0	63.7	1.94	ZZ
6PMBGF		639.0	9.8	0.33	617.0	-10.3	-0.31	ZZ
6VNMEX		668.0	38.8	1.31	676.0	48.7	1.48	ZZ
6ZJEKA		644.0	14.8	0.50	654.0	26.7	0.81	ZZ
6ZL4P7		590.0	-39.2	-1.32	584.5	-42.8	-1.30	ZZ
7V8TC3		620.0	-9.2	-0.31	609.0	-18.3	-0.56	ZZ
832H7C		638.0	8.8	0.30	642.1	14.8	0.45	ZZ
87KD94		682.4	53.2	1.79	678.3	50.9	1.55	ZZ
8FQE8A		691.0	61.8	2.08	695.0	67.7	2.06	ZZ
94CH37		650.0	20.8	0.70	642.0	14.7	0.45	ZZ
9LUG84		605.3	-23.9	-0.81	614.0	-13.4	-0.41	ZZ
9YX2BT		668.0	38.8	1.31	678.0	50.7	1.54	ZZ
A6YFUA	M	645.0	15.8	0.53	639.0	11.7	0.36	ZZ
A92GU7		658.5	29.3	0.99	637.0	9.7	0.29	ZZ
AHP8GY		592.0	-37.2	-1.25	583.0	-44.3	-1.35	ZZ
B2WW72		654.5	25.3	0.85	660.0	32.7	0.99	ZZ
B8JMTW		573.9	-55.3	-1.86	578.3	-49.0	-1.49	ZZ
BLKJP4		623.5	-5.7	-0.19	616.0	-11.3	-0.34	ZZ
C8J7U6		600.5	-28.7	-0.97	602.5	-24.8	-0.75	ZZ
CCAG43		616.5	-12.7	-0.43	607.5	-19.8	-0.60	ZZ
CGKUL2		652.9	23.7	0.80	644.5	17.1	0.52	ZZ
CGMJPY		628.5	-0.7	-0.02	635.5	8.2	0.25	ZZ
CLZ6Y7		659.6	30.4	1.02	666.3	38.9	1.18	ZZ
DBUKB4		650.8	21.6	0.73	635.3	8.0	0.24	ZZ
DKJ6G2		613.0	-16.2	-0.54	607.5	-19.8	-0.60	ZZ
E489DT		615.0	-14.2	-0.48	617.5	-9.8	-0.30	ZZ
EDZH4B		648.5	19.3	0.65	645.0	17.7	0.54	ZZ
EERKN7		620.5	-8.7	-0.29	631.5	4.2	0.13	ZZ
EHTNFR		624.0	-5.2	-0.17	629.0	1.7	0.05	ZZ
ELBNW9		604.0	-25.2	-0.85	594.0	-33.3	-1.01	ZZ
ENFBBX	*	682.5	53.3	1.80	658.8	31.5	0.96	ZZ

## Analysis 606

## Ultimate Elongation (percent)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ETA9ZN	*	651.5	22.3	0.75	679.5	52.2	1.59	ZZ
EU4Y74	*	715.5	86.3	2.91	724.5	97.2	2.95	ZZ
FENFPM		631.5	2.3	0.08	628.5	1.2	0.04	ZZ
FH7E63		627.0	-2.2	-0.07	637.5	10.2	0.31	ZZ
FKEPYL	X	547.5	-81.7	-2.75	605.0	-22.3	-0.68	ZZ
GMX4ZZ		583.0	-46.2	-1.56	573.5	-53.8	-1.63	ZZ
GP2WUY		611.5	-17.7	-0.60	614.0	-13.3	-0.40	ZZ
GT28QY		603.0	-26.2	-0.88	609.0	-18.3	-0.56	ZZ
H4GE3T		620.0	-9.2	-0.31	615.5	-11.8	-0.36	ZZ
H8WPFW		610.5	-18.7	-0.63	601.5	-25.8	-0.78	ZZ
J9MALT		635.0	5.8	0.20	643.0	15.7	0.48	ZZ
K4NF2W		602.0	-27.2	-0.92	615.0	-12.3	-0.37	ZZ
KH9V6W		573.0	-56.2	-1.89	571.5	-55.8	-1.70	ZZ
KVWXM		605.0	-24.2	-0.81	619.5	-7.8	-0.24	ZZ
L46RFV	X	665.0	35.8	1.21	625.0	-2.3	-0.07	ZZ
L9E6YF		577.0	-52.2	-1.76	589.0	-38.3	-1.16	ZZ
LADFTX		643.0	13.8	0.47	642.0	14.7	0.45	ZZ
LKUYCU		618.0	-11.2	-0.38	602.5	-24.8	-0.75	ZZ
LM2GBP		642.5	13.3	0.45	647.5	20.2	0.61	ZZ
LVRZPX		644.5	15.3	0.52	645.0	17.7	0.54	ZZ
M2XWBJ		608.4	-20.8	-0.70	611.7	-15.6	-0.48	ZZ
M6YWBF		632.0	2.8	0.10	641.0	13.7	0.42	ZZ
M7972R		641.0	11.8	0.40	632.0	4.7	0.14	ZZ
M9HWQV		639.5	10.3	0.35	643.9	16.6	0.50	ZZ
MYUXZQ		650.0	20.8	0.70	643.0	15.7	0.48	ZZ
ND9LNE		646.5	17.3	0.58	669.5	42.2	1.28	ZZ
P69LPC		630.5	1.3	0.04	623.5	-3.8	-0.12	ZZ
QC2FZF		608.5	-20.7	-0.70	605.0	-22.3	-0.68	ZZ
QFJFFV	X	572.0	-57.2	-1.93	604.0	-23.3	-0.71	ZZ
QNFBFF		571.5	-57.7	-1.94	574.0	-53.3	-1.62	ZZ
QQJ7YH		623.0	-6.2	-0.21	602.5	-24.8	-0.75	ZZ
QVFUFP		635.0	5.8	0.20	656.0	28.7	0.87	ZZ
R7RJTL		597.5	-31.7	-1.07	575.0	-52.3	-1.59	ZZ
RFH6YJ		628.5	-0.7	-0.02	637.5	10.2	0.31	ZZ
RGDKAV		633.5	4.3	0.15	615.0	-12.3	-0.37	ZZ
RHNMXE		586.0	-43.2	-1.45	574.0	-53.3	-1.62	ZZ
RZ4YNK		642.0	12.8	0.43	637.0	9.7	0.29	ZZ
T7BM2L		633.0	3.8	0.13	637.0	9.7	0.29	ZZ

## Analysis 606

## Ultimate Elongation (percent)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
TCYAWQ		621.5	-7.7	-0.26	618.0	-9.3	-0.28	ZZ
U99MEN		659.0	29.8	1.00	650.5	23.2	0.70	ZZ
ULXM8B		637.5	8.3	0.28	643.5	16.2	0.49	ZZ
UVJNML		622.5	-6.7	-0.22	623.0	-4.3	-0.13	ZZ
V7KE6M		597.5	-31.7	-1.07	569.0	-58.3	-1.77	ZZ
VTBXXG		627.0	-2.2	-0.07	653.5	26.2	0.80	ZZ
WCHMNF		603.0	-26.2	-0.88	597.5	-29.8	-0.91	ZZ
WRWNKI		644.0	14.8	0.50	650.5	23.2	0.70	ZZ
WX3K4B		583.6	-45.6	-1.54	586.8	-40.5	-1.23	ZZ
XNRHJA		651.8	22.6	0.76	648.9	21.6	0.66	ZZ
XVQ6BA		646.3	17.1	0.58	643.4	16.1	0.49	ZZ
XW823A		639.5	10.3	0.35	645.5	18.2	0.55	ZZ
Y7TMLC		696.5	67.3	2.27	697.0	69.7	2.12	ZZ
Z6UYH8		651.0	21.8	0.74	636.5	9.2	0.28	ZZ
ZEGZZ3		601.0	-28.2	-0.95	596.0	-31.3	-0.95	ZZ
ZMA8H9		619.5	-9.7	-0.33	618.5	-8.8	-0.27	ZZ
ZMRYUD		681.5	52.3	1.76	676.5	49.2	1.49	ZZ
ZQAGP4		661.0	31.8	1.07	638.8	11.5	0.35	ZZ
ZRPHWC		623.0	-6.2	-0.21	604.0	-23.3	-0.71	ZZ
ZVPQ38		636.3	7.1	0.24	617.1	-10.2	-0.31	ZZ
ZYZ2TG		584.5	-44.7	-1.51	565.5	-61.8	-1.88	ZZ

## Summary Statistics

## Grand Means

629.18 percent

627.30 percent

## Std Dev Btwn Labs

29.68 percent

32.91 percent

Statistics based on 91 of 96 reporting participants

Samples A61-A62: Polyisoprene compound, batch #1 &amp; A63-A64: Polyisoprene compound, batch #2

**Comments on assigned Data Flags for Test #606**

2AFDL6 (X) - Data for all Samples are low. Possible systematic error.

A6YFUA (M) - Data not reported for Sample A61.

FKPEYL (X) - Inconsistency in testing between Sample groups.

L46RFV (X) - Inconsistency in testing between Sample groups. Inconsistent in testing within Sample group A61-A62.

QFJFFV (X) - Inconsistency in testing between Sample groups.

Analysis 606

Ultimate Elongation (percent)

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Instrument Code Listing

<b>606</b> Ultimate Elongation (percent)
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**Instruments:**

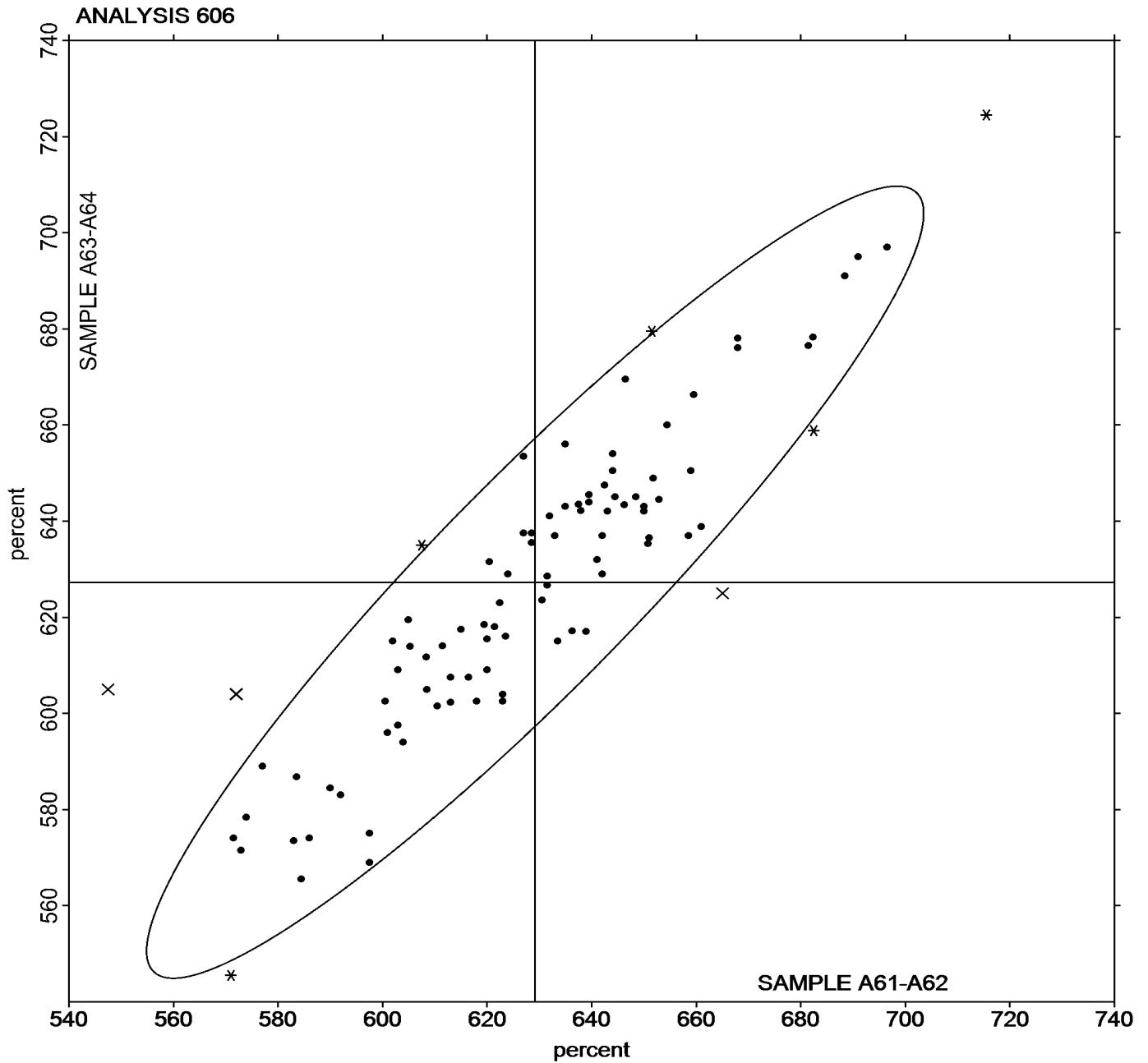
(ZZ) Instruments No Longer Tracked

Analysis 606

Ultimate Elongation (percent)

Grand Mean Sample A61 = 629.18 percent

Grand Mean Sample A62 = 627.30 percent



## Analysis 607

## Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		873.4	20.2	0.32	888.5	26.8	0.33	ZZ
2BCNG8		931.5	78.4	1.23	911.0	49.2	0.62	ZZ
3BUW73		936.5	83.4	1.31	949.0	87.2	1.09	ZZ
3JLFKB		780.7	-72.4	-1.14	871.0	9.3	0.12	ZZ
3XJRTE		884.7	31.6	0.50	979.0	117.3	1.46	ZZ
4H9684	X	960.9	107.7	1.69	810.0	-51.7	-0.65	ZZ
4P9P8D	X	651.0	-202.1	-3.17	709.0	-152.8	-1.91	ZZ
6PMBGF		789.5	-63.6	-1.00	854.0	-7.8	-0.10	ZZ
6VNMEX		879.5	26.4	0.41	799.0	-62.8	-0.78	ZZ
6ZJEKA		794.8	-58.3	-0.91	810.0	-51.7	-0.65	ZZ
6ZL4P7		846.5	-6.6	-0.10	952.5	90.7	1.13	ZZ
7V8TC3		857.5	4.4	0.07	906.5	44.7	0.56	ZZ
832H7C		845.7	-7.5	-0.12	864.5	2.7	0.03	ZZ
87KD94		760.4	-92.8	-1.45	726.0	-135.7	-1.70	ZZ
8FQE8A		786.5	-66.6	-1.04	716.0	-145.8	-1.82	ZZ
94CH37		764.0	-89.1	-1.40	782.5	-79.3	-0.99	ZZ
9LUG84		934.8	81.6	1.28	905.4	43.6	0.54	ZZ
9YX2BT		739.0	-114.1	-1.79	703.0	-158.8	-1.98	ZZ
A6YFUA	M	839.0	-14.1	-0.22	854.0	-7.8	-0.10	ZZ
A92GU7		741.3	-111.8	-1.75	825.3	-36.5	-0.46	ZZ
AHP8GY		924.0	70.9	1.11	977.5	115.7	1.45	ZZ
B2WW72		787.5	-65.6	-1.03	763.0	-98.8	-1.23	ZZ
B8JMTW		951.2	98.0	1.54	997.4	135.7	1.69	ZZ
BLKJP4		792.0	-61.1	-0.96	810.0	-51.8	-0.65	ZZ
C8J7U6		889.0	35.9	0.56	871.5	9.7	0.12	ZZ
CCAG43		831.0	-22.1	-0.35	856.0	-5.8	-0.07	ZZ
CGKUL2		769.6	-83.6	-1.31	794.2	-67.5	-0.84	ZZ
CGMJPY		824.9	-28.2	-0.44	843.9	-17.9	-0.22	ZZ
CLZ6Y7		747.0	-106.1	-1.66	739.3	-122.5	-1.53	ZZ
DBUKB4		869.4	16.3	0.25	856.1	-5.6	-0.07	ZZ
DKJ6G2		829.5	-23.6	-0.37	948.5	86.7	1.08	ZZ
E489DT		912.5	59.4	0.93	869.0	7.2	0.09	ZZ
EDZH4B		825.0	-28.1	-0.44	782.0	-79.8	-1.00	ZZ
EERKN7		945.9	92.7	1.45	901.3	39.5	0.49	ZZ
EHTNFR		838.0	-15.1	-0.24	849.0	-12.8	-0.16	ZZ
ELBNW9		936.5	83.4	1.31	981.0	119.2	1.49	ZZ
ENFBBX		756.0	-97.1	-1.52	807.6	-54.2	-0.68	ZZ

## Analysis 607

## Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ETA9ZN		821.5	-31.6	-0.50	811.5	-50.3	-0.63	ZZ
FENFPM		869.0	15.9	0.25	858.5	-3.3	-0.04	ZZ
FH7E63		834.0	-19.1	-0.30	783.5	-78.3	-0.98	ZZ
FKEPYL		788.0	-65.1	-1.02	696.0	-165.8	-2.07	ZZ
GMX4ZZ		977.5	124.4	1.95	1,046.0	184.2	2.30	ZZ
GP2WUY		810.0	-43.1	-0.68	834.5	-27.3	-0.34	ZZ
GT28QY		968.9	115.7	1.81	920.3	58.5	0.73	ZZ
H4GE3T		913.0	59.9	0.94	865.5	3.7	0.05	ZZ
H8WPFW		916.0	62.9	0.99	966.0	104.2	1.30	ZZ
J9MALT		899.5	46.4	0.73	935.5	73.7	0.92	ZZ
K4NF2W		906.5	53.4	0.84	927.0	65.2	0.82	ZZ
KH9V6W	X	1,028.5	175.4	2.75	1,140.0	278.2	3.48	ZZ
KVWXM		911.5	58.4	0.91	888.0	26.2	0.33	ZZ
L9E6YF		917.0	63.9	1.00	842.5	-19.3	-0.24	ZZ
LADFTX		823.0	-30.1	-0.47	819.0	-42.8	-0.53	ZZ
LKUYCU		776.0	-77.2	-1.21	762.2	-99.6	-1.24	ZZ
LVRZPX		782.5	-70.7	-1.11	836.9	-24.9	-0.31	ZZ
M2XWBJ		927.5	74.4	1.17	937.7	75.9	0.95	ZZ
M6YWBF		869.5	16.4	0.26	846.5	-15.3	-0.19	ZZ
M7972R		827.0	-26.1	-0.41	884.5	22.7	0.28	ZZ
M9HWQV		878.2	25.1	0.39	828.9	-32.9	-0.41	ZZ
MYUXZQ		835.5	-17.6	-0.28	852.5	-9.3	-0.12	ZZ
ND9LNE		779.5	-73.6	-1.15	785.0	-76.8	-0.96	ZZ
P69LPC		871.0	17.8	0.28	863.7	1.9	0.02	ZZ
QC2FZF		904.3	51.2	0.80	868.8	7.0	0.09	ZZ
QNFBFF		898.5	45.4	0.71	861.5	-0.3	0.00	ZZ
QQJ7YH		858.0	4.9	0.08	918.5	56.7	0.71	ZZ
QVFUFP		777.5	-75.6	-1.19	782.0	-79.8	-1.00	ZZ
R7RJTL		908.5	55.4	0.87	990.0	128.2	1.60	ZZ
RGDKAV		803.5	-49.6	-0.78	826.5	-35.3	-0.44	ZZ
RHNMXE		922.5	69.4	1.09	987.0	125.2	1.56	ZZ
RZ4YNK		906.0	52.9	0.83	875.5	13.7	0.17	ZZ
T7BM2L		744.1	-109.1	-1.71	754.2	-107.6	-1.34	ZZ
TCYAWQ		845.0	-8.1	-0.13	846.0	-15.8	-0.20	ZZ
U99MEN		854.5	1.4	0.02	853.0	-8.8	-0.11	ZZ
ULXM8B		832.5	-20.6	-0.32	842.5	-19.3	-0.24	ZZ
UVJNML		857.9	4.8	0.07	921.5	59.7	0.75	ZZ
V7KE6M		934.0	80.9	1.27	964.0	102.2	1.28	ZZ



Analysis 607

Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
VTBXXG		823.0	-30.1	-0.47	760.0	-101.8	-1.27	ZZ
WCHMNF		912.5	59.4	0.93	943.5	81.7	1.02	ZZ
WRWNKI		850.7	-2.5	-0.04	775.2	-86.5	-1.08	ZZ
WX3K4B	X	7,924.4	7,071.3	110.86	8,578.1	7,716.4	96.40	ZZ
XNRHJA		879.7	26.5	0.42	863.0	1.2	0.02	ZZ
XVQ6BA		815.8	-37.4	-0.59	813.7	-48.1	-0.60	ZZ
XW823A		873.1	20.0	0.31	849.2	-12.6	-0.16	ZZ
Y7TMLC		732.4	-120.7	-1.89	688.9	-172.8	-2.16	ZZ
Z6UYH8		812.0	-41.1	-0.64	842.5	-19.3	-0.24	ZZ
ZEGZZ3		850.5	-2.6	-0.04	895.5	33.7	0.42	ZZ
ZMA8H9		901.5	48.4	0.76	932.5	70.7	0.88	ZZ
ZMRYUD		746.0	-107.1	-1.68	780.0	-81.8	-1.02	ZZ
ZQAGP4		911.8	58.6	0.92	938.7	76.9	0.96	ZZ
ZRPHWC		860.2	7.1	0.11	924.5	62.7	0.78	ZZ
ZVPQ38		862.4	9.2	0.14	825.9	-35.8	-0.45	ZZ
ZYZ2TG	*	1,014.5	161.4	2.53	1,105.0	243.2	3.04	ZZ

Summary Statistics	
Grand Means	853.14 psi
Std Dev Btwn Labs	63.78 psi
	861.76 psi
	80.05 psi
Statistics based on 86 of 91 reporting participants	

Summary Statistics in SI Units	
Grand Means	5.8821 MPa
Std Dev Btwn Labs	0.4398 MPa
	5.94 MPa
	0.55 MPa
Statistics based on 86 of 91 reporting participants	

Samples A61-A62: Polyisoprene compound, batch #1 & A63-A64: Polyisoprene compound, batch #2

Analysis 607

Stress at 300% Elongation (psi)

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**Comments on assigned Data Flags for Test #607**

4H9684 (X) - Inconsistency in testing between Sample groups.

4P9P8D (X) - Data for Sample group A61-A62 are low.

A6YFUA (M) - Data not reported for Sample A61.

KH9V6W (X) - Data for Sample group A63-A64 are high.

WX3K4B (X) - Extreme data.

