



Rubber Interlaboratory Testing Program

Summary Report #195- 1st Qtr 2018

[About the Rubber Program, About CTS](#)

[Key for Web Summary Report](#)

Analysis	Analysis Name	Analysis	Analysis Name
605	Tensile Strength: Precured Rubber Samples	691	RPA Rheological Properties: Part A - G'' at 20Hz
606	Ultimate Elongation: Precured Rubber Samples	695	RPA Rheological Properties: Part B - G' at 1.0Hz
607	Stress at 300% Elongation: Precured Samples	696	RPA Rheological Properties: Part B - G'' at 1.0Hz
608	Stress at 100% Elongation: Precured Samples		
620	Hardness (Type A): Precured Rubber Samples		
621	Density: Precured Rubber Samples @ 25C		
625	Hardness (Shore D/Type D)		
630	Tensile Strength: Participant-Cured Rubber		
631	Ultimate Elongation: Participant-Cured Samples		
632	Tensile Stress at 300% Elongation: Lab-Cured		
633	Tensile Stress at 100% Elongation: Lab-Cured		
660	Mooney Viscosity (4-minute readings)		
661	Mooney Viscosity (8-minute butyl readings)		
662	Mooney Stress Relaxation: t80		
663	Mooney Stress Relaxation: X30		
664	Mooney Stress Relaxation: Area under curve		
669	ODR Vulcanization Charac.: Cure Time 10%		
670	ODR Vulcanization Charac.: Scorch Time, Ts1		
671	ODR Vulcanization Charac.: Cure Time 50%		
672	ODR Vulcanization Charac.: Cure Time 90%		
673	ODR Vulcanization Charac.: Minimum Torque		
674	ODR Vulcanization Charac.: Maximum Torque		
684	MDR Vulcanization Charac.: Cure Time 10%		
685	MDR Vulcanization Charac.: Scorch Time, Ts1		
686	MDR Vulcanization Charac.: Cure Time 50%		
687	MDR Vulcanization Charac.: Cure Time 90%		
688	MDR Vulcanization Charac.: Minimum Torque		
689	MDR Vulcanization Charac.: Maximum Torque		
690	RPA Rheological Properties: Part A - G' at 20Hz		

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:

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WebCode	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.
Lab Mean	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.
Grand Mean	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.
Difference from Grand Mean	The difference of the LAB MEAN from the GRAND MEAN.
Between-Lab Standard Deviation	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).
Comparative Performance Value	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.
Inst Code	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).
Data Flag	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	CAUTION - 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	STOP - 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	PROCEED - 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.

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.**

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.



Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
29JVB6		3,404.5	231.7	1.29	3,409.5	178.9	0.98
2DW7CR		3,159.0	-13.8	-0.08	3,200.5	-30.1	-0.17
2QJDAT		3,398.0	225.2	1.26	3,393.0	162.4	0.89
3QV2XK		3,271.0	98.2	0.55	3,404.5	173.9	0.96
3YCHRF		3,263.5	90.7	0.51	3,386.0	155.4	0.85
438UZK		3,038.6	-134.3	-0.75	3,132.8	-97.8	-0.54
46WZKH		3,305.4	132.6	0.74	3,285.9	55.2	0.30
477BQE		3,168.7	-4.2	-0.02	3,297.9	67.2	0.37
4DNGAL		3,165.5	-7.3	-0.04	3,242.0	11.4	0.06
4FDMUH		2,907.7	-265.2	-1.48	2,931.4	-299.2	-1.64
4LJDWN		3,267.1	94.3	0.53	3,210.9	-19.8	-0.11
4TH3ET		3,033.0	-139.8	-0.78	3,140.0	-90.6	-0.50
68T2Z6		3,404.3	231.5	1.29	3,480.4	249.8	1.37
69CTAP		3,385.7	212.8	1.19	3,406.7	176.1	0.97
6AMPJZ		3,136.5	-36.4	-0.20	3,237.3	6.6	0.04
6GKKGY	*	2,752.8	-420.0	-2.35	2,763.7	-467.0	-2.56
6WV7ZN		3,239.0	66.2	0.37	3,322.0	91.4	0.50
797X4N		3,270.0	97.1	0.54	3,314.4	83.7	0.46
7PTD8K		2,950.0	-222.8	-1.24	2,965.0	-265.6	-1.46
7TTP3K		2,940.0	-232.8	-1.30	2,950.0	-280.6	-1.54
7ZAZFL	*	3,633.2	460.4	2.57	3,713.0	482.4	2.65
8BR2BL		3,138.0	-34.8	-0.19	3,243.5	12.9	0.07
8ENKF7		3,206.9	34.0	0.19	3,259.6	28.9	0.16
8ZQ2R8		3,202.5	29.7	0.17	3,268.0	37.4	0.21
9ATBKX		3,001.5	-171.3	-0.96	3,226.0	-4.6	-0.03
9RR96E		3,062.0	-110.8	-0.62	3,126.5	-104.1	-0.57
AKQEKK		2,973.5	-199.3	-1.11	3,025.0	-205.6	-1.13
B8WE99		3,190.5	17.7	0.10	3,261.0	30.4	0.17
BAKJU7		3,277.5	104.7	0.58	3,340.0	109.4	0.60
BG3GAZ	*	2,706.5	-466.3	-2.60	2,759.0	-471.6	-2.59
BWFRY9		3,174.0	1.2	0.01	3,278.5	47.9	0.26
C8RK39		3,108.2	-64.7	-0.36	3,256.9	26.2	0.14
DWPGD6		3,207.5	34.7	0.19	3,360.0	129.4	0.71
EDRF2Y		3,375.1	202.2	1.13	3,423.6	193.0	1.06
EH4LCY		3,169.5	-3.3	-0.02	3,205.5	-25.1	-0.14
ERNWNB		2,965.0	-207.8	-1.16	3,124.0	-106.6	-0.59
EV8EW2		3,232.5	59.7	0.33	3,382.6	152.0	0.83
F3LK9X		3,204.6	31.8	0.18	3,177.1	-53.6	-0.29



Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #195
1st Qtr 2018

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		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
F7MY4X		3,361.9	189.0	1.06	3,475.1	244.4	1.34
FN7X9V		3,000.1	-172.7	-0.96	3,038.6	-192.1	-1.06
FUA2W9		3,136.5	-36.3	-0.20	3,190.0	-40.6	-0.22
GA4MZF		3,285.1	112.3	0.63	3,343.1	112.5	0.62
GKJUEV		3,193.2	20.3	0.11	3,311.0	80.3	0.44
GUAHAX		3,206.8	33.9	0.19	3,336.5	105.9	0.58
HAXTUE		3,238.0	65.2	0.36	3,294.0	63.4	0.35
HHVK39	*	2,825.0	-347.8	-1.94	3,080.0	-150.6	-0.83
HLUYND	*	2,846.3	-326.5	-1.82	3,103.8	-126.8	-0.70
J2JWHX		3,012.6	-160.2	-0.89	3,130.5	-100.1	-0.55
J7UK3A		3,017.5	-155.3	-0.87	2,992.5	-238.1	-1.31
JBN4XX		3,547.5	374.7	2.09	3,509.9	279.3	1.53
JCYFMA		3,130.9	-42.0	-0.23	3,185.1	-45.6	-0.25
JTT9MV		3,190.0	17.2	0.10	3,240.5	9.9	0.05
K43ZCV		3,396.8	224.0	1.25	3,417.0	186.4	1.02
KEJPB2		3,219.9	47.0	0.26	3,422.9	192.3	1.06
KFDDR8		3,246.5	73.7	0.41	3,222.5	-8.1	-0.04
KXX4TV	*	2,702.5	-470.3	-2.63	2,672.0	-558.6	-3.07
KYRRA7		2,923.3	-249.6	-1.39	2,958.8	-271.8	-1.49
LA9WXG		2,923.3	-249.6	-1.39	3,036.4	-194.2	-1.07
LFFTTV		2,970.7	-202.2	-1.13	3,089.1	-141.6	-0.78
LFVCDT		3,256.9	84.0	0.47	3,269.2	38.5	0.21
MGJD7G		3,343.7	170.8	0.95	3,429.7	199.0	1.09
MLCAG7	*	3,087.5	-85.3	-0.48	2,967.5	-263.1	-1.45
MTDTVH	*	3,438.1	265.3	1.48	3,322.8	92.2	0.51
N67WCG		3,119.5	-53.3	-0.30	3,136.5	-94.1	-0.52
NHV2VR		3,182.0	9.2	0.05	3,298.5	67.9	0.37
PC6J2V		3,117.0	-55.8	-0.31	3,223.5	-7.1	-0.04
PHP8PR		3,336.6	163.8	0.91	3,312.7	82.1	0.45
PJFZBG		3,300.2	127.4	0.71	3,345.4	114.8	0.63
QKN6B4	*	3,395.0	222.2	1.24	3,270.5	39.9	0.22
R7LTGQ		3,228.5	55.7	0.31	3,266.5	35.9	0.20
RB3Z6P		3,261.9	89.1	0.50	3,345.0	114.4	0.63
RCVLJV		3,330.0	157.2	0.88	3,462.0	231.4	1.27
RJQLXN		3,122.0	-50.8	-0.28	3,113.5	-117.1	-0.64
RT2Q9T		3,297.5	124.7	0.70	3,306.5	75.9	0.42
TCTLAZ		3,321.5	148.7	0.83	3,244.0	13.4	0.07



Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #195
1st Qtr 2018

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		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
TQQ8M3		3,084.6	-88.2	-0.49	3,172.2	-58.4	-0.32
TTWQMJ		2,905.7	-267.2	-1.49	2,948.5	-282.2	-1.55
TUAM7N		3,336.6	163.8	0.91	3,457.0	226.4	1.24
TV2DZN		3,181.5	8.7	0.05	3,186.0	-44.6	-0.25
U729WX		3,258.5	85.7	0.48	3,394.0	163.4	0.90
UJ4YDW		2,894.0	-278.8	-1.56	2,947.5	-283.1	-1.56
UVVJW9		3,075.6	-97.2	-0.54	3,199.4	-31.2	-0.17
V49WCJ	*	3,615.8	443.0	2.47	3,768.1	537.5	2.95
V63KTT		3,229.5	56.7	0.32	3,393.0	162.4	0.89
VLC8JB		3,227.1	54.3	0.30	3,393.9	163.3	0.90
VLN7BX		3,318.4	145.6	0.81	3,397.7	167.1	0.92
VNVREJ		3,157.5	-15.4	-0.09	3,237.3	6.6	0.04
VVB3EK		3,058.5	-114.3	-0.64	2,977.5	-253.1	-1.39
VW7PVU		3,246.0	73.2	0.41	3,270.5	39.9	0.22
W84DFG		3,264.0	91.2	0.51	3,255.5	24.9	0.14
WB8GCT		3,043.0	-129.8	-0.73	3,189.5	-41.1	-0.23
WDRP2K		3,453.0	280.2	1.56	3,413.5	182.9	1.00
WNA8UR		3,178.8	6.0	0.03	3,220.5	-10.1	-0.06
WV9YZZ		2,993.5	-179.3	-1.00	3,012.0	-218.6	-1.20
WXFK4K		2,998.0	-174.9	-0.98	2,970.4	-260.2	-1.43
X2CQVV	X	2,596.2	-576.7	-3.22	2,618.0	-612.7	-3.37
XEFL2X		3,111.1	-61.8	-0.35	3,166.4	-64.3	-0.35
Y74MA9		3,283.5	110.7	0.62	3,279.5	48.9	0.27
YLCFYW		3,139.1	-33.8	-0.19	3,135.6	-95.0	-0.52
Z7YPBH		3,258.0	85.2	0.48	3,180.5	-50.1	-0.28

Summary Statistics	
Grand Means	
3,172.85 psi	3,230.63 psi
Std Dev Btwn Labs	
179.06 psi	182.05 psi
Statistics based on 99 of 100 reporting participants	



Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #195
1st Qtr 2018

Summary Statistics in SI Units

Grand Means

21.876 MPa

22.27 MPa

Std Dev Btwn Labs

1.235 MPa

1.26 MPa

Statistics based on 99 of 100 reporting participants

Samples A81-A82: Polyisoprene compound, batch #1 & A83-A84: Polyisoprene compound, batch #2

Comments on Assigned Data Flags for Test #605

X2CQW (X) - Data for all samples are low. Possible Systematic Error.

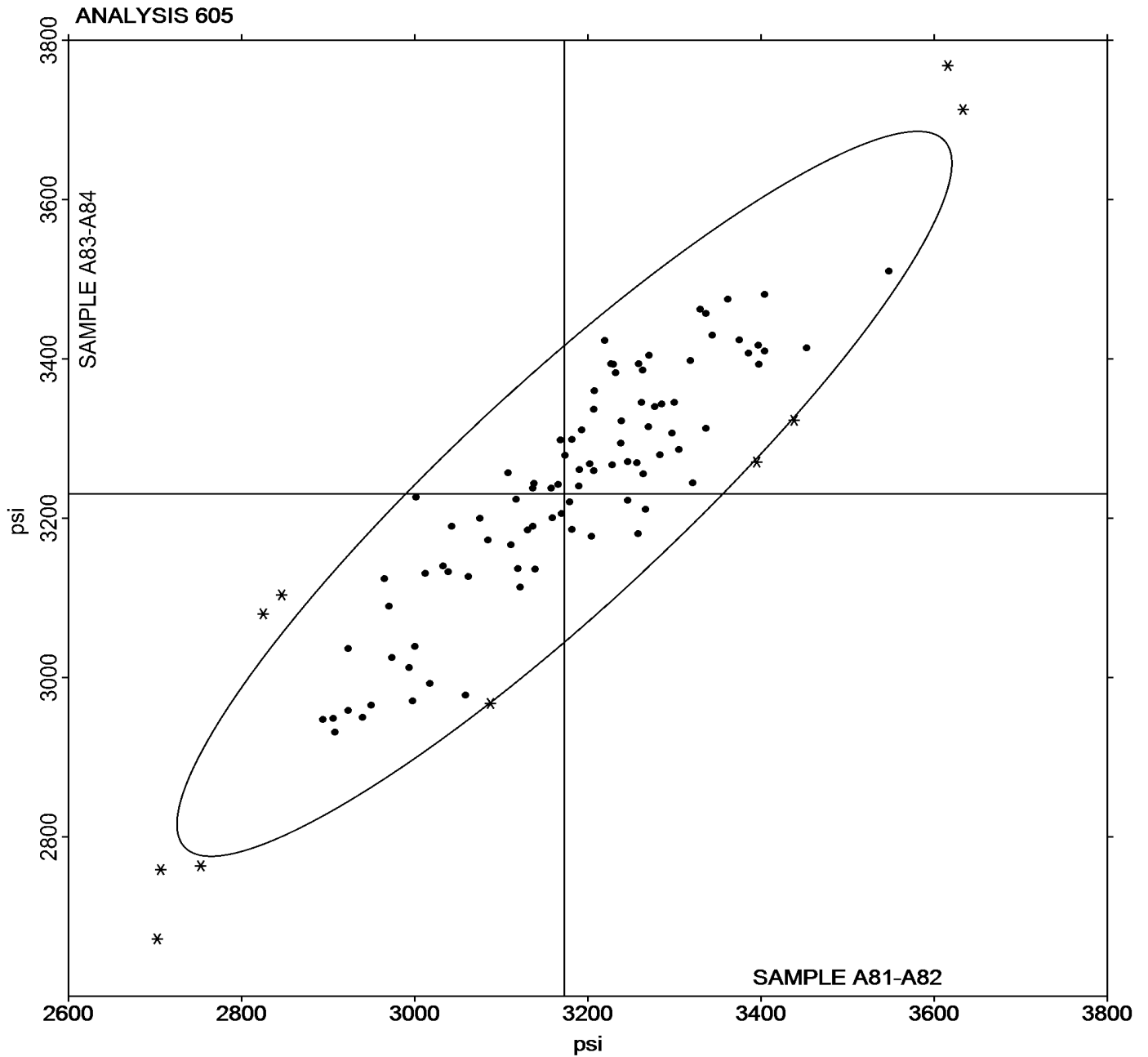


Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #195
1st Qtr 2018

Grand Mean Sample A81-A82 = 3,172.85 psi

Grand Mean Sample A83-A84 = 3,230.63 psi





Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
29JVB6		586.0	-0.5	-0.02	586.0	-2.9	-0.12
2DW7CR		592.5	6.0	0.25	578.5	-10.4	-0.42
2QJDAT		570.5	-16.0	-0.65	572.5	-16.4	-0.65
3QV2XK		618.5	32.0	1.30	627.5	38.6	1.54
3YCHRF		612.5	26.0	1.06	616.0	27.1	1.08
438UZK	X	510.0	-76.5	-3.11	530.0	-58.9	-2.35
46WZKH		599.5	13.0	0.53	600.0	11.1	0.44
477BQE		612.8	26.3	1.07	614.8	25.9	1.03
4DNGAL		568.0	-18.5	-0.75	552.0	-36.9	-1.47
4FDMUH		587.3	0.8	0.03	597.3	8.4	0.34
4LJDWN		579.3	-7.1	-0.29	577.6	-11.3	-0.45
4TH3ET		600.0	13.5	0.55	600.0	11.1	0.44
68T2Z6		645.9	59.4	2.42	646.6	57.6	2.30
69CTAP		604.1	17.6	0.72	612.1	23.2	0.92
6GKKGY		531.2	-55.3	-2.25	535.2	-53.7	-2.14
6WV7ZN		605.0	18.5	0.75	611.5	22.6	0.90
797X4N		594.3	7.8	0.32	604.1	15.2	0.61
7PTD8K		551.5	-35.0	-1.42	539.0	-49.9	-1.99
7TTP3K		560.0	-26.5	-1.08	565.5	-23.4	-0.93
7ZAZFL		556.3	-30.2	-1.23	568.2	-20.7	-0.83
8BR2BL	*	601.5	15.0	0.61	630.5	41.6	1.66
8ENKF7		603.3	16.9	0.69	606.8	17.9	0.71
8ZQ2R8	X	586.0	-0.5	-0.02	550.5	-38.4	-1.53
9ATBKX		569.5	-17.0	-0.69	573.5	-15.4	-0.61
9RR96E		547.5	-39.0	-1.58	542.5	-46.4	-1.85
AKQEKK		594.5	8.0	0.33	593.5	4.6	0.18
B8WE99		580.0	-6.5	-0.26	594.5	5.6	0.22
BAKJU7	*	649.8	63.3	2.57	633.5	44.6	1.78
BG3GAZ	X	489.5	-97.0	-3.94	487.0	-101.9	-4.07
BWFRY9		573.0	-13.5	-0.55	588.5	-0.4	-0.02
C8RK39		583.0	-3.5	-0.14	580.0	-8.9	-0.36
DWPGD6		601.5	15.0	0.61	609.5	20.6	0.82
EDRF2Y		584.0	-2.5	-0.10	590.0	1.1	0.04
EH4LCY		612.0	25.5	1.04	609.0	20.1	0.80
ERNWNB		591.2	4.7	0.19	598.5	9.5	0.38
EV8EW2		596.1	9.6	0.39	613.0	24.1	0.96
F3LK9X		611.0	24.5	1.00	616.0	27.1	1.08
F7MY4X		554.5	-31.9	-1.30	567.6	-21.3	-0.85



Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
FN7X9V		559.0	-27.5	-1.12	558.5	-30.4	-1.21
FUA2W9		577.0	-9.5	-0.38	576.5	-12.4	-0.50
GA4MZF		602.1	15.6	0.63	606.4	17.5	0.70
GKJUEV		563.9	-22.5	-0.92	575.4	-13.6	-0.54
GUAHAX		617.8	31.3	1.27	624.9	36.0	1.43
HAXTUE		548.0	-38.5	-1.56	552.5	-36.4	-1.45
HHVK39	X	498.0	-88.5	-3.60	504.5	-84.4	-3.37
HLUYND	*	533.5	-53.0	-2.15	552.5	-36.4	-1.45
J2JWHX		571.0	-15.5	-0.63	561.0	-27.9	-1.11
J7UK3A		552.0	-34.5	-1.40	541.0	-47.9	-1.91
JBN4XX		594.4	7.9	0.32	587.1	-1.8	-0.07
JCYFMA		590.7	4.2	0.17	594.7	5.8	0.23
JTT9MV		559.0	-27.5	-1.12	565.5	-23.4	-0.93
K43ZCV		607.5	21.0	0.86	612.0	23.1	0.92
KEJPB2		563.5	-23.0	-0.93	580.5	-8.4	-0.34
KFDDR8		586.0	-0.5	-0.02	591.5	2.6	0.10
KYRRA7		577.5	-9.0	-0.36	570.0	-18.9	-0.75
LA9WXG		615.0	28.5	1.16	619.5	30.6	1.22
LFFTTV		565.0	-21.5	-0.87	570.0	-18.9	-0.75
LFVCDT		624.5	38.0	1.55	628.0	39.1	1.56
MGJD7G		616.6	30.2	1.23	604.2	15.3	0.61
MLCAG7		565.0	-21.5	-0.87	555.0	-33.9	-1.35
MTDTHH	X	597.0	10.5	0.43	769.5	180.6	7.20
N67WCG		592.0	5.5	0.23	586.5	-2.4	-0.10
NHV2VR	*	567.5	-19.0	-0.77	547.0	-41.9	-1.67
PC6J2V		564.0	-22.5	-0.91	569.0	-19.9	-0.79
PHP8PR	X	619.0	32.5	1.32	585.5	-3.4	-0.14
PJFZBG		589.5	3.0	0.12	597.1	8.2	0.33
QKN6B4		618.5	32.0	1.30	613.0	24.1	0.96
R7LTGQ		567.5	-19.0	-0.77	569.0	-19.9	-0.79
RB3Z6P		594.6	8.1	0.33	596.6	7.7	0.31
RCVLJV		602.0	15.5	0.63	606.5	17.6	0.70
RJQLXN		588.5	2.0	0.08	585.5	-3.4	-0.14
RT2Q9T		592.0	5.5	0.23	592.0	3.1	0.12
TCTLAZ		624.5	38.0	1.55	622.5	33.6	1.34
TQQ8M3		559.5	-27.0	-1.10	571.0	-17.9	-0.71
TTWQMJ		599.0	12.5	0.51	597.5	8.6	0.34



Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
TUAM7N		555.5	-31.0	-1.26	570.5	-18.4	-0.73
TV2DZN	*	539.5	-47.0	-1.91	564.5	-24.4	-0.97
U729WX		599.0	12.5	0.51	608.0	19.1	0.76
UJ4YDW	*	550.0	-36.5	-1.48	530.0	-58.9	-2.35
UVVJW9		580.0	-6.5	-0.26	586.5	-2.4	-0.10
V49WCJ		599.0	12.5	0.51	608.5	19.6	0.78
V63KTT		581.0	-5.5	-0.22	599.0	10.1	0.40
VLC8JB		550.0	-36.5	-1.48	553.0	-35.9	-1.43
VLN7BX		586.6	0.1	0.01	581.6	-7.3	-0.29
VNVREJ		590.0	3.5	0.14	593.5	4.6	0.18
VVB3EK		575.5	-11.0	-0.45	577.5	-11.4	-0.46
VW7PVU		579.0	-7.5	-0.30	598.0	9.1	0.36
W84DFG		606.5	20.0	0.82	606.5	17.6	0.70
WB8GCT		589.5	3.0	0.12	601.0	12.1	0.48
WDRP2K		626.5	40.0	1.63	619.5	30.6	1.22
WNA8UR		598.8	12.3	0.50	601.4	12.5	0.50
WV9YZZ		557.5	-29.0	-1.18	554.0	-34.9	-1.39
WXFK4K		612.5	26.0	1.06	607.0	18.1	0.72
X2CQVV	X	405.0	-181.5	-7.38	325.0	-263.9	-10.53
XEFL2X		609.4	22.9	0.93	623.5	34.6	1.38
Y74MA9		613.0	26.5	1.08	596.5	7.6	0.30
YLCFYW	X	574.5	-12.0	-0.49	542.0	-46.9	-1.87
Z7YPBH		607.5	21.0	0.86	591.0	2.1	0.08

Grand Means		Summary Statistics	
	586.46 percent		588.91 percent
Std Dev Btwn Labs			
	24.58 percent		25.07 percent
Statistics based on 90 of 98 reporting participants			

Samples A81-A82: Polyisoprene compound, batch #1 & A83-A84: Polyisoprene compound, batch #2



Comments on Assigned Data Flags for Test #606

438UZK (X) - Inconsistent in testing between samples. Data for sample group A81-A82 are low.

8ZQ2R8 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample group A83-A84.

BG3GAZ (X) - Data for all samples are low. Possible Systematic Error.

HHVK39 (X) - Data for all samples are low. Possible Systematic Error.

MTDTVH (X) - Inconsistent in testing between samples. Data for sample group A83-A84 are high.

PHP8PR (X) - Inconsistent in testing between samples.

X2CQW (X) - Data for all samples are very low.

YLCFYW (X) - Inconsistent in testing between samples.

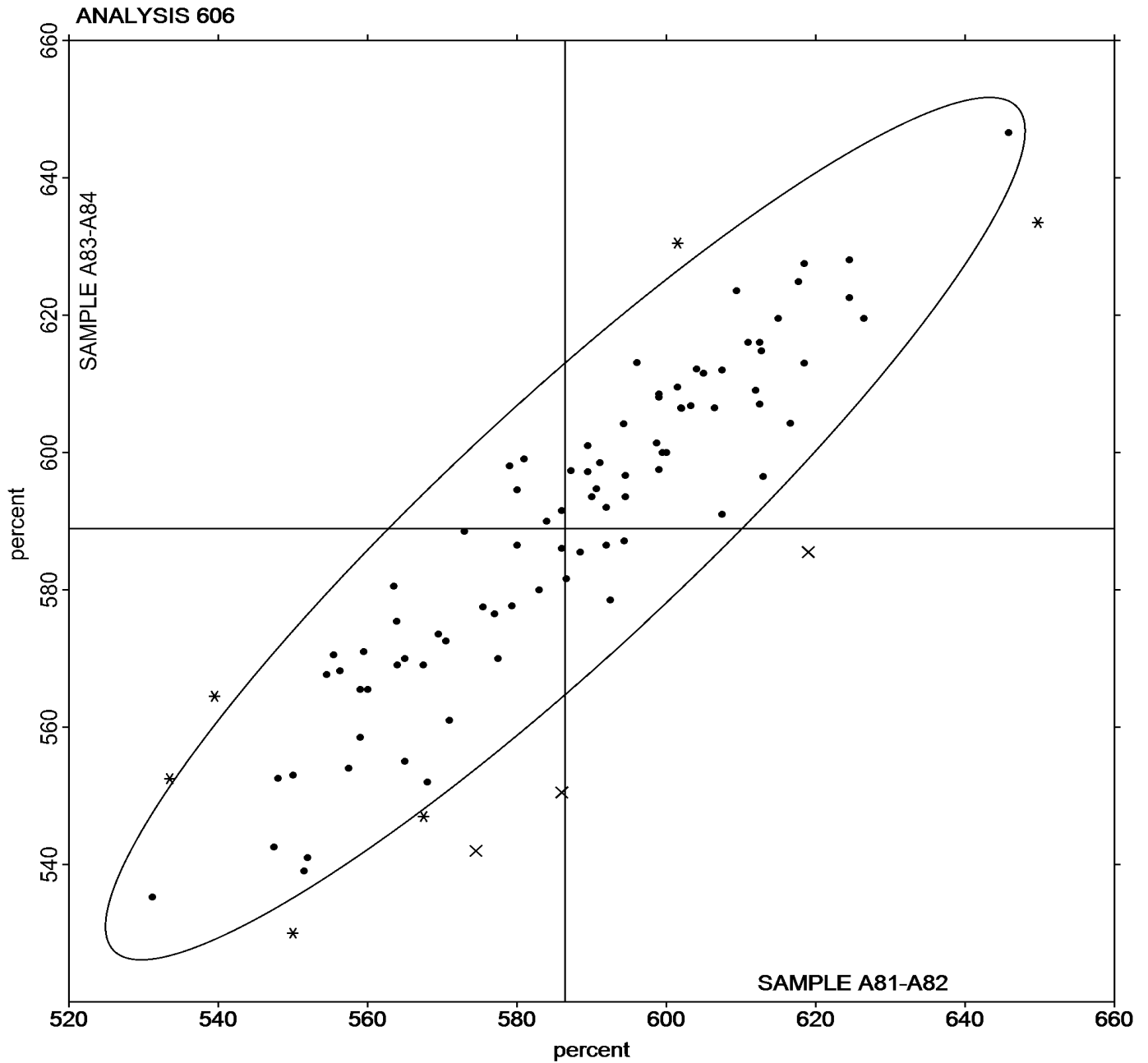


Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #195
1st Qtr 2018

Grand Mean Sample **A81-A82** = 586.46 percent

Grand Mean Sample **A83-A84** = 588.91 percent





Rubber Interlaboratory Testing Program

Report #195

Analysis 607

1st Qtr 2018

Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
29JVB6		1,071.5	-11.8	-0.17	1,128.0	15.4	0.21
2DW7CR		1,036.0	-47.3	-0.66	1,098.0	-14.6	-0.20
2QJDAT		1,132.0	48.7	0.69	1,185.5	72.9	0.98
3YCHRF		1,006.0	-77.3	-1.09	1,037.0	-75.6	-1.02
46WZKH		1,076.2	-7.1	-0.10	1,092.9	-19.7	-0.27
477BQE		1,010.2	-73.1	-1.03	1,033.2	-79.4	-1.07
4DNGAL		1,146.0	62.7	0.88	1,241.5	128.9	1.74
4FDMUH		1,069.2	-14.1	-0.20	1,078.2	-34.4	-0.46
4LJDWN		1,116.9	33.6	0.47	1,108.4	-4.2	-0.06
4TH3ET		979.0	-104.3	-1.47	1,060.5	-52.1	-0.70
68T2Z6		1,012.7	-70.6	-0.99	1,046.1	-66.5	-0.90
69CTAP		1,123.3	40.1	0.56	1,102.0	-10.6	-0.14
6GKKGY		1,070.5	-12.7	-0.18	1,087.6	-25.0	-0.34
6WV7ZN		1,083.0	-0.3	0.00	1,097.5	-15.1	-0.20
797X4N		1,089.7	6.4	0.09	1,110.9	-1.7	-0.02
7PTD8K		1,098.4	15.1	0.21	1,161.3	48.7	0.66
7TTP3K		1,070.0	-13.3	-0.19	1,090.0	-22.6	-0.30
7ZAZFL	X	1,673.0	589.8	8.30	1,681.7	569.1	7.67
8BR2BL		1,099.5	16.2	0.23	1,132.5	19.9	0.27
8ENKF7		1,055.2	-28.0	-0.39	1,031.5	-81.1	-1.09
8ZQ2R8		1,067.0	-16.3	-0.23	1,108.5	-4.1	-0.06
9ATBKX		1,052.5	-30.8	-0.43	1,079.5	-33.1	-0.45
9RR96E		1,134.5	51.2	0.72	1,225.0	112.4	1.51
AKQEKK		1,011.5	-71.8	-1.01	1,032.0	-80.6	-1.09
B8WE99		1,140.5	57.2	0.81	1,163.5	50.9	0.69
BAKJU7	X	902.5	-180.8	-2.54	1,016.0	-96.6	-1.30
BG3GAZ		1,244.5	161.2	2.27	1,268.0	155.4	2.09
BWFRY9		1,122.0	38.7	0.55	1,130.0	17.4	0.23
C8RK39		1,202.4	119.1	1.68	1,180.6	68.0	0.92
DWPGD6		1,004.5	-78.8	-1.11	1,071.0	-41.6	-0.56
EDRF2Y	*	1,278.5	195.3	2.75	1,326.4	213.8	2.88
EH4LCY		997.0	-86.3	-1.21	1,045.5	-67.1	-0.90
ERNWNB		1,052.7	-30.6	-0.43	1,066.5	-46.1	-0.62
EV8EW2		1,074.5	-8.8	-0.12	1,087.1	-25.5	-0.34
F3LK9X		984.8	-98.4	-1.38	1,018.9	-93.7	-1.26
F7MY4X	*	1,262.8	179.5	2.53	1,280.2	167.6	2.26
FN7X9V		1,114.6	31.4	0.44	1,147.3	34.7	0.47



