

Rubber Interlaboratory Testing Program

Summary Report #205- 3rd Qtr 2020

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

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Analysis	Analysis Name	Analysis	Analysis Name
605	Tensile Strength: Precured Rubber Samples	690	RPA Rheological Properties: Part A - G' at 20Hz
606	Ultimate Elongation: Precured Rubber Samples	691	RPA Rheological Properties: Part A - G'' at 20Hz
607	Stress at 300% Elongation: Precured Samples	695	RPA Rheological Properties: Part B - G' at 1.0Hz
608	Stress at 100% Elongation: Precured Samples	696	RPA Rheological Properties: Part B - G'' at 1.0Hz
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		
635	Compression Set		
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		

ABOUT THE PROGRAM

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

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

ABOUT CTS

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

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

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

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

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

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 #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
29WF3J		3,040.0	67.8	0.58	2,935.0	-41.7	-0.35
2D8TKG		3,229.6	257.4	2.21	3,107.3	130.6	1.09
2LHWNV		3,035.7	63.5	0.54	2,939.2	-37.5	-0.31
34WTHT		2,871.8	-100.4	-0.86	2,784.7	-191.9	-1.60
36WQYG		3,196.5	224.3	1.93	3,224.0	247.3	2.06
37NMLP		2,866.5	-105.7	-0.91	2,902.5	-74.2	-0.62
39RMFU		2,870.0	-102.2	-0.88	2,795.0	-181.7	-1.51
3DQWRH		3,051.6	79.3	0.68	3,132.2	155.5	1.30
3EHU7F		2,955.4	-16.8	-0.14	2,984.6	8.0	0.07
3HG72F		3,049.2	76.9	0.66	2,970.6	-6.1	-0.05
3K6H2L		2,819.6	-152.6	-1.31	2,965.3	-11.3	-0.09
4EDUJL		2,964.0	-8.2	-0.07	3,110.0	133.3	1.11
4HFVJH		2,915.3	-56.9	-0.49	2,995.1	18.4	0.15
4QP2FL		3,140.0	167.8	1.44	3,090.5	113.8	0.95
6RV2VC		2,976.2	4.0	0.03	2,997.2	20.6	0.17
6VJDUH		3,184.5	212.2	1.82	3,125.6	148.9	1.24
6ZW4DR		2,954.0	-18.2	-0.16	2,821.5	-155.2	-1.29
79KCHE		2,984.2	12.0	0.10	2,952.5	-24.2	-0.20
7MFVQP		2,751.5	-220.7	-1.89	2,773.5	-203.2	-1.69
7VEGYD		2,950.3	-21.9	-0.19	2,883.9	-92.8	-0.77
7X3RXH		3,077.5	105.3	0.90	3,057.0	80.3	0.67
88J2TP		2,805.1	-167.2	-1.44	2,878.3	-98.4	-0.82
8KCHNH		3,117.0	144.8	1.24	3,174.0	197.3	1.64
8LZYXQ	X	2,676.0	-296.2	-2.54	2,950.0	-26.7	-0.22
8RB6FH		2,805.5	-166.7	-1.43	2,830.0	-146.7	-1.22
8XHCHF	X	1,849.2	-1,123.0	-9.64	2,806.5	-170.2	-1.42
9D8X2D	*	2,994.6	22.4	0.19	3,214.3	237.6	1.98
9G4RTM		3,215.5	243.3	2.09	3,236.5	259.9	2.16
9YJZUM		3,078.6	106.4	0.91	2,994.7	18.0	0.15
9Z6AAJ	*	3,247.5	275.3	2.36	3,107.0	130.3	1.09
9ZJYBB		2,851.3	-120.9	-1.04	2,906.7	-70.0	-0.58
AA4PA8		2,994.9	22.7	0.20	2,962.4	-14.3	-0.12
ACR2AD		2,829.5	-142.7	-1.23	2,868.0	-108.7	-0.91
ANKHXE		3,105.0	132.8	1.14	3,010.0	33.3	0.28
BFKHYC		2,966.5	-5.7	-0.05	2,953.5	-23.2	-0.19
BG2J2E	*	3,235.8	263.6	2.26	3,079.9	103.2	0.86
BQ342L		3,015.7	43.5	0.37	3,065.9	89.2	0.74
BZD7MM		2,845.7	-126.5	-1.09	2,903.1	-73.6	-0.61



Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
C9GXC8		2,852.0	-120.2	-1.03	2,915.0	-61.7	-0.51
CVEAJD		2,974.7	2.5	0.02	3,058.1	81.5	0.68
DRR8PD		2,905.5	-66.7	-0.57	2,946.5	-30.2	-0.25
EPZDLG		2,844.2	-128.0	-1.10	2,725.3	-251.4	-2.09
ER8QAB		3,024.5	52.3	0.45	2,946.5	-30.2	-0.25
FHZB43		2,932.3	-39.9	-0.34	3,016.1	39.4	0.33
FWXMC7		2,952.0	-20.2	-0.17	2,956.5	-20.2	-0.17
FZGEM9		2,922.5	-49.7	-0.43	2,952.0	-24.7	-0.21
GQ7K2F		2,889.0	-83.2	-0.71	2,899.5	-77.2	-0.64
GRWX96		2,846.4	-125.8	-1.08	3,015.4	38.7	0.32
H49MLZ		2,995.5	23.3	0.20	2,972.0	-4.7	-0.04
H7WYK7		3,045.8	73.6	0.63	3,001.6	24.9	0.21
HCJRQD		3,060.3	88.1	0.76	2,960.2	-16.4	-0.14
HKDVZ3		2,982.9	10.7	0.09	3,040.1	63.4	0.53
HNBFFY		2,842.8	-129.4	-1.11	2,799.3	-177.4	-1.48
J887H8		2,954.4	-17.8	-0.15	3,043.6	67.0	0.56
JBLWM2		3,067.5	95.3	0.82	3,030.0	53.3	0.44
JE7NY4		2,993.0	20.8	0.18	3,025.5	48.8	0.41
JKCGTZ		3,051.0	78.7	0.68	3,002.5	25.8	0.22
JKWX93	*	2,803.0	-169.2	-1.45	2,684.0	-292.7	-2.44
L9TMQ6		2,875.0	-97.2	-0.83	2,794.0	-182.7	-1.52
LA4LMZ		2,884.0	-88.2	-0.76	3,031.9	55.3	0.46
LHUAH3		2,827.5	-144.7	-1.24	2,850.0	-126.7	-1.06
LU98M7		2,987.5	15.3	0.13	3,061.5	84.8	0.71
M4RXM4		2,857.3	-114.9	-0.99	2,842.8	-133.9	-1.12
M8R9H4	X	2,566.0	-406.2	-3.49	2,584.0	-392.7	-3.27
MFLEC6		2,966.0	-6.2	-0.05	2,856.0	-120.7	-1.01
MLCNL3		2,835.5	-136.7	-1.17	2,876.5	-100.2	-0.83
MQ8HJ4		3,004.5	32.3	0.28	2,976.5	-0.2	0.00
MW2ABY		2,892.8	-79.4	-0.68	3,095.1	118.5	0.99
MZTMQ4		3,055.5	83.3	0.72	2,960.5	-16.2	-0.13
NBQREA		2,930.0	-42.2	-0.36	3,060.0	83.3	0.69
NRD6R3		3,044.4	72.2	0.62	3,093.0	116.3	0.97
NWNDYX		2,902.5	-69.7	-0.60	2,844.5	-132.2	-1.10
NYCPY4		2,953.5	-18.7	-0.16	3,090.0	113.3	0.94
P2V9C7		2,874.3	-97.9	-0.84	2,847.0	-129.7	-1.08
P9WFX2		2,893.7	-78.6	-0.67	2,892.9	-83.8	-0.70



Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

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WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PNTVXV		3,007.0	34.8	0.30	2,984.5	7.8	0.07
Q8K948		3,175.1	202.9	1.74	3,123.0	146.3	1.22
QUBMMZ		2,993.6	21.3	0.18	2,974.3	-2.4	-0.02
R7JUW6		3,100.0	127.8	1.10	2,995.0	18.3	0.15
RDKYRV		3,031.0	58.7	0.50	3,209.6	233.0	1.94
RJR7UT		3,084.5	112.3	0.96	2,938.5	-38.2	-0.32
RPEZP6		3,076.0	103.8	0.89	2,987.5	10.8	0.09
T8ABRY		2,885.0	-87.2	-0.75	2,885.0	-91.7	-0.76
TJ7EVR		2,942.0	-30.2	-0.26	3,011.5	34.8	0.29
TLUQVX	*	2,661.5	-310.7	-2.67	2,705.0	-271.7	-2.26
U6HGN3		3,112.1	139.9	1.20	3,224.9	248.3	2.07
U7XVXX		2,941.0	-31.2	-0.27	2,912.5	-64.2	-0.53
UEPBHV	X	2,620.1	-352.1	-3.02	2,474.4	-502.3	-4.18
UMKACP		2,829.2	-143.0	-1.23	2,944.0	-32.7	-0.27
UP9LBV		2,867.0	-105.2	-0.90	2,964.0	-12.7	-0.11
UXGF6N		3,045.8	73.6	0.63	3,103.8	127.2	1.06
V3CBL2		3,014.6	42.3	0.36	3,079.9	103.3	0.86
V4JLKQ		2,812.3	-159.9	-1.37	2,783.0	-193.7	-1.61
VWPGRP		2,949.0	-23.2	-0.20	2,961.5	-15.2	-0.13
VZ4DWR		2,837.1	-135.1	-1.16	2,832.0	-144.7	-1.21
W78KCU		2,995.1	22.8	0.20	2,966.0	-10.6	-0.09
X2AHMK		2,912.5	-59.7	-0.51	2,979.5	2.8	0.02
XD322Q		2,965.0	-7.2	-0.06	2,960.0	-16.7	-0.14
YGG4GU		3,034.3	62.1	0.53	3,016.3	39.6	0.33
YJ9VVL		3,177.9	205.7	1.77	3,197.6	220.9	1.84
YZTLVK		3,015.0	42.8	0.37	2,940.0	-36.7	-0.31
Z48MBP		2,751.4	-220.8	-1.90	2,872.5	-104.2	-0.87
Z6YJXX		3,096.4	124.2	1.07	3,139.3	162.6	1.35
ZCKR2N		2,954.0	-18.2	-0.16	2,785.5	-191.2	-1.59
ZF2YPN		3,100.5	128.3	1.10	3,196.5	219.8	1.83
ZULETM		2,993.0	20.8	0.18	3,000.0	23.3	0.19
ZVF6WG		3,063.9	91.7	0.79	3,031.1	54.4	0.45



Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #205
3rd Qtr 2020

		Summary Statistics	
Grand Means			
	2,972.21 psi		2,976.67 psi
Stnd Dev Btwn Labs			
	116.48 psi		120.06 psi
Statistics based on 103 of 107 reporting participants			

		Summary Statistics in SI Units	
Grand Means			
	20.492 MPa		20.52 MPa
Stnd Dev Btwn Labs			
	0.803 MPa		0.83 MPa
Statistics based on 103 of 107 reporting participants			

Samples C01-C02: Polyisoprene compound, batch #1 & C03-C04: Polyisoprene compound, batch #2

Comments on Assigned Data Flags for Test #605

- 8LZYXQ (X) - Inconsistent in testing between samples.
- 8XHCHF (X) - Extreme Data for sample group C01-C02.
- M8R9H4 (X) - Data for all samples are low. Possible Systematic Error.
- UEPBHV (X) - Data for all samples are low. Possible Systematic Error.

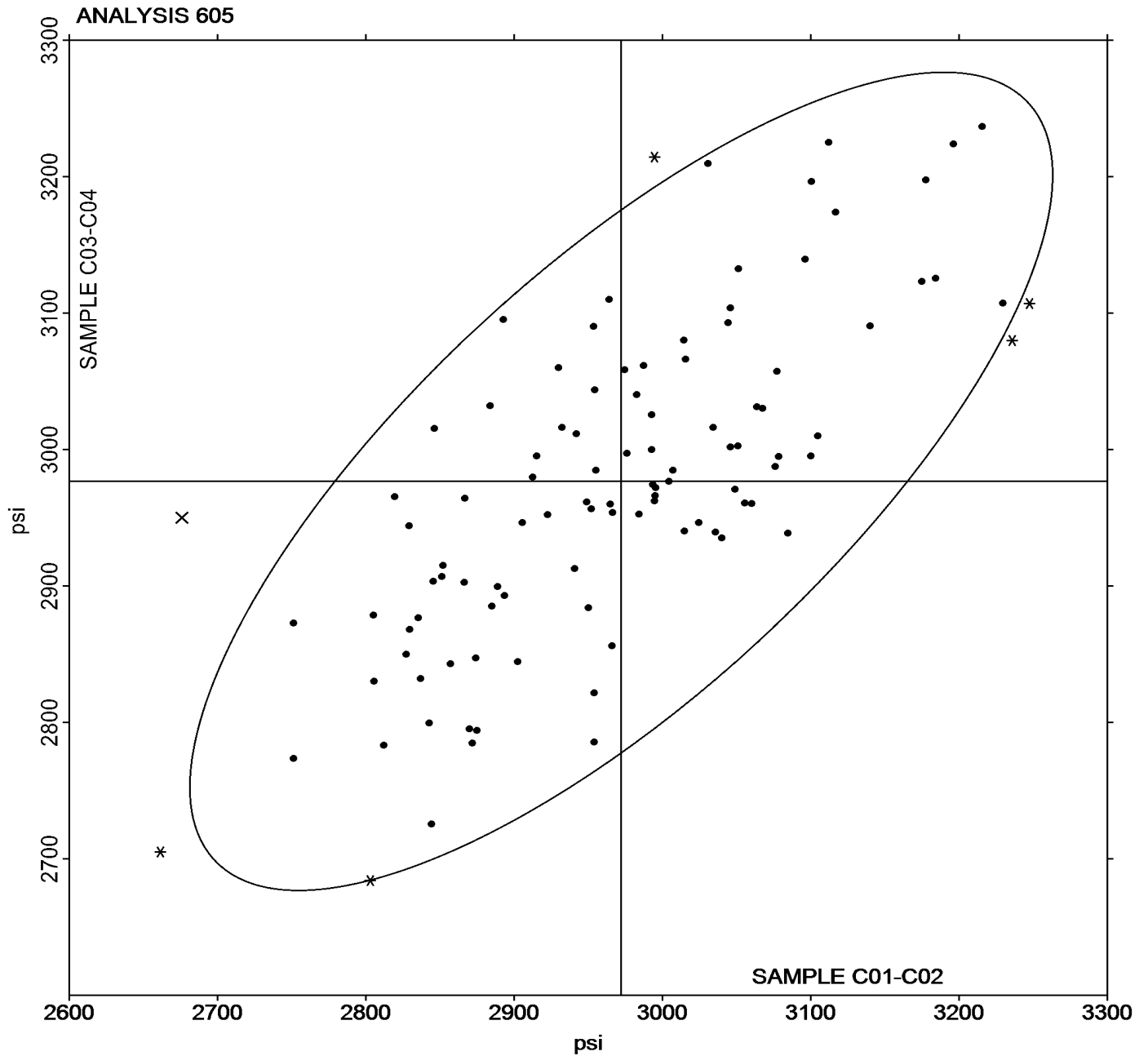


Rubber Interlaboratory Testing Program
Analysis 605
Tensile Strength (psi)

Report #205
3rd Qtr 2020

Grand Mean Sample **C01-C02** = 2,972.21 psi

Grand Mean Sample **C03-C04** = 2,976.67 psi





Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG		622.4	38.9	1.61	601.7	13.8	0.56
2LHWNV		617.9	34.4	1.42	616.0	28.1	1.14
34WTHT	X	627.0	43.5	1.80	668.5	80.6	3.26
36WQYG		562.0	-21.5	-0.89	553.5	-34.4	-1.39
37NMLP		588.5	5.0	0.21	581.0	-6.9	-0.28
39RMFU		636.0	52.5	2.17	634.5	46.6	1.89
3DQWRH		591.6	8.1	0.34	606.2	18.3	0.74
3EHU7F		605.0	21.5	0.89	607.3	19.4	0.79
3HG72F	*	570.0	-13.5	-0.56	539.4	-48.5	-1.96
3K6H2L		553.5	-30.0	-1.24	564.5	-23.4	-0.95
4EDUJL		589.5	6.0	0.25	600.0	12.1	0.49
4HFVJH		615.5	32.0	1.33	611.0	23.1	0.94
4QP2FL		577.0	-6.5	-0.27	587.5	-0.4	-0.02
6RV2VC		574.2	-9.3	-0.38	569.8	-18.1	-0.73
6VJDUH		604.8	21.3	0.88	610.5	22.6	0.92
6ZW4DR		642.5	59.0	2.44	634.5	46.6	1.89
79KCHE	X	676.5	93.0	3.85	879.7	291.8	11.81
7MFBVQP	*	521.0	-62.5	-2.59	520.5	-67.4	-2.73
7VEGYD		600.0	16.6	0.69	592.8	4.9	0.20
7X3RXH		579.5	-4.0	-0.16	584.0	-3.9	-0.16
8KCHNH		589.5	6.0	0.25	615.0	27.1	1.10
8LZYXQ	*	592.5	9.0	0.37	631.0	43.1	1.75
8RB6FH		591.5	8.0	0.33	616.0	28.1	1.14
8XHCHF	X	333.2	-250.3	-10.36	427.9	-160.0	-6.48
9D8X2D		569.0	-14.5	-0.60	599.5	11.6	0.47
9G4RTM		602.0	18.5	0.77	588.8	0.9	0.03
9YJZUM		593.6	10.1	0.42	618.6	30.7	1.24
9Z6AAJ		554.0	-29.5	-1.22	554.0	-33.9	-1.37
9ZJYBB		556.6	-26.9	-1.11	562.0	-25.9	-1.05
AA4PA8		585.1	1.6	0.07	584.6	-3.2	-0.13
ACR2AD	X	780.5	197.0	8.16	565.5	-22.4	-0.91
ANKHXE		600.5	17.0	0.70	598.0	10.1	0.41
BFKHYC		546.0	-37.5	-1.55	546.0	-41.9	-1.70
BG2J2E	X	701.5	118.0	4.89	705.5	117.6	4.76
BQ342L		597.5	14.0	0.58	590.1	2.2	0.09
BZD7MM		563.2	-20.3	-0.84	566.0	-21.9	-0.88
C9GXC8		596.0	12.5	0.52	601.5	13.6	0.55
CVEAJD		551.5	-32.0	-1.32	566.0	-21.9	-0.89



Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
DRR8PD	*	514.4	-69.1	-2.86	519.4	-68.5	-2.77
EPZDLG		594.5	11.0	0.46	575.0	-12.9	-0.52
ER8QAB		601.5	18.0	0.75	609.0	21.1	0.85
FHZB43		597.9	14.4	0.60	604.0	16.1	0.65
FWXMC7		592.5	9.0	0.37	600.5	12.6	0.51
FZGEM9		582.0	-1.5	-0.06	596.0	8.1	0.33
GQ7K2F		598.0	14.5	0.60	603.0	15.1	0.61
GRWX96		578.5	-5.0	-0.21	578.5	-9.4	-0.38
H49MLZ		615.0	31.5	1.30	614.0	26.1	1.06
H7WYK7		564.0	-19.5	-0.81	574.5	-13.4	-0.54
HCJRQD		595.7	12.2	0.51	594.2	6.3	0.26
HKDVZ3		604.9	21.4	0.88	603.4	15.5	0.63
HNBFFNY		618.5	35.0	1.45	603.0	15.1	0.61
J887H8		569.3	-14.1	-0.59	575.8	-12.1	-0.49
JBLWM2	X	686.0	102.5	4.24	701.0	113.1	4.58
JE7NY4		560.5	-23.0	-0.95	571.0	-16.9	-0.68
JKCGTZ		598.5	15.0	0.62	602.5	14.6	0.59
JKWX93		530.0	-53.5	-2.21	531.5	-56.4	-2.28
L9TMQ6	*	651.5	68.0	2.82	647.5	59.6	2.41
LA4LMZ		565.6	-17.9	-0.74	565.9	-22.0	-0.89
LHUAH3		571.5	-12.0	-0.50	578.0	-9.9	-0.40
LU98M7		570.5	-13.0	-0.54	595.5	7.6	0.31
M4RXM4		576.4	-7.1	-0.29	587.3	-0.6	-0.02
M8R9H4		573.5	-10.0	-0.41	584.5	-3.4	-0.14
MFLEC6	X	632.0	48.5	2.01	580.5	-7.4	-0.30
MLCNL3		572.5	-11.0	-0.45	583.5	-4.4	-0.18
MQ8HJ4		558.0	-25.5	-1.06	561.0	-26.9	-1.09
MW2ABY		571.5	-12.0	-0.50	587.0	-0.9	-0.04
MZTMQ4		599.0	15.5	0.64	599.5	11.6	0.47
NBQREA		581.0	-2.5	-0.10	613.5	25.6	1.04
NRD6R3		614.8	31.3	1.30	604.2	16.3	0.66
NWNDYX		543.7	-39.8	-1.65	534.1	-53.8	-2.18
NYCPY4		594.5	11.0	0.46	602.5	14.6	0.59
P2V9C7		602.0	18.5	0.77	610.0	22.1	0.90
P9WFX2		575.5	-8.0	-0.33	587.0	-0.9	-0.04
PNTVXV		605.0	21.5	0.89	609.5	21.6	0.87
Q8K948	X	690.5	107.0	4.43	699.5	111.6	4.52



Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QUBMMZ		602.5	19.0	0.79	587.0	-0.9	-0.04
R7JUW6		558.0	-25.5	-1.06	580.0	-7.9	-0.32
RDKYRV		587.3	3.9	0.16	601.6	13.7	0.56
RJR7UT		592.0	8.5	0.35	576.0	-11.9	-0.48
RPEZP6		601.5	18.0	0.75	602.0	14.1	0.57
T8ABRY	X	610.5	27.0	1.12	681.0	93.1	3.77
TJ7EVR		549.0	-34.5	-1.43	557.5	-30.4	-1.23
TLUQVX	X	509.9	-73.6	-3.05	539.6	-48.3	-1.95
U6HGN3		565.9	-17.6	-0.73	571.1	-16.7	-0.68
U7XVXX		582.0	-1.5	-0.06	580.0	-7.9	-0.32
UEPBHV	X	617.5	34.0	1.41	449.5	-138.4	-5.60
UMKACP		584.5	1.0	0.04	611.5	23.6	0.96
UP9LBV		573.0	-10.5	-0.43	591.0	3.1	0.13
UXGF6N	X	625.0	41.5	1.72	667.5	79.6	3.22
V3CBL2		573.6	-9.9	-0.41	592.7	4.8	0.19
V4JLKQ		554.9	-28.5	-1.18	567.4	-20.5	-0.83
VWPGRP		591.0	7.5	0.31	593.0	5.1	0.21
VZ4DWR		555.0	-28.5	-1.18	585.0	-2.9	-0.12
W78KCU		614.0	30.5	1.26	612.5	24.6	1.00
X2AHMK		573.4	-10.0	-0.42	561.8	-26.1	-1.06
XD322Q		555.0	-28.5	-1.18	545.0	-42.9	-1.74
YGG4GU		584.3	0.8	0.03	594.8	6.9	0.28
YJ9VVL		608.8	25.3	1.05	625.7	37.8	1.53
YZTLVK		583.5	0.0	0.00	583.0	-4.9	-0.20
Z48MBP	X	1,003.5	420.0	17.39	1,019.0	431.1	17.45
Z6YJXX		589.5	6.0	0.25	596.1	8.2	0.33
ZCKR2N		576.5	-7.0	-0.29	559.0	-28.9	-1.17
ZF2YPN		578.5	-5.0	-0.21	576.0	-11.9	-0.48
ZULETM		580.5	-3.0	-0.12	587.0	-0.9	-0.04
ZVF6WG		584.8	1.3	0.06	591.3	3.4	0.14

Grand Means		Summary Statistics	
	583.48 percent		587.89 percent
Std Dev Btwn Labs			
	24.15 percent		24.70 percent
Statistics based on 92 of 105 reporting participants			



Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #205
3rd Qtr 2020

Samples C01-C02: Polyisoprene compound, batch #1 & C03-C04: Polyisoprene compound, batch #2

Comments on Assigned Data Flags for Test #606

- 34WTHT (X) - Data for sample group C03-C04 are high.
- 79KCHE (X) - Extreme Data.
- 8XHCHF (X) - Extreme Data.
- ACR2AD (X) - Data for sample group C01-C02 are high. Inconsistent within the determinations of sample group C01-C02.
- BG2J2E (X) - Data for all samples are high. Possible Systematic Error.
- JBLWM2 (X) - Data for all samples are high. Possible Systematic Error.
- MFLEC6 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample group C01-C02.
- Q8K948 (X) - Data for all samples are high. Possible Systematic Error. Inconsistent within the determinations of both sample groups.
- T8ABRY (X) - Data for sample group C03-C04 are high.
- TLUQVX (X) - Data for sample group C01-C02 are low.
- UEPBHV (X) - Data for sample group C03-C04 are low. Inconsistent within the determinations of both sample groups.
- UXGF6N (X) - Data for sample group C03-C04 are high.
- Z48MBP (X) - Extreme Data.

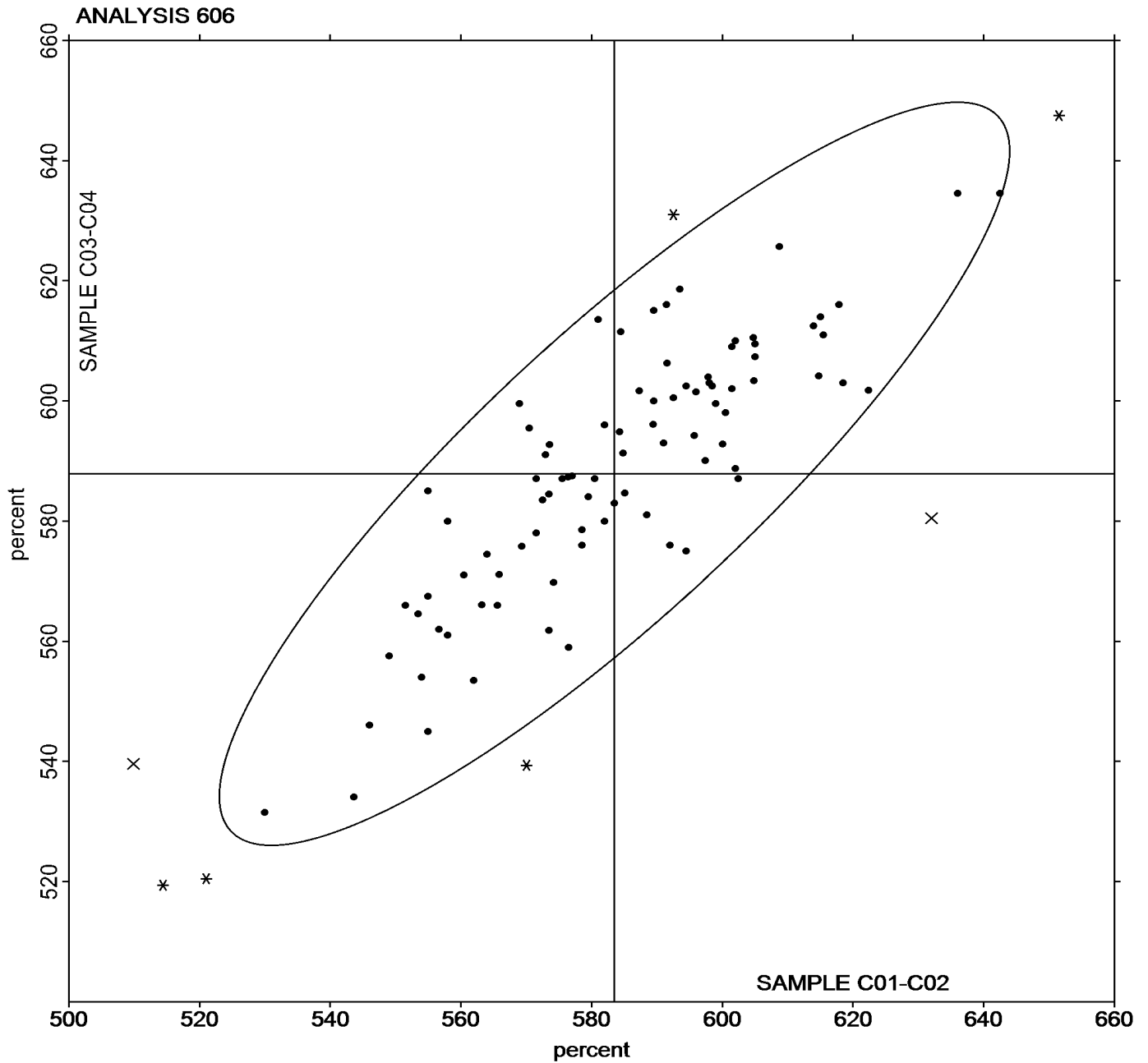


Rubber Interlaboratory Testing Program
Analysis 606
Ultimate Elongation (percent)

Report #205
3rd Qtr 2020

Grand Mean Sample **C01-C02** = 583.48 percent

Grand Mean Sample **C03-C04** = 587.89 percent





Rubber Interlaboratory Testing Program

Report #205

Analysis 607

3rd Qtr 2020

Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG		1,005.4	4.8	0.06	955.2	-23.9	-0.27
2LHWNV		916.6	-84.0	-0.97	907.2	-71.9	-0.81
34WTHT		1,044.3	43.6	0.50	1,008.7	29.6	0.33
36WQYG	*	1,143.5	142.9	1.65	1,200.5	221.4	2.49
37NMLP		954.5	-46.1	-0.53	980.5	1.4	0.02
39RMFU		942.2	-58.4	-0.68	875.4	-103.7	-1.17
3DQWRH		975.1	-25.5	-0.30	960.4	-18.7	-0.21
3EHU7F		940.6	-60.1	-0.69	907.1	-72.0	-0.81
3HG72F		1,006.4	5.8	0.07	1,081.2	102.1	1.15
3K6H2L		1,021.1	20.4	0.24	1,008.0	28.9	0.33
4EDUJL		953.0	-47.6	-0.55	975.0	-4.1	-0.05
4HFVJH		873.1	-127.5	-1.47	912.3	-66.8	-0.75
4QP2FL		1,001.0	0.4	0.00	969.0	-10.1	-0.11
6RV2VC		1,016.7	16.1	0.19	1,047.2	68.1	0.77
6VJDUH		1,036.3	35.7	0.41	1,018.8	39.7	0.45
6ZW4DR		871.5	-129.1	-1.49	841.0	-138.1	-1.56
79KCHE	*	795.6	-205.1	-2.37	734.1	-245.0	-2.76
7MFVQP		1,092.0	91.4	1.06	1,131.0	151.9	1.71
7VEGYD		940.7	-59.9	-0.69	937.0	-42.1	-0.47
7X3RXH		1,140.0	139.4	1.61	1,155.0	175.9	1.98
8KCHNH		1,015.5	14.9	0.17	950.5	-28.6	-0.32
8LZYXQ		876.0	-124.6	-1.44	871.0	-108.1	-1.22
8RB6FH		915.0	-85.6	-0.99	860.5	-118.6	-1.34
9D8X2D		1,028.0	27.3	0.32	1,030.7	51.5	0.58
9G4RTM		984.8	-15.8	-0.18	1,056.6	77.5	0.87
9YJZUM	*	1,073.9	73.2	0.85	935.9	-43.2	-0.49
9Z6AAJ		1,112.5	111.9	1.29	1,102.5	123.4	1.39
9ZJYBB		1,080.6	80.0	0.92	1,035.5	56.4	0.64
AA4PA8		1,017.7	17.1	0.20	1,014.8	35.7	0.40
ACR2AD	X	731.8	-268.9	-3.11	975.5	-3.6	-0.04
ANKHXE		1,052.0	51.4	0.59	959.0	-20.1	-0.23
BFKHYC		1,172.5	171.9	1.99	1,109.5	130.4	1.47
BG2J2E		786.1	-214.5	-2.48	783.2	-195.9	-2.21
BQ342L		935.3	-65.4	-0.76	954.2	-25.0	-0.28
BZD7MM		972.8	-27.8	-0.32	1,021.9	42.8	0.48
C9GXC8		945.0	-55.6	-0.64	935.0	-44.1	-0.50
CVEAJD		1,097.9	97.3	1.13	1,084.2	105.0	1.18
DRR8PD	*	1,224.1	223.4	2.58	1,170.6	191.5	2.16



