



Plastics Interlaboratory Testing Program

Web Summary Report #104, 4th Qtr 2017

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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 #104, 4th Qtr 2017

Analysis 704 - Tensile Stress at Yield

Material: ABS/PC	Sample F47	7,449.69	psi	1.75% COV
	Sample F48	7,450.97	psi	1.67% COV

Analysis 705 - Tensile Stress at Break

Material: ABS/PC	Sample F47	6,417.25	psi	1.66% COV
	Sample F48	6,431.78	psi	1.55% COV

Analysis 706 - Percent Elongation at Yield

Material: ABS/PC	Sample F47	4.6847	Percent	2.95% COV
	Sample F48	4.6840	Percent	3.16% COV

Analysis 708 - Modulus of Elasticity

Material: ABS/PC	Sample F47	327.11	ksi	4.09% COV
	Sample F48	326.37	ksi	3.96% COV

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

Material: ABS	Sample E47	77.447	Degrees C	1.68% COV
	Sample E48	77.469	Degrees C	1.61% COV

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

Material: PP	Sample G47	83.379	Degrees C	2.70% COV
	Sample G48	69.984	Degrees C	2.82% COV

Analysis 712 - Temperature of Deflection (1.80 MPa)

Material: HIPS	Sample N47	77.861	Degrees C	1.77% COV
	Sample N48	77.699	Degrees C	1.61% COV

Analysis 715 - Vicat Temperature (Rate A)

Material: ABS	Sample H47	99.619	Degrees C	0.694% COV
	Sample H48	99.656	Degrees C	0.718% COV

Analysis 716 - Vicat Temperature (Rate B)

Material: ABS	Sample R47	101.10	Degrees C	0.780% COV
	Sample R48	101.10	Degrees C	0.789% COV

Analysis 718 - Specific Gravity

Material: ABS/PC	Sample T47	1.1388	sp gr 23/23 C	0.205% COV
	Sample T48	1.1388	sp gr 23/23 C	0.205% COV

Analysis 720 - Flexural Modulus

Material: ABS/PC	Sample J47	338.23	ksi	5.44% COV
	Sample J48	338.74	ksi	5.71% COV

Analysis 721 - Flexural Stress at 5% Strain

Material: ABS/PC	Sample J47	11,861.87	psi	3.21% COV
	Sample J48	11,897.17	psi	3.35% COV

Analysis 722 - Flexural Stress at Yield

Material: ABS/PC	Sample J47	11,986.68	psi	3.57% COV
	Sample J48	12,029.70	psi	3.84% COV

Analysis 730 - Tensile Stress at Yield, ISO Method

Material: ABS/PC	Sample C47	50.725	MPa	1.55% COV
	Sample C48	51.012	MPa	1.28% COV

Analysis 731 - Tensile Stress at Break, ISO Method

Material: ABS/PC	Sample C47	43.321	MPa	1.90% COV
	Sample C48	43.474	MPa	1.67% COV



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Analysis 732 - Strain at Yield, ISO Method

Material: ABS/PC	Sample C47	4.6821	Percent	3.32% COV
	Sample C48	4.6266	Percent	3.19% COV

Analysis 734 - Modulus of Elasticity, ISO Method

Material: ABS/PC	Sample C47	2,268.08	MPa	4.31% COV
	Sample C48	2,267.12	MPa	4.03% COV

Analysis 736 - Flexural Modulus

Material: ABS/PC	Sample K47	2,261.30	MPa	4.30% COV
	Sample K48	2,267.90	MPa	3.73% COV

Analysis 737 - Flexural Stress at 3.5% Strain

Material: ABS/PC	Sample K47	69.482	MPa	3.56% COV
	Sample K48	69.773	MPa	3.09% COV

Analysis 738 - Flexural Stress at Yield

Material: ABS/PC	Sample K47	79.815	MPa	3.02% COV
	Sample K48	80.229	MPa	2.54% COV

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

Material: PP	Sample X47	14.884	grams/10 mins	5.86% COV
	Sample X48	11.343	grams/10 mins	4.86% COV

Analysis 755 - Moisture Content

Material: ABS/PC	Sample Y47	0.14684	Percent	19.1% COV
	Sample Y48	0.12036	Percent	20.0% COV

Analysis 757 - Ash Content

Material: PBT	Sample L47	14.910	Percent	1.11% COV
	Sample L48	14.928	Percent	0.871% COV

Analysis 760 - DSC

Material: PBT	Sample W47	196.29	Degrees Celsius	1.47% COV
	Sample W48	195.92	Degrees Celsius	1.49% COV

Analysis 761 - DSC

Material: PBT	Sample W47	221.00	Degrees Celsius	0.716% COV
	Sample W48	221.31	Degrees Celsius	0.793% COV

Analysis 762 - DSC

Material: PBT	Sample W47	22.835	Joules Per Gram	10.1% COV
	Sample W48	22.784	Joules Per Gram	9.38% COV

Analysis 763 - DSC

Material: PBT	Sample W47	24.819	Joules Per Gram	9.73% COV
	Sample W48	24.782	Joules Per Gram	8.93% COV

Analysis 764 - DSC

Material: ABS	Sample V47	106.70	Degrees Celsius	1.44% COV
	Sample V48	106.34	Degrees Celsius	1.43% COV

Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B47	1,759.89	psi	21.3% COV
	Sample B48	2,219.39	psi	26.5% COV

Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B47	2,945.32	psi	16.6% COV
	Sample B48	3,460.32	psi	11.9% COV



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Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B47	48.587	Percent	62.6% COV
	Sample B48	55.589	Percent	66.1% COV

Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B47	631.94	Percent	14.9% COV
	Sample B48	599.02	Percent	16.4% COV

Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B47	3.1026	mils	5.59% COV
	Sample B48	2.9458	mils	3.33% COV

Analysis 775 - Secant Modulus at 1% Strain

Material: LDPE	Sample B47	25,938.66	psi	16.1% COV
	Sample B48	28,195.52	psi	16.3% COV

Analysis 776 - Secant Modulus at 2% Strain

Material: LDPE	Sample B47	23,822.72	psi	17.7% COV
	Sample B48	26,078.38	psi	13.2% COV

Analysis 780 - Static Friction

Material: LDPE	Sample P47	0.14740	COF	41.9% COV
	Sample P48	0.12327	COF	39.3% COV

Analysis 781 - Kinetic Friction

Material: LDPE	Sample P47	0.09575	COF	30.3% COV
	Sample P48	0.09540	COF	29.8% COV

Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q47	378.38	grams-force	10.7% COV
	Sample Q48	140.66	grams-force	13.6% COV

Analysis 785 - Percent Haze

Material: LDPE	Sample D47	26.516	Percent	9.05% COV
	Sample D48	30.865	Percent	9.07% COV

Analysis 786 - Total Transmittance

Material: LDPE	Sample D47	91.525	Percent	2.36% COV
	Sample D48	91.410	Percent	2.42% COV

Analysis 790 - Notched Izod Impact

Material: ABS/PC	Sample S47	9.3539	ft.lbf/in	6.94% COV
	Sample S48	9.3238	ft.lbf/in	7.52% COV

Analysis 791 - Notched Izod Impact

Material: ABS/PC	Sample Z47	39.968	kJ/m ²	6.37% COV
	Sample Z48	40.060	kJ/m ²	5.97% COV

Analysis 792 - Notched Charpy Impact

Material: ABS/PC	Sample M47	41.367	kJ/m ²	7.99% COV
	Sample M48	42.213	kJ/m ²	8.19% COV



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2HMMRA		7,538.0	88.3	0.68	7,506.0	55.0	0.44
36E24B		7,397.0	-52.7	-0.40	7,397.0	-54.0	-0.43
36RMLY		7,379.6	-70.1	-0.54	7,420.2	-30.8	-0.25
3P2L2F		7,423.1	-26.6	-0.20	7,436.7	-14.2	-0.11
3WJB7G		7,658.1	208.4	1.60	7,571.0	120.1	0.96
3Z3D4E		7,446.8	-2.9	-0.02	7,493.0	42.0	0.34
42TWMR		7,322.4	-127.3	-0.98	7,334.2	-116.8	-0.94
4G6DR9		7,569.8	120.1	0.92	7,574.6	123.6	0.99
626VEF		7,632.0	182.3	1.40	7,531.0	80.0	0.64
6U8497	*	7,264.0	-185.7	-1.43	7,176.0	-275.0	-2.21
792YVX		7,252.2	-197.5	-1.52	7,251.4	-199.6	-1.60
7QJ7XL		7,593.3	143.6	1.10	7,578.8	127.8	1.03
7ZBLMP		7,248.8	-200.9	-1.54	7,244.6	-206.4	-1.66
8DUKZ6		7,593.9	144.2	1.11	7,615.9	164.9	1.32
8F2P3T		7,293.0	-156.7	-1.20	7,370.0	-81.0	-0.65
8U2QHF		7,258.8	-190.9	-1.47	7,244.8	-206.2	-1.65
8VTT3A		7,217.8	-231.9	-1.78	7,236.0	-215.0	-1.72
9DNQU4		7,368.0	-81.7	-0.63	7,376.0	-75.0	-0.60
9FTCQG		7,532.5	82.8	0.64	7,589.3	138.3	1.11
A7P8L8		7,353.6	-96.1	-0.74	7,342.8	-108.2	-0.87
ARL8AU		7,363.9	-85.8	-0.66	7,317.8	-133.2	-1.07
AY8XXB		7,596.6	146.9	1.13	7,620.3	169.4	1.36
B63C7P	X	1,016.1	-6,433.5	-49.44	7,008.0	-443.0	-3.55
BZT8HV	*	7,098.5	-351.1	-2.70	7,135.1	-315.9	-2.53
C3VD92		7,436.8	-12.9	-0.10	7,396.8	-54.2	-0.43
CAXFG9		7,467.2	17.5	0.13	7,535.4	84.4	0.68
CHAM44		7,618.6	168.9	1.30	7,677.6	226.6	1.82
CKZUJU		7,543.4	93.7	0.72	7,562.2	111.3	0.89
CVHBEL		7,301.0	-148.7	-1.14	7,311.1	-139.8	-1.12
CVXUZ6		7,514.2	64.5	0.50	7,543.6	92.6	0.74
DNUBBE		7,593.0	143.3	1.10	7,537.6	86.6	0.69
DW6ED8		7,465.2	15.5	0.12	7,481.1	30.1	0.24
EHJE86		7,495.8	46.1	0.35	7,510.3	59.3	0.48
EMZLQX		7,404.0	-45.7	-0.35	7,384.0	-67.0	-0.54
EYQBQ4		7,326.2	-123.5	-0.95	7,388.2	-62.8	-0.50



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
FQU3FW		7,547.4	97.7	0.75	7,489.0	38.0	0.31
G67VLE		7,470.6	20.9	0.16	7,484.8	33.8	0.27
GGYJET		7,506.2	56.5	0.43	7,461.2	10.2	0.08
GRX94G		7,510.8	61.1	0.47	7,499.4	48.4	0.39
GWDKBJ		7,426.2	-23.5	-0.18	7,493.8	42.8	0.34
HEPPC3		7,397.0	-52.7	-0.40	7,397.0	-54.0	-0.43
HKFXQG		7,494.7	45.1	0.35	7,516.2	65.2	0.52
J2H8VY		7,396.0	-53.7	-0.41	7,440.0	-11.0	-0.09
JCYU6Z		7,287.4	-162.3	-1.25	7,318.8	-132.2	-1.06
JFKU72		7,477.2	27.5	0.21	7,452.2	1.2	0.01
JWN9MV		7,514.2	64.5	0.50	7,487.2	36.2	0.29
L3MLAH		7,366.8	-82.9	-0.64	7,391.8	-59.2	-0.48
LCCYXH		7,318.8	-130.9	-1.01	7,372.0	-79.0	-0.63
LG4GPE	X	11.0	-7,438.7	-57.17	11.1	-7,439.9	-59.70
M2CPRK		7,516.5	66.8	0.51	7,495.6	44.6	0.36
MC9VLH		7,442.0	-7.7	-0.06	7,462.8	11.9	0.10
MN646L		7,562.9	113.2	0.87	7,552.5	101.5	0.81
N48AJ9		7,534.8	85.1	0.65	7,504.0	53.0	0.43
PGVP9U		7,245.2	-204.5	-1.57	7,270.2	-180.8	-1.45
PQJCPQ	*	7,630.8	181.1	1.39	7,519.0	68.0	0.55
PYA22K		7,627.6	177.9	1.37	7,630.8	179.8	1.44
Q44F4Z		7,616.9	167.2	1.28	7,557.7	106.7	0.86
QDQGHP		7,417.0	-32.7	-0.25	7,441.2	-9.8	-0.08
QNTGGN		7,636.0	186.3	1.43	7,604.0	153.0	1.23
R4DQDP		7,378.4	-71.3	-0.55	7,402.8	-48.2	-0.39
R76UZ6		7,463.8	14.1	0.11	7,531.2	80.2	0.64
RXTJYQ		7,558.0	108.3	0.83	7,599.5	148.5	1.19
T7ZRUI		7,446.3	-3.4	-0.03	7,431.8	-19.2	-0.15
TGKRUI		7,499.8	50.1	0.39	7,487.0	36.0	0.29
TX7F3A		7,673.4	223.7	1.72	7,675.2	224.2	1.80
U62XUR		7,442.6	-7.1	-0.05	7,454.4	3.4	0.03
U64HNL		7,536.8	87.1	0.67	7,516.6	65.6	0.53
U6KWHP	*	7,230.3	-219.3	-1.69	7,152.9	-298.1	-2.39
UEB6U2		7,445.2	-4.5	-0.03	7,456.3	5.3	0.04
UWT7MH	*	7,421.2	-28.5	-0.22	7,547.4	96.4	0.77



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
VFHYVJ	*	7,821.7	372.0	2.86	7,756.7	305.7	2.45
VRBFKK		7,244.0	-205.7	-1.58	7,240.0	-211.0	-1.69
VVCHE3		7,472.2	22.5	0.17	7,468.6	17.6	0.14
WFYEHY		7,388.0	-61.7	-0.47	7,370.0	-81.0	-0.65
WHMQG6		7,452.8	3.1	0.02	7,488.9	38.0	0.30
WNTM26		7,478.8	29.1	0.22	7,458.1	7.1	0.06
XBGLXJ		7,478.6	28.9	0.22	7,475.4	24.4	0.20
XC9PKY		7,307.8	-141.9	-1.09	7,307.2	-143.8	-1.15
XN2BK3		7,226.9	-222.8	-1.71	7,268.9	-182.1	-1.46
YR3FDF		7,434.7	-15.0	-0.12	7,469.5	18.5	0.15
YWCULD		7,521.6	71.9	0.55	7,446.5	-4.5	-0.04
YZUZCL		7,351.4	-98.3	-0.76	7,328.8	-122.2	-0.98
ZAXNDX	X	7,347.5	-102.2	-0.79	6,963.6	-487.4	-3.91
ZEBADH		7,607.6	157.9	1.21	7,632.4	181.4	1.46
ZJHXY7		7,482.9	33.3	0.26	7,482.2	31.2	0.25

Summary Statistics		Sample F47	Sample F48
Grand Means		7,449.69 psi	7,450.97 psi
Stnd Dev Btwn Labs		130.12 psi	124.63 psi
Statistics based on 82 of 85 reporting participants			

Sample F47: ABS/PC & Sample F48: ABS/PC

Comments on Assigned Data Flags for Test #704

- LG4GPE (X) - Extreme data.
- B63C7P (X) - Extreme data.
- ZAXNDX (X) - Inconsistent in testing between samples, data for Sample F48 are low.



Plastics Interlaboratory Testing Program

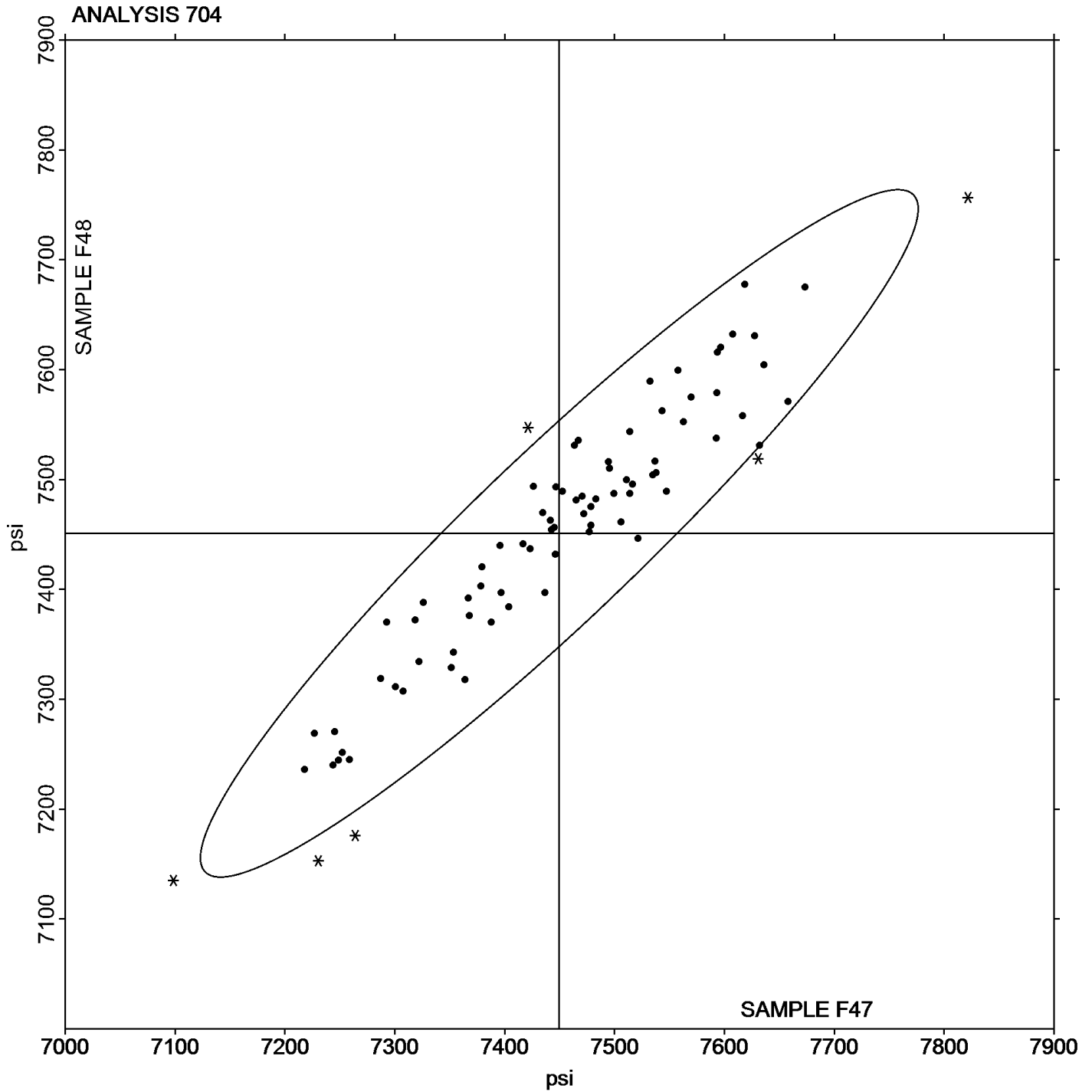
Report #104

Analysis 704

4th Qtr 2017

Tensile Stress at Yield - psi

Grand Mean Sample F47: 7,449.69 psi Grand Mean Sample F48: 7,450.97 psi





Plastics Interlaboratory Testing Program

Report #104

Analysis 705

4th Qtr 2017

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2HMMRA		6,498.0	80.7	0.76	6,454.0	22.2	0.22
36E24B		6,323.7	-93.6	-0.88	6,323.7	-108.1	-1.08
36RMLY		6,396.2	-21.0	-0.20	6,425.2	-6.6	-0.07
3P2L2F		6,236.4	-180.9	-1.70	6,312.4	-119.4	-1.20
3WJB7G		6,439.7	22.5	0.21	6,555.8	124.0	1.24
3Z3D4E		6,542.8	125.5	1.18	6,493.6	61.8	0.62
42TWMR		6,267.4	-149.9	-1.41	6,295.0	-136.8	-1.37
4G6DR9		6,405.0	-12.3	-0.12	6,300.2	-131.6	-1.32
792YVX		6,237.4	-179.9	-1.69	6,284.2	-147.6	-1.48
7QJ7XL		6,520.4	103.2	0.97	6,572.6	140.8	1.41
7ZBLMP		6,164.2	-253.1	-2.38	6,235.8	-196.0	-1.97
8DUKZ6	*	6,397.5	-19.8	-0.19	6,582.8	151.0	1.52
8U2QHF		6,480.2	62.9	0.59	6,437.4	5.6	0.06
8VTT3A		6,232.4	-184.9	-1.74	6,276.2	-155.6	-1.56
9DNQU4		6,330.0	-87.3	-0.82	6,378.0	-53.8	-0.54
9FTCQG		6,374.5	-42.8	-0.40	6,319.6	-112.1	-1.13
ARL8AU		6,343.4	-73.8	-0.69	6,384.6	-47.2	-0.47
AY8XXB	*	6,615.2	198.0	1.86	6,702.5	270.8	2.72
B63C7P	X	871.1	-5,546.1	-52.09	870.2	-5,561.6	-55.81
C3VD92		6,421.8	4.5	0.04	6,495.4	63.6	0.64
CAXFG9		6,490.6	73.3	0.69	6,439.4	7.6	0.08
CHAM44		6,516.4	99.1	0.93	6,508.0	76.2	0.76
CKZUJU		6,579.9	162.6	1.53	6,485.6	53.8	0.54
CVHBEL		6,234.6	-182.6	-1.72	6,257.0	-174.8	-1.75
CVXUZ6		6,640.0	222.7	2.09	6,540.0	108.2	1.09
DNUBBE		6,580.1	162.8	1.53	6,516.0	84.2	0.85
DRQN46	X	7,644.4	1,227.2	11.53	7,539.9	1,108.1	11.12
DW6ED8		6,400.0	-17.3	-0.16	6,443.8	12.0	0.12
EHJE86		6,511.5	94.2	0.89	6,530.6	98.8	0.99
EMZLQX		6,440.0	22.7	0.21	6,330.0	-101.8	-1.02
EYQBQ4		6,309.8	-107.5	-1.01	6,333.2	-98.6	-0.99
FQU3FW		6,427.4	10.1	0.10	6,428.0	-3.8	-0.04
G67VLE		6,477.8	60.5	0.57	6,451.8	20.0	0.20
GGYJET		6,419.4	2.1	0.02	6,395.6	-36.2	-0.36
GRX94G		6,382.0	-35.3	-0.33	6,446.0	14.2	0.14



Plastics Interlaboratory Testing Program

Report #104

Analysis 705

4th Qtr 2017

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
GWDKBJ		6,424.6	7.3	0.07	6,452.2	20.4	0.20
HEPPC3		6,323.7	-93.6	-0.88	6,381.7	-50.1	-0.50
HKFXQG	X	6,185.9	-231.3	-2.17	6,450.5	18.7	0.19
J2H8VY		6,366.0	-51.3	-0.48	6,326.0	-105.8	-1.06
JCYU6Z		6,267.6	-149.7	-1.41	6,247.8	-184.0	-1.85
JFKU72		6,417.2	-0.1	0.00	6,419.0	-12.8	-0.13
JWN9MV		6,423.5	6.2	0.06	6,386.4	-45.4	-0.46
L3MLAH		6,391.6	-25.6	-0.24	6,337.4	-94.4	-0.95
LCCYXH		6,309.0	-108.3	-1.02	6,423.4	-8.4	-0.08
LG4GPE	X	11.1	-6,406.2	-60.17	11.1	-6,420.7	-64.43
M2CPRK		6,454.2	37.0	0.35	6,372.7	-59.1	-0.59
MC9VLH		6,453.1	35.8	0.34	6,466.4	34.6	0.35
MN646L		6,321.7	-95.6	-0.90	6,384.0	-47.7	-0.48
N48AJ9		6,493.0	75.7	0.71	6,486.4	54.6	0.55
PGVP9U		6,279.8	-137.5	-1.29	6,248.4	-183.4	-1.84
PQJCPQ		6,566.0	148.7	1.40	6,415.4	-16.4	-0.16
PYA22K		6,381.7	-35.5	-0.33	6,562.1	130.4	1.31
QDQGHP		6,389.8	-27.5	-0.26	6,410.4	-21.4	-0.21
QNTGGN		6,488.0	70.7	0.66	6,502.5	70.7	0.71
R4DQDP		6,560.4	143.1	1.34	6,440.0	8.2	0.08
R76UZ6		6,473.5	56.2	0.53	6,460.3	28.5	0.29
RXTJYQ	X	5,958.2	-459.0	-4.31	6,413.3	-18.5	-0.19
T7ZRUV		6,439.7	22.5	0.21	6,474.5	42.8	0.43
TX7F3A	*	6,663.0	245.7	2.31	6,730.4	298.6	3.00
U62XUR		6,401.2	-16.1	-0.15	6,456.4	24.6	0.25
U64HNL		6,490.2	72.9	0.69	6,433.8	2.0	0.02
U6KWHP		6,371.7	-45.6	-0.43	6,417.0	-14.8	-0.15
UEB6U2		6,422.9	5.7	0.05	6,443.0	11.2	0.11
UWT7MH		6,405.0	-12.3	-0.12	6,494.8	63.0	0.63
VFHYVJ	X	6,816.8	399.6	3.75	6,755.9	324.1	3.25
WHMQG6		6,570.2	152.9	1.44	6,531.4	99.6	1.00
WNTM26		6,419.8	2.5	0.02	6,497.7	65.9	0.66
XBGLXJ		6,460.6	43.3	0.41	6,425.6	-6.2	-0.06
XC9PKY	X	6,195.6	-221.6	-2.08	6,009.5	-422.3	-4.24
XN2BK3	*	6,321.6	-95.7	-0.90	6,528.0	96.2	0.97



Plastics Interlaboratory Testing Program

Report #104

Analysis 705

4th Qtr 2017

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YR3FDF		6,431.0	13.8	0.13	6,497.7	66.0	0.66
YWCULD		6,361.6	-55.6	-0.52	6,361.3	-70.5	-0.71
YZUZCL		6,280.2	-137.1	-1.29	6,412.4	-19.4	-0.19
ZAXNDX	X	6,344.0	-73.3	-0.69	6,653.7	221.9	2.23
ZEBADH		6,582.1	164.8	1.55	6,557.9	126.1	1.27
ZJHXY7		6,332.1	-85.1	-0.80	6,442.9	11.1	0.11

Summary Statistics

	Sample F47	Sample F48
Grand Means	6,417.25 psi	6,431.78 psi
Std Dev Btwn Labs	106.47 psi	99.66 psi

Statistics based on 68 of 76 reporting participants

Sample F47: ABS/PC & Sample F48: ABS/PC

Comments on Assigned Data Flags for Test #705

- VFHYVJ (X) - Data for both samples are high. Possible Systematic Error.
- RXTJYQ (X) - Inconsistent in testing between samples, data for sample F47 are low. Inconsistent within the determinations of both samples.
- HKFXQG (X) - Inconsistent in testing between samples.
- DRQN46 (X) - Data for both samples are very high. Possible Systematic Error.
- LG4GPE (X) - Extreme data.
- B63C7P (X) - Extreme data.
- ZAXNDX (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample F48.
- XC9PKY (X) - Inconsistent in testing between samples, data for Sample F48 are low.



Plastics Interlaboratory Testing Program

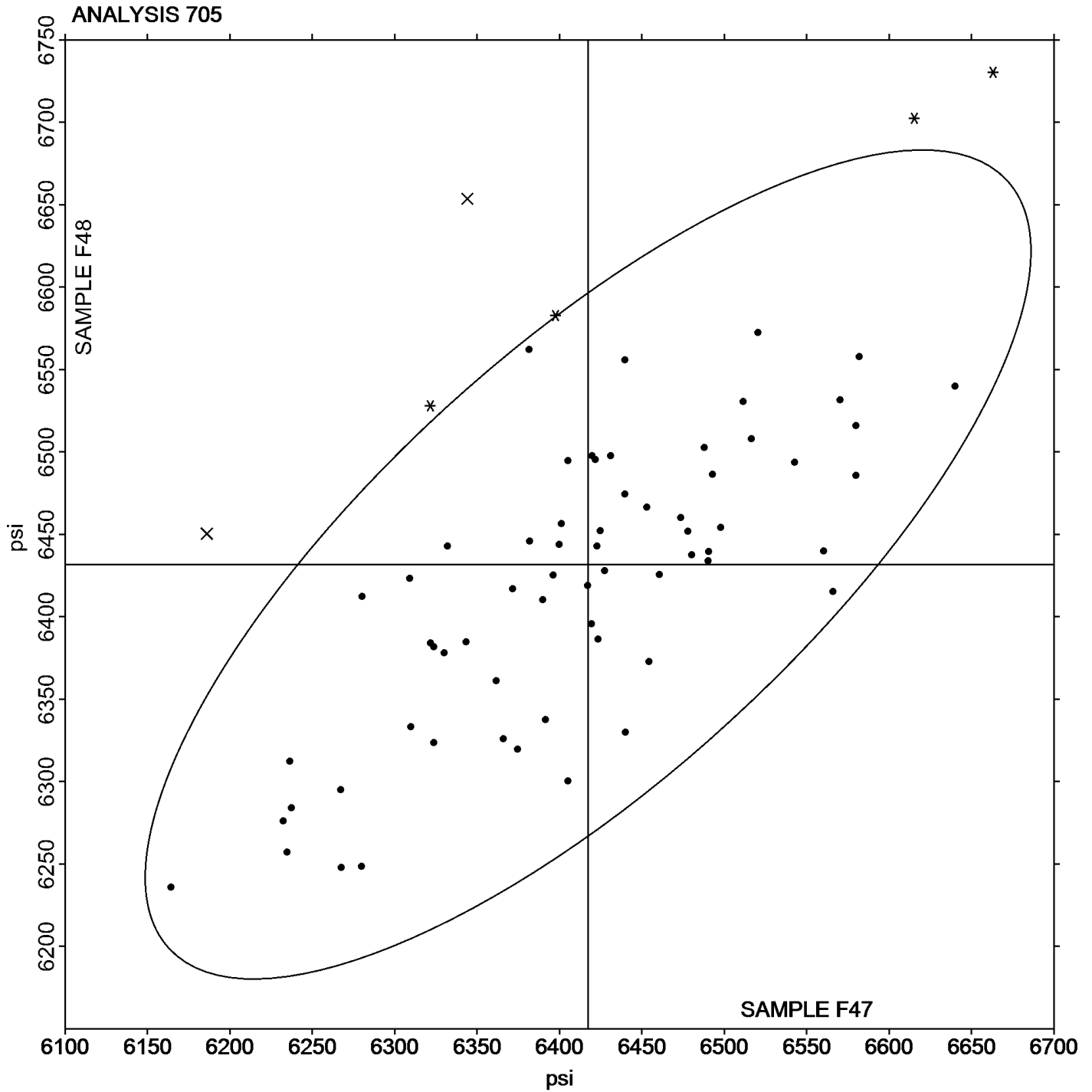
Analysis 705

Tensile Stress at Break - psi

Report #104

4th Qtr 2017

Grand Mean Sample F47: 6,417.25 psi Grand Mean Sample F48: 6,431.78 psi





Plastics Interlaboratory Testing Program

Report #104

Analysis 706

4th Qtr 2017

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2HMMRA		4.608	-0.077	-0.55	4.574	-0.110	-0.74
36E24B		4.800	0.115	0.83	4.706	0.022	0.15
36RMLY		4.800	0.115	0.83	4.840	0.156	1.05
3P2L2F		4.620	-0.065	-0.47	4.622	-0.062	-0.42
3WJB7G		4.730	0.045	0.33	4.712	0.028	0.19
3Z3D4E	X	5.278	0.593	4.29	4.834	0.150	1.01
42TWMR		4.646	-0.039	-0.28	4.694	0.010	0.07
4G6DR9		4.662	-0.023	-0.16	4.608	-0.076	-0.51
626VEF		4.788	0.103	0.75	4.642	-0.042	-0.28
7QJ7XL		4.699	0.015	0.11	4.707	0.023	0.16
7ZBLMP		4.640	-0.045	-0.32	4.560	-0.124	-0.84
8DUKZ6	X	3.569	-1.115	-8.06	3.639	-1.045	-7.06
8F2P3T		4.656	-0.029	-0.21	4.748	0.064	0.43
8U2QHF		4.556	-0.129	-0.93	4.662	-0.022	-0.15
8VTT3A	*	4.340	-0.345	-2.49	4.404	-0.280	-1.89
9DNQU4	X	45.536	40.851	295.33	44.428	39.744	268.44
9FTCQG		4.630	-0.055	-0.40	4.636	-0.048	-0.32
AY8XXB		4.872	0.188	1.36	4.913	0.228	1.54
B63C7P	X	4.164	-0.521	-3.76	4.136	-0.548	-3.70
C3VD92		4.594	-0.091	-0.66	4.650	-0.034	-0.23
CAXFG9		4.710	0.025	0.18	4.690	0.006	0.04
CHAM44	*	4.680	-0.005	-0.03	4.896	0.212	1.43
CKZUJU		4.604	-0.081	-0.58	4.494	-0.190	-1.28
CVHBEL		4.686	0.001	0.01	4.726	0.042	0.28
CVXUZ6		4.740	0.055	0.40	4.660	-0.024	-0.16
DNUBBE		4.783	0.098	0.71	4.745	0.061	0.41
DRQN46	X	9.553	4.869	35.20	9.483	4.799	32.42
DW6ED8		4.714	0.029	0.21	4.674	-0.010	-0.07
EHJE86		4.722	0.037	0.27	4.714	0.030	0.20
EMZLQX		4.700	0.015	0.11	4.790	0.106	0.72
EYQBQ4		4.784	0.100	0.72	4.859	0.175	1.18
FQU3FW		4.672	-0.013	-0.09	4.778	0.094	0.63
G67VLE	*	4.346	-0.339	-2.45	4.260	-0.424	-2.86
GGYJET		4.742	0.057	0.41	4.694	0.010	0.07
GRX94G		4.682	-0.003	-0.02	4.622	-0.062	-0.42



Plastics Interlaboratory Testing Program

Report #104

Analysis 706

4th Qtr 2017

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
GWDKBJ		4.594	-0.091	-0.66	4.622	-0.062	-0.42
HEPPC3	*	4.880	0.195	1.41	4.706	0.022	0.15
HKFXQG		4.784	0.099	0.72	4.660	-0.024	-0.16
J2H8VY		4.592	-0.093	-0.67	4.478	-0.206	-1.39
JCYU6Z		4.666	-0.019	-0.14	4.746	0.062	0.42
JFKU72		4.582	-0.103	-0.74	4.640	-0.044	-0.30
LCCYXH		4.754	0.069	0.50	4.734	0.050	0.34
LG4GPE	X	0.062	-4.623	-33.42	0.060	-4.624	-31.23
M2CPRK		4.550	-0.135	-0.97	4.602	-0.082	-0.55
MN646L		4.664	-0.021	-0.15	4.616	-0.068	-0.46
N48AJ9		4.698	0.013	0.09	4.746	0.062	0.42
PGVP9U		4.640	-0.045	-0.32	4.614	-0.070	-0.47
PQJCPQ	X	4.780	0.095	0.69	4.418	-0.266	-1.80
PYA22K	*	5.110	0.425	3.07	5.068	0.384	2.59
Q44F4Z		4.785	0.101	0.73	4.769	0.085	0.58
QDQGHP		4.618	-0.067	-0.48	4.546	-0.138	-0.93
QNTGGN		4.620	-0.065	-0.47	4.640	-0.044	-0.30
R4DQDP	X	3.932	-0.753	-5.44	3.948	-0.736	-4.97
R76UZ6	X	9.880	5.195	37.56	9.780	5.096	34.42
RXTJYQ	X	3.614	-1.071	-7.74	3.580	-1.104	-7.46
T7ZRUE	X	11.320	6.635	47.97	11.340	6.656	44.96
TGKRUE		4.418	-0.267	-1.93	4.470	-0.214	-1.45
TX7F3A		4.950	0.265	1.92	4.908	0.224	1.51
U62XUR		4.812	0.127	0.92	4.760	0.076	0.51
U64HNL		4.778	0.093	0.67	4.838	0.154	1.04
U6KWHP		4.924	0.239	1.73	5.025	0.341	2.31
UEB6U2	X	1.012	-3.673	-26.55	1.010	-3.674	-24.82
UWT7MH		4.388	-0.297	-2.14	4.320	-0.364	-2.46
VFHYVJ		4.846	0.161	1.17	4.894	0.210	1.42
VVCHE3		4.679	-0.006	-0.04	4.757	0.073	0.49
WHMQG6	X	4.408	-0.277	-2.00	4.686	0.002	0.01
XBGLXJ	X	10.316	5.631	40.71	10.344	5.660	38.23
XC9PKY		4.698	0.014	0.10	4.651	-0.033	-0.22
XN2BK3	X	4.200	-0.485	-3.50	4.400	-0.284	-1.92
YR3FDF		4.704	0.019	0.14	4.740	0.056	0.38



Plastics Interlaboratory Testing Program

Report #104

Analysis 706

4th Qtr 2017

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YZUZCL		4.596	-0.089	-0.64	4.566	-0.118	-0.80
ZAXNDX	X	4.033	-0.652	-4.71	3.890	-0.794	-5.36
ZEBADH	X	3.816	-0.869	-6.28	4.190	-0.494	-3.34
ZJHXY7		4.490	-0.195	-1.41	4.595	-0.089	-0.60

Summary Statistics

	Sample F47	Sample F48
Grand Means	4.6847 Percent	4.6840 Percent
Std Dev Btwn Labs	0.1383 Percent	0.1481 Percent

Statistics based on 57 of 74 reporting participants

Sample F47: ABS/PC & Sample F48: ABS/PC

Comments on Assigned Data Flags for Test #706

- PQJCPQ (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample F48.
- 3Z3D4E (X) - Inconsistent in testing between samples, data for Sample F47 are high.
- WHMQG6 (X) Inconsistent in testing between samples. Inconsistent within the determinations of sample F47.
- UEB6U2 (X) - Extreme data.
- RXTJYQ (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F47.
- ZEBADH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- XBGLXJ (X) - Extreme data.
- R4DQDP (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F47.
- T7ZRUIW (X) - Extreme data.
- XN2BK3 (X) - Inconsistent in testing between samples, data for sample F47 are low. Inconsistent within the determinations of both samples.
- DRQN46 (X) - Extreme data.
- 9DNQU4 (X) - Extreme data.
- 8DUKZ6 (X) - Data for both samples are low. Possible Systematic Error.
- LG4GPE (X) - Extreme data.
- B63C7P (X) - Data for both samples are low. Possible Systematic Error.
- ZAXNDX (X) - Data for both samples are low. Possible Systematic Error.
- R76UZ6 (X) - Extreme data.