**Instrument Code Listing**

<b>607</b> Stress at 300% Elongation (psi)
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**Instruments:**

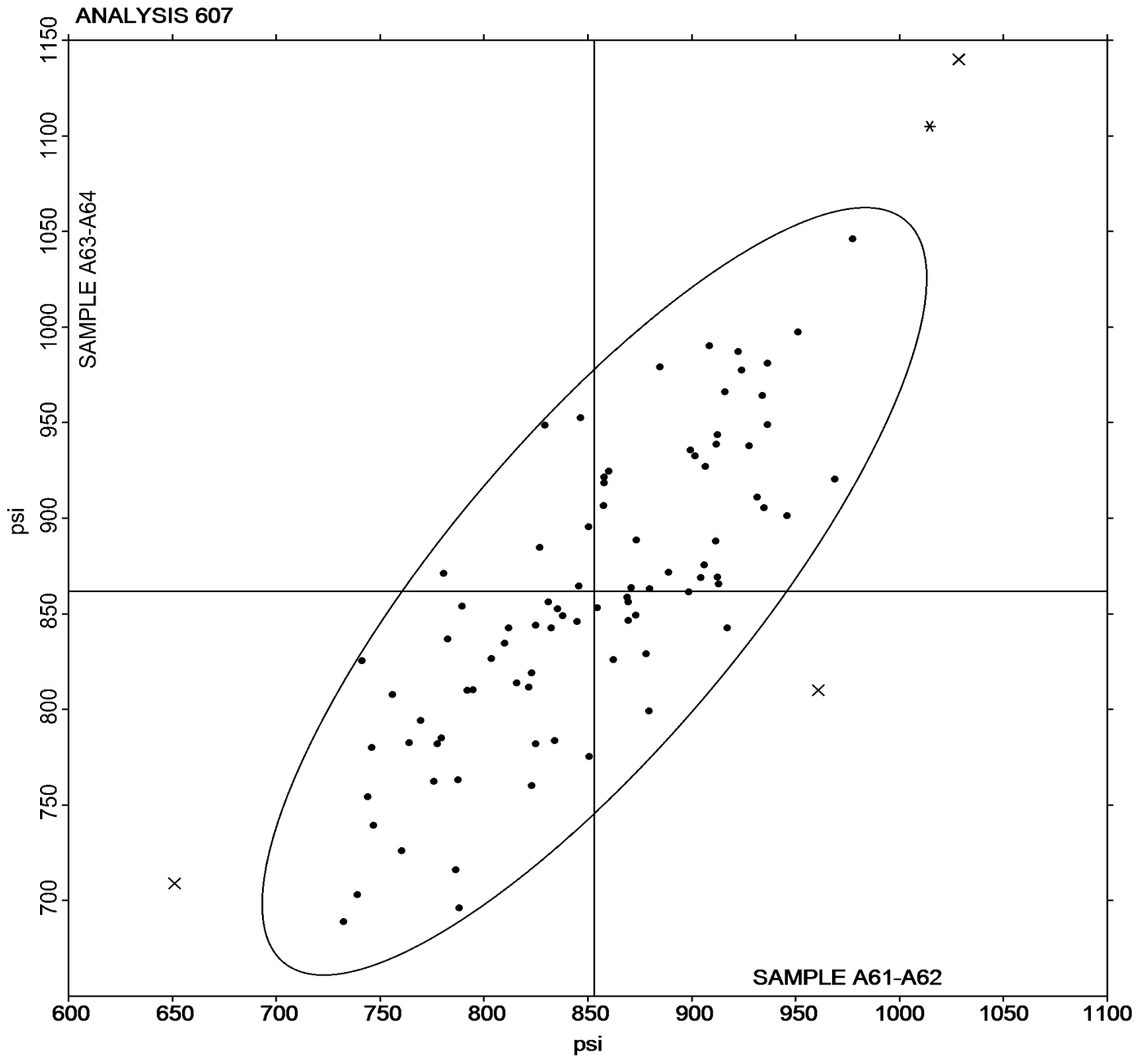
(ZZ) Instruments No Longer Tracked

Analysis 607

Stress at 300% Elongation (psi)

Grand Mean Sample A61 = 853.14 psi

Grand Mean Sample A62 = 861.76 psi



## Analysis 608

## Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		185.3	3.3	0.31	184.2	0.5	0.04	ZZ
2BCNG8		189.0	7.0	0.66	187.5	3.9	0.29	ZZ
3BUW73		192.5	10.5	1.00	195.5	11.9	0.89	ZZ
3JLFKB		167.0	-15.0	-1.43	183.7	0.1	0.01	ZZ
3XJRTE		188.6	6.5	0.62	203.1	19.4	1.46	ZZ
4H9684	X	198.0	15.9	1.52	168.2	-15.4	-1.16	ZZ
4P9P8D		172.0	-10.0	-0.96	182.5	-1.1	-0.09	ZZ
6PMBGF		169.5	-12.5	-1.19	183.0	-0.6	-0.05	ZZ
6VNME X	*	207.5	25.5	2.42	193.0	9.4	0.71	ZZ
6ZJEKA		179.8	-2.2	-0.21	178.4	-5.2	-0.39	ZZ
6ZL4P7	*	174.0	-8.0	-0.77	200.0	16.4	1.23	ZZ
7V8TC3		181.0	-1.0	-0.10	189.0	5.4	0.40	ZZ
832H7C		182.9	0.9	0.08	193.9	10.2	0.77	ZZ
87KD94		180.6	-1.5	-0.14	177.3	-6.3	-0.48	ZZ
8FQE8A		184.0	2.0	0.19	170.5	-13.1	-0.99	ZZ
94CH37		166.0	-16.0	-1.53	170.0	-13.6	-1.03	ZZ
9LUG84		193.4	11.4	1.08	187.0	3.4	0.25	ZZ
9YX2BT		169.5	-12.5	-1.19	162.5	-21.1	-1.59	ZZ
A6YFUA	M	195.0	13.0	1.23	190.0	6.4	0.48	ZZ
A92GU7		167.7	-14.3	-1.36	181.8	-1.8	-0.14	ZZ
AHP8GY		191.0	9.0	0.85	202.5	18.9	1.42	ZZ
B2WW72		173.0	-9.0	-0.86	169.5	-14.1	-1.06	ZZ
B8JMTW		188.3	6.3	0.60	197.7	14.1	1.06	ZZ
BLKJP4		175.5	-6.5	-0.62	181.5	-2.1	-0.16	ZZ
C8J7U6		171.8	-10.3	-0.98	175.0	-8.6	-0.65	ZZ
CCAG43		170.5	-11.5	-1.10	177.5	-6.1	-0.46	ZZ
CGKUL2		171.7	-10.4	-0.99	177.8	-5.8	-0.44	ZZ
CGMJPY		182.6	0.5	0.05	184.7	1.1	0.08	ZZ
CLZ6Y7		169.0	-13.0	-1.24	169.4	-14.2	-1.07	ZZ
DBUKB4		181.9	-0.1	-0.01	178.0	-5.6	-0.42	ZZ
DKJ6G2		193.0	11.0	1.04	213.8	30.1	2.27	ZZ
E489DT		196.0	14.0	1.33	186.5	2.9	0.22	ZZ
EDZH4B		167.0	-15.0	-1.43	159.5	-24.1	-1.82	ZZ
EERKN7	X	223.7	41.7	3.96	223.6	39.9	3.01	ZZ
EHTNFR		179.0	-3.0	-0.29	183.5	-0.1	-0.01	ZZ
ELBNW9		193.0	11.0	1.04	201.0	17.4	1.31	ZZ
ENFBBX		174.6	-7.5	-0.71	186.5	2.8	0.21	ZZ
ETA9ZN		185.0	3.0	0.28	183.0	-0.6	-0.05	ZZ

## Analysis 608

## Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
FENFPM		186.5	4.5	0.42	185.0	1.4	0.10	ZZ
FH7E63		178.5	-3.5	-0.34	171.0	-12.6	-0.95	ZZ
FKEPYL		163.0	-19.0	-1.81	151.0	-32.6	-2.46	ZZ
GMX4ZZ		203.0	21.0	1.99	214.0	30.4	2.29	ZZ
GP2WUY		174.5	-7.5	-0.72	177.0	-6.6	-0.50	ZZ
GT28QY		201.6	19.6	1.86	195.8	12.2	0.92	ZZ
H4GE3T		194.5	12.5	1.19	187.5	3.9	0.29	ZZ
H8WPFW		181.5	-0.5	-0.05	192.0	8.4	0.63	ZZ
J9MALT	X	225.5	43.5	4.14	237.0	53.4	4.02	ZZ
K4NF2W		187.5	5.5	0.52	193.0	9.4	0.71	ZZ
KH9V6W	X	270.5	88.5	8.42	299.5	115.9	8.73	ZZ
KVWXM		184.5	2.5	0.23	184.5	0.9	0.07	ZZ
L9E6YF		173.5	-8.5	-0.81	155.0	-28.6	-2.16	ZZ
LADFTX		177.5	-4.5	-0.43	170.0	-13.6	-1.03	ZZ
LKUUCU		169.0	-13.1	-1.24	166.8	-16.8	-1.27	ZZ
LM2GBP		174.5	-7.5	-0.72	169.0	-14.6	-1.10	ZZ
LVRZPX		168.2	-13.8	-1.31	179.8	-3.8	-0.28	ZZ
M2XWBJ		194.4	12.3	1.17	189.3	5.6	0.43	ZZ
M6YWBF		186.0	4.0	0.38	183.0	-0.6	-0.05	ZZ
M7972R		194.5	12.5	1.19	209.0	25.4	1.91	ZZ
M9HWQV		185.3	3.3	0.31	176.2	-7.5	-0.56	ZZ
MYUXZQ		178.5	-3.5	-0.34	182.0	-1.6	-0.12	ZZ
ND9LNE		170.5	-11.5	-1.10	172.5	-11.1	-0.84	ZZ
P69LPC		190.7	8.7	0.83	187.8	4.2	0.32	ZZ
QC2FZF		185.6	3.6	0.34	187.8	4.2	0.32	ZZ
QNFBFF		184.5	2.5	0.23	176.5	-7.1	-0.54	ZZ
QQJ7YH		187.5	5.5	0.52	198.5	14.9	1.12	ZZ
QVFUFP		178.0	-4.0	-0.38	176.0	-7.6	-0.57	ZZ
R7RJTL		197.0	15.0	1.42	204.0	20.4	1.53	ZZ
RFH6YJ		183.0	1.0	0.09	179.5	-4.1	-0.31	ZZ
RGDKAV		174.5	-7.5	-0.72	176.5	-7.1	-0.54	ZZ
RHNMXE		188.0	6.0	0.57	198.0	14.4	1.08	ZZ
RZ4YNK		188.5	6.5	0.61	183.0	-0.6	-0.05	ZZ
T7BM2L		157.4	-24.7	-2.35	159.5	-24.1	-1.81	ZZ
TCYAWQ		179.0	-3.0	-0.29	178.5	-5.1	-0.39	ZZ
U99MEN		189.5	7.5	0.71	187.0	3.4	0.25	ZZ
ULXM8B		204.5	22.5	2.14	207.5	23.9	1.80	ZZ

Analysis 608

Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
UVJNML		175.4	-6.6	-0.63	189.3	5.7	0.43	ZZ
V7KE6M		177.5	-4.5	-0.43	192.5	8.9	0.67	ZZ
VTBXXG		182.0	0.0	0.00	171.0	-12.6	-0.95	ZZ
WCHMNF	X	247.5	65.5	6.23	250.5	66.9	5.04	ZZ
WRWNKI		189.3	7.2	0.69	174.8	-8.9	-0.67	ZZ
WX3K4B	X	619.3	437.2	41.61	640.7	457.1	34.43	ZZ
XNRHJA		187.1	5.1	0.48	182.0	-1.6	-0.12	ZZ
XVQ6BA		181.4	-0.6	-0.06	184.7	1.0	0.08	ZZ
XW823A		195.1	13.0	1.24	188.6	4.9	0.37	ZZ
Y7TMLC		166.8	-15.2	-1.45	152.3	-31.3	-2.36	ZZ
Z6UYH8		179.0	-3.0	-0.29	181.5	-2.1	-0.16	ZZ
ZEGZZ3		178.5	-3.5	-0.34	180.0	-3.6	-0.27	ZZ
ZMA8H9		205.5	23.5	2.23	213.0	29.4	2.21	ZZ
ZMRYUD		167.5	-14.5	-1.38	176.0	-7.6	-0.57	ZZ
ZQAGP4		193.1	11.1	1.05	196.9	13.3	1.00	ZZ
ZRPHWC		187.0	4.9	0.47	198.9	15.2	1.15	ZZ
ZVPQ38		180.7	-1.3	-0.13	173.4	-10.2	-0.77	ZZ
ZYZ2TG	X	240.0	58.0	5.52	261.0	77.4	5.83	ZZ

Summary Statistics	
Grand Means	182.04 psi      183.63 psi
Stnd Dev Btwn Labs	10.51 psi      13.27 psi
Statistics based on 85 of 93 reporting participants	

Summary Statistics in SI Units	
Grand Means	1.2551 MPa      1.27 MPa
Stnd Dev Btwn Labs	0.0725 MPa      0.09 MPa
Statistics based on 85 of 93 reporting participants	

Samples A61-A62: Polyisoprene compound, batch #1 & A63-A64: Polyisoprene compound, batch #2

Analysis 608

Stress at 100% Elongation (psi)

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**Comments on assigned Data Flags for Test #608**

4H9684 (X) - Inconsistency in testing between Sample groups.

A6YFUA (M) - Data not reported for Sample A61.

EERKN7 (X) - Data for all Samples are high.

J9MALT (X) - Data for all Samples are high.

KH9V6W (X) - Data for all Samples are high.

WCHMNK (X) - Data for all Samples are high.

WX3K4B (X) - Extreme data.

ZYZ2TG (X) - Data for all Samples are high.

**Instrument Code Listing**

<b>608</b> Stress at 100% Elongation (psi)
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**Instruments:**

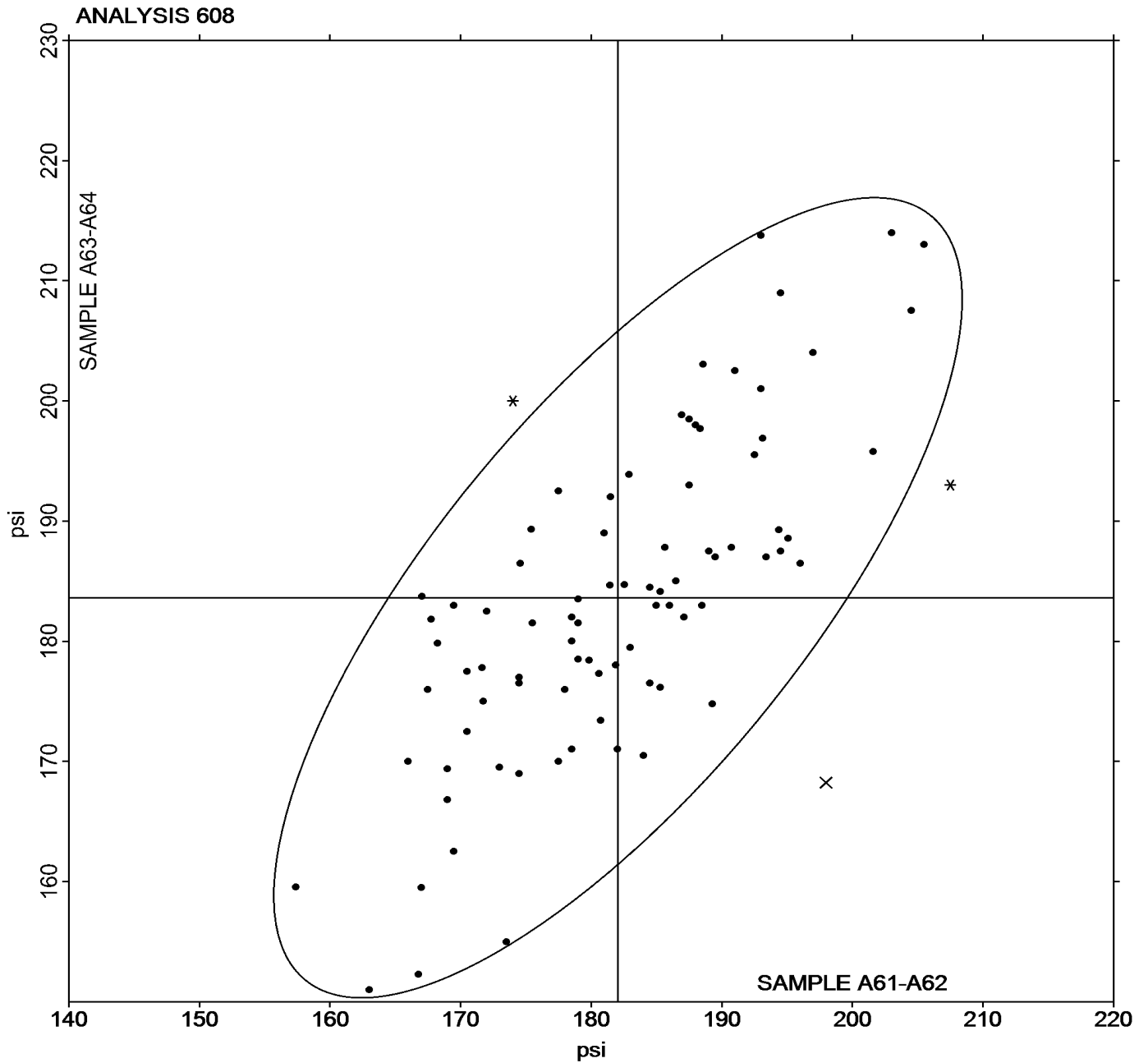
(ZZ) Instruments No Longer Tracked

Analysis 608

Stress at 100% Elongation (psi)

Grand Mean Sample A61 = 182.04 psi

Grand Mean Sample A62 = 183.63 psi





## Analysis 620

## Hardness (Shore A/Type A)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		48.30	0.73	0.40	47.60	-0.09	-0.05	BT
2BCNG8	*	48.00	0.43	0.23	46.00	-1.69	-0.90	HH
3BUW73		45.00	-2.57	-1.39	45.50	-2.19	-1.17	XX
3JLFKB		46.75	-0.82	-0.44	47.60	-0.09	-0.05	BT
3XJRTE		48.50	0.93	0.51	49.50	1.81	0.96	HH
4H9684	X	49.45	1.88	1.02	47.10	-0.59	-0.32	BT
4NWPBJ		46.20	-1.37	-0.74	45.35	-2.34	-1.25	BT
4P9P8D		46.00	-1.57	-0.85	47.50	-0.19	-0.10	HH
4XZ39Y		51.45	3.88	2.11	51.30	3.61	1.92	BT
6PMBGF		48.00	0.43	0.23	47.50	-0.19	-0.10	XX
6VNMEX		46.75	-0.82	-0.44	46.75	-0.94	-0.50	XX
6ZJEKA		45.50	-2.07	-1.12	45.50	-2.19	-1.17	BT
6ZL4P7		45.60	-1.97	-1.07	46.35	-1.34	-0.72	BT
7V8TC3		47.00	-0.57	-0.31	47.50	-0.19	-0.10	BT
832H7C		49.00	1.43	0.78	49.50	1.81	0.96	BT
87KD94		46.00	-1.57	-0.85	46.00	-1.69	-0.90	BT
8FQE8A		48.00	0.43	0.23	47.50	-0.19	-0.10	HH
94CH37		47.40	-0.17	-0.09	47.95	0.26	0.14	BT
9LUG84		46.00	-1.57	-0.85	45.00	-2.69	-1.43	XX
9YX2BT		48.40	0.83	0.45	48.20	0.51	0.27	BT
A6YFUA		46.00	-1.57	-0.85	46.50	-1.19	-0.64	HH
A92GU7		47.00	-0.57	-0.31	47.50	-0.19	-0.10	HH
AHP8GY		49.25	1.68	0.91	49.00	1.31	0.69	BT
B2WW72		47.35	-0.22	-0.12	47.70	0.01	0.00	XX
B8JMTW		48.60	1.03	0.56	48.60	0.91	0.48	XX
BLKJP4		45.35	-2.22	-1.20	45.95	-1.74	-0.93	BT
C8J7U6		45.50	-2.07	-1.12	46.00	-1.69	-0.90	HH
CCAG43		47.00	-0.57	-0.31	47.00	-0.69	-0.37	BT
CGKUL2		47.20	-0.37	-0.20	46.90	-0.79	-0.42	XX
CLZ6Y7	*	42.50	-5.07	-2.75	42.00	-5.69	-3.03	BT
DBUKB4		52.00	4.43	2.40	51.50	3.81	2.03	XX
DF6PPP		47.00	-0.57	-0.31	46.30	-1.39	-0.74	XX
DKJ6G2		48.00	0.43	0.23	48.00	0.31	0.16	HH
E489DT		47.25	-0.32	-0.17	46.75	-0.94	-0.50	HH
EDZH4B		49.00	1.43	0.78	47.50	-0.19	-0.10	XX
EERKN7		46.70	-0.87	-0.47	46.15	-1.54	-0.82	BT
EHTNFR		49.50	1.93	1.05	49.70	2.01	1.07	XX

## Analysis 620

## Hardness (Shore A/Type A)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ELBNW9		48.80	1.23	0.67	48.95	1.26	0.67	BT
ENFBBX		48.50	0.93	0.51	49.85	2.16	1.15	BT
ETA9ZN		49.50	1.93	1.05	49.50	1.81	0.96	XX
EU4Y74		47.00	-0.57	-0.31	46.50	-1.19	-0.64	HH
FENFPM		48.50	0.93	0.51	49.00	1.31	0.69	XX
FH7E63		47.50	-0.07	-0.04	48.00	0.31	0.16	HH
FKEPYL		50.65	3.08	1.67	50.05	2.36	1.25	HH
GMX4ZZ		50.00	2.43	1.32	51.00	3.31	1.76	XX
GP2WUY		44.00	-3.57	-1.94	45.00	-2.69	-1.43	HH
GT28QY		48.65	1.08	0.59	49.25	1.56	0.83	BT
H4GE3T		49.50	1.93	1.05	49.50	1.81	0.96	HH
J68Z9P		45.50	-2.07	-1.12	45.50	-2.19	-1.17	BT
J9MALT		47.50	-0.07	-0.04	48.50	0.81	0.43	HH
K4NF2W		48.00	0.43	0.23	48.00	0.31	0.16	XX
KH9V6W		46.50	-1.07	-0.58	47.50	-0.19	-0.10	HH
KVWXMN		47.00	-0.57	-0.31	47.00	-0.69	-0.37	HH
KVYMRL	X	45.50	-2.07	-1.12	48.00	0.31	0.16	BT
L46RFV		50.50	2.93	1.59	50.50	2.81	1.49	XX
L9E6YF		46.50	-1.07	-0.58	47.50	-0.19	-0.10	BT
LADFTX		49.00	1.43	0.78	48.50	0.81	0.43	BT
LKUUCU		47.00	-0.57	-0.31	46.00	-1.69	-0.90	BT
LM2GBP		45.00	-2.57	-1.39	44.50	-3.19	-1.70	BT
LVRZPX		47.05	-0.52	-0.28	47.90	0.21	0.11	BT
M2XWBJ		48.35	0.78	0.42	48.30	0.61	0.32	BT
M6YWBF		50.00	2.43	1.32	50.00	2.31	1.23	XX
M7972R		48.50	0.93	0.51	50.00	2.31	1.23	HH
M9HWQV		48.70	1.13	0.61	47.70	0.01	0.00	BT
MYUXZQ		47.05	-0.52	-0.28	47.25	-0.44	-0.24	BT
ND9LNE		47.00	-0.57	-0.31	47.50	-0.19	-0.10	XX
P69LPC	*	53.00	5.43	2.95	53.00	5.31	2.82	BT
PEXAKF		46.85	-0.72	-0.39	45.60	-2.09	-1.11	BT
QC2FZF		47.50	-0.07	-0.04	47.50	-0.19	-0.10	BT
QFJFFV		48.65	1.08	0.59	49.90	2.21	1.17	HH
QNFBFF		49.00	1.43	0.78	49.00	1.31	0.69	HH
QQJ7YH		49.00	1.43	0.78	49.50	1.81	0.96	HH
QVFUFP		46.40	-1.17	-0.63	46.95	-0.74	-0.40	BT
R7RJTL		46.50	-1.07	-0.58	48.00	0.31	0.16	BT
RFH6YJ		45.50	-2.07	-1.12	45.50	-2.19	-1.17	XX

Analysis 620

Hardness (Shore A/Type A)

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
RGDKAV		51.00	3.43	1.86	50.50	2.81	1.49	BT
RHNMXE		50.00	2.43	1.32	50.50	2.81	1.49	HH
RZ4YNK		46.05	-1.52	-0.82	46.05	-1.64	-0.88	BT
TCYAWQ		45.00	-2.57	-1.39	45.00	-2.69	-1.43	BT
U99MEN		49.70	2.13	1.16	49.25	1.56	0.83	BT
ULXM8B		49.75	2.18	1.18	50.25	2.56	1.36	HH
UVJNML		46.65	-0.92	-0.50	47.70	0.01	0.00	BT
V7KE6M		48.00	0.43	0.23	48.00	0.31	0.16	XX
VTBXXG		46.45	-1.12	-0.61	46.20	-1.49	-0.80	BT
WCHMNF		45.50	-2.07	-1.12	46.50	-1.19	-0.64	HH
WGYM97		45.00	-2.57	-1.39	45.50	-2.19	-1.17	BT
WL89UH		48.00	0.43	0.23	48.00	0.31	0.16	BT
WRWNKI		48.50	0.93	0.51	47.50	-0.19	-0.10	BT
WX3K4B		47.25	-0.32	-0.17	48.25	0.56	0.30	HH
XNRHJA	*	45.65	-1.92	-1.04	44.15	-3.54	-1.89	XX
XVQ6BA		48.80	1.23	0.67	50.15	2.46	1.31	BT
XW823A		47.60	0.03	0.02	46.85	-0.84	-0.45	BT
Y7TMLC		50.00	2.43	1.32	50.50	2.81	1.49	XX
Z6UYH8		43.50	-4.07	-2.21	44.25	-3.44	-1.83	BT
ZEGZZ3		45.00	-2.57	-1.39	45.00	-2.69	-1.43	HH
ZMA8H9		49.50	1.93	1.05	49.50	1.81	0.96	HH
ZMRYUD		49.40	1.83	0.99	49.05	1.36	0.72	BT
ZQAGP4		46.50	-1.07	-0.58	46.50	-1.19	-0.64	BT
ZRPHWC		48.25	0.68	0.37	48.25	0.56	0.30	BT
ZVPQ38		46.00	-1.57	-0.85	46.50	-1.19	-0.64	BT
ZYZ2TG	*	45.00	-2.57	-1.39	47.00	-0.69	-0.37	HH

Summary Statistics	
Grand Means	47.568 Type A
	47.694 Type A
Std Dev Btwn Labs	1.844 Type A
	1.879 Type A
Statistics based on 99 of 101 reporting participants	

Samples A61-A62: Polyisoprene compound, batch #1 & A63-A64: Polyisoprene compound, batch #2

Analysis 620

Hardness (Shore A/Type A)

**Comments on assigned Data Flags for Test #620**

4H9684 (X) - Inconsistency in testing between Sample groups.

KVYMRL (X) - Inconsistency in testing between Sample groups.

