

Plastics Interlaboratory Testing Program

Web Summary Report #112, 4th Qtr 2019

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About CTS and the Plastics Interlaboratory Program

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color and wine, 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.

Collaborative Testing Services initiated the Collaborative Reference Program for PLASTICS in 1992 at the request of industry, ASTM committee D-20 members, and accrediting bodies. Additional test methods are always under review and are incorporated into the program when possible.

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 plastics testing proficiency.

For each test there is a summary of the statistics for the analysis 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. Refer to the KEY FOR SUMMARY REPORT for an explanation of terms and guidelines for interpreting the results.

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Key for Web Summary Report (Page 1 of 2)

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Plastics Web Summary 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	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	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section) if instruments are tracked.
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.

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 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.

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.



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Results Summary for Report #112, 4th Qtr 2019

Analysis 704 - Tensile Stress at Yield

Material: ABS/PC	Sample F63	7,299.19	psi	1.73% COV
	Sample F64	7,301.17	psi	1.87% COV

Analysis 705 - Tensile Stress at Break

Material: ABS/PC	Sample F63	6,469.44	psi	3.19% COV
	Sample F64	6,509.85	psi	3.74% COV

Analysis 706 - Percent Elongation at Yield

Material: ABS/PC	Sample F63	4.7147	Percent	2.79% COV
	Sample F64	4.6919	Percent	3.39% COV

Analysis 708 - Modulus of Elasticity

Material: ABS/PC	Sample F63	324.47	ksi	4.72% COV
	Sample F64	325.71	ksi	4.72% COV

Analysis 710 - Deflection Temp. Under Flexural Load (1.82 MPa)

Material: HIPS	Sample E63	76.190	Degrees C	2.61% COV
	Sample E64	76.342	Degrees C	2.51% COV

Analysis 711 - Deflection Temp. Under Flexural Load (0.455 MPa)

Material: PP	Sample G63	111.68	Degrees C	7.21% COV
	Sample G64	111.00	Degrees C	6.96% COV

Analysis 712 - Temperature of Deflection (1.80 MPa)

Material: ABS	Sample N63	82.695	Degrees C	1.25% COV
	Sample N64	82.597	Degrees C	1.20% COV

Analysis 715 - Vicat Temperature (Rate A)

Material: ABS	Sample H63	102.52	Degrees C	0.778% COV
	Sample H64	102.63	Degrees C	0.724% COV

Analysis 716 - Vicat Temperature (Rate B)

Material: ABS	Sample R63	104.41	Degrees C	1.03% COV
	Sample R64	104.35	Degrees C	1.13% COV

Analysis 718 - Specific Gravity

Material: HIPS	Sample T63	1.0351	sp gr 23/23 C	0.186% COV
	Sample T64	1.0352	sp gr 23/23 C	0.195% COV

Analysis 720 - Flexural Modulus

Material: HIPS	Sample J63	333.85	ksi	6.26% COV
	Sample J64	336.84	ksi	6.61% COV

Analysis 721 - Flexural Stress at 5% Strain

Material: HIPS	Sample J63	5,904.53	psi	4.40% COV
	Sample J64	5,994.69	psi	5.98% COV

Analysis 722 - Flexural Stress at Yield

Material: HIPS	Sample J63	5,898.96	psi	4.85% COV
	Sample J64	5,999.05	psi	6.13% COV

Analysis 730 - Tensile Stress at Yield, ISO Method

Material: ABS	Sample C63	44.016	MPa	2.10% COV
	Sample C64	43.868	MPa	2.23% COV

Analysis 731 - Tensile Stress at Break, ISO Method

Material: ABS	Sample C63	33.134	MPa	3.20% COV
	Sample C64	33.108	MPa	3.31% COV



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Analysis 732 - Strain at Yield, ISO Method

Material: ABS	Sample C63	2.3739	Percent	3.94% COV
	Sample C64	2.3674	Percent	4.14% COV

Analysis 734 - Modulus of Elasticity, ISO Method

Material: ABS	Sample C63	2,339.69	MPa	3.20% COV
	Sample C64	2,342.14	MPa	3.42% COV

Analysis 736 - Flexural Modulus

Material: ABS	Sample K63	2,323.09	MPa	3.21% COV
	Sample K64	2,317.67	MPa	3.23% COV

Analysis 737 - Flexural Stress at 3.5% Strain

Material: ABS	Sample K63	65.641	MPa	2.97% COV
	Sample K64	65.383	MPa	3.06% COV

Analysis 738 - Flexural Stress at Yield

Material: ABS	Sample K63	66.553	MPa	1.91% COV
	Sample K64	66.325	MPa	2.03% COV

Analysis 750 - Flow Rate (190C or 230C/2.16 kg)

Material: PP	Sample X63	13.767	grams/10 mins	5.58% COV
	Sample X64	13.859	grams/10 mins	7.04% COV

Analysis 755 - Moisture Content

Material: ABS	Sample Y63	0.24860	Percent	14.7% COV
	Sample Y64	0.24778	Percent	12.9% COV

Analysis 757 - Ash Content

Material: PBT	Sample L63	30.511	Percent	0.800% COV
	Sample L64	30.477	Percent	0.756% COV

Analysis 760 - DSC Crystallization Temperature

Material: PBT	Sample W63	176.28	Degrees Celsius	2.41% COV
	Sample W64	176.35	Degrees Celsius	2.57% COV

Analysis 761 - DSC Melt Temperature

Material: PBT	Sample W63	224.28	Degrees Celsius	0.566% COV
	Sample W64	224.28	Degrees Celsius	0.502% COV

Analysis 762 - DSC Enthalpy of Crystallization

Material: PBT	Sample W63	45.309	Joules Per Gram	9.10% COV
	Sample W64	45.145	Joules Per Gram	7.99% COV

Analysis 763 - DSC Enthalpy of Fusion

Material: PBT	Sample W63	40.181	Joules Per Gram	15.8% COV
	Sample W64	40.428	Joules Per Gram	15.6% COV

Analysis 764 - DSC Glass Transition Temperature

Material: ABS	Sample V63	107.12	Degrees Celsius	2.17% COV
	Sample V64	107.17	Degrees Celsius	2.30% COV

Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B63	2,559.53	psi	15.2% COV
	Sample B64	2,567.71	psi	15.8% COV

Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B63	3,872.75	psi	8.61% COV
	Sample B64	3,887.37	psi	7.84% COV



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Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B63	93.939	Percent	10.5% COV
	Sample B64	93.228	Percent	10.6% COV

Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B63	550.98	Percent	14.2% COV
	Sample B64	558.90	Percent	13.9% COV

Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B63	2.8161	mils	4.20% COV
	Sample B64	2.8179	mils	4.04% COV

Analysis 775 - Secant Modulus at 1% Strain

Material: LDPE	Sample B63	41,320.19	psi	10.0% COV
	Sample B64	41,076.46	psi	9.94% COV

Analysis 776 - Secant Modulus at 2% Strain

Material: LDPE	Sample B63	33,643.59	psi	14.2% COV
	Sample B64	33,669.21	psi	14.2% COV

Analysis 780 - Static Friction

Material: LDPE	Sample P63	0.19303	COF	29.5% COV
	Sample P64	0.18466	COF	28.2% COV

Analysis 781 - Kinetic Friction

Material: LDPE	Sample P63	0.13775	COF	22.5% COV
	Sample P64	0.13105	COF	26.1% COV

Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q63	280.53	grams-force	27.9% COV
	Sample Q64	283.03	grams-force	30.3% COV

Analysis 785 - Percent Haze

Material: LDPE	Sample D63	22.875	Percent	5.86% COV
	Sample D64	16.781	Percent	6.02% COV

Analysis 786 - Total Transmittance

Material: LDPE	Sample D63	92.438	Percent	1.08% COV
	Sample D64	92.751	Percent	1.08% COV

Analysis 790 - Notched Izod Impact

Material: ABS	Sample S63	2.7956	ft.lbf/in	6.48% COV
	Sample S64	2.7517	ft.lbf/in	6.75% COV

Analysis 791 - Notched Izod Impact

Material: ABS/PC	Sample Z63	38.994	kJ/m ²	8.02% COV
	Sample Z64	39.093	kJ/m ²	8.65% COV

Analysis 792 - Notched Charpy Impact

Material: ABS/PC	Sample M63	41.283	kJ/m ²	9.52% COV
	Sample M64	41.257	kJ/m ²	9.35% COV



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D3GCH		7,400.0	100.8	0.80	7,388.0	86.8	0.64
37M2HD		7,349.3	50.1	0.40	7,369.2	68.0	0.50
38XLP3		7,399.6	100.4	0.79	7,404.8	103.6	0.76
3FUGPL		7,242.8	-56.4	-0.45	7,221.4	-79.8	-0.58
3MQCP6		7,434.2	135.0	1.07	7,388.0	86.8	0.64
43ZFRC		7,252.0	-47.2	-0.37	7,252.0	-49.2	-0.36
69LWDZ	X	6,800.6	-498.6	-3.94	6,776.8	-524.4	-3.84
6M3UKM		7,281.8	-17.4	-0.14	7,282.7	-18.4	-0.14
6X2LWU		7,247.8	-51.4	-0.41	7,272.0	-29.2	-0.21
7QGPXY		7,330.0	30.8	0.24	7,317.8	16.6	0.12
7QHL79	*	7,021.6	-277.6	-2.19	7,062.0	-239.2	-1.75
8A38ZV		7,312.6	13.4	0.11	7,311.6	10.4	0.08
8KN9F6	*	7,250.0	-49.2	-0.39	7,142.0	-159.2	-1.17
8WL8CG		7,498.9	199.7	1.58	7,501.4	200.2	1.47
932BU4		7,275.6	-23.6	-0.19	7,316.4	15.2	0.11
9ML4LK		7,398.6	99.4	0.79	7,367.8	66.6	0.49
9QLEHK		7,382.2	83.0	0.66	7,416.8	115.6	0.85
9WBRJ9		7,193.6	-105.5	-0.83	7,145.2	-156.0	-1.14
AUR27B		7,356.0	56.8	0.45	7,358.6	57.4	0.42
B88JCK		7,242.4	-56.8	-0.45	7,261.4	-39.8	-0.29
C2D2DY		7,313.8	14.6	0.12	7,307.2	6.0	0.04
CJRFGM	X	7,250.0	-49.2	-0.39	6,374.0	-927.2	-6.79
CMWVHY	X	8,073.8	774.6	6.12	8,029.4	728.2	5.33
CVKZXD	X	5,664.3	-1,634.9	-12.91	5,710.0	-1,591.2	-11.66
DBJ629		7,291.6	-7.6	-0.06	7,344.2	43.0	0.32
DL2MTF		7,363.4	64.2	0.51	7,353.6	52.4	0.38
DUVYP9	X	7,780.0	480.8	3.80	7,800.0	498.8	3.65
E7FXQV		7,230.0	-69.2	-0.55	7,262.0	-39.2	-0.29
E8JCM6		7,233.0	-66.2	-0.52	7,235.2	-66.0	-0.48
EC82ZM		7,165.2	-134.0	-1.06	7,156.0	-145.2	-1.06
EY3MZP		7,296.6	-2.6	-0.02	7,351.7	50.6	0.37
FGHBQV		7,445.4	146.2	1.16	7,437.0	135.9	1.00
H2EWER		7,249.4	-49.8	-0.39	7,175.4	-125.8	-0.92
HXJX8M		7,309.7	10.5	0.08	7,316.1	14.9	0.11
JD8ULN		7,352.6	53.4	0.42	7,338.1	36.9	0.27



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
JLXFPZ		7,378.3	79.1	0.62	7,330.0	28.8	0.21
JRJBLX	X	6,930.8	-368.4	-2.91	7,208.6	-92.6	-0.68
JURF8Y	X	7,336.0	36.8	0.29	7,196.0	-105.2	-0.77
JWHRYR		7,528.8	229.6	1.81	7,544.4	243.2	1.78
JZKK24		7,295.8	-3.4	-0.03	7,314.6	13.4	0.10
KLH8MR	X	7,071.0	-228.2	-1.80	6,669.0	-632.2	-4.63
KV73JL		7,408.2	109.0	0.86	7,369.4	68.2	0.50
L7EE4U		7,211.3	-87.8	-0.69	7,249.0	-52.1	-0.38
L8Q2MU		7,411.0	111.8	0.88	7,407.4	106.2	0.78
LF4XQF		7,268.2	-31.0	-0.24	7,246.8	-54.4	-0.40
LT4VF8		7,414.8	115.6	0.91	7,485.9	184.7	1.35
NKRDZ7	X	16,360.4	9,061.3	71.56	16,498.7	9,197.5	67.38
NPJKJE		7,223.0	-76.2	-0.60	7,294.4	-6.7	-0.05
P38XKG		7,133.6	-165.6	-1.31	7,124.4	-176.8	-1.29
P9VQKM		7,399.8	100.6	0.79	7,348.8	47.6	0.35
PJAQZ4		7,476.0	176.8	1.40	7,512.0	210.8	1.54
Q6JBBU		7,306.8	7.6	0.06	7,289.0	-12.2	-0.09
Q72BJQ		7,220.0	-79.2	-0.63	7,197.9	-103.3	-0.76
R8X2BQ		7,166.8	-132.4	-1.05	7,108.9	-192.3	-1.41
RER84R	*	7,489.4	190.2	1.50	7,575.2	274.0	2.01
RM6DMG	*	6,960.0	-339.2	-2.68	6,980.0	-321.2	-2.35
RM8VW9		7,240.6	-58.6	-0.46	7,241.2	-60.0	-0.44
RQ4L3J		7,340.5	41.4	0.33	7,395.5	94.3	0.69
RVFJHT		7,105.8	-193.3	-1.53	7,114.3	-186.8	-1.37
TJ2RNH		7,336.9	37.8	0.30	7,336.7	35.5	0.26
TR9QTD	*	7,083.8	-215.4	-1.70	7,002.2	-299.0	-2.19
U2J3UG		7,150.9	-148.3	-1.17	7,160.7	-140.5	-1.03
UQW8HU		7,308.2	9.0	0.07	7,330.8	29.6	0.22
UUHV9M		7,428.8	129.6	1.02	7,443.6	142.4	1.04
UVRW39		7,311.3	12.1	0.10	7,375.1	73.9	0.54
UZHF7C		7,112.2	-187.0	-1.48	7,144.0	-157.2	-1.15
V2BQJQ	*	7,545.0	245.8	1.94	7,489.2	188.0	1.38
VWKBYP		7,118.8	-180.4	-1.42	7,098.8	-202.4	-1.48
WEDJN8		7,467.2	168.0	1.33	7,520.0	218.8	1.60
WJCPA6		7,441.4	142.2	1.12	7,440.8	139.6	1.02



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
XUPG7D		7,126.8	-172.4	-1.36	7,095.4	-205.8	-1.51
XVG9K6	X	7,114.0	-185.2	-1.46	7,259.0	-42.2	-0.31
YNVY68		7,324.7	25.5	0.20	7,320.6	19.5	0.14
YU6TNJ		7,158.0	-141.2	-1.12	7,148.8	-152.4	-1.12
Z2ZD8P		7,538.2	239.0	1.89	7,586.5	285.4	2.09
ZJV7TN		7,195.7	-103.5	-0.82	7,199.2	-102.0	-0.75

Summary Statistics		Sample F63	Sample F64
Grand Means		7,299.19 psi	7,301.17 psi
Std Dev Btwn Labs		126.62 psi	136.51 psi
Statistics based on 66 of 76 reporting participants			

Sample F63: ABS/PC & Sample F64: ABS/PC

Comments on Assigned Data Flags for Test #704

- KLH8MR (X) - Data for sample F64 are low. Inconsistent within the determinations of both samples.
- 69LWDZ (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F63.
- XVG9K6 (X) - Inconsistent in testing between samples.
- JURF8Y (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample F64.
- CMWVHY (X) - Data for both samples are high. Possible Systematic Error.
- JRJBXL (X) - Data for sample F63 are low. Inconsistent within the determinations of both samples.
- DUVYP9 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample F64.
- CVKZXD (X) - Data for both samples are low. Possible Systematic Error.
- CJRFGM (X) - Data for sample F64 are low. Inconsistent within the determinations of both samples.
- NKRDZ7 (X) - Extreme data.



Plastics Interlaboratory Testing Program

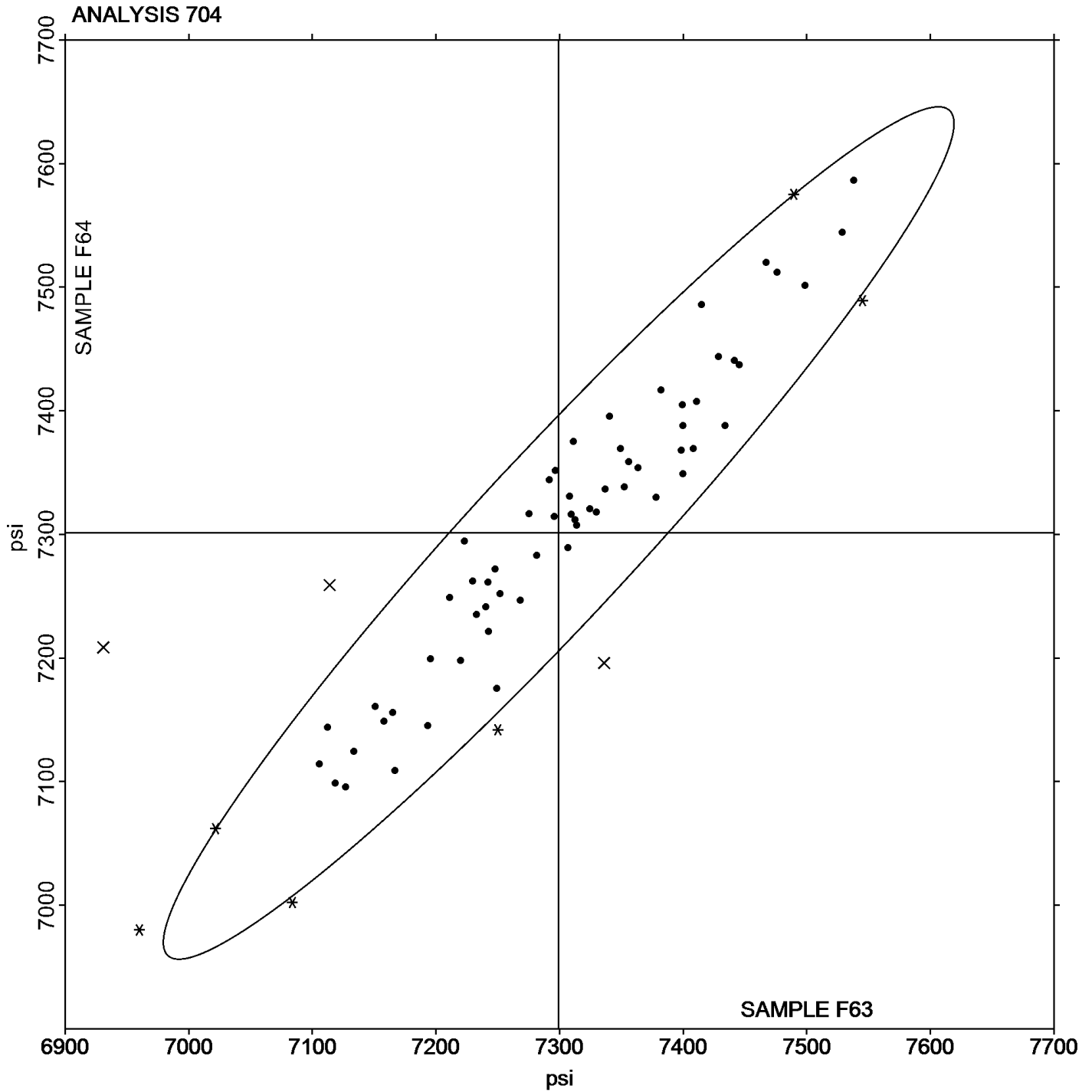
Report #112

Analysis 704

4th Qtr 2019

Tensile Stress at Yield - psi

Grand Mean Sample F63: 7,299.19 psi Grand Mean Sample F64: 7,301.17 psi





Plastics Interlaboratory Testing Program

Report #112

Analysis 705

4th Qtr 2019

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D3GCH		6,345.0	-124.4	-0.60	6,446.1	-63.7	-0.26
37M2HD		6,501.2	31.8	0.15	6,458.9	-50.9	-0.21
3MQCP6		6,480.6	11.2	0.05	6,475.0	-34.8	-0.14
43ZFRC		6,265.7	-203.8	-0.99	6,178.7	-331.2	-1.36
69LWDZ	*	6,340.5	-128.9	-0.63	5,985.2	-524.7	-2.16
6M3UKM		6,578.1	108.6	0.53	6,397.6	-112.3	-0.46
6X2LWU		6,320.2	-149.2	-0.72	6,340.8	-169.0	-0.70
7QGPXY		6,965.9	496.5	2.41	6,957.2	447.4	1.84
7QHL79		6,287.4	-182.0	-0.88	6,165.6	-344.2	-1.42
8A38ZV		6,531.8	62.4	0.30	6,655.2	145.4	0.60
8KN9F6		6,249.4	-220.0	-1.07	6,259.4	-250.4	-1.03
932BU4	X	6,083.2	-386.2	-1.87	6,958.1	448.3	1.84
9ML4LK		6,554.8	85.4	0.41	6,554.2	44.4	0.18
9QLEHK		6,738.0	268.5	1.30	6,872.3	362.5	1.49
9WBRJ9		6,263.1	-206.4	-1.00	6,295.6	-214.3	-0.88
AUR27B		6,339.6	-129.8	-0.63	6,416.2	-93.6	-0.39
C2D2DY		6,458.2	-11.2	-0.05	6,667.6	157.8	0.65
CJRFGM	X	6,269.4	-200.0	-0.97	7,362.0	852.2	3.50
CMWVHY	X	7,258.8	789.4	3.83	7,236.2	726.4	2.99
CVKZXD		6,481.2	11.8	0.06	6,539.0	29.2	0.12
DBJ629	*	6,980.0	510.6	2.48	6,720.0	210.2	0.86
DL2MTF		6,314.8	-154.6	-0.75	6,299.2	-210.6	-0.87
DUVYP9		6,660.0	190.6	0.92	6,580.0	70.2	0.29
E7FXQV		6,364.0	-105.4	-0.51	6,368.0	-141.8	-0.58
EC82ZM		6,295.0	-174.4	-0.85	6,278.0	-231.8	-0.95
EY3MZP		6,371.9	-97.6	-0.47	6,445.0	-64.9	-0.27
FGHBQV	*	6,988.3	518.8	2.52	7,173.0	663.2	2.73
H2EWER	X	7,249.4	780.0	3.78	7,438.6	928.8	3.82
HXJX8M		6,340.8	-128.6	-0.62	6,284.5	-225.3	-0.93
JD8ULN		6,564.8	95.3	0.46	6,497.2	-12.7	-0.05
JRJBLX		6,291.8	-177.6	-0.86	6,562.8	53.0	0.22
KLH8MR	X	6,324.0	-145.4	-0.71	5,731.2	-778.6	-3.20
L7EE4U		6,439.7	-29.7	-0.14	6,367.2	-142.6	-0.59
L8Q2MU		6,475.6	6.2	0.03	6,517.8	8.0	0.03
LF4XQF		6,497.4	28.0	0.14	6,689.6	179.8	0.74



Plastics Interlaboratory Testing Program

Report #112

Analysis 705

4th Qtr 2019

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LT4VF8		6,499.4	30.0	0.15	6,591.3	81.5	0.34
NKRDZ7	X	18,498.4	12,028.9	58.34	18,659.8	12,150.0	49.97
NPJKJE		6,397.5	-71.9	-0.35	6,808.4	298.6	1.23
P38XKG		6,357.4	-112.0	-0.54	6,555.4	45.6	0.19
P9VQKM		6,386.6	-82.8	-0.40	6,562.0	52.2	0.21
PJAQZ4	X	7,186.0	716.6	3.48	6,518.0	8.2	0.03
Q6JBBU		6,465.2	-4.2	-0.02	6,586.0	76.2	0.31
Q72BJQ		6,683.1	213.7	1.04	6,738.5	228.6	0.94
R8X2BQ		6,350.0	-119.5	-0.58	6,518.3	8.4	0.03
RER84R		6,428.0	-41.4	-0.20	6,527.6	17.8	0.07
RM8VW9		6,361.8	-107.6	-0.52	6,296.0	-213.8	-0.88
RQ4L3J		6,476.7	7.2	0.04	6,593.4	83.5	0.34
RVFJHT		6,031.0	-438.5	-2.13	6,155.2	-354.6	-1.46
TJ2RNH		6,372.1	-97.3	-0.47	6,306.3	-203.6	-0.84
U2J3UG		6,370.9	-98.5	-0.48	6,739.7	229.9	0.95
UQW8HU		6,867.4	398.0	1.93	6,679.3	169.4	0.70
UUHV9M		6,475.0	5.6	0.03	6,510.4	0.6	0.00
UVRW39		6,860.0	390.6	1.89	6,964.8	455.0	1.87
UZHF7C		6,205.2	-264.2	-1.28	6,012.2	-497.6	-2.05
V2BQJQ		6,500.8	31.4	0.15	6,582.4	72.6	0.30
VWKBYP		6,625.1	155.7	0.75	6,508.8	-1.1	0.00
WEDJN8		6,505.6	36.1	0.18	6,485.9	-24.0	-0.10
WJCPA6		6,817.8	348.4	1.69	6,944.2	434.4	1.79
XUPG7D		6,302.6	-166.8	-0.81	6,231.6	-278.2	-1.14
YNVY68		6,696.3	226.8	1.10	6,751.9	242.1	1.00
YU6TNJ		6,231.2	-238.2	-1.16	6,176.0	-333.8	-1.37
Z2ZD8P	X	7,319.2	849.7	4.12	7,046.1	536.2	2.21
ZJV7TN	*	6,267.7	-201.7	-0.98	6,769.3	259.4	1.07



Plastics Interlaboratory Testing Program

Report #112

Analysis 705

4th Qtr 2019

Tensile Stress at Break - psi

Summary Statistics	<u>Sample F63</u>	<u>Sample F64</u>
Grand Means	6,469.44 psi	6,509.85 psi
Stnd Dev Btwn Labs	206.18 psi	243.15 psi

Statistics based on 55 of 63 reporting participants

Sample F63: ABS/PC & Sample F64: ABS/PC

Comments on Assigned Data Flags for Test #705

- KLH8MR (X) - Data for sample F64 are low.
- Z2ZD8P (X) - Data for sample F63 are high. Inconsistent within the determinations of sample F64.
- CMWVHY (X) - Data for both samples are high.
- H2EWER (X) - Data for both samples are high.
- 932BU4 (X) - Inconsistent in testing between samples.
- PJAQZ4 (X) - Data for sample F63 are high.
- CJRFGM (X) - Data for sample F64 are high.
- NKRDZ7 (X) - Extreme data.



Plastics Interlaboratory Testing Program

Report #112

Analysis 706

4th Qtr 2019

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D3GCH		4.860	0.145	1.10	4.890	0.198	1.25
38XLP3	X	95.760	91.045	692.06	100.100	95.408	600.03
3MQCP6		4.878	0.163	1.24	4.804	0.112	0.71
43ZFRC		4.740	0.025	0.19	4.774	0.082	0.52
69LWDZ	X	3.996	-0.719	-5.46	4.090	-0.602	-3.79
6M3UKM		4.642	-0.073	-0.55	4.656	-0.036	-0.23
6X2LWU		4.684	-0.031	-0.23	4.514	-0.178	-1.12
7QGPXY		4.792	0.077	0.59	4.824	0.132	0.83
7QHL79		4.496	-0.219	-1.66	4.526	-0.166	-1.04
8A38ZV		4.826	0.111	0.85	4.804	0.112	0.71
8KN9F6		4.770	0.055	0.42	4.590	-0.102	-0.64
8WL8CG	*	4.550	-0.165	-1.25	4.820	0.128	0.81
932BU4		4.562	-0.153	-1.16	4.545	-0.147	-0.93
9ML4LK		4.731	0.016	0.12	4.654	-0.038	-0.24
9QLEHK	X	9.840	5.125	38.96	9.820	5.128	32.25
9WBRJ9		4.860	0.145	1.10	4.626	-0.066	-0.41
AUR27B	X	0.230	-4.485	-34.09	0.240	-4.452	-28.00
B88JCK		4.460	-0.255	-1.94	4.420	-0.272	-1.71
CJRFGM		4.658	-0.057	-0.43	4.458	-0.234	-1.47
CMWVHY		4.920	0.205	1.56	4.820	0.128	0.81
CVKZXD	X	2.000	-2.715	-20.64	2.000	-2.692	-16.93
DBJ629		4.680	-0.035	-0.26	4.740	0.048	0.30
DL2MTF		4.682	-0.033	-0.25	4.688	-0.004	-0.02
E7FXQV		4.740	0.025	0.19	4.902	0.210	1.32
E8JCM6		4.620	-0.095	-0.72	4.694	0.002	0.01
EC82ZM		4.634	-0.081	-0.61	4.690	-0.002	-0.01
EY3MZP	X	4.820	0.105	0.80	5.362	0.670	4.21
FGHBQV		4.798	0.083	0.63	4.758	0.066	0.42
H2EWER		4.716	0.001	0.01	4.764	0.072	0.45
JD8ULN		4.586	-0.129	-0.98	4.582	-0.110	-0.69
JLXFPZ		4.801	0.086	0.66	4.758	0.066	0.42
JRJBLX	X	4.074	-0.641	-4.87	3.890	-0.802	-5.04
KLH8MR		4.540	-0.175	-1.33	4.420	-0.272	-1.71
L7EE4U		4.700	-0.015	-0.11	4.700	0.008	0.05
L8Q2MU		4.768	0.053	0.40	4.749	0.057	0.36



Plastics Interlaboratory Testing Program

Report #112

Analysis 706

4th Qtr 2019

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LF4XQF		5.004	0.289	2.20	4.894	0.202	1.27
NKRDZ7	X	92.404	87.689	666.55	91.966	87.274	548.87
NPJKJE		4.779	0.065	0.49	4.784	0.092	0.58
P38XKG		4.680	-0.035	-0.26	4.704	0.012	0.08
P9VQKM		4.790	0.075	0.57	4.724	0.032	0.20
PJAQZ4	X	14.644	9.929	75.48	15.550	10.858	68.29
Q6JBBU		4.706	-0.009	-0.07	4.714	0.023	0.14
Q72BJQ	X	4.200	-0.515	-3.91	4.800	0.108	0.68
R8X2BQ		4.779	0.065	0.49	4.625	-0.067	-0.42
RER84R		4.798	0.083	0.63	4.870	0.178	1.12
RM8VW9		4.598	-0.117	-0.89	4.488	-0.204	-1.28
RVFJHT		4.504	-0.210	-1.60	4.625	-0.067	-0.42
TJ2RNH		4.714	-0.001	-0.01	4.728	0.036	0.23
TR9QTD	*	4.414	-0.301	-2.29	4.230	-0.462	-2.90
UQW8HU	X	3.758	-0.957	-7.27	3.577	-1.115	-7.01
UUHV9M		4.758	0.043	0.33	4.632	-0.060	-0.38
UVRW39		4.756	0.041	0.31	4.734	0.043	0.27
UZHF7C		4.740	0.025	0.19	4.696	0.004	0.03
V2BQJQ	X	11.594	6.879	52.29	12.212	7.520	47.29
VWKBYP		4.564	-0.151	-1.15	4.560	-0.132	-0.83
WEDJN8		4.974	0.259	1.97	4.914	0.222	1.40
WJCPA6		4.734	0.019	0.15	4.660	-0.032	-0.20
XUPG7D		4.570	-0.145	-1.10	4.436	-0.256	-1.61
XVG9K6	X	6.024	1.309	9.95	4.678	-0.014	-0.09
YNVY68		4.880	0.165	1.26	4.884	0.192	1.21
YU6TNJ	*	4.920	0.205	1.56	5.130	0.438	2.76
ZJV7TN		4.664	-0.051	-0.39	4.700	0.008	0.05

Summary Statistics

	Sample F63	Sample F64
Grand Means	4.7147 Percent	4.6919 Percent
Std Dev Btwn Labs	0.1316 Percent	0.1590 Percent

Statistics based on 49 of 62 reporting participants

Sample F63: ABS/PC & Sample F64: ABS/PC



Comments on Assigned Data Flags for Test #706

- 69LWDZ (X) - Data for both samples are low.
- 38XLP3 (X) - Extreme data.
- XVG9K6 (X) - Data for sample F63 are high. Inconsistent within the determinations of sample F63.
- AUR27B (X) - Extreme data.
- EY3MZP (X) - Data for sample F64 are high. Inconsistent within the determinations of sample F64.
- JRJBLX (X) - Data for both samples are low. Inconsistent within the determinations of both samples.
- Q72BJQ (X) - Data for sample F63 are low. Inconsistent within the determinations of both samples.
- V2BQJQ (X) - Extreme data.
- UQW8HU (X) - Data for both samples are low. Inconsistent within the determinations of sample F63.
- 9QLEHK (X) - Extreme data.
- PJAQZ4 (X) - Extreme data.
- CVKZXD (X) - Data for both samples are low.
- NKRDZ7 (X) - Extreme data.



Plastics Interlaboratory Testing Program

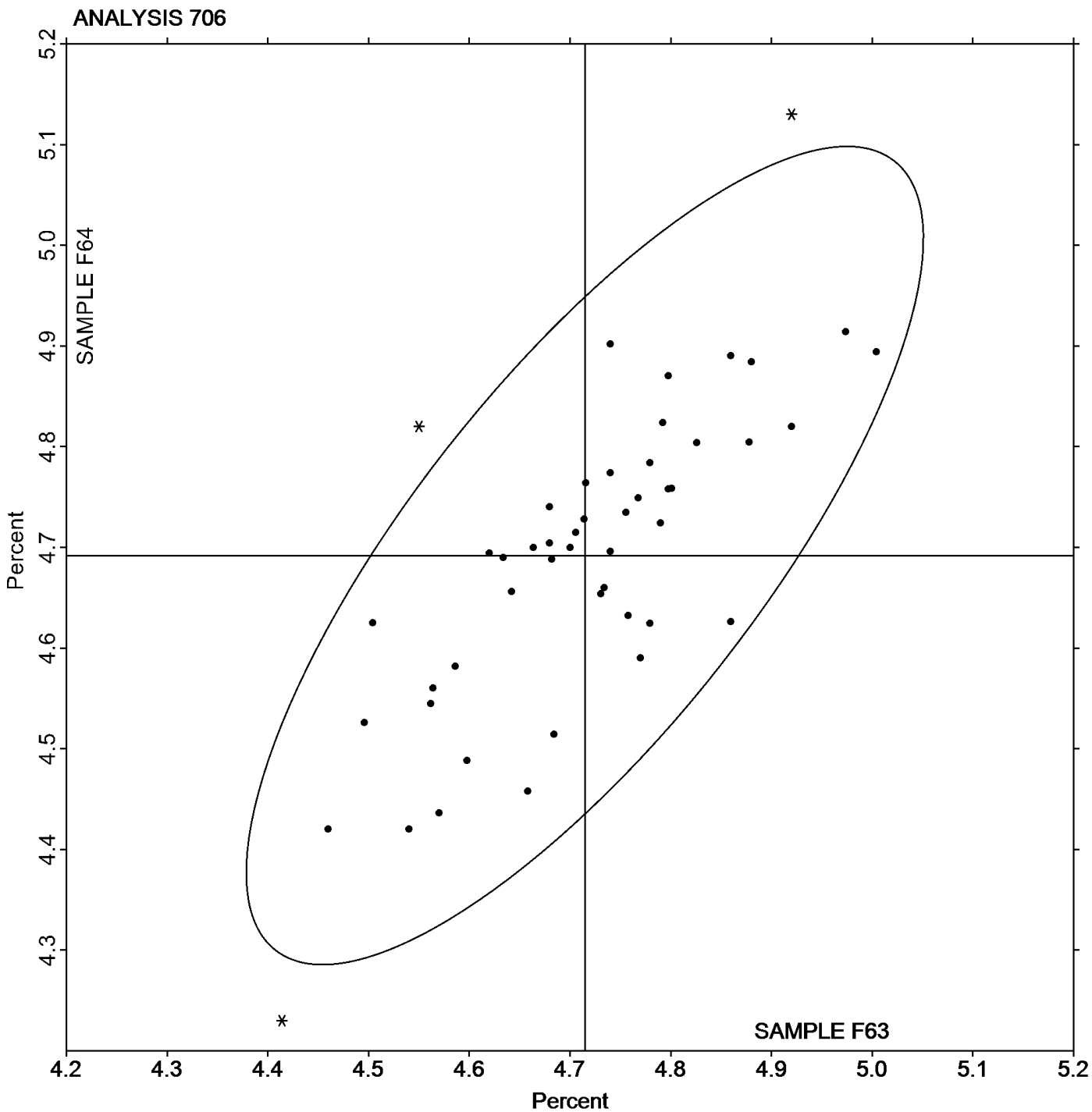
Analysis 706

Percent Elongation at Yield - Percent

Report #112

4th Qtr 2019

Grand Mean Sample F63: 4.7147 Percent Grand Mean Sample F64: 4.6919 Percent





Plastics Interlaboratory Testing Program

Report #112

Analysis 708

4th Qtr 2019

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2D3GCH		296.90	-27.57	-1.80	295.22	-30.49	-1.98
38XLP3		304.74	-19.73	-1.29	311.09	-14.62	-0.95
3MQCP6		342.18	17.71	1.16	340.94	15.23	0.99
43ZFRC		331.01	6.54	0.43	328.57	2.86	0.19
69LWDZ	*	289.64	-34.82	-2.27	284.68	-41.03	-2.67
6M3UKM		352.66	28.20	1.84	361.34	35.63	2.32
6X2LWU		328.78	4.31	0.28	335.18	9.47	0.62
7QGPXY		325.69	1.23	0.08	322.32	-3.39	-0.22
7QHL79		332.24	7.77	0.51	332.02	6.31	0.41
8A38ZV		327.70	3.23	0.21	329.60	3.89	0.25
8KN9F6		313.38	-11.09	-0.72	307.66	-18.05	-1.17
932BU4		309.44	-15.03	-0.98	320.31	-5.40	-0.35
9ML4LK		349.34	24.87	1.62	358.38	32.67	2.12
9WBRJ9		309.89	-14.57	-0.95	314.56	-11.15	-0.72
AUR27B		340.36	15.89	1.04	343.28	17.57	1.14
B88JCK		304.76	-19.70	-1.29	310.40	-15.31	-0.99
CJRFGM	X	312.80	-11.67	-0.76	358.60	32.89	2.14
CMWVHY		341.40	16.93	1.11	344.10	18.39	1.20
CVKZXD		312.10	-12.37	-0.81	314.02	-11.69	-0.76
DBJ629		342.80	18.33	1.20	342.80	17.09	1.11
DL2MTF		349.94	25.47	1.66	348.38	22.67	1.47
DUVYP9		355.76	31.29	2.04	347.52	21.81	1.42
E7FXQV		322.00	-2.47	-0.16	318.80	-6.91	-0.45
E8JCM6		344.78	20.31	1.33	336.14	10.43	0.68
EC82ZM		315.68	-8.79	-0.57	317.90	-7.81	-0.51
EY3MZP		313.09	-11.38	-0.74	325.29	-0.42	-0.03
FGHBQV		318.97	-5.50	-0.36	319.49	-6.22	-0.40
H2EWER		334.00	9.53	0.62	336.62	10.91	0.71
JD8ULN		338.78	14.32	0.93	338.64	12.93	0.84
JRJBLX		337.27	12.81	0.84	341.49	15.78	1.03
JZKK24		330.48	6.01	0.39	328.44	2.73	0.18
KLH8MR		334.71	10.25	0.67	331.89	6.18	0.40
L7EE4U		329.38	4.92	0.32	327.90	2.20	0.14
L8Q2MU		347.19	22.72	1.48	350.24	24.54	1.59
LF4XQF		313.52	-10.95	-0.71	316.78	-8.93	-0.58



Plastics Interlaboratory Testing Program

Report #112

Analysis 708

4th Qtr 2019

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F63			Sample F64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NKRDZ7	X	63.33	-261.13	-17.05	62.52	-263.19	-17.10
NPJKJE		309.92	-14.54	-0.95	322.85	-2.86	-0.19
P38XKG		328.78	4.31	0.28	324.02	-1.69	-0.11
P9VQKM		326.52	2.05	0.13	325.36	-0.35	-0.02
Q6JBBU		298.45	-26.01	-1.70	298.63	-27.08	-1.76
Q72BJQ	X	416.80	92.33	6.03	408.76	83.05	5.40
R8X2BQ		306.85	-17.62	-1.15	318.63	-7.07	-0.46
RER84R		300.36	-24.11	-1.57	304.48	-21.23	-1.38
RM8VW9		312.98	-11.49	-0.75	317.44	-8.27	-0.54
RVFJHT	*	325.78	1.31	0.09	311.81	-13.90	-0.90
TJ2RNH		316.27	-8.19	-0.53	317.43	-8.28	-0.54
TR9QTD		336.80	12.33	0.81	341.18	15.47	1.01
UQW8HU		323.78	-0.68	-0.04	326.10	0.39	0.03
UUHV9M		320.72	-3.75	-0.24	318.24	-7.47	-0.49
UVRW39	*	329.36	4.89	0.32	313.70	-12.01	-0.78
UZHF7C	X	322.00	-2.47	-0.16	361.14	35.43	2.30
V2BQJQ	X	110.91	-213.56	-13.94	111.29	-214.42	-13.93
VWKBYP		324.42	-0.04	0.00	325.93	0.22	0.01
WEDJN8		310.46	-14.01	-0.91	308.79	-16.92	-1.10
WJCPA6		333.56	9.09	0.59	336.34	10.63	0.69
XUPG7D		320.92	-3.54	-0.23	324.28	-1.43	-0.09
XVG9K6		324.44	-0.03	0.00	336.74	11.03	0.72
YNVY68		311.17	-13.29	-0.87	315.40	-10.31	-0.67
YU6TNJ	X	300.60	-23.87	-1.56	284.20	-41.51	-2.70
ZJV7TN		319.02	-5.44	-0.36	318.95	-6.76	-0.44

Summary Statistics		
	Sample F63	Sample F64
Grand Means	324.466 ksi	325.709 ksi
Stnd Dev Btwn Labs	15.319 ksi	15.390 ksi
Statistics based on 54 of 60 reporting participants		

Sample F63: ABS/PC & Sample F64: ABS/PC



Comments on Assigned Data Flags for Test #708

UZHF7C (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

Q72BJQ (X) - Data for both samples are high. Possible Systematic Error.

