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Rubber Industry Interlaboratory Program Performance Analysis Report

Cycle #189, 3rd Qtr 2016

Prepared for: Company

Participant Code: U1234A

Need Help?

For guidance on interpreting this report, or assistance with interpreting the statistics and terms used in the report, please refer to the CTS Help Guides located in the Rubber section of our website www.collaborativetesting.com. As always, you may contact the Program Analyst for assistance with any aspect of the program.

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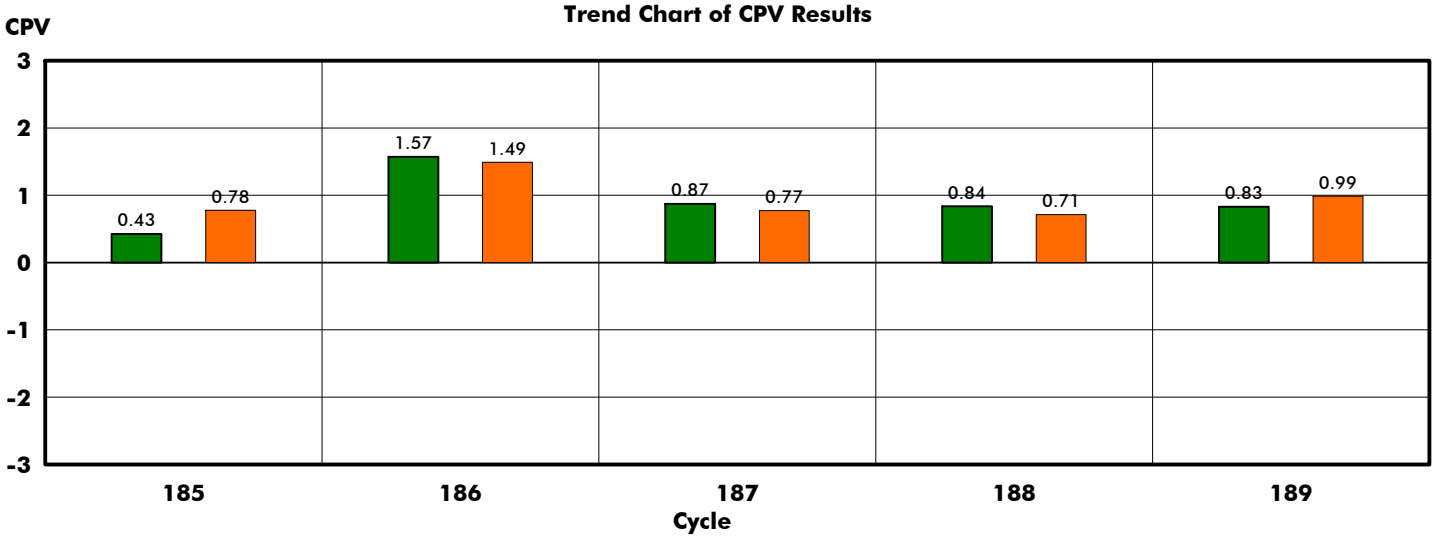
Performance Analysis Report - Trend Chart
Analysis #605: Tensile Strength
using ASTM Method D412

Lab Code: U1234A



A maximum of 5 test cycles are printed on this page. If there are fewer than 5 sets of bar graphs on the chart and the laboratory was enrolled for all cycles, then one of the following situations occured: lab did not submit data for a particular test/testing cycle or the data sheets were received late.

WebCode	Test Cycle	Sample Code	Lab Mean	Grand Mean	Between Lab Std Dev	CPV	Data Flag (if assigned)
UYLG3R	185	C51-C52	3,282.0	3,218.64	149.01	0.43	125 of 125 labs included
		C53-C54	3,341.5	3,221.23	154.94	0.78	
Testing Date: 3rd Qtr 2015		Sample C51-C52: Polyisoprene compound, batch #1		Sample C53-C54: Polyisoprene compound, batch #2			
3YX6CB	186	D51-D52	3,461.0	3,255.08	131.08	1.57	111 of 118 labs included
		D53-D54	3,461.0	3,279.06	122.03	1.49	
Testing Date: 4th Qtr 2015		Sample D51-D52: Polyisoprene compound, batch #1		Sample D53-D54: Polyisoprene compound, batch #2			
GMX4YZ	187	A61-A62	3,287.5	3,175.90	127.84	0.87	93 of 98 labs included
		A63-A64	3,276.5	3,189.00	113.30	0.77	
Testing Date: 1st Qtr 2016		Sample A61-A62: Polyisoprene compound, batch #1		Sample A63-A64: Polyisoprene compound, batch #2			
UC6LM4	188	B61-B62	3,476.0	3,331.46	172.69	0.84	99 of 103 labs included
		B63-B64	3,368.0	3,232.16	190.36	0.71	
Testing Date: 2nd Qtr 2016		Sample B61-B62: Polyisoprene compound, batch #1		Sample B63-B64: Polyisoprene compound, batch #2			
U8DV3A	189	C61-C62	3,450.5	3,329.47	145.82	0.83	107 of 114 labs included
		C63-C64	3,462.5	3,312.49	151.94	0.99	
Testing Date: 3rd Qtr 2016		Sample C61-C62: Polyisoprene compound, batch #1		Sample C63-C64: Polyisoprene compound, batch #2			