Rubber Interlaboratory Testing Program

Report #195

Analysis 607

1st Qtr 2018

Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
FUA2W9		1,077.5	-5.8	-0.08	1,092.0	-20.6	-0.28
GA4MZF		1,079.8	-3.4	-0.05	1,077.6	-35.0	-0.47
GKJUEV		1,162.0	78.8	1.11	1,204.9	92.3	1.24
GUAHAX		1,019.1	-64.1	-0.90	1,069.2	-43.4	-0.58
HAXTUE		1,249.0	165.7	2.33	1,256.5	143.9	1.94
HHVK39	X	1,300.0	216.7	3.05	1,395.0	282.4	3.80
HLUYND		1,121.5	38.3	0.54	1,192.6	80.0	1.08
J2JWHX		1,040.9	-42.4	-0.60	1,111.0	-1.6	-0.02
J7UK3A		1,202.0	118.7	1.67	1,243.5	130.9	1.76
JBN4XX		1,142.4	59.2	0.83	1,160.8	48.2	0.65
JCYFMA		1,054.0	-29.3	-0.41	1,075.8	-36.8	-0.50
JTT9MV		1,144.5	61.2	0.86	1,156.0	43.4	0.58
K43ZCV		1,100.0	16.7	0.24	1,080.5	-32.1	-0.43
KEJPB2		1,145.8	62.6	0.88	1,145.1	32.5	0.44
LA9WXG	*	905.8	-177.5	-2.50	953.6	-159.0	-2.14
LFFTTV		1,039.5	-43.8	-0.62	1,094.5	-18.1	-0.24
LFVCDT		992.8	-90.5	-1.27	1,000.8	-111.8	-1.51
MGJD7G		1,016.5	-66.7	-0.94	1,100.9	-11.7	-0.16
N67WCG		1,044.5	-38.8	-0.55	1,080.5	-32.1	-0.43
NHV2VR		1,112.0	28.7	0.40	1,206.5	93.9	1.27
PC6J2V		1,141.0	57.7	0.81	1,152.5	39.9	0.54
PHP8PR		1,069.7	-13.6	-0.19	1,113.9	1.3	0.02
PJFZBG		1,153.5	70.2	0.99	1,112.6	0.0	0.00
QKN6B4		1,080.0	-3.3	-0.05	1,127.0	14.4	0.19
R7LTGQ		1,147.0	63.7	0.90	1,156.0	43.4	0.58
RB3Z6P		1,039.7	-43.5	-0.61	1,093.2	-19.4	-0.26
RCVLJV		1,044.5	-38.8	-0.55	1,075.0	-37.6	-0.51
RJQLXN		1,038.5	-44.8	-0.63	1,047.5	-65.1	-0.88
RT2Q9T		1,049.0	-34.3	-0.48	1,093.0	-19.6	-0.26
TCTLAZ		1,006.5	-76.8	-1.08	986.5	-126.1	-1.70
TQQ8M3		1,089.4	6.1	0.09	1,097.4	-15.2	-0.20
TTWQMJ		972.0	-111.3	-1.57	1,018.5	-94.1	-1.27
TUAM7N		1,147.3	64.0	0.90	1,121.9	9.3	0.13
TV2DZN	X	1,191.5	108.2	1.52	1,068.0	-44.6	-0.60
U729WX		1,053.5	-29.8	-0.42	1,096.0	-16.6	-0.22
UJ4YDW		1,063.5	-19.8	-0.28	1,126.0	13.4	0.18
UVVJW9		1,108.6	25.3	0.36	1,139.1	26.5	0.36
V49WCJ		1,198.7	115.5	1.62	1,248.8	136.2	1.83



Rubber Interlaboratory Testing Program
Analysis 607
Stress at 300% Elongation (psi)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
V63KTT		1,104.5	21.2	0.30	1,158.5	45.9	0.62
VLC8JB		1,208.2	124.9	1.76	1,256.8	144.2	1.94
VLN7BX		1,096.0	12.7	0.18	1,166.5	53.9	0.73
VNVREJ		1,086.3	3.1	0.04	1,114.6	2.0	0.03
VVB3EK		1,046.5	-36.8	-0.52	1,007.0	-105.6	-1.42
VW7PVU		1,118.5	35.2	0.50	1,078.0	-34.6	-0.47
W84DFG		1,100.5	17.2	0.24	1,066.0	-46.6	-0.63
WB8GCT		1,002.0	-81.3	-1.14	1,076.0	-36.6	-0.49
WDRP2K		1,089.0	5.7	0.08	1,117.5	4.9	0.07
WNA8UR		1,036.0	-47.2	-0.66	1,064.8	-47.8	-0.64
WV9YZZ		1,081.5	-1.8	-0.02	1,061.5	-51.1	-0.69
WXFK4K		949.3	-134.0	-1.88	947.8	-164.8	-2.22
X2CQVV	X	1,554.1	470.8	6.62	2,338.0	1,225.4	16.51
XEFL2X		974.6	-108.7	-1.53	982.9	-129.7	-1.75
Y74MA9	*	993.0	-90.3	-1.27	1,108.5	-4.1	-0.06
YLCFYW		1,155.8	72.5	1.02	1,243.2	130.6	1.76
Z7YPBH		1,060.0	-23.3	-0.33	1,086.5	-26.1	-0.35

Grand Means		Summary Statistics	
	1,083.25 psi		1,112.60 psi
Std Dev Btwn Labs	71.08 psi		74.23 psi
Statistics based on 87 of 92 reporting participants			

Grand Means		Summary Statistics in SI Units	
	7.4687 MPa		7.67 MPa
Std Dev Btwn Labs	0.4900 MPa		0.51 MPa
Statistics based on 87 of 92 reporting participants			

Samples A81-A82: Polyisoprene compound, batch #1 & A83-A84: Polyisoprene compound, batch #2



Rubber Interlaboratory Testing Program

Report #195

Analysis 607

1st Qtr 2018

Stress at 300% Elongation (psi)

Comments on Assigned Data Flags for Test #607

7ZAZFL (X) - Data for all samples are high. Possible Systematic Error.

BAKJU7 (X) - Inconsistent in testing between samples.

HHVK39 (X) - Data for all samples are high. Possible Systematic Error.

TV2DZN (X) - Inconsistent in testing between samples.

X2CQW (X) - Extreme Data.



Rubber Interlaboratory Testing Program

Report #195

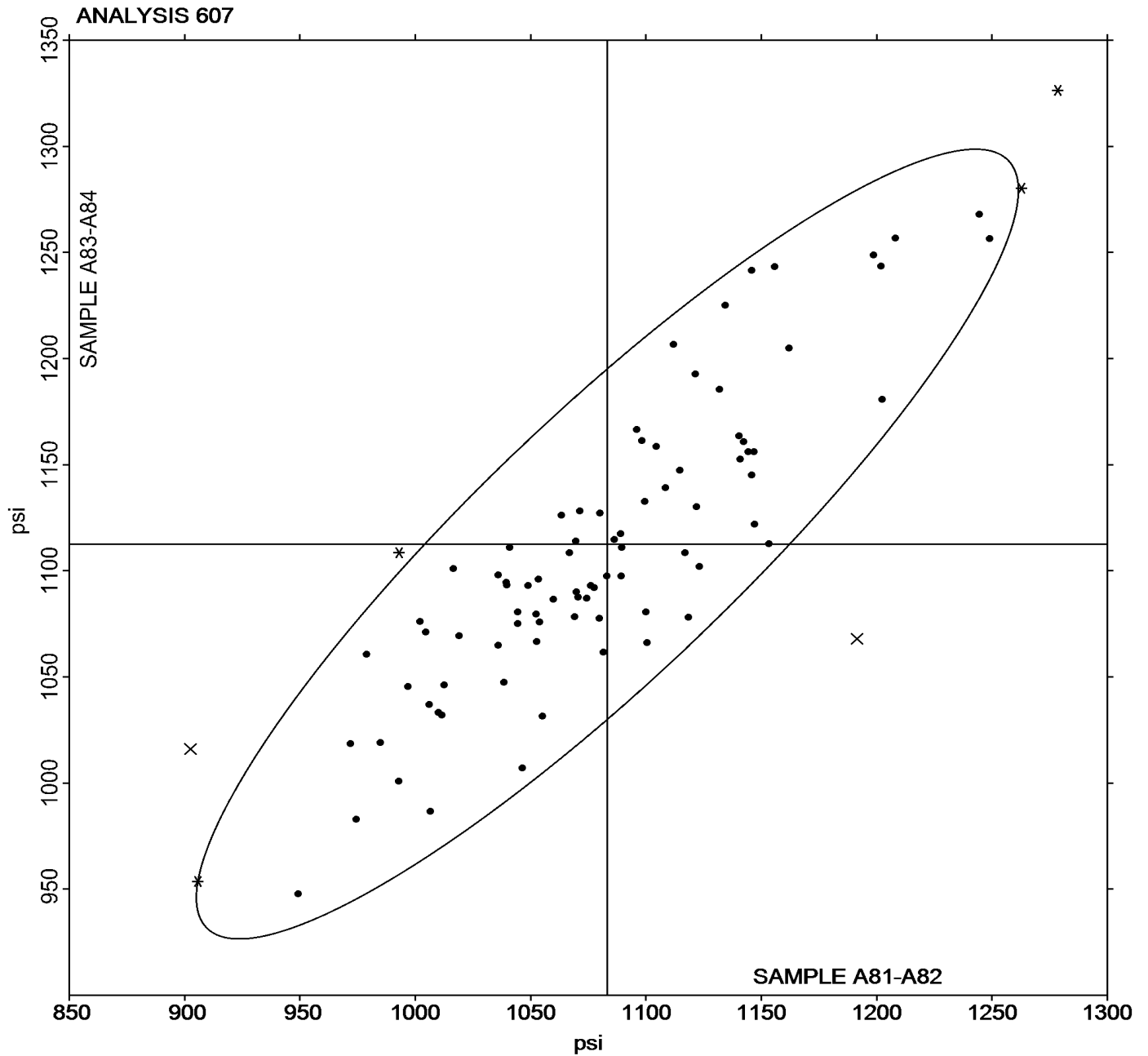
Analysis 607

1st Qtr 2018

Stress at 300% Elongation (psi)

Grand Mean Sample **A81-A82** = 1,083.25 psi

Grand Mean Sample **A83-A84** = 1,112.60 psi





Rubber Interlaboratory Testing Program

Report #195

Analysis 608

1st Qtr 2018

Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
29JVB6		219.5	-16.8	-1.19	224.5	-16.5	-1.18
2DW7CR		225.0	-11.3	-0.80	235.5	-5.5	-0.39
2QJDAT		238.5	2.2	0.16	246.5	5.5	0.39
3YCHRF		226.0	-10.3	-0.73	232.0	-9.0	-0.65
46WZKH		236.4	0.2	0.01	246.6	5.6	0.40
477BQE		219.1	-17.2	-1.22	227.8	-13.3	-0.95
4DNGAL		236.0	-0.3	-0.02	255.5	14.5	1.04
4FDMUH	*	273.0	36.8	2.61	263.9	22.9	1.64
4LJDWN		250.5	14.2	1.01	245.8	4.8	0.34
4TH3ET		227.0	-9.3	-0.66	236.0	-5.0	-0.36
68T2Z6		243.2	7.0	0.49	250.3	9.3	0.67
69CTAP		247.5	11.2	0.80	246.0	5.0	0.36
6GKKGY		233.3	-2.9	-0.21	237.0	-4.0	-0.29
6WV7ZN		245.5	9.2	0.66	249.5	8.5	0.61
797X4N		257.3	21.0	1.49	258.1	17.0	1.22
7PTD8K		236.4	0.1	0.01	243.6	2.5	0.18
7TTP3K		239.5	3.2	0.23	242.5	1.5	0.11
7ZAZFL	X	774.5	538.3	38.20	776.7	535.7	38.39
8BR2BL		225.0	-11.3	-0.80	229.0	-12.0	-0.86
8ENKF7		235.0	-1.2	-0.09	229.5	-11.5	-0.82
8ZQ2R8		235.5	-0.8	-0.05	242.5	1.5	0.11
9ATBKX	*	224.5	-11.8	-0.83	211.0	-30.0	-2.15
9RR96E		247.0	10.7	0.76	267.5	26.5	1.90
AKQEKK		219.5	-16.8	-1.19	228.0	-13.0	-0.93
B8WE99		256.5	20.2	1.44	267.5	26.5	1.90
BAKJU7	*	209.0	-27.3	-1.93	232.5	-8.5	-0.61
BG3GAZ		253.0	16.7	1.19	260.0	19.0	1.36
BWFRY9		234.5	-1.8	-0.12	236.0	-5.0	-0.36
C8RK39		235.7	-0.6	-0.04	232.8	-8.2	-0.59
DWPGD6		224.0	-12.3	-0.87	235.5	-5.5	-0.39
EDRF2Y	X	309.7	73.4	5.21	327.1	86.1	6.17
EH4LCY		225.5	-10.8	-0.76	232.5	-8.5	-0.61
ERNWNB		239.8	3.5	0.25	240.4	-0.7	-0.05
EV8EW2		239.7	3.4	0.24	240.2	-0.9	-0.06
F3LK9X		203.8	-32.5	-2.30	211.0	-30.0	-2.15
F7MY4X		260.4	24.2	1.71	256.4	15.4	1.11
FN7X9V		234.2	-2.0	-0.14	242.2	1.2	0.09
FUA2W9		234.0	-2.3	-0.16	238.0	-3.0	-0.22



Rubber Interlaboratory Testing Program

Report #195

Analysis 608

1st Qtr 2018

Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
GA4MZF		232.8	-3.5	-0.25	227.7	-13.3	-0.95
GKJUEV		244.0	7.7	0.55	257.0	16.0	1.15
GUAHAX		249.7	13.4	0.95	261.8	20.8	1.49
HAXTUE		248.0	11.7	0.83	250.5	9.5	0.68
HHVK39	X	319.5	83.2	5.91	344.5	103.5	7.42
HLUYND		237.1	0.9	0.06	248.7	7.7	0.55
J2JWHX		221.9	-14.3	-1.02	238.0	-3.0	-0.21
J7UK3A		249.5	13.2	0.94	256.5	15.5	1.11
JBN4XX		244.3	8.0	0.57	245.4	4.4	0.31
JCYFMA		233.5	-2.8	-0.20	236.5	-4.5	-0.32
JTT9MV		235.5	-0.8	-0.05	244.0	3.0	0.21
K43ZCV		246.5	10.2	0.73	239.5	-1.5	-0.11
KEJPB2		230.6	-5.6	-0.40	242.9	1.9	0.14
KFDDRB		238.0	1.7	0.12	234.5	-6.5	-0.47
LA9WXG		219.0	-17.2	-1.22	224.8	-16.2	-1.16
LFFTTV		227.5	-8.8	-0.62	239.0	-2.0	-0.14
LFVCDT		223.4	-12.9	-0.92	224.8	-16.2	-1.16
MGJD7G		218.1	-18.2	-1.29	232.1	-9.0	-0.64
N67WCG		226.0	-10.3	-0.73	230.5	-10.5	-0.75
NHV2VR		237.5	1.2	0.09	254.0	13.0	0.93
PC6J2V		244.0	7.7	0.55	247.0	6.0	0.43
PHP8PR		242.9	6.7	0.47	242.9	1.9	0.14
PJFZBG		248.2	11.9	0.85	240.4	-0.6	-0.04
QKN6B4		218.0	-18.3	-1.30	226.5	-14.5	-1.04
R7LTGQ		249.0	12.7	0.90	242.5	1.5	0.11
RB3Z6P		226.9	-9.3	-0.66	241.0	0.0	0.00
RCVLJV		240.5	4.2	0.30	242.0	1.0	0.07
RJQLXN		206.0	-30.3	-2.15	216.5	-24.5	-1.76
RT2Q9T		227.5	-8.8	-0.62	238.5	-2.5	-0.18
TCTLAZ		235.0	-1.3	-0.09	228.5	-12.5	-0.90
TQQ8M3		235.9	-0.4	-0.03	236.5	-4.5	-0.32
TTWQMJ		212.8	-23.5	-1.67	225.0	-16.0	-1.15
TUAM7N		250.2	13.9	0.99	243.7	2.7	0.19
TV2DZN	*	220.0	-16.3	-1.15	206.0	-35.0	-2.51
U729WX		230.5	-5.8	-0.41	235.5	-5.5	-0.39
UJ4YDW		237.0	0.7	0.05	237.0	-4.0	-0.29
UVVJW9	*	270.1	33.8	2.40	278.8	37.8	2.71



Rubber Interlaboratory Testing Program

Report #195

Analysis 608

1st Qtr 2018

Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
V49WCJ	*	274.1	37.9	2.69	284.3	43.3	3.10
V63KTT		241.5	5.2	0.37	254.5	13.5	0.97
VLC8JB		254.5	18.3	1.30	260.3	19.3	1.39
VLN7BX		235.6	-0.7	-0.05	246.1	5.0	0.36
VNVREJ		242.9	6.7	0.47	248.0	7.0	0.50
VVB3EK		250.5	14.2	1.01	240.0	-1.0	-0.07
VW7PVU		244.0	7.7	0.55	239.0	-2.0	-0.14
W84DFG		250.5	14.2	1.01	246.5	5.5	0.39
WB8GCT		225.0	-11.3	-0.80	239.5	-1.5	-0.11
WDRP2K		243.5	7.2	0.51	255.0	14.0	1.00
WNA8UR		234.2	-2.1	-0.15	238.3	-2.7	-0.19
WV9YZZ		243.5	7.2	0.51	235.0	-6.0	-0.43
WXFK4K		211.8	-24.5	-1.74	212.5	-28.5	-2.04
X2CQVV	X	301.7	65.4	4.64	398.9	157.8	11.31
XEFL2X		226.0	-10.2	-0.73	220.9	-20.2	-1.44
Y74MA9	*	209.5	-26.8	-1.90	233.5	-7.5	-0.54
YLCFYW		253.6	17.3	1.23	260.0	18.9	1.36
Z7YPBH		238.5	2.2	0.16	246.5	5.5	0.39

Grand Means		Summary Statistics	
	236.25 psi		241.01 psi
Stnd Dev Btwn Labs	14.09 psi		13.95 psi
Statistics based on 89 of 93 reporting participants			

Grand Means		Summary Statistics in SI Units	
	1.6289 MPa		1.66 MPa
Stnd Dev Btwn Labs	0.0971 MPa		0.10 MPa
Statistics based on 89 of 93 reporting participants			

Samples A81-A82: Polyisoprene compound, batch #1 & A83-A84: Polyisoprene compound, batch #2



Rubber Interlaboratory Testing Program

Analysis 608

Stress at 100% Elongation (psi)

Report #195

1st Qtr 2018

Comments on Assigned Data Flags for Test #608

7ZAZFL (X) - Extreme Data.

EDRF2Y (X) - Data for all samples are high. Possible Systematic Error.

HHVK39 (X) - Data for all samples are high. Possible Systematic Error.

X2CQW (X) - Data for all samples are very high.



Rubber Interlaboratory Testing Program

Report #195

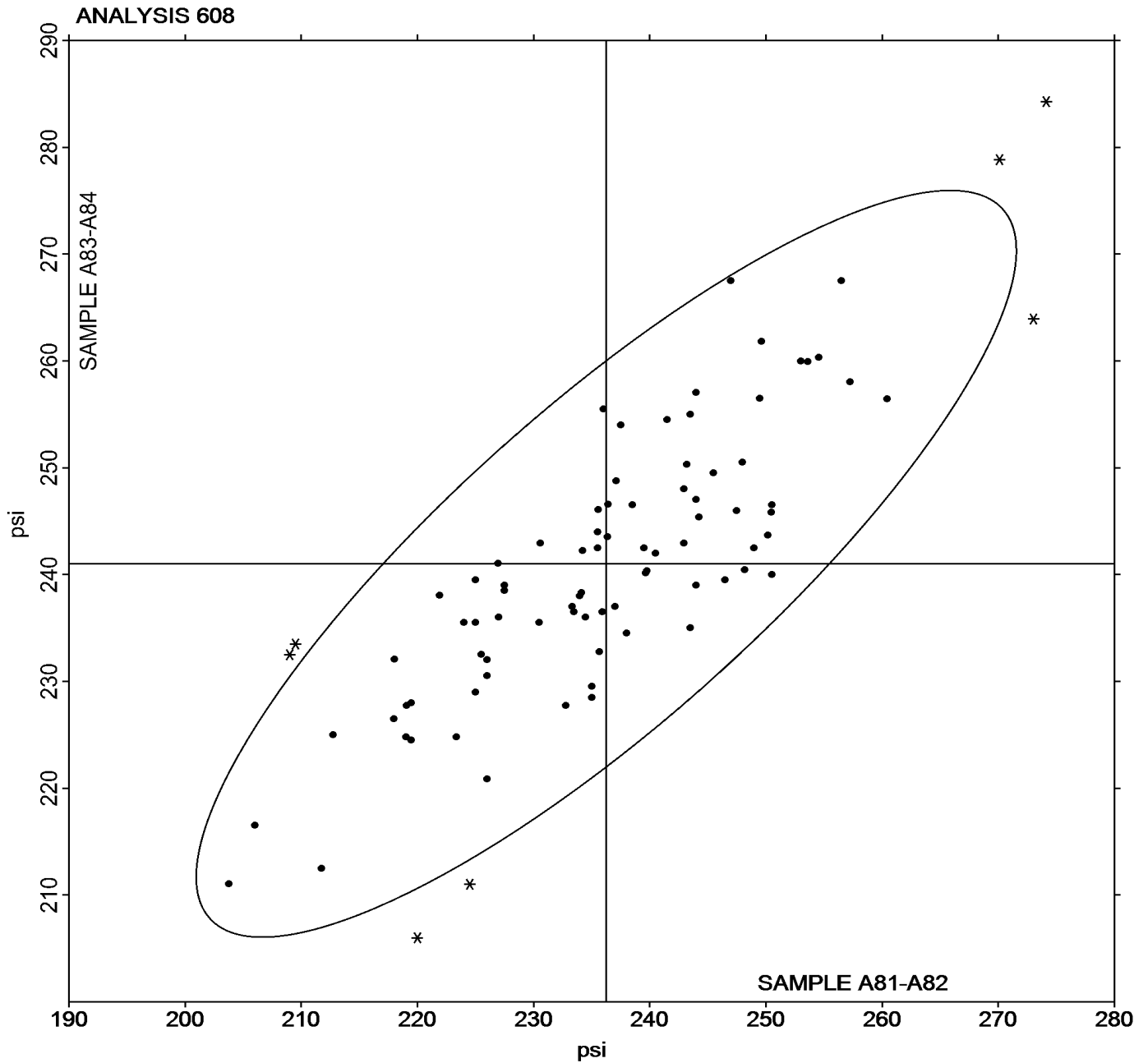
Analysis 608

1st Qtr 2018

Stress at 100% Elongation (psi)

Grand Mean Sample **A81-A82** = 236.25 psi

Grand Mean Sample **A83-A84** = 241.01 psi





Rubber Interlaboratory Testing Program
Analysis 620
Hardness (Shore A/Type A)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
29JVB6		50.50	-0.30	-0.24	50.00	-0.52	-0.42	BT
2DW7CR		50.00	-0.80	-0.65	50.00	-0.52	-0.42	BT
2QJDAT		50.50	-0.30	-0.24	50.50	-0.02	-0.02	BT
3QV2XK		49.50	-1.30	-1.05	50.00	-0.52	-0.42	BT
3YCHRF		50.00	-0.80	-0.65	50.00	-0.52	-0.42	BT
438UZK		50.00	-0.80	-0.65	50.00	-0.52	-0.42	HH
46WZKH		50.00	-0.80	-0.65	50.00	-0.52	-0.42	BT
477BQE		50.55	-0.25	-0.20	50.40	-0.12	-0.10	BT
4DNGAL		52.00	1.20	0.98	51.50	0.98	0.78	BT
4FDMUH		51.25	0.45	0.37	50.00	-0.52	-0.42	HH
4LJDWN	*	54.20	3.40	2.76	53.70	3.18	2.53	BT
4TH3ET		51.00	0.20	0.17	50.00	-0.52	-0.42	HH
68T2Z6		51.00	0.20	0.17	51.25	0.73	0.58	XX
69CTAP		49.30	-1.50	-1.21	50.00	-0.52	-0.42	BT
6AMPJZ		49.50	-1.30	-1.05	50.00	-0.52	-0.42	BT
6GKKGY		51.00	0.20	0.17	51.00	0.48	0.38	HH
6WV7ZN		51.65	0.85	0.69	50.80	0.28	0.22	BT
72LUX8		52.00	1.20	0.98	51.00	0.48	0.38	XX
797X4N		52.00	1.20	0.98	52.00	1.48	1.18	HH
7DEEEX		51.00	0.20	0.17	51.50	0.98	0.78	HH
7TTP3K		52.00	1.20	0.98	51.00	0.48	0.38	HH
7ZAZFL		52.50	1.70	1.38	52.00	1.48	1.18	HH
8BR2BL		50.95	0.15	0.13	49.80	-0.72	-0.57	BT
8ENKF7		50.50	-0.30	-0.24	51.00	0.48	0.38	BT
8ZQ2R8	X	52.00	1.20	0.98	49.50	-1.02	-0.81	HH
9ATBKX	X	47.50	-3.30	-2.68	45.50	-5.02	-4.00	BT
9RR96E		51.50	0.70	0.57	52.25	1.73	1.38	HH
AB2MZE		51.45	0.65	0.53	51.05	0.53	0.42	BT
AKQEKK	X	47.00	-3.80	-3.08	48.25	-2.27	-1.81	BT
B8WE99		50.50	-0.30	-0.24	49.60	-0.92	-0.73	XX
BAKJU7		51.00	0.20	0.17	51.00	0.48	0.38	BT
BG3GAZ		52.00	1.20	0.98	51.50	0.98	0.78	HH
BWFRY9		50.00	-0.80	-0.65	50.00	-0.52	-0.42	HH
C8RK39		51.75	0.95	0.78	51.25	0.73	0.58	BT
DWPGD6		50.50	-0.30	-0.24	50.00	-0.52	-0.42	BT
EDRF2Y		50.30	-0.50	-0.40	50.10	-0.42	-0.34	BT
EH4LCY	*	51.00	0.20	0.17	49.00	-1.52	-1.21	BT



Rubber Interlaboratory Testing Program
Analysis 620
Hardness (Shore A/Type A)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ERNWNB		49.90	-0.90	-0.73	50.15	-0.37	-0.30	BT
EV8EW2		51.50	0.70	0.57	52.00	1.48	1.18	HH
F3LK9X	X	52.00	1.20	0.98	54.00	3.48	2.77	BT
F7MY4X		51.75	0.95	0.78	51.25	0.73	0.58	BT
FN7X9V		49.20	-1.60	-1.30	48.30	-2.22	-1.77	BT
FUA2W9		48.00	-2.80	-2.27	47.50	-3.02	-2.41	BT
G6Q6JY		49.40	-1.40	-1.13	49.25	-1.27	-1.01	BT
GA4MZF		52.35	1.55	1.26	52.05	1.53	1.22	BT
GHYQ7X		50.00	-0.80	-0.65	50.00	-0.52	-0.42	BT
GKJUEV		51.10	0.30	0.25	50.10	-0.42	-0.34	BT
GUAHAX		52.85	2.05	1.67	52.45	1.93	1.54	HH
HAXTUE		52.00	1.20	0.98	51.45	0.93	0.74	BT
HLUYND		50.25	-0.55	-0.44	49.80	-0.72	-0.57	BT
J2JWHX		53.00	2.20	1.79	53.00	2.48	1.97	BT
J7UK3A		50.35	-0.45	-0.36	50.10	-0.42	-0.34	BT
JBN4XX		51.30	0.50	0.41	50.25	-0.27	-0.22	BT
JCYFMA		50.00	-0.80	-0.65	49.50	-1.02	-0.81	BT
JTT9MV		48.95	-1.85	-1.50	49.35	-1.17	-0.93	BT
K43ZCV		50.50	-0.30	-0.24	51.50	0.98	0.78	HH
KEJPB2	X	49.50	-1.30	-1.05	47.30	-3.22	-2.57	BT
KFDDRB		51.00	0.20	0.17	50.50	-0.02	-0.02	BT
KXX4TV		49.00	-1.80	-1.46	49.00	-1.52	-1.21	BT
KYRRA7	X	55.00	4.20	3.41	55.25	4.73	3.77	HH
LA9WXG		50.50	-0.30	-0.24	50.00	-0.52	-0.42	HH
LFFTTV	*	53.35	2.55	2.07	53.75	3.23	2.57	BT
LFVCDT		51.50	0.70	0.57	52.00	1.48	1.18	BT
MGJD7G		50.50	-0.30	-0.24	51.00	0.48	0.38	HH
MLCAG7		51.00	0.20	0.17	50.00	-0.52	-0.42	BT
MTDTVH		50.00	-0.80	-0.65	50.00	-0.52	-0.42	BT
N67WCG		50.00	-0.80	-0.65	49.50	-1.02	-0.81	BT
NHV2VR		52.50	1.70	1.38	52.50	1.98	1.58	HH
PC6J2V		50.90	0.10	0.09	50.70	0.18	0.14	BT
PHP8PR	X	54.00	3.20	2.60	52.00	1.48	1.18	HH
PJFZBG		49.50	-1.30	-1.05	48.50	-2.02	-1.61	BT
QKN6B4		53.50	2.70	2.20	52.75	2.23	1.77	HH
R7LTGQ		50.50	-0.30	-0.24	50.00	-0.52	-0.42	HH
RB3Z6P		48.50	-2.30	-1.86	48.00	-2.52	-2.01	HH
RCVLJV		51.50	0.70	0.57	50.50	-0.02	-0.02	BT