YU6TNJ (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample F64.

V2BQJQ (X) - Data for both samples are low. Possible Systematic Error.

CJRFGM (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

NKRDZ7 (X) - Extreme data.



Plastics Interlaboratory Testing Program

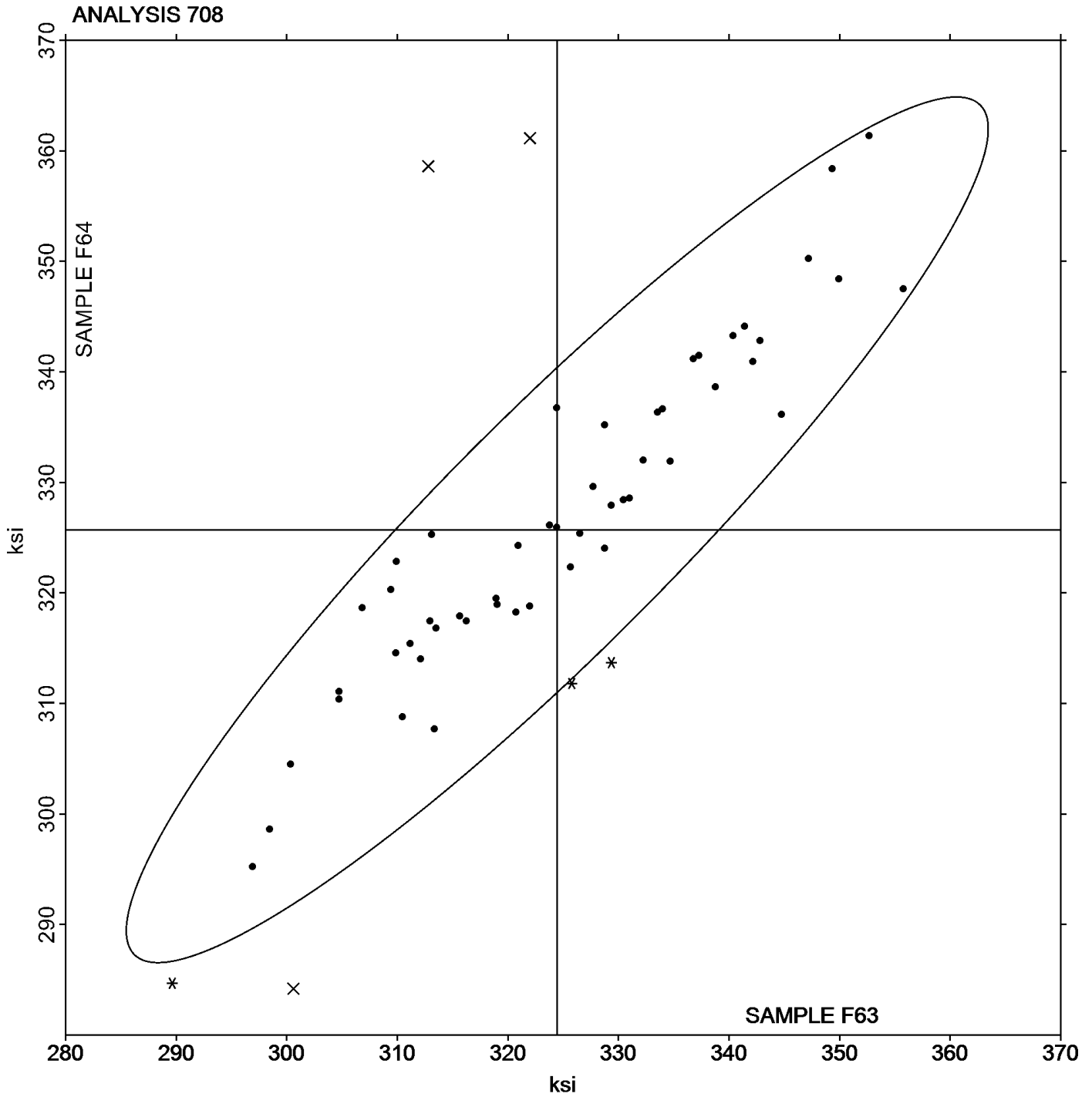
Analysis 708

Modulus of Elasticity - ksi

Report #112

4th Qtr 2019

Grand Mean Sample F63: 324.47 ksi Grand Mean Sample F64: 325.71 ksi





Plastics Interlaboratory Testing Program

Report #112

Analysis 710

4th Qtr 2019

Deflection Temp. Under Flexural Load (1.82 MPa) - Degrees C

WebCode	Data Flag	Sample E63			Sample E64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3ZZ2GF		74.78	-1.42	-0.71	74.78	-1.57	-0.82	TO
43ZFRC		75.25	-0.94	-0.47	74.83	-1.52	-0.79	RO
7QGPXY		75.88	-0.32	-0.16	75.63	-0.72	-0.37	CE
9ML4LK		75.28	-0.92	-0.46	75.58	-0.77	-0.40	TO
9QLEHK		75.00	-1.19	-0.60	75.15	-1.19	-0.62	CE
B88JCK		76.98	0.78	0.39	77.05	0.71	0.37	CE
C2D2DY		75.83	-0.37	-0.18	75.83	-0.52	-0.27	TO
CLM2JE		75.05	-1.14	-0.57	75.15	-1.19	-0.62	TO
CMWVHY		75.10	-1.09	-0.55	75.88	-0.47	-0.24	CE
E8JCM6		76.40	0.21	0.11	76.73	0.38	0.20	TO
FGHBQV		76.18	-0.02	-0.01	76.03	-0.32	-0.17	ZW
H2EWER		75.23	-0.97	-0.48	75.43	-0.92	-0.48	IN
HXJX8M		75.79	-0.40	-0.20	76.06	-0.28	-0.15	TO
KV73JL		75.23	-0.97	-0.48	75.45	-0.89	-0.47	IN
L7EE4U	*	82.63	6.43	3.23	82.10	5.76	3.00	CF
LF4XQF		75.28	-0.92	-0.46	75.45	-0.89	-0.47	IN
LYXXD6		76.38	0.18	0.09	76.88	0.53	0.28	CS
P38XKG		76.70	0.51	0.26	76.55	0.21	0.11	CE
PJAQZ4		74.80	-1.39	-0.70	75.20	-1.14	-0.60	TO
TJ2RNH		76.95	0.76	0.38	77.98	1.63	0.85	AT
TR9QTD		75.08	-1.12	-0.56	75.35	-0.99	-0.52	TO
UZHF7C		76.08	-0.12	-0.06	75.98	-0.37	-0.19	CF
VVPP7Y		75.40	-0.79	-0.40	75.45	-0.89	-0.47	CE
XVG9K6		74.60	-1.59	-0.80	74.65	-1.69	-0.88	TO
YNVY68	*	82.75	6.56	3.29	82.65	6.31	3.29	TO
YU6TNJ		76.25	0.06	0.03	77.36	1.02	0.53	XX
ZJV7TN		76.33	0.13	0.07	76.13	-0.22	-0.11	TY

Summary Statistics		Sample E63	Sample E64
Grand Means		76.190 Degrees C	76.342 Degrees C
Std Dev Btwn Labs		1.991 Degrees C	1.917 Degrees C
Statistics based on 27 of 27 reporting participants			

Sample E63: HIPS & Sample E64: HIPS



Plastics Interlaboratory Testing Program

Report #112

Analysis 710

4th Qtr 2019

Deflection Temp. Under Flexural Load (1.82 MPa) - Degrees C

Key to Instrument Codes Reported by Participants

AT	Atlas	CE	Ceast
CF	Coesfeld	CS	CSI
IN	Instron	RO	Rosand
TO	Tinius Olsen	TY	Toyoseiki
XX	Instrument manufacturer not specified by lab	ZW	Zwick



Plastics Interlaboratory Testing Program

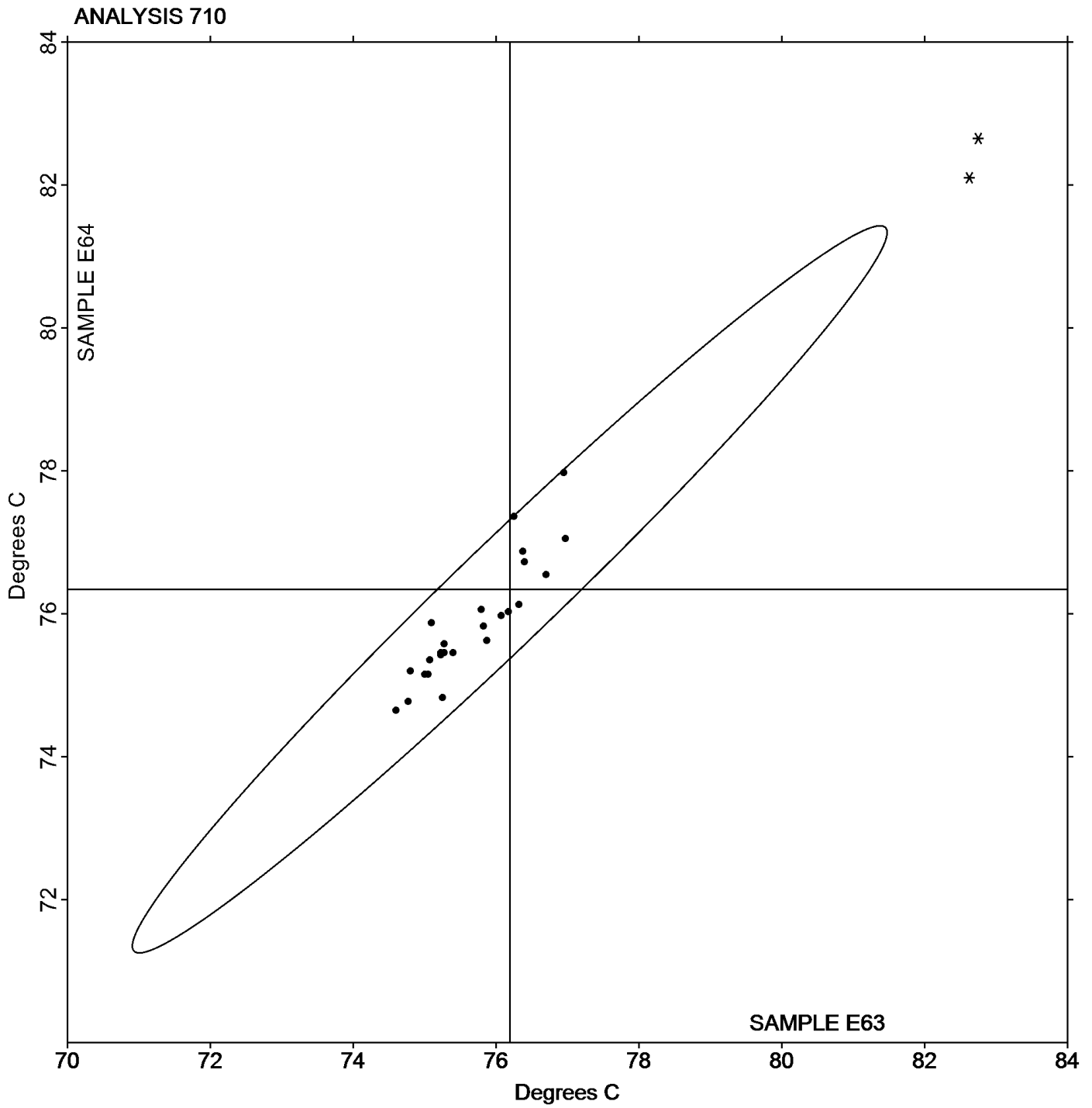
Report #112

Analysis 710

4th Qtr 2019

Deflection Temp. Under Flexural Load (1.82 MPa) - Degrees C

Grand Mean Sample E63: 76.190 Degrees C Grand Mean Sample E64: 76.342 Degrees C





Plastics Interlaboratory Testing Program

Report #112

Analysis 711

4th Qtr 2019

Deflection Temp. Under Flexural Load (0.455 MPa) - Degrees C

WebCode	Data Flag	Sample G63			Sample G64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3ZZ2GF		118.3	6.6	0.82	117.0	6.0	0.78	TO
9ML4LK		110.8	-0.9	-0.11	115.2	4.2	0.55	TO
9QLEHK		112.3	0.7	0.08	113.9	2.9	0.37	CE
B4NHZK		110.9	-0.8	-0.10	107.1	-3.9	-0.51	CE
C2D2DY		113.2	1.5	0.19	111.9	0.9	0.12	TO
GLDHVQ		113.5	1.8	0.23	113.1	2.1	0.27	CE
HXJX8M		114.2	2.5	0.31	114.9	3.9	0.50	TO
KV73JL		112.0	0.3	0.04	112.0	0.9	0.12	IN
PJAQZ4	*	82.7	-29.0	-3.60	83.9	-27.1	-3.51	TO
TJ2RNH		114.2	2.5	0.32	111.9	0.9	0.12	AT
TR9QTD		112.1	0.4	0.05	112.1	1.1	0.14	TO
VVPP7Y		114.0	2.3	0.29	113.1	2.1	0.27	CE
WCAN66		116.1	4.4	0.54	113.9	2.9	0.38	CE
XVG9K6		115.3	3.6	0.45	113.8	2.8	0.36	TO
YNVY68		116.9	5.2	0.65	115.5	4.4	0.58	TO
Z2ZD8P		110.5	-1.2	-0.15	106.9	-4.2	-0.54	XX

Summary Statistics

	Sample G63	Sample G64
Grand Means	111.68 Degrees C	111.00 Degrees C
Stnd Dev Btwn Labs	8.06 Degrees C	7.72 Degrees C

Statistics based on 16 of 16 reporting participants

Sample G63: PP & Sample G64: PP

Key to Instrument Codes Reported by Participants

AT	Atlas	CE	Ceast
IN	Instron	TO	Tinius Olsen
XX	Instrument manufacturer not specified by lab		



Plastics Interlaboratory Testing Program

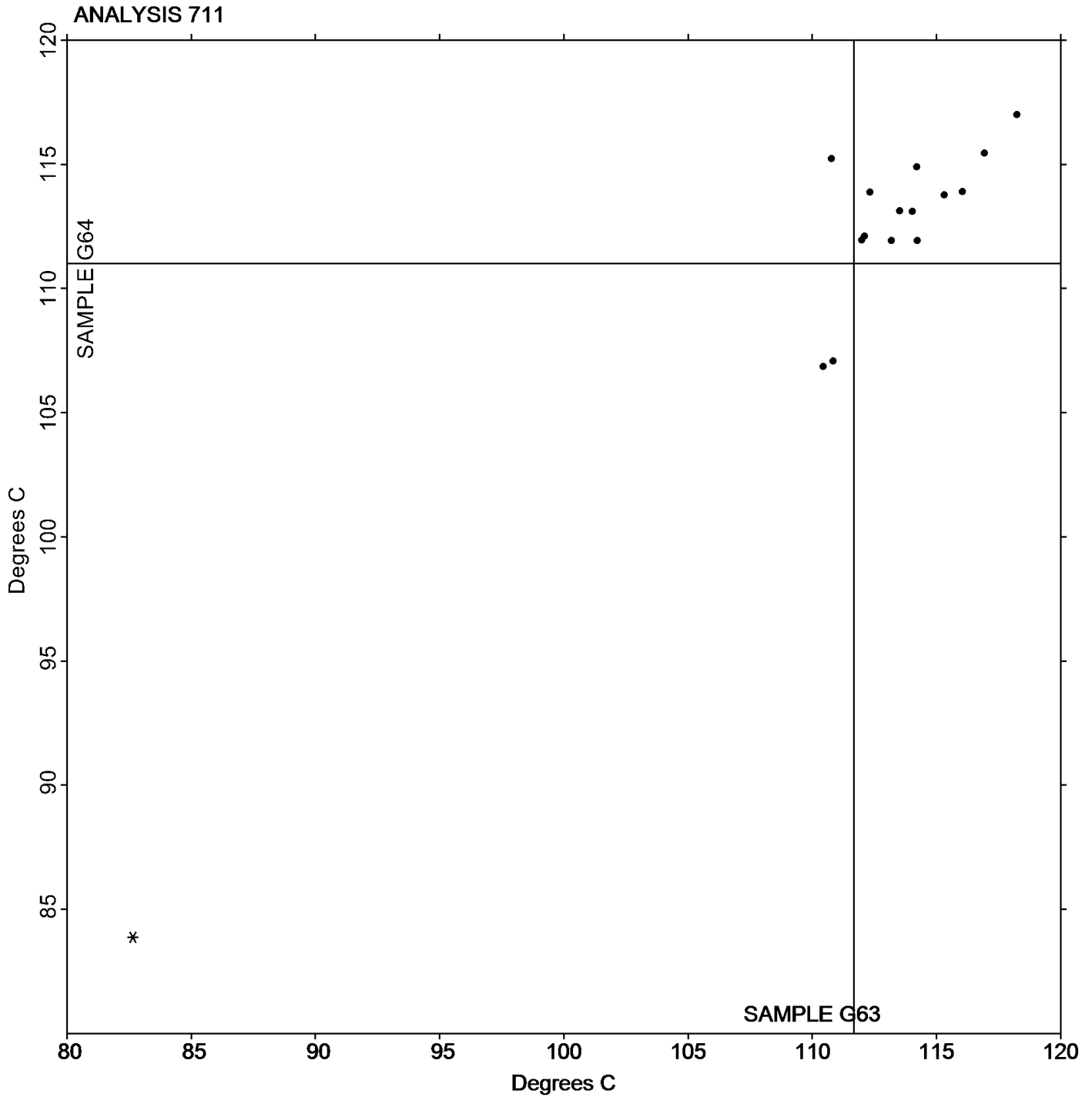
Report #112

Analysis 711

4th Qtr 2019

Deflection Temp. Under Flexural Load (0.455 MPa) - Degrees C

Grand Mean Sample G63: 111.68 Degrees C Grand Mean Sample G64: 111.00 Degrees C



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 712

4th Qtr 2019

Temp. of Deflection Under Flexural Load (1.80 MPa) - Degrees C

WebCode	Data Flag	Sample N63			Sample N64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2V42GX		84.33	1.63	1.57	84.40	1.80	1.82	XX
37M2HD		81.55	-1.14	-1.11	81.68	-0.92	-0.93	CE
7YA2TR		84.68	1.98	1.91	84.38	1.78	1.80	CE
9ML4LK		84.50	1.81	1.74	84.15	1.55	1.57	TO
9QLEHK		81.17	-1.53	-1.48	80.67	-1.93	-1.95	CE
AHC7TW		83.60	0.91	0.87	83.65	1.05	1.06	TY
AUPBX8		81.55	-1.14	-1.11	81.60	-1.00	-1.01	TO
AUR27B		83.75	1.06	1.02	83.53	0.93	0.94	IN
CTNF8Z		83.58	0.88	0.85	83.43	0.83	0.84	AT
CYBXR4		82.55	-0.14	-0.14	82.75	0.15	0.15	CE
DBJ629		83.15	0.46	0.44	82.90	0.30	0.31	MR
FGHBQV		81.85	-0.84	-0.82	81.95	-0.65	-0.65	ZW
H9F438		83.73	1.03	0.99	83.63	1.03	1.04	IN
HBLNRR		81.38	-1.32	-1.27	81.20	-1.40	-1.41	XX
HLPJ9C		82.03	-0.67	-0.65	82.00	-0.60	-0.60	TO
HNVXYQ		80.63	-2.07	-2.00	80.95	-1.65	-1.66	TO
HXJX8M		83.14	0.44	0.43	82.39	-0.21	-0.21	TO
JA6RZT		83.03	0.33	0.32	83.28	0.68	0.68	CE
JAUPEU		83.70	1.01	0.97	83.30	0.70	0.71	DN
JURF8Y	*	80.40	-2.29	-2.22	80.05	-2.55	-2.57	XX
K28DGE		83.70	1.01	0.97	83.68	1.08	1.09	CE
KV73JL		82.78	0.08	0.08	82.65	0.05	0.05	IN
LF4XQF		81.20	-1.49	-1.44	81.18	-1.42	-1.44	IN
MJLHBA		83.28	0.58	0.56	83.10	0.50	0.51	TO
NKFF7M		82.48	-0.22	-0.21	83.03	0.43	0.43	RO
P38XKG		82.95	0.26	0.25	83.18	0.58	0.58	CE
PJAQZ4	X	98.33	15.63	15.09	99.53	16.93	17.10	TO
RM6DMG		81.48	-1.22	-1.18	81.83	-0.77	-0.78	XX
TJ2RNH		82.98	0.28	0.27	83.03	0.43	0.43	AT
TQHGV6		82.38	-0.32	-0.31	82.20	-0.40	-0.40	CE
TR9QTD		82.45	-0.24	-0.24	82.05	-0.55	-0.55	TO
VVPP7Y		82.05	-0.64	-0.62	82.15	-0.45	-0.45	CE
VWKBYP		83.50	0.81	0.78	83.30	0.70	0.71	CE
WCAN66		82.45	-0.24	-0.24	82.25	-0.35	-0.35	CF
WTF8HM		83.00	0.31	0.29	82.40	-0.20	-0.20	CE



Plastics Interlaboratory Testing Program

Report #112

Analysis 712

4th Qtr 2019

Temp. of Deflection Under Flexural Load (1.80 MPa) - Degrees C

WebCode	Data Flag	Sample N63			Sample N64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
XURU3M		82.18	-0.52	-0.50	82.48	-0.12	-0.12	DN
XV3WNL		83.25	0.56	0.54	83.25	0.65	0.66	DN
YNVY68		82.10	-0.59	-0.57	82.15	-0.45	-0.45	TO
YU6TNJ	*	83.89	1.19	1.15	82.92	0.32	0.32	XX
ZJV7TN		83.10	0.41	0.39	83.00	0.40	0.41	TY
ZWJ4LL		82.38	-0.32	-0.31	82.23	-0.37	-0.38	CE

Summary Statistics

	Sample N63	Sample N64
Grand Means	82.695 Degrees C	82.597 Degrees C
Std Dev Btwn Labs	1.036 Degrees C	0.990 Degrees C

Statistics based on 40 of 41 reporting participants

Sample N63: ABS & Sample N64: ABS

Comments on Assigned Data Flags for Test #712

PJAQZ4 (X) - Data for both samples are high. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

AT Atlas	CE Ceast
CF Coesfeld	DN DYNISCO
IN Instron	MR MRC
RO Rosand	TO Tinius Olsen
TY Toyoseiki	XX Instrument manufacturer not specified by lab
ZW Zwick	



Plastics Interlaboratory Testing Program

Report #112

Analysis 715

4th Qtr 2019

Vicat Softening Temperature (Rate A)

WebCode	Data Flag	Sample H63			Sample H64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2V42GX		102.88	0.35	0.44	102.90	0.27	0.36	XX
43ZFRC		102.32	-0.21	-0.26	102.42	-0.21	-0.29	RO
8A38ZV		103.53	1.01	1.26	103.42	0.79	1.06	RR
DL2MTF		103.08	0.56	0.70	102.45	-0.18	-0.24	CE
E8JCM6		101.72	-0.81	-1.01	102.33	-0.30	-0.40	TO
FGHBQV		104.00	1.48	1.85	104.02	1.39	1.87	CF
GLDHVQ		101.03	-1.49	-1.87	101.00	-1.63	-2.19	CE
H9F438		102.48	-0.04	-0.05	102.42	-0.21	-0.29	IN
HNVXYQ		100.78	-1.74	-2.18	101.05	-1.58	-2.13	TO
JA6RZT		102.97	0.44	0.55	103.42	0.79	1.06	CF
JD8ULN		103.92	1.39	1.75	103.90	1.27	1.71	CE
L7EE4U		102.87	0.34	0.43	102.68	0.05	0.07	CF
NKFF7M		102.20	-0.32	-0.41	102.98	0.35	0.48	RO
P38XKG		102.83	0.31	0.39	103.02	0.39	0.52	CE
TJ2RNH		102.73	0.21	0.26	102.70	0.07	0.10	WZ
U2TBJ4		102.30	-0.22	-0.28	102.45	-0.18	-0.24	TO
VVPP7Y		101.97	-0.56	-0.70	102.05	-0.58	-0.78	CE
VWKBYP		103.67	1.14	1.43	103.57	0.94	1.26	CE
WCAN66		102.20	-0.32	-0.41	102.23	-0.40	-0.53	CF
XTBXC9		102.38	-0.14	-0.18	102.80	0.17	0.23	CE
YNVY68		102.35	-0.17	-0.22	102.60	-0.03	-0.04	TO
YU6TNJ		102.13	-0.39	-0.49	102.32	-0.31	-0.42	XX
ZJV7TN		102.48	-0.04	-0.05	102.57	-0.06	-0.08	TY
ZQX8YA		101.77	-0.76	-0.95	101.82	-0.81	-1.09	CE

Summary Statistics

	Sample H63	Sample H64
Grand Means	102.525 Degrees C	102.629 Degrees C
Stnd Dev Btwn Labs	0.798 Degrees C	0.743 Degrees C

Statistics based on 24 of 24 reporting participants

Sample H63: ABS & Sample H64: ABS



Plastics Interlaboratory Testing Program

Analysis 715

Vicat Softening Temperature (Rate A)

Report #112

4th Qtr 2019

Key to Instrument Codes Reported by Participants

CE	Ceast	CF	Coesfeld
IN	Instron	RO	Rosand
RR	Ray-Ran	TO	Tinius Olsen
TY	Toyoseiki	WZ	Zwick
XX	Instrument manufacturer not specified by lab		



Plastics Interlaboratory Testing Program

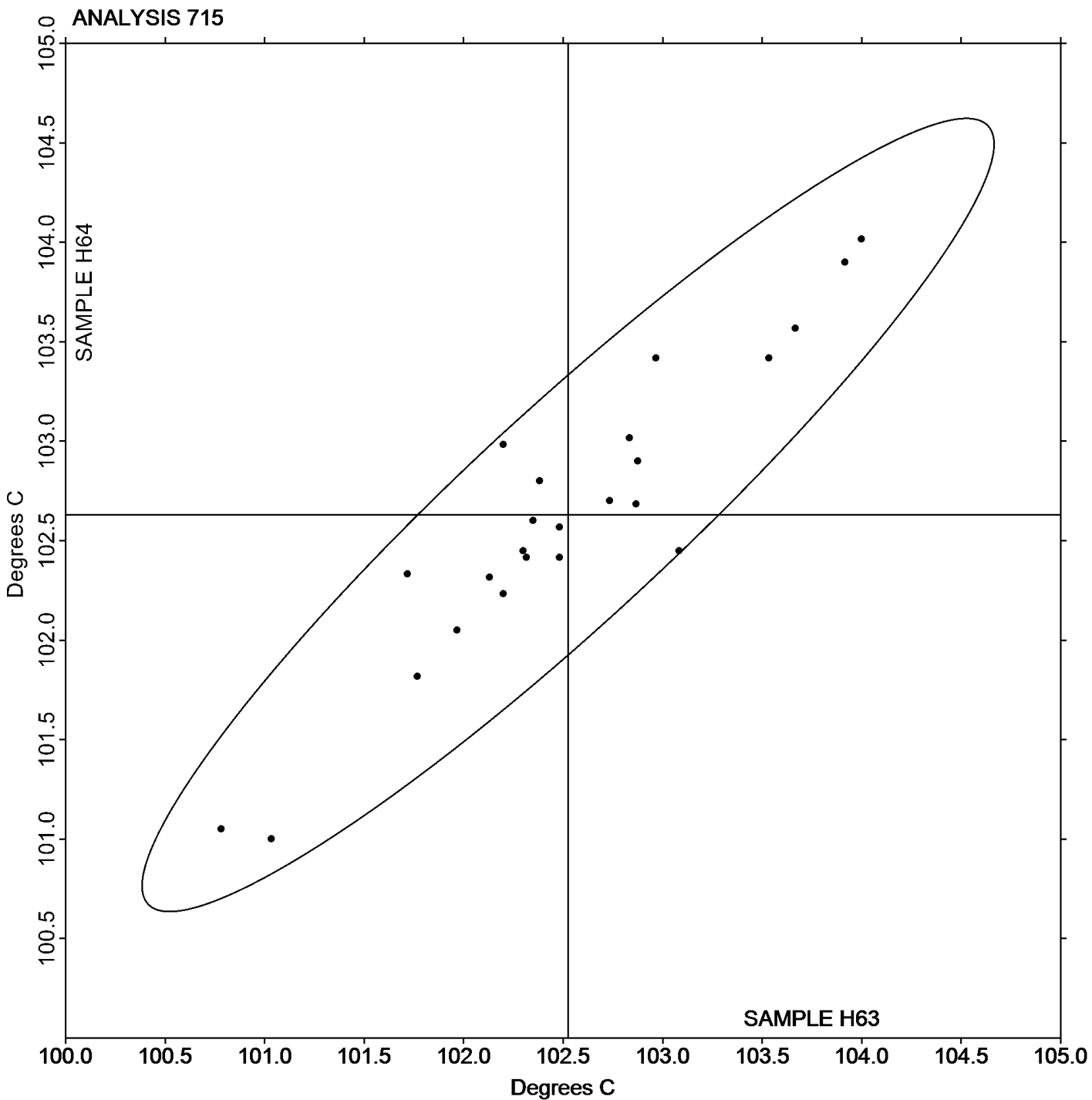
Analysis 715

Vicat Softening Temperature (Rate A)

Report #112

4th Qtr 2019

Grand Mean Sample H63: 102.52 Degrees C Grand Mean Sample H64: 102.63 Degrees C





Plastics Interlaboratory Testing Program

Report #112

Analysis 716

4th Qtr 2019

Vicat Softening Temperature (Rate B)

WebCode	Data Flag	Sample R63			Sample R64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2V42GX		104.25	-0.16	-0.15	104.20	-0.15	-0.13	XX
43ZFRC		104.42	0.01	0.01	104.10	-0.25	-0.21	RO
8A38ZV		105.28	0.87	0.81	105.48	1.13	0.96	RR
DL2MTF	*	105.52	1.11	1.03	104.28	-0.07	-0.06	CE
E8JCM6		103.25	-1.16	-1.08	103.78	-0.57	-0.48	TO
FGHBQV		105.27	0.86	0.80	105.08	0.73	0.62	CF
GLDHVQ		102.58	-1.83	-1.70	102.53	-1.82	-1.54	CE
GYF9B4		102.67	-1.74	-1.62	101.67	-2.68	-2.28	TO
H9F438		104.83	0.42	0.40	104.68	0.33	0.28	XX
HNVXYQ		101.90	-2.51	-2.34	101.83	-2.52	-2.14	TO
HXJX8M		104.52	0.11	0.10	104.58	0.23	0.20	TO
JA6RZT		104.45	0.04	0.04	104.98	0.63	0.54	CF
JD8ULN		106.33	1.92	1.79	106.32	1.97	1.67	CE
L7EE4U		105.00	0.59	0.55	104.93	0.58	0.50	CF
LYXXD6		106.00	1.59	1.48	106.17	1.82	1.54	CS
NKFF7M		104.08	-0.33	-0.30	104.75	0.40	0.34	XX
P38XKG		104.58	0.17	0.16	104.55	0.20	0.17	CE
TJ2RNH		104.93	0.52	0.49	104.80	0.45	0.38	AT
U2TBJ4		103.52	-0.89	-0.83	103.50	-0.85	-0.72	TO
VWKBYP		105.63	1.22	1.14	105.68	1.33	1.13	CE
WCAN66		104.07	-0.34	-0.32	104.43	0.08	0.07	CF
XTBXC9		104.37	-0.04	-0.04	104.30	-0.05	-0.04	CE
YNVY68		104.35	-0.06	-0.06	104.38	0.03	0.03	TO
YU6TNJ		103.43	-0.98	-0.91	102.69	-1.66	-1.41	XX
ZJV7TN		105.00	0.59	0.55	105.03	0.68	0.58	TY

Summary Statistics

	Sample R63	Sample R64
Grand Means	104.409 Degrees C	104.350 Degrees C
Std Dev Btwn Labs	1.074 Degrees C	1.178 Degrees C

Statistics based on 25 of 25 reporting participants

Sample R63: ABS & Sample R64: ABS



Plastics Interlaboratory Testing Program

Analysis 716

Vicat Softening Temperature (Rate B)

Report #112

4th Qtr 2019

Key to Instrument Codes Reported by Participants

AT	Atlas	CE	Ceast
CF	Coesfeld	CS	CSI
RO	Rosand	RR	Ray-Ran
TO	Tinius Olsen	TY	Toyoseiki
XX	Instrument manufacturer not specified by lab		



Plastics Interlaboratory Testing Program

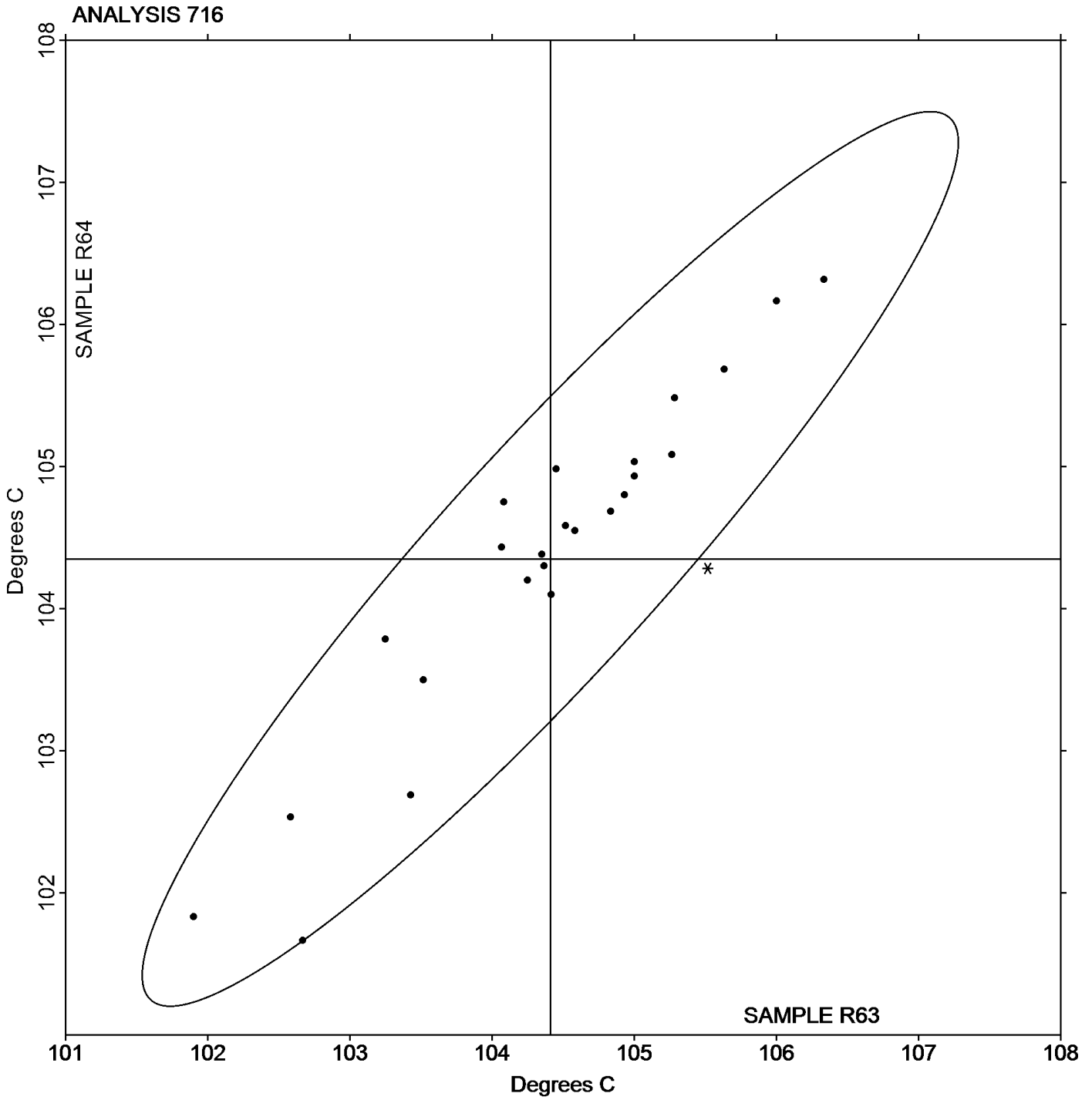
Report #112

Analysis 716

4th Qtr 2019

Vicat Softening Temperature (Rate B)

Grand Mean Sample R63: 104.41 Degrees C Grand Mean Sample R64: 104.35 Degrees C





Plastics Interlaboratory Testing Program

Report #112

Analysis 718

4th Qtr 2019

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T63			Sample T64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QWHPK		1.03610	0.00096	0.50	1.03613	0.00093	0.46
2QZX47	*	1.03100	-0.00414	-2.15	1.03233	-0.00287	-1.42
2WGTK2		1.03700	0.00186	0.96	1.03633	0.00113	0.56
3MQCP6		1.03587	0.00072	0.38	1.03577	0.00057	0.28
3NZQNY		1.03600	0.00086	0.44	1.03600	0.00080	0.40
4ACRC3		1.03600	0.00086	0.44	1.03700	0.00180	0.89
4LQZXU		1.03673	0.00159	0.82	1.03717	0.00197	0.98
4PTWPB		1.03607	0.00092	0.48	1.03620	0.00100	0.50
62LDEB		1.03523	0.00009	0.05	1.03563	0.00043	0.22
6X2LWU	*	1.04000	0.00486	2.52	1.04000	0.00480	2.38
7QGPXY		1.03433	-0.00081	-0.42	1.03600	0.00080	0.40
7YA2TR		1.03660	0.00146	0.76	1.03660	0.00140	0.69
8LGZUW		1.03500	-0.00014	-0.07	1.03500	-0.00020	-0.10
8WL8CG		1.03367	-0.00148	-0.76	1.03433	-0.00087	-0.43
92AAU8		1.03500	-0.00014	-0.07	1.03467	-0.00053	-0.26
9DLE24		1.03630	0.00116	0.60	1.03677	0.00157	0.78
9ML4LK		1.03293	-0.00221	-1.14	1.03377	-0.00143	-0.71
9QLEHK		1.03520	0.00006	0.03	1.03507	-0.00013	-0.07
9WBRJ9		1.03640	0.00126	0.65	1.03710	0.00190	0.94
B88JCK		1.03486	-0.00028	-0.14	1.03575	0.00055	0.27
C2D2DY	*	1.03353	-0.00161	-0.83	1.03543	0.00023	0.12
C4HR78		1.03476	-0.00038	-0.20	1.03509	-0.00011	-0.05
CTNF8Z		1.03600	0.00086	0.44	1.03600	0.00080	0.40
DBJ629		1.03700	0.00186	0.96	1.03700	0.00180	0.89
DL2MTF		1.03643	0.00129	0.67	1.03720	0.00200	0.99
DLDKR6		1.03690	0.00176	0.91	1.03590	0.00070	0.35
E8EZ2T		1.03633	0.00119	0.62	1.03633	0.00113	0.56
E8JCM6		1.03560	0.00046	0.24	1.03453	-0.00067	-0.33
ED739Z	X	1.03000	-0.00514	-2.66	1.03333	-0.00187	-0.92
EHCVN4		1.03597	0.00082	0.43	1.03660	0.00140	0.69
EN8PZW		1.03677	0.00162	0.84	1.03670	0.00150	0.74
F9GDMZ		1.03710	0.00196	1.01	1.03710	0.00190	0.94
FGHBQV		1.03680	0.00166	0.86	1.03680	0.00160	0.79
GLDHVQ		1.03493	-0.00021	-0.11	1.03483	-0.00037	-0.18
GRBGXY	*	1.03617	0.00102	0.53	1.03443	-0.00077	-0.38



Plastics Interlaboratory Testing Program

Report #112

Analysis 718

4th Qtr 2019

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T63			Sample T64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
H2EWER	X	1.02763	-0.00751	-3.89	1.02783	-0.00737	-3.65
HNVXYQ		1.03717	0.00202	1.05	1.03693	0.00173	0.86
HXJX8M		1.03563	0.00048	0.25	1.03476	-0.00044	-0.22
JD8ULN		1.03670	0.00156	0.81	1.03700	0.00180	0.89
JLXFPZ		1.03400	-0.00114	-0.59	1.03447	-0.00073	-0.36
JUC2ZP		1.03033	-0.00481	-2.49	1.03033	-0.00487	-2.41
JURF8Y		1.03500	-0.00014	-0.07	1.03433	-0.00087	-0.43
K28DGE	X	1.05767	0.02252	11.67	1.54300	0.50780	251.71
KECMBF	X	1.03067	-0.00448	-2.32	1.03300	-0.00220	-1.09
KTXVE9		1.03200	-0.00314	-1.63	1.03167	-0.00353	-1.75
KV73JL		1.03290	-0.00224	-1.16	1.03347	-0.00173	-0.86
KX4MBY		1.03633	0.00119	0.62	1.03633	0.00113	0.56
L7EE4U		1.03400	-0.00114	-0.59	1.03383	-0.00137	-0.68
L9Z8RH		1.03567	0.00052	0.27	1.03493	-0.00027	-0.13
LEBA4D	X	1.03323	-0.00191	-0.99	1.03713	0.00193	0.96
LF4XQF		1.03593	0.00079	0.41	1.03657	0.00137	0.68
LUKXET		1.03537	0.00022	0.12	1.03557	0.00037	0.18
LVZCNN		1.03770	0.00256	1.33	1.03827	0.00307	1.52
LYYQBD		1.03580	0.00066	0.34	1.03543	0.00023	0.12
M9EYFT	*	1.03333	-0.00181	-0.94	1.03167	-0.00353	-1.75
MCDACR	*	1.02983	-0.00531	-2.75	1.02957	-0.00563	-2.79
P38XKG		1.03870	0.00356	1.84	1.03917	0.00397	1.97
Q6NWX3		1.03417	-0.00098	-0.51	1.03437	-0.00083	-0.41
RBQ9LL		1.03667	0.00152	0.79	1.03700	0.00180	0.89
RM6DMG		1.03167	-0.00348	-1.80	1.03067	-0.00453	-2.25
TJ2RNH		1.03597	0.00082	0.43	1.03497	-0.00023	-0.12
TPTY7Q		1.03730	0.00216	1.12	1.03647	0.00127	0.63
U2J3UG		1.03400	-0.00114	-0.59	1.03367	-0.00153	-0.76
V2BQJQ		1.03283	-0.00231	-1.20	1.03283	-0.00237	-1.17
VA3VMY		1.03200	-0.00314	-1.63	1.03300	-0.00220	-1.09
VVPP7Y		1.03600	0.00086	0.44	1.03670	0.00150	0.74
VWKBYP		1.03527	0.00012	0.06	1.03513	-0.00007	-0.03
WBEZQF		1.03660	0.00146	0.76	1.03720	0.00200	0.99
WCAN66		1.03600	0.00086	0.44	1.03650	0.00130	0.64
WNGKWL		1.03600	0.00086	0.44	1.03667	0.00147	0.73



Plastics Interlaboratory Testing Program

Report #112

Analysis 718

4th Qtr 2019

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T63			Sample T64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WTF8HM		1.03500	-0.00014	-0.07	1.03500	-0.00020	-0.10
X8UM6J	*	1.03000	-0.00514	-2.66	1.03000	-0.00520	-2.58
XUPG7D		1.03500	-0.00014	-0.07	1.03500	-0.00020	-0.10
XURU3M		1.03600	0.00086	0.44	1.03600	0.00080	0.40
XV3WNL		1.03490	-0.00024	-0.13	1.03483	-0.00037	-0.18
XVG9K6		1.03663	0.00149	0.77	1.03670	0.00150	0.74
YNVY68		1.03287	-0.00228	-1.18	1.03223	-0.00297	-1.47
YU6TNJ		1.03367	-0.00148	-0.76	1.03367	-0.00153	-0.76
YZKRPN		1.03313	-0.00201	-1.04	1.03347	-0.00173	-0.86
ZJV7TN		1.03300	-0.00214	-1.11	1.03200	-0.00320	-1.59

Summary Statistics		
	Sample T63	Sample T64
Grand Means	1.035142 sp gr 23/23 C	1.035199 sp gr 23/23 C
Std Dev Btwn Labs	0.001930 sp gr 23/23 C	0.002017 sp gr 23/23 C
Statistics based on 75 of 80 reporting participants		

Sample T63: HIPS & Sample T64: HIPS

Comments on Assigned Data Flags for Test #718

- ED739Z (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T64.
- KECMBF (X) - Inconsistent in testing between samples.
- LEBA4D (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T64.
- H2EWER (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample T63.
- K28DGE (X) - Extreme data.



