

Plastics Interlaboratory Testing Program

Web Summary Report #129, 1st Qtr 2024

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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, agriculture, hemp, 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 100 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.



Plastics Interlaboratory Testing Program

Results Summary for Report #129, 1st Qtr 2024

Analysis 704 - Tensile Stress at Yield

Material: ABS	Sample F97	6,659.96	psi	2.01% COV
	Sample F98	6,674.35	psi	1.99% COV

Analysis 705 - Tensile Stress at Break

Material: ABS	Sample F97	5,149.93	psi	3.10% COV
	Sample F98	5,137.45	psi	3.18% COV

Analysis 706 - Percent Elongation at Yield

Material: ABS	Sample F97	2.4135	Percent	3.12% COV
	Sample F98	2.4127	Percent	3.21% COV

Analysis 708 - Modulus of Elasticity

Material: ABS	Sample F97	354.92	ksi	3.76% COV
	Sample F98	355.95	ksi	3.98% COV

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

Material: ABS/PC	Sample E97	104.79	Degrees C	1.63% COV
	Sample E98	104.71	Degrees C	1.34% COV

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

Material: PP	Sample G97	93.264	Degrees C	4.24% COV
	Sample G98	91.790	Degrees C	3.62% COV

Analysis 712 - Temperature of Deflection (1.80 MPa)

Material: ABS/PC	Sample N97	104.48	Degrees C	1.61% COV
	Sample N98	104.37	Degrees C	1.38% COV

Analysis 715 - Vicat Temperature (Rate A)

Material: ABS/PC	Sample H97	139.72	Degrees C	0.495% COV
	Sample H98	139.77	Degrees C	0.494% COV

Analysis 716 - Vicat Temperature (Rate B)

Material: ABS/PC	Sample R97	141.39	Degrees C	0.584% COV
	Sample R98	141.45	Degrees C	0.591% COV

Analysis 718 - Specific Gravity

Material: ABS/PC	Sample T97	1.1371	sp gr 23/23 C	0.254% COV
	Sample T98	1.1373	sp gr 23/23 C	0.240% COV

Analysis 720 - Flexural Modulus

Material: ABS/PC	Sample J97	342.64	ksi	5.16% COV
	Sample J98	343.47	ksi	5.27% COV

Analysis 721 - Flexural Stress at 5% Strain

Material: ABS/PC	Sample J97	11,669.06	psi	3.42% COV
	Sample J98	11,685.97	psi	3.30% COV

Analysis 722 - Flexural Stress at Yield

Material: ABS/PC	Sample J97	11,772.41	psi	4.03% COV
	Sample J98	11,780.46	psi	4.00% COV

Analysis 730 - Tensile Stress at Yield, ISO Method

Material: ABS	Sample C97	45.643	MPa	1.73% COV
	Sample C98	45.658	MPa	1.81% COV

Analysis 731 - Tensile Stress at Break, ISO Method

Material: ABS	Sample C97	34.347	MPa	3.17% COV
	Sample C98	34.338	MPa	3.43% COV



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Results Summary for Report #129, 1st Qtr 2024

Analysis 732 - Strain at Yield, ISO Method

Material: ABS	Sample C97	2.4357	Percent	3.45% COV
	Sample C98	2.4316	Percent	3.66% COV

Analysis 734 - Modulus of Elasticity, ISO Method

Material: ABS	Sample C97	2,374.64	MPa	2.80% COV
	Sample C98	2,378.69	MPa	3.49% COV

Analysis 736 - Flexural Modulus

Material: ABS	Sample K97	2,396.59	MPa	3.33% COV
	Sample K98	2,391.03	MPa	3.63% COV

Analysis 737 - Flexural Stress at 3.5% Strain

Material: ABS	Sample K97	68.678	MPa	2.60% COV
	Sample K98	68.677	MPa	2.55% COV

Analysis 738 - Flexural Stress at Yield

Material: ABS	Sample K97	69.628	MPa	1.91% COV
	Sample K98	69.714	MPa	1.82% COV

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

Material: HDPE	Sample X97	6.6687	grams/10 mins	2.87% COV
	Sample X98	6.6833	grams/10 mins	3.06% COV

Analysis 755 - Moisture Content

Material: HIPS	Sample Y97	0.01649	Percent	47.0% COV
	Sample Y98	0.01631	Percent	54.1% COV

Analysis 757 - Ash Content

Material: PP	Sample L97	20.668	Percent	0.335% COV
	Sample L98	20.666	Percent	0.305% COV

Analysis 758 - TGA

Material: PBT	Sample A97	69.170	Percent	2.54% COV
	Sample A98	69.047	Percent	2.61% COV

Analysis 760 - DSC Crystallization Temperature

Material: PP	Sample W97	106.52	Degrees Celsius	2.23% COV
	Sample W98	106.64	Degrees Celsius	2.38% COV

Analysis 761 - DSC Melt Temperature

Material: PP	Sample W97	165.11	Degrees Celsius	1.01% COV
	Sample W98	164.79	Degrees Celsius	1.03% COV

Analysis 762 - DSC Enthalpy of Crystallization

Material: PP	Sample W97	101.96	Joules Per Gram	9.93% COV
	Sample W98	102.52	Joules Per Gram	10.0% COV

Analysis 763 - DSC Enthalpy of Fusion

Material: PP	Sample W97	96.312	Joules Per Gram	11.6% COV
	Sample W98	96.729	Joules Per Gram	11.2% COV

Analysis 764 - DSC Glass Transition Temperature

Material: ABS	Sample V97	109.52	Degrees Celsius	2.45% COV
	Sample V98	109.37	Degrees Celsius	2.29% COV

Analysis 765 - Research Crystallization Peak Temperature

Material: PP	Sample W97	106.84	Degrees Celsius	2.51% COV
	Sample W98	107.09	Degrees Celsius	2.67% COV



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Results Summary for Report #129, 1st Qtr 2024

Analysis 766 - Research Melting Peak Temperature

Material: PP	Sample W97	164.02	Degrees Celsius	1.11% COV
	Sample W98	163.86	Degrees Celsius	0.755% COV

Analysis 767 - Research Heat of Crystallization

Material: PP	Sample W97	102.62	Joules Per Gram	13.1% COV
	Sample W98	103.27	Joules Per Gram	13.4% COV

Analysis 768 - Research Heat of Fusion

Material: PP	Sample W97	98.325	Joules Per Gram	12.8% COV
	Sample W98	98.097	Joules Per Gram	13.2% COV

Analysis 769 - Research Glass Transition Temperature

Material: ABS	Sample V97	107.45	Degrees Celsius	2.20% COV
	Sample V98	107.21	Degrees Celsius	2.13% COV

Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B97	1,800.86	psi	11.0% COV
	Sample B98	1,768.86	psi	12.7% COV

Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B97	3,695.56	psi	12.5% COV
	Sample B98	3,563.30	psi	16.3% COV

Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B97	47.024	Percent	73.9% COV
	Sample B98	49.078	Percent	75.1% COV

Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B97	755.81	Percent	22.8% COV
	Sample B98	748.66	Percent	24.6% COV

Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B97	3.6803	mils	2.52% COV
	Sample B98	3.6620	mils	3.07% COV

Analysis 775 - Secant Modulus at 1% Strain

Material: LDPE	Sample B97	32,625.58	psi	11.2% COV
	Sample B98	32,419.57	psi	9.47% COV

Analysis 776 - Secant Modulus at 2% Strain

Material: LDPE	Sample B97	27,791.99	psi	7.32% COV
	Sample B98	27,779.93	psi	7.20% COV

Analysis 780 - Static Friction

Material: LDPE	Sample P97	0.20866	COF	24.4% COV
	Sample P98	0.18711	COF	18.6% COV

Analysis 781 - Kinetic Friction

Material: LDPE	Sample P97	0.15498	COF	24.2% COV
	Sample P98	0.13962	COF	29.4% COV

Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q97	344.09	grams-force	13.3% COV
	Sample Q98	381.60	grams-force	14.8% COV

Analysis 785 - Percent Haze

Material: LDPE	Sample D97	11.580	Percent	5.96% COV
	Sample D98	11.962	Percent	4.99% COV



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Results Summary for Report #129, 1st Qtr 2024

Analysis 786 - Total Transmittance

Material: LDPE	Sample D97	92.683	Percent	1.28% COV
	Sample D98	92.869	Percent	1.26% COV

Analysis 790 - Notched Izod Impact

Material: ABS/PC	Sample S97	10.706	ft.lbf/in	6.54% COV
	Sample S98	10.739	ft.lbf/in	6.10% COV

Analysis 791 - Notched Izod Impact

Material: HIPS	Sample Z97	9.4223	kJ/m ²	5.32% COV
	Sample Z98	9.4188	kJ/m ²	5.30% COV

Analysis 792 - Notched Charpy Impact

Material: ABS/PC	Sample M97	49.726	kJ/m ²	9.03% COV
	Sample M98	49.674	kJ/m ²	10.9% COV



Plastics Interlaboratory Testing Program

Report #129

Analysis 704

1st Qtr 2024

Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F97			Sample F98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2NN4L7		6,590.0	-70.0	-0.52	6,620.0	-54.4	-0.41
2YLFCF		6,778.0	118.0	0.88	6,770.0	95.6	0.72
4DCQG9		6,667.4	7.5	0.06	6,754.8	80.4	0.60
4HRY68		6,597.3	-62.6	-0.47	6,607.6	-66.8	-0.50
4NYP9D		6,659.4	-0.6	0.00	6,714.4	40.0	0.30
4RX9LT		6,543.4	-116.6	-0.87	6,641.4	-33.0	-0.25
6L6QKL		6,670.0	10.0	0.08	6,690.0	15.6	0.12
6L8TJJ		6,662.6	2.6	0.02	6,638.2	-36.2	-0.27
6VWGG8		6,445.5	-214.4	-1.60	6,480.3	-194.0	-1.46
7T46RL		6,684.6	24.6	0.18	6,798.8	124.4	0.93
7YPX77		6,680.8	20.8	0.16	6,663.7	-10.7	-0.08
9282Q9		6,679.4	19.4	0.15	6,677.2	2.8	0.02
93EGXE		6,787.3	127.4	0.95	6,825.6	151.3	1.14
9VY6XF		6,574.0	-86.0	-0.64	6,654.0	-20.4	-0.15
9WBDA2		6,567.2	-92.8	-0.69	6,590.8	-83.6	-0.63
AYY9AF		6,637.0	-23.0	-0.17	6,598.4	-75.9	-0.57
B48PJ4		6,500.0	-160.0	-1.20	6,472.0	-202.4	-1.52
C7PXWG	*	6,456.0	-204.0	-1.52	6,588.0	-86.4	-0.65
DEHZPX		6,650.0	-10.0	-0.07	6,666.0	-8.4	-0.06
EG38Q6		6,601.0	-59.0	-0.44	6,648.6	-25.8	-0.19
GAWAVX		6,634.4	-25.6	-0.19	6,606.2	-68.1	-0.51
GDF9T		6,699.6	39.6	0.30	6,694.8	20.4	0.15
GTK4E8	X	6,803.6	143.6	1.07	6,523.8	-150.6	-1.13
HD7MXC		6,723.0	63.0	0.47	6,800.2	125.8	0.95
HMELHR		6,520.9	-139.0	-1.04	6,445.4	-228.9	-1.72
JCUFJ3		6,651.0	-9.0	-0.07	6,697.8	23.4	0.18
JQVAWW		6,758.8	98.9	0.74	6,758.8	84.5	0.63
JXUVLC		6,355.0	-305.0	-2.28	6,379.0	-295.4	-2.22
K7GCRR		6,703.2	43.2	0.32	6,743.8	69.4	0.52
MW69Q7		6,660.4	0.4	0.00	6,669.0	-5.4	-0.04
NEKBAR		6,505.4	-154.6	-1.16	6,563.0	-111.4	-0.84
QLCKCL		6,596.0	-64.0	-0.48	6,644.0	-30.4	-0.23
RFNW3V	X	6,178.2	-481.8	-3.60	6,146.0	-528.4	-3.97
RLQBWQ		6,461.0	-199.0	-1.49	6,479.0	-195.4	-1.47
TFG4MK		6,972.2	312.2	2.33	6,920.4	246.0	1.85



Plastics Interlaboratory Testing Program

Report #129

Analysis 704

1st Qtr 2024

Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F97			Sample F98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
UHG8YJ		6,673.8	13.9	0.10	6,621.9	-52.5	-0.39
UZ6P42		6,692.4	32.4	0.24	6,702.4	28.0	0.21
W2MQYY		6,589.2	-70.8	-0.53	6,546.4	-128.0	-0.96
XDF3WQ		6,851.6	191.7	1.43	6,842.9	168.6	1.27
XDVG7K		6,584.8	-75.2	-0.56	6,525.2	-149.2	-1.12
Y9JXFQ		6,911.2	251.2	1.88	6,834.4	160.0	1.20
YJIVGR		6,834.2	174.2	1.30	6,815.1	140.7	1.06
YVT2GE		6,561.6	-98.4	-0.74	6,542.2	-132.2	-0.99
YW9RHQ		6,874.0	214.0	1.60	6,912.0	237.6	1.79
YYCM3T		6,695.4	35.4	0.26	6,635.6	-38.8	-0.29
Z44PRR		6,809.4	149.4	1.12	6,892.4	218.0	1.64
ZENU2C		6,948.5	288.5	2.16	6,974.1	299.8	2.25

Summary Statistics

	Sample F97	Sample F98
Grand Means	6,659.96 psi	6,674.35 psi
Std Dev Btwn Labs	133.75 psi	133.11 psi

Statistics based on 45 of 47 reporting participants

Sample F97: ABS & Sample F98: ABS

Comments on Assigned Data Flags for Test #704

GTK4E8 (X) - Inconsistent in testing between samples.

RFNW3V (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

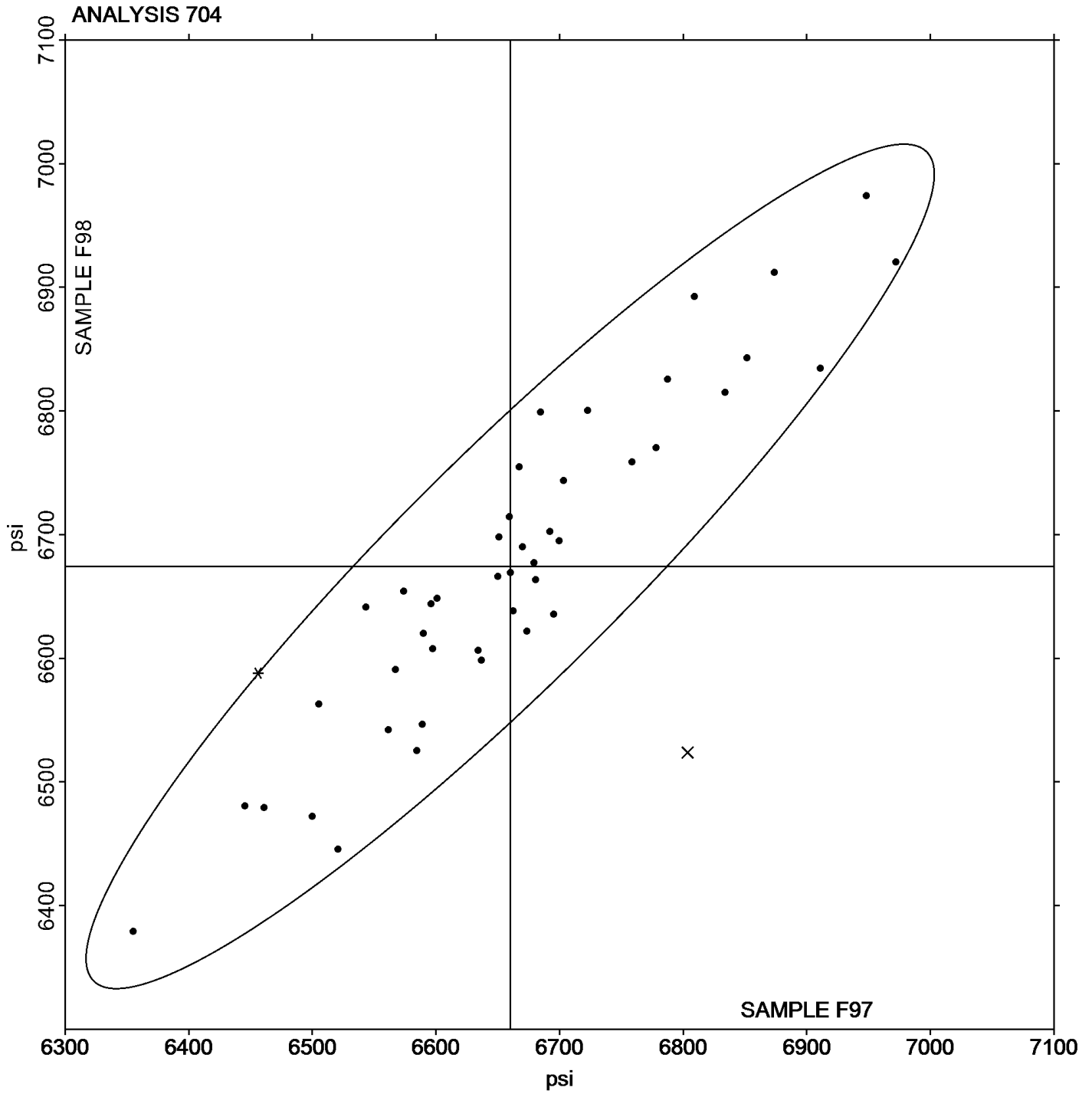
Report #129

Analysis 704

1st Qtr 2024

Tensile Stress at Yield - psi

Grand Mean Sample F97: 6,659.96 psi Grand Mean Sample F98: 6,674.35 psi





Plastics Interlaboratory Testing Program

Report #129

Analysis 705

1st Qtr 2024

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F97			Sample F98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2YLCFP		5,160.0	10.1	0.06	5,178.0	40.6	0.25
4DCQG9		5,022.4	-127.5	-0.80	5,186.3	48.9	0.30
4HRY68		5,095.1	-54.8	-0.34	5,123.5	-14.0	-0.09
4NYP9D		5,169.8	19.9	0.12	5,120.4	-17.0	-0.10
4RX9LT		5,062.2	-87.7	-0.55	5,154.2	16.8	0.10
6L6QKL		5,013.2	-136.7	-0.86	5,084.4	-53.0	-0.32
6VWGG8		5,108.3	-41.7	-0.26	5,079.3	-58.2	-0.36
7KNURM		5,536.8	386.9	2.42	5,500.2	362.8	2.22
7T46RL		5,282.6	132.7	0.83	5,323.4	186.0	1.14
7YPX77		5,080.7	-69.2	-0.43	5,077.5	-59.9	-0.37
9282Q9		5,131.8	-18.1	-0.11	5,065.4	-72.0	-0.44
9VY6XF		5,218.0	68.1	0.43	5,198.0	60.6	0.37
9WBDA2		5,300.6	150.7	0.94	5,175.6	38.2	0.23
AYY9AF		4,937.1	-212.8	-1.33	5,090.0	-47.4	-0.29
B48PJ4		5,358.0	208.1	1.30	5,240.0	102.6	0.63
C7PXWG		4,924.0	-225.9	-1.42	4,954.0	-183.4	-1.12
DEHZPX		5,018.0	-131.9	-0.83	5,112.0	-25.4	-0.16
EG38Q6	*	5,407.0	257.1	1.61	5,090.8	-46.6	-0.29
GAWAVX		5,026.5	-123.5	-0.77	4,966.4	-171.0	-1.05
G DFA9T		5,058.0	-91.9	-0.58	4,994.2	-143.2	-0.88
HD7MXC		5,318.6	168.7	1.06	5,224.0	86.6	0.53
H MELHR		4,871.6	-278.4	-1.74	4,835.4	-302.1	-1.85
HMUDK4		5,000.4	-149.5	-0.94	5,038.8	-98.7	-0.60
JCUFJ3		5,146.2	-3.7	-0.02	5,136.6	-0.8	-0.01
JQVAWW		5,192.4	42.5	0.27	5,279.4	142.0	0.87
JXUVLC		4,878.8	-271.1	-1.70	4,733.2	-404.2	-2.48
K7GCRR		5,240.4	90.5	0.57	5,267.0	129.6	0.79
MW69Q7		5,171.0	21.1	0.13	5,115.6	-21.8	-0.13
NEKBAR		4,986.6	-163.3	-1.02	4,931.6	-205.8	-1.26
RLQBWQ		5,043.0	-106.9	-0.67	5,057.2	-80.2	-0.49
TFG4MK		5,464.8	314.9	1.97	5,468.2	330.8	2.03
UHG8YJ		5,130.2	-19.7	-0.12	5,068.0	-69.4	-0.43
UZ6P42		5,177.6	27.7	0.17	5,265.8	128.4	0.79
W2MQYY		5,254.6	104.7	0.66	5,350.0	212.6	1.30
XDF3WQ		5,146.0	-4.0	-0.02	5,169.2	31.7	0.19



Plastics Interlaboratory Testing Program

Report #129

Analysis 705

1st Qtr 2024

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F97			Sample F98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
XDVG7K		5,180.4	30.5	0.19	4,931.8	-205.6	-1.26
YJVG7K	X	5,753.6	603.7	3.78	5,577.8	440.4	2.70
YVT2GE		4,927.0	-222.9	-1.40	4,960.4	-177.0	-1.08
YW9RHQ		5,290.4	140.5	0.88	5,189.4	52.0	0.32
YYCM3T		5,160.4	10.5	0.07	5,097.2	-40.2	-0.25
Z44PRR		5,210.0	60.1	0.38	5,293.5	156.1	0.96
ZENU2C		5,446.8	296.9	1.86	5,509.4	372.0	2.28

Summary Statistics		Sample F97	Sample F98
Grand Means		5,149.93 psi	5,137.45 psi
Std Dev Btwn Labs		159.55 psi	163.23 psi
Statistics based on 41 of 42 reporting participants			

Sample F97: ABS & Sample F98: ABS

Comments on Assigned Data Flags for Test #705

YJVG7K (X) - Data for both samples are high. Possible Systematic Error.



Plastics Interlaboratory Testing Program

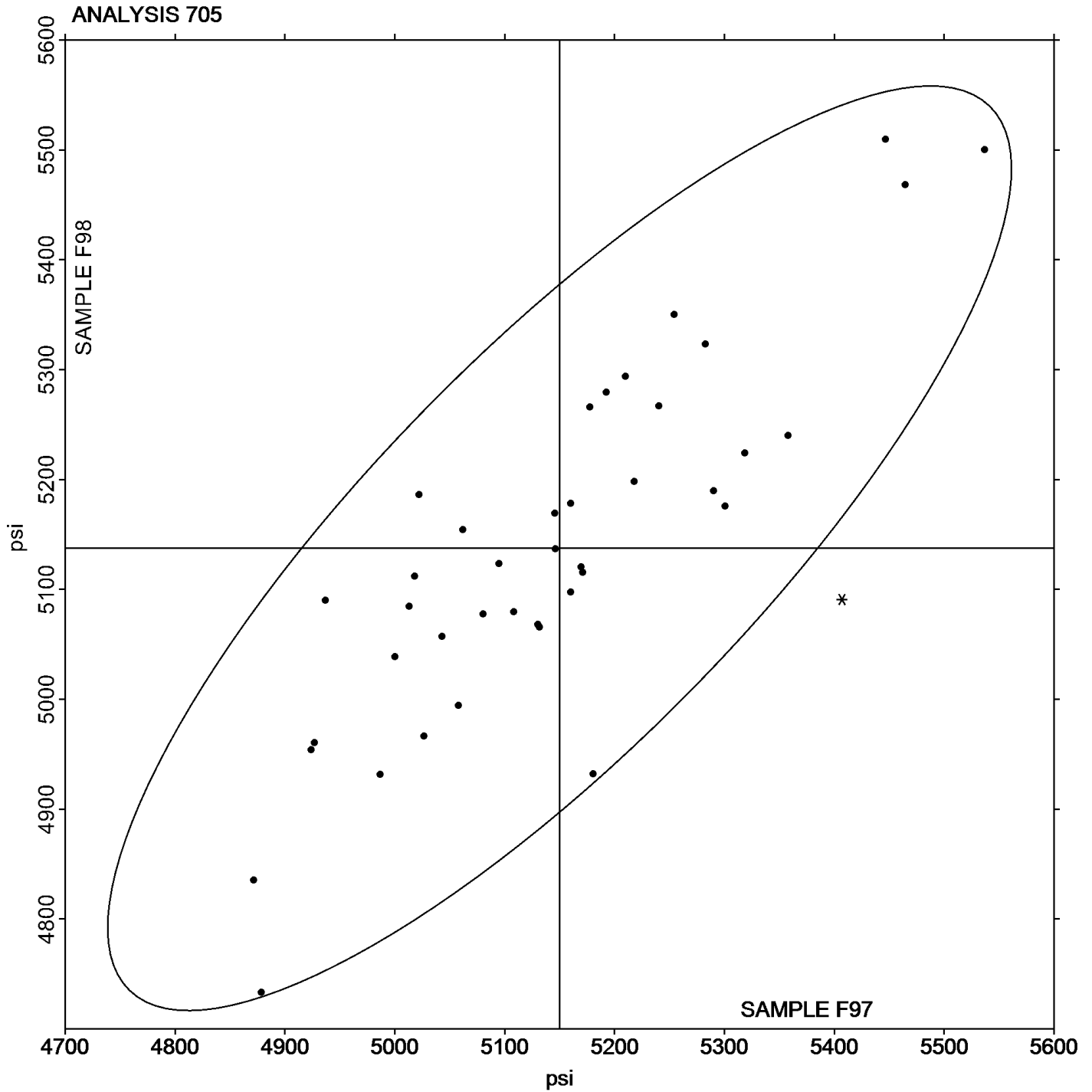
Report #129

Analysis 705

1st Qtr 2024

Tensile Stress at Break - psi

Grand Mean Sample F97: 5,149.93 psi Grand Mean Sample F98: 5,137.45 psi





Plastics Interlaboratory Testing Program

Report #129

Analysis 706

1st Qtr 2024

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F97			Sample F98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2YLCFP	X	1.710	-0.704	-9.34	1.720	-0.693	-8.96
4DCQG9		2.400	-0.014	-0.18	2.406	-0.007	-0.09
4HRY68		2.398	-0.016	-0.21	2.404	-0.009	-0.11
4NYP9D	X	3.366	0.952	12.64	3.362	0.949	12.27
4RX9LT		2.466	0.052	0.70	2.486	0.073	0.95
6L6QKL		2.576	0.162	2.16	2.604	0.191	2.47
6VWGG8		2.284	-0.130	-1.72	2.228	-0.185	-2.39
7T46RL	X	1.894	-0.520	-6.89	2.022	-0.391	-5.05
7YPX77		2.400	-0.014	-0.18	2.388	-0.025	-0.32
9282Q9		2.456	0.042	0.56	2.384	-0.029	-0.37
9VY6XF		2.364	-0.050	-0.66	2.398	-0.015	-0.19
9WBDA2		2.400	-0.014	-0.18	2.448	0.035	0.46
AYY9AF		2.396	-0.018	-0.23	2.424	0.011	0.15
B48PJ4	X	2.900	0.486	6.45	3.310	0.897	11.60
C7PXWG	X	3.054	0.640	8.50	3.028	0.615	7.96
DEHZPX		2.500	0.086	1.15	2.500	0.087	1.13
EG38Q6		2.320	-0.094	-1.24	2.320	-0.093	-1.20
GAWAVX		2.430	0.016	0.22	2.432	0.019	0.25
G DFA9T		2.422	0.008	0.11	2.428	0.015	0.20
GTK4E8	*	2.486	0.072	0.96	2.372	-0.041	-0.53
HD7MXC		2.332	-0.082	-1.08	2.428	0.015	0.20
HMELHR		2.258	-0.156	-2.06	2.330	-0.083	-1.07
JCUFJ3		2.356	-0.058	-0.76	2.380	-0.033	-0.42
JQVAWW		2.368	-0.046	-0.60	2.322	-0.091	-1.17
JXUVLC		2.334	-0.080	-1.06	2.372	-0.041	-0.53
K7GCRR		2.402	-0.012	-0.15	2.408	-0.005	-0.06
MW69Q7		2.405	-0.008	-0.11	2.402	-0.011	-0.14
NEKBAR		2.444	0.030	0.40	2.446	0.033	0.43
RLQBWQ		2.340	-0.074	-0.98	2.310	-0.103	-1.33
TFG4MK		2.500	0.086	1.15	2.466	0.053	0.69
UHG8YJ		2.452	0.038	0.51	2.456	0.043	0.56
UZ6P42		2.390	-0.024	-0.31	2.340	-0.073	-0.94
W2MQYY		2.430	0.016	0.22	2.402	-0.011	-0.14
XDF3WQ		2.500	0.086	1.15	2.500	0.087	1.13
XDVG7K		2.298	-0.116	-1.53	2.334	-0.079	-1.02



Plastics Interlaboratory Testing Program

Report #129

Analysis 706

1st Qtr 2024

Percent Elongation at Yield - Percent

WebCode	Data Flag	<u>Sample F97</u>			<u>Sample F98</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Y9JXFQ	*	2.598	0.184	2.45	2.626	0.213	2.76
YJIVGR		2.465	0.051	0.68	2.455	0.042	0.55
YVT2GE		2.446	0.032	0.43	2.428	0.015	0.20
YW9RHQ		2.462	0.048	0.64	2.456	0.043	0.56
YYCM3T		2.396	-0.017	-0.23	2.362	-0.050	-0.65

Summary Statistics		
	<u>Sample F97</u>	<u>Sample F98</u>
Grand Means	2.4135 Percent	2.4127 Percent
Stnd Dev Btwn Labs	0.0754 Percent	0.0773 Percent
Statistics based on 35 of 40 reporting participants		

Sample F97: ABS & Sample F98: ABS

Comments on Assigned Data Flags for Test #706

- 7T46RL (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F97.
- B48PJ4 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- 4NYP9D (X) - Data for both samples are high.
- 2YLCFP (X) - Data for both samples are low.
- C7PXWG (X) - Data for both samples are high. Inconsistent within the determinations of sample F97.