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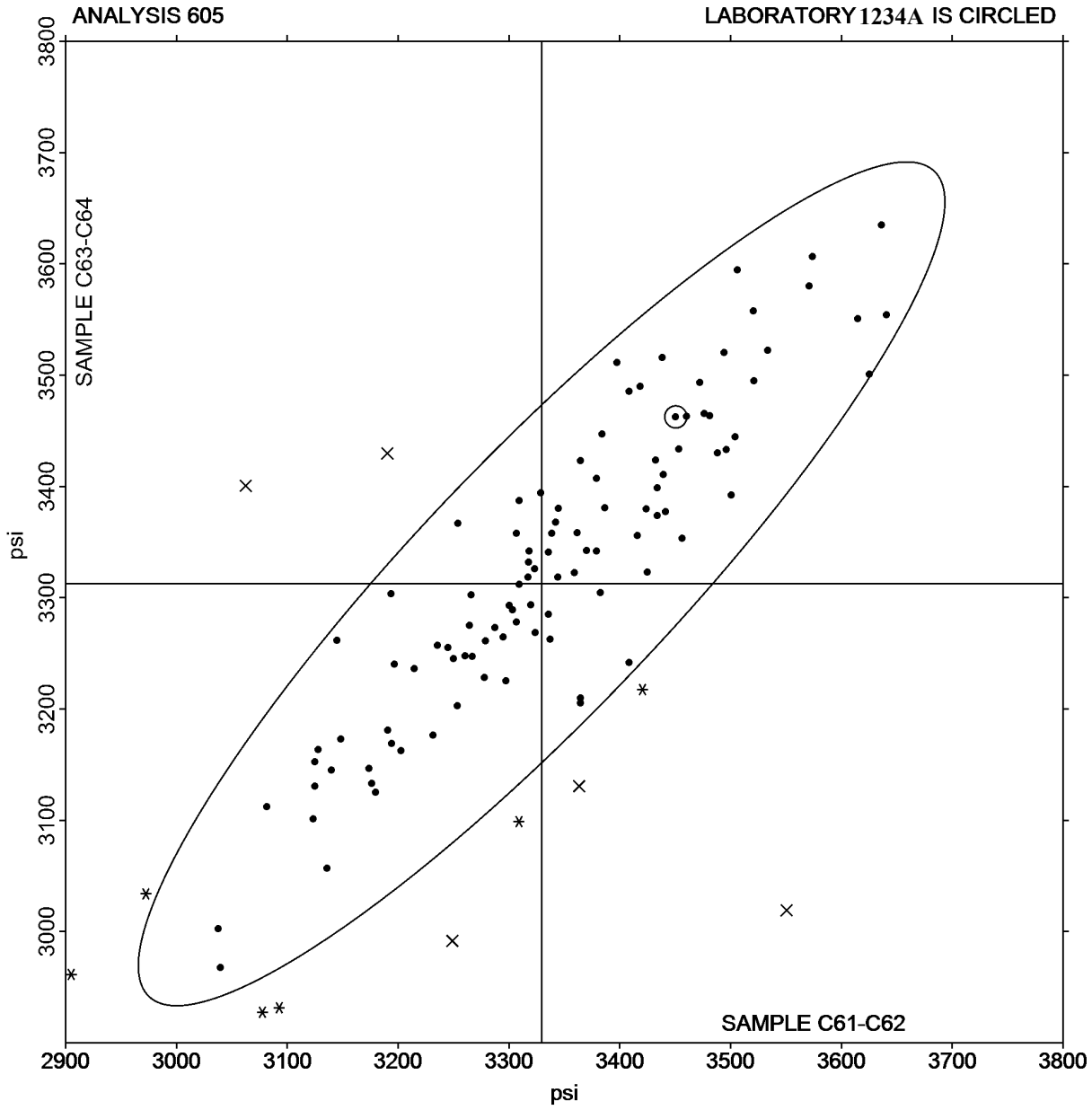

WebCode	Data Flag	Sample C61-C62 Lab Mean	Sample C61-C62 Diff from Grand Mean	Sample C61-C62 CPV	Sample C63-C64 Lab Mean	Sample C63-C64 Diff from Grand Mean	Sample C63-C64 CPV
U8DV3A		3,450.5	121.0	0.83	3,462.5	150.0	0.99

Consensus Results (all laboratories)

	Sample C61-C62		Sample C63-C64	
Grand Means	3,329.47	psi	3,312.49	psi
Btwn Lab Standard Deviation	145.82	psi	151.94	psi

Consensus statistics based on 107 of 114 reporting participants

Consensus Results in SI Units

Grand Means (SI)	22.956	MPa	22.84	MPa
Btwn Lab Standard Deviation	1.005	MPa	1.05	MPa

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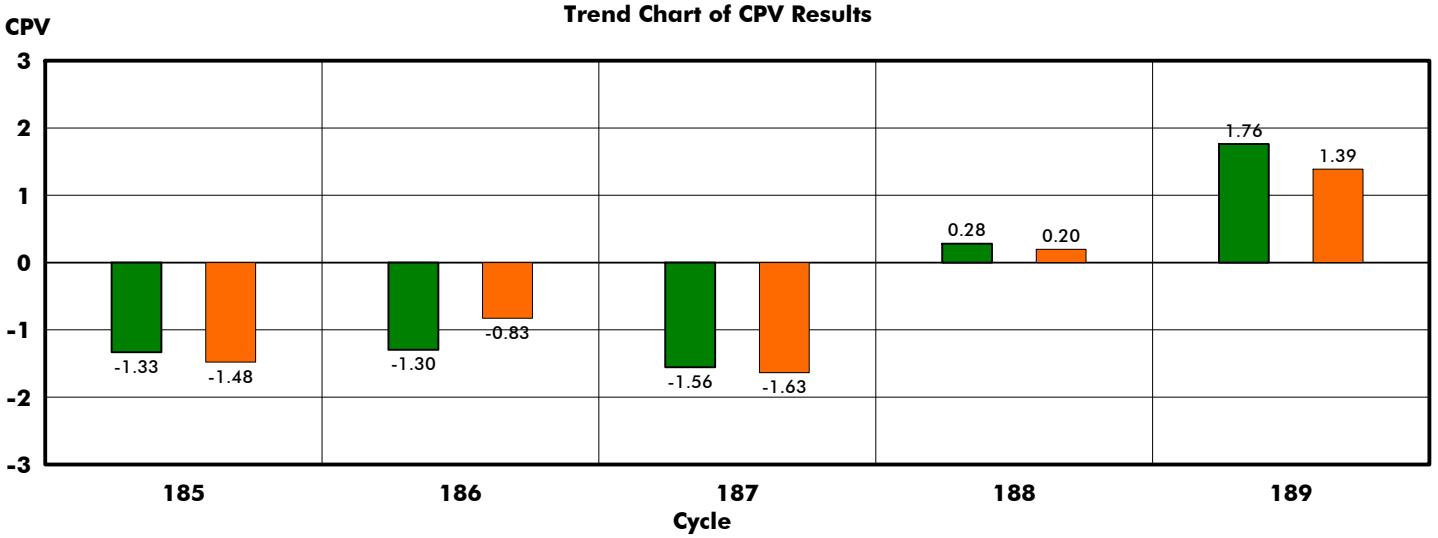
Performance Analysis Report - Trend Chart
Analysis #606: Ultimate Elongation
using ASTM Method D412

Lab Code: U1234A



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WebCode	Test Cycle	Sample Code	Lab Mean	Grand Mean	Between Lab Std Dev	CPV	Data Flag (if assigned)
UYLG3R	185	C51-C52	568.5	608.19	29.79	-1.33	110 of 121 labs included
		C53-C54	562.5	609.44	31.71	-1.48	
Testing Date: 3rd Qtr 2015		Sample C51-C52: Polyisoprene compound, batch #1		Sample C53-C54: Polyisoprene compound, batch #2			
3YX6CB	186	D51-D52	572.0	610.28	29.55	-1.30	106 of 113 labs included
		D53-D54	580.5	605.81	30.56	-0.83	
Testing Date: 4th Qtr 2015		Sample D51-D52: Polyisoprene compound, batch #1		Sample D53-D54: Polyisoprene compound, batch #2			
GMX4YZ	187	A61-A62	583.0	629.18	29.68	-1.56	91 of 96 labs included
		A63-A64	573.5	627.30	32.91	-1.63	
Testing Date: 1st Qtr 2016		Sample A61-A62: Polyisoprene compound, batch #1		Sample A63-A64: Polyisoprene compound, batch #2			
UC6LM4	188	B61-B62	621.5	614.51	24.97	0.28	93 of 101 labs included
		B63-B64	631.5	626.57	24.91	0.20	
Testing Date: 2nd Qtr 2016		Sample B61-B62: Polyisoprene compound, batch #1		Sample B63-B64: Polyisoprene compound, batch #2			
U8DV3A	189	C61-C62	662.5	603.78	33.32	1.76	108 of 111 labs included
		C63-C64	664.0	616.75	34.01	1.39	
Testing Date: 3rd Qtr 2016		Sample C61-C62: Polyisoprene compound, batch #1		Sample C63-C64: Polyisoprene compound, batch #2			