Plastics Interlaboratory Testing Program

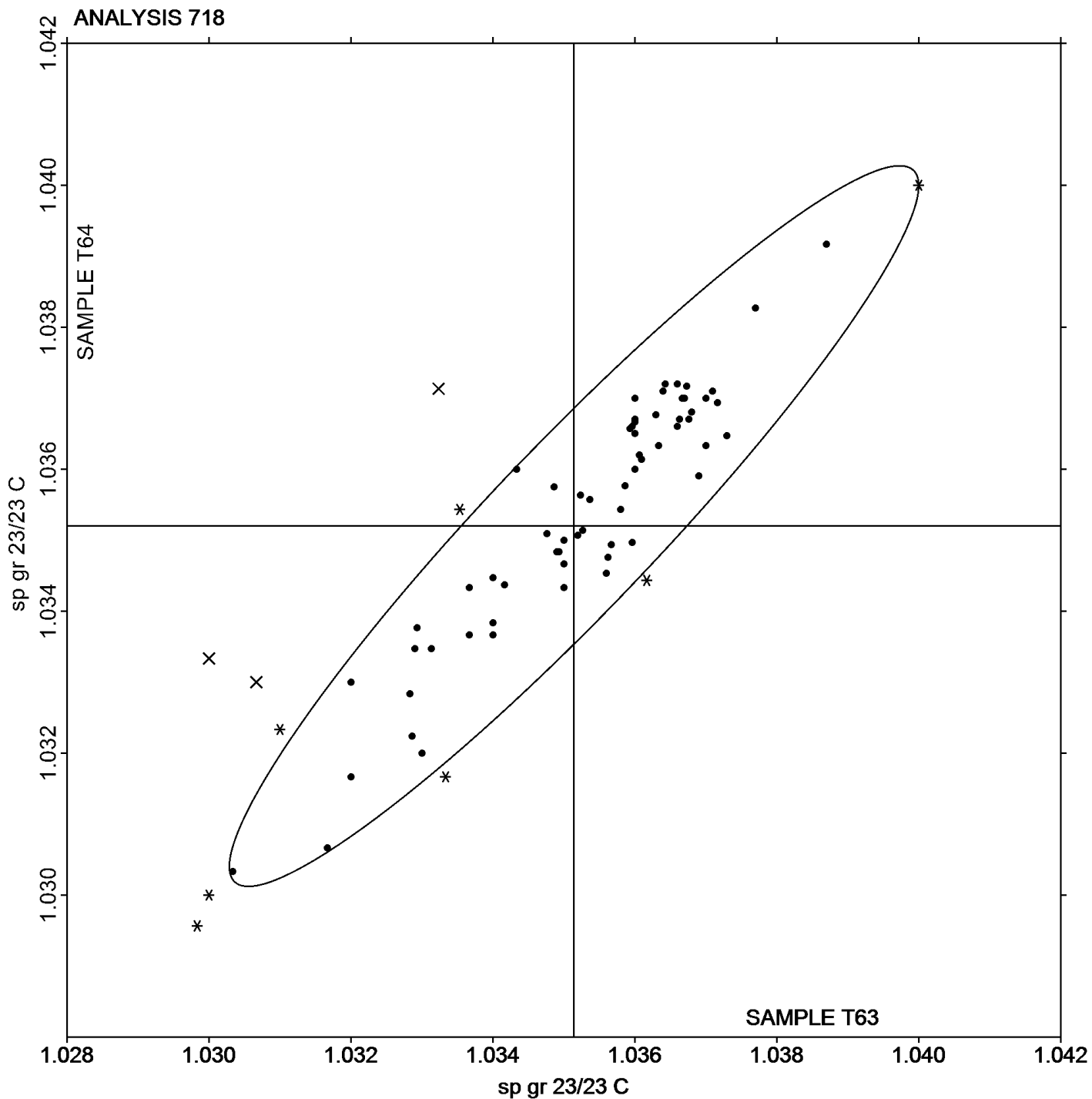
Analysis 718

Specific Gravity - sp gr 23/23 C

Report #112

4th Qtr 2019

Grand Mean Sample T63: 1.0351 sp gr 23/23 C Grand Mean Sample T64: 1.0352 sp gr 23/23 C





Plastics Interlaboratory Testing Program

Report #112

Analysis 720

4th Qtr 2019

Flexural Modulus- ksi

WebCode	Data Flag	Sample J63			Sample J64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
22FWP3		336.0	2.1	0.10	339.8	2.9	0.13
24ZZZK		319.7	-14.1	-0.68	315.9	-21.0	-0.94
2D3GCH		349.8	16.0	0.76	341.4	4.6	0.20
37M2HD		365.4	31.6	1.51	358.6	21.8	0.98
38XLP3		319.8	-14.0	-0.67	330.3	-6.5	-0.29
3FUGPL		298.4	-35.4	-1.70	299.7	-37.2	-1.67
3MQCP6		341.0	7.2	0.34	342.6	5.8	0.26
3MWNBF		338.6	4.8	0.23	355.4	18.6	0.83
3ZZ2GF		351.0	17.1	0.82	353.9	17.1	0.77
43ZFRC	*	341.3	7.4	0.36	362.6	25.8	1.16
69LWDZ		327.3	-6.6	-0.31	329.9	-6.9	-0.31
6M3UKM		324.1	-9.8	-0.47	326.6	-10.3	-0.46
7QGPXY		359.9	26.1	1.25	369.8	33.0	1.48
8A38ZV		327.4	-6.4	-0.31	334.5	-2.3	-0.10
8WL8CG		319.9	-14.0	-0.67	321.8	-15.1	-0.68
9ML4LK		377.2	43.4	2.08	378.4	41.5	1.86
9QLEHK		348.9	15.1	0.72	359.6	22.7	1.02
9WBRJ9		317.1	-16.8	-0.80	316.1	-20.8	-0.93
AGGJE9		346.6	12.7	0.61	355.5	18.7	0.84
AUR27B		303.9	-30.0	-1.44	305.5	-31.3	-1.41
B88JCK		326.3	-7.5	-0.36	334.1	-2.7	-0.12
C2D2DY		337.4	3.5	0.17	345.3	8.5	0.38
CMWVHY		351.6	17.8	0.85	354.0	17.2	0.77
CVKZXD	*	391.1	57.2	2.74	391.3	54.4	2.44
DBJ629		303.8	-30.0	-1.44	304.6	-32.2	-1.45
DL2MTF		351.8	18.0	0.86	357.6	20.8	0.93
E7FXQV		328.4	-5.4	-0.26	331.0	-5.8	-0.26
E8JCM6		325.2	-8.6	-0.41	336.5	-0.3	-0.01
EY3MZP		331.5	-2.4	-0.11	334.9	-1.9	-0.09
FGHBQV		320.4	-13.5	-0.64	322.4	-14.4	-0.65
H2EWER		341.6	7.8	0.37	332.3	-4.5	-0.20
H87WXT		324.0	-9.9	-0.47	336.6	-0.3	-0.01
HXJX8M		341.7	7.8	0.37	355.3	18.5	0.83
JLXFPZ		330.3	-3.6	-0.17	337.2	0.4	0.02
JLY7X4	X	276.0	-57.8	-2.77	234.1	-102.7	-4.61



Plastics Interlaboratory Testing Program

Report #112

Analysis 720

4th Qtr 2019

Flexural Modulus- ksi

WebCode	Data Flag	Sample J63			Sample J64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
JURF8Y		346.1	12.2	0.58	342.6	5.7	0.26
JWHRYR		313.2	-20.6	-0.99	304.6	-32.2	-1.45
JZKK24		319.7	-14.2	-0.68	323.4	-13.5	-0.61
KLPP4A		344.9	11.1	0.53	340.6	3.8	0.17
KV73JL		371.1	37.3	1.79	369.4	32.6	1.46
L7EE4U		335.9	2.0	0.10	335.5	-1.3	-0.06
L8Q2MU		343.8	10.0	0.48	343.6	6.8	0.30
NUWAA4		321.4	-12.4	-0.59	320.9	-15.9	-0.71
P38XKG		323.0	-10.8	-0.52	318.6	-18.2	-0.82
PJAQZ4		340.4	6.6	0.31	359.6	22.8	1.02
PKH4G6		332.0	-1.8	-0.09	333.2	-3.6	-0.16
Q6JBBU		306.0	-27.8	-1.33	308.2	-28.7	-1.29
Q72BJQ		328.8	-5.0	-0.24	325.2	-11.7	-0.52
RER84R		314.3	-19.6	-0.94	315.4	-21.4	-0.96
RM6DMG		300.5	-33.3	-1.60	309.8	-27.0	-1.21
TJ2RNH		332.7	-1.2	-0.06	334.5	-2.3	-0.10
UQW8HU		330.6	-3.3	-0.16	326.3	-10.6	-0.47
UUHV9M		379.0	45.1	2.16	381.1	44.2	1.99
UZH7C		333.8	0.0	0.00	327.7	-9.1	-0.41
VWKBYP		297.6	-36.3	-1.74	293.1	-43.7	-1.96
VXV7KG		346.0	12.1	0.58	358.3	21.5	0.96
WJCPA6		377.1	43.3	2.07	386.4	49.5	2.22
XUPG7D		316.6	-17.3	-0.83	320.7	-16.1	-0.72
XVG9K6	X	319.8	-14.0	-0.67	366.7	29.9	1.34
YNVY68		359.4	25.5	1.22	358.5	21.7	0.97
YU6TNJ		313.6	-20.2	-0.97	318.8	-18.0	-0.81
YZKRPN		307.8	-26.1	-1.25	304.3	-32.5	-1.46
ZJV7TN		311.4	-22.4	-1.07	315.9	-21.0	-0.94



Plastics Interlaboratory Testing Program

Report #112

Analysis 720

4th Qtr 2019

Flexural Modulus- ksi

Summary Statistics	<u>Sample J63</u>	<u>Sample J64</u>
Grand Means	333.85 ksi	336.84 ksi
Stnd Dev Btwn Labs	20.89 ksi	22.27 ksi

Statistics based on 61 of 63 reporting participants

Sample J63: HIPS & Sample J64: HIPS

Comments on Assigned Data Flags for Test #720

XVG9K6 (X) - Inconsistent in testing between samples.

JLY7X4 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample J64.



Plastics Interlaboratory Testing Program

Report #112

Analysis 721

4th Qtr 2019

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J63			Sample J64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
22FWP3		5,908	3	0.01	5,946	-48	-0.13
24ZZZK	X	807	-5,098	-19.62	792	-5,203	-14.52
2D3GCH		6,148	243	0.94	5,869	-125	-0.35
37M2HD		5,921	16	0.06	5,861	-134	-0.37
3MQCP6		5,832	-73	-0.28	5,792	-203	-0.57
3MWNBF		5,925	21	0.08	6,411	416	1.16
3ZZ2GF	*	6,592	687	2.65	6,584	589	1.64
43ZFRC		5,837	-68	-0.26	6,429	434	1.21
69LWDZ	*	5,557	-348	-1.34	5,094	-901	-2.52
6M3UKM		5,760	-144	-0.56	5,759	-236	-0.66
8A38ZV		5,844	-60	-0.23	5,959	-36	-0.10
9ML4LK		6,018	113	0.44	6,056	61	0.17
9QLEHK		5,932	27	0.11	6,083	88	0.25
9WBRJ9		5,722	-183	-0.70	5,726	-269	-0.75
AGGJE9		5,921	16	0.06	6,463	469	1.31
AUR27B	*	5,223	-682	-2.62	5,239	-756	-2.11
CMWVHY		6,114	209	0.81	6,132	137	0.38
CVKZXD		6,322	417	1.61	6,092	98	0.27
DBJ629		6,128	223	0.86	6,122	127	0.36
DL2MTF		5,945	41	0.16	6,474	479	1.34
E8JCM6		5,654	-251	-0.96	6,144	149	0.42
EY3MZP		6,066	161	0.62	6,120	125	0.35
FGHBQV		6,021	117	0.45	6,040	46	0.13
H2EWER		6,081	176	0.68	5,893	-101	-0.28
H87WXT		5,906	2	0.01	5,926	-69	-0.19
JLXFPZ		5,761	-144	-0.55	5,822	-173	-0.48
JLY7X4		5,442	-462	-1.78	5,600	-395	-1.10
JZKK24		5,896	-8	-0.03	6,013	18	0.05
KLPP4A		6,148	243	0.94	6,229	235	0.66
L7EE4U		5,920	15	0.06	5,941	-53	-0.15
L8Q2MU		5,794	-111	-0.43	5,774	-221	-0.62
NUWAA4		5,616	-288	-1.11	5,587	-407	-1.14
P38XKG		6,166	262	1.01	6,136	142	0.39
PJAQZ4		6,020	115	0.44	6,220	225	0.63
Q6JBBU		6,027	123	0.47	6,058	64	0.18



Plastics Interlaboratory Testing Program

Report #112

Analysis 721

4th Qtr 2019

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J63			Sample J64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Q72BJQ		5,612	-293	-1.13	5,589	-405	-1.13
RER84R		5,738	-167	-0.64	5,782	-213	-0.59
TJ2RNH		6,077	172	0.66	6,087	92	0.26
UQW8HU		6,242	338	1.30	6,271	276	0.77
UUHV9M		6,287	382	1.47	6,320	325	0.91
UZH7C		5,730	-175	-0.67	5,647	-348	-0.97
VWKBYP		5,631	-274	-1.05	5,535	-460	-1.28
VXV7KG		6,036	131	0.50	6,594	599	1.67
WJCPA6	*	6,453	548	2.11	6,954	960	2.68
WLU9VU		5,598	-307	-1.18	5,614	-381	-1.06
XUPG7D		5,622	-283	-1.09	5,641	-354	-0.99
XVG9K6	*	5,738	-167	-0.64	6,520	525	1.47
YNVY68	X	3,263	-2,642	-10.17	3,247	-2,747	-7.67
YU6TNJ		5,698	-206	-0.79	5,741	-254	-0.71
YZKRPN	X	6,898	993	3.82	6,854	860	2.40
ZJV7TN		5,790	-115	-0.44	5,860	-135	-0.38

Summary Statistics

	Sample J63	Sample J64
Grand Means	5,904.5 psi	5,994.7 psi
Stnd Dev Btwn Labs	259.8 psi	358.3 psi

Statistics based on 48 of 51 reporting participants

Sample J63: HIPS & Sample J64: HIPS

Comments on Assigned Data Flags for Test #721

- 24ZZZK (X) - Extreme data.
- YNVY68 (X) - Data for both samples are low.
- YZKRPN (X) - Data for sample J63 are high.



Plastics Interlaboratory Testing Program

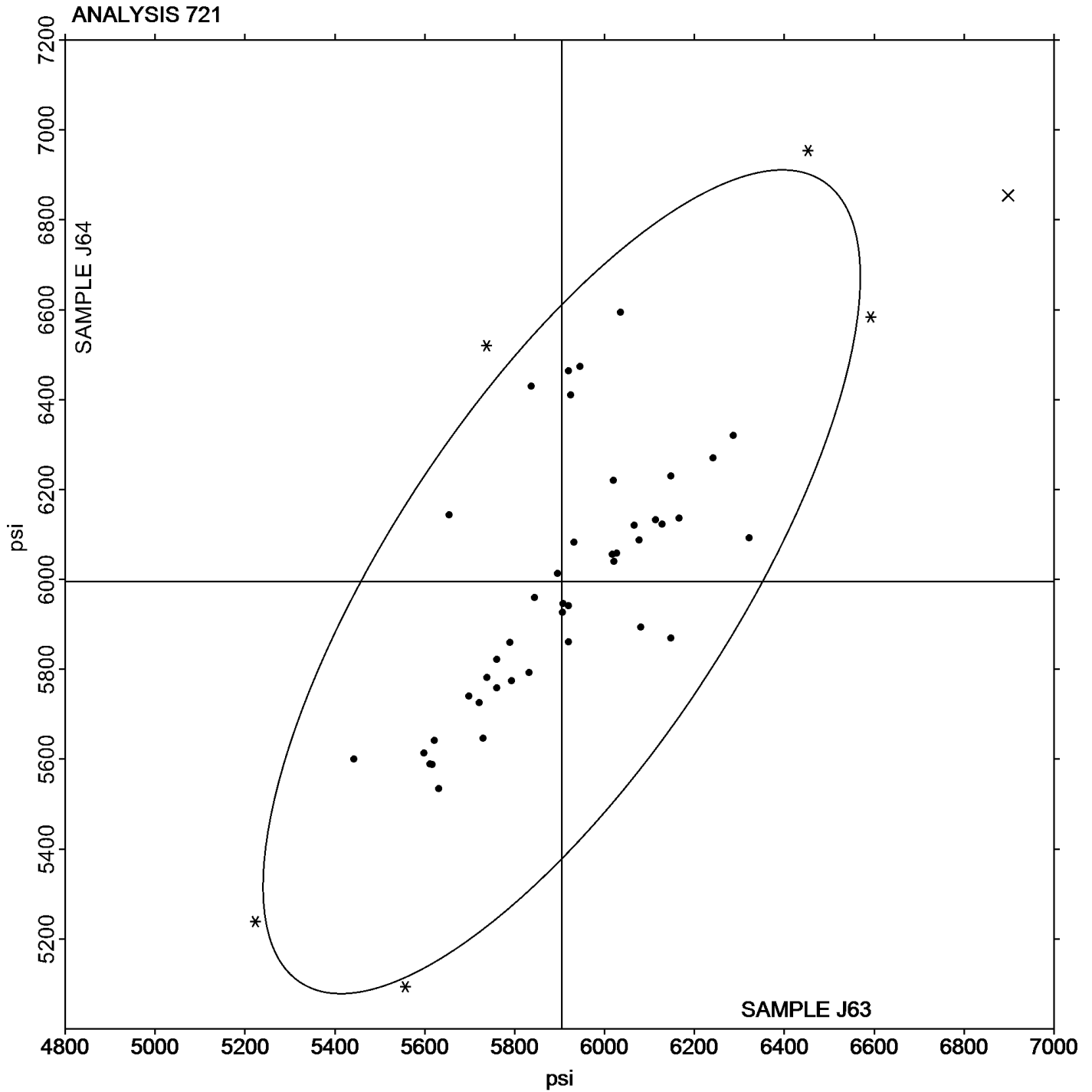
Report #112

Analysis 721

4th Qtr 2019

Flexural Stress at 5% Strain - psi

Grand Mean Sample J63: 5,904.53 psi Grand Mean Sample J64: 5,994.69 psi





Plastics Interlaboratory Testing Program

Report #112

Analysis 722

4th Qtr 2019

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J63			Sample J64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
22FWP3		5,923	24	0.08	5,963	-36	-0.10
24ZZZK		6,097	198	0.69	6,053	54	0.15
2D3GCH		6,110	211	0.74	5,825	-174	-0.47
37M2HD		5,951	52	0.18	5,903	-96	-0.26
38XLP3		6,064	165	0.58	6,549	550	1.50
3MQCP6		5,854	-45	-0.16	5,812	-187	-0.51
3MWNBF		5,935	36	0.13	6,424	425	1.16
3ZZ2GF		6,608	709	2.48	6,599	600	1.63
43ZFRC		5,889	-10	-0.04	6,440	441	1.20
69LWDZ	*	5,150	-749	-2.62	5,578	-421	-1.15
6M3UKM		5,766	-133	-0.46	5,765	-234	-0.64
7QGPXY		6,209	310	1.08	6,788	789	2.15
8A38ZV		5,845	-54	-0.19	5,960	-39	-0.11
9ML4LK		6,044	145	0.51	6,087	88	0.24
9QLEHK		5,632	-267	-0.93	5,783	-216	-0.59
9WBRJ9		5,809	-90	-0.31	5,777	-222	-0.60
AGGJE9		5,927	28	0.10	6,474	475	1.29
AUR27B		5,209	-690	-2.41	5,231	-768	-2.09
C2D2DY		5,864	-35	-0.12	6,483	484	1.32
CMWVHY		6,124	225	0.79	6,116	117	0.32
CVKZXD		5,304	-595	-2.08	5,137	-862	-2.35
DBJ629		6,122	223	0.78	6,132	133	0.36
E7FXQV		5,792	-107	-0.37	5,816	-183	-0.50
E8JCM6		5,662	-237	-0.83	6,146	147	0.40
EY3MZP		6,319	420	1.47	6,299	300	0.82
FGHBQV		5,958	59	0.21	5,961	-38	-0.10
H87WXT		5,892	-7	-0.02	5,902	-97	-0.26
HXJX8M		5,848	-51	-0.18	6,173	174	0.47
JLY7X4		5,729	-170	-0.60	5,895	-104	-0.28
KLPP4A		5,631	-268	-0.93	5,498	-501	-1.36
KV73JL		6,129	230	0.80	6,102	103	0.28
L8Q2MU		5,816	-83	-0.29	5,802	-197	-0.54
NUWAA4		5,622	-277	-0.97	5,592	-407	-1.11
PJAQZ4		6,050	151	0.53	6,256	257	0.70
PKH4G6		5,928	29	0.10	5,920	-79	-0.22



Plastics Interlaboratory Testing Program

Report #112

Analysis 722

4th Qtr 2019

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J63			Sample J64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Q6JBBU		6,041	142	0.50	6,070	71	0.19
Q72BJQ		5,610	-289	-1.01	5,589	-410	-1.12
RER84R		5,797	-102	-0.36	5,831	-168	-0.46
TJ2RNH		6,125	226	0.79	6,125	126	0.34
UQW8HU		6,285	386	1.35	6,294	295	0.80
UUHV9M		6,215	316	1.11	6,223	224	0.61
UZHF7C		5,737	-162	-0.57	5,652	-347	-0.94
VWKBYP		5,666	-233	-0.81	5,581	-419	-1.14
WJCPA6	*	6,511	612	2.14	6,959	960	2.61
WLU9VU		5,645	-254	-0.89	5,668	-331	-0.90
XUPG7D		5,630	-269	-0.94	5,652	-347	-0.94
YNVY68		6,030	131	0.46	6,022	23	0.06
YZKRPN		6,142	243	0.85	6,173	174	0.47
ZJV7TN		5,802	-97	-0.34	5,871	-128	-0.35

Summary Statistics		
	Sample J63	Sample J64
Grand Means	5,899.0 psi	5,999.0 psi
Stnd Dev Btwn Labs	286.3 psi	367.5 psi
Statistics based on 49 of 49 reporting participants		

Sample J63: HIPS & Sample J64: HIPS



Plastics Interlaboratory Testing Program

Report #112

Analysis 730

4th Qtr 2019

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QZX47		44.22	0.21	0.23	43.99	0.12	0.12
37M2HD		43.60	-0.41	-0.45	43.25	-0.62	-0.63
4PTWPB		42.50	-1.51	-1.64	42.57	-1.30	-1.33
7FEQPP		44.45	0.43	0.47	44.43	0.56	0.57
7YA2TR		45.73	1.71	1.86	45.43	1.56	1.60
7ZKY8A		43.91	-0.11	-0.12	42.95	-0.92	-0.94
88B3CP	X	67.44	23.43	25.40	65.38	21.51	22.03
8A38ZV		43.04	-0.98	-1.06	42.88	-0.99	-1.01
8ATT22		44.09	0.07	0.08	44.03	0.16	0.17
8WRNAM		43.78	-0.24	-0.26	43.17	-0.69	-0.71
9ML4LK		44.30	0.28	0.31	44.12	0.25	0.26
9QLEHK	*	45.36	1.34	1.46	44.24	0.37	0.38
9WBRJ9		42.96	-1.05	-1.14	42.57	-1.30	-1.33
AHC7TW		45.40	1.38	1.50	45.22	1.35	1.38
BBHMTL	X	36.49	-7.53	-8.16	36.84	-7.02	-7.19
C38RGR		42.55	-1.46	-1.59	42.68	-1.19	-1.22
CLM2JE		44.64	0.63	0.68	44.40	0.54	0.55
CTNF8Z		43.16	-0.86	-0.93	42.35	-1.52	-1.55
CYBXR4		44.65	0.64	0.69	44.70	0.83	0.85
ED739Z		44.46	0.44	0.48	43.70	-0.17	-0.17
FGHBQV		45.17	1.15	1.25	45.09	1.22	1.25
H2EWER		42.78	-1.24	-1.34	43.28	-0.59	-0.61
HLPJ9C		43.76	-0.26	-0.28	44.06	0.19	0.20
HNVXYQ		45.27	1.25	1.36	45.65	1.78	1.83
HQGV3M		43.70	-0.32	-0.34	43.44	-0.43	-0.44
HXJX8M		44.58	0.57	0.61	44.61	0.74	0.76
JAUPEU		43.94	-0.08	-0.08	43.31	-0.56	-0.57
JURF8Y		43.67	-0.34	-0.37	43.79	-0.08	-0.08
K28DGE		44.66	0.64	0.70	44.79	0.92	0.94
KRKD2U		44.46	0.44	0.48	44.29	0.43	0.44
KV73JL		44.46	0.44	0.48	44.49	0.63	0.64
L9Z8RH		44.79	0.78	0.84	44.84	0.97	0.99
LEBA4D	*	46.54	2.52	2.74	46.62	2.75	2.82
LF4XQF		44.26	0.25	0.27	44.65	0.78	0.80
MCDACR		42.48	-1.54	-1.67	41.92	-1.95	-2.00



Plastics Interlaboratory Testing Program

Report #112

Analysis 730

4th Qtr 2019

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MJ2VJE		42.94	-1.08	-1.17	43.40	-0.47	-0.48
MJLHBA		44.00	-0.01	-0.02	43.40	-0.47	-0.48
P38XKG		42.97	-1.05	-1.13	42.83	-1.04	-1.07
PJAQZ4		44.16	0.15	0.16	43.80	-0.07	-0.07
PY68ZM		43.38	-0.63	-0.69	43.11	-0.75	-0.77
Q7HHQT		43.94	-0.08	-0.08	43.70	-0.17	-0.17
QEG9AH	*	42.47	-1.54	-1.67	43.19	-0.67	-0.69
RM6DMG	*	41.62	-2.40	-2.60	41.40	-2.47	-2.53
TJ2RNH		44.30	0.28	0.30	44.14	0.28	0.28
TQHGV6		44.48	0.46	0.50	44.38	0.51	0.52
TR9QTD		44.19	0.17	0.19	43.51	-0.36	-0.37
VWKBYP		43.28	-0.74	-0.80	42.98	-0.89	-0.91
WCAN66		43.50	-0.52	-0.56	43.22	-0.65	-0.66
WTF8HM		43.87	-0.15	-0.16	43.54	-0.33	-0.33
XFK9BG		44.40	0.38	0.41	44.62	0.75	0.77
XV3WNL		44.72	0.70	0.76	44.72	0.85	0.87
Y3RALX		44.70	0.68	0.74	44.92	1.05	1.08
ZJV7TN		43.82	-0.20	-0.22	43.72	-0.15	-0.15
ZQX8YA		44.09	0.07	0.08	44.38	0.52	0.53
ZWJ4LL		44.69	0.67	0.73	44.51	0.64	0.66

Summary Statistics		
	Sample C63	Sample C64
Grand Means	44.016 MPa	43.868 MPa
Stnd Dev Btwn Labs	0.922 MPa	0.976 MPa
Statistics based on 53 of 55 reporting participants		

Sample C63: ABS & Sample C64: ABS

Comments on Assigned Data Flags for Test #730

- 88B3CP (X) - Data for both samples are high. Possible Systematic Error.
- BBHMTL (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample C63.



Plastics Interlaboratory Testing Program

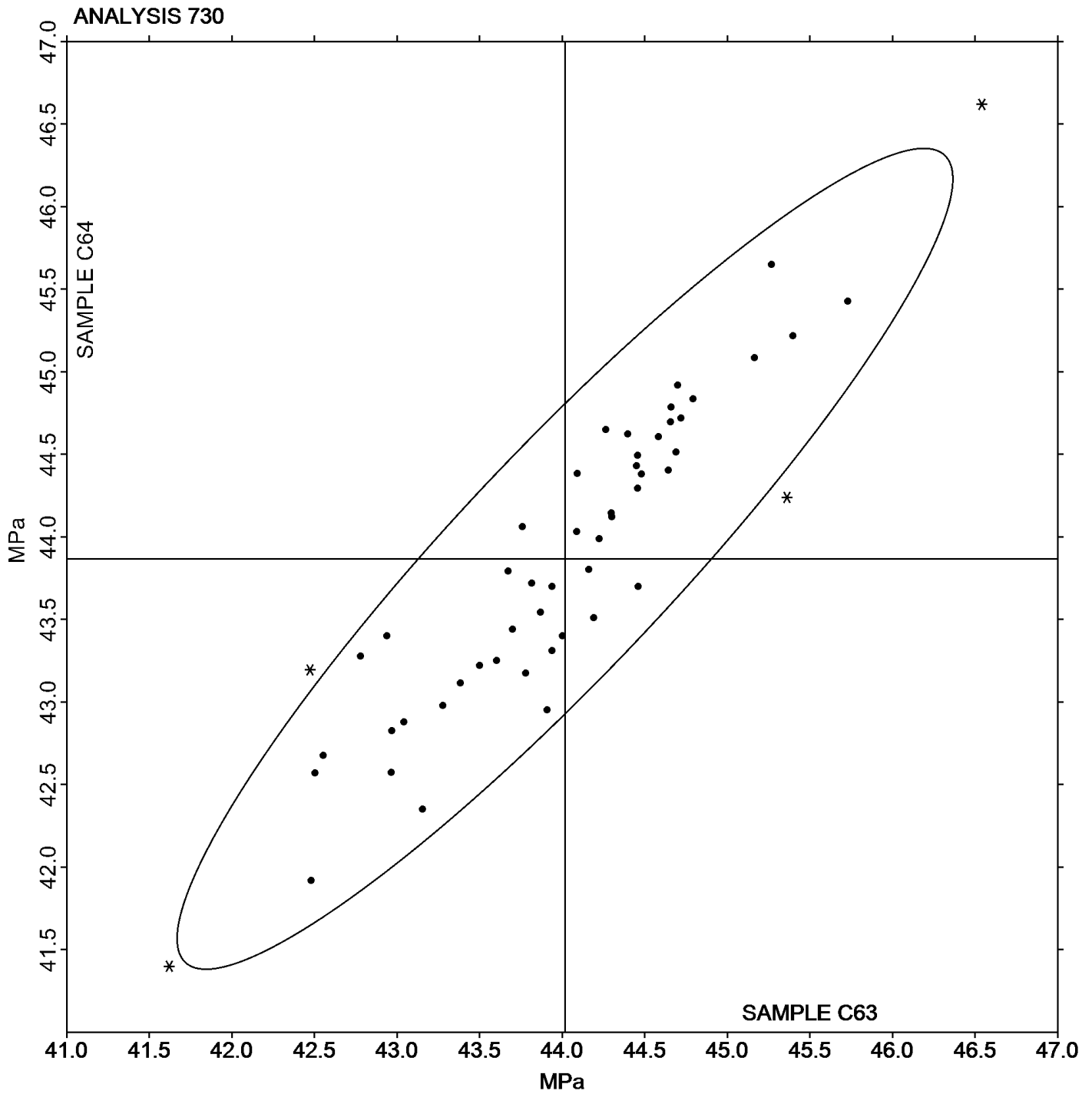
Analysis 730

Tensile Stress at Yield - MPa

Report #112

4th Qtr 2019

Grand Mean Sample C63: 44.016 MPa Grand Mean Sample C64: 43.868 MPa





Plastics Interlaboratory Testing Program

Report #112

Analysis 731

4th Qtr 2019

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QZX47		33.12	-0.01	-0.01	33.75	0.64	0.59
37M2HD		31.71	-1.42	-1.34	32.49	-0.62	-0.56
7FEQPP		32.37	-0.76	-0.72	32.50	-0.61	-0.55
7YA2TR		34.40	1.27	1.19	34.26	1.15	1.05
7ZKY8A		33.46	0.33	0.31	34.42	1.31	1.19
88B3CP		32.32	-0.82	-0.77	32.37	-0.74	-0.68
8A38ZV		34.34	1.21	1.14	33.66	0.55	0.50
8ATT22		32.55	-0.59	-0.55	32.99	-0.12	-0.10
8WRNAM		33.64	0.51	0.48	32.91	-0.20	-0.18
9ML4LK		33.71	0.57	0.54	33.71	0.61	0.55
9QLEHK		34.14	1.01	0.95	34.16	1.05	0.96
9WBRJ9	X	30.74	-2.40	-2.26	32.74	-0.37	-0.34
AHC7TW		33.84	0.71	0.67	33.68	0.57	0.52
BBHMTL	X	29.78	-3.36	-3.17	28.56	-4.54	-4.14
C38RGR		34.39	1.25	1.18	33.60	0.50	0.45
CLM2JE		33.70	0.57	0.53	33.79	0.68	0.62
CTNF8Z		32.24	-0.89	-0.84	32.18	-0.93	-0.85
CYBXR4		33.79	0.65	0.62	34.34	1.23	1.12
ED739Z	X	44.46	11.33	10.68	43.70	10.59	9.65
FGHBQV		34.27	1.13	1.07	33.99	0.88	0.80
H2EWER		31.61	-1.52	-1.44	32.23	-0.87	-0.80
HLPJ9C		32.74	-0.39	-0.37	32.24	-0.87	-0.79
HNVXYQ		34.40	1.27	1.20	35.36	2.25	2.05
HQGV3M		31.42	-1.71	-1.62	31.32	-1.79	-1.63
HXJX8M		34.68	1.54	1.45	33.80	0.70	0.63
JAUPEU		32.59	-0.55	-0.52	32.41	-0.70	-0.64
KRKD2U		31.92	-1.22	-1.15	32.56	-0.55	-0.50
L9Z8RH		33.67	0.54	0.51	33.53	0.42	0.39
LEBA4D		34.11	0.98	0.92	33.79	0.68	0.62
LF4XQF		33.60	0.46	0.44	33.79	0.68	0.62
MCDACR		32.42	-0.71	-0.67	31.62	-1.49	-1.36
MJ2VJE		32.36	-0.77	-0.73	32.78	-0.33	-0.30
MJLHBA		32.56	-0.58	-0.54	32.15	-0.95	-0.87
P38XKG		31.81	-1.32	-1.25	31.48	-1.63	-1.49
P4B2JW	*	35.50	2.37	2.23	36.24	3.13	2.85



Plastics Interlaboratory Testing Program

Report #112

Analysis 731

4th Qtr 2019

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PJAQZ4		33.88	0.75	0.70	32.75	-0.36	-0.33
PY68ZM		32.51	-0.62	-0.59	32.38	-0.72	-0.66
Q7HHQT		32.32	-0.81	-0.77	32.26	-0.85	-0.77
QEG9AH		31.31	-1.82	-1.72	31.87	-1.24	-1.13
TJ2RNH		32.75	-0.38	-0.36	33.28	0.17	0.15
TQHGV6		33.70	0.57	0.53	33.10	-0.01	-0.01
VWKBYP		31.45	-1.68	-1.59	30.88	-2.22	-2.03
WCAN66		31.90	-1.23	-1.16	31.98	-1.13	-1.03
WTF8HM		32.66	-0.48	-0.45	32.52	-0.59	-0.54
XFK9BG		33.79	0.65	0.61	33.52	0.41	0.37
XURU3M		33.13	-0.01	-0.01	32.73	-0.38	-0.34
XV3WNL		33.46	0.33	0.31	33.40	0.29	0.27
Y3RALX		35.38	2.25	2.12	35.30	2.19	2.00
ZJV7TN		32.04	-1.09	-1.03	31.98	-1.13	-1.03
ZWJ4LL		33.66	0.52	0.49	34.00	0.90	0.82

Summary Statistics

	Sample C63	Sample C64
Grand Means	33.134 MPa	33.108 MPa
Stnd Dev Btwn Labs	1.061 MPa	1.097 MPa

Statistics based on 47 of 50 reporting participants

Sample C63: ABS & Sample C64: ABS

Comments on Assigned Data Flags for Test #731

- ED739Z (X) - Data for both samples are high. Possible Systematic Error.
- 9WBRJ9 (X) - Inconsistent in testing between samples.
- BBHMTL (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