Rubber Interlaboratory Testing Program

Report #205

Analysis 607

3rd Qtr 2020

Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
EPZDLG		973.2	-27.4	-0.32	954.4	-24.8	-0.28
ER8QAB		1,048.5	47.9	0.55	943.5	-35.6	-0.40
FHZB43		988.9	-11.7	-0.14	977.4	-1.7	-0.02
FWXMC7		972.0	-28.6	-0.33	933.5	-45.6	-0.51
FZGEM9		1,015.0	14.4	0.17	1,001.5	22.4	0.25
GQ7K2F		977.5	-23.1	-0.27	921.0	-58.1	-0.65
GRWX96		952.9	-47.7	-0.55	1,002.9	23.8	0.27
H49MLZ		917.5	-83.1	-0.96	895.5	-83.6	-0.94
H7WYK7		1,126.2	125.6	1.45	1,056.6	77.5	0.87
HCJRQD		988.4	-12.3	-0.14	946.4	-32.7	-0.37
HKDVZ3		979.1	-21.5	-0.25	982.6	3.5	0.04
HNBFFNY		924.6	-76.0	-0.88	913.0	-66.1	-0.74
J887H8		1,050.1	49.4	0.57	1,061.7	82.6	0.93
JBLWM2		808.0	-192.6	-2.23	782.0	-197.1	-2.22
JE7NY4		1,005.5	4.9	0.06	962.5	-16.6	-0.19
JKCGTZ		1,033.9	33.2	0.38	1,032.9	53.8	0.61
JKWX93		1,101.0	100.4	1.16	1,027.5	48.4	0.55
LA4LMZ		916.9	-83.7	-0.97	981.0	1.9	0.02
LHUAH3		1,010.0	9.4	0.11	949.5	-29.6	-0.33
LU98M7		1,016.5	15.9	0.18	966.5	-12.6	-0.14
M4RXM4		975.4	-25.3	-0.29	968.9	-10.3	-0.12
M8R9H4		907.0	-93.6	-1.08	934.5	-44.6	-0.50
MLCNL3		963.5	-37.1	-0.43	910.0	-69.1	-0.78
MQ8HJ4		1,101.0	100.4	1.16	1,069.5	90.4	1.02
MW2ABY		1,053.7	53.1	0.61	1,037.0	57.9	0.65
NBQREA		1,003.5	2.9	0.03	924.5	-54.6	-0.62
NRD6R3		898.5	-102.1	-1.18	929.7	-49.4	-0.56
NWNDYX		1,163.5	162.8	1.88	1,148.0	168.8	1.90
NYCPY4		969.0	-31.6	-0.37	977.0	-2.1	-0.02
P2V9C7		958.5	-42.1	-0.49	885.0	-94.2	-1.06
P9WFX2		976.4	-24.2	-0.28	947.3	-31.9	-0.36
PNTVXV		962.0	-38.6	-0.45	940.5	-38.6	-0.44
Q8K948	*	762.7	-238.0	-2.75	738.1	-241.0	-2.72
QUBMMZ		946.8	-53.9	-0.62	976.4	-2.7	-0.03
R7JUW6	*	1,140.0	139.4	1.61	1,015.0	35.9	0.40
RDKYRV		1,008.2	7.5	0.09	1,034.9	55.7	0.63
RJR7UT		1,004.5	3.9	0.04	953.5	-25.6	-0.29



Rubber Interlaboratory Testing Program

Report #205

Analysis 607

3rd Qtr 2020

Stress at 300% Elongation (psi)

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RPEZP6		994.5	-6.1	-0.07	925.0	-54.1	-0.61
T8ABRY	X	966.5	-34.1	-0.39	758.5	-220.6	-2.49
TJ7EVR		1,087.5	86.9	1.00	1,098.0	118.9	1.34
TLUQVX		1,105.9	105.3	1.22	1,014.5	35.4	0.40
U7XVXX		979.5	-21.1	-0.24	947.0	-32.1	-0.36
UEPBHV	X	1,116.1	115.4	1.34	1,217.6	238.5	2.69
UMKACP		962.5	-38.1	-0.44	906.5	-72.6	-0.82
UP9LBV		1,002.5	1.9	0.02	977.0	-2.1	-0.02
UXGF6N		1,195.1	194.5	2.25	1,107.4	128.2	1.44
V3CBL2		1,091.2	90.6	1.05	1,102.7	123.6	1.39
V4JLKQ		1,030.0	29.3	0.34	976.3	-2.8	-0.03
VWPGRP		979.5	-21.1	-0.24	982.5	3.4	0.04
VZ4DWR		962.5	-38.1	-0.44	894.5	-84.6	-0.95
W78KCU		850.5	-150.1	-1.74	811.5	-167.6	-1.89
X2AHMK		980.5	-20.2	-0.23	1,039.9	60.8	0.69
XD322Q		1,105.0	104.4	1.21	1,150.0	170.9	1.93
YGG4GU		1,099.2	98.6	1.14	1,066.3	87.2	0.98
YJ9VVL		943.0	-57.7	-0.67	950.1	-29.0	-0.33
YZTLVK		1,023.0	22.4	0.26	995.0	15.9	0.18
Z48MBP	X	516.3	-484.3	-5.60	491.0	-488.2	-5.50
ZCKR2N		1,032.0	31.4	0.36	944.0	-35.1	-0.40
ZF2YPN		1,028.0	27.4	0.32	1,043.0	63.9	0.72
ZULETM		1,018.5	17.9	0.21	930.5	-48.6	-0.55
ZVF6WG		1,031.7	31.1	0.36	993.2	14.1	0.16

Summary Statistics	
Grand Means	1,000.64 psi
Std Dev Btwn Labs	86.46 psi
	979.12 psi
	88.76 psi
Statistics based on 95 of 99 reporting participants	

Summary Statistics in SI Units	
Grand Means	6.8991 MPa
Std Dev Btwn Labs	0.5961 MPa
	6.75 MPa
	0.61 MPa
Statistics based on 95 of 99 reporting participants	



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

Report #205
3rd Qtr 2020

Samples C01-C02: Polyisoprene compound, batch #1 & C03-C04: Polyisoprene compound, batch #2

Comments on Assigned Data Flags for Test #607

ACR2AD (X) - Data for sample group C01-C02 are low.

T8ABRY (X) - Inconsistent in testing between samples.

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

Z48MBP (X) - Data for all samples are low. Possible Systematic Error.



Rubber Interlaboratory Testing Program

Report #205

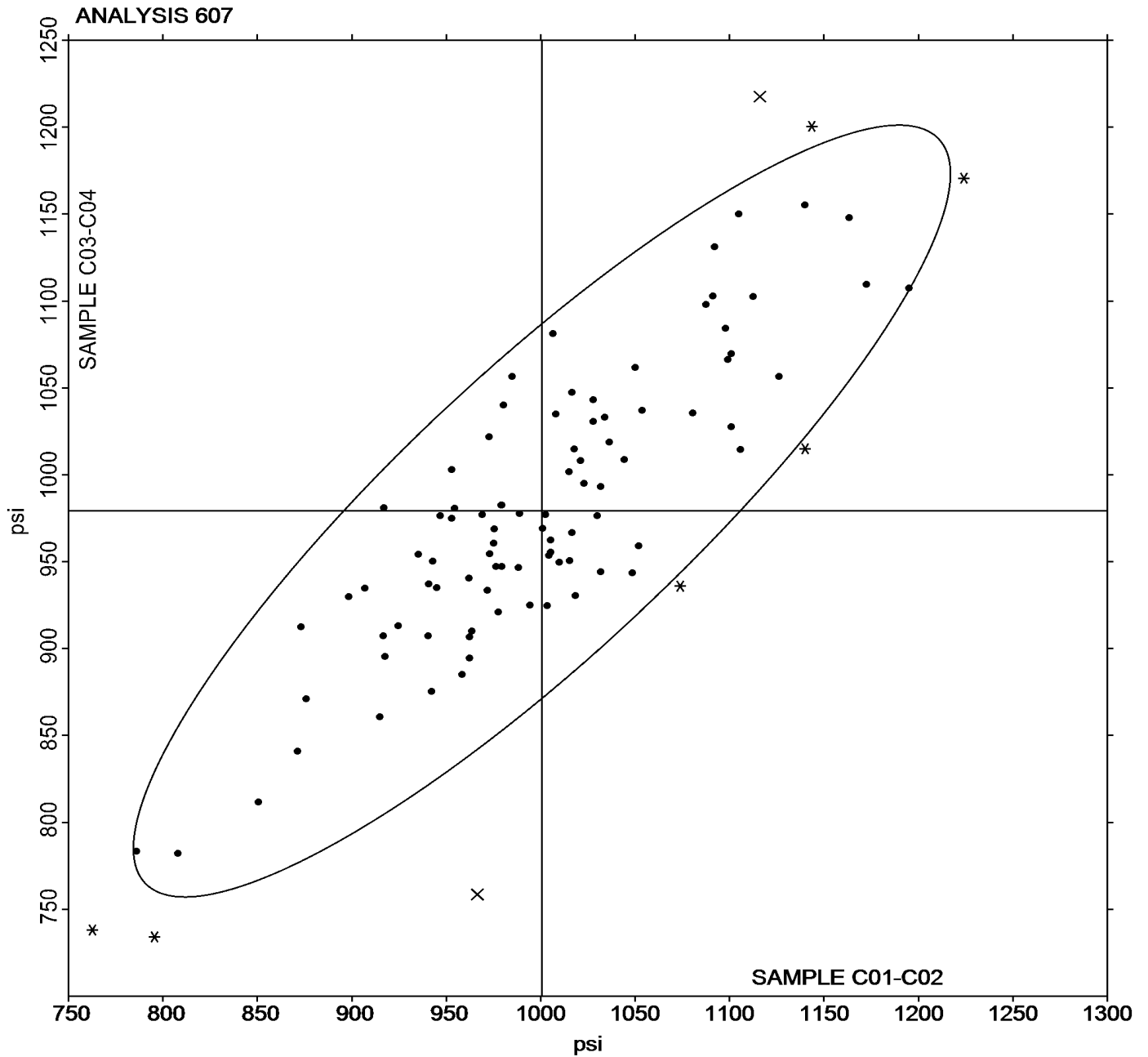
Analysis 607

3rd Qtr 2020

Stress at 300% Elongation (psi)

Grand Mean Sample C01-C02 = 1,000.64 psi

Grand Mean Sample C03-C04 = 979.12 psi





Rubber Interlaboratory Testing Program

Report #205

Analysis 608

3rd Qtr 2020

Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG		214.2	-6.8	-0.46	201.1	-14.6	-1.12
2LHWNV		198.7	-22.4	-1.52	192.9	-22.8	-1.75
34WTHT		235.7	14.6	0.99	232.1	16.4	1.26
36WQYG	X	242.5	21.4	1.45	273.0	57.3	4.42
37NMLP		213.5	-7.6	-0.51	219.5	3.8	0.30
39RMFU	*	265.3	44.2	3.00	242.6	26.9	2.08
3DQWRH		212.3	-8.8	-0.60	215.8	0.2	0.01
3EHU7F		206.5	-14.6	-0.99	202.1	-13.5	-1.04
3HG72F		213.9	-7.2	-0.49	224.6	8.9	0.69
3K6H2L		228.4	7.4	0.50	224.1	8.4	0.65
4EDUJL		210.0	-11.1	-0.75	213.0	-2.7	-0.20
4HFVJH	X	184.2	-36.9	-2.50	216.1	0.5	0.03
4QP2FL		229.5	8.4	0.57	221.5	5.8	0.45
6RV2VC		227.0	5.9	0.40	230.6	15.0	1.15
6VJDUH		218.5	-2.6	-0.17	215.0	-0.7	-0.05
6ZW4DR		202.0	-19.1	-1.29	195.0	-20.7	-1.59
79KCHE		192.6	-28.5	-1.93	198.3	-17.4	-1.34
7MFVQP		219.5	-1.6	-0.11	215.0	-0.7	-0.05
7VEGYD		212.4	-8.7	-0.59	206.7	-8.9	-0.69
7X3RXH	*	245.5	24.4	1.65	252.0	36.3	2.80
8KCHNH		224.5	3.4	0.23	214.0	-1.7	-0.13
8LZYXQ		206.5	-14.6	-0.99	207.5	-8.2	-0.63
8RB6FH		207.5	-13.6	-0.92	204.5	-11.2	-0.86
9D8X2D		211.3	-9.8	-0.67	217.9	2.2	0.17
9G4RTM		220.5	-0.6	-0.04	229.2	13.5	1.04
9YJZUM	*	248.9	27.8	1.88	215.5	-0.2	-0.01
9Z6AAJ		236.5	15.4	1.04	232.0	16.3	1.26
9ZJYBB		235.4	14.4	0.97	223.3	7.7	0.59
AA4PA8		218.0	-3.0	-0.21	221.0	5.4	0.41
ACR2AD		207.0	-14.1	-0.95	200.5	-15.2	-1.17
ANKHXE		229.0	7.9	0.54	201.5	-14.2	-1.09
BFKHYC		246.0	24.9	1.69	236.0	20.3	1.57
BG2J2E		199.4	-21.7	-1.47	193.6	-22.0	-1.70
BQ342L		210.4	-10.7	-0.73	208.8	-6.9	-0.53
BZD7MM		211.0	-10.1	-0.68	221.3	5.6	0.43
C9GXC8		223.0	1.9	0.13	205.5	-10.2	-0.78
CVEAJD		224.8	3.7	0.25	221.2	5.5	0.43
DRR8PD		250.9	29.8	2.02	234.2	18.5	1.43



Rubber Interlaboratory Testing Program

Report #205

Analysis 608

3rd Qtr 2020

Stress at 100% Elongation (psi)

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
EPZDLG		234.2	13.2	0.89	221.2	5.5	0.43
ER8QAB	*	240.0	18.9	1.28	205.5	-10.2	-0.78
FHZB43		238.2	17.1	1.16	236.8	21.1	1.63
FWXMC7		218.5	-2.6	-0.17	212.0	-3.7	-0.28
FZGEM9		227.5	6.4	0.43	223.0	7.3	0.57
GQ7K2F		229.0	7.9	0.54	219.5	3.8	0.30
GRWX96		210.3	-10.8	-0.73	221.2	5.5	0.43
H49MLZ		207.0	-14.1	-0.95	207.0	-8.7	-0.67
H7WYK7		247.3	26.2	1.77	234.2	18.6	1.43
HCJRQD		237.6	16.5	1.12	233.7	18.0	1.39
HKDVZ3		230.1	9.0	0.61	223.2	7.6	0.58
HNBFFNY		206.7	-14.4	-0.98	201.6	-14.1	-1.08
J887H8		224.8	3.7	0.25	227.7	12.1	0.93
JBLWM2		217.0	-4.1	-0.28	210.0	-5.7	-0.44
JE7NY4		220.0	-1.1	-0.07	209.0	-6.7	-0.51
JKCGTZ		225.7	4.6	0.31	225.9	10.2	0.79
JKWX93		248.0	26.9	1.82	224.5	8.8	0.68
LA4LMZ		195.8	-25.3	-1.71	205.1	-10.5	-0.81
LHUAH3		220.0	-1.1	-0.07	207.0	-8.7	-0.67
LU98M7		222.0	0.9	0.06	213.0	-2.7	-0.20
M4RXM4		213.2	-7.9	-0.53	211.8	-3.9	-0.30
M8R9H4		202.0	-19.1	-1.29	214.0	-1.7	-0.13
MLCNL3		210.0	-11.1	-0.75	203.5	-12.2	-0.94
MQ8HJ4		236.0	14.9	1.01	222.0	6.3	0.49
MW2ABY		240.0	19.0	1.28	219.7	4.1	0.31
MZTMQ4		205.5	-15.6	-1.06	202.0	-13.7	-1.05
NBQREA		220.5	-0.6	-0.04	206.5	-9.2	-0.71
NRD6R3		200.2	-20.9	-1.42	203.8	-11.9	-0.92
NWNDYX	*	256.5	35.4	2.40	247.5	31.8	2.45
NYCPY4		223.0	1.9	0.13	221.0	5.3	0.41
P2V9C7		237.3	16.2	1.10	223.7	8.0	0.62
P9WFX2		211.6	-9.5	-0.64	207.9	-7.8	-0.60
PNTVXV		217.5	-3.6	-0.24	213.5	-2.2	-0.17
Q8K948	*	192.4	-28.7	-1.94	181.6	-34.1	-2.63
QUBMMZ		207.9	-13.2	-0.90	212.0	-3.7	-0.29
R7JUW6	X	271.0	49.9	3.38	251.0	35.3	2.72
RDKYRV		221.1	0.0	0.00	224.5	8.9	0.68



Rubber Interlaboratory Testing Program
Analysis 608
Stress at 100% Elongation (psi)

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RJR7UT		220.0	-1.1	-0.07	216.0	0.3	0.03
RPEZP6		224.5	3.4	0.23	199.5	-16.2	-1.24
T8ABRY	X	225.5	4.4	0.30	189.0	-26.7	-2.05
TJ7EVR		201.5	-19.6	-1.33	206.0	-9.7	-0.74
TLUQVX		234.2	13.2	0.89	218.3	2.6	0.20
U6HGN3		223.0	1.9	0.13	227.5	11.9	0.91
U7XVXX		216.5	-4.6	-0.31	212.0	-3.7	-0.28
UEPBHV	X	275.6	54.5	3.69	230.6	15.0	1.15
UMKACP		214.5	-6.6	-0.45	202.0	-13.7	-1.05
UP9LBV		224.0	2.9	0.20	216.0	0.3	0.03
UXGF6N	X	309.7	88.6	6.00	299.5	83.8	6.46
V3CBL2	X	293.8	72.7	4.92	297.3	81.6	6.29
V4JLKQ		220.5	-0.6	-0.04	217.1	1.5	0.11
VWPGRP		216.0	-5.1	-0.34	213.5	-2.2	-0.17
VZ4DWR		214.5	-6.6	-0.45	209.5	-6.2	-0.47
W78KCU		195.0	-26.1	-1.77	190.5	-25.2	-1.94
X2AHMK		209.6	-11.5	-0.78	219.0	3.4	0.26
XD322Q		235.5	14.4	0.98	243.5	27.8	2.15
YGG4GU	X	277.8	56.8	3.84	286.0	70.4	5.42
YJ9VVL		214.8	-6.3	-0.43	217.6	2.0	0.15
YZTLVK		222.5	1.4	0.10	214.0	-1.7	-0.13
Z48MBP	X	163.9	-57.2	-3.87	150.8	-64.8	-4.99
ZCKR2N		228.5	7.4	0.50	204.0	-11.7	-0.90
ZF2YPN		228.0	6.9	0.47	235.5	19.8	1.53
ZULETM		231.5	10.4	0.71	211.0	-4.7	-0.36
ZVF6WG		214.6	-6.5	-0.44	202.7	-12.9	-1.00

Grand Means		Summary Statistics	
	221.08 psi		215.66 psi
Std Dev Btwn Labs	14.77 psi		12.98 psi
Statistics based on 92 of 101 reporting participants			



Rubber Interlaboratory Testing Program
Analysis 608
Stress at 100% Elongation (psi)

Report #205
3rd Qtr 2020

		Summary Statistics in SI Units	
Grand Means	1.5243 MPa	1.49	MPa
Stnd Dev Btwn Labs	0.1018 MPa	0.09	MPa
Statistics based on 92 of 101 reporting participants			

Samples C01-C02: Polyisoprene compound, batch #1 & C03-C04: Polyisoprene compound, batch #2

Comments on Assigned Data Flags for Test #608

- 36WQYG (X) - Data for sample group C03-C04 are high.
- 4HFVJH (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample group C01-C02.
- R7JUW6 (X) - Data for sample group C01-C02 are high.
- T8ABRY (X) - Inconsistent in testing between samples.
- UEPBHV (X) - Data for sample group C01-C02 are high.
- UXGF6N (X) - Data for all samples are high. Possible Systematic Error.
- V3CBL2 (X) - Data for all samples are high. Possible Systematic Error.
- YGG4GU (X) - Data for all samples are high. Possible Systematic Error.
- Z48MBP (X) - Data for all samples are low. Possible Systematic Error.



Rubber Interlaboratory Testing Program

Analysis 608

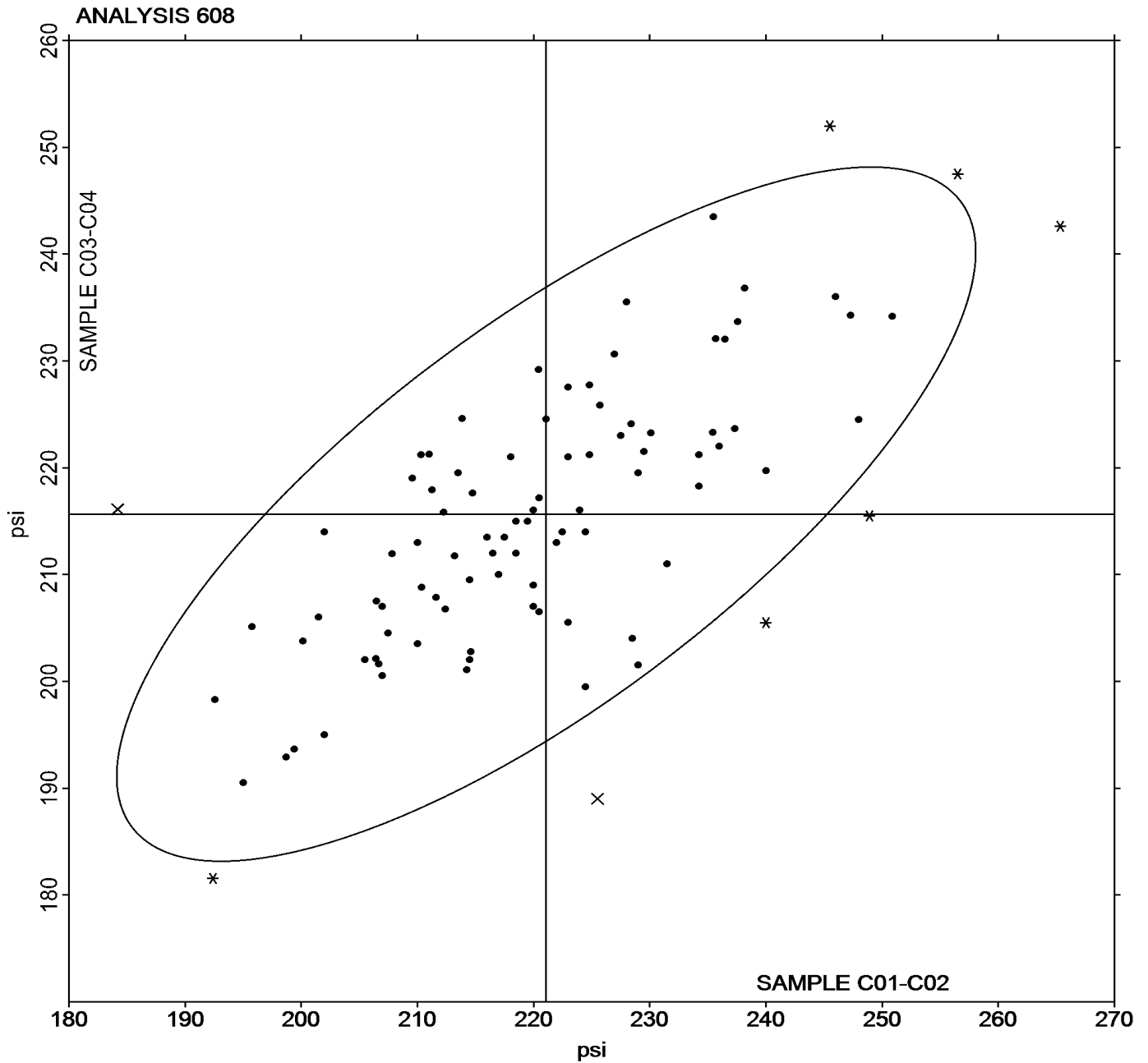
Stress at 100% Elongation (psi)

Report #205

3rd Qtr 2020

Grand Mean Sample C01-C02 = 221.08 psi

Grand Mean Sample C03-C04 = 215.66 psi





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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
29WF3J		48.50	-1.53	-0.95	47.50	-2.31	-1.47	BT
2D8TKG		52.25	2.22	1.38	52.90	3.09	1.96	BT
2LHWNV		50.50	0.47	0.29	50.00	0.19	0.12	BT
34WTHT		49.30	-0.73	-0.45	49.35	-0.46	-0.29	BT
36WQYG		49.15	-0.88	-0.55	48.20	-1.61	-1.02	BT
37NMLP		47.50	-2.53	-1.57	47.50	-2.31	-1.47	BT
39RMFU		51.00	0.97	0.61	49.50	-0.31	-0.20	HH
3DQWRH		46.50	-3.53	-2.20	46.50	-3.31	-2.10	BT
3EHU7F		50.00	-0.03	-0.02	48.50	-1.31	-0.83	BT
3HG72F		48.25	-1.78	-1.11	48.00	-1.81	-1.15	BT
3K6H2L		48.50	-1.53	-0.95	48.50	-1.31	-0.83	BT
3Z2W2F		49.50	-0.53	-0.33	49.00	-0.81	-0.52	XX
4EDUJL		50.35	0.32	0.20	50.30	0.49	0.31	BT
4HFVJH		48.50	-1.53	-0.95	48.50	-1.31	-0.83	BT
4QP2FL		50.75	0.72	0.45	51.20	1.39	0.88	BT
6RV2VC		49.55	-0.48	-0.30	48.95	-0.86	-0.55	BT
6VJDUH		51.50	1.47	0.92	51.00	1.19	0.75	HH
6ZW4DR		50.50	0.47	0.29	49.50	-0.31	-0.20	BT
79KCHE		49.00	-1.03	-0.64	49.00	-0.81	-0.52	HH
7JKZAC		49.50	-0.53	-0.33	50.00	0.19	0.12	BT
7MFVQP		49.85	-0.18	-0.11	50.00	0.19	0.12	BT
7VEGYD		48.95	-1.08	-0.67	49.30	-0.51	-0.33	BT
7X3RXH		50.00	-0.03	-0.02	50.50	0.69	0.43	HH
88J2TP		47.00	-3.03	-1.89	47.50	-2.31	-1.47	BT
8LZYXQ		49.80	-0.23	-0.14	50.20	0.39	0.24	BT
8PYAUQ		49.00	-1.03	-0.64	48.00	-1.81	-1.15	HH
8RB6FH		50.00	-0.03	-0.02	50.00	0.19	0.12	BT
8XHCHF		48.00	-2.03	-1.26	49.00	-0.81	-0.52	BT
9D8X2D		52.10	2.07	1.29	53.10	3.29	2.08	BT
9G4RTM		48.70	-1.33	-0.83	49.20	-0.61	-0.39	BT
9YJZUM		50.75	0.72	0.45	49.75	-0.06	-0.04	BT
9Z6AAJ		51.00	0.97	0.61	51.00	1.19	0.75	BT
9ZJYBB		51.80	1.77	1.10	51.45	1.64	1.04	BT
AA4PA8		51.80	1.77	1.10	51.05	1.24	0.78	BT
ACR2AD	*	46.50	-3.53	-2.20	45.50	-4.31	-2.73	HH
ANKHXE		50.00	-0.03	-0.02	50.00	0.19	0.12	HH
BFKHYC		48.50	-1.53	-0.95	47.15	-2.66	-1.69	BT
BG2J2E	*	52.45	2.42	1.51	53.35	3.54	2.24	BT



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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
BQ342L		51.60	1.57	0.98	51.00	1.19	0.75	XX
BZD7MM		49.10	-0.93	-0.58	49.60	-0.21	-0.14	BT
C9GXC8		51.00	0.97	0.61	51.00	1.19	0.75	HH
CVEAJD		48.20	-1.83	-1.14	48.80	-1.01	-0.64	BT
DRR8PD	X	54.50	4.47	2.78	55.50	5.69	3.60	HH
EPZDLG		51.00	0.97	0.61	51.00	1.19	0.75	HH
ER8QAB		51.05	1.02	0.64	50.25	0.44	0.28	BT
FHZB43		52.20	2.17	1.35	51.85	2.04	1.29	HH
FWXMC7		50.50	0.47	0.29	51.50	1.69	1.07	BT
FZGEM9		50.00	-0.03	-0.02	50.40	0.59	0.37	BT
GQ7K2F	*	54.65	4.62	2.88	53.20	3.39	2.15	XX
GRWX96		51.00	0.97	0.61	49.70	-0.11	-0.07	BT
H49MLZ		48.50	-1.53	-0.95	48.00	-1.81	-1.15	BT
H7WYK7		51.25	1.22	0.76	49.55	-0.26	-0.17	BT
HCJRQD	X	58.75	8.72	5.43	57.75	7.94	5.03	HH
HKDVZ3		50.00	-0.03	-0.02	48.50	-1.31	-0.83	HH
HNBFNY		47.75	-2.28	-1.42	47.50	-2.31	-1.47	BT
J887H8	X	49.40	-0.63	-0.39	46.90	-2.91	-1.85	XX
JBLWM2		49.00	-1.03	-0.64	50.00	0.19	0.12	BT
JE7NY4		52.00	1.97	1.23	51.00	1.19	0.75	HH
JKCGTZ		51.35	1.32	0.82	51.20	1.39	0.88	BT
JKWX93		50.70	0.67	0.42	50.90	1.09	0.69	BT
L9TMQ6		50.00	-0.03	-0.02	49.00	-0.81	-0.52	HH
LA4LMZ		48.75	-1.28	-0.80	48.60	-1.21	-0.77	BT
LHUAH3		49.00	-1.03	-0.64	49.00	-0.81	-0.52	BT
LU98M7		49.50	-0.53	-0.33	49.70	-0.11	-0.07	BT
M4RXM4		51.60	1.57	0.98	52.60	2.79	1.76	BT
M8R9H4	X	54.50	4.47	2.78	56.50	6.69	4.24	BT
MFLEC6		49.50	-0.53	-0.33	50.00	0.19	0.12	BT
MLCNL3		50.00	-0.03	-0.02	50.00	0.19	0.12	HH
MQ8HJ4		49.00	-1.03	-0.64	49.50	-0.31	-0.20	BT
MW2ABY		49.50	-0.53	-0.33	48.50	-1.31	-0.83	BT
MZTMQ4		50.85	0.82	0.51	50.55	0.74	0.47	BT
NBQREA		49.70	-0.33	-0.20	49.95	0.14	0.09	BT
NRD6R3		50.50	0.47	0.29	51.50	1.69	1.07	BT
NWNDYX		50.85	0.82	0.51	49.90	0.09	0.05	XX
NYCPY4		49.50	-0.53	-0.33	50.00	0.19	0.12	BT