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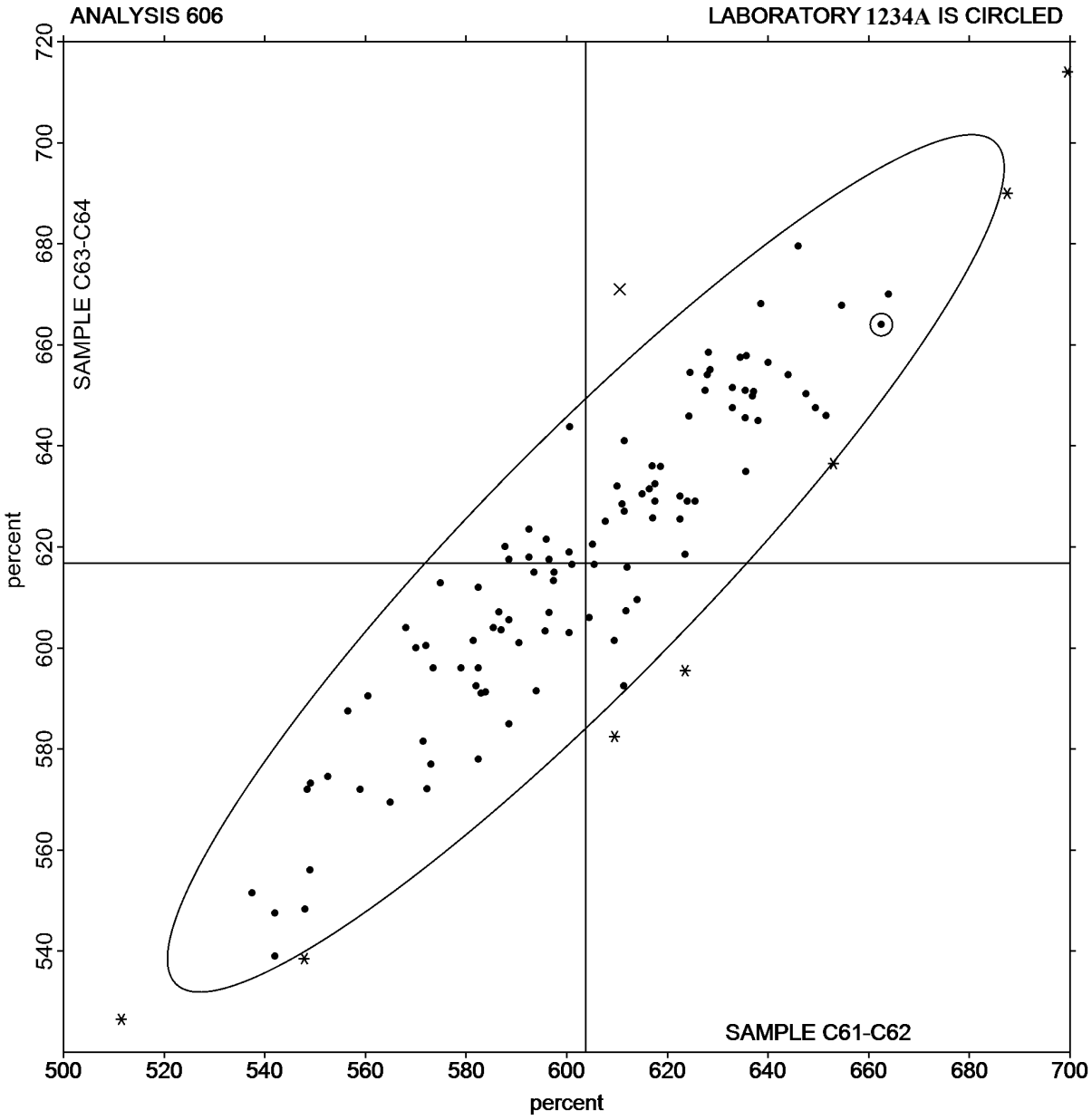

WebCode	Data Flag	Sample C61-C62 Lab Mean	Sample C61-C62 Diff from Grand Mean	Sample C61-C62 CPV	Sample C63-C64 Lab Mean	Sample C63-C64 Diff from Grand Mean	Sample C63-C64 CPV
U8DV3A		662.5	58.7	1.76	664.0	47.2	1.39

Consensus Results (all laboratories)

	Sample C61-C62		Sample C63-C64	
Grand Means	603.78	percent	616.75	percent
Btwn Lab Standard Deviation	33.32	percent	34.01	percent

Consensus statistics based on 108 of 111 reporting participants

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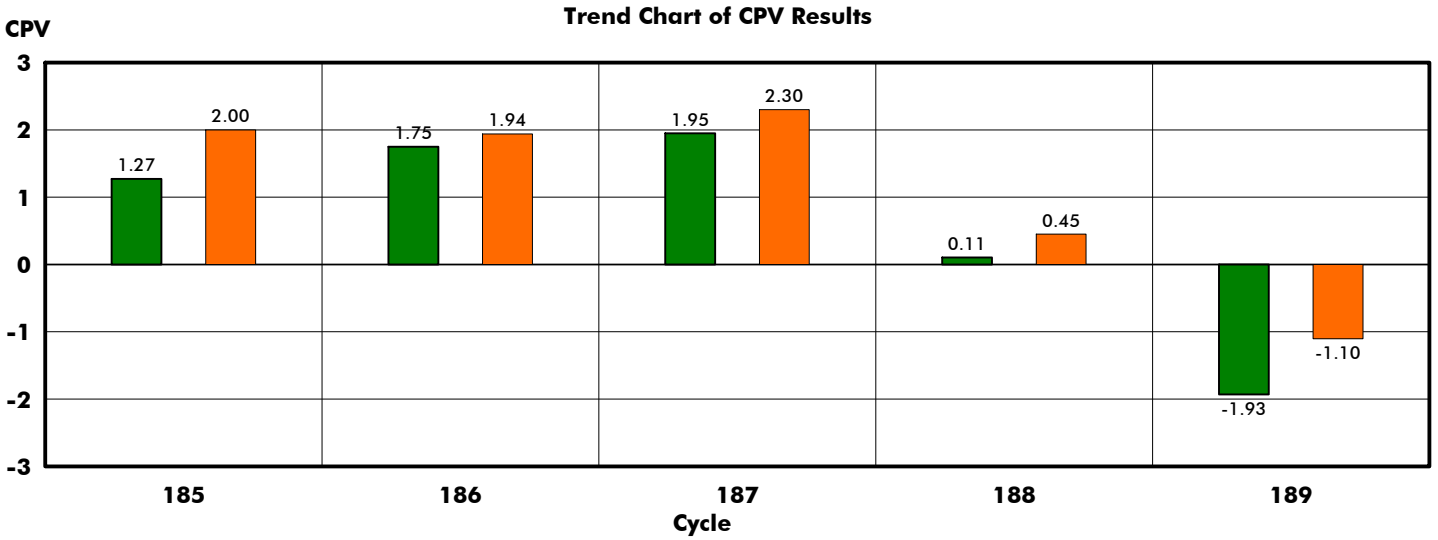
Performance Analysis Report - Trend Chart
Analysis #607: Stress at 300% Elongation
using ASTM Method D412