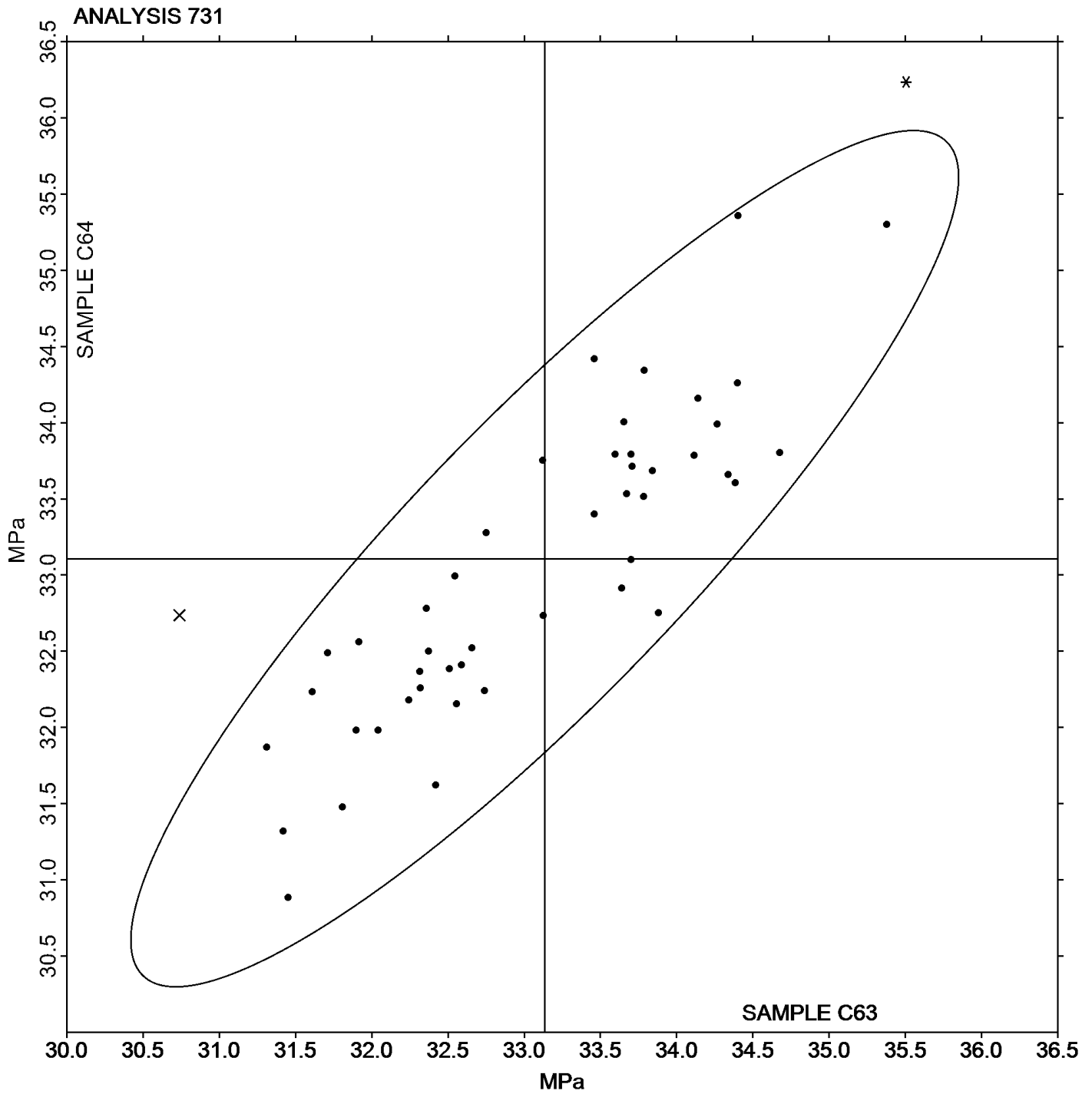
Analysis 731

Tensile Stress at Break - MPa

Report #112

4th Qtr 2019

Grand Mean Sample C63: 33.134 MPa Grand Mean Sample C64: 33.108 MPa





Plastics Interlaboratory Testing Program

Report #112

Analysis 732

4th Qtr 2019

Percent Strain at Yield

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QZX47	X	27.014	24.640	263.63	20.182	17.815	181.78
37M2HD		2.269	-0.105	-1.12	2.268	-0.099	-1.01
4PTWPB		2.218	-0.156	-1.67	2.220	-0.147	-1.50
7FEQPP		2.290	-0.084	-0.90	2.290	-0.077	-0.79
7YA2TR		2.416	0.042	0.45	2.396	0.029	0.29
7ZKY8A	X	4.086	1.712	18.32	4.678	2.311	23.58
88B3CP	X	1.664	-0.710	-7.60	1.440	-0.927	-9.46
8A38ZV		2.376	0.002	0.02	2.368	0.001	0.01
8ATT22		2.314	-0.060	-0.64	2.309	-0.059	-0.60
8WRNAM	*	2.646	0.272	2.91	2.618	0.251	2.56
9ML4LK		2.304	-0.070	-0.75	2.284	-0.083	-0.85
9QLEHK	X	4.680	2.306	24.67	4.580	2.213	22.58
9WBRJ9		2.450	0.076	0.81	2.416	0.049	0.50
AHC7TW		2.284	-0.090	-0.96	2.286	-0.081	-0.83
BBHMTL	X	7.806	5.432	58.12	7.141	4.774	48.71
C38RGR		2.234	-0.140	-1.50	2.318	-0.049	-0.50
CLM2JE		2.406	0.032	0.34	2.411	0.043	0.44
CTNF8Z	*	2.308	-0.066	-0.71	2.182	-0.185	-1.89
CYBXR4		2.406	0.032	0.34	2.382	0.014	0.15
ED739Z		2.420	0.046	0.49	2.360	-0.007	-0.08
FGHBQV		2.492	0.118	1.26	2.494	0.127	1.29
H2EWER		2.338	-0.036	-0.38	2.370	0.003	0.03
HLPJ9C		2.260	-0.114	-1.22	2.280	-0.087	-0.89
HNVXYQ		2.438	0.064	0.69	2.434	0.067	0.68
HQGV3M		2.384	0.010	0.11	2.370	0.003	0.03
HXJX8M		2.326	-0.048	-0.51	2.382	0.015	0.15
JAUPEU		2.372	-0.002	-0.02	2.338	-0.029	-0.30
K28DGE	X	7.366	4.992	53.41	4.662	2.295	23.41
KRKD2U		2.472	0.098	1.05	2.420	0.053	0.54
L9Z8RH		2.273	-0.101	-1.09	2.274	-0.093	-0.95
LEBA4D		2.440	0.066	0.71	2.436	0.069	0.70
LF4XQF		2.402	0.028	0.30	2.326	-0.041	-0.42
MCDACR	X	2.796	0.422	4.52	2.764	0.397	4.05
MJ2VJE	X	4.184	1.810	19.37	4.112	1.745	17.80
MJLHBA		2.568	0.194	2.08	2.582	0.215	2.19



Plastics Interlaboratory Testing Program

Report #112

Analysis 732

4th Qtr 2019

Percent Strain at Yield

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
P38XKG		2.328	-0.046	-0.49	2.380	0.013	0.13
PJAQZ4	X	10.964	8.590	91.91	10.350	7.983	81.45
PY68ZM		2.410	0.036	0.39	2.376	0.008	0.09
Q7HHQT	*	2.606	0.232	2.48	2.620	0.253	2.58
QEG9AH		2.339	-0.035	-0.37	2.312	-0.056	-0.57
TJ2RNH		2.392	0.018	0.19	2.385	0.017	0.18
TQHGV6		2.300	-0.074	-0.79	2.300	-0.067	-0.69
TR9QTD		2.344	-0.030	-0.32	2.272	-0.095	-0.97
VWKBYP		2.347	-0.027	-0.28	2.343	-0.025	-0.25
WCAN66		2.400	0.026	0.28	2.400	0.033	0.33
WTF8HM	X	4.522	2.148	22.98	4.180	1.813	18.50
XFK9BG		2.294	-0.080	-0.85	2.296	-0.071	-0.73
XURU3M		2.302	-0.072	-0.77	2.282	-0.085	-0.87
XV3WNL		2.392	0.018	0.19	2.400	0.033	0.33
Y3RALX	*	2.434	0.060	0.64	2.552	0.185	1.88
ZJV7TN		2.336	-0.038	-0.41	2.332	-0.035	-0.36
ZWJ4LL	X	1.980	-0.394	-4.21	1.880	-0.487	-4.97

Summary Statistics		
	Sample C63	Sample C64
Grand Means	2.3739 Percent	2.3674 Percent
Std Dev Btwn Labs	0.0935 Percent	0.0980 Percent
Statistics based on 41 of 52 reporting participants		

Sample C63: ABS & Sample C64: ABS



Comments on Assigned Data Flags for Test #732

2QZX47 (X) - Extreme data.

7ZKY8A (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

WTF8HM (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

MCDACR (X) - Data for both samples are high. Possible Systematic Error.

ZWJ4LL (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

9QLEHK (X) - Data for both samples are high. Possible Systematic Error.

PJAQZ4 (X) - Extreme data.

88B3CP (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

K28DGE (X) - Extreme data.

BBHMTL (X) - Extreme data.

MJ2VJE (X) - Data for both samples are high. Possible Systematic Error.



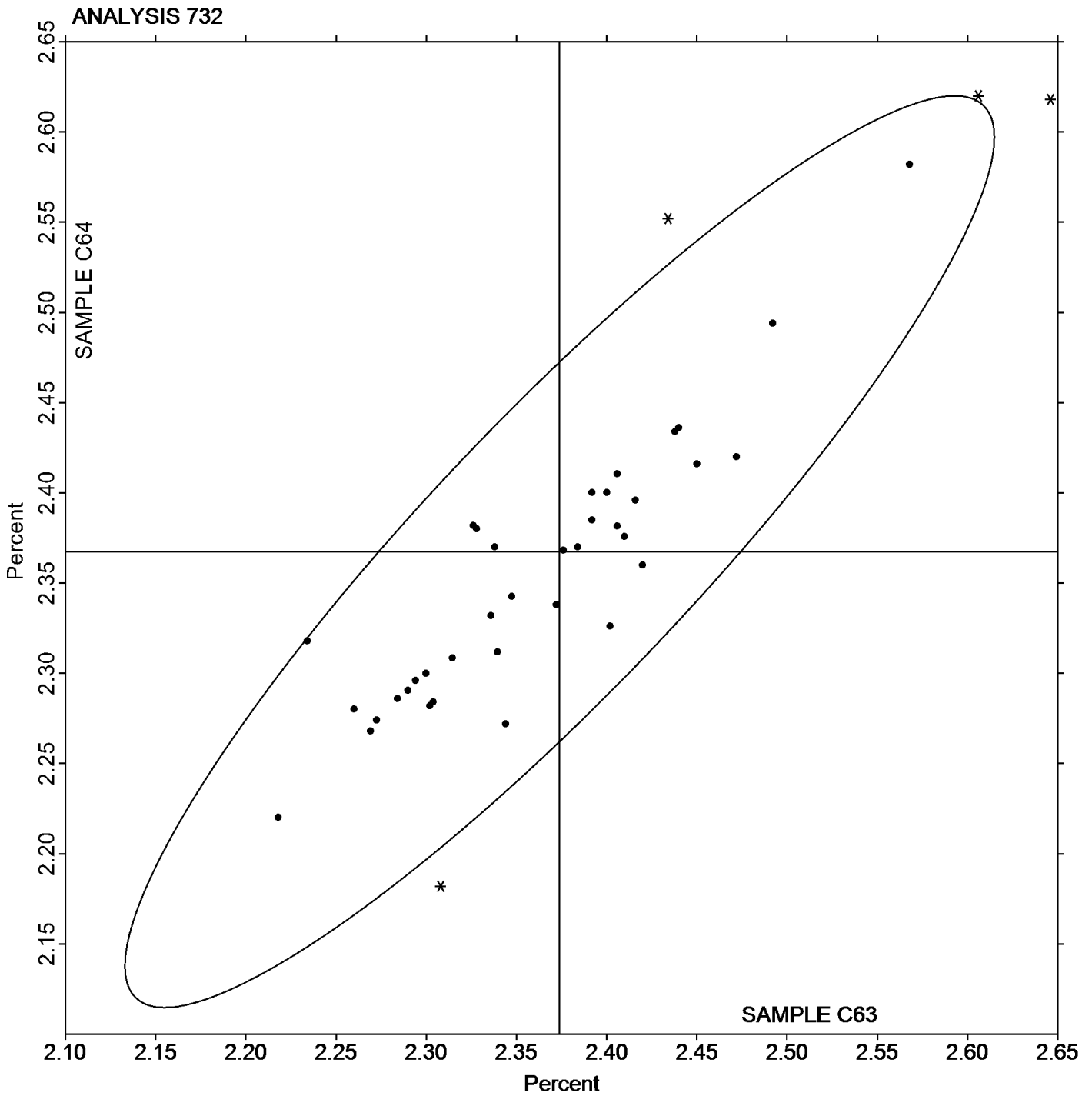
Plastics Interlaboratory Testing Program

Analysis 732 Percent Strain at Yield

Report #112

4th Qtr 2019

Grand Mean Sample C63: 2.3739 Percent Grand Mean Sample C64: 2.3674 Percent





Plastics Interlaboratory Testing Program

Report #112

Analysis 734

4th Qtr 2019

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QZX47	X	13,348	11,009	147.07	11,564	9,222	115.11
37M2HD		2,295	-45	-0.60	2,261	-81	-1.01
4PTWPB		2,425	86	1.15	2,438	96	1.20
7FEQPP		2,479	139	1.86	2,449	107	1.33
7YA2TR		2,442	102	1.37	2,481	139	1.73
7ZKY8A	X	1,933	-407	-5.44	1,987	-355	-4.43
88B3CP	X	2,713	374	4.99	2,349	7	0.08
8A38ZV		2,375	35	0.47	2,382	40	0.50
8ATT22		2,379	39	0.52	2,379	37	0.46
8WRNAM		2,326	-13	-0.18	2,375	33	0.41
9ML4LK		2,399	59	0.79	2,379	36	0.45
9WBRJ9		2,163	-177	-2.36	2,139	-203	-2.53
AHC7TW		2,419	79	1.06	2,437	95	1.19
C38RGR	X	1,945	-395	-5.27	1,960	-382	-4.77
CLM2JE		2,289	-51	-0.68	2,268	-75	-0.93
CTNF8Z		2,366	26	0.35	2,365	23	0.28
CYBXR4		2,243	-97	-1.30	2,291	-52	-0.64
ED739Z		2,346	6	0.08	2,328	-14	-0.18
FGHBQV		2,234	-106	-1.41	2,235	-107	-1.33
H2EWER		2,354	14	0.19	2,393	50	0.63
HLPJ9C		2,404	64	0.85	2,407	64	0.80
HNVXYQ		2,234	-106	-1.41	2,242	-100	-1.25
HQGV3M		2,286	-54	-0.72	2,296	-47	-0.58
HXJX8M		2,336	-3	-0.05	2,327	-15	-0.19
JAUPEU		2,282	-58	-0.78	2,288	-54	-0.68
K28DGE		2,449	109	1.46	2,451	108	1.35
KRKD2U		2,240	-100	-1.33	2,201	-141	-1.76
L9Z8RH		2,430	91	1.21	2,449	106	1.33
LEBA4D	*	2,274	-66	-0.88	2,345	2	0.03
LF4XQF		2,420	81	1.08	2,408	65	0.82
MCDACR		2,318	-22	-0.29	2,318	-24	-0.30
MJ2VJE	X	1,542	-798	-10.66	1,542	-800	-9.99
MJLHBA		2,317	-22	-0.30	2,267	-75	-0.93
P38XKG		2,279	-60	-0.81	2,264	-79	-0.98
PY68ZM		2,314	-26	-0.35	2,328	-14	-0.17



Plastics Interlaboratory Testing Program

Report #112

Analysis 734

4th Qtr 2019

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C63			Sample C64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Q7HHQT		2,265	-74	-1.00	2,287	-55	-0.69
QEG9AH		2,443	103	1.37	2,492	149	1.87
TJ2RNH		2,276	-64	-0.85	2,290	-52	-0.65
TQHGV6		2,387	48	0.63	2,407	65	0.81
TR9QTD		2,343	3	0.04	2,321	-21	-0.26
VWKBYP		2,295	-45	-0.60	2,279	-63	-0.79
WCAN66		2,300	-40	-0.53	2,300	-42	-0.53
WTF8HM	X	2,074	-266	-3.56	2,147	-195	-2.43
XFK9BG		2,353	13	0.17	2,363	21	0.27
XURU3M	*	2,454	114	1.53	2,398	56	0.70
XV3WNL		2,389	49	0.66	2,388	46	0.58
Y3RALX	X	2,554	214	2.86	2,410	68	0.85
ZJV7TN		2,239	-100	-1.34	2,239	-103	-1.28
ZQX8YA		2,430	90	1.21	2,442	100	1.25
ZWJ4LL		2,318	-21	-0.28	2,316	-26	-0.32

Summary Statistics

	Sample C63	Sample C64
Grand Means	2,339.7 MPa	2,342.1 MPa
Stnd Dev Btwn Labs	74.9 MPa	80.1 MPa

Statistics based on 43 of 50 reporting participants

Sample C63: ABS & Sample C64: ABS

Comments on Assigned Data Flags for Test #734

- 2QZX47 (X) - Extreme data.
- C38RGR (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- 7ZKY8A (X) - Data for both samples are low. Possible Systematic Error.
- WTF8HM (X) - Data for sample C63 are low.
- Y3RALX (X) - Data for sample C63 are high.
- 88B3CP (X) - Data for sample C63 are high. Inconsistent within the determinations of both samples.
- MJ2VJE (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

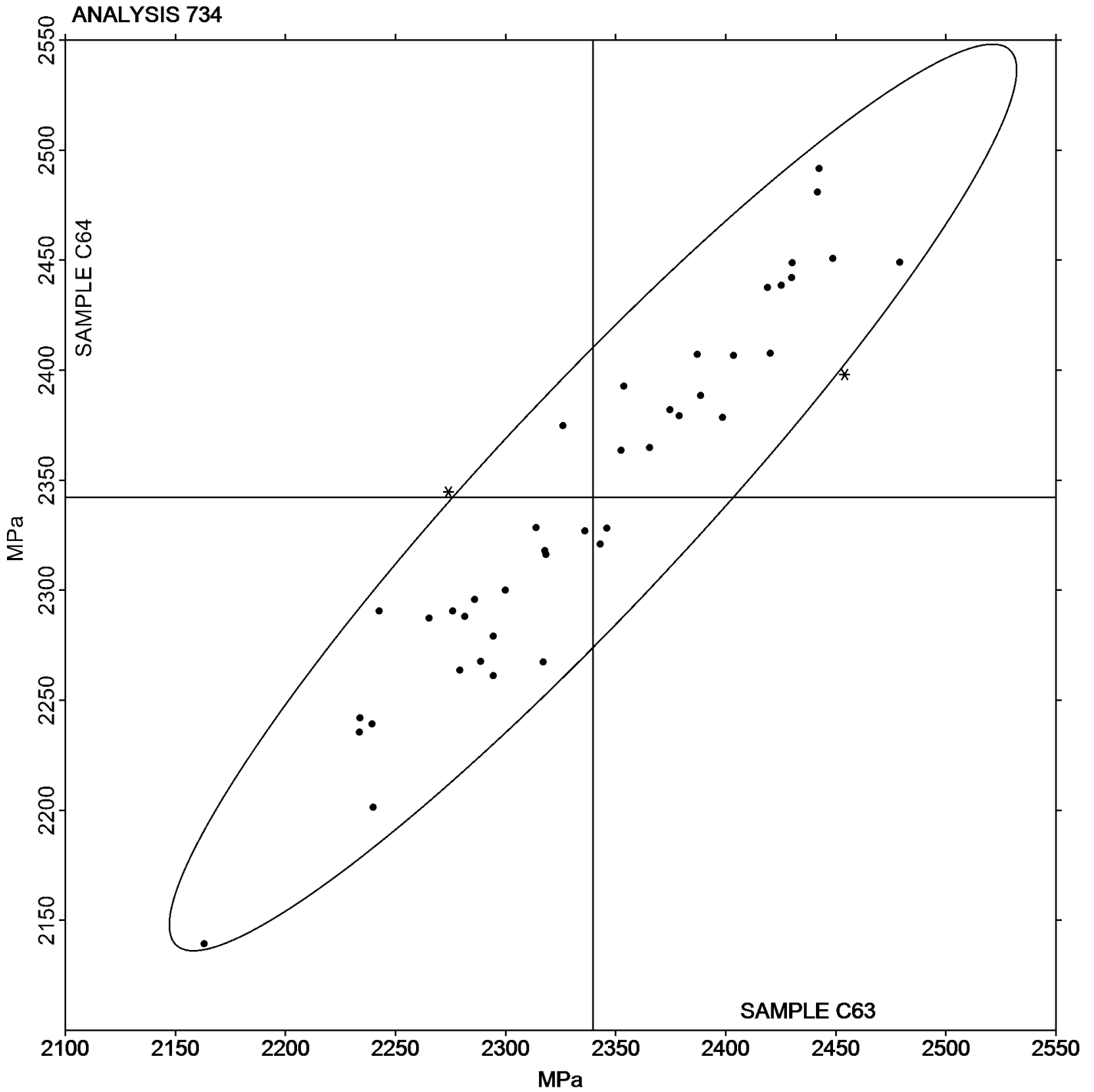
Report #112

Analysis 734

4th Qtr 2019

Modulus of Elasticity - MPa

Grand Mean Sample C63: 2,339.69 MPa Grand Mean Sample C64: 2,342.14 MPa





Plastics Interlaboratory Testing Program

Report #112

Analysis 736

4th Qtr 2019

Flexural Modulus - MPa

WebCode	Data Flag	Sample K63			Sample K64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QZX47	X	1,744	-579	-7.75	1,656	-662	-8.83
37M2HD		2,362	38	0.51	2,345	28	0.37
3ZZ2GF		2,350	27	0.36	2,358	41	0.54
4PTWPB		2,316	-7	-0.09	2,331	14	0.18
7FEQPP		2,409	86	1.15	2,372	54	0.73
7YA2TR		2,460	137	1.83	2,443	126	1.68
88B3CP	X	2,278	-45	-0.60	2,182	-136	-1.81
8ATT22		2,255	-68	-0.91	2,229	-89	-1.18
8WRNAM		2,283	-40	-0.54	2,290	-28	-0.37
9ML4LK		2,401	78	1.04	2,396	79	1.05
9QLEHK		2,353	30	0.40	2,348	30	0.40
9WBRJ9		2,239	-85	-1.13	2,242	-76	-1.01
AHC7TW	*	2,407	84	1.12	2,340	22	0.30
C38RGR		2,320	-3	-0.05	2,300	-17	-0.23
C9X72T		2,260	-63	-0.84	2,243	-75	-1.00
CLM2JE		2,367	44	0.59	2,352	35	0.46
CTNF8Z		2,253	-70	-0.94	2,238	-79	-1.06
CYBXR4		2,280	-43	-0.57	2,292	-25	-0.34
DYREMW	*	2,519	196	2.62	2,526	209	2.78
FGHBQV		2,317	-6	-0.08	2,321	4	0.05
GLDHVQ		2,220	-103	-1.38	2,215	-103	-1.37
H2EWER		2,349	26	0.34	2,339	21	0.28
H9F438		2,423	100	1.34	2,427	109	1.46
HBLNRR		2,309	-14	-0.18	2,290	-27	-0.36
HLPJ9C	X	2,197	-126	-1.69	2,315	-3	-0.04
HNVXYQ		2,203	-120	-1.61	2,186	-132	-1.76
HQGV3M		2,346	23	0.31	2,334	17	0.22
HXJX8M		2,366	43	0.57	2,349	31	0.42
JAUPEU		2,324	1	0.01	2,293	-25	-0.33
JD8ULN		2,362	39	0.53	2,351	33	0.44
K28DGE		2,364	41	0.55	2,392	74	0.99
KV73JL		2,345	22	0.29	2,341	24	0.32
L9Z8RH	X	2,689	366	4.90	2,623	305	4.07
LEBA4D		2,428	105	1.40	2,408	90	1.20
LF4XQF		2,365	42	0.56	2,348	30	0.40



Plastics Interlaboratory Testing Program

Report #112

Analysis 736

4th Qtr 2019

Flexural Modulus - MPa

WebCode	Data Flag	Sample K63			Sample K64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MCDACR	X	2,280	-43	-0.57	2,163	-154	-2.06
MJ2VJE		2,274	-49	-0.66	2,276	-42	-0.56
MJLHBA		2,236	-87	-1.16	2,270	-48	-0.64
NKFF7M		2,200	-123	-1.65	2,197	-121	-1.61
P38XKG		2,311	-12	-0.17	2,321	4	0.05
PJAQZ4	X	2,437	114	1.52	2,297	-20	-0.27
Q7HHQT		2,315	-8	-0.11	2,319	1	0.02
QEG9AH		2,281	-42	-0.57	2,256	-62	-0.83
TJ2RNH		2,297	-26	-0.34	2,302	-15	-0.21
U42LF8		2,261	-62	-0.84	2,232	-86	-1.14
VWKBYP	*	2,163	-160	-2.15	2,127	-191	-2.55
WCAN66		2,306	-17	-0.23	2,348	30	0.40
WTF8HM		2,469	146	1.95	2,466	148	1.98
XURU3M		2,310	-13	-0.17	2,322	4	0.05
XV3WNL		2,341	18	0.24	2,341	24	0.32
Y2G4PW		2,325	2	0.03	2,313	-5	-0.07
ZJV7TN	*	2,199	-124	-1.66	2,238	-80	-1.06
ZWJ4LL		2,346	23	0.30	2,362	44	0.59

Summary Statistics		
	Sample K63	Sample K64
Grand Means	2,323.1 MPa	2,317.7 MPa
Std Dev Btwn Labs	74.7 MPa	75.0 MPa
Statistics based on 47 of 53 reporting participants		

Sample K63: ABS & Sample K64: ABS

Comments on Assigned Data Flags for Test #736

- 2QZX47 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- HLPJ9C (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- MCDACR (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample K64.
- PJAQZ4 (X) - Inconsistent in testing between samples.
- 88B3CP (X) - Inconsistent in testing between samples.
- L9Z8RH (X) - Data for both samples are high. Possible Systematic Error.



Plastics Interlaboratory Testing Program

Report #112

Analysis 737

4th Qtr 2019

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K63			Sample K64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QZX47	X	4.70	-60.94	-31.25	4.74	-60.64	-30.27
37M2HD		63.82	-1.83	-0.94	63.64	-1.74	-0.87
3ZZ2GF		65.02	-0.62	-0.32	65.60	0.22	0.11
4PTWPB		65.62	-0.03	-0.01	65.81	0.42	0.21
7FEQPP		67.13	1.49	0.76	66.42	1.04	0.52
7YA2TR		70.20	4.56	2.34	69.37	3.99	1.99
88B3CP	X	4.74	-60.90	-31.23	4.78	-60.60	-30.25
8ATT22		65.01	-0.63	-0.32	64.64	-0.75	-0.37
8WRNAM		64.33	-1.31	-0.67	65.07	-0.31	-0.16
9ML4LK		65.64	0.00	0.00	65.64	0.26	0.13
9QLEHK		66.98	1.34	0.69	66.88	1.50	0.75
9WBRJ9		64.93	-0.71	-0.37	64.54	-0.84	-0.42
AHC7TW		66.32	0.68	0.35	65.49	0.11	0.05
C38RGR		65.06	-0.58	-0.30	64.64	-0.75	-0.37
C9X72T		64.53	-1.11	-0.57	63.96	-1.42	-0.71
CLM2JE		64.96	-0.68	-0.35	64.48	-0.91	-0.45
CTNF8Z		63.47	-2.17	-1.11	62.59	-2.79	-1.39
CYBXR4		64.54	-1.10	-0.56	65.36	-0.02	-0.01
DYREMW		69.59	3.95	2.02	69.97	4.59	2.29
FGHBQV		68.09	2.44	1.25	68.11	2.72	1.36
GLDHVQ		63.96	-1.68	-0.86	64.35	-1.04	-0.52
H2EWER		65.17	-0.47	-0.24	64.77	-0.62	-0.31
HLPJ9C		65.52	-0.12	-0.06	65.42	0.04	0.02
HNVXYQ		64.86	-0.78	-0.40	64.77	-0.62	-0.31
HQGV3M		65.14	-0.50	-0.26	65.30	-0.08	-0.04
JAUPEU		65.07	-0.57	-0.29	64.14	-1.24	-0.62
JD8ULN		65.19	-0.46	-0.23	64.35	-1.03	-0.51
L9Z8RH	*	70.18	4.54	2.33	68.90	3.52	1.76
LEBA4D		69.39	3.75	1.92	68.69	3.30	1.65
LF4XQF		65.80	0.16	0.08	65.35	-0.03	-0.01
MCDACR		64.06	-1.58	-0.81	63.18	-2.20	-1.10
MJLHBA		63.55	-2.10	-1.07	63.32	-2.06	-1.03
N2HD6C		64.89	-0.75	-0.39	63.55	-1.84	-0.92
NKFF7M		64.43	-1.22	-0.62	63.74	-1.65	-0.82
P38XKG		69.06	3.42	1.75	69.04	3.66	1.83



Plastics Interlaboratory Testing Program

Report #112

Analysis 737

4th Qtr 2019

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K63			Sample K64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PJAQZ4	X	6,841.80	6,776.16	3,474.89	6,633.20	6,567.82	3,278.46
Q7HHQT		63.90	-1.74	-0.89	63.30	-2.08	-1.04
QEG9AH		63.50	-2.15	-1.10	62.49	-2.89	-1.44
TJ2RNH		65.38	-0.27	-0.14	65.17	-0.21	-0.10
U42LF8		66.69	1.05	0.54	66.01	0.62	0.31
VWKBYP		62.04	-3.60	-1.85	61.44	-3.94	-1.97
WCAN66		66.33	0.69	0.35	66.70	1.32	0.66
WTF8HM		68.05	2.41	1.24	68.04	2.66	1.33
XURU3M		64.36	-1.28	-0.66	64.21	-1.18	-0.59
XV3WNL		65.23	-0.41	-0.21	65.43	0.05	0.02
Y2G4PW		65.28	-0.36	-0.18	64.83	-0.56	-0.28
ZJV7TN		63.94	-1.70	-0.87	64.60	-0.78	-0.39
ZQX8YA		69.42	3.78	1.94	69.87	4.48	2.24
ZWJ4LL		63.89	-1.75	-0.90	64.46	-0.93	-0.46

Summary Statistics		
	Sample K63	Sample K64
Grand Means	65.641 MPa	65.383 MPa
Stnd Dev Btwn Labs	1.950 MPa	2.003 MPa
Statistics based on 46 of 49 reporting participants		

Sample K63: ABS & Sample K64: ABS

Comments on Assigned Data Flags for Test #737

- 2QZX47 (X) - Extreme data.
- PJAQZ4 (X) - Extreme data.
- 88B3CP (X) - Extreme data.



Plastics Interlaboratory Testing Program

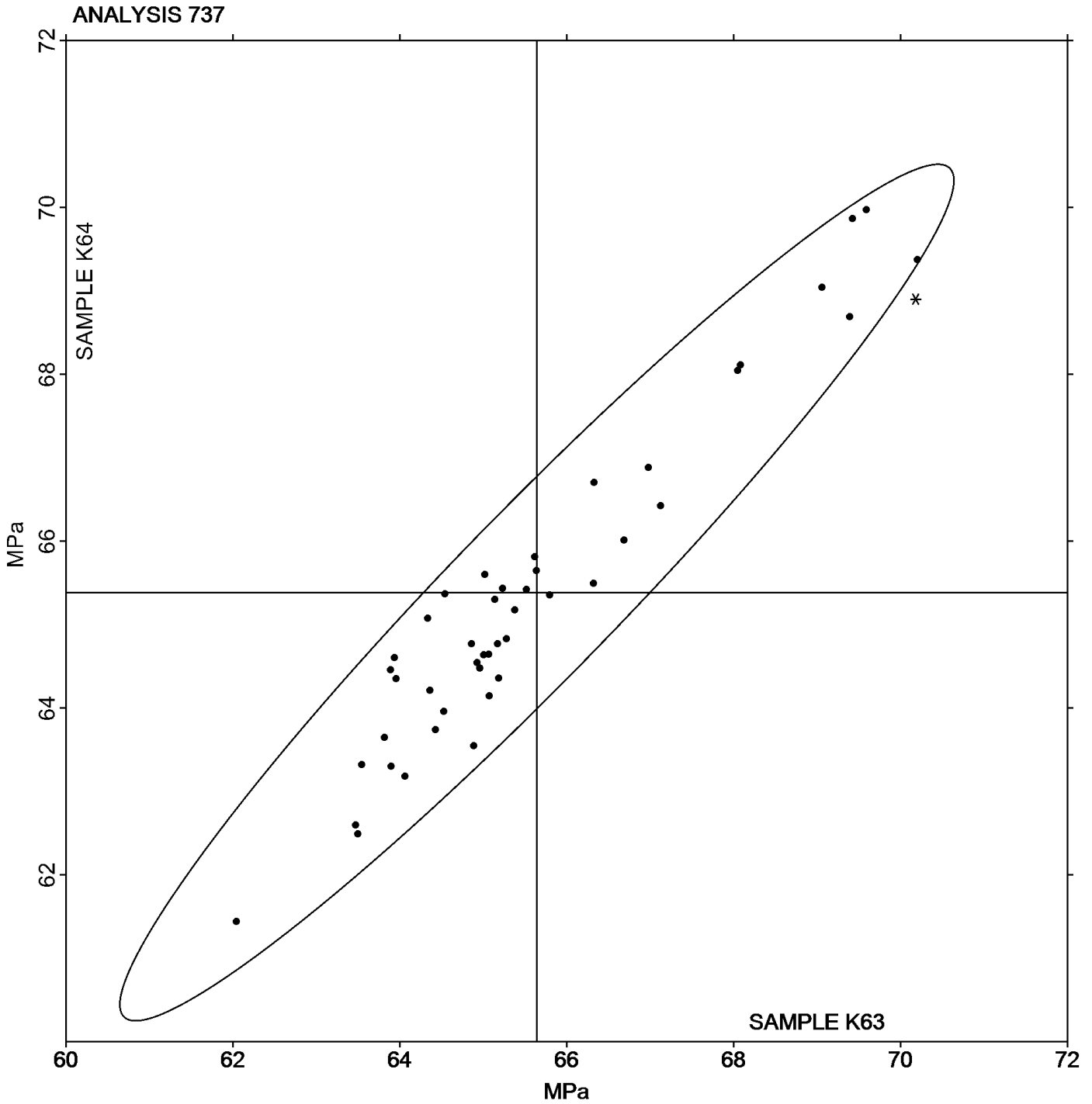
Report #112

Analysis 737

4th Qtr 2019

Flexural Stress at 3.5% Strain - MPa

Grand Mean Sample K63: 65.641 MPa Grand Mean Sample K64: 65.383 MPa





Plastics Interlaboratory Testing Program

Report #112

Analysis 738

4th Qtr 2019

Flexural Stress at Yield - MPa

WebCode	Data Flag	Sample K63			Sample K64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2QZX47		65.56	-0.99	-0.78	65.58	-0.74	-0.55
37M2HD		65.02	-1.54	-1.21	64.87	-1.46	-1.08
3ZZ2GF		66.10	-0.45	-0.36	66.78	0.46	0.34
7FEQPP		68.28	1.73	1.36	67.48	1.15	0.86
88B3CP	X	43.16	-23.39	-18.44	42.88	-23.44	-17.41
8ATT22		66.44	-0.12	-0.09	66.09	-0.23	-0.17
8WRNAM		65.80	-0.75	-0.59	66.62	0.30	0.22
9ML4LK		68.19	1.64	1.29	68.41	2.08	1.55
9QLEHK		66.98	0.43	0.34	66.88	0.56	0.41
9WBRJ9		66.46	-0.09	-0.07	65.96	-0.37	-0.27
AHC7TW		67.40	0.85	0.67	66.56	0.24	0.17
C38RGR		66.77	0.22	0.17	66.38	0.06	0.04
C9X72T		66.14	-0.42	-0.33	65.63	-0.69	-0.51
CLM2JE		66.49	-0.06	-0.05	66.11	-0.22	-0.16
CTNF8Z		64.53	-2.02	-1.59	63.81	-2.52	-1.87
FGHBQV	*	70.34	3.78	2.98	70.44	4.11	3.05
GLDHVQ		65.26	-1.29	-1.02	65.70	-0.63	-0.47
H2EWER		66.92	0.37	0.29	66.40	0.08	0.06
HLPJ9C		67.38	0.83	0.65	67.12	0.80	0.59
HNVXYQ		66.33	-0.22	-0.17	66.36	0.04	0.03
HQGV3M		66.42	-0.13	-0.11	66.74	0.42	0.31
HXJX8M		66.63	0.08	0.06	65.80	-0.52	-0.39
JAUPEU		66.14	-0.41	-0.32	65.24	-1.08	-0.81
JD8ULN		67.01	0.45	0.36	66.10	-0.23	-0.17
K28DGE		67.44	0.89	0.70	67.40	1.08	0.80
KV73JL		65.71	-0.85	-0.67	65.59	-0.73	-0.54
LF4XQF		66.80	0.25	0.20	66.40	0.07	0.05
MCDACR		65.46	-1.09	-0.86	64.56	-1.76	-1.31
MJ2VJE	X	39.02	-27.53	-21.70	37.36	-28.96	-21.51
MJLHBA		64.75	-1.80	-1.42	64.59	-1.73	-1.29
NKFF7M		65.92	-0.64	-0.50	65.32	-1.00	-0.74
PJAQZ4	X	63.82	-2.74	-2.16	60.73	-5.60	-4.16
Q7HHQT		65.36	-1.19	-0.94	64.84	-1.48	-1.10
TJ2RNH		66.89	0.34	0.27	67.15	0.83	0.61
U42LF8		68.63	2.08	1.64	67.92	1.60	1.19



Plastics Interlaboratory Testing Program

Report #112

Analysis 738

4th Qtr 2019

Flexural Stress at Yield - MPa

WebCode	Data Flag	<u>Sample K63</u>			<u>Sample K64</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
VWKBYP		64.28	-2.27	-1.79	63.72	-2.60	-1.93
WCAN66		67.82	1.27	1.00	68.51	2.18	1.62
WTF8HM		68.84	2.29	1.80	68.63	2.30	1.71
Y2G4PW		67.43	0.87	0.69	66.56	0.24	0.17
ZJV7TN		65.88	-0.67	-0.53	66.24	-0.08	-0.06
ZWJ4LL		65.22	-1.33	-1.05	65.86	-0.46	-0.35

Summary Statistics		<u>Sample K63</u>	<u>Sample K64</u>
Grand Means		66.553 MPa	66.325 MPa
Stnd Dev Btwn Labs		1.269 MPa	1.346 MPa
Statistics based on 38 of 41 reporting participants			

Sample K63: ABS & Sample K64: ABS

Comments on Assigned Data Flags for Test #738

- PJAQZ4 (X) - Data for sample K64 are low. Inconsistent within the determinations of sample K64.
- 88B3CP (X) - Data for both samples are low. Possible Systematic Error.
- MJ2VJE (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

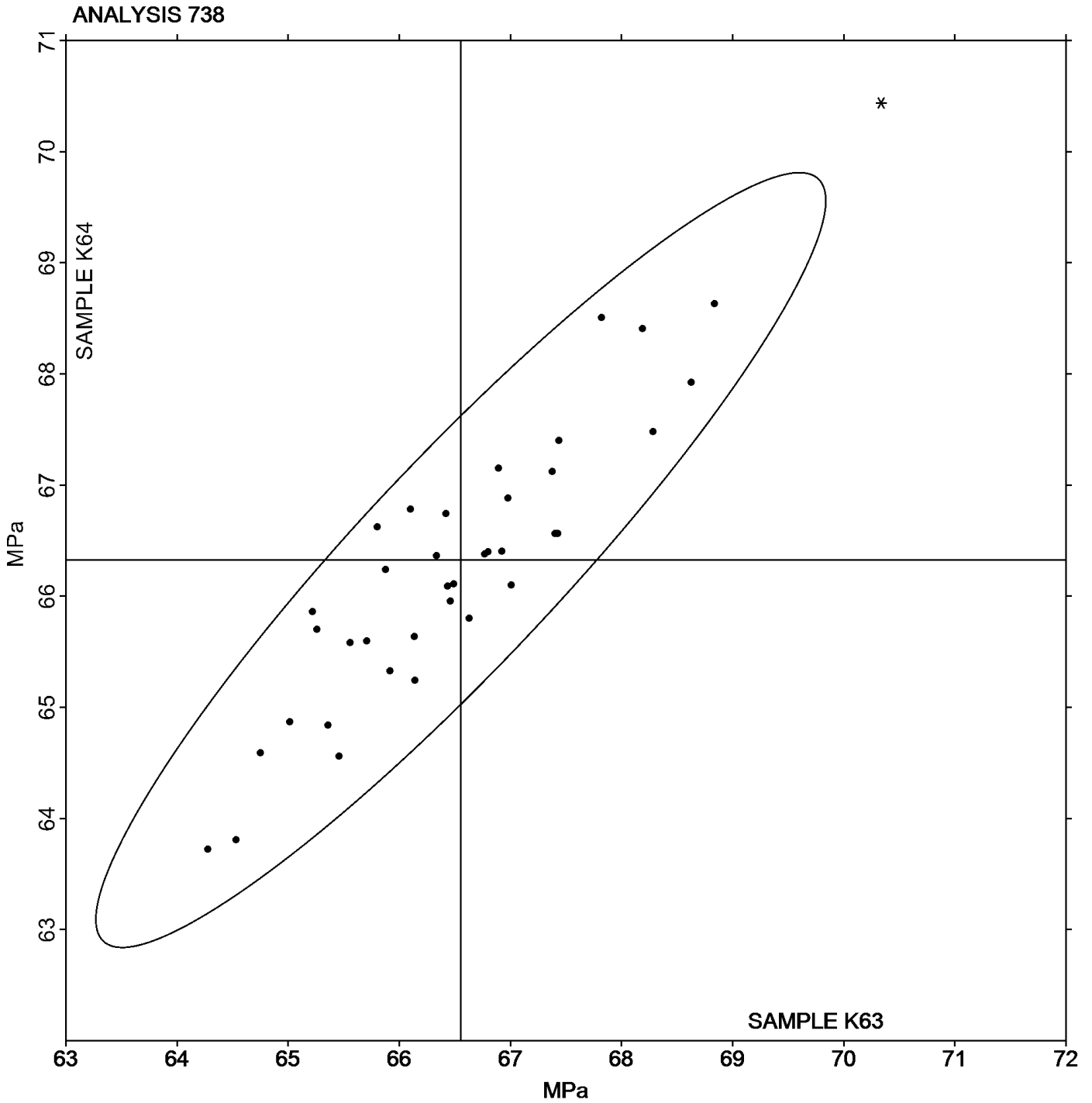
Analysis 738

Flexural Stress at Yield - MPa

Report #112

4th Qtr 2019

Grand Mean Sample K63: 66.553 MPa Grand Mean Sample K64: 66.325 MPa





Plastics Interlaboratory Testing Program

Report #112

Analysis 750

4th Qtr 2019

Flow Rates of Thermoplastics (190 or 230C/2.16 kg) - g/10 mins

WebCode	Data Flag	Sample X63			Sample X64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9	X	11.43	-2.34	-3.04	13.05	-0.81	-0.83	TM
2JTFKK		13.39	-0.38	-0.49	13.72	-0.14	-0.15	DY
2KLPYU	X	15.18	1.41	1.84	14.01	0.15	0.15	DY
2QZX47		14.73	0.96	1.25	14.40	0.54	0.55	TO
2V42GX		13.35	-0.42	-0.54	13.75	-0.11	-0.11	XX
2WGTK2	*	13.35	-0.42	-0.54	12.35	-1.51	-1.55	DY
37M2HD		13.87	0.10	0.14	13.40	-0.46	-0.48	TO
3FUGPL		14.10	0.33	0.43	14.27	0.41	0.42	TO
3NZQNY		13.87	0.10	0.13	13.99	0.13	0.13	DY
43ZFRC		14.05	0.28	0.37	13.55	-0.31	-0.32	TO
46AMV4		15.25	1.48	1.93	15.95	2.09	2.14	KA
62LDEB		15.01	1.24	1.61	15.45	1.59	1.63	DY
6M3UKM		13.85	0.08	0.11	13.95	0.09	0.09	TO
6X2LWU		14.30	0.53	0.69	14.60	0.74	0.76	AT
7QGPXY		14.32	0.55	0.72	14.39	0.53	0.54	TO
7QHL79		13.76	-0.01	-0.01	13.92	0.06	0.06	TO
7TQUD9		13.30	-0.47	-0.61	13.30	-0.56	-0.57	TO
7YA2TR		13.92	0.16	0.20	13.60	-0.26	-0.27	DY
8ATT22		12.98	-0.79	-1.03	12.88	-0.98	-1.01	DY
8LGZUW	*	13.89	0.12	0.16	15.09	1.23	1.26	DY
8WJH3E		12.75	-1.02	-1.32	12.61	-1.25	-1.28	TO
932BU4		13.92	0.16	0.20	13.55	-0.30	-0.31	XX
9ML4LK		14.48	0.71	0.92	14.50	0.64	0.66	TO
9QLEHK		14.19	0.42	0.55	14.12	0.27	0.27	TO
9WBRJ9		12.71	-1.06	-1.38	12.44	-1.42	-1.45	CE
AUR27B		13.24	-0.53	-0.69	13.15	-0.71	-0.73	WZ
B88JCK		14.15	0.38	0.50	14.20	0.34	0.35	TO
C2D2DY		13.40	-0.37	-0.48	13.95	0.09	0.09	TO
C38RGR		13.35	-0.42	-0.54	13.70	-0.16	-0.16	TO
C7D8XW		13.75	-0.02	-0.02	13.55	-0.31	-0.32	TO
C9ZUPY	X	15.79	2.02	2.63	14.24	0.38	0.39	CE
CLM2JE		13.90	0.13	0.17	13.85	-0.01	-0.01	AT
CMWVHY		13.20	-0.57	-0.74	13.25	-0.61	-0.62	TO
CYBXR4		13.05	-0.72	-0.93	12.80	-1.06	-1.08	WZ
DBJ629		14.76	1.00	1.30	14.44	0.58	0.59	KA