Rubber Interlaboratory Testing Program
Analysis 620
Hardness (Shore A/Type A)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
RJQLXN		51.00	0.20	0.17	51.00	0.48	0.38	HH
RT2Q9T		50.50	-0.30	-0.24	50.50	-0.02	-0.02	BT
TCTLAZ		51.00	0.20	0.17	50.70	0.18	0.14	BT
TQQ8M3		51.10	0.30	0.25	51.15	0.63	0.50	BT
TTWQMJ		49.00	-1.80	-1.46	49.00	-1.52	-1.21	XX
TUAM7N		50.00	-0.80	-0.65	48.80	-1.72	-1.37	BT
TV2DZN		50.50	-0.30	-0.24	50.00	-0.52	-0.42	BT
TZEYAV	*	53.00	2.20	1.79	51.50	0.98	0.78	BT
U729WX	*	49.00	-1.80	-1.46	50.00	-0.52	-0.42	BT
UVVJW9		48.50	-2.30	-1.86	48.00	-2.52	-2.01	BT
V49WCJ		50.85	0.05	0.04	50.10	-0.42	-0.34	BT
V63KTT		50.50	-0.30	-0.24	49.55	-0.97	-0.77	BT
VLC8JB		50.00	-0.80	-0.65	50.00	-0.52	-0.42	HH
VLN7BX		48.50	-2.30	-1.86	48.50	-2.02	-1.61	BT
VNVREJ		50.90	0.10	0.09	50.35	-0.17	-0.14	BT
VVB3EK		51.00	0.20	0.17	50.00	-0.52	-0.42	HH
VW7PVU		50.00	-0.80	-0.65	50.00	-0.52	-0.42	HH
W84DFG		50.75	-0.05	-0.04	51.00	0.48	0.38	HH
WB8GCT		50.00	-0.80	-0.65	50.00	-0.52	-0.42	BT
WDRP2K	*	53.55	2.75	2.24	54.15	3.63	2.89	BT
WNA8UR	*	54.00	3.20	2.60	53.50	2.98	2.37	BT
WV9YZZ		51.00	0.20	0.17	51.00	0.48	0.38	HH
WXFK4K		50.35	-0.45	-0.36	50.00	-0.52	-0.42	BT
X2CQVV	X	42.50	-8.30	-6.74	42.00	-8.52	-6.79	BT
XEFL2X		50.50	-0.30	-0.24	50.50	-0.02	-0.02	BT
Y74MA9		49.85	-0.95	-0.77	49.65	-0.87	-0.69	BT
Z7YPBH		50.35	-0.45	-0.36	50.20	-0.32	-0.26	BT

Grand Means		Summary Statistics	
	50.795 Type A		50.522 Type A
Std Dev Btwn Labs	1.232 Type A		1.256 Type A
Statistics based on 94 of 102 reporting participants			

Samples A81-A82: Polyisoprene compound, batch #1 & A83-A84: Polyisoprene compound, batch #2

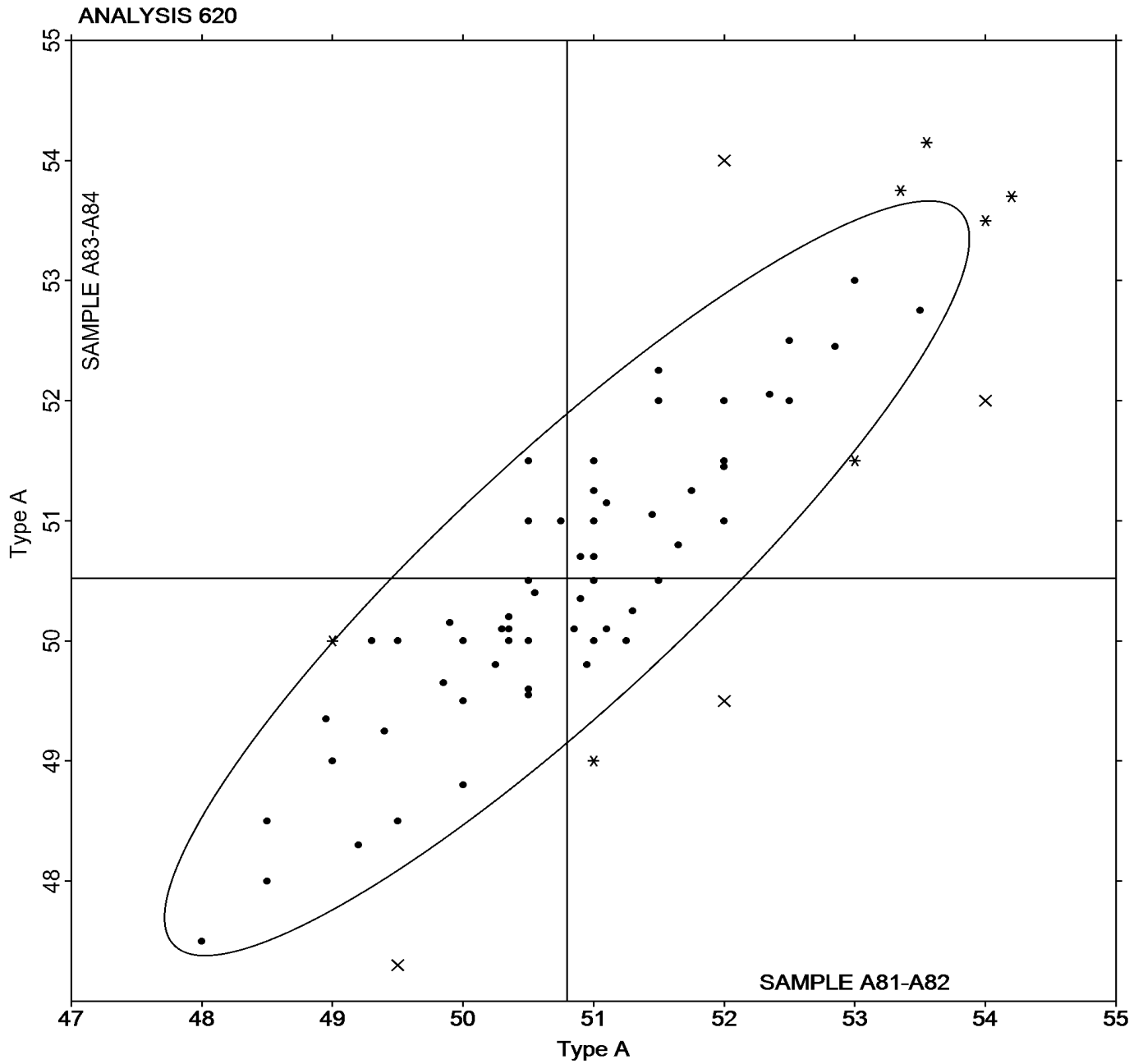


Rubber Interlaboratory Testing Program
Analysis 620
Hardness (Shore A/Type A)

Report #195
1st Qtr 2018

Grand Mean Sample **A81-A82** = 50.795 Type A

Grand Mean Sample **A83-A84** = 50.522 Type A





Rubber Interlaboratory Testing Program
Analysis 621
Density

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
29JVB6	X	1.128	-0.007	-3.11	1.133	-0.003	-1.05
2QJDAT		1.138	0.002	0.86	1.137	0.001	0.54
3QV2XK		1.133	-0.002	-1.02	1.134	-0.002	-0.85
3YCHRF		1.134	-0.001	-0.54	1.134	-0.001	-0.57
46WZKH		1.136	0.001	0.42	1.136	0.001	0.30
477BQE		1.139	0.004	1.63	1.140	0.004	1.54
4DNGAL	X	1.131	-0.005	-1.94	1.120	-0.015	-6.17
4LJDWN		1.136	0.000	0.19	1.136	0.000	0.06
4TH3ET		1.137	0.001	0.44	1.137	0.001	0.34
68T2Z6		1.137	0.001	0.46	1.137	0.001	0.58
6GKKGY		1.137	0.001	0.44	1.137	0.001	0.34
6WV7ZN		1.136	0.000	0.19	1.136	0.000	0.14
797X4N	X	1.143	0.008	3.29	1.137	0.002	0.64
7DEEEX	X	1.125	-0.010	-4.36	1.125	-0.011	-4.25
8BR2BL		1.132	-0.003	-1.27	1.133	-0.003	-1.17
8ENKF7	*	1.129	-0.007	-2.82	1.129	-0.006	-2.57
8ZQ2R8		1.134	-0.001	-0.60	1.134	-0.002	-0.85
9ATBKX		1.138	0.002	0.86	1.138	0.002	0.74
AB2MZE		1.139	0.003	1.32	1.139	0.004	1.50
AKQEKK		1.135	-0.001	-0.39	1.135	-0.001	-0.45
BAKJU7		1.137	0.001	0.44	1.137	0.001	0.54
BG3GAZ	X	1.126	-0.010	-4.15	1.126	-0.010	-4.05
BWFRY9		1.133	-0.003	-1.21	1.133	-0.003	-1.09
C8RK39		1.136	0.001	0.23	1.136	0.000	0.14
DWPGD6		1.137	0.002	0.84	1.138	0.002	0.78
EDRF2Y		1.134	-0.002	-0.66	1.135	0.000	-0.12
EH4LCY		1.134	-0.002	-0.81	1.133	-0.003	-1.05
ERNWNB		1.134	-0.001	-0.62	1.135	-0.001	-0.45
F3LK9X		1.135	0.000	-0.18	1.137	0.001	0.34
F7MY4X		1.134	-0.001	-0.58	1.135	0.000	-0.18
FN7X9V		1.137	0.001	0.44	1.136	0.000	0.14
GKJUEV		1.132	-0.004	-1.56	1.132	-0.004	-1.49
GUAHAX		1.136	0.001	0.34	1.138	0.002	0.94
J2JWHX	X	1.145	0.010	4.00	1.100	-0.036	-14.24
JBN4XX	X	1.137	0.002	0.71	1.141	0.006	2.20
JCYFMA		1.133	-0.003	-1.12	1.132	-0.004	-1.45
K43ZCV		1.132	-0.003	-1.38	1.133	-0.003	-1.23
KEJPB2		1.135	-0.001	-0.39	1.135	-0.001	-0.28



Rubber Interlaboratory Testing Program
Analysis 621
Density

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample A81-A82			Sample A83-A84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
KFDDRB		1.139	0.004	1.49	1.138	0.002	0.94
KYRRA7	X	1.124	-0.011	-4.74	1.124	-0.011	-4.53
LFFTTV		1.136	0.000	0.13	1.134	-0.001	-0.59
MGJD7G	X	1.124	-0.012	-4.99	1.123	-0.013	-5.25
MLCAG7		1.137	0.001	0.44	1.136	0.000	0.14
MTDTVH		1.139	0.004	1.49	1.139	0.003	1.34
N67WCG	*	1.135	-0.001	-0.39	1.138	0.002	0.74
NHV2VR		1.137	0.002	0.63	1.137	0.001	0.48
PC6J2V		1.136	0.001	0.34	1.136	0.000	0.04
PHP8PR	X	1.133	-0.003	-1.23	1.138	0.002	0.74
PJFZBG		1.136	0.001	0.23	1.136	0.000	0.14
R7LTGQ		1.138	0.003	1.07	1.138	0.002	0.74
RB3Z6P	X	1.140	0.004	1.70	1.135	-0.001	-0.26
RCVLJV		1.140	0.005	2.09	1.141	0.005	1.98
TQQ8M3		1.133	-0.003	-1.15	1.132	-0.003	-1.33
TTWQMJ	X	1.115	-0.020	-8.54	1.110	-0.026	-10.24
TUAM7N	X	1.147	0.012	4.89	1.133	-0.002	-0.93
TV2DZN		1.135	0.000	-0.18	1.135	-0.001	-0.45
TZEYAV		1.140	0.004	1.76	1.141	0.005	2.06
UVVJW9		1.138	0.003	1.26	1.138	0.002	0.96
V49WCJ		1.133	-0.002	-0.98	1.132	-0.004	-1.65
V63KTT	*	1.135	0.000	-0.18	1.133	-0.003	-1.25
VLN7BX		1.133	-0.002	-1.02	1.135	-0.001	-0.26
VNVREJ	*	1.130	-0.005	-2.27	1.132	-0.004	-1.45
VVB3EK		1.137	0.001	0.44	1.138	0.002	0.94
VW7PVU		1.139	0.003	1.28	1.140	0.004	1.54
WB8GCT	X	1.142	0.006	2.53	1.139	0.003	1.14
WDRP2K		1.135	-0.001	-0.33	1.137	0.002	0.70
WNA8UR		1.133	-0.003	-1.08	1.134	-0.002	-0.79
WV9YZZ		1.137	0.001	0.44	1.136	0.001	0.26
X2CQVV		1.137	0.002	0.65	1.138	0.002	0.94
XEFL2X	*	1.135	-0.001	-0.39	1.132	-0.004	-1.45
Y74MA9		1.135	-0.001	-0.35	1.134	-0.002	-0.63
YLCFYW	X	1.135	0.000	-0.18	1.130	-0.006	-2.25
Z7YPBH		1.137	0.001	0.61	1.137	0.002	0.70



Rubber Interlaboratory Testing Program
Analysis 621
Density

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means	1.1354 g/cm ³ (Mg/m ³)	1.1356 g/cm ³ (Mg/m ³)	
Stnd Dev Btwn Labs	0.0024 g/cm ³ (Mg/m ³)	0.0025 g/cm ³ (Mg/m ³)	
Statistics based on 58 of 73 reporting participants			

Samples A81-A82: Polyisoprene compound, batch #1 & A83-A84: Polyisoprene compound, batch #2

Comments on Assigned Data Flags for Test #621

- 29JVB6 (X) - Data for sample group A81-A82 are low. Inconsistent within the determinations of sample group A81-A82.
- 4DNGAL (X) - Data for sample group A83-A84 are low. Inconsistent within the determinations of sample group A83-A84.
- 797X4N (X) - Inconsistent in testing between samples. Data for sample group A81-A82 are high.
- 7DEEEX (X) - Data for all samples are low. Possible Systematic Error.
- BG3GAZ (X) - Data for all samples are low. Possible Systematic Error.
- J2JWHX (X) - Extreme Data.
- JBN4XX (X) - Inconsistent in testing between samples.
- KYRRA7 (X) - Data for all samples are low. Possible Systematic Error.
- MGJD7G (X) - Data for all samples are low. Possible Systematic Error.
- PHP8PR (X) - Inconsistent in testing between samples.
- RB3Z6P (X) - Inconsistent in testing between samples.
- TTWQMJ (X) - Data for all samples are very low.
- TUAM7N (X) - Inconsistent in testing between samples. Data for sample group A81-A82 are high. Inconsistent within the determinations of both sample groups.
- WB8GCT (X) - Inconsistent in testing between samples.
- YLCFYW (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample group A81-A82.

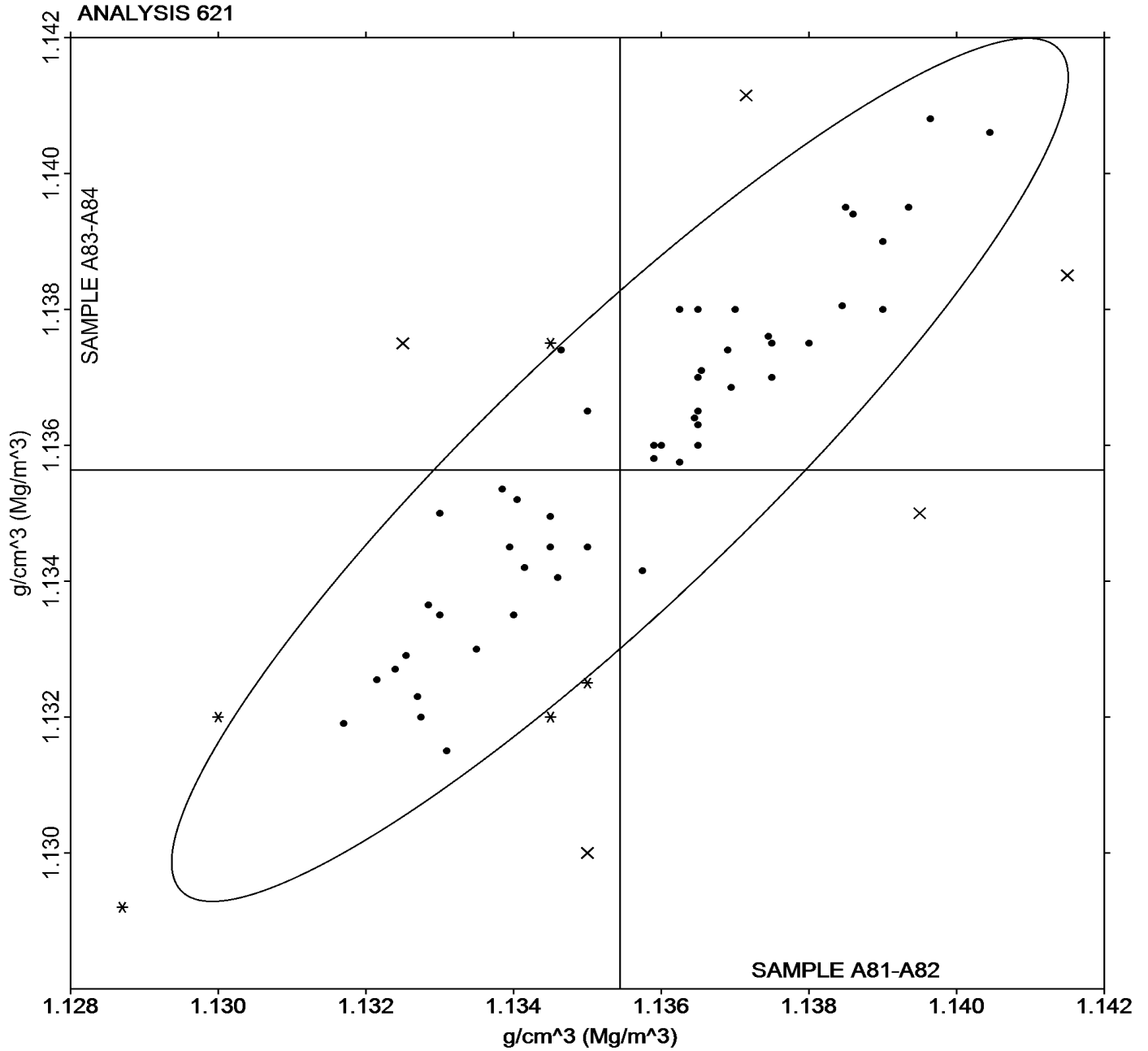


Rubber Interlaboratory Testing Program
Analysis 621
Density

Report #195
1st Qtr 2018

Grand Mean Sample **A81-A82** = 1.1354 g/cm³
(Mg/m³)

Grand Mean Sample **A83-A84** = 1.1356 g/cm³
(Mg/m³)





Rubber Interlaboratory Testing Program
Analysis 625
Hardness (Shore D/Type D)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample HA81-HA82			Sample HA83-HA84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4BY6D2		64.50	-1.81	-0.66	49.75	-2.16	-0.63	BT
4TH3ET		67.00	0.69	0.25	52.50	0.59	0.17	XX
6F8TNH		70.50	4.19	1.53	59.00	7.09	2.08	XX
8JW72H		70.00	3.69	1.34	56.75	4.84	1.42	BT
9Y8A33		65.05	-1.26	-0.46	48.75	-3.16	-0.93	BT
CJMOW7		70.50	4.19	1.53	56.00	4.09	1.20	XX
FN7X9V		62.70	-3.61	-1.32	47.45	-4.46	-1.31	BT
G6Q6JY		65.45	-0.86	-0.31	50.25	-1.66	-0.49	BT
GA4MZF		66.15	-0.16	-0.06	49.65	-2.26	-0.66	BT
GYM2RE		68.25	1.94	0.71	53.60	1.69	0.50	HH
QFH9Q4		66.50	0.19	0.07	53.50	1.59	0.47	BT
TC9DAR		68.00	1.69	0.62	52.80	0.89	0.26	BT
TLCP6L		65.00	-1.31	-0.48	51.50	-0.41	-0.12	BT
X2CQVV		62.00	-4.31	-1.57	48.00	-3.91	-1.15	BT
X2DVJZ		63.05	-3.26	-1.19	49.10	-2.81	-0.82	BT

Grand Means		Summary Statistics	
	66.310 Type D		51.907 Type D
Stnd Dev Btwn Labs	2.744 Type D		3.409 Type D
Statistics based on 15 of 15 reporting participants			

Samples HA81-HA82: Hardness Disc, batch #1 & HA83-HA84: Hardness Disc, batch #2

Key to Instrument Codes Reported by Participants

- BT Benchtop
- XX Specify Benchtop or Handheld Instrument
- HH Handheld



Rubber Interlaboratory Testing Program

Report #195

Analysis 630

1st Qtr 2018

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

WebCode	Data Flag	Sample A81-A82			Sample J81-J82		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
477BQE		3,168.7	-36.1	-0.25	3,359.5	268.9	1.13
4LJDWN		3,267.1	62.3	0.43	3,075.6	-15.0	-0.06
68T2Z6		3,404.3	199.6	1.36	3,235.1	144.6	0.61
6GKKGY	*	2,752.8	-451.9	-3.09	2,698.1	-392.4	-1.64
6WV7ZN		3,239.0	34.2	0.23	2,857.5	-233.0	-0.98
797X4N		3,270.0	65.2	0.45	3,225.7	135.2	0.57
8ENKF7		3,206.9	2.1	0.01	2,648.6	-441.9	-1.85
8ZQ2R8		3,202.5	-2.3	-0.02	2,887.5	-203.0	-0.85
9ATBKX		3,001.5	-203.3	-1.39	2,740.0	-350.5	-1.47
B8WE99		3,190.5	-14.3	-0.10	3,216.0	125.5	0.53
BAKJU7		3,277.5	72.7	0.50	3,377.0	286.5	1.20
EDRF2Y		3,375.1	170.3	1.16	3,334.4	243.9	1.02
EV8EW2		3,232.5	27.7	0.19	3,046.3	-44.2	-0.18
GA4MZF		3,285.1	80.4	0.55	3,161.9	71.3	0.30
GUAHAX		3,206.8	2.0	0.01	2,933.7	-156.9	-0.66
HAXTUE		3,238.0	33.2	0.23	2,887.0	-203.5	-0.85
JBN4XX		3,547.5	342.7	2.34	3,512.6	422.1	1.77
JCYFMA		3,130.9	-73.9	-0.51	2,804.0	-286.5	-1.20
K43ZCV		3,396.8	192.1	1.31	3,265.4	174.9	0.73
LA9WXG		2,923.3	-281.5	-1.92	2,600.5	-490.0	-2.05
MGJD7G		3,343.7	138.9	0.95	3,230.1	139.5	0.58
N67WCG		3,119.5	-85.3	-0.58	3,084.0	-6.5	-0.03
PC6J2V		3,117.0	-87.8	-0.60	3,087.0	-3.5	-0.01
PHP8PR		3,336.6	131.9	0.90	2,977.7	-112.9	-0.47
PJFZBG		3,300.2	95.5	0.65	3,397.8	307.3	1.29
R7LTGQ		3,228.5	23.7	0.16	3,196.0	105.5	0.44
RJQLXN		3,122.0	-82.8	-0.57	3,118.0	27.5	0.12
RT2Q9T		3,297.5	92.7	0.63	3,119.5	29.0	0.12
TQQ8M3		3,084.6	-120.2	-0.82	3,111.2	20.6	0.09
TUAM7N		3,336.6	131.9	0.90	3,452.7	362.1	1.52
TV2DZN		3,181.5	-23.3	-0.16	3,186.0	95.5	0.40
UVVJW9		3,075.6	-129.1	-0.88	3,011.9	-78.6	-0.33
VLN7BX		3,318.4	113.6	0.78	3,439.0	348.5	1.46
VNVREJ		3,157.5	-47.3	-0.32	3,145.9	55.4	0.23
VVB3EK		3,058.5	-146.3	-1.00	2,650.5	-440.0	-1.84
WB8GCT		3,043.0	-161.8	-1.11	3,082.5	-8.0	-0.03
YLCFYW		3,139.1	-65.7	-0.45	3,192.8	102.3	0.43



Rubber Interlaboratory Testing Program
Analysis 630
Tensile Strength: Precured vs. Lab-Cured Samples (psi)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means	3,204.77 psi		3,090.51 psi
Stnd Dev Btwn Labs	146.32 psi		238.96 psi
Statistics based on 37 of 37 reporting participants			

		Summary Statistics in SI Units	
Grand Means	22.096 MPa		21.31 MPa
Stnd Dev Btwn Labs	1.009 MPa		1.65 MPa
Statistics based on 37 of 37 reporting participants			

Samples A81-A82: Polyisoprene compound, batch #1 & J81-J82: Polyisoprene compound, batch #1

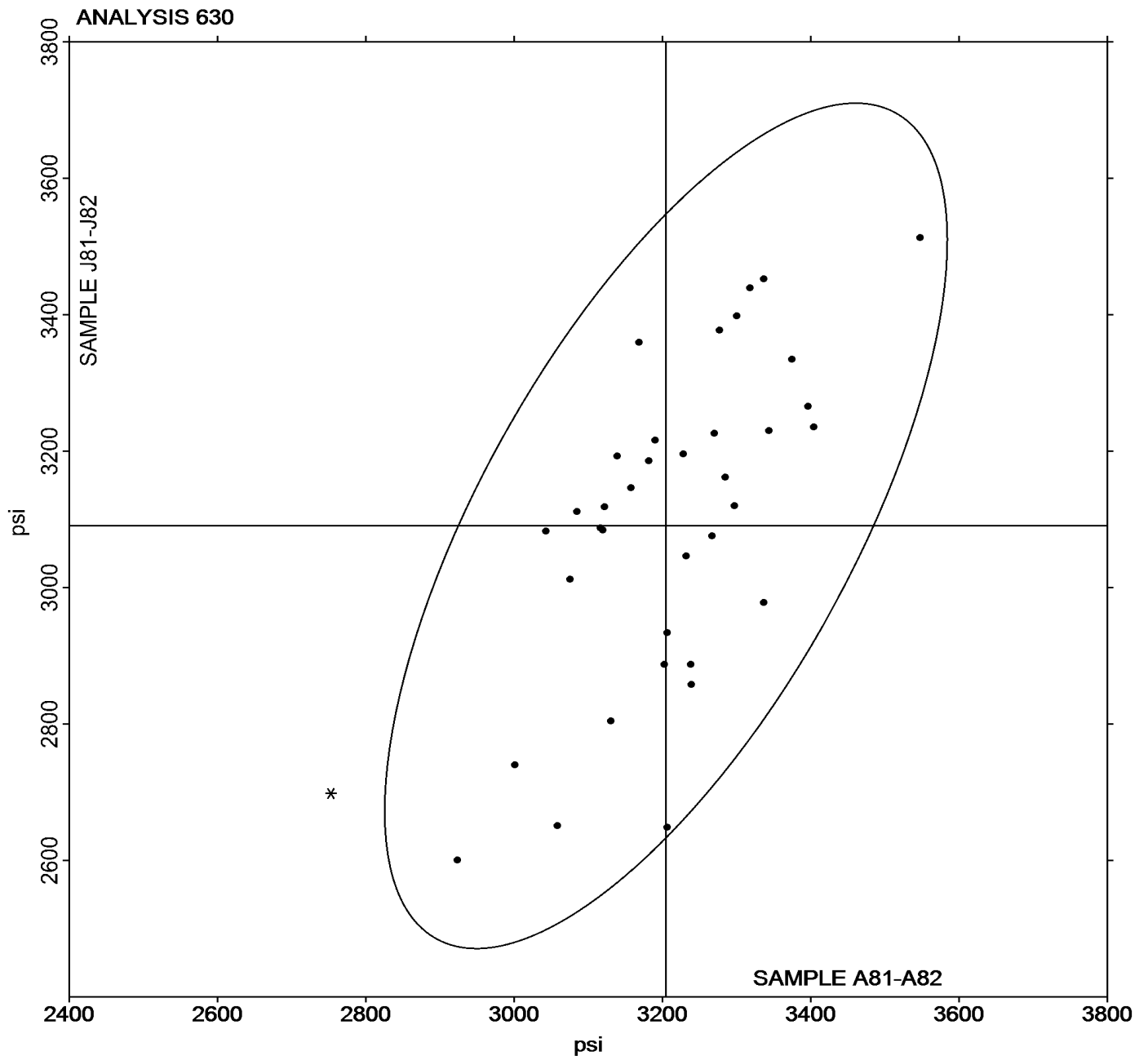


Rubber Interlaboratory Testing Program
Analysis 630
Tensile Strength: Precured vs. Lab-Cured Samples (psi)

Report #195
1st Qtr 2018

Grand Mean Sample **A81-A82** = 3,204.77 psi

Grand Mean Sample **J81-J82** = 3,090.51 psi





Rubber Interlaboratory Testing Program

Report #195

Analysis 631

1st Qtr 2018

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

WebCode	Data Flag	Sample A81-A82			Sample J81-J82		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
477BQE		612.8	23.8	0.93	583.8	4.0	0.15
4LJDWN		579.3	-9.6	-0.38	582.9	3.1	0.11
68T2Z6		645.9	56.9	2.23	632.7	52.9	1.94
6GKKGY	*	531.2	-57.8	-2.27	562.6	-17.2	-0.63
6WV7ZN		605.0	16.0	0.63	610.0	30.2	1.11
797X4N		594.3	5.3	0.21	565.3	-14.5	-0.53
8ENKF7		603.3	14.3	0.56	586.0	6.2	0.23
8ZQ2R8		586.0	-3.0	-0.12	599.0	19.2	0.70
9ATBKX		569.5	-19.5	-0.76	569.5	-10.3	-0.38
B8WE99		580.0	-9.0	-0.35	582.5	2.7	0.10
BAKJU7		649.8	60.8	2.39	634.0	54.2	1.98
EDRF2Y		584.0	-5.0	-0.20	614.5	34.7	1.27
EV8EW2		596.1	7.1	0.28	578.8	-1.0	-0.04
GA4MZF		602.1	13.1	0.51	577.9	-1.9	-0.07
GUAHAX		617.8	28.8	1.13	590.0	10.2	0.37
HAXTUE	*	548.0	-41.0	-1.61	498.0	-81.8	-2.99
JBN4XX		594.4	5.4	0.21	579.3	-0.5	-0.02
JCYFMA		590.7	1.7	0.07	563.2	-16.5	-0.61
K43ZCV		607.5	18.5	0.73	581.5	1.7	0.06
LA9WXG		615.0	26.0	1.02	634.5	54.7	2.00
MGJD7G		616.6	27.6	1.08	616.6	36.8	1.35
N67WCG		592.0	3.0	0.12	578.5	-1.3	-0.05
PC6J2V		564.0	-25.0	-0.98	566.0	-13.8	-0.50
PHP8PR		619.0	30.0	1.18	574.0	-5.8	-0.21
PJFZBG		589.5	0.5	0.02	591.4	11.7	0.43
R7LTGQ		567.5	-21.5	-0.84	550.5	-29.3	-1.07
RJQLXN		588.5	-0.5	-0.02	563.5	-16.3	-0.60
RT2Q9T		592.0	3.0	0.12	572.5	-7.3	-0.27
TQQ8M3		559.5	-29.5	-1.16	546.0	-33.8	-1.24
TUAM7N		555.5	-33.5	-1.31	562.5	-17.3	-0.63
TV2DZN		539.5	-49.5	-1.94	535.5	-44.3	-1.62
UVVJW9		580.0	-9.0	-0.35	565.5	-14.3	-0.52
VLN7BX		586.6	-2.4	-0.09	573.6	-6.2	-0.23
VNVREJ		590.0	1.0	0.04	573.0	-6.8	-0.25
VVB3EK		575.5	-13.5	-0.53	607.0	27.2	1.00
WB8GCT		589.5	0.5	0.02	591.0	11.2	0.41
YLCFYW		574.5	-14.5	-0.57	559.0	-20.8	-0.76