Plastics Interlaboratory Testing Program

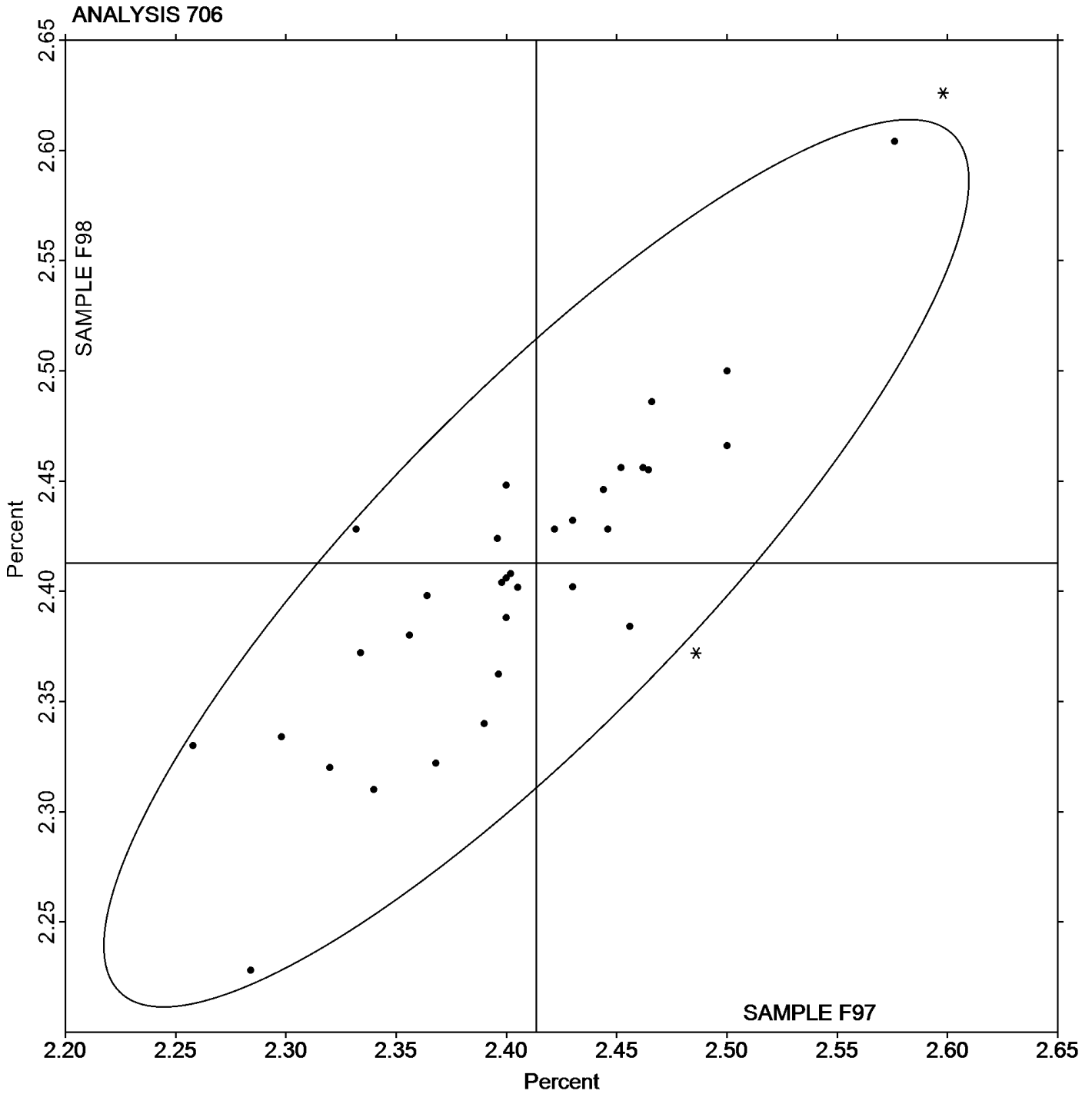
Report #129

Analysis 706

1st Qtr 2024

Percent Elongation at Yield - Percent

Grand Mean Sample F97: 2.4135 Percent Grand Mean Sample F98: 2.4127 Percent





Plastics Interlaboratory Testing Program

Report #129

Analysis 708

1st Qtr 2024

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F97			Sample F98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2YLCFP	X	507.40	152.48	11.42	500.00	144.05	10.18
4DCQG9		360.02	5.11	0.38	355.60	-0.35	-0.02
4HRY68		360.19	5.27	0.39	365.99	10.04	0.71
4NYP9D	X	256.40	-98.52	-7.38	259.80	-96.15	-6.79
4RX9LT		333.20	-21.72	-1.63	334.96	-20.99	-1.48
6L6QKL		335.82	-19.10	-1.43	335.82	-20.13	-1.42
6VWGG8	X	454.26	99.34	7.44	457.74	101.80	7.19
7KNURM	X	410.00	55.08	4.13	380.10	24.15	1.71
7T46RL	X	479.18	124.26	9.31	427.72	71.77	5.07
7YPX77		354.55	-0.37	-0.03	355.36	-0.59	-0.04
9282Q9		339.34	-15.58	-1.17	348.62	-7.33	-0.52
9VY6XF	X	326.00	-28.92	-2.17	367.40	11.45	0.81
9WBDA2		346.70	-8.22	-0.62	354.00	-1.95	-0.14
AYY9AF		364.34	9.42	0.71	351.08	-4.87	-0.34
B48PJ4		343.60	-11.32	-0.85	337.80	-18.15	-1.28
C7PXWG	X	298.60	-56.32	-4.22	292.00	-63.95	-4.52
DEHZPX		353.20	-1.72	-0.13	355.60	-0.35	-0.02
EG38Q6		372.38	17.46	1.31	382.52	26.57	1.88
GAWAVX		349.25	-5.66	-0.42	347.72	-8.23	-0.58
G DFA9T		355.70	0.78	0.06	356.66	0.71	0.05
GTK4E8		363.20	8.28	0.62	360.80	4.85	0.34
HD7MXC		386.00	31.08	2.33	378.63	22.69	1.60
HMELHR		323.18	-31.74	-2.38	327.22	-28.73	-2.03
JCUFJ3		374.48	19.56	1.47	381.82	25.87	1.83
JQVAWW		363.12	8.20	0.61	376.87	20.92	1.48
JXUVLC		348.50	-6.42	-0.48	347.62	-8.33	-0.59
K7GCRR		371.82	16.90	1.27	382.22	26.27	1.86
MW69Q7		348.16	-6.76	-0.51	351.02	-4.93	-0.35
NEKBAR		346.80	-8.12	-0.61	351.16	-4.79	-0.34
RLQBWQ		370.68	15.76	1.18	368.80	12.85	0.91
TFG4MK		368.20	13.28	0.99	370.64	14.69	1.04
UHG8YJ		347.90	-7.02	-0.53	345.66	-10.29	-0.73
UZ6P42		355.34	0.42	0.03	354.38	-1.57	-0.11
W2MQYY		351.52	-3.40	-0.25	340.70	-15.25	-1.08
XDF3WQ		345.48	-9.44	-0.71	344.32	-11.63	-0.82



Plastics Interlaboratory Testing Program

Report #129

Analysis 708

1st Qtr 2024

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F97			Sample F98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
XDVG7K		373.96	19.04	1.43	365.02	9.07	0.64
YJIVGR		351.46	-3.46	-0.26	356.88	0.93	0.07
YVT2GE		355.58	0.66	0.05	358.94	2.99	0.21
YW9RHQ		350.60	-4.32	-0.32	350.60	-5.35	-0.38
YYCM3T		348.04	-6.88	-0.52	351.26	-4.69	-0.33

Summary Statistics		Sample F97	Sample F98
Grand Means		354.919 ksi	355.948 ksi
Stnd Dev Btwn Labs		13.351 ksi	14.152 ksi
Statistics based on 33 of 40 reporting participants			

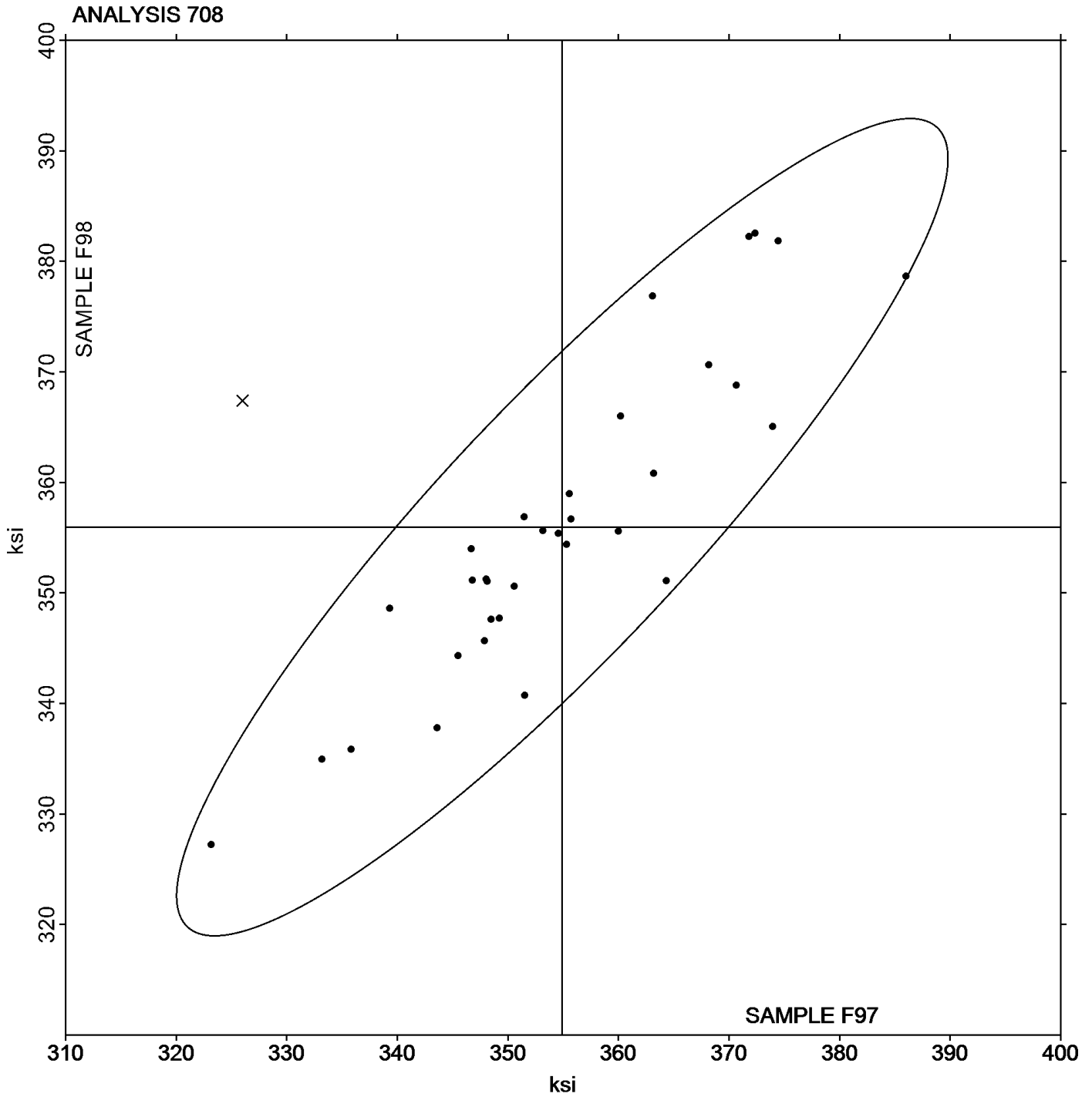
Sample F97: ABS & Sample F98: ABS

Comments on Assigned Data Flags for Test #708

- 7T46RL (X) - Data for both samples are high. Inconsistent within the determinations of sample F97.
- 6VWGG8 (X) - Data for both samples are high.
- 4NYP9D (X) - Data for both samples are low.
- 9VY6XF (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- 2YLCFP (X) - Data for both samples are high.
- C7PXWG (X) - Data for both samples are low. Possible Systematic Error.
- 7KNURM (X) - Data for sample F97 are high.



Grand Mean Sample F97: 354.92 ksi Grand Mean Sample F98: 355.95 ksi





Plastics Interlaboratory Testing Program

Report #129

Analysis 710

1st Qtr 2024

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

WebCode	Data Flag	Sample E97			Sample E98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4DCQG9		103.70	-1.09	-0.64	104.08	-0.64	-0.46	TY
4HRY68		103.75	-1.04	-0.61	103.30	-1.41	-1.01	IN
4NYP9D	*	109.28	4.48	2.63	107.15	2.44	1.74	XX
4RW7K8		106.05	1.26	0.74	105.83	1.11	0.79	IN
7YPX77		104.13	-0.67	-0.39	103.80	-0.91	-0.65	TY
93EGXE		105.30	0.51	0.30	105.10	0.39	0.27	TO
99QZN9		103.53	-1.27	-0.74	103.48	-1.24	-0.88	TO
9YE63F		106.10	1.31	0.77	105.70	0.99	0.70	CE
AYY9AF		105.95	1.16	0.68	105.78	1.06	0.76	IN
DEHZPX		104.40	-0.39	-0.23	103.35	-1.36	-0.97	CF
DP2FRZ		104.88	0.08	0.05	105.73	1.01	0.72	XA
GAWAVX		103.63	-1.17	-0.68	103.65	-1.06	-0.76	TO
GTK4E8	*	100.18	-4.62	-2.71	102.05	-2.66	-1.90	TO
JCUFJ3		104.65	-0.14	-0.08	104.48	-0.24	-0.17	IN
JQVAWW		103.00	-1.79	-1.05	103.00	-1.71	-1.22	TO
K7GCRR		103.40	-1.39	-0.82	103.50	-1.21	-0.87	TO
PQBJ8K		105.00	0.21	0.12	105.65	0.94	0.67	AT
QF7QHQ		103.50	-1.29	-0.76	103.20	-1.51	-1.08	IN
R22JQL		107.20	2.41	1.41	106.75	2.04	1.45	IN
RLQBWQ		105.58	0.78	0.46	104.38	-0.34	-0.24	TO
UHG8YJ		104.85	0.06	0.03	104.88	0.16	0.11	CE
UZ6P42		105.45	0.66	0.39	106.23	1.51	1.08	IN
XDF3WQ		104.83	0.03	0.02	104.45	-0.26	-0.19	IN
XDVG7K		103.53	-1.27	-0.74	103.80	-0.91	-0.65	CE
YVT2GE		106.43	1.63	0.96	105.85	1.14	0.81	IN
Z44PRR	*	106.33	1.53	0.90	107.45	2.74	1.95	TO

Summary Statistics		Sample E97	Sample E98
Grand Means		104.791 Degrees C	104.714 Degrees C
Std Dev Btwn Labs		1.703 Degrees C	1.403 Degrees C
Statistics based on 26 of 26 reporting participants			

Sample E97: ABS/PC & Sample E98: ABS/PC



Plastics Interlaboratory Testing Program

Report #129

Analysis 710

1st Qtr 2024

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

Key to Instrument Codes Reported by Participants

AT	Atlas	CE	Ceast
CF	Coesfeld	IN	Instron
TO	Tinius Olsen	TY	Toyoseiki
XA	Special In-House Instrument	XX	Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

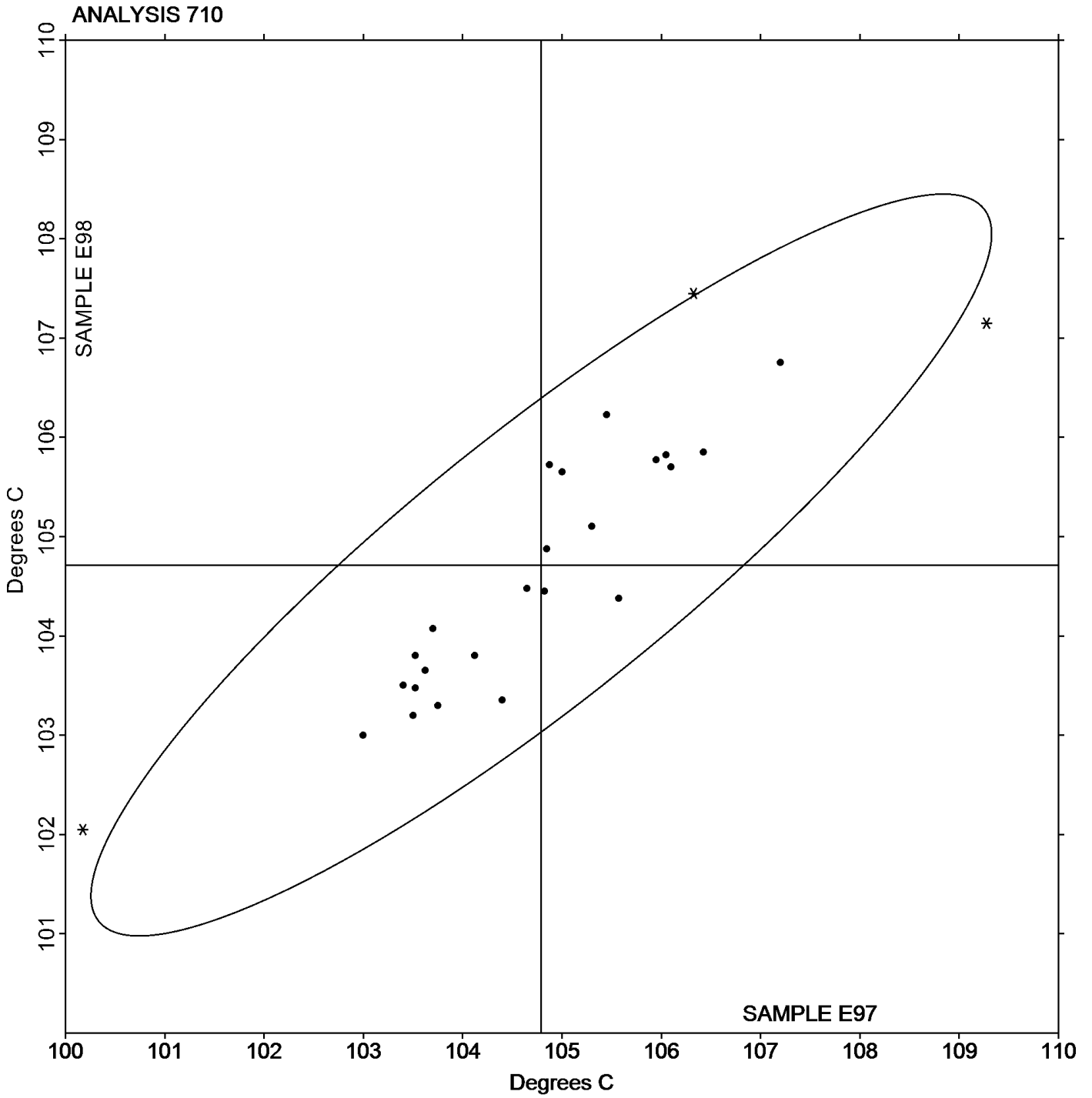
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Analysis 710

1st Qtr 2024

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

Grand Mean Sample E97: 104.79 Degrees C Grand Mean Sample E98: 104.71 Degrees C





Plastics Interlaboratory Testing Program

Report #129

Analysis 711

1st Qtr 2024

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

WebCode	Data Flag	Sample G97			Sample G98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2NN4L7		94.4	1.1	0.27	89.4	-2.4	-0.72	XX
4HRY68		91.3	-2.0	-0.51	93.3	1.5	0.46	IN
93EGXE		99.2	5.9	1.49	96.5	4.7	1.43	TO
AYY9AF		93.4	0.1	0.03	93.1	1.3	0.39	IN
DEHZPX		96.5	3.2	0.81	96.6	4.8	1.43	CE
GTK4E8		87.7	-5.6	-1.41	85.9	-5.9	-1.77	TO
QLCKCL		86.3	-7.0	-1.77	91.0	-0.8	-0.25	XX
R22JQL		95.8	2.5	0.64	90.0	-1.8	-0.55	IN
XDVG7K		95.3	2.0	0.51	89.6	-2.2	-0.67	CE
Z44PRR		93.0	-0.3	-0.07	92.7	0.9	0.26	TO

Summary Statistics		
	Sample G97	Sample G98
Grand Means	93.26 Degrees C	91.79 Degrees C
Std Dev Btwn Labs	3.96 Degrees C	3.32 Degrees C
Statistics based on 10 of 10 reporting participants		

Sample G97: PP & Sample G98: PP

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

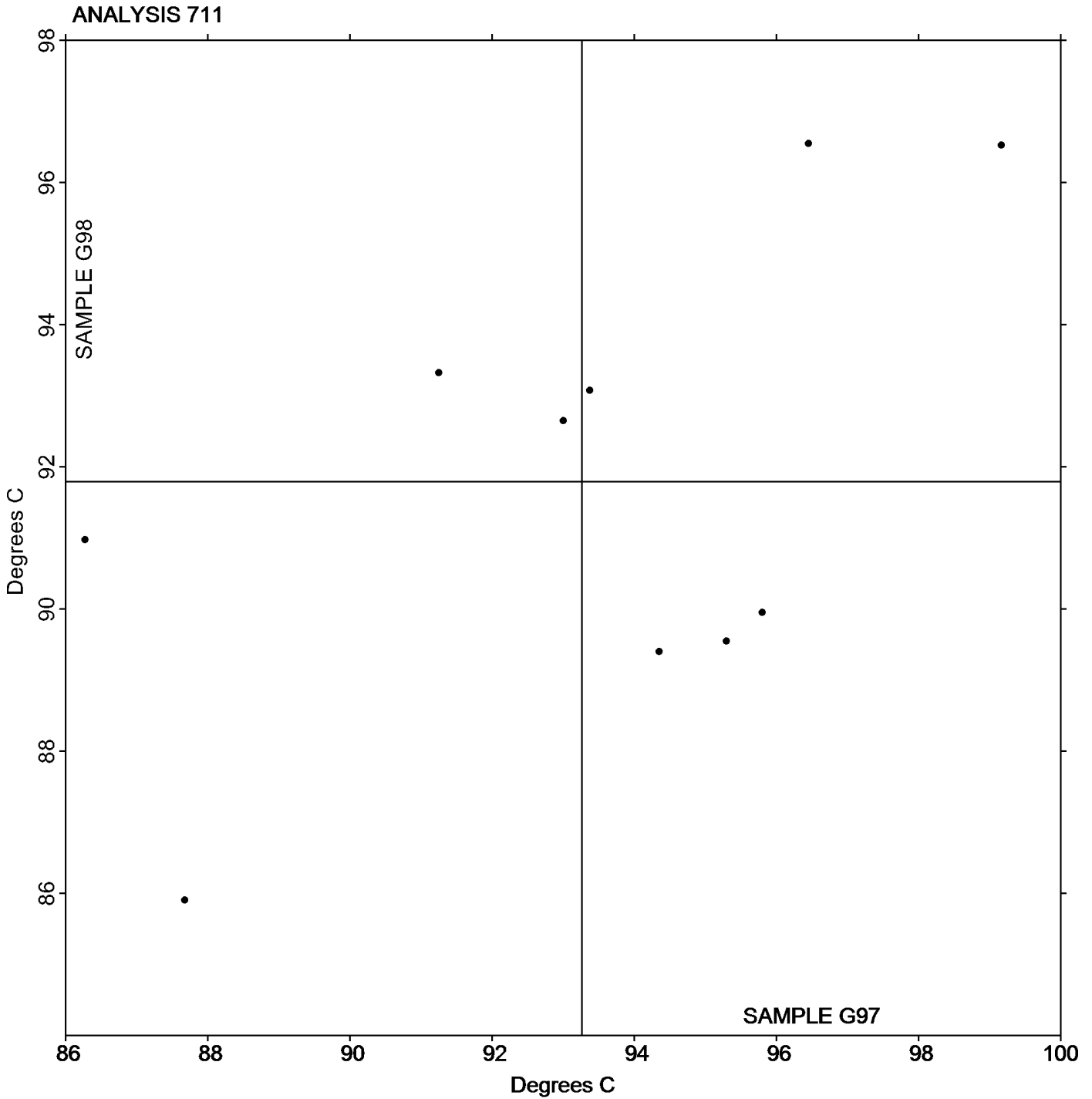
Report #129

Analysis 711

1st Qtr 2024

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

Grand Mean Sample G97: 93.264 Degrees C Grand Mean Sample G98: 91.790 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 #129

Analysis 712

1st Qtr 2024

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

WebCode	Data Flag	Sample N97			Sample N98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH	X	102.20	-2.28	-1.36	106.20	1.83	1.26	IN
2NN4L7		106.35	1.87	1.11	106.63	2.25	1.56	XX
4DCQG9		105.60	1.12	0.67	105.45	1.08	0.74	TY
4HRY68		104.45	-0.03	-0.02	104.00	-0.37	-0.26	IN
4NYP9D		107.85	3.37	2.01	106.55	2.18	1.51	XX
63E6UA	*	101.18	-3.31	-1.97	104.10	-0.27	-0.19	ZW
739KRL	X	110.78	6.29	3.75	111.43	7.05	4.88	XX
7YPX77		105.13	0.64	0.38	105.03	0.65	0.45	TY
82B2E4		105.08	0.59	0.35	105.40	1.03	0.71	IN
8NLU6N		104.85	0.37	0.22	104.60	0.23	0.16	XX
93EGXE		104.78	0.29	0.18	104.43	0.05	0.04	TO
AMK466		106.43	1.94	1.16	105.43	1.05	0.73	CE
AYY9AF		105.40	0.92	0.55	105.15	0.78	0.54	IN
BEA3J4		104.95	0.47	0.28	104.79	0.41	0.28	ZW
DEHZPX		105.03	0.55	0.33	105.30	0.93	0.64	CF
EPCW44		106.95	2.47	1.47	107.03	2.65	1.83	TO
FBNJDA		106.64	2.15	1.28	105.35	0.98	0.68	ZW
GGXYLX		104.68	0.19	0.12	104.10	-0.27	-0.19	IN
H6G38Y		104.30	-0.18	-0.11	104.38	0.00	0.00	CE
HR9NK7		102.00	-2.48	-1.48	102.25	-2.12	-1.47	TO
JCUFJ3		102.48	-2.01	-1.20	101.65	-2.72	-1.88	IN
JFC6W8		101.75	-2.73	-1.63	101.75	-2.62	-1.82	TO
K6RFCT	X	64.00	-40.48	-24.12	64.25	-40.12	-27.76	XX
Q2THHM		105.35	0.87	0.52	104.18	-0.20	-0.14	CE
Q4F2JK		104.03	-0.46	-0.27	103.88	-0.50	-0.35	CF
QLCKCL		105.00	0.52	0.31	105.00	0.63	0.43	XX
T89CHW	*	104.85	0.37	0.22	101.90	-2.47	-1.71	XX
UHG8YJ		102.78	-1.71	-1.02	105.10	0.73	0.50	CE
UZ6P42		105.18	0.69	0.41	105.05	0.68	0.47	IN
WGMZUD		101.70	-2.78	-1.66	102.25	-2.12	-1.47	CE
XDF3WQ		104.60	0.12	0.07	104.80	0.43	0.29	IN
XDVG7K		101.58	-2.91	-1.73	101.70	-2.67	-1.85	CE
XPWP8C		105.60	1.12	0.67	105.45	1.08	0.74	CE
XWBQ7L		104.50	0.02	0.01	104.75	0.38	0.26	TO
Y9JXFQ		102.00	-2.48	-1.48	102.48	-1.90	-1.31	CE



Plastics Interlaboratory Testing Program

Report #129

Analysis 712

1st Qtr 2024

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

WebCode	Data Flag	Sample N97			Sample N98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
YT7GFG		104.88	0.39	0.23	104.48	0.10	0.07	CE

Summary Statistics			
	Sample N97		Sample N98
Grand Means	104.481 Degrees C		104.374 Degrees C
Stnd Dev Btwn Labs	1.678 Degrees C		1.445 Degrees C
Statistics based on 33 of 36 reporting participants			

Sample N97: ABS/PC & Sample N98: ABS/PC

Comments on Assigned Data Flags for Test #712

- 27PLZH (X) - Inconsistent in testing between samples.
- 739KRL (X) - Data for both samples are high. Possible Systematic Error.
- K6RFCT (X) - Extreme data.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

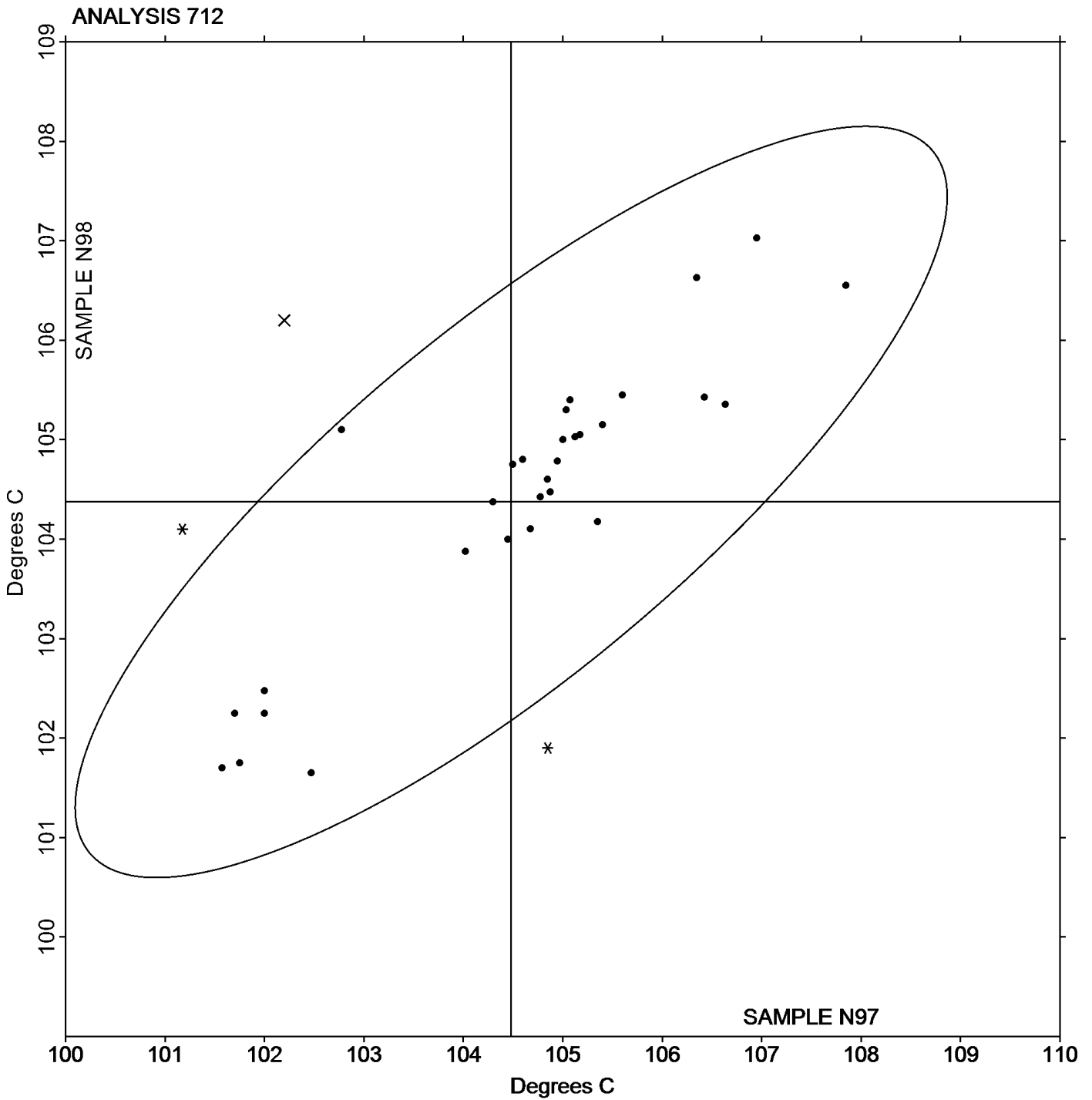
Report #129

Analysis 712

1st Qtr 2024

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

Grand Mean Sample N97: 104.48 Degrees C Grand Mean Sample N98: 104.37 Degrees C





Plastics Interlaboratory Testing Program

Report #129

Analysis 715

1st Qtr 2024

Vicat Softening Temperature (Rate A)

WebCode	Data Flag	Sample H97			Sample H98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2HEP2M		140.00	0.28	0.40	139.67	-0.10	-0.15	CE
4DCQG9		139.38	-0.34	-0.49	139.57	-0.20	-0.29	TY
4HRY68		139.67	-0.06	-0.08	139.77	0.00	0.00	IN
4NYP9D	X	139.08	-0.64	-0.93	137.78	-1.98	-2.88	XX
82B2E4		138.98	-0.74	-1.07	139.05	-0.72	-1.04	XX
93EGXE		139.08	-0.64	-0.93	139.10	-0.67	-0.97	TO
AYY9AF		140.75	1.03	1.48	140.92	1.15	1.66	CF
DEHZPX		139.33	-0.39	-0.57	139.50	-0.27	-0.39	CF
EG38Q6		139.17	-0.56	-0.81	139.45	-0.32	-0.46	CE
HAPMRP	X	126.32	-13.41	-19.40	128.27	-11.50	-16.67	IN
JQVAWW		139.33	-0.39	-0.57	139.67	-0.10	-0.15	TO
NAUVPQ		139.58	-0.14	-0.20	139.92	0.15	0.21	RO
Q2THHM		139.77	0.04	0.06	139.78	0.02	0.02	CE
Q6RTDM		141.08	1.36	1.97	140.93	1.16	1.69	CE
R22JQL		140.57	0.84	1.22	140.57	0.80	1.16	IN
RLQBWQ	*	138.65	-1.07	-1.55	138.23	-1.53	-2.22	TO
T3BJDK		139.37	-0.36	-0.52	139.42	-0.35	-0.51	IN
UHG8YJ		139.80	0.08	0.11	140.00	0.23	0.34	CE
UZ6P42		140.12	0.39	0.57	140.18	0.41	0.60	IN
XDF3WQ		139.72	-0.01	-0.01	139.75	-0.02	-0.03	AT
XDVG7K		139.07	-0.66	-0.95	139.02	-0.75	-1.09	CE
XPWP8C		141.07	1.34	1.94	140.88	1.12	1.62	CF

Summary Statistics		
	Sample H97	Sample H98
Grand Means	139.724 Degrees C	139.768 Degrees C
Std Dev Btwn Labs	0.691 Degrees C	0.690 Degrees C
Statistics based on 20 of 22 reporting participants		

Sample H97: ABS/PC & Sample H98: ABS/PC

Comments on Assigned Data Flags for Test #715

HAPMRP (X) - Data for both samples are low.

4NYP9D (X) - Data for sample H98 are low. Inconsistent within the determinations of sample H98.