Plastics Interlaboratory Testing Program

Report #112

Analysis 750

4th Qtr 2019

Flow Rates of Thermoplastics (190 or 230C/2.16 kg) - g/10 mins

WebCode	Data Flag	Sample X63			Sample X64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
DL2MTF		14.65	0.88	1.15	15.10	1.24	1.27	TO
DYREMW		12.65	-1.12	-1.45	12.65	-1.21	-1.24	TO
E7FXQV	X	13.90	0.13	0.17	12.09	-1.77	-1.82	TO
E7JEY3		14.46	0.69	0.90	14.38	0.52	0.53	TO
FDJZVW		12.82	-0.95	-1.23	13.02	-0.84	-0.86	TO
FGHBQV		13.90	0.14	0.18	13.74	-0.12	-0.12	TO
GLDHVQ	X	16.09	2.32	3.02	14.45	0.59	0.61	DY
GRBGXY		12.08	-1.69	-2.20	12.07	-1.79	-1.84	CE
GYF9B4	X	17.35	3.58	4.66	16.50	2.64	2.71	TO
H3NRU4	X	10.03	-3.74	-4.86	10.55	-3.31	-3.39	TO
HLPJ9C		12.80	-0.97	-1.26	13.35	-0.51	-0.52	WZ
HNVXYQ		13.60	-0.17	-0.22	13.20	-0.66	-0.67	TO
HXJX8M		13.52	-0.25	-0.32	13.55	-0.31	-0.32	TO
JAUPEU		12.18	-1.59	-2.06	12.09	-1.77	-1.82	WZ
JLXFPZ		13.90	0.13	0.17	15.04	1.18	1.21	TO
JURF8Y		14.60	0.83	1.08	14.50	0.64	0.66	XX
JWHRYR	X	15.80	2.03	2.64	13.70	-0.16	-0.16	TO
K28DGE	X	4.59	-9.18	-11.95	4.48	-9.38	-9.61	XX
KECMBF		14.40	0.63	0.82	14.70	0.84	0.86	TO
KLH8MR		13.45	-0.32	-0.41	13.46	-0.40	-0.41	CE
KV73JL		13.97	0.20	0.26	14.81	0.95	0.97	TO
L7EE4U		14.20	0.43	0.56	14.27	0.41	0.42	WZ
L9Z8RH		12.85	-0.92	-1.19	12.65	-1.21	-1.24	TO
LEBA4D		13.78	0.01	0.02	13.69	-0.17	-0.17	XX
LF4XQF		13.95	0.18	0.24	13.75	-0.11	-0.11	TO
LYYQBD		14.00	0.23	0.30	13.90	0.04	0.04	WZ
M9EYFT	X	17.11	3.34	4.35	17.29	3.43	3.51	TO
MCDACR		13.55	-0.22	-0.29	13.49	-0.37	-0.38	WZ
N2HD6C	*	15.70	1.93	2.51	16.10	2.24	2.30	TO
NFEJCL		12.51	-1.26	-1.64	11.85	-2.01	-2.06	TO
NPZUCF		13.65	-0.12	-0.16	13.77	-0.09	-0.10	TO
P38XKG		14.13	0.36	0.47	14.24	0.38	0.39	KA
PJAQZ4	*	14.88	1.11	1.44	16.20	2.34	2.40	TO
PKH4G6		14.49	0.72	0.93	14.49	0.63	0.64	RR
PN9YLQ	*	14.65	0.88	1.15	13.70	-0.16	-0.16	DY



Plastics Interlaboratory Testing Program

Report #112

Analysis 750

4th Qtr 2019

Flow Rates of Thermoplastics (190 or 230C/2.16 kg) - g/10 mins

WebCode	Data Flag	Sample X63			Sample X64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
PY68ZM		12.95	-0.82	-1.06	13.05	-0.81	-0.83	TO
Q36HU2	*	14.48	0.71	0.92	15.81	1.95	1.99	TO
Q4ERHT		14.62	0.85	1.10	14.76	0.90	0.92	DY
Q6NWX3		13.80	0.03	0.04	13.80	-0.06	-0.06	TY
Q7HHQT	X	17.68	3.91	5.08	17.37	3.51	3.59	TO
RBQ9LL		13.84	0.07	0.09	13.95	0.09	0.09	DY
RM6DMG		13.96	0.20	0.25	14.37	0.51	0.52	XX
TJ2RNH	X	12.92	-0.85	-1.11	14.29	0.43	0.44	TO
TQJF3K		13.27	-0.50	-0.65	13.95	0.09	0.09	TO
UZHF7C		13.09	-0.68	-0.88	13.34	-0.52	-0.54	DY
VVPP7Y		13.70	-0.07	-0.09	13.85	-0.01	-0.01	TO
VWKBYP		12.43	-1.34	-1.74	12.32	-1.54	-1.58	GO
WCAN66		13.58	-0.19	-0.24	13.61	-0.25	-0.25	GO
WTF8HM		14.13	0.36	0.47	14.06	0.20	0.21	TO
X8UM6J	X	15.70	1.93	2.52	15.06	1.20	1.23	GO
XURU3M		12.03	-1.74	-2.26	12.14	-1.72	-1.77	TO
XV3WNL		13.44	-0.33	-0.43	13.59	-0.27	-0.28	DY
XVG9K6		14.15	0.38	0.50	14.10	0.24	0.25	CE
Y3RALX	X	13.96	0.19	0.25	15.69	1.83	1.88	TO
YU6TNJ	*	15.85	2.08	2.71	16.80	2.94	3.01	XX
ZJV7TN		13.34	-0.43	-0.56	13.28	-0.58	-0.59	TY
ZTVRKU	M	No data reported for this sample			13.90	0.04	0.04	DY

Summary Statistics		Sample X63	Sample X64
Grand Means		13.767 grams/10 mins	13.859 grams/10 mins
Std Dev Btwn Labs		0.769 grams/10 mins	0.976 grams/10 mins
Statistics based on 77 of 92 reporting participants			

Sample X63: PP & Sample X64: PP



Plastics Interlaboratory Testing Program

Analysis 750

Flow Rates of Thermoplastics (190 or 230C/2.16 kg) - g/10 mins

Report #112

4th Qtr 2019

Comments on Assigned Data Flags for Test #750

- GLDHVQ (X) - Data for sample X63 are high.
- GYF9B4 (X) - Data for sample X63 are high.
- TJ2RNH (X) - Inconsistent in testing between samples.
- C9ZUPY (X) - Inconsistent in testing between samples.
- Q7HHQT (X) - Data for both samples are high.
- X8UM6J (X) - Inconsistent in testing between samples.
- JWHRYR (X) - Inconsistent in testing between samples.
- E7FXQV (X) - Inconsistent in testing between samples.
- 239UX9 (X) - Data for sample X63 are low.
- M9EYFT (X) - Data for both samples are high.
- H3NRU4 (X) - Data for both samples are low.
- Y3RALX (X) - Inconsistent in testing between samples.
- ZTVRKU (M) - Participant did not submit data for sample X63.
- 2KLPYU (X) - Inconsistent in testing between samples.
- K28DGE (X) - Extreme data.

Key to Instrument Codes Reported by Participants

AT	Atlas	CE	Ceast
DY	Dynisco	GO	Gottfert
KA	Kayeness	RR	Ray Ran
TM	TMI	TO	Tinius Olsen
TY	Toyoseiki Seisakusho	WZ	Zwick
XX	Instrument manufacturer not specified by lab		



Plastics Interlaboratory Testing Program

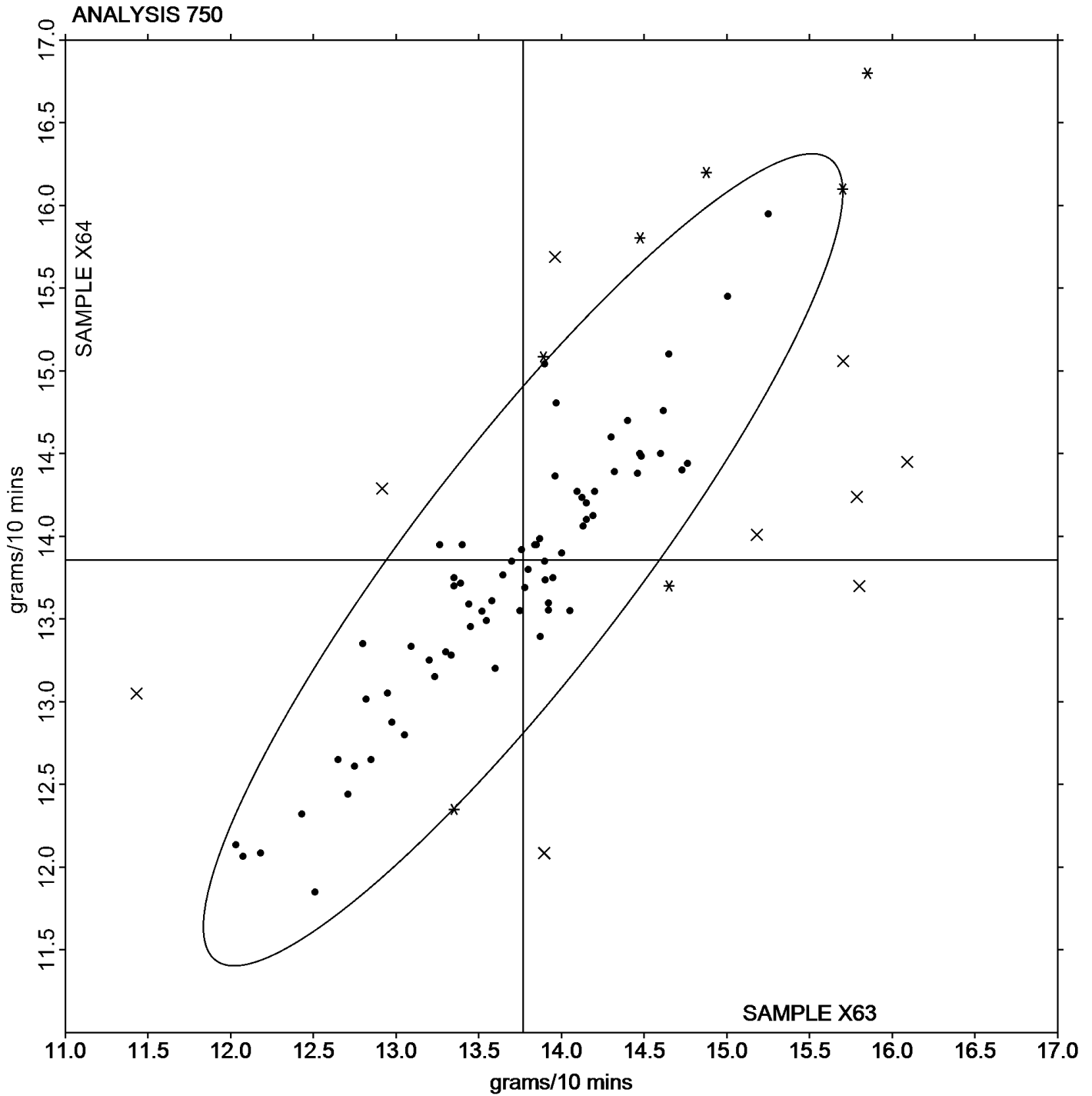
Analysis 750

Flow Rates of Thermoplastics (190 or 230C/2.16 kg) - g/10 mins

Report #112

4th Qtr 2019

Grand Mean Sample X63: 13.767 grams/10 mins Grand Mean Sample X64: 13.859 grams/10 mins





Plastics Interlaboratory Testing Program

Report #112

Analysis 755

4th Qtr 2019

Moisture Content of Plastics

WebCode	Data Flag	Sample Y63			Sample Y64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D3GCH		0.26323	0.01463	0.40	0.26010	0.01232	0.39	AZ
2JTFKK		0.27100	0.02240	0.61	0.27700	0.02922	0.92	MB
2QZX47		0.24630	-0.00230	-0.06	0.23783	-0.00995	-0.31	AZ
2V42GX	*	0.33150	0.08290	2.27	0.30350	0.05572	1.75	XX
2WGTK2		0.25233	0.00373	0.10	0.24200	-0.00578	-0.18	MJ
34RGFL		0.26100	0.01240	0.34	0.27200	0.02422	0.76	CT
36QGVE		0.26847	0.01987	0.54	0.27537	0.02759	0.86	MK
38XLP3		0.24867	0.00007	0.00	0.24367	-0.00411	-0.13	AZ
3NZQNY		0.18333	-0.06527	-1.78	0.20667	-0.04111	-1.29	AZ
3ZZ2GF		0.23867	-0.00993	-0.27	0.24400	-0.00378	-0.12	MK
62LDEB		0.25400	0.00540	0.15	0.25933	0.01155	0.36	AZ
7YA2TR		0.31550	0.06690	1.83	0.30250	0.05472	1.72	CT
8LGZUW		0.29387	0.04527	1.24	0.27543	0.02765	0.87	AZ
8WL8CG		0.20557	-0.04303	-1.18	0.22263	-0.02515	-0.79	MD
C2D2DY		0.26250	0.01390	0.38	0.26150	0.01372	0.43	BA
CTNF8Z		0.21833	-0.03027	-0.83	0.22300	-0.02478	-0.78	CT
DL2MTF		0.28250	0.03390	0.93	0.27950	0.03172	0.99	ML
DYREMW		0.26533	0.01673	0.46	0.25600	0.00822	0.26	ML
E7FXQV		0.26150	0.01290	0.35	0.26077	0.01299	0.41	AZ
ED739Z		0.22723	-0.02137	-0.58	0.22200	-0.02578	-0.81	AZ
FBQC9U		0.26600	0.01740	0.48	0.26300	0.01522	0.48	SA
FLDAYZ		0.26467	0.01607	0.44	0.27133	0.02355	0.74	CS
FRG7T8		0.24433	-0.00427	-0.12	0.24103	-0.00675	-0.21	ML
GRBGXY		0.23333	-0.01527	-0.42	0.23400	-0.01378	-0.43	MU
H3NRU4		0.26733	0.01873	0.51	0.25967	0.01189	0.37	CT
HNVXYQ		0.24867	0.00007	0.00	0.24067	-0.00711	-0.22	SA
JGZT4Y		0.25867	0.01007	0.28	0.26000	0.01222	0.38	ML
JLXFPZ		0.25600	0.00740	0.20	0.26250	0.01472	0.46	CT
K2A78Z	*	0.15433	-0.09427	-2.58	0.16167	-0.08611	-2.70	MU
L9Z8RH		0.25057	0.00197	0.05	0.25637	0.00859	0.27	AZ
LHKG6		0.22507	-0.02353	-0.64	0.24363	-0.00415	-0.13	MT
LUKXET		0.26100	0.01240	0.34	0.25733	0.00955	0.30	MU
M9EYFT	*	0.17167	-0.07693	-2.10	0.16500	-0.08278	-2.60	XX
MT8N2L		0.26800	0.01940	0.53	0.27900	0.03122	0.98	SB
P38XKG	X	0.26420	0.01560	0.43	0.21513	-0.03265	-1.02	MU



Plastics Interlaboratory Testing Program

Report #112

Analysis 755

4th Qtr 2019

Moisture Content of Plastics

WebCode	Data Flag	Sample Y63			Sample Y64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
P9VQKM		0.27100	0.02240	0.61	0.26333	0.01555	0.49	AZ
Q7HHQT		0.25033	0.00173	0.05	0.23300	-0.01478	-0.46	AZ
QTVDGB		0.27600	0.02740	0.75	0.25800	0.01022	0.32	SB
RBQ9LL		0.18333	-0.06527	-1.78	0.20667	-0.04111	-1.29	MU
TR9QTD	*	0.16267	-0.08593	-2.35	0.16033	-0.08745	-2.74	MU
WVG623		0.24763	-0.00097	-0.03	0.25120	0.00342	0.11	AZ
XURU3M		0.27300	0.02440	0.67	0.25100	0.00322	0.10	MS
XV3WNL		0.25683	0.00823	0.23	0.26327	0.01549	0.49	AZ

Summary Statistics

	Sample Y63	Sample Y64
Grand Means	0.248602 Percent	0.247781 Percent
Std Dev Btwn Labs	0.036578 Percent	0.031897 Percent
Statistics based on 42 of 43 reporting participants		

Sample Y63: ABS & Sample Y64: ABS

Comments on Assigned Data Flags for Test #755

P38XKG (X) - Inconsistent in testing between samples.

Key to Instrument Codes Reported by Participants

AZ Arizona Instruments Moisture Analyzer	BA Brabender Aquatrac
CS Cosa Instruments	CT Computrac Moisture Analyzer
MB Omnimark Mark 3	MD Mettler Toledo DL37
MJ Mitsubishi KF Analyzer Series	MK Mitsubishi KF Analyzer CA
ML Metrohm Coulometer	MS Metrohm Coulometer 831 KF
MT Mettler Toledo DL39	MU Mettler Toledo
SA Sartorius MA30	SB Sartorius Mark 3
XX Instrument manufacturer not specified by lab	



Plastics Interlaboratory Testing Program

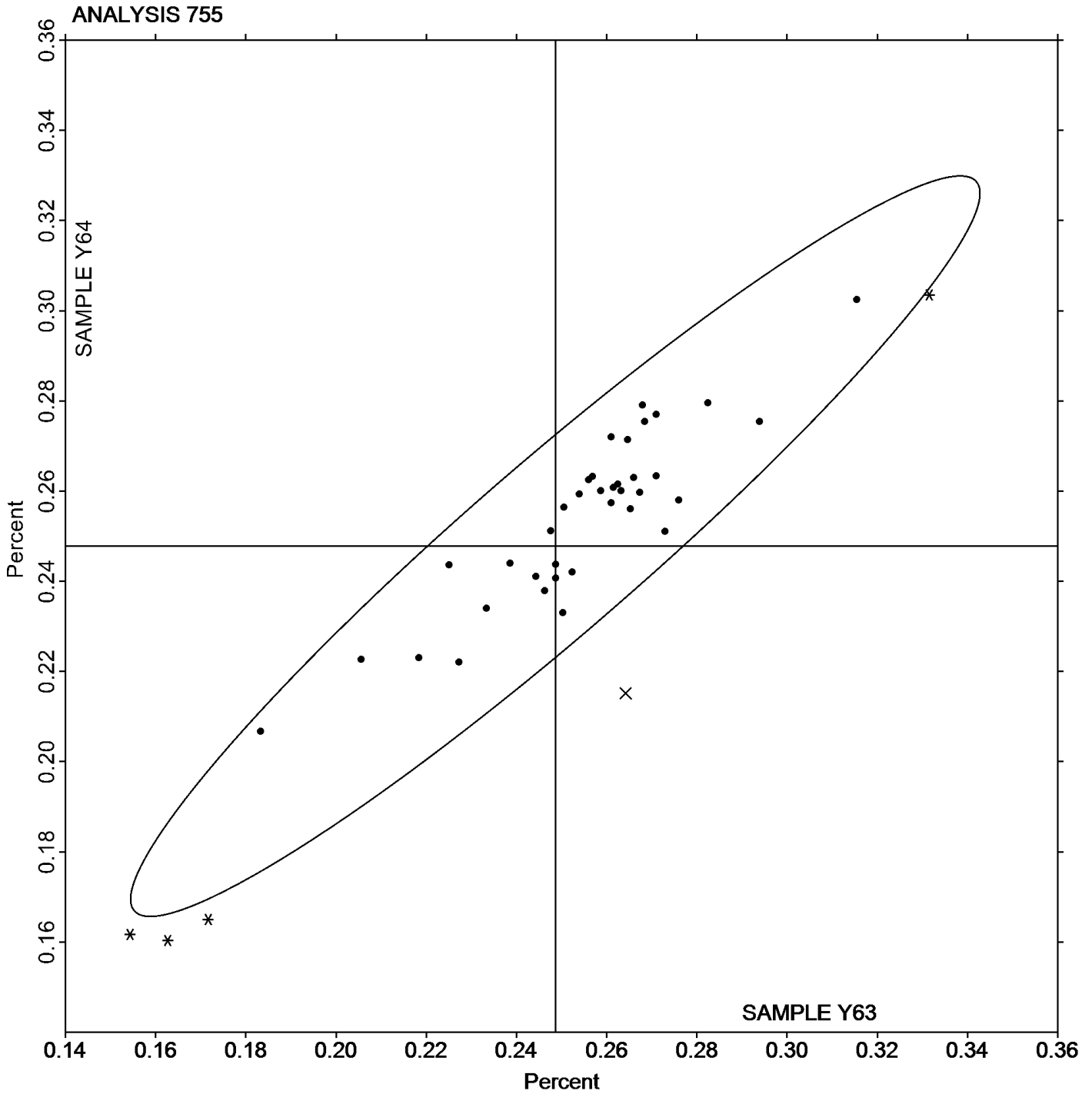
Analysis 755

Moisture Content of Plastics

Report #112

4th Qtr 2019

Grand Mean Sample Y63: 0.24860 Percent Grand Mean Sample Y64: 0.24778 Percent





Plastics Interlaboratory Testing Program

Report #112

Analysis 757

4th Qtr 2019

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L63			Sample L64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2JTFKK		30.270	-0.241	-0.99	30.340	-0.137	-0.60
2QZX47		30.784	0.273	1.12	30.325	-0.152	-0.66
2V42GX		30.260	-0.251	-1.03	30.330	-0.147	-0.64
2WGTK2		30.450	-0.061	-0.25	30.430	-0.047	-0.21
36QGVE		30.770	0.259	1.06	30.700	0.223	0.97
3NZQNY		30.500	-0.011	-0.05	30.400	-0.077	-0.34
42QRRC		30.444	-0.068	-0.28	30.434	-0.043	-0.19
46AMV4		30.735	0.224	0.92	30.715	0.238	1.03
7QGPXY	*	30.070	-0.441	-1.81	30.495	0.018	0.08
7TQUD9		30.775	0.264	1.08	30.640	0.163	0.71
7YA2TR		30.640	0.129	0.53	30.530	0.053	0.23
92AAU8		30.850	0.339	1.39	30.750	0.273	1.18
9WBRJ9		30.525	0.014	0.06	30.525	0.048	0.21
CMWVHY		30.360	-0.151	-0.62	30.315	-0.162	-0.70
CTNF8Z		30.655	0.144	0.59	30.735	0.258	1.12
CYBXR4		30.510	-0.001	0.00	30.500	0.023	0.10
DL2MTF		30.325	-0.186	-0.76	30.605	0.128	0.55
DYREMW		30.600	0.089	0.36	30.635	0.158	0.68
ED739Z		30.475	-0.036	-0.15	30.585	0.108	0.47
FGHBQV		30.250	-0.261	-1.07	30.430	-0.047	-0.21
GLDHVQ		30.350	-0.161	-0.66	30.410	-0.067	-0.29
GQFNCN		30.538	0.027	0.11	30.675	0.197	0.86
GRBGXY		30.688	0.177	0.73	30.518	0.041	0.18
H2EWER	X	70.035	39.524	161.92	70.015	39.538	171.70
H3NRU4		30.195	-0.317	-1.30	30.108	-0.370	-1.61
HBLNRR		30.605	0.094	0.38	30.605	0.128	0.55
HLPJ9C		30.395	-0.116	-0.48	30.185	-0.292	-1.27
HNVXYQ	X	31.290	0.779	3.19	30.560	0.083	0.36
HXJX8M		30.395	-0.116	-0.48	30.275	-0.202	-0.88
JA6RZT		30.935	0.424	1.74	31.000	0.523	2.27
JAUPEU		30.465	-0.046	-0.19	30.585	0.108	0.47
JURF8Y		30.135	-0.376	-1.54	30.080	-0.397	-1.73
JWHRYR	*	30.950	0.439	1.80	30.400	-0.077	-0.34
KV73JL		30.435	-0.076	-0.31	30.290	-0.187	-0.81
L7EE4U		30.446	-0.065	-0.27	30.555	0.077	0.34



Plastics Interlaboratory Testing Program

Report #112

Analysis 757

4th Qtr 2019

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L63			Sample L64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
L9Z8RH		30.635	0.124	0.51	30.645	0.168	0.73
LEBA4D		30.655	0.144	0.59	30.505	0.028	0.12
LF4XQF		30.165	-0.346	-1.42	30.220	-0.257	-1.12
LHKGC6		30.315	-0.196	-0.80	30.103	-0.374	-1.63
P38XKG		30.545	0.034	0.14	30.490	0.013	0.06
Q7HHQT		30.535	0.024	0.10	30.495	0.018	0.08
QTVDGB		30.550	0.039	0.16	30.405	-0.072	-0.31
RBQ9LL		30.405	-0.106	-0.43	30.565	0.088	0.38
RM6DMG		30.233	-0.278	-1.14	30.117	-0.360	-1.56
RM8VW9		30.480	-0.031	-0.13	30.405	-0.072	-0.31
RQ4L3J	*	31.163	0.651	2.67	31.163	0.685	2.98
TJ2RNH		30.623	0.112	0.46	30.491	0.014	0.06
WCAN66		30.350	-0.161	-0.66	30.515	0.038	0.16
WTF8HM		30.675	0.164	0.67	30.870	0.393	1.71
WVG623		30.282	-0.229	-0.94	30.317	-0.160	-0.70
XURU3M		30.445	-0.066	-0.27	30.430	-0.047	-0.21
XV3WNL		30.530	0.019	0.08	30.365	-0.112	-0.49
YU6TNJ	*	30.060	-0.451	-1.85	29.890	-0.587	-2.55
ZQX8YA	*	31.150	0.639	2.62	30.725	0.248	1.08

Summary Statistics		
	Sample L63	Sample L64
Grand Means	30.5111 Percent	30.4773 Percent
Stnd Dev Btwn Labs	0.2441 Percent	0.2303 Percent
Statistics based on 52 of 54 reporting participants		

Sample L63: PBT & Sample L64: PBT

Comments on Assigned Data Flags for Test #757

HNVXYQ (X) - Data for sample L63 are high.

H2EWER (X) - Extreme data.



Plastics Interlaboratory Testing Program

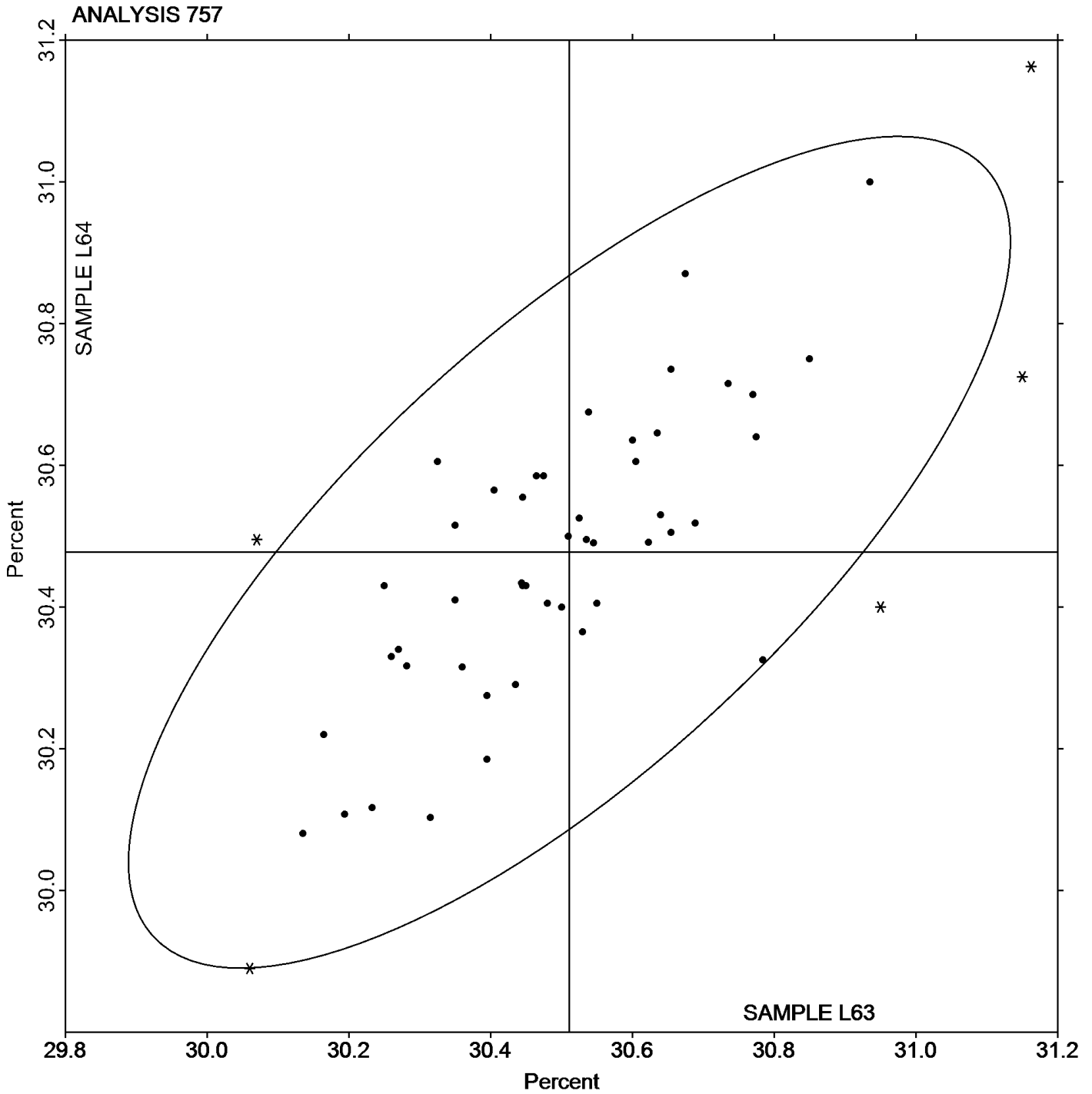
Analysis 757

Ash Content in Thermoplastics - Percent

Report #112

4th Qtr 2019

Grand Mean Sample L63: 30.511 Percent Grand Mean Sample L64: 30.477 Percent





Plastics Interlaboratory Testing Program

Report #112

Analysis 760

4th Qtr 2019

DSC Crystallization Temperature

WebCode	Data Flag	Sample W63			Sample W64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KHZUW		171.90	-4.38	-1.03	172.08	-4.27	-0.94	TA
3ZG2NB		172.75	-3.53	-0.83	172.33	-4.02	-0.89	TA
BFKFE6	*	178.00	1.72	0.40	175.40	-0.95	-0.21	NZ
CHZFHQ		181.87	5.58	1.31	182.13	5.78	1.28	NZ
CJRFGM		170.50	-5.78	-1.36	170.89	-5.46	-1.20	PE
CYBXR4		175.21	-1.07	-0.25	174.61	-1.74	-0.38	TA
E4TDTE		178.63	2.35	0.55	179.36	3.01	0.66	MT
E7FXQV		172.33	-3.95	-0.93	172.78	-3.57	-0.79	MT
FGHBQV		174.20	-2.08	-0.49	174.54	-1.81	-0.40	TA
GYF9B4	*	179.21	2.93	0.69	182.54	6.19	1.36	TA
HLPJ9C		176.00	-0.28	-0.07	174.62	-1.73	-0.38	PE
HNT8UT		170.90	-5.38	-1.27	170.53	-5.82	-1.28	PE
JA6RZT		173.77	-2.51	-0.59	173.98	-2.37	-0.52	TA
JAUPEU		173.60	-2.68	-0.63	173.57	-2.78	-0.61	TA
JURF8Y		172.58	-3.70	-0.87	172.68	-3.67	-0.81	TA
K28DGE	X	233.30	57.02	13.42	232.47	56.12	12.37	NZ
K93KVD		176.68	0.40	0.09	176.80	0.45	0.10	MT
LHKGC6		179.89	3.61	0.85	179.50	3.15	0.69	TA
M9EYFT		171.57	-4.72	-1.11	171.80	-4.55	-1.00	NZ
MCDACR		180.65	4.37	1.03	180.99	4.64	1.02	TA
Q6NWX3		182.56	6.27	1.48	182.56	6.21	1.37	SH
RM6DMG		174.87	-1.41	-0.33	174.33	-2.02	-0.44	TA
VWKBYP		185.53	9.25	2.18	186.40	10.05	2.22	TA
XV3WNL		181.30	5.02	1.18	181.62	5.27	1.16	TA

Summary Statistics		
	Sample W63	Sample W64
Grand Means	176.283 Degrees Celsius	176.350 Degrees Celsius
Std Dev Btwn Labs	4.250 Degrees Celsius	4.535 Degrees Celsius
Statistics based on 23 of 24 reporting participants		

Sample W63: PBT & Sample W64: PBT

Comments on Assigned Data Flags for Test #760

K28DGE (X) - Data for both samples are high. Possible Systematic Error.



Plastics Interlaboratory Testing Program

Analysis 760

DSC Crystallization Temperature

Report #112

4th Qtr 2019

Key to Instrument Codes Reported by Participants

MT Mettler Toledo Instruments

NZ Netzsch Instruments

PE Perkins Elmer Instruments

SH Shimadzu

TA TA Instruments



Plastics Interlaboratory Testing Program

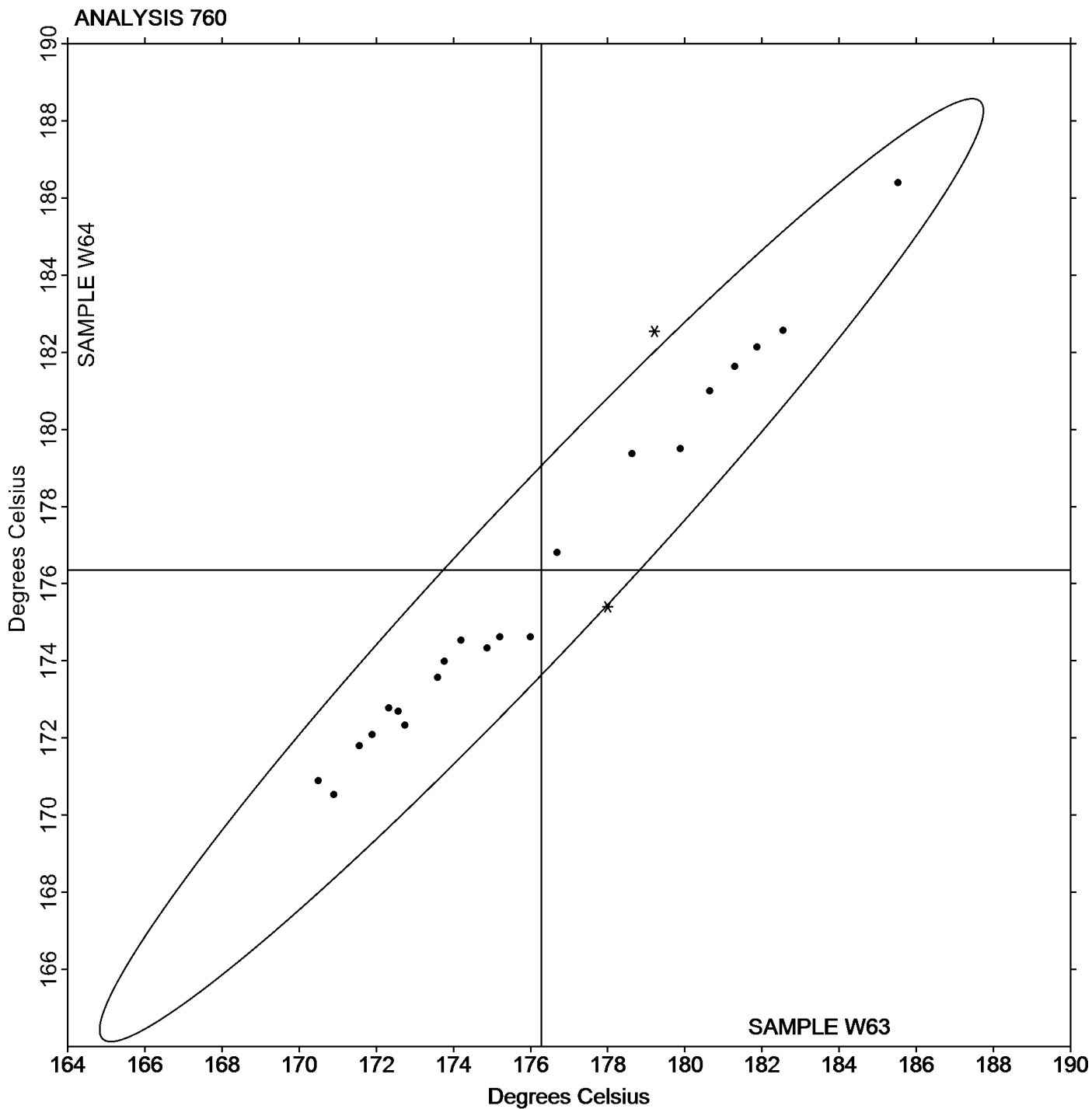
Analysis 760

DSC Crystallization Temperature

Report #112

4th Qtr 2019

Grand Mean Sample W63: 176.28 Degrees Celsius Grand Mean Sample W64: 176.35 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #112

Analysis 761

4th Qtr 2019

DSC Melt Temperature

WebCode	Data Flag	Sample W63			Sample W64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KHZUW		225.52	1.23	0.97	225.19	0.91	0.81	TA
3ZG2NB		223.68	-0.61	-0.48	224.24	-0.04	-0.04	TA
42QRRC		223.50	-0.79	-0.62	223.51	-0.77	-0.68	TA
BFKFE6	X	231.00	6.72	5.29	231.10	6.82	6.05	NZ
C2D2DY		226.87	2.58	2.03	225.77	1.49	1.32	TA
CHZFHQ		225.23	0.95	0.75	225.37	1.09	0.96	NZ
CJRFGM		224.19	-0.10	-0.08	224.70	0.42	0.38	PE
CYBXR4		224.67	0.38	0.30	224.40	0.12	0.11	TA
E4TDTE		224.24	-0.05	-0.04	223.96	-0.32	-0.29	MT
E7FXQV		223.33	-0.95	-0.75	223.00	-1.28	-1.14	MT
FGHBQV		223.48	-0.81	-0.64	223.31	-0.97	-0.86	TA
GYF9B4		223.21	-1.07	-0.85	223.16	-1.12	-1.00	TA
HLPJ9C		225.21	0.93	0.73	224.77	0.49	0.44	PE
HNT8UT		223.67	-0.62	-0.49	223.77	-0.51	-0.45	PE
JA6RZT		222.75	-1.53	-1.21	223.02	-1.26	-1.12	TA
JAUPEU		222.70	-1.58	-1.25	222.90	-1.38	-1.22	TA
JURF8Y		224.24	-0.04	-0.03	224.78	0.50	0.45	XX
K93KVD		221.98	-2.30	-1.81	223.06	-1.22	-1.08	MT
L9Z8RH		224.16	-0.12	-0.10	224.60	0.32	0.29	PE
LHKGC6	*	227.67	3.39	2.67	226.93	2.65	2.35	TA
M9EYFT		224.97	0.68	0.54	225.30	1.02	0.91	NZ
MCDACR		224.32	0.04	0.03	223.45	-0.83	-0.74	TA
Q6NWX3		222.42	-1.87	-1.47	221.84	-2.44	-2.17	SH
RM6DMG		224.24	-0.05	-0.04	224.26	-0.02	-0.01	XX
VWKBYP		225.47	1.18	0.93	225.87	1.59	1.41	TA
XURU3M		224.66	0.37	0.29	224.50	0.22	0.20	TA
XV3WNL		225.02	0.74	0.58	225.12	0.84	0.74	TA
ZQX8YA		224.30	0.02	0.01	224.77	0.49	0.43	TA