Instrument Code Listing

**620** Hardness (Shore A/Type A)

**Instruments:**

(BT) Benchtop

(HH) Handheld

(XX) Specify Benchtop or Handheld Instrument

**Results by Reading Time (as reported by laboratory)**

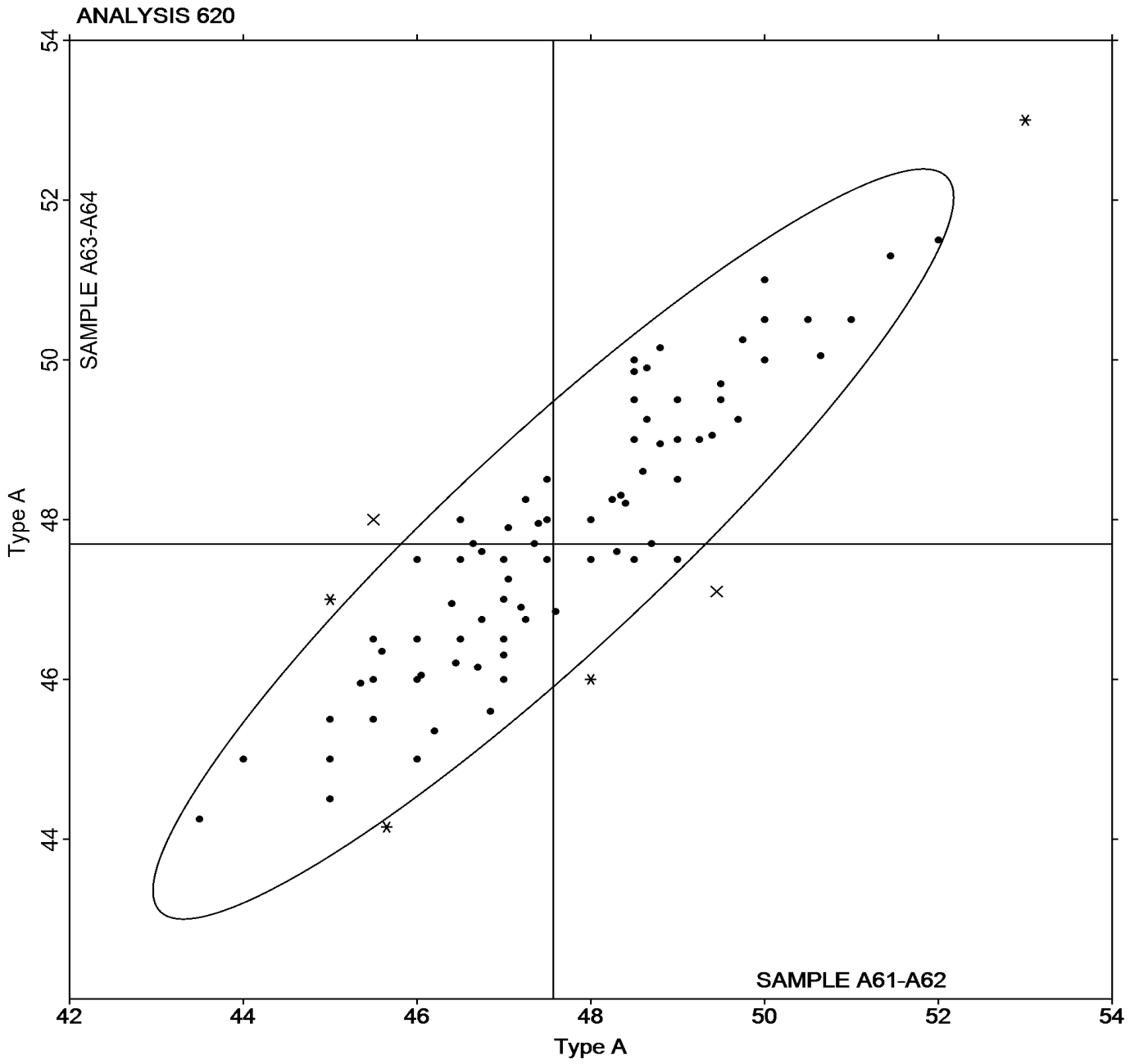
Reading Time	Sample A61 <i>Polyisoprene compound, batch #1</i>			Sample A62 <i>Polyisoprene compound, batch #1</i>			Labs Incl / Rpt	
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM		
Readings taken within 0 - 5 seconds	47.86	1.46	0.30	48.01	1.48	0.31	68	73
Readings taken at 5 seconds	46.47	1.40	-1.10	46.70	1.62	-1.00	11	12
Readings taken after 5+ seconds	47.11	2.16	-0.46	47.18	2.33	-0.51	5	5
Maximum hardness indicator used	47.37	2.69	-0.20	47.56	2.49	-0.13	10	11

Analysis 620

Hardness (Shore A/Type A)

Grand Mean Sample A61 = 47.568 Type A

Grand Mean Sample A62 = 47.694 Type A



## Analysis 621

## Density

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6	*	1.136	0.000	0.00	1.133	-0.003	-1.15	ZZ
3BUW73		1.139	0.003	1.29	1.138	0.002	0.62	ZZ
3JLFKB	*	1.129	-0.007	-2.66	1.131	-0.005	-2.16	ZZ
6ZJEKA		1.138	0.002	0.73	1.137	0.001	0.22	ZZ
6ZL4P7		1.137	0.001	0.54	1.136	0.000	0.16	ZZ
7V8TC3		1.134	-0.002	-0.59	1.135	-0.001	-0.37	ZZ
832H7C		1.139	0.004	1.43	1.140	0.004	1.74	ZZ
87KD94		1.138	0.003	1.03	1.139	0.003	1.13	ZZ
9LUG84		1.130	-0.006	-2.28	1.132	-0.004	-1.76	ZZ
9YX2BT		1.133	-0.003	-1.15	1.133	-0.003	-1.17	ZZ
A92GU7		1.138	0.002	0.92	1.138	0.002	0.62	ZZ
AHP8GY		1.136	0.000	0.05	1.136	0.000	-0.18	ZZ
B2WW72		1.134	-0.001	-0.49	1.135	-0.001	-0.28	ZZ
B8JMTW		1.135	-0.001	-0.32	1.135	-0.001	-0.35	ZZ
BLKJP4		1.135	-0.001	-0.21	1.136	0.000	-0.18	ZZ
CCAG43		1.140	0.004	1.48	1.141	0.005	2.10	ZZ
CLZ6Y7		1.133	-0.002	-0.79	1.134	-0.002	-0.83	ZZ
DKJ6G2		1.136	0.000	0.15	1.136	0.000	0.00	ZZ
E489DT		1.130	-0.006	-2.22	1.130	-0.006	-2.41	ZZ
EERKN7		1.140	0.004	1.67	1.140	0.004	1.60	ZZ
EHTNFR		1.138	0.003	1.01	1.138	0.002	0.93	ZZ
ELBNW9		1.136	0.000	0.17	1.138	0.002	0.62	ZZ
ETA9ZN		1.134	-0.002	-0.61	1.134	-0.002	-0.73	ZZ
FENFPM		1.135	-0.001	-0.32	1.135	-0.001	-0.45	ZZ
FH7E63		1.138	0.002	0.92	1.138	0.002	0.81	ZZ
FKEPYL		1.137	0.001	0.35	1.139	0.003	1.21	ZZ
GMX4ZZ	X	1.127	-0.009	-3.41	1.136	0.000	0.02	ZZ
GP2WUY		1.138	0.002	0.75	1.138	0.002	0.89	ZZ
GT28QY		1.136	0.000	0.09	1.136	0.000	0.02	ZZ
H8WPFW		1.134	-0.001	-0.51	1.137	0.001	0.28	ZZ
J9MALT		1.138	0.002	0.79	1.138	0.002	0.81	ZZ
L9E6YF		1.137	0.001	0.54	1.138	0.002	0.62	ZZ
M2XWBJ	X	1.129	-0.007	-2.51	1.125	-0.010	-4.16	ZZ
M6YWBF		1.137	0.001	0.35	1.138	0.002	0.65	ZZ
M7972R		1.134	-0.002	-0.59	1.135	-0.001	-0.57	ZZ
M9HWQV		1.139	0.004	1.45	1.139	0.003	1.29	ZZ
MYUXZQ		1.138	0.002	0.73	1.138	0.002	0.62	ZZ

Analysis 621

Density

WebCode	Data Flag	Sample A61			Sample A62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ND9LNE		1.136	0.000	0.15	1.135	0.000	-0.20	ZZ
PEXAKF	*	1.132	-0.004	-1.34	1.135	-0.001	-0.37	ZZ
QC2FZF		1.136	0.000	-0.02	1.136	0.000	0.02	ZZ
QFJFFV	*	1.129	-0.007	-2.47	1.130	-0.006	-2.55	ZZ
QQJ7YH		1.136	0.000	0.17	1.137	0.001	0.22	ZZ
QVFUFP	X	1.140	0.004	1.48	1.130	-0.006	-2.35	ZZ
RFH6YJ		1.136	0.000	-0.02	1.136	0.000	-0.18	ZZ
RGDKAV		1.138	0.002	0.92	1.138	0.002	0.81	ZZ
RHNMXE		1.135	-0.001	-0.34	1.134	-0.002	-0.69	ZZ
TCYAWQ		1.140	0.004	1.67	1.141	0.005	1.80	ZZ
ULXM8B		1.137	0.002	0.60	1.137	0.001	0.42	ZZ
V7KE6M		1.134	-0.002	-0.66	1.136	0.000	0.02	ZZ
VTBXXG		1.136	0.000	0.17	1.135	-0.001	-0.37	ZZ
WL89UH		1.137	0.001	0.43	1.138	0.002	0.75	ZZ
WRWNKI		1.137	0.001	0.49	1.137	0.001	0.48	ZZ
XNRHJA		1.134	-0.001	-0.46	1.134	-0.002	-0.89	ZZ
XVQ6BA		1.133	-0.003	-1.15	1.132	-0.004	-1.56	ZZ
XW823A		1.136	0.000	0.18	1.136	0.000	0.00	ZZ
Z6UYH8		1.136	0.001	0.20	1.137	0.001	0.26	ZZ
ZEGZZ3		1.137	0.002	0.71	1.137	0.001	0.34	ZZ
ZMA8H9		1.133	-0.003	-1.15	1.134	-0.002	-0.79	ZZ
ZQAGP4		1.135	-0.001	-0.40	1.135	-0.001	-0.37	ZZ
ZRPHWC		1.136	0.000	-0.02	1.136	0.000	0.02	ZZ
ZVPQ38		1.132	-0.004	-1.34	1.132	-0.004	-1.50	ZZ

Summary Statistics	
Grand Means	1.1356 Mg/M <sup>3</sup>
	1.1359 Mg/M <sup>3</sup>
Stnd Dev Btwn Labs	0.0027 Mg/M <sup>3</sup>
	0.0025 Mg/M <sup>3</sup>
Statistics based on 58 of 61 reporting participants	

Samples A61-A62: Polyisoprene compound, batch #1 & A63-A64: Polyisoprene compound, batch #2

## Analysis 621

## Density

**Comments on assigned Data Flags for Test #621**

GMX4ZZ (X) - Inconsistency in testing between Sample groups. Data for Sample group A61-A62 are low.

M2XWBJ (X) - Inconsistency in testing between Sample groups. Data for Sample group A63-A64 are low.

QVFUFP (X) - Inconsistency in testing between Sample groups. Inconsistent in testing within Sample group A61-A62.

**Instrument Code Listing**

621	Density
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**Instruments:**

(ZZ) Instruments No Longer Tracked

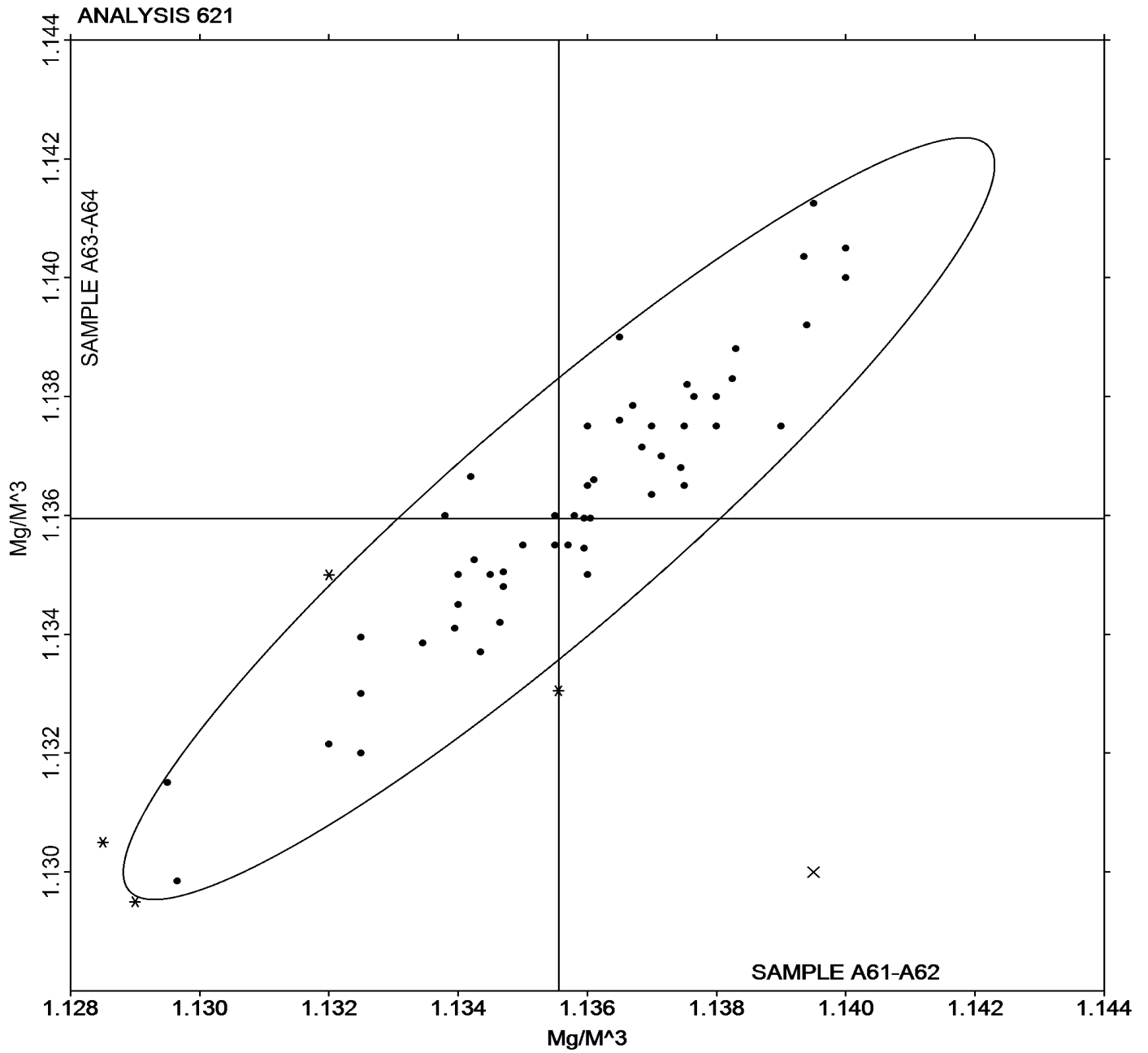


Analysis 621

Density

Grand Mean Sample A61 = 1.1356 Mg/M<sup>3</sup>

Grand Mean Sample A62 = 1.1359 Mg/M<sup>3</sup>



## Analysis 630

## Tensile Strength: Precured vs. Lab-Cured Samples (psi)

WebCode	Data Flag	Sample J61			Sample J62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2BCNG8		3,398.0	169.5	1.45	3,255.0	50.4	0.30	ZZ
3BUW73	*	2,869.5	-359.0	-3.07	3,219.0	14.4	0.08	ZZ
6VNMEX		3,254.0	25.5	0.22	3,242.5	37.9	0.22	ZZ
7V8TC3		3,166.0	-62.5	-0.53	3,189.0	-15.6	-0.09	ZZ
832H7C		3,200.5	-28.0	-0.24	3,350.2	145.5	0.86	ZZ
94CH37		3,110.0	-118.5	-1.01	3,262.5	57.9	0.34	ZZ
9LUG84		3,298.4	69.9	0.60	3,453.0	248.4	1.47	ZZ
A92GU7	X	3,145.5	-83.0	-0.71	2,245.8	-958.8	-5.66	ZZ
B2WW72	X	3,121.0	-107.5	-0.92	1,943.5	-1,261.1	-7.45	ZZ
CGMJPY		3,247.5	19.0	0.16	3,421.5	216.9	1.28	ZZ
DBUKB4		3,388.4	159.9	1.37	3,123.8	-80.8	-0.48	ZZ
EERKN7		3,276.2	47.7	0.41	3,317.0	112.3	0.66	ZZ
EHTNFR		3,167.4	-61.1	-0.52	3,264.0	59.4	0.35	ZZ
FH7E63		3,230.5	2.0	0.02	3,070.5	-134.1	-0.79	ZZ
GT28QY		3,407.7	179.2	1.53	3,378.0	173.3	1.02	ZZ
J9MALT		3,245.0	16.5	0.14	3,391.0	186.4	1.10	ZZ
KVWXM		3,160.5	-68.0	-0.58	3,109.0	-95.6	-0.56	ZZ
L9E6YF		3,336.0	107.5	0.92	3,348.0	143.4	0.85	ZZ
M2XWBJ		3,333.7	105.2	0.90	3,178.5	-26.1	-0.15	ZZ
M9HWQV		3,252.7	24.2	0.21	3,368.1	163.5	0.97	ZZ
QQJ7YH		3,181.5	-47.0	-0.40	2,976.5	-228.1	-1.35	ZZ
QVFUFP		3,042.0	-186.5	-1.59	3,085.5	-119.1	-0.70	ZZ
ULXM8B		3,284.5	56.0	0.48	2,820.0	-384.6	-2.27	ZZ
VTBXXG		3,064.5	-164.0	-1.40	3,121.5	-83.1	-0.49	ZZ
XNRHJA		3,386.7	158.2	1.35	3,270.6	66.0	0.39	ZZ
XVQ6BA		3,127.3	-101.2	-0.87	3,149.2	-55.4	-0.33	ZZ
Y7TMLC		3,205.4	-23.1	-0.20	3,263.4	58.8	0.35	ZZ
ZMA8H9		3,249.7	21.2	0.18	3,142.0	-62.6	-0.37	ZZ
ZMRYUD		3,233.5	5.0	0.04	2,976.5	-228.1	-1.35	ZZ
ZQAGP4		3,155.0	-73.5	-0.63	3,281.5	76.9	0.45	ZZ
ZRPHWC		3,236.5	8.0	0.07	3,366.5	161.9	0.96	ZZ
ZVPQ38	*	3,346.6	118.1	1.01	2,744.9	-459.7	-2.71	ZZ

Analysis 630

Tensile Strength: Precured vs. Lab-Cured Samples (psi)

Summary Statistics	
Grand Means	3,228.50 psi
Std Dev Btwn Labs	116.97 psi
	3,204.62 psi
	169.34 psi
Statistics based on 30 of 32 reporting participants	

Summary Statistics in SI Units	
Grand Means	22.260 MPa
Std Dev Btwn Labs	0.806 MPa
	22.09 MPa
	1.17 MPa
Statistics based on 30 of 32 reporting participants	

All samples : Polyisoprene compound, batch #1

Comments on assigned Data Flags for Test #630

A92GU7 (X) - Data for Sample group J61-J62 are low.

B2WW72 (X) - Data for Sample group J61-J62 are low.

Instrument Code Listing

630 Tensile Strength: Precured vs. Lab-Cured Samples (psi)

Instruments:

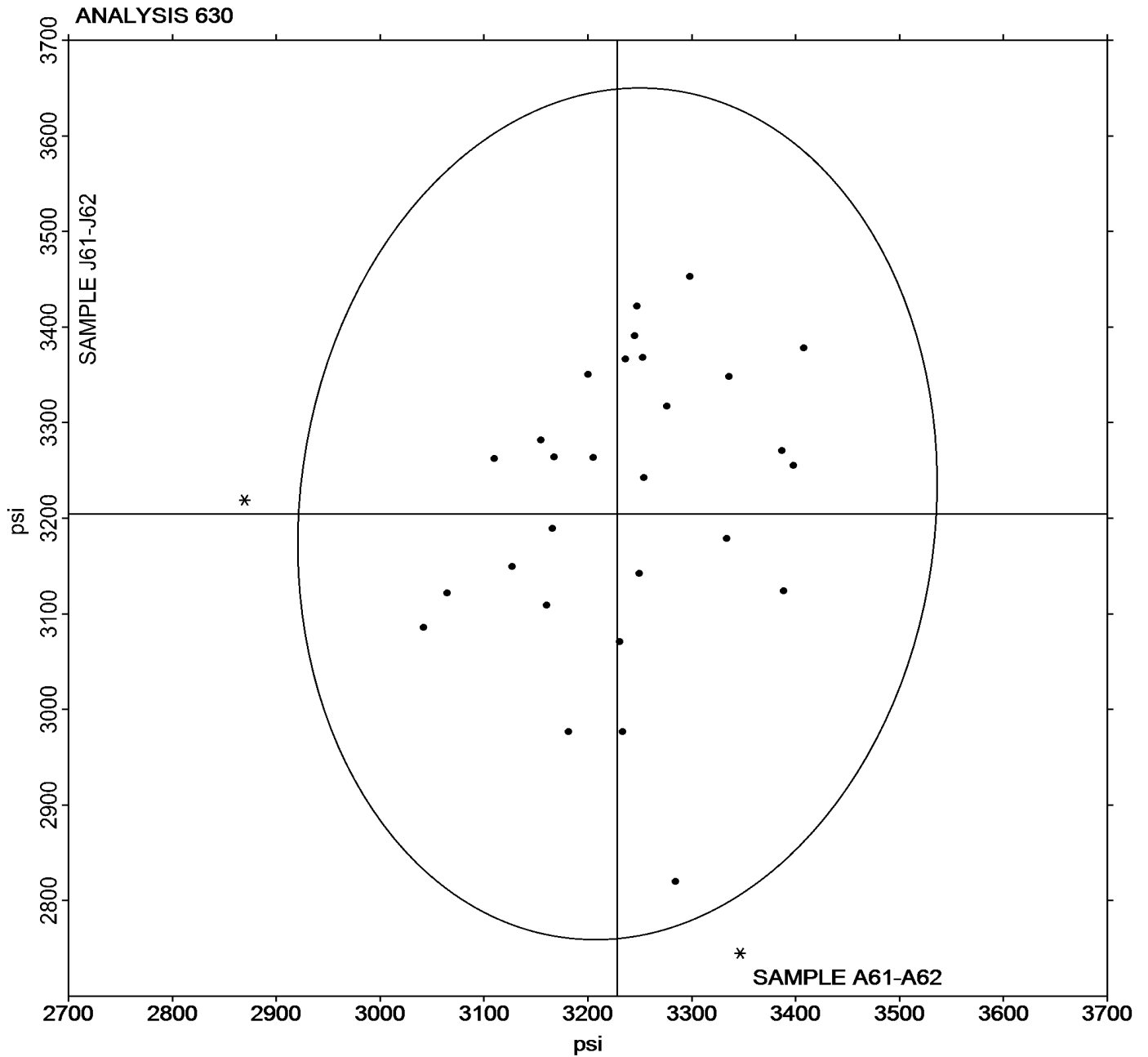
(ZZ) Instruments No Longer Tracked

Analysis 630

Tensile Strength: Precured vs. Lab-Cured Samples (psi)

Grand Mean Sample J61 = 3,228.50 psi

Grand Mean Sample J62 = 3,204.62 psi



## Analysis 631

## Ultimate Elongation: Precured vs. Lab-Cured Samples (percent)

WebCode	Data Flag	Sample J61			Sample J62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2BCNG8		613.0	-19.4	-0.73	543.0	-39.3	-1.49	ZZ
3BUW73	*	571.0	-61.4	-2.30	568.0	-14.3	-0.54	ZZ
6VNMEY		668.0	35.6	1.34	612.0	29.7	1.13	ZZ
7V8TC3		620.0	-12.4	-0.46	578.0	-4.3	-0.16	ZZ
832H7C		638.0	5.6	0.21	608.6	26.3	1.00	ZZ
94CH37		650.0	17.6	0.66	585.5	3.2	0.12	ZZ
9LUG84		605.3	-27.1	-1.02	570.6	-11.7	-0.44	ZZ
A92GU7		658.5	26.1	0.98	607.5	25.2	0.96	ZZ
B2WW72	*	654.5	22.1	0.83	652.0	69.7	2.65	ZZ
CGMJPY		628.5	-3.9	-0.14	577.5	-4.8	-0.18	ZZ
DBUKB4		650.8	18.4	0.69	566.9	-15.4	-0.59	ZZ
EERKN7		620.5	-11.9	-0.45	584.3	2.0	0.08	ZZ
EHTNFR		624.0	-8.4	-0.31	569.0	-13.3	-0.50	ZZ
FH7E63		627.0	-5.4	-0.20	571.5	-10.8	-0.41	ZZ
GT28QY		603.0	-29.4	-1.10	546.0	-36.3	-1.38	ZZ
J9MALT		635.0	2.6	0.10	593.0	10.7	0.41	ZZ
KVWXM		605.0	-27.4	-1.03	561.5	-20.8	-0.79	ZZ
L9E6YF		577.0	-55.4	-2.08	555.5	-26.8	-1.02	ZZ
M2XWBJ		608.4	-23.9	-0.90	524.9	-57.4	-2.18	ZZ
M9HWQV		639.5	7.1	0.27	593.1	10.8	0.41	ZZ
QQJ7YH		623.0	-9.4	-0.35	572.5	-9.8	-0.37	ZZ
QVFUFP		635.0	2.6	0.10	597.0	14.7	0.56	ZZ
ULXM8B		637.5	5.1	0.19	583.0	0.7	0.03	ZZ
VTBXXG		627.0	-5.4	-0.20	598.0	15.7	0.60	ZZ
XNRHJA		651.8	19.4	0.73	597.3	15.0	0.57	ZZ
XVQ6BA		646.3	13.9	0.52	563.2	-19.1	-0.73	ZZ
Y7TMLC		696.5	64.1	2.41	623.0	40.7	1.55	ZZ
ZMA8H9		619.5	-12.9	-0.48	563.5	-18.8	-0.71	ZZ
ZMRYUD		681.5	49.1	1.84	630.0	47.7	1.82	ZZ
ZQAGP4		661.0	28.7	1.07	590.5	8.2	0.31	ZZ
ZRPHWC		623.0	-9.4	-0.35	563.0	-19.3	-0.73	ZZ
ZVPQ38		636.3	4.0	0.15	583.2	0.9	0.04	ZZ