Rubber Interlaboratory Testing Program

Report #195

Analysis 631

1st Qtr 2018

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

		Summary Statistics	
Grand Means	588.97 percent		579.78 percent
Stnd Dev Btwn Labs	25.48 percent		27.31 percent
Statistics based on 37 of 37 reporting participants			

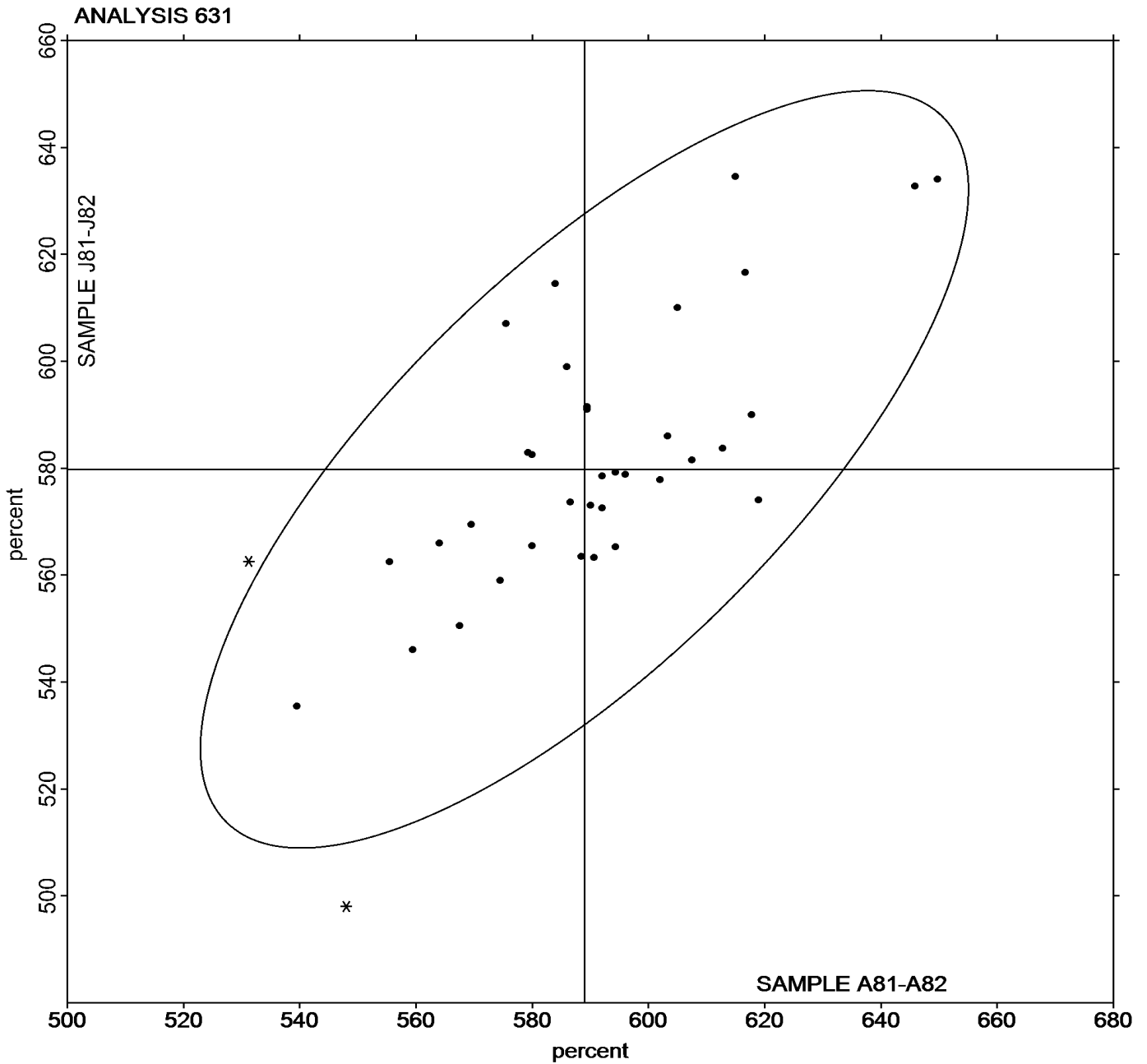
Samples A81-A82: Polyisoprene compound, batch #1 & J81-J82: Polyisoprene compound, batch #1



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

Grand Mean Sample A81-A82 = 588.97 percent

Grand Mean Sample J81-J82 = 579.78 percent





Rubber Interlaboratory Testing Program

Report #195

Analysis 632

1st Qtr 2018

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

WebCode	Data Flag	Sample A81-A82			Sample J81-J82		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
477BQE		1,010.2	-73.3	-0.97	1,257.2	178.5	1.31
4LJDWN		1,116.9	33.5	0.44	1,069.4	-9.2	-0.07
68T2Z6		1,012.7	-70.7	-0.93	1,027.6	-51.0	-0.37
6GKKGY		1,070.5	-12.9	-0.17	945.7	-133.0	-0.97
6WV7ZN		1,083.0	-0.4	-0.01	908.5	-170.2	-1.25
797X4N		1,089.7	6.2	0.08	1,164.9	86.3	0.63
8ENKF7		1,055.2	-28.2	-0.37	890.9	-187.7	-1.37
8ZQ2R8		1,067.0	-16.4	-0.22	915.0	-163.7	-1.20
9ATBKX		1,052.5	-30.9	-0.41	970.0	-108.7	-0.80
B8WE99		1,140.5	57.1	0.75	1,165.5	86.8	0.64
BAKJU7	*	902.5	-180.9	-2.39	1,066.5	-12.2	-0.09
EDRF2Y	*	1,278.5	195.1	2.57	1,168.3	89.6	0.66
EV8EW2		1,074.5	-8.9	-0.12	1,078.9	0.3	0.00
GA4MZF		1,079.8	-3.6	-0.05	1,110.3	31.6	0.23
GUAHAX		1,019.1	-64.3	-0.85	1,059.1	-19.6	-0.14
HAXTUE		1,249.0	165.6	2.18	1,317.5	238.8	1.75
JBN4XX		1,142.4	59.0	0.78	1,204.8	126.1	0.92
JCYFMA		1,054.0	-29.5	-0.39	981.7	-96.9	-0.71
K43ZCV		1,100.0	16.6	0.22	1,161.5	82.8	0.61
LA9WXG	*	905.8	-177.7	-2.34	707.8	-370.9	-2.71
MGJD7G		1,016.5	-66.9	-0.88	917.3	-161.3	-1.18
N67WCG		1,044.5	-38.9	-0.51	1,011.0	-67.7	-0.50
PC6J2V		1,141.0	57.6	0.76	1,077.0	-1.7	-0.01
PHP8PR		1,069.7	-13.8	-0.18	968.9	-109.8	-0.80
PJFZBG		1,153.5	70.1	0.92	1,189.1	110.4	0.81
R7LTGQ		1,147.0	63.6	0.84	1,211.5	132.8	0.97
RJQLXN		1,038.5	-44.9	-0.59	1,144.5	65.8	0.48
RT2Q9T		1,049.0	-34.4	-0.45	1,028.5	-50.2	-0.37
TQQ8M3		1,089.4	6.0	0.08	1,192.2	113.5	0.83
TUAM7N		1,147.3	63.8	0.84	1,158.9	80.2	0.59
TV2DZN		1,191.5	108.1	1.42	1,289.5	210.8	1.54
UVVJW9		1,108.6	25.1	0.33	1,077.0	-1.7	-0.01
VLN7BX		1,096.0	12.6	0.17	1,197.9	119.2	0.87
VNVREJ		1,086.3	2.9	0.04	1,125.5	46.8	0.34
VVB3EK		1,046.5	-36.9	-0.49	804.5	-274.2	-2.01
WB8GCT		1,002.0	-81.4	-1.07	1,092.0	13.3	0.10
YLFCYW		1,155.8	72.4	0.95	1,254.1	175.4	1.28



Rubber Interlaboratory Testing Program

Report #195

Analysis 632

1st Qtr 2018

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

Summary Statistics

Grand Means

1,083.43 psi

1,078.66 psi

Std Dev Btwn Labs

75.84 psi

136.62 psi

Statistics based on 37 of 37 reporting participants

Summary Statistics in SI Units

Grand Means

7.4699 MPa

7.44 MPa

Std Dev Btwn Labs

0.5229 MPa

0.94 MPa

Statistics based on 37 of 37 reporting participants

Samples A81-A82: Polyisoprene compound, batch #1 & J81-J82: Polyisoprene compound, batch #1



Rubber Interlaboratory Testing Program

Report #195

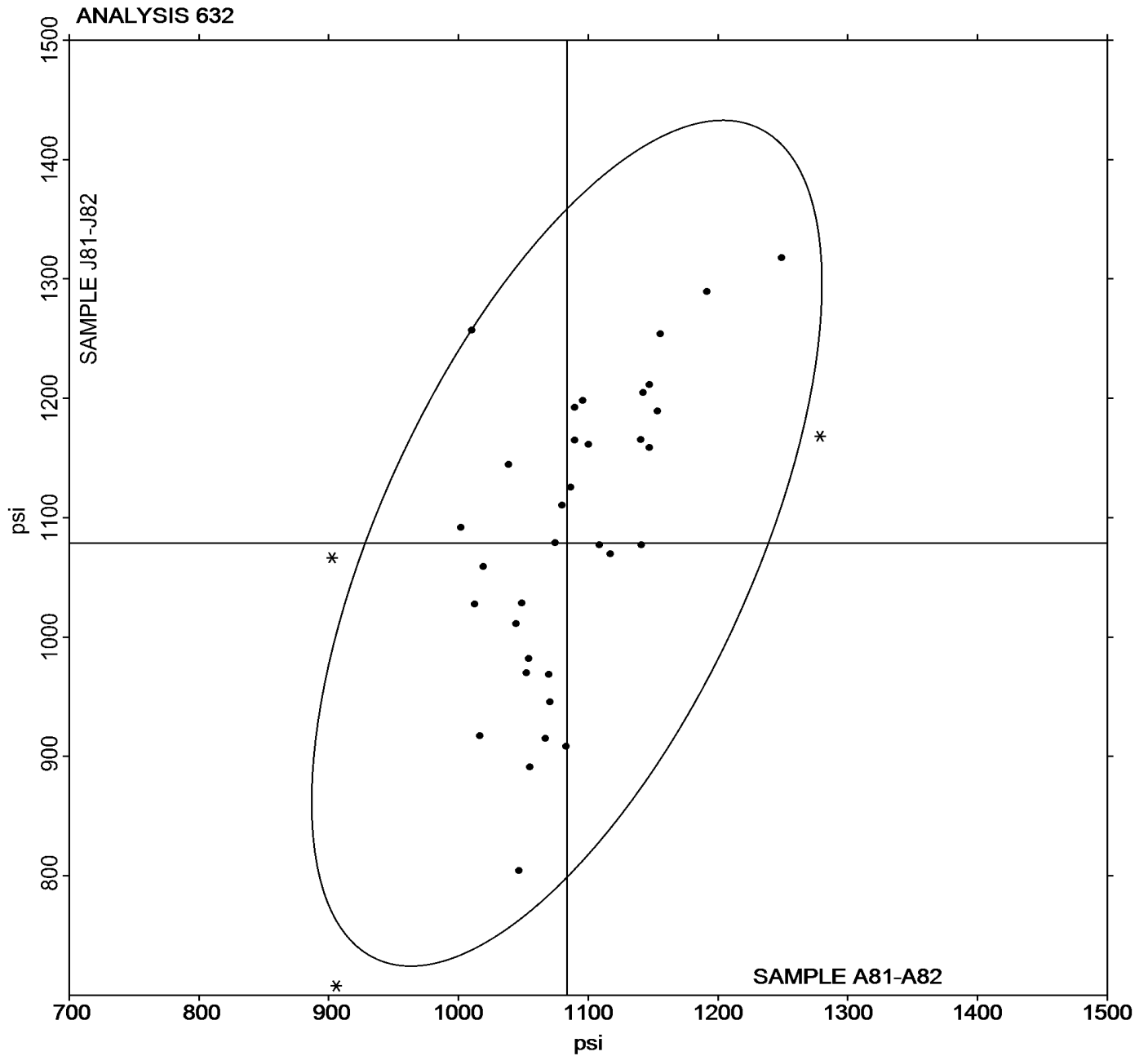
Analysis 632

1st Qtr 2018

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

Grand Mean Sample **A81-A82** = 1,083.43 psi

Grand Mean Sample **J81-J82** = 1,078.66 psi





Rubber Interlaboratory Testing Program

Report #195

Analysis 633

1st Qtr 2018

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

WebCode	Data Flag	Sample A81-A82			Sample J81-J82		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
477BQE		219.1	-18.9	-1.32	273.7	32.1	1.22
4LJDWN		250.5	12.5	0.87	247.1	5.5	0.21
68T2Z6		243.2	5.2	0.36	246.8	5.1	0.20
6GKKGY		233.3	-4.7	-0.33	220.7	-21.0	-0.80
6WV7ZN		245.5	7.5	0.52	211.5	-30.1	-1.15
797X4N		257.3	19.2	1.34	271.8	30.1	1.15
8ENKF7		235.0	-3.0	-0.21	207.0	-34.7	-1.32
8ZQ2R8		235.5	-2.5	-0.17	215.0	-26.6	-1.02
9ATBKX		224.5	-13.5	-0.94	220.0	-21.6	-0.83
B8WE99		256.5	18.5	1.29	275.0	33.4	1.27
BAKJU7		209.0	-29.0	-2.02	248.0	6.4	0.24
EDRF2Y	X	309.7	71.7	5.00	303.1	61.5	2.34
EV8EW2		239.7	1.6	0.11	229.0	-12.6	-0.48
GA4MZF		232.8	-5.2	-0.36	240.8	-0.9	-0.03
GUAHAX		249.7	11.6	0.81	248.5	6.9	0.26
HAXTUE		248.0	10.0	0.70	263.0	21.4	0.81
JBN4XX		244.3	6.2	0.44	274.3	32.7	1.25
JCYFMA		233.5	-4.5	-0.32	217.3	-24.3	-0.93
K43ZCV		246.5	8.5	0.59	253.0	11.4	0.43
LA9WXG	*	219.0	-19.0	-1.32	171.9	-69.8	-2.66
MGJD7G		218.1	-20.0	-1.39	206.8	-34.8	-1.33
N67WCG		226.0	-12.0	-0.84	227.0	-14.6	-0.56
PC6J2V		244.0	6.0	0.42	241.5	-0.1	-0.01
PHP8PR		242.9	4.9	0.34	222.6	-19.0	-0.72
PJFZBG		248.2	10.2	0.71	265.1	23.5	0.90
R7LTGQ		249.0	11.0	0.77	261.0	19.4	0.74
RJQLXN		206.0	-32.0	-2.23	238.5	-3.1	-0.12
RT2Q9T		227.5	-10.5	-0.73	232.0	-9.6	-0.37
TQQ8M3		235.9	-2.1	-0.15	264.3	22.6	0.86
TUAM7N		250.2	12.2	0.85	252.4	10.7	0.41
TV2DZN		220.0	-18.0	-1.26	281.0	39.4	1.50
UVVJW9		270.1	32.1	2.24	255.3	13.7	0.52
VLN7BX		235.6	-2.5	-0.17	262.1	20.4	0.78
VNVREJ		242.9	4.9	0.34	255.3	13.6	0.52
VVB3EK	*	250.5	12.5	0.87	182.5	-59.1	-2.25
WB8GCT		225.0	-13.0	-0.91	255.0	13.4	0.51
YLCFYW		253.6	15.6	1.09	262.5	20.8	0.79



Rubber Interlaboratory Testing Program

Report #195

Analysis 633

1st Qtr 2018

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

Summary Statistics

Grand Means

238.01 psi

241.64 psi

Stnd Dev Btwn Labs

14.34 psi

26.23 psi

Statistics based on 36 of 37 reporting participants

Summary Statistics in SI Units

Grand Means

1.6410 MPa

1.67 MPa

Stnd Dev Btwn Labs

0.0989 MPa

0.18 MPa

Statistics based on 36 of 37 reporting participants

Samples A81-A82: Polyisoprene compound, batch #1 & J81-J82: Polyisoprene compound, batch #1

Comments on Assigned Data Flags for Test #633

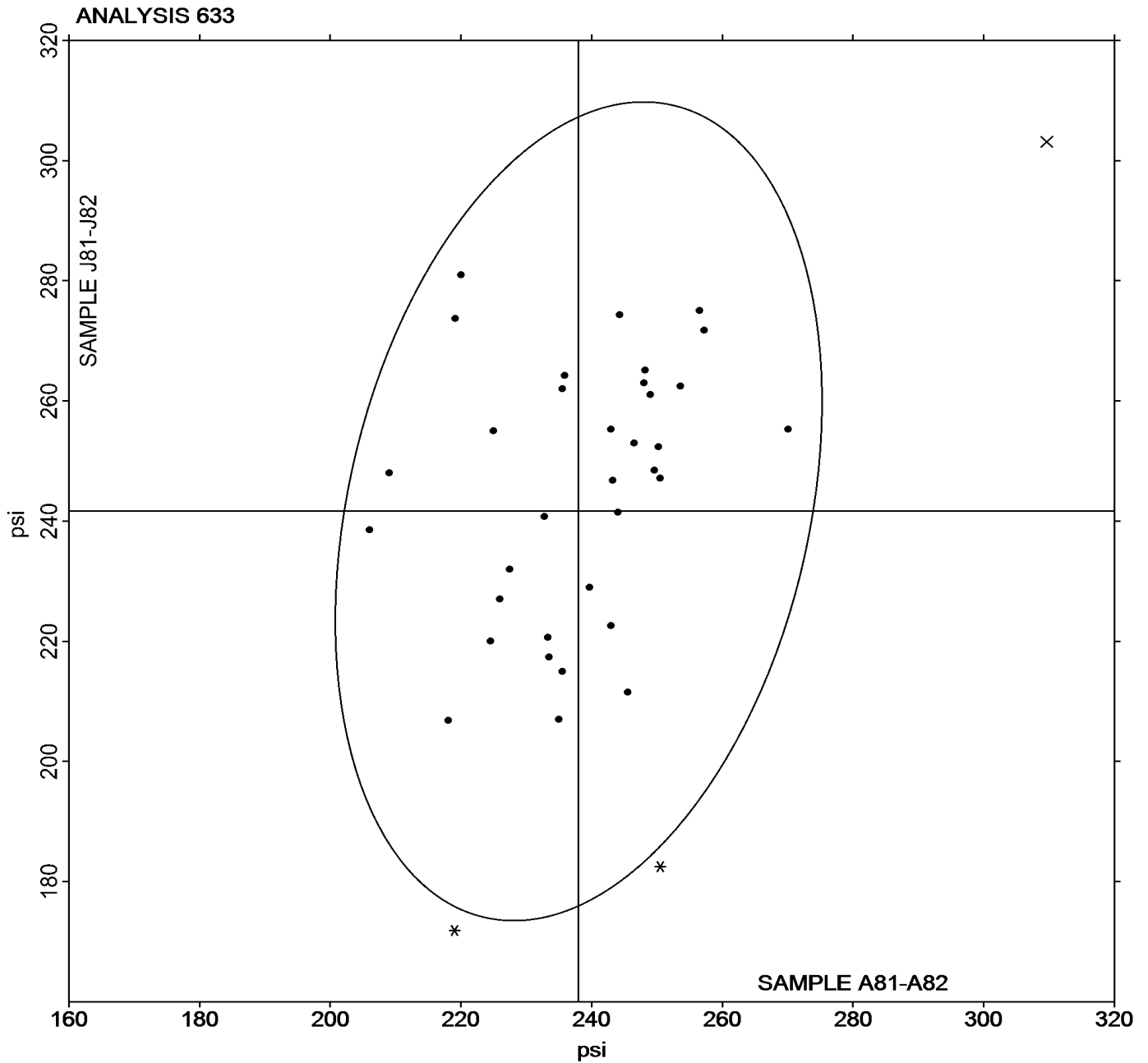
EDRF2Y (X) - Data for sample group A81-A82 are high. Inconsistent within the determinations of sample group J81-J82.



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

Grand Mean Sample A81-A82 = 238.01 psi

Grand Mean Sample J81-J82 = 241.64 psi





Rubber Interlaboratory Testing Program

Report #195

Analysis 660

1st Qtr 2018

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

WebCode	Data Flag	Sample S81-S82			Sample S83-S84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4LJDWN		48.70	0.81	0.55	54.10	0.96	0.73	MR
4PF3H3		48.20	0.31	0.21	54.12	0.98	0.74	MR
6GKKGY		47.83	-0.06	-0.04	53.00	-0.14	-0.11	MZ
797X4N		48.43	0.53	0.36	54.40	1.26	0.96	TA
79JL6F		47.38	-0.51	-0.35	53.40	0.26	0.20	MR
7DEEEX		49.13	1.24	0.84	53.17	0.03	0.02	MR
7TTP3K	X	53.28	5.39	3.65	59.90	6.76	5.13	MR
8ENKF7	*	51.65	3.75	2.54	57.11	3.97	3.01	TV
9ATBKX		47.97	0.07	0.05	53.31	0.17	0.13	ML
BAKJU7		48.08	0.18	0.12	52.59	-0.55	-0.42	MR
EDRF2Y	M	49.99	2.09	1.42	No data reported for this sample			MR
EZNMJF		48.28	0.39	0.26	53.55	0.41	0.31	MR
GA4MZF		46.55	-1.34	-0.91	53.03	-0.11	-0.08	MR
HX9U6X		48.64	0.74	0.50	54.03	0.89	0.67	MR
JBN4XX		49.18	1.29	0.87	52.36	-0.78	-0.60	MR
K43ZCV		49.53	1.64	1.11	53.57	0.43	0.32	MR
KP2749		48.27	0.37	0.25	51.90	-1.24	-0.94	MV
KYRRA7		46.05	-1.84	-1.25	50.68	-2.46	-1.87	XX
LA9WXG		50.12	2.23	1.51	54.19	1.05	0.80	MV
M3H4ZM		48.12	0.22	0.15	53.27	0.13	0.10	MR
MBUM87		45.48	-2.41	-1.63	52.80	-0.34	-0.26	MR
MGJD7G		44.61	-3.28	-2.22	52.51	-0.63	-0.48	MV
PC6J2V		46.53	-1.36	-0.92	52.70	-0.44	-0.34	MR
PHP8PR		47.83	-0.06	-0.04	54.93	1.78	1.35	MR
PJFZBG		48.57	0.67	0.46	52.37	-0.77	-0.59	XX
R7LTGQ		47.12	-0.78	-0.53	51.83	-1.31	-0.99	MR
RB3Z6P		49.06	1.16	0.79	54.36	1.22	0.93	MR
RCVLJV		47.07	-0.83	-0.56	53.20	0.06	0.04	MR
RT2Q9T		47.42	-0.48	-0.32	52.78	-0.36	-0.27	MR
T7HZAP	*	47.02	-0.88	-0.59	49.72	-3.42	-2.60	MR
TCTLAZ		46.20	-1.69	-1.15	51.42	-1.72	-1.31	MR
TUAM7N		47.09	-0.81	-0.55	52.42	-0.72	-0.55	MV
UVVJW9	X	48.13	0.23	0.16	57.42	4.28	3.25	MV
VNVREJ		46.88	-1.01	-0.68	53.47	0.33	0.25	MR
WB8GCT		45.87	-2.03	-1.37	51.98	-1.16	-0.88	MR
XEFL2X		50.59	2.70	1.83	54.44	1.30	0.99	MR
YLCFYW		48.95	1.06	0.72	54.12	0.98	0.74	MR



Rubber Interlaboratory Testing Program
Analysis 660
Mooney Viscosity: 4-minute readings (ML 1 + 4)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means	47.894 ML 1 + 4	53.141 ML 1 + 4	
Stnd Dev Btwn Labs	1.476 ML 1 + 4	1.317 ML 1 + 4	
Statistics based on 34 of 37 reporting participants			

Samples S81-S82: NBR & S83-S84: Butyl

Comments on Assigned Data Flags for Test #660

- 7TTP3K (X) - Data for all samples are high.
- EDRF2Y (M) - Participant did not submit data for sample group S83-S84.
- UVWJW9 (X) - Data for sample group S83-S84 are high. Inconsistent within the determinations of sample group S83-S84. Inconsistent within the determinations of sample group S83-S84.

Key to Instrument Codes Reported by Participants

ML	Alpha Technologies/Monsanto model not specified	MR	Alpha Technologies Model MV2000/MV2000E
MV	MonTech	MZ	Rebuilt Monsanto Mooney Viscometer
TA	TA Instruments (any model)	TV	Tech Pro Visc Tech (any model)
XX	Instrument make/model not specified by lab		

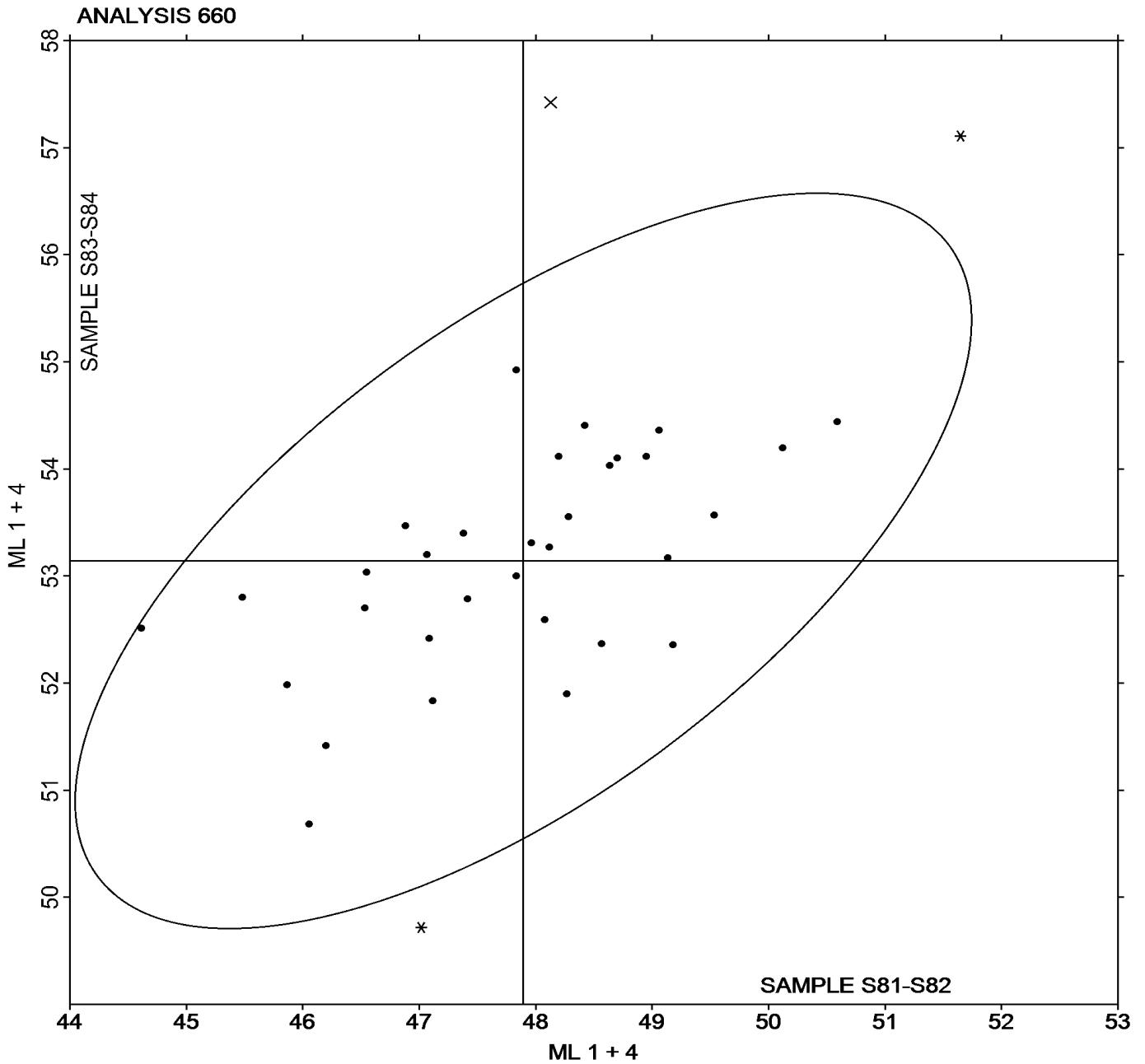


Rubber Interlaboratory Testing Program
Analysis 660
Mooney Viscosity: 4-minute readings (ML 1 + 4)

Report #195
1st Qtr 2018

Grand Mean Sample S81-S82 = 47.894 ML 1 + 4

Grand Mean Sample S83-S84 = 53.141 ML 1 + 4





Rubber Interlaboratory Testing Program

Report #195

Analysis 661

1st Qtr 2018

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

WebCode	Data Flag	Sample S81-S82			Sample S83-S84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4LJDWN		48.70	0.69	0.46	51.70	0.88	0.86	MR
4PF3H3		48.20	0.19	0.12	51.68	0.86	0.85	MR
6GKKGY		47.83	-0.18	-0.12	50.25	-0.57	-0.56	MZ
797X4N		48.43	0.41	0.28	51.68	0.86	0.85	TA
7DEEEX		49.13	1.12	0.75	50.87	0.04	0.04	MR
7TTP3K	X	53.28	5.27	3.52	56.67	5.85	5.76	MR
8ENKF7	*	51.65	3.64	2.43	53.54	2.71	2.67	TV
9ATBKX		47.97	-0.05	-0.03	49.98	-0.84	-0.83	ML
BAKJU7		48.08	0.06	0.04	50.11	-0.71	-0.70	MR
EDRF2Y		49.99	1.97	1.32	51.50	0.68	0.67	MR
EZNMJF		48.28	0.27	0.18	50.60	-0.22	-0.22	MR
GA4MZF		46.55	-1.46	-0.98	50.43	-0.39	-0.38	MR
JBN4XX		49.18	1.17	0.78	49.88	-0.94	-0.93	MR
K43ZCV		49.53	1.52	1.02	50.87	0.04	0.04	MR
KP2749		48.27	0.25	0.17	50.26	-0.57	-0.56	MV
LA9WXG		50.12	2.11	1.41	52.07	1.25	1.23	MV
M3H4ZM		48.12	0.10	0.07	50.43	-0.39	-0.38	MR
MBUM87		45.48	-2.53	-1.69	50.33	-0.49	-0.48	MR
MGJD7G	*	44.61	-3.40	-2.27	50.50	-0.32	-0.32	MV
PC6J2V		46.53	-1.48	-0.99	49.98	-0.84	-0.83	MR
PHP8PR		47.83	-0.18	-0.12	51.52	0.69	0.68	MR
PJFZBG		48.57	0.55	0.37	50.87	0.04	0.04	XX
R7LTGQ		47.12	-0.90	-0.60	49.18	-1.64	-1.61	MP
RB3Z6P		49.06	1.05	0.70	52.21	1.39	1.37	MR
RCVLJV		47.07	-0.95	-0.63	50.45	-0.37	-0.37	MR
RT2Q9T		47.42	-0.60	-0.40	50.18	-0.64	-0.63	MR
T7HZAP	*	47.02	-1.00	-0.67	52.42	1.59	1.57	MR
TCTLAZ		46.20	-1.81	-1.21	49.23	-1.59	-1.56	MR
TUAM7N		47.09	-0.93	-0.62	49.84	-0.99	-0.97	MV
UVVJW9		48.13	0.12	0.08	49.67	-1.15	-1.13	MV
VNVREJ		46.88	-1.13	-0.75	50.45	-0.37	-0.37	MR
WB8GCT		45.87	-2.15	-1.43	50.15	-0.67	-0.66	MR
XEFL2X		50.59	2.58	1.72	52.36	1.54	1.52	MR
YLCFYW		48.95	0.94	0.63	51.93	1.11	1.09	MR



Rubber Interlaboratory Testing Program

Report #195

Analysis 661

1st Qtr 2018

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

		Summary Statistics	
Grand Means	48.013 ML 1 + 8	50.822 ML 1 + 8	
Stnd Dev Btwn Labs	1.497 ML 1 + 8	1.015 ML 1 + 8	
Statistics based on 33 of 34 reporting participants			

Samples S81-S82: NBR & S83-S84: Butyl

Comments on Assigned Data Flags for Test #661

7TTP3K (X) - Data for all samples are high. Inconsistent within the determinations of sample group S83-S84.