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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
P2V9C7		48.50	-1.53	-0.95	49.50	-0.31	-0.20	BT
P7UHPU		47.50	-2.53	-1.57	47.00	-2.81	-1.78	BT
P9WFX2		49.75	-0.28	-0.17	50.15	0.34	0.21	BT
PD8TFZ		50.50	0.47	0.29	50.50	0.69	0.43	BT
PNTVXV		51.50	1.47	0.92	51.50	1.69	1.07	BT
Q8K948		51.50	1.47	0.92	51.00	1.19	0.75	HH
R7JUW6		49.50	-0.53	-0.33	49.00	-0.81	-0.52	BT
RDKYRV	*	45.90	-4.13	-2.57	46.50	-3.31	-2.10	BT
RJR7UT	*	52.65	2.62	1.63	50.65	0.84	0.53	BT
RPEZP6		52.90	2.87	1.79	52.75	2.94	1.86	BT
T8ABRY		52.00	1.97	1.23	52.00	2.19	1.38	BT
TJ7EVR		52.70	2.67	1.66	52.80	2.99	1.89	HH
TLUQVX		50.50	0.47	0.29	50.50	0.69	0.43	HH
U6HGN3		46.85	-3.18	-1.98	46.80	-3.01	-1.91	BT
U7XVXX		48.00	-2.03	-1.26	48.10	-1.71	-1.09	BT
UDCMG4		50.90	0.87	0.54	50.50	0.69	0.43	BT
UEPBHV		51.00	0.97	0.61	50.00	0.19	0.12	HH
UMKACP	*	52.50	2.47	1.54	50.50	0.69	0.43	HH
UP9LBV	X	54.35	4.32	2.69	51.80	1.99	1.26	BT
UVA2HU		50.90	0.87	0.54	51.00	1.19	0.75	XX
UXGF6N		49.55	-0.48	-0.30	48.70	-1.11	-0.71	BT
V3CBL2		50.50	0.47	0.29	50.00	0.19	0.12	HH
V4JLKQ		49.25	-0.78	-0.48	49.50	-0.31	-0.20	HH
VWPGRP		51.50	1.47	0.92	51.00	1.19	0.75	BT
VZ4DWR		50.60	0.57	0.36	50.45	0.64	0.40	BT
W78KCU		49.40	-0.63	-0.39	49.35	-0.46	-0.29	BT
X2AHMK		49.30	-0.73	-0.45	49.80	-0.01	-0.01	BT
XD322Q		52.60	2.57	1.60	52.25	2.44	1.54	BT
Y4TWQK	*	46.00	-4.03	-2.51	46.00	-3.81	-2.42	XX
YGG4GU		50.00	-0.03	-0.02	50.00	0.19	0.12	HH
YJ9VVL		51.00	0.97	0.61	51.00	1.19	0.75	BT
YZTLVK		49.00	-1.03	-0.64	50.00	0.19	0.12	BT
Z48MBP		49.50	-0.53	-0.33	48.50	-1.31	-0.83	BT
ZCKR2N	*	51.75	1.72	1.07	49.30	-0.51	-0.33	BT
ZF2YPN		50.00	-0.03	-0.02	49.50	-0.31	-0.20	HH
ZULETM		49.00	-1.03	-0.64	48.50	-1.31	-0.83	BT
ZVF6WG		52.60	2.57	1.60	51.75	1.94	1.23	HH

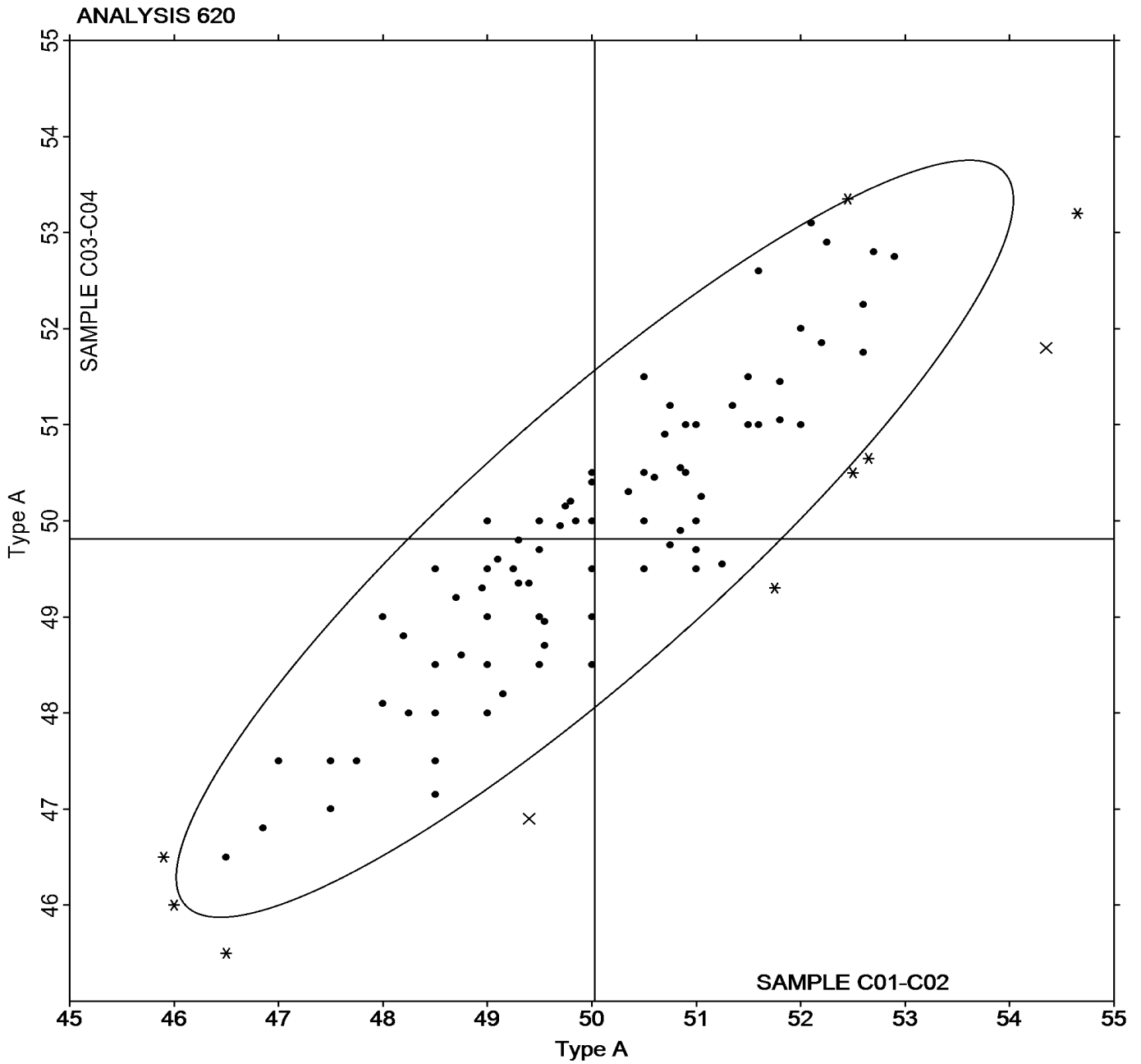


Rubber Interlaboratory Testing Program
Analysis 620
Hardness (Shore A/Type A)

Report #205
3rd Qtr 2020

Grand Mean Sample C01-C02 = 50.028 Type A

Grand Mean Sample C03-C04 = 49.814 Type A





Rubber Interlaboratory Testing Program
Analysis 621
Density

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG		1.136	0.000	0.03	1.133	-0.002	-0.70
2LHWNV		1.140	0.005	1.40	1.140	0.005	1.38
39RMFU		1.134	-0.002	-0.60	1.135	-0.001	-0.24
3DQWRH		1.134	-0.002	-0.60	1.134	-0.002	-0.54
3EHU7F		1.132	-0.004	-1.17	1.130	-0.005	-1.52
3HG72F		1.140	0.005	1.46	1.143	0.007	2.15
3K6H2L		1.134	-0.002	-0.60	1.134	-0.001	-0.39
4EDUJL		1.138	0.003	0.86	1.137	0.002	0.54
4HFVJH		1.135	-0.001	-0.29	1.135	0.000	-0.09
4QP2FL		1.138	0.003	0.77	1.137	0.002	0.60
6RV2VC		1.131	-0.005	-1.44	1.131	-0.004	-1.23
6VJDUH	X	1.120	-0.015	-4.75	1.120	-0.015	-4.50
6ZW4DR	X	1.122	-0.013	-4.13	1.129	-0.006	-1.86
79KCHE		1.132	-0.003	-0.95	1.135	-0.001	-0.23
7VEGYD		1.138	0.003	0.79	1.138	0.003	0.79
7X3RXH		1.137	0.001	0.42	1.137	0.001	0.35
8KCHNH		1.137	0.002	0.48	1.137	0.002	0.49
8LZYXQ		1.142	0.006	1.86	1.141	0.006	1.67
8PYAUQ		1.132	-0.004	-1.21	1.132	-0.004	-1.12
8RB6FH		1.138	0.003	0.86	1.135	-0.001	-0.15
9D8X2D		1.140	0.005	1.48	1.141	0.005	1.60
9G4RTM		1.136	0.001	0.17	1.133	-0.002	-0.58
9Z6AAJ		1.133	-0.003	-0.89	1.132	-0.004	-1.12
9ZJYBB	*	1.130	-0.005	-1.67	1.127	-0.009	-2.53
AA4PA8		1.132	-0.004	-1.21	1.133	-0.002	-0.68
ACR2AD		1.138	0.002	0.68	1.138	0.002	0.67
ANKHXE		1.139	0.003	0.94	1.138	0.003	0.79
BG2J2E		1.138	0.002	0.63	1.138	0.003	0.79
BZD7MM		1.132	-0.004	-1.21	1.133	-0.003	-0.83
C9GXC8		1.137	0.002	0.48	1.136	0.001	0.20
DRR8PD	X	1.132	-0.004	-1.14	1.123	-0.012	-3.61
ER8QAB		1.141	0.006	1.69	1.141	0.005	1.61
FHZB43		1.134	-0.001	-0.32	1.133	-0.002	-0.58
GQ7K2F		1.136	0.000	0.02	1.137	0.002	0.49
GRWX96		1.131	-0.004	-1.37	1.133	-0.003	-0.83
H49MLZ		1.136	0.001	0.17	1.137	0.002	0.49
H7WYK7		1.136	0.000	0.02	1.136	0.000	0.05



Rubber Interlaboratory Testing Program
Analysis 621
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WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
HCJRQD		1.132	-0.004	-1.14	1.134	-0.002	-0.51
HKDVZ3		1.132	-0.003	-1.06	1.130	-0.005	-1.56
HNBFNY		1.136	0.001	0.17	1.137	0.001	0.35
J887H8	*	1.133	-0.002	-0.75	1.129	-0.007	-2.01
JE7NY4		1.136	0.000	0.02	1.137	0.001	0.35
JKCGTZ		1.133	-0.002	-0.64	1.131	-0.004	-1.29
JKWX93		1.136	0.001	0.15	1.136	0.001	0.18
LA4LMZ		1.141	0.006	1.71	1.140	0.005	1.38
LHUAH3		1.135	0.000	-0.14	1.135	-0.001	-0.24
LU98M7		1.135	0.000	-0.14	1.135	0.000	-0.09
MFLEC6		1.136	0.001	0.17	1.136	0.000	0.05
MLCNL3		1.138	0.003	0.79	1.138	0.003	0.79
MW2ABY		1.138	0.002	0.66	1.136	0.001	0.24
MZTMQ4		1.141	0.005	1.55	1.141	0.006	1.67
NBQREA		1.133	-0.003	-0.78	1.136	0.001	0.23
NRD6R3	*	1.130	-0.005	-1.67	1.134	-0.001	-0.39
NYCPY4	*	1.133	-0.002	-0.75	1.137	0.002	0.49
P2V9C7		1.137	0.002	0.55	1.137	0.002	0.58
P9WFX2		1.142	0.006	1.98	1.141	0.006	1.79
PD8TFZ		1.134	-0.001	-0.44	1.134	-0.001	-0.39
PNTVXV		1.137	0.001	0.35	1.136	0.001	0.26
Q8K948	X	1.126	-0.009	-2.90	1.124	-0.012	-3.48
QUBMMZ		1.141	0.006	1.77	1.141	0.006	1.73
R7JUW6		1.133	-0.003	-0.78	1.132	-0.004	-1.08
RDKYRV	X	1.108	-0.028	-8.59	1.119	-0.017	-4.89
RJR7UT		1.135	0.000	-0.15	1.134	-0.002	-0.54
RPEZP6		1.136	0.000	0.14	1.136	0.001	0.33
T8ABRY		1.141	0.005	1.62	1.138	0.002	0.71
TJ7EVR		1.130	-0.005	-1.69	1.130	-0.006	-1.70
U6HGN3		1.137	0.001	0.32	1.137	0.001	0.35
U7XVXX		1.132	-0.003	-1.06	1.131	-0.004	-1.27
UEPBHV		1.139	0.004	1.09	1.138	0.003	0.79
UMKACP		1.137	0.001	0.35	1.139	0.004	1.10
UP9LBV		1.130	-0.005	-1.67	1.130	-0.005	-1.56
UVA2HU	X	1.107	-0.028	-8.75	1.106	-0.029	-8.62
UXGF6N		1.132	-0.004	-1.21	1.130	-0.006	-1.71
V3CBL2		1.135	0.000	0.00	1.136	0.000	0.08
VWPGRP		1.137	0.002	0.60	1.136	0.001	0.24



Rubber Interlaboratory Testing Program
Analysis 621
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Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample C01-C02			Sample C03-C04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
VZ4DWR		1.134	-0.002	-0.58	1.137	0.001	0.43
X2AHMK		1.137	0.002	0.62	1.139	0.003	1.02
XD322Q		1.136	0.000	0.09	1.136	0.001	0.27
YGG4GU		1.136	0.001	0.17	1.136	0.001	0.21
YZTLVK		1.135	0.000	-0.14	1.134	-0.001	-0.39
Z48MBP	X	1.119	-0.016	-5.06	1.117	-0.018	-5.39
ZCKR2N		1.137	0.001	0.39	1.136	0.000	0.07
ZF2YPN	*	1.127	-0.008	-2.60	1.128	-0.007	-2.15
ZULETM		1.137	0.002	0.48	1.135	0.000	-0.09

		Summary Statistics	
Grand Means	1.1354	g/cm ³ (Mg/m ³)	1.1353
			g/cm ³ (Mg/m ³)
Stnd Dev Btwn Labs	0.0033	g/cm ³ (Mg/m ³)	0.0034
			g/cm ³ (Mg/m ³)
Statistics based on 77 of 84 reporting participants			

Samples C01-C02: Polyisoprene compound, batch #1 & C03-C04: Polyisoprene compound, batch #2

Comments on Assigned Data Flags for Test #621

- 6VJDUH (X) - Data for all samples are low. Possible Systematic Error.
- 6ZW4DR (X) - Data for sample group C01-C02 are low. Inconsistent within the determinations of sample group C01-C02.
- DRR8PD (X) - Data for sample group C03-C04 are low.
- Q8K948 (X) - Data for all samples are low. Possible Systematic Error.
- RDKYRV (X) - Data for all samples are low. Possible Systematic Error. Inconsistent within the determinations of sample group C03-C04.
- UVA2HU (X) - Data for all samples are low. Possible Systematic Error. Inconsistent within the determinations of sample group C01-C02.
- Z48MBP (X) - Data for all samples are low. Possible Systematic Error. Inconsistent within the determinations of both sample groups.

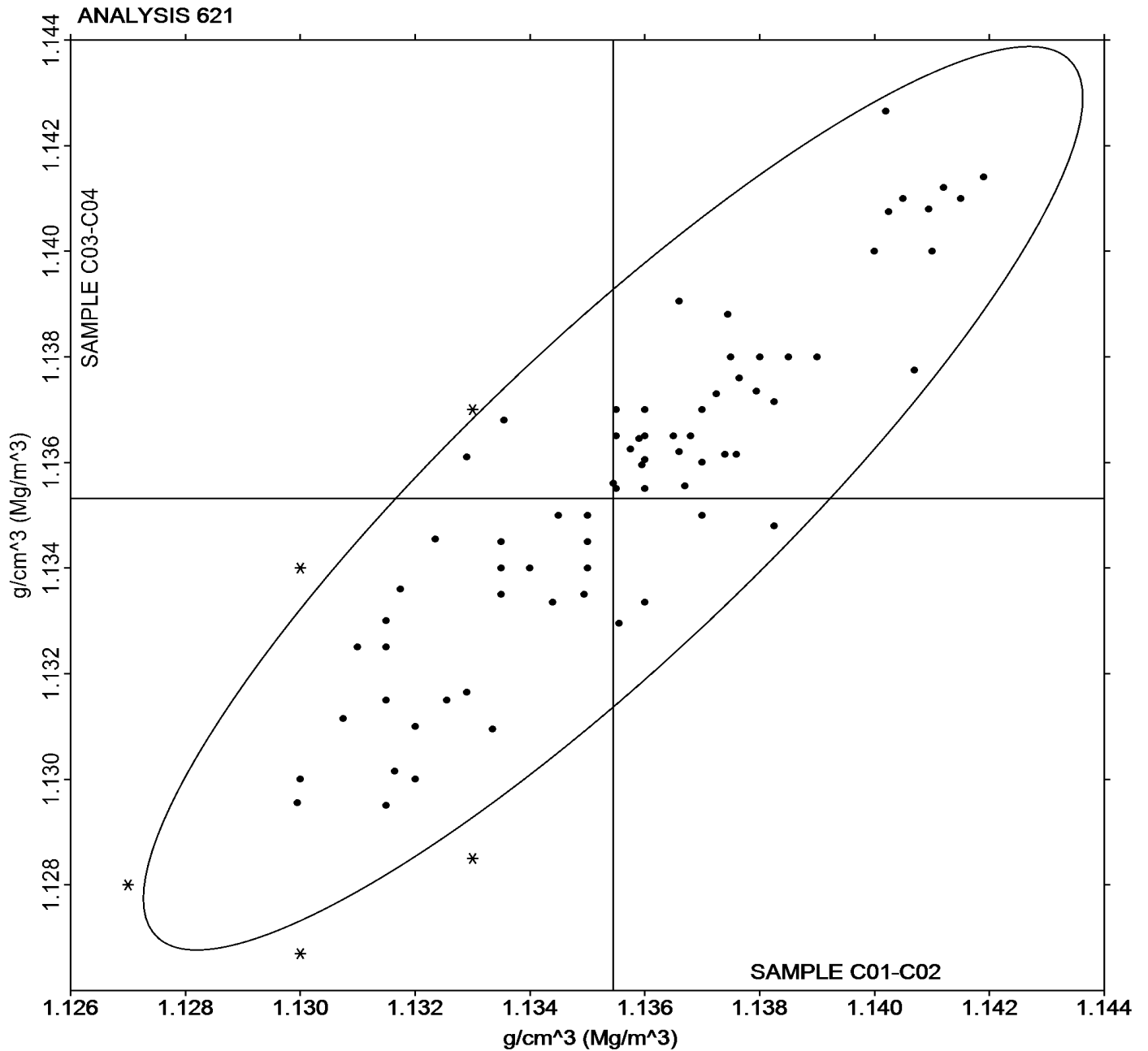


Rubber Interlaboratory Testing Program
Analysis 621
Density

Report #205
3rd Qtr 2020

Grand Mean Sample C01-C02 = 1.1354 g/cm³
(Mg/m³)

Grand Mean Sample C03-C04 = 1.1353 g/cm³
(Mg/m³)





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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample HC01-HC02			Sample HC03-HC04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
34WTHT		52.85	-0.75	-0.26	66.60	-1.30	-0.55	BT
3PEZTM		54.00	0.40	0.14	68.75	0.85	0.35	HH
4U6RKF		58.00	4.40	1.55	71.50	3.60	1.51	XX
7X3RXH		57.00	3.40	1.20	72.00	4.10	1.71	HH
8T34UF		49.15	-4.45	-1.57	65.15	-2.75	-1.15	XX
8XHCHF		50.00	-3.60	-1.27	65.00	-2.90	-1.22	BT
B6NJ6L		55.50	1.90	0.67	68.50	0.60	0.25	XX
FA3JV9		56.50	2.90	1.02	70.00	2.10	0.88	HH
FWGBU2		47.00	-6.60	-2.32	62.00	-5.90	-2.47	BT
GUKEHC		54.50	0.90	0.32	69.00	1.10	0.46	HH
HMKA89		55.25	1.65	0.58	69.40	1.50	0.63	HH
J887H8		51.00	-2.60	-0.92	66.00	-1.90	-0.80	XX
JFZE3X		54.00	0.40	0.14	66.50	-1.40	-0.59	BT
LCRXL6		50.00	-3.60	-1.27	65.50	-2.40	-1.01	BT
LRJVNZ		51.00	-2.60	-0.92	66.50	-1.40	-0.59	HH
M4RXM4		52.25	-1.35	-0.47	67.55	-0.35	-0.15	BT
MLCNL3		54.00	0.40	0.14	68.00	0.10	0.04	HH
P9WFX2		52.65	-0.95	-0.33	67.60	-0.30	-0.13	BT
Q6WRUY		56.25	2.65	0.93	70.10	2.20	0.92	HH
TQ7J7W		58.00	4.40	1.55	72.50	4.60	1.92	BT
UDCMG4		52.95	-0.65	-0.23	67.10	-0.80	-0.34	BT
UEPBHV		51.50	-2.10	-0.74	66.50	-1.40	-0.59	HH
UFXJPU		57.45	3.85	1.36	70.80	2.90	1.21	BT
VK848Z		53.50	-0.10	-0.03	68.00	0.10	0.04	XX
X4XULQ		54.25	0.65	0.23	66.95	-0.95	-0.40	BT
YJ9VVL		55.00	1.40	0.49	68.00	0.10	0.04	XX

Grand Means		Summary Statistics	
	53.598 Type D		67.904 Type D
Std Dev Btwn Labs	2.839 Type D		2.389 Type D
Statistics based on 26 of 26 reporting participants			

Samples HC01-HC02: Hardness Disc, batch #1 & HC03-HC04: Hardness Disc, batch #2

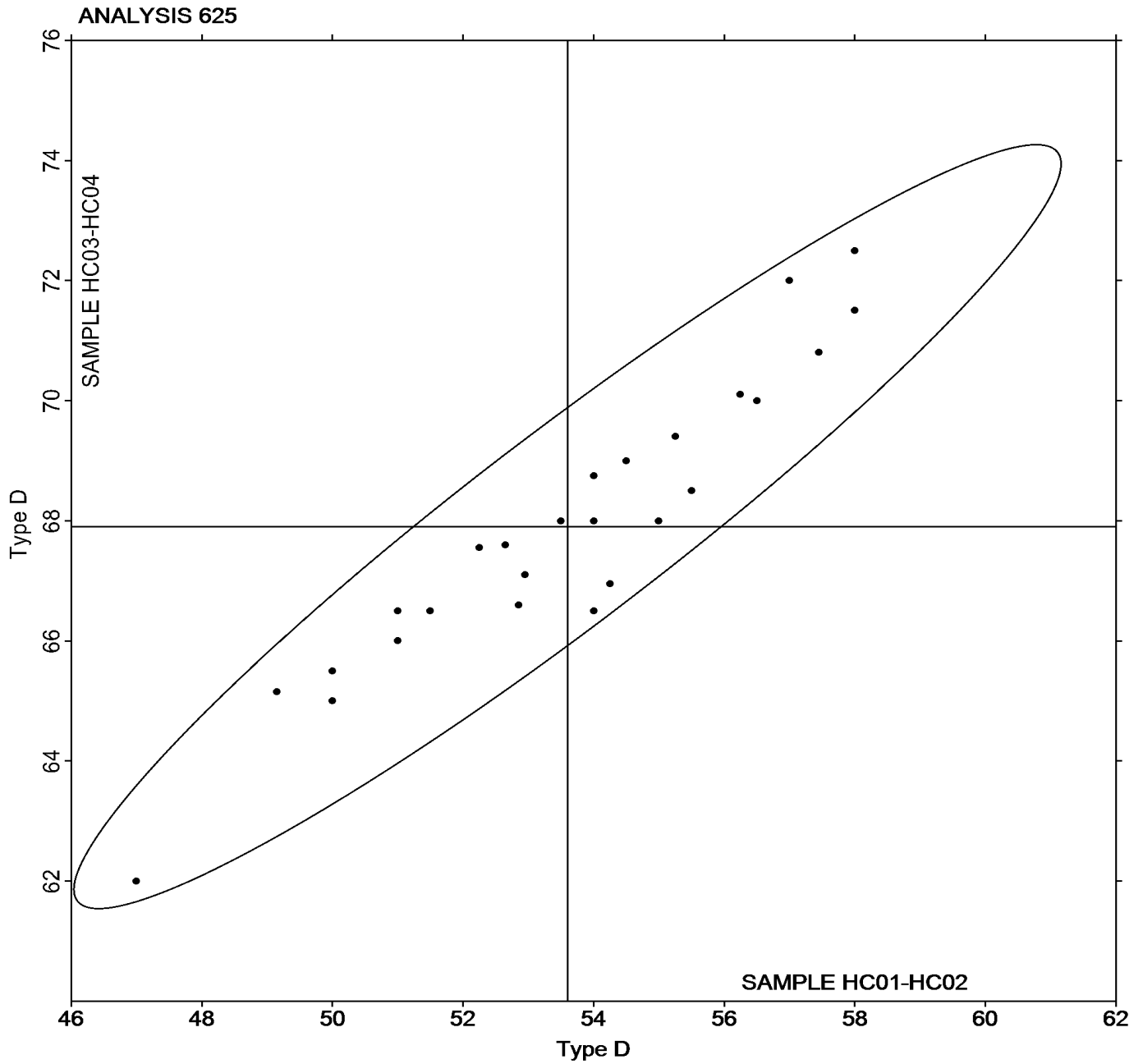


Rubber Interlaboratory Testing Program
Analysis 625
Hardness (Shore D/Type D)

Report #205
3rd Qtr 2020

Grand Mean Sample **HC01-HC02** = 53.598 Type D

Grand Mean Sample **HC03-HC04** = 67.904 Type D





Rubber Interlaboratory Testing Program

Report #205

Analysis 630

3rd Qtr 2020

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

WebCode	Data Flag	Sample C01-C02			Sample L01-L02		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG	*	3,229.6	244.6	2.02	2,366.1	-610.1	-2.47
2LHWNV		3,035.7	50.7	0.42	2,879.0	-97.2	-0.39
39RMFU		2,870.0	-115.0	-0.95	2,595.0	-381.2	-1.54
3DQWRH		3,051.6	66.6	0.55	3,419.3	443.1	1.79
3EHU7F		2,955.4	-29.6	-0.24	2,559.4	-416.8	-1.68
4EDUJL		2,964.0	-21.0	-0.17	3,071.5	95.3	0.39
6VJDUH		3,184.5	199.5	1.65	3,154.0	177.8	0.72
8LZYXQ	*	2,676.0	-309.0	-2.55	3,075.5	99.3	0.40
9D8X2D		2,994.6	9.6	0.08	3,242.0	265.8	1.07
9G4RTM		3,215.5	230.5	1.91	3,099.5	123.3	0.50
ANKHXE		3,105.0	120.0	0.99	3,225.0	248.8	1.01
EPZDLG		2,844.2	-140.8	-1.16	2,506.3	-469.9	-1.90
ER8QAB		3,024.5	39.5	0.33	3,013.0	36.8	0.15
FHZB43		2,932.3	-52.7	-0.44	2,676.5	-299.7	-1.21
FWXMC7		2,952.0	-33.0	-0.27	3,059.5	83.3	0.34
GQ7K2F		2,889.0	-96.0	-0.79	2,980.5	4.3	0.02
GRWX96		2,846.4	-138.6	-1.15	3,224.9	248.8	1.01
H7WYK7		3,045.8	60.8	0.50	2,956.6	-19.6	-0.08
HCJRQD		3,060.3	75.3	0.62	3,192.3	216.1	0.87
HKDVZ3		2,982.9	-2.1	-0.02	2,990.8	14.6	0.06
JE7NY4		2,993.0	8.0	0.07	2,804.0	-172.2	-0.70
JKCGTZ		3,051.0	66.0	0.55	2,510.5	-465.7	-1.88
M4RXM4		2,857.3	-127.7	-1.06	3,031.3	55.1	0.22
NWNDYX		2,902.5	-82.5	-0.68	2,962.2	-14.0	-0.06
P2V9C7		2,874.3	-110.7	-0.91	2,884.5	-91.7	-0.37
P9WFX2		2,893.7	-91.3	-0.76	3,120.6	144.4	0.58
Q8K948		3,175.1	190.1	1.57	3,174.5	198.3	0.80
QUBMMZ		2,993.6	8.6	0.07	3,054.3	78.1	0.32
RDKYRV		3,031.0	46.0	0.38	3,236.3	260.2	1.05
RPEZP6		3,076.0	91.0	0.75	2,915.0	-61.2	-0.25
UMKACP		2,829.2	-155.8	-1.29	3,031.1	55.0	0.22
YZTLVK		3,015.0	30.0	0.25	3,153.5	177.3	0.72
ZCKR2N		2,954.0	-31.0	-0.26	3,049.5	73.3	0.30



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

Report #205
3rd Qtr 2020

		Summary Statistics	
Grand Means			
	2,984.99 psi		2,976.18 psi
Stnd Dev Btwn Labs			
	120.96 psi		247.44 psi
Statistics based on 33 of 33 reporting participants			

		Summary Statistics in SI Units	
Grand Means			
	20.581 MPa		20.52 MPa
Stnd Dev Btwn Labs			
	0.834 MPa		1.71 MPa
Statistics based on 33 of 33 reporting participants			

Samples C01-C02: Polyisoprene compound, batch #1 & L01-L02: Polyisoprene compound, batch #1