**Rubber Interlaboratory Testing Program  
Analysis 631**

**Ultimate Elongation: Precured vs. Lab-Cured Samples (percent)**

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		Summary Statistics	
Grand Means	632.35 percent	582.27 percent	
Std Dev Btwn Labs	26.67 percent	26.28 percent	
Statistics based on 32 of 32 reporting participants			

All samples : Polyisoprene compound, batch #1

Instrument Code Listing

<b>631</b> Ultimate Elongation: Precured vs. Lab-Cured Samples (percent)
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Instruments:

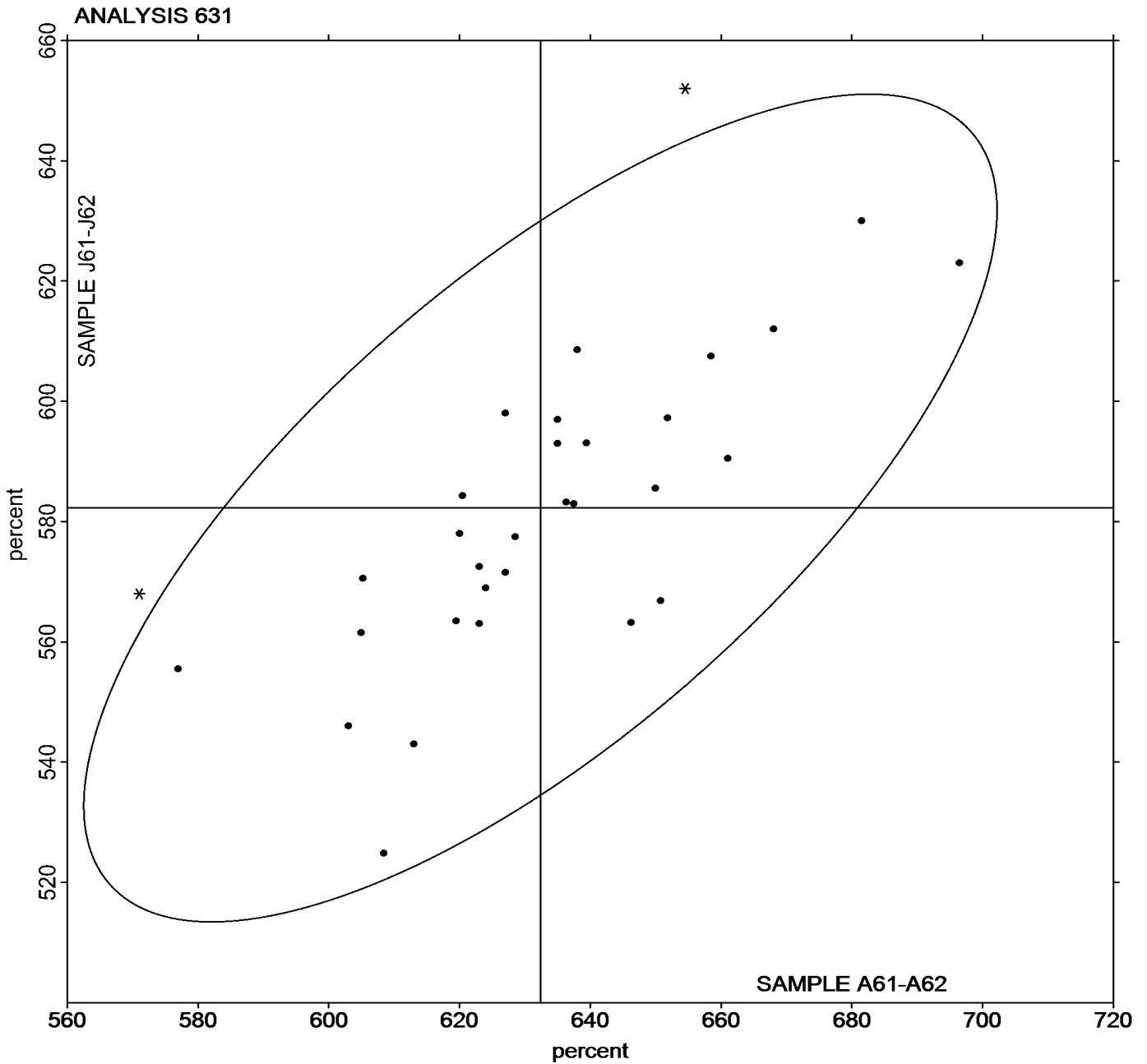
(ZZ) Instruments No Longer Tracked

Analysis 631

Ultimate Elongation: Precured vs. Lab-Cured Samples (percent)

Grand Mean Sample J61 = 632.35 percent

Grand Mean Sample J62 = 582.27 percent



## Analysis 632

## Stress at 300% Elongation: Precured vs. Lab-Cured Samples (psi)

WebCode	Data Flag	Sample J61			Sample J62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2BCNG8		931.5	65.9	1.08	1,243.5	134.8	1.35	ZZ
3BUW73		936.5	70.9	1.16	1,165.5	56.8	0.57	ZZ
6VNMEY		879.5	13.9	0.23	1,086.0	-22.7	-0.23	ZZ
7V8TC3		857.5	-8.1	-0.13	1,074.5	-34.2	-0.34	ZZ
832H7C		845.7	-19.9	-0.33	1,112.3	3.6	0.04	ZZ
94CH37		764.0	-101.6	-1.66	1,162.0	53.3	0.53	ZZ
9LUG84		934.8	69.1	1.13	1,201.6	92.9	0.93	ZZ
A92GU7	X	741.3	-124.3	-2.04	642.0	-466.7	-4.67	ZZ
B2WW72	X	787.5	-78.1	-1.28	502.5	-606.2	-6.07	ZZ
CGMJPY		824.9	-40.7	-0.67	1,187.5	78.8	0.79	ZZ
DBUKB4		869.4	3.8	0.06	1,119.3	10.6	0.11	ZZ
EERKN7		945.9	80.3	1.31	1,099.9	-8.8	-0.09	ZZ
EHTNFR		838.0	-27.6	-0.45	1,155.5	46.8	0.47	ZZ
FH7E63		834.0	-31.6	-0.52	1,047.0	-61.7	-0.62	ZZ
GT28QY		968.9	103.3	1.69	1,227.8	119.1	1.19	ZZ
J9MALT		899.5	33.9	0.55	1,127.0	18.3	0.18	ZZ
KVWXM		911.5	45.9	0.75	1,132.0	23.3	0.23	ZZ
L9E6YF		917.0	51.4	0.84	1,157.0	48.3	0.48	ZZ
M2XWBJ		927.5	61.9	1.01	1,282.9	174.2	1.74	ZZ
M9HWQV		878.2	12.6	0.21	1,191.3	82.6	0.83	ZZ
QQJ7YH		858.0	-7.6	-0.12	987.0	-121.7	-1.22	ZZ
QVFUFP		777.5	-88.1	-1.44	987.5	-121.2	-1.21	ZZ
ULXM8B		832.5	-33.1	-0.54	938.0	-170.7	-1.71	ZZ
VTBXXG		823.0	-42.6	-0.70	1,068.0	-40.7	-0.41	ZZ
XNRHJA		879.7	14.1	0.23	1,042.8	-65.8	-0.66	ZZ
XVQ6BA		815.8	-49.9	-0.82	1,145.6	36.9	0.37	ZZ
Y7TMLC		732.4	-133.2	-2.18	950.0	-158.7	-1.59	ZZ
ZMA8H9		901.5	35.9	0.59	1,071.0	-37.7	-0.38	ZZ
ZMRYUD	*	746.0	-119.6	-1.96	838.5	-270.2	-2.71	ZZ
ZQAGP4		911.8	46.2	0.76	1,135.5	26.9	0.27	ZZ
ZRPHWC		860.2	-5.4	-0.09	1,215.3	106.6	1.07	ZZ



Analysis 632

Stress at 300% Elongation: Precured vs. Lab-Cured Samples (psi)

		Summary Statistics	
Grand Means	865.60 psi		1,108.68 psi
Std Dev Btwn Labs	61.08 psi		99.85 psi
Statistics based on 29 of 31 reporting participants			

		Summary Statistics in SI Units	
Grand Means	5.9681 MPa		7.64 MPa
Std Dev Btwn Labs	0.4211 MPa		0.69 MPa
Statistics based on 29 of 31 reporting participants			

All samples : Polyisoprene compound, batch #1

**Comments on assigned Data Flags for Test #632**

A92GU7 (X) - Data for Sample group J61-J62 are low.

B2WW72 (X) - Data for Sample group J61-J62 are low.

Instrument Code Listing

**632** Stress at 300% Elongation: Precured vs. Lab-Cured Samples (psi)

**Instruments:**

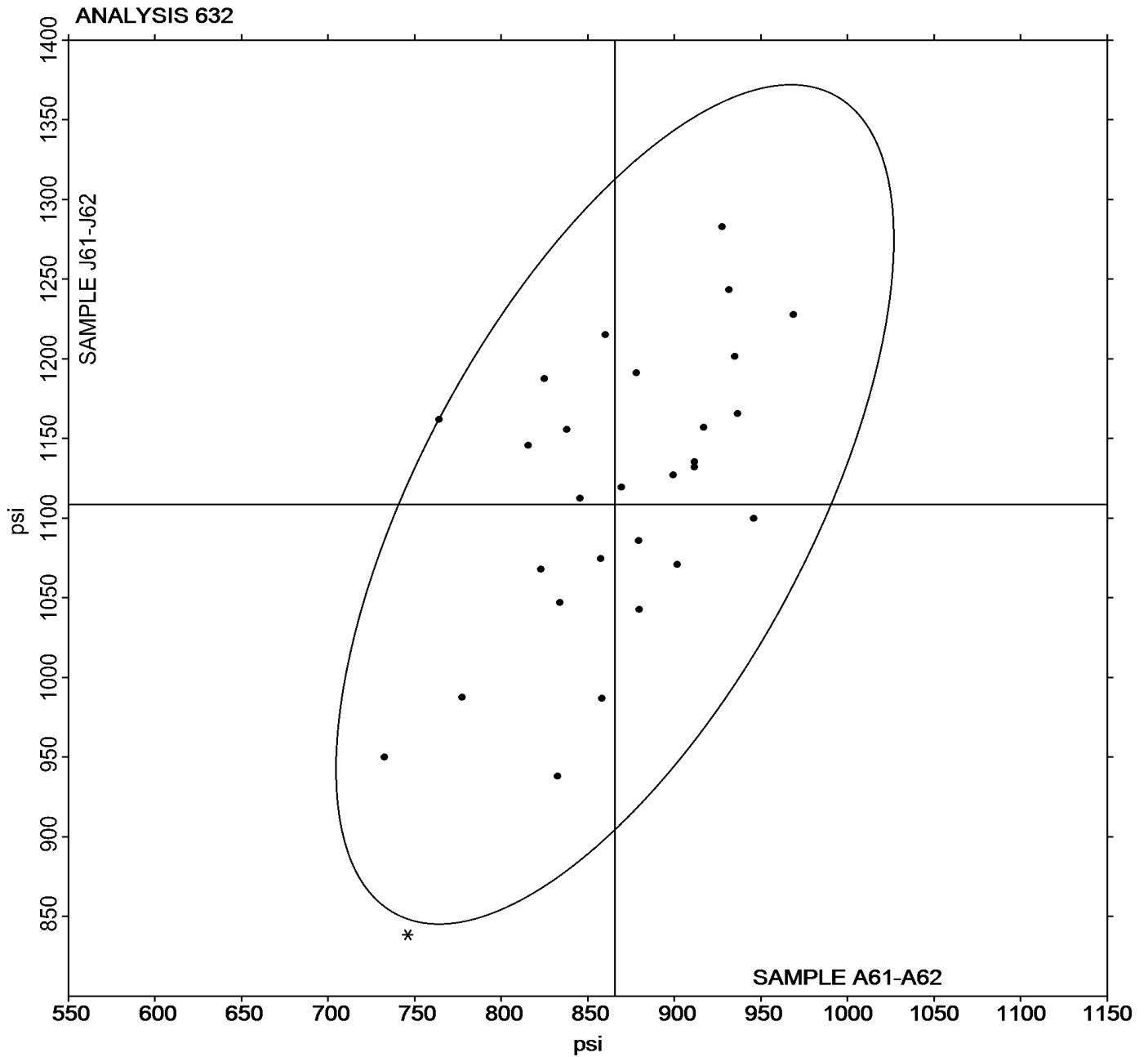
(ZZ) Instruments No Longer Tracked

Analysis 632

Stress at 300% Elongation: Precured vs. Lab-Cured Samples (psi)

Grand Mean Sample J61 = 865.60 psi

Grand Mean Sample J62 = 1,108.68 psi



## Analysis 633

## Stress at 100% Elongation: Precured vs. Lab-Cured Samples (psi)

WebCode	Data Flag	Sample J61			Sample J62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2BCNG8		189.0	0.9	0.06	244.0	3.2	0.15	ZZ
3BUW73		192.5	4.4	0.30	253.5	12.7	0.57	ZZ
6VNMEX		207.5	19.4	1.34	263.0	22.2	1.00	ZZ
7V8TC3		181.0	-7.1	-0.49	232.0	-8.8	-0.40	ZZ
832H7C		182.9	-5.2	-0.36	248.5	7.8	0.35	ZZ
94CH37		166.0	-22.1	-1.53	251.5	10.7	0.48	ZZ
9LUG84		193.4	5.3	0.36	258.1	17.3	0.78	ZZ
A92GU7	X	167.7	-20.4	-1.41	145.9	-94.9	-4.29	ZZ
B2WW72	X	173.0	-15.1	-1.05	123.5	-117.3	-5.30	ZZ
CGMJPY		182.6	-5.6	-0.39	262.6	21.8	0.98	ZZ
DBUKB4		181.9	-6.2	-0.43	219.7	-21.1	-0.95	ZZ
EERKN7		223.7	35.6	2.46	267.0	26.2	1.18	ZZ
EHTNFR		179.0	-9.1	-0.63	248.0	7.2	0.33	ZZ
FH7E63		178.5	-9.6	-0.67	224.5	-16.3	-0.74	ZZ
GT28QY		201.6	13.5	0.93	256.7	15.9	0.72	ZZ
J9MALT	*	225.5	37.4	2.58	289.5	48.7	2.20	ZZ
KVWXM		184.5	-3.6	-0.25	241.0	0.2	0.01	ZZ
L9E6YF		173.5	-14.6	-1.01	229.0	-11.8	-0.53	ZZ
M2XWBJ		194.4	6.2	0.43	253.1	12.3	0.56	ZZ
M9HWQV		185.3	-2.8	-0.20	249.2	8.4	0.38	ZZ
QQJ7YH		187.5	-0.6	-0.04	219.5	-21.3	-0.96	ZZ
QVFUFP		178.0	-10.1	-0.70	221.0	-19.8	-0.89	ZZ
ULXM8B		204.5	16.4	1.13	224.5	-16.3	-0.74	ZZ
VTBXXG		182.0	-6.1	-0.42	245.0	4.2	0.19	ZZ
XNRHJA		187.1	-1.0	-0.07	216.1	-24.7	-1.11	ZZ
XVQ6BA		181.4	-6.7	-0.46	254.8	14.1	0.64	ZZ
Y7TMLC		166.8	-21.3	-1.47	210.3	-30.5	-1.38	ZZ
ZMA8H9		205.5	17.4	1.20	240.5	-0.3	-0.01	ZZ
ZMRYUD		167.5	-20.6	-1.43	190.5	-50.3	-2.27	ZZ
ZQAGP4		193.1	5.0	0.35	248.6	7.8	0.35	ZZ
ZRPHWC		187.0	-1.2	-0.08	265.8	25.0	1.13	ZZ
ZVPQ38		180.7	-7.4	-0.51	196.0	-44.8	-2.02	ZZ

Analysis 633

Stress at 100% Elongation: Precured vs. Lab-Cured Samples (psi)

		Summary Statistics	
Grand Means	188.13 psi	240.78 psi	
Stnd Dev Btwn Labs	14.47 psi	22.13 psi	
Statistics based on 30 of 32 reporting participants			

		Summary Statistics in SI Units	
Grand Means	1.2971 MPa	1.66 MPa	
Stnd Dev Btwn Labs	0.0998 MPa	0.15 MPa	
Statistics based on 30 of 32 reporting participants			

All samples : Polyisoprene compound, batch #1

Comments on assigned Data Flags for Test #633

A92GU7 (X) - Data for Sample group J61-J62 are low.

B2WW72 (X) - Data for Sample group J61-J62 are low.

Instrument Code Listing

633 Stress at 100% Elongation: Precured vs. Lab-Cured Samples (psi)

Instruments:

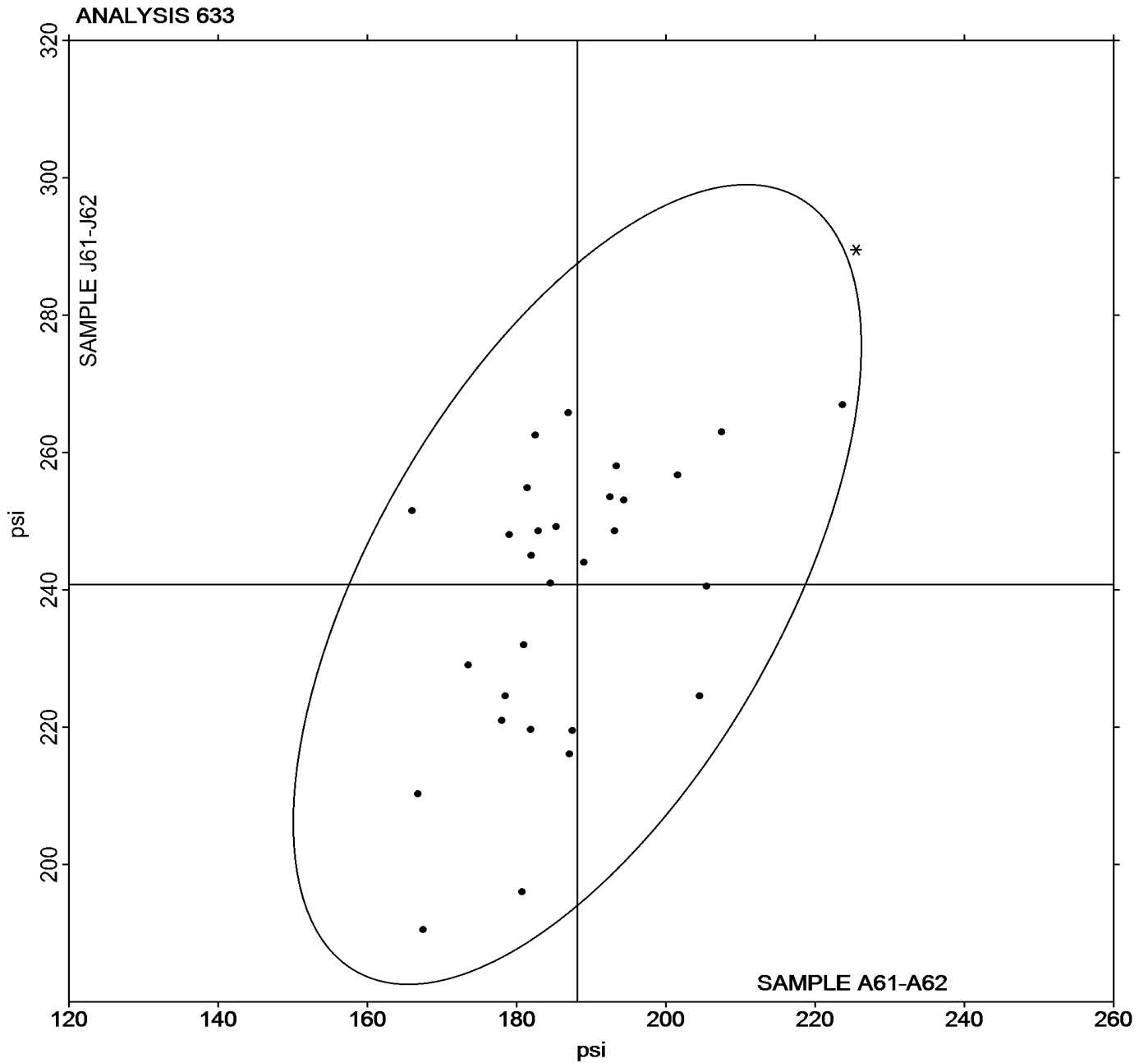
(ZZ) Instruments No Longer Tracked

Analysis 633

Stress at 100% Elongation: Precured vs. Lab-Cured Samples (psi)

Grand Mean Sample J61 = 188.13 psi

Grand Mean Sample J62 = 240.78 psi



Rubber Interlaboratory Testing Program

Analysis 660

Mooney Viscosity: 4-minute readings (ML 1 + 4)

WebCode	Data Flag	Sample S61			Sample S62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		48.04	0.72	0.70	55.24	-0.11	-0.10	MR
2EA8J7		47.25	-0.07	-0.07	57.23	1.88	1.65	MR
3BUW73		46.67	-0.65	-0.63	55.85	0.50	0.44	XX
4P9P8D		47.50	0.18	0.18	56.67	1.31	1.15	MR
6NRTEE		45.72	-1.60	-1.56	55.07	-0.28	-0.25	MR
8263VZ		48.73	1.42	1.38	57.23	1.88	1.65	MR
832H7C		47.44	0.12	0.12	54.44	-0.91	-0.80	MR
87KD94		46.97	-0.35	-0.34	55.97	0.62	0.54	MR
A2Z6XA		47.93	0.62	0.60	56.20	0.85	0.74	MR
A92GU7		46.50	-0.82	-0.80	54.82	-0.53	-0.47	MR
B8N4RV		46.38	-0.93	-0.91	54.58	-0.77	-0.67	MR
CCAG43		48.08	0.77	0.75	54.90	-0.45	-0.39	MR
CGMJPY		46.72	-0.60	-0.59	55.02	-0.33	-0.29	MR
EERKN7	X	31.14	-16.18	-15.79	39.93	-15.42	-13.49	MR
EHTNFR		48.48	1.17	1.14	54.88	-0.47	-0.41	MR
FH7E63		47.48	0.17	0.16	54.82	-0.53	-0.47	MR
GT28QY		48.42	1.11	1.08	55.70	0.34	0.30	XX
J9MALT		44.68	-2.64	-2.57	53.53	-1.82	-1.59	TA
L46RFV		46.60	-0.71	-0.70	52.51	-2.84	-2.49	XX
PEXAKF		48.32	1.01	0.98	55.84	0.49	0.43	MR
RHNMXE		47.20	-0.12	-0.11	55.68	0.33	0.29	MP
TCYAWQ		48.28	0.97	0.94	58.03	2.68	2.35	MR
TCZZ3A		46.52	-0.80	-0.78	55.60	0.25	0.22	MR
U99MEN		47.27	-0.05	-0.05	54.27	-1.08	-0.95	MR
UHHRRE		47.93	0.61	0.60	55.88	0.53	0.47	MR
VTBXXG		46.50	-0.82	-0.80	54.50	-0.85	-0.74	MR
XVQ6BA		49.17	1.85	1.80	56.75	1.40	1.22	MR
Y7TMLC		45.32	-2.00	-1.95	54.37	-0.98	-0.86	MR
ZMA8H9		47.93	0.62	0.60	54.48	-0.87	-0.76	MR
ZQAGP4		47.63	0.32	0.31	55.07	-0.28	-0.25	XX
ZVPQ38		47.85	0.53	0.52	55.42	0.07	0.06	MZ

Summary Statistics	
Grand Means	47.317 ML 1 + 4      55.351 ML 1 + 4
Std Dev Btwn Labs	1.025 ML 1 + 4      1.143 ML 1 + 4
Statistics based on 30 of 31 reporting participants	

## Analysis 660

**Mooney Viscosity: 4-minute readings (ML 1 + 4)**

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Samples S61-S62: NBR &amp; S63-S64: Butyl

**Comments on assigned Data Flags for Test #660**

EERKN7 (X) - Extreme data.