Plastics Interlaboratory Testing Program

Report #112

Analysis 761

4th Qtr 2019

DSC Melt Temperature

Summary Statistics

	<u>Sample W63</u>	<u>Sample W64</u>
Grand Means	224.284 Degrees Celsius	224.279 Degrees Celsius
Stnd Dev Btwn Labs	1.269 Degrees Celsius	1.127 Degrees Celsius

Statistics based on 27 of 28 reporting participants

Sample W63: PBT & Sample W64: PBT

Comments on Assigned Data Flags for Test #761

BFKFE6 (X) - Data for both samples are high. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

MT Mettler Toledo Instruments

NZ Netzsch Instruments

PE Perkins Elmer Instruments

SH Shimadzu

TA TA Instruments

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

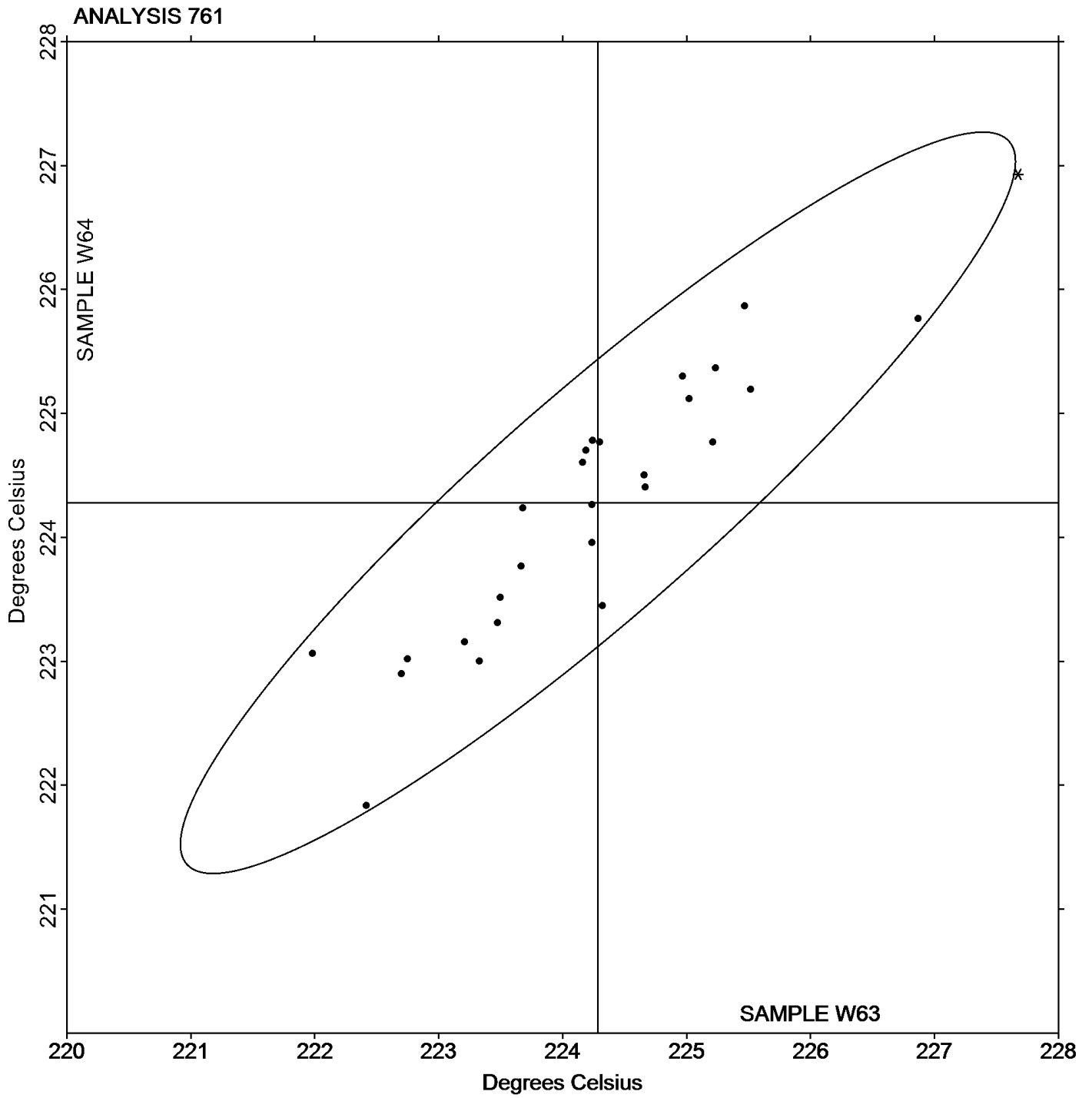
Report #112

Analysis 761

4th Qtr 2019

DSC Melt Temperature

Grand Mean Sample W63: 224.28 Degrees Celsius Grand Mean Sample W64: 224.28 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #112

Analysis 762

4th Qtr 2019

DSC Enthalpy of Crystallization

WebCode	Data Flag	<u>Sample W63</u>			<u>Sample W64</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KHZUW		43.86	-1.45	-0.35	43.91	-1.24	-0.34	TA
3ZG2NB		46.25	0.94	0.23	44.88	-0.27	-0.07	TA
BFKFE6		40.18	-5.13	-1.24	40.92	-4.23	-1.17	NZ
CHZFHQ		48.77	3.46	0.84	47.68	2.53	0.70	NZ
E4TDTE		45.71	0.40	0.10	44.61	-0.54	-0.15	MT
FGHBQV		47.88	2.57	0.62	48.11	2.97	0.82	TA
GYF9B4		44.02	-1.29	-0.31	43.26	-1.88	-0.52	TA
HNT8UT		40.79	-4.52	-1.10	39.76	-5.39	-1.49	PE
JA6RZT		46.83	1.52	0.37	45.98	0.84	0.23	TA
JAUPEU		46.00	0.69	0.17	44.25	-0.90	-0.25	TA
LHKGC6		55.88	10.57	2.56	55.08	9.94	2.75	TA
M9EYFT		41.68	-3.63	-0.88	43.18	-1.96	-0.54	NZ
MCDACR		46.28	0.97	0.24	46.13	0.99	0.27	TA
Q6NWX3		38.01	-7.30	-1.77	41.04	-4.10	-1.14	SH
VWKBYP		46.87	1.56	0.38	46.20	1.05	0.29	TA
XV3WNL		45.94	0.63	0.15	47.32	2.17	0.60	TA

Summary Statistics

	<u>Sample W63</u>	<u>Sample W64</u>
Grand Means	45.309 Joules Per Gram	45.145 Joules Per Gram
Stnd Dev Btwn Labs	4.121 Joules Per Gram	3.608 Joules Per Gram

Statistics based on 16 of 16 reporting participants

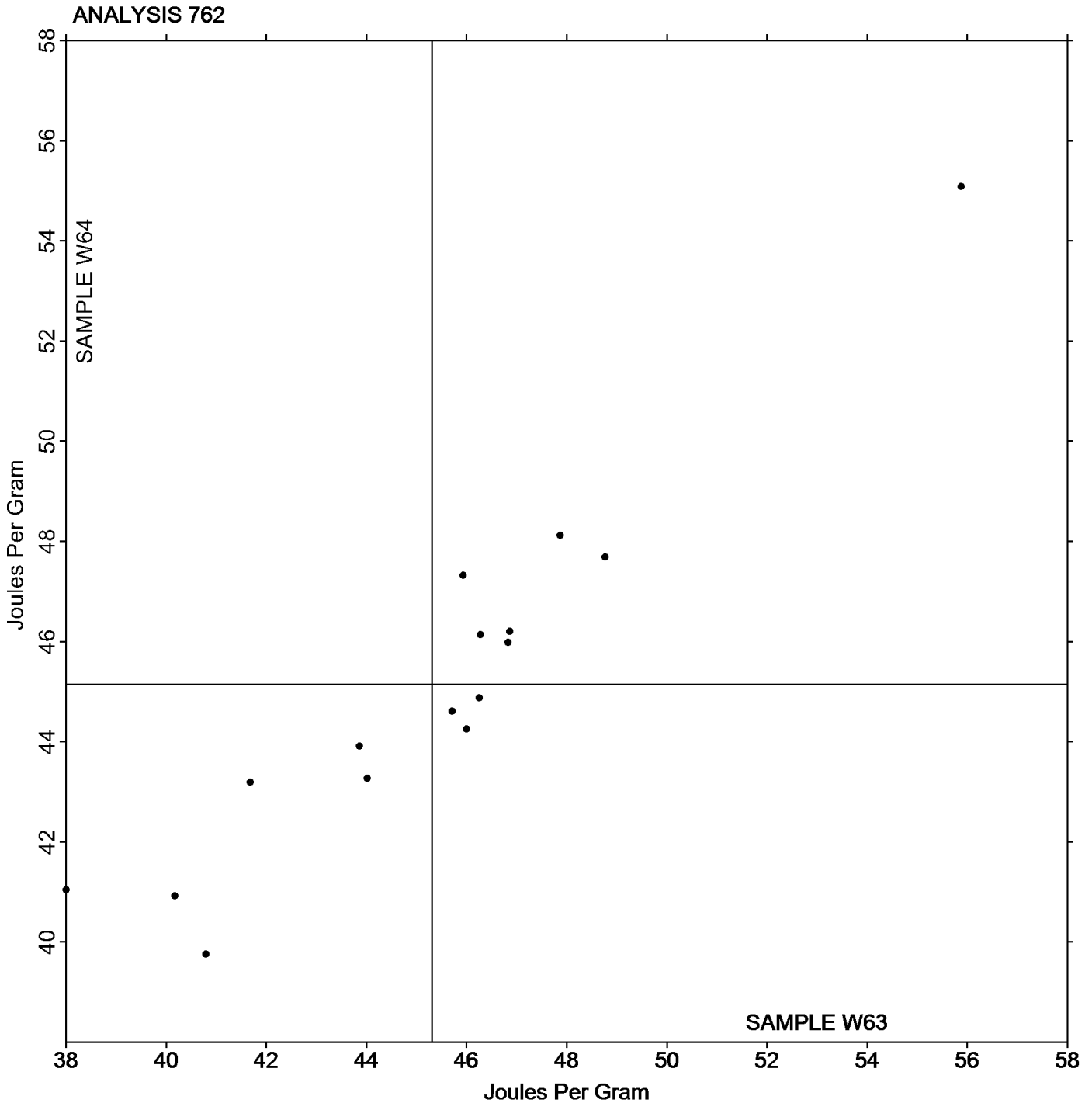
Sample W63: PBT & Sample W64: PBT

Key to Instrument Codes Reported by Participants

- | | | | |
|----|----------------------------|----|---------------------|
| MT | Mettler Toledo Instruments | NZ | Netzsch Instruments |
| PE | Perkins Elmer Instruments | SH | Shimadzu |
| TA | TA Instruments | | |



Grand Mean Sample W63: 45.309 Joules Per Gram Grand Mean Sample W64: 45.145 Joules Per Gram



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 763

4th Qtr 2019

DSC Enthalpy of Fusion

WebCode	Data Flag	<u>Sample W63</u>			<u>Sample W64</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KHZUW		37.62	-2.56	-0.40	38.17	-2.26	-0.36	TA
3ZG2NB		42.24	2.06	0.32	39.93	-0.50	-0.08	TA
BFKFE6		46.54	6.36	1.00	47.46	7.03	1.12	NZ
CHZFHQ		57.42	17.24	2.71	56.81	16.38	2.60	NZ
E4TDTE		39.47	-0.71	-0.11	39.04	-1.39	-0.22	MT
FGHBQV		38.26	-1.92	-0.30	38.35	-2.08	-0.33	TA
GYF9B4		42.74	2.56	0.40	43.81	3.38	0.54	TA
HNT8UT		33.60	-6.58	-1.04	34.08	-6.35	-1.01	PE
JA6RZT		38.53	-1.65	-0.26	37.19	-3.24	-0.51	TA
JAUPEU		36.98	-3.20	-0.50	36.14	-4.29	-0.68	TA
LHKGC6		48.41	8.23	1.30	48.87	8.44	1.34	TA
M9EYFT		33.19	-6.99	-1.10	33.80	-6.63	-1.05	NZ
MCDACR		37.94	-2.24	-0.35	38.25	-2.18	-0.35	TA
Q6NWX3		30.57	-9.61	-1.51	32.70	-7.73	-1.23	SH
QFTKCU		46.20	6.02	0.95	48.33	7.90	1.25	SH
VWKBYP		37.30	-2.88	-0.45	37.27	-3.16	-0.50	TA
XURU3M		36.81	-3.37	-0.53	37.05	-3.38	-0.54	TA
XV3WNL		39.42	-0.76	-0.12	40.48	0.05	0.01	TA

Summary Statistics

	<u>Sample W63</u>	<u>Sample W64</u>
Grand Means	40.181 Joules Per Gram	40.428 Joules Per Gram
Std Dev Btwn Labs	6.352 Joules Per Gram	6.294 Joules Per Gram

Statistics based on 18 of 18 reporting participants

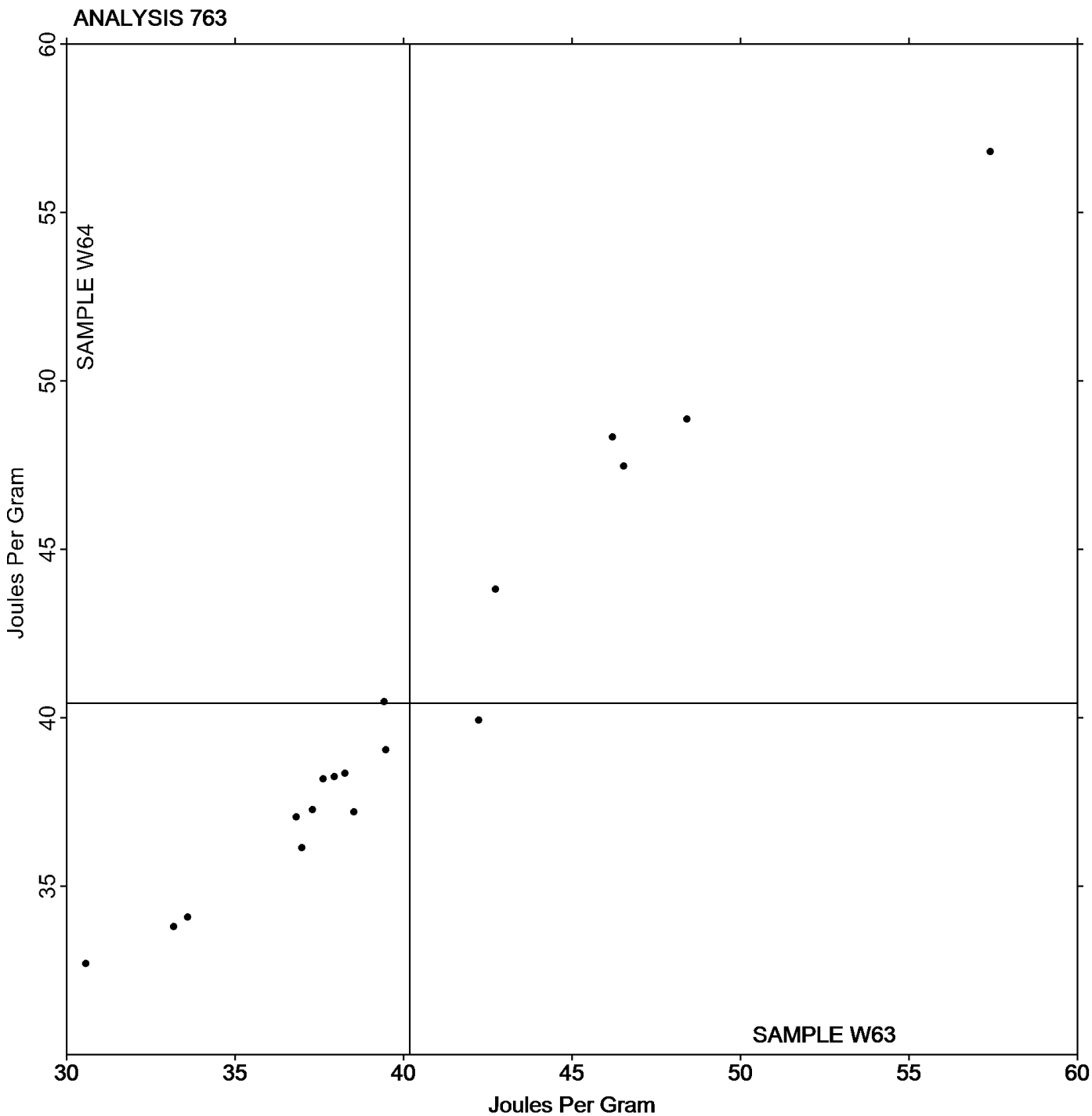
Sample W63: PBT & Sample W64: PBT

Key to Instrument Codes Reported by Participants

MT	Mettler Toledo Instruments	NZ	Netzsch Instruments
PE	Perkins Elmer Instruments	SH	Shimadzu
TA	TA Instruments		



Grand Mean Sample W63: 40.181 Joules Per Gram Grand Mean Sample W64: 40.428 Joules Per Gram



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 764

4th Qtr 2019

DSC Glass Transition Temperature

WebCode	Data Flag	Sample V63			Sample V64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KHZUW		105.77	-1.35	-0.58	105.54	-1.63	-0.66	TA
3ZG2NB		106.95	-0.17	-0.07	106.42	-0.75	-0.30	TA
BFKFE6		105.40	-1.72	-0.74	105.30	-1.87	-0.76	NZ
CHZFHQ		108.87	1.75	0.75	108.47	1.30	0.53	NZ
CJRFGM		107.76	0.65	0.28	108.27	1.10	0.45	XX
E4TDTE		106.35	-0.77	-0.33	106.94	-0.23	-0.09	MT
E7FXQV		106.80	-0.31	-0.13	107.19	0.02	0.01	MT
FGHBQV		106.93	-0.19	-0.08	107.07	-0.09	-0.04	TA
GYF9B4		103.92	-3.19	-1.37	103.30	-3.86	-1.57	TA
HNT8UT		107.77	0.65	0.28	107.69	0.53	0.21	PE
JA6RZT		107.62	0.50	0.22	107.67	0.50	0.20	TA
K93KVD		107.02	-0.09	-0.04	106.53	-0.63	-0.26	MT
LHKGC6	X	142.09	34.97	15.03	139.39	32.22	13.09	TA
M9EYFT	*	106.03	-1.08	-0.47	108.43	1.27	0.51	NZ
MCDACR		107.40	0.28	0.12	108.35	1.19	0.48	TA
Q6NWX3	*	112.66	5.54	2.38	111.58	4.41	1.79	SH
QFTKCU		103.79	-3.33	-1.43	102.76	-4.41	-1.79	SH
VWKBYP		104.83	-2.28	-0.98	104.93	-2.23	-0.91	TA
XURU3M		112.52	5.41	2.32	113.18	6.01	2.44	TA
XV3WNL		106.80	-0.32	-0.14	106.53	-0.63	-0.26	TA

Summary Statistics		
	Sample V63	Sample V64
Grand Means	107.116 Degrees Celsius	107.166 Degrees Celsius
Stnd Dev Btwn Labs	2.327 Degrees Celsius	2.461 Degrees Celsius
Statistics based on 19 of 20 reporting participants		

Sample V63: ABS & Sample V64: ABS

Comments on Assigned Data Flags for Test #764

LHKGC6 (X) - Data for both samples are high. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

- | | | | |
|----|----------------------------|----|--|
| MT | Mettler Toledo Instruments | NZ | Netzsch Instruments |
| PE | Perkins Elmer Instruments | SH | Shimadzu |
| TA | TA Instruments | XX | Instrument manufacturer not specified by lab |



Plastics Interlaboratory Testing Program

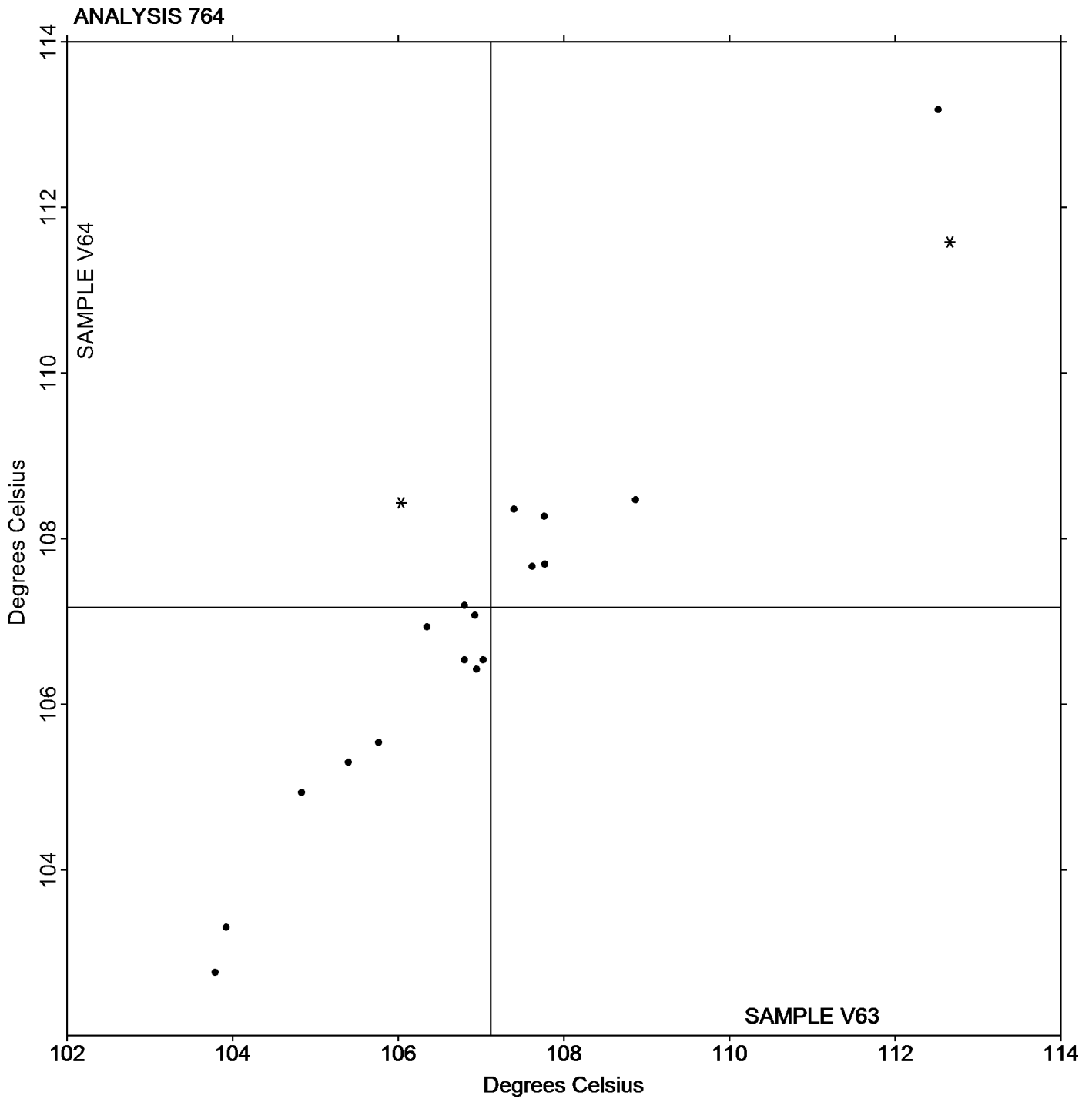
Analysis 764

DSC Glass Transition Temperature

Report #112

4th Qtr 2019

Grand Mean Sample V63: 107.12 Degrees Celsius Grand Mean Sample V64: 107.17 Degrees Celsius



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 770

4th Qtr 2019

Tensile Stress at Yield, Film Samples - psi

WebCode	Data Flag	Sample B63			Sample B64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		2,625	65	0.17	2,700	133	0.33	OA
6EN7JT	X	10	-2,549	-6.53	9	-2,558	-6.30	XX
6YTNRA		2,733	174	0.44	2,762	195	0.48	IN
AUNEPX	X	4	-2,555	-6.55	4	-2,563	-6.31	XX
BFKFE6		2,714	155	0.40	2,696	128	0.31	IN
BX7VKM	X	5	-2,554	-6.54	5	-2,562	-6.31	XX
C4PKH3		2,750	191	0.49	2,737	170	0.42	IN
C9ZUPY		1,763	-796	-2.04	1,706	-862	-2.12	IN
EZDKBL	X	5	-2,555	-6.55	5	-2,563	-6.31	IN
FM9NTJ	X	9	-2,550	-6.53	10	-2,558	-6.30	XX
GKZVBQ		3,013	453	1.16	3,190	623	1.53	LI
L7EE4U		1,900	-659	-1.69	1,907	-661	-1.63	WZ
LYYQBD		2,585	25	0.07	2,708	140	0.35	IN
M89FPC	X	5	-2,554	-6.54	5	-2,563	-6.31	XX
PL3J78	X	6	-2,553	-6.54	7	-2,561	-6.30	XX
PTMLBP		2,687	128	0.33	2,695	128	0.31	IN
RULYM8	X	6	-2,554	-6.54	5	-2,562	-6.31	IR
UYBVP4	X	5	-2,554	-6.54	5	-2,562	-6.31	XX
VVPP7Y		2,835	276	0.71	2,743	175	0.43	IN
VXV7KG		2,504	-55	-0.14	2,593	25	0.06	MT
WGGBFK		3,004	445	1.14	2,968	400	0.99	TO
WNW743		2,531	-29	-0.07	2,535	-33	-0.08	IN
XHPZ4P		2,663	104	0.27	2,638	70	0.17	SH
YNQ9BH		2,821	261	0.67	2,685	117	0.29	IN
YNVY68		1,823	-737	-1.89	1,819	-748	-1.84	IN
ZGT6Q7	X	5	-2,554	-6.55	5	-2,563	-6.31	XX

Summary Statistics		
	Sample B63	Sample B64
Grand Means	2,559.5 psi	2,567.7 psi
Std Dev Btwn Labs	390.3 psi	406.2 psi
Statistics based on 16 of 26 reporting participants		

Sample B63: LDPE & Sample B64: LDPE



Comments on Assigned Data Flags for Test #770

- RULYM8 (X) - Extreme data.
- EZDKBL (X) - Extreme data.
- 6EN7JT (X) - Extreme data.
- FM9NTJ (X) - Extreme data.
- M89FPC (X) - Extreme data.
- UYBVP4 (X) - Extreme data.
- PL3J78 (X) - Extreme data.
- BX7VKM (X) - Extreme data.
- ZGT6Q7 (X) - Extreme data.
- AUNEPX (X) - Extreme data.

Key to Instrument Codes Reported by Participants

- | | |
|--|---------------------------------|
| IN Instron | IR Instron with retrofit |
| LI Lloyd Instruments | MT MTS/Sintech |
| OA Oakland Testing | SH Shimadzu |
| TO Tinius Olsen | WZ Zwick |
| XX Instrument manufacturer not specified by lab | |



Plastics Interlaboratory Testing Program

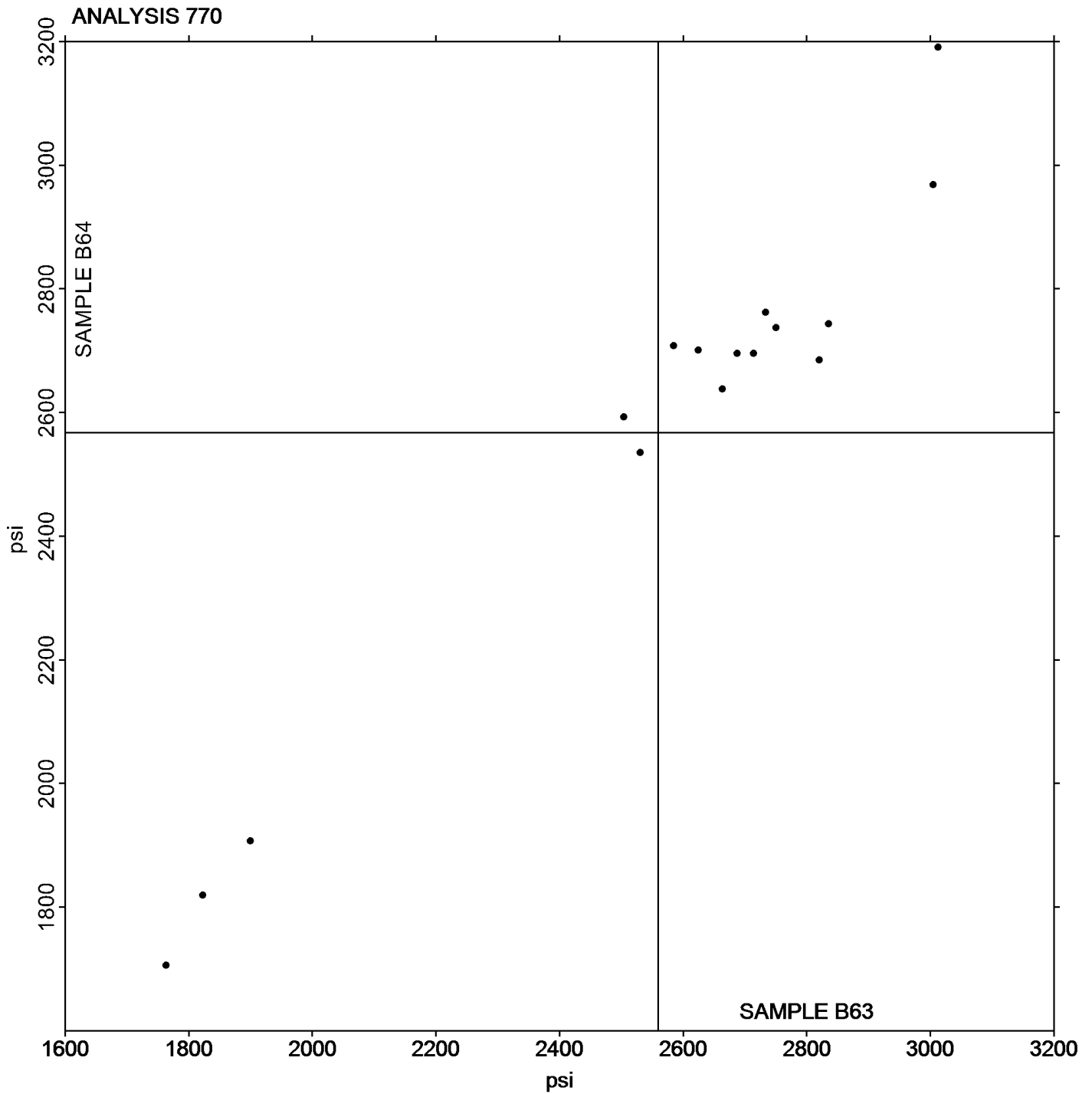
Analysis 770

Tensile Stress at Yield, Film Samples - psi

Report #112

4th Qtr 2019

Grand Mean Sample B63: 2,559.53 psi Grand Mean Sample B64: 2,567.71 psi



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 771

4th Qtr 2019

Tensile Stress at Break, Film Samples - psi

WebCode	Data Flag	Sample B63			Sample B64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		3,909	36	0.11	3,828	-60	-0.20	OA
6NDW7L		3,382	-490	-1.47	3,565	-322	-1.06	IN
6YTNRA		4,200	328	0.98	4,201	314	1.03	IN
BFKFE6		4,225	353	1.06	3,950	63	0.21	IN
C4PKH3		4,039	166	0.50	4,047	159	0.52	IN
C9ZUPY		3,674	-199	-0.60	3,699	-188	-0.62	IN
GKZVBQ	*	3,640	-233	-0.70	4,216	329	1.08	LI
L7EE4U		3,954	81	0.24	3,867	-21	-0.07	WZ
LYYQBD		3,981	108	0.32	4,078	191	0.63	IN
PTMLBP		4,136	263	0.79	4,166	279	0.91	IN
Q6NWX3		4,355	482	1.45	4,226	338	1.11	SH
VVPP7Y		4,237	365	1.09	4,190	302	0.99	IN
VXV7KG		3,584	-289	-0.87	3,662	-226	-0.74	MT
WGGBFK		3,136	-736	-2.21	3,075	-812	-2.66	TO
WNW743		3,785	-87	-0.26	3,693	-194	-0.64	IN
XHPZ4P		3,653	-220	-0.66	3,612	-276	-0.90	SH
YNQ9BH		4,188	316	0.95	4,107	220	0.72	IN
YNVY68		3,630	-243	-0.73	3,791	-96	-0.32	IN

Summary Statistics		
	Sample B63	Sample B64
Grand Means	3,872.8 psi	3,887.4 psi
Std Dev Btwn Labs	333.3 psi	305.0 psi
Statistics based on 18 of 18 reporting participants		

Sample B63: LDPE & Sample B64: LDPE

Key to Instrument Codes Reported by Participants

- | | |
|----------------|----------------------|
| IN Instron | LI Lloyd Instruments |
| MT MTS/Sintech | OA Oakland Testing |
| SH Shimadzu | TO Tinius Olsen |
| WZ Zwick | |



Plastics Interlaboratory Testing Program

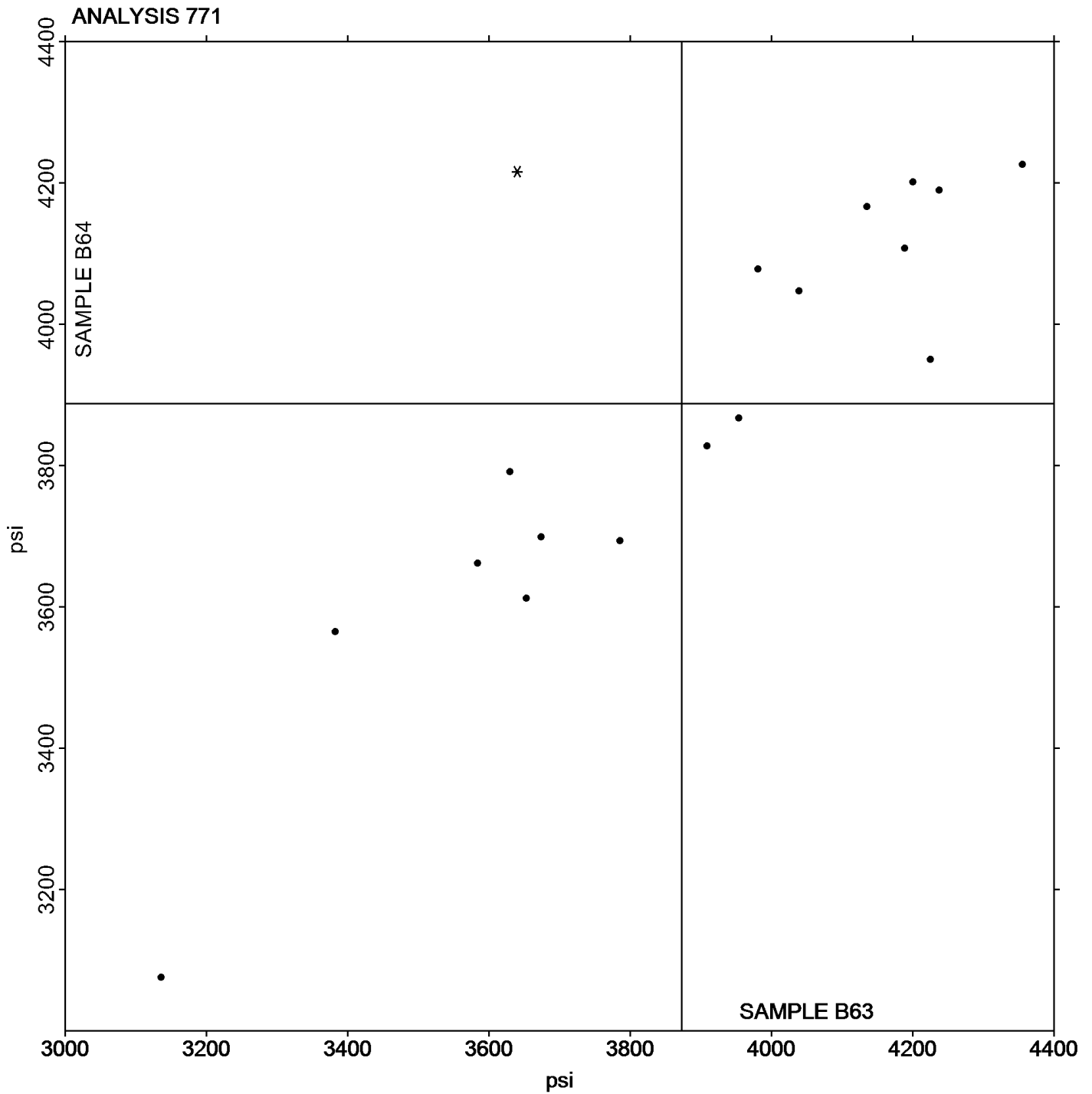
Report #112

Analysis 771

4th Qtr 2019

Tensile Stress at Break, Film Samples - psi

Grand Mean Sample B63: 3,872.75 psi Grand Mean Sample B64: 3,887.37 psi



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 772

4th Qtr 2019

Percent Elongation at Yield, Films

WebCode	Data Flag	Sample B63			Sample B64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6YTNRA		92.39	-1.55	-0.16	87.24	-5.99	-0.60	IN
BFKFE6		91.20	-2.74	-0.28	87.19	-6.04	-0.61	IN
C4PKH3		87.60	-6.34	-0.64	88.33	-4.90	-0.49	IN
C9ZUPY		78.00	-15.94	-1.62	79.56	-13.67	-1.38	IN
GKZVBQ		106.52	12.58	1.28	107.21	13.98	1.41	LI
L7EE4U	X	16.22	-77.72	-7.89	17.57	-75.66	-7.64	WZ
LYYQBD		96.53	2.59	0.26	98.00	4.77	0.48	IN
PTMLBP		84.99	-8.95	-0.91	84.95	-8.28	-0.84	IN
VVPP7Y		84.20	-9.74	-0.99	83.32	-9.91	-1.00	IN
WGGBFK	X	255.40	161.46	16.39	232.90	139.67	14.11	TO
WNW743		105.59	11.65	1.18	105.24	12.01	1.21	IN
XHPZ4P		99.91	5.97	0.61	100.57	7.34	0.74	SH
YNQ9BH		106.40	12.46	1.26	103.90	10.67	1.08	IN
YNVY68	X	8.28	-85.66	-8.69	8.38	-84.85	-8.57	IN

Summary Statistics

	Sample B63	Sample B64
Grand Means	93.939 Percent	93.228 Percent
Std Dev Btwn Labs	9.852 Percent	9.900 Percent

Statistics based on 11 of 14 reporting participants

Sample B63: LDPE & Sample B64: LDPE

Note: Results for test 772 exhibit higher variability than historical averages. Use caution when interpreting results.

Comments on Assigned Data Flags for Test #772

YNVY68 (X) - Extreme data.

WGGBFK (X) - Extreme data.

L7EE4U (X) - Extreme data.