Lab Code: U1234A



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WebCode	Test Cycle	Sample Code	Lab Mean	Grand Mean	Between Lab Std Dev	CPV	Data Flag (if assigned)
UYLG3R	185	C51-C52	1,068.0	970.29	76.82	1.27	107 of 117 labs included
		C53-C54	1,125.0	972.38	76.35	2.00	
Testing Date: 3rd Qtr 2015		Sample C51-C52: Polyisoprene compound, batch #1		Sample C53-C54: Polyisoprene compound, batch #2			
3YX6CB	186	D51-D52	1,115.0	971.02	82.30	1.75	101 of 110 labs included
		D53-D54	1,166.5	1,006.63	82.39	1.94	
Testing Date: 4th Qtr 2015		Sample D51-D52: Polyisoprene compound, batch #1		Sample D53-D54: Polyisoprene compound, batch #2			
GMX4YZ	187	A61-A62	977.5	853.14	63.78	1.95	86 of 91 labs included
		A63-A64	1,046.0	861.76	80.05	2.30	
Testing Date: 1st Qtr 2016		Sample A61-A62: Polyisoprene compound, batch #1		Sample A63-A64: Polyisoprene compound, batch #2			
UC6LM4	188	B61-B62	1,023.0	1,014.04	85.24	0.11	91 of 97 labs included
		B63-B64	923.0	885.21	83.69	0.45	
Testing Date: 2nd Qtr 2016		Sample B61-B62: Polyisoprene compound, batch #1		Sample B63-B64: Polyisoprene compound, batch #2			
U8DV3A	189	C61-C62	924.0	1,093.41	87.76	-1.93	100 of 104 labs included
		C63-C64	921.5	1,011.33	81.49	-1.10	
Testing Date: 3rd Qtr 2016		Sample C61-C62: Polyisoprene compound, batch #1		Sample C63-C64: Polyisoprene compound, batch #2			

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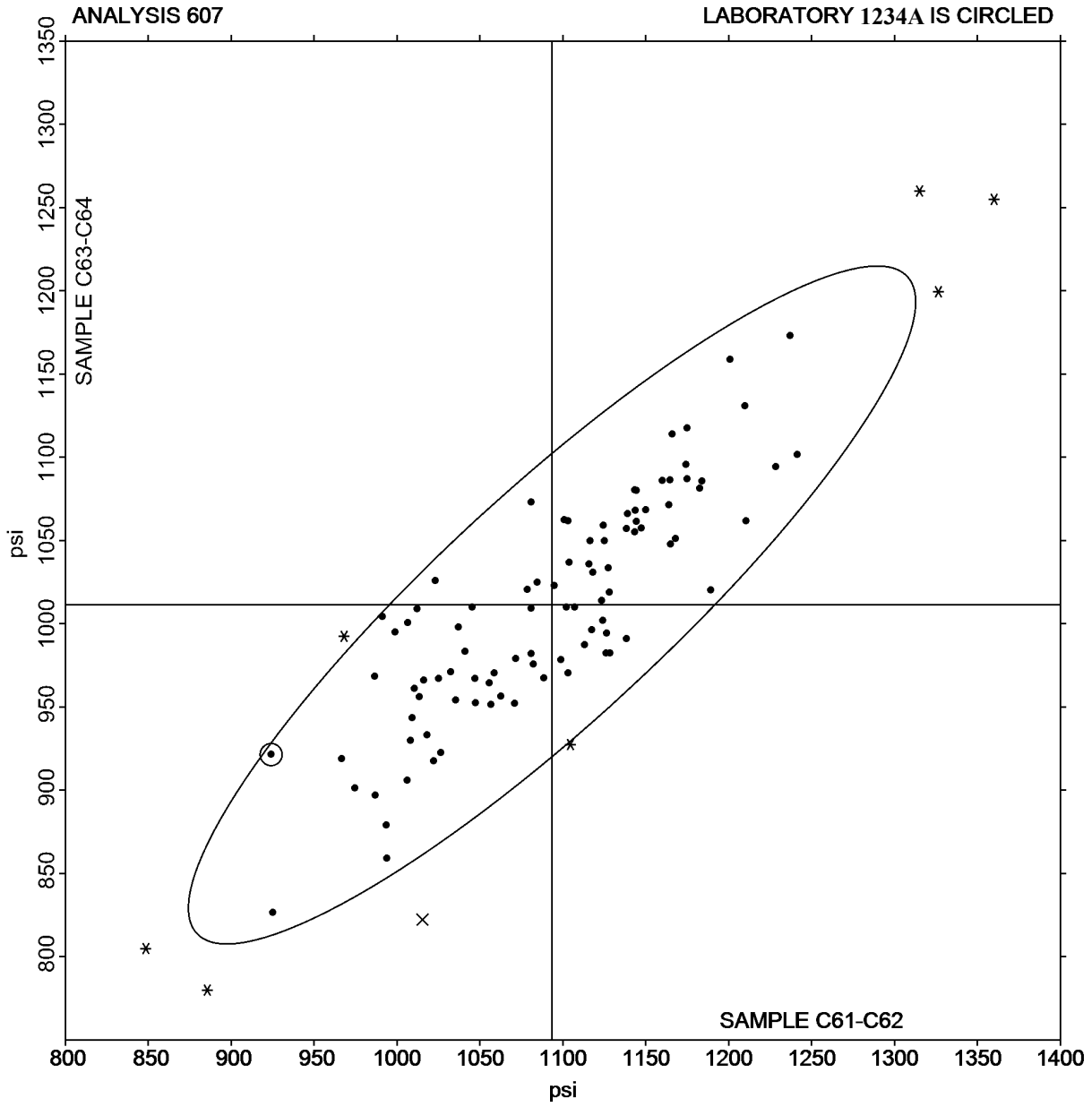

WebCode	Data Flag	Sample C61-C62 Lab Mean	Sample C61-C62 Diff from Grand Mean	Sample C61-C62 CPV	Sample C63-C64 Lab Mean	Sample C63-C64 Diff from Grand Mean	Sample C63-C64 CPV
U8DV3A		924.0	-169.4	-1.93	921.5	-89.8	-1.10

Consensus Results (all laboratories)