Rubber Interlaboratory Testing Program

Report #205

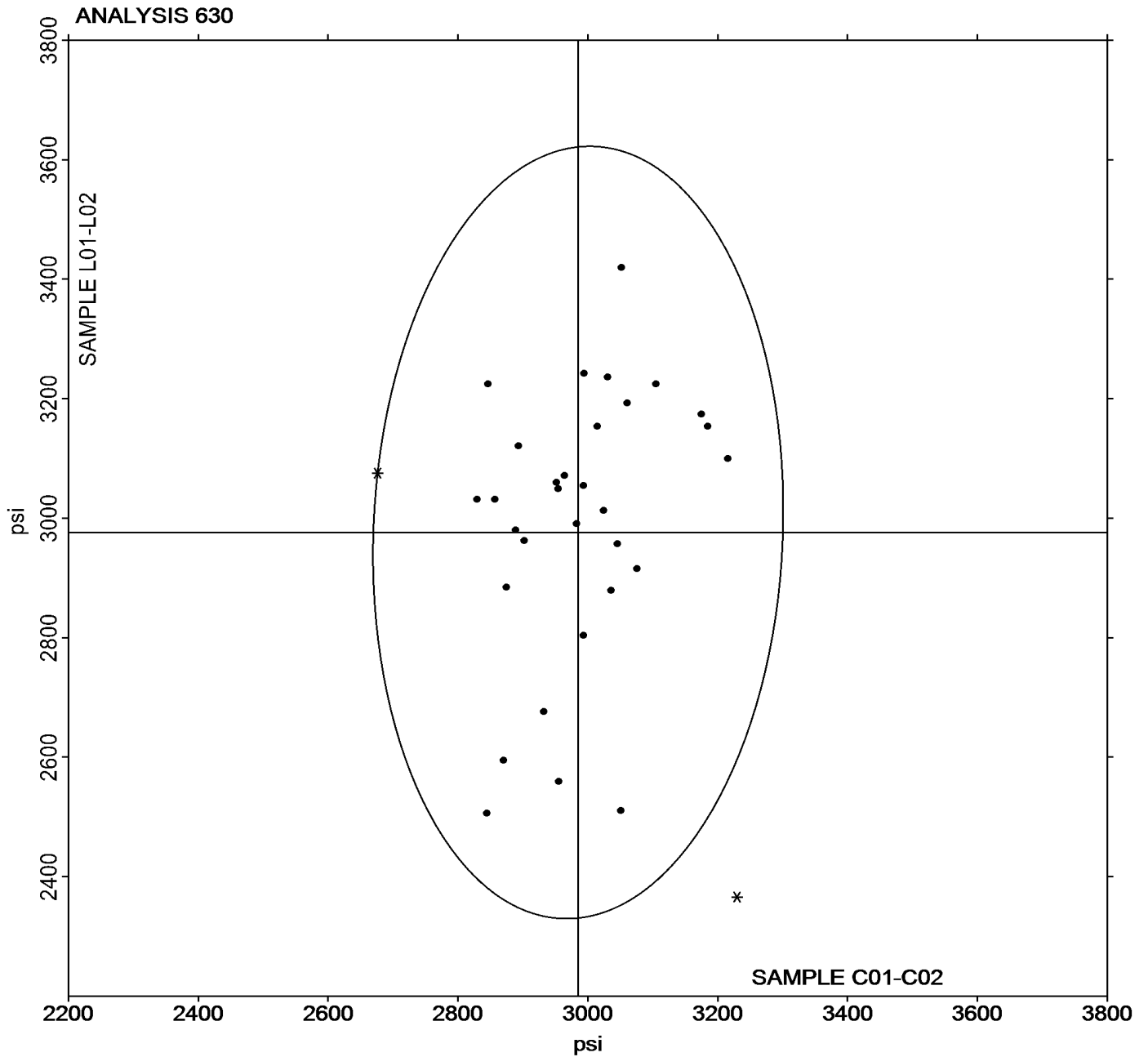
Analysis 630

3rd Qtr 2020

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

Grand Mean Sample C01-C02 = 2,984.99 psi

Grand Mean Sample L01-L02 = 2,976.18 psi





Rubber Interlaboratory Testing Program

Report #205

Analysis 631

3rd Qtr 2020

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

WebCode	Data Flag	Sample C01-C02			Sample L01-L02		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG		622.4	31.6	1.88	603.5	5.7	0.27
2LHWNV		617.9	27.0	1.61	634.1	36.3	1.72
39RMFU	X	636.0	45.2	2.69	726.0	128.2	6.09
3DQWRH		591.6	0.8	0.05	611.5	13.7	0.65
3EHU7F		605.0	14.2	0.85	601.9	4.2	0.20
4EDUJL		589.5	-1.3	-0.08	598.5	0.7	0.03
6VJDUH		604.8	14.0	0.83	610.3	12.5	0.60
8LZYXQ	*	592.5	1.7	0.10	652.5	54.7	2.60
9D8X2D		569.0	-21.8	-1.30	586.5	-11.3	-0.54
9G4RTM		602.0	11.2	0.67	589.1	-8.7	-0.41
ANKHXE		600.5	9.7	0.58	618.5	20.7	0.98
EPZDLG		594.5	3.7	0.22	578.5	-19.3	-0.92
ER8QAB		601.5	10.7	0.64	594.0	-3.8	-0.18
FHZB43		597.9	7.1	0.42	587.2	-10.6	-0.50
FWXMC7		592.5	1.7	0.10	589.5	-8.3	-0.39
GQ7K2F		598.0	7.2	0.43	609.5	11.7	0.56
GRWX96		578.5	-12.3	-0.73	599.5	1.7	0.08
H7WYK7		564.0	-26.8	-1.59	572.0	-25.8	-1.22
HCJRQD		595.7	4.9	0.29	577.1	-20.6	-0.98
HKDVZ3		604.9	14.0	0.84	614.4	16.6	0.79
JE7NY4		560.5	-30.3	-1.80	580.0	-17.8	-0.84
JKCGTZ		598.5	7.7	0.46	622.5	24.7	1.17
M4RXM4		576.4	-14.4	-0.86	589.9	-7.9	-0.38
NWNDYX	*	543.7	-47.2	-2.80	533.9	-63.9	-3.04
P2V9C7		602.0	11.2	0.67	602.0	4.2	0.20
P9WFX2		575.5	-15.3	-0.91	594.0	-3.8	-0.18
Q8K948	X	690.5	99.7	5.93	710.3	112.5	5.34
QUBMMZ		602.5	11.7	0.70	586.0	-11.8	-0.56
RDKYRV		587.3	-3.5	-0.21	608.9	11.2	0.53
RPEZP6		601.5	10.7	0.64	593.0	-4.8	-0.23
UMKACP		584.5	-6.3	-0.38	616.0	18.2	0.86
YZTLVK		583.5	-7.3	-0.43	588.5	-9.3	-0.44
ZCKR2N		576.5	-14.3	-0.85	588.5	-9.3	-0.44



Rubber Interlaboratory Testing Program

Report #205

Analysis 631

3rd Qtr 2020

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

		Summary Statistics	
Grand Means	590.81 percent	597.78 percent	
Stnd Dev Btwn Labs	16.81 percent	21.06 percent	
Statistics based on 31 of 33 reporting participants			

Samples C01-C02: Polyisoprene compound, batch #1 & L01-L02: Polyisoprene compound, batch #1

Comments on Assigned Data Flags for Test #631

39RMFU (X) - Data for all samples are high.

Q8K948 (X) - Data for all samples are high. Inconsistent within the determinations of sample group C01-C02.



Rubber Interlaboratory Testing Program

Report #205

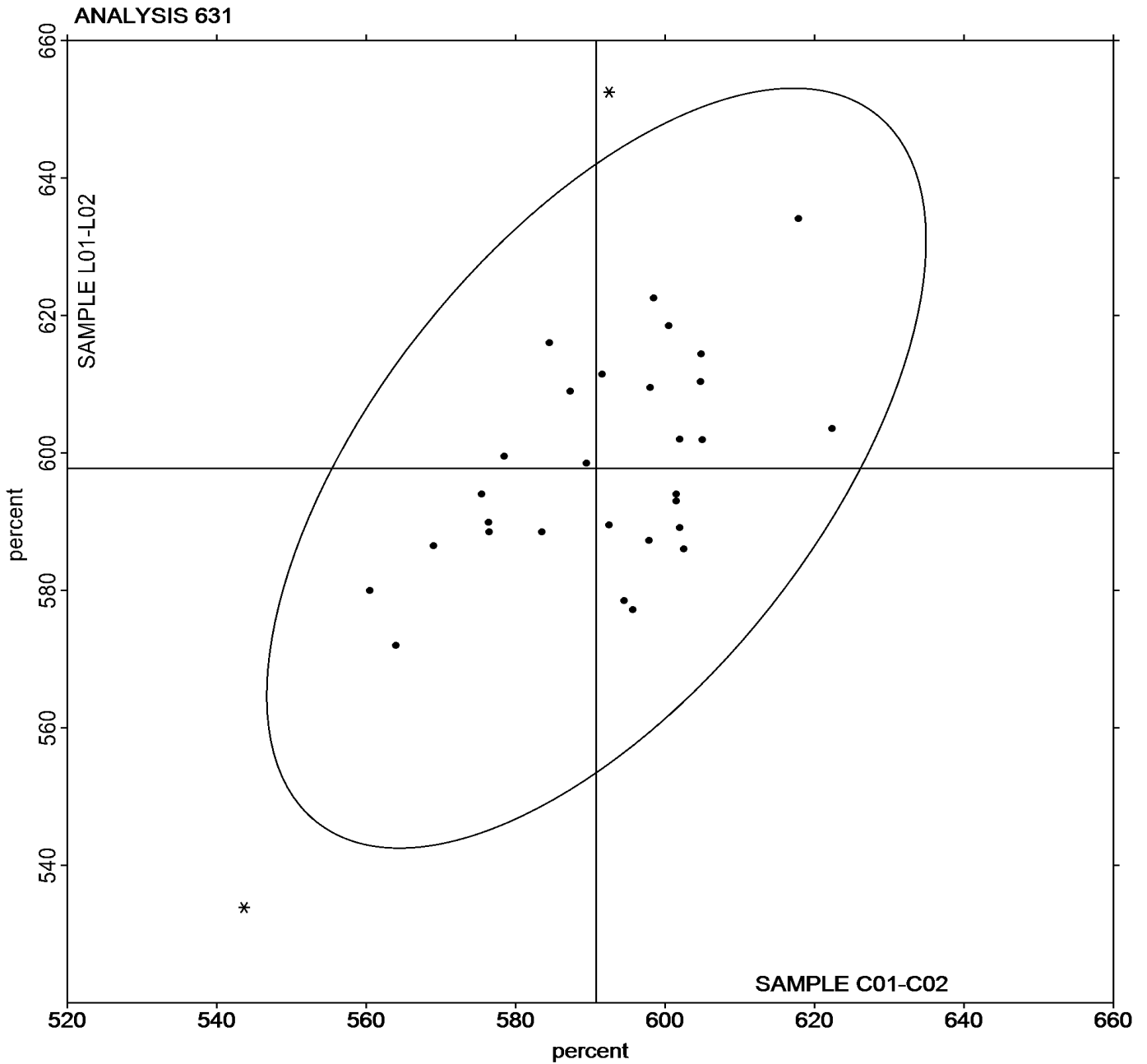
Analysis 631

3rd Qtr 2020

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

Grand Mean Sample C01-C02 = 590.81 percent

Grand Mean Sample L01-L02 = 597.78 percent





Rubber Interlaboratory Testing Program

Report #205

Analysis 632

3rd Qtr 2020

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

WebCode	Data Flag	Sample C01-C02			Sample L01-L02		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG		1,005.4	18.8	0.28	666.1	-251.2	-2.09
2LHWNV		916.6	-70.0	-1.03	823.1	-94.2	-0.78
39RMFU	*	942.2	-44.4	-0.65	589.5	-327.8	-2.73
3DQWRH		975.1	-11.5	-0.17	998.2	81.0	0.67
3EHU7F		940.6	-46.1	-0.68	787.8	-129.4	-1.08
4EDUJL		953.0	-33.7	-0.50	930.5	13.2	0.11
6VJDUH		1,036.3	49.7	0.73	874.0	-43.3	-0.36
8LZYXQ		876.0	-110.7	-1.63	834.0	-83.3	-0.69
9D8X2D		1,028.0	41.3	0.61	1,036.1	118.8	0.99
9G4RTM		984.8	-1.8	-0.03	958.7	41.4	0.35
ANKHXE		1,052.0	65.3	0.96	971.5	54.2	0.45
EPZDLG		973.2	-13.4	-0.20	799.2	-118.1	-0.98
ER8QAB		1,048.5	61.8	0.91	991.0	73.7	0.61
FHZB43		988.9	2.3	0.03	912.6	-4.7	-0.04
FWXMC7		972.0	-14.7	-0.22	966.5	49.2	0.41
GQ7K2F		977.5	-9.2	-0.13	936.0	18.7	0.16
GRWX96		952.9	-33.7	-0.50	1,032.0	114.7	0.95
H7WYK7		1,126.2	139.6	2.06	1,005.8	88.6	0.74
HCJRQD		988.4	1.7	0.03	1,012.6	95.3	0.79
HKDVZ3		979.1	-7.5	-0.11	921.3	4.0	0.03
JE7NY4		1,005.5	18.8	0.28	851.0	-66.3	-0.55
JKCGTZ		1,033.9	47.2	0.70	731.1	-186.2	-1.55
M4RXM4		975.4	-11.3	-0.17	1,001.5	84.2	0.70
NWNDYX	*	1,163.5	176.8	2.60	1,191.0	273.7	2.28
P2V9C7		958.5	-28.1	-0.41	944.2	27.0	0.22
P9WFX2		976.4	-10.3	-0.15	982.9	65.6	0.55
Q8K948	*	762.7	-224.0	-3.30	738.9	-178.3	-1.48
QUBMMZ		946.8	-39.9	-0.59	959.1	41.8	0.35
RDKYRV		1,008.2	21.5	0.32	1,020.5	103.2	0.86
RPEZP6		994.5	7.8	0.12	922.0	4.7	0.04
UMKACP		962.5	-24.2	-0.36	914.0	-3.3	-0.03
YZTLVK		1,023.0	36.3	0.54	982.0	64.7	0.54
ZCKR2N		1,032.0	45.3	0.67	985.0	67.7	0.56



Rubber Interlaboratory Testing Program

Report #205

Analysis 632

3rd Qtr 2020

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

		Summary Statistics	
Grand Means	986.65 psi		917.26 psi
Std Dev Btwn Labs	67.87 psi		120.14 psi
Statistics based on 33 of 33 reporting participants			

		Summary Statistics in SI Units	
Grand Means	6.8027 MPa		6.32 MPa
Std Dev Btwn Labs	0.4679 MPa		0.83 MPa
Statistics based on 33 of 33 reporting participants			

Samples C01-C02: Polyisoprene compound, batch #1 & L01-L02: Polyisoprene compound, batch #1



Rubber Interlaboratory Testing Program

Report #205

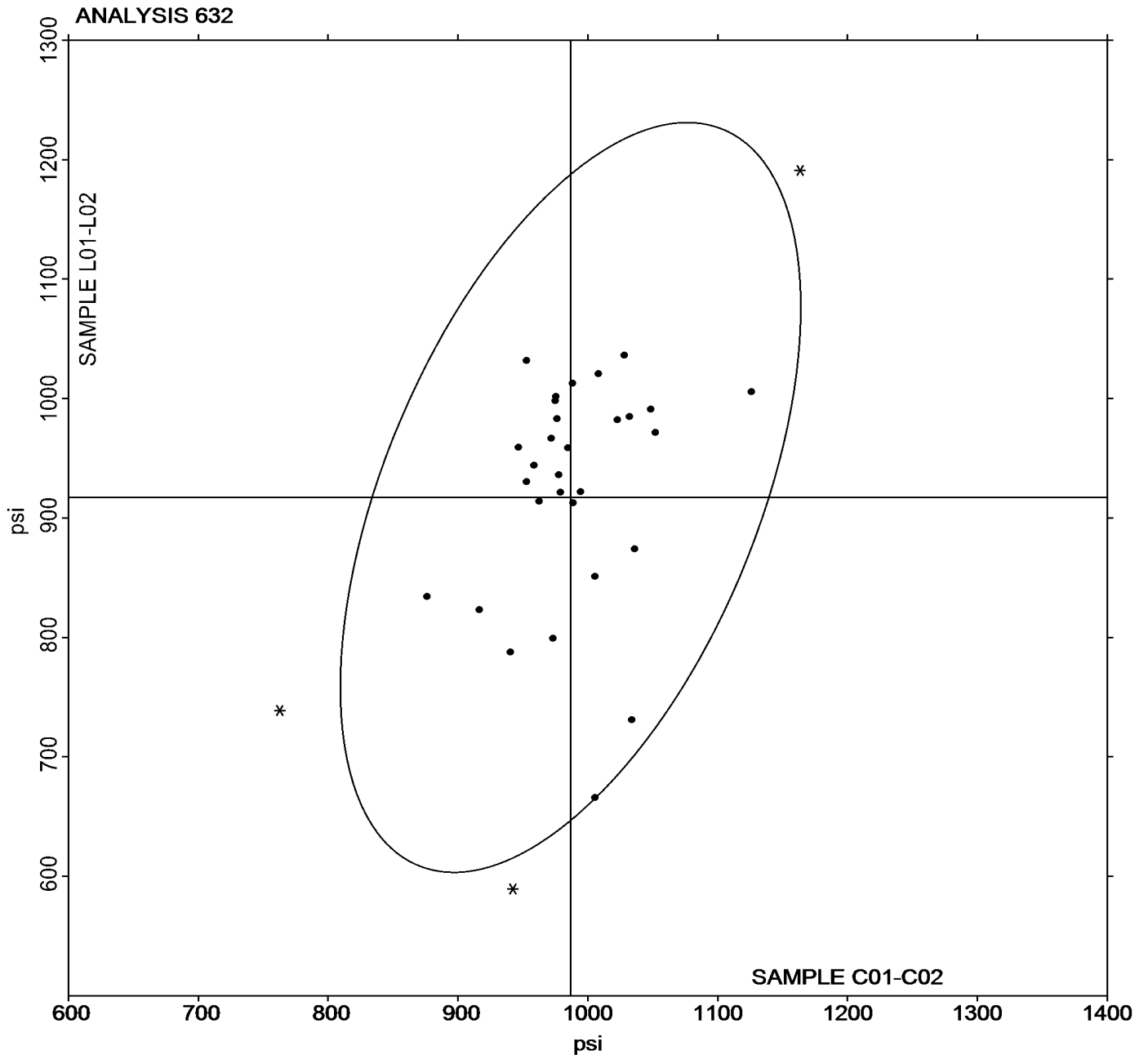
Analysis 632

3rd Qtr 2020

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

Grand Mean Sample C01-C02 = 986.65 psi

Grand Mean Sample L01-L02 = 917.26 psi





Rubber Interlaboratory Testing Program

Report #205

Analysis 633

3rd Qtr 2020

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

WebCode	Data Flag	Sample C01-C02			Sample L01-L02		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG	*	214.2	-7.3	-0.51	153.9	-58.6	-2.50
2LHWNV		198.7	-22.8	-1.61	179.1	-33.3	-1.42
39RMFU	X	265.3	43.8	3.10	170.1	-42.3	-1.81
3DQWRH		212.3	-9.2	-0.65	220.5	8.1	0.35
3EHU7F		206.5	-15.0	-1.07	176.4	-36.0	-1.54
4EDUJL		210.0	-11.5	-0.81	208.0	-4.4	-0.19
6VJDUH		218.5	-3.0	-0.21	193.6	-18.9	-0.81
8LZYXQ		206.5	-15.0	-1.06	203.0	-9.4	-0.40
9D8X2D		211.3	-10.3	-0.73	219.9	7.5	0.32
9G4RTM		220.5	-1.0	-0.07	219.7	7.3	0.31
ANKHXE		229.0	7.5	0.53	218.0	5.6	0.24
EPZDLG		234.2	12.7	0.90	187.1	-25.3	-1.08
ER8QAB		240.0	18.5	1.31	230.5	18.1	0.77
FHZB43		238.2	16.7	1.18	212.0	-0.5	-0.02
FWXMC7		218.5	-3.0	-0.21	226.5	14.1	0.60
GQ7K2F		229.0	7.5	0.53	223.0	10.6	0.45
GRWX96		210.3	-11.2	-0.79	237.9	25.5	1.09
H7WYK7		247.3	25.8	1.83	230.6	18.2	0.78
HCJRQD		237.6	16.1	1.14	248.8	36.4	1.56
HKDVZ3		230.1	8.6	0.61	211.4	-1.0	-0.04
JE7NY4		220.0	-1.5	-0.11	194.5	-17.9	-0.77
JKCGTZ		225.7	4.2	0.30	165.9	-46.5	-1.99
M4RXM4		213.2	-8.3	-0.59	225.5	13.1	0.56
NWNDYX		256.5	35.0	2.48	256.5	44.0	1.88
P2V9C7		237.3	15.8	1.12	249.5	37.1	1.59
P9WFX2		211.6	-9.9	-0.70	219.2	6.8	0.29
Q8K948		192.4	-29.1	-2.06	190.6	-21.9	-0.93
QUBMMZ		207.9	-13.7	-0.97	215.9	3.4	0.15
RDKYRV		221.1	-0.4	-0.03	220.6	8.2	0.35
RPEZP6		224.5	3.0	0.21	211.0	-1.4	-0.06
UMKACP		214.5	-7.0	-0.50	204.5	-7.9	-0.34
YZTLVK		222.5	1.0	0.07	227.0	14.6	0.62
ZCKR2N		228.5	7.0	0.49	216.5	4.1	0.18



Rubber Interlaboratory Testing Program

Report #205

Analysis 633

3rd Qtr 2020

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

		Summary Statistics	
Grand Means	221.51 psi		212.40 psi
Stnd Dev Btwn Labs	14.13 psi		23.39 psi
Statistics based on 32 of 33 reporting participants			

		Summary Statistics in SI Units	
Grand Means	1.5272 MPa		1.46 MPa
Stnd Dev Btwn Labs	0.0974 MPa		0.16 MPa
Statistics based on 32 of 33 reporting participants			

Samples C01-C02: Polyisoprene compound, batch #1 & L01-L02: Polyisoprene compound, batch #1

Comments on Assigned Data Flags for Test #633

39RMFU (X) - Data for sample group C01-C02 are high.



Rubber Interlaboratory Testing Program

Report #205

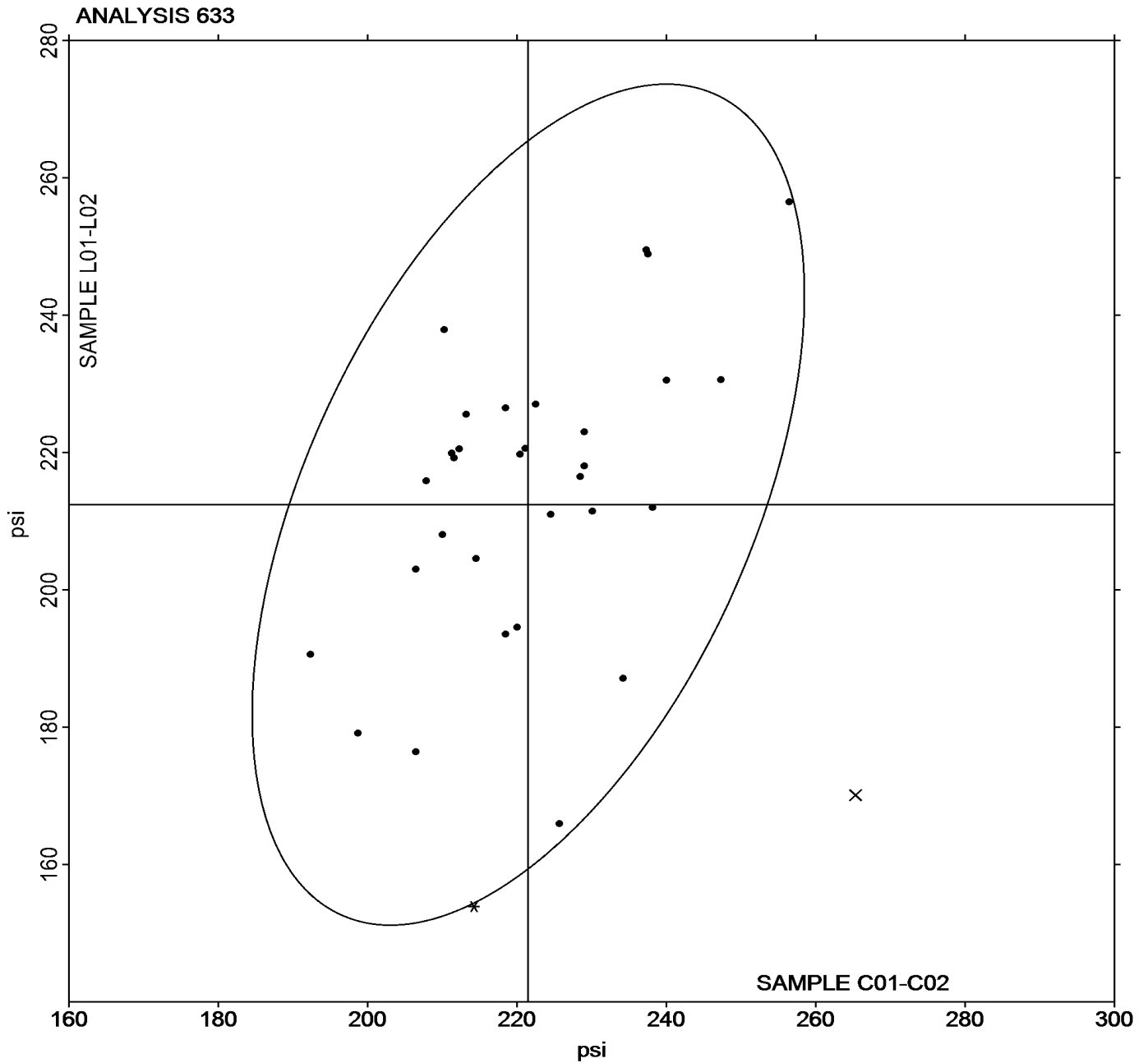
Analysis 633

3rd Qtr 2020

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

Grand Mean Sample C01-C02 = 221.51 psi

Grand Mean Sample L01-L02 = 212.40 psi





Rubber Interlaboratory Testing Program
Analysis 635
Compression Set Method B

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample P01			Sample P02		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D8TKG		20.40	-4.20	-1.17	21.93	-2.74	-0.75
2WJF7P		25.67	1.06	0.30	26.33	1.66	0.45
34WTHT		28.90	4.30	1.20	31.77	7.09	1.93
4PX7TD		25.00	0.40	0.11	23.33	-1.34	-0.37
6B9NGK		26.40	1.80	0.50	25.73	1.06	0.29
79KCHE	*	21.50	-3.10	-0.87	28.20	3.52	0.96
8RB6FH		31.90	7.30	2.04	32.47	7.79	2.12
9Z6AAJ		22.90	-1.70	-0.48	21.40	-3.28	-0.89
9ZJYBB		22.53	-2.07	-0.58	21.50	-3.18	-0.87
A3LY6F		27.71	3.10	0.87	28.01	3.34	0.91
BK2QMC		16.23	-8.38	-2.34	18.66	-6.01	-1.64
BZD7MM		22.67	-1.94	-0.54	23.33	-1.34	-0.37
DRR8PD		27.56	2.96	0.83	30.47	5.79	1.58
FHZB43		23.13	-1.47	-0.41	23.50	-1.18	-0.32
H49MLZ		27.33	2.73	0.76	26.33	1.66	0.45
JKCGTZ		18.67	-5.94	-1.66	20.00	-4.68	-1.27
LU98M7		25.26	0.65	0.18	25.34	0.67	0.18
MFLEC6		25.00	0.40	0.11	20.67	-4.01	-1.09
MW2ABY		26.60	2.00	0.56	24.87	0.19	0.05
MZTMQ4		21.63	-2.97	-0.83	23.63	-1.04	-0.28
NWNDYX		24.70	0.10	0.03	24.47	-0.21	-0.06
NYCPY4		23.67	-0.94	-0.26	23.67	-1.01	-0.28
P9WFX2		32.27	7.67	2.14	28.86	4.19	1.14
PNTVXV		23.33	-1.27	-0.35	20.67	-4.01	-1.09
RJR7UT		21.07	-3.54	-0.99	22.33	-2.35	-0.64
RPEZP6		21.95	-2.65	-0.74	23.86	-0.82	-0.22
TJ7EVR	X	7.67	-16.94	-4.73	9.33	-15.34	-4.18
UEPBHV		29.67	5.06	1.41	30.33	5.66	1.54
UMKACP	X	52.92	28.32	7.90	58.59	33.91	9.24
UP9LBV		24.25	-0.35	-0.10	19.50	-5.17	-1.41
VWPGRP		23.67	-0.94	-0.26	22.67	-2.01	-0.55
X2AHMK		26.56	1.96	0.55	26.49	1.81	0.49



Rubber Interlaboratory Testing Program
Analysis 635
Compression Set Method B

Report #205
3rd Qtr 2020

		Summary Statistics	
Grand Means	24.604 % Compression	24.678 % Compression	
Std Dev Btwn Labs	3.584 % Compression	3.670 % Compression	
Statistics based on 30 of 32 reporting participants			

Samples P01: EPDM compound, batch #1 & P02: EPDM compound, batch #2

Comments on Assigned Data Flags for Test #635

TJ7EVR (X) - Data for all samples are low. Possible Systematic Error.

UMKACP (X) - Extreme Data.