Plastics Interlaboratory Testing Program

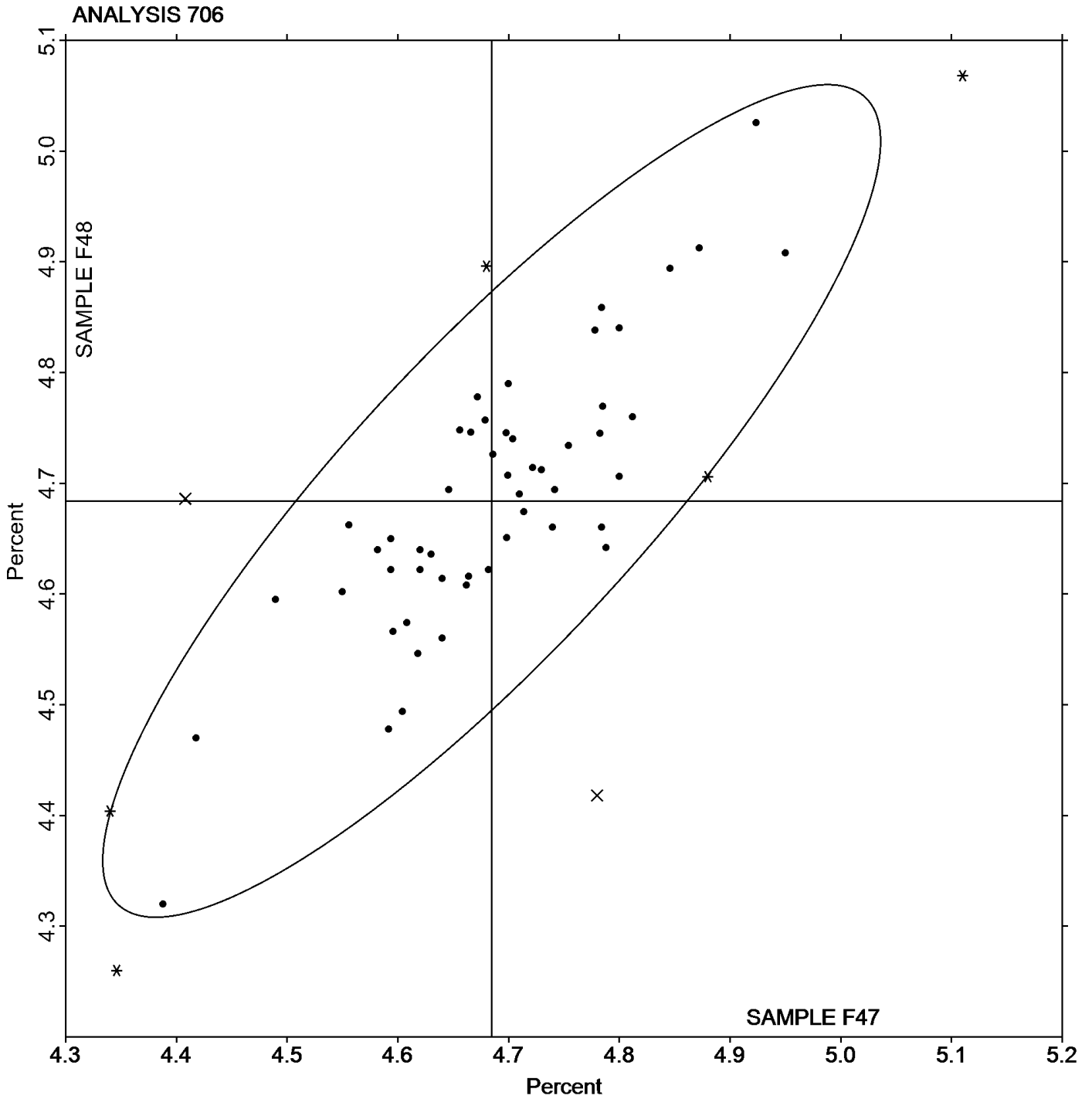
Analysis 706

Percent Elongation at Yield - Percent

Report #104

4th Qtr 2017

Grand Mean Sample F47: 4.6847 Percent Grand Mean Sample F48: 4.6840 Percent





Plastics Interlaboratory Testing Program

Report #104

Analysis 708

4th Qtr 2017

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2HMMRA		333.60	6.49	0.49	340.20	13.83	1.07
36E24B		329.44	2.33	0.17	327.32	0.95	0.07
36RMLY		327.27	0.16	0.01	329.30	2.93	0.23
3P2L2F		318.33	-8.78	-0.66	317.87	-8.50	-0.66
3WJB7G		325.29	-1.82	-0.14	325.19	-1.17	-0.09
3Z3D4E	X	294.76	-32.35	-2.42	319.26	-7.11	-0.55
42TWMR		321.18	-5.93	-0.44	322.74	-3.63	-0.28
4G6DR9		348.30	21.19	1.58	344.42	18.05	1.40
626VEF		329.84	2.73	0.20	333.32	6.95	0.54
6U8497		325.80	-1.31	-0.10	327.60	1.23	0.10
7QJ7XL		335.85	8.74	0.65	340.28	13.91	1.08
7ZBLMP		333.88	6.77	0.51	330.46	4.09	0.32
8DUKZ6		321.28	-5.83	-0.44	318.83	-7.54	-0.58
8F2P3T		317.26	-9.85	-0.74	321.88	-4.49	-0.35
8GYZZH	*	307.38	-19.73	-1.48	294.95	-31.42	-2.43
8U2QHF	X	255.56	-71.55	-5.35	248.62	-77.75	-6.02
8VTT3A		340.26	13.15	0.98	332.34	5.97	0.46
94KDZV		337.70	10.59	0.79	337.61	11.24	0.87
9DNQU4		336.20	9.09	0.68	335.20	8.83	0.68
9FTCQG		315.60	-11.51	-0.86	306.09	-20.28	-1.57
A7P8L8		334.46	7.35	0.55	338.42	12.05	0.93
AY8XXB		323.74	-3.37	-0.25	321.30	-5.07	-0.39
C3VD92		342.78	15.67	1.17	333.60	7.23	0.56
CAXFG9		326.52	-0.59	-0.04	328.32	1.95	0.15
CHAM44		339.14	12.03	0.90	340.66	14.29	1.11
CKZUJU	X	412.84	85.73	6.41	404.87	78.50	6.08
CVHBEL		325.90	-1.21	-0.09	320.80	-5.57	-0.43
CVXUZ6		316.40	-10.71	-0.80	321.20	-5.17	-0.40
DNUBBE		339.05	11.94	0.89	338.38	12.01	0.93
DW6ED8		311.00	-16.11	-1.20	313.60	-12.77	-0.99
EHJE86		304.31	-22.80	-1.70	305.17	-21.20	-1.64
EMZLQX		313.80	-13.31	-1.00	308.20	-18.17	-1.41
EYQBQ4	X	275.48	-51.63	-3.86	264.40	-61.97	-4.80
FQU3FW		332.92	5.81	0.43	328.22	1.85	0.14
GGYJET		329.02	1.91	0.14	331.60	5.23	0.41



Plastics Interlaboratory Testing Program

Report #104

Analysis 708

4th Qtr 2017

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F47			Sample F48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
GRX94G		329.80	2.69	0.20	329.94	3.57	0.28
GWDKBJ		332.98	5.87	0.44	335.12	8.75	0.68
HEPPC3	X	283.97	-43.14	-3.23	311.73	-14.64	-1.13
HKFXQG		310.95	-16.16	-1.21	311.65	-14.72	-1.14
J2H8VY		327.60	0.49	0.04	335.00	8.63	0.67
JCYU6Z		305.40	-21.71	-1.62	303.66	-22.71	-1.76
JFKU72		329.74	2.63	0.20	325.34	-1.03	-0.08
LCCYXH		328.06	0.95	0.07	328.36	1.99	0.15
LG4GPE	X	25.10	-302.01	-22.58	31.81	-294.56	-22.81
M2CPRK		352.85	25.74	1.92	346.32	19.95	1.55
MN646L		309.31	-17.80	-1.33	306.09	-20.28	-1.57
N48AJ9		334.94	7.83	0.59	339.64	13.27	1.03
PGVP9U		319.08	-8.03	-0.60	314.64	-11.73	-0.91
PYA22K		314.42	-12.70	-0.95	315.08	-11.29	-0.87
Q44F4Z		334.25	7.14	0.53	335.30	8.93	0.69
QDQGHP		353.38	26.27	1.96	354.82	28.45	2.20
QNTGGN		336.00	8.89	0.66	332.80	6.43	0.50
R4DQDP		328.56	1.45	0.11	331.30	4.93	0.38
R76UZ6	X	184.26	-142.85	-10.68	187.12	-139.25	-10.78
T7ZRUI	X	99.67	-227.44	-17.01	98.89	-227.48	-17.62
TX7F3A		307.70	-19.41	-1.45	308.32	-18.05	-1.40
U62XUR		313.24	-13.87	-1.04	315.03	-11.34	-0.88
U64HNL		327.94	0.83	0.06	326.16	-0.21	-0.02
U6KWHP	X	382.80	55.69	4.16	379.18	52.81	4.09
UEB6U2	X	468.25	141.14	10.55	483.01	156.64	12.13
UWT7MH	X	327.50	0.39	0.03	349.15	22.78	1.76
VFHYVJ		355.64	28.53	2.13	347.22	20.85	1.61
VVCHE3		326.30	-0.81	-0.06	322.15	-4.22	-0.33
WHMQG6		334.98	7.87	0.59	340.34	13.97	1.08
XC9PKY	*	301.59	-25.52	-1.91	313.33	-13.04	-1.01
XN2BK3	X	411.92	84.81	6.34	404.87	78.50	6.08
YR3FDF	*	338.81	11.70	0.87	323.15	-3.22	-0.25
YZUZCL	*	355.70	28.59	2.14	344.86	18.49	1.43
ZAXNDX		320.00	-7.11	-0.53	326.45	0.08	0.01
ZJHXY7		299.71	-27.40	-2.05	302.30	-24.07	-1.86



Plastics Interlaboratory Testing Program

Report #104

Analysis 708

4th Qtr 2017

Modulus of Elasticity - ksi

Summary Statistics	<u>Sample F47</u>	<u>Sample F48</u>
Grand Means	327.111 ksi	326.370 ksi
Std Dev Btwn Labs	13.375 ksi	12.914 ksi

Statistics based on 58 of 70 reporting participants

Sample F47: ABS/PC & Sample F48: ABS/PC

Comments on Assigned Data Flags for Test #708

- UWT7MH (X) - Inconsistent in testing between samples.
- 3Z3D4E (X) - Inconsistent in testing between samples.
- CKZUJU (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample F47.
- UEB6U2 (X) - Extreme data.
- EYQBQ4 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F47.
- 8U2QHF (X) - Data for both samples are low. Possible Systematic Error.
- HEPPC3 (X) - Inconsistent in testing between samples, data for sample F47 are low.
- T7ZRUI (X) - Extreme data.
- XN2BK3 (X) - Data for both samples are high. Possible Systematic Error.
- U6KWHP (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- LG4GPE (X) - Extreme data.
- R76UZ6 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

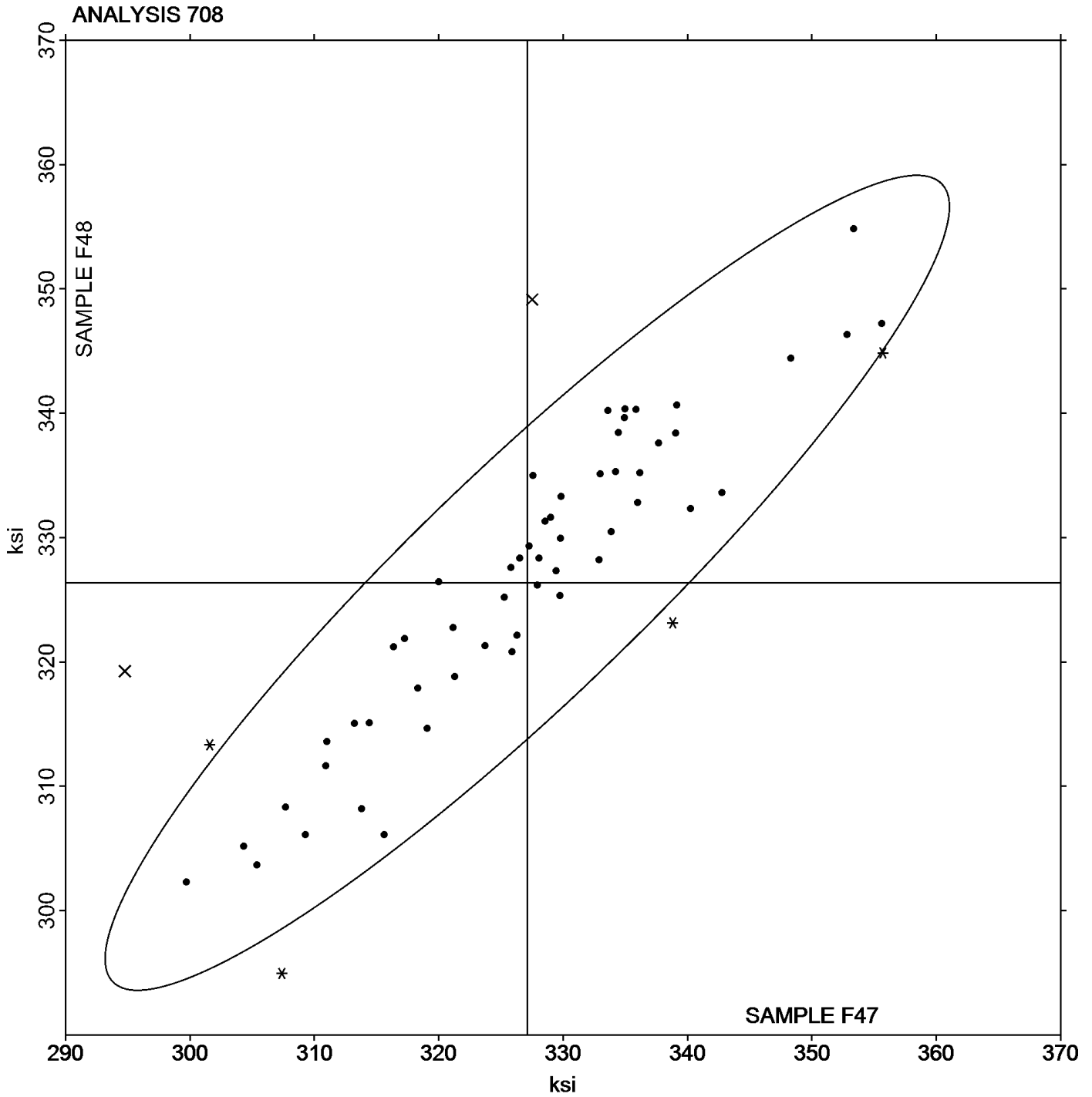
Analysis 708

Modulus of Elasticity - ksi

Report #104

4th Qtr 2017

Grand Mean Sample F47: 327.11 ksi Grand Mean Sample F48: 326.37 ksi





Plastics Interlaboratory Testing Program

Report #104

Analysis 710

4th Qtr 2017

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

WebCode	Data Flag	Sample E47			Sample E48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36E24B		77.00	-0.45	-0.34	77.00	-0.47	-0.38	RO
36RMLY		76.95	-0.50	-0.38	76.90	-0.57	-0.46	CE
3P2L2F		77.73	0.28	0.21	77.73	0.26	0.21	TY
3PH6JR	*	81.35	3.90	2.99	80.95	3.48	2.79	TO
3WJB7G	X	77.37	-0.08	-0.06	75.77	-1.70	-1.37	CE
3Z3D4E		77.45	0.00	0.00	77.78	0.31	0.25	TO
4NLQUD		77.70	0.25	0.19	77.65	0.18	0.15	CE
4VNVNH		77.53	0.08	0.06	77.23	-0.24	-0.20	TO
7ZBLMP	*	73.99	-3.46	-2.65	74.20	-3.27	-2.62	RO
8F2P3T		76.25	-1.20	-0.92	76.73	-0.74	-0.60	TO
9FTCQG		78.50	1.05	0.81	78.65	1.18	0.95	AT
BZT8HV		77.25	-0.20	-0.15	77.18	-0.29	-0.24	TO
C3VD92		79.68	2.23	1.71	79.48	2.01	1.61	XX
CAXFG9		78.05	0.60	0.46	77.98	0.51	0.41	DN
GWDKBJ		76.55	-0.90	-0.69	76.78	-0.69	-0.56	TO
HKFXQG		77.13	-0.32	-0.25	77.13	-0.34	-0.28	CE
JFKU72		77.03	-0.42	-0.32	76.30	-1.17	-0.94	CF
KZHKXL		75.90	-1.55	-1.19	76.38	-1.09	-0.88	XX
LCCYXH		77.23	-0.22	-0.17	77.15	-0.32	-0.26	XX
M2CPRK		77.60	0.15	0.12	78.03	0.56	0.45	CE
MMREX3		76.73	-0.72	-0.55	77.25	-0.22	-0.18	DN
MN646L	*	79.80	2.35	1.80	78.78	1.31	1.05	AT
PQJCPQ		77.68	0.23	0.17	77.63	0.16	0.13	DN
PYA22K		78.00	0.55	0.42	77.80	0.33	0.27	ZW
R4DQDP		77.03	-0.42	-0.32	77.00	-0.47	-0.38	IN
R76UZ6		78.73	1.28	0.98	78.68	1.21	0.97	CE
TGKRUZ		76.90	-0.55	-0.42	76.75	-0.72	-0.58	CE
U62XUR		77.35	-0.10	-0.07	77.70	0.23	0.19	TO
U64HNL		76.70	-0.75	-0.57	76.45	-1.02	-0.82	RO
WHMQG6		77.58	0.13	0.10	78.35	0.88	0.71	CE
YZUZCL		75.85	-1.60	-1.22	75.60	-1.87	-1.50	CE
ZEBADH		76.63	-0.82	-0.63	76.38	-1.09	-0.88	XX
ZHRHXB	*	78.53	1.08	0.83	79.48	2.01	1.61	XX



Plastics Interlaboratory Testing Program

Report #104

Analysis 710

4th Qtr 2017

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

Summary Statistics	<u>Sample E47</u>	<u>Sample E48</u>
Grand Means	77.447 Degrees C	77.469 Degrees C
Stnd Dev Btwn Labs	1.304 Degrees C	1.246 Degrees C
Statistics based on 32 of 33 reporting participants		

Sample E47: ABS & Sample E48: ABS

Comments on Assigned Data Flags for Test #710

3WJB7G (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample E47.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

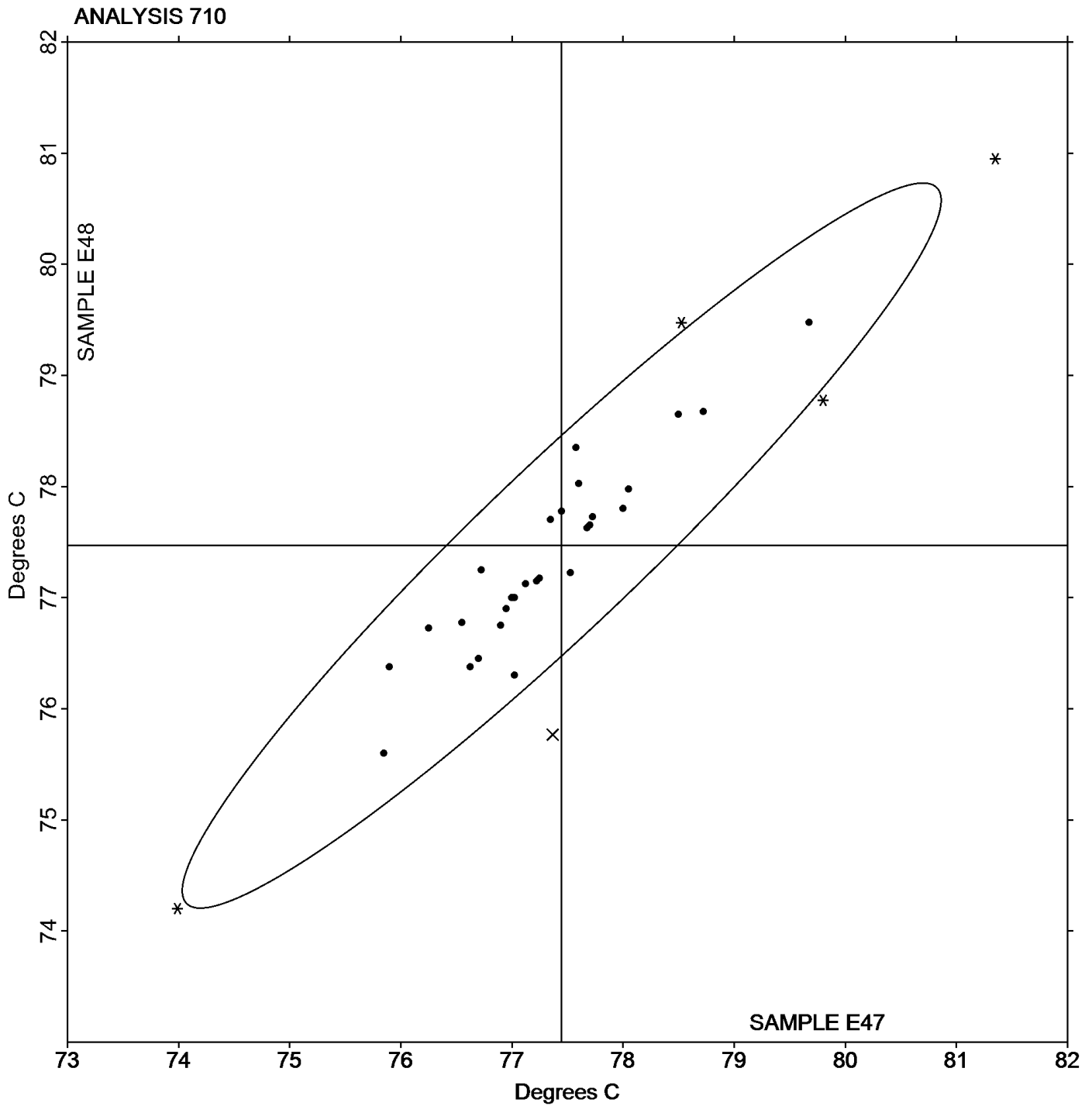
Report #104

Analysis 710

4th Qtr 2017

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

Grand Mean Sample E47: 77.447 Degrees C Grand Mean Sample E48: 77.469 Degrees C





Plastics Interlaboratory Testing Program

Report #104

Analysis 711

4th Qtr 2017

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

WebCode	Data Flag	Sample G47			Sample G48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4NLQUD		82.8	-0.6	-0.28	69.7	-0.3	-0.14	CE
4VNVNH		81.8	-1.6	-0.71	69.2	-0.8	-0.42	TO
7ZBLMP		88.6	5.3	2.34	73.4	3.4	1.73	RO
8F2P3T		82.6	-0.8	-0.35	69.5	-0.5	-0.26	TO
BZT8HV		81.0	-2.4	-1.05	67.1	-2.9	-1.49	TO
C3VD92		82.9	-0.5	-0.20	71.5	1.5	0.74	XX
EVPALZ		82.2	-1.2	-0.54	68.8	-1.2	-0.59	CE
MAJP6T		85.8	2.4	1.05	72.0	2.0	1.00	CE
MVKKYF		82.3	-1.1	-0.49	68.7	-1.3	-0.65	AT
R76UZ6		86.2	2.8	1.24	72.9	2.9	1.48	CE
TGKRUZ		82.1	-1.3	-0.58	68.9	-1.1	-0.54	CE
U62XUR		82.4	-1.0	-0.42	68.3	-1.7	-0.85	TO

Summary Statistics		
	Sample G47	Sample G48
Grand Means	83.38 Degrees C	69.98 Degrees C
Stnd Dev Btwn Labs	2.26 Degrees C	1.97 Degrees C
Statistics based on 12 of 12 reporting participants		

Sample G47: PP & Sample G48: PP

Key to Instrument Codes Reported by Participants

- | | |
|---|-----------------|
| AT Atlas | CE Ceast |
| RO Rosand | TO Tinius Olsen |
| XX Instrument manufacturer not specified by lab | |



Plastics Interlaboratory Testing Program

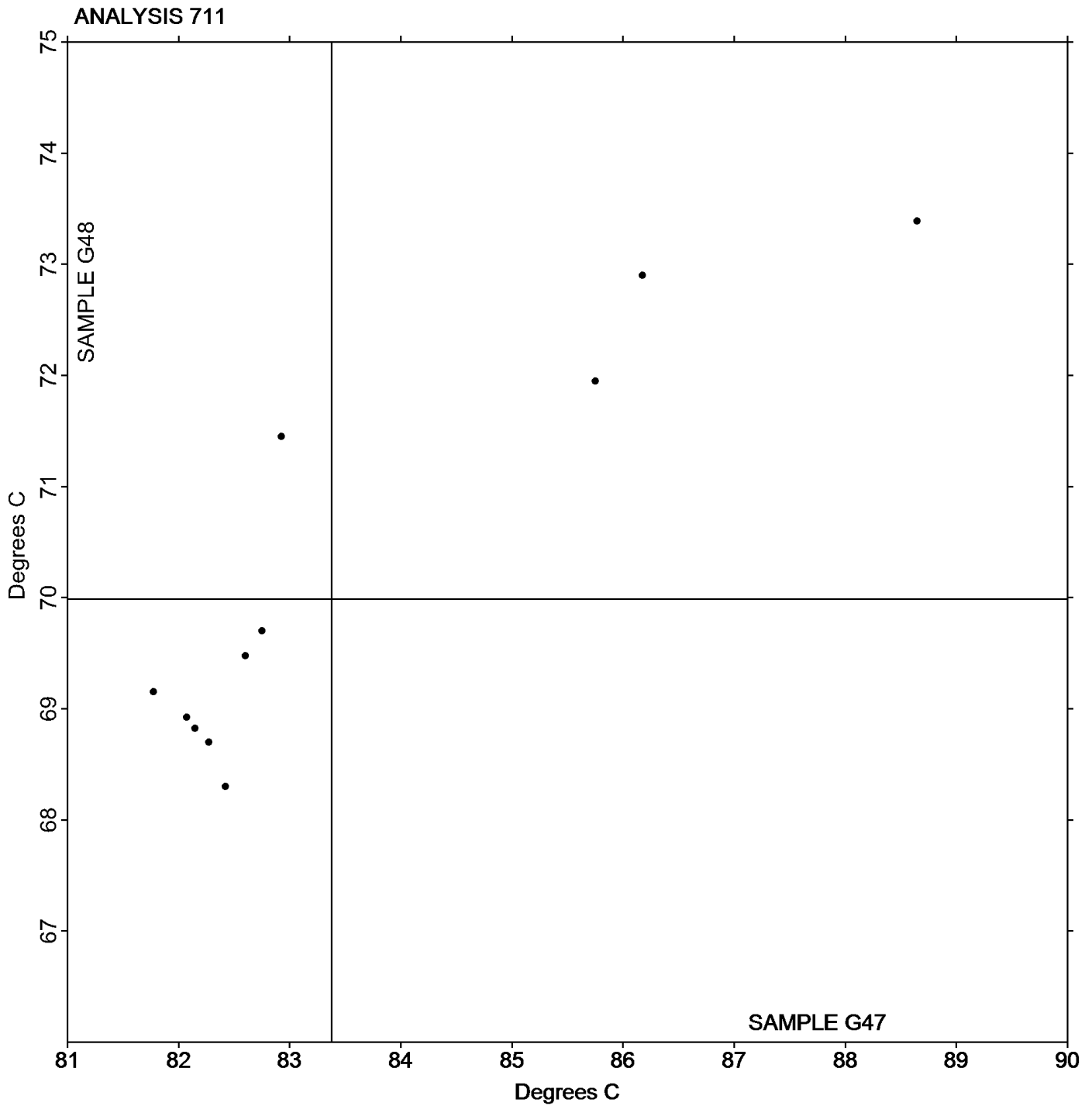
Report #104

Analysis 711

4th Qtr 2017

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

Grand Mean Sample G47: 83.379 Degrees C Grand Mean Sample G48: 69.984 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 #104

Analysis 712

4th Qtr 2017

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

WebCode	Data Flag	Sample N47			Sample N48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2E7F8G		76.50	-1.36	-0.99	76.73	-0.97	-0.78	TO
2P7LLP		77.70	-0.16	-0.12	77.93	0.23	0.18	AT
3P2L2F		78.88	1.01	0.73	77.63	-0.07	-0.06	TY
4NLQUD		76.65	-1.21	-0.88	77.33	-0.37	-0.30	CE
4TZLAB		77.58	-0.29	-0.21	77.40	-0.30	-0.24	AT
4VNVNH		76.83	-1.04	-0.75	77.08	-0.62	-0.50	TO
4VQFHD		77.10	-0.76	-0.55	77.55	-0.15	-0.12	CE
7LCHFD		78.68	0.81	0.59	79.30	1.60	1.28	DN
7TACDC	*	74.65	-3.21	-2.33	74.23	-3.47	-2.77	CE
8VTT3A		78.60	0.74	0.53	77.88	0.18	0.14	TO
9WHCPT	*	80.10	2.24	1.62	78.08	0.38	0.30	TO
BQATFT		77.38	-0.49	-0.35	77.43	-0.27	-0.22	AT
CVHBEL		78.60	0.74	0.53	78.55	0.85	0.68	CE
CVXUZ6		77.80	-0.06	-0.04	78.48	0.78	0.62	XX
E2U9U6		79.98	2.11	1.53	80.23	2.53	2.02	AT
EANC38		79.40	1.54	1.11	79.55	1.85	1.48	DN
GBVD2C		77.83	-0.04	-0.03	77.68	-0.02	-0.02	TY
GQMBYZ		77.20	-0.66	-0.48	77.18	-0.52	-0.42	CE
GRX7GX		77.13	-0.74	-0.53	78.05	0.35	0.28	CE
HQ36RL	*	80.58	2.71	1.96	78.20	0.50	0.40	CF
JQHD4V		78.10	0.24	0.17	78.25	0.55	0.44	CE
KVBWKJ		78.08	0.21	0.15	78.40	0.70	0.56	AT
LCCYXH		78.23	0.36	0.26	77.58	-0.12	-0.10	IN
LNYP6		78.15	0.29	0.21	76.80	-0.90	-0.72	CE
M4EQU3		79.70	1.84	1.33	78.53	0.83	0.66	CF
MAJP6T		78.63	0.77	0.56	78.60	0.90	0.72	CF
MMREX3		76.00	-1.86	-1.35	76.05	-1.65	-1.32	DN
MN646L		78.38	0.51	0.37	78.23	0.53	0.42	AT
NADWMB		78.35	0.49	0.35	78.15	0.45	0.36	DN
PYA22K		77.68	-0.19	-0.13	77.58	-0.12	-0.10	ZW
Q44F4Z		76.48	-1.39	-1.00	76.50	-1.20	-0.96	CE
QXQNN8		77.63	-0.24	-0.17	76.58	-1.12	-0.90	CE
R76UZ6		79.68	1.81	1.31	79.45	1.75	1.40	CE
RJVC2P		77.83	-0.04	-0.03	78.60	0.90	0.72	CE
TGKRUZ		76.35	-1.51	-1.09	76.38	-1.32	-1.06	CE



Plastics Interlaboratory Testing Program

Report #104

Analysis 712

4th Qtr 2017

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

WebCode	Data Flag	Sample N47			Sample N48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
U62XUR		76.63	-1.24	-0.90	76.75	-0.95	-0.76	TO
VRBFKK		80.40	2.54	1.84	79.78	2.08	1.66	XX
WFYEHY		75.68	-2.19	-1.58	75.75	-1.95	-1.56	XX
XWZJK2		78.20	0.34	0.25	78.75	1.05	0.84	CE
YZUZCL		75.20	-2.66	-1.93	74.85	-2.85	-2.27	CE

Summary Statistics		Sample N47	Sample N48
Grand Means		77.861 Degrees C	77.699 Degrees C
Stnd Dev Btwn Labs		1.381 Degrees C	1.253 Degrees C
Statistics based on 40 of 40 reporting participants			

Sample N47: HIPS & Sample N48: HIPS

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

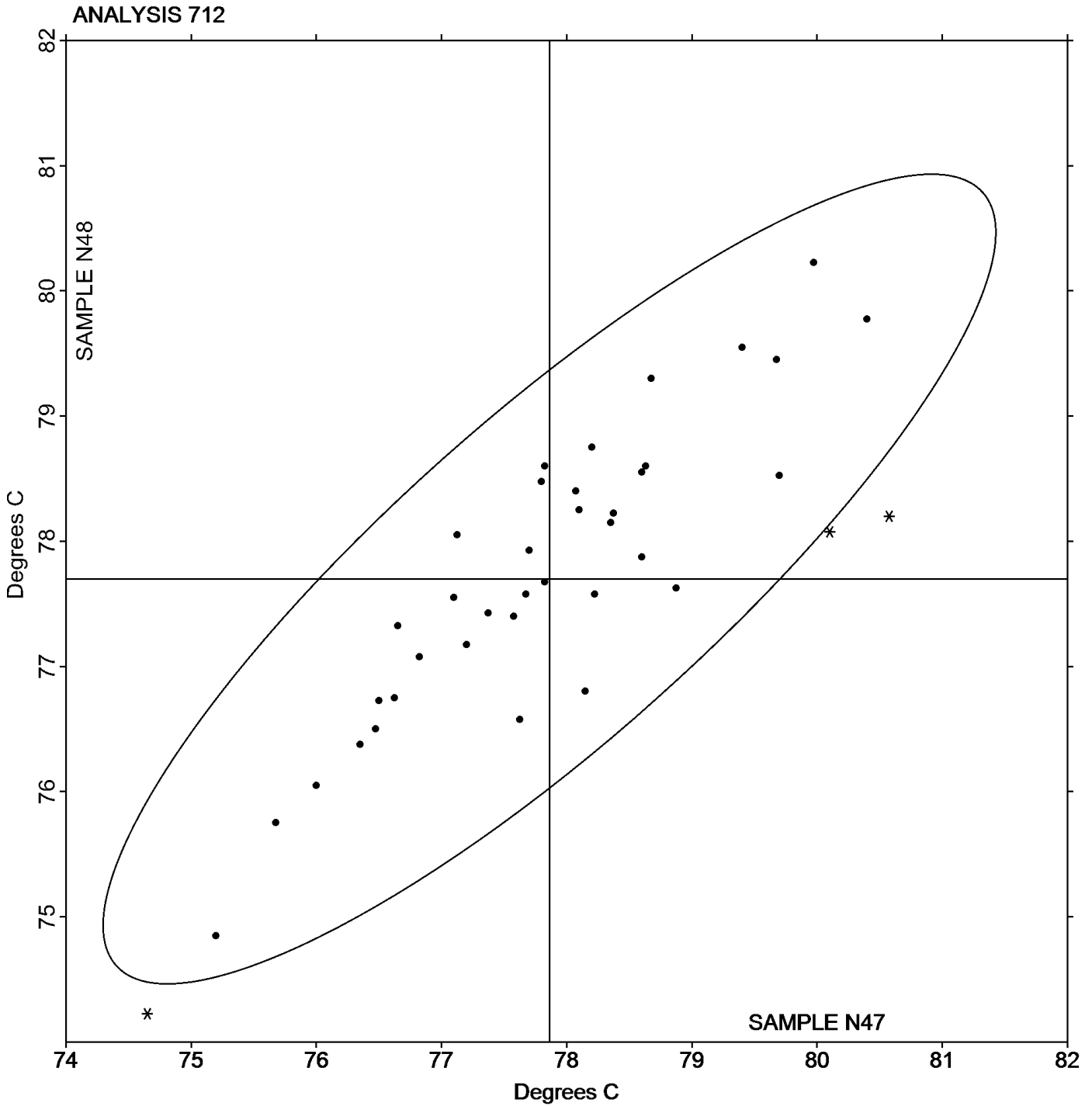
Report #104

Analysis 712

4th Qtr 2017

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

Grand Mean Sample N47: 77.861 Degrees C Grand Mean Sample N48: 77.699 Degrees C





Plastics Interlaboratory Testing Program

Report #104

Analysis 715

4th Qtr 2017

Vicat Softening Temperature (Rate A)

WebCode	Data Flag	Sample H47			Sample H48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36E24B		99.50	-0.12	-0.17	99.77	0.11	0.15	RO
36RMLY		100.10	0.48	0.69	100.28	0.63	0.88	CE
3P2L2F		99.57	-0.05	-0.08	99.53	-0.12	-0.17	TY
3WJB7G	*	100.15	0.53	0.77	99.55	-0.11	-0.15	CE
4NLQUD		99.67	0.05	0.07	99.53	-0.12	-0.17	CE
AY8XXB		98.40	-1.22	-1.76	98.53	-1.12	-1.57	DN
BZT8HV		99.33	-0.29	-0.41	99.48	-0.17	-0.24	TO
CAXFG9		98.60	-1.02	-1.47	98.53	-1.12	-1.57	QA
CVHBEL		99.52	-0.10	-0.15	99.48	-0.17	-0.24	CE
EVPALZ		98.45	-1.17	-1.69	98.50	-1.16	-1.62	CE
GAEDQA		99.10	-0.52	-0.75	99.12	-0.54	-0.75	CE
GGYJET		99.43	-0.19	-0.27	99.42	-0.24	-0.33	AT
GRX7GX		99.27	-0.35	-0.51	99.47	-0.19	-0.26	CE
HLARK6		98.83	-0.79	-1.14	98.77	-0.88	-1.23	CE
MAJP6T		99.73	0.11	0.16	99.93	0.28	0.39	CF
MN646L		100.13	0.51	0.74	100.15	0.49	0.69	AT
PYA22K		100.58	0.96	1.39	100.58	0.93	1.30	CF
QDQGHP		99.55	-0.07	-0.10	99.53	-0.12	-0.17	CE
QNTGGN	*	100.27	0.65	0.94	100.90	1.24	1.74	CE
U62XUR	*	101.50	1.88	2.72	101.45	1.79	2.51	TO
V7DYCJ		99.85	0.23	0.33	99.88	0.23	0.32	CE
XWZJK2		100.07	0.45	0.65	100.12	0.46	0.64	CF
Y6QNQ9		99.72	0.10	0.14	99.67	0.01	0.02	CE
YZUZCL		99.55	-0.07	-0.10	99.55	-0.11	-0.15	CE

Summary Statistics		
	Sample H47	Sample H48
Grand Means	99.619 Degrees C	99.656 Degrees C
Std Dev Btwn Labs	0.692 Degrees C	0.715 Degrees C
Statistics based on 24 of 24 reporting participants		

Sample H47: ABS & Sample H48: ABS



Plastics Interlaboratory Testing Program

Analysis 715

Vicat Softening Temperature (Rate A)

Report #104

4th Qtr 2017

Key to Instrument Codes Reported by Participants

AT Atlas

CF Coesfeld

QA Qualitest

TO Tinius Olsen

CE Ceast

DN DYNISCO

RO Rosand

TY Toyoseiki



Plastics Interlaboratory Testing Program

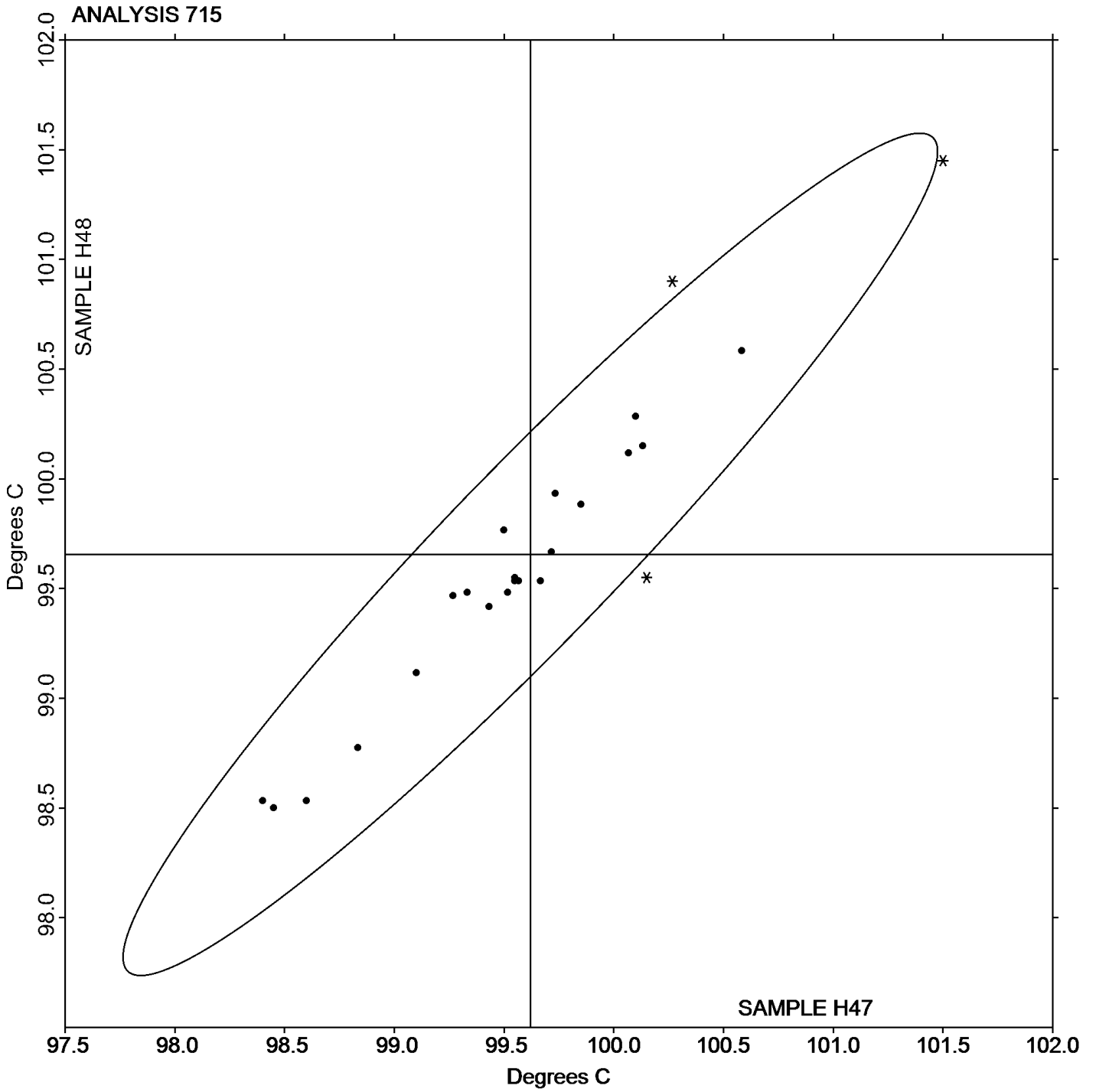
Report #104

Analysis 715

4th Qtr 2017

Vicat Softening Temperature (Rate A)

Grand Mean Sample H47: 99.619 Degrees C Grand Mean Sample H48: 99.656 Degrees C





Plastics Interlaboratory Testing Program

Report #104

Analysis 716

4th Qtr 2017

Vicat Softening Temperature (Rate B)

WebCode	Data Flag	Sample R47			Sample R48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36E24B		101.50	0.40	0.50	101.28	0.19	0.23	RO
36RMLY		101.72	0.61	0.78	101.83	0.74	0.92	CE
3P2L2F		101.85	0.75	0.95	101.83	0.74	0.92	TY
3WJB7G		101.10	0.00	0.00	101.48	0.38	0.47	CE
AY8XXB		100.12	-0.99	-1.25	100.08	-1.01	-1.27	DN
BZT8HV		100.40	-0.70	-0.89	100.83	-0.26	-0.33	TO
CAXFG9		101.47	0.36	0.46	101.25	0.15	0.19	DN
CVHBEL		101.18	0.08	0.10	101.53	0.44	0.55	CE
CYEYT9		100.17	-0.94	-1.19	100.02	-1.08	-1.35	TO
EVPALZ		99.88	-1.22	-1.55	99.93	-1.16	-1.46	CE
GAEDQA		100.73	-0.37	-0.47	100.73	-0.36	-0.46	CE
GGYJET		101.47	0.36	0.46	101.52	0.42	0.53	AT
GRX7GX		100.63	-0.47	-0.59	100.67	-0.43	-0.54	CE
HLARK6		100.33	-0.77	-0.98	100.20	-0.90	-1.12	CE
MAJP6T		101.90	0.80	1.01	101.67	0.57	0.71	CF
MN646L		102.27	1.16	1.48	102.25	1.15	1.45	AT
PYA22K		102.07	0.96	1.22	102.12	1.02	1.28	CF
QDQGHP		101.18	0.08	0.10	100.82	-0.28	-0.35	CE
U62XUR		99.48	-1.62	-2.05	99.37	-1.73	-2.17	TO
V7DYCJ		101.45	0.35	0.44	101.27	0.17	0.21	CE
XWZJK2		101.13	0.03	0.04	101.28	0.19	0.23	CF
YZUZCL		102.22	1.11	1.41	102.17	1.07	1.34	CE

Summary Statistics		
	Sample R47	Sample R48
Grand Means	101.102 Degrees C	101.097 Degrees C
Std Dev Btwn Labs	0.788 Degrees C	0.798 Degrees C
Statistics based on 22 of 22 reporting participants		

Sample R47: ABS & Sample R48: ABS



Plastics Interlaboratory Testing Program

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Vicat Softening Temperature (Rate B)

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Key to Instrument Codes Reported by Participants

AT Atlas

CF Coesfeld

RO Rosand

TY Toyoseiki

CE Ceast

DN DYNISCO

TO Tinius Olsen



Plastics Interlaboratory Testing Program

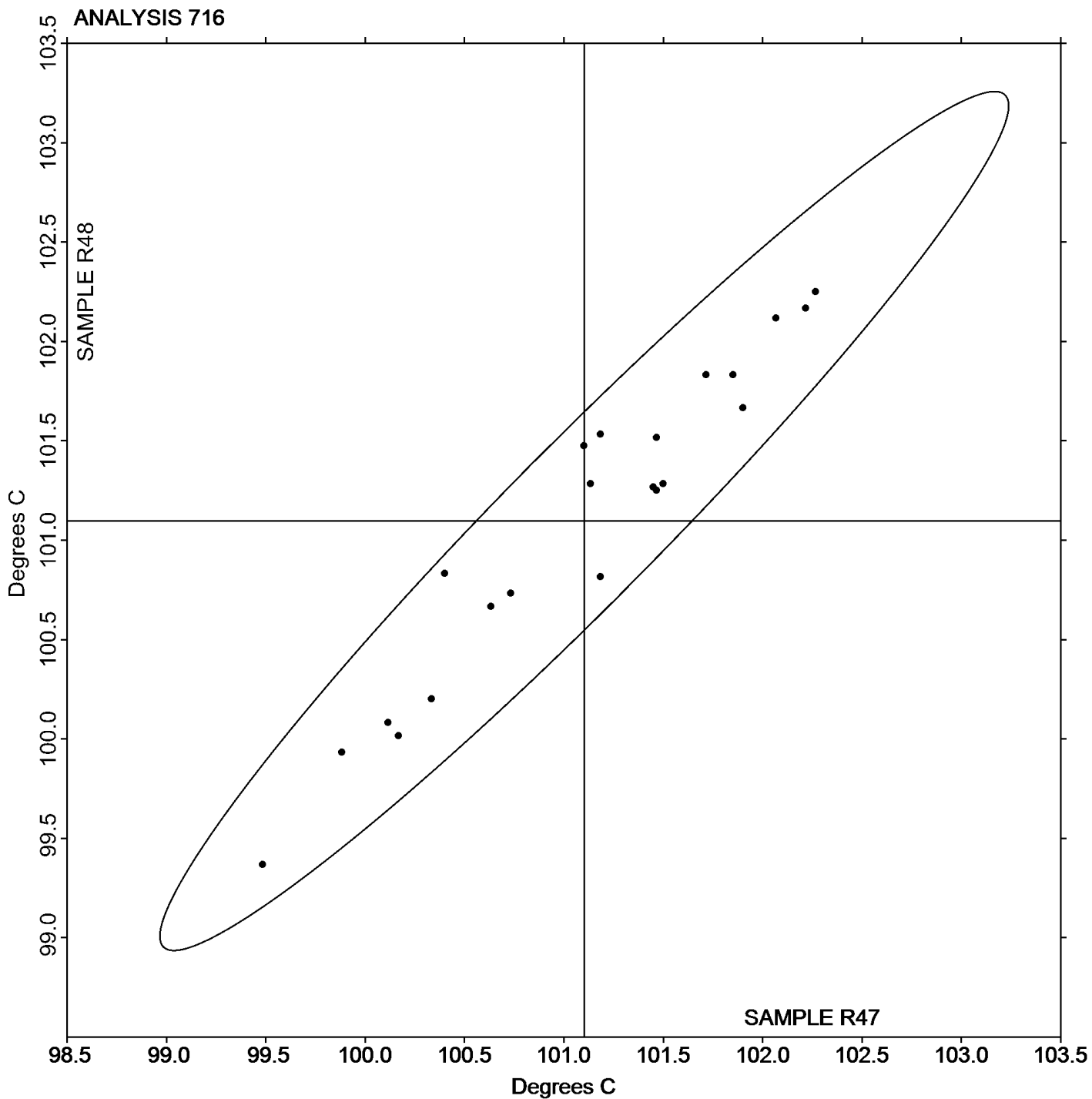
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4th Qtr 2017