**Instrument Code Listing**

<b>660</b> Mooney Viscosity: 4-minute readings (ML 1 + 4)
---

**Instruments:**

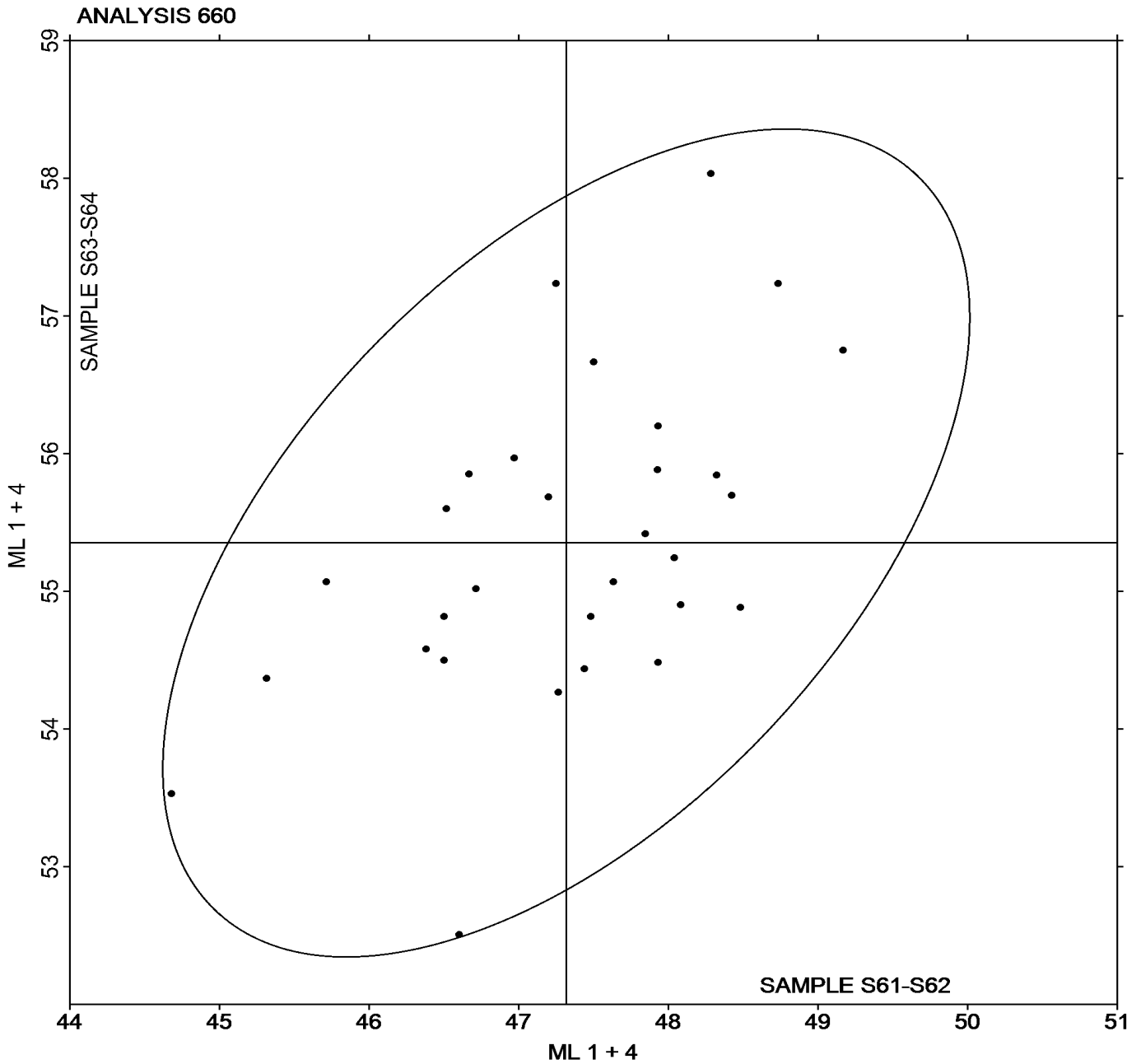
(ML) Alpha Technologies/Monsanto model not specified	(MM) Alpha Technologies Model 1xxx or OSM
(MP) Monsanto Compact Mooney Viscometer	(MR) Alpha Technologies Model MV2000/MV2000E
(MZ) Rebuilt Monsanto Mooney Viscometer	(SF) Scott STI (any model)
(TA) TA Instruments (any model)	(TV) Tech Pro Visc Tech (any model)
(XA) Special In-House Instrument	(XX) Instrument make/model not specified by lab

Analysis 660

Mooney Viscosity: 4-minute readings (ML 1 + 4)

Grand Mean Sample S61 = 47.317 ML 1 + 4

Grand Mean Sample S62 = 55.351 ML 1 + 4





Analysis 661

Mooney Viscosity: 4-min NBR/SBR & 8-min butyl readings (ML)

WebCode	Data Flag	Sample			Sample			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		48.04	0.66	0.62	52.79	0.03	0.02	MR
3BUW73		46.67	-0.71	-0.68	52.58	-0.18	-0.16	XX
4P9P8D		47.50	0.12	0.11	53.60	0.84	0.76	MR
6NRTEE		45.72	-1.66	-1.58	51.73	-1.03	-0.94	MR
8263VZ		48.73	1.35	1.28	54.53	1.77	1.61	MR
832H7C		47.44	0.06	0.06	51.81	-0.96	-0.87	MR
87KD94		46.97	-0.41	-0.39	53.68	0.92	0.84	MR
A2Z6XA		47.93	0.55	0.52	53.55	0.79	0.72	MR
A92GU7		46.50	-0.88	-0.83	51.78	-0.98	-0.89	MR
CCAG43		48.08	0.70	0.67	52.38	-0.38	-0.34	MR
CGMJPY		46.72	-0.66	-0.63	52.73	-0.03	-0.03	MR
EERKN7	X	31.14	-16.25	-15.39	36.36	-16.40	-14.91	MR
EHTNFR		48.48	1.10	1.04	51.93	-0.83	-0.75	XX
FH7E63		47.48	0.10	0.10	51.88	-0.89	-0.81	MP
GT28QY		48.42	1.04	0.99	53.16	0.40	0.36	XX
J9MALT		44.68	-2.70	-2.56	51.02	-1.74	-1.58	TA
PEXAKF		48.32	0.94	0.89	53.11	0.34	0.31	XX
RHNMXE		47.20	-0.18	-0.17	52.43	-0.33	-0.30	MP
TCYAWQ	*	48.28	0.90	0.85	55.65	2.89	2.63	MR
TCZZ3A		46.52	-0.86	-0.82	53.32	0.55	0.50	MR
U99MEN		47.27	-0.11	-0.11	51.88	-0.88	-0.80	MR
UHRRE		47.93	0.55	0.52	54.51	1.75	1.59	MR
VTBXXG		46.50	-0.88	-0.83	52.53	-0.23	-0.21	MR
XVQ6BA		49.17	1.79	1.69	54.30	1.54	1.40	MR
Y7TMLC		45.32	-2.06	-1.96	51.50	-1.26	-1.15	MR
ZMA8H9		47.93	0.55	0.52	51.75	-1.01	-0.92	MR
ZQAGP4		47.63	0.25	0.24	52.37	-0.40	-0.36	XX
ZVPQ38		47.85	0.47	0.44	52.07	-0.69	-0.63	MZ

Grand Means		Summary Statistics	
47.381 ML 1 + 8		52.763 ML 1 + 8	
Std Dev Btwn Labs		Statistics based on 27 of 28 reporting participants	
1.056 ML 1 + 8		1.100 ML 1 + 8	

Please refer to the sample information provided for Analysis 660.

## Analysis 661

**Mooney Viscosity: 4-min NBR/SBR & 8-min butyl readings (ML)**

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**Comments on assigned Data Flags for Test #661**

EERKN7 (X) - Extreme data.

**Instrument Code Listing**

<b>661</b> Mooney Viscosity: 4-min NBR/SBR & 8-min butyl readings (ML)
--

**Instruments:**

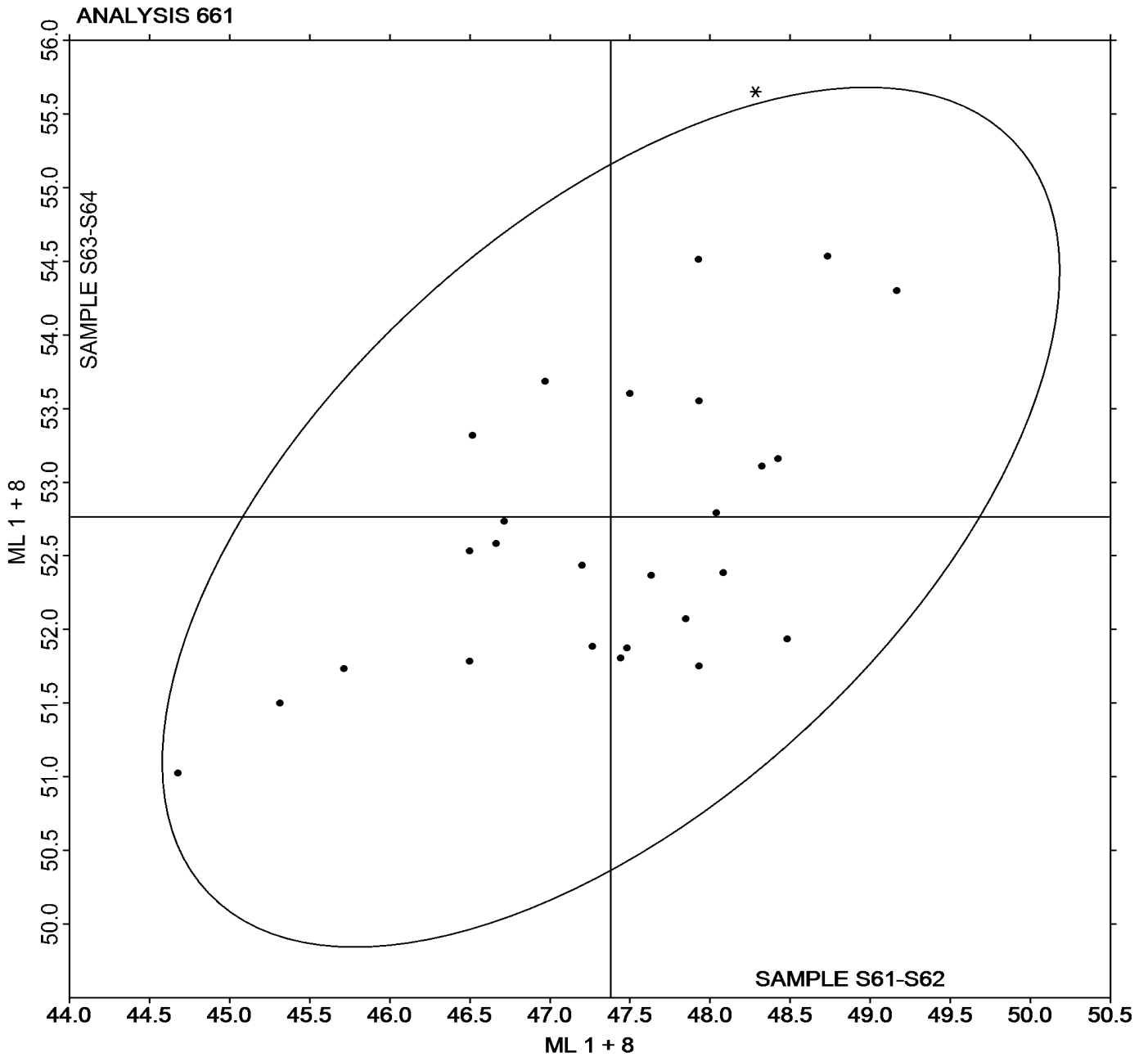
(ML) Alpha Technologies/Monsanto model not specified	(MM) Alpha Technologies Model 1xxx or OSM
(MP) Monsanto Compact Mooney Viscometer	(MR) Alpha Technologies Model MV2000/MV2000E
(MZ) Rebuilt Monsanto Mooney Viscometer	(SF) Scott STI (any model)
(TA) TA Instruments (any model)	(TV) Tech Pro Visc Tech (any model)
(XA) Special In-House Instrument	(XX) Instrument make/model not specified by lab

Analysis 661

Mooney Viscosity: 4-min NBR/SBR & 8-min butyl readings (ML)

Grand Mean Sample = 47.381 ML 1 + 8

Grand Mean Sample = 52.763 ML 1 + 8



Analysis 662

Mooney Stress Relaxation: t80 (seconds)

WebCode	Data Flag	Sample S61			Sample S62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
832H7C		4.493	-0.263	-0.83	7.015	-0.691	-0.43	MR
A2Z6XA		4.750	-0.007	-0.02	8.833	1.127	0.69	MR
B8N4RV		4.700	-0.057	-0.18	8.900	1.194	0.73	MR
EHTNFR		4.500	-0.257	-0.81	8.163	0.457	0.28	MR
GT28QY		5.070	0.313	0.99	5.150	-2.556	-1.57	XX
J9MALT		5.048	0.292	0.92	5.102	-2.605	-1.60	TA
XVQ6BA		4.327	-0.430	-1.35	8.483	0.777	0.48	MR
Y7TMLC		5.292	0.535	1.68	9.617	1.910	1.18	XX
ZMA8H9		4.630	-0.127	-0.40	8.093	0.387	0.24	MR
ZVPQ38	X	11.050	6.293	19.79	11.112	3.405	2.10	TV

Summary Statistics	
Grand Means	4.7567 seconds
	7.7063 seconds
Std Dev Btwn Labs	0.3180 seconds
	1.6242 seconds
Statistics based on 9 of 10 reporting participants	

Samples S61-S62: NBR & S63-S64: Butyl

**Comments on assigned Data Flags for Test #662**

ZVPQ38 (X) - Extreme data for Sample group S61-S62.

**Instrument Code Listing**

**662** Mooney Stress Relaxation: t80 (seconds)

**Instruments:**

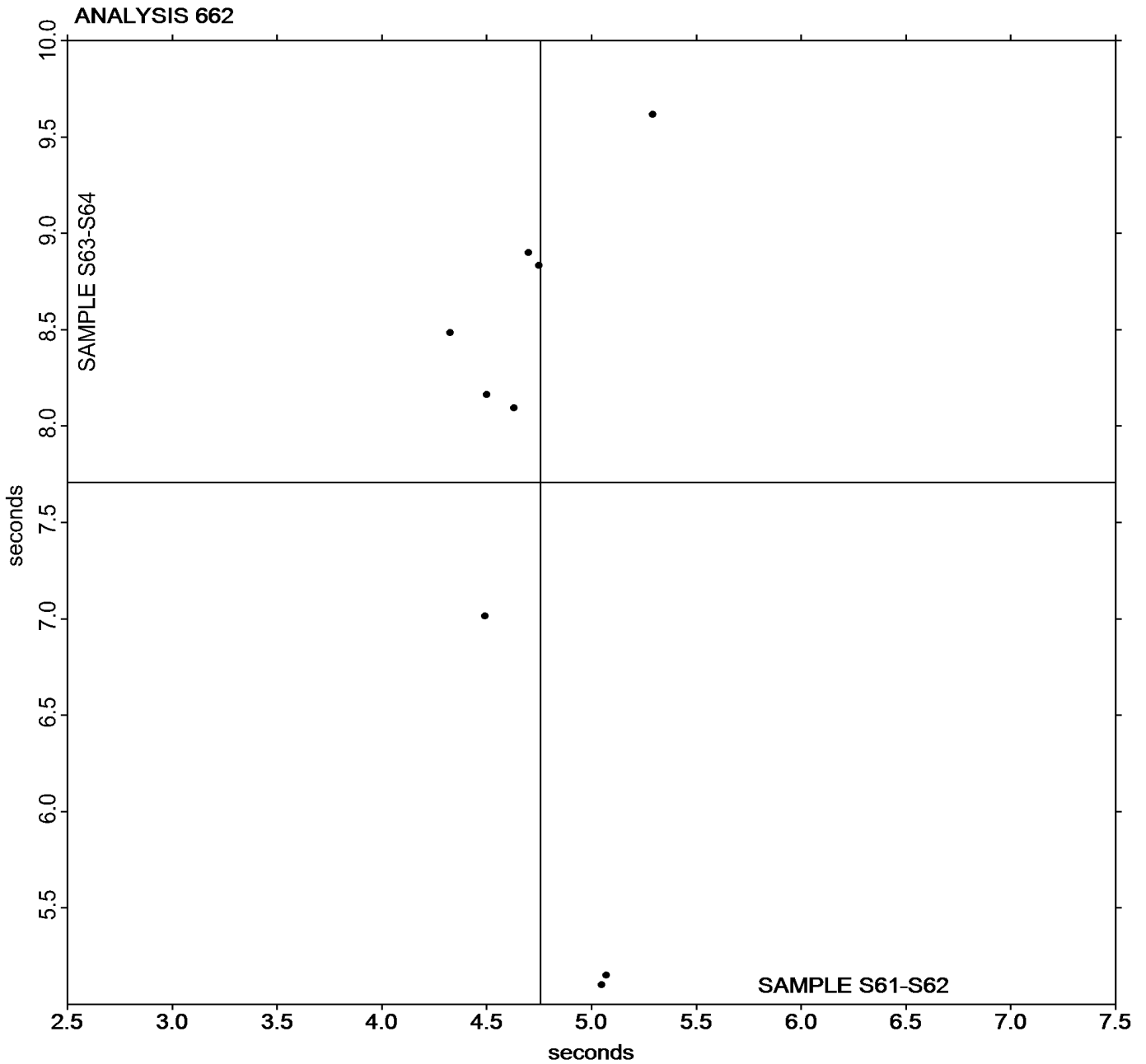
- (ML) Alpha Technologies/Monsanto model not specified
- (MP) Monsanto Compact Mooney Viscometer
- (MZ) Rebuilt Monsanto Mooney Viscometer
- (TA) TA Instruments (any model)
- (XA) Special In-House Instrument
- (MM) Alpha Technologies Model 1xxx or OSM
- (MR) Alpha Technologies Model MV2000/MV2000E
- (SF) Scott STI (any model)
- (TV) Tech Pro Visc Tech (any model)
- (XX) Instrument make/model not specified by lab

Analysis 662

Mooney Stress Relaxation: t80 (seconds)

Grand Mean Sample S61 = 4.7567 seconds

Grand Mean Sample S62 = 7.7063 seconds



Analysis 663

Mooney Stress Relaxation: X30 (percent)

WebCode	Data Flag	Sample S61			Sample S62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
832H7C		92.93	0.58	0.34	92.67	1.33	1.01	MR
A2Z6XA		91.47	-0.88	-0.51	90.43	-0.91	-0.69	MR
EHTNFR		92.10	-0.25	-0.14	91.43	0.09	0.07	MR
GT28QY		92.59	0.25	0.14	90.87	-0.47	-0.36	XX
J9MALT	X	0.39	-91.95	-52.91	2.54	-88.80	-67.38	TA
XVQ6BA		91.90	-0.45	-0.26	90.76	-0.58	-0.44	MR
Y7TMLC		90.15	-2.19	-1.26	89.60	-1.74	-1.32	XX
ZMA8H9		91.51	-0.83	-0.48	91.18	-0.16	-0.12	MR
ZVPQ38		96.11	3.77	2.17	93.78	2.44	1.85	TV

Summary Statistics	
Grand Means	92.344 percent
Std Dev Btwn Labs	1.738 percent
	91.340 percent
	1.318 percent
Statistics based on 8 of 9 reporting participants	

Samples S61-S62: NBR & S63-S64: Butyl

Comments on assigned Data Flags for Test #663

J9MALT (X) - Extreme data.

Instrument Code Listing

663 Mooney Stress Relaxation: X30 (percent)

Instruments:

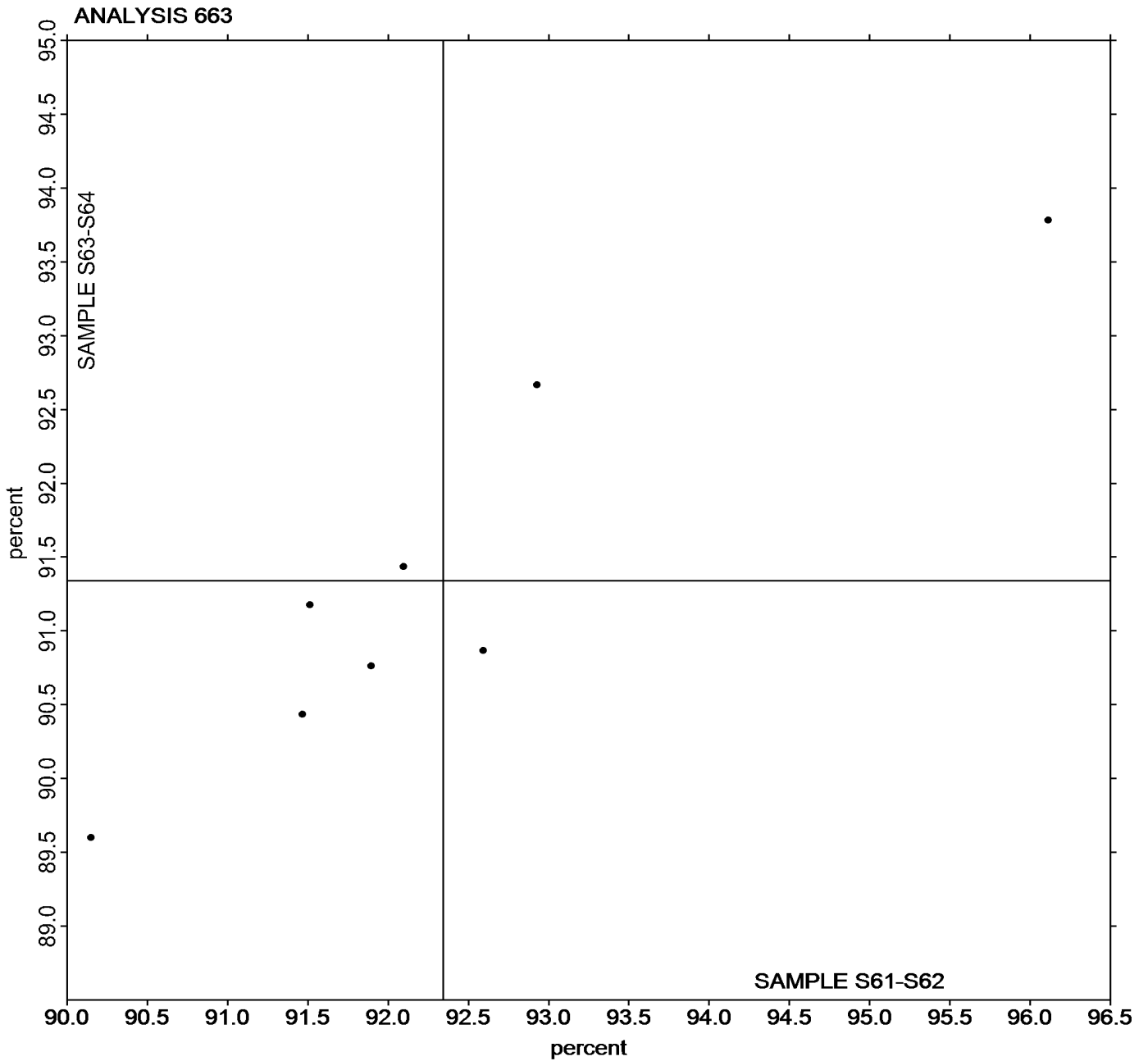
- (ML) Alpha Technologies/Monsanto model not specified
- (MP) Monsanto Compact Mooney Viscometer
- (MZ) Rebuilt Monsanto Mooney Viscometer
- (TA) TA Instruments (any model)
- (XA) Special In-House Instrument
- (MM) Alpha Technologies Model 1xxx or OSM
- (MR) Alpha Technologies Model MV2000/MV2000E
- (SF) Scott STI (any model)
- (TV) Tech Pro Visc Tech (any model)
- (XX) Instrument make/model not specified by lab

Analysis 663

Mooney Stress Relaxation: X30 (percent)

Grand Mean Sample S61 = 92.344 percent

Grand Mean Sample S62 = 91.340 percent



Analysis 664

Mooney Stress Relaxation: Area under curve (M-s)

WebCode	Data Flag	Sample S61			Sample S62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
832H7C		364.1	-7.9	-0.07	436.4	-49.2	-0.44	MR
A2Z6XA		447.3	75.2	0.70	569.5	83.9	0.75	MR
EHTNFR		414.9	42.9	0.40	501.6	16.0	0.14	MR
GT28QY		381.4	9.3	0.09	547.0	61.4	0.55	XX
J9MALT		212.3	-159.8	-1.48	280.4	-205.2	-1.83	TA
XVQ6BA		430.0	57.9	0.54	561.3	75.7	0.68	MR
Y7TMLC		483.5	111.4	1.03	620.9	135.3	1.21	XX
ZMA8H9		441.3	69.2	0.64	509.3	23.7	0.21	MR
ZVPQ38		173.9	-198.2	-1.84	344.0	-141.6	-1.26	TV

Grand Means		Summary Statistics	
	372.09 M-s		485.60 M-s
Stnd Dev Btwn Labs	107.84 M-s		111.94 M-s
Statistics based on 9 of 9 reporting participants			

Samples S61-S62: NBR & S63-S64: Butyl

Instrument Code Listing

**664** Mooney Stress Relaxation: Area under curve (M-s)

Instruments:

- (ML) Alpha Technologies/Monsanto model not specified
- (MP) Monsanto Compact Mooney Viscometer
- (MZ) Rebuilt Mooney Viscometer
- (TA) TA Instruments (any model)
- (XA) Special In-House Instrument
- (MM) Alpha Technologies Model 1xxx or OSM
- (MR) Alpha Technologies Model MV2000/MV2000E
- (SF) Scott STI (any model)
- (TV) Tech Pro Visc Tech (any model)
- (XX) Instrument make/model not specified by lab