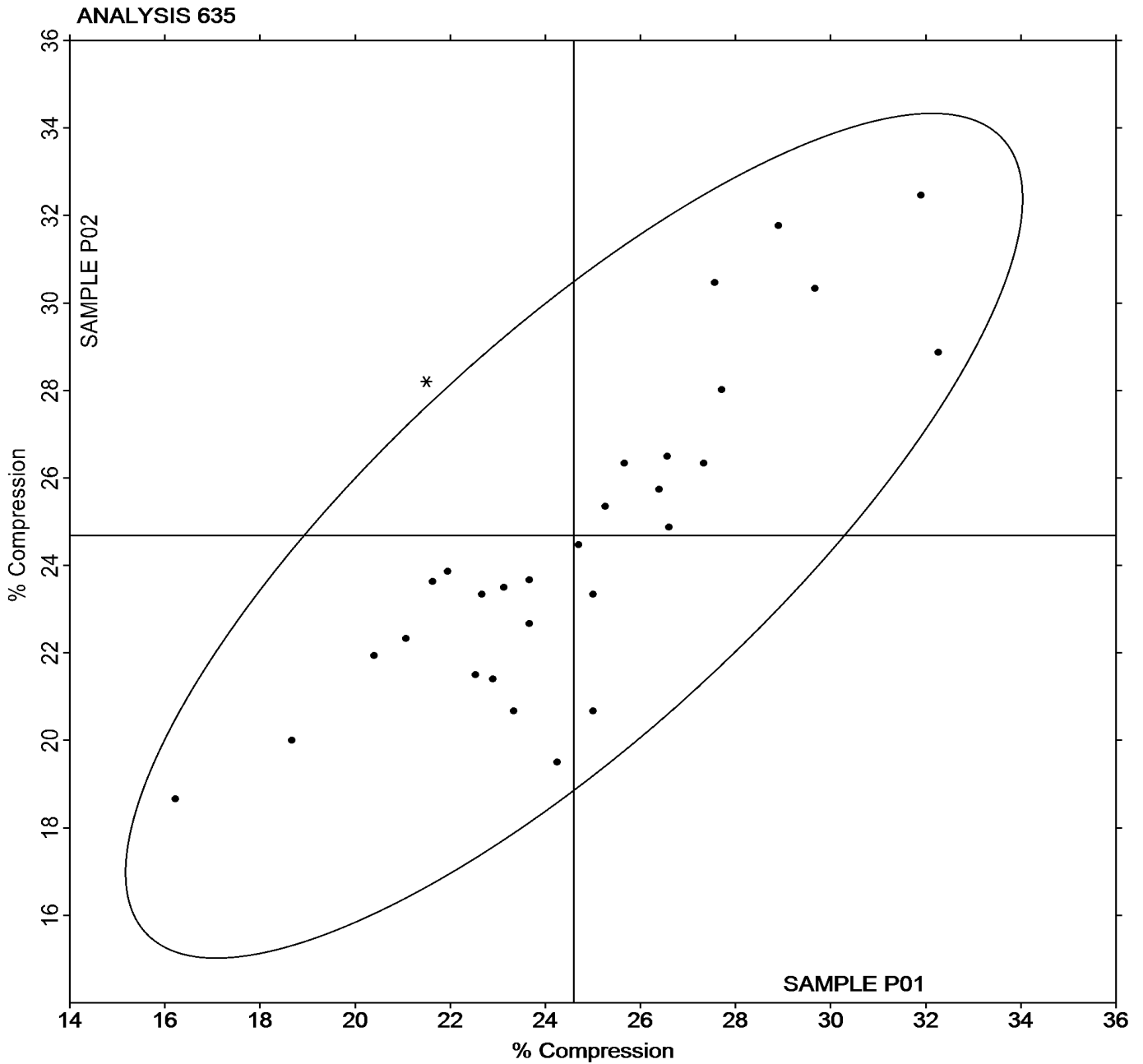


Rubber Interlaboratory Testing Program
Analysis 635
Compression Set Method B

Report #205
3rd Qtr 2020

Grand Mean Sample P01 = 24.604 % Compression

Grand Mean Sample P02 = 24.678 % Compression





Rubber Interlaboratory Testing Program

Report #205

Analysis 660

3rd Qtr 2020

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

WebCode	Data Flag	Sample U01-U02			Sample U03-U04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2FV6JM		45.47	-0.41	-0.50	56.65	-0.72	-0.69	MR
39RMFU		46.39	0.52	0.64	58.44	1.06	1.02	MZ
3DQWRH		45.97	0.09	0.12	57.35	-0.02	-0.02	MR
3EHU7F	X	49.21	3.34	4.13	60.99	3.61	3.48	TV
4EDUJL		46.68	0.81	1.00	58.11	0.74	0.71	MR
7U4G3H		45.02	-0.86	-1.06	57.10	-0.27	-0.26	MR
8LZYXQ		46.00	0.13	0.16	58.17	0.79	0.76	MV
8PYAUQ		44.55	-1.32	-1.64	55.37	-2.01	-1.93	MR
8RB6FH		45.72	-0.15	-0.19	57.96	0.59	0.57	MR
9D8X2D		45.87	-0.01	-0.01	56.37	-1.01	-0.97	MR
AA4PA8		46.12	0.24	0.30	56.76	-0.61	-0.59	MR
ANKHXE		46.03	0.16	0.20	57.02	-0.36	-0.34	MR
BQ342L		46.57	0.69	0.86	58.52	1.14	1.10	MR
C9GXC8	X	45.93	0.06	0.07	60.56	3.18	3.06	TV
EGLU3H	*	47.58	1.71	2.12	60.68	3.31	3.18	TA
EPZDLG		44.69	-1.18	-1.46	56.44	-0.93	-0.89	MV
FWXMC7		46.47	0.59	0.73	57.83	0.46	0.44	MR
FZGEM9		44.04	-1.83	-2.27	55.25	-2.12	-2.04	MR
GB9NL3		47.08	1.21	1.50	58.13	0.76	0.73	MR
GQ7K2F		46.02	0.14	0.18	57.22	-0.16	-0.15	XX
H49MLZ		45.19	-0.68	-0.84	57.31	-0.06	-0.06	MP
H7WYK7		45.35	-0.52	-0.65	57.32	-0.06	-0.05	MR
HCJRQD		45.91	0.03	0.04	55.70	-1.67	-1.61	MR
KPHFVC		46.72	0.84	1.04	58.05	0.68	0.65	MR
LY24CW		46.36	0.49	0.61	58.33	0.96	0.92	MR
M4RXM4		44.95	-0.92	-1.14	56.78	-0.59	-0.57	MR
NYCPY4		46.70	0.83	1.02	57.70	0.33	0.32	MR
P2V9C7		47.44	1.56	1.93	58.42	1.04	1.01	XX
Q8K948		45.16	-0.71	-0.88	56.75	-0.63	-0.60	MV
QUBMMZ		46.40	0.53	0.65	58.15	0.78	0.75	MR
RDKYRV		45.07	-0.80	-0.99	56.73	-0.65	-0.62	MV
RPEZP6		46.10	0.23	0.28	57.01	-0.36	-0.34	MV
UMKACP		46.54	0.66	0.82	58.15	0.78	0.75	ML
UP9LBV		46.00	0.13	0.16	56.22	-1.16	-1.11	MR
V4JLKQ		45.81	-0.06	-0.07	57.97	0.60	0.58	MR
WTZUAL		45.29	-0.58	-0.72	57.81	0.44	0.42	MV
XRZVTY		45.12	-0.76	-0.94	56.48	-0.89	-0.85	MR



Rubber Interlaboratory Testing Program

Report #205

Analysis 660

3rd Qtr 2020

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

WebCode	Data Flag	Sample U01-U02			Sample U03-U04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ZCKR2N		45.08	-0.80	-0.99	57.15	-0.23	-0.22	MV

Summary Statistics	
Grand Means	
	45.873 ML 1 + 4
	57.372 ML 1 + 4
Stnd Dev Btwn Labs	
	0.808 ML 1 + 4
	1.039 ML 1 + 4
Statistics based on 36 of 38 reporting participants	

Samples U01-U02: SBR & U03-U04: Butyl

Comments on Assigned Data Flags for Test #660

3EHU7F (X) - Data for all samples are high.

C9GXC8 (X) - Data for sample group U03-U04 are high. Inconsistent within the determinations of sample group U03-U04.

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

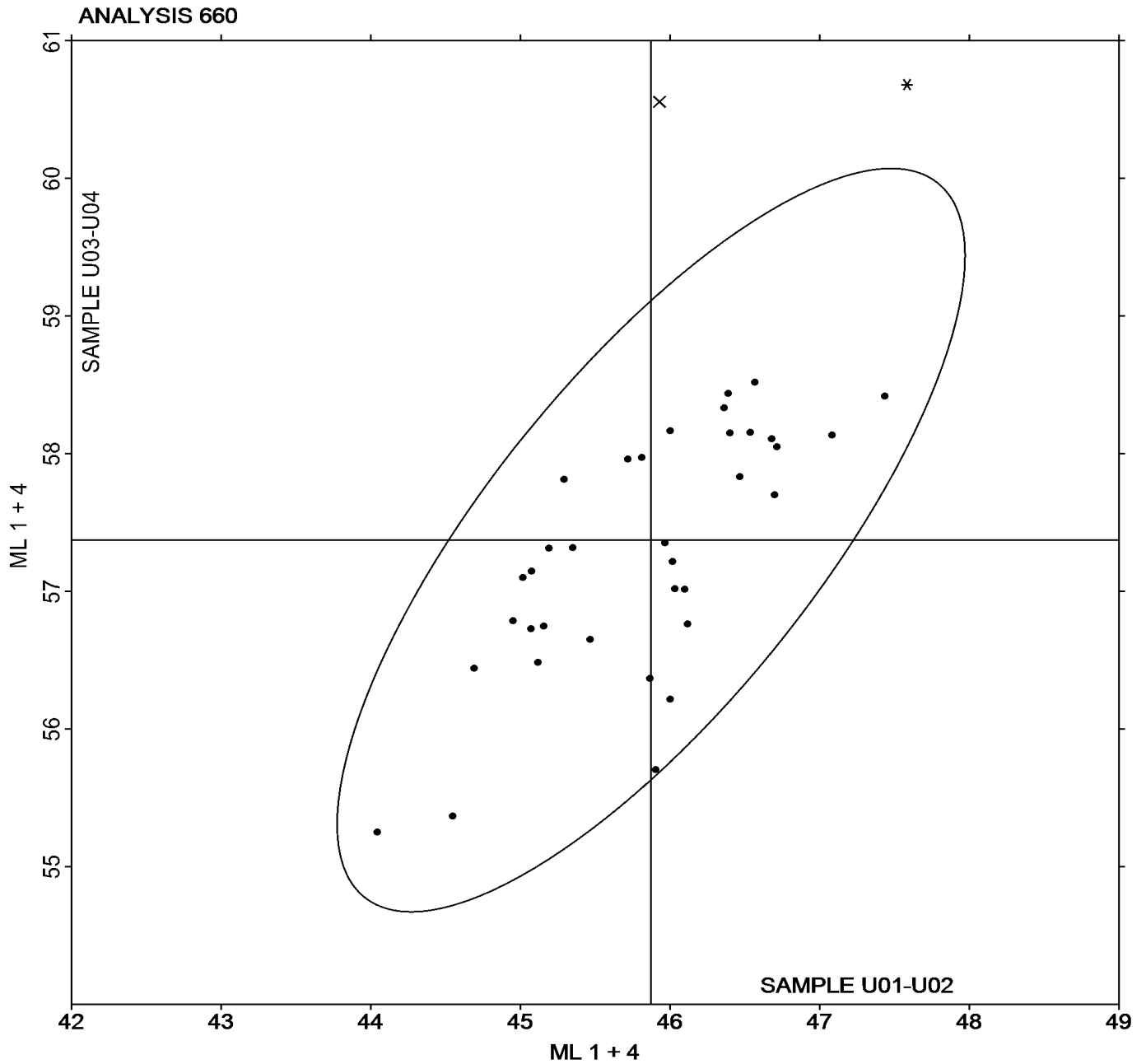


Rubber Interlaboratory Testing Program
Analysis 660
Mooney Viscosity: 4-minute readings (ML 1 + 4)

Report #205
3rd Qtr 2020

Grand Mean Sample **U01-U02** = 45.873 ML 1 + 4

Grand Mean Sample **U03-U04** = 57.372 ML 1 + 4





Rubber Interlaboratory Testing Program

Report #205

Analysis 661

3rd Qtr 2020

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

WebCode	Data Flag	Sample U01-U02			Sample U03-U04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2FV6JM		45.47	-0.42	-0.52	53.70	-1.08	-1.00	MR
39RMFU		46.39	0.51	0.63	55.58	0.80	0.74	MZ
3DQWRH		45.97	0.08	0.10	54.68	-0.10	-0.09	MR
3EHU7F	X	49.21	3.33	4.14	58.26	3.48	3.23	TV
4EDUJL		46.68	0.80	0.99	55.66	0.88	0.82	MR
7U4G3H		45.02	-0.87	-1.08	53.88	-0.90	-0.83	MR
8LZYXQ		46.00	0.12	0.15	55.67	0.89	0.82	MV
8PYAUQ		44.55	-1.33	-1.66	53.00	-1.78	-1.65	MR
8RB6FH		45.72	-0.16	-0.20	55.28	0.50	0.46	MR
9D8X2D		45.87	-0.02	-0.02	53.55	-1.23	-1.14	MR
AA4PA8		46.12	0.23	0.29	54.30	-0.48	-0.44	MR
ANKHXE		46.03	0.15	0.19	53.70	-1.08	-1.00	MP
BQ342L		46.57	0.68	0.85	56.22	1.44	1.33	MR
C9GXC8		45.93	0.05	0.06	55.78	0.99	0.92	TV
EGLU3H	*	47.58	1.70	2.11	57.81	3.03	2.82	TA
EPZDLG		44.69	-1.19	-1.48	53.99	-0.79	-0.73	MV
FWXMC7		46.47	0.58	0.73	55.22	0.44	0.41	MR
FZGEM9		44.04	-1.84	-2.28	52.90	-1.88	-1.75	MR
GB9NL3		47.08	1.20	1.49	55.52	0.74	0.68	MR
GQ7K2F		46.02	0.13	0.17	54.33	-0.45	-0.41	XX
H49MLZ		45.19	-0.69	-0.86	54.33	-0.45	-0.42	MP
H7WYK7		45.35	-0.53	-0.66	54.42	-0.36	-0.34	MR
HCJRQD	*	45.91	0.02	0.03	52.54	-2.24	-2.08	MR
KPHFVC		46.72	0.83	1.04	54.92	0.14	0.13	MR
M4RXM4		44.95	-0.93	-1.16	54.32	-0.46	-0.43	MR
NYCPY4		46.70	0.82	1.02	55.15	0.37	0.34	MR
P2V9C7		47.44	1.55	1.93	54.87	0.09	0.08	XX
Q8K948		45.16	-0.72	-0.90	54.97	0.19	0.17	MV
QUBMMZ		46.40	0.52	0.64	55.50	0.72	0.67	MR
RDKYRV		45.07	-0.81	-1.01	54.06	-0.72	-0.67	MV
RPEZP6		46.10	0.22	0.27	54.10	-0.68	-0.63	MV
UMKACP		46.54	0.65	0.81	55.41	0.63	0.58	ML
UP9LBV		46.00	0.12	0.15	56.55	1.77	1.64	MR
V4JLKQ		45.81	-0.07	-0.09	55.14	0.35	0.33	MR
WTZUAL		45.29	-0.59	-0.73	55.59	0.80	0.75	MV
ZCKR2N		45.08	-0.81	-1.00	54.69	-0.09	-0.08	MV



Rubber Interlaboratory Testing Program

Report #205

Analysis 661

3rd Qtr 2020

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

		Summary Statistics	
Grand Means	45.882 ML 1 + 8	54.780 ML 1 + 8	
Stnd Dev Btwn Labs	0.805 ML 1 + 8	1.077 ML 1 + 8	
Statistics based on 35 of 36 reporting participants			

Samples U01-U02: SBR & U03-U04: Butyl

Comments on Assigned Data Flags for Test #661

3EHU7F (X) - Data for all samples are high.

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 #205

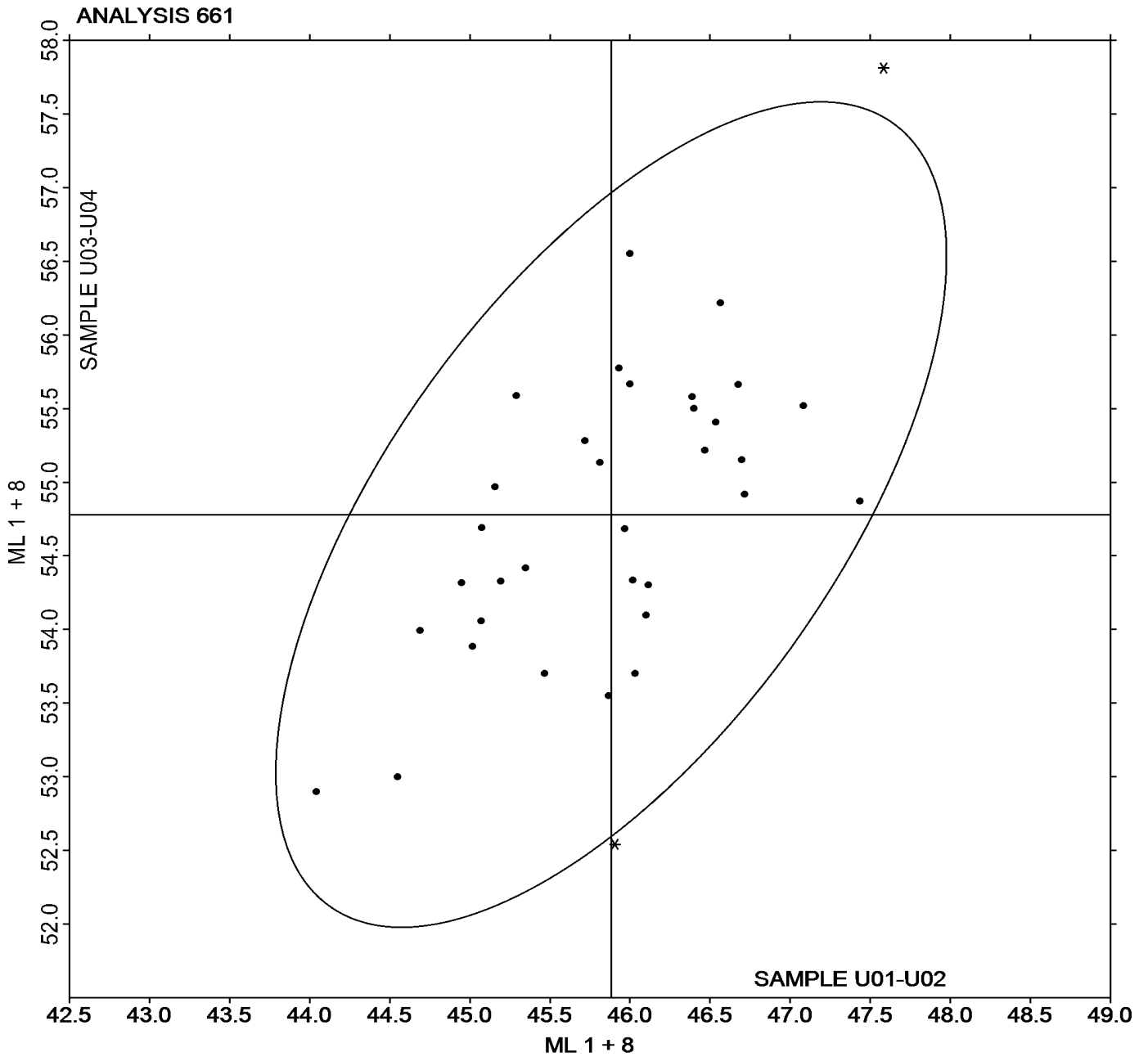
Analysis 661

3rd Qtr 2020

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

Grand Mean Sample **U01-U02** = 45.882 ML 1 + 8

Grand Mean Sample **U03-U04** = 54.780 ML 1 + 8





Rubber Interlaboratory Testing Program

Report #205

Analysis 662

3rd Qtr 2020

Mooney Stress Relaxation: t80 (seconds)

WebCode	Data Flag	Sample U01-U02			Sample U03-U04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
39RMFU		4.80	-7.78	-1.17	5.667	-1.683	-0.87	MZ
3EHU7F	X	666.50	653.92	98.54	667.100	659.750	340.68	TV
7U4G3H		12.00	-0.58	-0.09	8.267	0.917	0.47	MR
8LZYXQ		12.33	-0.25	-0.04	7.467	0.117	0.06	MV
8PYAUQ		9.48	-3.10	-0.47	6.290	-1.060	-0.55	MR
9D8X2D		13.03	0.44	0.07	7.140	-0.210	-0.11	MR
EPZDLG		8.00	-4.58	-0.69	6.100	-1.250	-0.65	MV
FWXMC7		12.04	-0.54	-0.08	7.093	-0.257	-0.13	MR
GQ7K2F		13.30	0.72	0.11	7.417	0.067	0.03	XX
H7WYK7		12.37	-0.21	-0.03	7.095	-0.255	-0.13	MR
HCJRQD		12.69	0.11	0.02	6.697	-0.653	-0.34	MR
M4RXM4		11.86	-0.72	-0.11	7.140	-0.210	-0.11	MR
P2V9C7	X	247.50	234.92	35.40	244.900	237.550	122.67	XX
Q8K948	X	545.90	533.32	80.37	549.667	542.317	280.04	MV
RDKYRV	X	307.50	294.92	44.44	306.600	299.250	154.53	MV
RPEZP6		11.20	-1.38	-0.21	6.533	-0.817	-0.42	MV
UMKACP		12.24	-0.35	-0.05	7.399	0.049	0.03	ML
V4JLKQ	*	35.03	22.44	3.38	13.913	6.563	3.39	MR
ZCKR2N		8.40	-4.18	-0.63	6.033	-1.317	-0.68	MV

Grand Means		Summary Statistics	
	12.585 seconds		7.3501 seconds
Stnd Dev Btwn Labs	6.636 seconds		1.9366 seconds
Statistics based on 15 of 19 reporting participants			

Samples U01-U02: SBR & U03-U04: Butyl

Comments on Assigned Data Flags for Test #662

- 3EHU7F (X) - Extreme Data.
- P2V9C7 (X) - Extreme Data.
- Q8K948 (X) - Extreme Data.
- RDKYRV (X) - Extreme Data.



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

Report #205
3rd Qtr 2020

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
TV	Tech Pro Visc Tech (any model)	XX	Instrument make/model not specified by lab

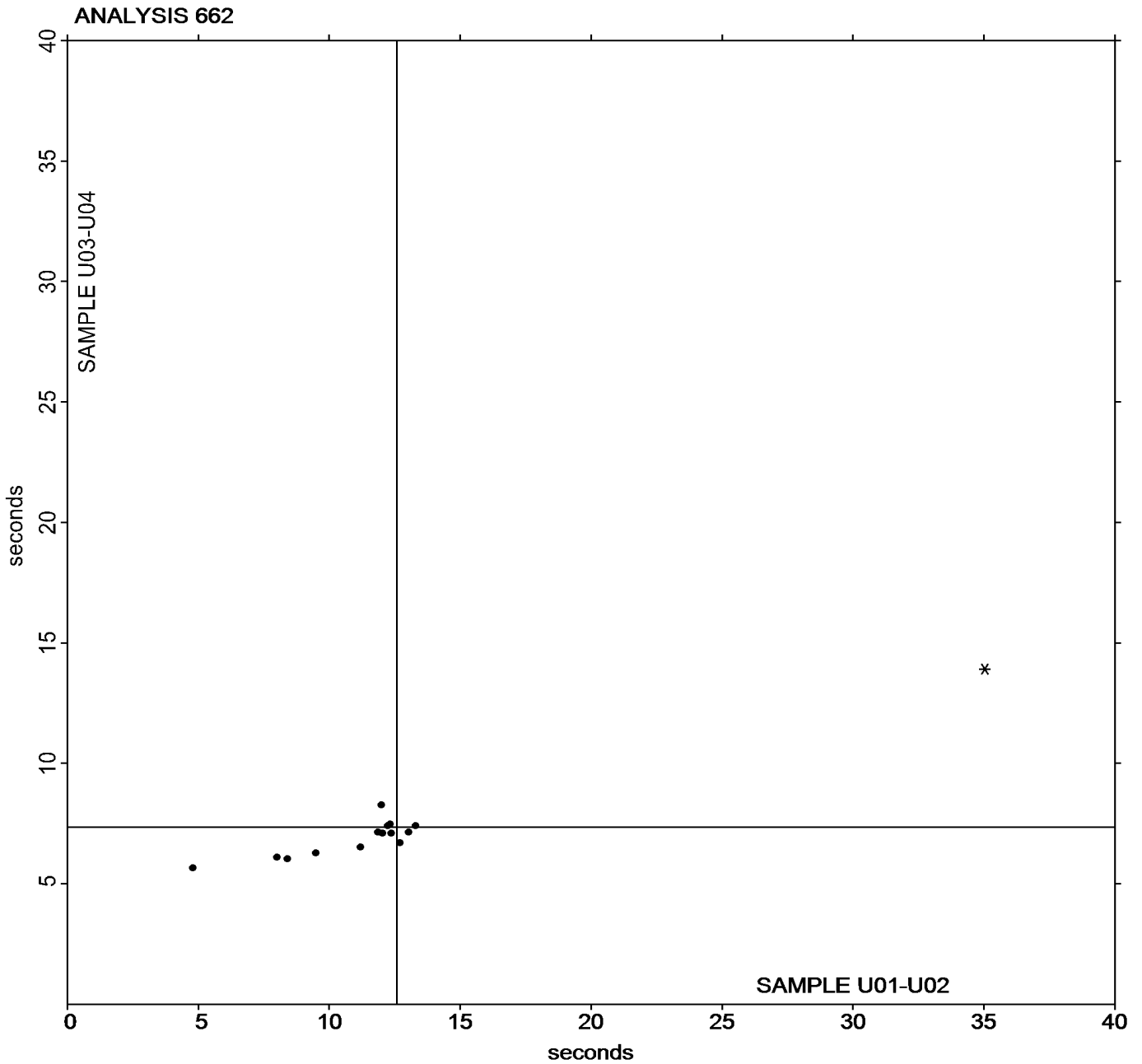


Rubber Interlaboratory Testing Program
Analysis 662
Mooney Stress Relaxation: t80 (seconds)

Report #205
3rd Qtr 2020

Grand Mean Sample **U01-U02** = 12.585 seconds

Grand Mean Sample **U03-U04** = 7.3501 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 #205

Analysis 663

3rd Qtr 2020

Mooney Stress Relaxation: X30 (percent)

WebCode	Data Flag	Sample U01-U02			Sample U03-U04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
39RMFU		92.07	5.48	1.29	95.14	1.88	1.35	MZ
3EHU7F		89.71	3.12	0.74	93.19	-0.07	-0.05	TV
7U4G3H		85.92	-0.67	-0.16	91.80	-1.46	-1.05	MR
8LZYXQ		85.76	-0.83	-0.20	92.04	-1.22	-0.88	MV
8PYAUQ		88.04	1.45	0.34	95.01	1.75	1.26	MR
9D8X2D		85.47	-1.12	-0.27	93.03	-0.23	-0.16	MR
EPZDLG		89.67	3.08	0.73	95.50	2.24	1.61	MV
FWXMC7		85.98	-0.61	-0.14	92.59	-0.67	-0.48	MR
GQ7K2F		85.27	-1.32	-0.31	92.43	-0.82	-0.59	XX
H7WYK7		85.12	-1.47	-0.35	92.75	-0.51	-0.37	MR
HCJRQD	*	72.10	-14.49	-3.42	90.26	-3.00	-2.16	MR
M4RXM4		86.14	-0.45	-0.11	93.04	-0.22	-0.16	MR
P2V9C7		85.75	-0.84	-0.20	92.34	-0.92	-0.66	XX
Q8K948		91.32	4.73	1.12	94.37	1.11	0.80	MV
RDKYRV		89.64	3.05	0.72	94.86	1.61	1.16	MV
RPEZP6		86.29	-0.30	-0.07	93.37	0.11	0.08	MV
UMKACP		85.85	-0.74	-0.18	92.38	-0.87	-0.63	ML
ZCKR2N		88.55	1.96	0.46	94.55	1.30	0.93	MV

Grand Means		Summary Statistics	
	86.589 percent		93.258 percent
Std Dev Btwn Labs	4.236 percent		1.390 percent
Statistics based on 18 of 18 reporting participants			

Samples U01-U02: SBR & U03-U04: Butyl

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
TV	Tech Pro Visc Tech (any model)	XX	Instrument make/model not specified by lab

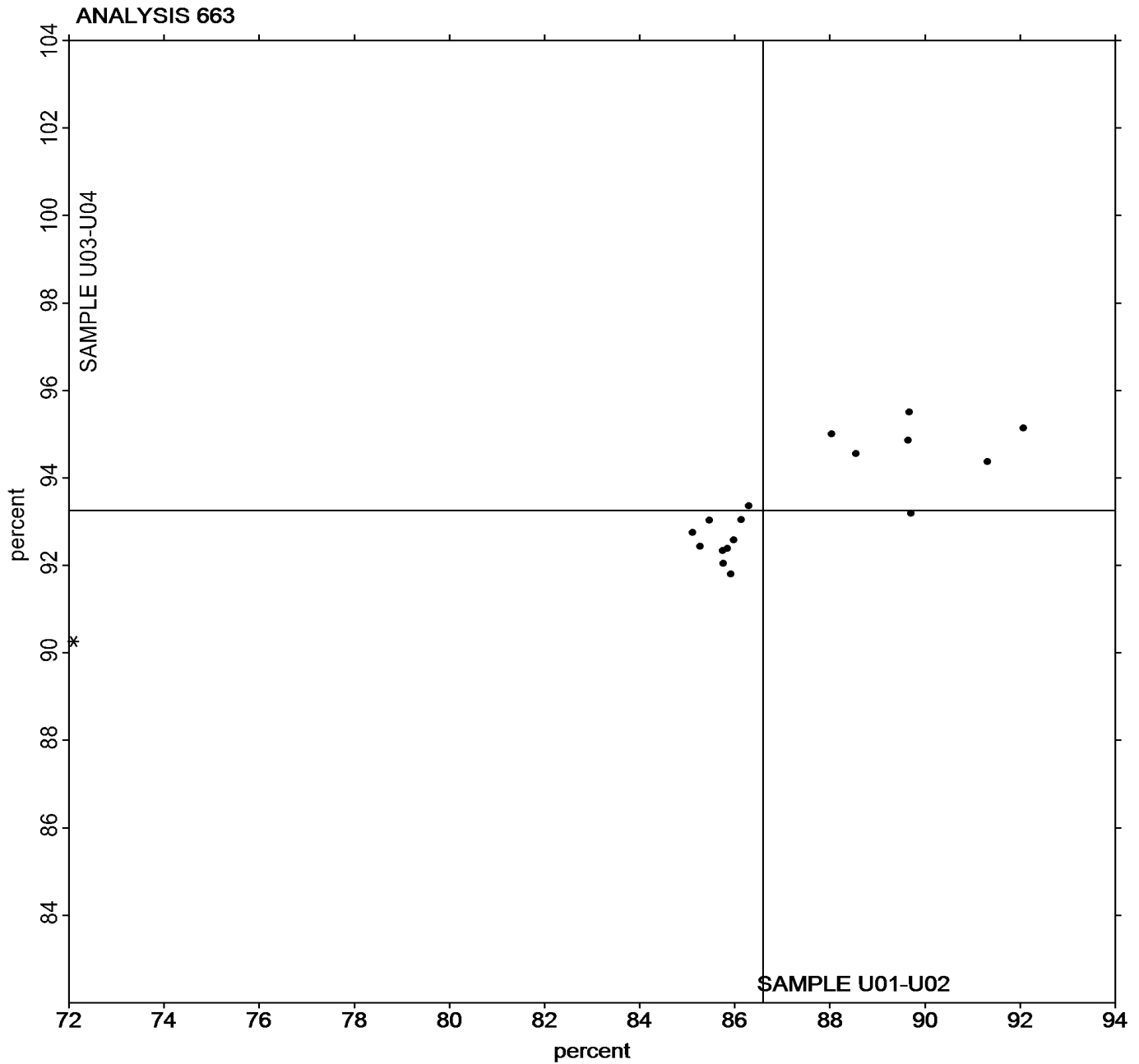


Rubber Interlaboratory Testing Program
Analysis 663
Mooney Stress Relaxation: X30 (percent)

Report #205
3rd Qtr 2020

Grand Mean Sample **U01-U02** = 86.589 percent

Grand Mean Sample **U03-U04** = 93.258 percent



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 #205

Analysis 664

3rd Qtr 2020

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

WebCode	Data Flag	Sample U01-U02			Sample U03-U04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
39RMFU		349.1	-277.2	-2.28	292.9	-134.6	-1.68	MZ
3EHU7F		503.8	-122.4	-1.01	445.2	17.7	0.22	TV
7U4G3H		684.8	58.6	0.48	523.2	95.6	1.19	MR
8LZYXQ		704.3	78.0	0.64	486.8	59.3	0.74	MV
9D8X2D		719.3	93.0	0.76	432.2	4.7	0.06	MR
EPZDLG		469.3	-157.0	-1.29	266.6	-161.0	-2.00	MV
FWXMC7		706.2	79.9	0.66	466.0	38.5	0.48	MR
GQ7K2F		731.1	104.8	0.86	464.6	37.0	0.46	XX
H7WYK7		705.5	79.2	0.65	451.3	23.8	0.30	MR
HCJRQD		707.9	81.7	0.67	453.3	25.8	0.32	MR
M4RXM4		672.5	46.2	0.38	441.0	13.5	0.17	XX
P2V9C7		726.7	100.5	0.83	507.3	79.8	0.99	XX
RDKYRV		486.4	-139.8	-1.15	314.7	-112.8	-1.41	MV
RPEZP6		679.4	53.2	0.44	403.7	-23.8	-0.30	MV
UMKACP		751.9	125.6	1.03	529.0	101.5	1.26	ML
V4JLKQ		512.1	-114.2	-0.94	465.2	37.7	0.47	MR
ZCKR2N		536.1	-90.1	-0.74	324.9	-102.6	-1.28	MV

Grand Means		Summary Statistics	
	626.26 M-s		427.52 M-s
Std Dev Btwn Labs	121.58 M-s		80.32 M-s
Statistics based on 17 of 17 reporting participants			