Vicat Softening Temperature (Rate B)

Grand Mean Sample R47: 101.10 Degrees C Grand Mean Sample R48: 101.10 Degrees C





Plastics Interlaboratory Testing Program

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Analysis 718

4th Qtr 2017

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T47			Sample T48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
23UN6G		1.14100	0.00221	0.95	1.14167	0.00291	1.25
2E7F8G		1.14043	0.00164	0.70	1.13990	0.00114	0.49
2P7LLP		1.14067	0.00187	0.80	1.14133	0.00257	1.10
2RC9X9		1.13683	-0.00196	-0.84	1.13547	-0.00329	-1.41
36RMLY		1.13660	-0.00219	-0.94	1.13607	-0.00269	-1.15
3P2L2F		1.13590	-0.00289	-1.24	1.13530	-0.00346	-1.48
3RRRG7		1.13863	-0.00016	-0.07	1.13800	-0.00076	-0.33
3WJB7G		1.14107	0.00227	0.97	1.14110	0.00234	1.00
3Z3D4E		1.13600	-0.00279	-1.20	1.13533	-0.00343	-1.47
443LAA	X	1.14100	0.00221	0.95	1.13533	-0.00343	-1.47
4FXVVX		1.13767	-0.00113	-0.48	1.13800	-0.00076	-0.33
4NLQUD		1.13920	0.00041	0.17	1.13980	0.00104	0.45
4TZLAB		1.14133	0.00254	1.09	1.14157	0.00281	1.20
4VQFHD		1.13830	-0.00049	-0.21	1.13787	-0.00089	-0.38
626VEF		1.14120	0.00241	1.03	1.14153	0.00277	1.19
6BQ7E9	*	1.13413	-0.00466	-2.00	1.13630	-0.00246	-1.05
6NKBYR		1.13913	0.00034	0.15	1.13847	-0.00029	-0.13
7LCHFD		1.13920	0.00041	0.17	1.13893	0.00017	0.07
7TACDC		1.14017	0.00137	0.59	1.13973	0.00097	0.42
8F2P3T		1.14167	0.00287	1.23	1.13900	0.00024	0.10
8GYZZH	X	1.14080	0.00201	0.86	1.13683	-0.00193	-0.83
8NVUYF		1.13910	0.00031	0.13	1.13957	0.00081	0.35
9DNQU4		1.14000	0.00121	0.52	1.13967	0.00091	0.39
9FTCQG		1.13813	-0.00066	-0.28	1.13837	-0.00039	-0.17
9UEEJ8		1.13533	-0.00346	-1.48	1.13367	-0.00509	-2.18
AM8LBV		1.13960	0.00081	0.35	1.13940	0.00064	0.27
ARL8AU	*	1.13197	-0.00683	-2.92	1.13263	-0.00613	-2.63
CP7JUM		1.14100	0.00221	0.95	1.14100	0.00224	0.96
CVHBEL		1.13987	0.00107	0.46	1.13900	0.00024	0.10
CVXUZ6		1.14113	0.00234	1.00	1.14123	0.00247	1.06
DNDP84		1.14107	0.00227	0.97	1.14047	0.00171	0.73
DNUBBE		1.14140	0.00261	1.12	1.14113	0.00237	1.02
DRQN46		1.13813	-0.00066	-0.28	1.13887	0.00011	0.05
E2U9U6		1.13900	0.00021	0.09	1.14000	0.00124	0.53
EANC38		1.14043	0.00164	0.70	1.14033	0.00157	0.68



Plastics Interlaboratory Testing Program

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4th Qtr 2017

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T47			Sample T48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
EE3UH4	*	1.13597	-0.00283	-1.21	1.13880	0.00004	0.02
EVPALZ		1.13837	-0.00043	-0.18	1.13867	-0.00009	-0.04
FLZ478	X	1.13793	-0.00086	-0.37	1.14160	0.00284	1.22
G26RUT		1.13610	-0.00269	-1.15	1.13633	-0.00243	-1.04
GQMBYZ		1.14223	0.00344	1.47	1.14187	0.00311	1.33
H9PCEJ	*	1.13667	-0.00213	-0.91	1.14000	0.00124	0.53
HDAJK6		1.14033	0.00154	0.66	1.14033	0.00157	0.68
HJ7YNK		1.13710	-0.00169	-0.73	1.13587	-0.00289	-1.24
HKFXQG		1.14210	0.00331	1.42	1.14173	0.00297	1.28
J2H8VY	X	1.14600	0.00721	3.09	1.13700	-0.00176	-0.75
J4PF76		1.13750	-0.00129	-0.55	1.13687	-0.00189	-0.81
L7MLWU		1.13780	-0.00099	-0.43	1.13780	-0.00096	-0.41
LCCYXH	*	1.13577	-0.00303	-1.30	1.13350	-0.00526	-2.26
LJ98RN		1.13997	0.00117	0.50	1.14000	0.00124	0.53
LNYP6		1.13600	-0.00279	-1.20	1.13767	-0.00109	-0.47
M2CPRK	X	1.09597	-0.04283	-18.35	1.08030	-0.05846	-25.07
MAJP6T		1.13750	-0.00129	-0.55	1.13900	0.00024	0.10
MC9VLH		1.14000	0.00121	0.52	1.14000	0.00124	0.53
MMREX3		1.13833	-0.00046	-0.20	1.13867	-0.00009	-0.04
MN646L		1.13863	-0.00016	-0.07	1.13853	-0.00023	-0.10
MTW9ZB		1.13983	0.00104	0.45	1.13937	0.00061	0.26
MVKKYF		1.13967	0.00087	0.37	1.13923	0.00047	0.20
N6KX7U		1.13740	-0.00139	-0.60	1.13797	-0.00079	-0.34
NL9W9M		1.14249	0.00370	1.58	1.14318	0.00442	1.90
NNYAXK		1.13393	-0.00486	-2.08	1.13587	-0.00289	-1.24
NYXWZP		1.13950	0.00071	0.30	1.14110	0.00234	1.00
PBPQ3B		1.14037	0.00157	0.67	1.14043	0.00167	0.72
PGVP9U		1.14000	0.00121	0.52	1.14000	0.00124	0.53
PL333L		1.13900	0.00021	0.09	1.13900	0.00024	0.10
PL7R8J		1.13897	0.00017	0.07	1.13800	-0.00076	-0.33
PYA22K		1.14027	0.00147	0.63	1.14017	0.00141	0.60
Q6FVX2	X	1.12700	-0.01179	-5.05	1.13467	-0.00409	-1.75
QDQGHP	X	1.13937	0.00057	0.25	1.14453	0.00577	2.48
R4DQDP		1.13640	-0.00239	-1.03	1.13583	-0.00293	-1.25
R76UZ6		1.13727	-0.00153	-0.65	1.13787	-0.00089	-0.38



Plastics Interlaboratory Testing Program

Report #104

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4th Qtr 2017

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T47			Sample T48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
T7ZRUI		1.13533	-0.00346	-1.48	1.13700	-0.00176	-0.75
TBDFLG		1.14040	0.00161	0.69	1.14043	0.00167	0.72
TGKRUI		1.13447	-0.00433	-1.85	1.13407	-0.00469	-2.01
TXNHKH	X	1.13100	-0.00779	-3.34	1.13233	-0.00643	-2.76
U62XUR		1.13800	-0.00079	-0.34	1.13700	-0.00176	-0.75
UDEQ6M	X	1.13667	-0.00213	-0.91	1.13067	-0.00809	-3.47
VDN8MT		1.13873	-0.00006	-0.03	1.13880	0.00004	0.02
VFHYVJ	*	1.13533	-0.00346	-1.48	1.13333	-0.00543	-2.33
VL9DEY		1.13977	0.00097	0.42	1.13707	-0.00169	-0.73
VRAMTD		1.13947	0.00067	0.29	1.13947	0.00071	0.30
VRBFKK	X	1.13333	-0.00546	-2.34	1.13867	-0.00009	-0.04
W6GZEW		1.14033	0.00154	0.66	1.14067	0.00191	0.82
WFYEHY		1.14033	0.00154	0.66	1.14067	0.00191	0.82
WHMQG6	*	1.13300	-0.00579	-2.48	1.13500	-0.00376	-1.61
WND4G8		1.14433	0.00554	2.37	1.14433	0.00557	2.39
WNTM26		1.13829	-0.00051	-0.22	1.13713	-0.00163	-0.70
XBGLXJ		1.14033	0.00154	0.66	1.14087	0.00211	0.90
XG8YXM		1.13940	0.00061	0.26	1.13737	-0.00139	-0.60
XLJWB2		1.14137	0.00257	1.10	1.13870	-0.00006	-0.03
XRPQ8H		1.14130	0.00251	1.07	1.14100	0.00224	0.96
YWCULD		1.14033	0.00154	0.66	1.14067	0.00191	0.82
YZUZCL		1.14130	0.00251	1.07	1.14150	0.00274	1.18
Z8BVNA		1.13717	-0.00163	-0.70	1.13757	-0.00119	-0.51

Summary Statistics		
	Sample T47	Sample T48
Grand Means	1.138792 sp gr 23/23 C	1.138759 sp gr 23/23 C
Std Dev Btwn Labs	0.002334 sp gr 23/23 C	0.002332 sp gr 23/23 C
Statistics based on 83 of 93 reporting participants		

Sample T47: ABS/PC & Sample T48: ABS/PC



Comments on Assigned Data Flags for Test #718

- VRBFKK (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T48.
- 443LAA (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T48.
- UDEQ6M (X) - Inconsistent in testing between samples, data for Sample T48 are low. Inconsistent within the determinations of Sample T48.
- QDQGHP (X) - Inconsistent in testing between samples.
- M2CPRK (X) - Extreme data.
- Q6FVX2 (X) - Inconsistent in testing between samples, data for Sample T47 are low. Inconsistent within the determinations of Sample T47.
- 8GYZZH (X) - Inconsistent in testing between samples.
- FLZ478 (X) - Inconsistent in testing between samples.
- J2H8VY (X) - Inconsistent in testing between samples, data for Sample T47 are high.
- TXNHKH (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

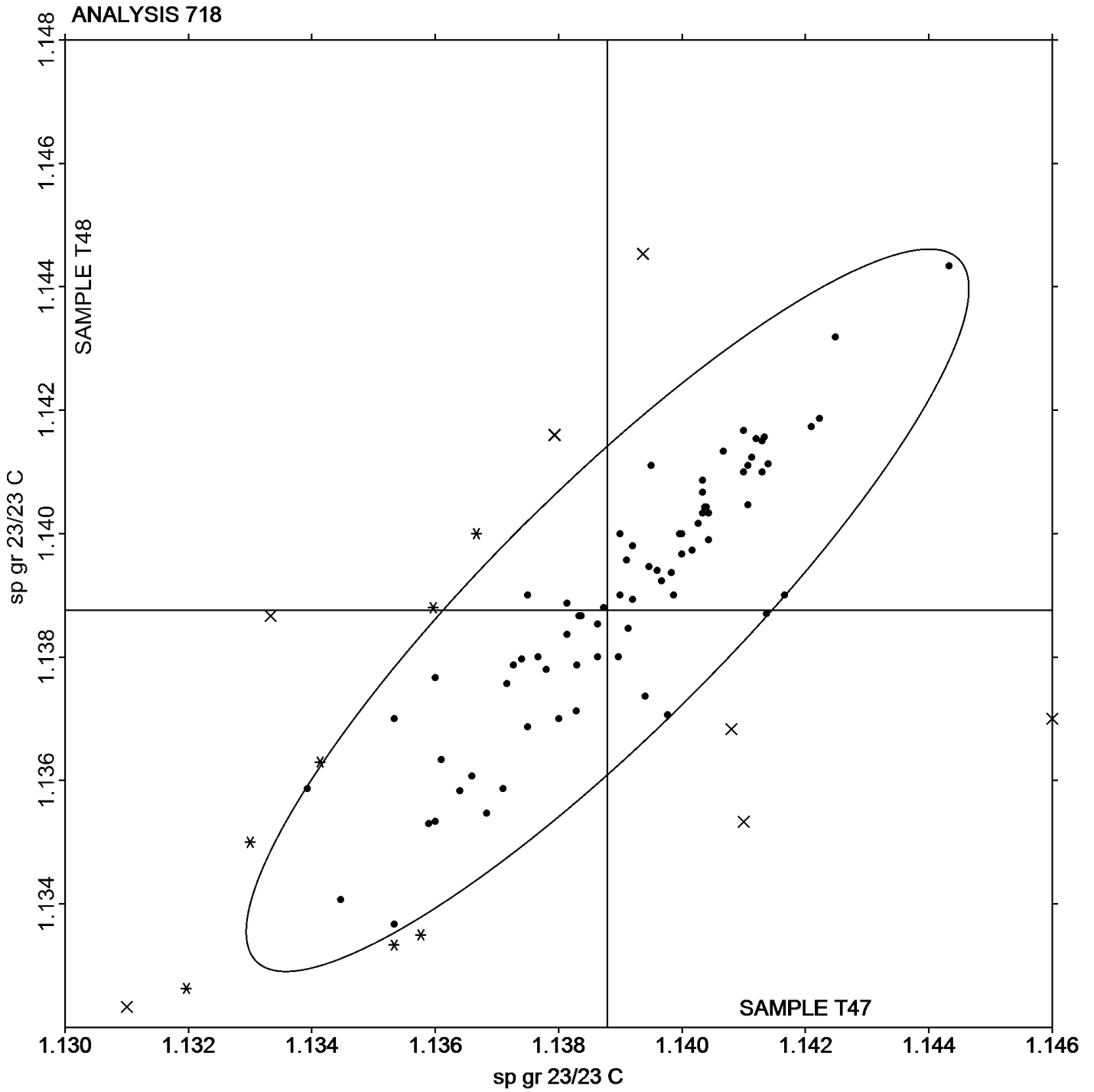
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Analysis 718

4th Qtr 2017

Specific Gravity - sp gr 23/23 C

Grand Mean Sample T47: 1.1388 sp gr 23/23 C Grand Mean Sample T48: 1.1388 sp gr 23/23 C





Plastics Interlaboratory Testing Program

Report #104

Analysis 720

4th Qtr 2017

Flexural Modulus- ksi

WebCode	Data Flag	Sample J47			Sample J48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KWPHF		317.4	-20.8	-1.13	315.4	-23.3	-1.21
36E24B		347.2	9.0	0.49	341.9	3.1	0.16
36RMLY		307.9	-30.3	-1.65	305.7	-33.0	-1.71
3P2L2F		333.6	-4.6	-0.25	331.3	-7.5	-0.39
3WJB7G		328.8	-9.4	-0.51	322.4	-16.3	-0.84
3Z3D4E		352.6	14.4	0.78	347.5	8.7	0.45
42TWMR		323.0	-15.2	-0.83	324.8	-13.9	-0.72
626VEF		358.4	20.1	1.10	354.5	15.8	0.82
6MLCFJ		352.1	13.9	0.75	351.0	12.2	0.63
6U8497		335.8	-2.4	-0.13	337.0	-1.7	-0.09
7QJ7XL		342.2	4.0	0.22	343.2	4.5	0.23
8DUKZ6		354.6	16.4	0.89	357.6	18.9	0.97
8GYZZH		339.9	1.6	0.09	340.2	1.4	0.07
8U2QHF		336.9	-1.3	-0.07	332.6	-6.1	-0.32
8VTT3A		359.0	20.8	1.13	366.4	27.7	1.43
9FTCQG	*	343.9	5.7	0.31	331.4	-7.3	-0.38
A7P8L8		336.0	-2.3	-0.12	337.0	-1.7	-0.09
AGYZKD		339.9	1.7	0.09	342.8	4.1	0.21
AM8LBV		342.4	4.2	0.23	350.8	12.0	0.62
BZT8HV		321.3	-16.9	-0.92	332.0	-6.8	-0.35
C3VD92		335.0	-3.2	-0.18	331.1	-7.6	-0.39
CAXFG9		324.0	-14.3	-0.78	323.1	-15.6	-0.81
CHAM44		317.5	-20.8	-1.13	323.3	-15.4	-0.80
CVHBEL	X	281.8	-56.4	-3.07	308.8	-30.0	-1.55
CVXUZ6		323.4	-14.8	-0.81	325.0	-13.7	-0.71
DNUBBE		342.4	4.2	0.23	342.4	3.7	0.19
DRQN46		363.0	24.8	1.35	360.7	21.9	1.13
EHJE86		347.4	9.2	0.50	350.2	11.5	0.59
EMZLQX		366.6	28.4	1.54	369.4	30.7	1.58
GRX94G		355.0	16.8	0.91	355.1	16.3	0.84
GWDKBJ		332.4	-5.8	-0.32	334.6	-4.1	-0.21
HKFXQG		343.9	5.7	0.31	345.2	6.5	0.34
J2H8VY		337.0	-1.2	-0.07	331.4	-7.3	-0.38
JFKU72		338.4	0.2	0.01	344.1	5.4	0.28
KZHKXL	*	282.6	-55.6	-3.03	283.5	-55.2	-2.85



Plastics Interlaboratory Testing Program

Report #104

Analysis 720

4th Qtr 2017

Flexural Modulus- ksi

WebCode	Data Flag	Sample J47			Sample J48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LCCYXH		341.5	3.2	0.18	345.2	6.5	0.33
MMREX3		320.1	-18.1	-0.99	322.1	-16.7	-0.86
MN646L		344.8	6.5	0.36	344.8	6.1	0.31
MX7F93		339.2	1.0	0.05	345.6	6.8	0.35
N6KX7U		331.0	-7.2	-0.39	332.7	-6.0	-0.31
PGVP9U		356.0	17.8	0.97	365.8	27.1	1.40
PQJCPQ		340.6	2.4	0.13	352.5	13.8	0.71
PYA22K		322.5	-15.8	-0.86	322.7	-16.0	-0.83
Q44F4Z		336.8	-1.4	-0.08	336.6	-2.1	-0.11
QDQGHP		354.6	16.3	0.89	357.0	18.2	0.94
QNTGGN	X	148.2	-190.0	-10.34	154.2	-184.5	-9.53
R4DQDP	*	386.5	48.3	2.63	394.7	55.9	2.89
R76UZ6		360.1	21.9	1.19	361.0	22.3	1.15
RXTJYQ		304.9	-33.4	-1.82	307.9	-30.9	-1.59
TGKRUZ		362.8	24.6	1.34	363.4	24.7	1.28
TGYGU7		348.9	10.6	0.58	349.0	10.3	0.53
TMRF92		346.9	8.7	0.47	347.2	8.5	0.44
TX7F3A		339.8	1.6	0.08	338.2	-0.6	-0.03
U62XUR		341.2	3.0	0.16	344.5	5.8	0.30
U64HNL		338.3	0.1	0.01	338.0	-0.8	-0.04
UWT7MH		335.9	-2.3	-0.12	331.7	-7.1	-0.36
VDN8MT		327.8	-10.4	-0.57	327.4	-11.4	-0.59
VFHYVJ	X	167.1	-171.1	-9.31	168.3	-170.4	-8.80
VRBFKK		313.9	-24.4	-1.33	305.7	-33.0	-1.70
VVCHE3		321.2	-17.0	-0.93	320.8	-18.0	-0.93
WFYEHY		314.4	-23.8	-1.29	319.2	-19.5	-1.01
WHMQG6		366.6	28.4	1.54	359.2	20.4	1.06
WNTM26		346.2	8.0	0.43	340.6	1.8	0.09
WQUTFB		344.9	6.7	0.36	347.9	9.1	0.47
XG8YXM	X	297.0	-41.2	-2.24	260.0	-78.7	-4.07
XN2BK3		331.9	-6.3	-0.34	332.6	-6.2	-0.32
YR3FDF	*	288.3	-50.0	-2.72	281.1	-57.6	-2.98
YWCULD		373.9	35.7	1.94	373.2	34.4	1.78
YZUZCL		336.1	-2.2	-0.12	337.5	-1.3	-0.07
ZAXNDX		324.2	-14.0	-0.76	326.5	-12.2	-0.63



Plastics Interlaboratory Testing Program

Report #104

Analysis 720

4th Qtr 2017

Flexural Modulus- ksi

Summary Statistics	<u>Sample J47</u>	<u>Sample J48</u>
Grand Means	338.23 ksi	338.74 ksi
Stnd Dev Btwn Labs	18.38 ksi	19.36 ksi

Statistics based on 66 of 70 reporting participants

Sample J47: ABS/PC & Sample J48: ABS/PC

Comments on Assigned Data Flags for Test #720

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

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

CVHBEL (X) - Inconsistent in testing between samples, data for sample J47 are low.

XG8YXM (X) - Inconsistent in testing between samples, data for sample J48 are low.

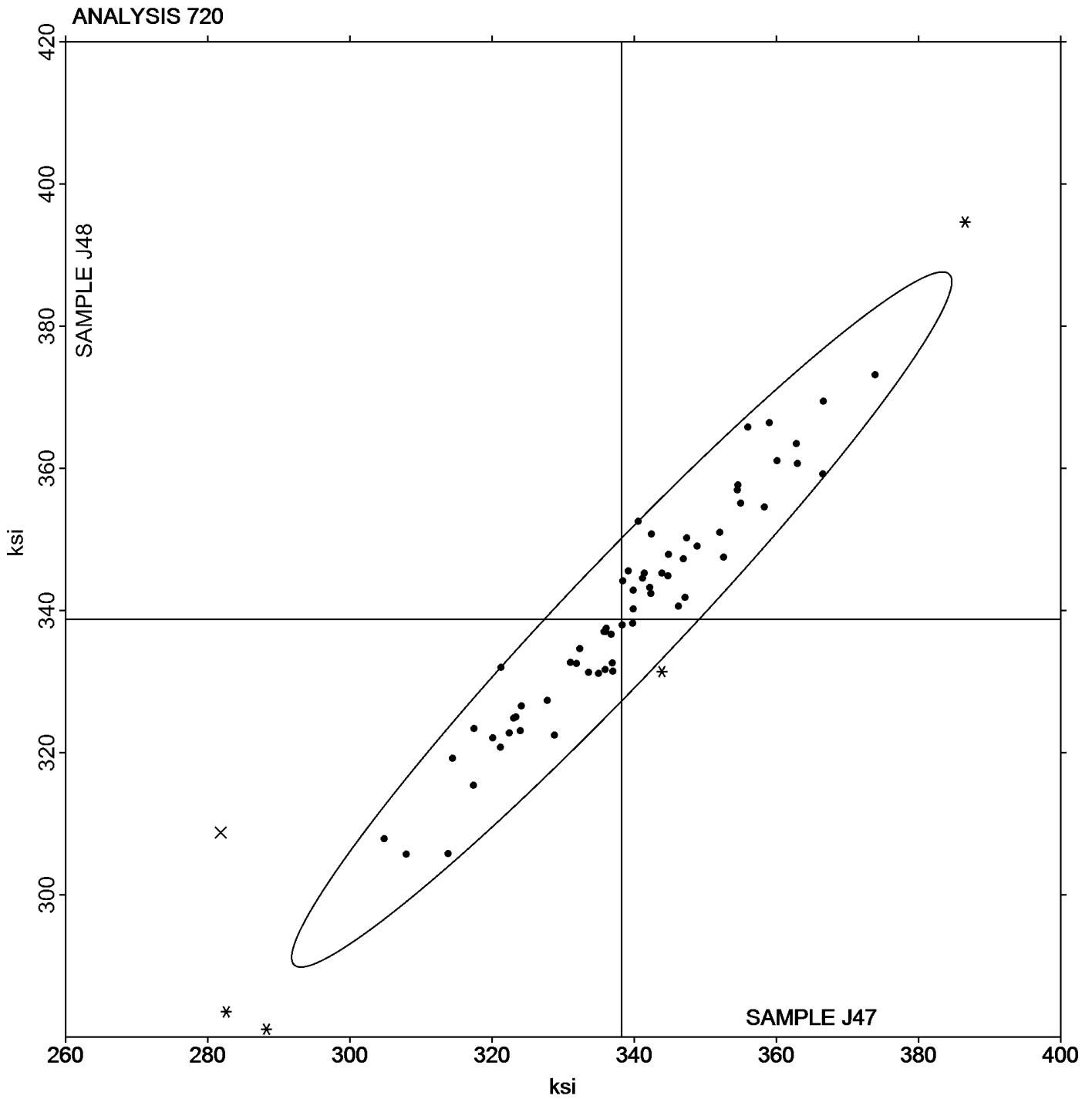


Plastics Interlaboratory Testing Program

Analysis 720 Flexural Modulus- ksi

Report #104
4th Qtr 2017

Grand Mean Sample J47: 338.23 ksi Grand Mean Sample J48: 338.74 ksi





Plastics Interlaboratory Testing Program

Report #104

Analysis 721

4th Qtr 2017

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J47			Sample J48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KWPHF		11,410	-452	-1.18	11,404	-493	-1.24
36RMLY		11,943	81	0.21	11,876	-21	-0.05
3P2L2F		11,728	-133	-0.35	11,789	-108	-0.27
3WJB7G		11,226	-636	-1.67	11,400	-497	-1.25
3Z3D4E		11,778	-83	-0.22	11,662	-235	-0.59
42TWMR		11,492	-370	-0.97	11,545	-353	-0.89
626VEF	*	12,680	818	2.15	12,900	1,003	2.52
6MLCFJ		12,309	447	1.17	12,300	403	1.01
6U8497		11,986	124	0.33	11,918	21	0.05
7QJ7XL		11,640	-222	-0.58	11,760	-137	-0.34
8DUKZ6		12,364	502	1.32	12,386	489	1.23
8GYZZH		11,286	-576	-1.51	11,410	-487	-1.22
8U2QHF		11,995	133	0.35	11,846	-52	-0.13
8VTT3A		12,400	538	1.41	12,620	723	1.82
A7P8L8		12,188	327	0.86	12,266	369	0.93
AGYZKD		12,305	443	1.16	12,318	421	1.06
C3VD92		11,894	32	0.08	11,850	-47	-0.12
CAXFG9		11,631	-231	-0.61	11,595	-302	-0.76
CHAM44		11,820	-42	-0.11	11,872	-25	-0.06
CVHBEL		11,429	-433	-1.14	11,243	-654	-1.64
CVXUZ6		11,914	52	0.14	12,052	155	0.39
DNUBBE		11,660	-202	-0.53	11,620	-277	-0.70
EHJE86		12,291	429	1.12	12,252	355	0.89
EMZLQX		12,060	198	0.52	12,120	223	0.56
GRX94G		12,472	610	1.60	12,496	599	1.50
HKFXQG		11,916	54	0.14	11,971	74	0.19
JFKU72		11,651	-210	-0.55	11,838	-59	-0.15
LCCYXH		12,005	143	0.38	12,125	228	0.57
MMREX3		11,603	-259	-0.68	11,678	-219	-0.55
MN646L		11,964	102	0.27	12,026	129	0.32
MX7F93		11,700	-162	-0.43	11,890	-7	-0.02
N6KX7U		11,736	-126	-0.33	11,698	-199	-0.50
PGVP9U	*	12,218	356	0.93	11,936	39	0.10
PQJCPQ		12,242	380	1.00	12,317	420	1.06
PYA22K		11,688	-174	-0.46	11,771	-126	-0.32



Plastics Interlaboratory Testing Program

Report #104

Analysis 721

4th Qtr 2017

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J47			Sample J48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QDQGHP		12,206	344	0.90	12,304	407	1.02
QNTGGN	X	7,250	-4,612	-12.10	7,410	-4,487	-11.27
R4DQDP		11,851	-10	-0.03	12,034	137	0.34
R76UZ6		12,434	573	1.50	12,545	648	1.63
RXTJYQ		11,039	-823	-2.16	11,045	-852	-2.14
TGYGU7		11,942	80	0.21	11,952	55	0.14
TMRF92		11,870	8	0.02	11,979	82	0.21
TX7F3A		11,718	-144	-0.38	11,763	-134	-0.34
U62XUR		11,695	-167	-0.44	11,719	-178	-0.45
U64HNL		11,942	80	0.21	12,024	127	0.32
UWT7MH		11,514	-348	-0.91	11,335	-562	-1.41
VDN8MT		11,135	-726	-1.91	11,261	-637	-1.60
VFHYVJ	X	7,449	-4,413	-11.58	7,470	-4,428	-11.12
VVCHE3		12,171	309	0.81	12,242	345	0.87
WHMQG6		11,925	63	0.16	11,935	38	0.10
WQUTFB		11,549	-313	-0.82	11,465	-432	-1.08
XN2BK3	*	10,956	-906	-2.38	11,100	-797	-2.00
YR3FDF		11,872	10	0.03	11,761	-136	-0.34
YZUZCL		12,504	642	1.69	12,560	663	1.67
ZAXNDX		11,734	-128	-0.34	11,772	-126	-0.32

Summary Statistics		
	Sample J47	Sample J48
Grand Means	11,861.9 psi	11,897.2 psi
Stnd Dev Btwn Labs	381.2 psi	398.1 psi
Statistics based on 53 of 55 reporting participants		

Sample J47: ABS/PC & Sample J48: ABS/PC

Comments on Assigned Data Flags for Test #721

- VFHYVJ (X) - Data for both samples are very low. Possible Systematic Error.
- QNTGGN (X) - Data for both samples are very low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

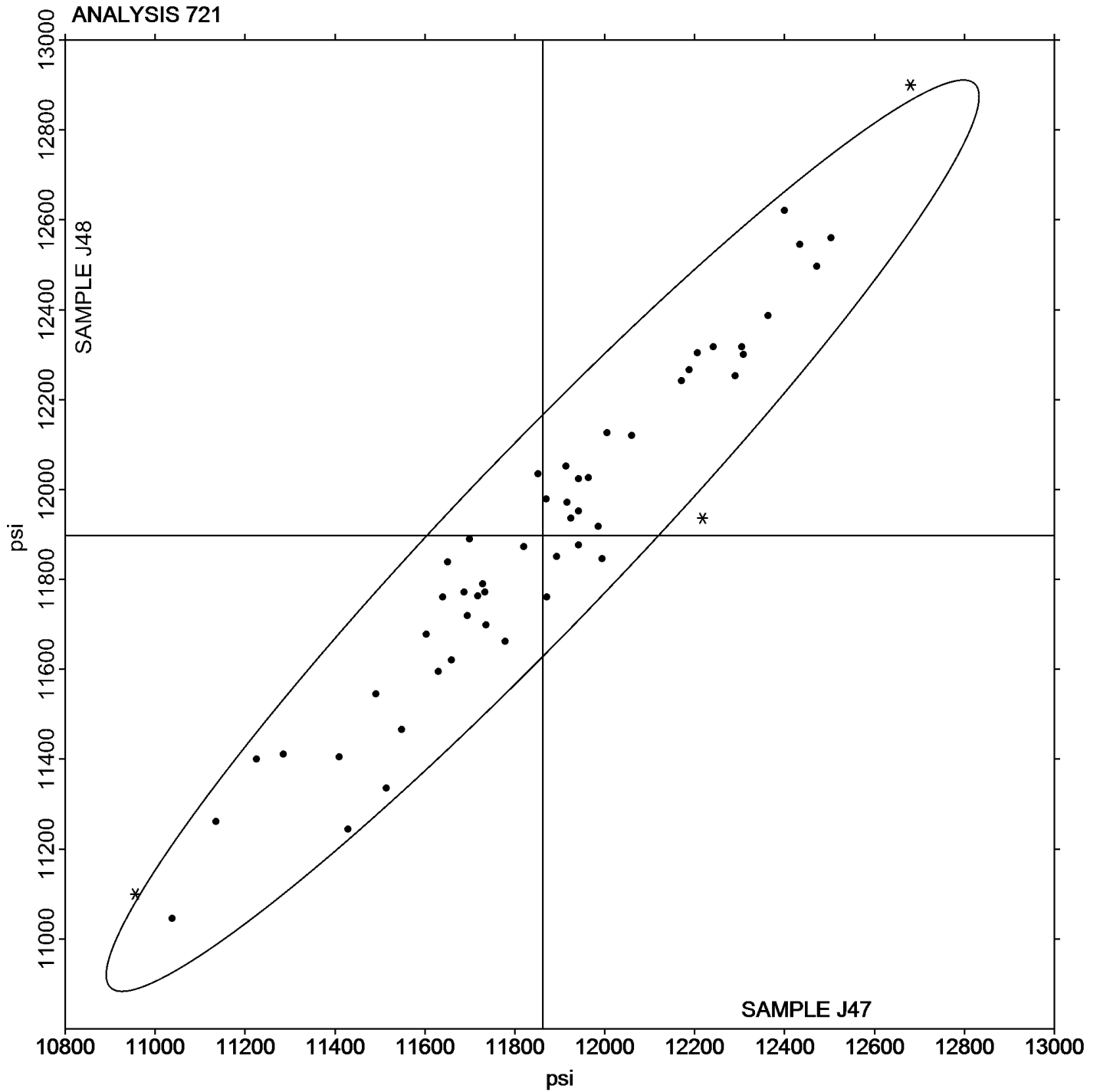
Report #104

Analysis 721

4th Qtr 2017

Flexural Stress at 5% Strain - psi

Grand Mean Sample J47: 11,861.87 psi Grand Mean Sample J48: 11,897.17 psi





Plastics Interlaboratory Testing Program

Report #104

Analysis 722

4th Qtr 2017

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J47			Sample J48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KWPHF		11,650	-336	-0.79	11,676	-354	-0.77
36E24B	X	12,125	139	0.32	11,719	-311	-0.67
3P2L2F		11,882	-105	-0.25	11,937	-93	-0.20
3WJB7G		11,545	-442	-1.03	11,719	-311	-0.67
3Z3D4E		12,049	62	0.15	11,888	-141	-0.31
42TWMR		11,724	-262	-0.61	11,769	-261	-0.57
6MLCFJ		12,515	529	1.24	12,534	505	1.09
6U8497		12,196	209	0.49	12,100	70	0.15
8DUKZ6		12,611	624	1.46	12,647	617	1.34
8VTT3A		12,400	413	0.97	12,620	590	1.28
9FTCQG		11,774	-213	-0.50	11,935	-94	-0.20
A7P8L8	*	12,839	853	2.00	13,123	1,094	2.37
AGYZKD		12,531	544	1.27	12,650	621	1.34
AM8LBV		11,824	-162	-0.38	11,979	-50	-0.11
C3VD92		12,120	134	0.31	12,065	35	0.08
CAXFG9		11,815	-171	-0.40	11,787	-243	-0.53
CHAM44		12,226	239	0.56	12,265	236	0.51
CVHBEL		11,606	-381	-0.89	11,383	-647	-1.40
CVXUZ6		11,754	-233	-0.54	11,796	-234	-0.51
EHJE86		12,335	349	0.82	12,299	269	0.58
EMZLQX		12,160	173	0.41	12,260	230	0.50
GRX94G		12,626	639	1.50	12,679	650	1.41
HKFXQG		12,102	116	0.27	12,091	61	0.13
J2H8VY		12,000	13	0.03	11,980	-50	-0.11
JFKU72		11,810	-177	-0.41	12,086	56	0.12
LCCYXH		12,221	235	0.55	12,351	321	0.70
MMREX3		11,885	-102	-0.24	11,981	-49	-0.11
MN646L		12,129	143	0.33	12,217	188	0.41
MX7F93		11,864	-122	-0.29	12,045	15	0.03
N6KX7U		11,950	-37	-0.09	11,903	-127	-0.27
PGVP9U	*	13,170	1,183	2.77	13,298	1,269	2.75
PYA22K		11,845	-142	-0.33	11,858	-172	-0.37
Q44F4Z		11,696	-291	-0.68	11,746	-284	-0.61
QNTGGN	X	7,250,000	,238,013	16,934.69	7,410,000	7,397,970	16,018.39
R76UZ6		12,434	448	1.05	12,545	515	1.12



Plastics Interlaboratory Testing Program

Report #104

Analysis 722

4th Qtr 2017

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J47			Sample J48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RXTJYQ		11,039	-948	-2.22	11,045	-985	-2.13
TGKRUZ		12,234	247	0.58	12,228	198	0.43
TGYGU7		12,230	243	0.57	12,259	229	0.50
TMRF92		12,026	40	0.09	12,176	146	0.32
TX7F3A		11,892	-95	-0.22	11,942	-88	-0.19
U62XUR		11,862	-125	-0.29	11,891	-139	-0.30
UWT7MH		11,633	-353	-0.83	11,460	-570	-1.23
VDN8MT		11,160	-826	-1.93	11,268	-762	-1.65
VFHYVJ	X	7,449	-4,537	-10.62	7,470	-4,560	-9.87
VVCHE3		12,180	193	0.45	12,244	215	0.46
WHMQG6		12,012	26	0.06	12,051	21	0.05
WNTM26		11,942	-44	-0.10	11,893	-136	-0.30
WQUTFB		11,641	-346	-0.81	11,659	-371	-0.80
XN2BK3	*	10,956	-1,031	-2.41	11,100	-930	-2.01
YR3FDF		11,926	-60	-0.14	11,809	-221	-0.48
YWCULD	X	10,467	-1,520	-3.56	10,622	-1,408	-3.05
ZAXNDX		11,337	-649	-1.52	11,189	-840	-1.82

Summary Statistics		Sample J47	Sample J48
Grand Means		11,986.7 psi	12,029.7 psi
Std Dev Btwn Labs		427.4 psi	461.8 psi
Statistics based on 48 of 52 reporting participants			

Sample J47: ABS/PC & Sample J48: ABS/PC

Comments on Assigned Data Flags for Test #722

- VFHYVJ (X) - Data for both samples are low. Possible Systematic Error.
- QNTGGN (X) - Extreme data.
- 36E24B (X) - Inconsistent in testing between samples.
- YWCULD (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

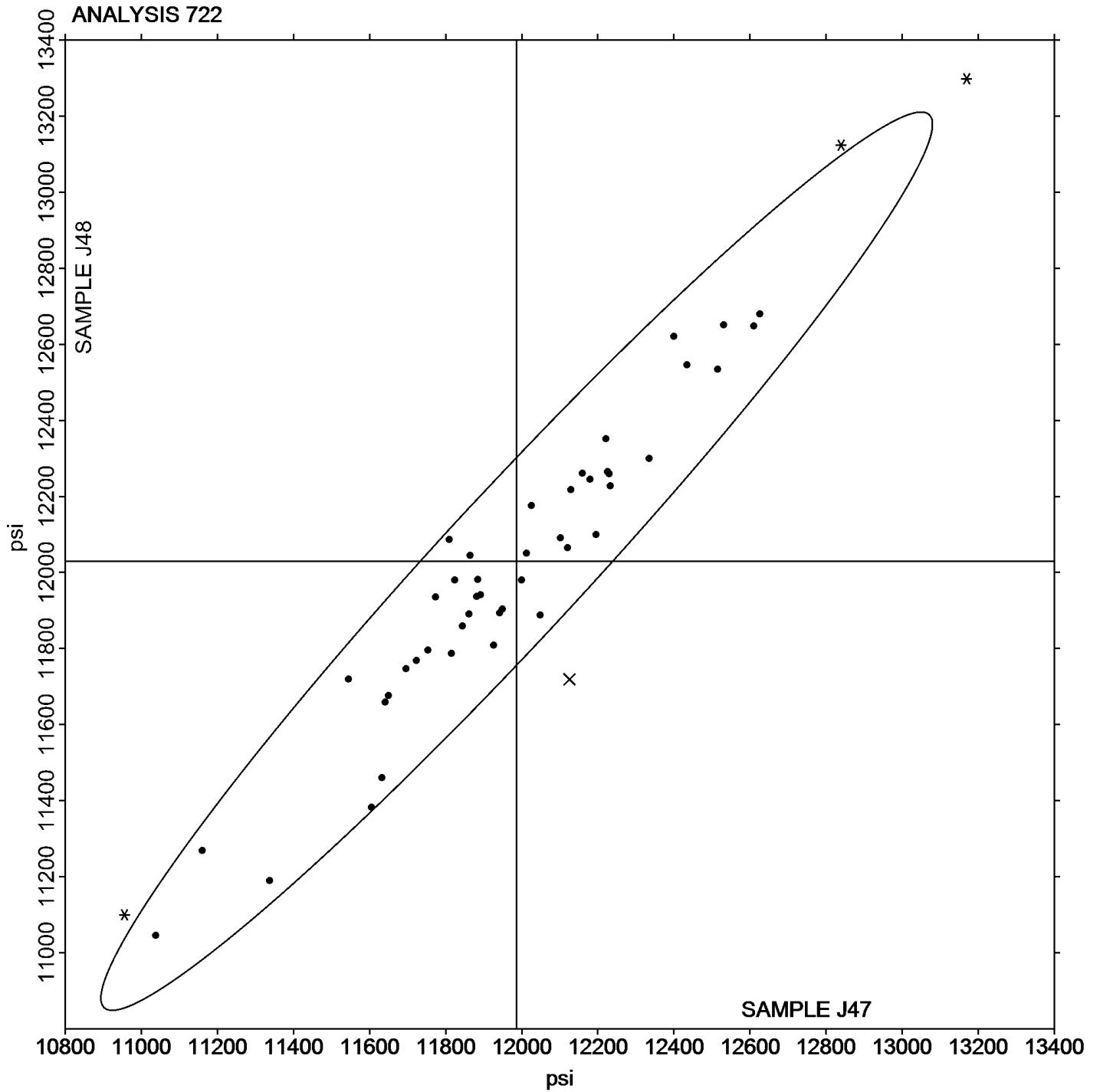
Analysis 722

Flexural Stress at Yield - psi

Report #104

4th Qtr 2017

Grand Mean Sample J47: 11,986.68 psi Grand Mean Sample J48: 12,029.70 psi





Plastics Interlaboratory Testing Program

Report #104

Analysis 730

4th Qtr 2017

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2P7LLP		50.74	0.02	0.02	50.70	-0.31	-0.48
3LZW6Z		50.86	0.13	0.17	51.45	0.44	0.67
3P2L2F		49.67	-1.06	-1.35	50.68	-0.33	-0.50
3PH6JR		50.30	-0.42	-0.54	51.12	0.11	0.16
443LAA		50.76	0.04	0.04	50.76	-0.25	-0.39
4TZLAB		50.59	-0.13	-0.17	50.91	-0.10	-0.16
4VQFHD		51.75	1.03	1.31	51.76	0.75	1.14
7CHGXE		50.86	0.14	0.17	50.84	-0.17	-0.26
7LCHFD		51.54	0.82	1.04	51.64	0.63	0.96
7TACDC		50.34	-0.38	-0.49	51.50	0.49	0.74
7WBF6Y		50.05	-0.68	-0.86	50.98	-0.03	-0.05
7X46QE		51.24	0.52	0.66	51.35	0.34	0.52
7ZBLMP		51.74	1.02	1.29	50.98	-0.03	-0.05
8NVUYF		52.45	1.72	2.20	52.18	1.17	1.78
8VTT3A		49.66	-1.06	-1.36	49.82	-1.19	-1.82
9UUZQN	X	50.88	0.15	0.19	47.65	-3.36	-5.13
9WHCPT		49.81	-0.91	-1.16	50.78	-0.23	-0.35
AYZXQF		50.06	-0.66	-0.85	51.10	0.09	0.13
BQATFT		50.35	-0.37	-0.48	51.16	0.15	0.23
C28Q6E		51.81	1.09	1.38	51.07	0.06	0.09
C3VD92		50.56	-0.17	-0.21	50.98	-0.03	-0.05
CDRJZE		50.14	-0.58	-0.74	50.54	-0.47	-0.71
CVHBEL	*	51.88	1.16	1.47	50.48	-0.53	-0.81
E2U9U6		50.32	-0.40	-0.52	50.37	-0.64	-0.97
EANC38	*	52.54	1.81	2.31	52.97	1.96	2.99
EE3UH4		50.91	0.18	0.23	50.85	-0.16	-0.25
EVPALZ	X	50.40	-0.33	-0.42	49.05	-1.96	-2.99
G67VLE		50.25	-0.47	-0.60	50.49	-0.53	-0.80
GBVD2C		51.40	0.68	0.86	51.32	0.31	0.48
GQMBYZ	X	54.85	4.12	5.25	53.75	2.74	4.18
HKFXQG		50.86	0.13	0.17	51.15	0.14	0.21
HQ36RL		49.82	-0.90	-1.15	50.50	-0.51	-0.78
JQHD4V		49.64	-1.08	-1.38	50.78	-0.24	-0.36
KVBWKJ		50.48	-0.25	-0.31	51.18	0.17	0.26
LCCYXH		51.00	0.27	0.35	50.88	-0.13	-0.21



Plastics Interlaboratory Testing Program

Report #104

Analysis 730

4th Qtr 2017

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LNYP6	*	52.00	1.28	1.62	52.85	1.84	2.81
M4EQU3		51.34	0.62	0.78	51.34	0.33	0.50
MAJP6T		50.22	-0.50	-0.64	50.84	-0.17	-0.26
MMREX3		49.91	-0.82	-1.04	49.99	-1.02	-1.55
MN646L		51.77	1.05	1.33	51.74	0.73	1.11
MYCZW3	X	53.58	2.85	3.63	52.24	1.23	1.88
NADWMB		50.61	-0.12	-0.15	50.98	-0.03	-0.04
PBPQ3B		50.13	-0.60	-0.76	50.64	-0.37	-0.57
PYA22K		52.51	1.79	2.28	52.27	1.26	1.92
Q44F4Z		51.61	0.89	1.13	51.68	0.67	1.02
QNTGGN		50.22	-0.50	-0.64	51.16	0.15	0.23
QVMVRN		50.16	-0.56	-0.72	51.31	0.30	0.46
QXQNN8		50.94	0.22	0.27	50.28	-0.73	-1.12
R4DQDP		50.06	-0.66	-0.85	50.50	-0.52	-0.79
R76UZ6		50.66	-0.06	-0.08	51.68	0.67	1.02
RJVC2P		51.12	0.40	0.50	50.34	-0.68	-1.03
T7ZRUI		50.14	-0.58	-0.75	49.94	-1.07	-1.64
TGKRUI		50.55	-0.18	-0.23	51.29	0.28	0.42
TMRF92		50.26	-0.47	-0.59	50.97	-0.04	-0.07
TX7F3A	X	52.92	2.19	2.79	53.38	2.36	3.61
UDEQ6M		49.92	-0.80	-1.02	50.25	-0.77	-1.17
VRBFKK		49.56	-1.17	-1.49	50.51	-0.50	-0.77
WFYEHY		51.26	0.53	0.68	51.34	0.33	0.50
WNTM26		51.32	0.59	0.76	51.42	0.41	0.62
YZUZCL		50.35	-0.37	-0.48	50.22	-0.79	-1.21
ZAT9ZX		49.60	-1.12	-1.43	49.86	-1.15	-1.76

Summary Statistics	Sample C47	Sample C48
Grand Means	50.725 MPa	51.012 MPa
Stnd Dev Btwn Labs	0.785 MPa	0.655 MPa

Statistics based on 56 of 61 reporting participants

Sample C47: ABS/PC & Sample C48: ABS/PC



Plastics Interlaboratory Testing Program

Analysis 730

Tensile Stress at Yield - MPa

Report #104

4th Qtr 2017

Comments on Assigned Data Flags for Test #730

EVPALZ (X) - Data for sample C48 are low. Inconsistent within the determinations of both samples.