Key to Instrument Codes Reported by Participants

ML	Alpha Technologies/Monsanto model not specified	MP	Monsanto Compact Mooney Viscometer
MR	Alpha Technologies Model MV2000/MV2000E	MV	Montech
MZ	Rebuilt Monsanto Mooney Viscometer	TA	TA Instruments (any model)
TV	Tech Pro Visc Tech (any model)	XX	Instrument make/model not specified by lab



Rubber Interlaboratory Testing Program

Report #195

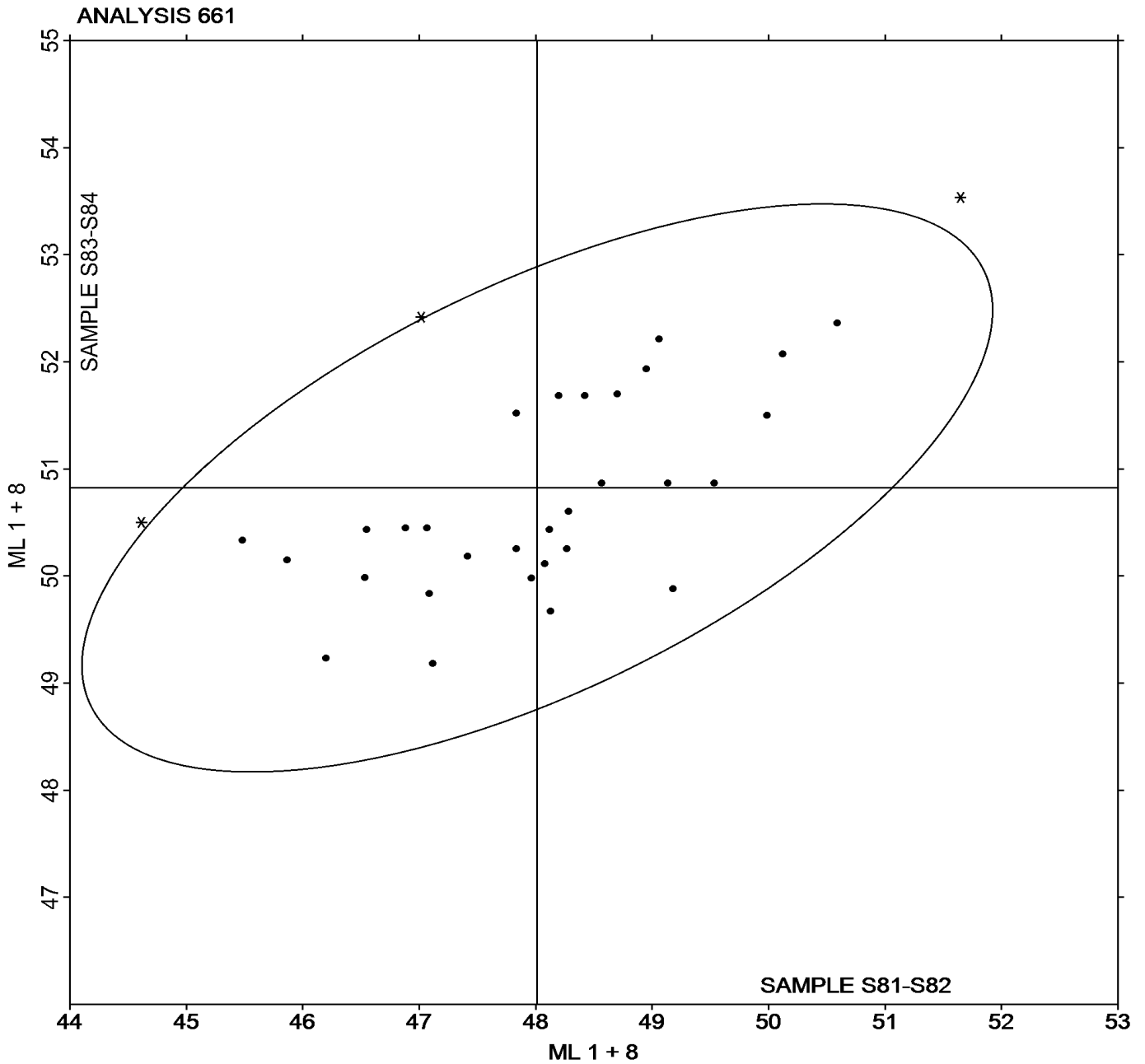
Analysis 661

1st Qtr 2018

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

Grand Mean Sample **S81-S82** = 48.013 ML 1 + 8

Grand Mean Sample **S83-S84** = 50.822 ML 1 + 8





Rubber Interlaboratory Testing Program

Report #195

Analysis 662

1st Qtr 2018

Mooney Stress Relaxation: t80 (seconds)

WebCode	Data Flag	Sample S81-S82			Sample S83-S84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4LJDWN		4.863	-0.928	-0.40	7.757	0.115	0.07	MR
6GKKGY		9.053	3.262	1.39	9.102	1.460	0.86	MZ
797X4N		5.060	-0.732	-0.31	5.120	-2.522	-1.49	TA
7DEEEX		4.957	-0.835	-0.36	7.317	-0.325	-0.19	MR
8ENKF7		11.060	5.268	2.25	11.127	3.485	2.06	TV
BAKJU7		11.400	5.608	2.40	11.365	3.723	2.21	MR
EZNMJF		5.183	-0.608	-0.26	7.717	0.075	0.04	MR
GA4MZF		5.330	-0.462	-0.20	7.800	0.158	0.09	MR
HX9U6X		4.600	-1.192	-0.51	8.300	0.658	0.39	MR
K43ZCV		5.220	-0.572	-0.24	7.550	-0.092	-0.05	MR
LA9WXG		3.600	-2.192	-0.94	6.000	-1.642	-0.97	MV
M3H4ZM		3.717	-2.075	-0.89	7.350	-0.292	-0.17	MR
MGJD7G	X	548.567	542.775	231.97	551.933	544.291	322.38	MV
PC6J2V		5.003	-0.788	-0.34	6.963	-0.679	-0.40	MR
RT2Q9T		4.847	-0.945	-0.40	7.227	-0.415	-0.25	MR
TUAM7N		5.058	-0.733	-0.31	5.110	-2.532	-1.50	MV
UVVJW9		4.667	-1.125	-0.48	7.000	-0.642	-0.38	MV
VNVREJ		4.842	-0.950	-0.41	7.108	-0.534	-0.32	MR

Grand Means		Summary Statistics	
	5.7918 seconds		7.6419 seconds
Std Dev Btwn Labs	2.3399 seconds		1.6883 seconds
Statistics based on 17 of 18 reporting participants			

Samples S81-S82: NBR & S83-S84: Butyl

Comments on Assigned Data Flags for Test #662

MGJD7G (X) - Extreme Data.

Key to Instrument Codes Reported by Participants

MR	Alpha Technologies Model MV2000/MV2000E	MV	MonTech
MZ	Rebuilt Monsanto Mooney Viscometer	TA	TA Instruments (any model)
TV	Tech Pro Visc Tech (any model)		

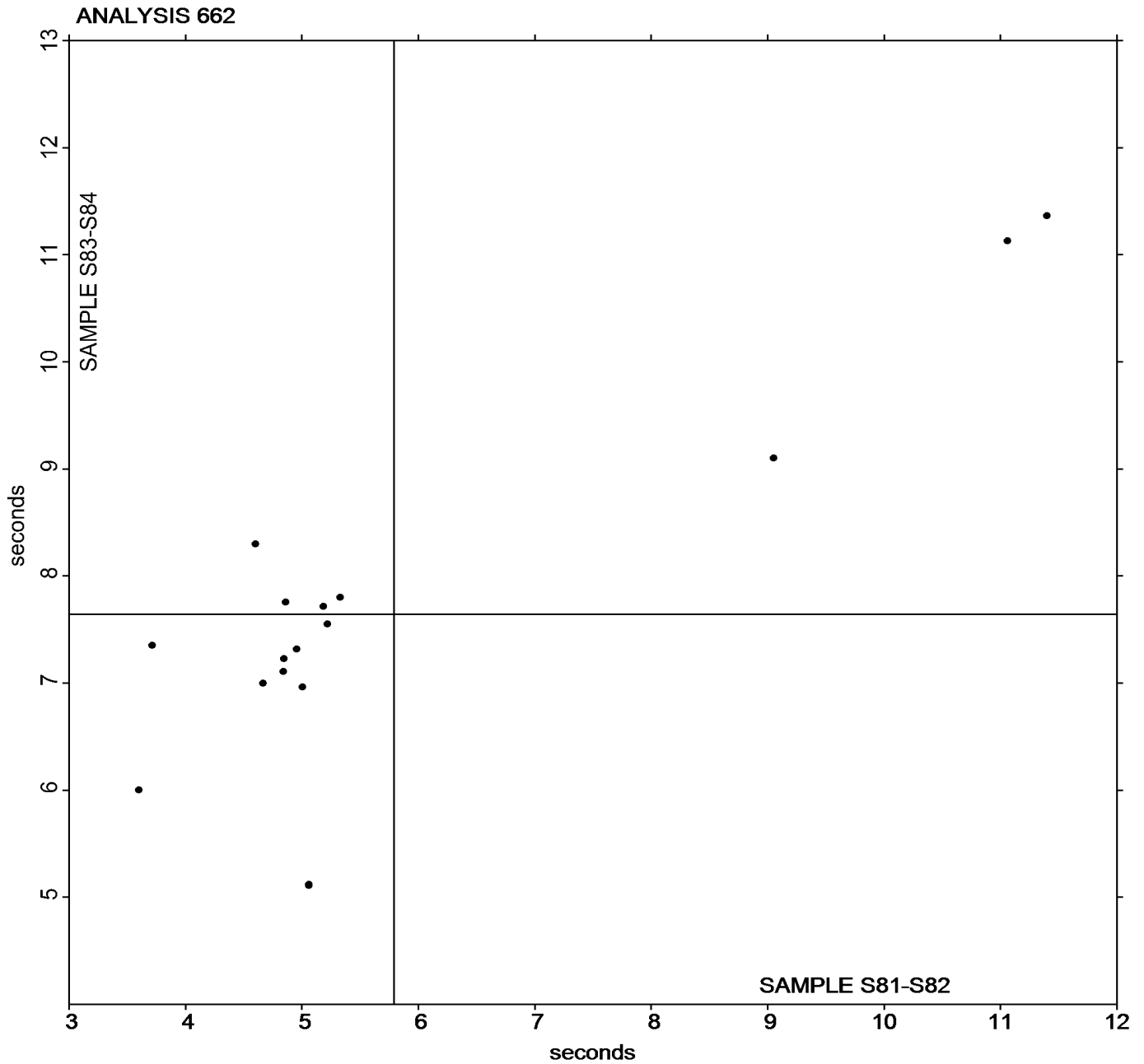


Rubber Interlaboratory Testing Program
Analysis 662
Mooney Stress Relaxation: t80 (seconds)

Report #195
1st Qtr 2018

Grand Mean Sample S81-S82 = 5.7918 seconds

Grand Mean Sample S83-S84 = 7.6419 seconds



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program

Report #195

Analysis 663

1st Qtr 2018

Mooney Stress Relaxation: X30 (percent)

WebCode	Data Flag	Sample S81-S82			Sample S83-S84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4LJDWN		91.04	-0.62	-0.29	91.43	-0.43	-0.21	MR
6GKKGY		94.37	2.72	1.28	94.12	2.26	1.12	MZ
797X4N		94.86	3.21	1.51	93.86	2.00	0.99	TA
7DEEEX		90.81	-0.84	-0.40	91.90	0.04	0.02	MR
8ENKF7		92.36	0.71	0.33	91.67	-0.19	-0.09	TV
BAKJU7		91.03	-0.62	-0.29	88.65	-3.21	-1.58	MR
EZNMJF		90.55	-1.10	-0.52	91.48	-0.37	-0.18	MR
GA4MZF		91.12	-0.54	-0.25	92.04	0.18	0.09	MR
K43ZCV		90.31	-1.34	-0.63	91.42	-0.44	-0.22	MR
LA9WXG		94.66	3.00	1.42	94.95	3.10	1.53	MV
M3H4ZM		91.18	-0.47	-0.22	89.98	-1.87	-0.93	MR
MGJD7G		86.01	-5.64	-2.66	86.66	-5.19	-2.56	MV
PC6J2V		91.16	-0.49	-0.23	92.50	0.64	0.32	MR
RT2Q9T		91.11	-0.54	-0.26	92.20	0.34	0.17	MR
TUAM7N		94.30	2.64	1.25	93.89	2.03	1.00	MV
UVVJW9		92.07	0.42	0.20	92.79	0.93	0.46	MV
VNVREJ		91.16	-0.49	-0.23	92.04	0.18	0.09	MR

Grand Means		Summary Statistics	
	91.652 percent		91.858 percent
Std Dev Btwn Labs	2.121 percent		2.025 percent
Statistics based on 17 of 17 reporting participants			

Samples S81-S82: NBR & S83-S84: Butyl

Key to Instrument Codes Reported by Participants

MR	Alpha Technologies Model MV2000/MV2000E	MV	Montech
MZ	Rebuilt Monsanto Mooney Viscometer	TA	TA Instruments (any model)
TV	Tech Pro Visc Tech (any model)		



Rubber Interlaboratory Testing Program

Report #195

Analysis 664

1st Qtr 2018

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

WebCode	Data Flag	Sample S81-S82			Sample S83-S84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4LJDWN		471.0	50.7	0.43	499.4	56.9	0.50	MR
6GKKGY		261.2	-159.1	-1.35	322.3	-120.1	-1.05	MZ
797X4N		249.5	-170.8	-1.45	344.8	-97.7	-0.85	TA
8ENKF7		399.8	-20.5	-0.17	501.2	58.7	0.51	TV
BAKJU7		468.4	48.1	0.41	420.4	-22.1	-0.19	MR
EZNMJF		495.0	74.7	0.64	489.5	47.0	0.41	MR
GA4MZF		451.5	31.2	0.27	456.3	13.8	0.12	XX
K43ZCV		518.6	98.3	0.84	490.9	48.5	0.42	MR
LA9WXG		267.7	-152.6	-1.30	275.9	-166.6	-1.45	MV
M3H4ZM	X	6.9	-413.4	-3.51	7.7	-434.8	-3.79	MR
MGJD7G	*	687.1	266.8	2.27	772.2	329.7	2.88	MV
PC6J2V		442.8	22.6	0.19	425.8	-16.7	-0.15	MR
RT2Q9T		455.5	35.2	0.30	441.2	-1.3	-0.01	MR
TUAM7N		275.8	-144.4	-1.23	341.5	-100.9	-0.88	MV
UVVJW9		413.5	-6.8	-0.06	407.0	-35.4	-0.31	MV
VNVREJ		446.6	26.3	0.22	448.7	6.2	0.05	MR

Grand Means		Summary Statistics	
	420.27 M-s		442.48 M-s
Std Dev Btwn Labs	117.67 M-s		114.69 M-s
Statistics based on 15 of 16 reporting participants			

Samples S81-S82: NBR & S83-S84: Butyl

Comments on Assigned Data Flags for Test #664

M3H4ZM (X) - Data for all samples are low.

Key to Instrument Codes Reported by Participants

MR	Alpha Technologies Model MV2000/MV2000E	MV	MonTech
MZ	Rebuilt Mooney Viscometer	TA	TA Instruments (any model)
TV	Tech Pro Visc Tech (any model)	XX	Instrument make/model not specified by lab

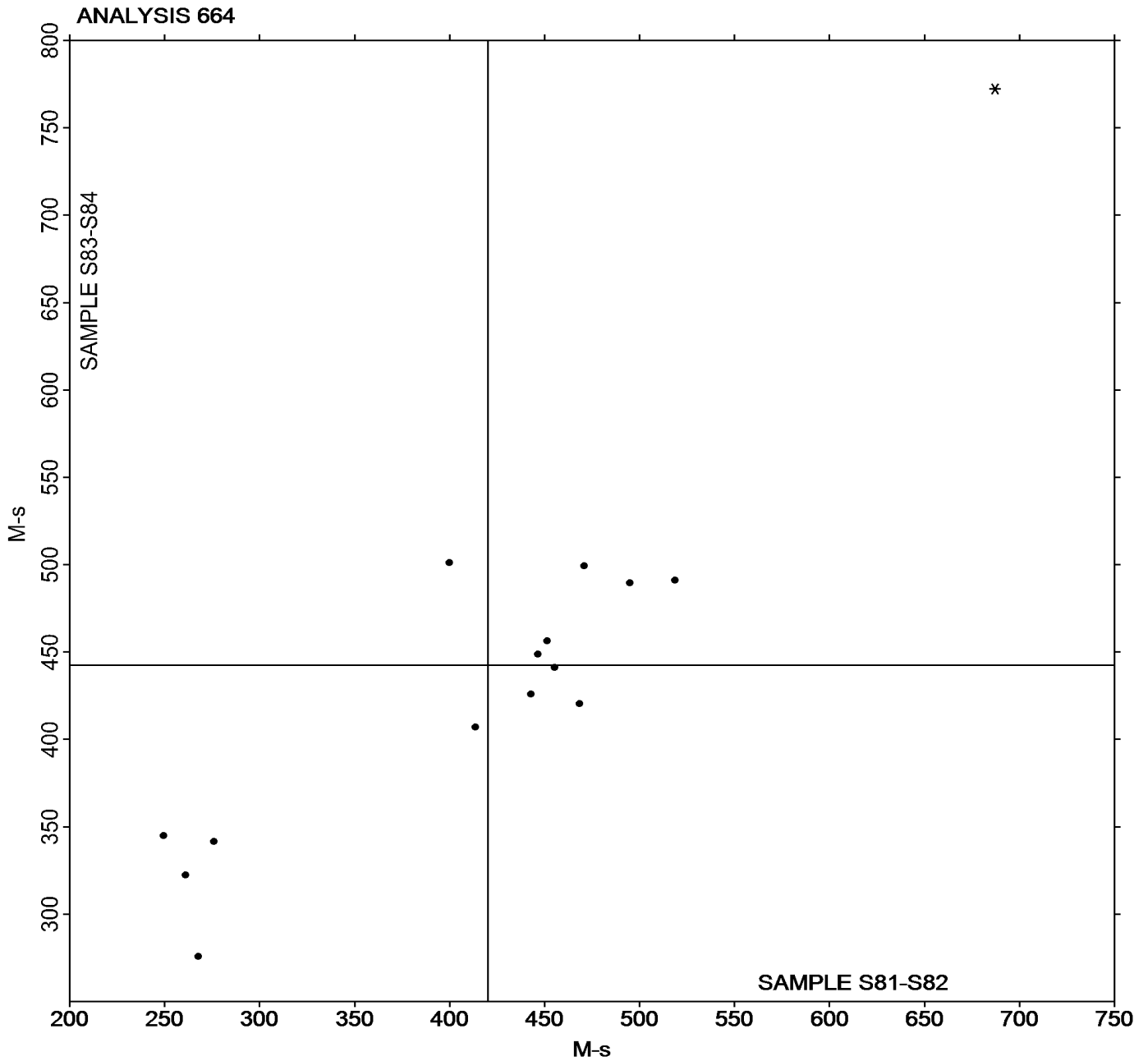


Rubber Interlaboratory Testing Program
Analysis 664
Mooney Stress Relaxation: Area under curve (M-s)

Report #195
1st Qtr 2018

Grand Mean Sample S81-S82 = 420.27 M-s

Grand Mean Sample S83-S84 = 442.48 M-s



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program
Analysis 669
ODR Vulcanization-Cure Time 10% (minutes)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample W81-W82			Sample W83-W84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
8ENKF7		1.610	-0.001	-0.01	2.965	-0.084	-0.97
BAKJU7		1.532	-0.079	-0.72	3.048	-0.001	-0.01
EV8EW2		1.577	-0.034	-0.31	3.067	0.018	0.21
PHP8PR		1.670	0.059	0.54	3.047	-0.002	-0.03
R7LTGQ		1.692	0.081	0.73	3.245	0.196	2.27
TCTLAZ		1.813	0.203	1.84	3.022	-0.027	-0.32
WB8GCT		1.505	-0.106	-0.96	3.015	-0.034	-0.39
XEFL2X		1.488	-0.123	-1.11	2.983	-0.066	-0.76

		Summary Statistics	
Grand Means	1.6108 minutes	3.0490 minutes	
Stnd Dev Btwn Labs	0.1100 minutes	0.0862 minutes	
Statistics based on 8 of 8 reporting participants			

Samples W81-W82: EPDM compound #1 & W83-W84: EPDM compound #2

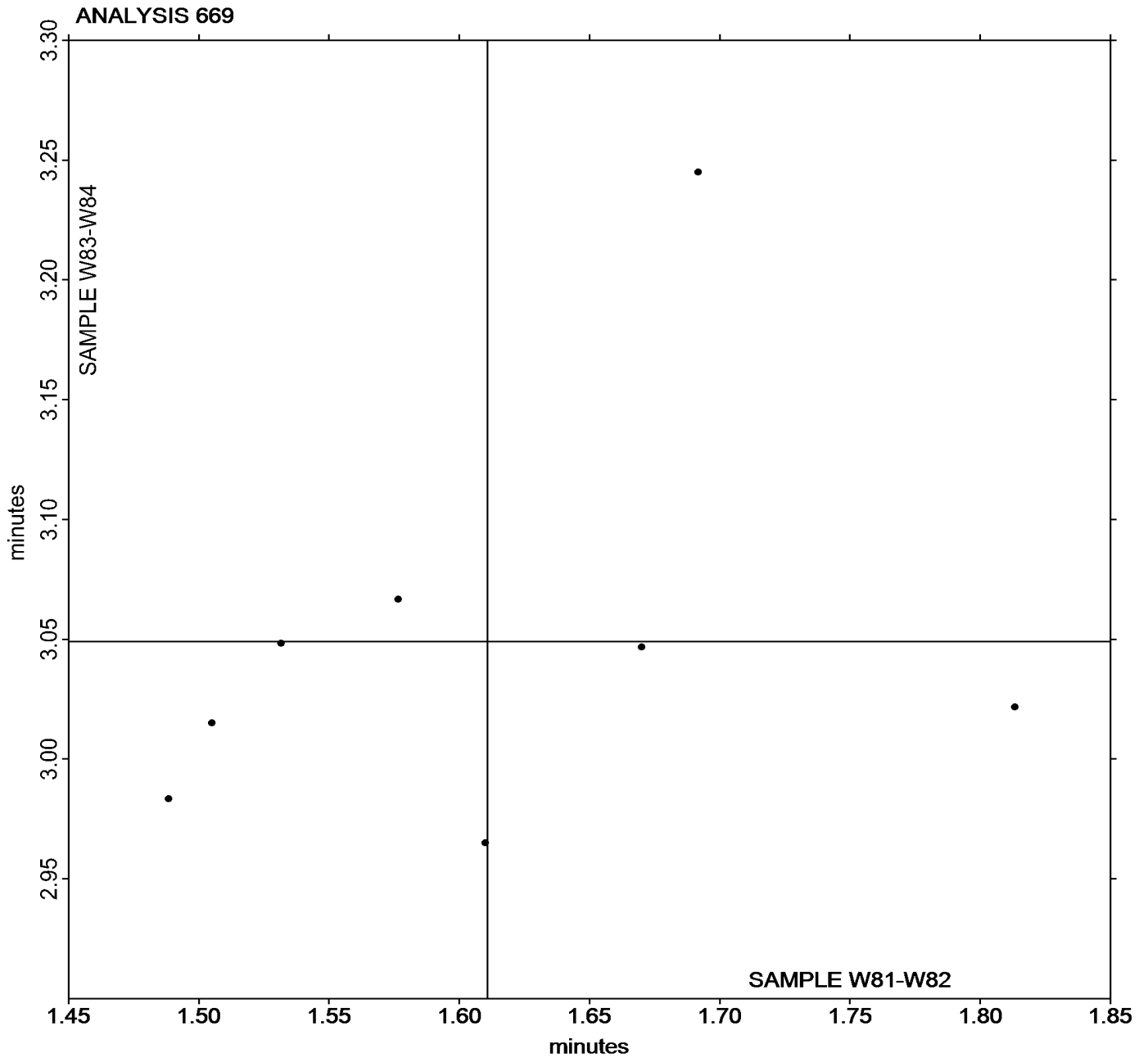


Rubber Interlaboratory Testing Program
Analysis 669
ODR Vulcanization-Cure Time 10% (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W81-W82** = 1.6108 minutes

Grand Mean Sample **W83-W84** = 3.0490 minutes



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program
Analysis 670
ODR Vulcanization-Scorch Time, Ts1 (minutes)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample W81-W82			Sample W83-W84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
8ENKF7		1.200	0.032	0.33	2.392	0.094	0.73
BAKJU7		1.110	-0.058	-0.61	2.398	0.100	0.78
EV8EW2		1.143	-0.025	-0.26	2.262	-0.036	-0.28
PHP8PR		1.188	0.020	0.21	2.355	0.057	0.45
R7LTGQ		1.190	0.021	0.22	2.437	0.139	1.08
TCTLAZ		1.365	0.197	2.07	2.317	0.019	0.15
WB8GCT		1.100	-0.068	-0.72	2.147	-0.151	-1.18
XEFL2X		1.050	-0.118	-1.24	2.077	-0.221	-1.73

		Summary Statistics	
Grand Means	1.1683 minutes	2.2979 minutes	
Std Dev Btwn Labs	0.0950 minutes	0.1281 minutes	
Statistics based on 8 of 8 reporting participants			

Samples W81-W82: EPDM compound #1 & W83-W84: EPDM compound #2

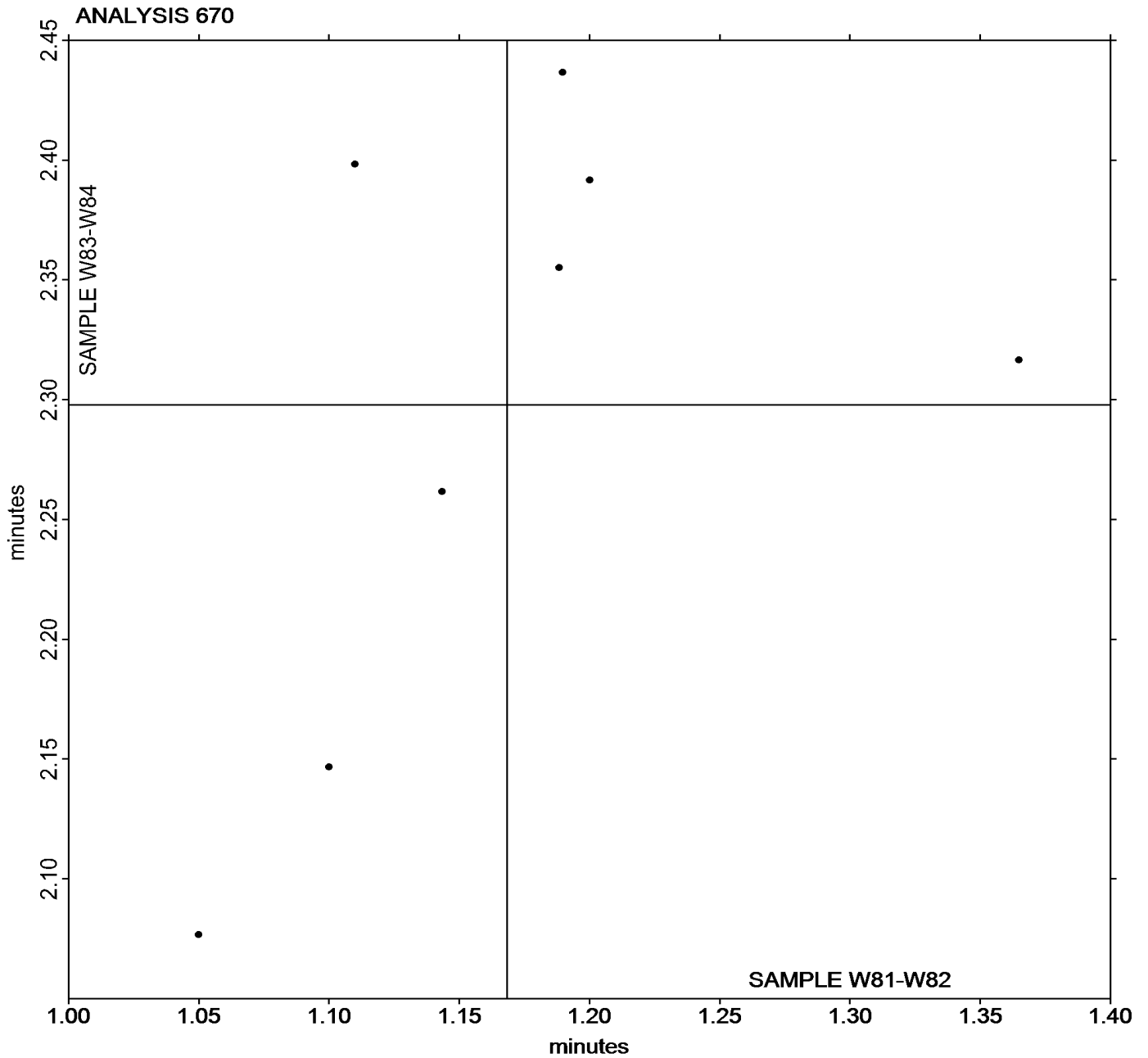


Rubber Interlaboratory Testing Program
Analysis 670
ODR Vulcanization-Scorch Time, Ts1 (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W81-W82** = 1.1683 minutes