Samples U01-U02: SBR & U03-U04: Butyl

Key to Instrument Codes Reported by Participants

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

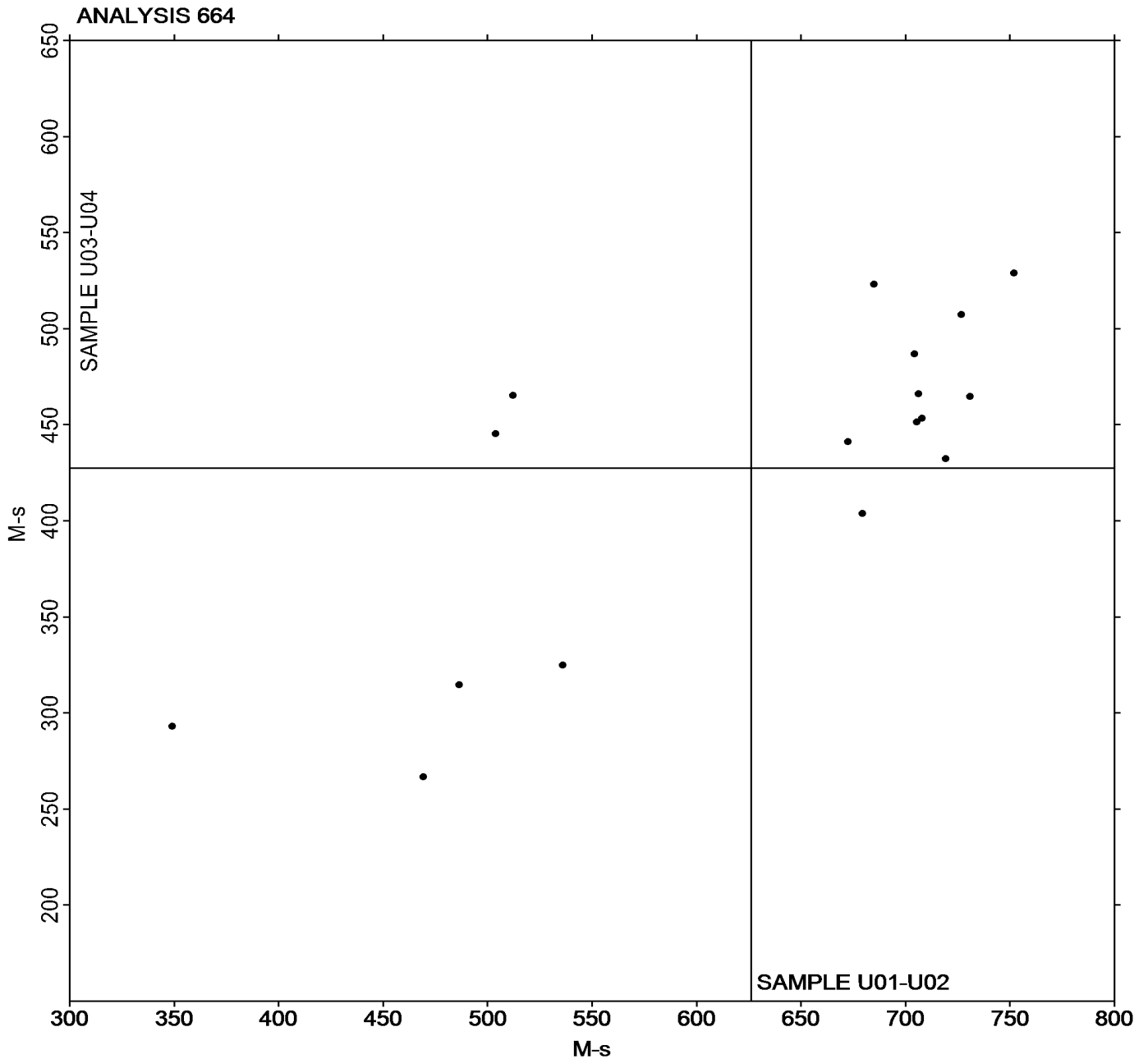


Rubber Interlaboratory Testing Program
Analysis 664
Mooney Stress Relaxation: Area under curve (M-s)

Report #205
3rd Qtr 2020

Grand Mean Sample **U01-U02** = 626.26 M-s

Grand Mean Sample **U03-U04** = 427.52 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 #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y01-Y02			Sample Y03-Y04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6VJDUH		1.380	-1.891	-0.56	2.588	-1.876	-0.59
AA4PA8		1.755	-1.516	-0.45	2.927	-1.537	-0.48
FZGEM9		2.083	-1.187	-0.35	3.585	-0.879	-0.28
Q8K948		1.838	-1.432	-0.42	3.103	-1.361	-0.43
ZCKR2N		9.297	6.026	1.78	10.117	5.653	1.78

Grand Means		Summary Statistics	
	3.2707 minutes		4.4640 minutes
Std Dev Btwn Labs	3.3781 minutes		3.1803 minutes
Statistics based on 5 of 5 reporting participants			

Samples Y01-Y02: EPDM compound, batch #1 & Y03-Y04: EPDM compound, batch #2

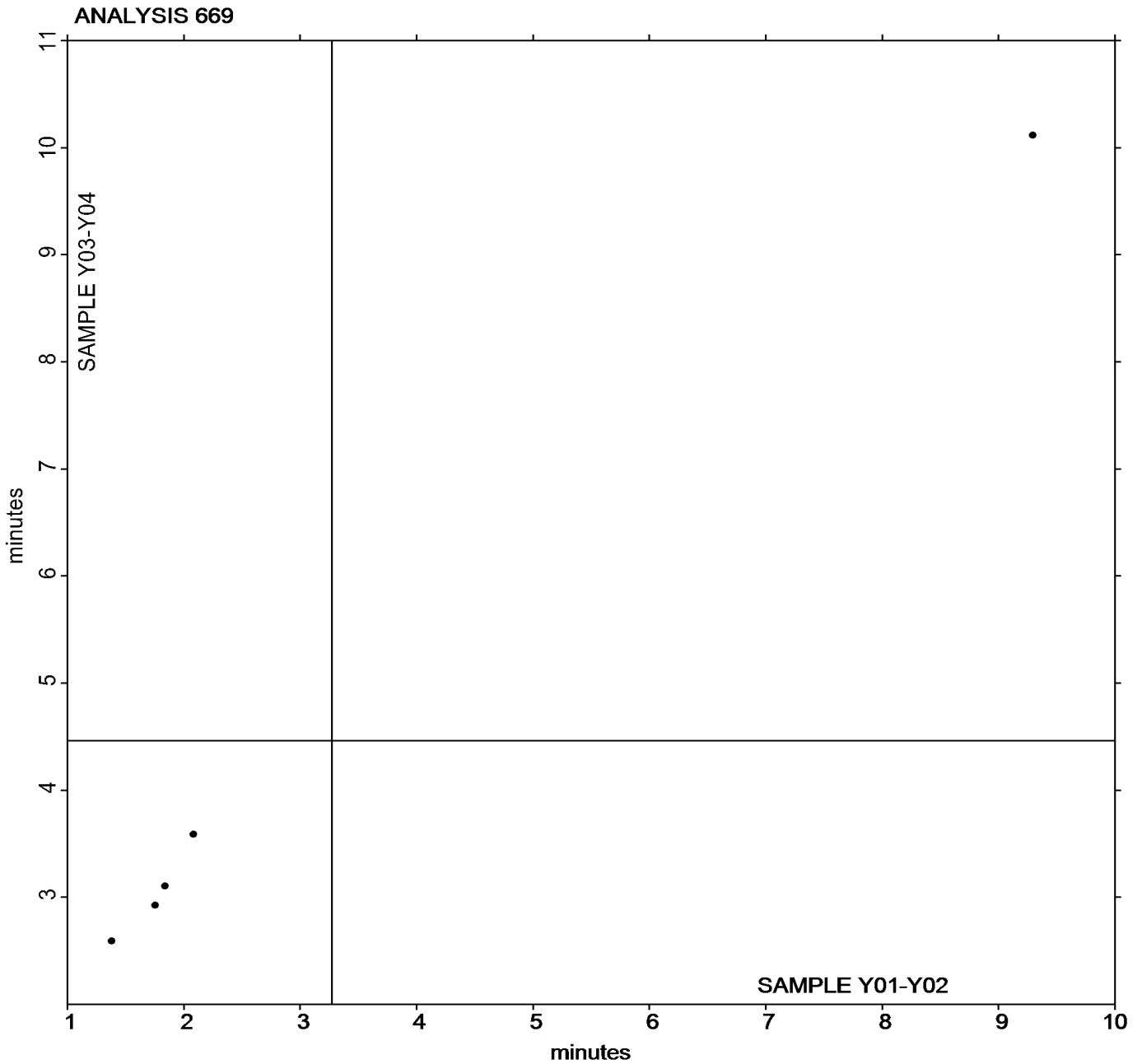


Rubber Interlaboratory Testing Program
Analysis 669
ODR Vulcanization-Cure Time 10% (minutes)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y01-Y02** = 3.2707 minutes

Grand Mean Sample **Y03-Y04** = 4.4640 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 #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y01-Y02			Sample Y03-Y04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6VJDUH		1.380	0.035	0.22	2.588	0.159	0.62
AA4PA8		1.208	-0.137	-0.87	2.183	-0.246	-0.97
FZGEM9		1.563	0.218	1.39	2.777	0.347	1.36
Q8K948		1.397	0.052	0.33	2.402	-0.028	-0.11
ZCKR2N		1.177	-0.168	-1.07	2.198	-0.231	-0.91

Summary Statistics	
Grand Means	
	1.3450 minutes 2.4297 minutes
Std Dev Btwn Labs	
	0.1570 minutes 0.2552 minutes
	Statistics based on 5 of 5 reporting participants

Samples Y01-Y02: EPDM compound, batch #1 & Y03-Y04: EPDM compound, batch #2

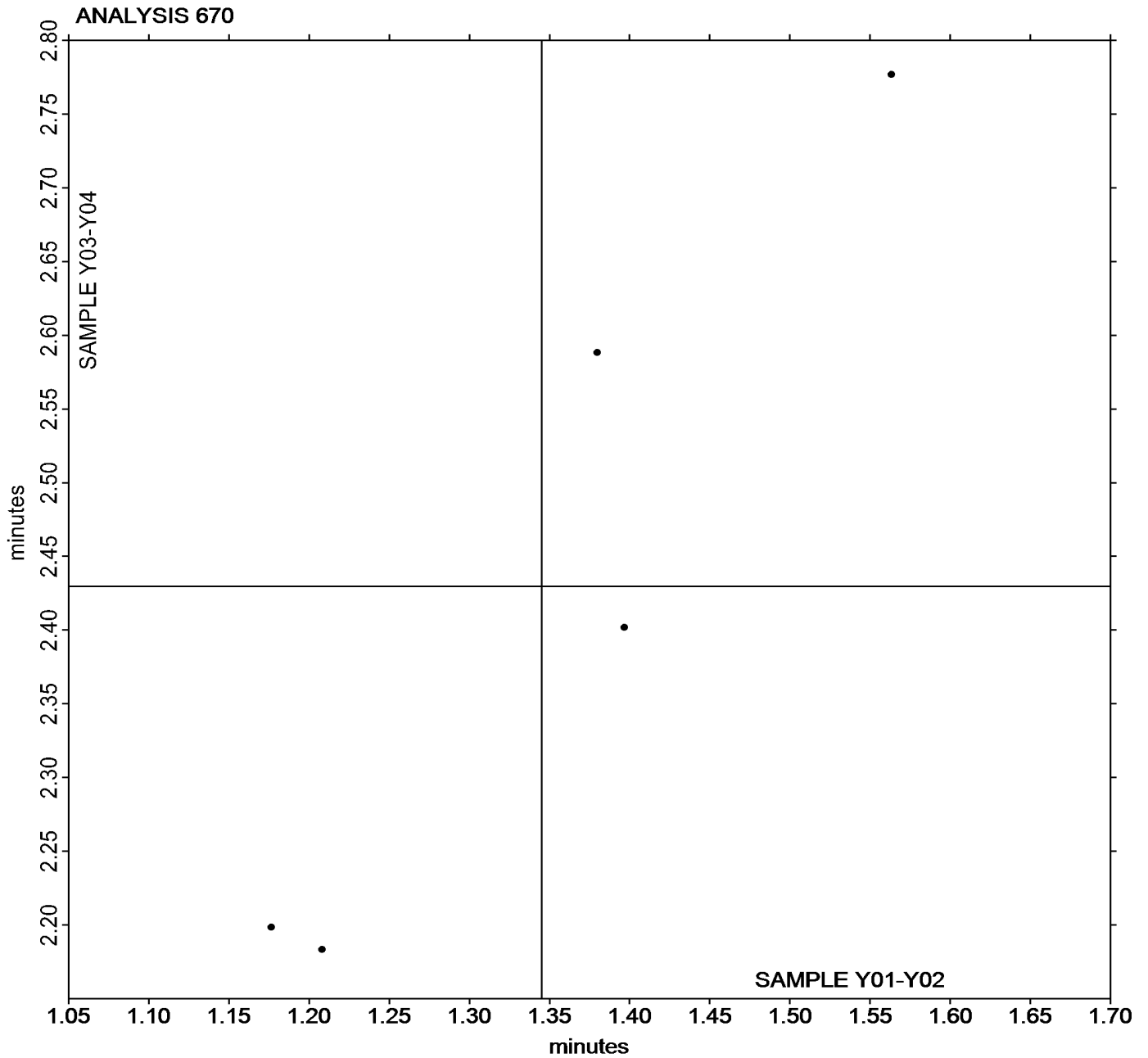


Rubber Interlaboratory Testing Program
Analysis 670
ODR Vulcanization-Scorch Time, Ts1 (minutes)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y01-Y02** = 1.3450 minutes

Grand Mean Sample **Y03-Y04** = 2.4297 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 #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y01-Y02			Sample Y03-Y04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6VJDUH		3.690	0.099	0.38	6.393	0.772	1.02
AA4PA8		3.610	0.019	0.07	5.472	-0.150	-0.20
FZGEM9		3.953	0.362	1.40	6.373	0.752	0.99
Q8K948		3.432	-0.160	-0.62	4.637	-0.985	-1.30
ZCKR2N		3.272	-0.320	-1.23	5.232	-0.390	-0.51

Grand Means		Summary Statistics	
	3.5913 minutes		5.6213 minutes
Stnd Dev Btwn Labs	0.2592 minutes		0.7592 minutes
Statistics based on 5 of 5 reporting participants			

Samples Y01-Y02: EPDM compound, batch #1 & Y03-Y04: EPDM compound, batch #2



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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y01-Y02			Sample Y03-Y04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6VJDUH		11.30	-0.02	0.00	12.95	2.90	0.70
AA4PA8		18.72	7.40	1.20	10.80	0.75	0.18
FZGEM9		13.38	2.06	0.33	12.44	2.39	0.58
Q8K948		11.53	0.21	0.03	11.20	1.15	0.28
ZCKR2N		1.68	-9.65	-1.56	2.85	-7.20	-1.75

		Summary Statistics	
Grand Means		11.322 minutes	10.048 minutes
Std Dev Btwn Labs		6.166 minutes	4.117 minutes
Statistics based on 5 of 5 reporting participants			

Samples Y01-Y02: EPDM compound, batch #1 & Y03-Y04: EPDM compound, batch #2



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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y01-Y02			Sample Y03-Y04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6VJDUH		8.568	1.315	1.38	17.76	5.03	1.74
AA4PA8		6.322	-0.931	-0.97	12.20	-0.53	-0.18
FZGEM9		7.368	0.115	0.12	10.52	-2.21	-0.76
Q8K948		6.323	-0.930	-0.97	11.18	-1.55	-0.54
ZCKR2N		7.683	0.430	0.45	11.98	-0.75	-0.26

		Summary Statistics	
Grand Means		7.2530 lbf.in	12.728 lbf.in
Std Dev Btwn Labs		0.9566 lbf.in	2.890 lbf.in
Statistics based on 5 of 5 reporting participants			

		Summary Statistics in SI Units	
Grand Means		8.1948 dN.m	14.381 dN.m
Std Dev Btwn Labs		1.0808 dN.m	3.266 dN.m
Statistics based on 5 of 5 reporting participants			

Samples Y01-Y02: EPDM compound, batch #1 & Y03-Y04: EPDM compound, batch #2

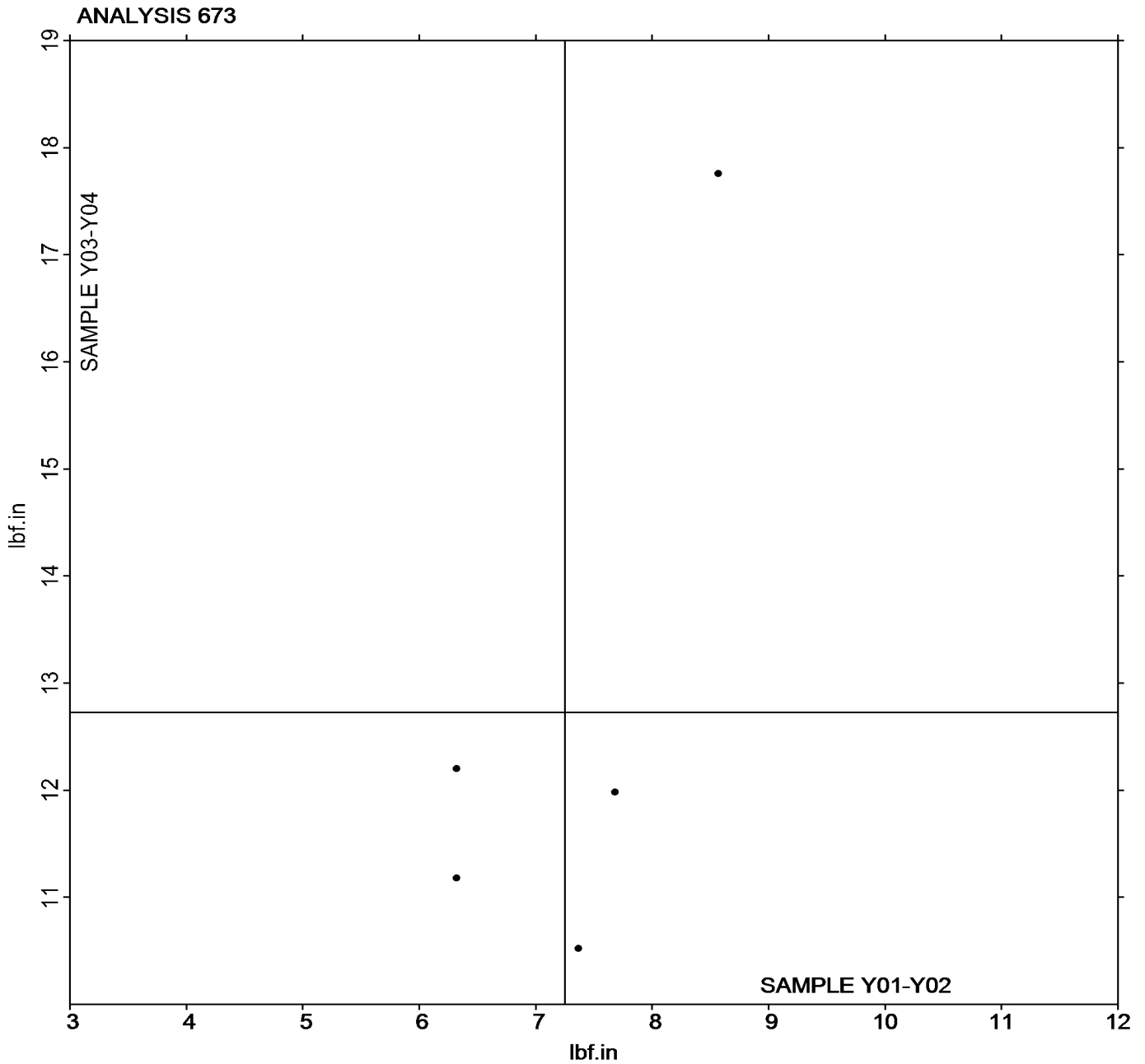


Rubber Interlaboratory Testing Program
Analysis 673
ODR Vulcanization: Minimum Torque (lbf.in)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y01-Y02** = 7.2530 lbf.in

Grand Mean Sample **Y03-Y04** = 12.728 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 #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y01-Y02			Sample Y03-Y04		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6VJDUH		41.54	-4.43	-0.97	45.45	5.90	1.64
AA4PA8		50.84	4.87	1.07	40.06	0.51	0.14
FZGEM9		41.36	-4.61	-1.01	36.05	-3.50	-0.97
Q8K948		45.85	-0.12	-0.03	38.44	-1.11	-0.31
ZCKR2N		50.27	4.30	0.94	37.76	-1.79	-0.50

		Summary Statistics	
Grand Means		45.971 lbf.in	39.550 lbf.in
Std Dev Btwn Labs		4.559 lbf.in	3.595 lbf.in
Statistics based on 5 of 5 reporting participants			

		Summary Statistics in SI Units	
Grand Means		51.940 dN.m	44.685 dN.m
Std Dev Btwn Labs		5.151 dN.m	4.062 dN.m
Statistics based on 5 of 5 reporting participants			

Samples Y01-Y02: EPDM compound, batch #1 & Y03-Y04: EPDM compound, batch #2

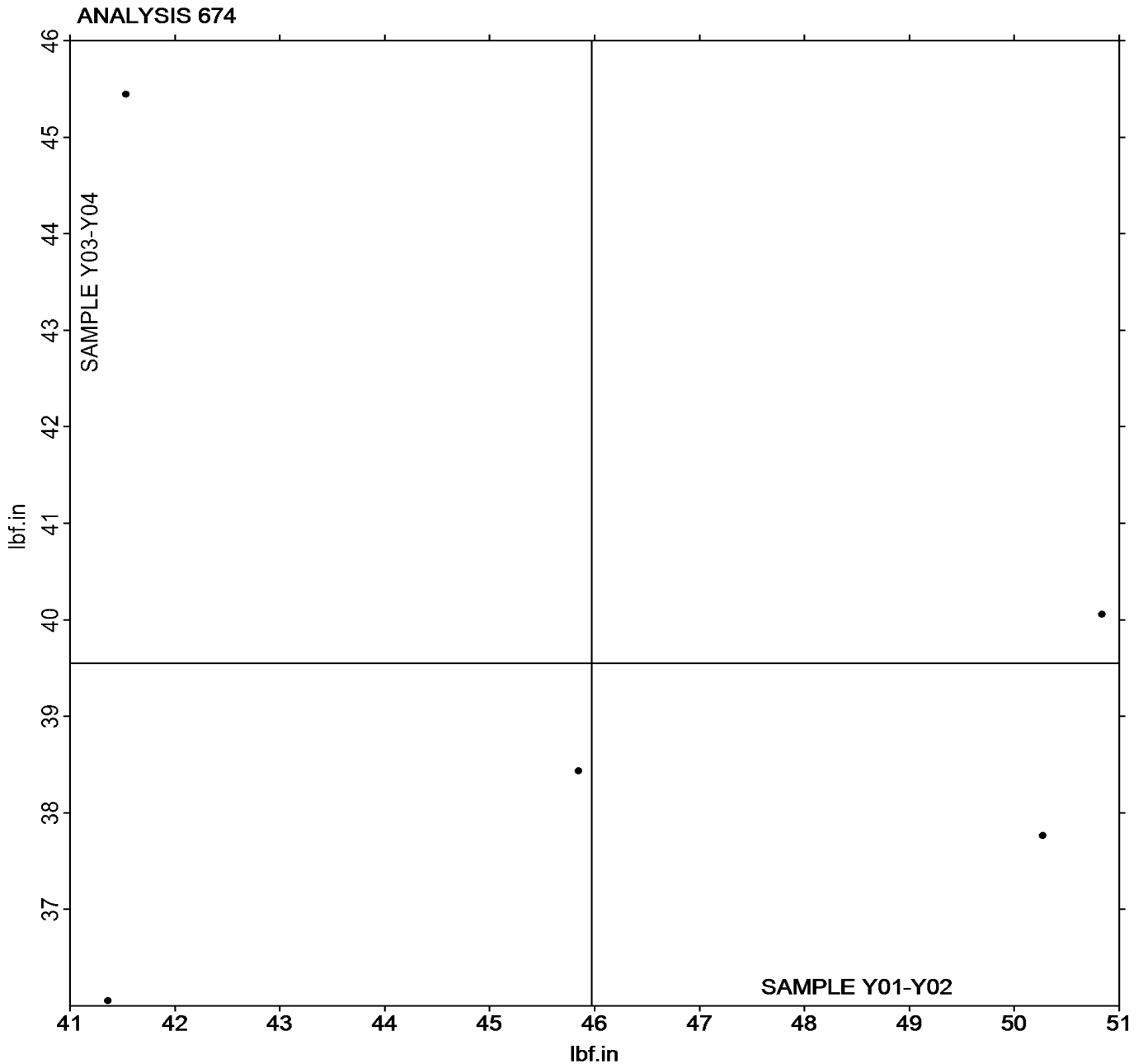


Rubber Interlaboratory Testing Program
Analysis 674
ODR Vulcanization: Maximum Torque (lbf.in)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y01-Y02** = 45.971 lbf.in

Grand Mean Sample **Y03-Y04** = 39.550 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 #205

Analysis 684

3rd Qtr 2020

MDR Vulcanization-Cure Time 10% (minutes)

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D8TKG		2.265	-0.009	-0.07	3.138	0.711	1.15	MC
39RMFU		2.250	-0.024	-0.19	1.357	-1.070	-1.74	MX
3DQWRH		2.250	-0.024	-0.19	2.850	0.423	0.69	MC
4EDUJL		2.197	-0.077	-0.62	1.310	-1.117	-1.81	MC
4QP2FL		2.125	-0.149	-1.19	2.067	-0.360	-0.58	MR
6RV2VC		2.235	-0.039	-0.31	2.915	0.488	0.79	MC
8LZYXQ		2.515	0.241	1.93	2.397	-0.030	-0.05	MM
8PYAUQ		2.167	-0.107	-0.86	2.837	0.410	0.66	MC
8RB6FH		2.533	0.260	2.07	3.052	0.625	1.01	MC
938BAF		2.265	-0.009	-0.07	2.178	-0.249	-0.40	MM
9D8X2D		2.097	-0.177	-1.41	1.267	-1.160	-1.88	MC
AA4PA8		2.175	-0.099	-0.79	2.128	-0.299	-0.48	MC
BQ342L		2.331	0.057	0.45	3.016	0.589	0.95	MC
C9GXC8		2.202	-0.072	-0.58	2.227	-0.200	-0.33	TP
EPZDLG		2.325	0.051	0.41	2.992	0.565	0.92	MM
ER8QAB		2.177	-0.097	-0.78	2.135	-0.292	-0.47	MD
FWXMC7		2.237	-0.037	-0.30	3.032	0.605	0.98	MC
FZGEM9		2.268	-0.005	-0.04	2.122	-0.305	-0.50	MC
GQ7K2F		2.115	-0.159	-1.27	2.898	0.471	0.76	XX
GRWX96		2.581	0.307	2.45	3.267	0.840	1.36	MC
H7WYK7		2.275	0.001	0.01	1.535	-0.892	-1.45	MC
HCJRQD		2.405	0.131	1.05	2.392	-0.035	-0.06	MC
JE7NY4		2.367	0.093	0.74	3.270	0.843	1.37	ME
JKCGTZ		2.367	0.093	0.74	2.925	0.498	0.81	ME
JKWX93		2.250	-0.024	-0.19	2.773	0.346	0.56	MP
LY24CW		2.303	0.030	0.24	2.943	0.516	0.84	MP
NWNDYX		2.210	-0.064	-0.51	2.782	0.355	0.57	MC
NYCPY4		2.182	-0.092	-0.74	2.963	0.536	0.87	MC
P2V9C7		2.017	-0.257	-2.05	1.947	-0.480	-0.78	MC
P9WFX2		2.328	0.055	0.44	2.847	0.420	0.68	MC
Q8K948		2.465	0.191	1.53	2.460	0.033	0.05	MM
RDKYRV		2.335	0.061	0.49	2.240	-0.187	-0.30	MR
RPEZP6		2.380	0.106	0.85	1.585	-0.842	-1.37	MD
UMKACP		2.197	-0.077	-0.62	2.947	0.520	0.84	MM
WTZUAL		2.205	-0.069	-0.55	2.098	-0.329	-0.53	MC
Y7G9PQ		2.137	-0.137	-1.09	1.312	-1.115	-1.81	ME
ZCKR2N		2.400	0.126	1.01	1.602	-0.825	-1.34	XX



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

Report #205
3rd Qtr 2020

		Summary Statistics	
Grand Means	2.2738 minutes	2.4271 minutes	
Stnd Dev Btwn Labs	0.1253 minutes	0.6167 minutes	
Statistics based on 37 of 37 reporting participants			

Samples Y05-Y06: EPDM compound, batch #1 & Y07-Y08: 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 | |

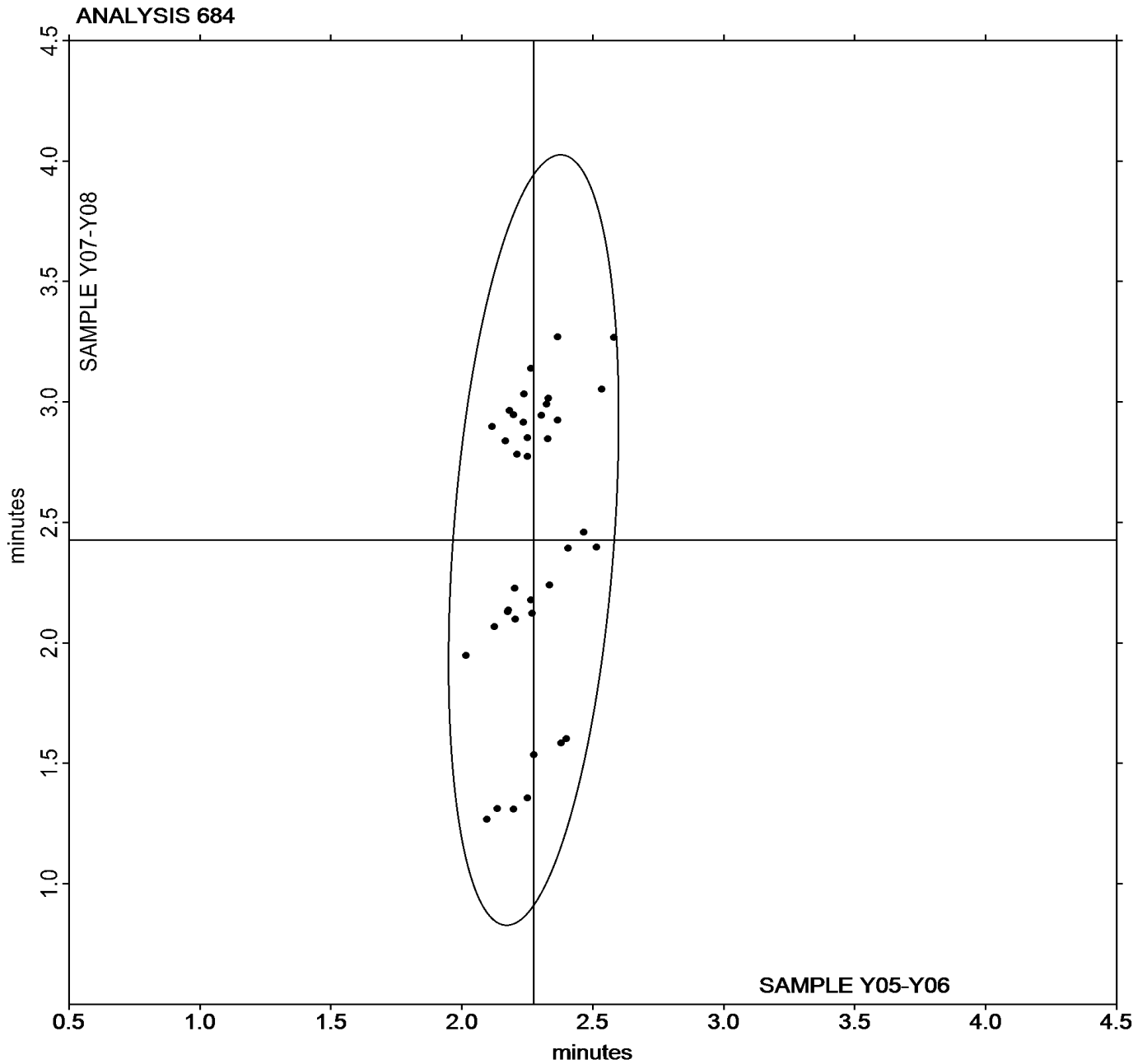


Rubber Interlaboratory Testing Program
Analysis 684
MDR Vulcanization-Cure Time 10% (minutes)