GQMBYZ (X) - Data for both samples are high.

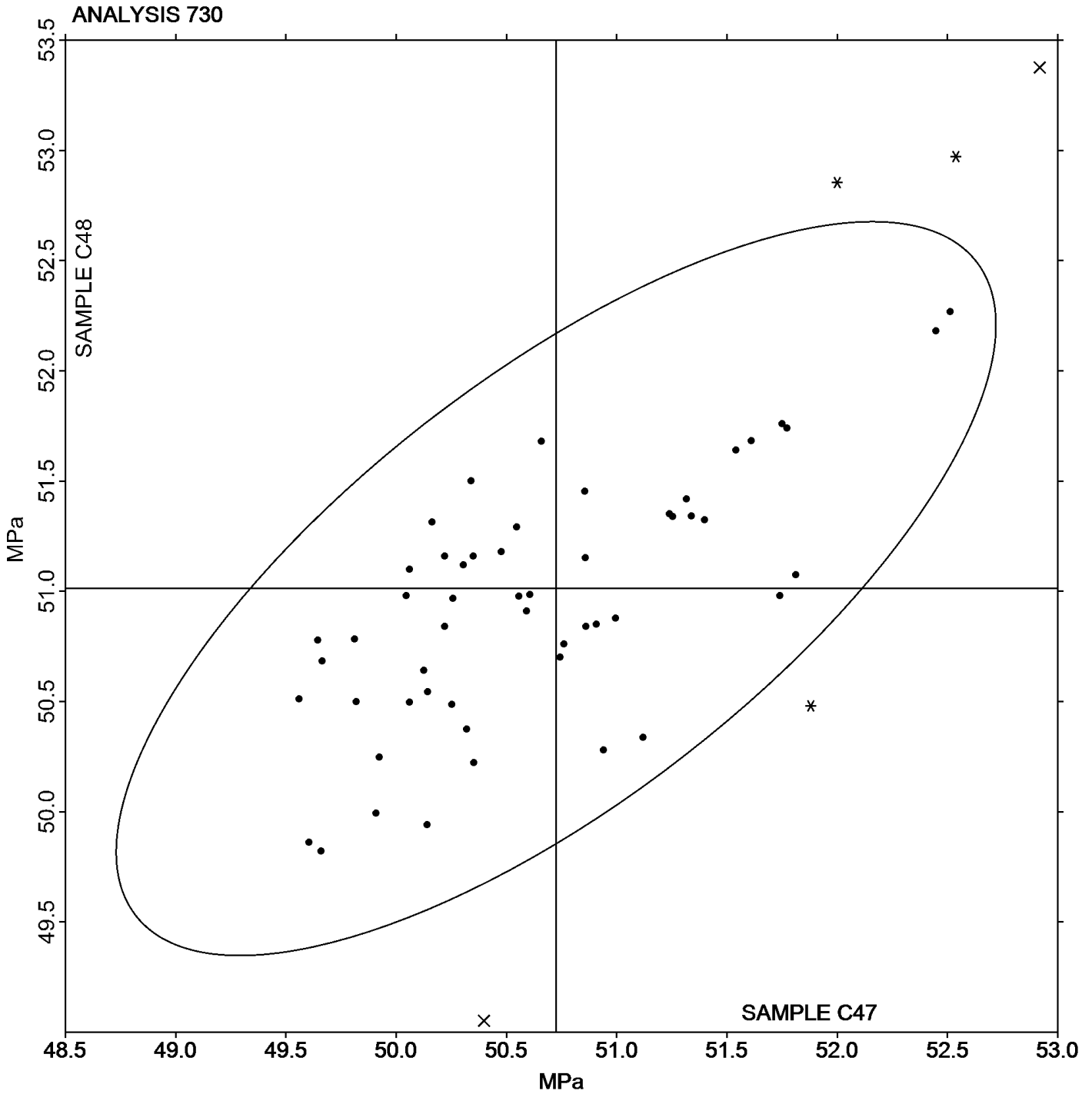
TX7F3A (X) - Data for both samples are high.

9UUZQN (X) - Data for sample C48 are low.

MYCZW3 (X) - Data for sample C47 are high.



Grand Mean Sample C47: 50.725 MPa Grand Mean Sample C48: 51.012 MPa





Plastics Interlaboratory Testing Program

Report #104

Analysis 731

4th Qtr 2017

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2P7LLP		42.42	-0.90	-1.10	42.53	-0.94	-1.29
3LZW6Z		43.32	0.00	0.00	44.41	0.94	1.28
3P2L2F		42.02	-1.30	-1.58	42.21	-1.26	-1.73
3PH6JR		42.41	-0.91	-1.11	43.50	0.03	0.04
443LAA	X	39.72	-3.60	-4.38	40.82	-2.65	-3.65
4TZLAB	X	45.16	1.84	2.24	46.33	2.86	3.92
7CHGXE		42.38	-0.94	-1.14	41.88	-1.59	-2.19
7LCHFD		43.80	0.48	0.58	43.74	0.27	0.36
7TACDC		42.48	-0.84	-1.02	43.36	-0.11	-0.16
7WBF6Y		43.85	0.52	0.64	42.61	-0.86	-1.19
7X46QE		42.40	-0.92	-1.12	41.98	-1.49	-2.05
7ZBLMP		44.48	1.16	1.41	43.68	0.21	0.28
8NVUYF		44.69	1.37	1.66	44.08	0.60	0.83
8VTT3A		42.44	-0.88	-1.07	43.00	-0.47	-0.65
9UUZQN	X	42.90	-0.42	-0.51	40.43	-3.05	-4.19
9WHCPT		43.32	0.00	0.00	43.38	-0.09	-0.13
AYZXQF		42.72	-0.60	-0.73	44.26	0.79	1.08
BQATFT		43.11	-0.21	-0.26	43.61	0.14	0.19
C28Q6E		44.03	0.71	0.86	43.41	-0.07	-0.09
C3VD92		43.33	0.01	0.01	43.34	-0.14	-0.19
CDRJZE		42.17	-1.15	-1.40	43.79	0.31	0.43
CVHBEL		43.34	0.02	0.02	42.20	-1.27	-1.75
E2U9U6		43.33	0.01	0.01	43.90	0.43	0.59
EANC38		44.20	0.88	1.07	44.86	1.39	1.90
EE3UH4		44.05	0.73	0.88	43.67	0.20	0.27
EVPALZ	X	44.08	0.76	0.92	41.47	-2.01	-2.76
G67VLE		43.24	-0.08	-0.09	43.29	-0.18	-0.25
GBVD2C		43.49	0.17	0.21	43.47	0.00	0.00
GQMBYZ	X	47.31	3.99	4.84	45.89	2.41	3.31
HKFXQG		43.21	-0.11	-0.14	43.65	0.18	0.25
HQ36RL		42.46	-0.86	-1.05	42.90	-0.57	-0.79
JQHD4V		42.54	-0.78	-0.94	43.31	-0.17	-0.23
KVBWKJ		43.06	-0.26	-0.32	43.73	0.26	0.36
LCCYXH		43.19	-0.13	-0.15	44.00	0.53	0.72
LNYP6	*	45.65	2.33	2.83	44.78	1.30	1.79



Plastics Interlaboratory Testing Program

Report #104

Analysis 731

4th Qtr 2017

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
M4EQU3		43.70	0.38	0.46	43.40	-0.07	-0.10
MAJP6T		42.96	-0.36	-0.44	43.56	0.09	0.12
MMREX3		42.81	-0.51	-0.62	42.36	-1.11	-1.53
MN646L		43.34	0.02	0.03	43.60	0.13	0.17
MYCZW3		45.24	1.92	2.34	44.22	0.74	1.02
NADWMB		43.59	0.27	0.32	43.50	0.02	0.03
PBPQ3B		42.71	-0.61	-0.74	43.13	-0.34	-0.47
PYA22K		44.00	0.68	0.82	44.26	0.79	1.08
Q44F4Z		44.33	1.01	1.22	43.98	0.50	0.69
QNTGGN		42.36	-0.96	-1.17	43.56	0.09	0.12
QVMVRN		42.66	-0.66	-0.81	43.60	0.13	0.17
QXQNN8		43.28	-0.04	-0.05	42.58	-0.89	-1.23
R4DQDP		43.04	-0.28	-0.34	43.60	0.12	0.17
R76UZ6		43.62	0.30	0.36	43.74	0.27	0.36
T7ZR UW		42.74	-0.58	-0.71	43.30	-0.17	-0.24
TMR F92		43.39	0.07	0.09	44.00	0.52	0.72
TX7F3A	*	45.19	1.87	2.27	45.42	1.94	2.67
WNTM26		44.00	0.68	0.82	43.85	0.37	0.51
YZUZCL		42.62	-0.70	-0.85	42.29	-1.18	-1.63
ZAT9ZX		43.33	0.01	0.01	43.23	-0.24	-0.33

Summary Statistics		
	Sample C47	Sample C48
Grand Means	43.321 MPa	43.474 MPa
Stnd Dev Btwn Labs	0.823 MPa	0.728 MPa
Statistics based on 50 of 55 reporting participants		

Sample C47: ABS/PC & Sample C48: ABS/PC

Comments on Assigned Data Flags for Test #731

- 4TZLAB (X) - Data for sample C48 are high. Inconsistent within the determinations of both samples.
- EVPALZ (X) - Data for sample C48 are low. Inconsistent within the determinations of sample C47.
- 443LAA (X) - Data for both samples are low.
- GQMBYZ (X) - Data for both samples are high.
- 9UUZQN (X) - Data for sample C48 are low.



Plastics Interlaboratory Testing Program

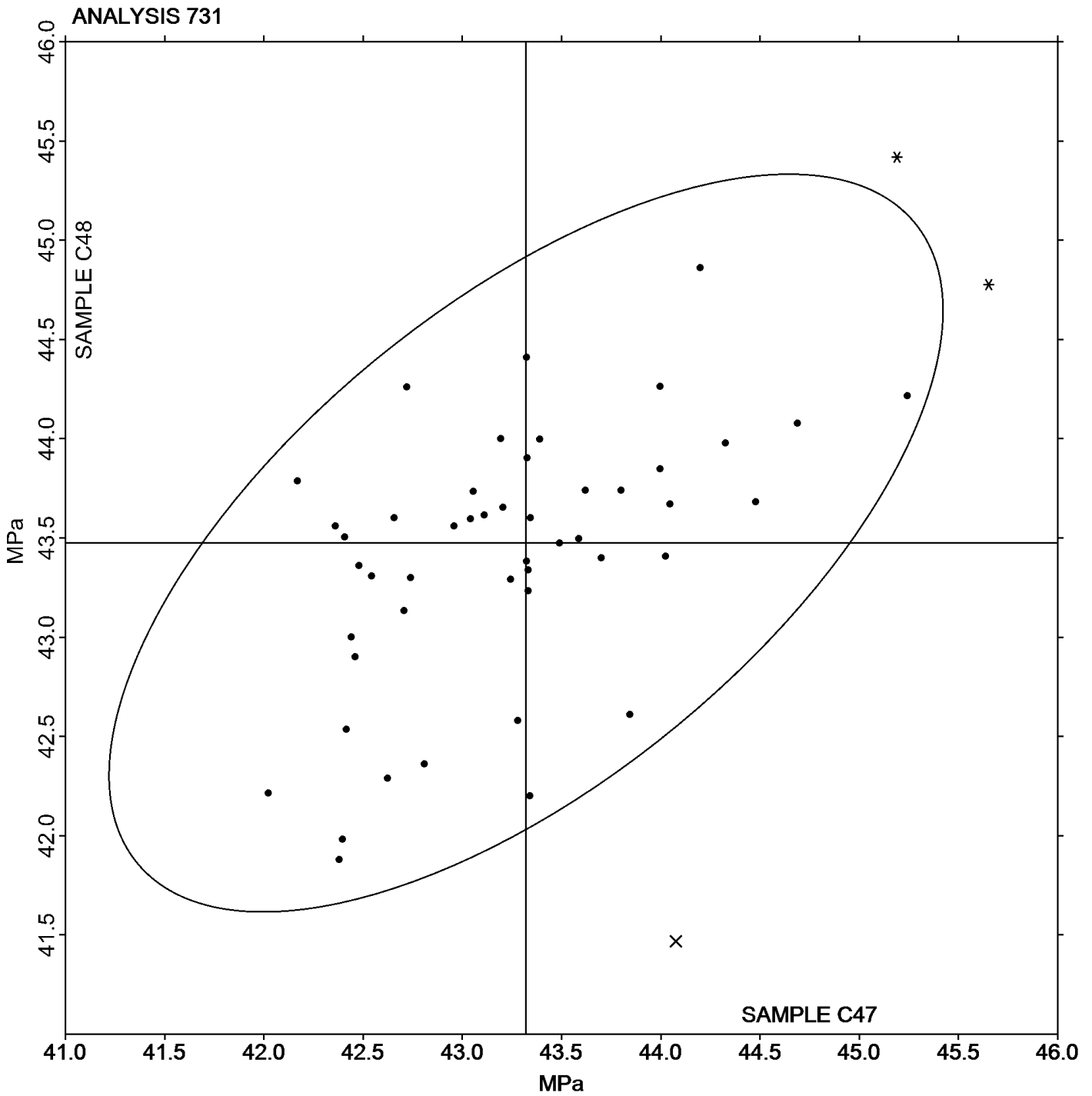
Analysis 731

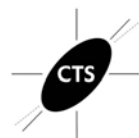
Tensile Stress at Break - MPa

Report #104

4th Qtr 2017

Grand Mean Sample C47: 43.321 MPa Grand Mean Sample C48: 43.474 MPa





Plastics Interlaboratory Testing Program

Report #104

Analysis 732

4th Qtr 2017

Percent Strain at Yield

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2P7LLP		4.772	0.090	0.58	4.726	0.099	0.67
3LZW6Z		4.813	0.131	0.84	4.722	0.096	0.65
3P2L2F		4.754	0.072	0.46	4.686	0.059	0.40
3PH6JR		4.640	-0.042	-0.27	4.528	-0.099	-0.67
443LAA	X	2,228.000	,223.318	14,310.71	2,226.000	2,221.373	15,072.32
4TZLAB		4.728	0.046	0.30	4.678	0.051	0.35
7CHGXE		4.640	-0.042	-0.27	4.616	-0.011	-0.07
7LCHFD		4.684	0.002	0.01	4.640	0.013	0.09
7TACDC	X	61.486	56.804	365.63	39.752	35.125	238.33
7WBF6Y		5.011	0.329	2.12	4.934	0.307	2.09
7X46QE		4.526	-0.156	-1.00	4.538	-0.089	-0.60
7ZBLMP		4.740	0.058	0.37	4.700	0.073	0.50
8NVUYF		4.860	0.178	1.15	4.752	0.125	0.85
8VTT3A	*	5.150	0.468	3.01	5.098	0.471	3.20
9UUZQN		4.698	0.015	0.10	4.695	0.068	0.46
9WHCPT	*	4.606	-0.076	-0.49	4.730	0.103	0.70
AYZXQF		4.720	0.038	0.24	4.580	-0.047	-0.32
BQATFT		4.730	0.048	0.31	4.660	0.033	0.23
C28Q6E		4.596	-0.086	-0.55	4.494	-0.133	-0.90
C3VD92		4.572	-0.110	-0.71	4.598	-0.029	-0.19
CDRJZE		4.672	-0.010	-0.06	4.518	-0.109	-0.74
CVHBEL		4.632	-0.050	-0.32	4.680	0.053	0.36
E2U9U6		4.740	0.058	0.37	4.558	-0.069	-0.47
EANC38		4.846	0.164	1.06	4.798	0.171	1.16
EE3UH4		4.770	0.088	0.57	4.546	-0.081	-0.55
EVPALZ		4.818	0.136	0.87	4.670	0.043	0.29
G67VLE	X	3.996	-0.686	-4.42	4.060	-0.567	-3.84
GBVD2C		4.432	-0.250	-1.61	4.396	-0.231	-1.56
GQMBYZ		4.620	-0.062	-0.40	4.533	-0.093	-0.63
HKFXQG		4.448	-0.234	-1.51	4.450	-0.177	-1.20
HQ36RL		4.776	0.094	0.60	4.642	0.015	0.10
JQHD4V		4.738	0.056	0.36	4.636	0.010	0.07
KVBWKJ		4.662	-0.020	-0.13	4.590	-0.037	-0.25
LCCYXH		4.664	-0.018	-0.12	4.626	-0.001	0.00
LNYP6	X	5.028	0.346	2.23	4.724	0.097	0.66



Plastics Interlaboratory Testing Program

Report #104

Analysis 732

4th Qtr 2017

Percent Strain at Yield

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
M4EQU3		4.796	0.114	0.73	4.750	0.123	0.84
MAJP6T	X	98.600	93.918	604.52	79.660	75.033	509.11
MMREX3		4.388	-0.294	-1.89	4.340	-0.287	-1.94
MN646L		4.596	-0.086	-0.55	4.604	-0.023	-0.15
MYCZW3		4.336	-0.346	-2.23	4.312	-0.315	-2.13
NADWMB		4.788	0.106	0.68	4.676	0.049	0.34
PBPQ3B		4.718	0.036	0.23	4.670	0.043	0.29
PYA22K		4.906	0.224	1.44	4.904	0.277	1.88
Q44F4Z		4.604	-0.078	-0.50	4.602	-0.025	-0.17
QNTGGN		4.560	-0.122	-0.79	4.460	-0.167	-1.13
QVMVRN	*	4.602	-0.080	-0.52	4.736	0.109	0.74
QXQNN8	X	2.420	-2.262	-14.56	3.880	-0.747	-5.07
R4DQDP		4.832	0.150	0.96	4.660	0.033	0.23
R76UZ6	X	8.120	3.438	22.13	8.180	3.553	24.11
RJVC2P		4.560	-0.122	-0.79	4.520	-0.107	-0.72
T7ZRUW	X	6.756	2.074	13.35	6.636	2.009	13.63
TGKRUZ		4.464	-0.218	-1.40	4.372	-0.255	-1.73
TMRF92		4.708	0.026	0.17	4.656	0.029	0.20
TX7F3A		4.820	0.138	0.89	4.766	0.139	0.95
UDEQ6M		4.462	-0.220	-1.42	4.444	-0.183	-1.24
YZUZCL		4.542	-0.140	-0.90	4.586	-0.041	-0.28
ZAT9ZX	X	4.708	0.026	0.17	4.319	-0.308	-2.09

Summary Statistics		Sample C47	Sample C48
Grand Means		4.6821 Percent	4.6266 Percent
Std Dev Btwn Labs		0.1554 Percent	0.1474 Percent
Statistics based on 48 of 57 reporting participants			

Sample C47: ABS/PC & Sample C48: ABS/PC



Comments on Assigned Data Flags for Test #732

443LAA (X) - Extreme data.

7TACDC (X) - Extreme data.

G67VLE (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample C48.

MAJP6T (X) - Extreme data.

T7ZRUIW (X) - Data for both samples are very high. Possible Systematic Error.

ZAT9ZX (X) - Inconsistent in testing between samples.

LNYJP6 (X) - Inconsistent in testing between samples.

QXQNN8 (X) - Extreme data.

R76UZ6 (X) - Extreme data.



Plastics Interlaboratory Testing Program

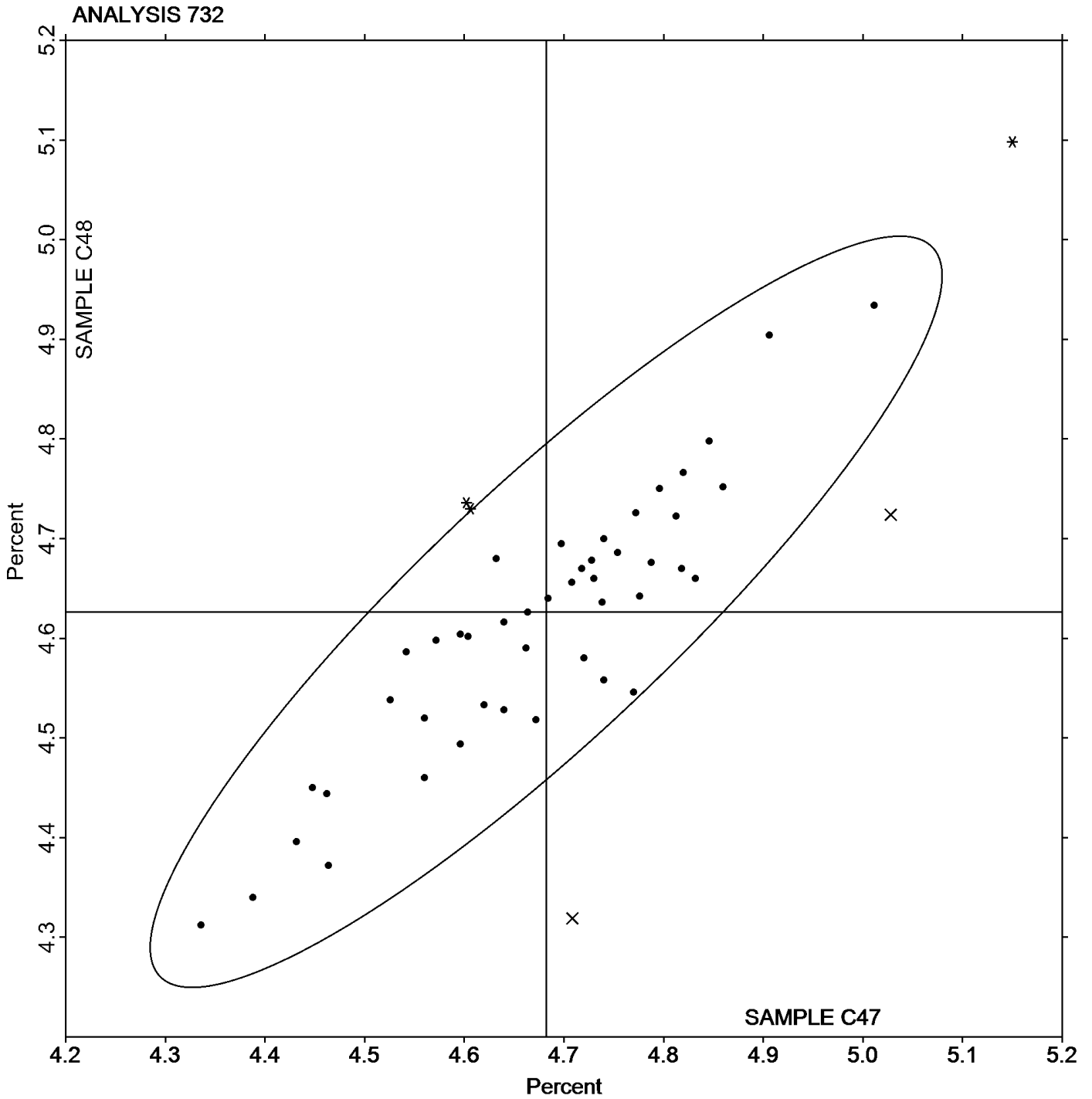
Analysis 732

Percent Strain at Yield

Report #104

4th Qtr 2017

Grand Mean Sample C47: 4.6821 Percent Grand Mean Sample C48: 4.6266 Percent





Plastics Interlaboratory Testing Program

Report #104

Analysis 734

4th Qtr 2017

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2P7LLP		2,415	147	1.51	2,376	109	1.20
3LZW6Z		2,358	90	0.92	2,320	53	0.58
3P2L2F		2,177	-91	-0.93	2,205	-62	-0.68
3PH6JR		2,252	-16	-0.17	2,268	1	0.01
443LAA		2,308	40	0.41	2,254	-13	-0.14
4VQFHD		2,350	82	0.84	2,354	87	0.95
7CHGXE		2,236	-32	-0.33	2,238	-29	-0.32
7LCHFD		2,248	-21	-0.21	2,244	-23	-0.25
7TACDC	*	2,172	-96	-0.98	2,326	58	0.64
7WBF6Y		2,167	-101	-1.04	2,095	-172	-1.88
7X46QE		2,281	13	0.13	2,270	3	0.03
7ZBLMP		2,349	81	0.82	2,330	63	0.69
8NVUYF		2,319	51	0.52	2,270	3	0.03
8VTT3A		2,150	-118	-1.20	2,105	-162	-1.78
9UUZQN		2,214	-54	-0.55	2,124	-143	-1.57
9WHCPT		2,244	-24	-0.25	2,352	85	0.93
AYZXQF		2,122	-146	-1.50	2,200	-67	-0.74
BQATFT		2,206	-62	-0.63	2,243	-25	-0.27
C28Q6E		2,371	103	1.06	2,327	60	0.66
C3VD92	*	2,536	268	2.74	2,378	111	1.22
CDRJZE	X	1,895	-373	-3.82	1,994	-273	-2.99
CVHBEL		2,287	19	0.19	2,220	-47	-0.51
E2U9U6		2,295	27	0.28	2,276	9	0.10
EANC38		2,352	84	0.86	2,373	106	1.16
EE3UH4		2,316	48	0.49	2,333	66	0.72
EVPALZ		2,293	25	0.26	2,263	-4	-0.04
GBVD2C		2,269	1	0.01	2,276	9	0.10
GQMBYZ		2,301	33	0.33	2,229	-38	-0.42
HKFXQG	*	2,031	-237	-2.43	2,024	-243	-2.66
HQ36RL		2,246	-22	-0.23	2,272	5	0.05
JQHD4V		2,147	-121	-1.24	2,175	-92	-1.01
KVBWKJ		2,301	33	0.33	2,368	101	1.11
LCCYXH		2,371	103	1.05	2,366	99	1.09
LNYP6		2,186	-82	-0.84	2,309	42	0.46
M4EQU3		2,216	-52	-0.53	2,229	-38	-0.42



Plastics Interlaboratory Testing Program

Report #104

Analysis 734

4th Qtr 2017

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C47			Sample C48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MAJP6T		2,290	22	0.22	2,298	31	0.34
MMREX3		2,168	-100	-1.03	2,179	-88	-0.97
MN646L		2,218	-50	-0.51	2,205	-62	-0.68
MYCZW3		2,466	198	2.02	2,464	197	2.15
NADWMB		2,201	-67	-0.69	2,258	-9	-0.10
PBPQ3B		2,235	-33	-0.34	2,258	-9	-0.10
PYA22K		2,205	-63	-0.64	2,175	-93	-1.01
Q44F4Z	X	2,422	154	1.57	2,665	398	4.36
QNTGGN		2,270	2	0.02	2,286	19	0.21
QVMVRN		2,154	-114	-1.17	2,094	-173	-1.90
QXQNN8		2,267	-1	-0.01	2,286	19	0.21
R4DQDP		2,204	-64	-0.66	2,243	-24	-0.26
R76UZ6	*	2,530	262	2.68	2,399	132	1.45
RJVC2P		2,148	-120	-1.23	2,129	-138	-1.51
T7ZRUI	X	1,304	-964	-9.87	1,324	-943	-10.34
TMRF92		2,206	-62	-0.64	2,256	-11	-0.12
TX7F3A		2,243	-25	-0.26	2,266	-1	-0.01
UDEQ6M		2,363	95	0.97	2,242	-25	-0.27
WNTM26		2,276	8	0.08	2,263	-4	-0.04
YZUZCL		2,387	119	1.21	2,454	187	2.05
ZAT9ZX		2,294	25	0.26	2,409	142	1.56

Summary Statistics		
	Sample C47	Sample C48
Grand Means	2,268.1 MPa	2,267.1 MPa
Stnd Dev Btwn Labs	97.7 MPa	91.3 MPa
Statistics based on 53 of 56 reporting participants		

Sample C47: ABS/PC & Sample C48: ABS/PC

Comments on Assigned Data Flags for Test #734

Q44F4Z (X) - Inconsistent in testing between samples, data for Sample C48 are high. Inconsistent within the determinations of Sample C48.

T7ZRUI (X) - Data for both samples are low. Possible Systematic Error.

CDRJE (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample C48.



Plastics Interlaboratory Testing Program

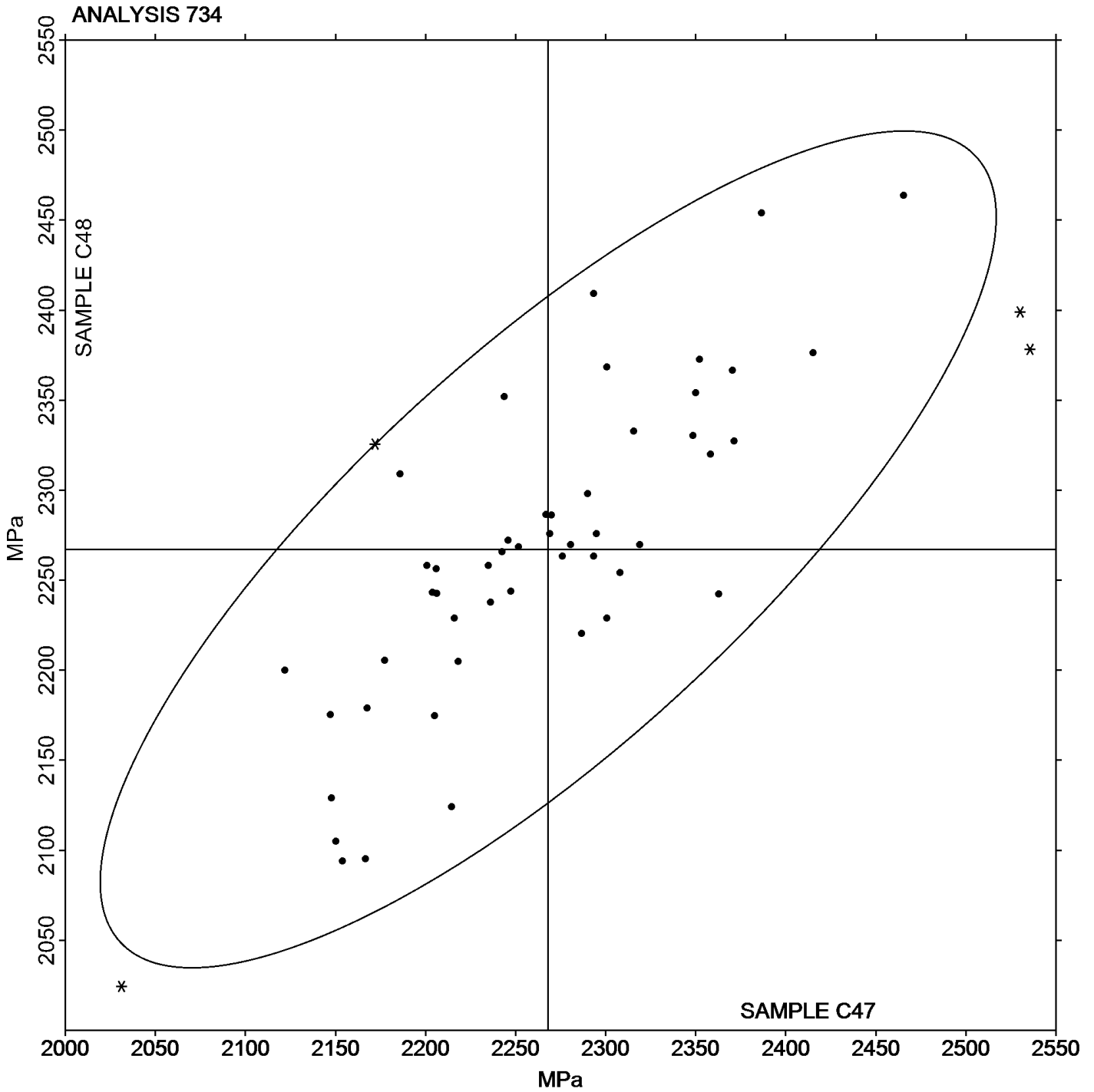
Analysis 734

Modulus of Elasticity - MPa

Report #104

4th Qtr 2017

Grand Mean Sample C47: 2,268.08 MPa Grand Mean Sample C48: 2,267.12 MPa





Plastics Interlaboratory Testing Program

Report #104

Analysis 736

4th Qtr 2017

Flexural Modulus - MPa

WebCode	Data Flag	Sample K47			Sample K48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2P7LLP		2,270	9	0.09	2,268	0	0.00
3LZW6Z		2,326	64	0.66	2,239	-29	-0.34
3P2L2F		2,298	37	0.38	2,332	64	0.76
3PH6JR		2,309	47	0.49	2,283	16	0.18
4TZLAB		2,210	-52	-0.53	2,154	-114	-1.35
7CHGXE		2,356	95	0.98	2,356	88	1.04
7LCHFD		2,369	108	1.11	2,370	103	1.21
7TACDC	*	2,512	251	2.58	2,497	230	2.72
7WBF6Y		2,111	-151	-1.55	2,160	-108	-1.28
87AKH8		2,179	-82	-0.85	2,230	-38	-0.45
8NVUYF		2,349	87	0.90	2,347	79	0.93
8VTT3A		2,466	205	2.11	2,462	194	2.29
9UUZQN		2,223	-39	-0.40	2,272	4	0.04
9WHCPT		2,115	-146	-1.51	2,130	-138	-1.63
ALX8AG		2,202	-60	-0.61	2,174	-94	-1.11
AY8XXB		2,163	-98	-1.01	2,241	-27	-0.32
BQATFT		2,281	20	0.20	2,322	54	0.64
C3VD92		2,289	28	0.28	2,277	9	0.11
CVHBEL		2,278	16	0.17	2,259	-9	-0.10
E2U9U6		2,324	63	0.65	2,314	46	0.54
EANC38		2,431	169	1.74	2,345	78	0.92
EE3UH4		2,317	55	0.57	2,309	41	0.48
EVPALZ		2,282	21	0.21	2,254	-14	-0.17
GBVD2C		2,312	51	0.53	2,294	27	0.31
GQMBYZ		2,493	232	2.39	2,458	190	2.25
GXBV98		2,304	43	0.44	2,292	24	0.29
HKFXQG		2,322	61	0.63	2,244	-24	-0.28
JQHD4V		2,226	-35	-0.36	2,237	-31	-0.36
KVBWKJ		2,152	-109	-1.12	2,137	-131	-1.55
LCCYXH		2,212	-49	-0.51	2,244	-24	-0.29
LNYP6		2,234	-28	-0.28	2,199	-68	-0.81
M2CPRK		2,232	-29	-0.30	2,247	-21	-0.25
M4EQU3		2,278	16	0.17	2,284	16	0.19
MAJP6T		2,278	17	0.17	2,228	-40	-0.47
MMREX3		2,166	-95	-0.98	2,224	-44	-0.52



Plastics Interlaboratory Testing Program

Report #104

Analysis 736

4th Qtr 2017

Flexural Modulus - MPa

WebCode	Data Flag	<u>Sample K47</u>			<u>Sample K48</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MN646L		2,236	-26	-0.26	2,241	-27	-0.32
NADWMB		2,264	2	0.03	2,263	-4	-0.05
PBPQ3B		2,211	-50	-0.51	2,246	-22	-0.26
PYA22K		2,223	-38	-0.39	2,219	-49	-0.58
Q44F4Z		2,263	2	0.02	2,271	3	0.04
QNTGGN	*	1,964	-297	-3.06	2,012	-256	-3.03
QXQNN8	*	2,164	-97	-1.00	2,292	25	0.29
R4DQDP		2,245	-16	-0.16	2,332	65	0.76
R76UZ6		2,186	-76	-0.78	2,280	12	0.14
RJVC2P		2,201	-60	-0.62	2,184	-83	-0.99
TGKRUZ		2,204	-58	-0.59	2,261	-7	-0.08
TMRF92		2,253	-9	-0.09	2,282	14	0.17
TX7F3A		2,256	-6	-0.06	2,303	35	0.42
UDEQ6M		2,147	-114	-1.17	2,147	-121	-1.43
WNTM26		2,343	81	0.84	2,343	75	0.89
YZUZCL		2,298	36	0.37	2,304	36	0.42

Summary Statistics		
	<u>Sample K47</u>	<u>Sample K48</u>
Grand Means	2,261.3 MPa	2,267.9 MPa
Stnd Dev Btwn Labs	97.1 MPa	84.5 MPa
Statistics based on 51 of 51 reporting participants		

Sample K47: ABS/PC & Sample K48: ABS/PC



Plastics Interlaboratory Testing Program

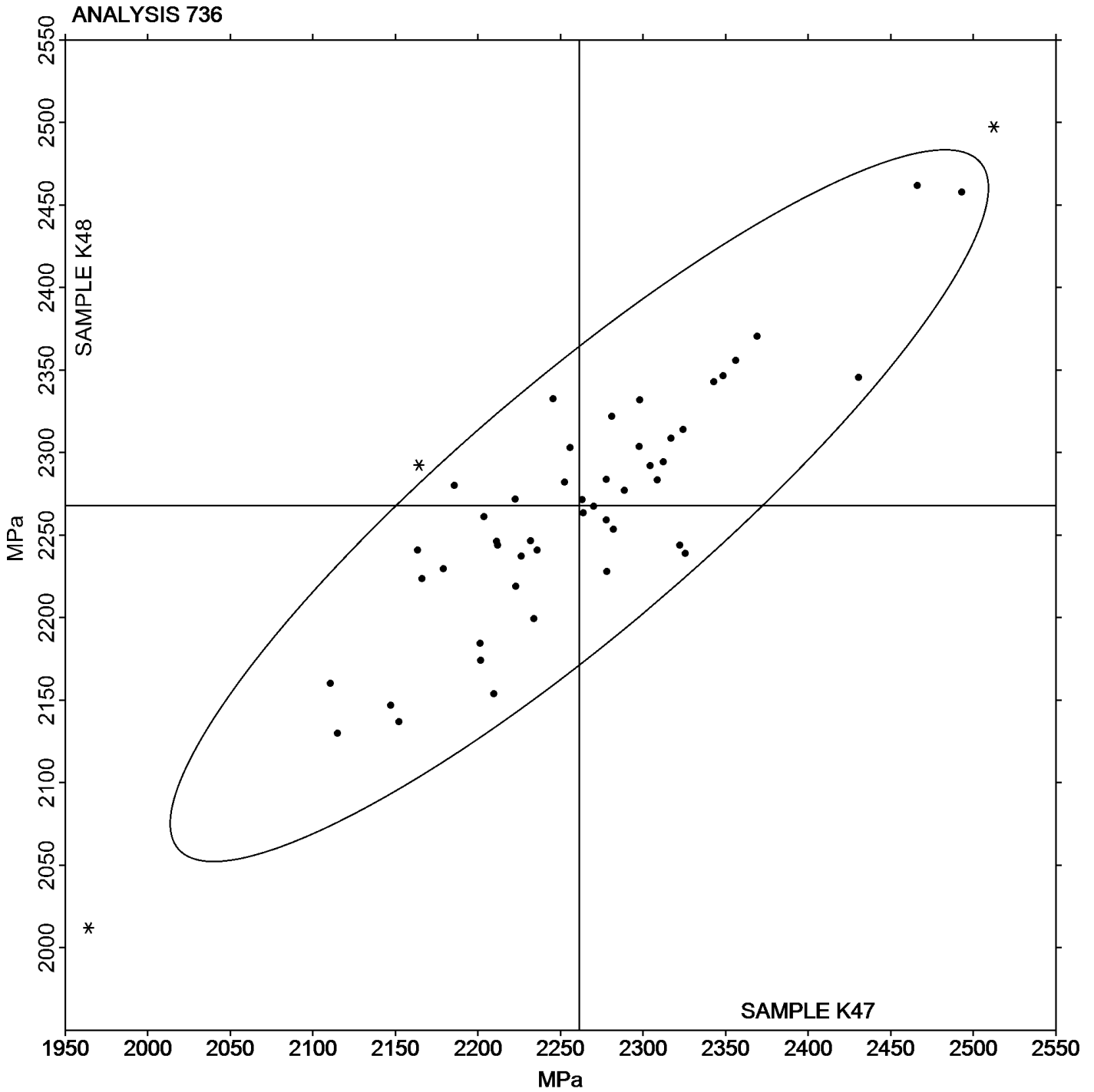
Analysis 736

Flexural Modulus - MPa

Report #104

4th Qtr 2017

Grand Mean Sample K47: 2,261.30 MPa Grand Mean Sample K48: 2,267.90 MPa





Plastics Interlaboratory Testing Program

Report #104

Analysis 737

4th Qtr 2017

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K47			Sample K48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2P7LLP		68.78	-0.70	-0.28	68.93	-0.85	-0.39
3LZW6Z		70.55	1.06	0.43	67.88	-1.89	-0.88
3P2L2F		70.01	0.52	0.21	70.38	0.61	0.28
3PH6JR		70.37	0.89	0.36	69.62	-0.15	-0.07
4TZLAB		68.07	-1.41	-0.57	66.83	-2.95	-1.37
4VQFHD	X	2,414.26	2,344.77	946.68	2,486.06	2,416.28	1,119.89
7CHGXE		71.40	1.92	0.77	71.60	1.83	0.85
7LCHFD		71.69	2.21	0.89	72.16	2.39	1.11
7TACDC		74.35	4.87	1.97	73.64	3.87	1.79
7WBF6Y		64.08	-5.40	-2.18	65.58	-4.20	-1.94
87AKH8		70.50	1.02	0.41	70.48	0.70	0.33
8NVUYF		74.76	5.27	2.13	74.71	4.94	2.29
8VTT3A		71.32	1.84	0.74	69.91	0.14	0.06
9UUZQN		65.60	-3.88	-1.57	67.06	-2.71	-1.26
9WHCPT		66.92	-2.56	-1.04	67.74	-2.03	-0.94
ALX8AG		68.92	-0.56	-0.23	68.14	-1.63	-0.76
AY8XXB		65.64	-3.84	-1.55	67.61	-2.16	-1.00
BQATFT		69.19	-0.29	-0.12	69.33	-0.44	-0.21
C3VD92		68.95	-0.54	-0.22	68.71	-1.06	-0.49
CVHBEL		69.44	-0.04	-0.02	69.08	-0.69	-0.32
E2U9U6		69.19	-0.29	-0.12	69.04	-0.73	-0.34
EANC38		73.43	3.95	1.59	72.21	2.44	1.13
EE3UH4		72.59	3.11	1.25	72.32	2.55	1.18
EVPALZ		69.53	0.05	0.02	68.82	-0.95	-0.44
GBVD2C		73.01	3.53	1.43	72.66	2.89	1.34
GQMBYZ		70.62	1.14	0.46	70.69	0.92	0.43
GXBV98		71.77	2.29	0.93	71.87	2.09	0.97
HKFXQG		66.54	-2.94	-1.19	66.09	-3.68	-1.71
JQHD4V		71.44	1.96	0.79	71.86	2.09	0.97
KVBWKJ		66.74	-2.75	-1.11	66.44	-3.33	-1.54
LCCYXH	*	70.24	0.76	0.31	73.79	4.02	1.86
LNYP6		67.87	-1.61	-0.65	66.70	-3.07	-1.42
M2CPRK		69.55	0.07	0.03	69.26	-0.51	-0.24
M4EQU3		71.41	1.92	0.78	71.48	1.71	0.79
MAJP6T		72.14	2.66	1.07	71.89	2.12	0.98



Plastics Interlaboratory Testing Program

Report #104

Analysis 737

4th Qtr 2017

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K47			Sample K48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MMREX3		66.31	-3.17	-1.28	68.56	-1.21	-0.56
MN646L		70.65	1.17	0.47	70.67	0.90	0.42
NADWMB		69.55	0.07	0.03	69.42	-0.35	-0.16
PBPQ3B		67.59	-1.90	-0.77	68.69	-1.09	-0.50
PYA22K		71.54	2.06	0.83	71.22	1.44	0.67
Q44F4Z		70.22	0.74	0.30	70.68	0.90	0.42
QNTGGN		65.76	-3.72	-1.50	66.78	-2.99	-1.39
QXQNN8		65.02	-4.46	-1.80	68.12	-1.65	-0.77
R4DQDP		68.08	-1.41	-0.57	70.77	1.00	0.46
R76UZ6	*	66.74	-2.74	-1.11	70.46	0.69	0.32
TMRF92		68.49	-0.99	-0.40	68.67	-1.10	-0.51
TX7F3A		68.28	-1.20	-0.48	70.11	0.34	0.16
UDEQ6M		68.13	-1.35	-0.55	68.30	-1.47	-0.68
YZUZCL		72.16	2.68	1.08	72.10	2.33	1.08

Summary Statistics		
	Sample K47	Sample K48
Grand Means	69.482 MPa	69.773 MPa
Stnd Dev Btwn Labs	2.477 MPa	2.158 MPa
Statistics based on 48 of 49 reporting participants		

Sample K47: ABS/PC & Sample K48: ABS/PC

Comments on Assigned Data Flags for Test #737

4VQFHD (X) - Extreme data.