	Sample C61-C62		Sample C63-C64	
Grand Means	1,093.41	psi	1,011.33	psi
Btwn Lab Standard Deviation	87.76	psi	81.49	psi

Consensus statistics based on 100 of 104 reporting participants

Consensus Results in SI Units

Grand Means (SI)	7.5387	MPa	6.97	MPa
Btwn Lab Standard Deviation	0.6051	MPa	0.56	MPa

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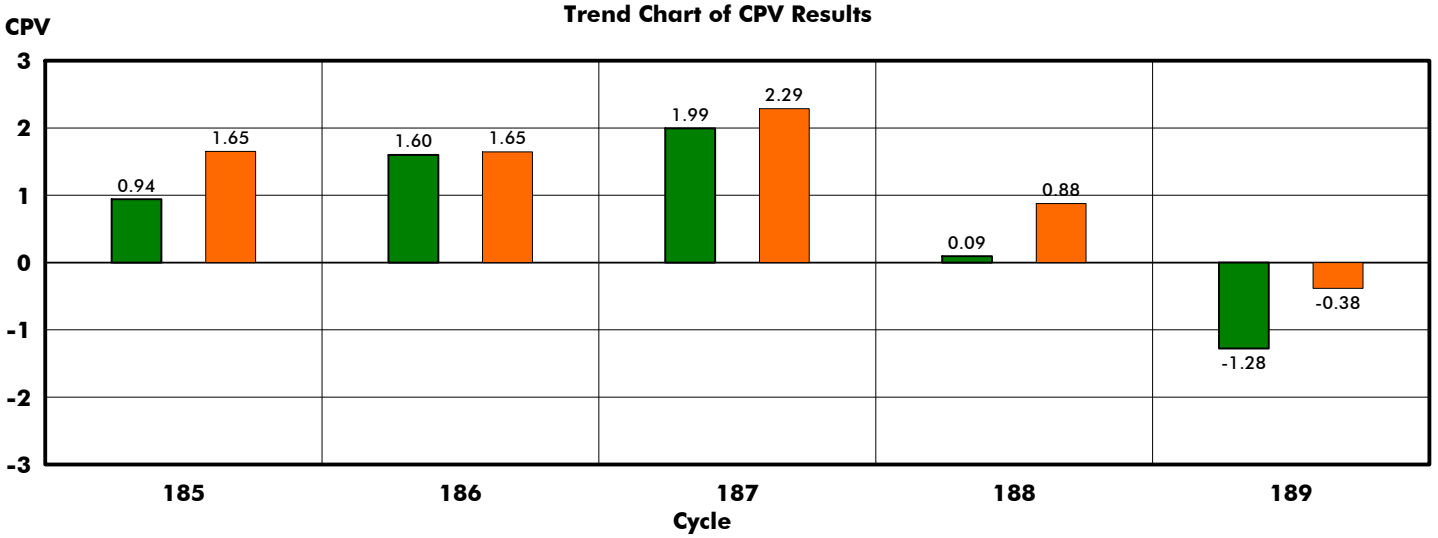
Performance Analysis Report - Trend Chart
Analysis #608: Stress at 100% Elongation
using ASTM Method D412

Lab Code: U1234A



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WebCode	Test Cycle	Sample Code	(Lab Mean	- Grand Mean)	÷ Between Lab Std Dev	= CPV	Data Flag (if assigned)	
UYLG3R	185	C51-C52	220.0	206.47	14.36	0.94		106 of 118 labs included
		C53-C54	230.0	207.40	13.68	1.65		
Testing Date: 3rd Qtr 2015		Sample C51-C52: Polyisoprene compound, batch #1			Sample C53-C54: Polyisoprene compound, batch #2			
3YX6CB	186	D51-D52	230.5	207.35	14.47	1.60		102 of 111 labs included
		D53-D54	236.5	214.21	13.54	1.65		
Testing Date: 4th Qtr 2015		Sample D51-D52: Polyisoprene compound, batch #1			Sample D53-D54: Polyisoprene compound, batch #2			
GMX4YZ	187	A61-A62	203.0	182.04	10.51	1.99		85 of 93 labs included
		A63-A64	214.0	183.63	13.27	2.29		
Testing Date: 1st Qtr 2016		Sample A61-A62: Polyisoprene compound, batch #1			Sample A63-A64: Polyisoprene compound, batch #2			
UC6LM4	188	B61-B62	216.0	214.61	14.76	0.09		89 of 98 labs included
		B63-B64	202.0	190.23	13.42	0.88		
Testing Date: 2nd Qtr 2016		Sample B61-B62: Polyisoprene compound, batch #1			Sample B63-B64: Polyisoprene compound, batch #2			
U8DV3A	189	C61-C62	215.5	234.51	14.90	-1.28		93 of 105 labs included
		C63-C64	207.5	212.52	13.14	-0.38		
Testing Date: 3rd Qtr 2016		Sample C61-C62: Polyisoprene compound, batch #1			Sample C63-C64: Polyisoprene compound, batch #2			

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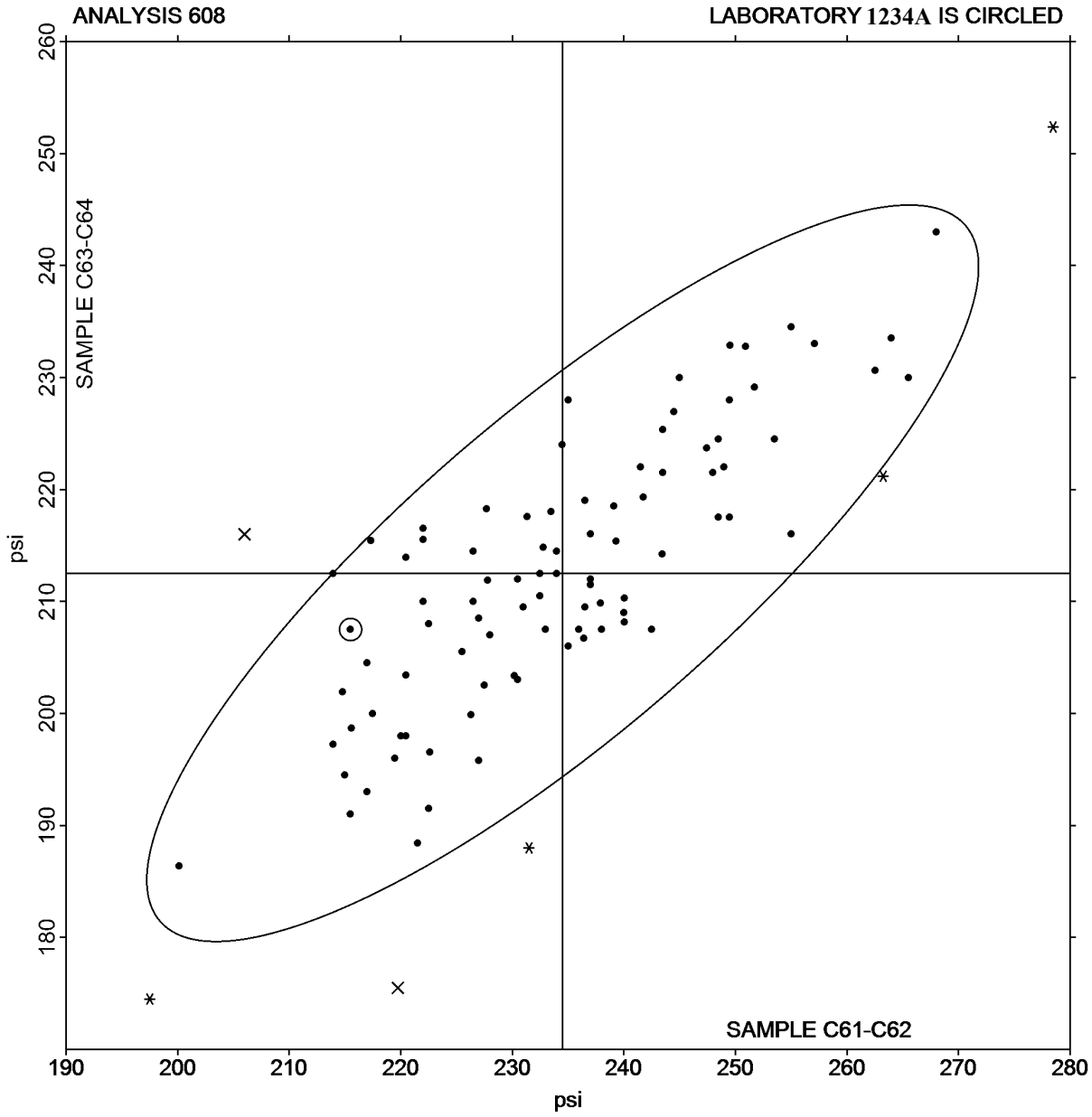