Plastics Interlaboratory Testing Program

Report #129

Analysis 715

1st Qtr 2024

Vicat Softening Temperature (Rate A)

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

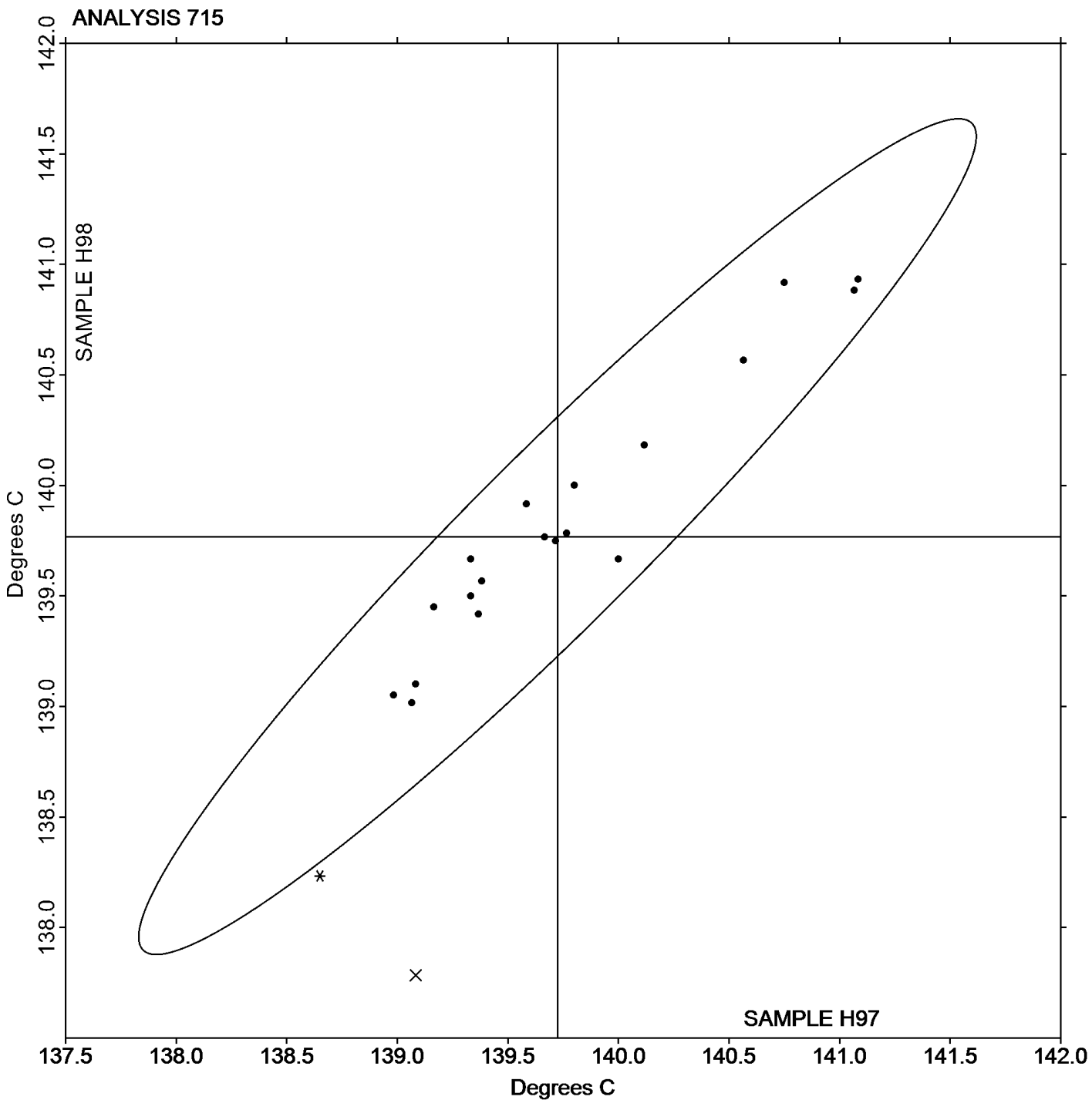
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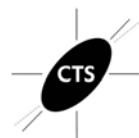
Analysis 715

1st Qtr 2024

Vicat Softening Temperature (Rate A)

Grand Mean Sample H97: 139.72 Degrees C Grand Mean Sample H98: 139.77 Degrees C





Plastics Interlaboratory Testing Program

Report #129

Analysis 716

1st Qtr 2024

Vicat Softening Temperature (Rate B)

WebCode	Data Flag	Sample R97			Sample R98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4DCQG9		140.13	-1.26	-1.52	140.22	-1.23	-1.47	TY
4HRY68		141.92	0.52	0.63	141.95	0.50	0.60	TO
4NYP9D		140.08	-1.31	-1.58	140.47	-0.98	-1.17	XX
82B2E4		141.43	0.04	0.05	141.25	-0.20	-0.24	XX
93EGXE		140.62	-0.78	-0.94	140.43	-1.01	-1.21	TO
AYY9AF		142.18	0.79	0.96	142.10	0.65	0.78	CF
DEHZPX		141.60	0.21	0.25	141.83	0.39	0.46	CF
EG38Q6		141.18	-0.21	-0.25	141.43	-0.01	-0.02	CE
HAPMRP	X	126.57	-14.83	-17.95	128.02	-13.43	-16.07	IN
JQVAWW		141.33	-0.06	-0.07	141.33	-0.11	-0.14	TO
NAUVPQ		141.22	-0.18	-0.21	141.73	0.29	0.34	RO
Q2THHM		141.35	-0.04	-0.05	141.33	-0.11	-0.14	CE
Q6RTDM		141.12	-0.28	-0.33	140.95	-0.50	-0.59	CE
R22JQL		142.82	1.42	1.72	142.77	1.32	1.58	IN
RLQBWQ		139.78	-1.61	-1.95	139.72	-1.73	-2.07	TO
UHG8YJ		141.95	0.56	0.67	141.72	0.27	0.32	CE
UZ6P42		142.08	0.69	0.84	142.35	0.90	1.08	IN
XDF3WQ		141.92	0.52	0.63	141.85	0.40	0.48	AT
XPWP8C		142.35	0.96	1.16	142.62	1.17	1.40	CF

Summary Statistics

	Sample R97	Sample R98
Grand Means	141.393 Degrees C	141.447 Degrees C
Std Dev Btwn Labs	0.826 Degrees C	0.836 Degrees C

Statistics based on 18 of 19 reporting participants

Sample R97: ABS/PC & Sample R98: ABS/PC

Comments on Assigned Data Flags for Test #716

HAPMRP (X) - Data for both samples are low.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

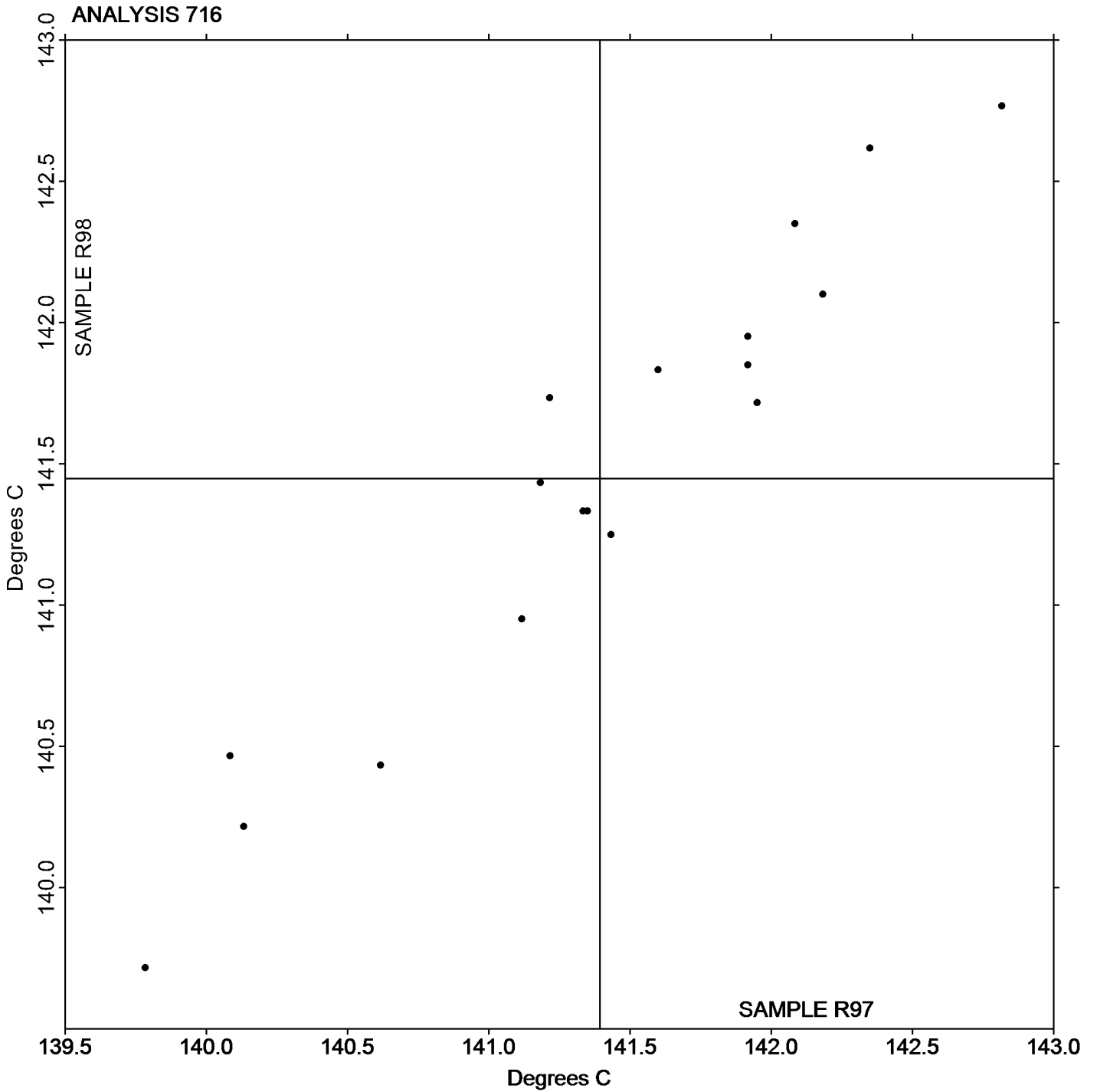
Report #129

Analysis 716

1st Qtr 2024

Vicat Softening Temperature (Rate B)

Grand Mean Sample R97: 141.39 Degrees C Grand Mean Sample R98: 141.45 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 #129

Analysis 718

1st Qtr 2024

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T97			Sample T98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
27PLZH		1.14057	0.00345	1.20	1.14177	0.00448	1.64
2BEXLK		1.13840	0.00129	0.45	1.13903	0.00175	0.64
2NN4L7		1.13977	0.00265	0.92	1.13940	0.00211	0.77
3HCFKA		1.13630	-0.00081	-0.28	1.13723	-0.00005	-0.02
48VV2D		1.14030	0.00319	1.11	1.14067	0.00338	1.24
4DCQG9		1.13600	-0.00111	-0.39	1.13567	-0.00162	-0.59
4ECYYM		1.13807	0.00095	0.33	1.13877	0.00148	0.54
4HRY68		1.13557	-0.00155	-0.54	1.13447	-0.00282	-1.03
4NYP9D		1.13867	0.00155	0.54	1.14000	0.00271	0.99
4WR6BJ		1.13823	0.00112	0.39	1.13823	0.00095	0.35
6GQKVK	X	1.28600	0.14889	51.64	1.28757	0.15028	55.03
6L8TJJ		1.13633	-0.00078	-0.27	1.13633	-0.00095	-0.35
6VWGG8		1.13867	0.00155	0.54	1.13600	-0.00129	-0.47
79FJAJ	X	1.28530	0.14819	51.40	1.28870	0.15141	55.45
7WJDFL		1.14047	0.00335	1.16	1.13737	0.00008	0.03
82B2E4		1.14087	0.00375	1.30	1.14097	0.00368	1.35
8A8WF9		1.13807	0.00095	0.33	1.13793	0.00065	0.24
93EGXE		1.13823	0.00112	0.39	1.13853	0.00125	0.46
AKY8WE	X	1.28660	0.14949	51.85	1.28697	0.14968	54.82
AYY9AF		1.13977	0.00265	0.92	1.13983	0.00255	0.93
BEA3J4		1.13683	-0.00028	-0.10	1.13663	-0.00065	-0.24
C2W7XD		1.13467	-0.00245	-0.85	1.13567	-0.00162	-0.59
C7PXWG		1.13500	-0.00211	-0.73	1.13633	-0.00095	-0.35
DEHZPX		1.13300	-0.00411	-1.43	1.13350	-0.00379	-1.39
DKPWKD		1.13710	-0.00001	0.00	1.13667	-0.00062	-0.23
EG38Q6		1.13883	0.00172	0.60	1.14050	0.00321	1.18
FBNJDA		1.13667	-0.00045	-0.15	1.13567	-0.00162	-0.59
GAWAVX		1.13533	-0.00178	-0.62	1.13700	-0.00029	-0.11
G DFA9T		1.13903	0.00192	0.67	1.13920	0.00191	0.70
GGXYLX	*	1.13030	-0.00681	-2.36	1.13430	-0.00299	-1.09
GRCJWY		1.13400	-0.00311	-1.08	1.13733	0.00005	0.02
GTK4E8	*	1.13257	-0.00455	-1.58	1.13703	-0.00025	-0.09
HD7MXC		1.13567	-0.00145	-0.50	1.13567	-0.00162	-0.59
HMUDK4		1.13933	0.00222	0.77	1.13900	0.00171	0.63
JCUFJ3		1.13960	0.00249	0.86	1.13923	0.00195	0.71



Plastics Interlaboratory Testing Program

Report #129

Analysis 718

1st Qtr 2024

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T97			Sample T98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
K6RFCT		1.13250	-0.00461	-1.60	1.13223	-0.00505	-1.85
KCMHE4	X	1.14000	0.00289	1.00	1.13333	-0.00395	-1.45
KQ8XH4		1.13400	-0.00311	-1.08	1.13400	-0.00329	-1.20
KXN2HW		1.13993	0.00282	0.98	1.13983	0.00255	0.93
L3HZPZ		1.13600	-0.00111	-0.39	1.13567	-0.00162	-0.59
LMZ2B7		1.13410	-0.00301	-1.05	1.13240	-0.00489	-1.79
MP6M2Q	*	1.13000	-0.00711	-2.47	1.13000	-0.00729	-2.67
N6TJD7		1.14023	0.00312	1.08	1.13950	0.00221	0.81
NAPGCQ		1.13660	-0.00051	-0.18	1.13680	-0.00049	-0.18
NZZRE3		1.13633	-0.00078	-0.27	1.13433	-0.00295	-1.08
PLWDK7		1.13833	0.00122	0.42	1.13967	0.00238	0.87
Q2THHM	*	1.14487	0.00775	2.69	1.14457	0.00728	2.67
Q4F2JK		1.13957	0.00245	0.85	1.13970	0.00241	0.88
Q8DM92		1.13900	0.00189	0.65	1.13900	0.00171	0.63
QF7QHQ		1.13947	0.00235	0.82	1.13900	0.00171	0.63
QHG6W7		1.13700	-0.00011	-0.04	1.13400	-0.00329	-1.20
QLCKCL		1.13700	-0.00011	-0.04	1.13533	-0.00195	-0.72
RBU8TW		1.13737	0.00025	0.09	1.13743	0.00015	0.05
RFNW3V		1.14057	0.00345	1.20	1.14133	0.00405	1.48
T3BJDK		1.13447	-0.00265	-0.92	1.13680	-0.00049	-0.18
UHG8YJ		1.14017	0.00305	1.06	1.14013	0.00285	1.04
UZ6P42	*	1.13100	-0.00611	-2.12	1.13453	-0.00275	-1.01
WBBHLR		1.13520	-0.00191	-0.66	1.13473	-0.00255	-0.94
XDF3WQ		1.13957	0.00245	0.85	1.13997	0.00268	0.98
XDVG7K		1.13713	0.00002	0.01	1.13740	0.00011	0.04
XWBQ7L		1.13400	-0.00311	-1.08	1.13300	-0.00429	-1.57
YT7GFG	X	1.13600	-0.00111	-0.39	1.12633	-0.01095	-4.01
YVT2GE		1.13393	-0.00318	-1.10	1.13367	-0.00362	-1.33
Z44PRR		1.13893	0.00182	0.63	1.13897	0.00168	0.61
ZENU2C		1.13733	0.00022	0.08	1.13733	0.00005	0.02



Plastics Interlaboratory Testing Program

Report #129

Analysis 718

1st Qtr 2024

Specific Gravity - sp gr 23/23 C

Summary Statistics	<u>Sample T97</u>	<u>Sample T98</u>
Grand Means	1.137113 sp gr 23/23 C	1.137288 sp gr 23/23 C
Std Dev Btwn Labs	0.002883 sp gr 23/23 C	0.002731 sp gr 23/23 C
Statistics based on 60 of 65 reporting participants		

Sample T97: ABS/PC & Sample T98: ABS/PC

Comments on Assigned Data Flags for Test #718

- YT7GFG (X) - Data for sample T98 are low.
- 6GQKVK (X) - Extreme data.
- 79FJAJ (X) - Extreme data.
- AKY8WE (X) - Extreme data.
- KCMHE4 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T98.

Results by Methodology (as reported by laboratory)

Test Methodology	Sample T97 <i>ABS/PC</i>			Sample T98 <i>ABS/PC</i>			Labs Incl / Rpt
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM	
ASTM D792 Method A (water)	1.136912	0.002672	0.000	1.137093	0.002525	0.000	41/45
ASTM D792 Method B (not water)	1.142100	0.003913	0.005	1.141783	0.003936	0.004	2/2
ASTM D1505	1.137133	0.000000	0.000	1.137400	0.000000	0.000	1/1
ISO 1183	1.137004	0.003033	0.000	1.137219	0.002913	0.000	16/17



Plastics Interlaboratory Testing Program

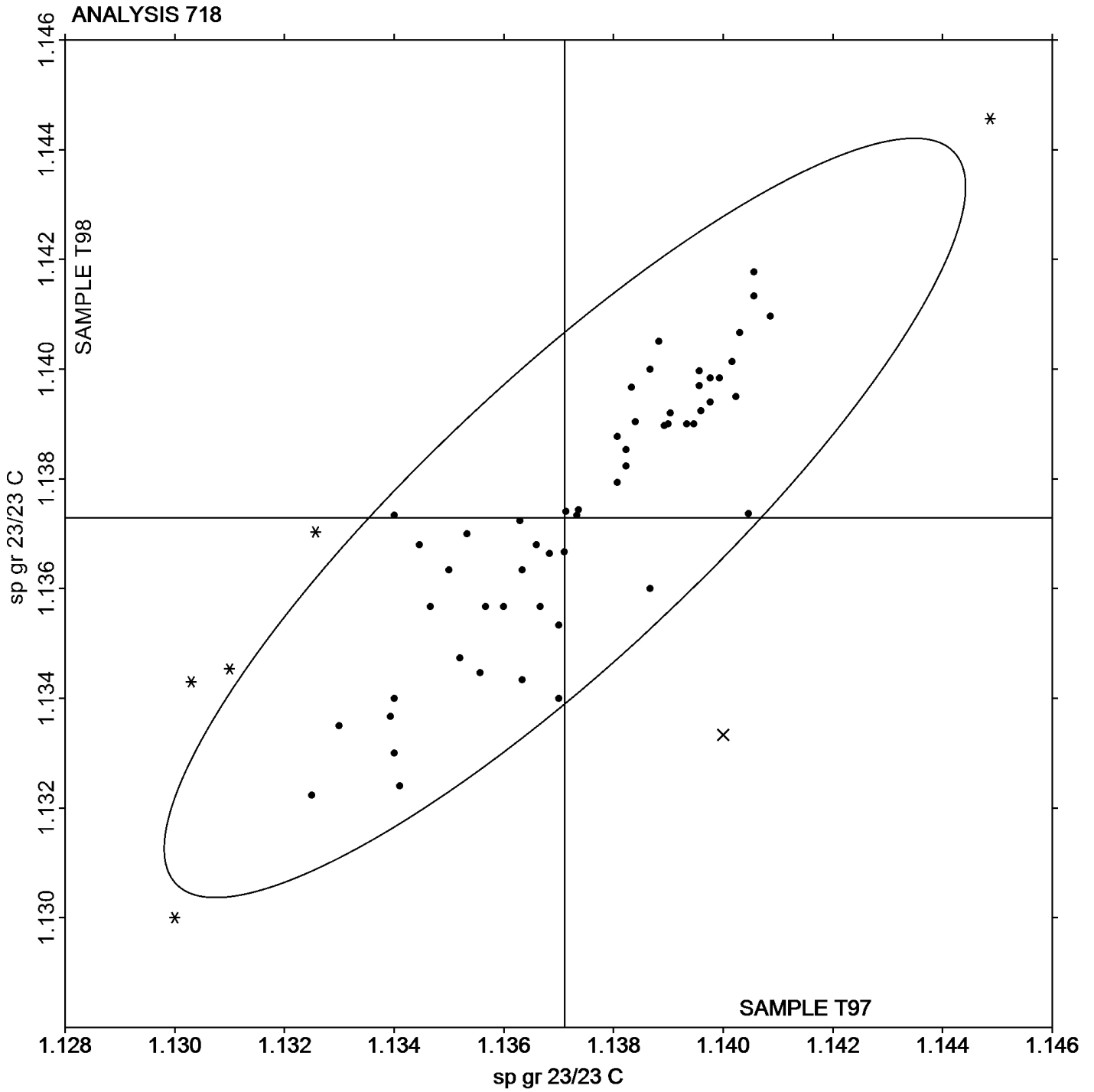
Report #129

Analysis 718

1st Qtr 2024

Specific Gravity - sp gr 23/23 C

Grand Mean Sample T97: 1.1371 sp gr 23/23 C Grand Mean Sample T98: 1.1373 sp gr 23/23 C





Plastics Interlaboratory Testing Program

Report #129

Analysis 720

1st Qtr 2024

Flexural Modulus- ksi

WebCode	Data Flag	Sample J97			Sample J98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2NN4L7		345.2	2.5	0.14	344.9	1.4	0.08
2YLCFP		352.2	9.6	0.54	351.8	8.3	0.46
4DCQG9		321.3	-21.4	-1.21	320.6	-22.9	-1.26
4HRY68		370.2	27.6	1.56	370.9	27.4	1.52
4NYP9D		316.4	-26.2	-1.49	315.8	-27.7	-1.53
63E6UA		346.1	3.5	0.20	349.3	5.9	0.32
6L6QKL		347.8	5.2	0.29	349.4	5.9	0.33
7T46RL		319.5	-23.2	-1.31	323.4	-20.0	-1.11
7YA9VL		314.1	-28.6	-1.62	314.0	-29.5	-1.63
93EGXE		371.0	28.3	1.60	371.7	28.2	1.56
9YE63F		305.8	-36.8	-2.09	304.2	-39.3	-2.17
AYY9AF		345.3	2.7	0.15	344.8	1.3	0.07
B48PJ4	*	334.6	-8.0	-0.46	340.6	-2.9	-0.16
DGMLG4	X	219.9	-122.7	-6.95	220.4	-123.0	-6.79
EG38Q6		343.4	0.8	0.04	342.1	-1.4	-0.08
GAWAVX		360.9	18.3	1.04	361.0	17.6	0.97
G DFA9T		350.3	7.7	0.43	350.6	7.1	0.39
GK9AC8		344.4	1.7	0.10	345.6	2.1	0.12
GTK4E8		344.3	1.7	0.09	341.6	-1.9	-0.10
H7CMUX		364.8	22.1	1.25	367.7	24.2	1.34
HGBJWZ	X	344.6	2.0	0.11	336.7	-6.8	-0.37
JCUFJ3		349.5	6.9	0.39	348.3	4.8	0.26
JQVAWW		347.4	4.7	0.27	350.6	7.2	0.40
K7GCRR		380.5	37.8	2.14	383.1	39.7	2.19
KMQDXA		358.9	16.3	0.92	358.4	15.0	0.83
KPR7FR		343.6	1.0	0.05	344.0	0.5	0.03
PQBJ8K		338.1	-4.5	-0.26	338.4	-5.1	-0.28
QF7QHQ	X	286.7	-55.9	-3.16	265.2	-78.2	-4.32
QLCKCL	X	353.1	10.4	0.59	343.4	-0.1	-0.01
TCWP4W		338.5	-4.1	-0.23	339.5	-4.0	-0.22
UHG8YJ		338.8	-3.9	-0.22	339.8	-3.7	-0.20
UZ6P42		338.5	-4.1	-0.23	339.1	-4.4	-0.24
W2MQYY		315.8	-26.8	-1.52	318.4	-25.1	-1.39
XDF3WQ		329.0	-13.6	-0.77	328.2	-15.3	-0.85
XDVG7K		335.6	-7.0	-0.40	337.3	-6.1	-0.34



Plastics Interlaboratory Testing Program

Report #129

Analysis 720

1st Qtr 2024

Flexural Modulus- ksi

WebCode	Data Flag	Sample J97			Sample J98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Y9JXFQ		368.4	25.8	1.46	373.0	29.6	1.63
YVT2GE		324.7	-17.9	-1.01	325.0	-18.5	-1.02
Z44PRR		344.8	2.2	0.12	344.9	1.5	0.08

Summary Statistics		Sample J97	Sample J98
Grand Means		342.64 ksi	343.47 ksi
Stnd Dev Btwn Labs		17.67 ksi	18.11 ksi
Statistics based on 34 of 38 reporting participants			

Sample J97: ABS/PC & Sample J98: ABS/PC

Comments on Assigned Data Flags for Test #720

- QLCKCL (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- QF7QHQ (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- DGMLG4 (X) - Data for both samples are low. Possible Systematic Error.
- HGBJWZ (X) - Inconsistent in testing between samples.



Plastics Interlaboratory Testing Program

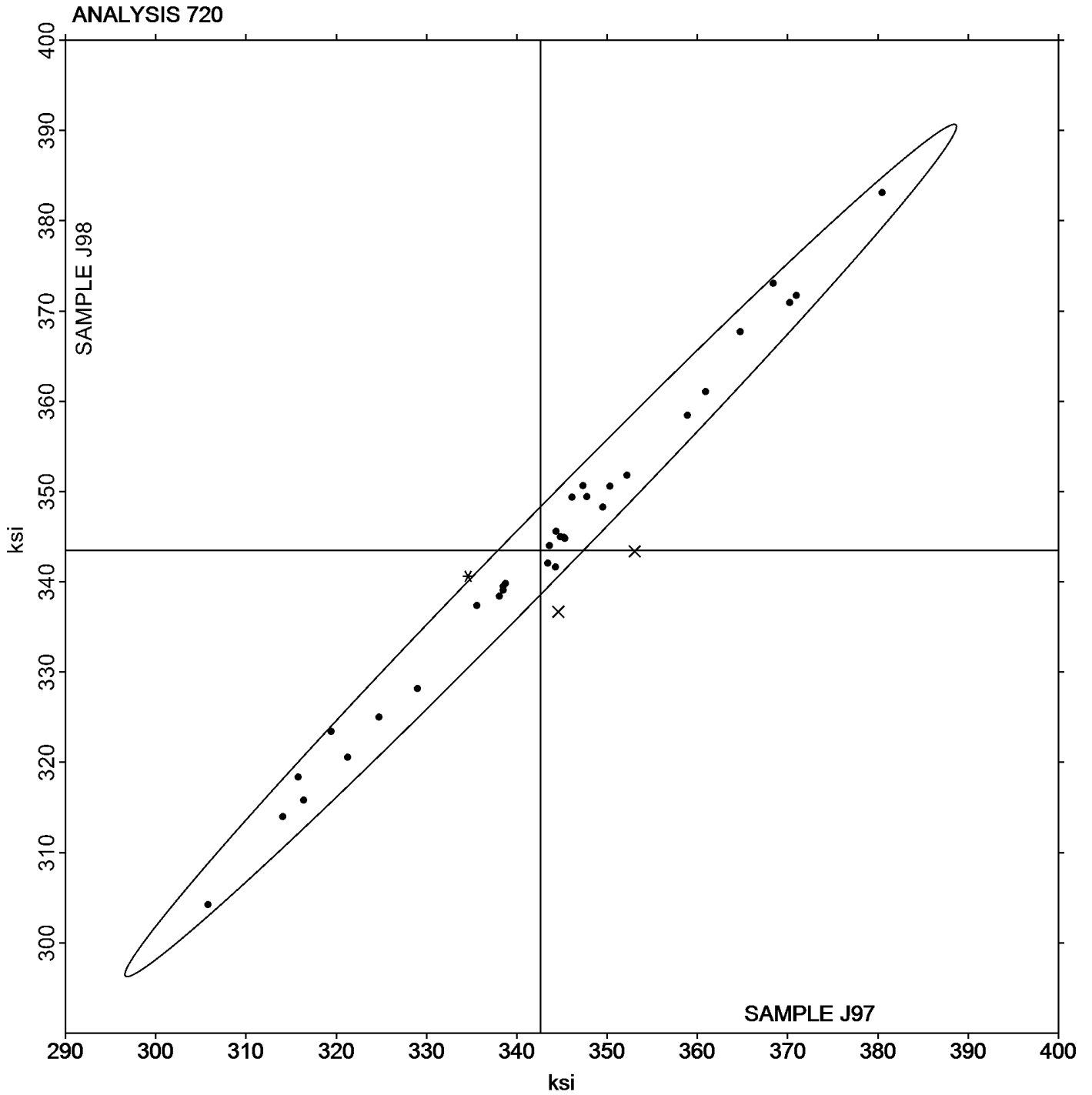
Report #129

Analysis 720

1st Qtr 2024

Flexural Modulus- ksi

Grand Mean Sample J97: 342.64 ksi Grand Mean Sample J98: 343.47 ksi





Plastics Interlaboratory Testing Program

Report #129

Analysis 721

1st Qtr 2024

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J97			Sample J98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
4DCQG9		11,380	-289	-0.72	11,359	-327	-0.85
4HRY68		12,078	409	1.02	12,093	407	1.06
4NYP9D		11,378	-291	-0.73	11,415	-271	-0.70
63E6UA		11,537	-132	-0.33	11,519	-167	-0.43
6L6QKL		12,239	570	1.43	12,342	656	1.70
7T46RL		11,274	-395	-0.99	11,393	-293	-0.76
7YA9VL		10,913	-756	-1.89	10,954	-732	-1.90
9YE63F		11,353	-316	-0.79	11,297	-389	-1.01
AYY9AF		11,669	0	0.00	11,636	-50	-0.13
B48PJ4	*	11,320	-349	-0.87	11,540	-146	-0.38
DGMLG4	X	8,876	-2,793	-7.00	8,825	-2,861	-7.42
EG38Q6		11,688	19	0.05	11,732	46	0.12
GAWAVX		11,789	120	0.30	11,831	145	0.38
G DFA9T		11,642	-27	-0.07	11,721	35	0.09
GK9AC8		12,195	526	1.32	12,183	497	1.29
GTK4E8		11,800	131	0.33	11,859	173	0.45
H7CMUX		12,667	998	2.50	12,634	948	2.46
HGBJWZ		11,908	239	0.60	11,770	84	0.22
JCUFJ3		11,759	90	0.23	11,792	106	0.28
JQVAWW		11,835	166	0.42	11,864	178	0.46
K7GCRR		12,027	358	0.90	12,037	351	0.91
KMQDXA		11,787	118	0.30	11,740	54	0.14
KPR7FR		11,206	-463	-1.16	11,297	-389	-1.01
PQBJ8K		11,534	-135	-0.34	11,521	-165	-0.43
QF7QHQ	X	10,689	-980	-2.45	10,514	-1,172	-3.04
TCWP4W		11,349	-320	-0.80	11,360	-326	-0.85
UHG8YJ		12,087	418	1.05	12,064	378	0.98
UZ6P42		11,409	-260	-0.65	11,373	-313	-0.81
W2MQYY		10,997	-672	-1.68	11,063	-623	-1.62
XDF3WQ		12,221	552	1.38	12,224	538	1.40
YVT2GE		11,320	-349	-0.87	11,334	-352	-0.91
Z44PRR		11,710	41	0.10	11,630	-56	-0.14



Plastics Interlaboratory Testing Program

Report #129

Analysis 721

1st Qtr 2024

Flexural Stress at 5% Strain - psi

Summary Statistics	<u>Sample J97</u>	<u>Sample J98</u>
Grand Means	11,669.1 psi	11,686.0 psi
Stnd Dev Btwn Labs	399.3 psi	385.5 psi
Statistics based on 30 of 32 reporting participants		

Sample J97: ABS/PC & Sample J98: ABS/PC

Comments on Assigned Data Flags for Test #721

QF7QHQ (X) - Data for sample J98 are low. Inconsistent within the determinations of sample J97.

DGMLG4 (X) - Data for both samples are low.