Plastics Interlaboratory Testing Program

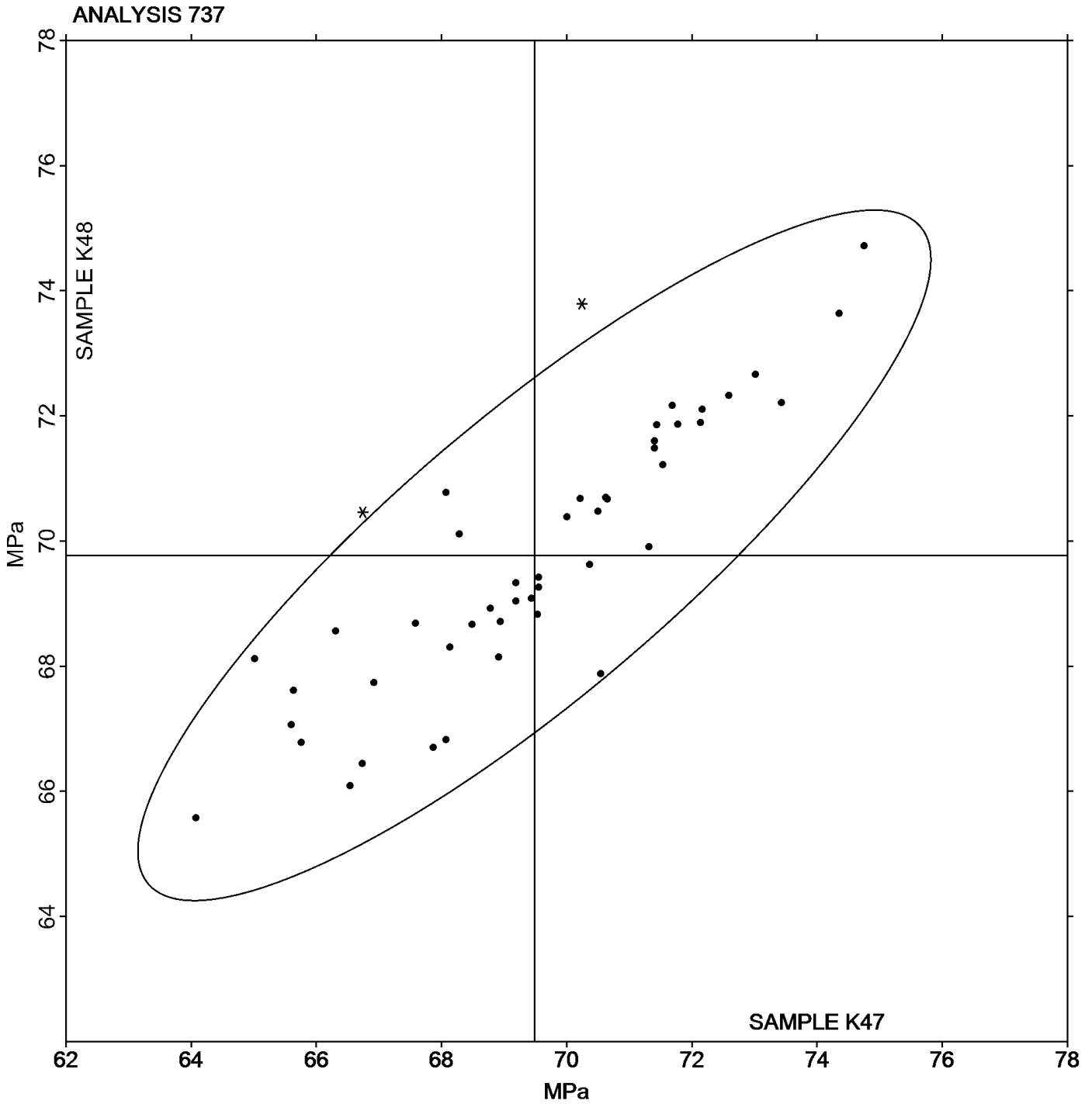
Report #104

Analysis 737

4th Qtr 2017

Flexural Stress at 3.5% Strain - MPa

Grand Mean Sample K47: 69.482 MPa Grand Mean Sample K48: 69.773 MPa





Plastics Interlaboratory Testing Program

Report #104

Analysis 738

4th Qtr 2017

Flexural Stress at Yield - MPa

WebCode	Data Flag	Sample K47			Sample K48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2P7LLP		78.64	-1.18	-0.49	79.05	-1.18	-0.58
3LZW6Z	*	81.94	2.13	0.88	79.43	-0.80	-0.39
3P2L2F		79.60	-0.22	-0.09	79.98	-0.25	-0.12
3PH6JR		83.34	3.53	1.46	84.11	3.88	1.90
4TZLAB		78.45	-1.37	-0.57	77.72	-2.50	-1.23
7CHGXE		81.54	1.72	0.71	82.14	1.91	0.94
7TACDC		83.42	3.60	1.49	82.50	2.27	1.11
87AKH8		80.52	0.70	0.29	80.62	0.39	0.19
9UUZQN		74.38	-5.44	-2.25	75.98	-4.25	-2.08
9WHCPT		77.36	-2.46	-1.02	78.41	-1.82	-0.89
ALX8AG		79.92	0.11	0.04	79.44	-0.79	-0.39
C3VD92		80.93	1.12	0.46	80.56	0.33	0.16
CVHBEL		79.76	-0.06	-0.02	79.78	-0.45	-0.22
EE3UH4		82.62	2.81	1.16	82.86	2.63	1.29
EVPALZ		79.08	-0.73	-0.30	78.69	-1.53	-0.75
GBVD2C		84.26	4.44	1.84	84.01	3.78	1.86
GXBV98		80.89	1.07	0.44	81.23	1.01	0.49
HKFXQG		75.53	-4.29	-1.78	76.22	-4.01	-1.97
KVBWKJ		78.38	-1.44	-0.60	78.71	-1.52	-0.75
LCCYXH		80.35	0.53	0.22	80.92	0.69	0.34
LNYP6		77.87	-1.94	-0.80	77.10	-3.13	-1.54
M2CPRK		80.62	0.80	0.33	81.23	1.00	0.49
M4EQU3		80.89	1.08	0.45	81.08	0.85	0.42
MAJP6T		82.30	2.48	1.03	82.24	2.01	0.98
MMREX3		77.27	-2.54	-1.05	80.26	0.03	0.01
MN646L		82.26	2.45	1.01	82.51	2.28	1.12
NADWMB		78.53	-1.29	-0.53	78.60	-1.63	-0.80
PBPQ3B		78.17	-1.64	-0.68	79.46	-0.77	-0.38
PYA22K		83.86	4.04	1.68	83.44	3.21	1.58
Q44F4Z		81.37	1.56	0.65	81.95	1.73	0.85
QNTGGN	X	65.76	-14.06	-5.82	66.78	-13.45	-6.60
QXQNN8		76.28	-3.54	-1.46	79.00	-1.23	-0.60
R76UZ6	X	66.74	-13.08	-5.42	70.46	-9.77	-4.79
TGKRUZ		76.64	-3.17	-1.31	78.55	-1.68	-0.82
TMRF92		77.84	-1.97	-0.82	79.35	-0.88	-0.43



Plastics Interlaboratory Testing Program

Report #104

Analysis 738

4th Qtr 2017

Flexural Stress at Yield - MPa

WebCode	Data Flag	<u>Sample K47</u>			<u>Sample K48</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
TX7F3A		78.97	-0.85	-0.35	80.98	0.75	0.37
UDEQ6M	X	70.22	-9.60	-3.98	70.20	-10.03	-4.92
WNTM26		79.74	-0.08	-0.03	79.91	-0.32	-0.16

Summary Statistics		
	<u>Sample K47</u>	<u>Sample K48</u>
Grand Means	79.815 MPa	80.229 MPa
Std Dev Btwn Labs	2.414 MPa	2.038 MPa
Statistics based on 35 of 38 reporting participants		

Sample K47: ABS/PC & Sample K48: ABS/PC

Comments on Assigned Data Flags for Test #738

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

UDEQ6M (X) - Data for both samples are low. Possible Systematic Error.

R76UZ6 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

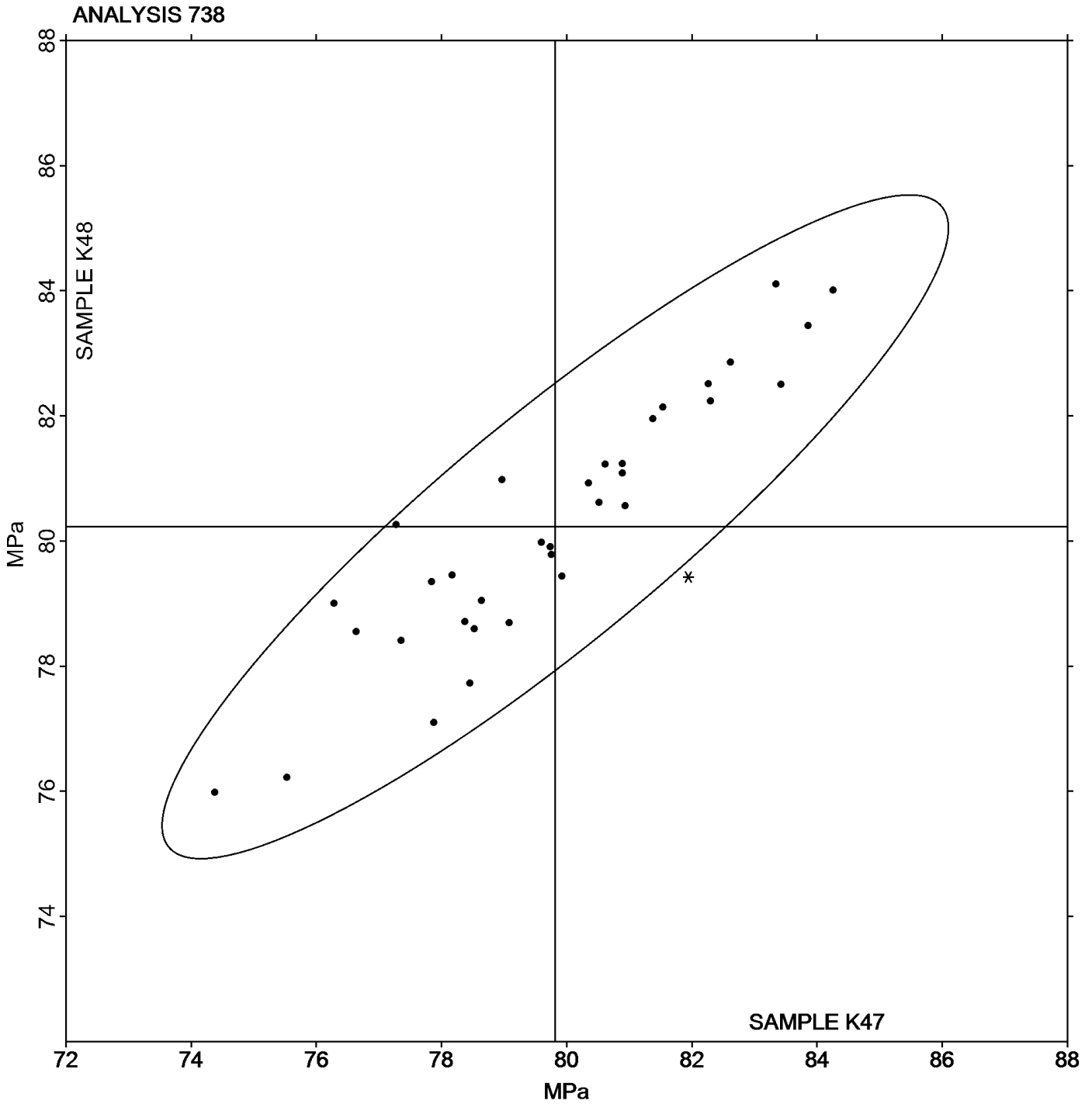
Analysis 738

Flexural Stress at Yield - MPa

Report #104

4th Qtr 2017

Grand Mean Sample K47: 79.815 MPa Grand Mean Sample K48: 80.229 MPa





Plastics Interlaboratory Testing Program

Report #104

Analysis 750

4th Qtr 2017

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

WebCode	Data Flag	Sample X47			Sample X48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KFBCQ	X	14.88	0.00	0.00	14.94	3.60	6.52	DY
36E24B		15.55	0.67	0.76	12.00	0.66	1.19	TO
36RMLY		14.42	-0.46	-0.53	10.78	-0.56	-1.02	WZ
39E9MM		14.34	-0.54	-0.62	11.27	-0.08	-0.14	TO
3P2L2F		14.13	-0.76	-0.87	11.02	-0.33	-0.60	TY
3PH6JR		15.40	0.52	0.59	11.40	0.06	0.10	AT
3WJB7G		14.61	-0.28	-0.32	11.58	0.24	0.43	CE
4FXVVX		14.95	0.07	0.08	10.85	-0.49	-0.89	DY
4NLQUD		15.29	0.40	0.46	11.25	-0.10	-0.17	TO
4TZLAB		14.95	0.07	0.08	12.05	0.71	1.28	TO
4VNVNH		15.85	0.97	1.11	11.75	0.41	0.74	TO
4VQFHD		15.10	0.22	0.25	11.51	0.17	0.30	DY
6BQ7E9	X	18.28	3.40	3.89	11.82	0.48	0.87	TO
7LCHFD		14.94	0.06	0.06	11.38	0.04	0.07	DY
7TACDC		13.58	-1.31	-1.50	10.71	-0.64	-1.16	CE
7X46QE		16.09	1.21	1.38	12.22	0.87	1.58	TO
8F2P3T		14.30	-0.58	-0.67	11.12	-0.22	-0.41	CE
8JG9VB		14.27	-0.62	-0.71	11.27	-0.07	-0.13	TO
8NVUYF	*	13.63	-1.26	-1.44	11.68	0.33	0.61	DY
8VTT3A		15.20	0.32	0.36	12.20	0.86	1.55	TO
99VIJ9		14.28	-0.60	-0.69	10.36	-0.98	-1.78	TO
9UEEJ8		15.60	0.72	0.82	11.60	0.26	0.47	TO
9UUZQN		16.20	1.32	1.51	11.65	0.31	0.56	TO
9WHCPT		14.45	-0.43	-0.50	11.90	0.56	1.01	TO
AY8XXB		14.86	-0.03	-0.03	10.78	-0.57	-1.03	DY
BQATFT		14.23	-0.65	-0.75	10.80	-0.55	-0.99	TO
BZT8HV	X	18.17	3.29	3.76	13.02	1.67	3.03	TO
C2N8XL		15.81	0.92	1.05	11.64	0.29	0.53	TO
C3VD92		13.74	-1.14	-1.31	11.09	-0.26	-0.46	TO
CP7JUM		15.39	0.50	0.57	11.57	0.23	0.41	DY
CVHBEL		13.02	-1.86	-2.14	10.49	-0.86	-1.56	GO
CVXUZ6		16.72	1.83	2.10	12.50	1.15	2.09	KA
CYEYT9		15.75	0.87	0.99	10.80	-0.54	-0.98	TO
DKEHHZ	X	11.90	-2.98	-3.42	11.90	0.56	1.01	DY
DNDP84		14.04	-0.84	-0.97	11.22	-0.12	-0.22	DY



Plastics Interlaboratory Testing Program

Report #104

Analysis 750

4th Qtr 2017

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

WebCode	Data Flag	Sample X47			Sample X48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
DRQN46		16.35	1.47	1.68	11.85	0.51	0.92	TO
E2U9U6		16.32	1.44	1.64	11.26	-0.08	-0.15	TO
EANC38		14.77	-0.11	-0.13	11.52	0.17	0.31	DY
EHJE86		15.40	0.52	0.59	11.40	0.06	0.10	XX
EVPALZ		16.13	1.24	1.42	11.47	0.12	0.22	DY
GEWNPY		13.95	-0.93	-1.07	10.37	-0.98	-1.77	TO
GQMBYZ	X	18.47	3.58	4.10	14.23	2.88	5.22	DY
GWDKBJ		13.50	-1.38	-1.59	10.25	-1.09	-1.98	TO
H4LTY Y		15.03	0.15	0.17	11.37	0.03	0.06	CE
H9PCEJ		13.60	-1.28	-1.47	10.20	-1.14	-2.07	DY
HKFXQG		14.22	-0.67	-0.77	10.66	-0.68	-1.24	CE
J2H8VY		15.75	0.87	0.99	11.95	0.61	1.10	TO
JFKU72		13.27	-1.62	-1.86	10.25	-1.09	-1.98	DY
JQHD4V		14.26	-0.62	-0.72	10.82	-0.52	-0.95	WZ
KHEY9K	X	15.76	0.88	1.00	13.09	1.74	3.16	TO
L7MLWU	X	14.60	-0.28	-0.33	13.20	1.86	3.36	TY
LCCYXH		14.60	-0.28	-0.33	11.20	-0.14	-0.26	TO
LNYP6		15.03	0.14	0.16	11.04	-0.31	-0.56	TO
M4EQU3		14.75	-0.13	-0.15	10.53	-0.81	-1.48	GO
MAJP6T		14.50	-0.38	-0.44	11.30	-0.04	-0.08	GO
MMREX3		14.55	-0.33	-0.38	11.10	-0.24	-0.44	TO
MN646L		14.71	-0.18	-0.21	11.50	0.16	0.28	TO
MYCZW3		13.83	-1.05	-1.21	11.27	-0.08	-0.14	XX
NADWMB	*	12.45	-2.43	-2.79	10.20	-1.14	-2.07	WZ
NBQH4Y		14.65	-0.23	-0.27	11.04	-0.30	-0.55	TO
ND29LF	X	15.01	0.12	0.14	13.03	1.68	3.05	TO
PHNFLZ		15.05	0.17	0.19	12.15	0.81	1.46	TO
PYA22K		14.91	0.02	0.03	11.48	0.14	0.25	TO
Q78Z29		14.58	-0.31	-0.35	11.59	0.25	0.45	TO
QDQGHP		16.80	1.92	2.19	12.20	0.86	1.55	TO
QLGYXH		15.21	0.33	0.37	11.74	0.40	0.72	TO
QNTGGN	X	15.40	0.52	0.59	10.05	-1.29	-2.34	TO
QVMVRN		15.07	0.18	0.21	11.26	-0.09	-0.16	TO
R76UZ6		16.53	1.64	1.88	12.43	1.08	1.96	TO
RG77KY		14.77	-0.11	-0.13	11.81	0.46	0.84	TO



Plastics Interlaboratory Testing Program

Report #104

Analysis 750

4th Qtr 2017

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

WebCode	Data Flag	Sample X47			Sample X48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
RXTJYQ		14.73	-0.15	-0.18	11.59	0.24	0.44	TO
RZJPFG		14.08	-0.80	-0.92	11.59	0.25	0.45	TO
TGKRUZ		14.49	-0.39	-0.45	11.26	-0.08	-0.15	TO
TGYGU7		15.27	0.39	0.44	11.21	-0.13	-0.24	WZ
U64HNL		15.30	0.42	0.48	11.40	0.06	0.10	TO
VFHYVJ		14.90	0.01	0.01	11.00	-0.35	-0.63	TO
VRBFKK		14.92	0.04	0.04	11.98	0.63	1.15	XX
WFYEHY	*	15.26	0.37	0.42	12.57	1.23	2.23	XX
WHMQG6	X	39.32	24.44	28.00	30.12	18.78	34.03	TO
WNTM26		15.12	0.24	0.27	11.70	0.35	0.64	TO
XG8YXM		15.55	0.67	0.76	11.80	0.46	0.83	TO
XRPQ8H		15.55	0.67	0.76	11.40	0.06	0.10	DY
XWZJK2		14.78	-0.11	-0.12	11.25	-0.09	-0.17	GO
XZHXXA		14.94	0.05	0.06	11.66	0.32	0.58	TO
YLXLA8		16.19	1.31	1.50	11.37	0.02	0.04	CE
YR3FDF		15.95	1.07	1.22	11.60	0.26	0.47	KA
YWCULD	X	15.55	0.67	0.76	14.50	3.16	5.72	TO
YZUZCL		15.34	0.46	0.52	11.42	0.07	0.13	DY
ZAT9ZX		13.47	-1.41	-1.62	10.44	-0.90	-1.63	TO

Summary Statistics		
	Sample X47	Sample X48
Grand Means	14.884 grams/10 mins	11.343 grams/10 mins
Std Dev Btwn Labs	0.873 grams/10 mins	0.552 grams/10 mins
Statistics based on 78 of 89 reporting participants		

Sample X47: PP & Sample X48: PP



Plastics Interlaboratory Testing Program

Report #104

Analysis 750

4th Qtr 2017

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

Comments on Assigned Data Flags for Test #750

QNTGGN (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample X48.

DKEHHZ (X) - Data for sample X47 are low.

GQMBYZ (X) - Data for both samples are high.

L7MLWU (X) - Data for sample X48 are high.

ND29LF (X) - Data for sample X48 are high.

WHMQG6 (X) Extreme data.

-

BZT8HV (X) - Data for both samples are high.

2KFBCQ (X) - Data for sample X48 are high.

6BQ7E9 (X) - Data for sample X47 are high.

YWCULD (X) - Data for sample X48 are high.

KHEY9K (X) - Data for sample X48 are high.

Key to Instrument Codes Reported by Participants

AT Atlas

CE Ceast

DY Dynisco

GO Gottfert

KA Kayeness

TO Tinius Olsen

TY Toyoseiki Seisakusho

WZ Zwick

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

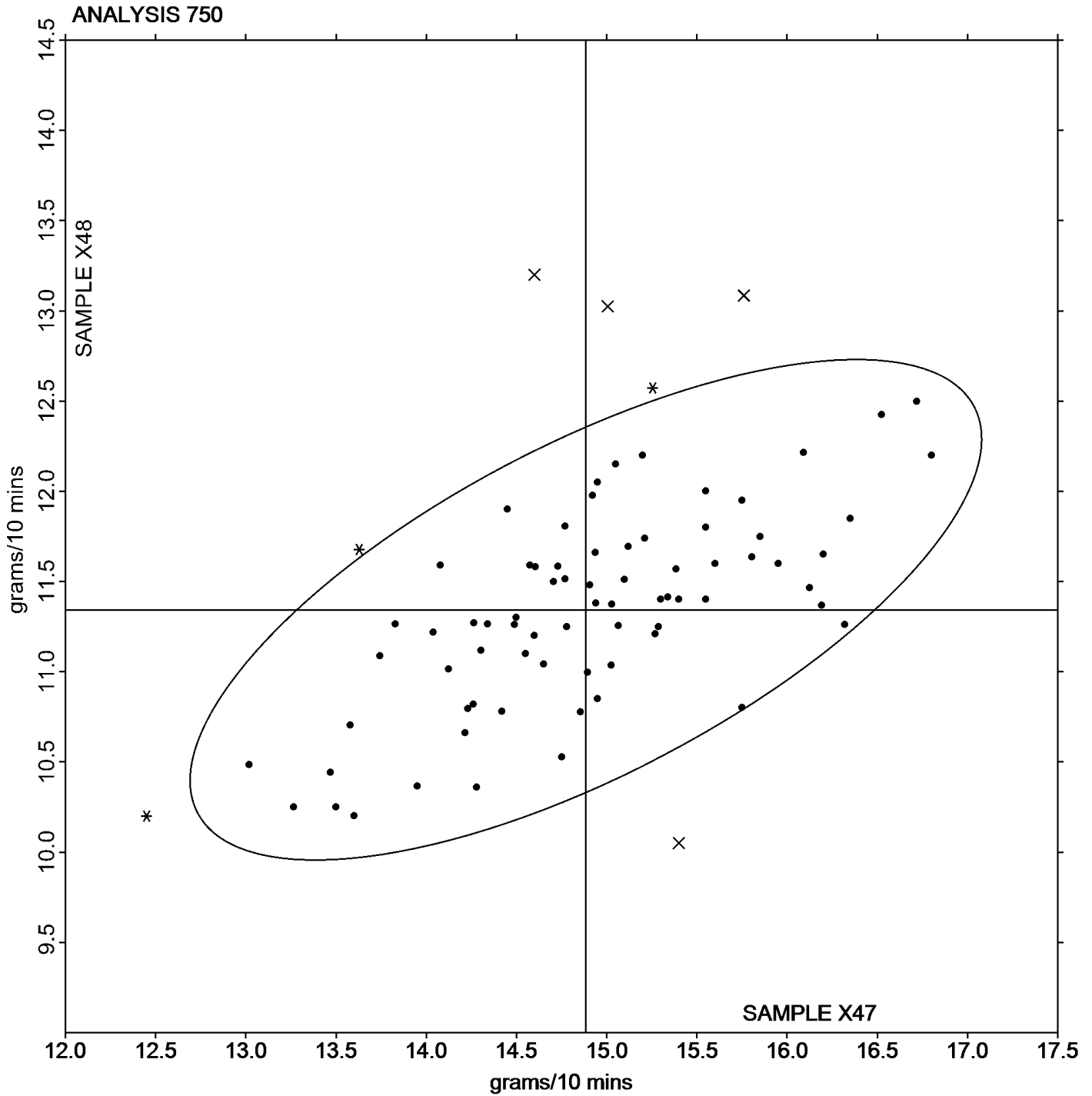
Report #104

Analysis 750

4th Qtr 2017

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

Grand Mean Sample X47: 14.884 grams/10 mins Grand Mean Sample X48: 11.343 grams/10 mins





Plastics Interlaboratory Testing Program

Report #104

Analysis 755

4th Qtr 2017

Moisture Content of Plastics

WebCode	Data Flag	Sample Y47			Sample Y48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3NMF7X		0.17167	0.02482	0.89	0.13567	0.01531	0.63	CS
443LAA		0.15900	0.01216	0.43	0.13700	0.01664	0.69	AZ
4FXVVX		0.17343	0.02659	0.95	0.12870	0.00834	0.35	AZ
4TZLAB	*	0.17300	0.02616	0.93	0.16633	0.04597	1.91	SA
4VQFHD		0.15200	0.00516	0.18	0.12533	0.00497	0.21	MR
6D4NPR		0.12860	-0.01824	-0.65	0.09840	-0.02196	-0.91	MU
6MLCFJ	*	0.07000	-0.07684	-2.74	0.07000	-0.05036	-2.09	XX
7LCHFD		0.15100	0.00416	0.15	0.12300	0.00264	0.11	MB
7TACDC		0.15940	0.01256	0.45	0.12763	0.00727	0.30	MK
8DDD4N		0.10030	-0.04654	-1.66	0.07949	-0.04087	-1.70	MT
8JG9VB		0.15600	0.00916	0.33	0.12100	0.00064	0.03	MB
9UUZQN		0.14050	-0.00634	-0.23	0.11300	-0.00736	-0.31	AZ
BZT8HV		0.15087	0.00402	0.14	0.12140	0.00104	0.04	AQ
C2N8XL		0.14343	-0.00341	-0.12	0.11867	-0.00169	-0.07	MR
CP7JUM		0.11533	-0.03151	-1.12	0.08833	-0.03203	-1.33	MS
DNDP84		0.15900	0.01216	0.43	0.12633	0.00597	0.25	MJ
DRQN46		0.17750	0.03066	1.09	0.15250	0.03214	1.33	CT
E2U9U6		0.18623	0.03939	1.41	0.15310	0.03274	1.36	MS
EANC38		0.13250	-0.01434	-0.51	0.09800	-0.02236	-0.93	CT
F6TVYT		0.15667	0.00982	0.35	0.12333	0.00297	0.12	ML
GWDKBJ		0.08900	-0.05784	-2.06	0.06367	-0.05669	-2.35	AZ
HKFXQG		0.13267	-0.01418	-0.51	0.10667	-0.01369	-0.57	MU
HRVTBG		0.15533	0.00849	0.30	0.12133	0.00097	0.04	ML
J2H8VY		0.15357	0.00672	0.24	0.11693	-0.00343	-0.14	AZ
LCCYXH		0.13833	-0.00851	-0.30	0.13767	0.01731	0.72	MK
Q78Z29		0.10267	-0.04418	-1.58	0.10000	-0.02036	-0.84	CT
QDQGHP		0.17850	0.03166	1.13	0.14750	0.02714	1.13	ML
RJVC2P		0.14917	0.00232	0.08	0.12167	0.00131	0.05	MD
RTXPAC	*	0.12597	-0.02088	-0.75	0.12887	0.00851	0.35	MT
TXNHKH		0.18100	0.03416	1.22	0.14200	0.02164	0.90	SB
UDEQ6M		0.15000	0.00316	0.11	0.11700	-0.00336	-0.14	MK
VFHYVJ		0.19503	0.04819	1.72	0.16813	0.04777	1.98	AZ
XRPQ8H		0.13967	-0.00718	-0.26	0.10633	-0.01403	-0.58	AZ
YWCULD		0.17000	0.02316	0.83	0.13667	0.01631	0.68	MU
YZUZCL		0.11090	-0.03594	-1.28	0.08913	-0.03123	-1.30	MU



Plastics Interlaboratory Testing Program

Report #104

Analysis 755

4th Qtr 2017

Moisture Content of Plastics

WebCode	Data Flag	Sample Y47			Sample Y48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ZAXNDX		0.15817	0.01132	0.40	0.12213	0.00177	0.07	AZ

Summary Statistics				
	Sample Y47		Sample Y48	
Grand Means	0.146845 Percent		0.120359 Percent	
Stnd Dev Btwn Labs	0.028023 Percent		0.024109 Percent	
Statistics based on 36 of 36 reporting participants				

Sample Y47: ABS/PC & Sample Y48: ABS/PC

Key to Instrument Codes Reported by Participants

- | | |
|---|--|
| AQ Aquastar | AZ Arizona Instruments Moisture Analyzer |
| 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 | MR Metrohm Coulometer 756 KF |
| 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

Report #104

Analysis 757

4th Qtr 2017

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L47			Sample L48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2E7F8G	*	14.925	0.015	0.09	14.560	-0.368	-2.83
36RMLY		14.985	0.075	0.45	14.861	-0.067	-0.51
3NMF7X		14.630	-0.280	-1.69	15.205	0.277	2.13
3WJB7G		14.560	-0.350	-2.11	14.908	-0.020	-0.15
443LAA	X	92.325	77.415	466.83	96.330	81.402	626.29
4TZLAB		14.820	-0.090	-0.54	14.925	-0.003	-0.02
7LCHFD		15.145	0.235	1.42	14.795	-0.133	-1.02
7TACDC		14.930	0.020	0.12	14.875	-0.053	-0.40
8JG9VB		14.740	-0.170	-1.03	14.800	-0.128	-0.98
8NVUYF		14.925	0.015	0.09	14.910	-0.018	-0.13
8VTT3A		14.980	0.070	0.42	14.675	-0.253	-1.94
9FTCQG		14.895	-0.015	-0.09	14.820	-0.108	-0.83
9UUZQN		15.040	0.130	0.78	15.007	0.079	0.61
BQATFT		14.995	0.085	0.51	14.970	0.042	0.33
BZT8HV	*	14.700	-0.210	-1.27	15.305	0.377	2.90
C2N8XL		14.970	0.060	0.36	15.050	0.122	0.94
CP7JUM		14.915	0.005	0.03	14.990	0.062	0.48
DNDP84		14.813	-0.097	-0.59	14.982	0.054	0.42
E2U9U6		14.765	-0.145	-0.87	14.765	-0.163	-1.25
EANC38		14.865	-0.045	-0.27	14.875	-0.053	-0.40
EE3UH4		14.815	-0.095	-0.57	14.880	-0.048	-0.37
EVPALZ		14.850	-0.060	-0.36	14.910	-0.018	-0.13
EYLABV		14.935	0.025	0.15	14.800	-0.128	-0.98
GGYJET		14.765	-0.145	-0.87	14.955	0.027	0.21
GRX7GX	X	17.465	2.555	15.41	17.385	2.457	18.91
HEPPC3		15.065	0.155	0.93	14.980	0.052	0.40
HKFXQG		14.912	0.002	0.01	14.981	0.053	0.41
JQHD4V		14.985	0.075	0.45	14.900	-0.028	-0.21
KHEY9K		15.077	0.166	1.00	14.940	0.012	0.10
KVBWKJ		15.080	0.170	1.02	14.800	-0.128	-0.98
LCCYXH		14.625	-0.285	-1.72	15.030	0.102	0.79
LNYP6		15.100	0.190	1.15	14.985	0.057	0.44
MAJP6T		14.960	0.050	0.30	14.995	0.067	0.52
MMREX3		14.760	-0.150	-0.91	14.750	-0.178	-1.37
MN646L		14.800	-0.110	-0.66	14.945	0.017	0.13



Plastics Interlaboratory Testing Program

Report #104

Analysis 757

4th Qtr 2017

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L47			Sample L48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
N6KX7U		15.253	0.343	2.07	15.026	0.098	0.76
NADWMB		14.910	0.000	0.00	15.135	0.207	1.60
PHNFLZ		15.265	0.355	2.14	14.720	-0.208	-1.60
PXXFZX		14.960	0.049	0.30	14.758	-0.170	-1.31
PYA22K		14.787	-0.123	-0.74	14.779	-0.149	-1.14
Q6FVX2		15.100	0.190	1.15	14.850	-0.078	-0.60
Q78Z29		15.100	0.190	1.15	14.965	0.037	0.29
QDQGHP		15.015	0.105	0.63	14.960	0.032	0.25
QJGTGR		14.988	0.078	0.47	14.821	-0.107	-0.82
R4DQDP	X	14.570	-0.340	-2.05	14.380	-0.548	-4.21
RJVC2P		14.905	-0.005	-0.03	14.940	0.012	0.10
RTXPAC		14.870	-0.040	-0.24	14.970	0.042	0.33
T7ZRUI		15.180	0.270	1.63	15.100	0.172	1.33
TGKRUI		15.200	0.290	1.75	14.900	-0.028	-0.21
UDEQ6M		14.950	0.040	0.24	14.835	-0.093	-0.71
VFHYVJ		14.840	-0.070	-0.42	15.030	0.102	0.79
VRBFKK	X	12.250	-2.660	-16.04	15.000	0.072	0.56
WFYEHY		15.000	0.090	0.54	15.000	0.072	0.56
WHMQG6		14.628	-0.282	-1.70	15.075	0.147	1.13
WNTM26		14.605	-0.305	-1.84	14.955	0.027	0.21
XRPQ8H		14.585	-0.325	-1.96	14.960	0.032	0.25
XWZJK2		14.815	-0.095	-0.57	14.931	0.003	0.02
YWCULD		14.950	0.040	0.24	15.150	0.222	1.71
YZUZCL		14.788	-0.122	-0.74	15.024	0.097	0.74
ZHRHXB		14.945	0.035	0.21	14.930	0.002	0.02

Summary Statistics

	Sample L47	Sample L48
Grand Means	14.9101 Percent	14.9275 Percent
Std Dev Btwn Labs	0.1658 Percent	0.1300 Percent

Statistics based on 56 of 60 reporting participants

Sample L47: PBT & Sample L48: PBT



Plastics Interlaboratory Testing Program

Analysis 757

Ash Content in Thermoplastics - Percent

Report #104

4th Qtr 2017

Comments on Assigned Data Flags for Test #757

VRBFKK (X) - Data for sample L47 are very low. Inconsistent within the determinations of sample L47.

443LAA (X) - Extreme data.

R4DQDP (X) - Data for sample L48 are low.

GRX7GX (X) - Extreme data.