WebCode	Data Flag	Sample C61-C62 Lab Mean	Sample C61-C62 Diff from Grand Mean	Sample C61-C62 CPV	Sample C63-C64 Lab Mean	Sample C63-C64 Diff from Grand Mean	Sample C63-C64 CPV
U8DV3A		215.5	-19.0	-1.28	207.5	-5.0	-0.38

Consensus Results (all laboratories)

	Sample C61-C62		Sample C63-C64	
Grand Means	234.51	psi	212.52	psi
Btwn Lab Standard Deviation	14.90	psi	13.14	psi

Consensus statistics based on 93 of 105 reporting participants

Consensus Results in SI Units

Grand Means (SI)	1.6169	MPa	1.47	MPa
Btwn Lab Standard Deviation	0.1027	MPa	0.09	MPa

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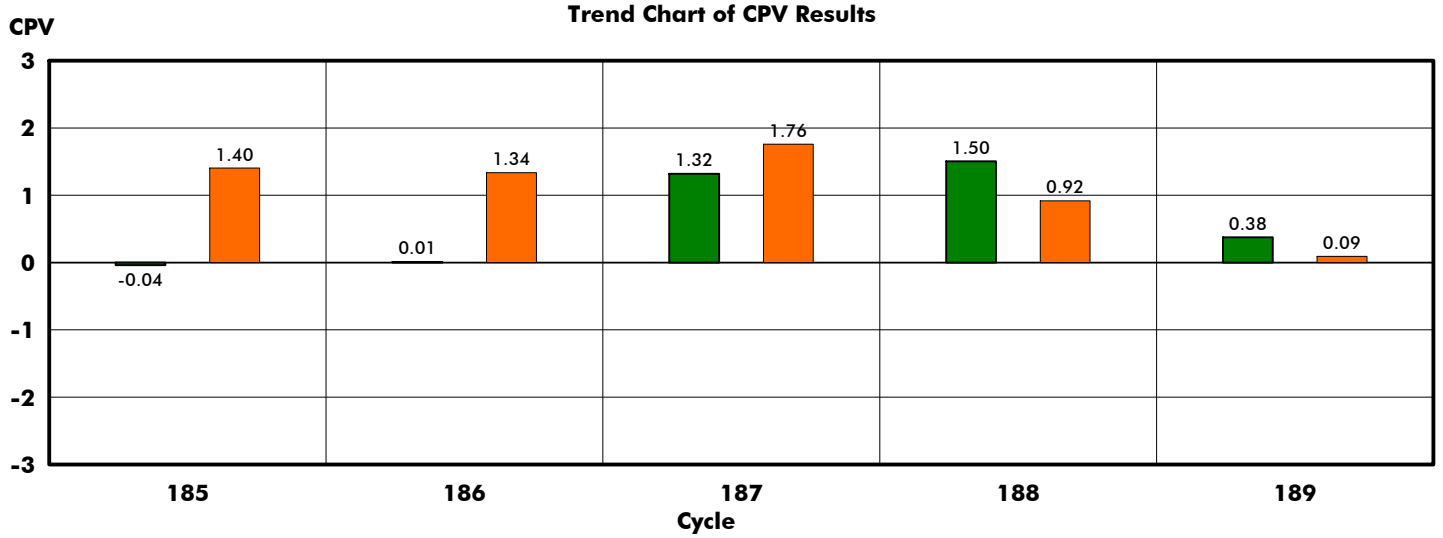
Performance Analysis Report - Trend Chart
Analysis #620: Hardness
using ASTM Method D2240

Lab Code: U1234A



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WebCode	Test Cycle	Sample Code	Lab Mean	Grand Mean	Between Lab Std Dev	CPV	Data Flag (if assigned)	
UYLG3R	185	C51-C52	50.00	50.048	1.306	-0.04	*	119 of 128 labs included
		C53-C54	52.00	50.111	1.346	1.40		
Testing Date: 3rd Qtr 2015		Sample C51-C52: Polyisoprene compound, batch #1		Sample C53-C54: Polyisoprene compound, batch #2				
3YX6CB	186	D51-D52	50.00	49.985	1.513	0.01	*	117 of 120 labs included
		D53-D54	52.00	50.232	1.324	1.34		
Testing Date: 4th Qtr 2015		Sample D51-D52: Polyisoprene compound, batch #1		Sample D53-D54: Polyisoprene compound, batch #2				
GMX4YZ	187	A61-A62	50.00	47.568	1.844	1.32		99 of 101 labs included
		A63-A64	51.00	47.694	1.879	1.76		
Testing Date: 1st Qtr 2016		Sample A61-A62: Polyisoprene compound, batch #1		Sample A63-A64: Polyisoprene compound, batch #2				
UC6LM4	188	B61-B62	52.00	49.900	1.395	1.50		101 of 105 labs included
		B63-B64	50.00	48.575	1.551	0.92		
Testing Date: 2nd Qtr 2016		Sample B61-B62: Polyisoprene compound, batch #1		Sample B63-B64: Polyisoprene compound, batch #2				
U8DV3A	189	C61-C62	52.00	51.412	1.565	0.38		114 of 116 labs included
		C63-C64	50.00	49.859	1.536	0.09		
Testing Date: 3rd Qtr 2016		Sample C61-C62: Polyisoprene compound, batch #1		Sample C63-C64: Polyisoprene compound, batch #2				