Plastics Interlaboratory Testing Program

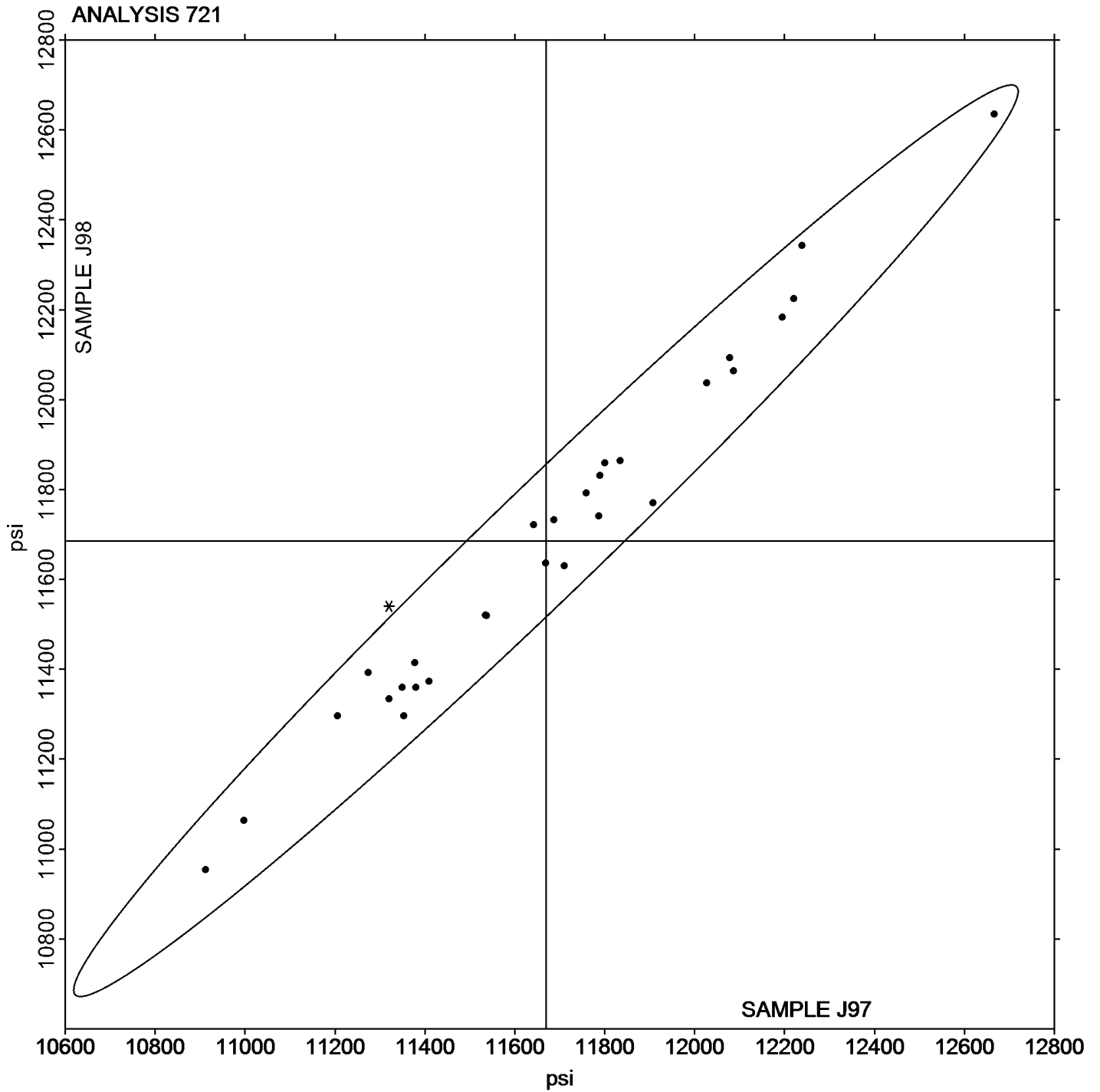
Report #129

Analysis 721

1st Qtr 2024

Flexural Stress at 5% Strain - psi

Grand Mean Sample J97: 11,669.06 psi Grand Mean Sample J98: 11,685.97 psi





Plastics Interlaboratory Testing Program

Report #129

Analysis 722

1st Qtr 2024

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J97			Sample J98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2YLCFP		12,160	388	0.82	12,180	400	0.85
4DCQG9		11,531	-242	-0.51	11,525	-256	-0.54
4NYP9D		11,383	-389	-0.82	11,408	-372	-0.79
63E6UA		11,658	-114	-0.24	11,626	-154	-0.33
6L6QKL		12,240	468	0.98	12,360	580	1.23
7T46RL		11,415	-357	-0.75	11,525	-256	-0.54
7YA9VL		10,913	-859	-1.81	10,954	-826	-1.75
9YE63F		11,500	-273	-0.57	11,455	-326	-0.69
B48PJ4		11,620	-152	-0.32	11,780	0	0.00
DGMLG4	X	9,490	-2,282	-4.80	9,394	-2,386	-5.06
GAWAVX		11,810	38	0.08	11,850	69	0.15
GK9AC8		12,346	573	1.21	12,353	573	1.21
H7CMUX		12,778	1,006	2.12	12,762	981	2.08
HGBJWZ		12,091	319	0.67	11,979	199	0.42
JCUFJ3		11,860	88	0.18	11,887	107	0.23
JQVAWW		11,835	63	0.13	11,922	142	0.30
K7GCRR		12,079	306	0.65	12,045	265	0.56
KMQDXA		11,898	125	0.26	11,926	146	0.31
KPR7FR		11,796	24	0.05	11,891	111	0.24
PQBJ8K		11,645	-127	-0.27	11,637	-144	-0.31
QF7QHQ		11,001	-772	-1.62	10,902	-878	-1.86
TCWP4W		11,002	-771	-1.62	11,007	-774	-1.64
UHG8YJ		12,085	312	0.66	12,062	281	0.60
UZ6P42		11,410	-362	-0.76	11,382	-399	-0.85
W2MQYY		11,051	-722	-1.52	11,121	-659	-1.40
XDF3WQ		12,482	710	1.49	12,513	732	1.55
Y9JXFQ		12,247	475	1.00	12,124	343	0.73
Z44PRR		12,019	247	0.52	11,897	117	0.25

Summary Statistics

	Sample J97	Sample J98
Grand Means	11,772.4 psi	11,780.5 psi
Std Dev Btwn Labs	475.0 psi	471.5 psi

Statistics based on 27 of 28 reporting participants

Sample J97: ABS/PC & Sample J98: ABS/PC



Plastics Interlaboratory Testing Program

Analysis 722

Flexural Stress at Yield - psi

Report #129

1st Qtr 2024

Comments on Assigned Data Flags for Test #722

DGMLG4 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

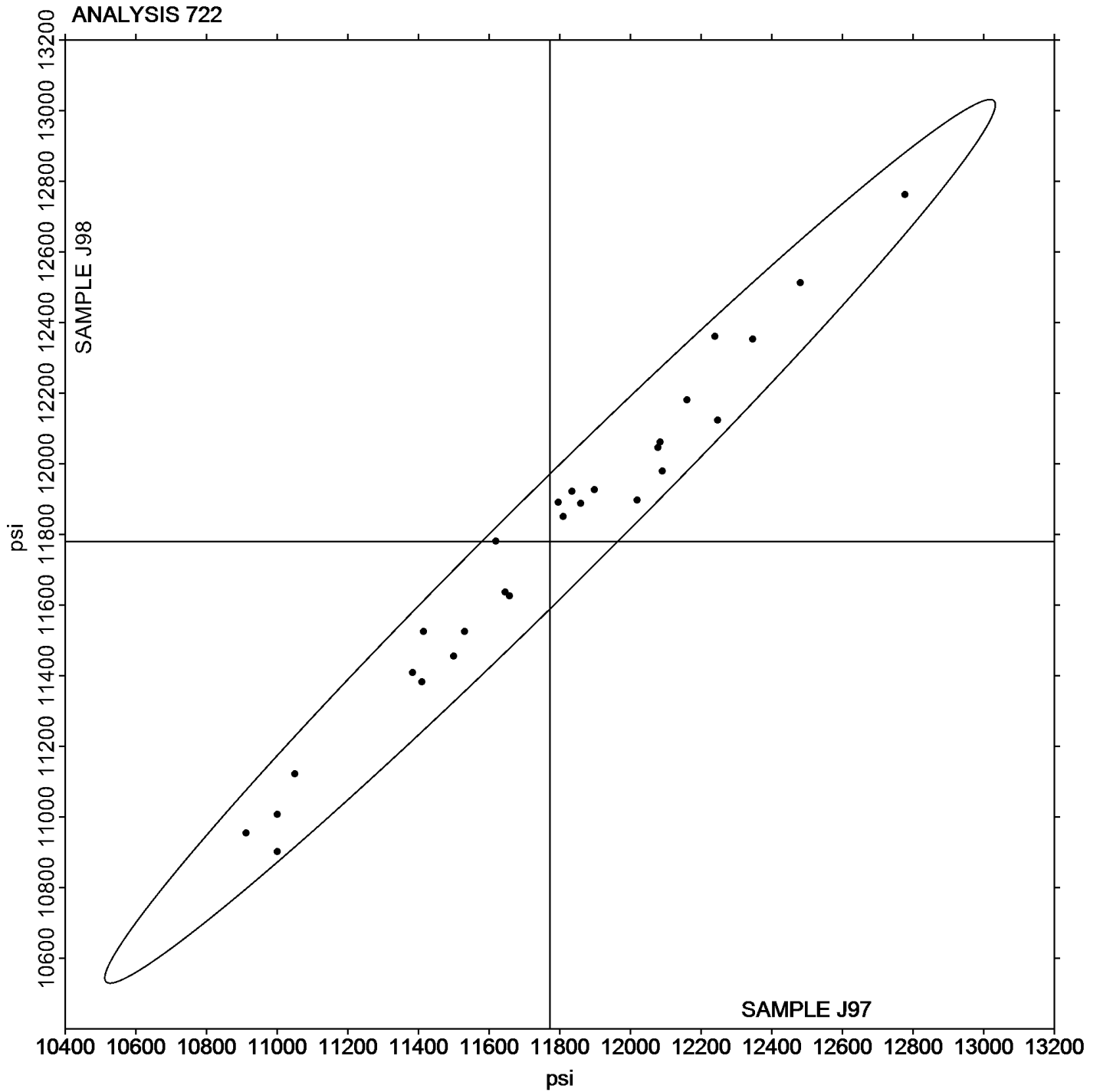
Report #129

Analysis 722

1st Qtr 2024

Flexural Stress at Yield - psi

Grand Mean Sample J97: 11,772.41 psi Grand Mean Sample J98: 11,780.46 psi





Plastics Interlaboratory Testing Program

Report #129

Analysis 730

1st Qtr 2024

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C97			Sample C98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
27PLZH		46.01	0.37	0.46	46.03	0.38	0.46
2NN4L7		45.26	-0.38	-0.48	45.34	-0.32	-0.39
2PGWGP		46.88	1.23	1.56	47.00	1.34	1.62
2Y7KDD	X	40.95	-4.69	-5.95	40.58	-5.08	-6.16
3HCFKA		45.78	0.14	0.18	45.37	-0.29	-0.35
4DCQG9		45.57	-0.08	-0.10	45.42	-0.24	-0.29
4HRY68		45.62	-0.03	-0.03	45.59	-0.07	-0.09
4RX9LT		44.93	-0.72	-0.91	44.92	-0.74	-0.90
7WJDFL		46.20	0.55	0.70	46.09	0.43	0.52
7YPX77		46.08	0.44	0.56	46.22	0.57	0.69
82B2E4		46.60	0.96	1.21	46.39	0.74	0.89
8NLU6N		46.59	0.94	1.20	46.86	1.20	1.46
93EGXE		46.67	1.03	1.31	46.45	0.79	0.96
9YE63F		45.10	-0.54	-0.69	44.67	-0.99	-1.20
AMK466		46.12	0.48	0.61	46.18	0.52	0.63
AYY9AF		45.19	-0.45	-0.57	45.13	-0.53	-0.64
BEA3J4		45.66	0.02	0.03	45.79	0.14	0.17
C7PXWG	X	43.40	-2.24	-2.84	44.36	-1.30	-1.57
DEHZPX		46.04	0.40	0.50	46.06	0.40	0.49
EPCW44		44.36	-1.29	-1.63	44.71	-0.95	-1.15
EYL3Z8		43.83	-1.81	-2.30	44.02	-1.64	-1.99
FBNJDA		46.64	1.00	1.26	46.75	1.09	1.32
GGXYLX	*	45.08	-0.57	-0.72	44.42	-1.23	-1.50
GRCJWY		46.12	0.48	0.60	46.69	1.03	1.25
H6G38Y		46.20	0.56	0.70	46.08	0.42	0.51
HAPMRP		45.54	-0.10	-0.13	44.98	-0.68	-0.82
HR9NK7		45.86	0.22	0.28	45.84	0.18	0.22
HRT6Z9		45.89	0.24	0.31	45.60	-0.06	-0.07
JCUFJ3	*	43.28	-2.36	-3.00	43.32	-2.34	-2.83
JFC6W8		46.60	0.96	1.21	46.38	0.72	0.88
K6RFCT		46.28	0.64	0.81	46.17	0.51	0.62
LMK7YQ		44.65	-1.00	-1.26	45.14	-0.51	-0.62
PLWDK7		45.53	-0.11	-0.14	45.81	0.15	0.18
Q2THHM		45.21	-0.43	-0.55	45.25	-0.41	-0.49
Q4F2JK		46.08	0.44	0.56	46.19	0.53	0.64



Plastics Interlaboratory Testing Program

Report #129

Analysis 730

1st Qtr 2024

Tensile Stress at Yield - MPa

WebCode	Data Flag	<u>Sample C97</u>			<u>Sample C98</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QHG6W7		46.00	0.36	0.45	46.09	0.43	0.52
QLCKCL		44.42	-1.22	-1.55	44.04	-1.62	-1.96
T89CHW		45.40	-0.24	-0.31	45.24	-0.42	-0.51
TL8RPX		45.85	0.21	0.27	45.73	0.07	0.08
UHG8YJ		45.73	0.09	0.11	45.55	-0.10	-0.13
UM2UZK		44.42	-1.22	-1.55	44.62	-1.04	-1.26
UZ6P42		46.50	0.86	1.08	46.78	1.12	1.36
WGMZUD		46.31	0.67	0.85	46.40	0.75	0.91
WLD3MY	*	45.41	-0.24	-0.30	46.13	0.48	0.58
XDF3WQ		46.34	0.70	0.88	46.28	0.62	0.75
XH9UVU		45.15	-0.50	-0.63	45.47	-0.19	-0.23
XPWP8C		45.36	-0.28	-0.36	45.24	-0.42	-0.51
XWBQ7L		46.08	0.44	0.55	46.46	0.80	0.97
YQY7GR		45.20	-0.44	-0.56	45.00	-0.66	-0.80
YT7GFG		46.35	0.71	0.90	46.48	0.82	0.99
YVT2GE		44.12	-1.52	-1.93	44.27	-1.38	-1.68
Z44PRR		46.10	0.45	0.57	46.26	0.60	0.73

Summary Statistics		
	<u>Sample C97</u>	<u>Sample C98</u>
Grand Means	45.643 MPa	45.658 MPa
Stnd Dev Btwn Labs	0.789 MPa	0.824 MPa
Statistics based on 50 of 52 reporting participants		

Sample C97: ABS & Sample C98: ABS

Comments on Assigned Data Flags for Test #730

2Y7KDD (X) - Data for both samples are low. Possible Systematic Error.

C7PXWG (X) - Data for sample C97 are low.



Plastics Interlaboratory Testing Program

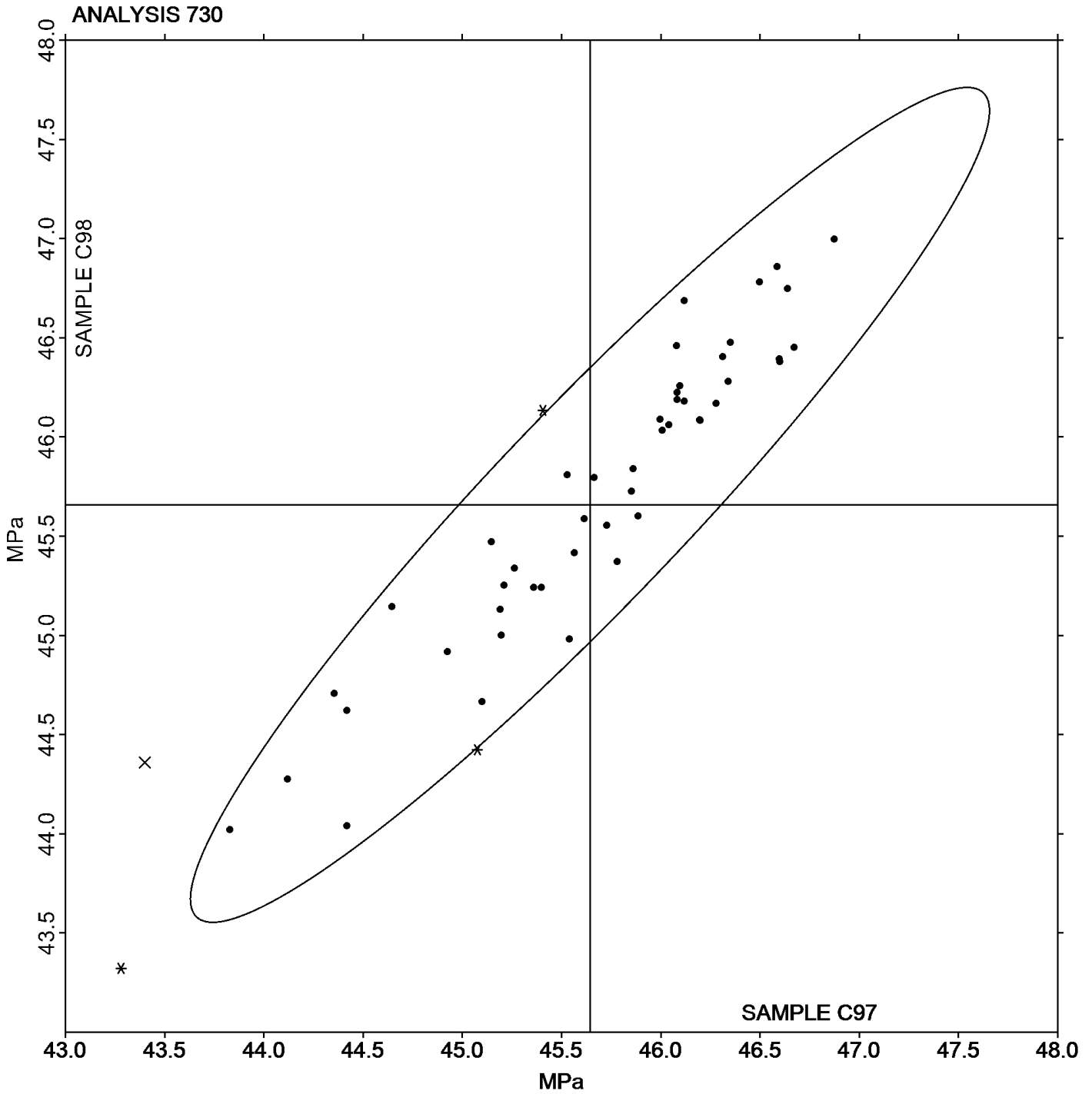
Report #129

Analysis 730

1st Qtr 2024

Tensile Stress at Yield - MPa

Grand Mean Sample C97: 45.643 MPa Grand Mean Sample C98: 45.658 MPa





Plastics Interlaboratory Testing Program

Report #129

Analysis 731

1st Qtr 2024

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C97			Sample C98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
27PLZH		36.09	1.74	1.60	36.00	1.66	1.41
2PGWGP		36.29	1.94	1.79	36.67	2.33	1.98
2Y7KDD	X	40.95	6.61	6.08	40.58	6.24	5.30
4DCQG9		32.86	-1.48	-1.36	32.48	-1.86	-1.58
4HRY68		33.47	-0.87	-0.80	33.96	-0.38	-0.32
4RX9LT		34.37	0.02	0.02	34.64	0.31	0.26
7YPX77		33.53	-0.82	-0.75	32.76	-1.57	-1.34
82B2E4		34.56	0.21	0.20	34.82	0.48	0.41
8NLU6N		36.44	2.09	1.93	34.98	0.64	0.55
9YE63F		33.04	-1.31	-1.20	34.27	-0.07	-0.06
AMK466		34.68	0.33	0.31	34.28	-0.06	-0.05
AYY9AF		33.32	-1.02	-0.94	33.41	-0.93	-0.79
BEA3J4		35.45	1.10	1.01	34.85	0.51	0.43
C7PXWG	X	31.90	-2.45	-2.25	34.88	0.54	0.46
DEHZPX		34.20	-0.15	-0.13	34.02	-0.32	-0.27
EPCW44		34.37	0.03	0.02	34.56	0.23	0.19
EYL3Z8		33.42	-0.92	-0.85	33.77	-0.57	-0.48
FBNJDA		33.68	-0.66	-0.61	35.13	0.80	0.68
GRCJWY	X	38.30	3.95	3.63	38.47	4.13	3.51
H6G38Y		34.96	0.61	0.56	35.02	0.69	0.58
HAPMRP		35.30	0.95	0.88	35.16	0.82	0.70
HR9NK7		33.80	-0.55	-0.50	34.71	0.37	0.31
HRT6Z9		36.45	2.10	1.93	35.96	1.62	1.38
JCUFJ3		32.67	-1.67	-1.54	32.39	-1.95	-1.66
JFC6W8	*	33.50	-0.85	-0.78	35.94	1.60	1.36
K6RFCT		33.42	-0.92	-0.85	33.74	-0.59	-0.50
LMK7YQ		33.87	-0.48	-0.44	34.16	-0.17	-0.15
PLWDK7	*	35.92	1.57	1.45	33.79	-0.55	-0.47
Q2THHM		34.00	-0.34	-0.32	33.52	-0.82	-0.70
Q4F2JK		34.06	-0.28	-0.26	33.37	-0.97	-0.82
QHG6W7		34.63	0.28	0.26	34.54	0.21	0.17
T89CHW		34.22	-0.12	-0.11	33.28	-1.06	-0.90
TL8RPX		34.40	0.05	0.05	33.92	-0.42	-0.36
UHG8YJ		34.26	-0.09	-0.08	34.20	-0.14	-0.12
UM2UZK		33.96	-0.39	-0.36	33.94	-0.40	-0.34



Plastics Interlaboratory Testing Program

Report #129

Analysis 731

1st Qtr 2024

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C97			Sample C98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
UZ6P42		34.67	0.32	0.29	35.47	1.13	0.96
WGMZUD		33.72	-0.63	-0.58	33.00	-1.34	-1.14
WLD3MY		33.30	-1.05	-0.96	33.75	-0.59	-0.50
XDF3WQ		36.22	1.87	1.72	35.98	1.64	1.39
XDVG7K		34.44	0.09	0.09	34.45	0.11	0.09
XH9UVU		35.18	0.84	0.77	35.45	1.11	0.94
XPWP8C		33.56	-0.79	-0.72	33.40	-0.94	-0.80
XWBQ7L		33.78	-0.57	-0.52	34.06	-0.28	-0.24
YQY7GR	*	35.43	1.08	0.99	37.06	2.73	2.32
YT7GFG	X	37.96	3.61	3.32	30.34	-4.00	-3.40
YVT2GE	*	31.82	-2.53	-2.33	31.02	-3.32	-2.82
Z44PRR		35.60	1.25	1.15	34.65	0.32	0.27

Summary Statistics		
	Sample C97	Sample C98
Grand Means	34.347 MPa	34.338 MPa
Std Dev Btwn Labs	1.087 MPa	1.177 MPa
Statistics based on 43 of 47 reporting participants		

Sample C97: ABS & Sample C98: ABS

Comments on Assigned Data Flags for Test #731

- YT7GFG (X) - Data for sample C97 are high and data for sample C98 are low. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- GRCJWY (X) - Data for both samples are high. Possible Systematic Error.
- 2Y7KDD (X) - Data for both samples are high. Possible Systematic Error.
- C7PXWG (X) - Inconsistent in testing between samples.



Plastics Interlaboratory Testing Program

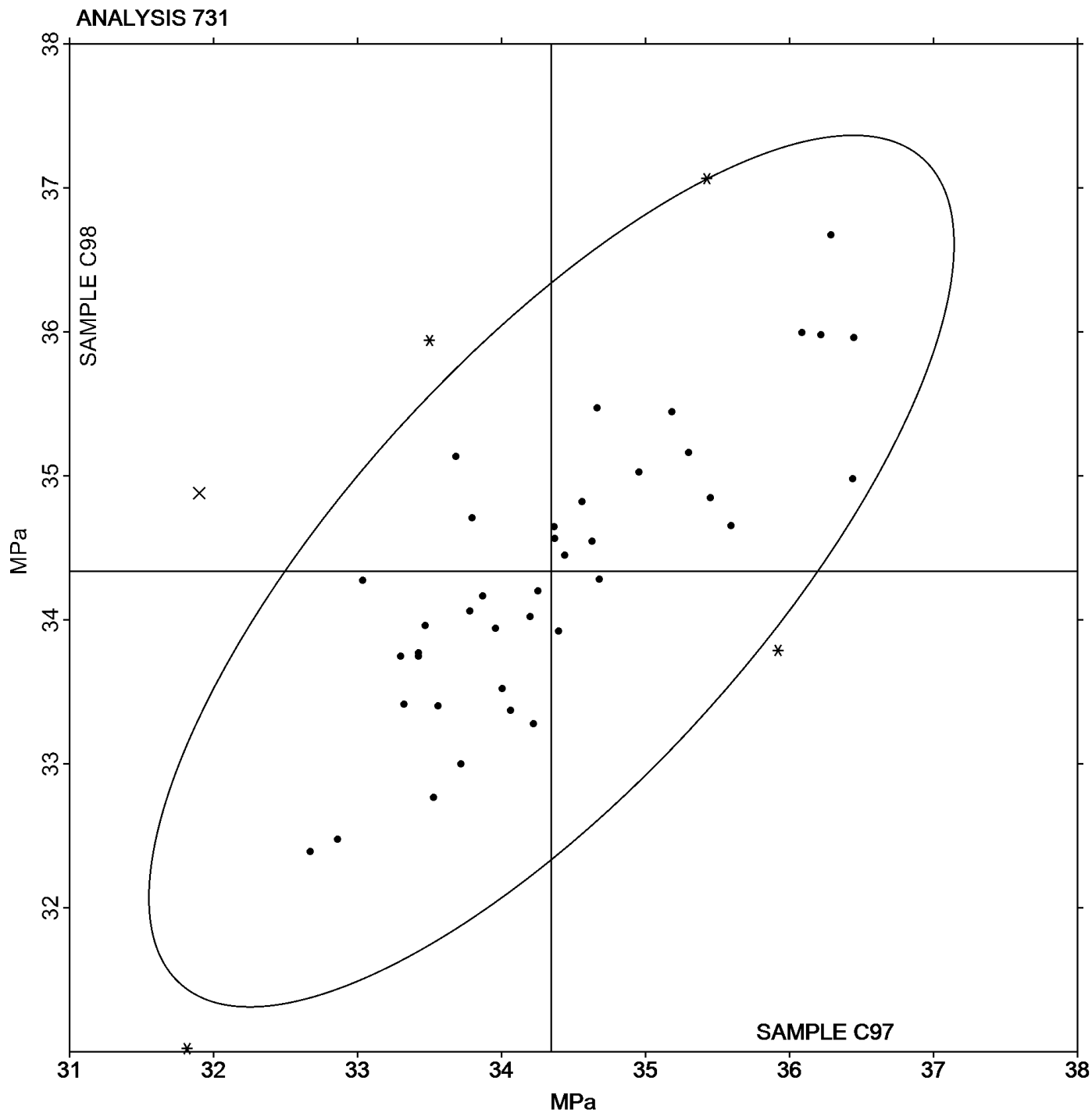
Report #129

Analysis 731

1st Qtr 2024

Tensile Stress at Break - MPa

Grand Mean Sample C97: 34.347 MPa Grand Mean Sample C98: 34.338 MPa





Plastics Interlaboratory Testing Program

Report #129

Analysis 732

1st Qtr 2024

Percent Strain at Yield

WebCode	Data Flag	Sample C97			Sample C98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
27PLZH		2.538	0.102	1.22	2.561	0.129	1.45
2PGWGP	*	2.570	0.134	1.60	2.501	0.069	0.78
2Y7KDD	*	2.208	-0.227	-2.70	2.150	-0.282	-3.17
4DCQG9		2.390	-0.046	-0.54	2.394	-0.038	-0.42
4HRY68		2.396	-0.040	-0.47	2.398	-0.034	-0.38
4RX9LT		2.484	0.048	0.57	2.484	0.052	0.59
7WJDFL		2.384	-0.052	-0.62	2.366	-0.066	-0.74
7YPX77		2.386	-0.050	-0.59	2.354	-0.078	-0.87
82B2E4		2.474	0.038	0.46	2.470	0.038	0.43
8NLU6N		2.400	-0.036	-0.42	2.440	0.008	0.09
9YE63F		2.410	-0.026	-0.31	2.360	-0.072	-0.81
AMK466		2.500	0.064	0.76	2.500	0.068	0.77
AYY9AF	X	2.366	-0.070	-0.83	2.134	-0.298	-3.35
BEA3J4		2.432	-0.004	-0.04	2.424	-0.008	-0.09
C7PXWG		2.430	-0.006	-0.07	2.412	-0.020	-0.22
DEHZPX		2.500	0.064	0.76	2.500	0.068	0.77
EPCW44		2.428	-0.008	-0.09	2.372	-0.060	-0.67
EYL3Z8		2.426	-0.010	-0.12	2.480	0.048	0.54
FBNJDA		2.418	-0.018	-0.21	2.418	-0.014	-0.15
GRCJWY	X	3.038	0.602	7.16	3.142	0.710	7.99
H6G38Y		2.500	0.064	0.76	2.506	0.074	0.84
HAPMRP		2.650	0.214	2.55	2.644	0.212	2.39
HR9NK7		2.400	-0.036	-0.42	2.400	-0.032	-0.36
HRT6Z9		2.458	0.022	0.26	2.404	-0.028	-0.31
JCUFJ3		2.418	-0.018	-0.22	2.416	-0.016	-0.18
JFC6W8		2.258	-0.178	-2.11	2.212	-0.220	-2.47
K6RFCT		2.512	0.076	0.91	2.513	0.081	0.91
LMK7YQ		2.438	0.002	0.03	2.450	0.018	0.21
PLWDK7	X	2.790	0.354	4.21	3.236	0.804	9.04
Q2THHM		2.422	-0.014	-0.16	2.392	-0.040	-0.45
Q4F2JK		2.460	0.024	0.29	2.458	0.026	0.30
QHG6W7		2.454	0.018	0.22	2.454	0.022	0.25
T89CHW		2.548	0.113	1.34	2.578	0.146	1.64
TL8RPX		2.496	0.060	0.72	2.504	0.072	0.81
UH8YJ		2.450	0.014	0.17	2.444	0.012	0.14



Plastics Interlaboratory Testing Program

Report #129

Analysis 732

1st Qtr 2024

Percent Strain at Yield

WebCode	Data Flag	Sample C97			Sample C98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
UZ6P42		2.358	-0.078	-0.92	2.422	-0.010	-0.11
WGMZUD		2.440	0.004	0.05	2.448	0.016	0.18
WLD3MY	X	3.098	0.662	7.88	3.836	1.404	15.79
XDF3WQ	X	2.540	0.104	1.24	2.380	-0.052	-0.58
XH9UVU		2.341	-0.095	-1.12	2.376	-0.056	-0.63
XPWP8C		2.400	-0.036	-0.42	2.400	-0.032	-0.36
XWBQ7L		2.520	0.084	1.00	2.480	0.048	0.54
YQY7GR	X	3.259	0.823	9.79	3.105	0.673	7.57
YT7GFG	*	2.250	-0.186	-2.21	2.300	-0.132	-1.48
YVT2GE		2.446	0.010	0.12	2.450	0.018	0.21

Summary Statistics		
	Sample C97	Sample C98
Grand Means	2.4357 Percent	2.4316 Percent
Stnd Dev Btwn Labs	0.0841 Percent	0.0889 Percent
Statistics based on 39 of 45 reporting participants		

Sample C97: ABS & Sample C98: ABS

Comments on Assigned Data Flags for Test #732

- GRCJWY (X) - Data for both samples are high.
- AYY9AF (X) - Data for sample C98 are low. Inconsistent within the determinations of sample C98.
- XDF3WQ (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- YQY7GR (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- WLD3MY (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- PLWDK7 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