Plastics Interlaboratory Testing Program

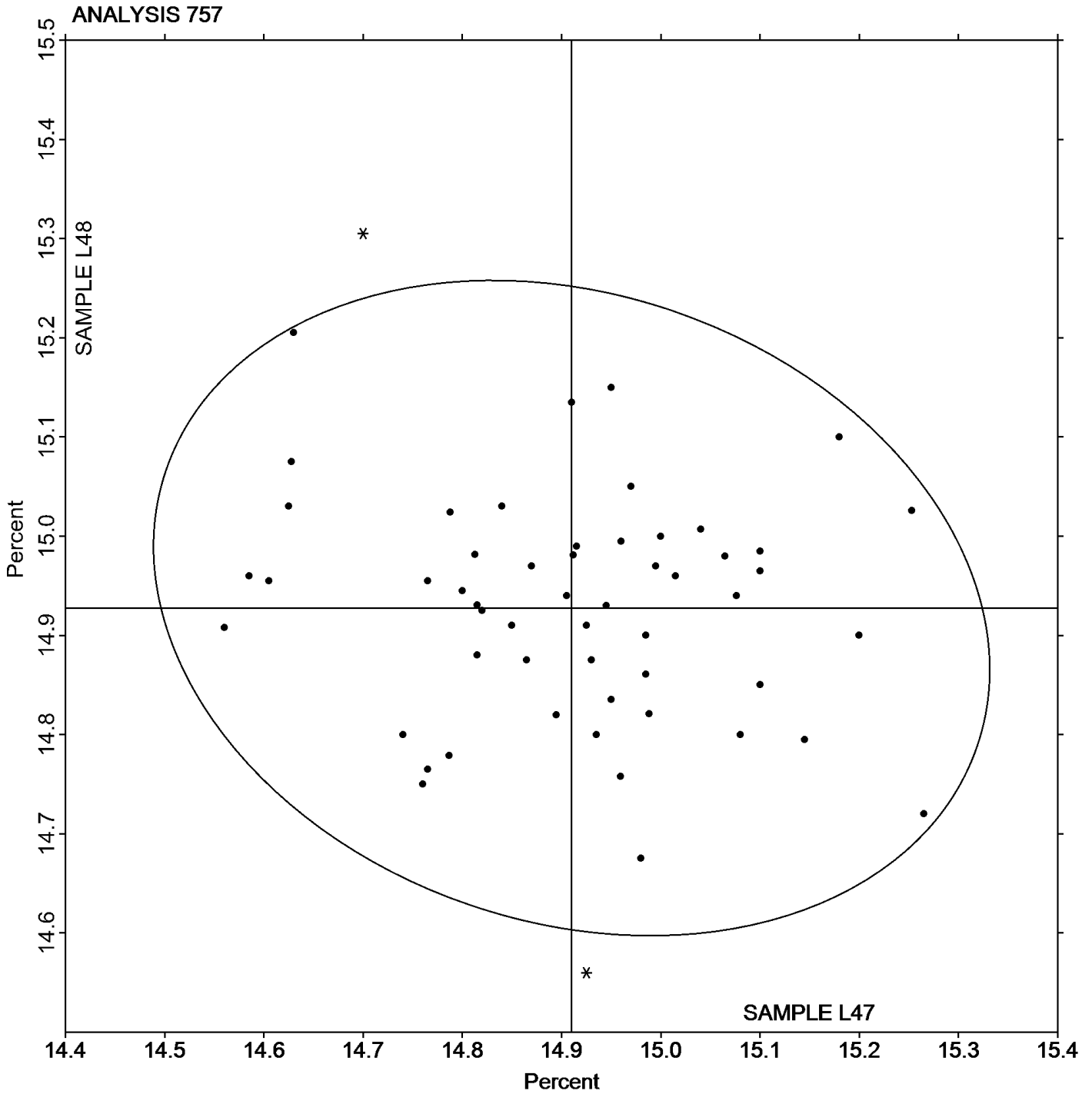
Analysis 757

Ash Content in Thermoplastics - Percent

Report #104

4th Qtr 2017

Grand Mean Sample L47: 14.910 Percent Grand Mean Sample L48: 14.928 Percent





Plastics Interlaboratory Testing Program

Report #104

Analysis 760

4th Qtr 2017

DSC Crystallization Temperature

WebCode	Data Flag	Sample W47			Sample W48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6BQ7E9		201.30	5.01	1.74	201.17	5.25	1.80	NZ
7TACDC		196.33	0.05	0.02	196.67	0.75	0.26	TA
87AKH8		194.81	-1.48	-0.51	193.74	-2.17	-0.75	TA
8R9NKE	*	195.90	-0.39	-0.13	193.30	-2.62	-0.90	NZ
AYGYPB		196.65	0.36	0.13	196.58	0.66	0.23	TA
CDRJZE	X	205.63	9.34	3.25	200.06	4.14	1.42	TA
CVHBEL		199.27	2.98	1.04	199.43	3.52	1.21	TA
GQMBYZ		192.87	-3.42	-1.19	193.27	-2.65	-0.91	TA
J2H8VY		192.33	-3.95	-1.37	192.45	-3.47	-1.19	MT
J6HJRY		199.13	2.85	0.99	198.90	2.98	1.02	TA
JQHD4V		191.96	-4.33	-1.50	192.09	-3.83	-1.31	TA
L7MLWU		202.40	6.11	2.12	202.46	6.54	2.24	TA
NADWMB		198.77	2.48	0.86	197.77	1.85	0.63	TA
PYA22K		196.40	0.11	0.04	195.61	-0.31	-0.11	TA
RDL8ZP		194.79	-1.50	-0.52	194.69	-1.22	-0.42	TA
RHVLK9		194.93	-1.36	-0.47	193.86	-2.05	-0.70	TA
RJVC2P		194.50	-1.79	-0.62	193.72	-2.20	-0.75	PE
TGKRUZ		193.00	-3.29	-1.14	193.13	-2.78	-0.95	TA
UDEQ6M		196.10	-0.19	-0.07	196.10	0.18	0.06	TA
VRBFKK		194.13	-2.16	-0.75	193.92	-2.00	-0.68	TA
WFYEHY		197.54	1.25	0.44	197.51	1.59	0.54	TA
XWZJK2		198.93	2.65	0.92	197.90	1.98	0.68	TA

Summary Statistics

Grand Means

Sample W47
196.287 Degrees Celsius

Sample W48
195.917 Degrees Celsius

Std Dev Btwn Labs

2.876 Degrees Celsius

2.917 Degrees Celsius

Statistics based on 21 of 22 reporting participants

Sample W47: PBT & Sample W48: PBT

Comments on Assigned Data Flags for Test #760

CDRJZE (X) - Inconsistent in testing between samples, data for Sample W47 are high.



Plastics Interlaboratory Testing Program

Analysis 760

DSC Crystallization Temperature

Report #104

4th Qtr 2017

Key to Instrument Codes Reported by Participants

MT Mettler Toledo Instruments

NZ Netzsch Instruments

PE Perkins Elmer Instruments

TA TA Instruments



Plastics Interlaboratory Testing Program

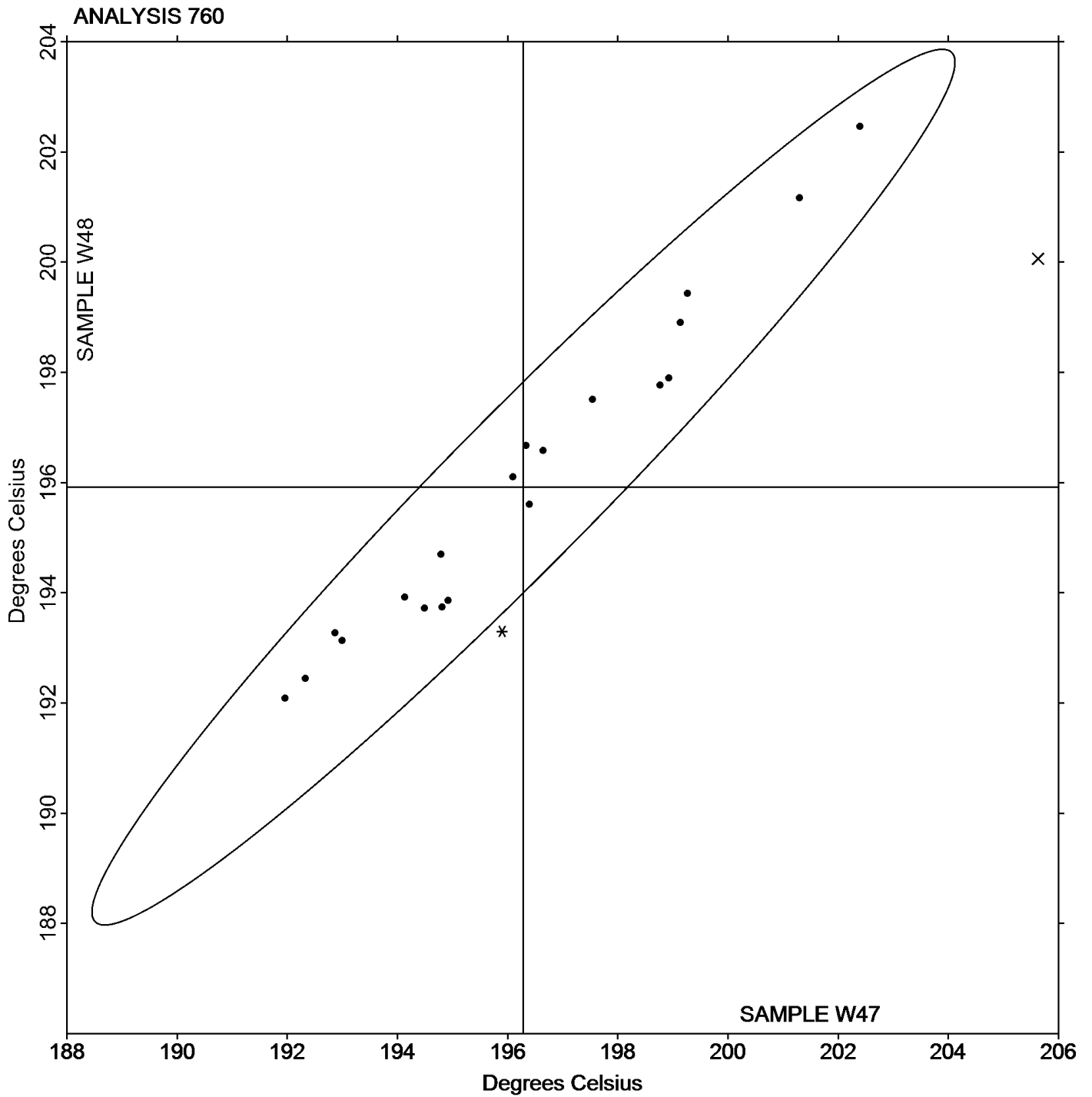
Analysis 760

DSC Crystallization Temperature

Report #104

4th Qtr 2017

Grand Mean Sample W47: 196.29 Degrees Celsius Grand Mean Sample W48: 195.92 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #104

Analysis 761

4th Qtr 2017

DSC Melt Temperature

WebCode	Data Flag	Sample W47			Sample W48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6BQ7E9		222.03	1.04	0.66	221.77	0.46	0.26	NZ
7TACDC		218.67	-2.33	-1.47	219.00	-2.31	-1.32	TA
87AKH8		219.38	-1.62	-1.02	219.57	-1.74	-0.99	TA
8R9NKE	X	222.60	1.60	1.01	226.30	4.99	2.84	NZ
AYGYPB		219.98	-1.01	-0.64	220.28	-1.03	-0.59	TA
CDRJZE		223.05	2.05	1.30	223.78	2.47	1.41	TA
CVHBEL		222.13	1.14	0.72	221.77	0.46	0.26	TA
GQMBYZ		222.50	1.50	0.95	222.87	1.56	0.89	TA
J2H8VY		224.44	3.45	2.18	224.89	3.58	2.04	MT
J6HJRY		222.63	1.64	1.04	222.63	1.32	0.75	TA
JQHD4V		219.73	-1.27	-0.80	219.93	-1.38	-0.78	TA
L7MLWU		219.78	-1.22	-0.77	218.89	-2.42	-1.38	TA
NADWMB		220.20	-0.80	-0.50	220.33	-0.98	-0.56	TA
PYA22K		219.15	-1.85	-1.17	220.03	-1.28	-0.73	TA
QJGTGR		221.10	0.11	0.07	221.12	-0.19	-0.11	TA
RDL8ZP		218.73	-2.27	-1.43	218.55	-2.76	-1.57	TA
RHVLK9		221.72	0.73	0.46	223.24	1.93	1.10	TA
RJVC2P		223.18	2.19	1.38	222.96	1.65	0.94	PE
TGKRUZ		219.37	-1.63	-1.03	219.40	-1.91	-1.09	TA
UDEQ6M		221.80	0.80	0.51	222.60	1.29	0.73	TA
VRBFKK		220.82	-0.18	-0.11	222.62	1.31	0.75	XX
WFYEHY		221.00	0.00	0.00	220.97	-0.34	-0.19	XX
XLJWB2		219.87	-1.13	-0.71	220.20	-1.11	-0.63	TA
XWZJK2		221.63	0.64	0.40	222.73	1.42	0.81	TA

Summary Statistics		
	Sample W47	Sample W48
Grand Means	220.996 Degrees Celsius	221.310 Degrees Celsius
Std Dev Btwn Labs	1.582 Degrees Celsius	1.755 Degrees Celsius
Statistics based on 23 of 24 reporting participants		

Sample W47: PBT & Sample W48: PBT

Comments on Assigned Data Flags for Test #761

8R9NKE (X) - Inconsistent in testing between samples, data for Sample W48 are high.



Plastics Interlaboratory Testing Program

Analysis 761

DSC Melt Temperature

Report #104

4th Qtr 2017

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

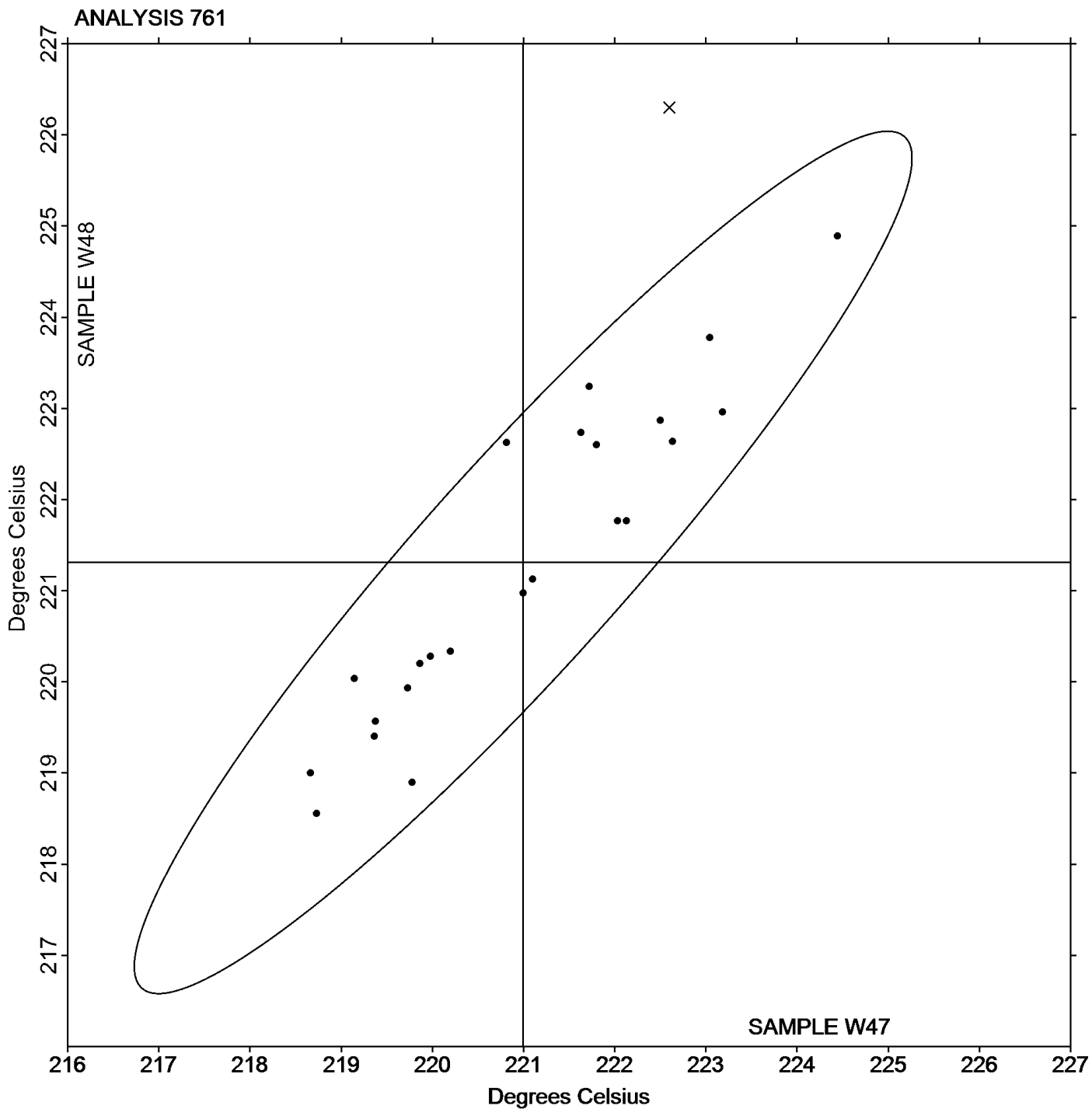
Analysis 761

DSC Melt Temperature

Report #104

4th Qtr 2017

Grand Mean Sample W47: 221.00 Degrees Celsius Grand Mean Sample W48: 221.31 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #104

Analysis 762

4th Qtr 2017

DSC Enthalpy of Crystallization

WebCode	Data Flag	<u>Sample W47</u>			<u>Sample W48</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6BQ7E9		22.55	-0.28	-0.12	22.57	-0.21	-0.10	NZ
7TACDC		20.30	-2.53	-1.10	20.93	-1.85	-0.87	TA
87AKH8		23.05	0.22	0.09	23.26	0.47	0.22	TA
8R9NKE		23.30	0.47	0.20	23.30	0.52	0.24	NZ
AYGYPB		26.81	3.97	1.72	26.66	3.87	1.81	TA
CDRJZE		23.57	0.73	0.32	22.43	-0.35	-0.16	TA
CVHBEL		22.07	-0.77	-0.33	22.87	0.08	0.04	TA
GQMBYZ		19.21	-3.62	-1.57	19.20	-3.58	-1.67	TA
J6HJRY		23.77	0.93	0.40	22.47	-0.32	-0.15	TA
L7MLWU		17.50	-5.33	-2.31	17.26	-5.53	-2.59	TA
NADWMB		21.56	-1.27	-0.55	21.93	-0.86	-0.40	TA
PYA22K		24.54	1.70	0.74	24.99	2.20	1.03	TA
RDL8ZP		23.77	0.94	0.41	24.57	1.78	0.83	TA
RHVLK9		26.39	3.56	1.54	25.12	2.34	1.09	TA
RJVC2P		21.07	-1.76	-0.76	23.44	0.66	0.31	PE
TGKRUZ		23.86	1.02	0.44	23.33	0.55	0.26	TA
UDEQ6M		23.48	0.64	0.28	22.60	-0.18	-0.08	TA
XWZJK2		24.23	1.40	0.61	23.20	0.42	0.19	TA

Summary Statistics		
	<u>Sample W47</u>	<u>Sample W48</u>
Grand Means	22.835 Joules Per Gram	22.784 Joules Per Gram
Std Dev Btwn Labs	2.309 Joules Per Gram	2.138 Joules Per Gram
Statistics based on 18 of 18 reporting participants		

Sample W47: PBT & Sample W48: PBT

Key to Instrument Codes Reported by Participants

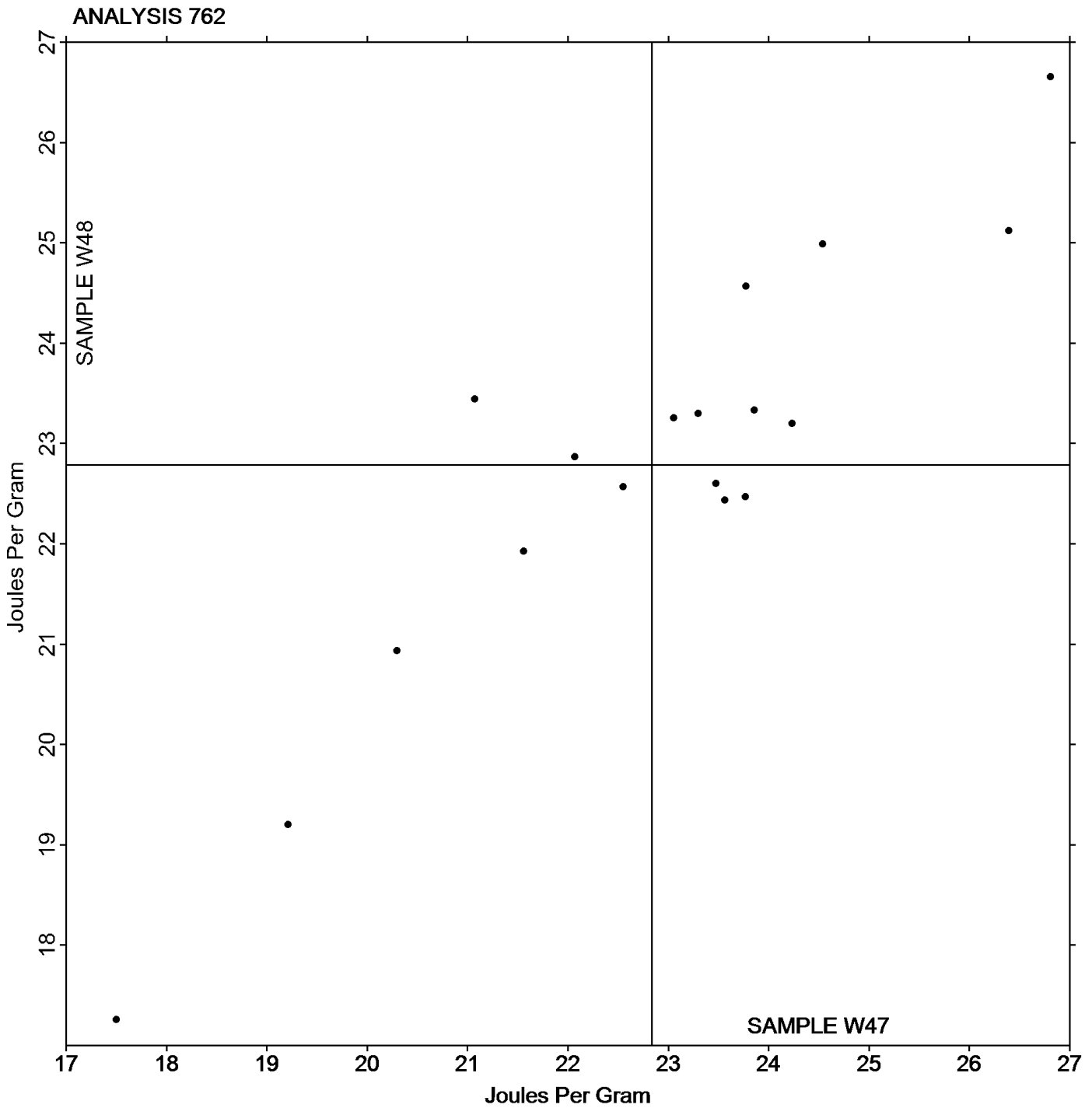
NZ Netzsch Instruments

PE Perkins Elmer Instruments

TA TA Instruments



Grand Mean Sample W47: 22.835 Joules Per Gram Grand Mean Sample W48: 22.784 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 #104

Analysis 763

4th Qtr 2017

DSC Enthalpy of Fusion

WebCode	Data Flag	<u>Sample W47</u>			<u>Sample W48</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6BQ7E9		28.51	3.69	1.53	29.58	4.80	2.17	NZ
7TACDC		22.67	-2.15	-0.89	23.00	-1.78	-0.81	TA
87AKH8		25.24	0.42	0.17	25.41	0.63	0.28	TA
8R9NKE		25.20	0.38	0.16	23.40	-1.38	-0.62	NZ
AYGYPB		26.20	1.38	0.57	25.86	1.08	0.49	TA
CDRJZE		23.10	-1.72	-0.71	23.01	-1.78	-0.80	TA
CVHBEL		24.13	-0.69	-0.28	24.63	-0.15	-0.07	TA
GQMBYZ		22.57	-2.25	-0.93	22.53	-2.25	-1.02	TA
J6HJRY		23.23	-1.59	-0.66	23.17	-1.62	-0.73	TA
L7MLWU		22.30	-2.52	-1.04	22.68	-2.10	-0.95	TA
NADWMB		22.45	-2.37	-0.98	22.50	-2.28	-1.03	TA
PYA22K		28.02	3.20	1.33	28.08	3.30	1.49	TA
RDL8ZP		25.15	0.33	0.14	26.06	1.28	0.58	TA
RHVLK9		30.57	5.75	2.38	28.48	3.70	1.67	TA
RJVC2P		21.92	-2.90	-1.20	23.46	-1.32	-0.60	PE
TGKRUZ		26.48	1.66	0.69	26.51	1.73	0.78	TA
UDEQ6M		23.84	-0.98	-0.40	24.35	-0.43	-0.20	TA
XWZJK2		25.17	0.35	0.14	23.37	-1.42	-0.64	TA

Summary Statistics		
	<u>Sample W47</u>	<u>Sample W48</u>
Grand Means	24.819 Joules Per Gram	24.782 Joules Per Gram
Std Dev Btwn Labs	2.414 Joules Per Gram	2.213 Joules Per Gram
Statistics based on 18 of 18 reporting participants		

Sample W47: PBT & Sample W48: PBT

Key to Instrument Codes Reported by Participants

NZ Netzsch Instruments
TA TA Instruments

PE Perkins Elmer Instruments



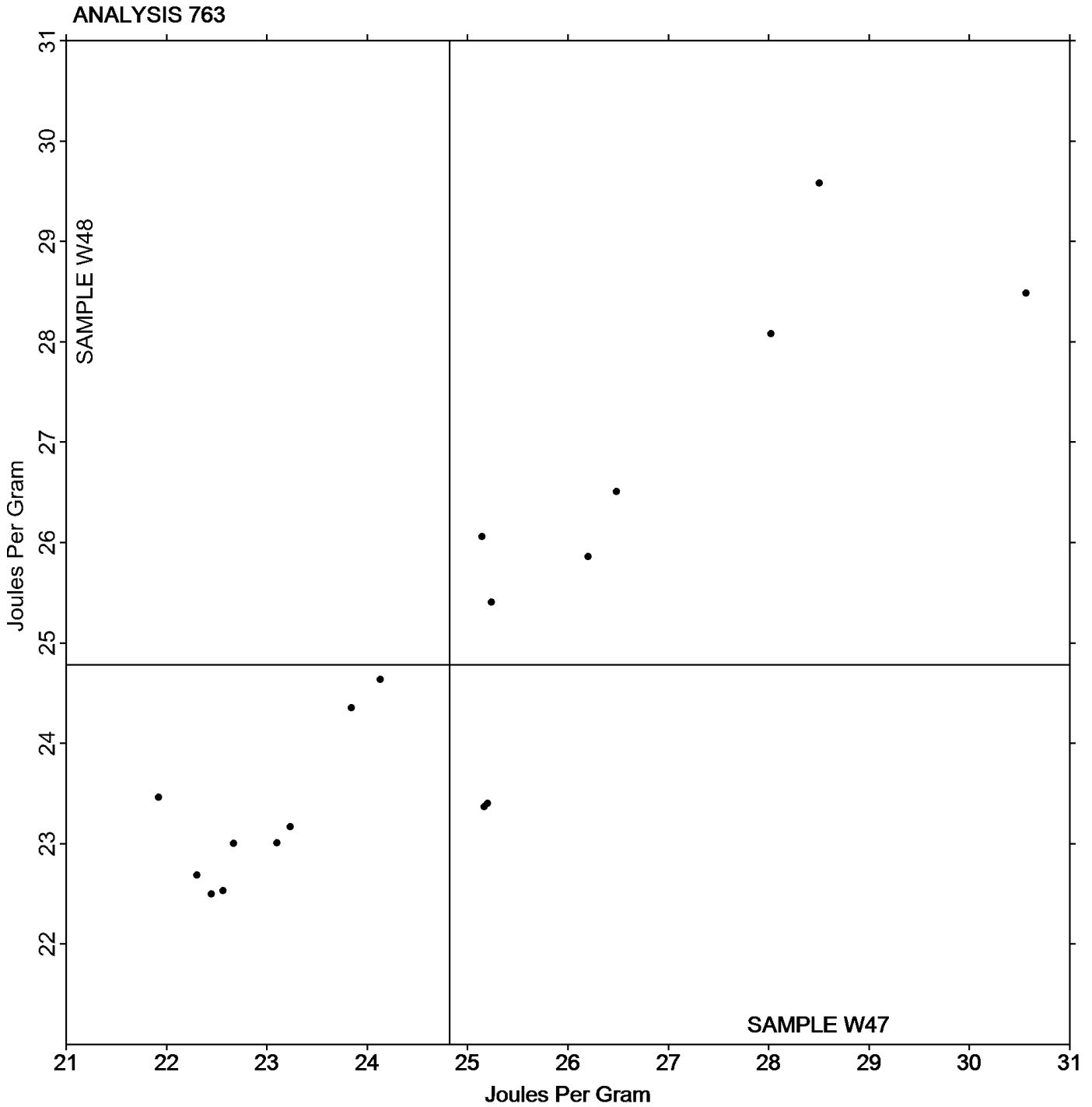
Plastics Interlaboratory Testing Program

Analysis 763
DSC Enthalpy of Fusion

Report #104

4th Qtr 2017

Grand Mean Sample W47: 24.819 Joules Per Gram Grand Mean Sample W48: 24.782 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 #104

Analysis 764

4th Qtr 2017

DSC Glass Transition Temperature

WebCode	Data Flag	Sample V47			Sample V48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6BQ7E9		107.90	1.20	0.78	106.37	0.02	0.01	NZ
7TACDC		104.33	-2.37	-1.54	104.33	-2.01	-1.32	TA
8R9NKE		108.30	1.60	1.04	108.10	1.76	1.16	NZ
AYGYPB		105.19	-1.51	-0.99	104.98	-1.36	-0.90	TA
CDRJZE	X	97.30	-9.40	-6.13	103.49	-2.85	-1.88	TA
CVHBEL		106.23	-0.47	-0.30	106.73	0.39	0.26	TA
J2H8VY		107.81	1.11	0.72	108.13	1.78	1.17	MT
J6HJRY		104.87	-1.83	-1.20	104.90	-1.44	-0.95	TA
L7MLWU		106.09	-0.61	-0.40	106.61	0.26	0.17	TA
NADWMB		107.90	1.20	0.78	106.00	-0.34	-0.23	TA
PYA22K		107.36	0.66	0.43	107.35	1.01	0.66	TA
RDL8ZP		106.71	0.01	0.01	104.99	-1.36	-0.89	TA
RHVLK9		105.56	-1.14	-0.75	106.09	-0.26	-0.17	TA
RJVC2P		108.57	1.87	1.22	107.87	1.52	1.00	PE
TGKRUZ		106.93	0.23	0.15	106.37	0.02	0.01	TA
UDEQ6M		109.13	2.43	1.59	109.07	2.72	1.79	TA
XWZJK2		104.33	-2.37	-1.54	103.63	-2.71	-1.79	TA

Summary Statistics		Sample V47	Sample V48
Grand Means		106.701 Degrees Celsius	106.344 Degrees Celsius
Std Dev Btwn Labs		1.535 Degrees Celsius	1.518 Degrees Celsius
Statistics based on 16 of 17 reporting participants			

Sample V47: ABS & Sample V48: ABS

Comments on Assigned Data Flags for Test #764

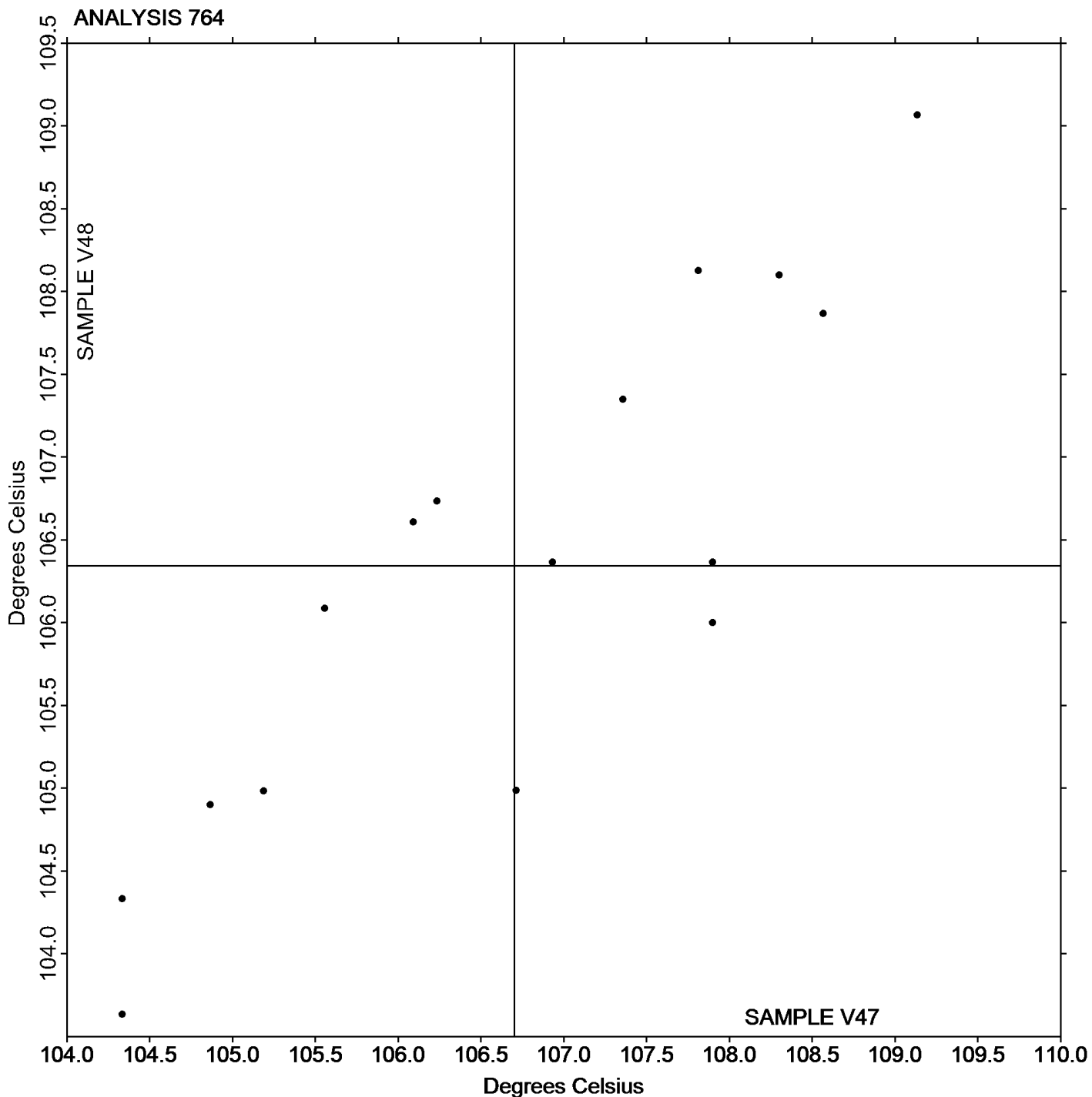
CDRJZE (X) - Data for samples V47 are low.

Key to Instrument Codes Reported by Participants

- MT Mettler Toledo Instruments
- NZ Netzsch Instruments
- PE Perkins Elmer Instruments
- TA TA Instruments



Grand Mean Sample V47: 106.70 Degrees Celsius Grand Mean Sample V48: 106.34 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 #104

Analysis 770

4th Qtr 2017

Tensile Stress at Yield, Film Samples - psi

WebCode	Data Flag	Sample B47			Sample B48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		1,712	-47	-0.13	1,928	-291	-0.50	WZ
4NLQUD		1,734	-26	-0.07	2,416	197	0.34	IN
7C6P8J		2,442	682	1.82	2,570	351	0.60	XX
8R9NKE		1,794	34	0.09	2,497	278	0.47	IN
AY8XXB		2,528	768	2.05	3,628	1,409	2.40	IN
H7KHX3		1,591	-169	-0.45	1,906	-314	-0.53	IN
HJ7YNK		1,391	-368	-0.98	1,637	-582	-0.99	IN
JFKU72		1,224	-536	-1.43	1,709	-511	-0.87	IN
R6TXQT		1,892	132	0.35	2,822	603	1.03	IN
R7YHEU		1,915	155	0.41	2,357	137	0.23	IN
U62XUR		1,488	-272	-0.72	1,620	-600	-1.02	MT
VHMLC4		1,621	-138	-0.37	2,166	-54	-0.09	SH
YLXLA8		1,546	-213	-0.57	1,597	-623	-1.06	IN

Summary Statistics

	Sample B47	Sample B48
Grand Means	1,759.9 psi	2,219.4 psi
Stnd Dev Btwn Labs	375.3 psi	587.3 psi

Statistics based on 13 of 13 reporting participants

Sample B47: LDPE & Sample B48: LDPE

Key to Instrument Codes Reported by Participants

- IN Instron
- SH Shimadzu
- XX Instrument manufacturer not specified by lab
- MT MTS/Sintech
- WZ Zwick



Plastics Interlaboratory Testing Program

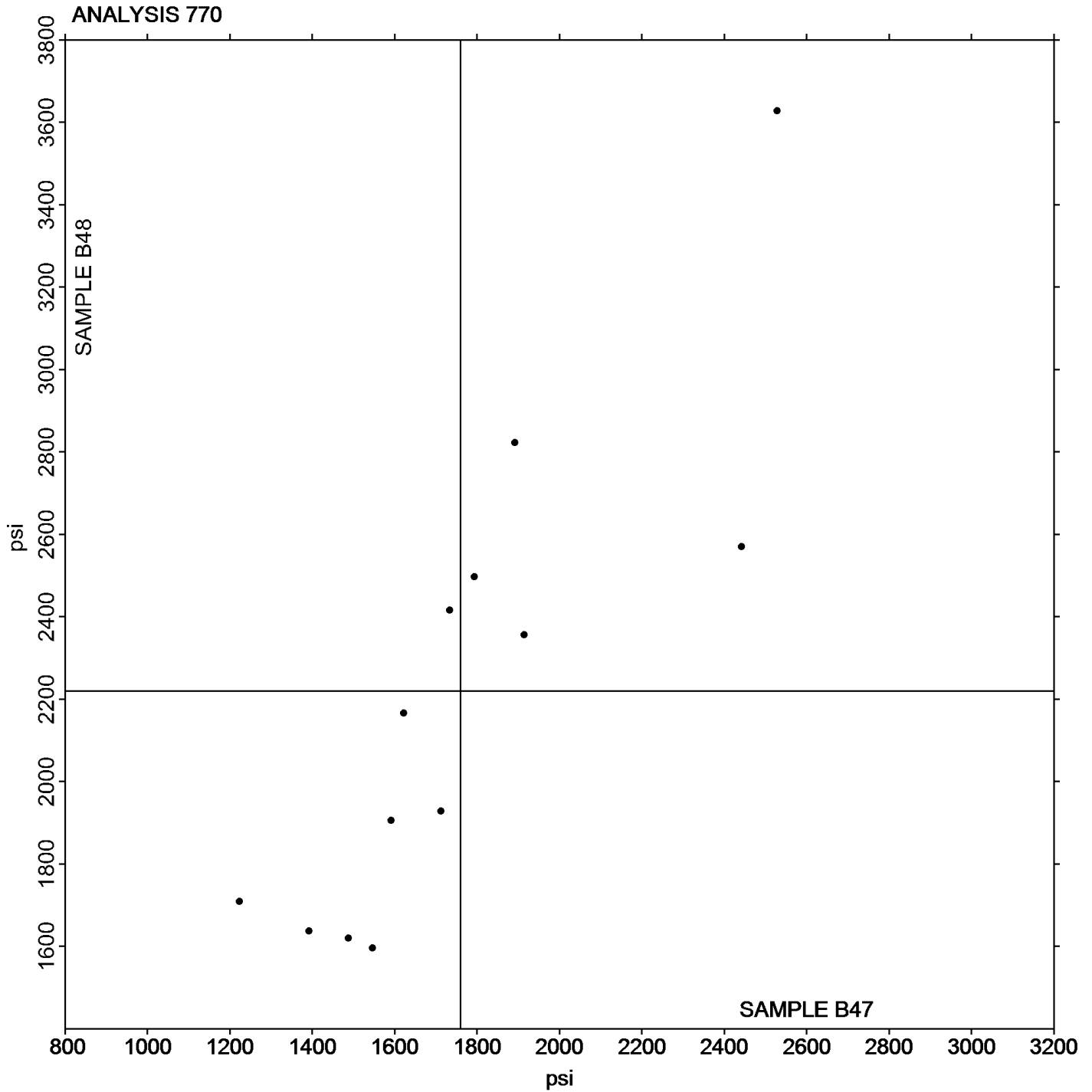
Report #104

Analysis 770

4th Qtr 2017

Tensile Stress at Yield, Film Samples - psi

Grand Mean Sample B47: 1,759.89 psi Grand Mean Sample B48: 2,219.39 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 #104

Analysis 771

4th Qtr 2017

Tensile Stress at Break, Film Samples - psi

WebCode	Data Flag	Sample B47			Sample B48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		3,361	415	0.85	3,577	116	0.28	WZ
4NLQUD		3,320	375	0.76	3,825	365	0.89	IN
626VEF		1,984	-962	-1.96	2,754	-707	-1.72	UC
7C6P8J		2,426	-520	-1.06	2,557	-903	-2.20	XX
8R9NKE		3,348	403	0.82	3,855	395	0.96	IN
8U2QHF		2,516	-429	-0.87	3,414	-46	-0.11	IN
AY8XXB		3,008	63	0.13	3,613	153	0.37	IN
H7KHX3		2,643	-303	-0.62	2,963	-497	-1.21	IN
HJ7YNK		2,282	-663	-1.35	3,374	-86	-0.21	IN
JFKU72		2,704	-241	-0.49	3,209	-251	-0.61	IN
L7MLWU		3,151	205	0.42	3,587	127	0.31	SH
QDQGHP		3,026	80	0.16	3,728	268	0.65	IN
R6TXQT		3,546	600	1.22	3,999	539	1.31	IN
R7YHEU		3,612	667	1.36	3,883	422	1.03	IN
U62XUR		3,312	367	0.75	3,728	268	0.65	MT
VHMLC4		2,464	-481	-0.98	3,155	-305	-0.74	SH
YLXLA8		3,369	423	0.86	3,603	142	0.35	IN

Summary Statistics		
	Sample B47	Sample B48
Grand Means	2,945.3 psi	3,460.3 psi
Std Dev Btwn Labs	490.4 psi	411.0 psi
Statistics based on 17 of 17 reporting participants		

Sample B47: LDPE & Sample B48: LDPE

Key to Instrument Codes Reported by Participants

IN	Instron	MT	MTS/Sintech
SH	Shimadzu	UC	United
WZ	Zwick	XX	Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

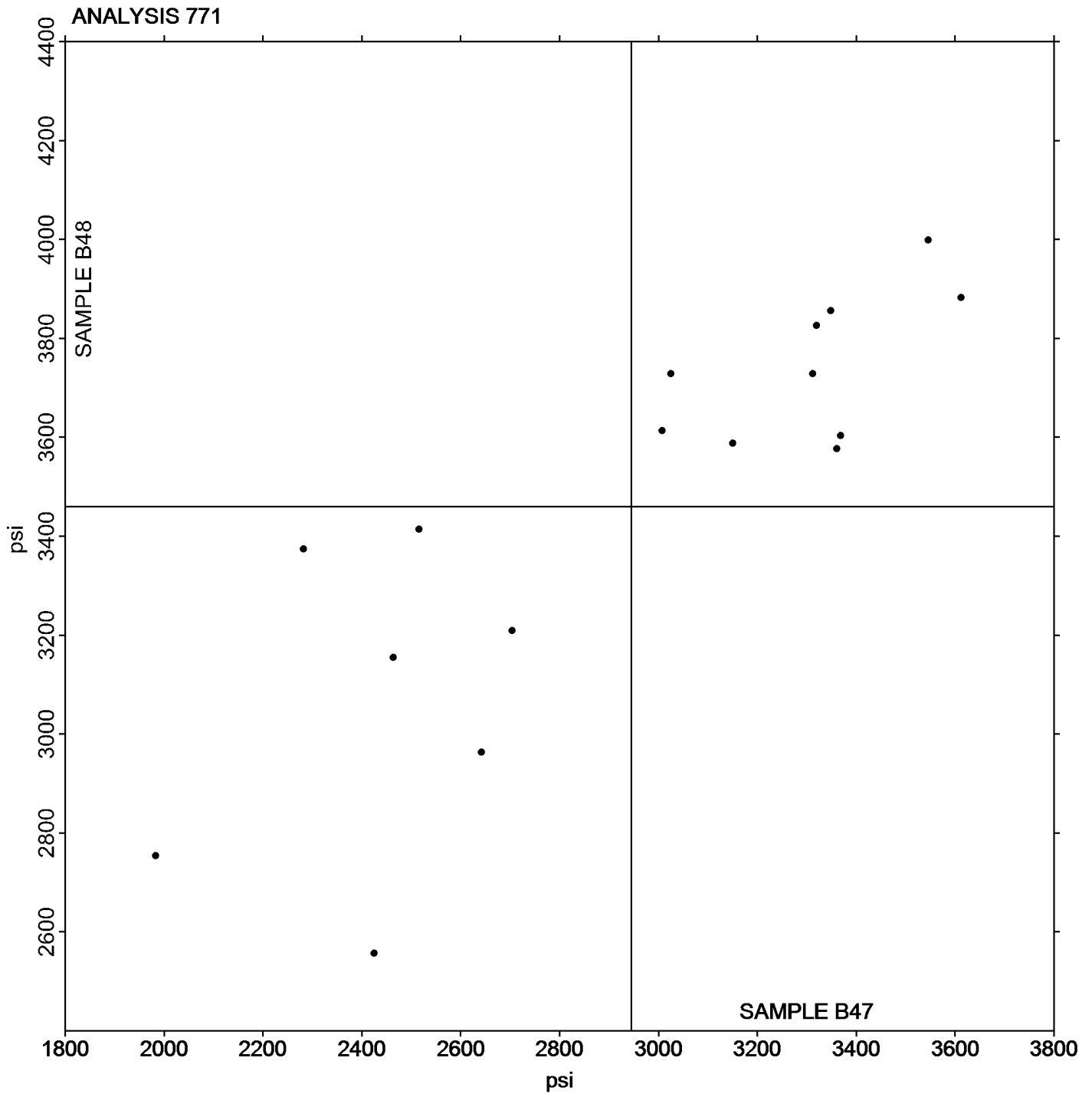
Analysis 771

Tensile Stress at Break, Film Samples - psi

Report #104

4th Qtr 2017

Grand Mean Sample B47: 2,945.32 psi Grand Mean Sample B48: 3,460.32 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 #104

Analysis 772

4th Qtr 2017

Percent Elongation at Yield, Films

WebCode	Data Flag	Sample B47			Sample B48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		15.47	-33.12	-1.09	17.82	-37.77	-1.03	WZ
4NLQUD		66.57	17.98	0.59	78.54	22.95	0.63	IN
7C6P8J	X	485.20	436.61	14.35	416.50	360.91	9.83	TO
8R9NKE		73.66	25.07	0.82	87.18	31.59	0.86	IN
AY8XXB	X	400.88	352.29	11.58	718.64	663.06	18.06	IN
H7KHX3		45.39	-3.20	-0.11	41.16	-14.43	-0.39	IN
HJ7YNK		13.96	-34.63	-1.14	16.19	-39.40	-1.07	IN
JFKU72		75.84	27.25	0.90	90.09	34.50	0.94	IN
R6TXQT		70.07	21.48	0.71	82.08	26.49	0.72	IN
R7YHEU		73.49	24.90	0.82	86.91	31.32	0.85	IN
U62XUR		8.69	-39.89	-1.31	8.68	-46.91	-1.28	MT
VHMLC4		81.44	32.85	1.08	94.21	38.62	1.05	SH
YLXLA8		9.88	-38.71	-1.27	8.62	-46.97	-1.28	IN

Summary Statistics

	Sample B47	Sample B48
Grand Means	48.587 Percent	55.589 Percent
Std Dev Btwn Labs	30.417 Percent	36.719 Percent

Statistics based on 11 of 13 reporting participants

Sample B47: LDPE & Sample B48: 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

AY8XXB (X) - Data for both samples are high.