Grand Mean Sample **W83-W84** = 2.2979 minutes



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program
Analysis 671
ODR Vulcanization-Cure Time 50% (minutes)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample W81-W82			Sample W83-W84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
8ENKF7		3.122	0.041	0.26	4.767	-0.334	-1.68
BAKJU7		2.932	-0.149	-0.95	5.050	-0.050	-0.25
EV8EW2		2.940	-0.141	-0.90	5.322	0.221	1.11
PHP8PR		3.245	0.164	1.05	5.022	-0.079	-0.40
R7LTGQ		3.175	0.094	0.60	5.388	0.288	1.45
TCTLAZ		3.325	0.244	1.56	4.957	-0.144	-0.72
WB8GCT		2.968	-0.113	-0.72	5.160	0.060	0.30
XEFL2X		2.940	-0.141	-0.90	5.138	0.038	0.19

Grand Means		Summary Statistics	
	3.0808 minutes		5.1004 minutes
Std Dev Btwn Labs	0.1566 minutes		0.1992 minutes
Statistics based on 8 of 8 reporting participants			

Samples W81-W82: EPDM compound #1 & W83-W84: EPDM compound #2

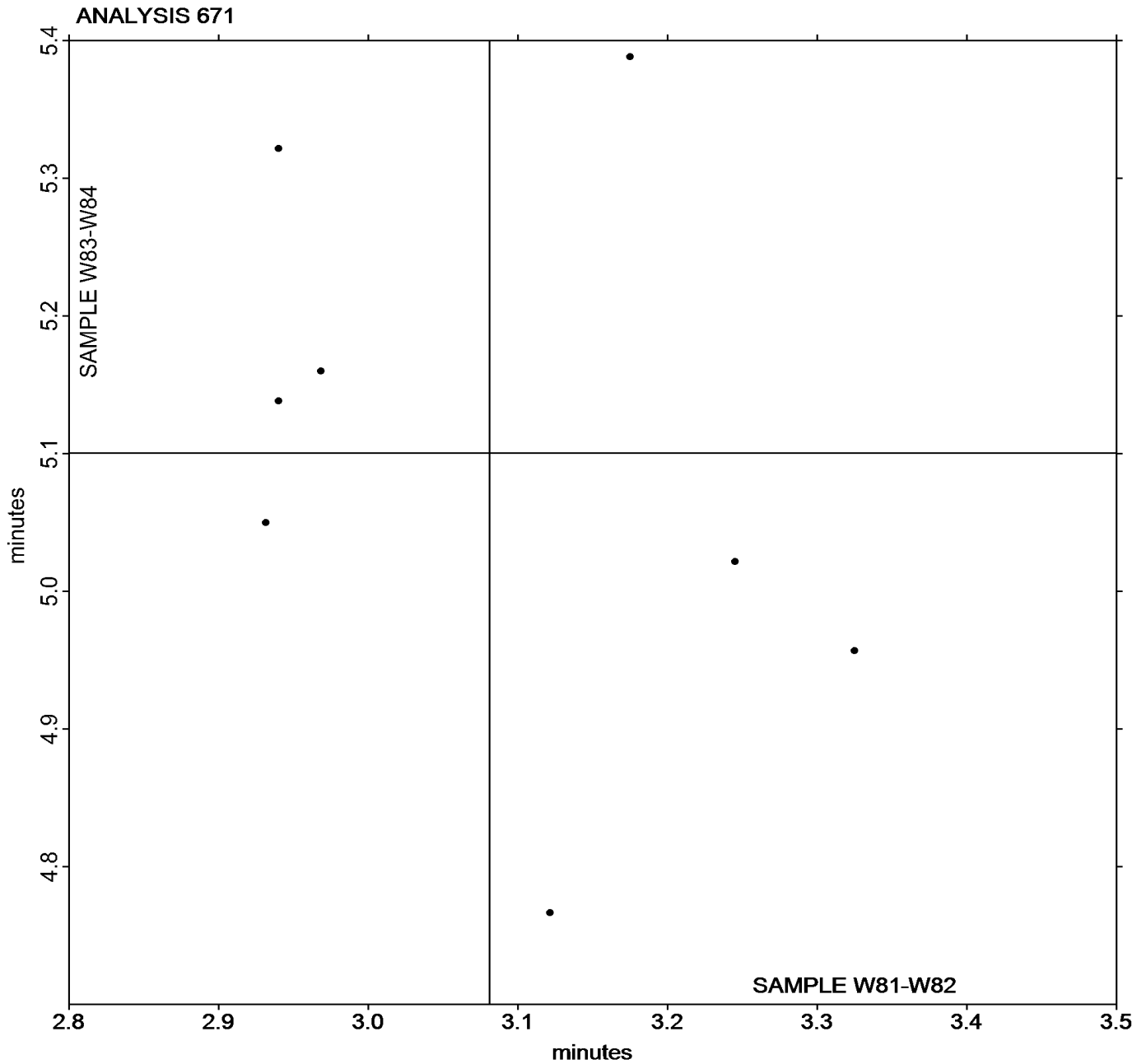


Rubber Interlaboratory Testing Program
Analysis 671
ODR Vulcanization-Cure Time 50% (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W81-W82** = 3.0808 minutes

Grand Mean Sample **W83-W84** = 5.1004 minutes



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program
Analysis 672
ODR Vulcanization-Cure Time 90% (minutes)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample W81-W82			Sample W83-W84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
8ENKF7		15.25	1.40	1.24	10.02	-1.16	-0.63
BAKJU7		13.17	-0.68	-0.60	9.88	-1.30	-0.71
EV8EW2		12.00	-1.85	-1.63	9.78	-1.40	-0.76
PHP8PR		15.39	1.54	1.36	10.38	-0.80	-0.43
R7LTGQ		13.17	-0.68	-0.60	10.86	-0.32	-0.17
TCTLAZ		13.74	-0.11	-0.10	10.30	-0.88	-0.47
WB8GCT		14.36	0.51	0.45	13.84	2.66	1.44
XEFL2X		13.71	-0.14	-0.12	14.37	3.20	1.73

		Summary Statistics	
Grand Means		13.850 minutes	11.177 minutes
Std Dev Btwn Labs		1.131 minutes	1.843 minutes
Statistics based on 8 of 8 reporting participants			

Samples W81-W82: EPDM compound #1 & W83-W84: EPDM compound #2

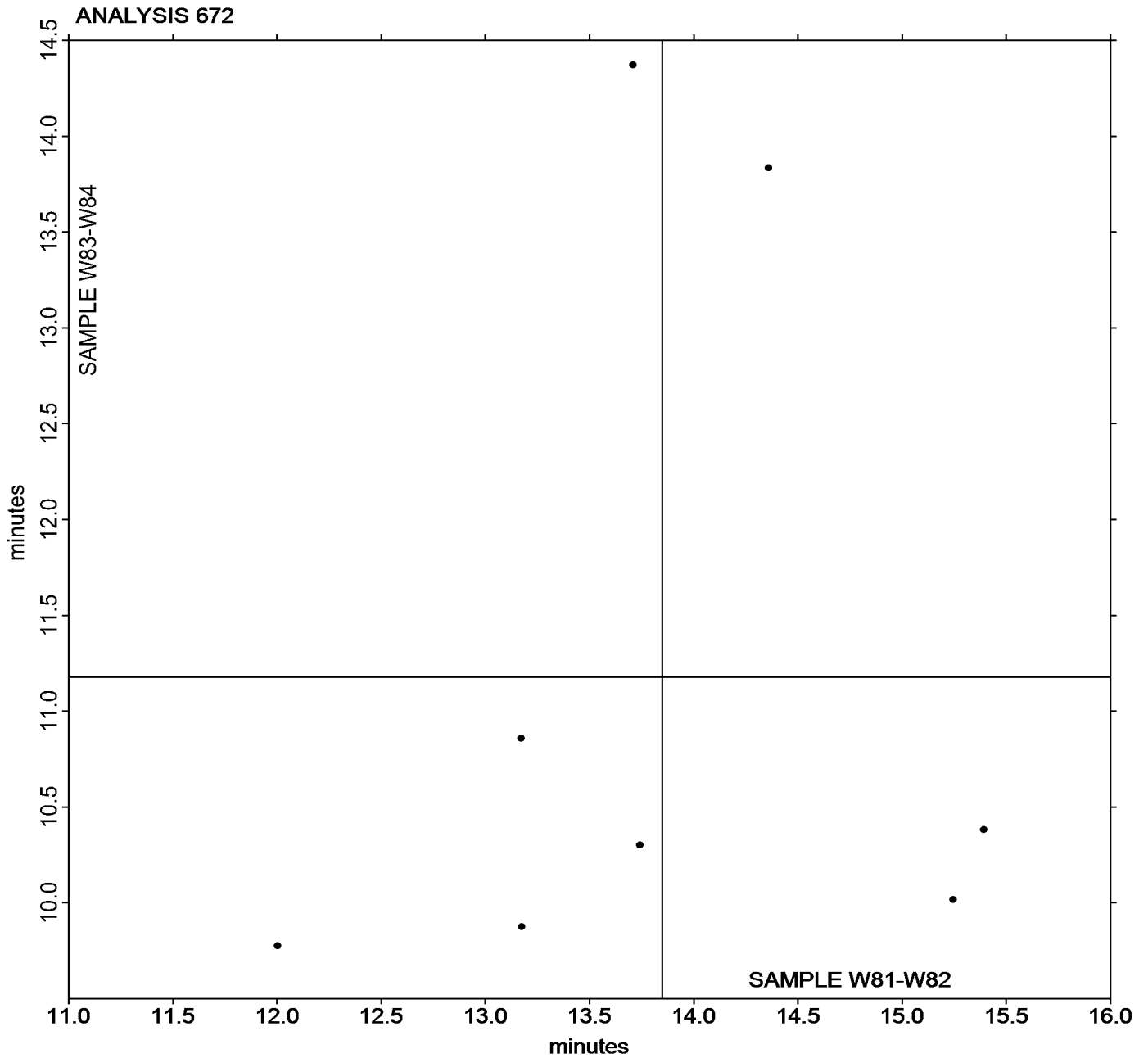


Rubber Interlaboratory Testing Program
Analysis 672
ODR Vulcanization-Cure Time 90% (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W81-W82** = 13.850 minutes

Grand Mean Sample **W83-W84** = 11.177 minutes



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program
Analysis 673
ODR Vulcanization: Minimum Torque (lbf.in)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample W81-W82			Sample W83-W84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
8ENKF7		8.472	-0.124	-0.13	9.295	1.389	1.01
BAKJU7		9.533	0.937	1.02	9.320	1.414	1.03
EV8EW2		8.123	-0.473	-0.51	6.687	-1.219	-0.88
PHP8PR		8.233	-0.363	-0.39	9.587	1.681	1.22
R7LTGQ		9.878	1.282	1.39	8.357	0.451	0.33
TCTLAZ		9.445	0.849	0.92	7.050	-0.856	-0.62
WB8GCT		7.312	-1.284	-1.39	6.573	-1.333	-0.97
XEFL2X		7.772	-0.824	-0.89	6.378	-1.528	-1.11

		Summary Statistics	
Grand Means		8.5960 lbf.in	7.9058 lbf.in
Std Dev Btwn Labs		0.9214 lbf.in	1.3777 lbf.in
Statistics based on 8 of 8 reporting participants			

		Summary Statistics in SI Units	
Grand Means		9.7122 dN.m	8.9324 dN.m
Std Dev Btwn Labs		1.0411 dN.m	1.5566 dN.m
Statistics based on 8 of 8 reporting participants			

Samples W81-W82: EPDM compound #1 & W83-W84: EPDM compound #2

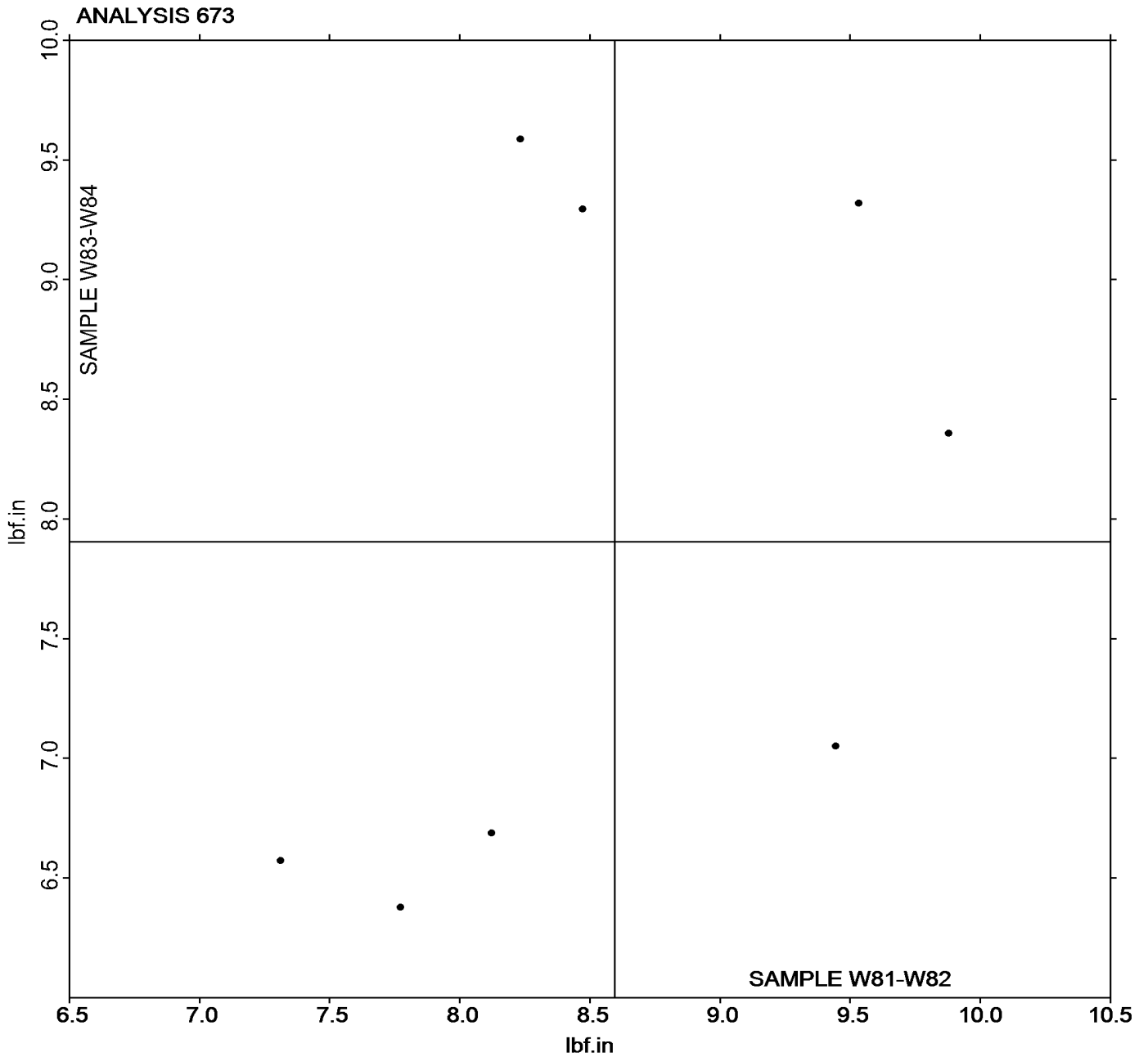


Rubber Interlaboratory Testing Program
Analysis 673
ODR Vulcanization: Minimum Torque (lbf.in)

Report #195
1st Qtr 2018

Grand Mean Sample **W81-W82** = 8.5960 lbf.in

Grand Mean Sample **W83-W84** = 7.9058 lbf.in



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program
Analysis 674
ODR Vulcanization: Maximum Torque (lbf.in)

Report #195
1st Qtr 2018

WebCode	Data Flag	Sample W81-W82			Sample W83-W84		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
8ENKF7		42.78	-2.41	-0.92	36.03	-0.52	-0.29
BAKJU7		44.64	-0.56	-0.21	35.40	-1.15	-0.65
EV8EW2		42.74	-2.45	-0.94	34.45	-2.10	-1.18
PHP8PR		49.25	4.06	1.55	39.15	2.60	1.47
R7LTGQ		46.70	1.50	0.57	37.38	0.83	0.47
TCTLAZ		41.99	-3.20	-1.22	34.27	-2.28	-1.28
WB8GCT		45.65	0.46	0.17	37.78	1.23	0.69
XEFL2X		47.81	2.62	1.00	37.93	1.38	0.78

		Summary Statistics	
Grand Means		45.196 lbf.in	36.548 lbf.in
Std Dev Btwn Labs		2.623 lbf.in	1.776 lbf.in
Statistics based on 8 of 8 reporting participants			

		Summary Statistics in SI Units	
Grand Means		51.065 dN.m	41.294 dN.m
Std Dev Btwn Labs		2.964 dN.m	2.006 dN.m
Statistics based on 8 of 8 reporting participants			

Samples W81-W82: EPDM compound #1 & W83-W84: EPDM compound #2

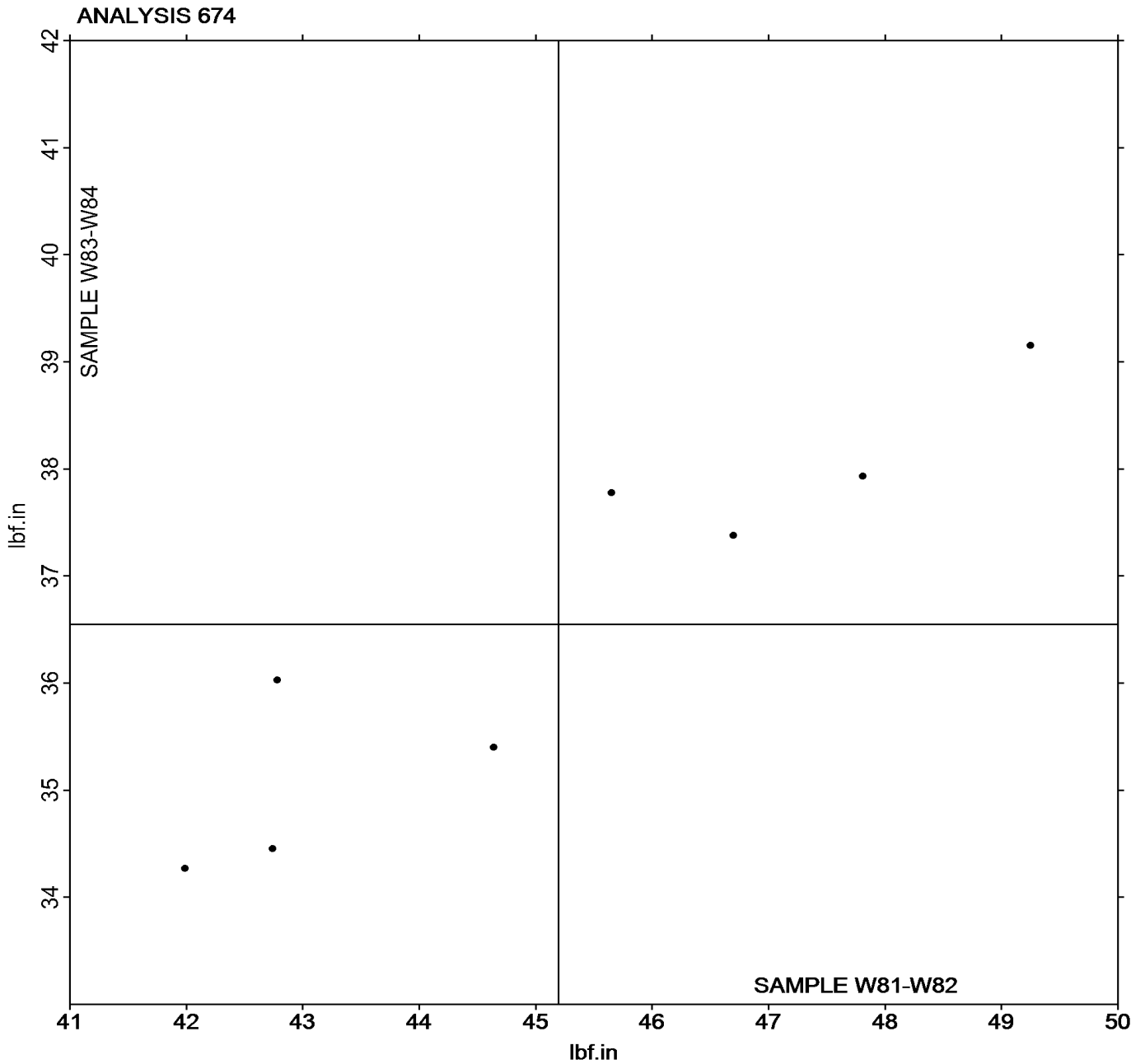


Rubber Interlaboratory Testing Program
Analysis 674
ODR Vulcanization: Maximum Torque (lbf.in)

Report #195
1st Qtr 2018

Grand Mean Sample **W81-W82** = 45.196 lbf.in

Grand Mean Sample **W83-W84** = 36.548 lbf.in



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program

Report #195

Analysis 684

1st Qtr 2018

MDR Vulcanization-Cure Time 10% (minutes)

WebCode	Data Flag	Sample W85-W86			Sample W87-W88			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
477BQE		2.313	0.083	0.52	2.193	0.029	0.30	MC
4LJDWN		2.330	0.100	0.62	2.130	-0.034	-0.35	MD
6GKKGY		2.463	0.233	1.45	2.308	0.144	1.49	MX
6WV7ZN		1.903	-0.327	-2.03	2.127	-0.037	-0.38	ME
79JL6F		2.253	0.023	0.14	2.152	-0.012	-0.13	MP
7DEEEX		2.298	0.068	0.42	2.237	0.073	0.75	MC
8BR2BL		2.175	-0.055	-0.34	2.207	0.043	0.44	MC
9ATBKX		2.388	0.158	0.98	2.287	0.123	1.26	MC
B8WE99		2.102	-0.129	-0.80	2.020	-0.144	-1.48	MC
BAKJU7		2.230	0.000	0.00	2.123	-0.041	-0.42	TP
JBN4XX		2.112	-0.119	-0.74	2.062	-0.102	-1.05	MC
JCYFMA	*	2.008	-0.222	-1.38	2.345	0.181	1.86	ME
K43ZCV	*	1.922	-0.309	-1.92	2.233	0.069	0.71	MM
KP2749		2.065	-0.165	-1.03	2.063	-0.101	-1.04	MC
LA9WXG		2.393	0.163	1.01	2.187	0.023	0.23	MC
MGJD7G		2.495	0.265	1.64	2.310	0.146	1.50	MM
N67WCG		2.375	0.145	0.90	2.182	0.018	0.18	MC
PC6J2V		2.325	0.095	0.59	2.157	-0.007	-0.07	MC
PJFZBG		2.262	0.031	0.19	2.110	-0.054	-0.56	XX
RB3Z6P		2.407	0.176	1.10	2.210	0.046	0.47	MC
RCVLJV		2.227	-0.004	-0.02	2.062	-0.102	-1.05	MC
RR7UCP		2.253	0.023	0.14	2.187	0.023	0.23	ME
RT2Q9T		2.040	-0.190	-1.18	2.023	-0.141	-1.45	MC
TCTLAZ		2.355	0.125	0.77	2.245	0.081	0.83	MC
TQQ8M3		2.342	0.111	0.69	2.167	0.003	0.03	MC
TUAM7N		2.117	-0.114	-0.71	1.963	-0.201	-2.07	MR
TV2DZN		1.914	-0.316	-1.97	2.181	0.017	0.17	MC
UVVJW9		2.065	-0.165	-1.03	1.990	-0.174	-1.79	MC
V49WCJ		2.270	0.040	0.25	2.130	-0.034	-0.35	MC
VNVREJ		2.348	0.118	0.73	2.245	0.081	0.83	MC
VVB3EK		2.348	0.118	0.73	2.243	0.079	0.82	TP
XEFL2X		2.353	0.123	0.76	2.278	0.114	1.18	MC
Y4XU4T		2.150	-0.080	-0.50	2.053	-0.111	-1.14	MC



Rubber Interlaboratory Testing Program
Analysis 684
MDR Vulcanization-Cure Time 10% (minutes)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means	2.2304 minutes	2.1639 minutes	
Stnd Dev Btwn Labs	0.1609 minutes	0.0971 minutes	
Statistics based on 33 of 33 reporting participants			

Samples W85-W86: EPDM compound, batch #1 & W87-W88: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

- | | |
|---|--|
| MC Alpha Technologies [Monsanto] MDR 2000 or 2000E | MD Alpha Tech. Rubber Process Analyzer (RPA 2000) |
| ME Alpha Tech. MDR Premiere | MM MonTech MDR 3000 |
| MP Alpha Technologies [Monsanto] MDR 2000P | MR MonTech D-RPA 3000 |
| MX Rebuilt MonTech Alpha | TP Tech Pro MDR model MDPT |
| XX Instrument model not specified by lab | |

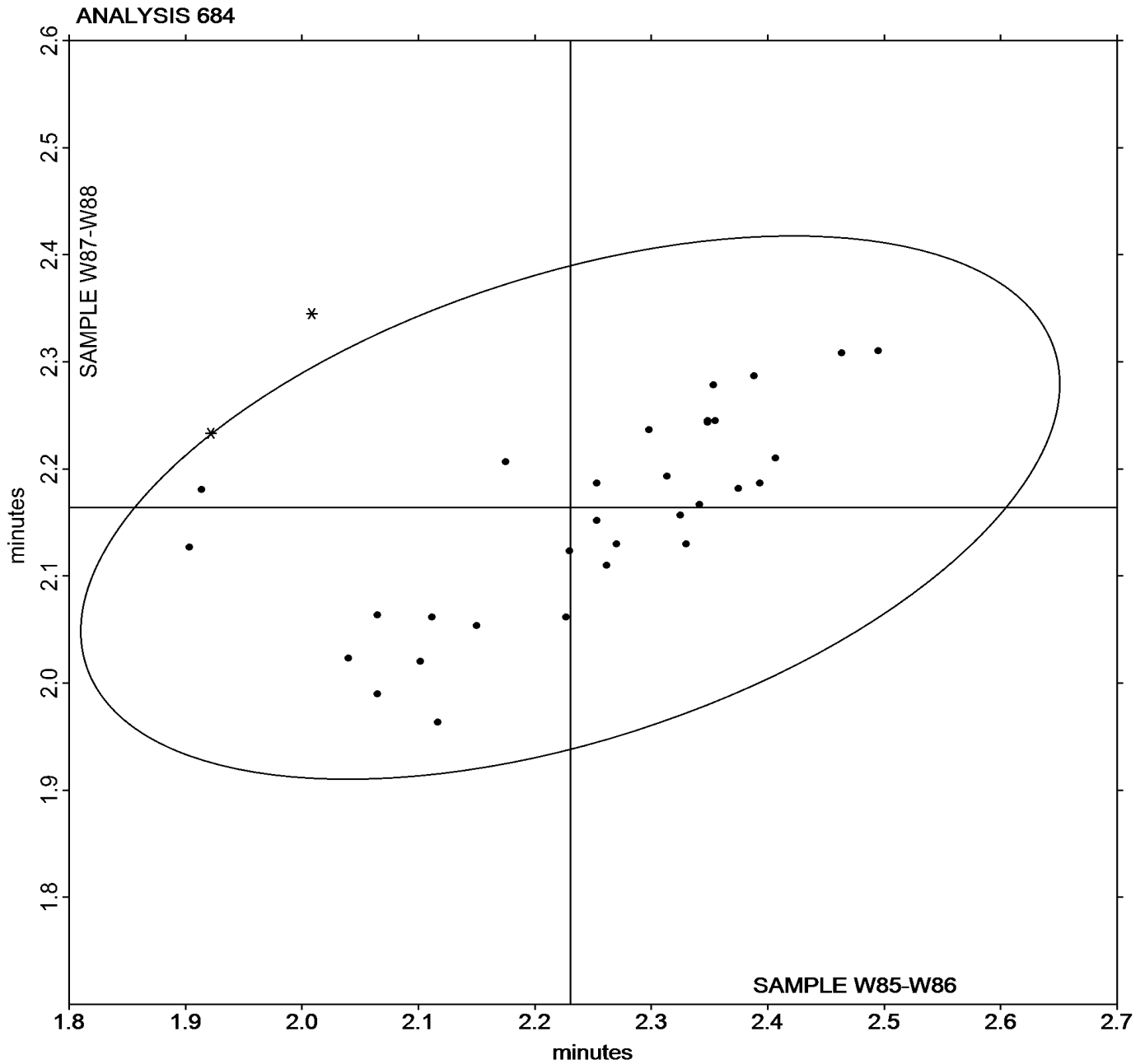


Rubber Interlaboratory Testing Program
Analysis 684
MDR Vulcanization-Cure Time 10% (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W85-W86** = 2.2304 minutes

Grand Mean Sample **W87-W88** = 2.1639 minutes





Rubber Interlaboratory Testing Program

Report #195

Analysis 685

1st Qtr 2018

MDR Vulcanization-Scorch Time, Ts1 (minutes)

WebCode	Data Flag	Sample W85-W86			Sample W87-W88			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
477BQE		2.135	0.032	0.20	2.043	0.005	0.05	MC
4LJDWN		2.197	0.094	0.58	2.033	-0.005	-0.05	MD
6GKKGY		2.258	0.156	0.97	2.107	0.069	0.64	MX
6WV7ZN		1.830	-0.273	-1.69	2.028	-0.010	-0.09	ME
79JL6F		1.972	-0.131	-0.81	1.898	-0.140	-1.31	MP
7DEEEX		2.137	0.034	0.21	2.083	0.045	0.42	MC
8BR2BL		2.043	-0.059	-0.37	2.072	0.034	0.31	MC
9ATBKX		2.322	0.219	1.36	2.242	0.204	1.90	MC
B8WE99		1.875	-0.228	-1.41	1.817	-0.221	-2.07	MC
BAKJU7		2.263	0.161	1.00	2.158	0.120	1.12	TP
EDRF2Y		2.182	0.079	0.49	2.063	0.025	0.24	MC
F7MY4X		2.187	0.084	0.52	1.938	-0.100	-0.93	MC
GA4MZF		2.003	-0.100	-0.62	1.933	-0.105	-0.98	MC
HX9U6X		2.102	-0.001	-0.01	2.020	-0.018	-0.17	MC
JBN4XX		1.995	-0.108	-0.67	1.943	-0.095	-0.89	MC
JCYFMA	*	1.823	-0.279	-1.73	2.122	0.084	0.78	ME
K43ZCV		1.907	-0.196	-1.22	2.135	0.097	0.90	MM
KP2749		1.867	-0.236	-1.46	1.897	-0.141	-1.32	MC
LA9WXG		2.227	0.124	0.77	2.053	0.015	0.14	MC
MGJD7G	*	2.477	0.374	2.32	2.307	0.269	2.51	MM
N67WCG		2.192	0.089	0.55	2.037	-0.001	-0.01	MC
PC6J2V		2.250	0.147	0.92	2.107	0.069	0.64	MC
PJFZBG		2.183	0.081	0.50	2.025	-0.013	-0.12	XX
RB3Z6P		2.222	0.119	0.74	2.058	0.020	0.19	MC
RCVLJV		2.212	0.109	0.68	2.050	0.012	0.11	MC
RR7UCP		2.088	-0.014	-0.09	2.047	0.009	0.08	ME
RT2Q9T		2.012	-0.091	-0.56	1.988	-0.050	-0.47	MC
TCTLAZ		2.182	0.079	0.49	2.100	0.062	0.58	MC
TQQ8M3		2.188	0.086	0.53	2.027	-0.011	-0.11	MC
TUAM7N	*	1.855	-0.248	-1.54	1.747	-0.291	-2.72	MR
TV2DZN		1.792	-0.311	-1.93	2.025	-0.013	-0.12	MC
UVVJW9	X	1.367	-0.736	-4.57	1.345	-0.693	-6.48	MC
V49WCJ		2.140	0.037	0.23	2.025	-0.013	-0.12	MC
VNVREJ		2.053	-0.049	-0.31	2.002	-0.036	-0.34	MC
VVB3EK		2.270	0.167	1.04	2.160	0.122	1.14	TP
XEFL2X		2.213	0.111	0.69	2.130	0.092	0.86	MC
Y4XU4T		2.042	-0.061	-0.38	1.953	-0.085	-0.79	MC



Rubber Interlaboratory Testing Program
Analysis 685
MDR Vulcanization-Scorch Time, Ts1 (minutes)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means	2.1026 minutes	2.0382 minutes	
Stnd Dev Btwn Labs	0.1611 minutes	0.1070 minutes	
Statistics based on 36 of 37 reporting participants			

Samples W85-W86: EPDM compound, batch #1 & W87-W88: EPDM compound, batch #2

Comments on Assigned Data Flags for Test #685

UWJW9 (X) - Data for all samples are low.