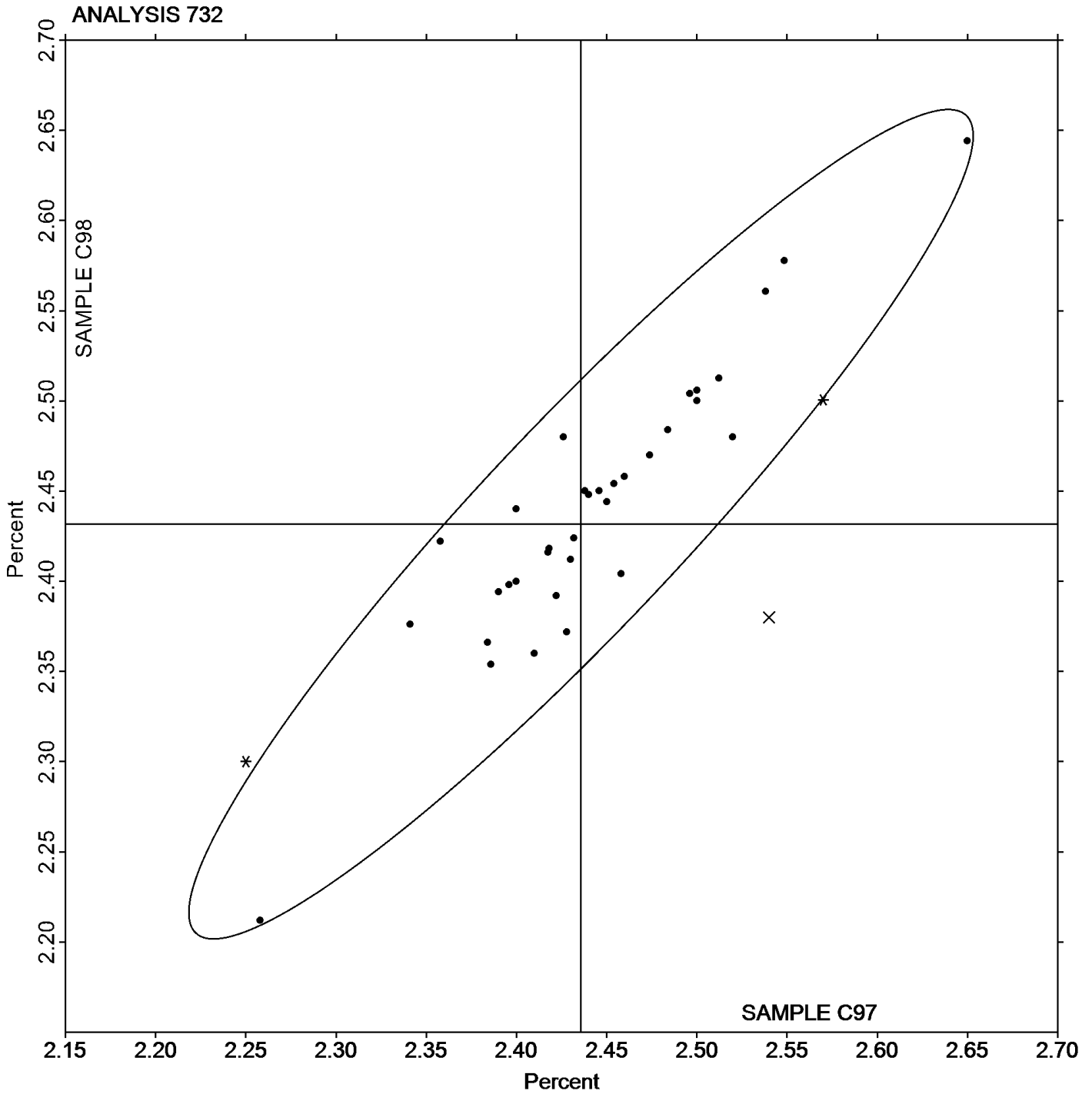
Report #129

Analysis 732

1st Qtr 2024

Percent Strain at Yield

Grand Mean Sample C97: 2.4357 Percent Grand Mean Sample C98: 2.4316 Percent





Plastics Interlaboratory Testing Program

Report #129

Analysis 734

1st Qtr 2024

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C97			Sample C98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
27PLZH		2,268	-106	-1.60	2,249	-130	-1.56
2PGWGP	X	2,041	-334	-5.01	2,329	-50	-0.60
2Y7KDD		2,368	-7	-0.10	2,335	-44	-0.53
4DCQG9		2,368	-6	-0.09	2,378	-1	-0.01
4HRY68		2,479	105	1.57	2,504	125	1.51
4RX9LT	X	2,000	-374	-5.63	2,002	-377	-4.54
7WJDFL		2,380	5	0.08	2,390	11	0.13
7YPX77		2,416	41	0.62	2,451	72	0.87
82B2E4		2,451	76	1.14	2,486	107	1.29
8NLU6N		2,411	36	0.54	2,417	39	0.47
9YE63F		2,317	-58	-0.87	2,343	-36	-0.43
AMK466		2,340	-35	-0.52	2,340	-39	-0.47
AYY9AF	X	2,687	312	4.69	2,656	278	3.34
BEA3J4		2,453	79	1.18	2,451	72	0.87
C7PXWG	X	3,460	1,085	16.31	2,828	449	5.41
DEHZPX		2,372	-3	-0.04	2,350	-29	-0.35
EPCW44		2,482	107	1.61	2,539	160	1.93
EYL3Z8	X	2,452	78	1.17	2,317	-61	-0.74
FBNJDA		2,310	-65	-0.97	2,312	-67	-0.80
GRCJWY		2,394	20	0.30	2,341	-38	-0.46
H6G38Y		2,349	-26	-0.39	2,341	-37	-0.45
HAPMRP		2,374	-1	-0.01	2,360	-19	-0.23
HR9NK7		2,418	43	0.65	2,452	73	0.88
HRT6Z9		2,355	-19	-0.29	2,403	24	0.29
JCUFJ3	X	2,755	380	5.71	2,701	323	3.89
JFC6W8		2,366	-8	-0.13	2,345	-34	-0.41
K6RFCT		2,346	-29	-0.43	2,327	-52	-0.62
LMK7YQ		2,285	-89	-1.34	2,271	-108	-1.30
PLWDK7	X	2,158	-217	-3.26	1,822	-557	-6.71
Q2THHM		2,334	-40	-0.61	2,374	-4	-0.05
Q4F2JK		2,343	-32	-0.48	2,342	-36	-0.44
QHG6W7		2,381	7	0.10	2,410	31	0.37
T3BJDK		2,260	-115	-1.72	2,228	-151	-1.82
T89CHW		2,354	-21	-0.32	2,370	-9	-0.11
TL8RPX		2,373	-1	-0.02	2,397	19	0.22



Plastics Interlaboratory Testing Program

Report #129

Analysis 734

1st Qtr 2024

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C97			Sample C98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
UHG8YJ		2,314	-60	-0.91	2,329	-49	-0.59
UZ6P42		2,446	71	1.07	2,416	38	0.45
WGMZUD		2,442	67	1.01	2,436	57	0.69
WLD3MY		2,373	-2	-0.02	2,357	-21	-0.26
XDF3WQ		2,226	-149	-2.23	2,186	-193	-2.32
XDVG7K		2,323	-51	-0.77	2,335	-44	-0.53
XH9UVU		2,470	95	1.43	2,537	158	1.90
XPWP8C		2,351	-24	-0.36	2,332	-46	-0.56
XWBQ7L	X	2,215	-160	-2.40	2,292	-87	-1.04
YQY7GR	X	1,898	-476	-7.16	2,094	-284	-3.43
YT7GFG	*	2,547	172	2.58	2,577	198	2.39
YVT2GE		2,397	23	0.34	2,380	1	0.01

Summary Statistics

	Sample C97	Sample C98
Grand Means	2,374.6 MPa	2,378.7 MPa
Std Dev Btwn Labs	66.5 MPa	83.0 MPa

Statistics based on 38 of 47 reporting participants

Sample C97: ABS & Sample C98: ABS

Comments on Assigned Data Flags for Test #734

- XWBQ7L (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- JCUFJ3 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- EYL3Z8 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- AYY9AF (X) - Data for both samples are high. Inconsistent within the determinations of sample C97.
- 2PGWGP (X) - Data for sample C97 are low. Inconsistent within the determinations of both samples.
- YQY7GR (X) - Data for both samples are low. Inconsistent within the determinations of both samples.
- C7PXWG (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- 4RX9LT (X) - Data for both samples are low. Inconsistent within the determinations of sample C97.
- PLWDK7 (X) - Data for both samples are low. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

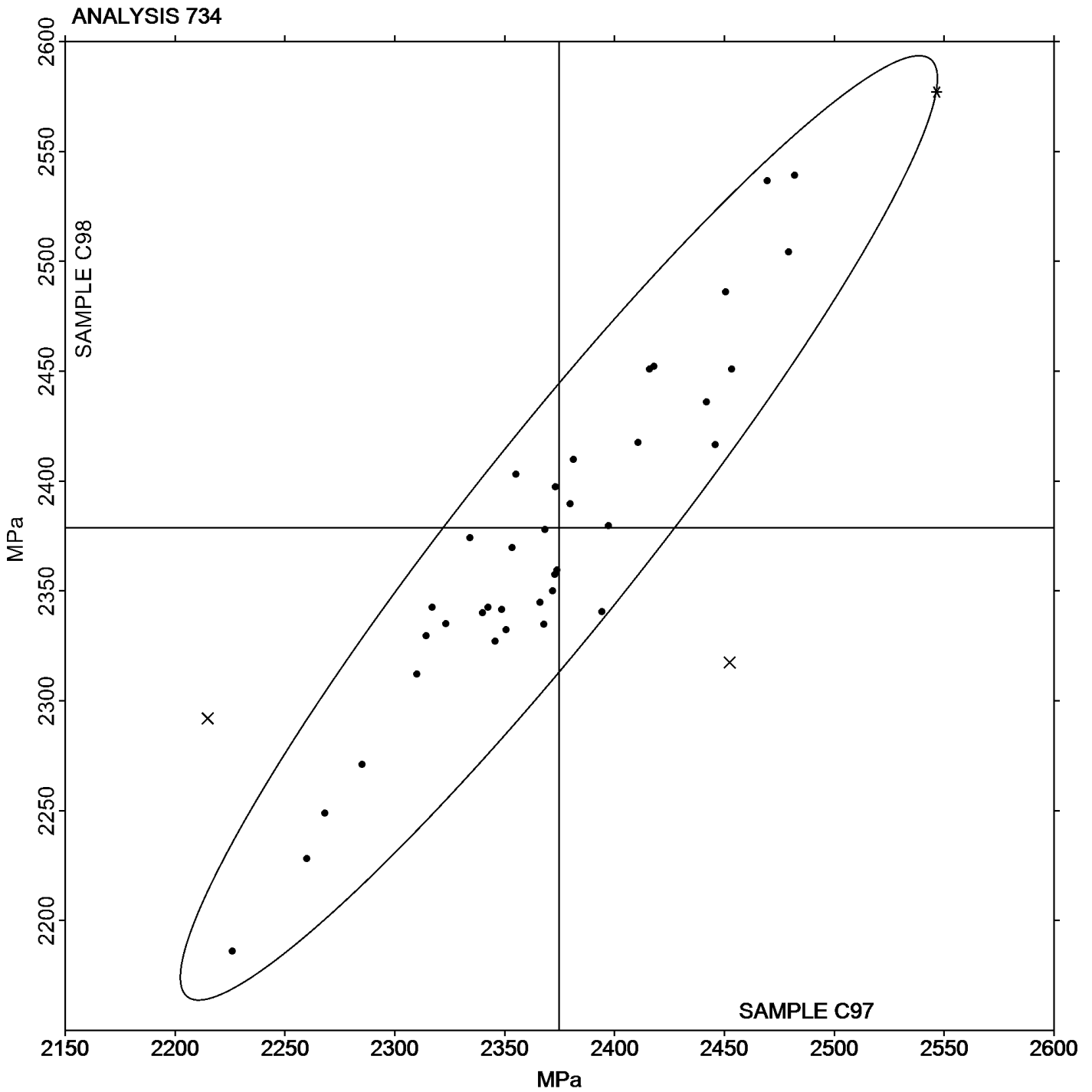
Report #129

Analysis 734

1st Qtr 2024

Modulus of Elasticity - MPa

Grand Mean Sample C97: 2,374.64 MPa Grand Mean Sample C98: 2,378.69 MPa





Plastics Interlaboratory Testing Program

Report #129

Analysis 736

1st Qtr 2024

Flexural Modulus - MPa

WebCode	Data Flag	Sample K97			Sample K98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
27PLZH		2,529	133	1.66	2,562	171	1.97
2NN4L7		2,380	-17	-0.21	2,388	-3	-0.03
2PGWGP		2,405	9	0.11	2,401	10	0.12
4DCQG9		2,390	-7	-0.08	2,378	-13	-0.15
4HRY68		2,468	71	0.89	2,466	75	0.87
7WJDFL		2,455	58	0.73	2,435	44	0.50
82B2E4		2,441	45	0.56	2,452	61	0.71
8NLU6N		2,485	88	1.10	2,473	82	0.95
93EGXE		2,485	89	1.11	2,476	85	0.98
AYY9AF		2,286	-111	-1.39	2,271	-120	-1.38
BEA3J4		2,449	52	0.65	2,441	50	0.57
C7PXWG	X	2,726	329	4.13	2,764	373	4.30
CBKRUH	X	2,905	509	6.37	2,899	508	5.86
DEHZPX		2,306	-91	-1.14	2,308	-83	-0.96
EPCW44		2,363	-34	-0.42	2,342	-49	-0.57
EYL3Z8		2,258	-139	-1.74	2,237	-154	-1.78
FBNJDA		2,318	-79	-0.98	2,330	-61	-0.70
GGXYLX		2,498	102	1.27	2,496	105	1.21
H6G38Y		2,432	36	0.45	2,385	-6	-0.07
HAPMRP		2,402	5	0.07	2,419	28	0.33
HR9NK7	*	2,344	-53	-0.66	2,276	-115	-1.33
JCUFJ3		2,375	-22	-0.27	2,394	3	0.03
JFC6W8		2,400	4	0.05	2,421	30	0.34
K6RFCT		2,500	103	1.29	2,501	110	1.27
PLWDK7		2,510	113	1.42	2,505	113	1.31
PQBJ8K		2,408	12	0.15	2,417	26	0.30
Q2THHM		2,303	-94	-1.18	2,299	-92	-1.06
Q4F2JK		2,357	-40	-0.50	2,376	-15	-0.17
QHG6W7		2,299	-98	-1.22	2,291	-100	-1.15
QLCKCL		2,338	-59	-0.73	2,370	-21	-0.24
T3BJDK		2,338	-59	-0.73	2,300	-91	-1.05
T89CHW		2,371	-25	-0.32	2,367	-24	-0.27
TL8RPX		2,412	15	0.19	2,396	5	0.06
UHG8YJ		2,530	133	1.67	2,536	145	1.67
UZ6P42		2,404	7	0.09	2,436	45	0.52



Plastics Interlaboratory Testing Program

Report #129

Analysis 736

1st Qtr 2024

Flexural Modulus - MPa

WebCode	Data Flag	Sample K97			Sample K98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WGMZUD		2,459	62	0.78	2,478	87	1.01
WLD3MY		2,567	171	2.14	2,562	171	1.97
XDF3WQ		2,405	8	0.10	2,403	12	0.13
XDVG7K		2,346	-50	-0.63	2,316	-75	-0.87
XH9UVU		2,218	-178	-2.23	2,228	-163	-1.87
XPWP8C		2,418	21	0.26	2,406	15	0.17
XWBQ7L		2,329	-67	-0.84	2,307	-84	-0.96
YQY7GR	X	2,157	-240	-3.01	2,315	-76	-0.88
YT7GFG	*	2,383	-14	-0.18	2,302	-89	-1.02
YVT2GE		2,293	-104	-1.30	2,275	-116	-1.34

Summary Statistics		
	Sample K97	Sample K98
Grand Means	2,396.6 MPa	2,391.0 MPa
Stnd Dev Btwn Labs	79.8 MPa	86.8 MPa
Statistics based on 42 of 45 reporting participants		

Sample K97: ABS & Sample K98: ABS

Comments on Assigned Data Flags for Test #736

- YQY7GR (X) - Data for sample K97 are low. Inconsistent within the determinations of both samples.
- C7PXWG (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample K97.
- CBKRUH (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample K98.



Plastics Interlaboratory Testing Program

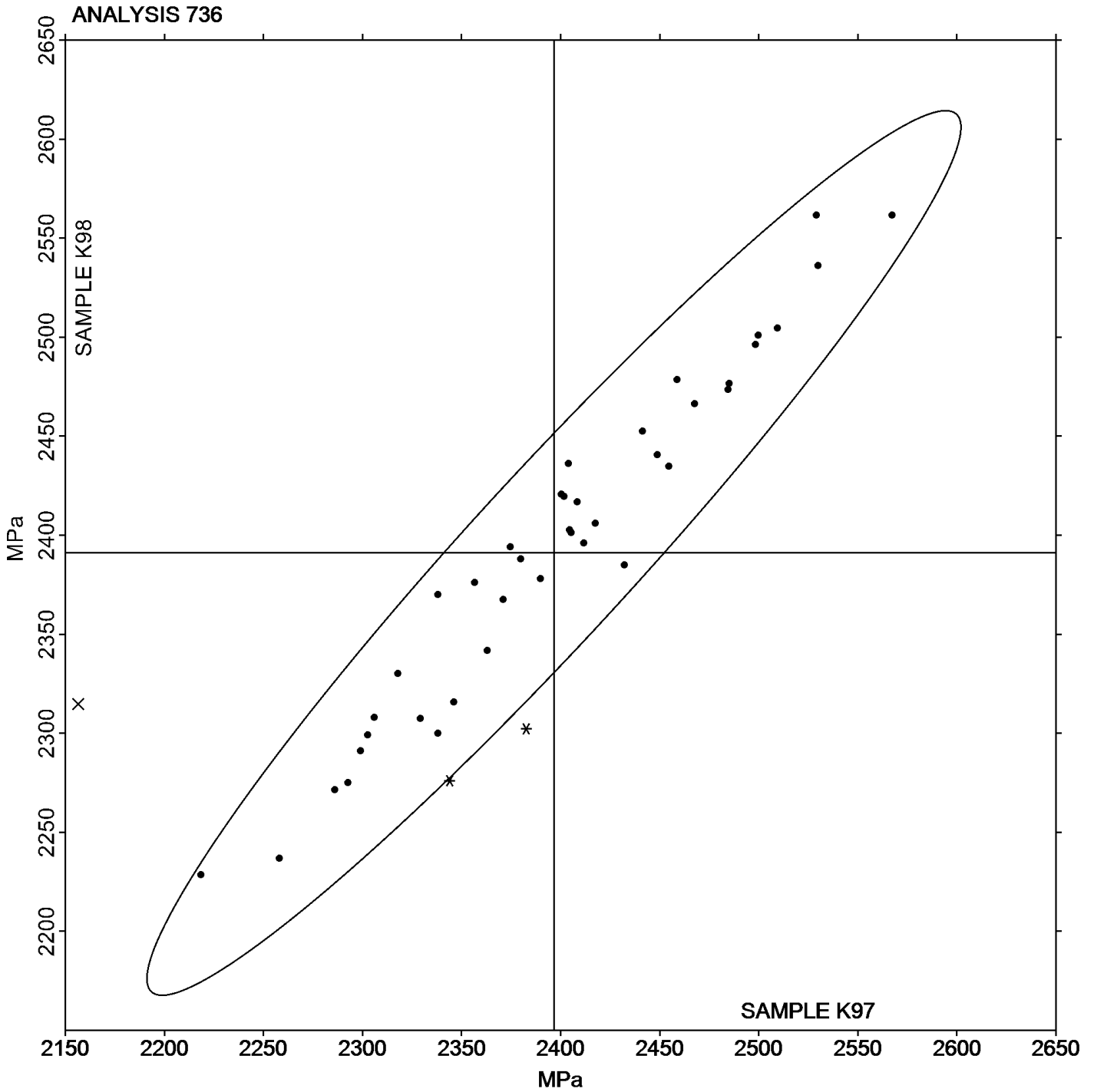
Report #129

Analysis 736

1st Qtr 2024

Flexural Modulus - MPa

Grand Mean Sample K97: 2,396.59 MPa Grand Mean Sample K98: 2,391.03 MPa





Plastics Interlaboratory Testing Program

Report #129

Analysis 737

1st Qtr 2024

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K97			Sample K98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
27PLZH		67.26	-1.42	-0.80	67.36	-1.32	-0.75
2PGWGP		70.11	1.43	0.80	69.69	1.01	0.58
4DCQG9		67.78	-0.89	-0.50	67.74	-0.94	-0.54
4HRY68		68.94	0.26	0.15	68.88	0.20	0.12
7WJDFL		69.16	0.49	0.27	69.14	0.46	0.26
82B2E4		71.42	2.74	1.54	71.94	3.26	1.86
8NLU6N		71.49	2.81	1.58	71.34	2.66	1.52
AYY9AF		67.36	-1.31	-0.74	67.48	-1.20	-0.68
BEA3J4		69.08	0.41	0.23	69.09	0.41	0.23
C7PXWG		71.54	2.86	1.61	71.38	2.70	1.54
DEHZPX		69.95	1.27	0.71	70.13	1.46	0.83
EPCW44		67.40	-1.27	-0.71	67.07	-1.61	-0.92
EYL3Z8		66.83	-1.85	-1.04	66.94	-1.73	-0.99
FBNJDA		69.17	0.49	0.27	69.43	0.75	0.43
H6G38Y		67.89	-0.79	-0.44	67.82	-0.86	-0.49
HAPMRP	X	63.10	-5.58	-3.13	62.22	-6.46	-3.69
JCUFJ3		68.17	-0.51	-0.29	67.62	-1.05	-0.60
K6RFCT	*	63.42	-5.26	-2.95	63.22	-5.46	-3.12
PLWDK7		69.92	1.24	0.70	69.55	0.87	0.50
PQBJ8K		67.35	-1.32	-0.74	67.61	-1.06	-0.61
Q2THHM		71.18	2.50	1.40	71.11	2.43	1.39
Q4F2JK		69.01	0.33	0.19	68.76	0.08	0.04
QHG6W7		67.05	-1.63	-0.92	66.88	-1.80	-1.03
T89CHW		69.84	1.16	0.65	69.54	0.87	0.50
TL8RPX		69.51	0.83	0.47	69.50	0.82	0.47
UHG8YJ		70.10	1.42	0.80	70.25	1.57	0.90
UZ6P42		67.18	-1.50	-0.84	67.86	-0.82	-0.47
WGMZUD		68.50	-0.18	-0.10	68.39	-0.29	-0.16
WLD3MY		66.02	-2.66	-1.49	66.77	-1.91	-1.09
XDF3WQ		69.98	1.31	0.73	69.70	1.03	0.59
XH9UVU		68.28	-0.39	-0.22	68.82	0.14	0.08
XPWP8C		68.54	-0.14	-0.08	67.94	-0.74	-0.42
XWBQ7L		69.83	1.15	0.65	70.40	1.72	0.98
YQY7GR	X	51.08	-17.60	-9.87	50.33	-18.34	-10.47
YT7GFG		69.98	1.30	0.73	69.50	0.82	0.47



Plastics Interlaboratory Testing Program

Report #129

Analysis 737

1st Qtr 2024

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K97			Sample K98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YVT2GE		65.82	-2.86	-1.60	66.18	-2.50	-1.42

Summary Statistics		Sample K97	Sample K98
Grand Means		68.678 MPa	68.677 MPa
Stnd Dev Btwn Labs		1.783 MPa	1.752 MPa
Statistics based on 34 of 36 reporting participants			

Sample K97: ABS & Sample K98: ABS

Comments on Assigned Data Flags for Test #737

YQY7GR (X) - Data for both samples are low.

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



Plastics Interlaboratory Testing Program

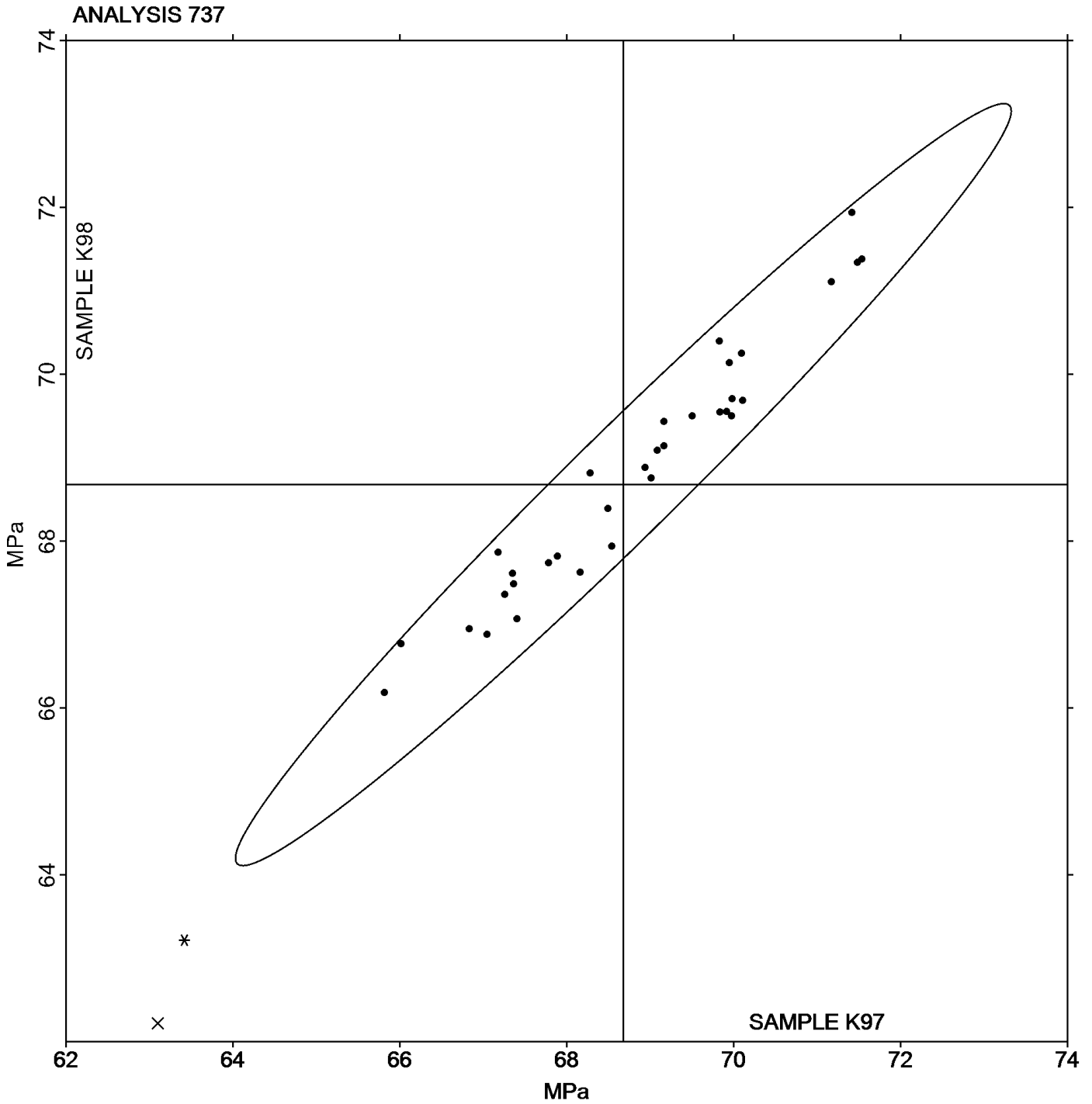
Report #129

Analysis 737

1st Qtr 2024

Flexural Stress at 3.5% Strain - MPa

Grand Mean Sample K97: 68.678 MPa Grand Mean Sample K98: 68.677 MPa





Plastics Interlaboratory Testing Program

Report #129

Analysis 738

1st Qtr 2024

Flexural Stress at Yield - MPa

WebCode	Data Flag	Sample K97			Sample K98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
4DCQG9		68.72	-0.91	-0.68	68.82	-0.89	-0.71
4HRY68		69.79	0.16	0.12	69.71	-0.01	-0.01
AYY9AF		68.57	-1.06	-0.79	68.89	-0.82	-0.65
C7PXWG	M	67.00	-2.63	-1.97	No data reported for this sample		
DEHZPX		71.30	1.67	1.26	71.30	1.58	1.25
EPCW44		68.65	-0.98	-0.73	68.50	-1.22	-0.96
EYL3Z8		68.37	-1.26	-0.95	68.47	-1.24	-0.98
FBNJDA		70.89	1.26	0.95	71.09	1.38	1.09
H6G38Y		69.84	0.21	0.16	70.06	0.35	0.28
HAPMRP	X	63.66	-5.97	-4.48	62.76	-6.95	-5.49
HR9NK7		70.58	0.95	0.71	70.14	0.43	0.34
JCUFJ3		68.83	-0.80	-0.60	68.33	-1.38	-1.09
JFC6W8		71.16	1.53	1.15	71.52	1.81	1.43
K6RFCT	X	63.43	-6.19	-4.65	63.41	-6.31	-4.98
PLWDK7	X	71.48	1.85	1.39	73.56	3.84	3.04
PQBJ8K		68.35	-1.28	-0.96	68.52	-1.19	-0.94
Q2THHM	X	79.85	10.22	7.67	80.01	10.29	8.13
Q4F2JK		70.06	0.43	0.33	69.77	0.06	0.05
QHG6W7		68.19	-1.44	-1.08	68.12	-1.60	-1.26
T89CHW		69.84	0.21	0.16	69.54	-0.17	-0.13
TL8RPX		70.51	0.88	0.66	70.75	1.04	0.82
UHG8YJ		71.59	1.96	1.47	71.74	2.02	1.60
UZ6P42		68.99	-0.64	-0.48	69.57	-0.15	-0.11
WGMZUD		69.49	-0.14	-0.11	69.23	-0.48	-0.38
WLD3MY	*	66.41	-3.22	-2.42	67.18	-2.54	-2.00
XDF3WQ		71.69	2.07	1.55	71.42	1.70	1.34
XDVG7K		70.00	0.37	0.28	70.20	0.49	0.38
XH9UVU		69.50	-0.13	-0.09	70.27	0.56	0.44
XPWP8C		69.34	-0.29	-0.22	69.10	-0.61	-0.48
XWBQ7L		71.04	1.41	1.06	71.59	1.88	1.48
YQY7GR	X	52.51	-17.12	-12.85	51.76	-17.95	-14.18
YT7GFG		71.00	1.37	1.03	70.56	0.85	0.67
YVT2GE		67.27	-2.36	-1.77	67.88	-1.83	-1.45



Plastics Interlaboratory Testing Program

Report #129

Analysis 738

1st Qtr 2024

Flexural Stress at Yield - MPa

Summary Statistics	<u>Sample K97</u>	<u>Sample K98</u>
Grand Means	69.628 MPa	69.714 MPa
Std Dev Btwn Labs	1.332 MPa	1.266 MPa
Statistics based on 27 of 33 reporting participants		

Sample K97: ABS & Sample K98: ABS

Comments on Assigned Data Flags for Test #738

- Q2THHM (X) - Data for both samples are high.
- YQY7GR (X) - Data for both samples are low.
- HAPMRP (X) - Data for both samples are low. Possible Systematic Error.
- C7PXWG (M) - Participant did not submit data for sample K98.
- PLWDK7 (X) - Data for sample K98 are high. Inconsistent within the determinations of sample K98.
- K6RFCT (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