Report #205
3rd Qtr 2020

Grand Mean Sample Y05-Y06 = 2.2738 minutes

Grand Mean Sample Y07-Y08 = 2.4271 minutes





Rubber Interlaboratory Testing Program

Report #205

Analysis 685

3rd Qtr 2020

MDR Vulcanization-Scorch Time, Ts1 (minutes)

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D8TKG		2.205	-0.054	-0.33	2.960	0.535	0.89	MC
39RMFU		2.443	0.185	1.12	1.467	-0.958	-1.59	MX
3DQWRH		2.272	0.013	0.08	2.843	0.419	0.69	MC
3EHU7F		2.338	0.080	0.48	2.815	0.390	0.65	MM
3HG72F		2.023	-0.235	-1.43	2.708	0.284	0.47	MC
4EDUJL		2.230	-0.029	-0.17	1.325	-1.100	-1.82	MC
4QP2FL		2.223	-0.035	-0.21	2.152	-0.273	-0.45	MR
6RV2VC		2.175	-0.084	-0.51	2.855	0.430	0.71	MC
8LZYXQ		2.350	0.091	0.55	2.220	-0.205	-0.34	MM
8PYAUQ		2.137	-0.122	-0.74	2.790	0.365	0.61	MC
8RB6FH		2.510	0.251	1.52	3.058	0.634	1.05	MC
938BAF		2.245	-0.014	-0.08	2.205	-0.220	-0.36	MM
9D8X2D		2.075	-0.184	-1.11	1.195	-1.230	-2.04	MC
AA4PA8		2.162	-0.097	-0.59	2.105	-0.320	-0.53	MC
ANKHXE		2.185	-0.074	-0.45	1.918	-0.506	-0.84	MR
BQ342L		2.202	-0.057	-0.35	2.925	0.500	0.83	MC
C9GXC8		2.288	0.030	0.18	2.297	-0.128	-0.21	TP
EPZDLG		2.458	0.200	1.21	3.197	0.772	1.28	MM
ER8QAB		2.138	-0.120	-0.73	2.127	-0.298	-0.49	MD
FWXMC7		2.267	0.008	0.05	3.025	0.600	1.00	MC
FZGEM9		2.270	0.011	0.07	2.135	-0.290	-0.48	MC
GQ7K2F		2.077	-0.182	-1.10	2.860	0.435	0.72	XX
GRWX96		2.631	0.372	2.25	3.272	0.848	1.41	MC
H7WYK7		2.155	-0.104	-0.63	1.398	-1.026	-1.70	MC
HCJRQD		2.397	0.138	0.84	2.332	-0.093	-0.15	MC
JE7NY4		2.350	0.091	0.55	3.208	0.784	1.30	ME
JKCGTZ		2.362	0.103	0.62	2.983	0.559	0.93	ME
JKWX93		2.312	0.053	0.32	2.810	0.385	0.64	MC
LY24CW		2.127	-0.132	-0.80	2.713	0.289	0.48	MP
M4RXM4		2.073	-0.185	-1.12	2.725	0.300	0.50	MC
NWNDYX		2.012	-0.247	-1.50	2.569	0.145	0.24	MC
NYCPY4		2.172	-0.087	-0.53	2.885	0.460	0.76	MC
P2V9C7	X	1.380	-0.879	-5.32	1.347	-1.078	-1.79	MC
P9WFX2		2.352	0.093	0.56	2.928	0.504	0.84	MC
Q8K948	*	2.758	0.500	3.03	2.668	0.244	0.40	MM
RDKYRV		1.993	-0.265	-1.61	1.910	-0.515	-0.85	MR
RPEZP6		2.340	0.081	0.49	1.517	-0.908	-1.51	MD



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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
UMKACP		2.305	0.046	0.28	2.973	0.549	0.91	MM
WTZUAL		2.082	-0.177	-1.07	1.963	-0.461	-0.76	MC
Y7G9PQ		2.190	-0.069	-0.42	1.335	-1.090	-1.81	ME
ZCKR2N		2.468	0.210	1.27	1.613	-0.811	-1.35	XX

Grand Means		Summary Statistics	
	2.2588 minutes		2.4247 minutes
Stnd Dev Btwn Labs	0.1651 minutes		0.6031 minutes
Statistics based on 40 of 41 reporting participants			

Samples Y05-Y06: EPDM compound, batch #1 & Y07-Y08: EPDM compound, batch #2

Comments on Assigned Data Flags for Test #685

P2V9C7 (X) - Data for sample group Y05-Y06 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		

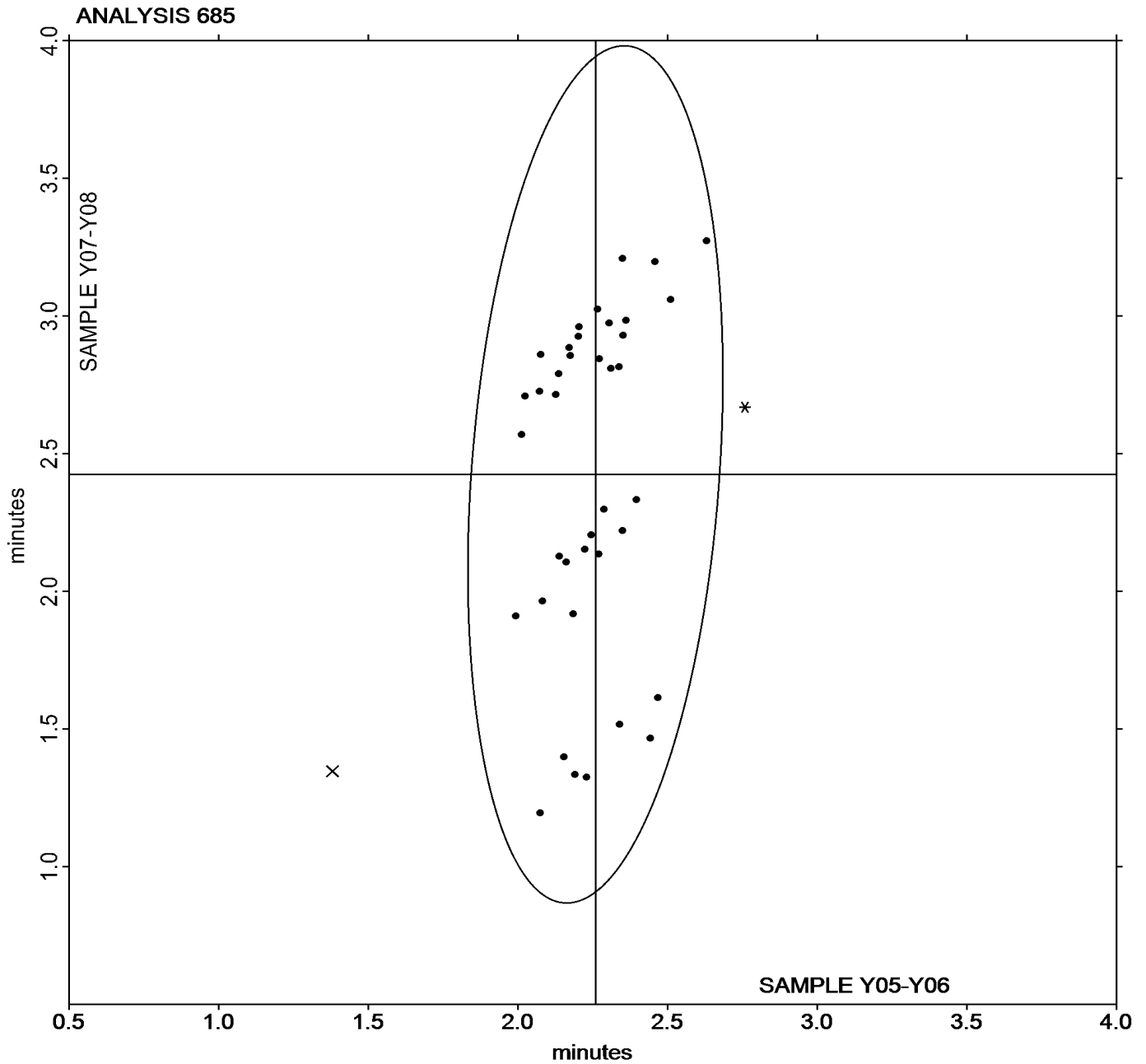


Rubber Interlaboratory Testing Program
Analysis 685
MDR Vulcanization-Scorch Time, Ts1 (minutes)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y05-Y06** = 2.2588 minutes

Grand Mean Sample **Y07-Y08** = 2.4247 minutes





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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D8TKG		4.880	-0.064	-0.26	6.388	1.097	0.94	MC
39RMFU		4.540	-0.404	-1.67	2.802	-2.489	-2.14	MX
3DQWRH		4.880	-0.064	-0.26	6.000	0.709	0.61	MC
3EHU7F		5.023	0.080	0.33	6.072	0.781	0.67	MM
3HG72F		4.637	-0.307	-1.27	5.963	0.672	0.58	MC
4EDUJL		4.788	-0.155	-0.64	3.113	-2.178	-1.87	MC
4QP2FL		4.805	-0.139	-0.57	4.682	-0.609	-0.52	MR
6RV2VC		4.895	-0.049	-0.20	6.300	1.009	0.87	MC
8LZYXQ	*	5.638	0.695	2.87	5.407	0.116	0.10	MM
8PYAUQ		4.683	-0.260	-1.07	6.002	0.711	0.61	MC
8RB6FH		5.440	0.496	2.05	6.370	1.079	0.93	MC
938BAF		5.060	0.116	0.48	5.030	-0.261	-0.22	MM
9D8X2D		4.788	-0.155	-0.64	3.132	-2.159	-1.85	MC
AA4PA8		4.658	-0.285	-1.18	4.617	-0.674	-0.58	MC
ANKHXE		5.095	0.151	0.62	4.773	-0.518	-0.44	MR
BQ342L		5.013	0.069	0.29	6.254	0.963	0.83	MC
C9GXC8		4.785	-0.159	-0.66	4.977	-0.314	-0.27	TP
EPZDLG		5.220	0.276	1.14	6.633	1.342	1.15	MM
ER8QAB		4.665	-0.279	-1.15	4.587	-0.704	-0.61	MD
FWXMC7		4.965	0.021	0.09	6.365	1.074	0.92	MC
FZGEM9		5.050	0.106	0.44	4.792	-0.499	-0.43	MC
GQ7K2F		4.715	-0.229	-0.94	6.132	0.841	0.72	XX
GRWX96		5.270	0.326	1.34	6.425	1.134	0.97	MC
H7WYK7		5.020	0.076	0.31	3.670	-1.621	-1.39	MC
HCJRQD		5.127	0.183	0.75	5.185	-0.106	-0.09	MC
JE7NY4		5.177	0.233	0.96	6.717	1.426	1.22	ME
JKCGTZ		5.148	0.205	0.84	6.115	0.824	0.71	ME
JKWX93		4.933	-0.010	-0.04	6.078	0.787	0.68	MC
LY24CW		4.888	-0.055	-0.23	6.253	0.962	0.83	MC
M4RXM4		5.086	0.142	0.59	6.700	1.409	1.21	MC
NWNDYX		4.975	0.031	0.13	6.122	0.831	0.71	MC
NYCPY4		4.748	-0.195	-0.81	6.280	0.989	0.85	MC
P2V9C7		4.353	-0.590	-2.44	4.167	-1.124	-0.97	MC
P9WFX2		5.052	0.108	0.45	6.065	0.774	0.66	MC
Q8K948		5.082	0.138	0.57	4.920	-0.371	-0.32	MM
RDKYRV		4.940	-0.004	-0.02	4.678	-0.613	-0.53	MR
RPEZP6		5.002	0.058	0.24	3.545	-1.746	-1.50	MX



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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
UMKACP		4.927	-0.017	-0.07	6.327	1.036	0.89	MM
WTZUAL		4.925	-0.019	-0.08	4.643	-0.648	-0.56	MC
Y7G9PQ		4.632	-0.312	-1.29	3.095	-2.196	-1.89	ME
ZCKR2N		5.187	0.243	1.00	3.563	-1.728	-1.48	XX

Grand Means		Summary Statistics	
	4.9438 minutes		5.2912 minutes
Stnd Dev Btwn Labs	0.2423 minutes		1.1643 minutes
Statistics based on 41 of 41 reporting participants			

Samples Y05-Y06: EPDM compound, batch #1 & Y07-Y08: 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
MR	MonTech D-RPA 3000	MX	Rebuilt MonTech Alpha
TP	Tech Pro MDR model MDPT	XX	Instrument model not specified by lab

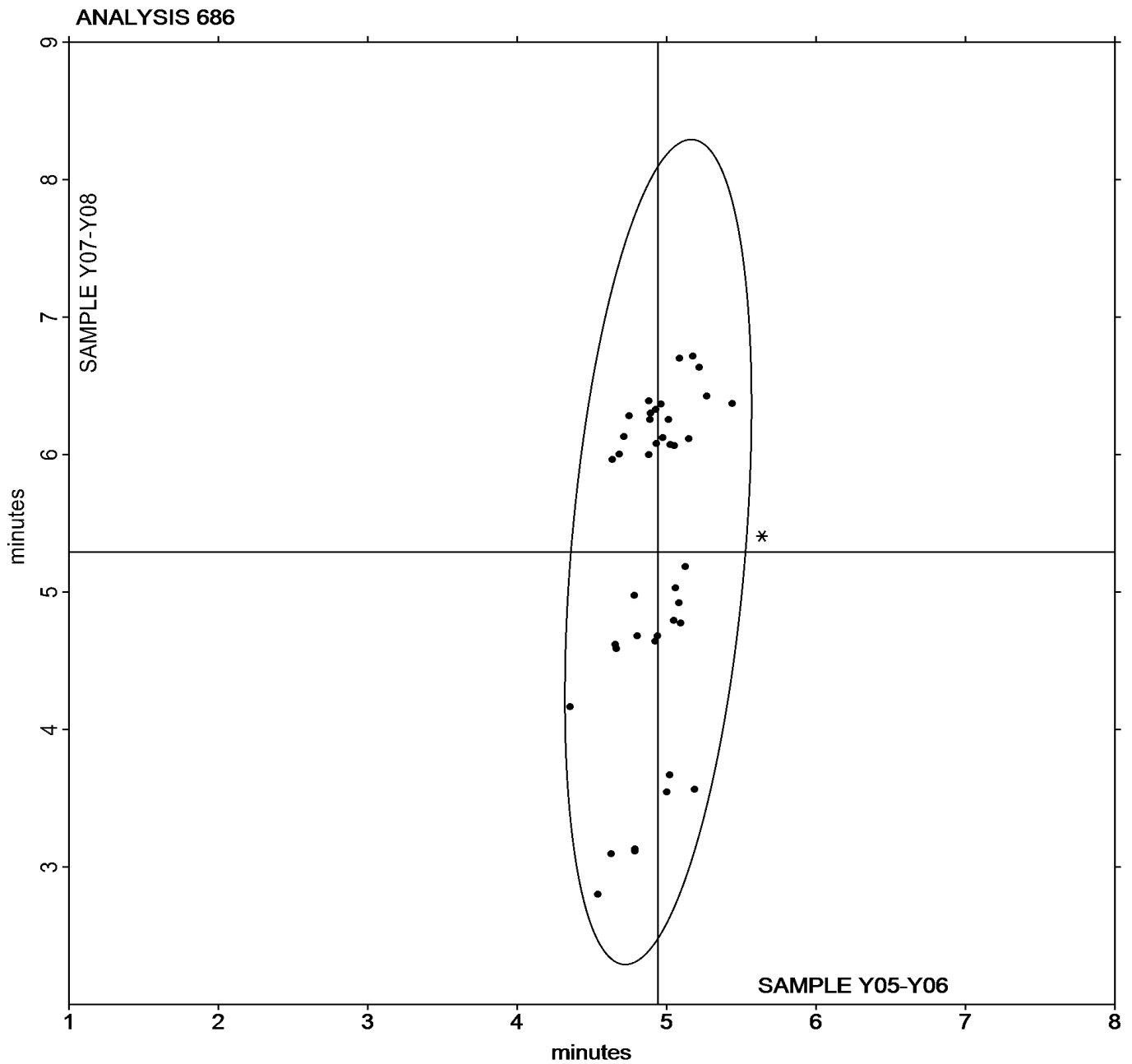


Rubber Interlaboratory Testing Program
Analysis 686
MDR Vulcanization-Cure Time 50% (minutes)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y05-Y06** = 4.9438 minutes

Grand Mean Sample **Y07-Y08** = 5.2912 minutes





Rubber Interlaboratory Testing Program

Report #205

Analysis 687

3rd Qtr 2020

MDR Vulcanization-Cure Time 90% (minutes)

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D8TKG		8.477	-0.257	-0.59	10.247	1.313	0.79	MC
39RMFU	*	8.055	-0.679	-1.56	4.855	-4.079	-2.44	MX
3DQWRH		8.480	-0.254	-0.58	9.710	0.776	0.46	MC
3EHU7F		9.103	0.370	0.85	10.210	1.276	0.76	MM
3HG72F		8.158	-0.575	-1.32	9.925	0.991	0.59	MC
4EDUJL		8.472	-0.262	-0.60	5.720	-3.214	-1.92	MC
4QP2FL		8.558	-0.175	-0.40	8.135	-0.799	-0.48	MR
6RV2VC		8.385	-0.349	-0.80	10.360	1.426	0.85	MC
8LZYXQ	*	10.112	1.378	3.16	9.328	0.395	0.24	MM
8PYAUQ		8.898	0.165	0.38	10.415	1.481	0.89	MC
8RB6FH		9.333	0.600	1.38	10.397	1.463	0.88	MC
938BAF		9.250	0.516	1.19	8.658	-0.275	-0.16	MM
9D8X2D		8.723	-0.010	-0.02	6.337	-2.597	-1.55	MC
AA4PA8		8.697	-0.037	-0.08	8.567	-0.367	-0.22	MC
ANKHXE		8.797	0.063	0.14	8.205	-0.729	-0.44	MR
BQ342L		9.004	0.270	0.62	10.316	1.382	0.83	MC
C9GXC8		8.103	-0.630	-1.45	8.147	-0.787	-0.47	TP
EPZDLG		9.332	0.598	1.37	10.997	2.063	1.24	MM
ER8QAB		8.607	-0.127	-0.29	7.843	-1.090	-0.65	MD
FWXMC7		8.728	-0.005	-0.01	10.432	1.498	0.90	MC
FZGEM9		8.922	0.188	0.43	8.162	-0.772	-0.46	MC
GQ7K2F		8.693	-0.040	-0.09	10.207	1.273	0.76	XX
GRWX96		8.978	0.244	0.56	10.509	1.575	0.94	MC
H7WYK7		8.685	-0.049	-0.11	6.175	-2.759	-1.65	MC
HCJRQD		8.645	-0.089	-0.20	8.388	-0.545	-0.33	MC
JE7NY4		8.895	0.161	0.37	10.973	2.040	1.22	ME
JKCGTZ		9.033	0.300	0.69	10.052	1.118	0.67	ME
JKWX93		8.665	-0.069	-0.16	10.065	1.131	0.68	MC
LY24CW		8.418	-0.315	-0.72	10.080	1.146	0.69	MP
M4RXM4		9.002	0.268	0.62	10.922	1.988	1.19	MC
NWNDYX		8.607	-0.127	-0.29	9.882	0.948	0.57	MC
NYCPY4		8.193	-0.540	-1.24	10.197	1.263	0.76	MC
P2V9C7		7.630	-1.104	-2.53	7.128	-1.805	-1.08	MC
P9WFX2		8.675	-0.059	-0.13	9.752	0.818	0.49	MC
Q8K948		9.002	0.268	0.62	8.730	-0.204	-0.12	MM
RDKYRV		9.057	0.323	0.74	8.742	-0.192	-0.11	MR
RPEZP6		9.057	0.323	0.74	6.607	-2.327	-1.39	MX
UMKACP		8.637	-0.097	-0.22	10.333	1.400	0.84	MM



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

Report #205
3rd Qtr 2020

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
WTZUAL		8.622	-0.112	-0.26	8.137	-0.797	-0.48	MC
Y7G9PQ		8.113	-0.620	-1.42	5.502	-3.432	-2.05	ME
ZCKR2N		9.278	0.545	1.25	6.932	-2.002	-1.20	XX

Grand Means		Summary Statistics	
	8.7336 minutes		8.9335 minutes
Stnd Dev Btwn Labs	0.4357 minutes		1.6705 minutes
Statistics based on 41 of 41 reporting participants			

Samples Y05-Y06: EPDM compound, batch #1 & Y07-Y08: 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		

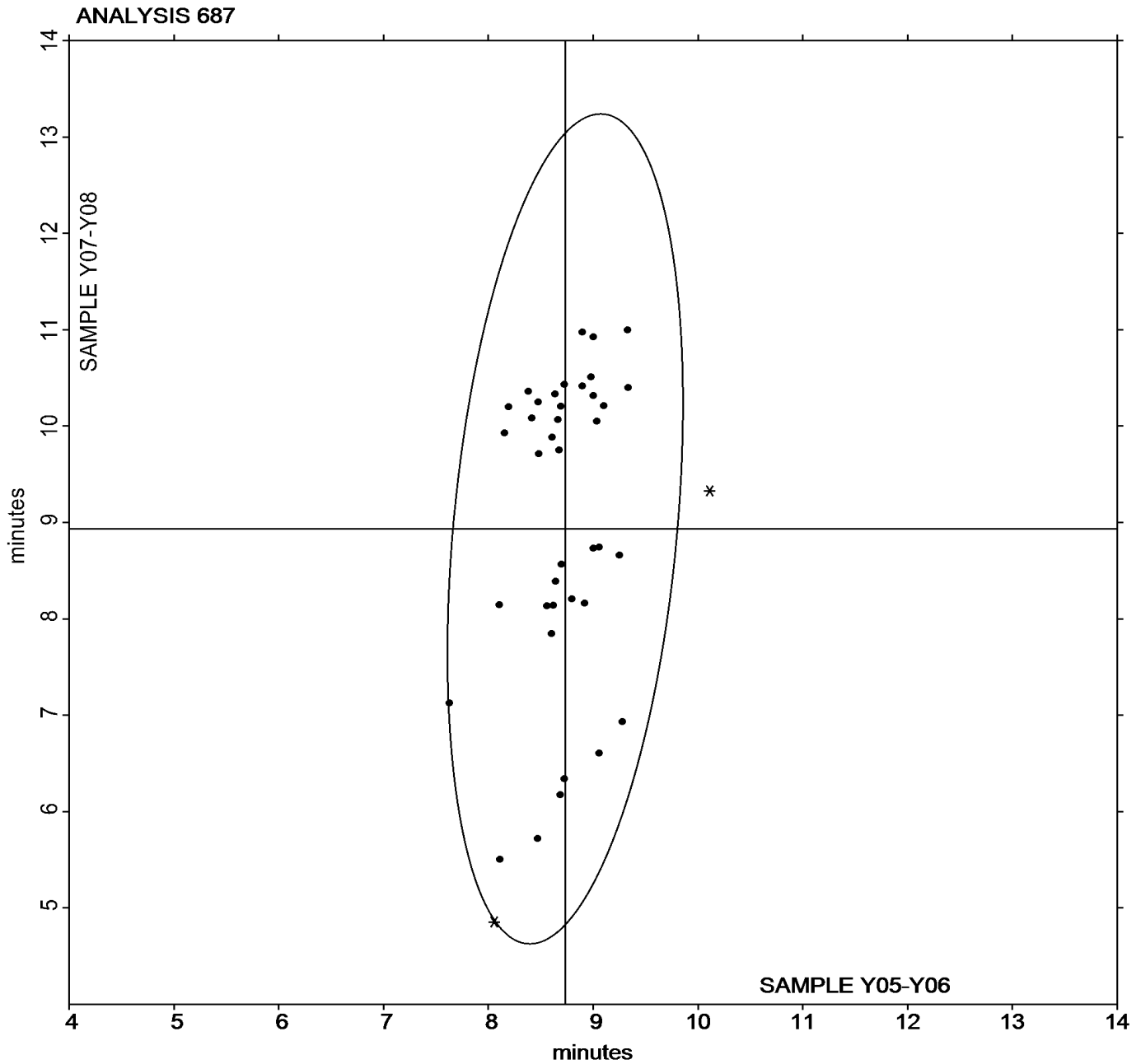


Rubber Interlaboratory Testing Program
Analysis 687
MDR Vulcanization-Cure Time 90% (minutes)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y05-Y06** = 8.7336 minutes

Grand Mean Sample **Y07-Y08** = 8.9335 minutes





Rubber Interlaboratory Testing Program

Report #205

Analysis 688

3rd Qtr 2020

MDR Vulcanization: Minimum Torque (lbf.in)

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D8TKG		3.082	0.283	0.96	3.468	0.670	1.73	MC
39RMFU		2.727	-0.072	-0.24	2.487	-0.312	-0.81	MX
3DQWRH		2.905	0.107	0.36	3.050	0.252	0.65	MC
3EHU7F		2.810	0.012	0.04	2.847	0.048	0.12	MM
3HG72F		2.883	0.085	0.29	3.108	0.310	0.80	MC
4EDUJL		3.055	0.257	0.87	2.788	-0.010	-0.03	MC
4QP2FL		2.415	-0.383	-1.30	2.505	-0.293	-0.76	MR
6RV2VC		2.583	-0.215	-0.73	2.477	-0.322	-0.83	MC
8LZYXQ		3.022	0.223	0.75	2.662	-0.137	-0.35	MM
8PYAUQ		3.115	0.317	1.07	3.317	0.518	1.34	MC
8RB6FH		2.728	-0.070	-0.24	2.592	-0.207	-0.53	MC
938BAF		2.737	-0.062	-0.21	2.842	0.043	0.11	MM
9D8X2D		3.252	0.453	1.53	3.057	0.258	0.67	MC
AA4PA8		3.083	0.285	0.96	3.067	0.268	0.69	MC
ANKHXE		2.750	-0.048	-0.16	2.608	-0.190	-0.49	MR
BQ342L		2.995	0.197	0.66	2.952	0.153	0.40	MC
C9GXC8		2.638	-0.160	-0.54	2.570	-0.228	-0.59	TP
EPZDLG		2.325	-0.473	-1.60	2.570	-0.228	-0.59	MM
ER8QAB		3.172	0.373	1.26	2.958	0.160	0.41	MD
FWXMC7		2.955	0.157	0.53	3.168	0.370	0.96	MC
FZGEM9		2.545	-0.253	-0.86	2.340	-0.458	-1.18	MC
GQ7K2F		3.275	0.477	1.61	3.510	0.712	1.84	XX
GRWX96	*	3.232	0.433	1.46	3.803	1.005	2.60	MC
H7WYK7		2.548	-0.251	-0.85	2.096	-0.702	-1.81	MC
HCJRQD		3.158	0.360	1.22	3.165	0.367	0.95	MC
JE7NY4		2.472	-0.327	-1.10	2.800	0.002	0.00	ME
JKCGTZ		2.803	0.005	0.02	2.962	0.163	0.42	ME
JKWX93		2.408	-0.390	-1.32	2.657	-0.142	-0.37	MC
LY24CW		2.779	-0.019	-0.07	3.071	0.273	0.70	MP
M4RXM4		2.694	-0.105	-0.35	2.928	0.130	0.33	MC
NWNDYX		2.546	-0.252	-0.85	2.719	-0.080	-0.21	MC
NYCPY4		2.690	-0.108	-0.37	2.912	0.113	0.29	MC
P2V9C7		2.977	0.178	0.60	2.912	0.113	0.29	MC
P9WFX2		2.920	0.122	0.41	2.838	0.040	0.10	MC
Q8K948		2.162	-0.637	-2.15	2.292	-0.507	-1.31	MM
RDKYRV		2.643	-0.155	-0.52	2.280	-0.518	-1.34	MR
RPEZP6		2.574	-0.224	-0.76	2.068	-0.730	-1.89	MX
UMKACP		2.587	-0.212	-0.72	2.668	-0.130	-0.34	MM



Rubber Interlaboratory Testing Program

Report #205

Analysis 688

3rd Qtr 2020

MDR Vulcanization: Minimum Torque (lbf.in)

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
WTZUAL		3.312	0.513	1.74	2.883	0.085	0.22	MC
Y7G9PQ		2.975	0.177	0.60	2.777	-0.022	-0.06	ME
ZCKR2N		2.205	-0.593	-2.01	1.965	-0.833	-2.15	MM

Grand Means		Summary Statistics	
	2.7984 lbf.in		2.7985 lbf.in
Stnd Dev Btwn Labs	0.2957 lbf.in		0.3872 lbf.in
Statistics based on 41 of 41 reporting participants			

Grand Means		Summary Statistics in SI Units	
	3.1618 dN.m		3.1618 dN.m
Stnd Dev Btwn Labs	0.3341 dN.m		0.4375 dN.m
Statistics based on 41 of 41 reporting participants			

Samples Y05-Y06: EPDM compound, batch #1 & Y07-Y08: 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		

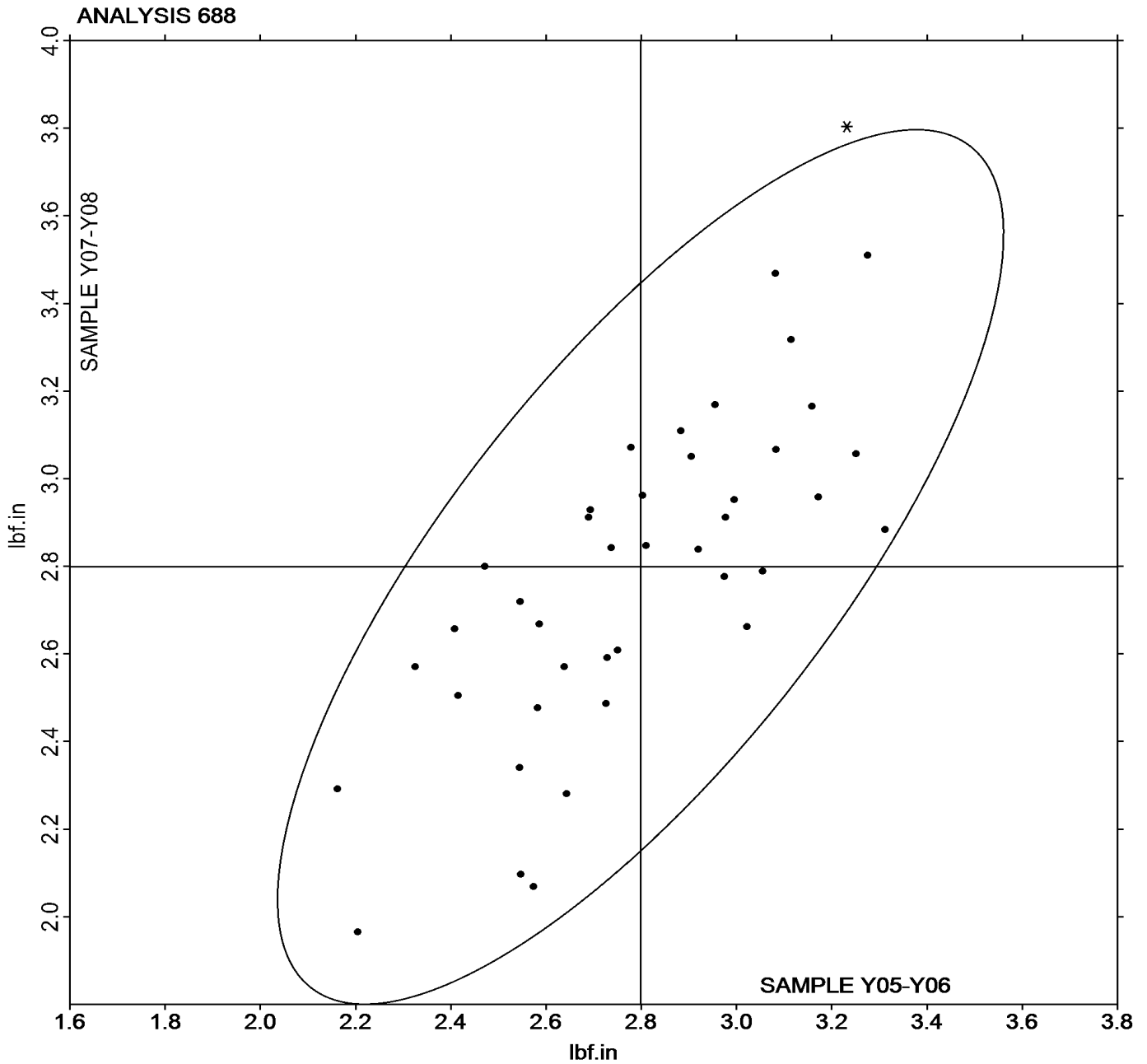


Rubber Interlaboratory Testing Program
Analysis 688
MDR Vulcanization: Minimum Torque (lbf.in)