Key to Instrument Codes Reported by Participants

MC	Alpha Technologies [Monsanto] MDR 2000 or 2000E	MD	Alpha Tech. Rubber Process Analyzer (RPA 2000)
ME	Alpha Tech. MDR Premiere	MM	MonTech MDR 3000
MP	Alpha Technologies [Monsanto] MDR 2000P	MR	MonTech D-RPA 3000
MX	Rebuilt MonTech Alpha	TP	Tech Pro MDR model MDPT
XX	Instrument model not specified by lab		

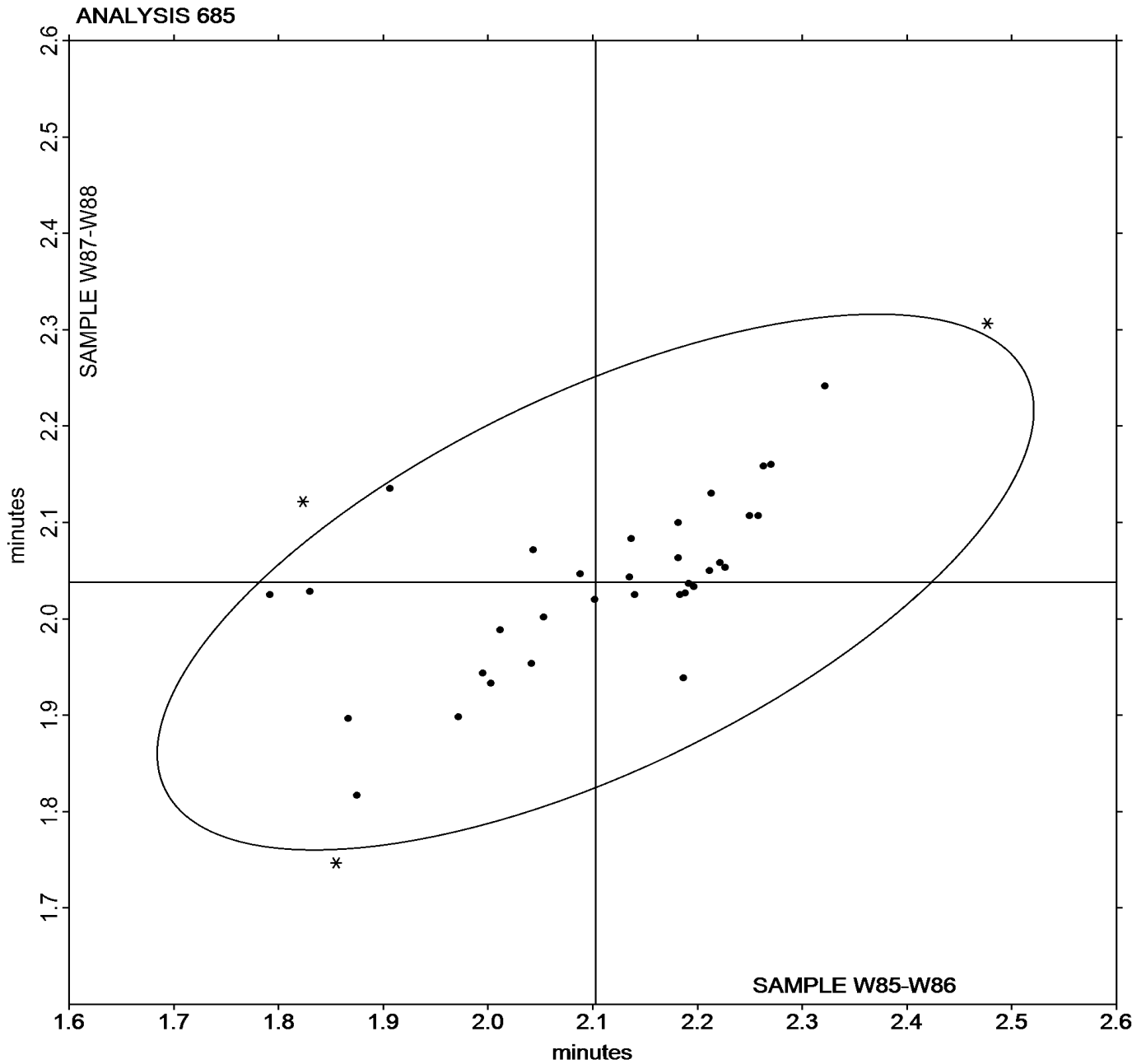


Rubber Interlaboratory Testing Program
Analysis 685
MDR Vulcanization-Scorch Time, Ts1 (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W85-W86** = 2.1026 minutes

Grand Mean Sample **W87-W88** = 2.0382 minutes





Rubber Interlaboratory Testing Program

Report #195

Analysis 686

1st Qtr 2018

MDR Vulcanization-Cure Time 50% (minutes)

WebCode	Data Flag	Sample W85-W86			Sample W87-W88			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
477BQE		4.737	0.323	1.11	4.467	0.225	1.08	MC
4LJDWN		4.550	0.136	0.47	4.195	-0.047	-0.22	MD
6GKKGY		4.695	0.281	0.97	4.452	0.210	1.01	MX
6WV7ZN		3.980	-0.434	-1.50	4.157	-0.085	-0.41	ME
79JL6F		4.513	0.100	0.34	4.210	-0.032	-0.15	MC
7DEEEX		4.443	0.030	0.10	4.358	0.117	0.56	MC
8BR2BL		4.283	-0.130	-0.45	4.280	0.038	0.18	MC
9ATBKX		4.640	0.226	0.78	4.440	0.198	0.95	MC
B8WE99		3.960	-0.454	-1.57	3.890	-0.352	-1.68	MC
BAKJU7		4.378	-0.035	-0.12	4.185	-0.057	-0.27	TP
EDRF2Y		4.245	-0.169	-0.58	4.052	-0.190	-0.91	MC
F7MY4X		3.755	-0.659	-2.27	3.913	-0.328	-1.57	MC
GA4MZF		4.595	0.181	0.62	4.392	0.151	0.72	MC
HX9U6X		4.453	0.040	0.14	4.213	-0.028	-0.14	MC
JBN4XX		4.163	-0.250	-0.86	4.030	-0.212	-1.01	MC
JCYFMA	X	4.200	-0.214	-0.74	4.738	0.497	2.38	ME
K43ZCV	*	4.008	-0.405	-1.40	4.358	0.117	0.56	MM
KP2749		4.295	-0.119	-0.41	4.207	-0.035	-0.17	MC
LA9WXG		4.722	0.308	1.06	4.322	0.080	0.38	MC
MGJD7G		4.757	0.343	1.18	4.442	0.200	0.96	MM
N67WCG		4.742	0.328	1.13	4.387	0.145	0.69	MC
PC6J2V		4.418	0.005	0.02	4.243	0.002	0.01	MC
PJFZBG		4.197	-0.217	-0.75	3.915	-0.327	-1.56	XX
RB3Z6P		4.908	0.495	1.71	4.560	0.318	1.52	MC
RCVLJV		4.235	-0.179	-0.62	4.013	-0.228	-1.09	MC
RR7UCP		4.442	0.028	0.10	4.295	0.053	0.26	ME
RT2Q9T		3.987	-0.427	-1.47	3.892	-0.350	-1.68	MC
TCTLAZ		4.755	0.341	1.18	4.515	0.273	1.31	MC
TQQ8M3		4.587	0.173	0.60	4.233	-0.008	-0.04	MC
TUAM7N		4.703	0.290	1.00	4.360	0.118	0.57	MR
TV2DZN	*	4.136	-0.278	-0.96	4.417	0.175	0.84	MC
UVVJW9		4.125	-0.289	-1.00	3.853	-0.388	-1.86	MC
V49WCJ		4.305	-0.109	-0.38	4.090	-0.152	-0.73	MC
VNVREJ		4.687	0.273	0.94	4.525	0.283	1.36	MC
VVB3EK		4.620	0.206	0.71	4.370	0.128	0.61	TP
XEFL2X		4.735	0.321	1.11	4.527	0.285	1.36	MC
Y4XU4T		4.142	-0.272	-0.94	3.942	-0.300	-1.44	MC



Rubber Interlaboratory Testing Program
Analysis 686
MDR Vulcanization-Cure Time 50% (minutes)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means	4.4138 minutes	4.2416 minutes	
Stnd Dev Btwn Labs	0.2897 minutes	0.2089 minutes	
Statistics based on 36 of 37 reporting participants			

Samples W85-W86: EPDM compound, batch #1 & W87-W88: EPDM compound, batch #2

Comments on Assigned Data Flags for Test #686

JCYFMA (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both sample groups.

Key to Instrument Codes Reported by Participants

MC	Alpha Technologies [Monsanto] MDR 2000 or 2000E	MD	Alpha Tech. Rubber Process Analyzer (RPA 2000)
ME	Alpha Tech. MDR Premiere	MM	MonTech MDR 3000
MR	MonTech D-RPA 3000	MX	Rebuilt MonTech Alpha
TP	Tech Pro MDR model MDPT	XX	Instrument model not specified by lab

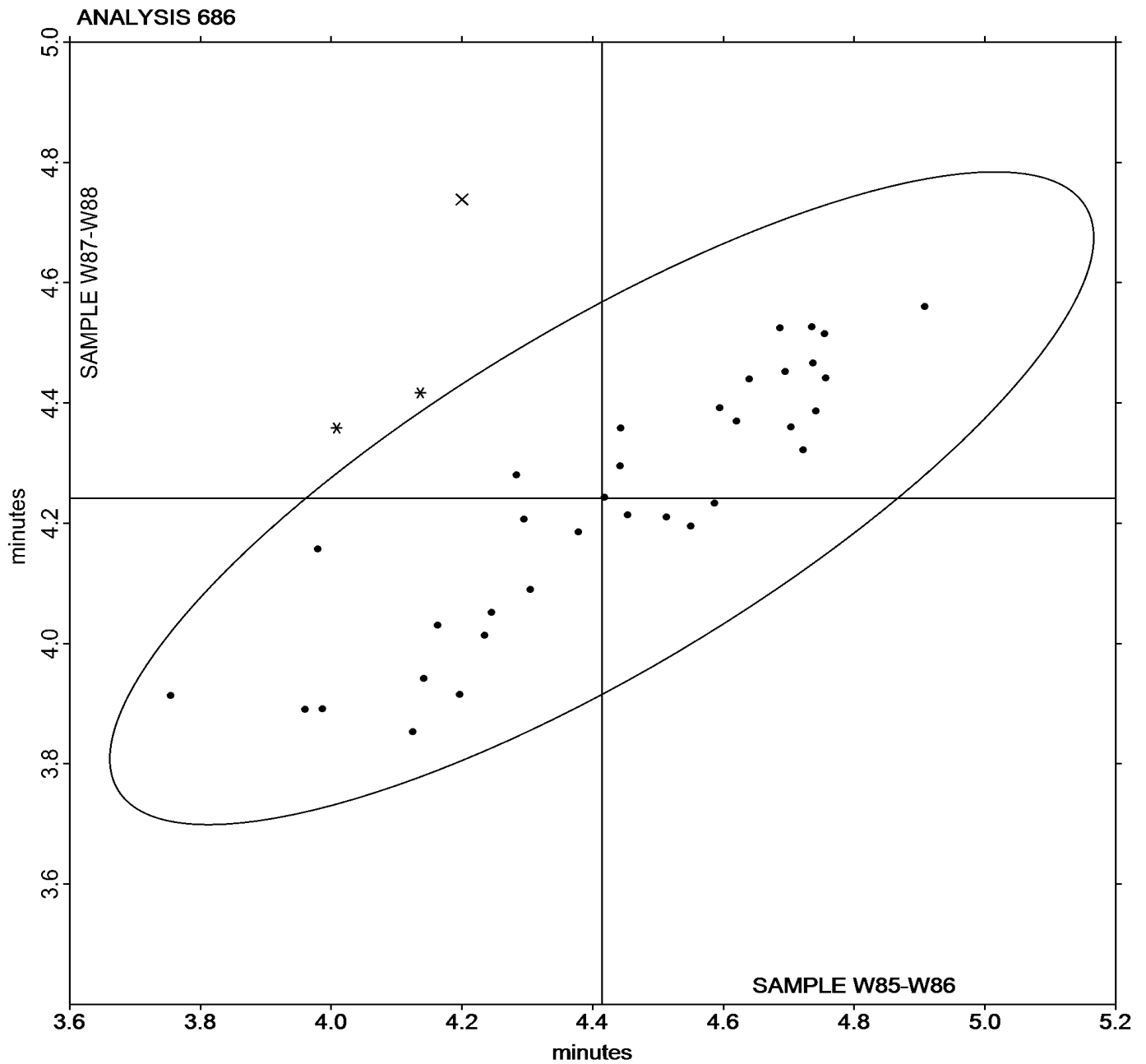


Rubber Interlaboratory Testing Program
Analysis 686
MDR Vulcanization-Cure Time 50% (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W85-W86** = 4.4138 minutes

Grand Mean Sample **W87-W88** = 4.2416 minutes





Rubber Interlaboratory Testing Program

Report #195

Analysis 687

1st Qtr 2018

MDR Vulcanization-Cure Time 90% (minutes)

WebCode	Data Flag	Sample W85-W86			Sample W87-W88			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
477BQE		7.757	0.249	0.52	7.225	0.037	0.10	MC
4LJDWN		7.715	0.207	0.43	7.073	-0.115	-0.32	MD
6GKKGY	X	9.127	1.619	3.39	8.733	1.545	4.31	MX
6WV7ZN		7.122	-0.386	-0.81	7.202	0.013	0.04	ME
79JL6F		7.480	-0.028	-0.06	7.107	-0.082	-0.23	MP
7DEEEX	*	8.033	0.526	1.10	8.020	0.832	2.32	MC
8BR2BL		7.120	-0.388	-0.81	7.200	0.012	0.03	MC
9ATBKX		7.690	0.182	0.38	7.213	0.025	0.07	MC
B8WE99		7.527	0.019	0.04	7.218	0.030	0.08	MC
BAKJU7		6.770	-0.738	-1.54	6.567	-0.622	-1.73	TP
EDRF2Y		7.333	-0.174	-0.36	6.923	-0.265	-0.74	MC
F7MY4X		6.593	-0.914	-1.91	6.492	-0.697	-1.94	MC
GA4MZF		7.854	0.347	0.73	7.639	0.451	1.26	MC
HX9U6X		7.405	-0.103	-0.21	7.032	-0.157	-0.44	MC
JBN4XX		6.893	-0.614	-1.29	6.645	-0.543	-1.52	MC
JCYFMA	X	7.667	0.159	0.33	8.795	1.607	4.48	ME
K43ZCV	X	7.103	-0.404	-0.85	7.930	0.742	2.07	MM
KP2749		7.185	-0.323	-0.68	6.965	-0.223	-0.62	MC
LA9WXG		8.195	0.687	1.44	7.483	0.295	0.82	MC
MGJD7G		8.250	0.742	1.55	7.733	0.545	1.52	MM
N67WCG		7.922	0.414	0.87	7.238	0.050	0.14	MC
PC6J2V		7.655	0.147	0.31	7.283	0.095	0.27	MC
PJFZBG		7.382	-0.126	-0.26	7.115	-0.073	-0.20	XX
RB3Z6P		8.013	0.506	1.06	7.413	0.225	0.63	MC
RCVLJV		6.893	-0.614	-1.29	6.535	-0.653	-1.82	MC
RR7UCP		7.865	0.357	0.75	7.525	0.337	0.94	ME
RT2Q9T		6.932	-0.576	-1.21	6.873	-0.315	-0.88	MC
TCTLAZ		7.912	0.404	0.85	7.502	0.313	0.87	MC
TQQ8M3		7.615	0.107	0.22	7.208	0.020	0.06	MC
TUAM7N		8.347	0.839	1.76	7.532	0.343	0.96	MR
TV2DZN		7.222	-0.285	-0.60	7.364	0.176	0.49	MC
UVVJW9		6.558	-0.949	-1.99	6.800	-0.388	-1.08	MC
V49WCJ		7.565	0.057	0.12	7.130	-0.058	-0.16	MC
VNVREJ		7.787	0.279	0.58	7.463	0.275	0.77	MC
VVB3EK		7.625	0.117	0.25	7.382	0.193	0.54	TP
XEFL2X		8.028	0.521	1.09	7.598	0.410	1.14	MC
Y4XU4T		7.017	-0.491	-1.03	6.700	-0.488	-1.36	MC



Rubber Interlaboratory Testing Program
Analysis 687
MDR Vulcanization-Cure Time 90% (minutes)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means	7.5077 minutes	7.1882 minutes	
Stnd Dev Btwn Labs	0.4777 minutes	0.3585 minutes	
Statistics based on 34 of 37 reporting participants			

Samples W85-W86: EPDM compound, batch #1 & W87-W88: EPDM compound, batch #2

Comments on Assigned Data Flags for Test #687

- 6GKKG Y (X) - Data for all samples are high.
- JCYFMA (X) - Data for sample group W87-W88 are high. Inconsistent within the determinations of both sample groups.
- K43ZCV (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample group W85-W86.

Key to Instrument Codes Reported by Participants

MC	Alpha Technologies [Monsanto] MDR 2000 or 2000E	MD	Alpha Tech. Rubber Process Analyzer (RPA 2000)
ME	Alpha Tech. MDR Premiere	MM	MonTech MDR 3000
MP	Alpha Technologies [Monsanto] MDR 2000P	MR	MonTech D-RPA 3000
MX	Rebuilt MonTech Alpha	TP	Tech Pro MDR model MDPT
XX	Instrument model not specified by lab		

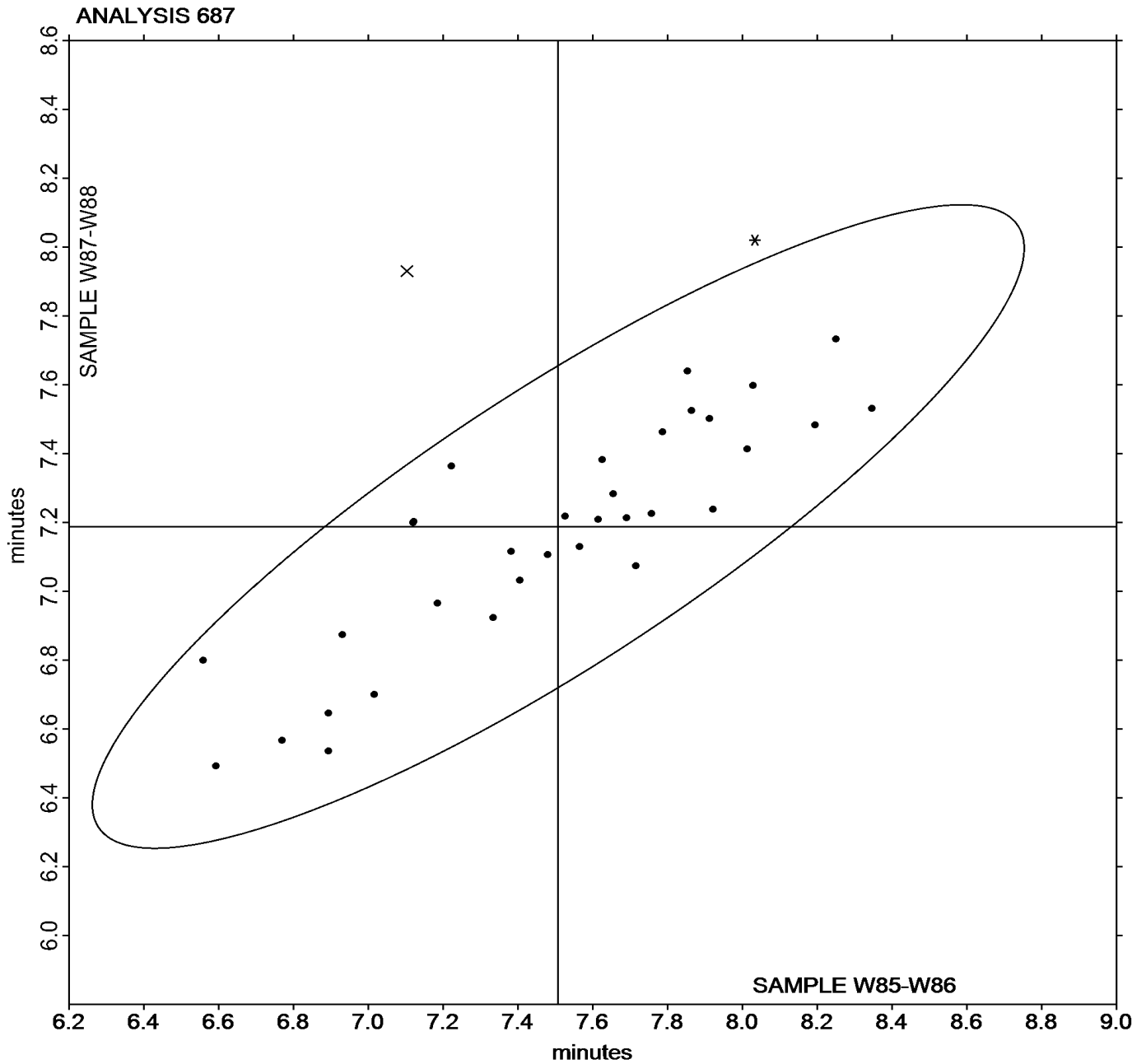


Rubber Interlaboratory Testing Program
Analysis 687
MDR Vulcanization-Cure Time 90% (minutes)

Report #195
1st Qtr 2018

Grand Mean Sample **W85-W86** = 7.5077 minutes

Grand Mean Sample **W87-W88** = 7.1882 minutes





Rubber Interlaboratory Testing Program

Report #195

Analysis 688

1st Qtr 2018

MDR Vulcanization: Minimum Torque (lbf.in)

WebCode	Data Flag	Sample W85-W86			Sample W87-W88			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
477BQE		1.835	-0.375	-0.79	1.933	-0.370	-0.83	MC
4LJDWN		1.751	-0.458	-0.97	1.829	-0.474	-1.06	MD
6GKKGY		2.563	0.354	0.75	2.547	0.243	0.54	MX
6WV7ZN		2.043	-0.166	-0.35	2.278	-0.025	-0.06	ME
79JL6F		1.809	-0.401	-0.85	1.946	-0.358	-0.80	MP
7DEEEX		1.958	-0.251	-0.53	2.100	-0.204	-0.46	MC
8BR2BL		1.997	-0.212	-0.45	2.086	-0.218	-0.49	MC
9ATBKX		2.190	-0.020	-0.04	2.303	0.000	0.00	MC
B8WE99		3.014	0.804	1.70	3.023	0.719	1.61	MC
BAKJU7		2.102	-0.108	-0.23	2.143	-0.160	-0.36	TP
EDRF2Y		3.247	1.037	2.19	3.260	0.956	2.14	MC
F7MY4X	*	2.563	0.354	0.75	2.810	0.506	1.13	MC
GA4MZF		2.070	-0.140	-0.29	2.148	-0.156	-0.35	MC
HX9U6X		1.863	-0.346	-0.73	2.047	-0.257	-0.57	MC
JBN4XX		2.110	-0.100	-0.21	2.228	-0.075	-0.17	MC
JCYFMA		1.814	-0.395	-0.83	1.844	-0.460	-1.03	ME
K43ZCV		2.457	0.247	0.52	2.662	0.358	0.80	MM
KP2749		2.098	-0.111	-0.23	2.310	0.006	0.01	MC
LA9WXG		2.182	-0.028	-0.06	2.202	-0.102	-0.23	MC
MGJD7G		1.703	-0.506	-1.07	1.763	-0.540	-1.21	MM
N67WCG		1.990	-0.220	-0.46	2.062	-0.242	-0.54	MC
PC6J2V		2.615	0.405	0.85	2.603	0.300	0.67	MC
PJFZBG		3.043	0.834	1.76	3.003	0.700	1.57	XX
RB3Z6P		1.780	-0.430	-0.91	1.873	-0.430	-0.96	MC
RCVLJV		2.657	0.447	0.94	2.655	0.351	0.79	MC
RR7UCP		1.970	-0.240	-0.50	2.073	-0.230	-0.52	ME
RT2Q9T		3.172	0.962	2.03	3.213	0.910	2.04	MC
TCTLAZ		1.750	-0.460	-0.97	1.850	-0.454	-1.01	MC
TQQ8M3		2.333	0.124	0.26	2.467	0.163	0.36	MC
TUAM7N		1.838	-0.371	-0.78	1.958	-0.345	-0.77	MR
TV2DZN		1.780	-0.430	-0.91	2.018	-0.285	-0.64	MC
UVVJW9		2.182	-0.028	-0.06	2.368	0.065	0.14	MC
V49WCJ		2.527	0.317	0.67	2.520	0.216	0.48	MC
VNVREJ		1.736	-0.473	-1.00	1.834	-0.470	-1.05	MC
VVB3EK		1.880	-0.330	-0.69	1.998	-0.305	-0.68	TP
XEFL2X		1.752	-0.458	-0.97	1.845	-0.459	-1.03	MC
Y4XU4T		3.378	1.169	2.46	3.430	1.126	2.52	MC



Rubber Interlaboratory Testing Program
Analysis 688
MDR Vulcanization: Minimum Torque (lbf.in)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means			
	2.2095 lbf.in		2.3036 lbf.in
Stnd Dev Btwn Labs			
	0.4744 lbf.in		0.4470 lbf.in
Statistics based on 37 of 37 reporting participants			

		Summary Statistics in SI Units	
Grand Means			
	2.4964 dN.m		2.6027 dN.m
Stnd Dev Btwn Labs			
	0.5360 dN.m		0.5051 dN.m
Statistics based on 37 of 37 reporting participants			

Samples W85-W86: EPDM compound, batch #1 & W87-W88: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

- | | |
|---|--|
| MC Alpha Technologies [Monsanto] MDR 2000 or 2000E | MD Alpha Tech. Rubber Process Analyzer (RPA 2000) |
| ME Alpha Tech. MDR Premiere | MM MonTech MDR 3000 |
| MP Alpha Technologies [Monsanto] MDR 2000P | MR MonTech D-RPA 3000 |
| MX Rebuilt MonTech Alpha | TP Tech Pro MDR model MDPT |
| XX Instrument model not specified by lab | |

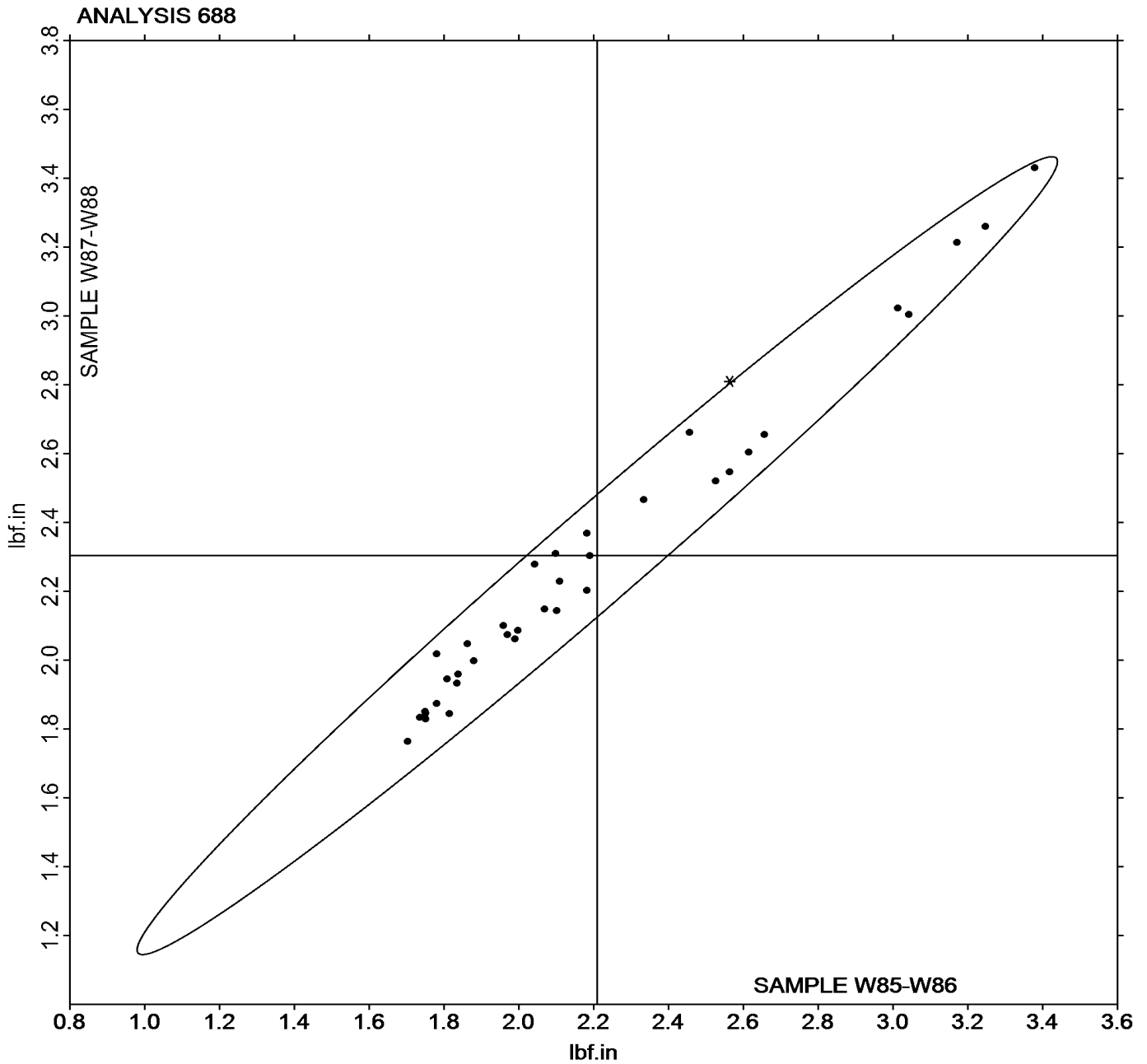


Rubber Interlaboratory Testing Program
Analysis 688
MDR Vulcanization: Minimum Torque (lbf.in)