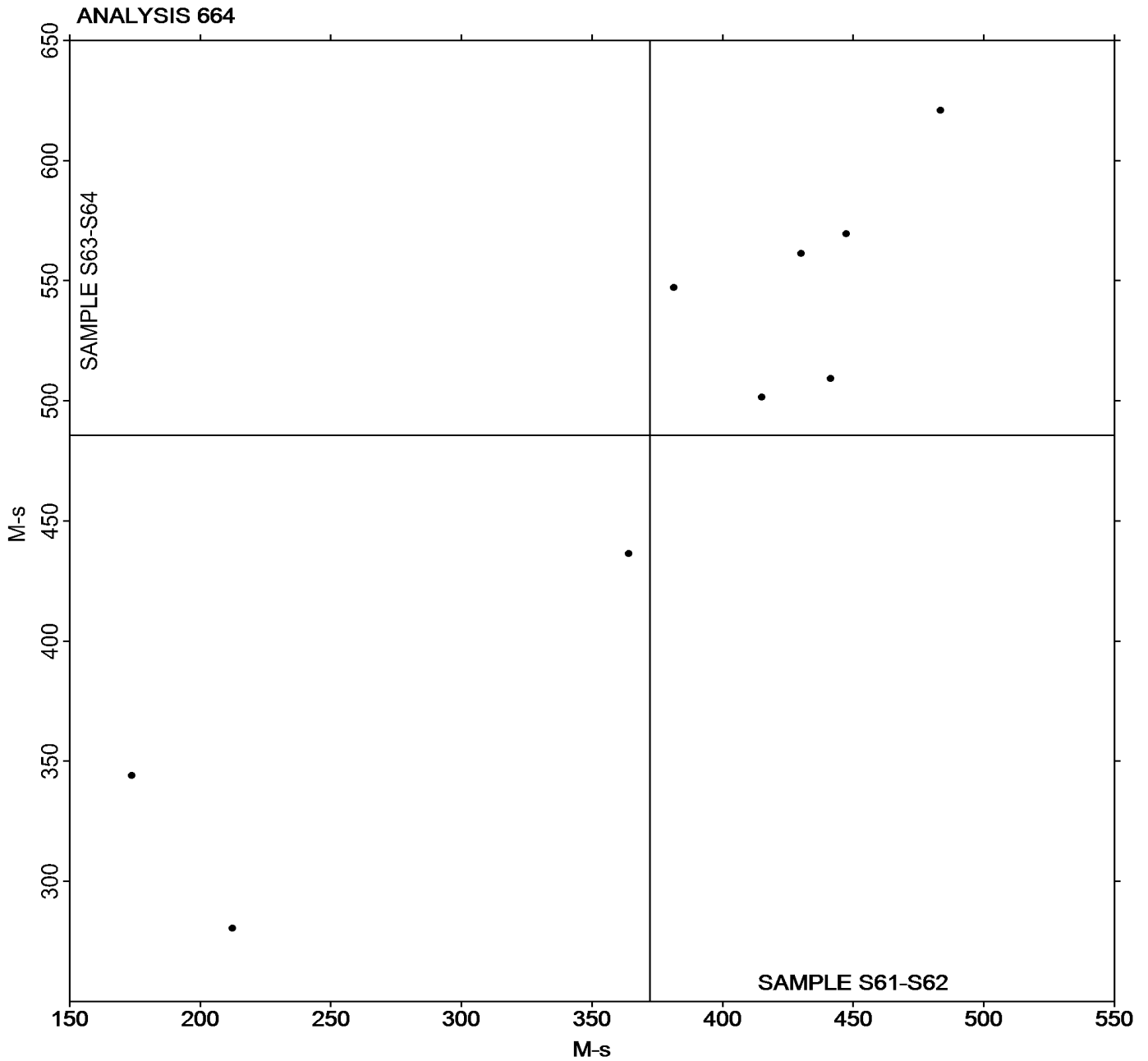


Analysis 664

Mooney Stress Relaxation: Area under curve (M-s)

Grand Mean Sample S61 = 372.09 M-s

Grand Mean Sample S62 = 485.60 M-s



Analysis 669

ODR Vulcanization-Cure Time 10% (minutes)

WebCode	Data Flag	Sample W61			Sample W62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		0.9283	-0.0379	-0.77	1.412	-0.209	-0.77	ZZ
832H7C		0.9850	0.0188	0.38	1.585	-0.036	-0.13	ZZ
87KD94		0.9833	0.0171	0.35	1.408	-0.213	-0.78	ZZ
A92GU7		1.0100	0.0438	0.89	1.877	0.256	0.94	ZZ
DBUKB4		0.8983	-0.0679	-1.38	1.350	-0.271	-1.00	ZZ
FH7E63		0.9567	-0.0095	-0.19	1.838	0.217	0.80	ZZ
PEXAKF		0.9367	-0.0295	-0.60	1.403	-0.218	-0.80	ZZ
U99MEN		0.9833	0.0171	0.35	1.528	-0.093	-0.34	ZZ
VTBXXG		0.9033	-0.0629	-1.27	1.493	-0.128	-0.47	ZZ
Y7TMLC		0.9750	0.0088	0.18	1.693	0.072	0.27	ZZ
ZVPQ38		1.0683	0.1021	2.07	2.242	0.621	2.28	ZZ

Summary Statistics	
Grand Means	0.96621 minutes      1.6209 minutes
Std Dev Btwn Labs	0.04932 minutes      0.2719 minutes
Statistics based on 11 of 11 reporting participants	

Samples W61-W62: EPDM compound #1 & W63-W64: EPDM compound #2

Instrument Code Listing

**669** ODR Vulcanization-Cure Time 10% (minutes)

Instruments:

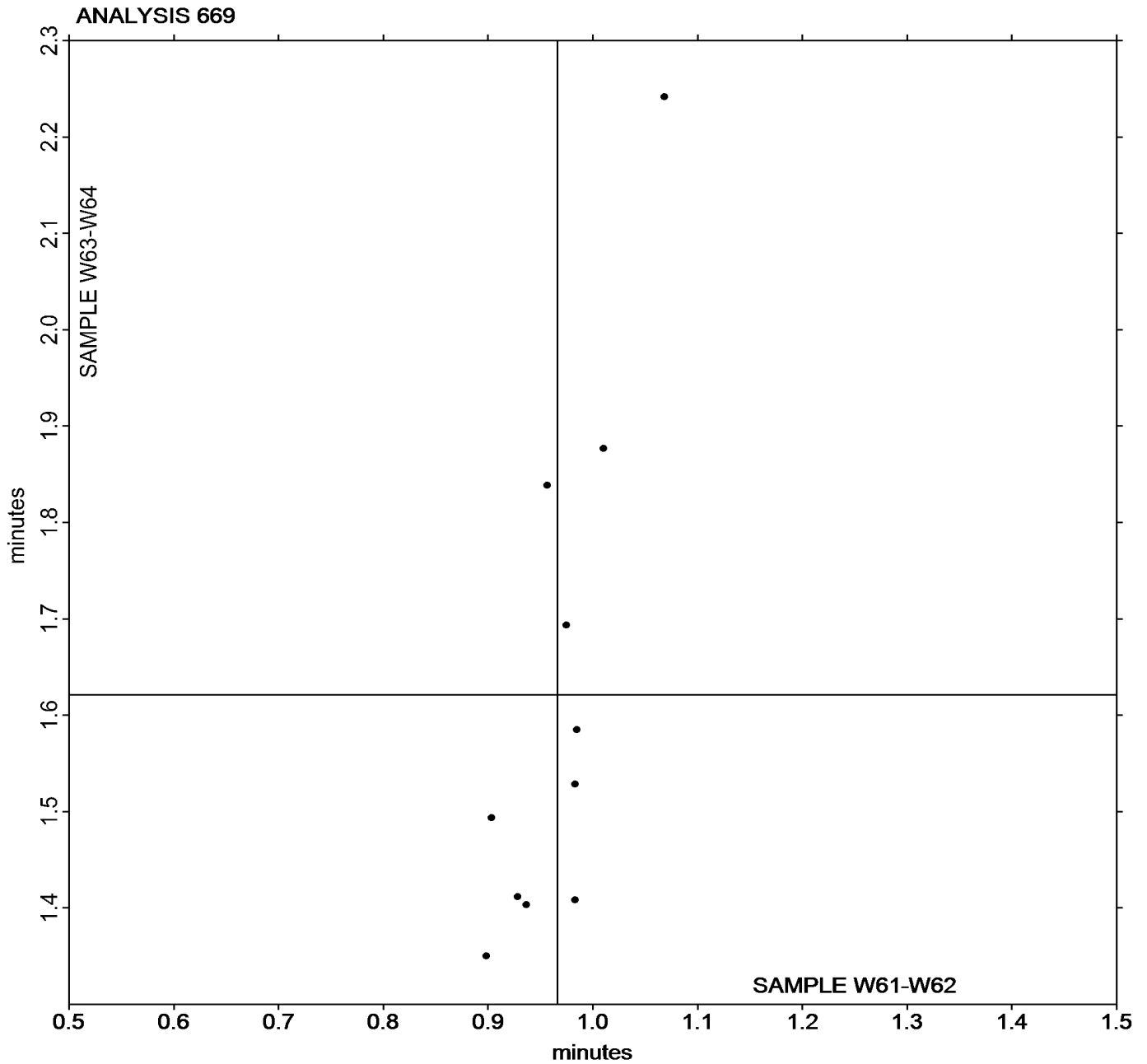
(ZZ) Instruments No Longer Tracked

Analysis 669

ODR Vulcanization-Cure Time 10% (minutes)

Grand Mean Sample **W61** = 0.96621 minutes

Grand Mean Sample **W62** = 1.6209 minutes



Analysis 670

ODR Vulcanization-Scorch Time, Ts1 (minutes)

WebCode	Data Flag	Sample W61			Sample W62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		0.6317	-0.0383	-0.81	1.018	-0.222	-0.77	ZZ
832H7C		0.6900	0.0200	0.42	1.213	-0.027	-0.09	ZZ
87KD94		0.6750	0.0050	0.11	1.005	-0.235	-0.82	ZZ
A92GU7		0.6983	0.0283	0.60	1.507	0.266	0.92	ZZ
DBUKB4		0.6133	-0.0567	-1.20	0.977	-0.264	-0.91	ZZ
FH7E63		0.6750	0.0050	0.11	1.463	0.223	0.77	ZZ
PEXAKF		0.6350	-0.0350	-0.74	1.003	-0.237	-0.82	ZZ
U99MEN		0.7283	0.0583	1.24	1.207	-0.034	-0.12	ZZ
VTBXXG		0.6100	-0.0600	-1.27	1.060	-0.180	-0.63	ZZ
Y7TMLC		0.6550	-0.0150	-0.32	1.283	0.043	0.15	ZZ
ZVPQ38		0.7583	0.0883	1.88	1.908	0.668	2.31	ZZ

Summary Statistics	
Grand Means	0.67000 minutes      1.2405 minutes
Std Dev Btwn Labs	0.04711 minutes      0.2887 minutes
Statistics based on 11 of 11 reporting participants	

Samples W61-W62: EPDM compound #1 & W63-W64: EPDM compound #2

Instrument Code Listing

**670** ODR Vulcanization-Scorch Time, Ts1 (minutes)

Instruments:

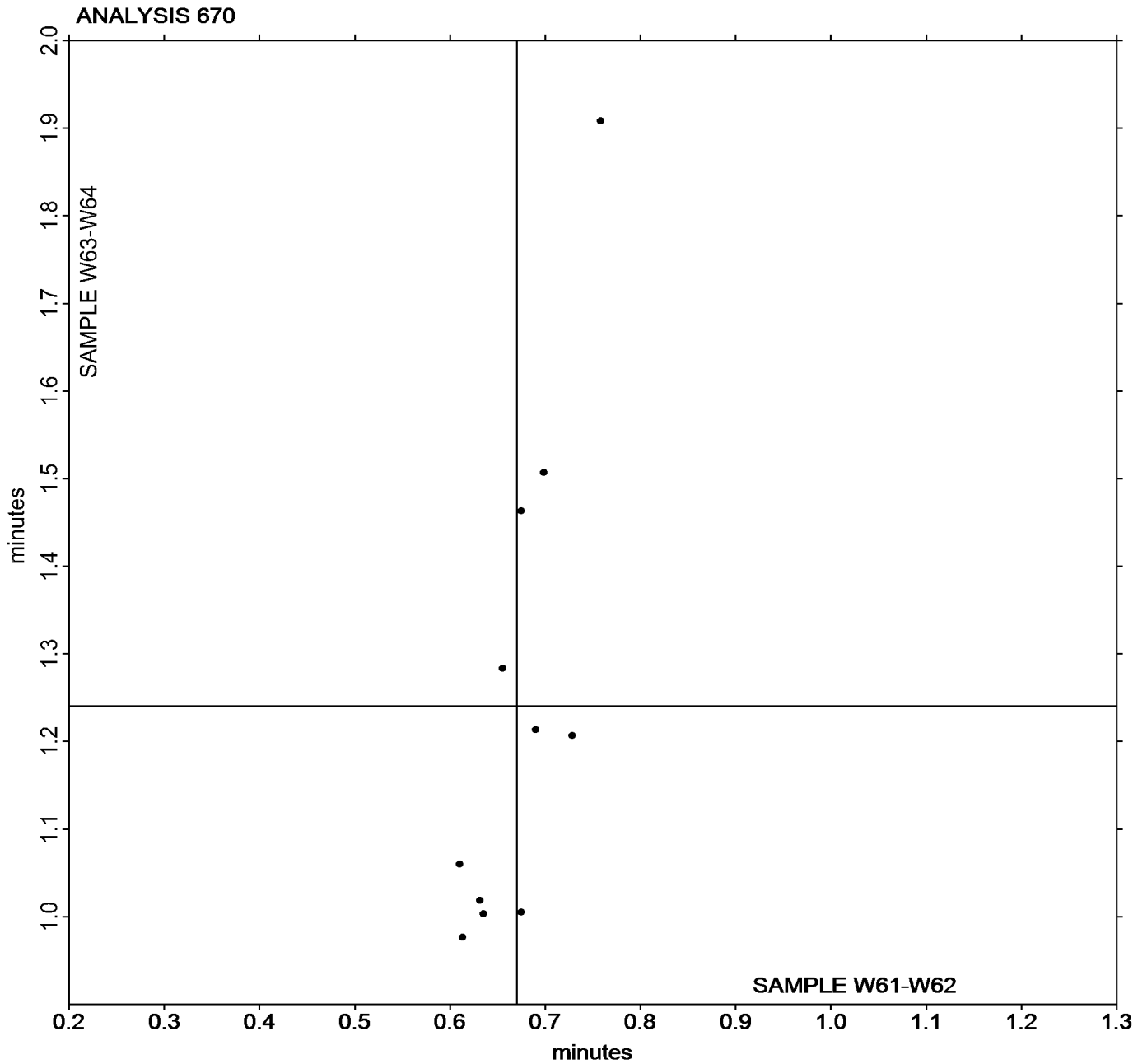
(ZZ) Instruments No Longer Tracked

Analysis 670

ODR Vulcanization-Scorch Time, Ts1 (minutes)

Grand Mean Sample **W61** = 0.67000 minutes

Grand Mean Sample **W62** = 1.2405 minutes



**Rubber Interlaboratory Testing Program**

**Analysis 671**

**ODR Vulcanization-Cure Time 50% (minutes)**

WebCode	Data Flag	Sample W61			Sample W62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		2.363	-0.158	-0.79	3.308	-0.147	-0.44	ZZ
832H7C		2.528	0.007	0.04	3.388	-0.067	-0.20	ZZ
87KD94		2.457	-0.064	-0.32	3.167	-0.289	-0.87	ZZ
A92GU7		2.603	0.082	0.41	3.628	0.173	0.52	ZZ
DBUKB4		2.243	-0.278	-1.39	3.260	-0.196	-0.59	ZZ
FH7E63		2.450	-0.071	-0.36	3.770	0.314	0.94	ZZ
PEXAKF		2.507	-0.014	-0.07	3.247	-0.209	-0.63	ZZ
U99MEN		2.375	-0.146	-0.73	2.945	-0.511	-1.53	ZZ
VTBXXG		2.627	0.106	0.53	3.495	0.039	0.12	ZZ
Y7TMLC		2.562	0.041	0.20	3.645	0.189	0.57	ZZ
ZVPQ38		3.017	0.496	2.48	4.160	0.704	2.11	ZZ

Summary Statistics	
Grand Means	2.5211 minutes                      3.4558 minutes
Std Dev Btwn Labs	0.1995 minutes                      0.3339 minutes
Statistics based on 11 of 11 reporting participants	

Samples W61-W62: EPDM compound #1 & W63-W64: EPDM compound #2

Instrument Code Listing

**671** ODR Vulcanization-Cure Time 50% (minutes)

**Instruments:**

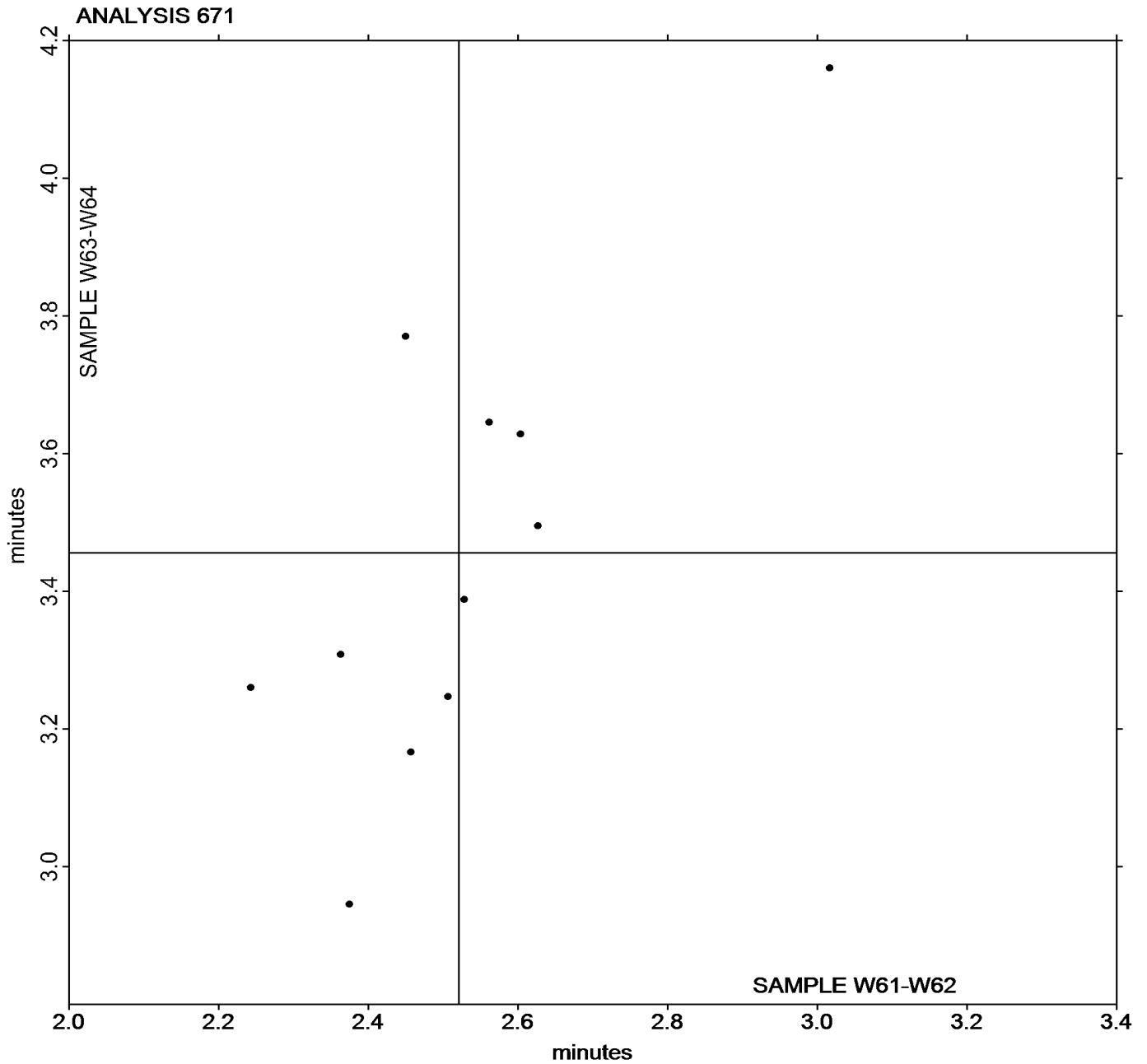
(ZZ) Instruments No Longer Tracked

Analysis 671

ODR Vulcanization-Cure Time 50% (minutes)

Grand Mean Sample **W61** = 2.5211 minutes

Grand Mean Sample **W62** = 3.4558 minutes



Analysis 672

ODR Vulcanization-Cure Time 90% (minutes)

WebCode	Data Flag	Sample W61			Sample W62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		12.59	-0.26	-0.17	9.42	-0.93	-0.47	ZZ
832H7C		12.31	-0.54	-0.35	9.37	-0.99	-0.50	ZZ
87KD94		11.59	-1.26	-0.81	8.02	-2.33	-1.17	ZZ
A92GU7		13.95	1.09	0.71	9.86	-0.49	-0.25	ZZ
DBUKB4		11.60	-1.25	-0.81	9.62	-0.73	-0.37	ZZ
FH7E63		11.42	-1.43	-0.92	13.16	2.80	1.41	ZZ
PEXAKF		12.07	-0.79	-0.51	10.96	0.61	0.31	ZZ
U99MEN		11.25	-1.60	-1.03	6.84	-3.51	-1.77	ZZ
VTBXXG		14.80	1.95	1.26	12.18	1.82	0.92	ZZ
Y7TMLC		13.92	1.07	0.69	11.73	1.38	0.70	ZZ
ZVPQ38		15.87	3.02	1.95	12.72	2.37	1.19	ZZ

Summary Statistics	
Grand Means	12.852 minutes
Std Dev Btwn Labs	1.549 minutes
	10.352 minutes
	1.986 minutes
Statistics based on 11 of 11 reporting participants	

Samples W61-W62: EPDM compound #1 & W63-W64: EPDM compound #2

Instrument Code Listing

**672** ODR Vulcanization-Cure Time 90% (minutes)

**Instruments:**

(ZZ) Instruments No Longer Tracked

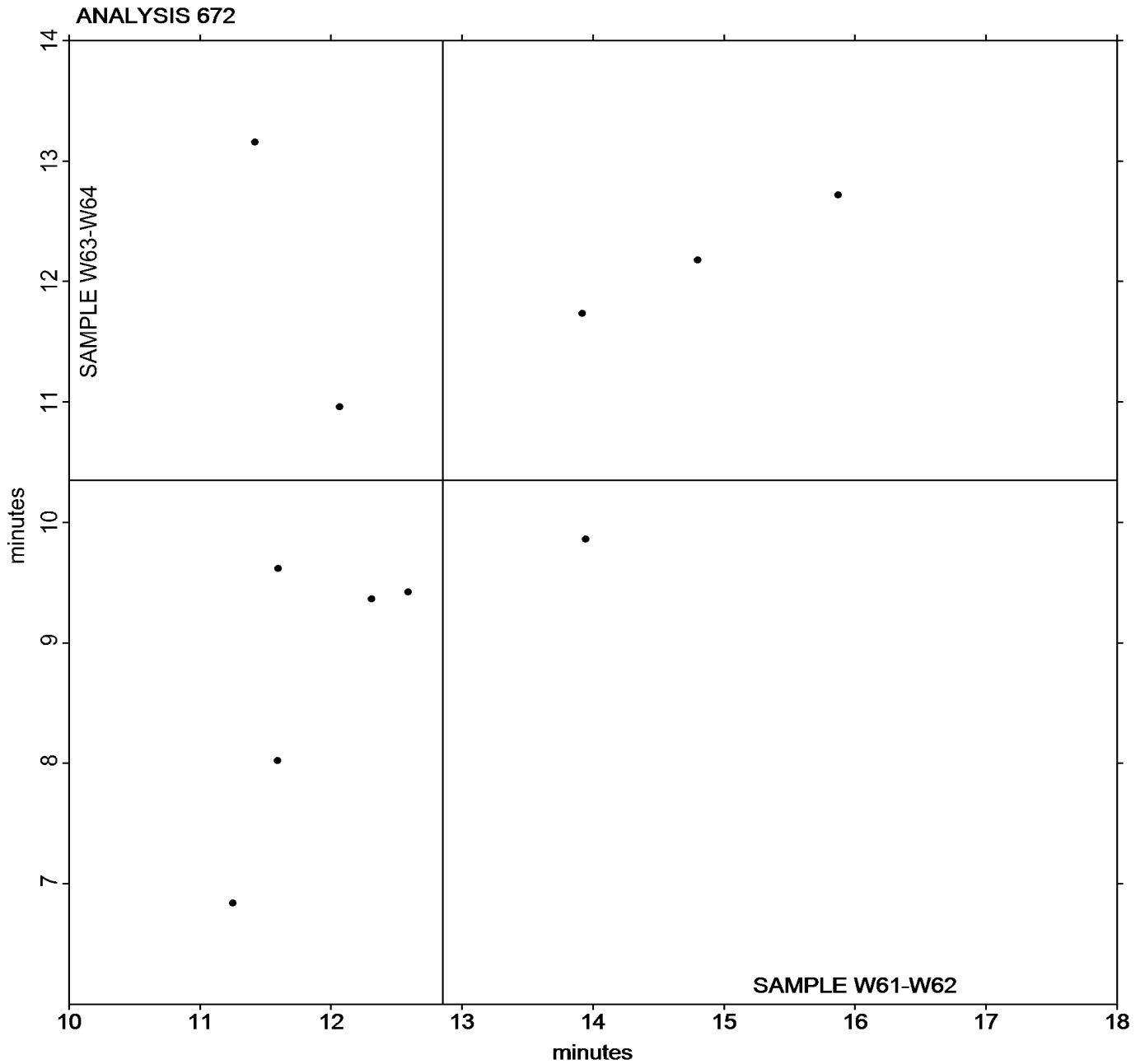


Analysis 672

ODR Vulcanization-Cure Time 90% (minutes)