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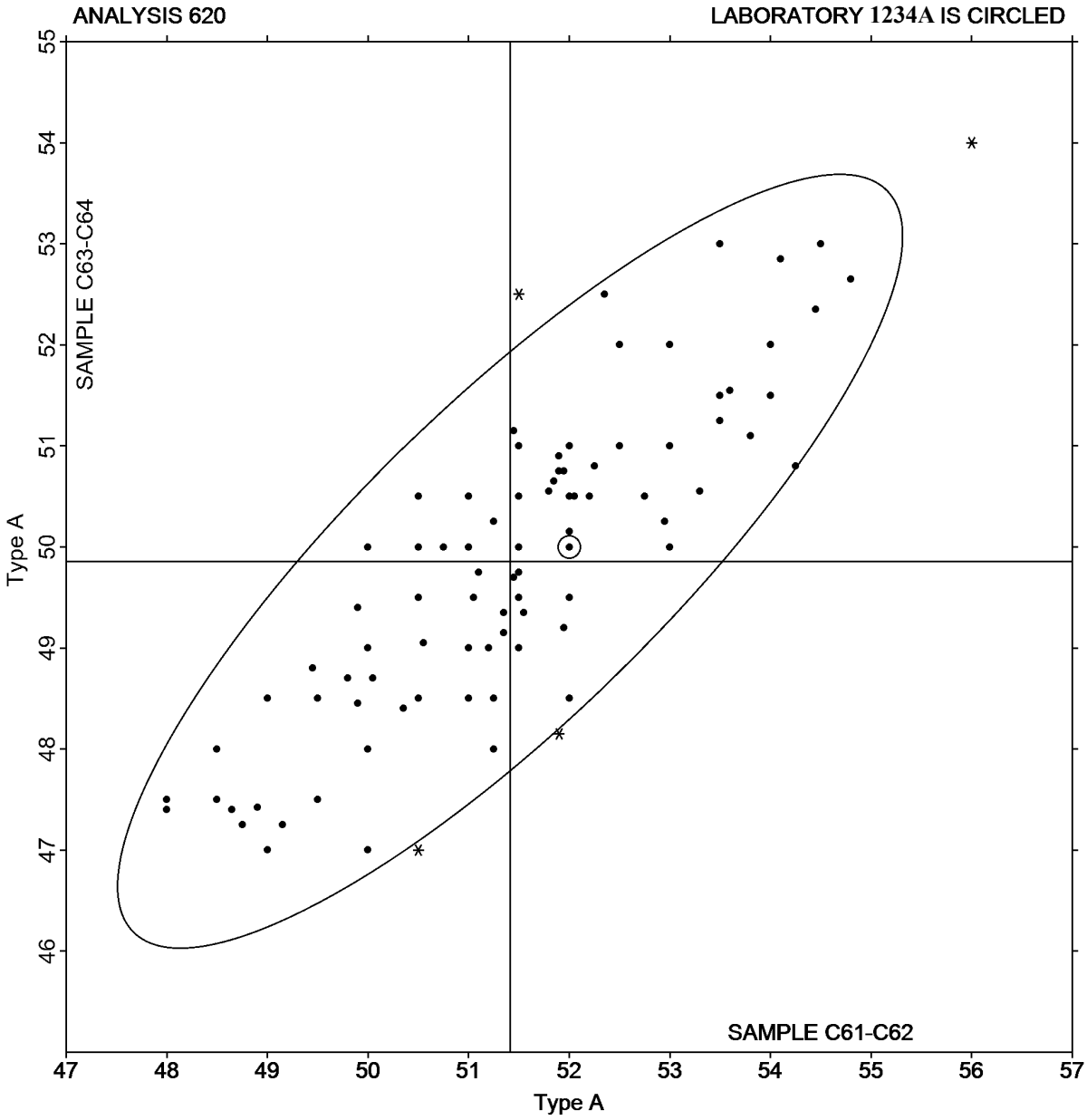

WebCode	Data Flag	Sample C61-C62 Lab Mean	Sample C61-C62 Diff from Grand Mean	Sample C61-C62 CPV	Sample C63-C64 Lab Mean	Sample C63-C64 Diff from Grand Mean	Sample C63-C64 CPV
U8DV3A		52.00	0.59	0.38	50.00	0.14	0.09

Consensus Results (all laboratories)

	Sample C61-C62	Sample C63-C64
Grand Means	51.412 Type A	49.859 Type A
Btwn Lab Standard Deviation	1.565 Type A	1.536 Type A

Consensus statistics based on 114 of 116 reporting participants

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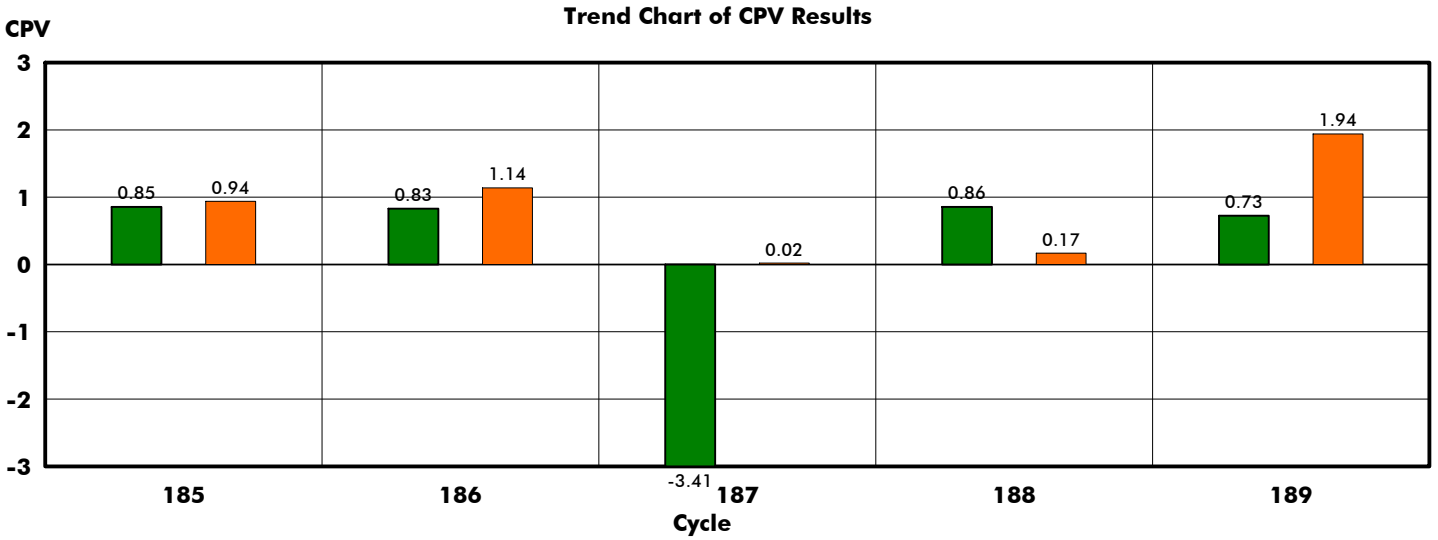
Performance Analysis Report - Trend Chart
Analysis #621: Density -- Lab Cured Samples
using ASTM D297