Key to Instrument Codes Reported by Participants

IN Instron

LI Lloyd Instruments

SH Shimadzu

TO Tinius Olsen

WZ Zwick



Plastics Interlaboratory Testing Program

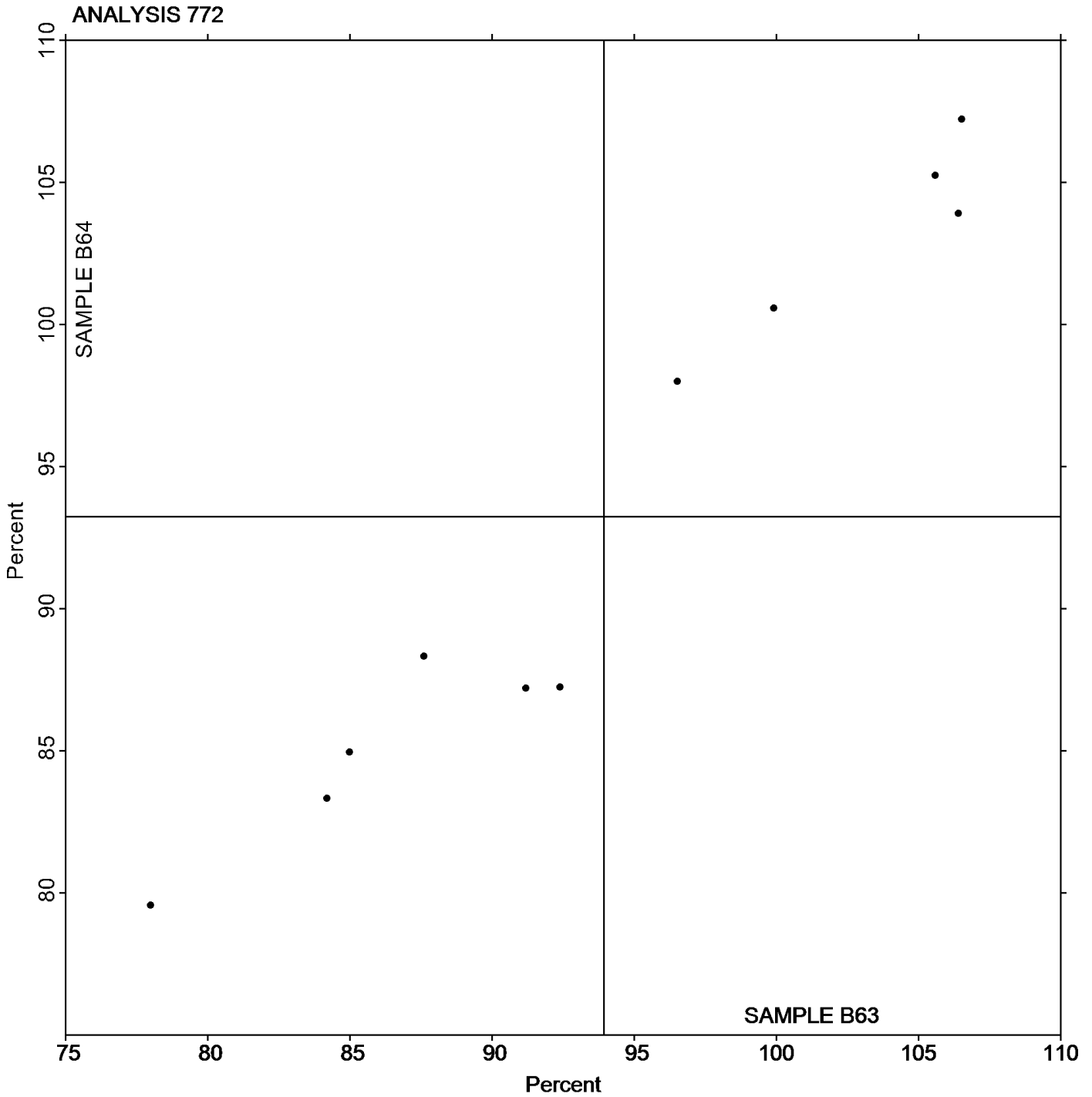
Report #112

Analysis 772

4th Qtr 2019

Percent Elongation at Yield, Films

Grand Mean Sample B63: 93.939 Percent Grand Mean Sample B64: 93.228 Percent



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 773

4th Qtr 2019

Percent Elongation at Break, Film Samples

WebCode	Data Flag	Sample B63			Sample B64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		567.5	16.6	0.21	544.8	-14.1	-0.18	OA
6NDW7L		714.2	163.2	2.09	741.8	182.9	2.35	IN
6YTNRA		495.4	-55.6	-0.71	493.3	-65.6	-0.84	IN
BFKFE6		513.9	-37.1	-0.47	494.4	-64.5	-0.83	IN
C4PKH3		492.6	-58.4	-0.75	487.0	-71.9	-0.92	IN
C9ZUPY		480.1	-70.9	-0.91	492.7	-66.2	-0.85	IN
GKZVBQ		457.9	-93.1	-1.19	538.1	-20.8	-0.27	LI
L7EE4U		474.0	-77.0	-0.98	466.0	-92.9	-1.19	WZ
LYYQBD		593.2	42.2	0.54	585.2	26.3	0.34	IN
PTMLBP		493.6	-57.4	-0.73	495.9	-63.0	-0.81	IN
Q6NWX3		591.3	40.3	0.52	625.8	66.9	0.86	SH
VVPP7Y		504.3	-46.7	-0.60	512.4	-46.5	-0.60	IN
VXV7KG		643.2	92.2	1.18	642.6	83.7	1.08	MT
WGGBFK	X	277.2	-273.8	-3.50	260.4	-298.5	-3.84	TO
WNW743		688.8	137.8	1.76	660.8	101.9	1.31	IN
XHPZ4P		580.5	29.5	0.38	575.9	17.0	0.22	SH
YNQ9BH		592.1	41.1	0.53	630.0	71.1	0.91	IN
YNVY68		484.1	-66.9	-0.86	514.6	-44.3	-0.57	IN

Summary Statistics		
	Sample B63	Sample B64
Grand Means	550.98 Percent	558.90 Percent
Std Dev Btwn Labs	78.19 Percent	77.76 Percent
Statistics based on 17 of 18 reporting participants		

Sample B63: LDPE & Sample B64: LDPE

Comments on Assigned Data Flags for Test #773

WGGBFK (X) - Extreme data.

Key to Instrument Codes Reported by Participants

IN	Instron	LI	Lloyd Instruments
MT	MTS/Sintech	OA	Oakland Testing
SH	Shimadzu	TO	Tinius Olsen
WZ	Zwick		



Plastics Interlaboratory Testing Program

Report #112

Analysis 774

4th Qtr 2019

Thickness of Film Tensile Samples - mils

WebCode	Data Flag	Sample B63			Sample B64		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
239UX9		2.8690	0.0529	0.45	2.8420	0.0241	0.21
4E6WZZ		2.8465	0.0304	0.26	2.8504	0.0325	0.29
6NDW7L		2.8307	0.0146	0.12	2.8071	-0.0109	-0.10
6YTNRA		2.7750	-0.0411	-0.35	2.7470	-0.0709	-0.62
BKFE6		2.7830	-0.0331	-0.28	2.7780	-0.0399	-0.35
C4PKH3		2.7820	-0.0341	-0.29	2.7720	-0.0459	-0.40
C9ZUPY		2.8032	-0.0129	-0.11	2.8308	0.0128	0.11
GKZVBQ		2.6977	-0.1184	-1.00	2.5819	-0.2360	-2.07
JKTJQR	*	3.2200	0.4039	3.41	3.1700	0.3521	3.09
L7EE4U		2.9158	0.0997	0.84	2.9213	0.1034	0.91
LYYQBD		2.9000	0.0839	0.71	2.8650	0.0471	0.41
PTMLBP		2.7630	-0.0531	-0.45	2.7600	-0.0579	-0.51
Q6NWX3		2.8189	0.0028	0.02	2.7402	-0.0778	-0.68
QK4TLB		2.6090	-0.2071	-1.75	2.6490	-0.1689	-1.48
VVPP7Y		2.8140	-0.0021	-0.02	2.8640	0.0461	0.40
VXV7KG	*	2.6770	-0.1391	-1.18	2.8510	0.0331	0.29
WGGBFK		2.7402	-0.0759	-0.64	2.7284	-0.0895	-0.79
WNW743		2.8290	0.0129	0.11	2.8740	0.0561	0.49
XHPZ4P		2.7646	-0.0515	-0.44	2.8276	0.0097	0.08
YNQ9BH		2.8200	0.0039	0.03	2.8400	0.0221	0.19
YNVY68		2.8800	0.0639	0.54	2.8770	0.0591	0.52

Summary Statistics		
	Sample B63	Sample B64
Grand Means	2.81613 mils	2.81794 mils
Std Dev Btwn Labs	0.11831 mils	0.11393 mils
Statistics based on 21 of 21 reporting participants		

Sample B63: LDPE & Sample B64: LDPE



Plastics Interlaboratory Testing Program

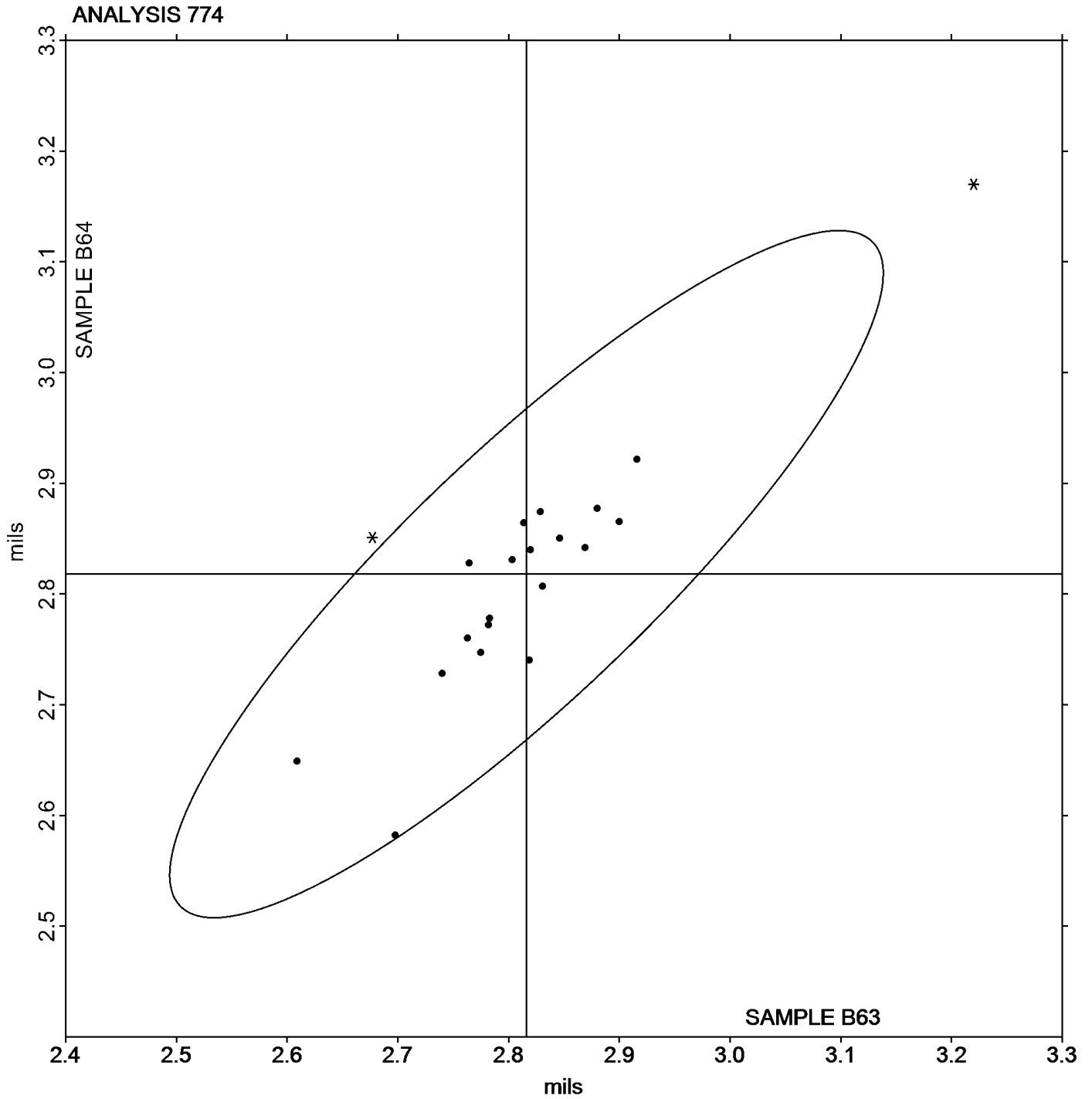
Analysis 774

Thickness of Film Tensile Samples - mils

Report #112

4th Qtr 2019

Grand Mean Sample B63: 2.8161 mils Grand Mean Sample B64: 2.8179 mils





Plastics Interlaboratory Testing Program

Report #112

Analysis 775

4th Qtr 2019

Secant Modulus at 1% Strain - psi

WebCode	Data Flag	Sample B63			Sample B64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		41,283	-37	-0.01	39,327	-1,749	-0.43	OA
4E6WZZ		40,448	-872	-0.21	39,745	-1,331	-0.33	IN
6NDW7L	X	25,523	-15,798	-3.81	26,571	-14,506	-3.55	IN
6YTNRA		43,056	1,736	0.42	41,689	612	0.15	IN
BFKFE6		44,685	3,365	0.81	43,563	2,486	0.61	IN
C4PKH3		36,379	-4,942	-1.19	36,141	-4,936	-1.21	IN
GKZVBQ		44,653	3,333	0.80	45,924	4,848	1.19	LI
L7EE4U		43,352	2,032	0.49	44,658	3,581	0.88	WZ
LYYQBD		41,236	-84	-0.02	41,824	748	0.18	IN
PTMLBP		38,170	-3,151	-0.76	38,937	-2,140	-0.52	IN
VVPP7Y		42,985	1,664	0.40	42,303	1,227	0.30	IN
VXV7KG		41,401	81	0.02	40,249	-827	-0.20	MT
WGGBFK		30,458	-10,862	-2.62	30,873	-10,203	-2.50	TO
XHPZ4P		43,240	1,920	0.46	43,591	2,514	0.62	SH
YNVY68		47,136	5,816	1.40	46,248	5,171	1.27	IN

Summary Statistics		
	Sample B63	Sample B64
Grand Means	41,320.2 psi	41,076.5 psi
Stnd Dev Btwn Labs	4,141.3 psi	4,081.6 psi
Statistics based on 14 of 15 reporting participants		

Sample B63: LDPE & Sample B64: LDPE

Comments on Assigned Data Flags for Test #775

6NDW7L (X) - Extreme data.

Key to Instrument Codes Reported by Participants

- | | | | |
|----|-------------|----|-------------------|
| IN | Instron | LI | Lloyd Instruments |
| MT | MTS/Sintech | OA | Oakland Testing |
| SH | Shimadzu | TO | Tinius Olsen |
| WZ | Zwick | | |



Plastics Interlaboratory Testing Program

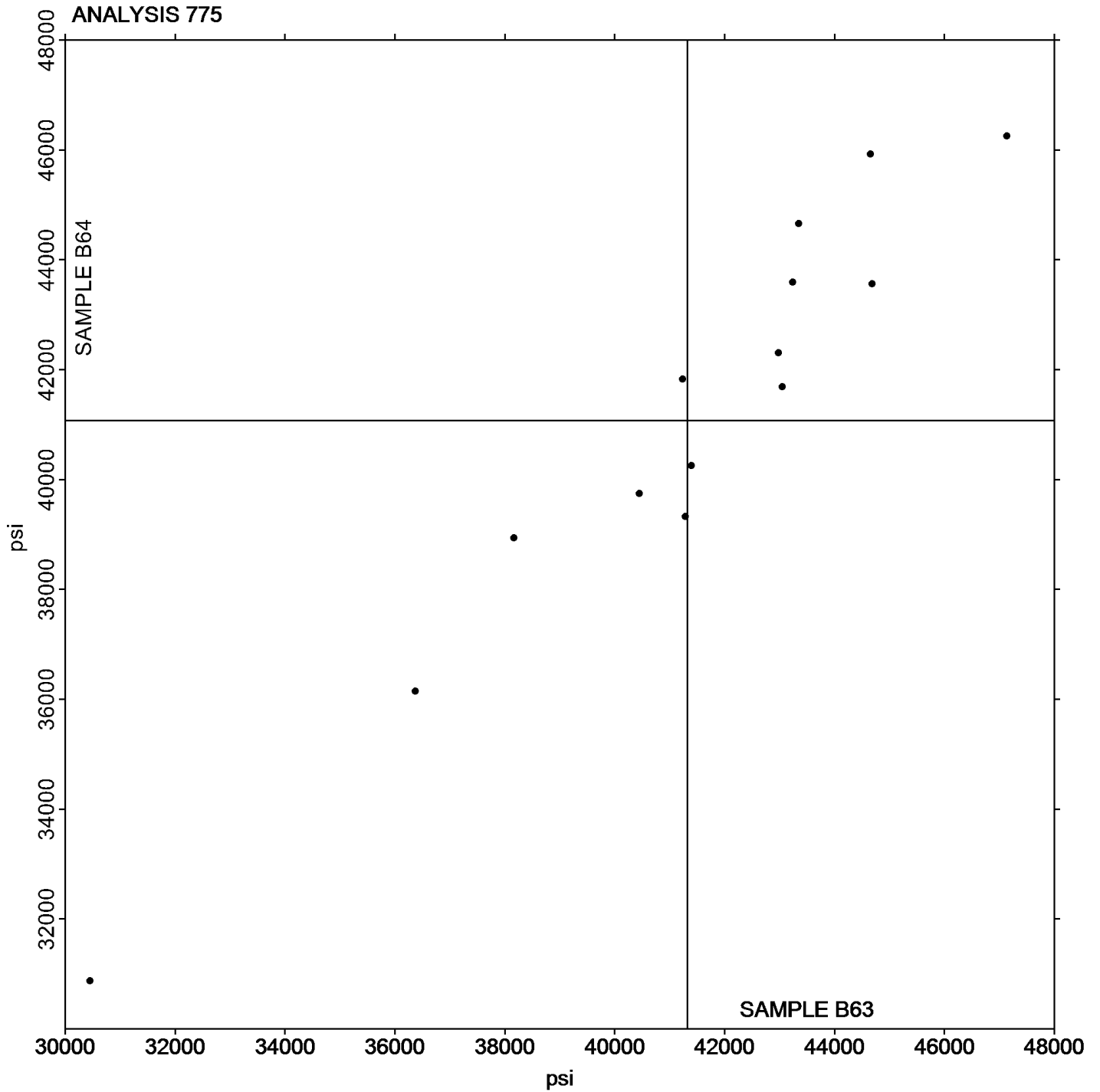
Report #112

Analysis 775

4th Qtr 2019

Secant Modulus at 1% Strain - psi

Grand Mean Sample B63: 41,320.19 psi Grand Mean Sample B64: 41,076.46 psi



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 776

4th Qtr 2019

Secant Modulus at 2% Strain - psi

WebCode	Data Flag	Sample B63			Sample B64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4E6WZZ		34,232	588	0.12	33,511	-159	-0.03	IN
6NDW7L		26,917	-6,727	-1.41	27,628	-6,041	-1.26	IN
6YTNRA		36,367	2,724	0.57	35,465	1,796	0.37	IN
BFKFE6		37,169	3,526	0.74	36,286	2,617	0.55	IN
C4PKH3		33,815	171	0.04	34,122	453	0.09	IN
GKZVBQ		37,704	4,060	0.85	39,202	5,533	1.15	LI
LYYQBD		35,423	1,780	0.37	35,985	2,315	0.48	IN
PTMLBP		34,128	484	0.10	34,565	896	0.19	IN
WGGBFK		22,471	-11,173	-2.35	22,079	-11,591	-2.42	TO
XHPZ4P		34,161	517	0.11	34,468	799	0.17	SH
YNVY68		37,693	4,049	0.85	37,051	3,381	0.71	MT

Summary Statistics		Sample B63	Sample B64
Grand Means		33,643.6 psi	33,669.2 psi
Stnd Dev Btwn Labs		4,762.9 psi	4,795.7 psi
Statistics based on 11 of 11 reporting participants			

Sample B63: LDPE & Sample B64: LDPE

Key to Instrument Codes Reported by Participants

- | | |
|-----------------|----------------------|
| IN Instron | LI Lloyd Instruments |
| MT MTS/Sintech | SH Shimadzu |
| TO Tinius Olsen | |



Plastics Interlaboratory Testing Program

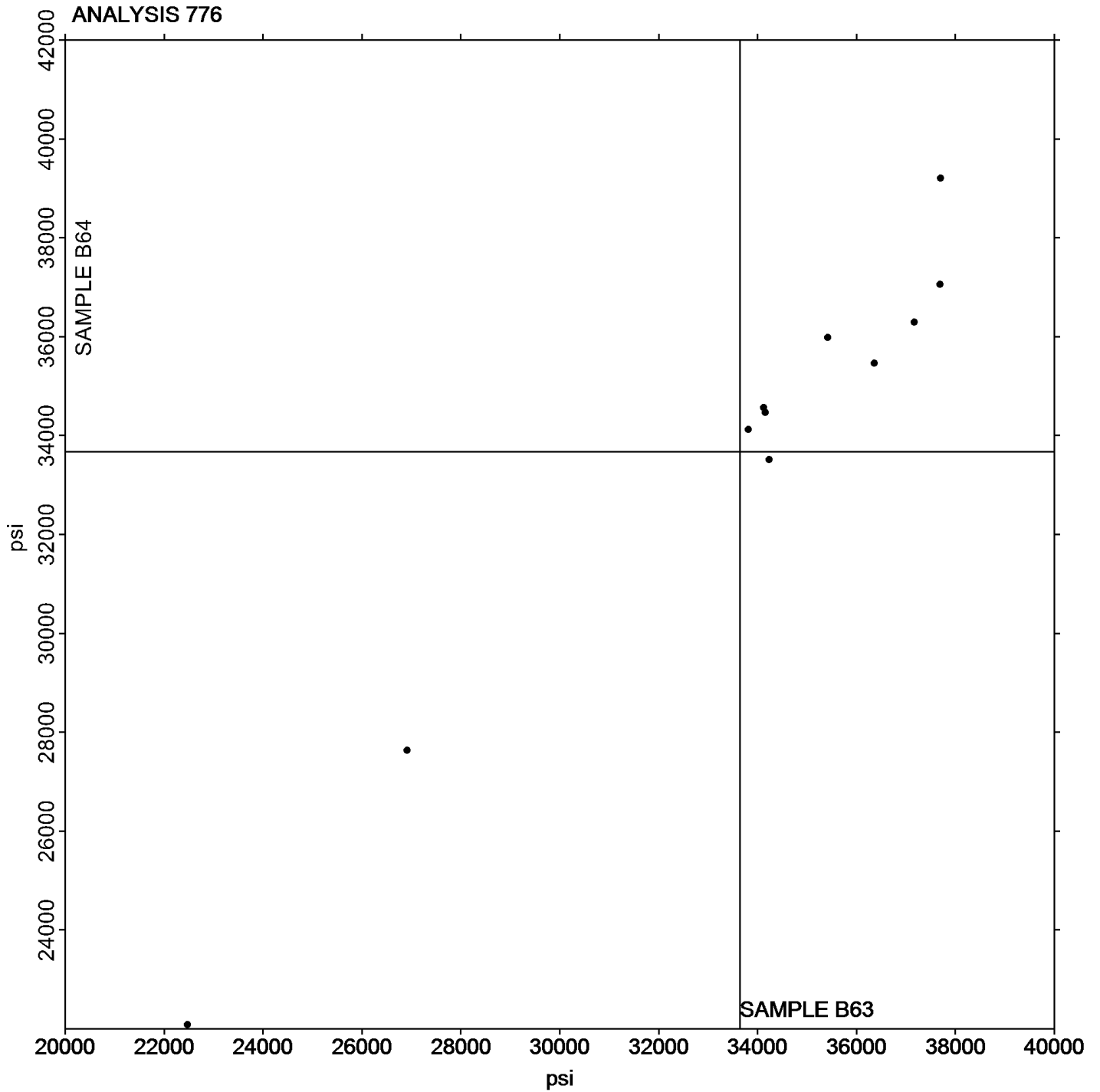
Report #112

Analysis 776

4th Qtr 2019

Secant Modulus at 2% Strain - psi

Grand Mean Sample B63: 33,643.59 psi Grand Mean Sample B64: 33,669.21 psi



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 780

4th Qtr 2019

Coefficient of Static Friction

WebCode	Data Flag	Sample P63			Sample P64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		0.2204	0.0274	0.48	0.2414	0.0567	1.09	DY
3MQCP6		0.1905	-0.0026	-0.04	0.1615	-0.0232	-0.45	IG
4Q4HFC		0.1608	-0.0322	-0.57	0.1560	-0.0287	-0.55	IP
92AAU8		0.1640	-0.0290	-0.51	0.1700	-0.0147	-0.28	KA
BFKFE6		0.1380	-0.0550	-0.97	0.1180	-0.0667	-1.28	TH
C4PKH3		0.1660	-0.0270	-0.47	0.1520	-0.0327	-0.63	XX
C9ZUPY		0.2504	0.0574	1.01	0.2252	0.0405	0.78	IS
L7EE4U		0.1444	-0.0486	-0.85	0.1586	-0.0261	-0.50	TH
QTVDGB		0.1168	-0.0762	-1.34	0.1194	-0.0653	-1.25	TN
RM8VW9		0.2762	0.0832	1.46	0.2576	0.0729	1.40	TH
VVPP7Y		0.2176	0.0246	0.43	0.1704	-0.0143	-0.27	TH
VXV7KG		0.2162	0.0232	0.41	0.2260	0.0413	0.79	MI
WGGBFK		0.1352	-0.0578	-1.01	0.1378	-0.0469	-0.90	RD
XHPZ4P		0.1794	-0.0136	-0.24	0.1833	-0.0014	-0.03	SA
YNVY68		0.3196	0.1266	2.22	0.2928	0.1081	2.08	MI

Summary Statistics		
	Sample P63	Sample P64
Grand Means	0.19303 COF	0.18466 COF
Std Dev Btw Labs	0.05699 COF	0.05211 COF
Statistics based on 15 of 15 reporting participants		

Sample P63: LDPE & Sample P64: LDPE

Key to Instrument Codes Reported by Participants

DY	Dynisco Model D1055	IG	Instron
IP	Instron 4000 Series	IS	Instron 5000 Series
KA	Kayeness Inc.	MI	MTS Insight
RD	RDM CF	SA	Shimadzu Autograph
TH	Thwing Albert Friction/Peel Tester Model 225-1	TN	TMI #32-06
XX	Instrument make/model not specified by lab		



Plastics Interlaboratory Testing Program

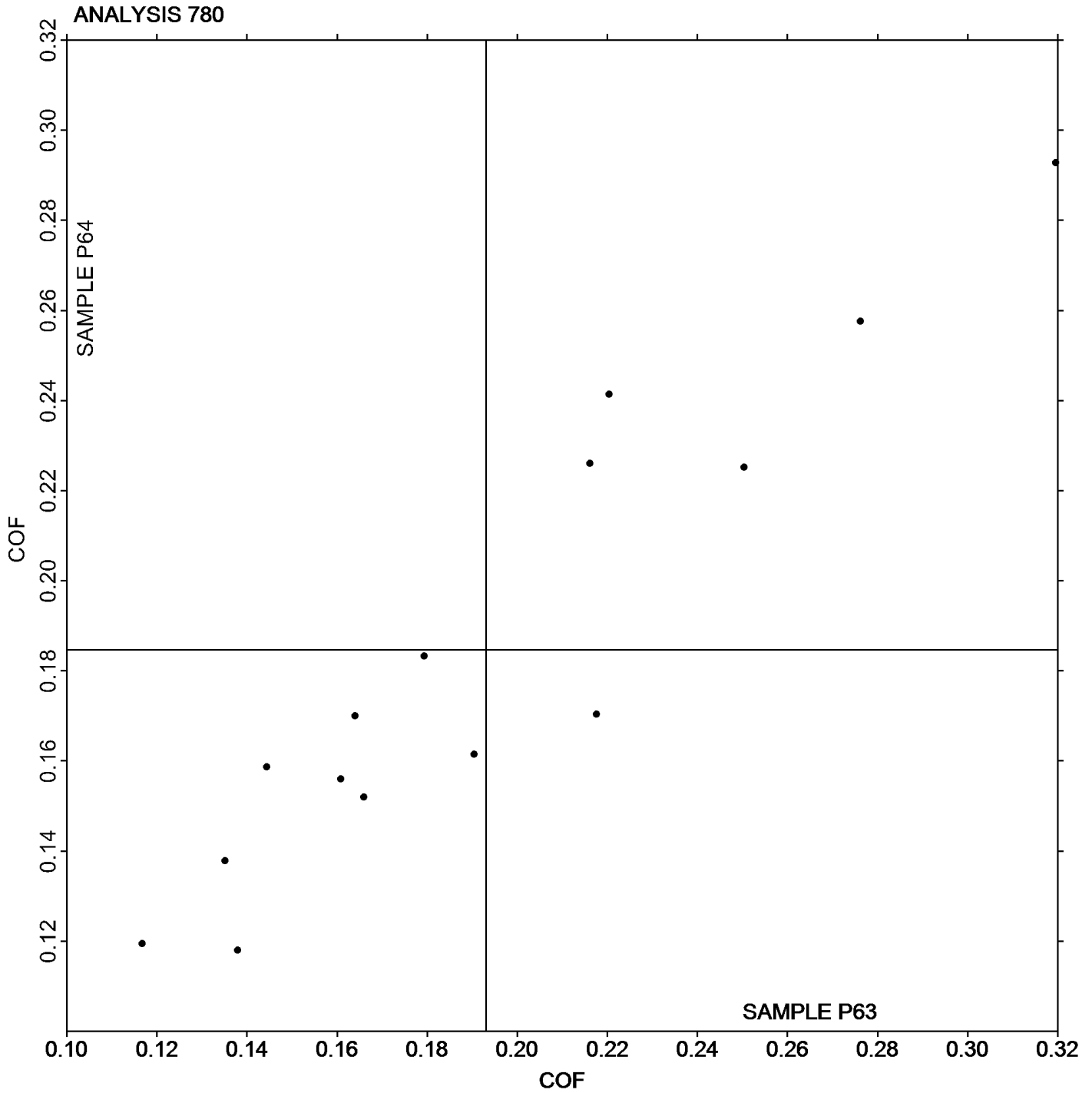
Analysis 780

Coefficient of Static Friction

Report #112

4th Qtr 2019

Grand Mean Sample P63: 0.19303 COF Grand Mean Sample P64: 0.18466 COF



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 781

4th Qtr 2019

Coefficient of Kinetic Friction

WebCode	Data Flag	Sample P63			Sample P64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		0.1654	0.0277	0.89	0.1814	0.0503	1.47	DY
3MQCP6		0.1002	-0.0376	-1.21	0.1033	-0.0278	-0.81	IG
4Q4HFC		0.0848	-0.0529	-1.71	0.0664	-0.0647	-1.89	IP
6EN7JT		0.1580	0.0203	0.65	0.1580	0.0269	0.79	XX
92AAU8		0.1460	0.0083	0.27	0.1620	0.0309	0.91	KA
AUNEPX		0.1400	0.0023	0.07	0.1460	0.0149	0.44	XX
BFKFE6		0.1300	-0.0077	-0.25	0.1100	-0.0211	-0.62	TH
BX7VKM		0.1440	0.0063	0.20	0.1200	-0.0111	-0.32	XX
C4PKH3		0.1080	-0.0297	-0.96	0.0980	-0.0331	-0.97	XX
C9ZUPY		0.1622	0.0245	0.79	0.1598	0.0287	0.84	IS
EZDKBL		0.2000	0.0623	2.01	0.2040	0.0729	2.13	XX
FM9NTJ		0.1600	0.0223	0.72	0.1720	0.0409	1.20	XX
L7EE4U		0.0950	-0.0427	-1.38	0.0796	-0.0515	-1.51	TH
M89FPC		0.1460	0.0083	0.27	0.1500	0.0189	0.55	XX
PL3J78		0.0940	-0.0437	-1.41	0.0880	-0.0431	-1.26	XX
QTVDGB		0.0922	-0.0455	-1.47	0.0934	-0.0377	-1.10	TN
RM8VW9		0.1334	-0.0043	-0.14	0.1030	-0.0281	-0.82	TH
RULYM8		0.1420	0.0043	0.14	0.1200	-0.0111	-0.32	TN
UYBVP4		0.1380	0.0003	0.01	0.1420	0.0109	0.32	XX
VVPP7Y	*	0.2014	0.0637	2.06	0.1548	0.0237	0.69	TH
VXV7KG		0.1382	0.0005	0.01	0.1308	-0.0003	-0.01	MI
WGGBFK		0.1278	-0.0099	-0.32	0.1282	-0.0029	-0.08	RD
XHPZ4P	X	0.0284	-0.1093	-3.53	0.0231	-0.1080	-3.16	SA
YNVY68		0.1614	0.0237	0.76	0.1406	0.0095	0.28	MI
ZGT6Q7		0.1380	0.0003	0.01	0.1340	0.0029	0.09	XX

Summary Statistics		
	Sample P63	Sample P64
Grand Means	0.13775 COF	0.13105 COF
Stnd Dev Btwn Labs	0.03096 COF	0.03417 COF
Statistics based on 24 of 25 reporting participants		

Sample P63: LDPE & Sample P64: LDPE

Comments on Assigned Data Flags for Test #781

XHPZ4P (X) - Extreme data.



Plastics Interlaboratory Testing Program

Analysis 781

Coefficient of Kinetic Friction

Report #112

4th Qtr 2019

Key to Instrument Codes Reported by Participants

DY	Dynisco Model D1055	IG	Instron
IP	Instron 4000 Series	IS	Instron 5000 Series
KA	Kayeness Inc.	MI	MTS Insight
RD	RDM CF	SA	Shimadzu Autograph
TH	Thwing Albert Friction/Peel Tester Model 225-1	TN	TMI #32-06
XX	Instrument make/model not specified by lab		



Plastics Interlaboratory Testing Program

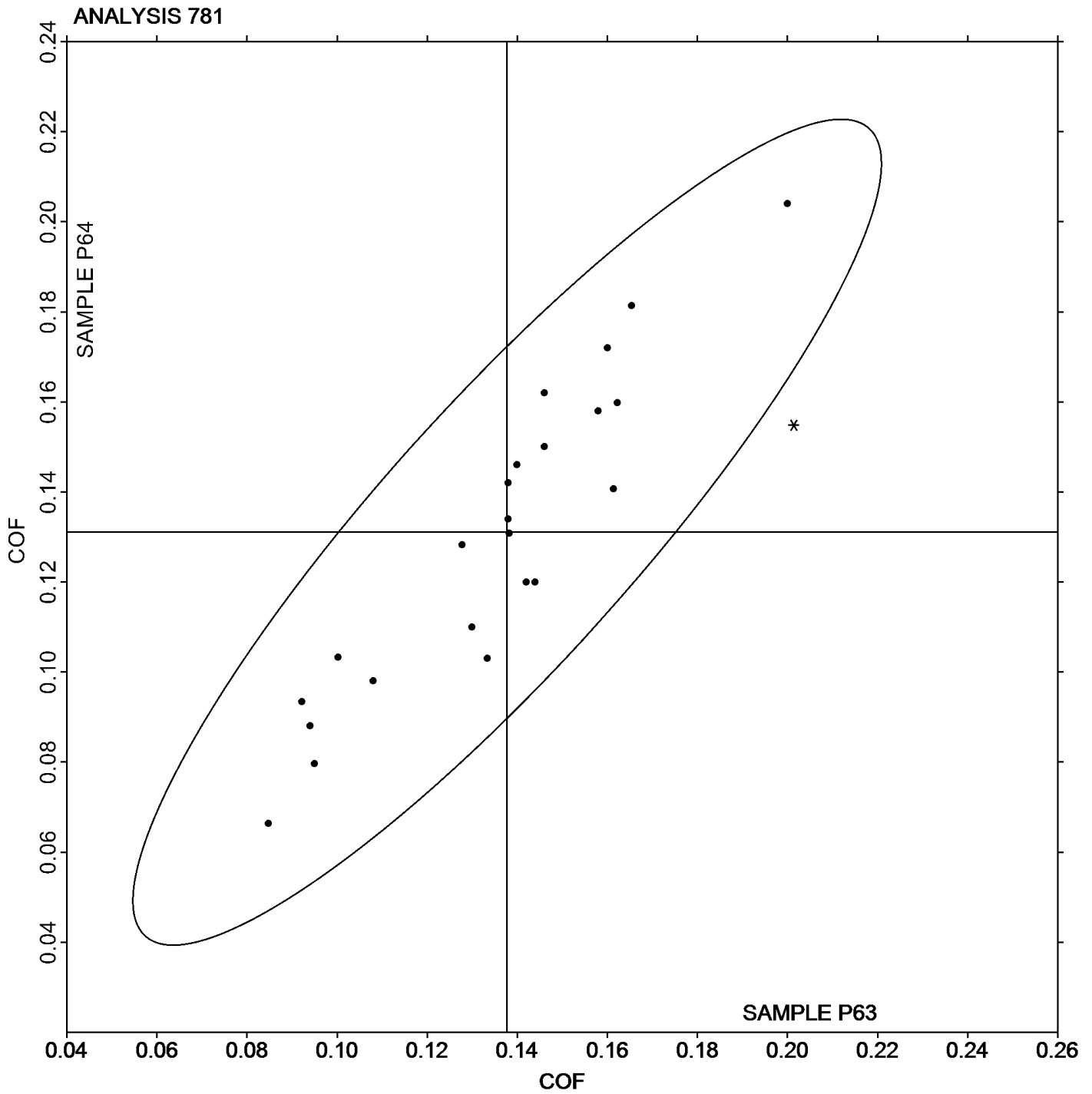
Analysis 781

Coefficient of Kinetic Friction

Report #112

4th Qtr 2019

Grand Mean Sample P63: 0.13775 COF Grand Mean Sample P64: 0.13105 COF





Plastics Interlaboratory Testing Program

Report #112

Analysis 782

4th Qtr 2019

Tear Resistance of Films

WebCode	Data Flag	Sample Q63			Sample Q64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		229.4	-51.1	-0.65	206.1	-76.9	-0.90	TA
2MPHTT		415.5	135.0	1.73	410.9	127.9	1.49	TG
BFKFE6		273.3	-7.2	-0.09	119.7	-163.3	-1.91	TE
C4PKH3		207.6	-72.9	-0.93	247.5	-35.6	-0.42	TM
C9ZUPY		370.2	89.7	1.15	378.4	95.4	1.11	SZ
L7EE4U		312.4	31.9	0.41	316.7	33.7	0.39	TA
LYYQBD		171.1	-109.4	-1.40	186.9	-96.1	-1.12	TM
NKFF7M		388.0	107.5	1.37	413.6	130.6	1.52	TA
Q6NWX3		276.5	-4.0	-0.05	277.0	-6.1	-0.07	LO
VVPP7Y		212.5	-68.0	-0.87	256.4	-26.6	-0.31	TE
VXV7KG		303.9	23.4	0.30	281.9	-1.1	-0.01	TE
XHPZ4P		300.6	20.1	0.26	305.0	21.9	0.26	TE
YNVY68		185.8	-94.8	-1.21	279.4	-3.6	-0.04	TE

Summary Statistics

	Sample Q63	Sample Q64
Grand Means	280.53 grams-force	283.03 grams-force
Stnd Dev Btwn Labs	78.19 grams-force	85.62 grams-force

Statistics based on 13 of 13 reporting participants

Sample Q63: LDPE & Sample Q64: LDPE

Key to Instrument Codes Reported by Participants

LO	Lorentzen & Wettre Model II	SZ	Textest FX 3700
TA	Thwing-Albert	TE	Thwing-Albert Pro Tear
TG	Thwing-Albert Model 93	TM	TMI No. 83-1100



Plastics Interlaboratory Testing Program

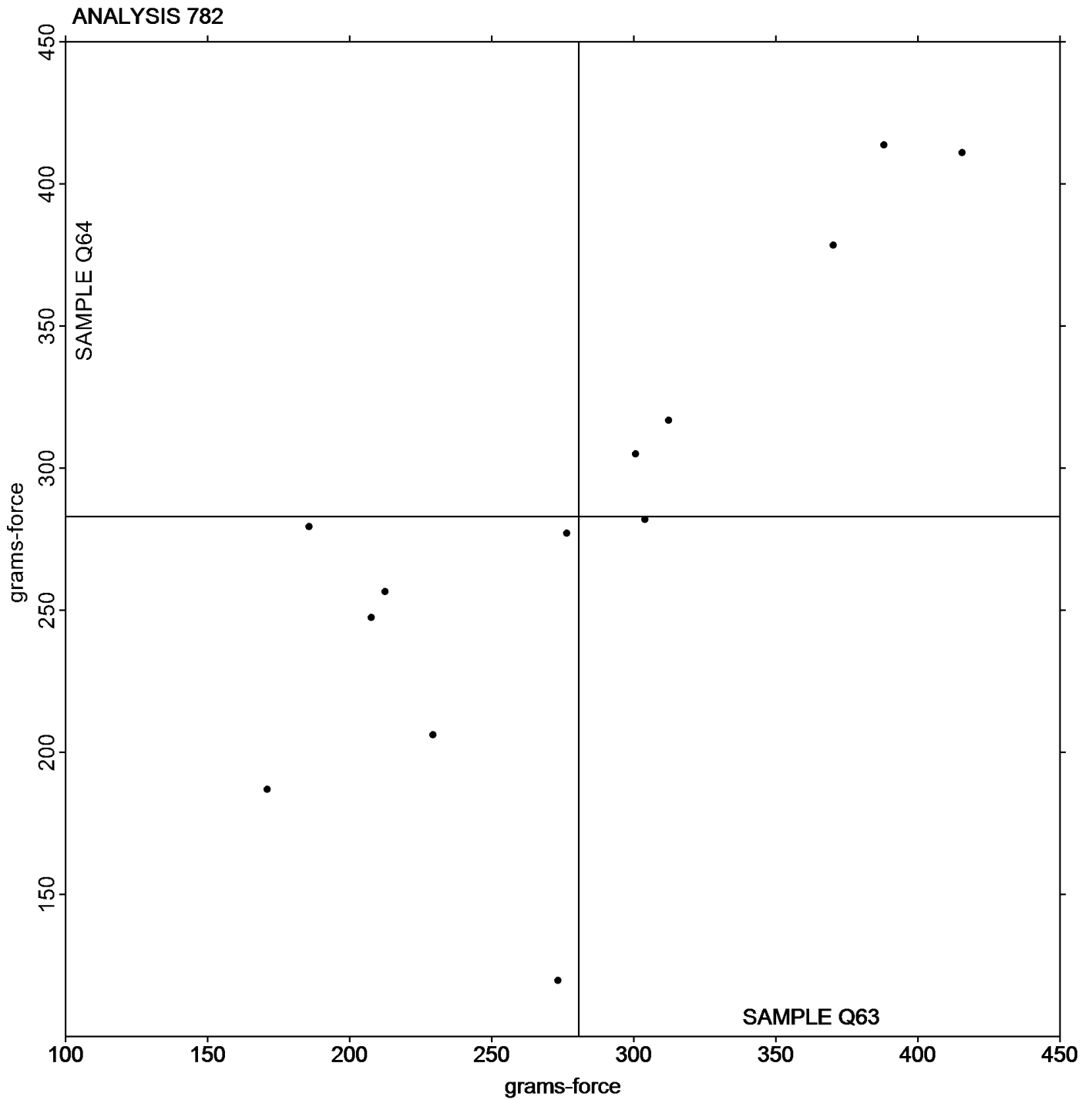
Report #112

Analysis 782

4th Qtr 2019

Tear Resistance of Films

Grand Mean Sample Q63: 280.53 grams-force Grand Mean Sample Q64: 283.03 grams-force