Grand Mean Sample **W61** = 12.852 minutes

Grand Mean Sample **W62** = 10.352 minutes



Analysis 673

ODR Vulcanization: Minimum Torque (lbf.in)

WebCode	Data Flag	Sample W61			Sample W62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		10.21	-1.45	-1.41	16.73	-3.29	-0.80	ZZ
832H7C		11.89	0.23	0.22	17.67	-2.34	-0.57	ZZ
87KD94		11.04	-0.62	-0.60	16.74	-3.28	-0.79	ZZ
A92GU7		12.35	0.70	0.67	25.87	5.85	1.41	ZZ
DBUKB4		10.80	-0.86	-0.83	16.61	-3.40	-0.82	ZZ
FH7E63		14.01	2.35	2.28	25.62	5.60	1.36	ZZ
PEXAKF		11.37	-0.29	-0.28	17.86	-2.16	-0.52	ZZ
U99MEN		12.05	0.39	0.38	18.56	-1.46	-0.35	ZZ
VTBXXG		10.89	-0.77	-0.75	16.99	-3.03	-0.73	ZZ
Y7TMLC		11.35	-0.31	-0.30	20.42	0.40	0.10	ZZ
ZVPQ38		12.31	0.65	0.63	27.13	7.11	1.72	ZZ

Summary Statistics	
Grand Means	11.658 lbf.in      20.017 lbf.in
Std Dev Btwn Labs	1.031 lbf.in      4.136 lbf.in
Statistics based on 11 of 11 reporting participants	

Summary Statistics in SI Units	
Grand Means	13.172 dN.m      22.616 dN.m
Std Dev Btwn Labs	1.165 dN.m      4.673 dN.m
Statistics based on 11 of 11 reporting participants	

Samples W61-W62: EPDM compound #1 & W63-W64: EPDM compound #2

Instrument Code Listing

**673** ODR Vulcanization: Minimum Torque (lbf.in)

Instruments:

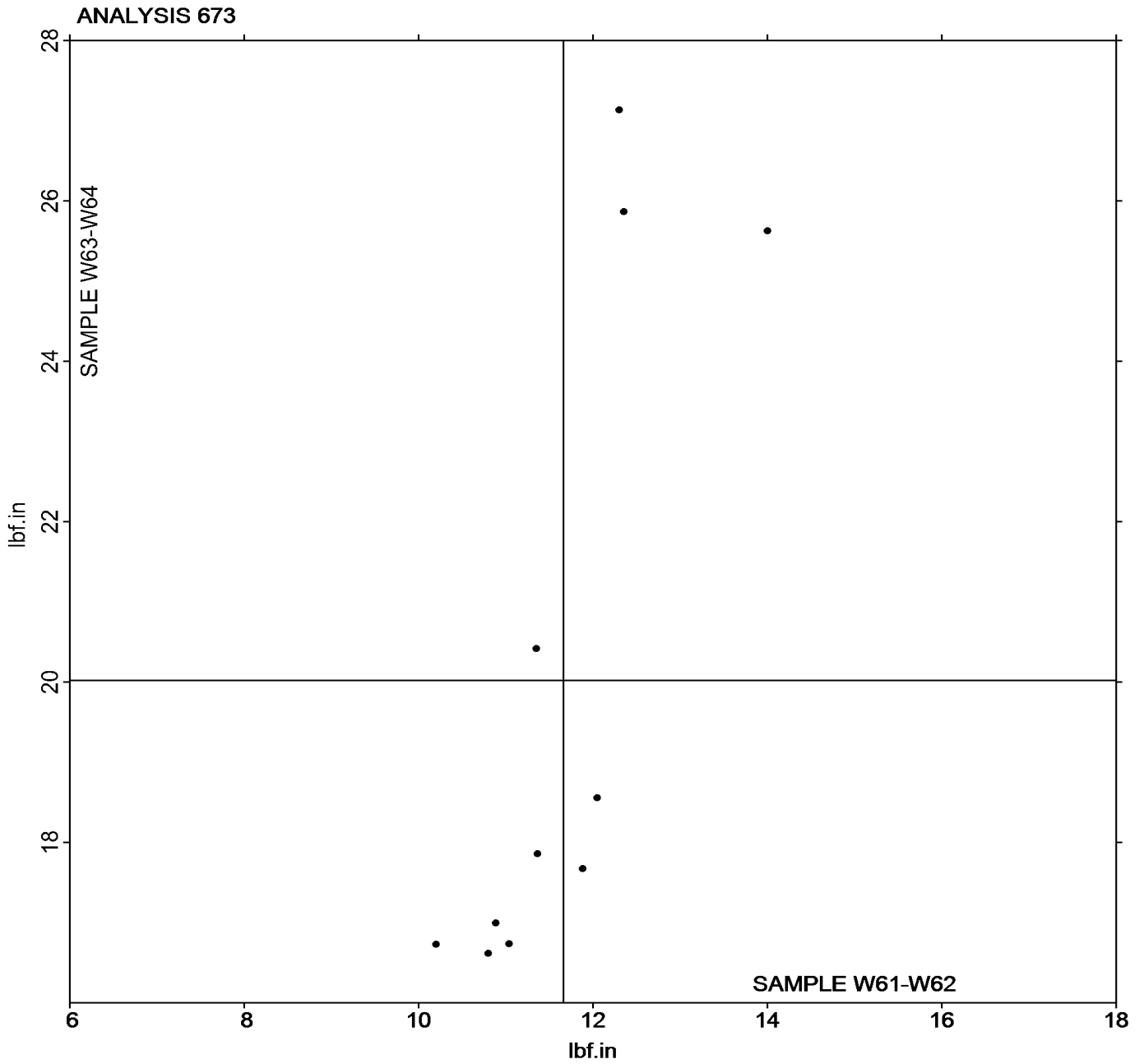
(ZZ) Instruments No Longer Tracked

Analysis 673

ODR Vulcanization: Minimum Torque (lbf.in)

Grand Mean Sample **W61** = 11.658 lbf.in

Grand Mean Sample **W62** = 20.017 lbf.in



**Rubber Interlaboratory Testing Program  
Analysis 674**

**ODR Vulcanization: Maximum Torque (lbf.in)**

WebCode	Data Flag	Sample W61			Sample W62			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		45.20	-0.74	-0.29	42.99	-0.67	-0.19	ZZ
832H7C		43.71	-2.24	-0.87	39.59	-4.06	-1.17	ZZ
87KD94		48.84	2.90	1.13	43.74	0.09	0.03	ZZ
A92GU7		50.95	5.01	1.95	50.06	6.41	1.85	ZZ
DBUKB4		42.16	-3.79	-1.47	38.93	-4.72	-1.36	ZZ
FH7E63		45.83	-0.12	-0.05	47.14	3.49	1.01	ZZ
PEXAKF		46.04	0.09	0.04	41.84	-1.81	-0.52	ZZ
U99MEN		45.14	-0.81	-0.31	40.42	-3.24	-0.94	ZZ
VTBXXG		47.48	1.54	0.60	43.57	-0.09	-0.02	ZZ
Y7TMLC		47.03	1.09	0.42	44.72	1.07	0.31	ZZ
ZVPQ38		43.02	-2.93	-1.14	47.17	3.52	1.02	ZZ

Grand Means		Summary Statistics	
	45.945 lbf.in		43.650 lbf.in
Std Dev Btwn Labs			
	2.572 lbf.in		3.460 lbf.in
Statistics based on 11 of 11 reporting participants			

Grand Means		Summary Statistics in SI Units	
	51.910 dN.m		49.318 dN.m
Std Dev Btwn Labs			
	2.906 dN.m		3.910 dN.m
Statistics based on 11 of 11 reporting participants			

Samples W61-W62: EPDM compound #1 & W63-W64: EPDM compound #2

**Instrument Code Listing**

**674** ODR Vulcanization: Maximum Torque (lbf.in)

**Instruments:**

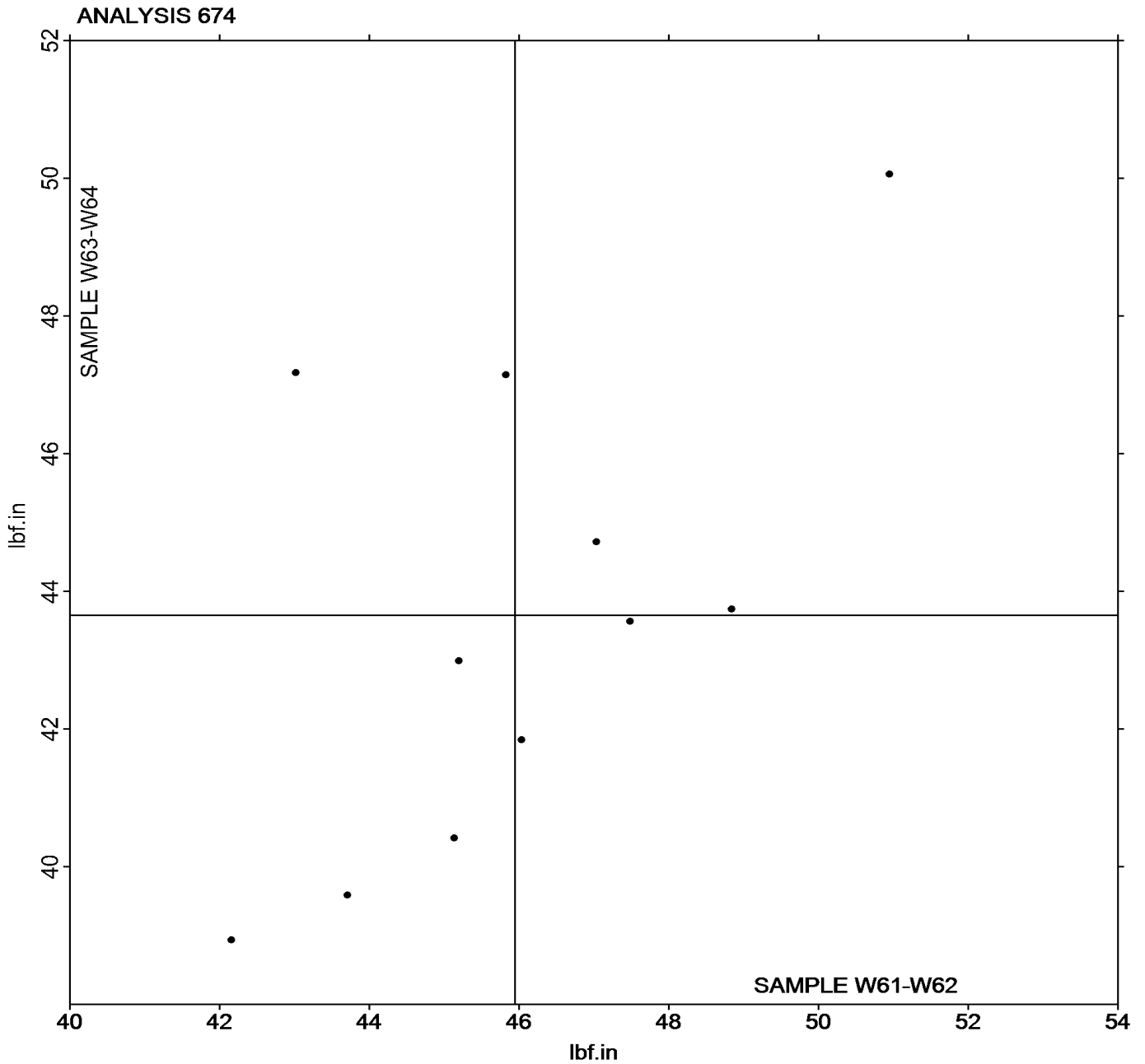
(ZZ) Instruments No Longer Tracked

Analysis 674

ODR Vulcanization: Maximum Torque (lbf.in)

Grand Mean Sample **W61** = 45.945 lbf.in

Grand Mean Sample **W62** = 43.650 lbf.in



Analysis 684

MDR Vulcanization-Cure Time 10% (minutes)

WebCode	Data Flag	Sample W65			Sample W66			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		0.8717	-0.0343	-0.52	0.8650	-0.0027	-0.04	MC
2EA8J7		0.9267	0.0207	0.31	0.9250	0.0573	0.80	MP
3BUW73		0.9517	0.0457	0.69	0.8950	0.0273	0.38	MC
3JLFBK		0.8367	-0.0693	-1.06	0.9033	0.0356	0.50	MC
6VNMEX		0.9517	0.0457	0.69	0.6950	-0.1727	-2.40	MC
7V8TC3		0.8861	-0.0199	-0.30	0.8972	0.0295	0.41	MC
832H7C		0.9017	-0.0043	-0.07	0.8500	-0.0177	-0.25	XX
87KD94		0.9133	0.0073	0.11	0.9667	0.0990	1.38	MC
A7UYVB		0.8917	-0.0143	-0.22	0.9133	0.0456	0.63	MC
B2WW72		0.8833	-0.0227	-0.34	0.7733	-0.0944	-1.31	TP
CCAG43	*	0.9683	0.0623	0.95	0.6800	-0.1877	-2.61	MC
DWR8F6	X	0.9467	0.0407	0.62	0.8633	-0.0044	-0.06	MC
EERKN7		0.8733	-0.0327	-0.50	0.9133	0.0456	0.63	MD
EHTNFR		0.8517	-0.0543	-0.83	0.8350	-0.0327	-0.46	MC
GT28QY		0.9333	0.0273	0.42	0.9767	0.1090	1.52	XX
L9E6YF		1.0483	0.1423	2.17	0.9083	0.0406	0.56	MC
M9HWQV		0.9417	0.0357	0.54	0.8617	-0.0060	-0.08	MC
PEXAKF		0.9450	0.0390	0.59	0.8467	-0.0210	-0.29	MC
QQJ7YH		1.0667	0.1607	2.44	0.8433	-0.0244	-0.34	TP
TCYAWQ		0.8817	-0.0243	-0.37	0.9417	0.0740	1.03	MC
U99MEN		0.8933	-0.0127	-0.19	0.8950	0.0273	0.38	MC
UHHRRE		0.8217	-0.0843	-1.28	0.9083	0.0406	0.56	MC
XVQ6BA		0.9233	0.0173	0.26	0.8817	0.0140	0.19	MD
XW823A		0.8600	-0.0460	-0.70	0.9100	0.0423	0.59	MC
ZMA8H9		0.9150	0.0090	0.14	0.8317	-0.0360	-0.50	XX
ZQAGP4	*	0.7400	-0.1660	-2.53	0.7783	-0.0894	-1.24	XX
ZRPHWC		0.8783	-0.0277	-0.42	0.8650	-0.0027	-0.04	MC

Grand Means		Summary Statistics	
	0.90600 minutes		0.86771 minutes
Stnd Dev Btwn Labs	0.06572 minutes		0.07190 minutes
Statistics based on 26 of 27 reporting participants			

Samples W65-W66: EPDM compound, batch #1 & W67-W68: EPDM compound, batch #2

**Rubber Interlaboratory Testing Program**  
**Analysis 684**

**MDR Vulcanization-Cure Time 10% (minutes)**

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**Comments on assigned Data Flags for Test #684**

DWR8F6 (X) - Data for Sample A68 appear to be off by a factor of .1. Data corrected by CTS (x10).

**Instrument Code Listing**

<b>684</b> MDR Vulcanization-Cure Time 10% (minutes)
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**Instruments:**

- |  |   |
|--|---|
| (MC) Alpha Technologies [Monsanto] MDR 2000 or 2000E | (MD) Alpha Tech. Rubber Process Analyzer (RPA 2000) |
| (MP) Alpha Technologies [Monsanto] MDR 2000P         | (TP) Tech Pro MDR model MDPT                        |
| (XX) Instrument model not specified by lab           |   |





Analysis 685

MDR Vulcanization-Scorch Time, Ts1 (minutes)

WebCode	Data Flag	Sample W65			Sample W66			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		0.8150	-0.0452	-0.43	0.7783	0.0277	0.51	MC
2EA8J7		0.8167	-0.0435	-0.42	0.7667	0.0160	0.30	MP
3BUW73		0.9217	0.0615	0.59	0.8083	0.0577	1.06	MC
3JLFKB		0.7300	-0.1302	-1.25	0.7667	0.0160	0.30	MC
6VNMEX	*	0.9425	0.0823	0.79	0.5956	-0.1551	-2.86	MC
7V8TC3		0.8083	-0.0519	-0.50	0.7695	0.0188	0.35	MC
832H7C		1.0200	0.1598	1.53	0.8100	0.0594	1.09	XX
87KD94		0.8183	-0.0419	-0.40	0.8267	0.0760	1.40	MC
A7UYVB		0.8000	-0.0602	-0.58	0.7867	0.0360	0.66	MC
B2WW72		0.9200	0.0598	0.57	0.7233	-0.0273	-0.50	TP
B8JMTW		0.9633	0.1031	0.99	0.7100	-0.0406	-0.75	MC
B8N4RV		1.0900	0.2298	2.21	0.6733	-0.0773	-1.42	MC
CCAG43		0.9867	0.1265	1.21	0.6317	-0.1190	-2.19	MC
DWR8F6		0.9167	0.0565	0.54	0.7433	-0.0073	-0.13	MC
EERKN7		0.8150	-0.0452	-0.43	0.8050	0.0544	1.00	MD
EHTNFR		0.8250	-0.0352	-0.34	0.7033	-0.0473	-0.87	MC
GT28QY		0.8017	-0.0585	-0.56	0.8067	0.0560	1.03	XX
L9E6YF		0.9450	0.0848	0.81	0.7867	0.0360	0.66	MC
M9HWQV		0.8750	0.0148	0.14	0.7500	-0.0006	-0.01	MC
PEXAKF		0.8433	-0.0169	-0.16	0.7233	-0.0273	-0.50	MC
QQJ7YH		1.0767	0.2165	2.08	0.7700	0.0194	0.36	TP
TCYAWQ		0.7883	-0.0719	-0.69	0.7900	0.0394	0.72	MC
U99MEN		0.8050	-0.0552	-0.53	0.7617	0.0110	0.20	MC
UHHRRE		0.6700	-0.1902	-1.83	0.7300	-0.0206	-0.38	MC
XVQ6BA		0.8533	-0.0069	-0.07	0.7883	0.0377	0.69	MD
XW823A		0.7750	-0.0852	-0.82	0.7950	0.0444	0.82	MC
ZMA8H9		0.8567	-0.0035	-0.03	0.7250	-0.0256	-0.47	XX
ZQAGP4		0.6733	-0.1869	-1.79	0.6917	-0.0590	-1.09	XX
ZRPHWC		0.7933	-0.0669	-0.64	0.7517	0.0010	0.02	MC

Grand Means		Summary Statistics	
	0.86020 minutes		0.75063 minutes
Std Dev Btw Labs	0.10413 minutes		0.05430 minutes
Statistics based on 29 of 29 reporting participants			

Samples W65-W66: EPDM compound, batch #1 & W67-W68: EPDM compound, batch #2

**Rubber Interlaboratory Testing Program**  
**Analysis 685**

**MDR Vulcanization-Scorch Time, Ts1 (minutes)**

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Instrument Code Listing

<b>685</b> MDR Vulcanization-Scorch Time, Ts1 (minutes)
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**Instruments:**

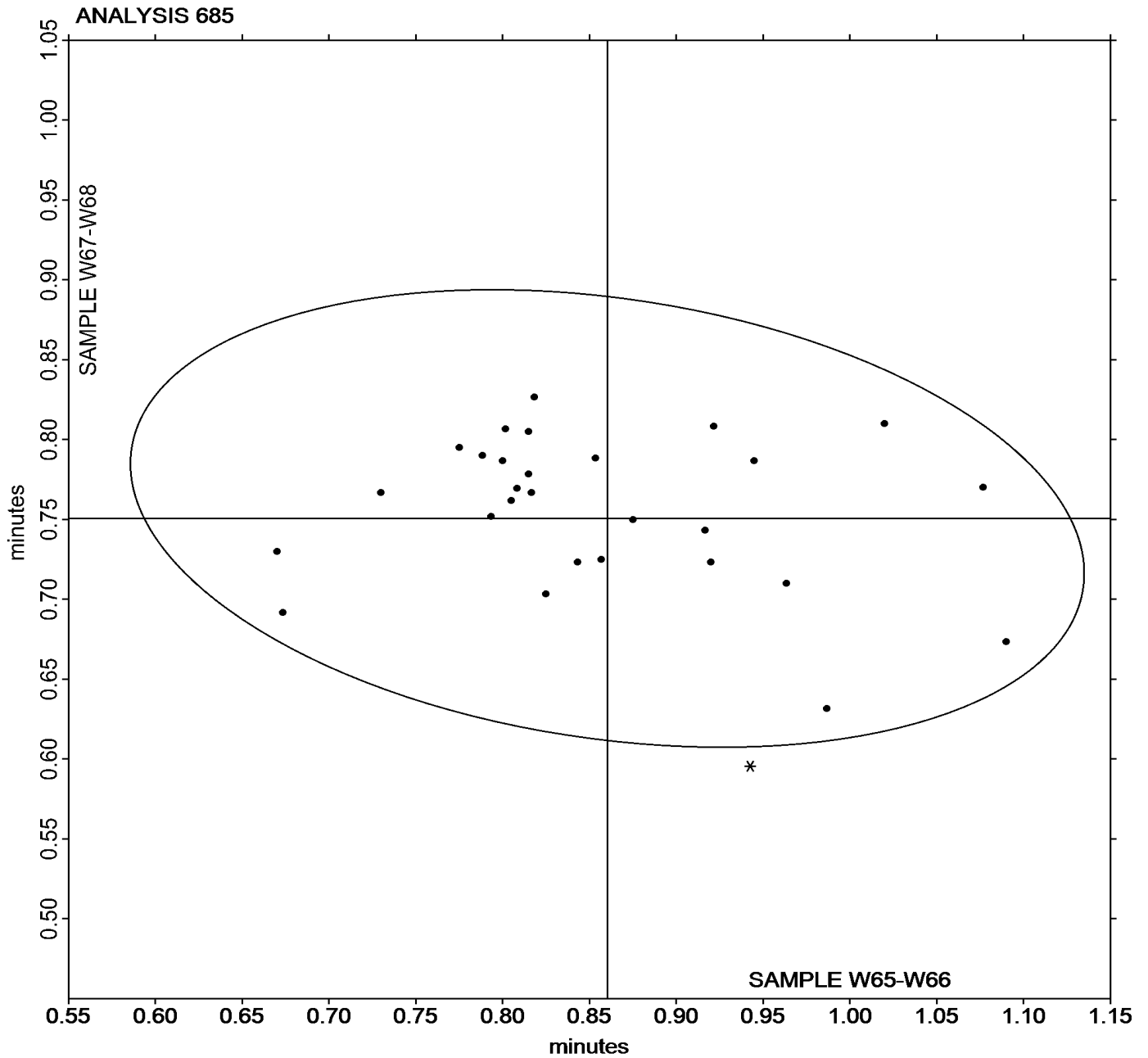
- |  |   |
|--|---|
| (MC) Alpha Technologies [Monsanto] MDR 2000 or 2000E | (MD) Alpha Tech. Rubber Process Analyzer (RPA 2000) |
| (MP) Alpha Technologies [Monsanto] MDR 2000P         | (TP) Tech Pro MDR model MDPT                        |
| (XX) Instrument model not specified by lab           |   |

Analysis 685

MDR Vulcanization-Scorch Time, Ts1 (minutes)

Grand Mean Sample **W65** = 0.86020 minutes

Grand Mean Sample **W66** = 0.75063 minutes



Rubber Interlaboratory Testing Program

Analysis 686

MDR Vulcanization-Cure Time 50% (minutes)

WebCode	Data Flag	Sample W65			Sample W66			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		2.543	-0.039	-0.45	3.125	0.068	0.42	MC
2EA8J7		2.612	0.029	0.34	3.083	0.026	0.16	MC
3BUW73		2.520	-0.062	-0.73	3.095	0.038	0.23	MC
3JLFKB		2.635	0.053	0.61	3.325	0.268	1.67	MC
6VNMEX		2.445	-0.137	-1.60	2.725	-0.332	-2.08	MC
7V8TC3		2.600	0.018	0.21	3.133	0.076	0.47	MC
832H7C		2.495	-0.087	-1.02	2.960	-0.097	-0.61	XX
87KD94		2.678	0.096	1.12	3.288	0.231	1.44	MC
A7UYVB		2.573	-0.009	-0.10	3.053	-0.004	-0.03	MC
B2WW72		2.420	-0.162	-1.89	2.840	-0.217	-1.36	TP
B8JMTW		2.577	-0.006	-0.07	2.947	-0.111	-0.69	MC
B8N4RV		2.520	-0.062	-0.73	2.878	-0.179	-1.12	MC
CCAG43		2.498	-0.084	-0.98	2.747	-0.311	-1.94	MC
DWR8F6		2.577	-0.006	-0.07	3.072	0.014	0.09	MC
EERKN7		2.685	0.103	1.20	3.143	0.086	0.54	MD
EHTNFR		2.567	-0.016	-0.18	3.038	-0.019	-0.12	MC
GT28QY		2.643	0.061	0.71	2.938	-0.119	-0.74	XX
L9E6YF	*	2.785	0.203	2.36	3.202	0.144	0.90	MC
M9HWQV		2.570	-0.012	-0.14	3.098	0.041	0.26	MC
PEXAKF		2.642	0.059	0.69	3.053	-0.004	-0.03	MC
QQJ7YH		2.642	0.059	0.69	3.158	0.101	0.63	TP
TCYAWQ		2.673	0.091	1.06	3.345	0.288	1.80	MC
U99MEN		2.633	0.051	0.60	3.135	0.078	0.48	MC
UHHRRE		2.645	0.063	0.73	3.167	0.109	0.68	MC
XVQ6BA		2.672	0.089	1.04	3.260	0.203	1.27	MD
XW823A		2.580	-0.002	-0.03	3.060	0.003	0.02	MC
ZMA8H9		2.438	-0.144	-1.68	2.862	-0.196	-1.22	XX
ZQAGP4		2.453	-0.129	-1.50	2.867	-0.191	-1.19	XX
ZRPHWC		2.565	-0.017	-0.20	3.067	0.009	0.06	MC