Lab Code: U1234A



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WebCode	Test Cycle	Sample Code	Lab Mean	Grand Mean	Between Lab Std Dev	CPV	Data Flag (if assigned)	
UYLG3R	185	C51-C52	1.138	1.1353	0.0025	0.85		70 of 74 labs included
		C53-C54	1.138	1.1351	0.0026	0.94		
Testing Date: 3rd Qtr 2015		Sample C51-C52: Polyisoprene compound, batch #1		Sample C53-C54: Polyisoprene compound, batch #2				
3YX6CB	186	D51-D52	1.140	1.1374	0.0026	0.83		68 of 79 labs included
		D53-D54	1.141	1.1379	0.0027	1.14		
Testing Date: 4th Qtr 2015		Sample D51-D52: Polyisoprene compound, batch #1		Sample D53-D54: Polyisoprene compound, batch #2				
GMX4YZ	187	A61-A62	1.127	1.1356	0.0027	-3.41	X	58 of 61 labs included
		A63-A64	1.136	1.1359	0.0025	0.02		
Testing Date: 1st Qtr 2016		Sample A61-A62: Polyisoprene compound, batch #1		Sample A63-A64: Polyisoprene compound, batch #2				
Analyst Comment: Inconsistency in testing between Sample groups. Data for Sample group A61-A62 are low.								
UC6LM4	188	B61-B62	1.139	1.1367	0.0027	0.86		63 of 67 labs included
		B63-B64	1.137	1.1365	0.0028	0.17		
Testing Date: 2nd Qtr 2016		Sample B61-B62: Polyisoprene compound, batch #1		Sample B63-B64: Polyisoprene compound, batch #2				
U8DV3A	189	C61-C62	1.141	1.1388	0.0024	0.73		69 of 75 labs included
		C63-C64	1.142	1.1370	0.0026	1.94		
Testing Date: 3rd Qtr 2016		Sample C61-C62: Polyisoprene compound, batch #1		Sample C63-C64: Polyisoprene compound, batch #2				

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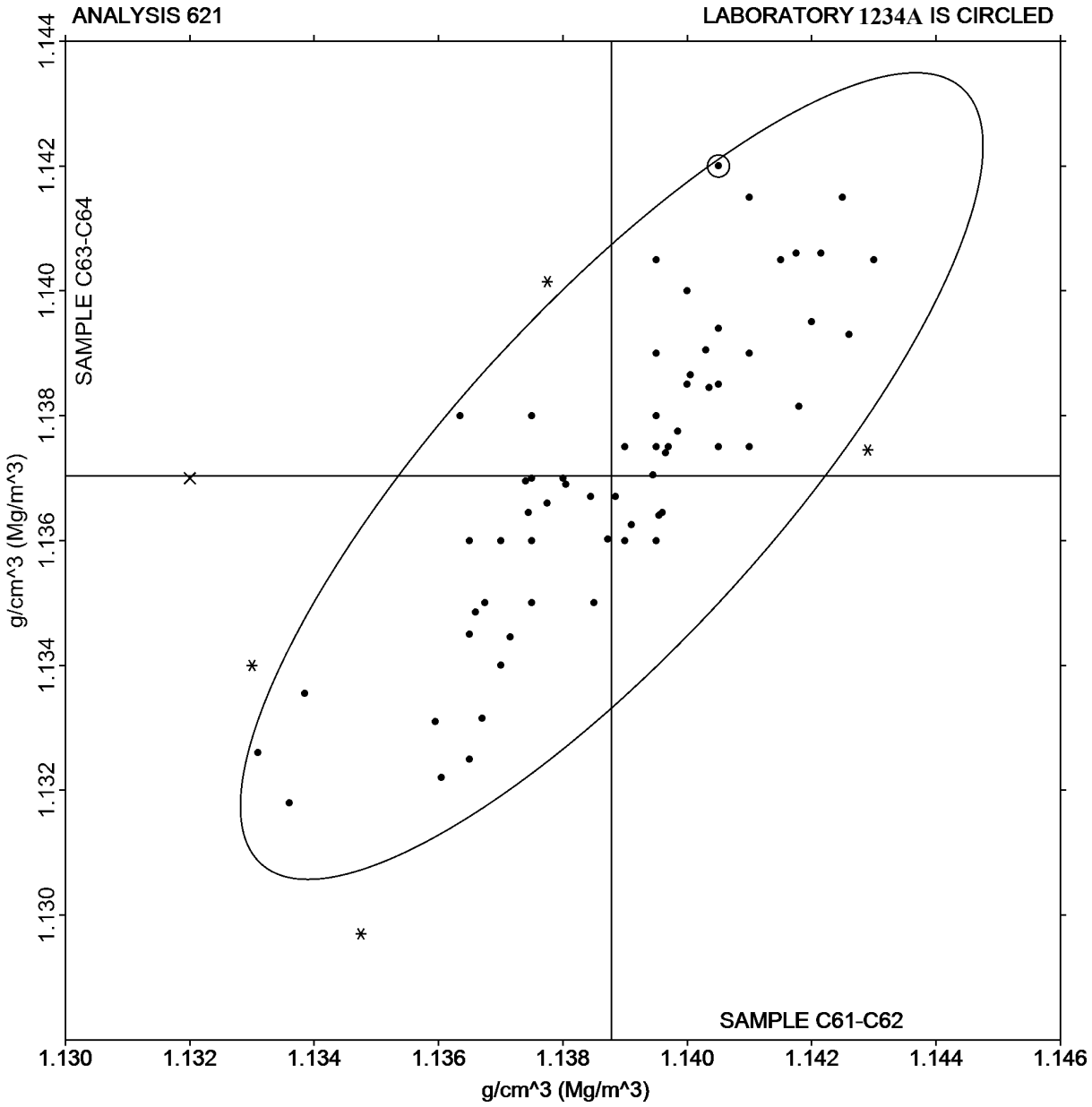

WebCode	Data Flag	Sample C61-C62 Lab Mean	Sample C61-C62 Diff from Grand Mean	Sample C61-C62 CPV	Sample C63-C64 Lab Mean	Sample C63-C64 Diff from Grand Mean	Sample C63-C64 CPV
U8DV3A		1.141	0.002	0.73	1.142	0.005	1.94

Consensus Results (all laboratories)

Grand Means	1.1388	g/cm^3 (Mg/m^3)	1.1370	g/cm^3 (Mg/m^3)
Btwn Lab Standard Deviation	0.0024	g/cm^3 (Mg/m^3)	0.0026	g/cm^3 (Mg/m^3)

Consensus statistics based on 69 of 75 reporting participants

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