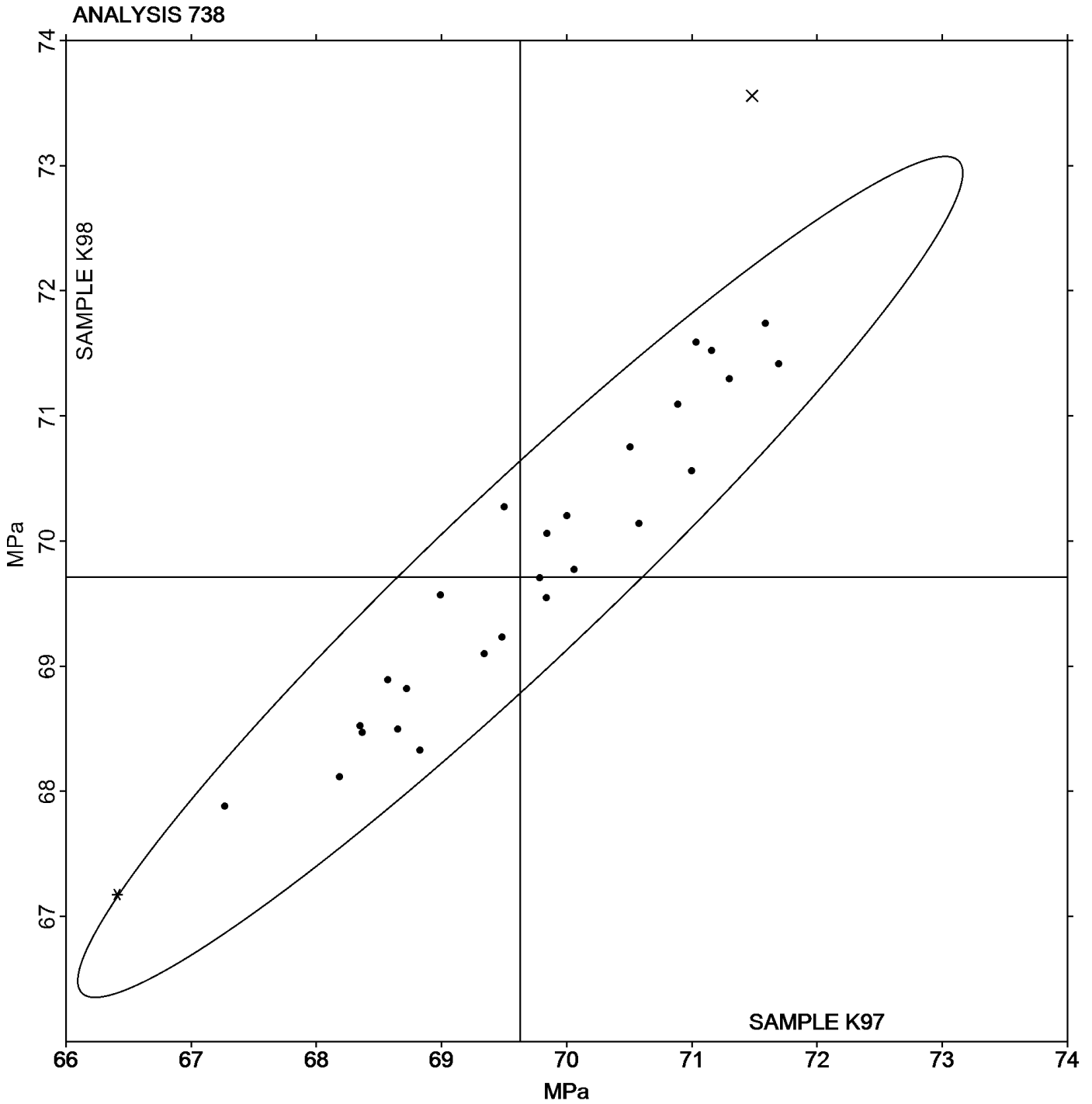
Report #129

Analysis 738

1st Qtr 2024

Flexural Stress at Yield - MPa

Grand Mean Sample K97: 69.628 MPa Grand Mean Sample K98: 69.714 MPa





Plastics Interlaboratory Testing Program

Report #129

Analysis 750

1st Qtr 2024

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

WebCode	Data Flag	Sample X97			Sample X98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH		6.92	0.25	1.29	6.85	0.17	0.82	DY
2KLDTT	X	8.95	2.29	11.95	8.95	2.27	11.10	CE
2NN4L7		6.67	0.00	-0.02	6.54	-0.15	-0.72	XX
2Y7KDD		6.69	0.02	0.09	6.54	-0.15	-0.71	TO
2YLCFP	X	1.37	-5.30	-27.70	1.38	-5.31	-25.95	RR
3GLNNQ	X	8.51	1.84	9.60	8.61	1.92	9.40	TO
4DCQG9		6.82	0.15	0.79	6.77	0.09	0.42	TY
4ECYYM		6.60	-0.07	-0.36	6.80	0.12	0.57	WZ
4HRY68	X	11.38	4.71	24.60	11.52	4.84	23.65	TO
4NYP9D	*	6.15	-0.52	-2.71	6.15	-0.53	-2.61	XX
4RW7K8		6.88	0.21	1.11	6.96	0.28	1.35	TO
6L8TJJ		6.45	-0.22	-1.14	6.55	-0.13	-0.65	KA
739KRL		6.74	0.07	0.35	6.78	0.09	0.45	XX
82B2E4		6.75	0.09	0.45	6.72	0.04	0.18	DY
8NLU6N		6.51	-0.16	-0.86	6.37	-0.31	-1.53	WZ
93EGXE		6.61	-0.06	-0.33	6.56	-0.12	-0.60	TO
9VY6XF		6.73	0.06	0.29	6.70	0.01	0.06	TO
9ZEDLF		6.80	0.13	0.68	6.83	0.14	0.71	TO
A9NW84	X	6.30	-0.37	-1.91	5.94	-0.75	-3.65	TM
AYY9AF		6.45	-0.22	-1.14	6.60	-0.08	-0.41	WZ
BEA3J4		6.65	-0.02	-0.10	6.80	0.12	0.57	DY
C2W7XD		6.75	0.08	0.42	6.79	0.11	0.52	DY
C7PXWG	*	6.20	-0.47	-2.45	6.30	-0.38	-1.87	TO
CBKRUH		6.85	0.18	0.95	6.85	0.17	0.82	DY
DEHZPX		6.77	0.10	0.53	6.77	0.08	0.40	GO
DKPWKD		6.63	-0.04	-0.20	6.55	-0.13	-0.65	TO
E4CF2V		6.55	-0.12	-0.62	6.60	-0.08	-0.41	TO
EG38Q6		6.65	-0.02	-0.10	6.60	-0.08	-0.41	WZ
EYL3Z8		6.65	-0.02	-0.10	6.75	0.07	0.33	TO
FBNJDA		6.40	-0.27	-1.43	6.52	-0.16	-0.80	WZ
FETECX		6.90	0.23	1.21	6.85	0.17	0.82	TO
GAWAVX		6.45	-0.22	-1.17	6.28	-0.41	-2.00	TO
G DFA9T		6.66	-0.01	-0.05	6.57	-0.12	-0.58	WZ
GTK4E8		6.65	-0.02	-0.10	6.70	0.02	0.08	CE
HAPMRP	X	6.97	0.30	1.57	6.46	-0.22	-1.09	TO



Plastics Interlaboratory Testing Program

Report #129

Analysis 750

1st Qtr 2024

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

WebCode	Data Flag	Sample X97			Sample X98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
J6AE4P		6.60	-0.07	-0.36	6.45	-0.23	-1.14	TO
JCUFJ3		6.70	0.03	0.16	6.80	0.12	0.57	TO
JFC6W8		6.60	-0.07	-0.36	6.59	-0.10	-0.48	TO
JQVAWW		6.80	0.13	0.66	6.87	0.18	0.89	TO
K6RFCT		6.73	0.06	0.33	6.79	0.10	0.51	XX
L3HZPZ	X	5.87	-0.80	-4.20	5.87	-0.82	-4.00	TO
MJZHXQ		6.61	-0.06	-0.31	6.62	-0.07	-0.33	TO
MNVA43	X	6.74	0.07	0.37	7.07	0.38	1.87	TO
MP6M2Q		6.73	0.06	0.29	6.76	0.07	0.35	TO
MXXPVT		6.81	0.15	0.76	6.80	0.11	0.56	TO
N6TJD7		6.76	0.09	0.45	6.74	0.06	0.28	WZ
NAPGCQ		6.48	-0.19	-1.01	6.49	-0.20	-0.96	TO
PLWDK7	X	4.00	-2.67	-13.95	4.95	-1.73	-8.47	CE
PUU7TZ		6.33	-0.34	-1.77	6.35	-0.34	-1.65	TO
Q2THHM		7.05	0.38	1.97	7.03	0.35	1.70	TO
Q4F2JK		6.71	0.04	0.20	6.71	0.03	0.13	GO
QHG6W7	X	12.10	5.43	28.39	12.25	5.57	27.22	CE
QLCKCL	*	6.34	-0.33	-1.74	6.53	-0.15	-0.74	XX
R22JQL	X	7.60	0.94	4.89	7.40	0.72	3.52	CE
RLQBWQ		7.01	0.34	1.76	7.00	0.32	1.55	TO
TB8NEV		6.69	0.02	0.13	6.60	-0.08	-0.40	TO
TCWP4W		6.50	-0.17	-0.88	6.45	-0.23	-1.14	DY
UHG8YJ		6.50	-0.17	-0.88	6.49	-0.19	-0.95	KA
UKPRYZ		6.60	-0.07	-0.39	6.58	-0.11	-0.53	TO
UZ6P42		6.55	-0.12	-0.62	6.60	-0.08	-0.41	CE
WGMZUD		6.75	0.08	0.42	6.82	0.14	0.67	DY
XDF3WQ		6.84	0.17	0.87	6.88	0.19	0.94	TO
XDVG7K		6.94	0.27	1.39	6.99	0.31	1.50	TO
XPWP8C	*	6.82	0.15	0.80	7.05	0.37	1.79	GO
XWBQ7L		6.96	0.29	1.50	6.97	0.28	1.38	WZ
Y9JXFQ		7.00	0.33	1.73	7.10	0.42	2.04	TO
Z44PRR		6.60	-0.07	-0.39	6.64	-0.05	-0.24	TO



Plastics Interlaboratory Testing Program

Report #129

Analysis 750

1st Qtr 2024

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

Summary Statistics	<u>Sample X97</u>	<u>Sample X98</u>
Grand Means	6.669 grams/10 mins	6.683 grams/10 mins
Std Dev Btwn Labs	0.191 grams/10 mins	0.205 grams/10 mins
Statistics based on 56 of 67 reporting participants		

Sample X97: HDPE & Sample X98: HDPE

Comments on Assigned Data Flags for Test #750

- L3HYPZ (X) - Data for both samples are low. Possible Systematic Error.
- MNVA43 (X) - Inconsistent in testing between samples.
- HAPMRP (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample X97.
- 4HRY68 (X) - Extreme data.
- A9NW84 (X) - Data for sample X98 are low.
- 2YLCP (X) - Extreme data.
- 3GLNNQ (X) - Data for both samples are high.
- 2KLDTT (X) - Data for both samples are high.
- QHG6W7 (X) - Extreme data.
- PLWDK7 (X) - Data for both samples are low. Inconsistent within the determinations of sample X97.
- R22JQL (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample X97.

Results by Methodology (as reported by laboratory)

Test Methodology	Sample X97 <i>HDPE</i>			Sample X98 <i>HDPE</i>			Labs Incl / Rpt
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM	
Procedure A of ASTM D1238	6.644	0.195	-0.024	6.651	0.215	-0.032	31/38
Procedure B of ASTM D1238	6.620	0.229	-0.049	6.647	0.188	-0.037	10/12
Procedure A of ISO 1133	6.733	0.146	0.065	6.743	0.175	0.060	12/14
Procedure B of ISO 1133	6.826	0.008	0.157	6.898	0.141	0.215	3/3

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

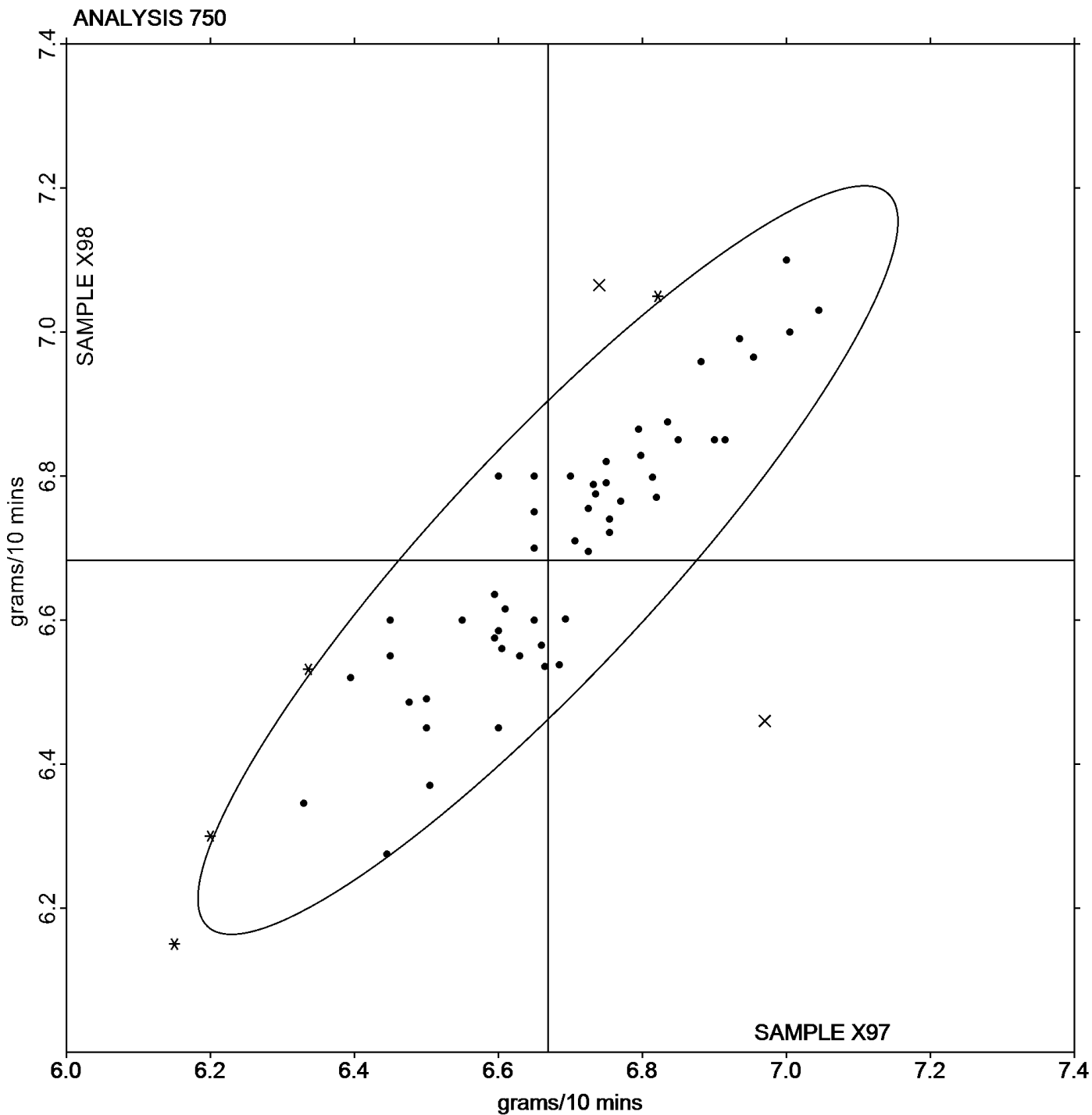
Report #129

Analysis 750

1st Qtr 2024

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

Grand Mean Sample X97: 6.6687 grams/10 mins Grand Mean Sample X98: 6.6833 grams/10 mins





Plastics Interlaboratory Testing Program

Report #129

Analysis 755

1st Qtr 2024

Moisture Content of Plastics

WebCode	Data Flag	Sample Y97			Sample Y98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2Y7KDD	X	0.12333	0.10684	13.79	0.13000	0.11369	12.87	AZ
4RW7K8		0.01873	0.00224	0.29	0.01773	0.00142	0.16	MD
4RX9LT		0.01700	0.00051	0.07	0.01700	0.00069	0.08	BA
6L6QKL		0.00787	-0.00863	-1.11	0.00847	-0.00785	-0.89	AZ
82B2E4		0.01308	-0.00342	-0.44	0.01145	-0.00486	-0.55	BA
8NLU6N		0.03577	0.01927	2.49	0.03543	0.01912	2.16	BA
93EGXE		0.01040	-0.00609	-0.79	0.01017	-0.00615	-0.70	AQ
967DM9		0.01800	0.00151	0.19	0.01767	0.00135	0.15	CS
BEA3J4		0.01433	-0.00216	-0.28	0.01400	-0.00231	-0.26	CT
C2W7XD		0.00000	-0.01649	-2.13	0.00000	-0.01631	-1.85	AZ
DKPWKD		0.02100	0.00451	0.58	0.01933	0.00302	0.34	XX
EG38Q6		0.03200	0.01551	2.00	0.03500	0.01869	2.12	ML
FBNJDA		0.01720	0.00071	0.09	0.01623	-0.00008	-0.01	MU
GAWAVX		0.02253	0.00604	0.78	0.02850	0.01219	1.38	ML
GDF9T		0.01400	-0.00249	-0.32	0.01433	-0.00198	-0.22	MJ
H6G38Y		0.00933	-0.00716	-0.92	0.00700	-0.00931	-1.05	MU
HAPMRP		0.01333	-0.00316	-0.41	0.00867	-0.00765	-0.87	AZ
HD7MXC		0.02950	0.01301	1.68	0.02950	0.01319	1.49	MU
HMUDK4		0.00617	-0.01033	-1.33	0.00540	-0.01091	-1.24	CT
JCUFJ3		0.01533	-0.00116	-0.15	0.01533	-0.00098	-0.11	MU
JZFK7N		0.01333	-0.00316	-0.41	0.00867	-0.00765	-0.87	MU
L3HZPZ		0.01667	0.00017	0.02	0.01000	-0.00631	-0.71	ML
LMZ2B7		0.02600	0.00951	1.23	0.02850	0.01219	1.38	SB
MJZHXQ	X	0.03700	0.02051	2.65	0.02933	0.01302	1.47	MU
Q4F2JK		0.02500	0.00851	1.10	0.03000	0.01369	1.55	MU
TCWP4W		0.01633	-0.00016	-0.02	0.01700	0.00069	0.08	AZ
UHG8YJ		0.01267	-0.00383	-0.49	0.01300	-0.00331	-0.38	MU
UZ6P42		0.01900	0.00251	0.32	0.01933	0.00302	0.34	MU
WLD3MY	X	0.03200	0.01551	2.00	0.05133	0.03502	3.96	CT
XDVG7K		0.00900	-0.00749	-0.97	0.00900	-0.00731	-0.83	AZ
XWBQ7L		0.00833	-0.00816	-1.05	0.01300	-0.00331	-0.38	MU
YT7GFG		0.01523	-0.00126	-0.16	0.01133	-0.00498	-0.56	MK
Z44PRR		0.01767	0.00117	0.15	0.01833	0.00202	0.23	BA



Plastics Interlaboratory Testing Program

Report #129

Analysis 755

1st Qtr 2024

Moisture Content of Plastics

Summary Statistics	<u>Sample Y97</u>	<u>Sample Y98</u>
Grand Means	0.016494 Percent	0.016313 Percent
Stnd Dev Btwn Labs	0.007747 Percent	0.008832 Percent
Statistics based on 30 of 33 reporting participants		

Sample Y97: HIPS & Sample Y98: HIPS

Comments on Assigned Data Flags for Test #755

- 2Y7KDD (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- MJZHXX (X) - Data for sample Y97 are high.
- WLD3MY (X) - Data for sample Y98 are high. Inconsistent within the determinations of both samples.

Results by Methodology (as reported by laboratory)

Test Methodology	Sample Y97 <i>HIPS</i>			Sample Y98 <i>HIPS</i>			Labs Incl / Rpt
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM	
ASTM D6869	0.016000	0.003827	-0.0005	0.016081	0.005843	-0.0002	9/10
ISO 15512 Method B	0.016461	0.008490	0.0000	0.015428	0.010068	-0.0009	6/6
ASTM D6980	0.019917	0.006422	0.0034	0.019750	0.008530	0.0034	6/8
ASTM D7191	0.008140	0.006358	-0.0084	0.008240	0.006679	-0.0081	5/5

Key to Instrument Codes Reported by Participants

- | | |
|---|--|
| <p>AQ Aquastar</p> <p>BA Brabender Aquatrac</p> <p>CT Computrac Moisture Analyzer</p> <p>MJ Mitsubishi KF Analyzer Series</p> <p>ML Metrohm Coulometer</p> <p>SB Sartorius Mark 3</p> | <p>AZ Arizona Instruments Moisture Analyzer</p> <p>CS Cosa Instruments</p> <p>MD Mettler Toledo DL37</p> <p>MK Mitsubishi KF Analyzer CA</p> <p>MU Mettler Toledo</p> <p>XX Instrument manufacturer not specified by lab</p> |
|---|--|



Plastics Interlaboratory Testing Program

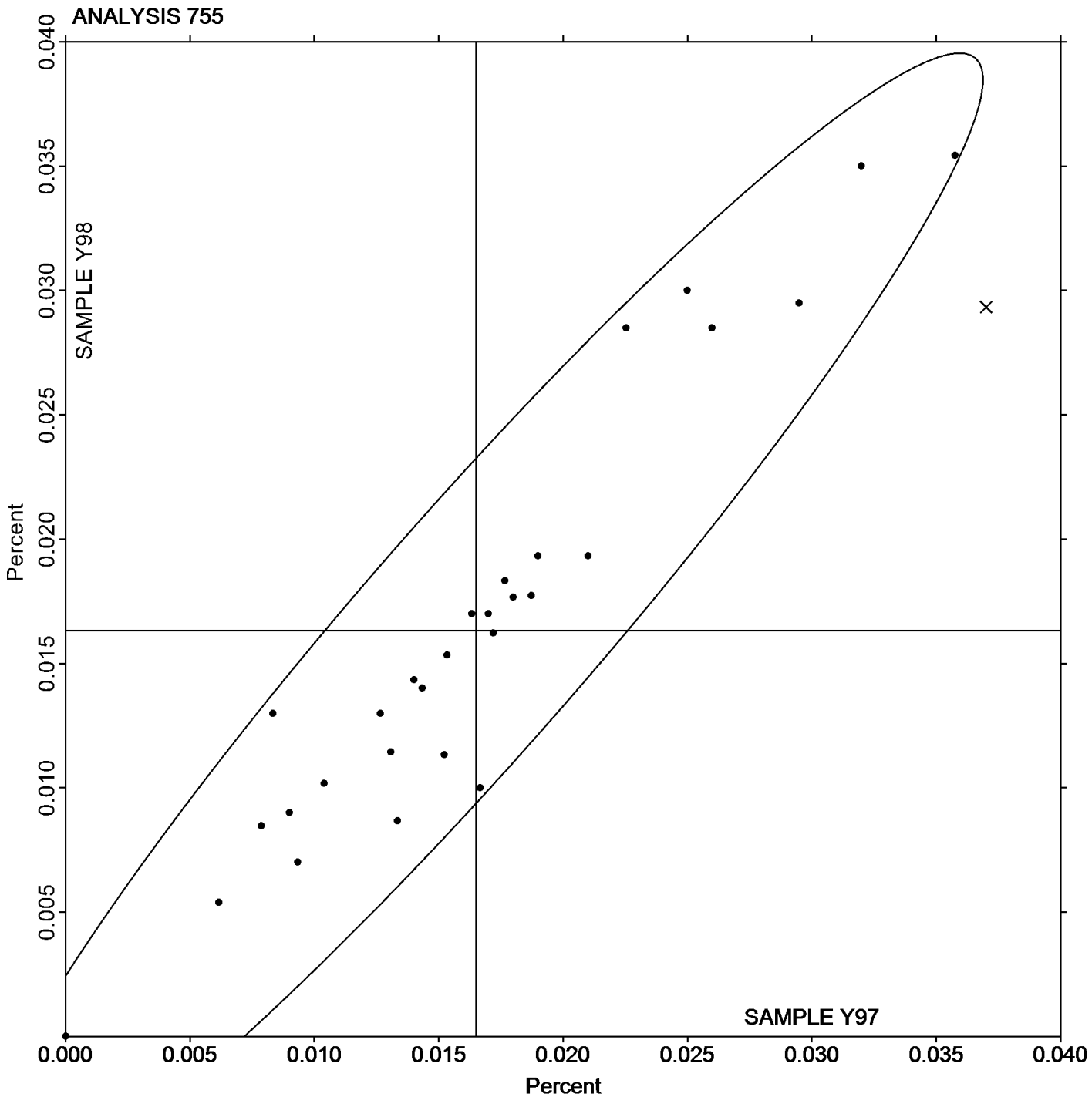
Analysis 755

Moisture Content of Plastics

Report #129

1st Qtr 2024

Grand Mean Sample Y97: 0.01649 Percent Grand Mean Sample Y98: 0.01631 Percent





Plastics Interlaboratory Testing Program

Report #129

Analysis 757

1st Qtr 2024

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L97			Sample L98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2HEP2M		20.645	-0.023	-0.33	20.665	-0.001	-0.02
2NN4L7	*	20.490	-0.178	-2.57	20.560	-0.106	-1.69
2WENPJ	X	3.800	-16.868	-243.96	3.817	-16.850	-267.12
2YLCFP		20.720	0.052	0.76	20.700	0.034	0.53
3LDFMT		20.760	0.092	1.34	20.735	0.069	1.09
3YYVQR		20.525	-0.143	-2.06	20.630	-0.036	-0.58
4HRY68		20.740	0.072	1.05	20.705	0.039	0.61
4NYP9D		20.800	0.132	1.92	20.750	0.084	1.33
82B2E4		20.580	-0.088	-1.27	20.610	-0.056	-0.89
8NLU6N		20.625	-0.043	-0.62	20.685	0.019	0.30
93EGXE		20.679	0.012	0.17	20.648	-0.018	-0.29
967DM9		20.740	0.072	1.05	20.630	-0.036	-0.58
AYY9AF		20.600	-0.068	-0.98	20.590	-0.076	-1.21
BEA3J4		20.575	-0.093	-1.34	20.745	0.079	1.25
C7PXWG		20.775	0.107	1.55	20.710	0.044	0.69
CBKRUH		20.670	0.002	0.04	20.695	0.029	0.46
DEHZPX		20.700	0.032	0.47	20.650	-0.016	-0.26
DKPWKD		20.651	-0.017	-0.25	20.692	0.026	0.41
DP2FRZ		20.765	0.097	1.41	20.705	0.039	0.61
E4CF2V		20.670	0.002	0.04	20.720	0.054	0.85
EG38Q6		20.635	-0.033	-0.47	20.645	-0.021	-0.34
FBNJDA		20.685	0.017	0.25	20.675	0.009	0.14
GAWAVX		20.715	0.047	0.69	20.650	-0.016	-0.26
G DFA9T		20.620	-0.048	-0.69	20.745	0.079	1.25
GRCJWY		20.615	-0.053	-0.76	20.635	-0.031	-0.50
HAPMRP	X	20.815	0.147	2.13	20.925	0.259	4.10
JCUFJ3		20.680	0.012	0.18	20.690	0.024	0.38
MP6M2Q		20.735	0.067	0.98	20.690	0.024	0.38
MXXPVT		20.706	0.038	0.56	20.709	0.042	0.67
N6TJD7		20.690	0.022	0.32	20.695	0.029	0.46
PQBJ8K		20.665	-0.003	-0.04	20.695	0.029	0.46
Q2THHM		20.785	0.117	1.70	20.625	-0.041	-0.65
Q4F2JK		20.715	0.047	0.69	20.770	0.104	1.64
QLCKCL		20.650	-0.018	-0.25	20.603	-0.064	-1.01
UHG8YJ		20.600	-0.068	-0.98	20.650	-0.016	-0.26



Plastics Interlaboratory Testing Program

Report #129

Analysis 757

1st Qtr 2024

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L97			Sample L98		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
VP3RVR		20.611	-0.057	-0.82	20.724	0.057	0.91
WLD3MY		20.590	-0.078	-1.12	20.730	0.064	1.01
XDF3WQ	*	20.600	-0.068	-0.98	20.500	-0.166	-2.64
XDVG7K		20.700	0.032	0.47	20.650	-0.016	-0.26
XNY46R		20.700	0.032	0.47	20.750	0.084	1.33
XPWP8C		20.610	-0.058	-0.83	20.520	-0.146	-2.32
XWBQ7L		20.690	0.022	0.32	20.640	-0.026	-0.42
Y9JXFQ		20.705	0.037	0.54	20.630	-0.036	-0.58
YT7GFG	X	19.800	-0.868	-12.55	20.600	-0.066	-1.05
YVT2GE		20.625	-0.043	-0.62	20.540	-0.126	-2.00

Summary Statistics		Sample L97	Sample L98
Grand Means		20.6675 Percent	20.6663 Percent
Std Dev Btwn Labs		0.0691 Percent	0.0631 Percent
Statistics based on 42 of 45 reporting participants			

Sample L97: PP & Sample L98: PP

Comments on Assigned Data Flags for Test #757

- YT7GFG (X) - Data for sample L97 are low.
- 2WENPJ (X) - Extreme data.
- HAPMRP (X) - Data for sample L98 are high.