Grand Means		Summary Statistics	
	2.5823 minutes		3.0574 minutes
Std Dev Btwn Labs	0.0857 minutes		0.1600 minutes
Statistics based on 29 of 29 reporting participants			

Samples W65-W66: EPDM compound, batch #1 & W67-W68: EPDM compound, batch #2

**Rubber Interlaboratory Testing Program**  
**Analysis 686**

**MDR Vulcanization-Cure Time 50% (minutes)**

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Instrument Code Listing

<b>686</b> MDR Vulcanization-Cure Time 50% (minutes)
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**Instruments:**

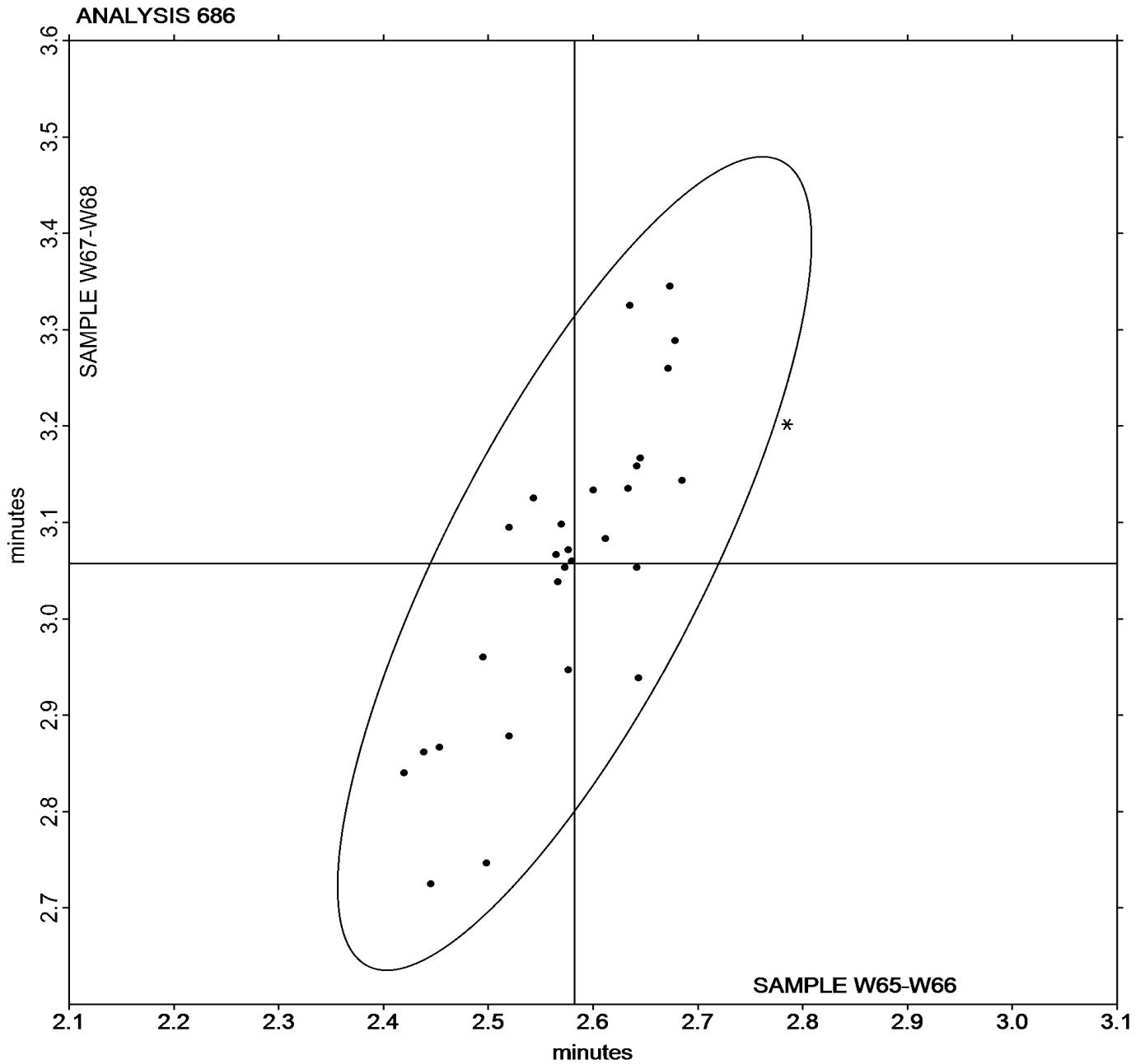
- |  |   |
|--|---|
| (MC) Alpha Technologies [Monsanto] MDR 2000 or 2000E | (MD) Alpha Tech. Rubber Process Analyzer (RPA 2000) |
| (MP) Alpha Technologies [Monsanto] MDR 2000P         | (TP) Tech Pro MDR model MDPT                        |
| (XX) Instrument model not specified by lab           |   |

Analysis 686

MDR Vulcanization-Cure Time 50% (minutes)

Grand Mean Sample **W65** = 2.5823 minutes

Grand Mean Sample **W66** = 3.0574 minutes



Analysis 687

MDR Vulcanization-Cure Time 90% (minutes)

WebCode	Data Flag	Sample W65			Sample W66			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		6.127	0.026	0.19	6.440	0.075	0.36	MC
2EA8J7		5.920	-0.180	-1.32	6.300	-0.065	-0.31	MP
3BUW73		5.922	-0.179	-1.31	6.163	-0.202	-0.97	MC
3JLFKB		6.247	0.146	1.07	6.622	0.256	1.23	MC
6VNMEX		5.879	-0.221	-1.61	6.004	-0.362	-1.74	MC
7V8TC3		6.083	-0.017	-0.12	6.345	-0.021	-0.10	MC
832H7C	*	5.838	-0.262	-1.91	6.387	0.021	0.10	XX
87KD94		6.207	0.106	0.78	6.677	0.311	1.49	MC
A7UYVB		6.043	-0.057	-0.42	6.353	-0.012	-0.06	MC
B2WW72	X	5.213	-0.887	-6.48	5.875	-0.490	-2.35	TP
B8JMTW		5.947	-0.154	-1.12	6.072	-0.294	-1.41	MC
B8N4RV		6.098	-0.002	-0.01	6.160	-0.205	-0.98	MC
CCAG43		6.000	-0.100	-0.73	6.165	-0.200	-0.96	MC
DWR8F6		6.095	-0.005	-0.04	6.417	0.051	0.25	MC
EERKN7		6.323	0.223	1.63	6.823	0.458	2.20	MD
EHTNFR		6.292	0.191	1.40	6.477	0.111	0.53	MC
GT28QY	X	6.312	0.211	1.54	4.923	-1.442	-6.92	XX
L9E6YF		6.253	0.153	1.12	6.287	-0.079	-0.38	MC
M9HWQV		6.035	-0.065	-0.48	6.373	0.008	0.04	MC
PEXAKF		6.088	-0.012	-0.09	6.400	0.035	0.17	MC
QQJ7YH		6.172	0.071	0.52	6.407	0.041	0.20	TP
TCYAWQ		6.278	0.178	1.30	6.733	0.368	1.77	MC
U99MEN		6.065	-0.035	-0.26	6.398	0.033	0.16	MC
UHHRRE		6.135	0.035	0.25	6.448	0.083	0.40	MC
XVQ6BA		6.345	0.245	1.79	6.557	0.191	0.92	MD
XW823A		6.155	0.055	0.40	6.360	-0.005	-0.02	MC
ZMA8H9		6.008	-0.092	-0.67	5.972	-0.394	-1.89	XX
ZQAGP4		6.012	-0.089	-0.65	6.372	0.006	0.03	XX
ZRPHWC		6.142	0.041	0.30	6.150	-0.215	-1.03	MC

Summary Statistics	
Grand Means	6.1004 minutes
	6.3652 minutes
Std Dev Btwn Labs	0.1368 minutes
	0.2084 minutes
Statistics based on 27 of 29 reporting participants	

Samples W65-W66: EPDM compound, batch #1 & W67-W68: EPDM compound, batch #2

## Analysis 687

## MDR Vulcanization-Cure Time 90% (minutes)

**Comments on assigned Data Flags for Test #687**

B2WW72 (X) - Data for Sample group W65-W66 are low. Inconsistency in testing within Sample group W65-W66.

GT28QY (X) - Data for Sample group W67-W68 are low.

**Instrument Code Listing**

<b>687</b> MDR Vulcanization-Cure Time 90% (minutes)
--

**Instruments:**

(MC) Alpha Technologies [Monsanto] MDR 2000 or 2000E

(MD) Alpha Tech. Rubber Process Analyzer (RPA 2000)

(MP) Alpha Technologies [Monsanto] MDR 2000P

(TP) Tech Pro MDR model MDPT

(XX) Instrument model not specified by lab

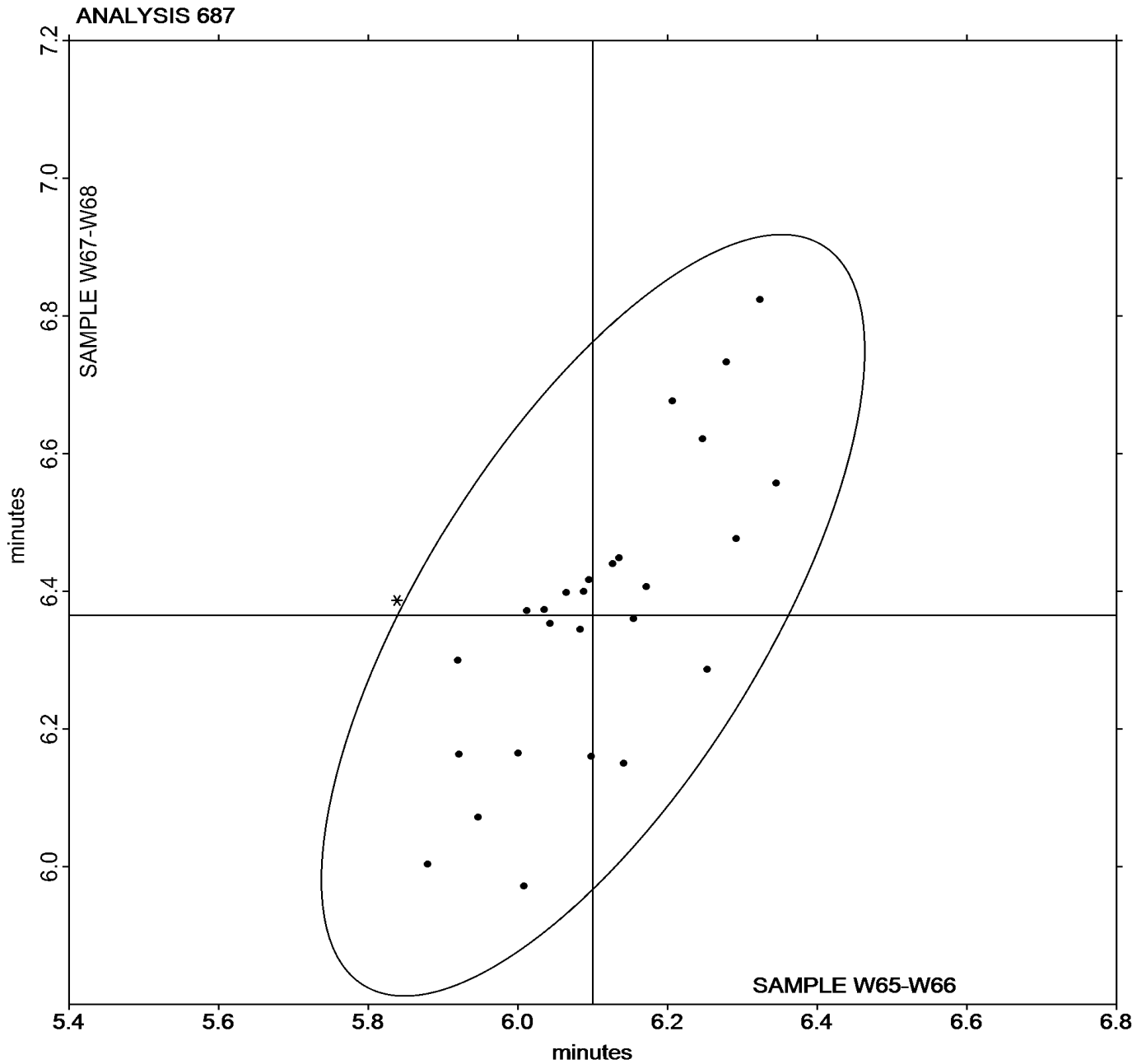


Analysis 687

MDR Vulcanization-Cure Time 90% (minutes)

Grand Mean Sample **W65** = 6.1004 minutes

Grand Mean Sample **W66** = 6.3652 minutes



Analysis 688

MDR Vulcanization: Minimum Torque (lbf.in)

WebCode	Data Flag	Sample W65			Sample W66			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		4.378	-0.119	-0.24	2.062	-0.157	-0.67	MC
2EA8J7		4.144	-0.353	-0.72	2.015	-0.204	-0.87	MP
3BUW73		4.313	-0.184	-0.37	2.098	-0.121	-0.52	MC
3JLFKB		4.012	-0.485	-0.98	2.165	-0.054	-0.23	MC
6VNMEX		4.625	0.128	0.26	2.543	0.324	1.38	MC
7V8TC3		4.450	-0.047	-0.09	2.153	-0.066	-0.28	MC
832H7C	*	3.042	-1.455	-2.95	1.678	-0.541	-2.31	XX
87KD94		4.107	-0.390	-0.79	2.098	-0.121	-0.52	MC
A7UYVB		4.408	-0.089	-0.18	2.163	-0.056	-0.24	MC
B2WW72		4.408	-0.089	-0.18	2.028	-0.191	-0.81	TP
B8JMTW		5.330	0.833	1.69	2.302	0.083	0.35	MC
B8N4RV		5.607	1.110	2.25	2.588	0.369	1.57	MC
CCAG43	*	5.333	0.836	1.70	2.840	0.621	2.65	MC
DWR8F6		4.527	0.030	0.06	2.387	0.168	0.71	MC
EERKN7		3.964	-0.533	-1.08	2.031	-0.188	-0.80	MD
EHTNFR		4.412	-0.085	-0.17	2.378	0.159	0.68	MC
GT28QY		4.657	0.160	0.32	2.308	0.089	0.38	XX
L9E6YF		5.195	0.698	1.42	2.180	-0.039	-0.17	MC
M9HWQV		4.705	0.208	0.42	2.257	0.038	0.16	MC
PEXAKF		4.715	0.218	0.44	2.003	-0.216	-0.92	MC
QQJ7YH		4.682	0.185	0.37	2.052	-0.167	-0.71	TP
TCYAWQ		4.127	-0.370	-0.75	2.208	-0.011	-0.05	MC
U99MEN		4.342	-0.155	-0.31	2.137	-0.082	-0.35	MC
UHRRE		4.782	0.285	0.58	2.318	0.099	0.42	MC
XVQ6BA		4.489	-0.008	-0.02	2.032	-0.188	-0.80	MD
XW823A		3.970	-0.527	-1.07	2.089	-0.130	-0.56	MC
ZMA8H9		4.622	0.125	0.25	2.337	0.118	0.50	XX
ZQAGP4		4.583	0.086	0.18	2.682	0.463	1.97	XX
ZRPHWC		4.483	-0.014	-0.03	2.223	0.004	0.02	MC

Grand Means		Summary Statistics	
	4.4968 lbf.in		2.2192 lbf.in
Std Dev Btw Labs	0.4932 lbf.in		0.2345 lbf.in
Statistics based on 29 of 29 reporting participants			

Analysis 688

MDR Vulcanization: Minimum Torque (lbf.in)

Grand Means		Summary Statistics in SI Units	
	5.0808 dN.m		2.5073 dN.m
Stnd Dev Btwn Labs			
	0.5572 dN.m		0.2649 dN.m
Statistics based on 29 of 29 reporting participants			

Samples W65-W66: EPDM compound, batch #1 & W67-W68: EPDM compound, batch #2

Instrument Code Listing

**688** MDR Vulcanization: Minimum Torque (lbf.in)

Instruments:

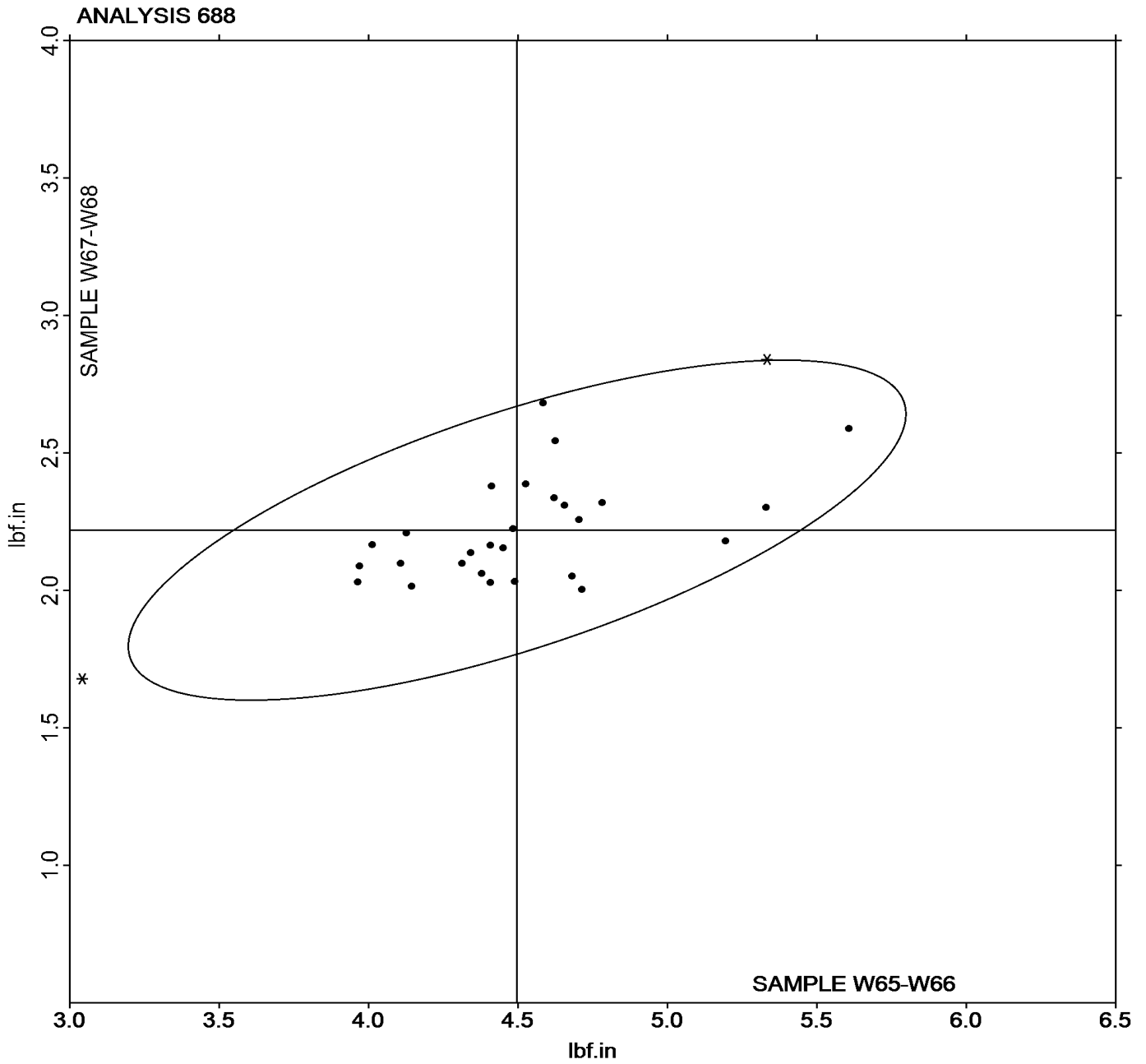
- (MC) Alpha Technologies [Monsanto] MDR 2000 or 2000E
- (MD) Alpha Tech. Rubber Process Analyzer (RPA 2000)
- (MP) Alpha Technologies [Monsanto] MDR 2000P
- (TP) Tech Pro MDR model MDPT
- (XX) Instrument model not specified by lab

Analysis 688

MDR Vulcanization: Minimum Torque (lbf.in)

Grand Mean Sample **W65** = 4.4968 lbf.in

Grand Mean Sample **W66** = 2.2192 lbf.in



Analysis 689

MDR Vulcanization: Maximum Torque (lbf.in)

WebCode	Data Flag	Sample W65			Sample W66			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AFDL6		15.46	-0.34	-0.34	13.99	-0.90	-1.12	MC
2EA8J7		15.22	-0.58	-0.58	14.37	-0.51	-0.64	MC
3BUW73		14.87	-0.93	-0.92	14.04	-0.85	-1.06	MC
3JLFKB		16.24	0.43	0.43	15.36	0.47	0.59	MC
6VNMEX		13.67	-2.14	-2.12	13.87	-1.02	-1.27	MC
7V8TC3		16.24	0.44	0.43	15.18	0.30	0.37	MC
832H7C	X	11.21	-4.59	-4.56	12.53	-2.36	-2.95	XX
87KD94		16.01	0.21	0.21	15.23	0.34	0.43	MC
A7UYVB		16.36	0.56	0.56	15.12	0.24	0.30	MC
B2WW72		14.05	-1.75	-1.74	13.41	-1.48	-1.85	TP
B8JMTW	X	16.20	0.40	0.40	17.85	2.96	3.70	MC
B8N4RV		15.69	-0.11	-0.11	14.46	-0.43	-0.54	MC
CCAG43		15.09	-0.71	-0.71	14.36	-0.53	-0.66	MC
DWR8F6		14.96	-0.85	-0.84	15.28	0.39	0.49	MC
EERKN7		15.10	-0.70	-0.69	14.48	-0.41	-0.51	MD
EHTNFR		15.45	-0.35	-0.35	15.44	0.56	0.70	MC
GT28QY		18.01	2.21	2.19	16.75	1.87	2.34	XX
L9E6YF		16.57	0.77	0.76	14.83	-0.05	-0.07	MC
M9HWQV		16.06	0.26	0.26	14.98	0.10	0.12	MC
PEXAKF		16.81	1.01	1.00	14.84	-0.05	-0.06	MC
QQJ7YH		14.46	-1.34	-1.33	13.64	-1.25	-1.56	TP
TCYAWQ		16.01	0.21	0.21	15.66	0.78	0.97	MC
U99MEN		16.22	0.41	0.41	15.18	0.29	0.36	MC
UHHRRE		18.23	2.43	2.41	16.75	1.87	2.34	MC
XVQ6BA		15.99	0.19	0.19	14.35	-0.54	-0.67	MD
XW823A		15.76	-0.04	-0.04	14.77	-0.11	-0.14	MC
ZMA8H9		16.17	0.37	0.37	15.56	0.68	0.84	XX
ZQAGP4		15.75	-0.05	-0.05	15.12	0.23	0.29	XX
ZRPHWC		16.19	0.38	0.38	14.89	0.00	0.00	MC

Grand Means		Summary Statistics	
	15.801 lbf.in		14.885 lbf.in
Std Dev Btwn Labs	1.006 lbf.in		0.800 lbf.in
Statistics based on 27 of 29 reporting participants			

Analysis 689

MDR Vulcanization: Maximum Torque (lbf.in)

Grand Means		Summary Statistics in SI Units	
	17.852 dN.m		16.817 dN.m
Stnd Dev Btwn Labs	1.137 dN.m		0.904 dN.m
Statistics based on 27 of 29 reporting participants			

Samples W65-W66: EPDM compound, batch #1 & W67-W68: EPDM compound, batch #2

Comments on assigned Data Flags for Test #689

832H7C (X) - Data for all Samples are low. Inconsistency in testing within Sample group W67-W68.

B8JMTW (X) - Data for Sample group W67-W68 are high.

Instrument Code Listing

689 MDR Vulcanization: Maximum Torque (lbf.in)

Instruments:

- (MC) Alpha Technologies [Monsanto] MDR 2000 or 2000E
- (MD) Alpha Tech. Rubber Process Analyzer (RPA 2000)
- (MP) Alpha Technologies [Monsanto] MDR 2000P
- (TP) Tech Pro MDR model MDPT
- (XX) Instrument model not specified by lab

Analysis 689

MDR Vulcanization: Maximum Torque (lbf.in)

Grand Mean Sample W65 = 15.801 lbf.in

Grand Mean Sample W66 = 14.885 lbf.in