Report #205
3rd Qtr 2020

Grand Mean Sample Y05-Y06 = 2.7984 lbf.in

Grand Mean Sample Y07-Y08 = 2.7985 lbf.in





Rubber Interlaboratory Testing Program

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MDR Vulcanization: Maximum Torque (lbf.in)

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D8TKG		12.49	-0.27	-0.27	13.66	0.70	0.73	MC
39RMFU		10.91	-1.85	-1.91	10.71	-2.25	-2.34	MX
3DQWRH		12.71	-0.05	-0.05	13.14	0.18	0.19	MC
3EHU7F		11.97	-0.79	-0.81	11.83	-1.13	-1.17	MM
3HG72F		12.82	0.06	0.07	13.35	0.39	0.40	MC
4EDUJL		12.71	-0.05	-0.05	12.52	-0.44	-0.46	MC
4QP2FL		11.62	-1.14	-1.17	11.82	-1.14	-1.18	MR
6RV2VC		12.61	-0.15	-0.15	12.38	-0.58	-0.60	MC
8LZYXQ		14.51	1.75	1.80	14.49	1.54	1.60	MM
8PYAUQ		13.42	0.66	0.68	13.71	0.75	0.78	MC
8RB6FH		12.96	0.20	0.21	12.61	-0.35	-0.36	MC
938BAF		12.95	0.19	0.19	12.74	-0.22	-0.23	MM
9D8X2D		13.44	0.68	0.70	14.15	1.19	1.24	MC
AA4PA8		13.23	0.47	0.49	13.28	0.33	0.34	MC
ANKHXE		12.75	-0.01	-0.01	13.67	0.71	0.74	MR
BQ342L		14.25	1.49	1.54	13.61	0.65	0.68	MC
C9GXC8		11.80	-0.96	-0.99	12.05	-0.91	-0.95	TP
EPZDLG		12.51	-0.25	-0.26	12.56	-0.40	-0.41	MM
ER8QAB		13.58	0.82	0.85	13.05	0.10	0.10	MD
FWXMC7		12.73	-0.03	-0.03	13.25	0.29	0.30	MC
FZGEM9		12.47	-0.29	-0.30	12.34	-0.62	-0.65	MC
GQ7K2F		13.60	0.84	0.86	13.93	0.97	1.01	XX
GRWX96		12.76	0.00	0.00	13.78	0.82	0.85	MC
H7WYK7		12.53	-0.23	-0.24	12.82	-0.14	-0.15	MC
HCJRQD		13.24	0.48	0.49	13.88	0.92	0.96	MC
JE7NY4		12.61	-0.15	-0.16	13.23	0.27	0.28	ME
JKCGTZ		12.89	0.13	0.14	12.52	-0.44	-0.46	ME
JKWX93		11.85	-0.91	-0.94	12.41	-0.55	-0.57	MC
LY24CW		12.28	-0.48	-0.50	12.47	-0.49	-0.51	MC
M4RXM4		13.75	0.99	1.02	13.95	1.00	1.04	MC
NWNDYX		13.15	0.39	0.40	13.06	0.10	0.10	MC
NYCPY4		12.80	0.04	0.04	13.49	0.53	0.55	MC
P2V9C7		13.32	0.56	0.58	13.71	0.75	0.78	MC
P9WFX2		12.69	-0.07	-0.07	12.27	-0.69	-0.72	MC
Q8K948	*	9.96	-2.80	-2.89	10.55	-2.41	-2.50	MM
RDKYRV		15.14	2.38	2.46	15.10	2.14	2.23	MR
RPEZP6		11.82	-0.94	-0.97	11.91	-1.04	-1.09	MX
UMKACP		11.70	-1.06	-1.09	12.46	-0.50	-0.52	MM



Rubber Interlaboratory Testing Program

Report #205

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MDR Vulcanization: Maximum Torque (lbf.in)

WebCode	Data Flag	Sample Y05-Y06			Sample Y07-Y08			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
WTZUAL		14.58	1.82	1.88	14.49	1.53	1.59	MC
Y7G9PQ		12.43	-0.33	-0.34	12.45	-0.51	-0.53	ME
ZCKR2N		11.58	-1.18	-1.22	11.88	-1.08	-1.12	MM

		Summary Statistics	
Grand Means		12.759 lbf.in	12.957 lbf.in
Stnd Dev Btwn Labs		0.969 lbf.in	0.961 lbf.in
Statistics based on 41 of 41 reporting participants			

		Summary Statistics in SI Units	
Grand Means		14.415 dN.m	14.640 dN.m
Stnd Dev Btwn Labs		1.095 dN.m	1.086 dN.m
Statistics based on 41 of 41 reporting participants			

Samples Y05-Y06: EPDM compound, batch #1 & Y07-Y08: 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
MR	MonTech D-RPA 3000	MX	Rebuilt MonTech Alpha
TP	Tech Pro MDR model MDPT	XX	Instrument model not specified by lab

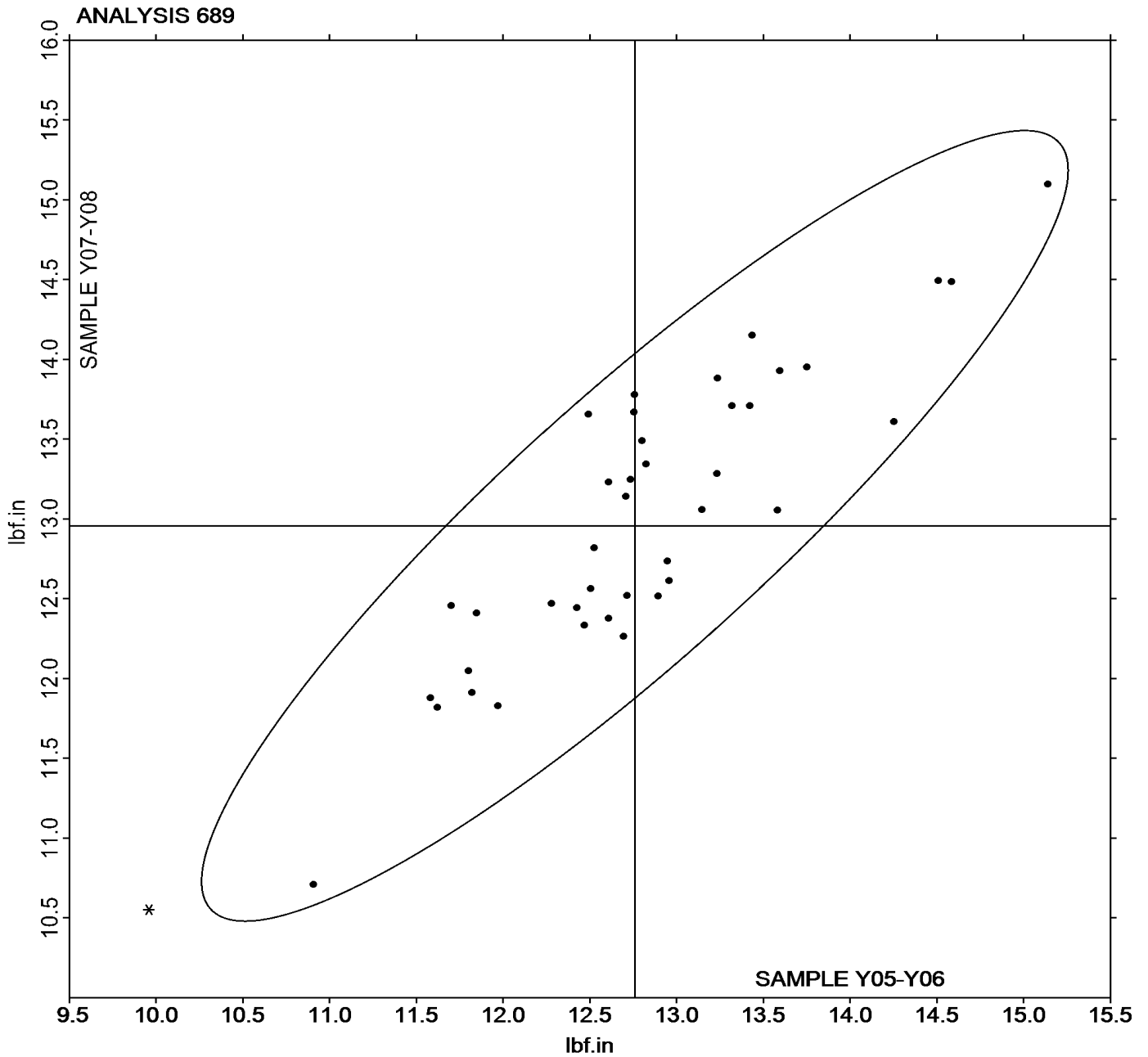


Rubber Interlaboratory Testing Program
Analysis 689
MDR Vulcanization: Maximum Torque (lbf.in)

Report #205
3rd Qtr 2020

Grand Mean Sample **Y05-Y06** = 12.759 lbf.in

Grand Mean Sample **Y07-Y08** = 12.957 lbf.in





Rubber Interlaboratory Testing Program

Report #205

Analysis 690

3rd Qtr 2020

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

WebCode	Data Flag	Sample G01-G02			Sample G03-G04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
9ZJYBB		689.1	129.2	2.08	661.4	101.5	1.67	RP
M4RXM4		530.3	-29.7	-0.48	526.8	-33.2	-0.54	RP
NWNDYX		535.9	-24.1	-0.39	530.1	-29.9	-0.49	RP
P9WFX2		514.7	-45.3	-0.73	516.1	-43.9	-0.72	PR
Q8K948		638.8	78.9	1.27	665.0	105.0	1.72	RP
QUBMMZ		525.6	-34.3	-0.55	535.3	-24.7	-0.41	RP
RPEZP6		505.8	-54.2	-0.87	499.8	-60.2	-0.99	RP
UMKACP		538.9	-21.0	-0.34	544.8	-15.2	-0.25	XX
V4JLKQ		560.6	0.6	0.01	560.6	0.7	0.01	XX

Grand Means		Summary Statistics	
	559.97 kPa		559.97 kPa
Std Dev Btwn Labs	62.23 kPa		60.93 kPa
Statistics based on 9 of 9 reporting participants			

Samples G01-G02: EPDM compound, batch #1 & G03-G04: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

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

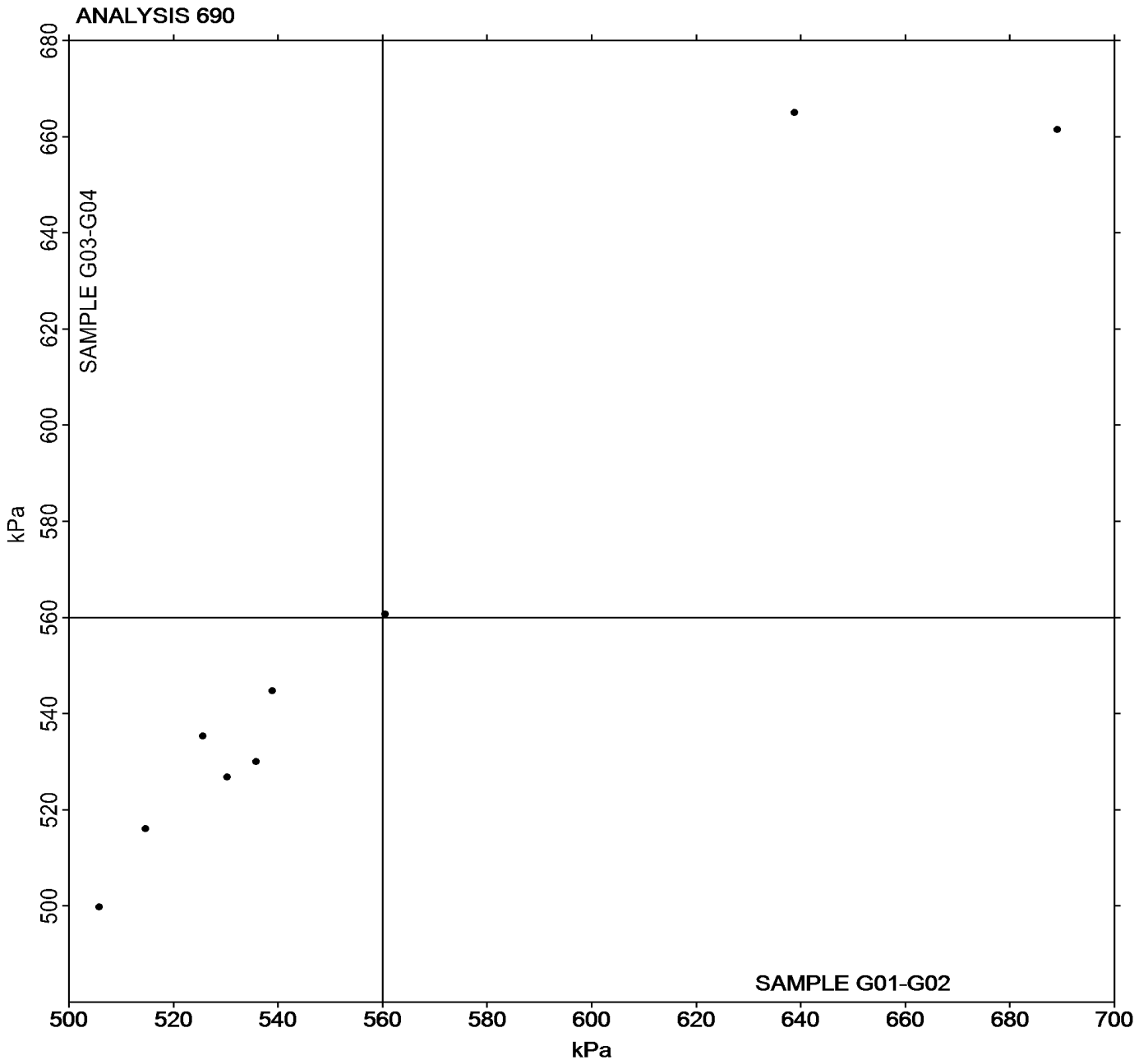


Rubber Interlaboratory Testing Program
Analysis 690
RPA Rheological Properties: Part A - G' at 20Hz (kPa)

Report #205
3rd Qtr 2020

Grand Mean Sample **G01-G02** = 559.97 kPa

Grand Mean Sample **G03-G04** = 559.97 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 #205

Analysis 691

3rd Qtr 2020

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

WebCode	Data Flag	Sample G01-G02			Sample G03-G04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
9ZJYBB		275.5	63.5	2.37	272.1	59.1	2.32	RP
M4RXM4		203.3	-8.7	-0.33	202.7	-10.2	-0.40	RP
NWNDYX		207.0	-5.0	-0.19	208.6	-4.4	-0.17	RP
P9WFX2		202.7	-9.3	-0.35	205.2	-7.7	-0.30	PR
Q8K948		208.3	-3.7	-0.14	210.6	-2.3	-0.09	RP
QUBMMZ		209.8	-2.2	-0.08	212.0	-0.9	-0.04	RP
RPEZP6		177.8	-34.2	-1.28	178.7	-34.3	-1.34	RP
UMKACP		198.9	-13.1	-0.49	200.2	-12.7	-0.50	XX
V4JLKQ		224.7	12.7	0.48	226.3	13.4	0.53	XX

Grand Means		Summary Statistics	
	212.00 kPa		212.93 kPa
Std Dev Btwn Labs	26.79 kPa		25.50 kPa
Statistics based on 9 of 9 reporting participants			

Samples G01-G02: EPDM compound, batch #1 & G03-G04: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

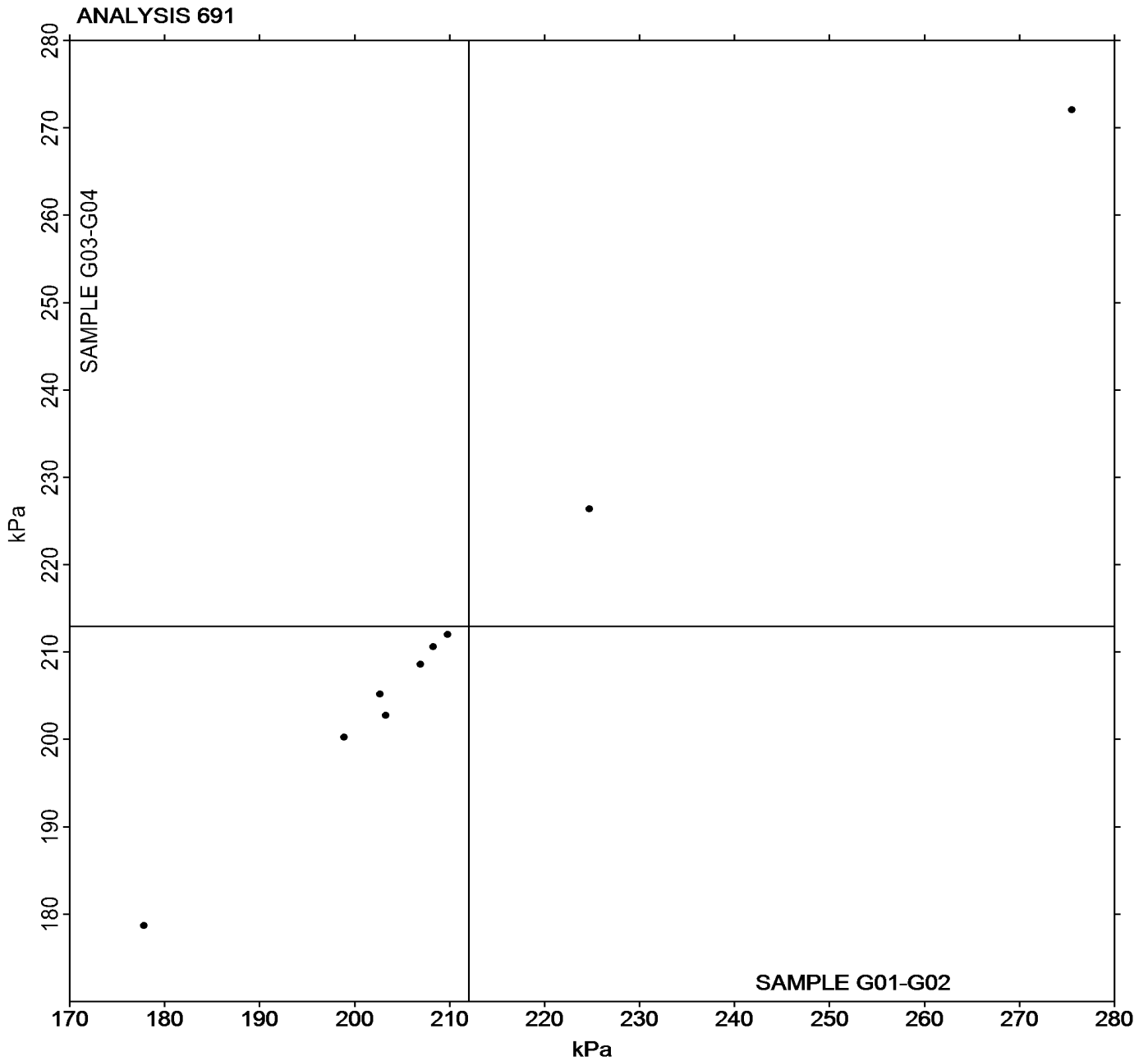
- PR PRPA 2000
- RP RPA 2000
- XX Instrument model not specified by lab



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

Grand Mean Sample G01-G02 = 212.00 kPa

Grand Mean Sample G03-G04 = 212.93 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 #205

Analysis 695

3rd Qtr 2020

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

WebCode	Data Flag	Sample G01-G02			Sample G03-G04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
9ZJYBB		98.93	-0.05	0.00	93.7	-6.9	-0.37	RP
M4RXM4		88.38	-10.60	-0.79	85.7	-14.9	-0.81	RP
NWNDYX		91.57	-7.41	-0.55	90.0	-10.6	-0.58	RP
P9WFX2		89.95	-9.04	-0.67	91.0	-9.6	-0.52	PR
Q8K948		132.53	33.55	2.50	147.1	46.5	2.52	RP
QUBMMZ		91.41	-7.57	-0.56	92.0	-8.6	-0.47	RP
RPEZP6		99.58	0.60	0.04	103.4	2.8	0.15	RP
UMKACP		100.90	1.92	0.14	101.7	1.1	0.06	XX
V4JLKQ		97.57	-1.41	-0.10	100.9	0.3	0.01	XX

Grand Means		Summary Statistics	
	98.980 kPa		100.61 kPa
Std Dev Btwn Labs	13.407 kPa		18.44 kPa
Statistics based on 9 of 9 reporting participants			

Samples G01-G02: EPDM compound, batch #1 & G03-G04: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

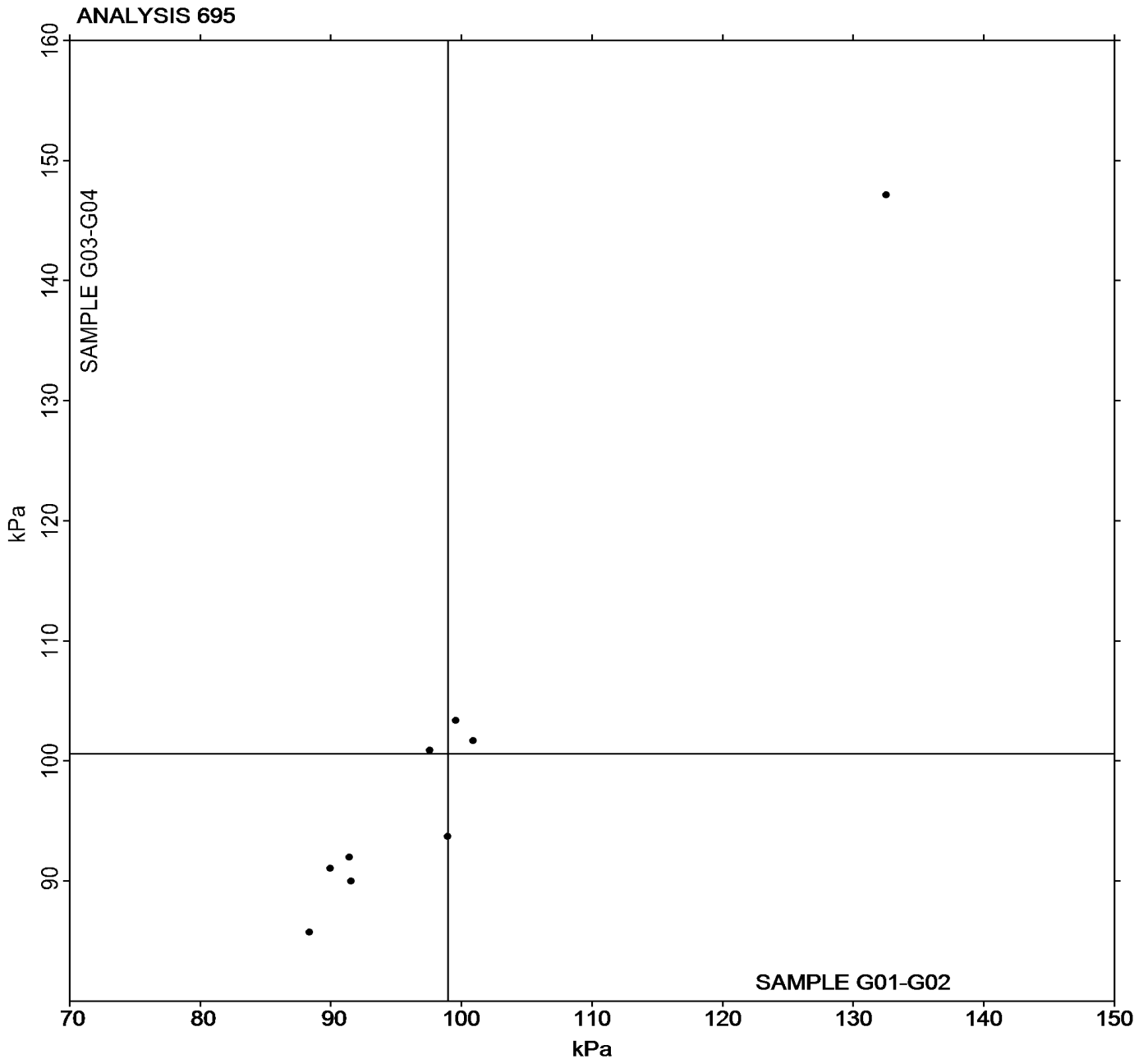
- PR PRPA 2000
- RP RPA 2000
- XX Instrument model not specified by lab



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

Grand Mean Sample G01-G02 = 98.980 kPa

Grand Mean Sample G03-G04 = 100.61 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 #205

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

WebCode	Data Flag	Sample G01-G02			Sample G03-G04			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
9ZJYBB		91.70	18.00	2.24	91.30	16.01	2.02	RP
M4RXM4		70.08	-3.62	-0.45	71.31	-3.98	-0.50	RP
NWNDYX		70.94	-2.76	-0.34	73.60	-1.68	-0.21	RP
P9WFX2		69.41	-4.28	-0.53	70.43	-4.86	-0.61	PR
Q8K948		79.61	5.92	0.74	84.19	8.90	1.12	XX
QUBMMZ		69.36	-4.33	-0.54	70.72	-4.56	-0.58	XX
RPEZP6		64.23	-9.47	-1.18	66.01	-9.27	-1.17	RP
UMKACP		71.85	-1.85	-0.23	71.96	-3.33	-0.42	XX
V4JLKQ		76.09	2.40	0.30	78.05	2.77	0.35	XX

Summary Statistics	
Grand Means	73.696 kPa
Stnd Dev Btwn Labs	8.029 kPa
	75.285 kPa
	7.933 kPa
Statistics based on 9 of 9 reporting participants	

Samples G01-G02: EPDM compound, batch #1 & G03-G04: EPDM compound, batch #2

Key to Instrument Codes Reported by Participants

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



Rubber Interlaboratory Testing Program

Report #205

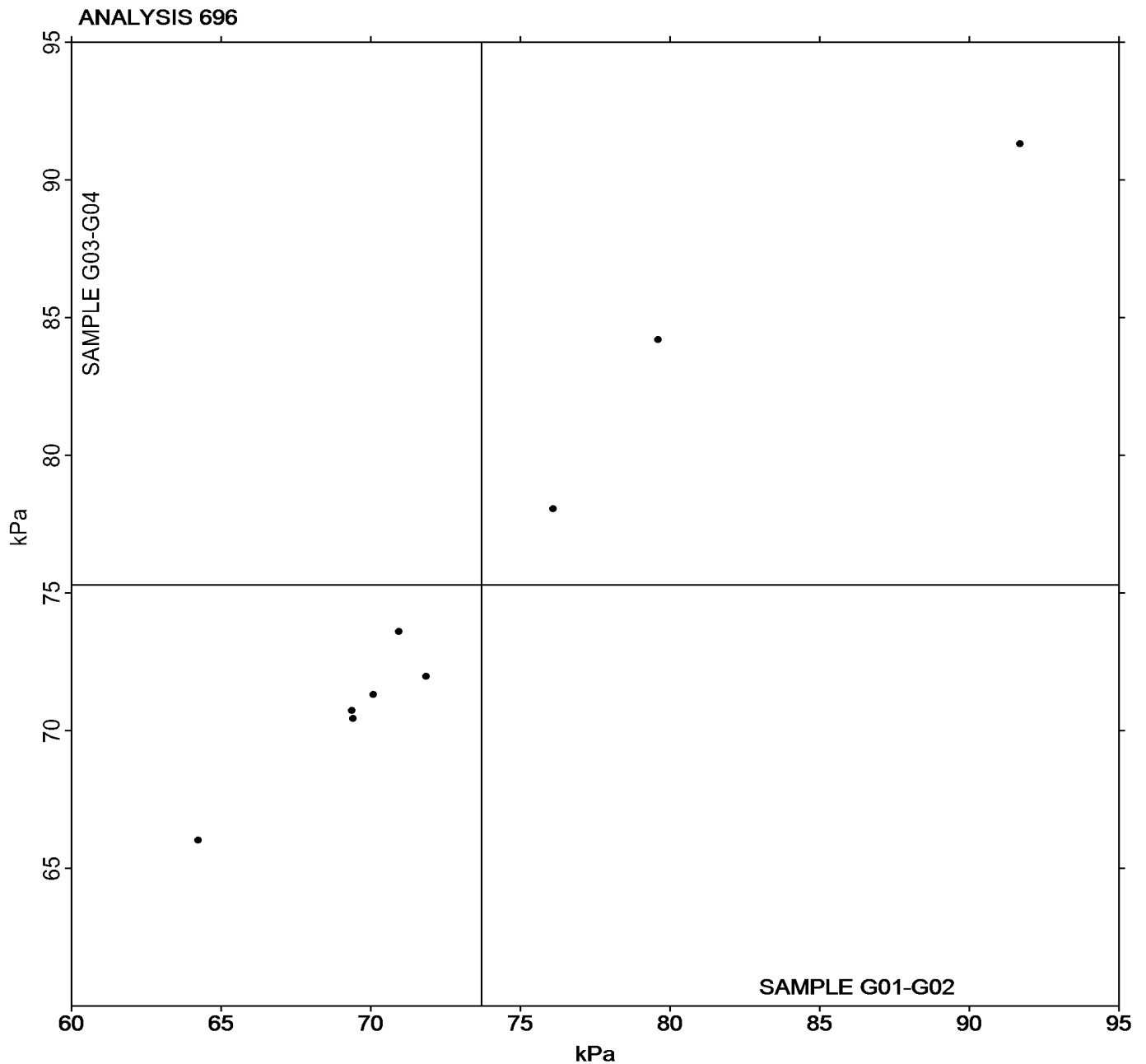
Analysis 696

3rd Qtr 2020

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

Grand Mean Sample **G01-G02** = 73.696 kPa

Grand Mean Sample **G03-G04** = 75.285 kPa



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

-End of Report-