Plastics Interlaboratory Testing Program

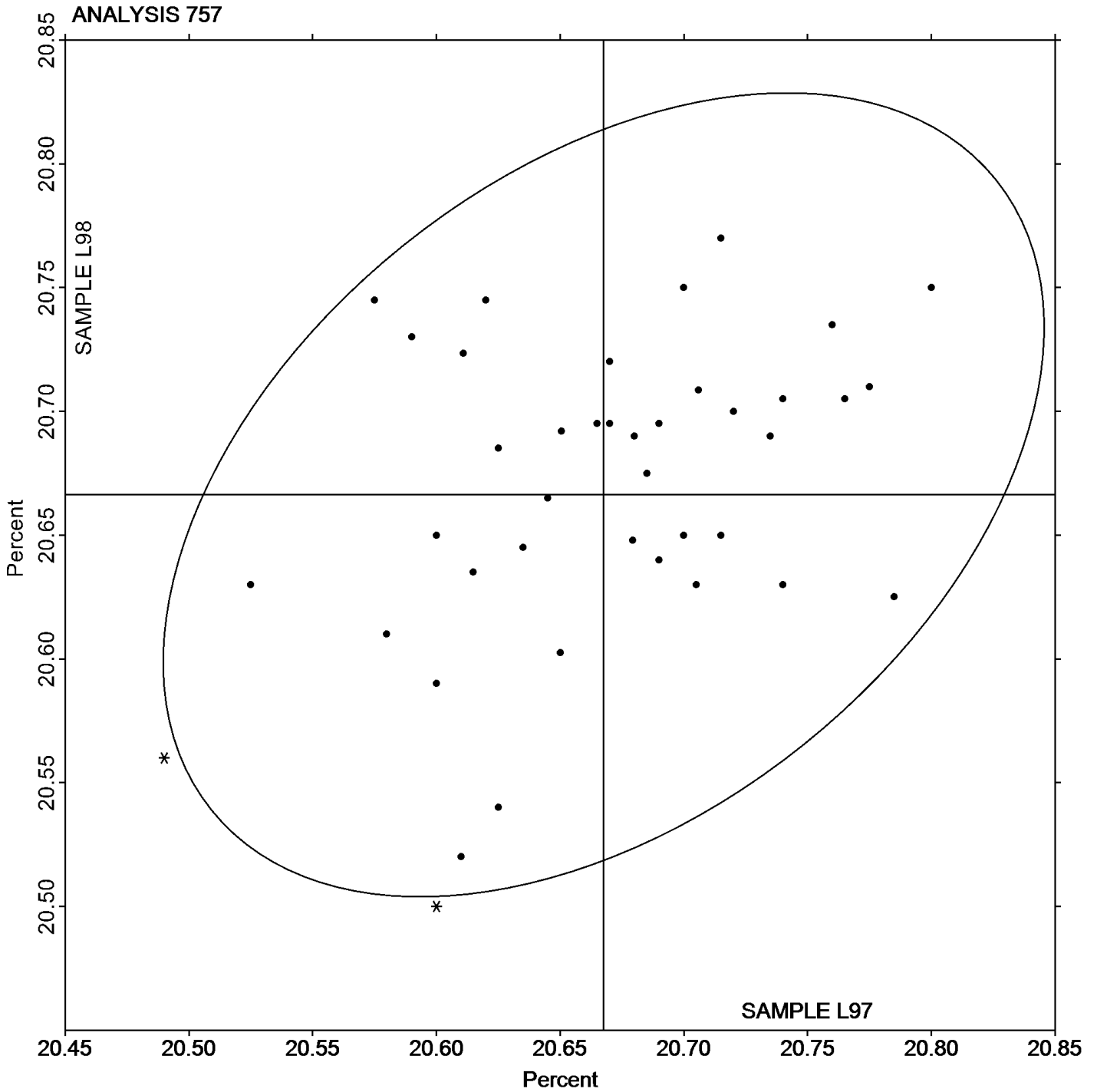
Report #129

Analysis 757

1st Qtr 2024

Ash Content in Thermoplastics - Percent

Grand Mean Sample L97: 20.668 Percent Grand Mean Sample L98: 20.666 Percent





Plastics Interlaboratory Testing Program

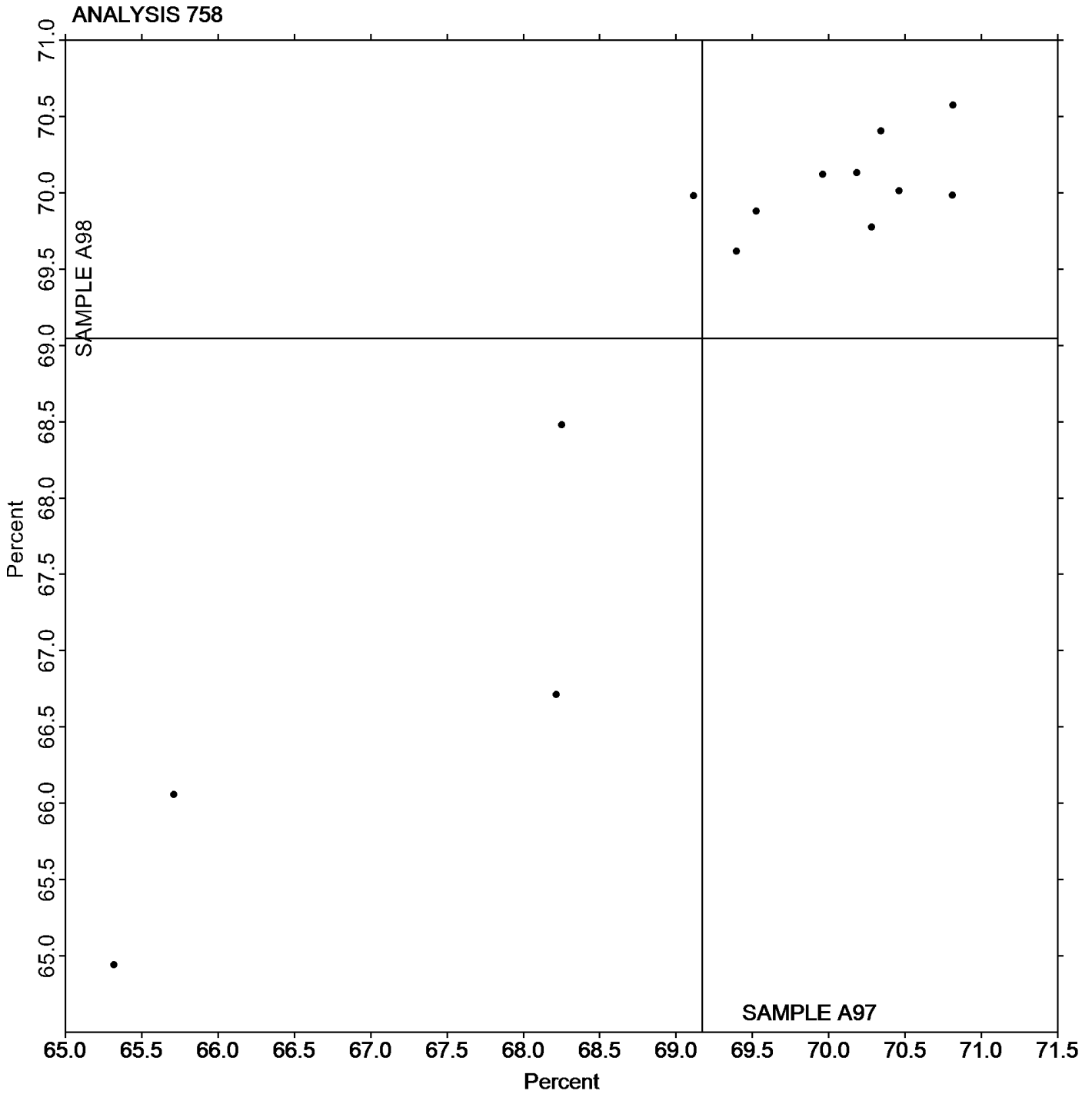
Report #129

Analysis 758

1st Qtr 2024

Thermogravimetric Analysis

Grand Mean Sample A97: 69.170 Percent Grand Mean Sample A98: 69.047 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 #129

Analysis 760

1st Qtr 2024

DSC Crystallization Temperature

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH		108.75	2.24	0.94	108.84	2.20	0.87	TA
2NN4L7		109.00	2.48	1.05	110.26	3.62	1.43	TA
2Y7KDD		109.33	2.82	1.19	108.83	2.19	0.86	MT
4ECYYM		104.64	-1.88	-0.79	104.61	-2.03	-0.80	TA
4RW7K8		111.13	4.62	1.95	111.47	4.82	1.90	TA
6VWGG8		105.23	-1.29	-0.54	105.04	-1.60	-0.63	TA
82B2E4		106.35	-0.17	-0.07	106.39	-0.26	-0.10	XX
8XTC4M		103.93	-2.58	-1.09	104.93	-1.71	-0.67	TA
AYY9AF		105.53	-0.98	-0.41	106.27	-0.38	-0.15	TA
BEA3J4		106.80	0.28	0.12	107.73	1.09	0.43	TA
C7PXWG	X	95.17	-11.35	-4.79	97.56	-9.09	-3.58	PE
DJA6H2		105.66	-0.86	-0.36	105.79	-0.85	-0.34	TA
DKPWKD		102.73	-3.78	-1.60	103.03	-3.61	-1.42	NZ
FBNJDA		105.60	-0.92	-0.39	104.76	-1.88	-0.74	TA
GGXYLX	X	170.25	63.73	26.88	170.35	63.70	25.12	TA
K7GCRR		105.60	-0.92	-0.39	105.50	-1.14	-0.45	TA
MH6XBR		103.61	-2.91	-1.23	103.64	-3.01	-1.19	PE
PLWDK7		102.67	-3.85	-1.62	102.67	-3.98	-1.57	MT
Q4F2JK		106.67	0.15	0.06	107.10	0.46	0.18	TA
QHG6W7		102.76	-3.76	-1.59	102.04	-4.61	-1.82	TA
QLCKCL		108.94	2.42	1.02	109.52	2.88	1.14	TA
TL8RPX		107.23	0.72	0.30	105.90	-0.74	-0.29	XX
WGMZUD		107.37	0.85	0.36	107.33	0.69	0.27	TA
XPWP8C		106.82	0.30	0.13	106.76	0.11	0.04	TA
YQY7GR		108.97	2.46	1.04	108.71	2.07	0.82	MT
YVT2GE		106.23	-0.28	-0.12	106.80	0.16	0.06	TA
YW9RHQ		110.93	4.42	1.86	111.64	4.99	1.97	TA
YYCM3T		106.93	0.42	0.18	107.17	0.52	0.21	NZ

Summary Statistics

Grand Means

Sample W97
106.516 Degrees Celsius

Sample W98
106.643 Degrees Celsius

Std Dev Btwn Labs

2.371 Degrees Celsius

2.536 Degrees Celsius

Statistics based on 26 of 28 reporting participants

Sample W97: PP & Sample W98: PP



Comments on Assigned Data Flags for Test #760

C7PXWG (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample W97.

GGXYLX (X) - Extreme data.

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

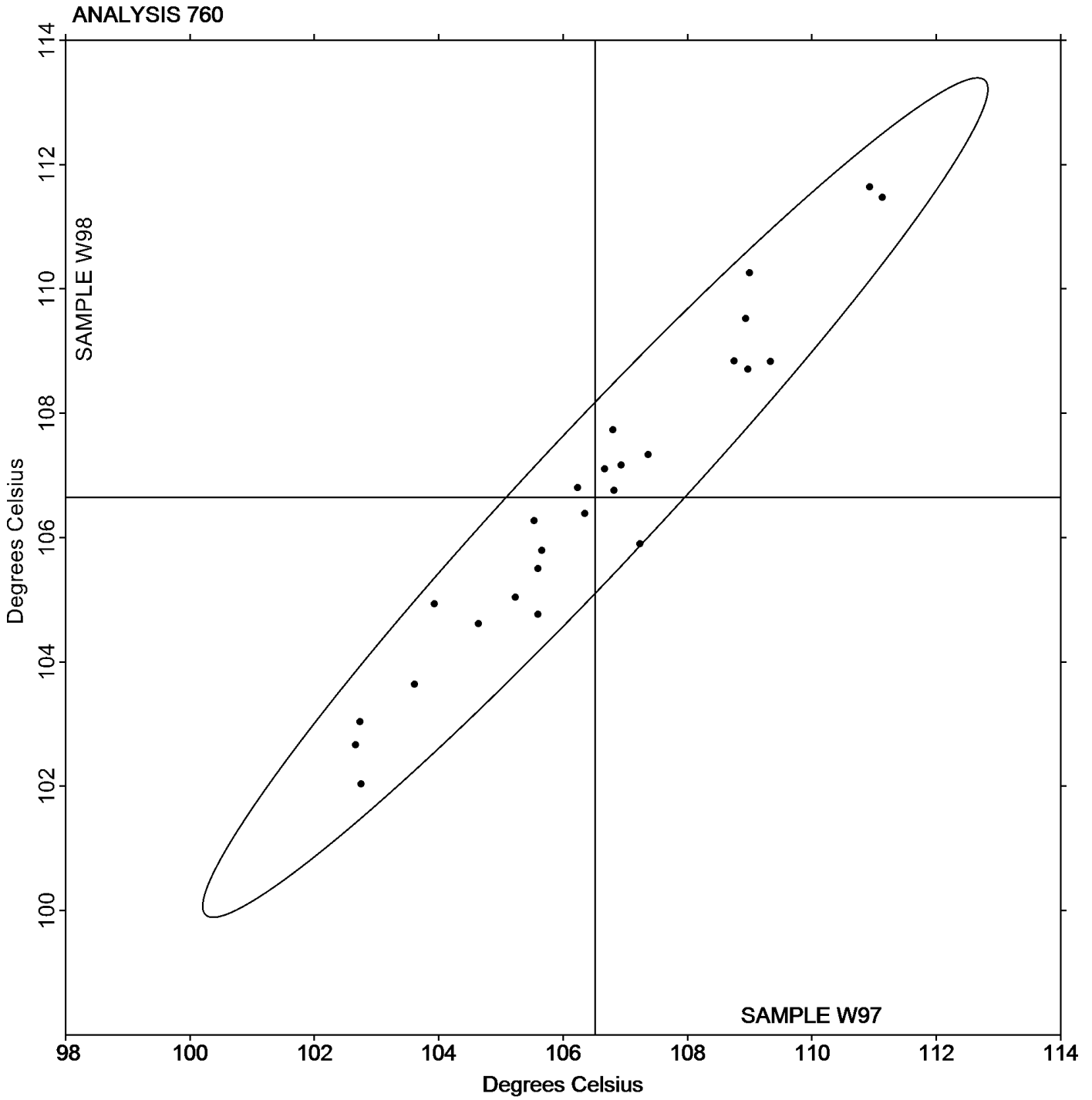
Report #129

Analysis 760

1st Qtr 2024

DSC Crystallization Temperature

Grand Mean Sample W97: 106.52 Degrees Celsius Grand Mean Sample W98: 106.64 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #129

Analysis 761

1st Qtr 2024

DSC Melt Temperature

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH		167.75	2.64	1.58	167.23	2.44	1.44	TA
2NN4L7		165.64	0.53	0.32	164.44	-0.35	-0.21	XX
2Y7KDD	*	164.83	-0.28	-0.17	166.45	1.66	0.98	MT
468CZF		165.46	0.35	0.21	165.17	0.38	0.22	SH
4ECYYM		164.95	-0.16	-0.10	164.40	-0.39	-0.23	TA
4RW7K8		164.80	-0.31	-0.19	163.60	-1.19	-0.70	TA
6VWGG8		164.17	-0.94	-0.56	164.65	-0.14	-0.08	TA
82B2E4		166.26	1.15	0.69	166.39	1.60	0.94	XX
8A8WF9		165.26	0.15	0.09	164.36	-0.42	-0.25	PE
8XTC4M		164.53	-0.58	-0.35	163.70	-1.09	-0.64	TA
AYY9AF		165.10	-0.01	-0.01	164.47	-0.32	-0.19	TA
BEA3J4		164.57	-0.55	-0.33	164.70	-0.09	-0.05	TA
C7PXWG	X	155.22	-9.89	-5.91	155.96	-8.83	-5.21	PE
DJA6H2		167.05	1.93	1.16	165.78	1.00	0.59	TA
DKPWKD		168.00	2.89	1.73	168.07	3.28	1.94	NZ
FBNJDA	X	160.86	-4.26	-2.54	163.67	-1.12	-0.66	TA
GAWAVX		166.14	1.03	0.62	166.64	1.85	1.09	TA
K7GCRR		167.17	2.05	1.23	167.10	2.31	1.37	TA
MH6XBR		165.81	0.70	0.42	165.74	0.95	0.56	PE
MXXPVT		162.03	-3.09	-1.84	162.11	-2.67	-1.58	TA
PLWDK7		167.70	2.59	1.55	167.73	2.95	1.74	XX
Q4F2JK		163.10	-2.01	-1.20	162.50	-2.29	-1.35	TA
QHG6W7		166.92	1.81	1.08	167.12	2.34	1.38	TA
QLCKCL		166.31	1.20	0.72	164.69	-0.09	-0.06	XX
TL8RPX		162.53	-2.58	-1.54	163.00	-1.79	-1.06	XX
WGMZUD		163.87	-1.25	-0.74	163.87	-0.92	-0.54	TA
XPWP8C		165.76	0.64	0.39	165.16	0.37	0.22	TA
Y9JXFQ		166.47	1.35	0.81	165.43	0.65	0.38	MT
YQY7GR		165.92	0.81	0.48	164.98	0.19	0.11	MT
YT7GFG		162.55	-2.56	-1.53	162.52	-2.26	-1.34	TA
YVT2GE		164.23	-0.88	-0.52	163.57	-1.22	-0.72	TA
YW9RHQ		163.32	-1.79	-1.07	162.64	-2.15	-1.27	TA
YYCM3T		163.00	-2.11	-1.26	162.50	-2.29	-1.35	NZ
Z44PRR		162.37	-2.75	-1.64	162.50	-2.29	-1.35	TA



Plastics Interlaboratory Testing Program

Report #129

Analysis 761

1st Qtr 2024

DSC Melt Temperature

Summary Statistics	<u>Sample W97</u>	<u>Sample W98</u>
Grand Means	165.112 Degrees Celsius	164.787 Degrees Celsius
Stnd Dev Btwn Labs	1.674 Degrees Celsius	1.693 Degrees Celsius
Statistics based on 32 of 34 reporting participants		

Sample W97: PP & Sample W98: PP

Comments on Assigned Data Flags for Test #761

FBNJDA (X) - Inconsistent in testing between samples.

C7PXWG (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

Key to Instrument Codes Reported by Participants

MT Mettler Toledo Instruments

NZ Netzsch Instruments

PE Perkins Elmer Instruments

SH Shimadzu

TA TA Instruments

XX Instrument manufacturer not specified by lab



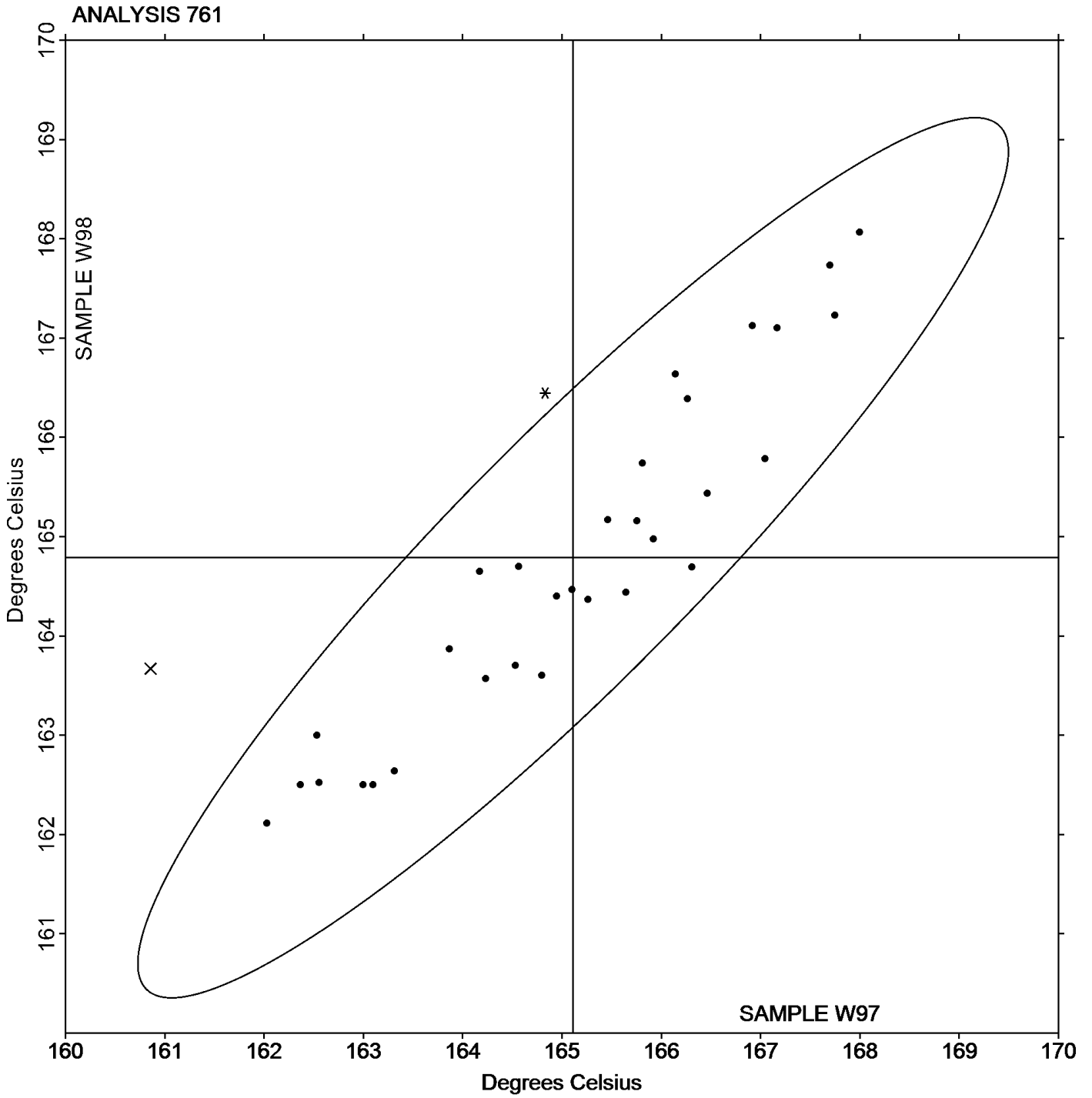
Plastics Interlaboratory Testing Program

Analysis 761 DSC Melt Temperature

Report #129

1st Qtr 2024

Grand Mean Sample W97: 165.11 Degrees Celsius Grand Mean Sample W98: 164.79 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #129

Analysis 762

1st Qtr 2024

DSC Enthalpy of Crystallization

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH		95.61	-6.34	-0.63	96.25	-6.27	-0.61	TA
4ECYYM		96.76	-5.20	-0.51	96.82	-5.70	-0.55	TA
4RW7K8		124.20	22.24	2.20	125.63	23.11	2.25	TA
6VWGG8		105.51	3.56	0.35	103.93	1.41	0.14	TA
82B2E4		103.87	1.91	0.19	103.80	1.28	0.12	XX
8XTC4M		123.10	21.14	2.09	124.40	21.88	2.13	TA
AYY9AF		96.06	-5.89	-0.58	96.99	-5.53	-0.54	TA
BEA3J4		103.20	1.24	0.12	101.72	-0.80	-0.08	TA
C7PXWG	X	-26.75	-128.70	-12.72	-34.85	-137.37	-13.35	PE
DJA6H2		91.00	-10.95	-1.08	93.58	-8.94	-0.87	TA
DKPWKD		98.75	-3.21	-0.32	100.21	-2.31	-0.22	NZ
FBNJDA		99.02	-2.93	-0.29	98.86	-3.66	-0.36	TA
MH6XBR		91.23	-10.72	-1.06	93.11	-9.41	-0.91	PE
PLWDK7		117.07	15.11	1.49	118.47	15.95	1.55	MT
Q4F2JK		100.37	-1.59	-0.16	100.82	-1.70	-0.17	TA
QHG6W7		118.03	16.08	1.59	118.80	16.28	1.58	XX
TL8RPX		91.77	-10.19	-1.01	95.37	-7.15	-0.69	XX
WGMZUD		102.30	0.34	0.03	101.60	-0.92	-0.09	TA
XPWP8C		90.58	-11.38	-1.12	87.18	-15.34	-1.49	TA
YQY7GR		104.64	2.68	0.26	104.50	1.98	0.19	MT
YVT2GE		100.24	-1.72	-0.17	102.14	-0.38	-0.04	TA
YW9RHQ		95.93	-6.03	-0.60	93.52	-9.00	-0.87	TA
YYCM3T		93.82	-8.14	-0.80	97.74	-4.78	-0.46	NZ

Summary Statistics		
	Sample W97	Sample W98
Grand Means	101.957 Joules Per Gram	102.519 Joules Per Gram
Std Dev Btwn Labs	10.120 Joules Per Gram	10.292 Joules Per Gram
Statistics based on 22 of 23 reporting participants		

Sample W97: PP & Sample W98: PP

Comments on Assigned Data Flags for Test #762

C7PXWG (X) - Extreme data.



Plastics Interlaboratory Testing Program

Report #129

Analysis 762

1st Qtr 2024

DSC Enthalpy of Crystallization

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

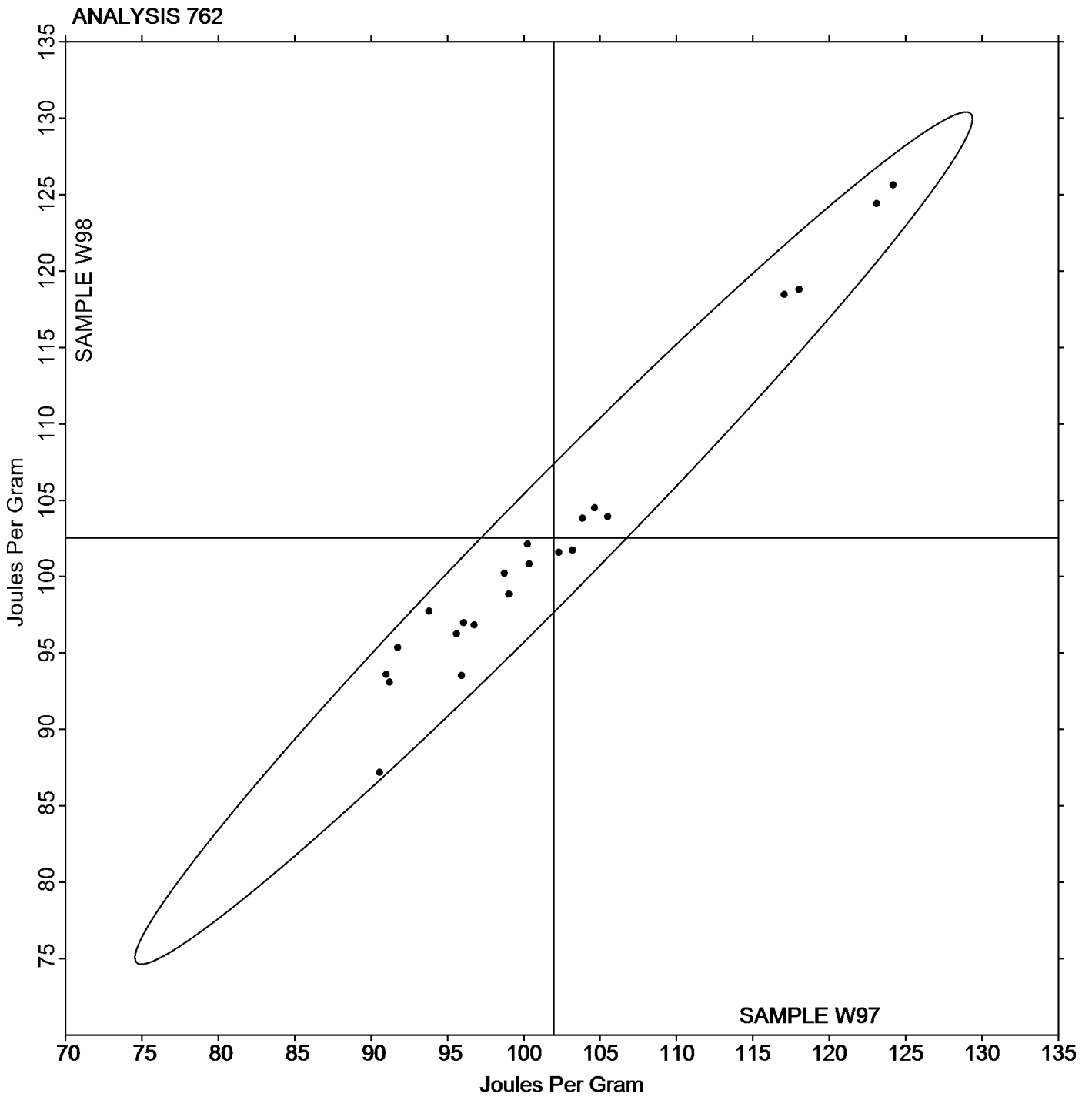
Report #129

Analysis 762

1st Qtr 2024

DSC Enthalpy of Crystallization

Grand Mean Sample W97: 101.96 Joules Per Gram Grand Mean Sample W98: 102.52 Joules Per Gram





Plastics Interlaboratory Testing Program

Report #129

Analysis 763

1st Qtr 2024

DSC Enthalpy of Fusion

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH		82.87	-13.45	-1.20	85.12	-11.61	-1.07	TA
4ECYYM		86.47	-9.84	-0.88	88.03	-8.70	-0.80	TA
4RW7K8		124.80	28.49	2.54	125.17	28.44	2.61	TA
6VWGG8		108.38	12.07	1.08	107.74	11.01	1.01	TA
82B2E4		102.67	6.35	0.57	102.57	5.84	0.54	XX
8XTC4M		108.50	12.19	1.09	108.67	11.94	1.10	TA
AYY9AF		96.18	-0.13	-0.01	96.59	-0.14	-0.01	TA
BEA3J4		100.69	4.38	0.39	97.20	0.47	0.04	TA
C7PXWG	X	42.43	-53.88	-4.81	52.78	-43.95	-4.04	PE
DJA6H2		93.55	-2.76	-0.25	93.16	-3.57	-0.33	TA
DKPWKD		94.37	-1.94	-0.17	94.35	-2.38	-0.22	NZ
FBNJDA		95.74	-0.57	-0.05	91.90	-4.83	-0.44	TA
MH6XBR		79.76	-16.55	-1.48	80.45	-16.28	-1.50	PE
PLWDK7		81.83	-14.48	-1.29	84.83	-11.90	-1.09	MT
Q4F2JK		94.78	-1.53	-0.14	94.87	-1.86	-0.17	TA
QHG6W7		107.70	11.39	1.02	109.67	12.94	1.19	TA
TL8RPX		81.13	-15.18	-1.35	82.83	-13.90	-1.28	XX
WGMZUD		101.63	5.32	0.47	101.73	5.00	0.46	TA
XPWP8C		88.60	-7.72	-0.69	88.81	-7.92	-0.73	TA
YQY7GR		101.99	5.67	0.51	101.92	5.19	0.48	MT
YVT2GE		107.36	11.05	0.99	108.88	12.15	1.12	TA
YW9RHQ		87.52	-8.79	-0.78	87.06	-9.67	-0.89	TA
YYCM3T		92.32	-4.00	-0.36	96.49	-0.24	-0.02	NZ

Summary Statistics		
	Sample W97	Sample W98
Grand Means	96.312 Joules Per Gram	96.729 Joules Per Gram
Std Dev Btwn Labs	11.204 Joules Per Gram	10.879 Joules Per Gram
Statistics based on 22 of 23 reporting participants		

Sample W97: PP & Sample W98: PP

Comments on Assigned Data Flags for Test #763

C7PXWG (X) - Data for both samples are low. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

Analysis 763

DSC Enthalpy of Fusion

Report #129

1st Qtr 2024

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

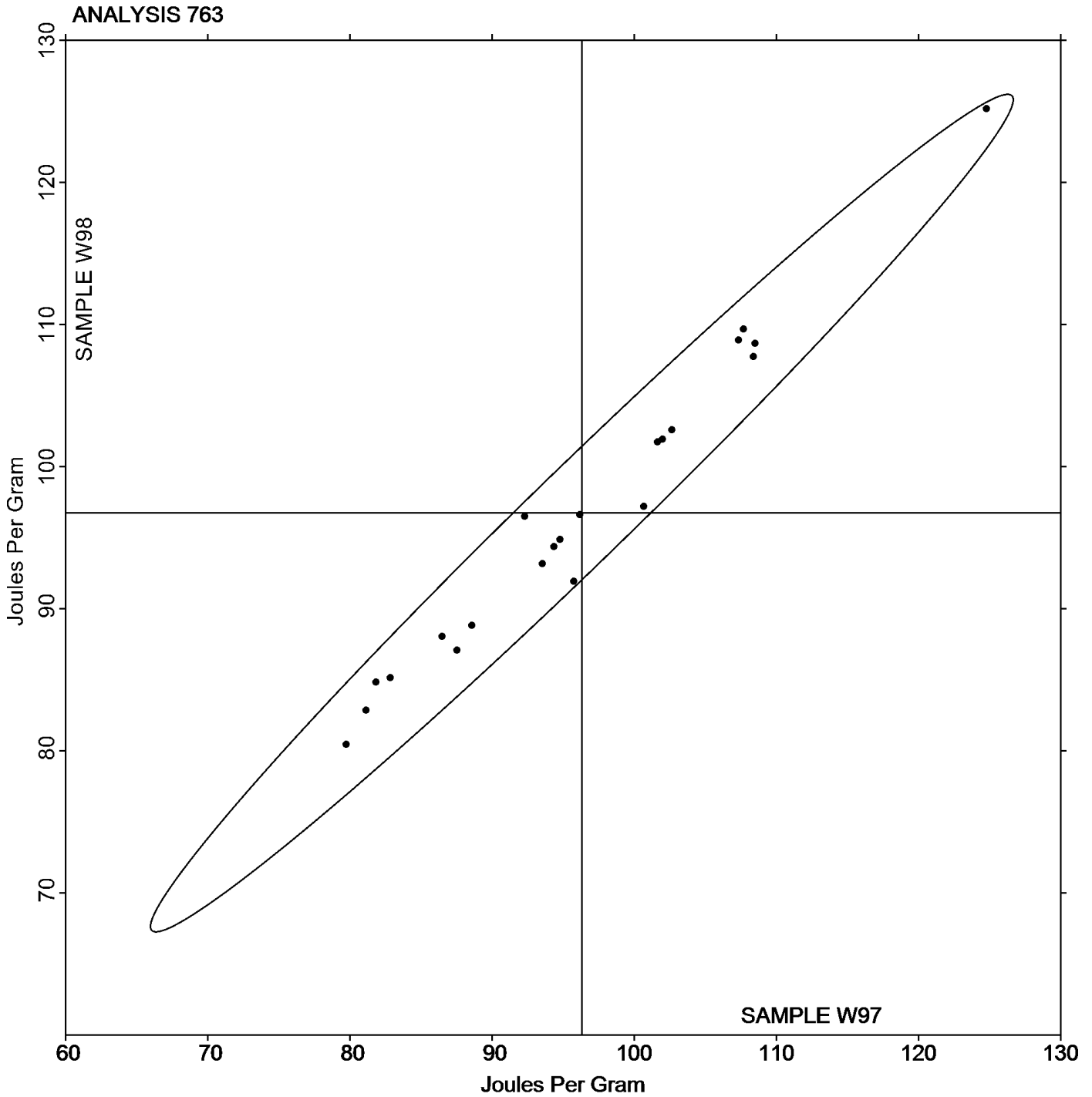
Report #129

Analysis 763

1st Qtr 2024

DSC Enthalpy of Fusion

Grand Mean Sample W97: 96.312 Joules Per Gram Grand Mean Sample W98: 96.729 Joules Per Gram