7C6P8J (X) - Data for both samples are high.

Key to Instrument Codes Reported by Participants

IN Instron	MT MTS/Sintech
SH Shimadzu	TO Tinius Olsen
WZ Zwick	



Plastics Interlaboratory Testing Program

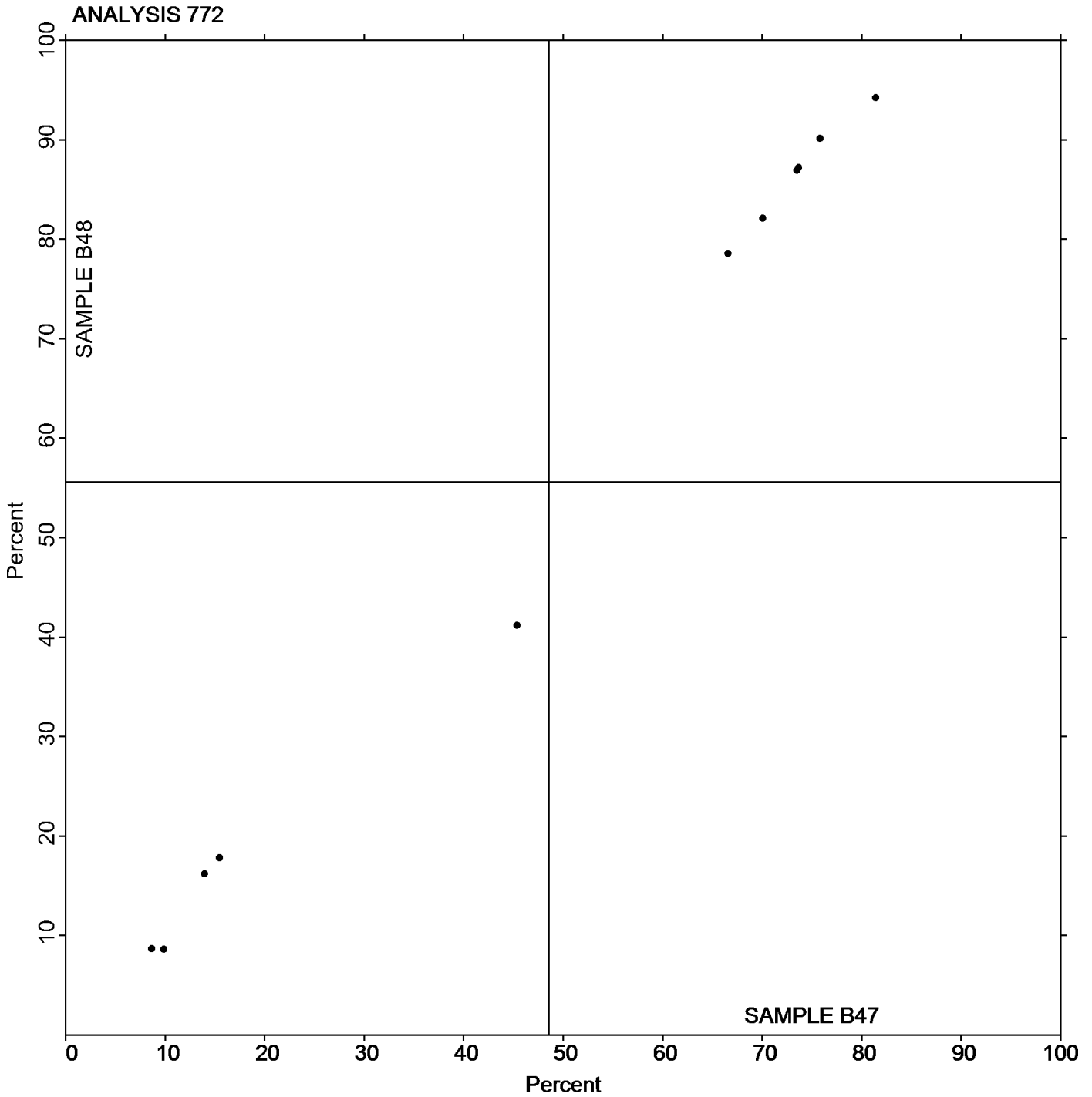
Report #104

Analysis 772

4th Qtr 2017

Percent Elongation at Yield, Films

Grand Mean Sample B47: 48.587 Percent Grand Mean Sample B48: 55.589 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 #104

Analysis 773

4th Qtr 2017

Percent Elongation at Break, Film Samples

WebCode	Data Flag	Sample B47			Sample B48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		528.0	-103.9	-1.10	480.0	-119.0	-1.21	WZ
4NLQUD		576.5	-55.4	-0.59	519.7	-79.3	-0.81	IN
7C6P8J		490.4	-141.5	-1.50	422.6	-176.4	-1.80	TO
8R9NKE		584.5	-47.5	-0.50	562.0	-37.0	-0.38	IN
8U2QHF		783.3	151.4	1.61	746.4	147.4	1.50	IN
AY8XXB		708.5	76.5	0.81	719.5	120.4	1.23	IN
H7KHX3		703.3	71.3	0.76	631.8	32.8	0.33	IN
HJ7YNK		563.8	-68.1	-0.72	627.4	28.4	0.29	IN
JFKU72		700.8	68.9	0.73	633.8	34.7	0.35	IN
L7MLWU		797.3	165.4	1.75	752.7	153.7	1.57	SH
QDQGHP		746.8	114.9	1.22	723.5	124.5	1.27	IN
R6TXQT		559.8	-72.2	-0.77	545.0	-54.0	-0.55	IN
R7YHEU		588.9	-43.0	-0.46	558.7	-40.3	-0.41	IN
U62XUR		574.7	-57.2	-0.61	528.6	-70.4	-0.72	MT
VHMLC4		578.5	-53.5	-0.57	589.1	-9.9	-0.10	SH
YLXLA8		626.1	-5.8	-0.06	543.6	-55.5	-0.57	IN

Summary Statistics		
	Sample B47	Sample B48
Grand Means	631.94 Percent	599.02 Percent
Stnd Dev Btwn Labs	94.23 Percent	98.00 Percent
Statistics based on 16 of 16 reporting participants		

Sample B47: LDPE & Sample B48: LDPE

Key to Instrument Codes Reported by Participants

- IN Instron
- SH Shimadzu
- WZ Zwick
- MT MTS/Sintech
- TO Tinius Olsen



Plastics Interlaboratory Testing Program

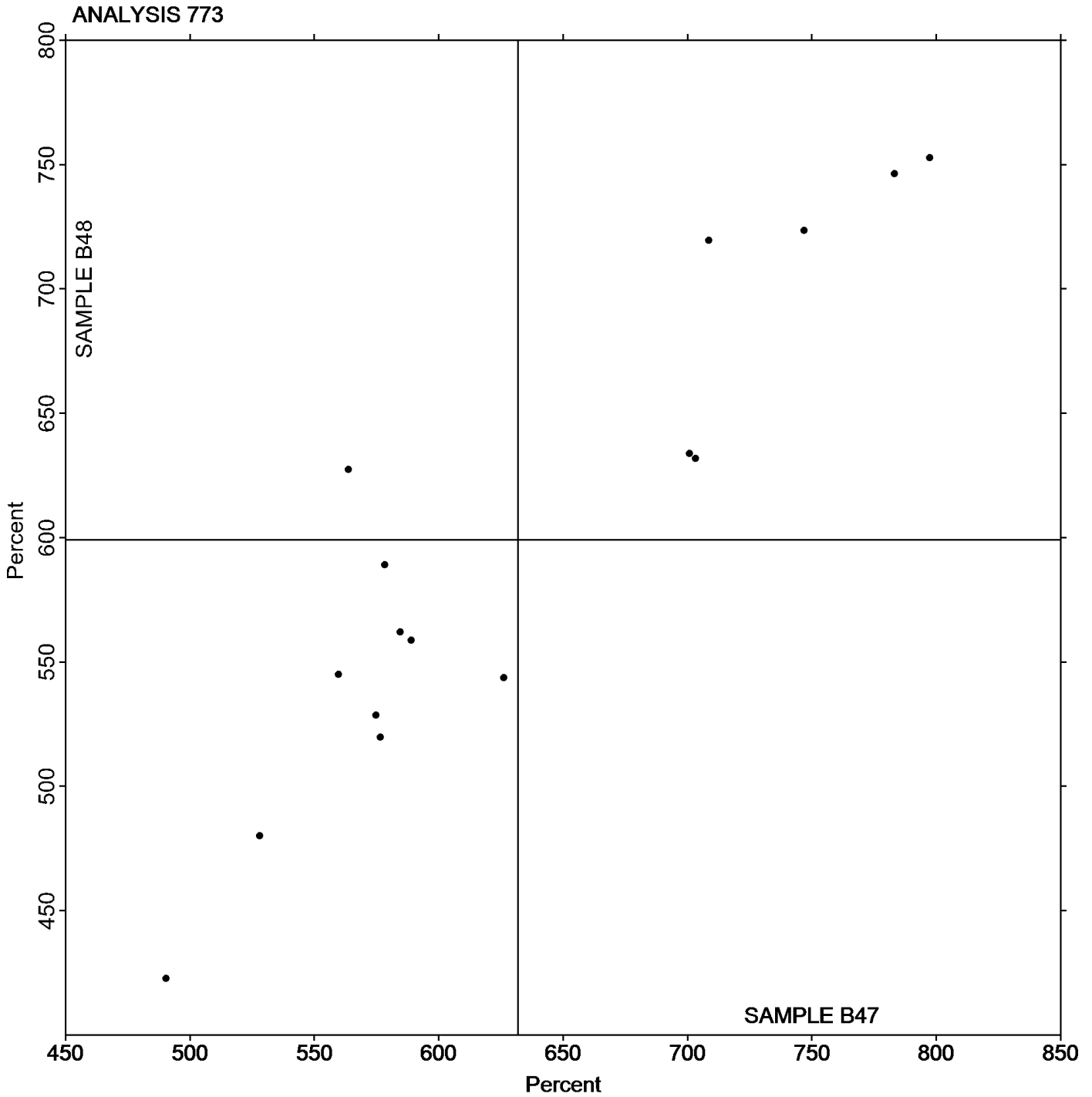
Report #104

Analysis 773

4th Qtr 2017

Percent Elongation at Break, Film Samples

Grand Mean Sample B47: 631.94 Percent Grand Mean Sample B48: 599.02 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 #104

Analysis 774

4th Qtr 2017

Thickness of Film Tensile Samples - mils

WebCode	Data Flag	Sample B47			Sample B48		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
36RMLY		3.0642	-0.0384	-0.22	2.9430	-0.0028	-0.03
4NLQUD		3.1600	0.0574	0.33	2.7860	-0.1598	-1.63
626VEF		3.3200	0.2174	1.25	2.8400	-0.1058	-1.08
6TFZNC		2.9140	-0.1886	-1.09	2.8360	-0.1098	-1.12
7C6P8J		3.1536	0.0510	0.29	3.1654	0.2196	2.24
82Z7A9		3.0110	-0.0916	-0.53	2.9770	0.0312	0.32
8R9NKE		2.9750	-0.1276	-0.74	2.9210	-0.0248	-0.25
8U2QHF		3.4700	0.3674	2.12	2.8700	-0.0758	-0.77
AY8XXB		3.0591	-0.0435	-0.25	2.9921	0.0464	0.47
H7KHX3		3.1142	0.0116	0.07	2.8977	-0.0481	-0.49
HJ7YNK		3.3990	0.2964	1.71	2.9600	0.0142	0.15
JFKU72		3.0110	-0.0916	-0.53	2.8780	-0.0678	-0.69
L7MLWU		3.0433	-0.0593	-0.34	3.0551	0.1093	1.12
QDQGHP		3.2900	0.1874	1.08	3.0400	0.0942	0.96
R6TXQT		2.8230	-0.2796	-1.61	2.8700	-0.0758	-0.77
R7YHEU		2.8300	-0.2726	-1.57	2.9290	-0.0168	-0.17
U62XUR		3.1300	0.0274	0.16	3.1250	0.1792	1.83
VHMLC4		3.0638	-0.0388	-0.22	2.9315	-0.0142	-0.15
YLXLA8		3.1182	0.0156	0.09	2.9528	0.0070	0.07

Summary Statistics		
	Sample B47	Sample B48
Grand Means	3.10260 mils	2.94577 mils
Stnd Dev Btwn Labs	0.17349 mils	0.09799 mils
Statistics based on 19 of 19 reporting participants		

Sample B47: LDPE & Sample B48: LDPE



Plastics Interlaboratory Testing Program

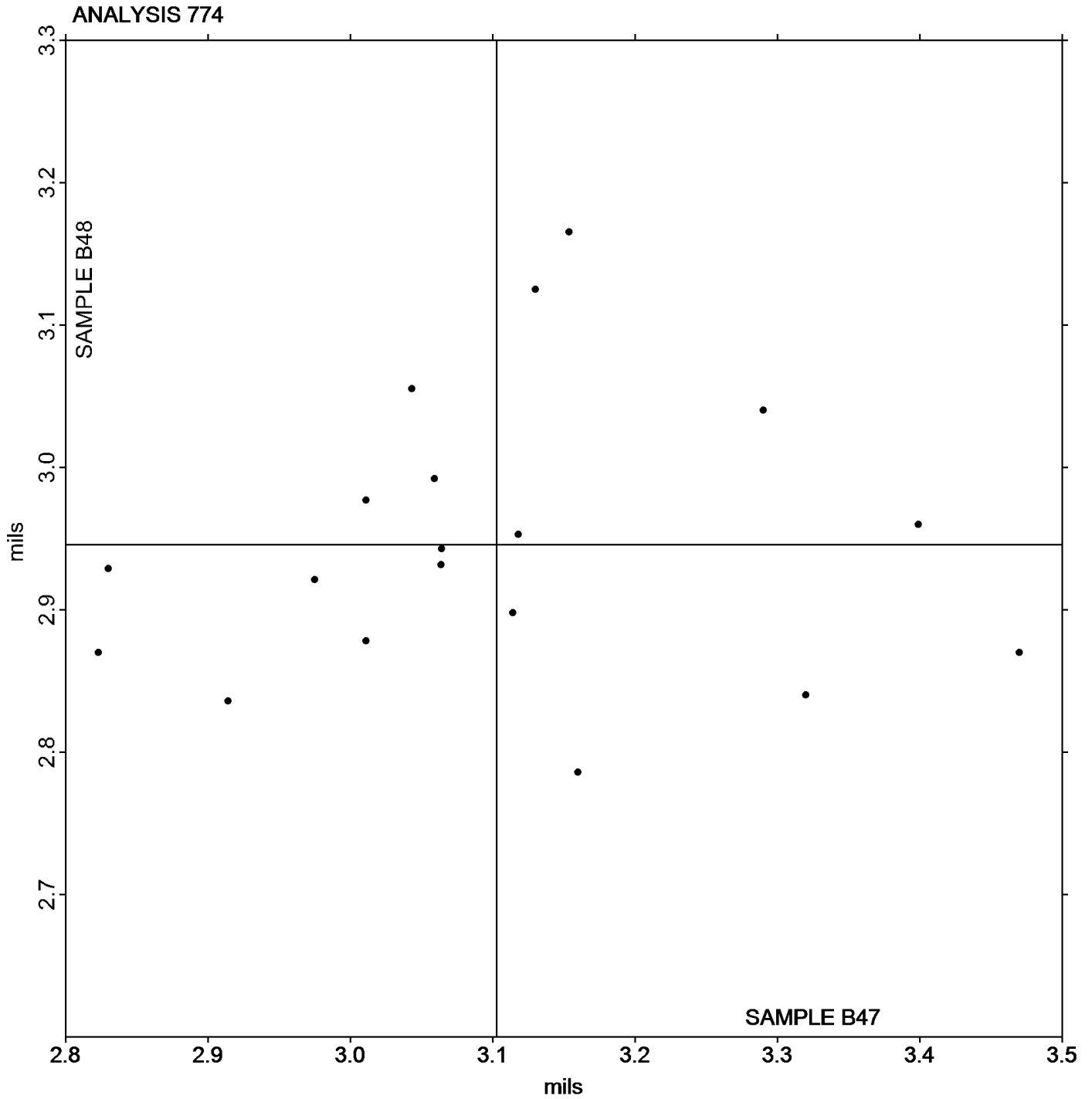
Report #104

Analysis 774

4th Qtr 2017

Thickness of Film Tensile Samples - mils

Grand Mean Sample B47: 3.1026 mils Grand Mean Sample B48: 2.9458 mils



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 #104

Analysis 775

4th Qtr 2017

Secant Modulus at 1% Strain - psi

WebCode	Data Flag	Sample B47			Sample B48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4NLQUD		28,581	2,642	0.63	32,536	4,341	0.95	IN
7C6P8J		19,509	-6,430	-1.54	19,949	-8,247	-1.80	TO
8R9NKE		30,171	4,232	1.01	25,235	-2,960	-0.64	IN
8U2QHF		27,453	1,514	0.36	30,537	2,341	0.51	IN
AY8XXB		20,027	-5,911	-1.42	21,232	-6,963	-1.52	IN
H7KHX3		23,240	-2,699	-0.65	28,242	46	0.01	IN
HJ7YNK		26,991	1,052	0.25	28,079	-116	-0.03	IN
JFKU72		19,368	-6,571	-1.57	23,883	-4,312	-0.94	IN
QDQGHP		25,998	59	0.01	30,081	1,886	0.41	IN
R6TXQT		26,717	778	0.19	27,277	-918	-0.20	IN
R7YHEU		28,453	2,515	0.60	31,421	3,225	0.70	IN
U62XUR		28,325	2,386	0.57	33,108	4,913	1.07	MT
VHMLC4		32,372	6,433	1.54	34,961	6,765	1.47	SH

Summary Statistics

	Sample B47	Sample B48
Grand Means	25,938.7 psi	28,195.5 psi
Stnd Dev Btwn Labs	4,173.9 psi	4,590.7 psi

Statistics based on 13 of 13 reporting participants

Sample B47: LDPE & Sample B48: LDPE

Key to Instrument Codes Reported by Participants

IN	Instron	MT	MTS/Sintech
SH	Shimadzu	TO	Tinius Olsen



Plastics Interlaboratory Testing Program

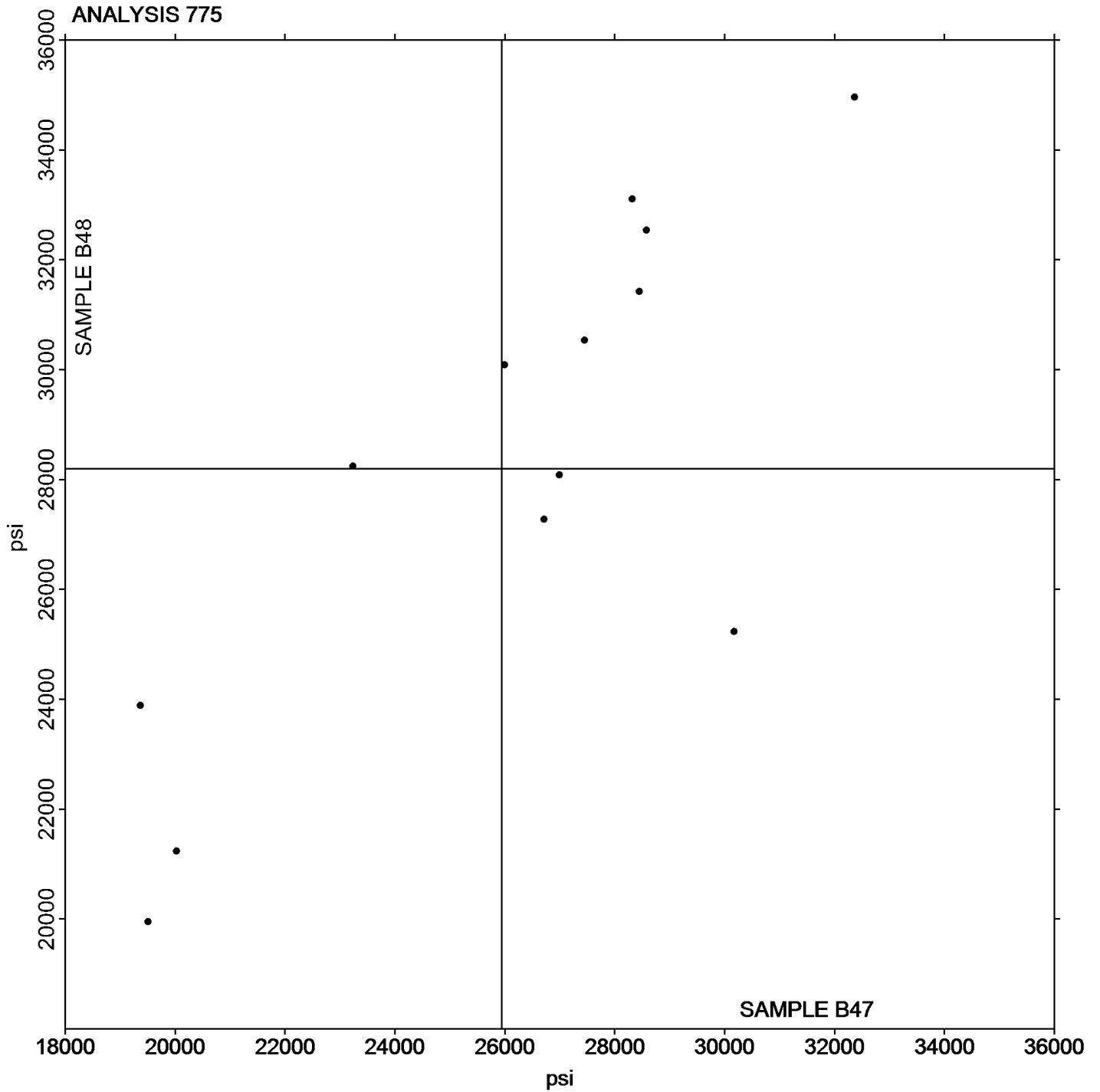
Report #104

Analysis 775

4th Qtr 2017

Secant Modulus at 1% Strain - psi

Grand Mean Sample B47: 25,938.66 psi Grand Mean Sample B48: 28,195.52 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 #104

Analysis 776

4th Qtr 2017

Secant Modulus at 2% Strain - psi

WebCode	Data Flag	Sample B47			Sample B48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		26,296	2,473	0.59	30,560	4,481	1.30	WZ
7C6P8J		22,196	-1,627	-0.39	20,978	-5,100	-1.48	TO
8R9NKE		33,431	9,608	2.28	28,262	2,183	0.64	IN
8U2QHF		22,642	-1,181	-0.28	26,050	-29	-0.01	IN
AY8XXB		19,316	-4,507	-1.07	23,041	-3,038	-0.88	IN
H7KHX3		24,541	718	0.17	27,737	1,659	0.48	IN
JFKU72		15,803	-8,020	-1.90	19,346	-6,732	-1.96	IN
QDQGHP		22,304	-1,519	-0.36	25,989	-90	-0.03	IN
R6TXQT		24,007	184	0.04	25,447	-632	-0.18	IN
R7YHEU		24,971	1,148	0.27	27,887	1,809	0.53	IN
U62XUR		25,181	1,359	0.32	30,030	3,952	1.15	MT
VHMLC4		25,186	1,363	0.32	27,614	1,536	0.45	SH

Summary Statistics		
	Sample B47	Sample B48
Grand Means	23,822.7 psi	26,078.4 psi
Std Dev Btwn Labs	4,210.1 psi	3,435.3 psi
Statistics based on 12 of 12 reporting participants		

Sample B47: LDPE & Sample B48: LDPE

Key to Instrument Codes Reported by Participants

- IN Instron
- SH Shimadzu
- WZ Zwick
- MT MTS/Sintech
- TO Tinius Olsen



Plastics Interlaboratory Testing Program

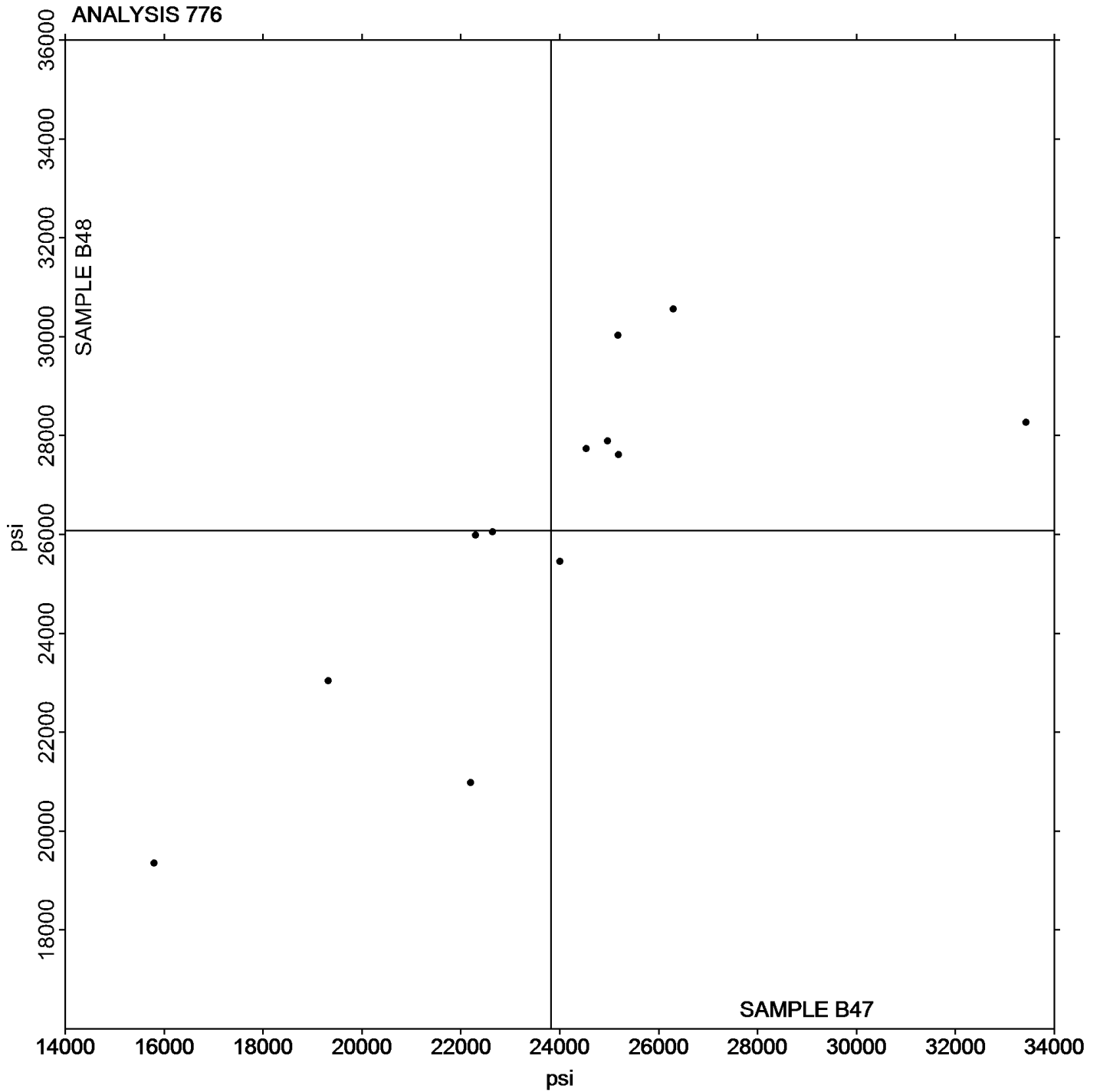
Report #104

Analysis 776

4th Qtr 2017

Secant Modulus at 2% Strain - psi

Grand Mean Sample B47: 23,822.72 psi Grand Mean Sample B48: 26,078.38 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 #104

Analysis 780

4th Qtr 2017

Coefficient of Static Friction

WebCode	Data Flag	Sample P47			Sample P48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		0.1246	-0.0228	-0.37	0.1120	-0.0113	-0.23	TH
4NLQUD		0.0906	-0.0568	-0.92	0.0870	-0.0363	-0.75	TH
6NKBYR		0.1395	-0.0079	-0.13	0.1135	-0.0098	-0.20	IG
7C6P8J		0.1234	-0.0240	-0.39	0.1236	0.0003	0.01	RD
8R9NKE		0.0980	-0.0494	-0.80	0.1040	-0.0193	-0.40	TH
9L4AD4		0.1586	0.0112	0.18	0.0636	-0.0597	-1.23	XX
DNUBBE		0.1007	-0.0467	-0.76	0.1136	-0.0097	-0.20	IG
HJ7YNK		0.1404	-0.0070	-0.11	0.1154	-0.0079	-0.16	TN
J4PF76		0.0588	-0.0887	-1.44	0.0763	-0.0470	-0.97	IG
L7MLWU		0.2084	0.0610	0.99	0.1742	0.0509	1.05	SA
PGVP9U		0.2560	0.1086	1.76	0.2394	0.1161	2.40	TH
Q6FVX2		0.0780	-0.0694	-1.13	0.0580	-0.0653	-1.35	KA
QDQGHP		0.1710	0.0236	0.38	0.1266	0.0033	0.07	IS
U62XUR		0.2072	0.0598	0.97	0.1620	0.0387	0.80	MI
VHMLC4		0.2559	0.1085	1.76	0.1798	0.0566	1.17	SA

Summary Statistics		
	Sample P47	Sample P48
Grand Means	0.14740 COF	0.12327 COF
Std Dev Btwn Labs	0.06169 COF	0.04846 COF
Statistics based on 15 of 15 reporting participants		

Sample P47: LDPE & Sample P48: LDPE

Key to Instrument Codes Reported by Participants

IG	Instron	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

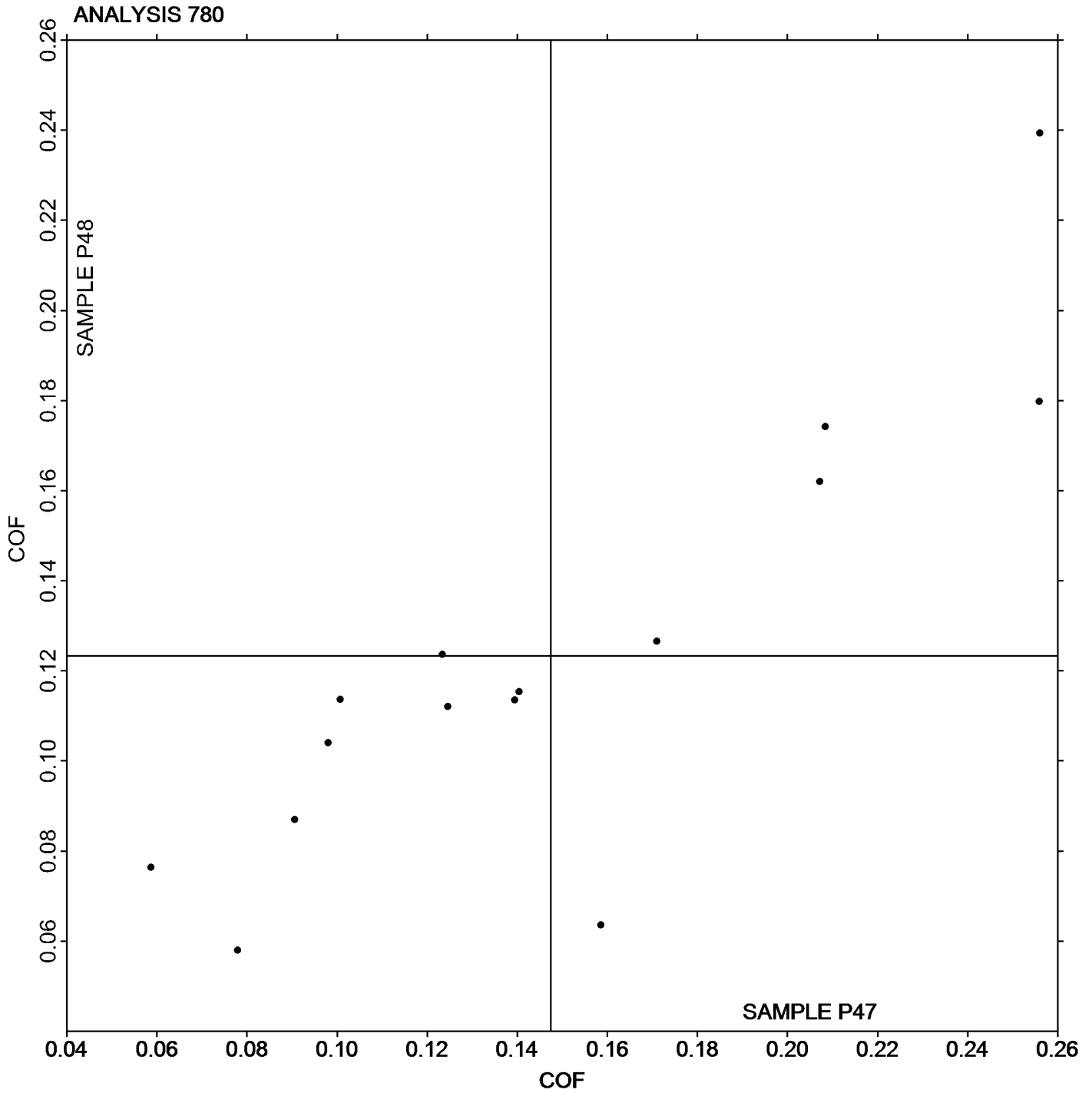
Analysis 780

Coefficient of Static Friction

Report #104

4th Qtr 2017

Grand Mean Sample P47: 0.14740 COF Grand Mean Sample P48: 0.12327 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 #104

Analysis 781

4th Qtr 2017

Coefficient of Kinetic Friction

WebCode	Data Flag	Sample P47			Sample P48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		0.0626	-0.0331	-1.14	0.0824	-0.0130	-0.46	TH
4NLQUD		0.0904	-0.0053	-0.18	0.0874	-0.0080	-0.28	TH
6NKBYR		0.0700	-0.0257	-0.89	0.0834	-0.0120	-0.42	IG
7C6P8J		0.1122	0.0165	0.57	0.1114	0.0160	0.56	RD
8R9NKE		0.0720	-0.0237	-0.82	0.0920	-0.0034	-0.12	TH
9L4AD4	*	0.1146	0.0189	0.65	0.0332	-0.0622	-2.19	XX
DNUBBE		0.0877	-0.0080	-0.28	0.1025	0.0071	0.25	IG
HJ7YNK		0.0906	-0.0051	-0.18	0.0844	-0.0110	-0.39	TN
J4PF76		0.0547	-0.0411	-1.42	0.0688	-0.0266	-0.94	IG
L7MLWU		0.0888	-0.0069	-0.24	0.1230	0.0276	0.97	SA
PGVP9U		0.1594	0.0637	2.20	0.1460	0.0506	1.78	TH
Q6FVX2		0.0960	0.0003	0.01	0.0920	-0.0034	-0.12	KA
QDQGHP		0.1040	0.0083	0.28	0.0856	-0.0098	-0.35	IS
U62XUR		0.0854	-0.0103	-0.36	0.0938	-0.0016	-0.06	MI
VHMLC4		0.1478	0.0521	1.80	0.1452	0.0498	1.75	SA

Summary Statistics		Sample P47	Sample P48
Grand Means		0.09575 COF	0.09540 COF
Stnd Dev Btwn Labs		0.02897 COF	0.02842 COF
Statistics based on 15 of 15 reporting participants			

Sample P47: LDPE & Sample P48: LDPE

Key to Instrument Codes Reported by Participants

IG	Instron	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

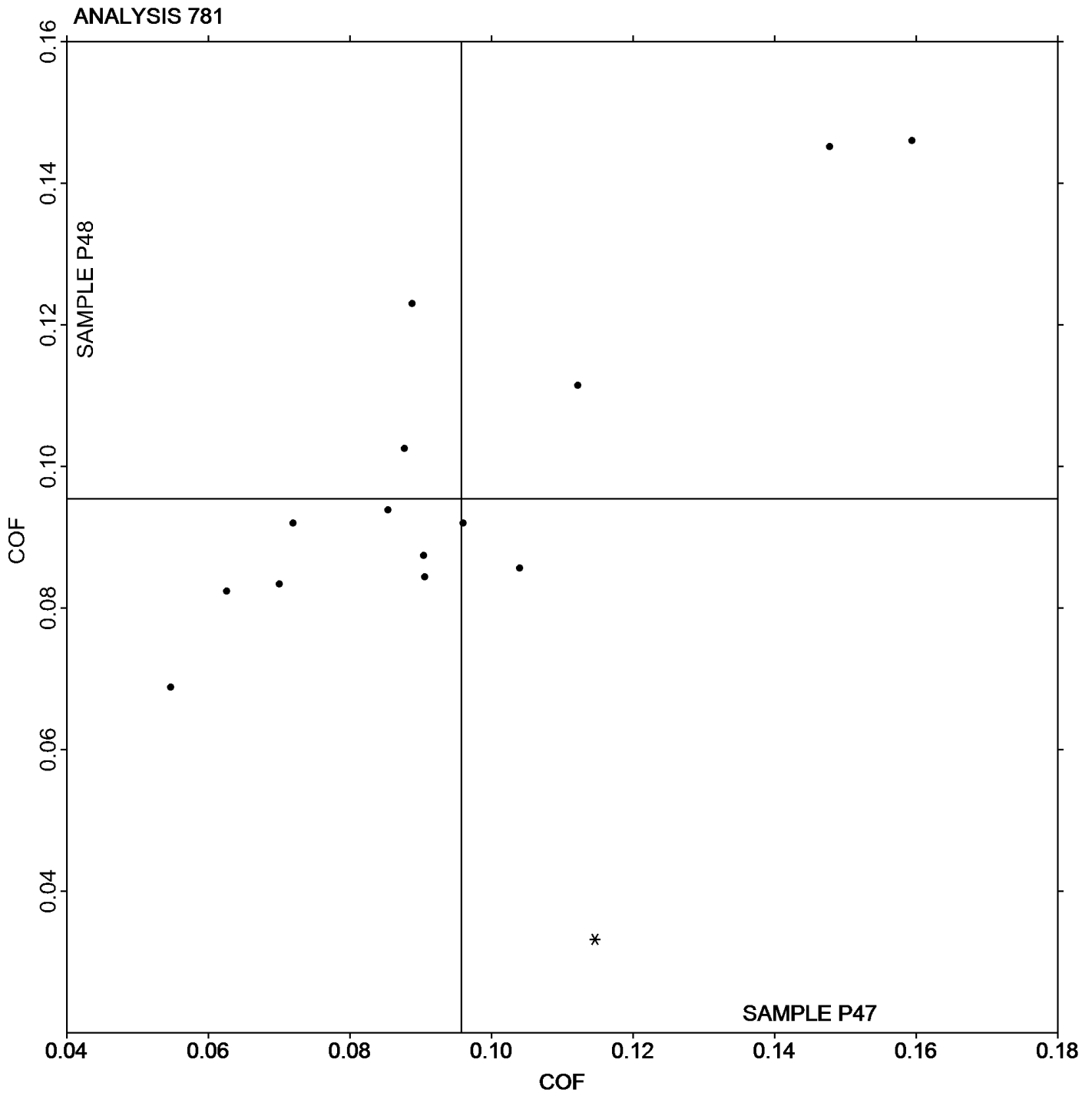
Analysis 781

Coefficient of Kinetic Friction

Report #104

4th Qtr 2017

Grand Mean Sample P47: 0.09575 COF Grand Mean Sample P48: 0.09540 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 #104