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



Plastics Interlaboratory Testing Program

Report #112

Analysis 785

4th Qtr 2019

Percent Haze of Film

WebCode	Data Flag	Sample D63			Sample D64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
239UX9		22.013	-0.863	-0.64	18.365	1.584	1.57	XR
2MPHTT		21.675	-1.200	-0.90	15.763	-1.018	-1.01	BJ
4BQ647		22.350	-0.525	-0.39	16.400	-0.381	-0.38	BJ
7QHL79		22.488	-0.388	-0.29	16.688	-0.093	-0.09	BJ
9K6KXA		22.230	-0.645	-0.48	16.738	-0.043	-0.04	BJ
9LU3MN		22.390	-0.485	-0.36	18.358	1.577	1.56	XX
AFQHB6	*	25.269	2.393	1.78	19.729	2.948	2.92	XR
B498FK		22.325	-0.550	-0.41	16.275	-0.506	-0.50	BJ
BFKFE6		22.638	-0.238	-0.18	16.725	-0.056	-0.05	BJ
C9ZUPY		25.138	2.262	1.69	16.713	-0.068	-0.07	BJ
DLZUV9		23.681	0.806	0.60	17.828	1.047	1.04	XR
ENK76X		22.065	-0.810	-0.60	16.704	-0.077	-0.08	BJ
FPQ4MJ		24.950	2.075	1.55	16.313	-0.468	-0.46	BJ
L7EE4U		22.400	-0.475	-0.35	16.100	-0.681	-0.67	BJ
LF4XQF		22.513	-0.363	-0.27	16.838	0.057	0.06	BJ
LYYQBD	*	19.838	-3.038	-2.27	18.550	1.769	1.75	BJ
N9ZQ2Q		24.980	2.105	1.57	16.171	-0.609	-0.60	XX
NKFF7M		23.425	0.550	0.41	16.825	0.044	0.04	BJ
QK4TLB		23.438	0.562	0.42	16.525	-0.256	-0.25	BJ
QNMP7V		22.063	-0.813	-0.61	16.500	-0.281	-0.28	BJ
U2ZB7Q		23.540	0.665	0.50	17.766	0.986	0.98	XR
UTPX2F		22.450	-0.425	-0.32	14.800	-1.981	-1.96	HL
VVPP7Y		22.688	-0.188	-0.14	16.350	-0.431	-0.43	BJ
WD72PC		22.900	0.025	0.02	15.913	-0.868	-0.86	BJ
WVG8LZ		21.293	-1.583	-1.18	15.765	-1.016	-1.01	XR
XHPZ4P		20.613	-2.263	-1.69	16.013	-0.768	-0.76	BJ
XVXK3A		25.375	2.500	1.86	16.100	-0.681	-0.67	BJ
YNVY68		23.450	0.575	0.43	16.913	0.132	0.13	BJ
ZJV7TN		23.213	0.337	0.25	16.913	0.132	0.13	BJ



Plastics Interlaboratory Testing Program

Report #112

Analysis 785

4th Qtr 2019

Percent Haze of Film

Summary Statistics	<u>Sample D63</u>	<u>Sample D64</u>
Grand Means	22.8753 Percent	16.7805 Percent
Stnd Dev Btwn Labs	1.3410 Percent	1.0095 Percent

Statistics based on 29 of 29 reporting participants

Sample D63: LDPE & Sample D64: LDPE

Key to Instrument Codes Reported by Participants

- | | |
|---|--|
| BJ BYK-Gardner Haze-Gard Plus/i | HL Hunterlab Ultrascan |
| XR X-Rite Spectrocolorimeter (any model) | XX Instrument make/model not specified by lab |



Plastics Interlaboratory Testing Program

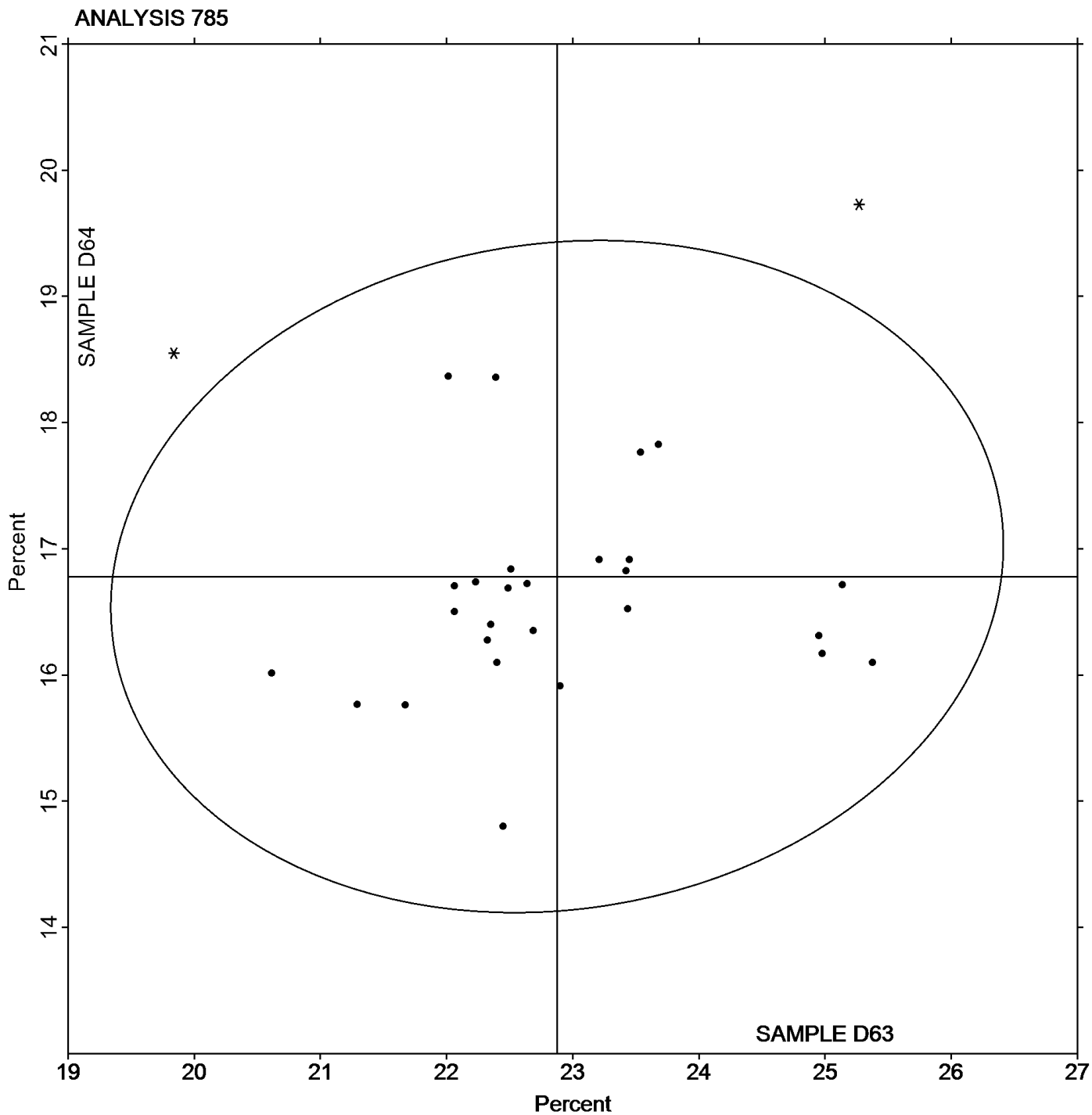
Analysis 785

Percent Haze of Film

Report #112

4th Qtr 2019

Grand Mean Sample D63: 22.875 Percent Grand Mean Sample D64: 16.781 Percent





Plastics Interlaboratory Testing Program

Report #112

Analysis 786

4th Qtr 2019

Total Luminous transmittance of film

WebCode	Data Flag	Sample D63			Sample D64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MPHTT		92.26	-0.18	-0.18	92.91	0.16	0.16	BJ
4BQ647		92.80	0.36	0.36	93.49	0.74	0.73	BJ
7QHL79		92.41	-0.03	-0.03	92.89	0.14	0.14	BJ
9K6KXA		92.60	0.16	0.16	93.09	0.34	0.33	BJ
9LU3MN		90.79	-1.65	-1.65	90.87	-1.89	-1.87	XX
AFQHB6		91.88	-0.56	-0.56	92.03	-0.72	-0.71	XR
B498FK		93.29	0.85	0.85	93.34	0.59	0.58	BJ
BFKFE6		91.81	-0.63	-0.63	92.03	-0.73	-0.72	BJ
C9ZUPY		91.33	-1.11	-1.11	91.66	-1.09	-1.08	BJ
DLZUV9		91.60	-0.84	-0.84	91.67	-1.08	-1.07	XR
ENK76X		93.57	1.13	1.13	93.96	1.21	1.20	BJ
FPQ4MJ		92.99	0.55	0.55	93.45	0.70	0.70	BJ
L7EE4U		93.10	0.66	0.66	93.48	0.72	0.72	BJ
LF4XQF		92.81	0.37	0.38	93.05	0.30	0.30	BJ
LYYQBD		92.74	0.30	0.30	92.95	0.20	0.20	BJ
N9ZQ2Q		91.70	-0.74	-0.74	91.98	-0.78	-0.77	XX
NKFF7M		93.84	1.40	1.40	94.05	1.30	1.29	BJ
QK4TLB		94.39	1.95	1.95	94.63	1.87	1.86	BJ
QNMP7V		93.00	0.56	0.56	93.54	0.79	0.78	BJ
U2ZB7Q		92.04	-0.40	-0.40	92.12	-0.63	-0.63	XR
UTPX2F	*	90.05	-2.39	-2.39	90.80	-1.95	-1.94	HL
VVPP7Y		91.76	-0.68	-0.68	91.89	-0.86	-0.86	BJ
WD72PC		93.40	0.96	0.96	93.73	0.97	0.97	BJ
WVG8LZ		90.79	-1.64	-1.65	91.09	-1.66	-1.65	XR
XHPZ4P		92.94	0.50	0.50	93.04	0.29	0.29	BJ
XVXK3A		92.91	0.47	0.48	93.21	0.46	0.46	BJ
YNVY68	X	92.98	0.54	0.54	92.26	-0.49	-0.49	BJ
ZJV7TN		93.03	0.59	0.59	93.35	0.60	0.60	BJ



Plastics Interlaboratory Testing Program

Report #112

Analysis 786

4th Qtr 2019

Total Luminous transmittance of film

Summary Statistics		
	<u>Sample D63</u>	<u>Sample D64</u>
Grand Means	92.438 Percent	92.751 Percent
Stnd Dev Btwn Labs	0.998 Percent	1.006 Percent
Statistics based on 27 of 28 reporting participants		

Sample D63: LDPE & Sample D64: LDPE

Comments on Assigned Data Flags for Test #786

YNVY68 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample D64.

Key to Instrument Codes Reported by Participants

- | | | | |
|----|---------------------------------------|----|--|
| BJ | BYK-Gardner Haze-Gard Plus/i | HL | Hunterlab Ultrascan XE |
| XR | X-Rite Spectrocolorimeter (any model) | XX | Instrument make/model not specified by lab |



Plastics Interlaboratory Testing Program

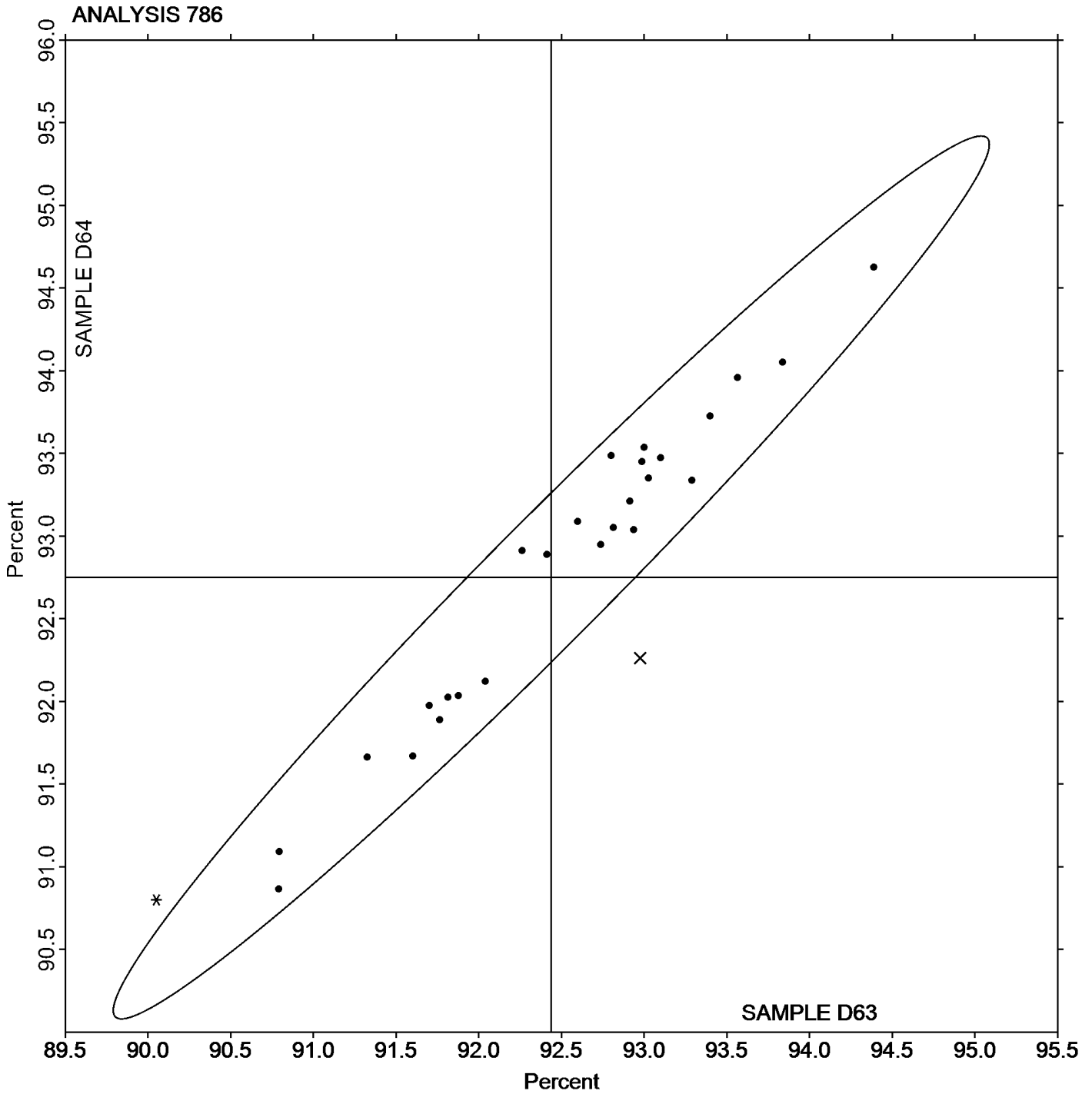
Analysis 786

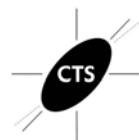
Total Luminous transmittance of film

Report #112

4th Qtr 2019

Grand Mean Sample D63: 92.438 Percent Grand Mean Sample D64: 92.751 Percent





Plastics Interlaboratory Testing Program

Report #112

Analysis 790

4th Qtr 2019

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S63			Sample S64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2D3GCH		3.14	0.34	1.89	3.03	0.28	1.51	TO
37M2HD	*	2.83	0.04	0.21	2.37	-0.38	-2.05	TO
38XLP3		2.70	-0.10	-0.54	2.74	-0.01	-0.06	TM
43ZFRC		2.94	0.14	0.79	3.06	0.31	1.68	TO
6M3UKM	X	3.34	0.55	3.02	3.58	0.83	4.47	CE
6X2LWU		3.02	0.23	1.25	2.95	0.20	1.09	TM
7QGPXY		2.79	-0.01	-0.04	2.71	-0.04	-0.24	TO
7QHL79	X	4.62	1.83	10.10	2.81	0.06	0.34	CE
8A38ZV		2.66	-0.14	-0.76	2.40	-0.35	-1.88	TM
8WL8CG		2.95	0.15	0.83	2.90	0.15	0.79	TM
9ML4LK		2.40	-0.40	-2.18	2.40	-0.35	-1.90	TO
9QLEHK		2.69	-0.11	-0.59	2.46	-0.30	-1.59	TO
B97JKW		2.83	0.04	0.20	2.79	0.03	0.18	TM
C2D2DY		2.46	-0.34	-1.87	2.47	-0.28	-1.50	TO
CLM2JE		3.00	0.20	1.11	3.09	0.34	1.84	CS
CMWVHY	X	3.33	0.53	2.93	2.51	-0.25	-1.32	TO
CTNF8Z		2.85	0.06	0.30	2.86	0.11	0.59	TO
DL2MTF		2.89	0.09	0.50	2.87	0.12	0.65	TO
E7FXQV		2.69	-0.10	-0.56	2.72	-0.03	-0.15	TM
E8JCM6		2.80	0.00	0.01	2.80	0.05	0.27	TO
FDJZVW		2.90	0.10	0.55	2.90	0.14	0.78	BA
FGHBQV		2.64	-0.15	-0.83	2.65	-0.10	-0.55	WZ
GLDHVQ		2.79	-0.01	-0.05	2.91	0.16	0.88	CE
H2EWER	X	6.23	3.43	18.94	5.53	2.78	14.97	TM
HXJX8M		2.71	-0.09	-0.48	2.70	-0.05	-0.27	CE
JD8ULN		2.48	-0.32	-1.76	2.49	-0.26	-1.38	DY
JLXFPZ		2.75	-0.04	-0.23	2.63	-0.12	-0.65	TO
JRJBLY	X	3.36	0.56	3.11	2.70	-0.05	-0.29	TO
JURF8Y		2.75	-0.05	-0.26	2.80	0.04	0.24	XX
JWHRYR		2.78	-0.02	-0.09	2.73	-0.02	-0.11	TO
KECMBF		2.86	0.07	0.38	2.87	0.12	0.65	TO
KV73JL		2.58	-0.22	-1.20	2.55	-0.20	-1.10	CE
L7EE4U		2.90	0.10	0.57	2.48	-0.27	-1.47	WZ
LF4XQF	X	2.50	-0.30	-1.65	3.19	0.44	2.37	TM
LUKXET		3.12	0.32	1.79	2.78	0.03	0.15	TO



Plastics Interlaboratory Testing Program

Report #112

Analysis 790

4th Qtr 2019

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S63			Sample S64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
LYXXD6	*	2.38	-0.42	-2.31	2.77	0.02	0.10	TO
P38XKG		2.72	-0.08	-0.44	2.67	-0.09	-0.46	CE
P9VQKM		2.74	-0.05	-0.30	2.84	0.09	0.49	CE
PJAQZ4	X	0.38	-2.42	-13.34	0.32	-2.43	-13.08	TO
PKH4G6		2.76	-0.04	-0.22	2.69	-0.06	-0.34	TO
QTVDGB		3.09	0.29	1.63	3.07	0.32	1.71	TM
RM6DMG		2.72	-0.07	-0.41	2.72	-0.03	-0.18	XX
RQ4L3J	X	3.89	1.10	6.05	3.21	0.46	2.49	TM
TCW4GA		2.77	-0.02	-0.13	2.55	-0.20	-1.07	TM
TJ2RNH		2.87	0.07	0.40	2.83	0.08	0.40	WZ
TQJF3K		3.26	0.46	2.54	3.04	0.29	1.56	TM
UQW8HU		2.71	-0.09	-0.48	2.64	-0.11	-0.58	WZ
UZHF7C	X	3.52	0.72	3.99	3.54	0.79	4.25	CE
VVPP7Y		2.77	-0.02	-0.12	2.78	0.03	0.14	CE
VWKBYP		2.73	-0.06	-0.34	2.64	-0.11	-0.61	CE
WJCPA6		2.98	0.18	1.00	2.91	0.16	0.85	CE
XTBXC9		2.73	-0.07	-0.37	2.92	0.17	0.92	TO
XVG9K6		2.74	-0.06	-0.33	2.72	-0.03	-0.16	TO
Y3RALX		2.69	-0.10	-0.57	2.76	0.01	0.07	TO
YNVY68		3.01	0.22	1.20	2.71	-0.04	-0.21	TO
YU6TNJ	X	3.57	0.77	4.25	3.15	0.39	2.12	XX
ZJV7TN		2.85	0.06	0.31	2.94	0.18	0.99	TY

Summary Statistics		
	Sample S63	Sample S64
Grand Means	2.796 ft.lbf/in	2.752 ft.lbf/in
Std Dev Btwn Labs	0.181 ft.lbf/in	0.186 ft.lbf/in
Statistics based on 47 of 57 reporting participants		

Sample S63: ABS & Sample S64: ABS



Plastics Interlaboratory Testing Program

Analysis 790

Notched Izod Impact - ft.lbf/in

Report #112

4th Qtr 2019

Comments on Assigned Data Flags for Test #790

- LF4XQF (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- 6M3UKM (X) - Data for both samples are high.
- UZH7C (X) - Data for both samples are high.
- CMWVHY (X) - Data for sample S63 are high.
- RQ4L3J (X) - Data for sample S63 are high.
- H2EWER (X) - Extreme data.
- JRBLX (X) - Data for sample S63 are high.
- YU6TNJ (X) - Data for sample S63 are high.
- 7QHL79 (X) - Data for sample S63 are high. Inconsistent within the determinations of sample S63.
- PJAQZ4 (X) - Extreme data.

Key to Instrument Codes Reported by Participants

BA	Baldwin	CE	Ceast
CS	CSI	DY	Dynatup
TM	TMI	TO	Tinius Olsen
TY	Toyoseiki	WZ	Zwick
XX	Instrument manufacturer not specified by lab		



Plastics Interlaboratory Testing Program

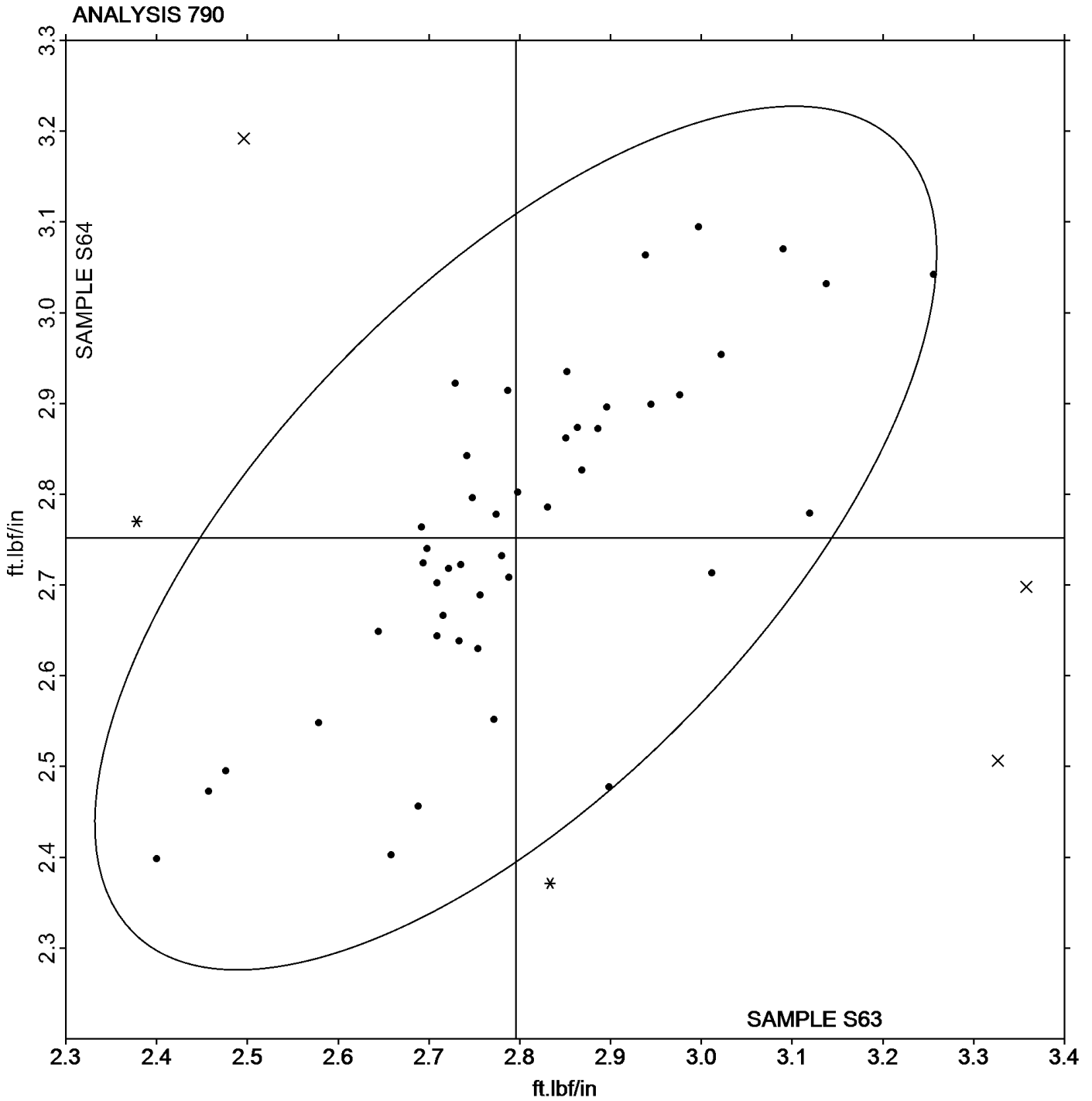
Analysis 790

Notched Izod Impact - ft.lbf/in

Report #112

4th Qtr 2019

Grand Mean Sample S63: 2.7956 ft.lbf/in Grand Mean Sample S64: 2.7517 ft.lbf/in





Plastics Interlaboratory Testing Program

Report #112

Analysis 791

4th Qtr 2019

Notched Izod Impact - kJ/m²

WebCode	Data Flag	Sample Z63			Sample Z64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2QZX47		41.35440	2.36063	0.75	41.55580	2.46231	0.73	TM
37M2HD		35.72000	-3.27377	-1.05	35.59800	-3.49549	-1.03	TO
4PTWPB		41.94000	2.94623	0.94	43.89200	4.79851	1.42	CE
9ML4LK		37.42200	-1.57177	-0.50	37.11600	-1.97749	-0.59	TO
9QLEHK		37.28000	-1.71377	-0.55	35.84000	-3.25349	-0.96	TO
9WBRJ9		37.19600	-1.79777	-0.57	37.02000	-2.07349	-0.61	CE
AUPBX8		39.40000	0.40623	0.13	39.74000	0.64651	0.19	TO
C38RGR		37.06000	-1.93377	-0.62	36.66000	-2.43349	-0.72	CE
FGHBQV		39.36600	0.37223	0.12	39.66800	0.57451	0.17	WZ
HBLNRR		35.13800	-3.85577	-1.23	35.04800	-4.04549	-1.20	XX
HNVXYQ		35.90600	-3.08777	-0.99	35.69600	-3.39749	-1.01	TO
JA6RZT		39.45400	0.46023	0.15	39.54800	0.45451	0.13	WZ
JAUPEU		44.42000	5.42623	1.73	44.10000	5.00651	1.48	TO
K28DGE		46.50000	7.50623	2.40	47.52000	8.42651	2.49	WZ
LYYQBD		33.16000	-5.83377	-1.86	33.56000	-5.53349	-1.64	CE
MCDACR		42.39800	3.40423	1.09	41.75200	2.65851	0.79	CE
PJAQZ4		38.24800	-0.74577	-0.24	38.85600	-0.23749	-0.07	TO
TJ2RNH		36.18600	-2.80777	-0.90	36.27800	-2.81549	-0.83	WZ
TQHGV6		43.08400	4.09023	1.31	42.55800	3.46451	1.02	WZ
WCAN66		39.18600	0.19223	0.06	39.62200	0.52851	0.16	WZ
WTF8HM		38.71400	-0.27977	-0.09	37.49000	-1.60349	-0.47	TO
WTGZFV		39.95400	0.96023	0.31	41.43000	2.33651	0.69	CE
XURU3M		36.87400	-2.11977	-0.68	37.15400	-1.93949	-0.57	TO
ZJV7TN		39.89000	0.89623	0.29	40.54200	1.44851	0.43	XX

Summary Statistics		Sample Z63	Sample Z64
Grand Means		38.993767 kJ/m ²	39.093492 kJ/m ²
Std Dev Btwn Labs		3.128958 kJ/m ²	3.380261 kJ/m ²
Statistics based on 24 of 24 reporting participants			

Sample Z63: ABS/PC & Sample Z64: ABS/PC



Plastics Interlaboratory Testing Program

Analysis 791

Notched Izod Impact - kJ/m^2

Report #112

4th Qtr 2019

Key to Instrument Codes Reported by Participants

CE Ceast

TO Tinius Olsen

XX Instrument manufacturer not specified by lab

TM TMI

WZ Zwick



Plastics Interlaboratory Testing Program

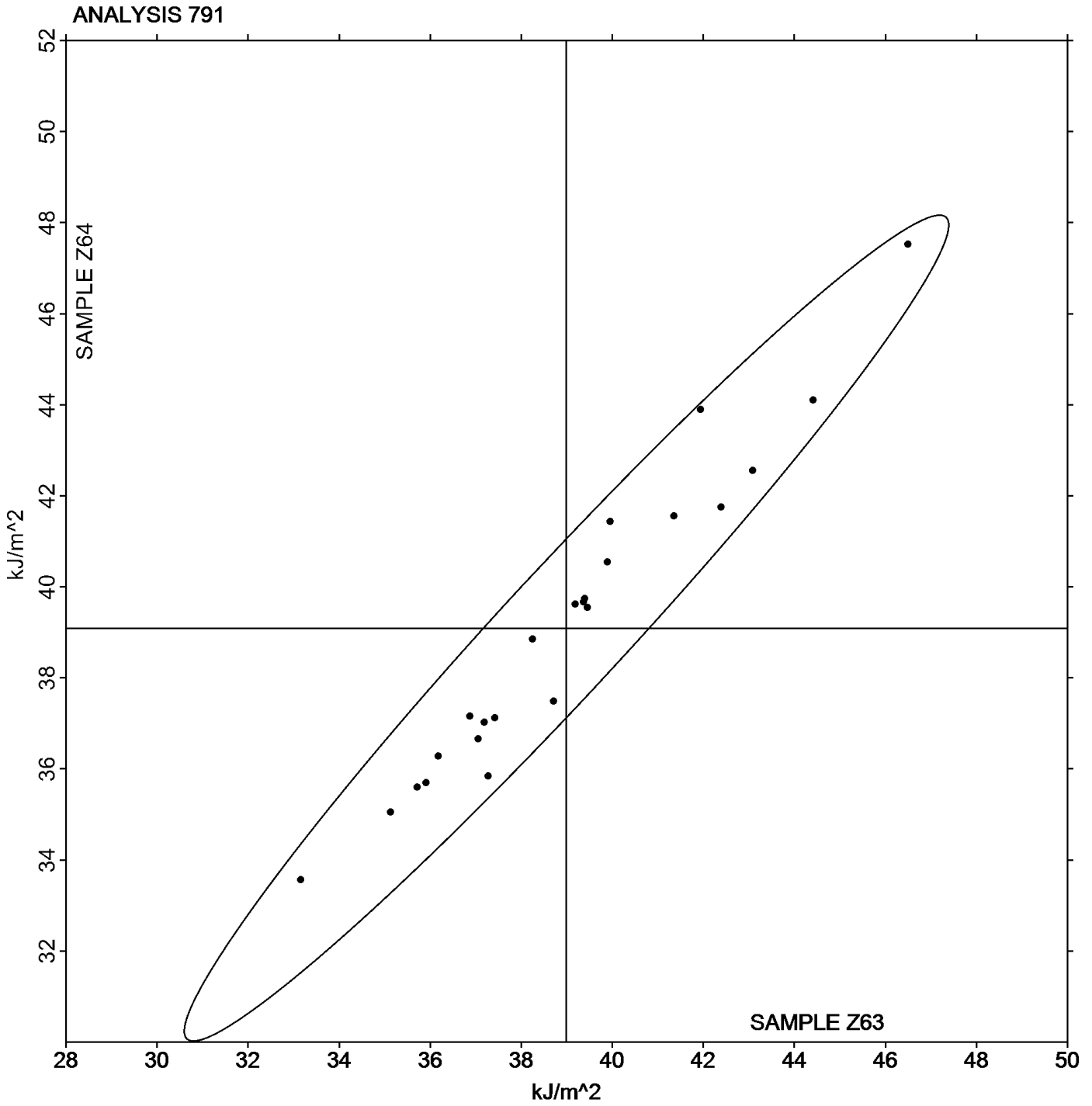
Report #112

Analysis 791

4th Qtr 2019

Notched Izod Impact - kJ/m^2

Grand Mean Sample Z63: 38.994 kJ/m^2 Grand Mean Sample Z64: 39.093 kJ/m^2





Plastics Interlaboratory Testing Program

Report #112

Analysis 792

4th Qtr 2019

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M63			Sample M64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24ZZZK		40.81	-0.47	-0.12	40.87	-0.39	-0.10	XX
37M2HD		37.69	-3.59	-0.91	37.71	-3.54	-0.92	TO
43ZFC	*	45.92	4.63	1.18	42.46	1.20	0.31	TO
4PTWPB		43.45	2.17	0.55	43.85	2.59	0.67	CE
7YA2TR		43.98	2.69	0.69	44.96	3.70	0.96	WZ
7ZKY8A	X	32.48	-8.80	-2.24	37.09	-4.17	-1.08	XX
8ATT22		44.18	2.89	0.74	44.48	3.22	0.84	XX
9ML4LK		41.39	0.11	0.03	41.40	0.15	0.04	TO
9QLEHK		40.38	-0.90	-0.23	38.52	-2.74	-0.71	TO
AHC7TW		39.76	-1.52	-0.39	40.78	-0.47	-0.12	WZ
B88JCK	*	53.30	12.02	3.06	51.98	10.72	2.78	TO
B97JKW		44.08	2.80	0.71	43.19	1.93	0.50	TM
C38RGR	M	No data reported for this sample			41.14	-0.12	-0.03	CE
CYBXR4		44.78	3.50	0.89	43.24	1.98	0.51	IN
FGHBQV		39.33	-1.95	-0.50	40.71	-0.55	-0.14	WZ
GLDHVQ		46.27	4.99	1.27	46.13	4.87	1.26	CE
HLPJ9C		41.82	0.54	0.14	42.24	0.98	0.25	TO
HNVXYQ		38.18	-3.11	-0.79	37.76	-3.50	-0.91	TO
HQGV3M		45.73	4.45	1.13	45.13	3.88	1.00	XX
HXJX8M		39.59	-1.70	-0.43	40.00	-1.26	-0.33	CE
JA6RZT		42.14	0.86	0.22	41.90	0.64	0.17	WZ
JURF8Y		37.34	-3.94	-1.00	38.20	-3.06	-0.79	XX
K28DGE		48.92	7.64	1.94	47.44	6.18	1.60	WZ
KV73JL		40.13	-1.15	-0.29	39.92	-1.34	-0.35	CE
L7EE4U		39.28	-2.01	-0.51	38.41	-2.85	-0.74	WZ
L9Z8RH		35.00	-6.29	-1.60	35.69	-5.57	-1.44	IN
LEBA4D		44.88	3.60	0.92	44.00	2.74	0.71	XX
LF4XQF	M	No data reported for this sample			31.32	-9.94	-2.58	TM
MCDACR	X	74.98	33.70	8.57	73.89	32.63	8.46	CE
MJ2VJE		36.44	-4.84	-1.23	36.00	-5.26	-1.36	TO
MJLHBA		35.83	-5.45	-1.39	35.38	-5.88	-1.52	TO
NKFF7M		39.21	-2.07	-0.53	39.47	-1.79	-0.46	TO
Q7HHQT		42.82	1.54	0.39	44.40	3.14	0.81	CE
RM6DMG		36.98	-4.30	-1.09	37.52	-3.74	-0.97	XX
TJ2RNH		36.82	-4.46	-1.14	37.07	-4.19	-1.08	WZ



Plastics Interlaboratory Testing Program

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Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M63			Sample M64			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
VVPP7Y		44.08	2.80	0.71	46.80	5.54	1.44	CE
VWKBYP	*	36.90	-4.38	-1.11	40.55	-0.71	-0.18	CE
WCAN66		39.24	-2.04	-0.52	39.20	-2.06	-0.53	WZ
WTF8HM		41.90	0.62	0.16	42.72	1.46	0.38	TO
WTGZJV		42.77	1.49	0.38	41.66	0.40	0.10	CE
XURU3M		39.99	-1.29	-0.33	38.52	-2.74	-0.71	TO
XV3WNL		44.48	3.20	0.81	45.60	4.34	1.12	WZ
XVG9K6		40.38	-0.90	-0.23	42.50	1.24	0.32	TO
Y3RALX	*	34.10	-7.18	-1.83	31.62	-9.64	-2.50	TO
YU6TNJ		38.31	-2.97	-0.76	37.38	-3.88	-1.01	XX
ZJV7TN		40.13	-1.16	-0.29	40.30	-0.96	-0.25	TY
ZQX8YA		47.61	6.33	1.61	46.98	5.72	1.48	CE
ZWJ4LL		40.13	-1.16	-0.29	40.71	-0.55	-0.14	CE

Summary Statistics

	Sample M63	Sample M64
Grand Means	41.283 kJ/m ²	41.257 kJ/m ²
Std Dev Btwn Labs	3.930 kJ/m ²	3.858 kJ/m ²

Statistics based on 44 of 48 reporting participants

Sample M63: ABS/PC & Sample M64: ABS/PC

Comments on Assigned Data Flags for Test #792

LF4XQF (M) - Participant did not submit data for sample M63.

C38RGR (M) - Participant did not submit data for sample M63.

7ZKY8A (X) - Inconsistent in testing between samples.

MCDACR (X) - Extreme data.

Key to Instrument Codes Reported by Participants

CE	Ceast	IN	Instron
TM	TMI	TO	Tinius Olsen
TY	Toyoseiki	WZ	Zwick
XX	Instrument manufacturer not specified by lab		



Plastics Interlaboratory Testing Program

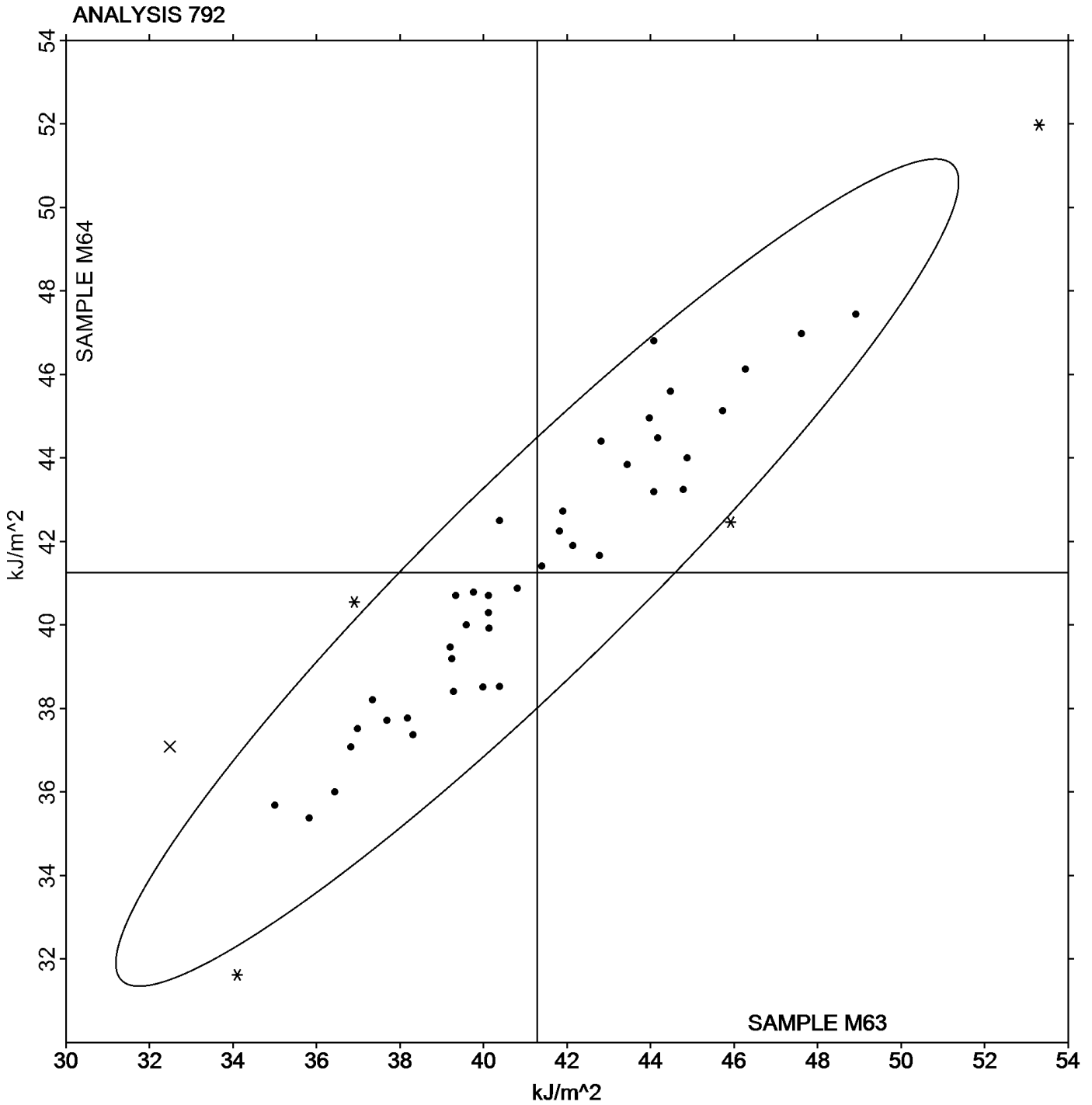
Analysis 792

Notched Charpy Impact - kJ/m^2

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4th Qtr 2019

Grand Mean Sample M63: 41.283 kJ/m^2 Grand Mean Sample M64: 41.257 kJ/m^2



-End of Report-