Report #195
1st Qtr 2018

Grand Mean Sample **W85-W86** = 2.2095 lbf.in

Grand Mean Sample **W87-W88** = 2.3036 lbf.in





Rubber Interlaboratory Testing Program

Report #195

Analysis 689

1st Qtr 2018

MDR Vulcanization: Maximum Torque (lbf.in)

WebCode	Data Flag	Sample W85-W86			Sample W87-W88			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
477BQE		13.79	0.18	0.23	13.68	-0.01	-0.01	MC
4LJDWN		13.20	-0.41	-0.54	12.95	-0.73	-1.00	MD
6GKKGY		13.99	0.38	0.50	13.97	0.28	0.38	MX
6WV7ZN		12.96	-0.65	-0.87	13.66	-0.02	-0.03	ME
79JL6F		13.66	0.04	0.06	13.83	0.15	0.20	MC
7DEEEX		13.84	0.22	0.29	14.34	0.66	0.90	MC
8BR2BL		12.33	-1.29	-1.71	12.49	-1.20	-1.64	MC
9ATBKX		12.99	-0.62	-0.82	12.94	-0.74	-1.01	MC
B8WE99		15.11	1.49	1.98	14.77	1.09	1.49	MC
BAKJU7	*	11.75	-1.86	-2.47	11.76	-1.93	-2.64	TP
EDRF2Y		14.47	0.86	1.14	14.35	0.67	0.91	MC
F7MY4X		12.99	-0.62	-0.82	13.67	-0.02	-0.02	MC
GA4MZF		14.41	0.80	1.06	14.57	0.88	1.21	MC
HX9U6X		13.50	-0.11	-0.15	13.71	0.03	0.04	MC
JBN4XX		13.62	0.01	0.01	13.74	0.05	0.07	MC
JCYFMA		12.93	-0.68	-0.91	13.36	-0.33	-0.45	ME
K43ZCV	X	12.81	-0.81	-1.07	14.10	0.42	0.57	MM
KP2749		14.46	0.85	1.13	14.48	0.80	1.09	MC
LA9WXG		14.05	0.44	0.58	13.92	0.24	0.33	MC
MGJD7G		11.97	-1.65	-2.19	11.95	-1.74	-2.37	MM
N67WCG		13.91	0.30	0.40	13.85	0.17	0.23	MC
PC6J2V		13.54	-0.08	-0.10	13.24	-0.45	-0.61	MC
PJFZBG		14.22	0.61	0.81	14.37	0.69	0.94	XX
RB3Z6P		13.68	0.06	0.08	13.63	-0.05	-0.07	MC
RCVLJV		12.94	-0.68	-0.90	12.83	-0.85	-1.16	MC
RR7UCP		13.93	0.32	0.42	13.78	0.09	0.13	ME
RT2Q9T		13.63	0.02	0.03	13.71	0.02	0.03	MC
TCTLAZ		13.48	-0.14	-0.18	13.45	-0.23	-0.32	MC
TQQ8M3		14.30	0.69	0.92	14.36	0.68	0.92	MC
TUAM7N		14.43	0.82	1.09	14.41	0.72	0.98	MR
TV2DZN		13.24	-0.38	-0.50	13.93	0.24	0.33	MC
UVVJW9		14.13	0.51	0.68	14.54	0.86	1.17	MC
V49WCJ		13.73	0.12	0.16	13.56	-0.13	-0.18	MC
VNVREJ		13.42	-0.20	-0.26	13.36	-0.32	-0.44	MC
VVB3EK		12.78	-0.83	-1.11	12.90	-0.78	-1.07	TP
XEFL2X		13.66	0.04	0.06	13.60	-0.09	-0.12	MC
Y4XU4T		15.05	1.44	1.91	15.01	1.33	1.81	MC



Rubber Interlaboratory Testing Program
Analysis 689
MDR Vulcanization: Maximum Torque (lbf.in)

Report #195
1st Qtr 2018

		Summary Statistics	
Grand Means			
	13.613 lbf.in		13.685 lbf.in
Stnd Dev Btwn Labs			
	0.753 lbf.in		0.732 lbf.in
Statistics based on 36 of 37 reporting participants			

		Summary Statistics in SI Units	
Grand Means			
	15.381 dN.m		15.462 dN.m
Stnd Dev Btwn Labs			
	0.850 dN.m		0.827 dN.m
Statistics based on 36 of 37 reporting participants			

Samples W85-W86: EPDM compound, batch #1 & W87-W88: EPDM compound, batch #2

Comments on Assigned Data Flags for Test #689

K43ZCV (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample group W85-W86.

Key to Instrument Codes Reported by Participants

MC	Alpha Technologies [Monsanto] MDR 2000 or 2000E	MD	Alpha Tech. Rubber Process Analyzer (RPA 2000)
ME	Alpha Tech. MDR Premiere	MM	MonTech MDR 3000
MR	MonTech D-RPA 3000	MX	Rebuilt MonTech Alpha
TP	Tech Pro MDR model MDPT	XX	Instrument model not specified by lab

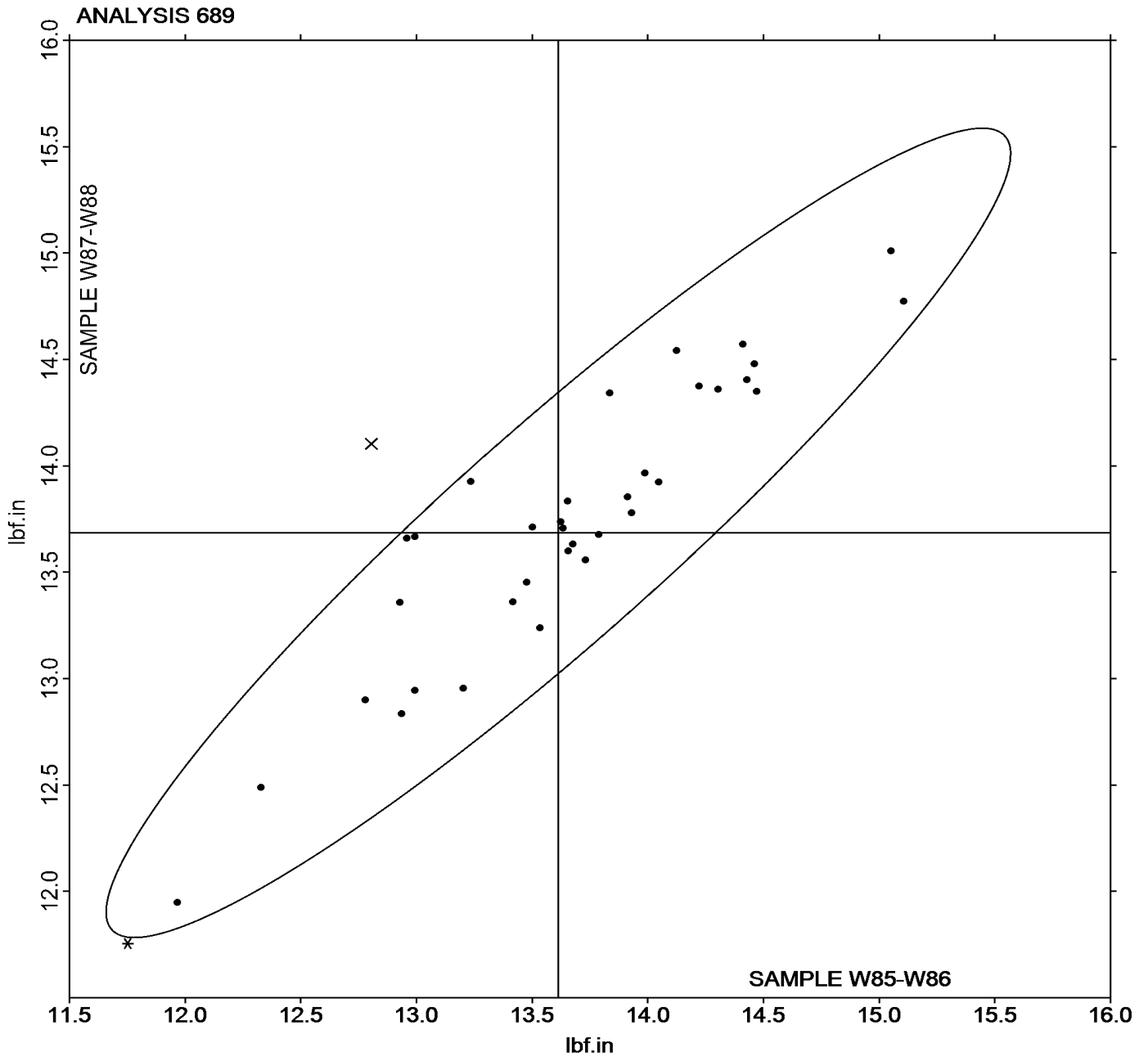


Rubber Interlaboratory Testing Program
Analysis 689
MDR Vulcanization: Maximum Torque (lbf.in)

Report #195
1st Qtr 2018

Grand Mean Sample **W85-W86** = 13.613 lbf.in

Grand Mean Sample **W87-W88** = 13.685 lbf.in





Rubber Interlaboratory Testing Program

Report #195

Analysis 690

1st Qtr 2018

RPA Rheological Properties: Part A - G' at 20Hz (kPa)

WebCode	Data Flag	Sample E81-E82			Sample E83-E84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6GKKGY		566.2	32.2	0.50	581.3	40.2	0.67	XX
B8WE99		594.8	60.8	0.95	590.0	48.9	0.81	XX
GA4MZF		492.1	-41.9	-0.65	501.2	-39.9	-0.66	RP
K43ZCV		589.6	55.6	0.87	596.0	55.0	0.91	XX
MGJD7G		545.0	11.0	0.17	552.2	11.1	0.18	XX
PC6J2V		538.8	4.9	0.08	540.2	-0.9	-0.01	PP
VVB3EK		411.4	-122.6	-1.91	426.6	-114.4	-1.90	XX

Summary Statistics	
Grand Means	533.98 kPa
Std Dev Btwn Labs	64.23 kPa
	541.06 kPa
	60.34 kPa
Statistics based on 7 of 7 reporting participants	

Samples E81-E82: EPDM compound, batch #1 & E83-E84: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

- PP PPA 2000
- RP RPA 2000
- XX Instrument model not specified by lab

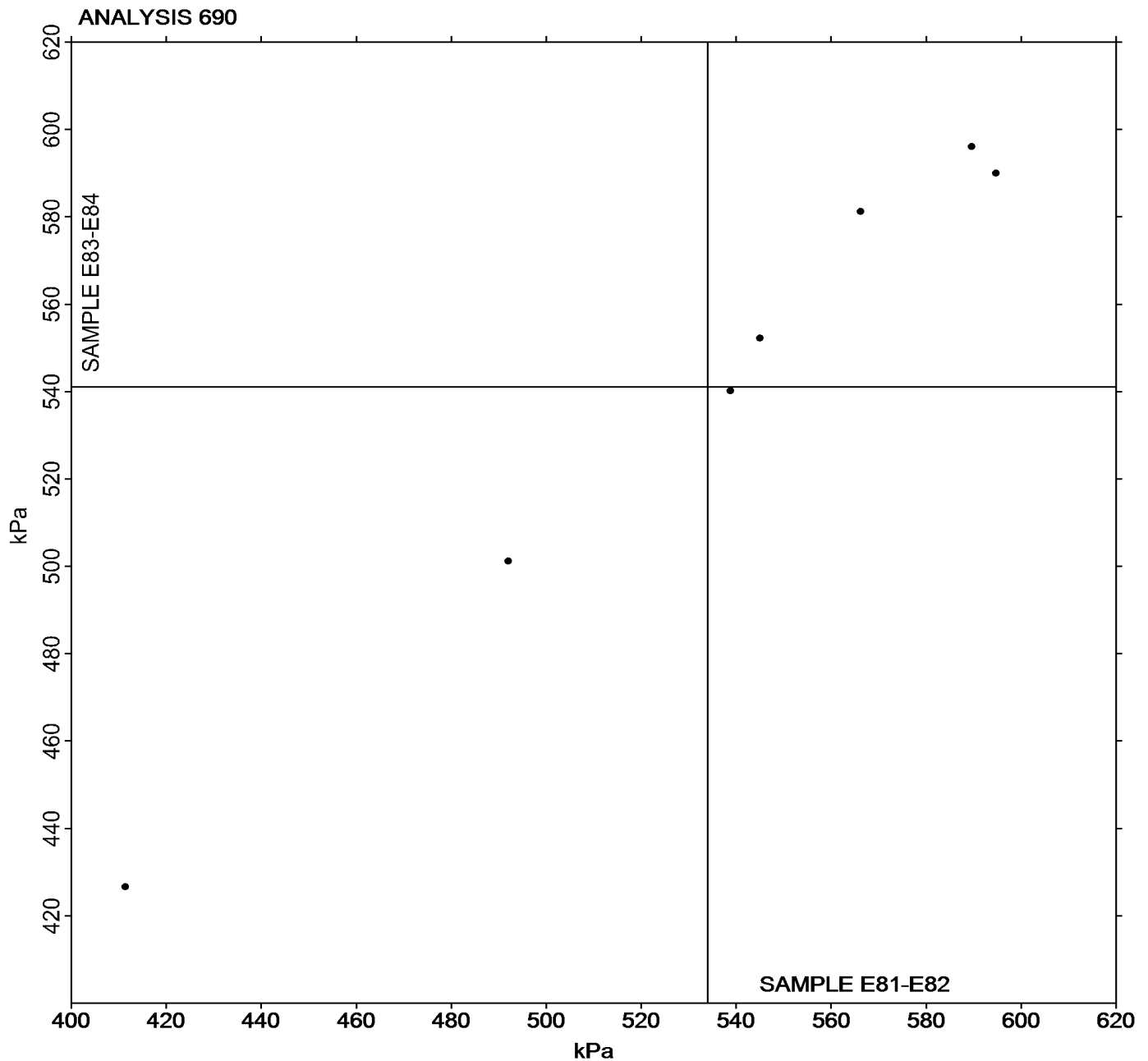


Rubber Interlaboratory Testing Program
Analysis 690
RPA Rheological Properties: Part A - G' at 20Hz (kPa)

Report #195
1st Qtr 2018

Grand Mean Sample E81-E82 = 533.98 kPa

Grand Mean Sample E83-E84 = 541.06 kPa



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program

Report #195

Analysis 691

1st Qtr 2018

RPA Rheological Properties: Part A - G'' at 20Hz (kPa)

WebCode	Data Flag	Sample E81-E82			Sample E83-E84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6GKKGY		191.6	-3.5	-0.16	198.4	2.5	0.12	XX
B8WE99		220.3	25.2	1.16	217.5	21.5	1.03	XX
GA4MZF		212.7	17.6	0.81	214.3	18.4	0.88	RP
K43ZCV		167.6	-27.5	-1.27	167.4	-28.6	-1.36	XX
MGJD7G		182.5	-12.5	-0.58	182.8	-13.2	-0.63	XX
PC6J2V		217.2	22.1	1.02	216.2	20.2	0.96	PP
VVB3EK		173.6	-21.4	-0.99	175.0	-20.9	-1.00	XX

Grand Means		Summary Statistics	
	195.08 kPa		195.93 kPa
Std Dev Btwn Labs	21.67 kPa		21.00 kPa
Statistics based on 7 of 7 reporting participants			

Samples E81-E82: EPDM compound, batch #1 & E83-E84: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

- PP PPA 2000
- RP RPA 2000
- XX Instrument model not specified by lab

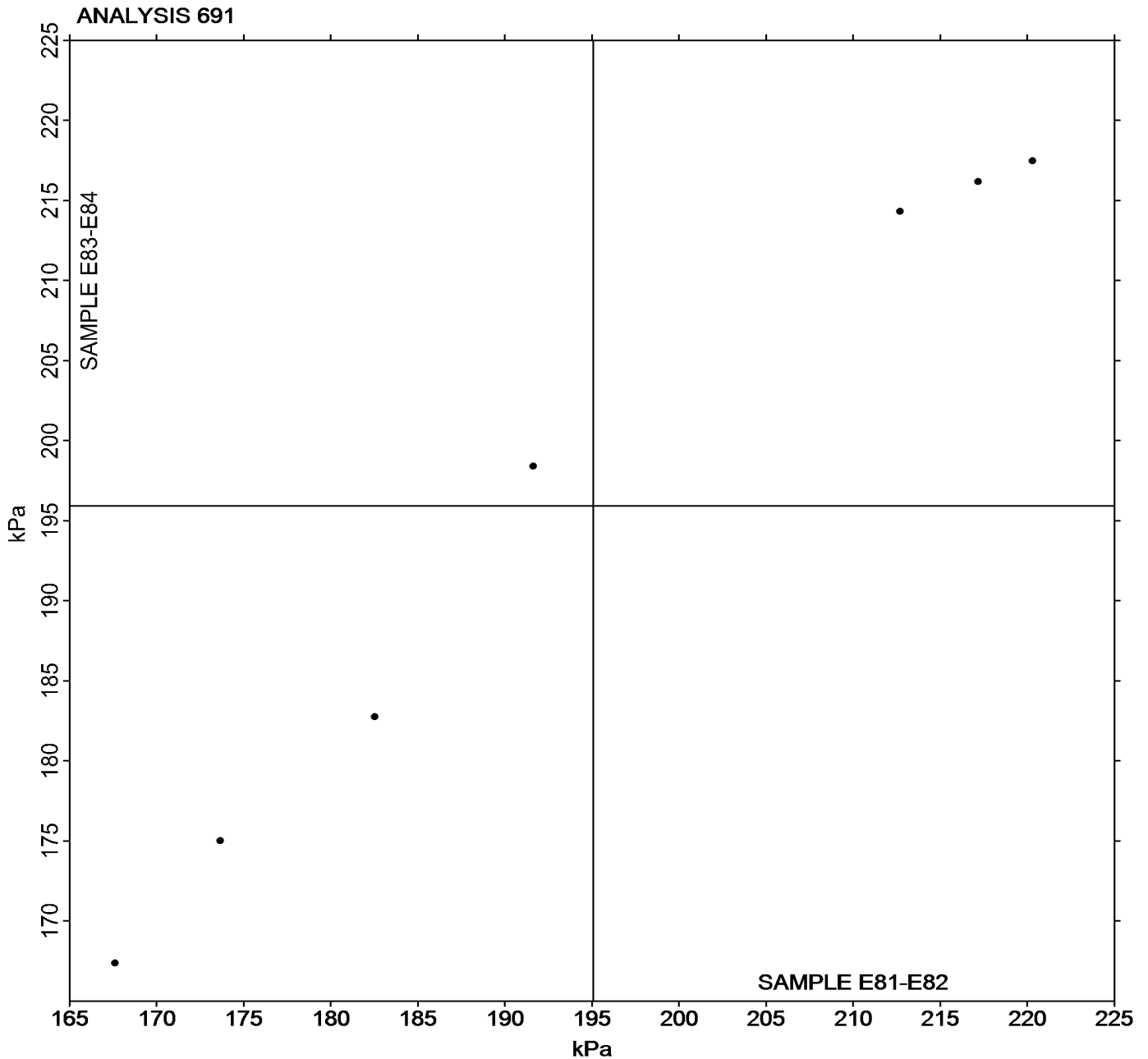


Rubber Interlaboratory Testing Program
Analysis 691
RPA Rheological Properties: Part A - G'' at 20Hz (kPa)

Report #195
1st Qtr 2018

Grand Mean Sample **E81-E82** = 195.08 kPa

Grand Mean Sample **E83-E84** = 195.93 kPa



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program

Report #195

Analysis 695

1st Qtr 2018

RPA Rheological Properties: Part B - G' at 1.0Hz (kPa)

WebCode	Data Flag	Sample E81-E82			Sample E83-E84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6GKKGY		110.15	14.17	0.86	112.80	14.23	0.85	XX
B8WE99		103.97	7.99	0.48	104.92	6.35	0.38	XX
GA4MZF		69.68	-26.30	-1.59	71.72	-26.85	-1.60	RP
K43ZCV		113.80	17.82	1.08	117.59	19.02	1.13	XX
MGJD7G		87.65	-8.33	-0.50	91.96	-6.61	-0.39	XX
PC6J2V		90.64	-5.34	-0.32	92.44	-6.13	-0.37	PR

Summary Statistics	
Grand Means	95.979 kPa
Std Dev Btwn Labs	16.565 kPa
	98.574 kPa
	16.774 kPa
Statistics based on 6 of 6 reporting participants	

Samples E81-E82: EPDM compound, batch #1 & E83-E84: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

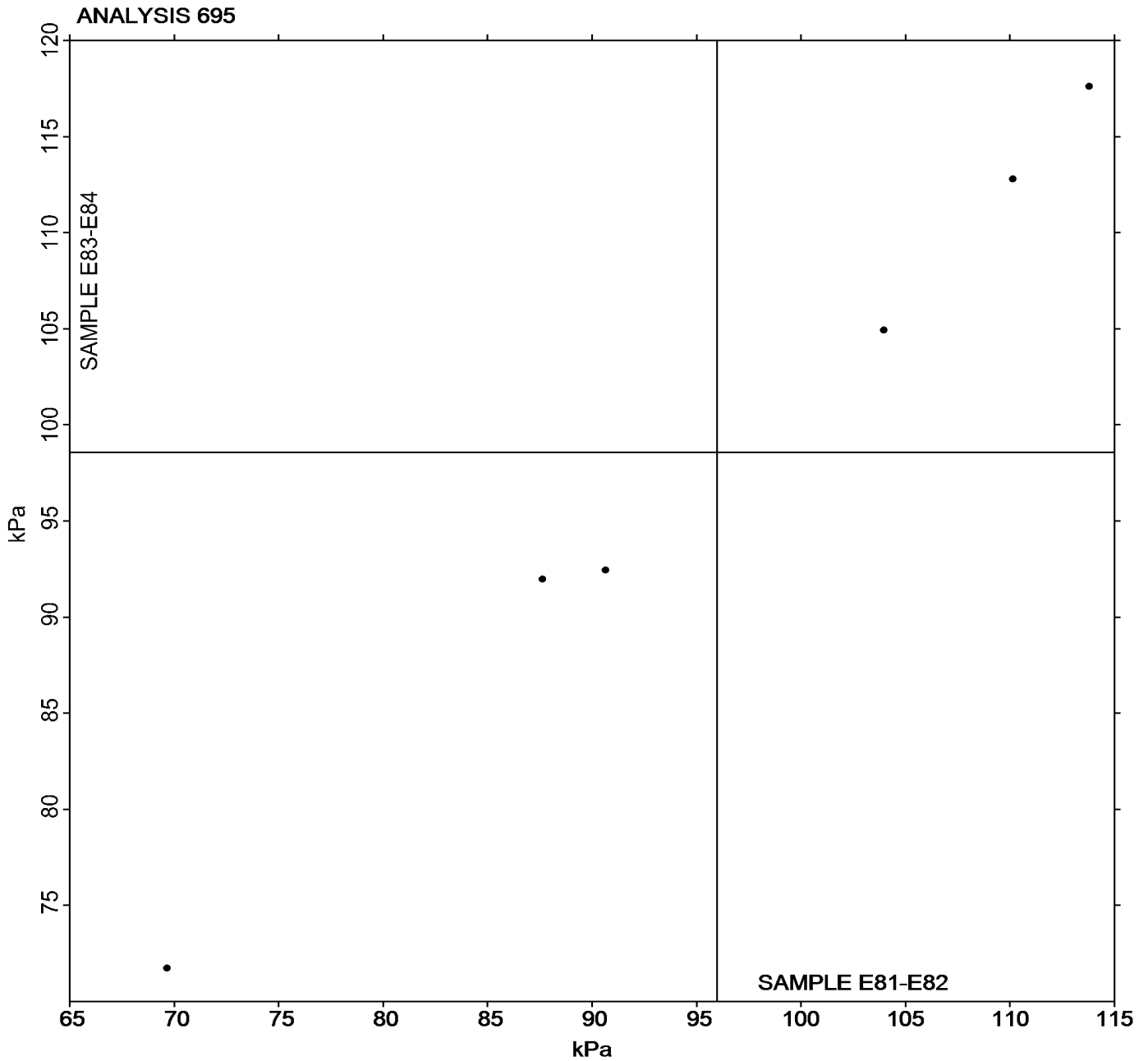
- PR PRPA 2000
- XX Instrument model not specified by lab
- RP RPA 2000



RPA Rheological Properties: Part B - G' at 1.0Hz (kPa)

Grand Mean Sample E81-E82 = 95.979 kPa

Grand Mean Sample E83-E84 = 98.574 kPa



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.



Rubber Interlaboratory Testing Program

Report #195

Analysis 696

1st Qtr 2018

RPA Rheological Properties: Part B - G'' at 1.0Hz (kPa)

WebCode	Data Flag	Sample E81-E82			Sample E83-E84			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6GKKGY		69.04	-2.36	-0.88	71.99	0.15	0.09	XX
B8WE99		75.79	4.38	1.63	74.48	2.64	1.47	XX
GA4MZF		68.20	-3.21	-1.19	68.98	-2.86	-1.60	RP
K43ZCV		71.43	0.03	0.01	71.93	0.09	0.05	XX
MGJD7G		72.37	0.97	0.36	72.50	0.66	0.37	XX
PC6J2V		71.60	0.19	0.07	71.16	-0.68	-0.38	PP

Summary Statistics	
Grand Means	71.405 kPa
Stnd Dev Btwn Labs	2.686 kPa
	71.840 kPa
	1.794 kPa
Statistics based on 6 of 6 reporting participants	

Samples E81-E82: EPDM compound, batch #1 & E83-E84: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

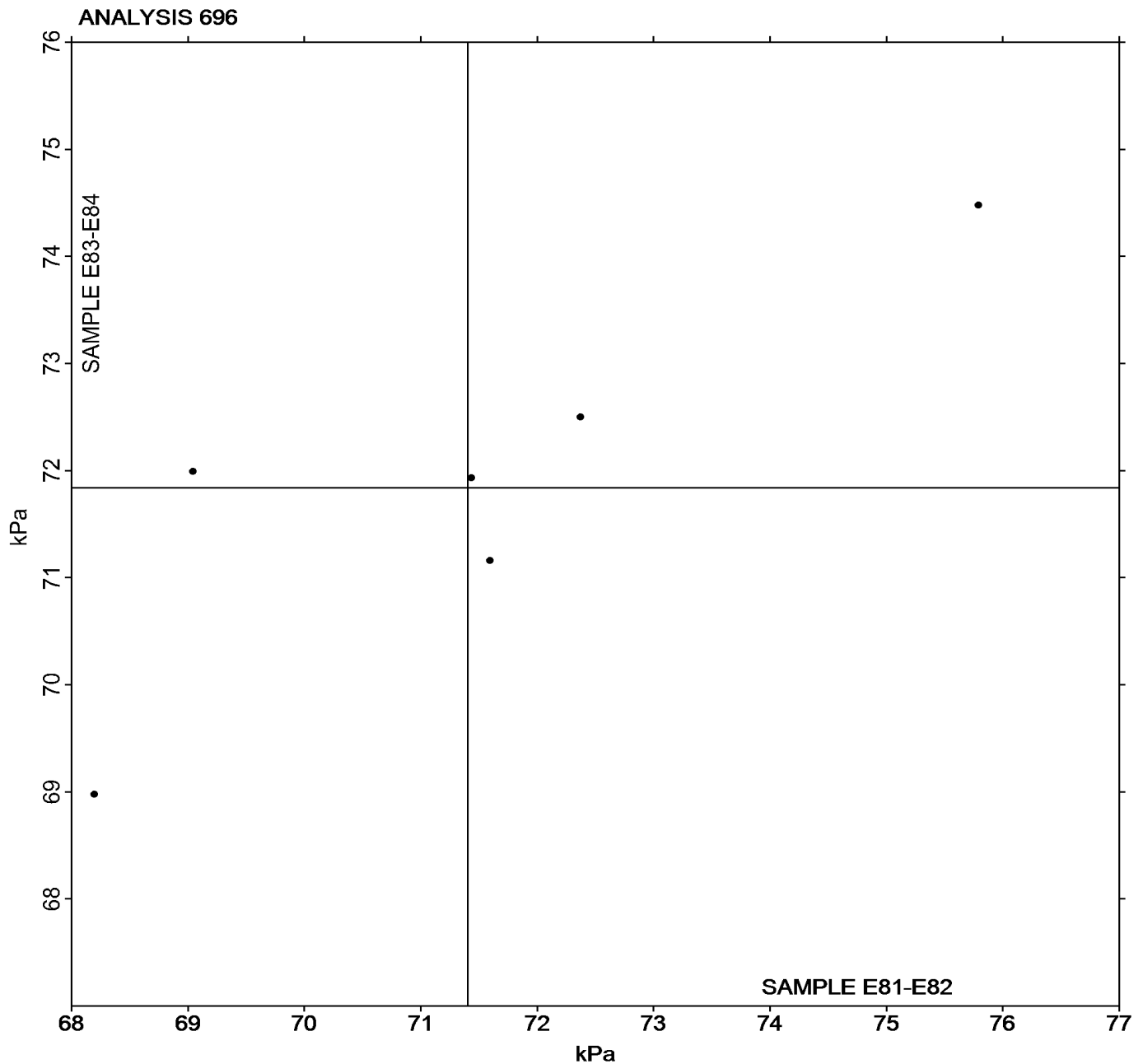
- PP PPA 2000
- XX Instrument model not specified by lab
- RP RPA 2000



RPA Rheological Properties: Part B - G'' at 1.0Hz (kPa)

Grand Mean Sample E81-E82 = 71.405 kPa

Grand Mean Sample E83-E84 = 71.840 kPa



If fewer than 20 laboratories are included in an analysis, a control ellipse will not be drawn on the two-sample plot.