Analysis 782

4th Qtr 2017

Tear Resistance of Films

WebCode	Data Flag	Sample Q47			Sample Q48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36RMLY		382.5	4.1	0.10	140.4	-0.2	-0.01	TA
4NLQUD		355.8	-22.5	-0.56	125.8	-14.8	-0.77	TE
8R9NKE		417.6	39.2	0.97	147.9	7.3	0.38	TE
HJ7YNK	M	No data reported for this sample			124.3	-16.4	-0.85	TM
L7MLWU		438.5	60.1	1.48	117.9	-22.8	-1.19	LO
QDQGHP		426.6	48.2	1.19	125.8	-14.9	-0.78	TE
R7YHEU		370.6	-7.8	-0.19	135.9	-4.7	-0.25	TM
U62XUR		350.0	-28.4	-0.70	177.5	36.9	1.93	TE
VHMLC4		333.3	-45.1	-1.11	132.3	-8.3	-0.44	TE
YLXLA8		330.5	-47.9	-1.18	162.3	21.6	1.13	SZ

Summary Statistics		
	Sample Q47	Sample Q48
Grand Means	378.38 grams-force	140.66 grams-force
Std Dev Btwn Labs	40.61 grams-force	19.14 grams-force
Statistics based on 9 of 10 reporting participants		

Sample Q47: LDPE & Sample Q48: LDPE

Comments on Assigned Data Flags for Test #782

HJ7YNK (M) - Participant did not submit data for sample Q47.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

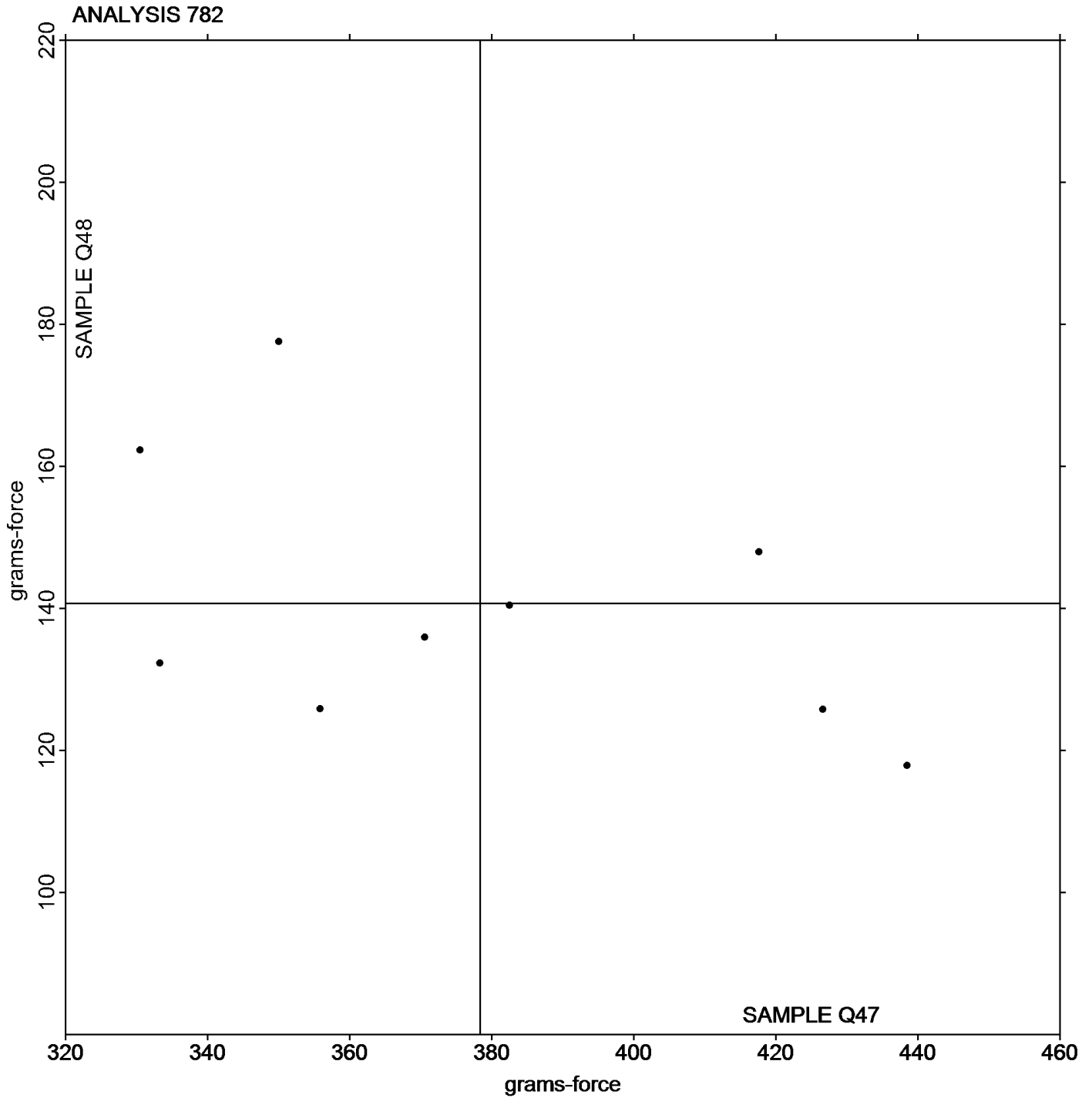
Report #104

Analysis 782

4th Qtr 2017

Tear Resistance of Films

Grand Mean Sample Q47: 378.38 grams-force Grand Mean Sample Q48: 140.66 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 #104

Analysis 785

4th Qtr 2017

Percent Haze of Film

WebCode	Data Flag	Sample D47			Sample D48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3P2L2F		26.988	0.471	0.20	31.013	0.147	0.05	BJ
4NLQUD		27.575	1.059	0.44	32.338	1.472	0.53	BJ
69AUQ6		28.050	1.534	0.64	31.538	0.672	0.24	BG
6TFZNC		27.538	1.021	0.43	32.963	2.097	0.75	BJ
7HAEUH	*	31.275	4.759	1.98	34.700	3.835	1.37	DA
8R9NKE		27.875	1.359	0.57	32.113	1.247	0.45	BJ
8VTT3A		27.913	1.396	0.58	32.475	1.610	0.57	BJ
B8HH28		22.919	-3.598	-1.50	26.070	-4.795	-1.71	XR
HJ7YNK		27.988	1.471	0.61	32.738	1.872	0.67	BJ
JFKU72		23.690	-2.826	-1.18	26.561	-4.304	-1.54	HC
JWN9MV		22.926	-3.590	-1.50	27.006	-3.859	-1.38	XR
LCCYXH		28.113	1.596	0.66	32.800	1.935	0.69	BJ
LVLZQV		26.888	0.371	0.15	31.663	0.797	0.28	BJ
M67TEW		27.854	1.338	0.56	31.520	0.655	0.23	BJ
PGVP9U		22.663	-3.854	-1.61	26.838	-4.028	-1.44	BH
PVUABR		26.638	0.121	0.05	31.225	0.360	0.13	BJ
QDQGHP		27.300	0.784	0.33	31.725	0.860	0.31	BJ
QNTGGN	*	19.275	-7.241	-3.02	22.138	-8.728	-3.12	XR
RXTJYQ		26.575	0.059	0.02	30.850	-0.015	-0.01	DS
T7FVHW		26.700	0.184	0.08	31.363	0.497	0.18	BJ
U62XUR		27.463	0.946	0.39	30.363	-0.503	-0.18	BJ
U64HNL		27.975	1.459	0.61	32.038	1.172	0.42	BJ
UTVJXZ		23.858	-2.659	-1.11	28.660	-2.205	-0.79	HL
VHMLC4		28.175	1.659	0.69	33.438	2.572	0.92	BJ
WA9692		27.500	0.984	0.41	32.150	1.285	0.46	BJ
Y6QNNQ9		27.700	1.184	0.49	33.563	2.697	0.96	BJ
YLXLA8		27.175	0.659	0.27	33.175	2.310	0.82	BJ
Z96J9Q		25.871	-0.645	-0.27	31.215	0.350	0.12	BH



Plastics Interlaboratory Testing Program

Report #104

Analysis 785

4th Qtr 2017

Percent Haze of Film

Summary Statistics

	<u>Sample D47</u>	<u>Sample D48</u>
Grand Means	26.5163 Percent	30.8654 Percent
Stnd Dev Btwn Labs	2.4010 Percent	2.7996 Percent

Statistics based on 28 of 28 reporting participants

Sample D47: LDPE & Sample D48: LDPE

Key to Instrument Codes Reported by Participants

BG BYK-Gardner/Pacific Scientific	BH BYK-Gardner/Pacific Scientific Model XL-211
BJ BYK-Gardner Haze-Gard Plus	DA Datacolor SF 600 Series
DS Diffusion Systems EEL 57D Hazemeter	HC Hunterlab ColorQuest
HL Hunterlab Ultrascan	XR X-Rite Spectrocolorimeter (any model)



Plastics Interlaboratory Testing Program

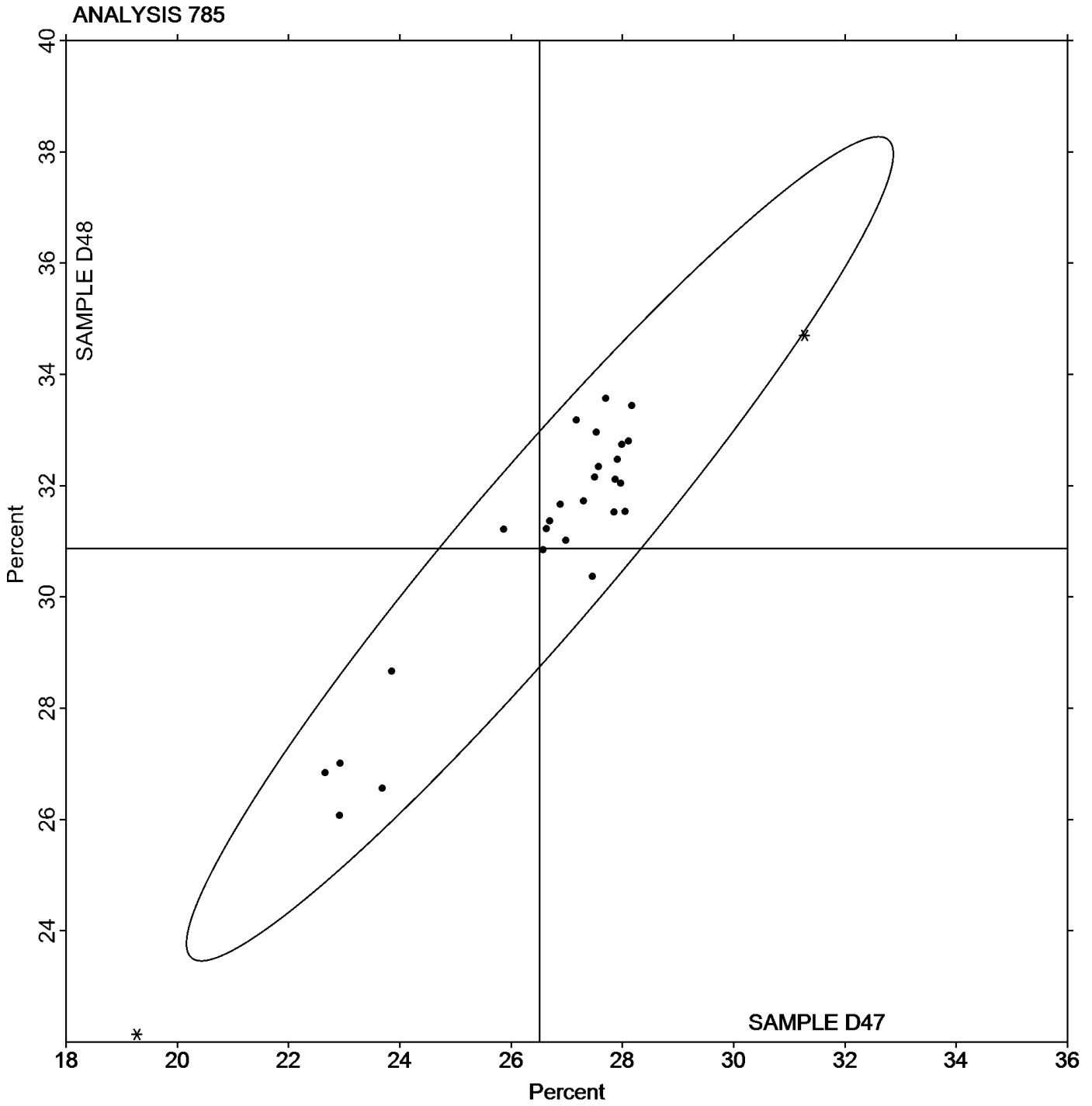
Analysis 785

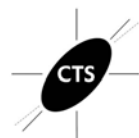
Percent Haze of Film

Report #104

4th Qtr 2017

Grand Mean Sample D47: 26.516 Percent Grand Mean Sample D48: 30.865 Percent





Plastics Interlaboratory Testing Program

Report #104

Analysis 786

4th Qtr 2017

Total Luminous transmittance of film

WebCode	Data Flag	Sample D47			Sample D48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3P2L2F		92.84	1.31	0.61	92.80	1.39	0.63	BJ
4NLQUD		93.60	2.07	0.96	93.56	2.15	0.97	BJ
69AUQ6		92.75	1.22	0.57	92.66	1.25	0.57	BG
6TFZNC		93.86	2.34	1.08	93.65	2.24	1.01	BJ
7HAEUH		89.35	-2.18	-1.01	89.30	-2.11	-0.95	DA
8R9NKE	X	73.00	-18.53	-8.59	70.76	-20.65	-9.35	BJ
8VTT3A		92.80	1.27	0.59	93.14	1.73	0.78	BJ
B8HH28		90.88	-0.65	-0.30	90.74	-0.67	-0.30	XR
HJ7YNK		93.05	1.52	0.71	93.04	1.63	0.74	BJ
JFKU72		89.43	-2.10	-0.97	89.58	-1.83	-0.83	HC
JWN9MV		91.21	-0.31	-0.14	91.23	-0.18	-0.08	XR
LCCYXH	*	85.88	-5.65	-2.62	85.80	-5.61	-2.54	BJ
LVLZQV		92.54	1.01	0.47	92.53	1.12	0.50	BJ
M67TEW		93.03	1.50	0.70	92.98	1.57	0.71	BJ
PGVP9U		90.56	-0.96	-0.45	90.30	-1.11	-0.50	BH
PVUABR		93.28	1.75	0.81	93.24	1.83	0.83	BJ
QDQGHP		93.03	1.50	0.70	92.98	1.57	0.71	BJ
QNTGGN	*	85.58	-5.95	-2.76	85.14	-6.27	-2.84	XR
RXTJYQ		90.80	-0.73	-0.34	90.60	-0.81	-0.37	XX
T7FVHW		92.54	1.01	0.47	92.36	0.95	0.43	BJ
U62XUR		91.14	-0.39	-0.18	91.20	-0.21	-0.09	BJ
U64HNL		93.63	2.10	0.97	93.60	2.19	0.99	BJ
UTQFTN	*	92.06	0.53	0.25	91.30	-0.11	-0.05	XR
UTVJXZ		88.99	-2.54	-1.18	88.65	-2.76	-1.25	HL
VHMLC4		92.54	1.01	0.47	92.25	0.84	0.38	BJ
WA9692		92.68	1.15	0.53	92.74	1.33	0.60	BJ
Y6QNQ9		92.68	1.15	0.53	92.29	0.88	0.40	BJ
YLXLA8		90.50	-1.03	-0.48	90.41	-1.00	-0.45	BJ
Z96J9Q	X	91.48	-0.05	-0.02	92.36	0.95	0.43	BH



Plastics Interlaboratory Testing Program

Report #104

Analysis 786

4th Qtr 2017

Total Luminous transmittance of film

Summary Statistics		
	<u>Sample D47</u>	<u>Sample D48</u>
Grand Means	91.525 Percent	91.410 Percent
Stnd Dev Btwn Labs	2.157 Percent	2.209 Percent
Statistics based on 27 of 29 reporting participants		

Sample D47: LDPE & Sample D48: LDPE

Comments on Assigned Data Flags for Test #786

Z96J9Q (X) - Inconsistent in testing between samples.

8R9NKE (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

Key to Instrument Codes Reported by Participants

- | | |
|---|---|
| BG BYK-Gardner/Pacific Scientific | BH BYK-Gardner/Pacific Scientific Model XL-211 |
| BJ BYK-Gardner Haze-Gard Plus | DA Datacolor SF 600 Series |
| HC Hunterlab ColorQuest | HL Hunterlab Ultrascan XE |
| XR X-Rite Spectrocolorimeter (any model) | XX Instrument make/model not specified by lab |



Plastics Interlaboratory Testing Program

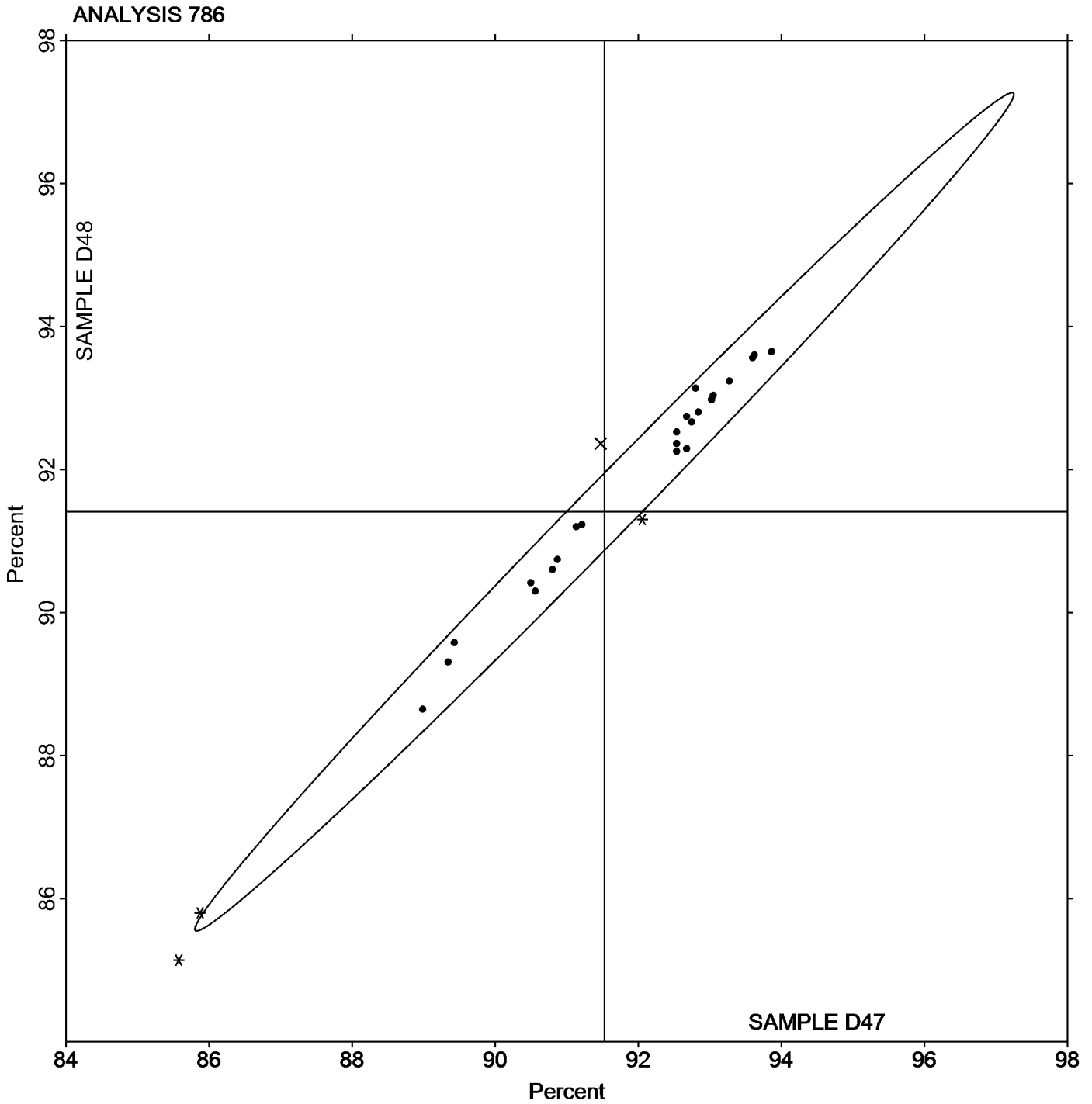
Analysis 786

Total Luminous transmittance of film

Report #104

4th Qtr 2017

Grand Mean Sample D47: 91.525 Percent Grand Mean Sample D48: 91.410 Percent





Plastics Interlaboratory Testing Program

Report #104

Analysis 790

4th Qtr 2017

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S47			Sample S48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KFBCQ	X	0.79	-8.56	-13.20	0.79	-8.53	-12.17	IN
2KWPHF		9.90	0.55	0.84	9.96	0.64	0.91	TO
2P7LLP		10.09	0.73	1.13	10.17	0.85	1.21	TO
36E24B		9.38	0.02	0.03	9.19	-0.13	-0.19	TO
36RMLY		8.67	-0.69	-1.06	8.56	-0.77	-1.10	WZ
39E9MM		10.34	0.99	1.52	10.85	1.53	2.18	TM
3P2L2F		9.90	0.55	0.84	9.52	0.20	0.29	TY
3PH6JR		7.99	-1.37	-2.11	7.99	-1.34	-1.91	CS
3WJB7G		9.69	0.34	0.52	9.62	0.29	0.42	CE
3Z3D4E		9.38	0.03	0.05	8.68	-0.65	-0.92	TO
4NLQUD	X	3.19	-6.16	-9.50	3.15	-6.18	-8.81	CE
626VEF		9.61	0.26	0.39	9.61	0.29	0.41	TO
7X46QE		8.41	-0.95	-1.46	8.52	-0.80	-1.14	TO
7ZBLMP		10.27	0.91	1.41	10.36	1.04	1.48	TM
8DUKZ6		9.79	0.43	0.67	9.77	0.45	0.64	WZ
8F2P3T		9.26	-0.10	-0.15	8.95	-0.37	-0.53	TO
8VTT3A	*	9.40	0.05	0.07	10.28	0.95	1.36	TO
9FTCQG		8.95	-0.41	-0.63	9.25	-0.07	-0.11	TM
9UEEJ8	X	9.93	0.57	0.88	10.96	1.63	2.33	TO
AM8LBV		7.86	-1.49	-2.30	7.90	-1.42	-2.03	TO
AY8XXB		9.10	-0.26	-0.40	9.05	-0.28	-0.40	WZ
BZT8HV		8.27	-1.08	-1.66	8.74	-0.58	-0.83	TO
C3VD92		10.03	0.68	1.04	10.00	0.68	0.97	TO
CAXFG9		9.89	0.53	0.82	9.98	0.66	0.94	TM
CVHBEL		8.92	-0.44	-0.68	9.24	-0.09	-0.12	CE
DRQN46		8.65	-0.70	-1.08	8.58	-0.74	-1.06	TO
E2GG7U		10.13	0.78	1.20	9.58	0.25	0.36	WZ
EHJE86		8.41	-0.95	-1.46	8.41	-0.91	-1.30	XX
EMZLQX		8.97	-0.38	-0.59	9.62	0.30	0.43	WZ
EVPALZ		9.84	0.49	0.75	9.98	0.65	0.93	CE
FQU3FW		9.33	-0.03	-0.04	9.72	0.40	0.57	CE
GWDKBJ		10.03	0.68	1.04	10.12	0.79	1.13	WZ
HKFXQG		9.09	-0.27	-0.41	8.88	-0.44	-0.63	CE
J2H8VY		9.61	0.26	0.40	9.21	-0.12	-0.17	TM
JFKU72	*	7.71	-1.64	-2.53	7.38	-1.94	-2.77	CE



Plastics Interlaboratory Testing Program

Report #104

Analysis 790

4th Qtr 2017

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S47			Sample S48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
KZHKXL		9.65	0.30	0.46	9.59	0.26	0.38	XX
LCCYXH		10.26	0.90	1.39	10.26	0.93	1.33	TM
M2CPRK		9.22	-0.14	-0.21	8.79	-0.54	-0.76	DY
MMREX3		9.09	-0.27	-0.41	8.95	-0.37	-0.53	TO
PQJCPQ		10.08	0.72	1.11	10.22	0.90	1.28	CE
PYA22K		9.31	-0.04	-0.06	9.24	-0.08	-0.11	WZ
Q44F4Z		9.13	-0.22	-0.34	9.20	-0.13	-0.18	TM
QDQGHP		9.52	0.16	0.25	9.38	0.05	0.07	TM
QLGYXH		9.15	-0.20	-0.31	8.83	-0.49	-0.70	BA
QNTGGN		7.76	-1.59	-2.46	7.86	-1.47	-2.09	TO
R4DQDP	X	6.17	-3.19	-4.91	4.65	-4.67	-6.66	TM
R76UZ6		9.68	0.33	0.50	9.64	0.31	0.45	TO
RG77KY		8.93	-0.42	-0.65	8.48	-0.84	-1.20	TM
RJVC2P		10.49	1.13	1.75	10.37	1.05	1.49	TO
T7ZRUI		9.55	0.19	0.30	9.60	0.28	0.40	TO
TGKRUI		9.17	-0.19	-0.29	9.05	-0.27	-0.39	CE
TX7F3A	X	3.21	-6.15	-9.47	3.12	-6.20	-8.85	CE
U62XUR		9.94	0.58	0.90	9.85	0.52	0.74	TO
U64HNL		9.69	0.34	0.53	9.29	-0.03	-0.05	TO
UWT7MH		9.45	0.10	0.15	9.05	-0.27	-0.39	TO
V7DYCJ		9.09	-0.27	-0.41	9.28	-0.05	-0.07	TO
VFHYVJ	X	3.50	-5.86	-9.02	3.21	-6.12	-8.73	TM
VRBFKK		9.51	0.15	0.24	9.53	0.21	0.30	XX
WFYEHY	X	35.64	26.29	40.51	38.04	28.72	40.96	XX
WHMQG6		10.11	0.75	1.16	10.25	0.93	1.32	TO
WNTM26		9.71	0.36	0.55	9.94	0.62	0.88	CE
XG8YXM		8.88	-0.47	-0.73	8.90	-0.42	-0.60	TO
XLJWB2		9.41	0.05	0.08	9.55	0.22	0.32	TO
YWCULD		9.54	0.19	0.29	9.53	0.21	0.30	TO
YZUZCL	*	9.75	0.39	0.60	8.76	-0.57	-0.81	CE
ZAXNDX		8.98	-0.38	-0.58	9.04	-0.28	-0.40	TO



Plastics Interlaboratory Testing Program

Report #104

Analysis 790

4th Qtr 2017

Notched Izod Impact - ft.lbf/in

Summary Statistics		
	<u>Sample S47</u>	<u>Sample S48</u>
Grand Means	9.354 ft.lbf/in	9.324 ft.lbf/in
Stnd Dev Btwn Labs	0.649 ft.lbf/in	0.701 ft.lbf/in

Statistics based on 59 of 66 reporting participants

Sample S47: ABS/PC & Sample S48: ABS/PC

Comments on Assigned Data Flags for Test #790

- VFHYVJ (X) - Data for both samples are low. Possible Systematic Error.
- 4NLQUD (X) - Data for both samples are low. Possible Systematic Error.
- TX7F3A (X) - Data for both samples are low. Possible Systematic Error.
- 2KFBCQ (X) - Data for both samples are very low. Possible Systematic Error.
- WFYEHY (X) - Extreme data.
- 9UEEJ8 (X) - Inconsistent in testing between samples.
- R4DQDP (X) - Data for both samples are low. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

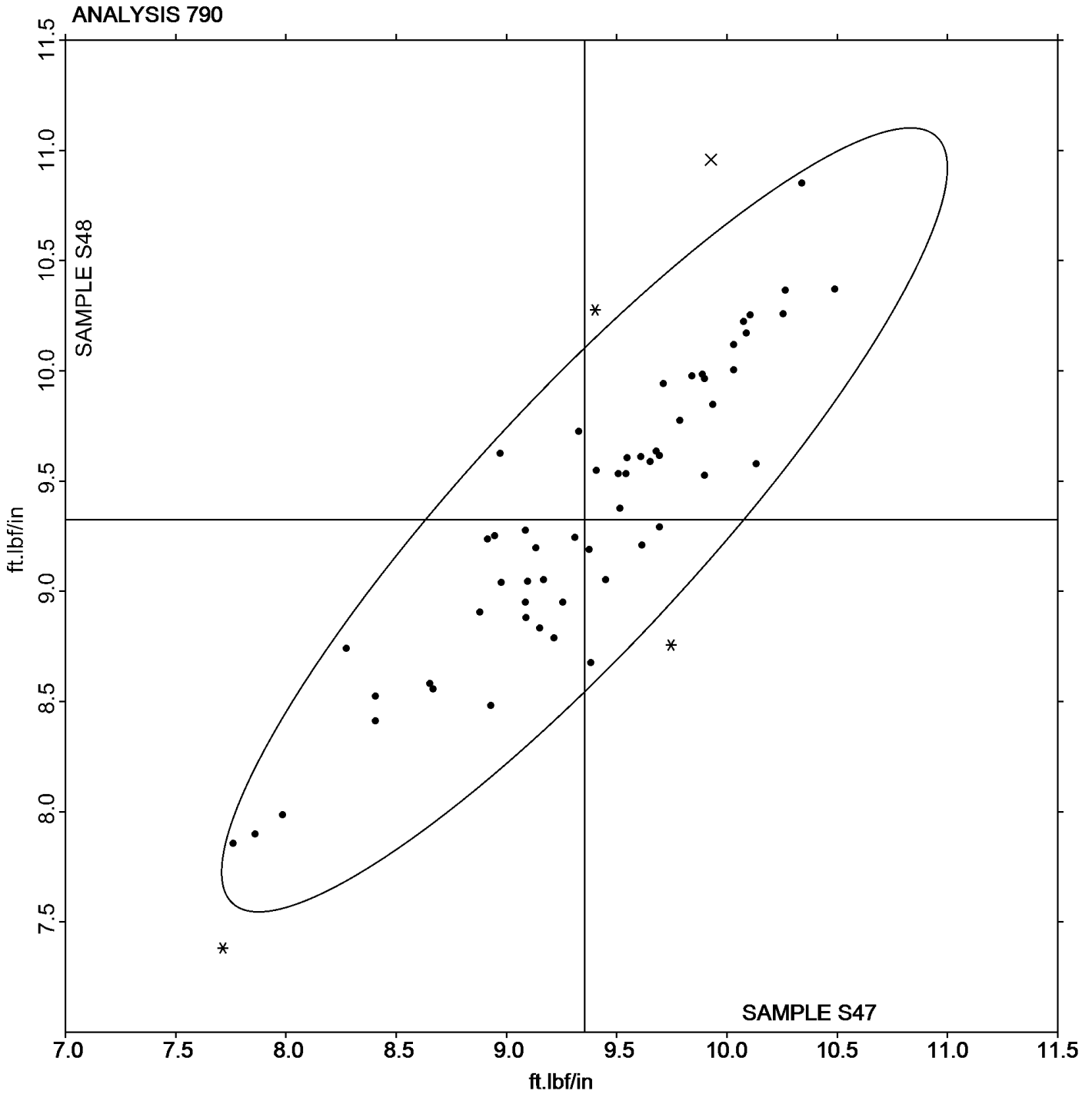
Analysis 790

Notched Izod Impact - ft.lbf/in

Report #104

4th Qtr 2017

Grand Mean Sample S47: 9.3539 ft.lbf/in Grand Mean Sample S48: 9.3238 ft.lbf/in





Plastics Interlaboratory Testing Program

Report #104

Analysis 791

4th Qtr 2017

Notched Izod Impact - kJ/m²

WebCode	Data Flag	Sample Z47			Sample Z48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3LZW6Z		40.86636	0.89867	0.35	39.35180	-0.70812	-0.30	TO
3P2L2F		39.41400	-0.55369	-0.22	39.09600	-0.96392	-0.40	XX
4QVVAM		40.92200	0.95431	0.37	40.43000	0.37008	0.15	CE
4TZLAB		38.55200	-1.41569	-0.56	39.33200	-0.72792	-0.30	TO
4VQFHD		41.33200	1.36431	0.54	40.52600	0.46608	0.19	CE
69AUQ6		42.42400	2.45631	0.96	43.98800	3.92808	1.64	WZ
7TACDC		40.72980	0.76211	0.30	40.64220	0.58228	0.24	TM
9UUZQN	X	48.38000	8.41231	3.30	43.51600	3.45608	1.44	IN
9WHCPT		39.95000	-0.01769	-0.01	40.14400	0.08408	0.04	CE
BQATFT		43.46000	3.49231	1.37	42.28000	2.22008	0.93	TO
BZT8HV		36.57180	-3.39589	-1.33	35.83440	-4.22552	-1.77	TO
C3VD92		43.16000	3.19231	1.25	43.20000	3.14008	1.31	TO
E2U9U6		36.48200	-3.48569	-1.37	36.72200	-3.33792	-1.40	TO
GAEDQA		41.08000	1.11231	0.44	40.34000	0.28008	0.12	TM
GQMBYZ		42.40340	2.43571	0.96	40.90080	0.84088	0.35	CE
GRX7GX		36.54600	-3.42169	-1.34	38.74800	-1.31192	-0.55	CE
HJ7YNK		34.76000	-5.20769	-2.05	34.60000	-5.45992	-2.28	CE
J7ER7A		39.86540	-0.10229	-0.04	39.41960	-0.64032	-0.27	XX
JQHD4V		37.65340	-2.31429	-0.91	39.54400	-0.51592	-0.22	CE
LNYP6		38.47600	-1.49169	-0.59	40.03600	-0.02392	-0.01	TO
MAJP6T		44.80000	4.83231	1.90	44.32600	4.26608	1.78	WZ
MN646L		37.24000	-2.72769	-1.07	37.41400	-2.64592	-1.11	WZ
N3RTMV		39.54000	-0.42769	-0.17	39.87000	-0.18992	-0.08	TM
NADWMB		44.90000	4.93231	1.94	45.12000	5.06008	2.12	TO
NUNHRQ		40.23160	0.26391	0.10	41.18240	1.12248	0.47	XX
PYA22K		39.90800	-0.05969	-0.02	40.54200	0.48208	0.20	WZ
Q44F4Z		37.56880	-2.39889	-0.94	37.70540	-2.35452	-0.98	TM
R76UZ6		41.06000	1.09231	0.43	41.12000	1.06008	0.44	TO
T7ZR UW		39.19880	-0.76889	-0.30	39.26320	-0.79672	-0.33	TO



Plastics Interlaboratory Testing Program

Report #104

Analysis 791

4th Qtr 2017

Notched Izod Impact - kJ/m²

Summary Statistics	Sample Z47	Sample Z48
Grand Means	39.967691 kJ/m ²	40.059921 kJ/m ²
Stnd Dev Btwn Labs	2.546442 kJ/m ²	2.392161 kJ/m ²
Statistics based on 28 of 29 reporting participants		

Sample Z47: ABS/PC & Sample Z48: ABS/PC

Comments on Assigned Data Flags for Test #791

9UUZQN (X) - Inconsistent in testing between samples, data for sample Z47 are high. Inconsistent within the determinations of sample Z47.

Key to Instrument Codes Reported by Participants

CE Ceast

IN Instron

TM TMI

TO Tinius Olsen

WZ Zwick

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

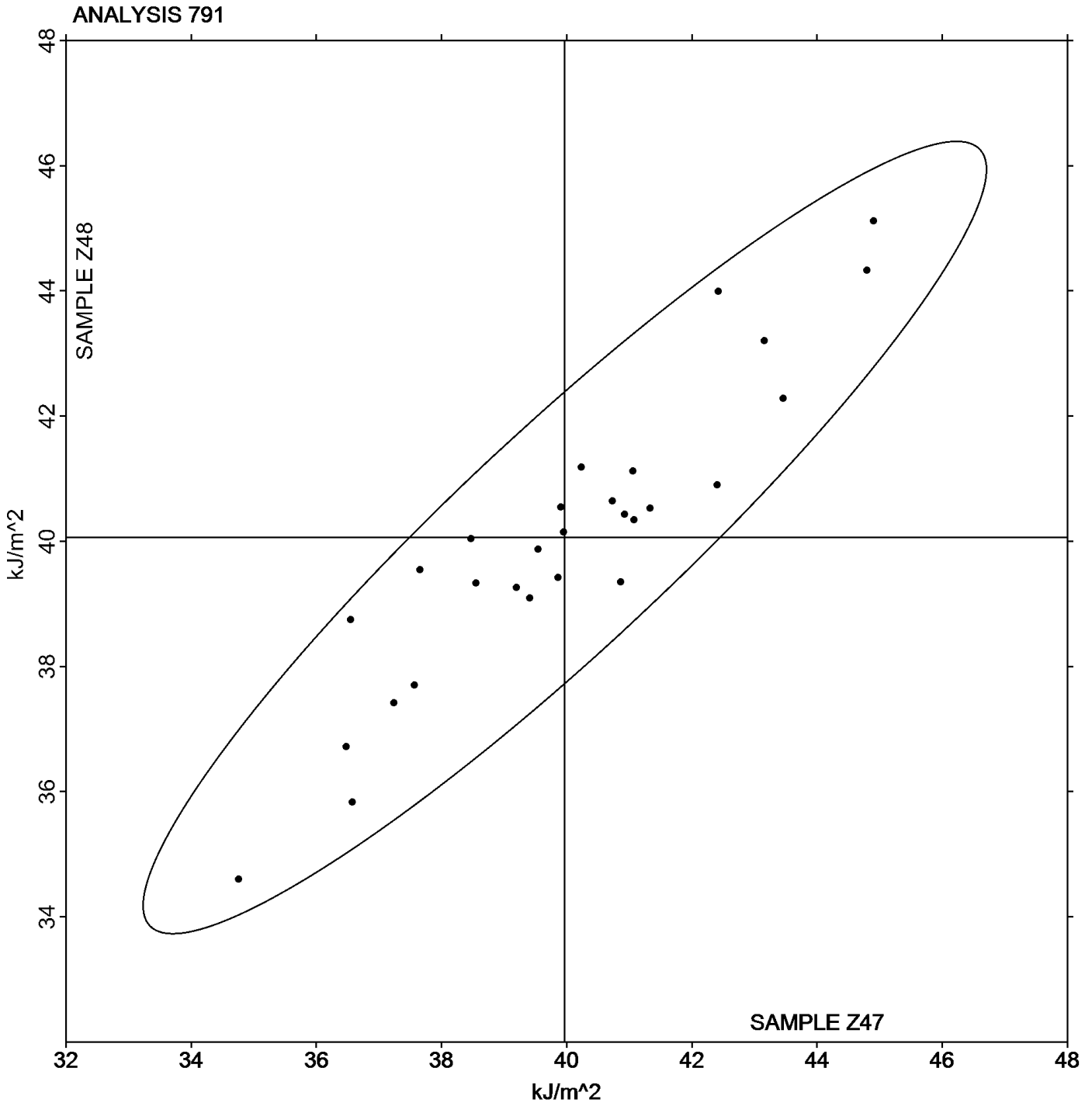
Analysis 791

Notched Izod Impact - kJ/m^2

Report #104

4th Qtr 2017

Grand Mean Sample Z47: 39.968 kJ/m^2 Grand Mean Sample Z48: 40.060 kJ/m^2





Plastics Interlaboratory Testing Program

Report #104

Analysis 792

4th Qtr 2017

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M47			Sample M48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36E24B		42.60	1.23	0.37	43.74	1.53	0.44	TO
36RMLY		35.75	-5.62	-1.70	37.63	-4.59	-1.33	WZ
3P2L2F		41.26	-0.11	-0.03	41.78	-0.44	-0.13	TY
3WJB7G		42.22	0.86	0.26	44.60	2.39	0.69	CE
4NLQUD	X	45.07	3.71	1.12	34.45	-7.77	-2.25	CE
4TZLAB		39.38	-1.98	-0.60	39.70	-2.51	-0.73	TO
7CHGXE		44.72	3.35	1.01	47.06	4.85	1.40	XX
7LCHFD		43.84	2.47	0.75	43.34	1.13	0.33	IN
7TACDC		40.39	-0.97	-0.29	40.64	-1.58	-0.46	TM
8F2P3T	*	43.38	2.01	0.61	48.14	5.93	1.71	TO
8NVUYF		43.64	2.27	0.69	43.42	1.21	0.35	WZ
8VTT3A		41.89	0.52	0.16	40.70	-1.51	-0.44	TO
9WHCPT		43.66	2.29	0.69	43.01	0.80	0.23	CE
C3VD92		46.84	5.47	1.66	44.66	2.45	0.71	TO
CVHBEL		37.38	-3.99	-1.21	37.88	-4.34	-1.25	CE
E2U9U6		38.91	-2.45	-0.74	39.52	-2.70	-0.78	TO
EANC38		43.94	2.58	0.78	44.75	2.54	0.73	WZ
EVPALZ		45.42	4.05	1.23	45.87	3.66	1.06	CE
GBVD2C		42.74	1.37	0.42	44.06	1.85	0.53	CE
GQMBYZ		44.83	3.46	1.05	45.19	2.98	0.86	CE
GRX7GX		40.61	-0.75	-0.23	39.43	-2.78	-0.80	CE
HLARK6		41.75	0.38	0.12	42.04	-0.17	-0.05	TM
HQ36RL		42.70	1.33	0.40	46.10	3.89	1.13	WZ
LCCYXH		42.66	1.29	0.39	45.94	3.73	1.08	TM
LNYP6		41.86	0.49	0.15	42.36	0.14	0.04	TO
M4EQU3		44.81	3.44	1.04	44.29	2.07	0.60	WZ
MAJP6T		40.91	-0.46	-0.14	42.72	0.51	0.15	WZ
MN646L		40.21	-1.16	-0.35	38.80	-3.41	-0.99	WZ
MYCZW3		41.79	0.43	0.13	42.41	0.20	0.06	CE
PYA22K		43.68	2.31	0.70	43.88	1.67	0.48	WZ
Q44F4Z		39.27	-2.09	-0.63	40.65	-1.56	-0.45	TM
QELWYR		35.18	-6.18	-1.87	35.37	-6.84	-1.98	WZ
QVMVRN		42.82	1.45	0.44	42.78	0.57	0.16	TO
QXQNN8		36.68	-4.69	-1.42	40.44	-1.77	-0.51	CE
R76UZ6		45.28	3.91	1.18	47.16	4.94	1.43	TO



Plastics Interlaboratory Testing Program

Report #104

Analysis 792

4th Qtr 2017

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M47			Sample M48			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
TGKRUZ		40.55	-0.82	-0.25	42.15	-0.06	-0.02	CE
UDEQ6M		39.61	-1.75	-0.53	42.11	-0.10	-0.03	TM
VRBFKK		35.22	-6.15	-1.86	35.28	-6.93	-2.01	XX
WFYEHY	*	31.22	-10.15	-3.07	32.16	-10.05	-2.91	XX
WNTM26		43.70	2.33	0.71	44.54	2.33	0.67	CE

Summary Statistics		
	Sample M47	Sample M48
Grand Means	41.367 kJ/m ²	42.213 kJ/m ²
Stnd Dev Btwn Labs	3.304 kJ/m ²	3.457 kJ/m ²
Statistics based on 39 of 40 reporting participants		

Sample M47: ABS/PC & Sample M48: ABS/PC

Comments on Assigned Data Flags for Test #792

4NLQUD (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample M48.

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

Report #104

Analysis 792

4th Qtr 2017

Notched Charpy Impact - kJ/m²

Grand Mean Sample M47: 41.367 kJ/m² Grand Mean Sample M48: 42.213 kJ/m²