Plastics Interlaboratory Testing Program

Report #129

Analysis 764

1st Qtr 2024

DSC Glass Transition Temperature

WebCode	Data Flag	Sample V97			Sample V98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH		113.46	3.94	1.47	113.95	4.58	1.83	TA
2Y7KDD		109.69	0.17	0.06	108.93	-0.45	-0.18	MT
468CZF		106.70	-2.82	-1.05	106.30	-3.08	-1.23	SH
4ECYYM		111.41	1.89	0.71	111.11	1.73	0.69	TA
4RW7K8		105.47	-4.05	-1.51	105.70	-3.67	-1.47	TA
6VWGG8		109.37	-0.15	-0.06	109.96	0.59	0.24	TA
82B2E4		109.28	-0.24	-0.09	108.65	-0.72	-0.29	XX
8XTC4M	*	105.00	-4.52	-1.69	103.30	-6.07	-2.43	XX
AYY9AF		110.47	0.95	0.35	110.37	0.99	0.40	TA
BEA3J4		107.97	-1.55	-0.58	110.20	0.82	0.33	TA
C7PXWG		106.96	-2.56	-0.96	106.63	-2.74	-1.10	PE
DJA6H2		106.73	-2.79	-1.04	109.58	0.20	0.08	TA
DKPWKD		113.33	3.81	1.42	112.13	2.76	1.10	NZ
FBNJDA		105.85	-3.67	-1.37	106.88	-2.49	-1.00	TA
K7GCRR		111.70	2.18	0.81	111.77	2.39	0.96	TA
MH6XBR		109.66	0.14	0.05	109.57	0.20	0.08	PE
PLWDK7		109.30	-0.22	-0.08	109.73	0.36	0.14	MT
Q4F2JK		106.90	-2.62	-0.98	107.30	-2.07	-0.83	TA
QHG6W7		111.94	2.42	0.90	112.21	2.84	1.13	TA
TL8RPX		111.80	2.28	0.85	111.63	2.26	0.90	XX
WGMZUD		113.10	3.58	1.34	111.70	2.33	0.93	TA
XPWP8C		112.48	2.96	1.10	112.20	2.83	1.13	TA
YQY7GR		111.60	2.08	0.78	109.62	0.25	0.10	MT
YVT2GE		109.10	-0.42	-0.16	108.50	-0.87	-0.35	TA
YW9RHQ		112.34	2.82	1.05	109.72	0.34	0.14	TA
YYCM3T		105.90	-3.62	-1.35	106.10	-3.27	-1.31	NZ

Summary Statistics		
	Sample V97	Sample V98
Grand Means	109.519 Degrees Celsius	109.375 Degrees Celsius
Std Dev Btwn Labs	2.680 Degrees Celsius	2.501 Degrees Celsius
Statistics based on 26 of 26 reporting participants		

Sample V97: ABS & Sample V98: ABS



Plastics Interlaboratory Testing Program

Report #129

Analysis 764

1st Qtr 2024

DSC Glass Transition Temperature

Key to Instrument Codes Reported by Participants

MT Mettler Toledo Instruments

NZ Netzsch Instruments

PE Perkins Elmer Instruments

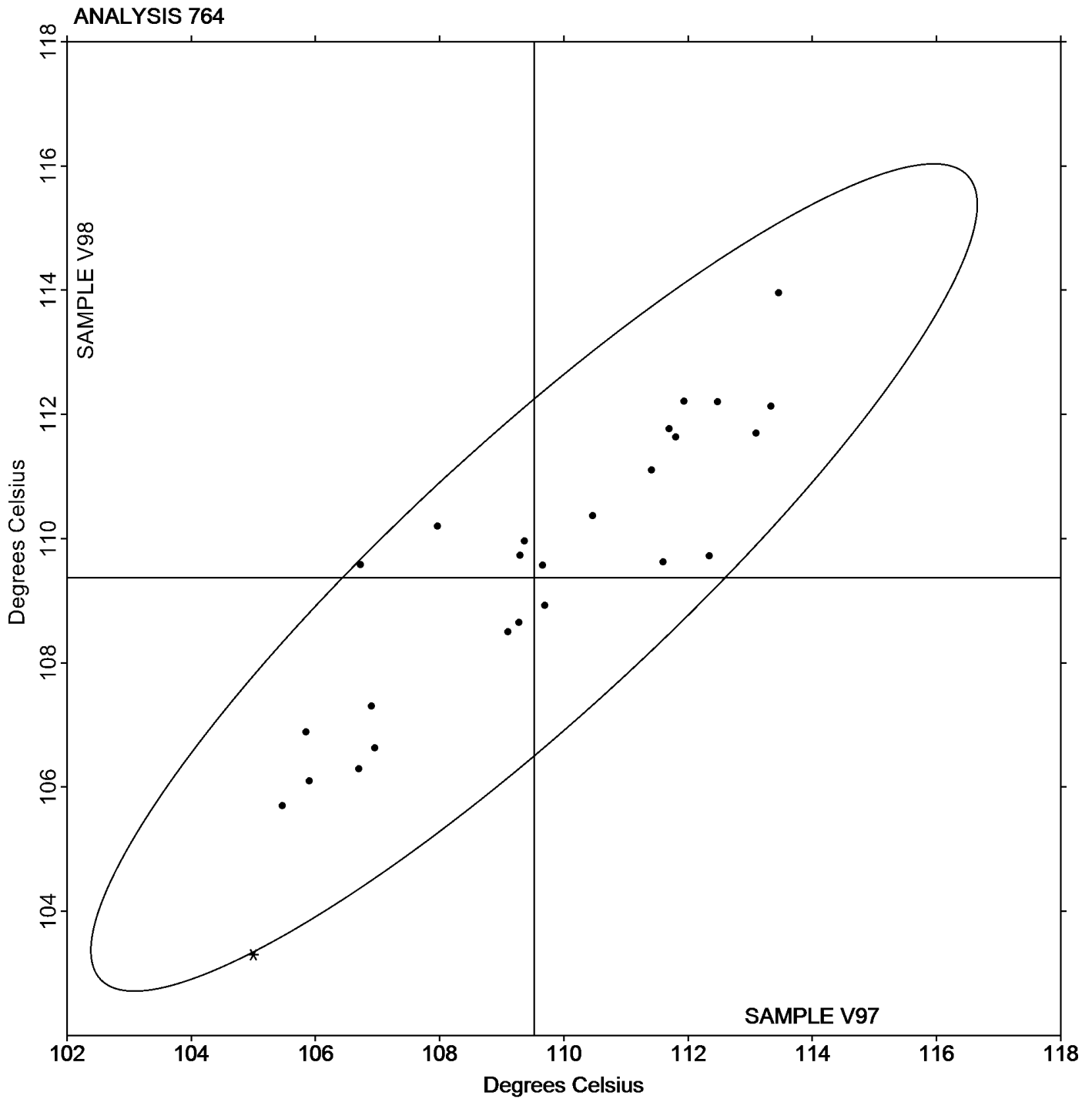
SH Shimadzu

TA TA Instruments

XX Instrument manufacturer not specified by lab



Grand Mean Sample V97: 109.52 Degrees Celsius Grand Mean Sample V98: 109.37 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #129

Analysis 765

1st Qtr 2024

Research Crystallization Peak Temperature

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4RW7K8		111.13	4.29	1.60	111.53	4.45	1.56	TA
8XTC4M		103.93	-2.91	-1.08	104.93	-2.15	-0.75	XX
AYY9AF		105.53	-1.31	-0.49	106.27	-0.82	-0.29	TA
DJA6H2		105.66	-1.18	-0.44	105.79	-1.29	-0.45	TA
FBNJDA		105.60	-1.24	-0.46	104.76	-2.33	-0.81	TA
XDVG7K		106.53	-0.31	-0.11	106.77	-0.32	-0.11	TA
YW9RHQ		110.93	4.09	1.52	111.63	4.54	1.59	TA
YYCM3T		105.40	-1.44	-0.54	105.00	-2.09	-0.73	NZ

Summary Statistics		
	Sample W97	Sample W98
Grand Means	106.840 Degrees Celsius	107.085 Degrees Celsius
Std Dev Btwn Labs	2.685 Degrees Celsius	2.860 Degrees Celsius
Statistics based on 8 of 8 reporting participants		

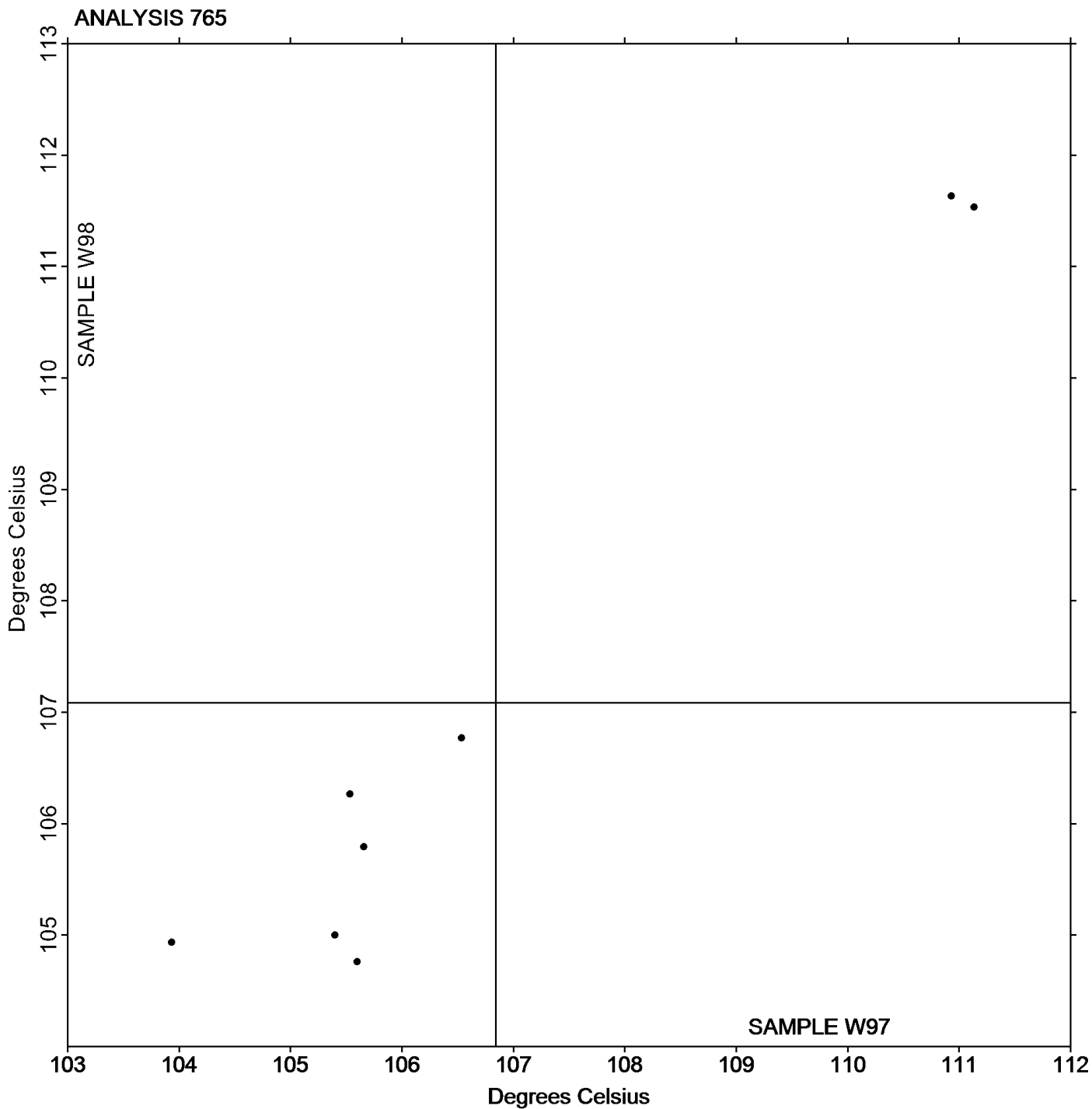
Sample W97: PP & Sample W98: PP

Key to Instrument Codes Reported by Participants

- NZ Netzsch Instruments
- TA TA Instruments
- XX Instrument manufacturer not specified by lab



Grand Mean Sample W97: 106.84 Degrees Celsius Grand Mean Sample W98: 107.09 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 #129

Analysis 766

1st Qtr 2024

Research Melting Peak Temperature

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4RW7K8		164.80	0.78	0.43	163.60	-0.26	-0.21	XX
8XTC4M		164.53	0.51	0.28	163.70	-0.16	-0.13	XX
AYY9AF		165.10	1.08	0.59	164.47	0.61	0.49	TA
DJA6H2		167.05	3.03	1.66	165.78	1.93	1.56	TA
FBNJDA		160.86	-3.16	-1.74	163.67	-0.19	-0.15	TA
K7GCRR		165.43	1.41	0.77	165.37	1.51	1.22	XX
MXXPVT		162.03	-1.99	-1.09	162.11	-1.74	-1.41	TA
XDVG7K		162.60	-1.42	-0.78	162.47	-1.39	-1.12	TA
YW9RHQ		163.32	-0.70	-0.39	162.64	-1.22	-0.98	TA
YYCM3T		164.50	0.48	0.26	164.77	0.91	0.74	NZ

Summary Statistics

Grand Means

Sample W97

164.021 Degrees Celsius

Sample W98

163.857 Degrees Celsius

Std Dev Btwn Labs

1.823 Degrees Celsius

1.237 Degrees Celsius

Statistics based on 10 of 10 reporting participants

Sample W97: PP & Sample W98: PP

Key to Instrument Codes Reported by Participants

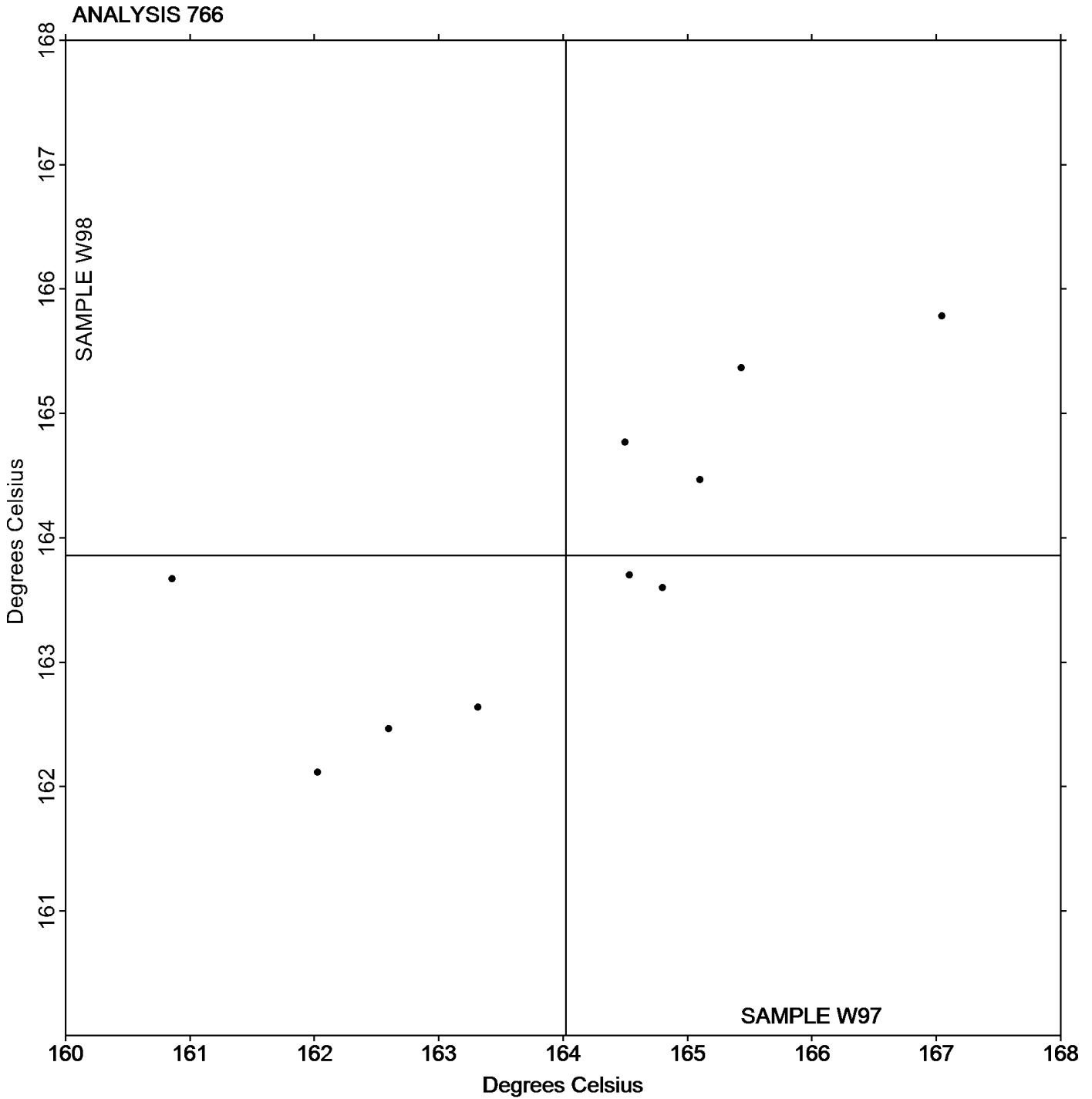
NZ Netzsch Instruments

TA TA Instruments

XX Instrument manufacturer not specified by lab



Grand Mean Sample W97: 164.02 Degrees Celsius Grand Mean Sample W98: 163.86 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 #129

Analysis 767

1st Qtr 2024

Research Heat of Crystallization

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4RW7K8		124.20	21.58	1.60	125.63	22.36	1.61	XX
8XTC4M		123.10	20.48	1.52	124.40	21.13	1.52	XX
AYY9AF		96.06	-6.56	-0.49	96.99	-6.28	-0.45	TA
DJA6H2		91.00	-11.62	-0.86	93.58	-9.69	-0.70	TA
FBNJDA		99.02	-3.60	-0.27	98.86	-4.41	-0.32	TA
XDVG7K		100.14	-2.48	-0.18	100.99	-2.28	-0.16	TA
YW9RHQ		97.53	-5.09	-0.38	96.27	-7.00	-0.50	TA
YYCM3T		89.92	-12.71	-0.94	89.44	-13.83	-1.00	NZ

Summary Statistics

	Sample W97	Sample W98
Grand Means	102.622 Joules Per Gram	103.270 Joules Per Gram
Std Dev Btwn Labs	13.467 Joules Per Gram	13.861 Joules Per Gram

Statistics based on 8 of 8 reporting participants

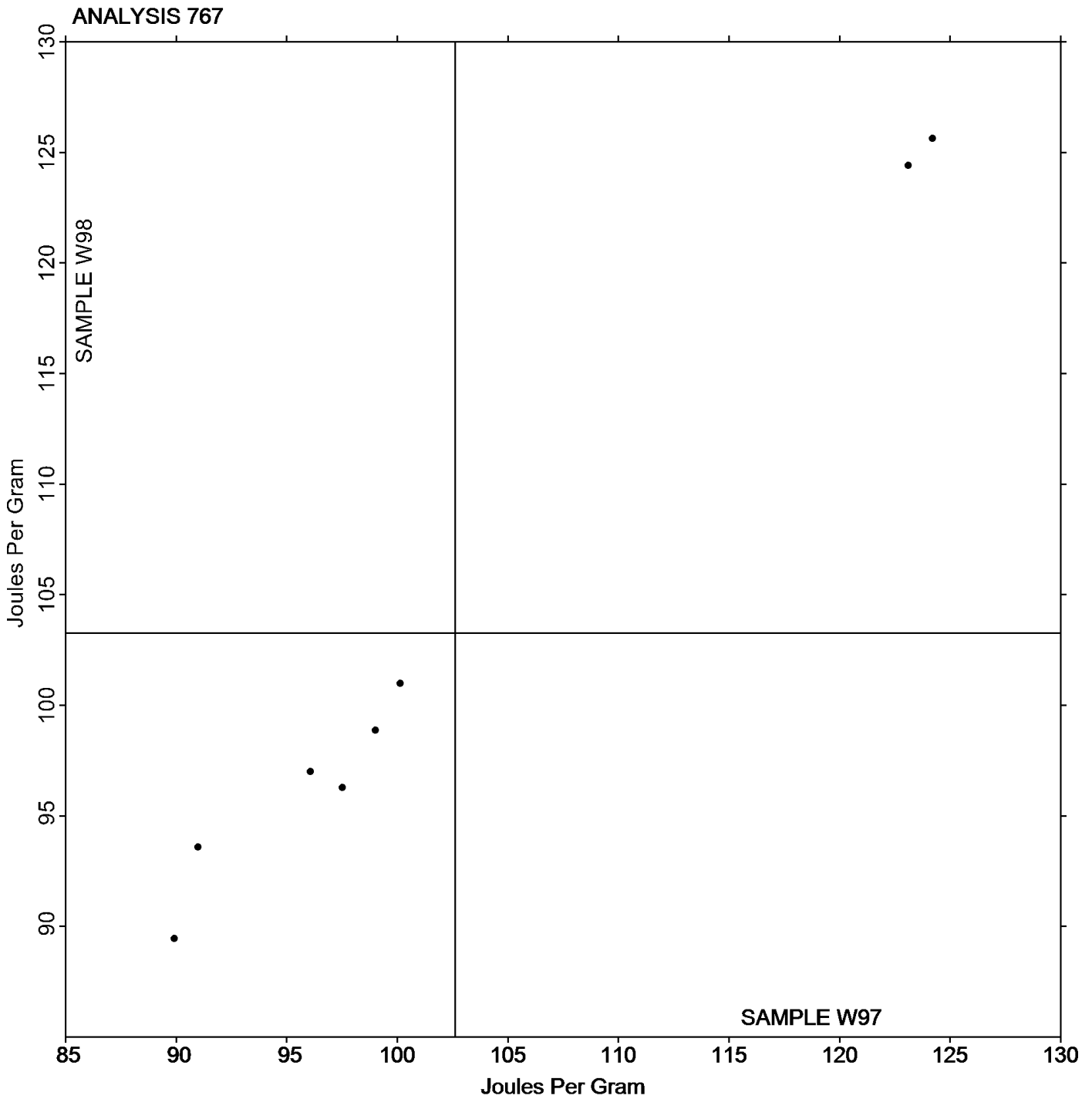
Sample W97: PP & Sample W98: PP

Key to Instrument Codes Reported by Participants

- NZ Netzsch Instruments
- TA TA Instruments
- XX Instrument manufacturer not specified by lab



Grand Mean Sample W97: 102.62 Joules Per Gram Grand Mean Sample W98: 103.27 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 #129

Analysis 768

1st Qtr 2024

Research Heat of Fusion

WebCode	Data Flag	Sample W97			Sample W98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4RW7K8		124.97	26.64	2.11	125.17	27.07	2.10	XX
8XTC4M		108.50	10.17	0.81	108.67	10.57	0.82	XX
AYY9AF		96.18	-2.14	-0.17	96.59	-1.50	-0.12	TA
DJA6H2		90.55	-7.77	-0.62	93.16	-4.93	-0.38	TA
FBNJDA		95.74	-2.58	-0.20	91.90	-6.20	-0.48	TA
XDVG7K		94.80	-3.53	-0.28	95.42	-2.67	-0.21	TA
YW9RHQ		87.72	-10.60	-0.84	86.53	-11.57	-0.90	TA
YYCM3T		88.14	-10.19	-0.81	87.33	-10.76	-0.83	NZ

Summary Statistics

	Sample W97	Sample W98
Grand Means	98.325 Joules Per Gram	98.097 Joules Per Gram
Std Dev Btwn Labs	12.613 Joules Per Gram	12.908 Joules Per Gram

Statistics based on 8 of 8 reporting participants

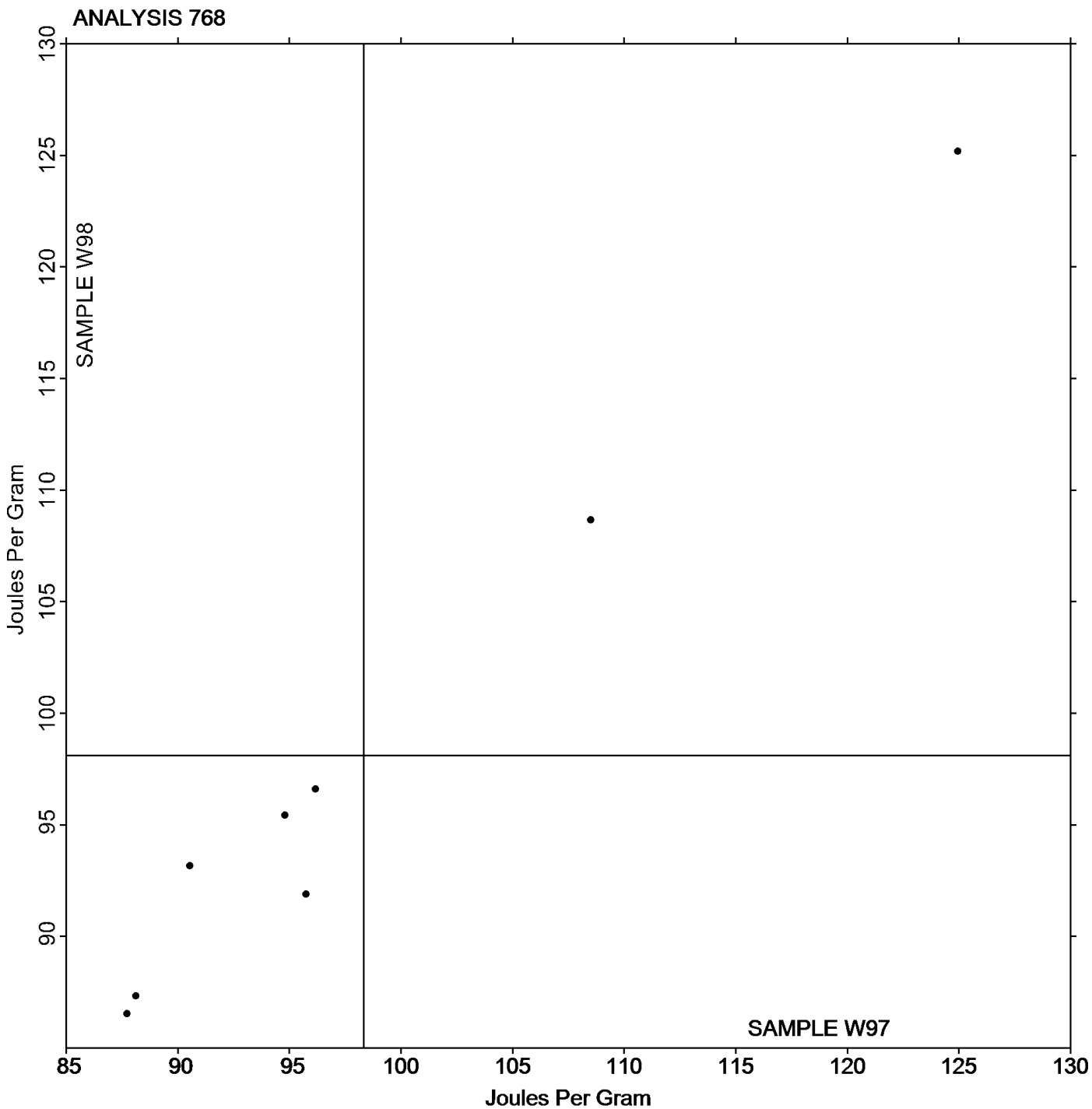
Sample W97: PP & Sample W98: PP

Key to Instrument Codes Reported by Participants

- NZ Netzsch Instruments
- TA TA Instruments
- XX Instrument manufacturer not specified by lab



Grand Mean Sample W97: 98.325 Joules Per Gram Grand Mean Sample W98: 98.097 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 #129

Analysis 769

1st Qtr 2024

Research Glass Transition Temperature

WebCode	Data Flag	Sample V97			Sample V98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4RW7K8		105.47	-1.99	-0.84	105.70	-1.51	-0.66	XX
8XTC4M		105.00	-2.45	-1.04	103.30	-3.91	-1.71	XX
AYY9AF		110.47	3.01	1.28	110.37	3.16	1.38	TA
DJA6H2		106.73	-0.72	-0.31	109.58	2.37	1.04	TA
FBNJDA		105.85	-1.60	-0.68	106.88	-0.32	-0.14	TA
XDVG7K		107.60	0.15	0.06	106.70	-0.51	-0.22	TA
YW9RHQ		111.54	4.08	1.73	108.76	1.55	0.68	TA
YYCM3T		106.97	-0.49	-0.21	106.37	-0.84	-0.37	NZ

Summary Statistics

	Sample V97	Sample V98
Grand Means	107.453 Degrees Celsius	107.207 Degrees Celsius
Std Dev Btwn Labs	2.362 Degrees Celsius	2.287 Degrees Celsius
Statistics based on 8 of 8 reporting participants		

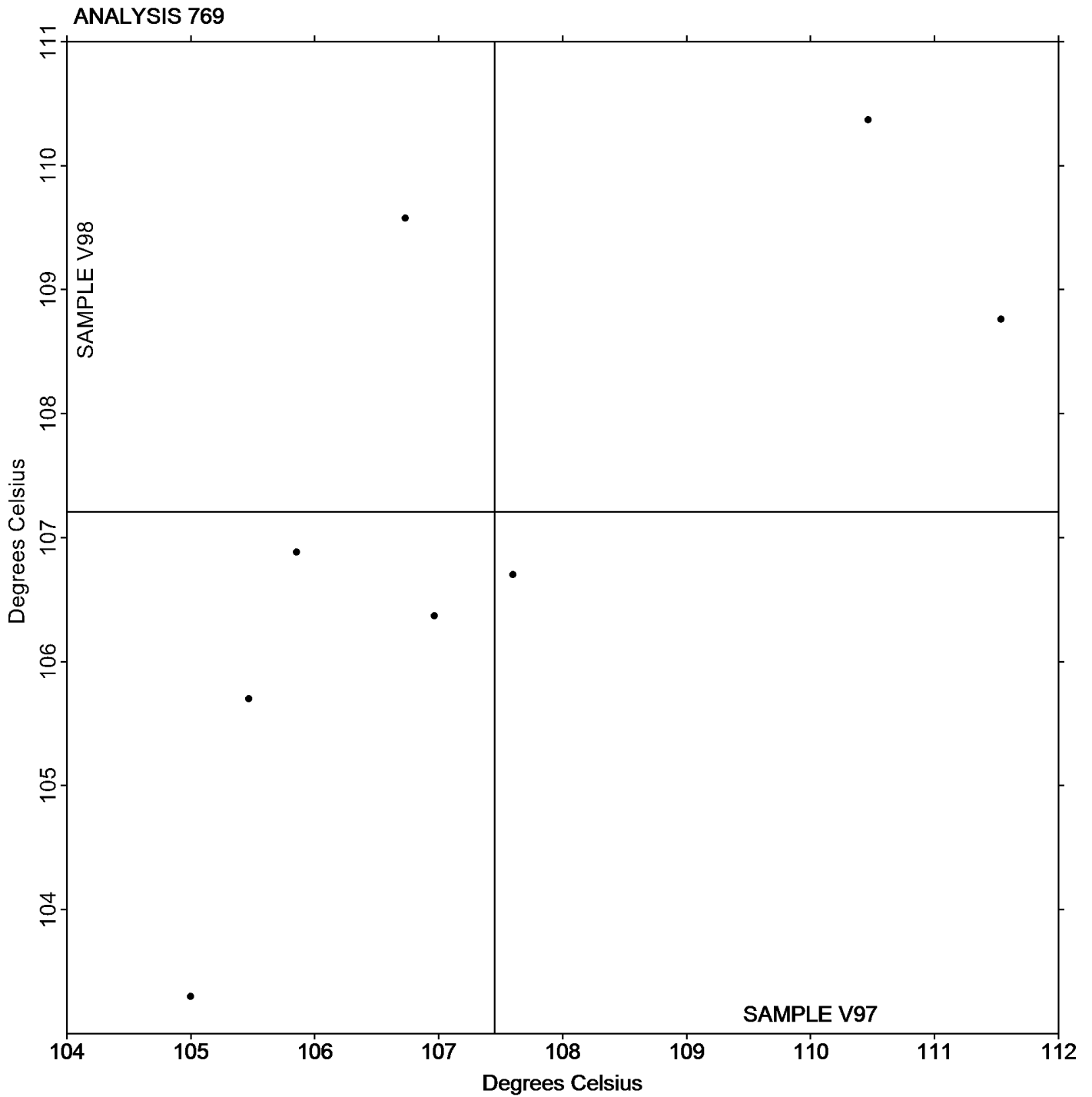
Sample V97: ABS & Sample V98: ABS

Key to Instrument Codes Reported by Participants

- NZ Netzsch Instruments
- TA TA Instruments
- XX Instrument manufacturer not specified by lab



Grand Mean Sample V97: 107.45 Degrees Celsius Grand Mean Sample V98: 107.21 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 #129

Analysis 770

1st Qtr 2024

Tensile Stress at Yield, Film Samples - psi

WebCode	Data Flag	Sample B97			Sample B98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
468CZF		1,865	64	0.32	1,929	160	0.71	WZ
4HRY68		1,433	-367	-1.85	1,332	-437	-1.94	IN
4RX9LT		2,017	216	1.09	1,965	196	0.87	IN
A9NW84		1,886	85	0.43	1,888	119	0.53	OA
H2WE7Y		1,497	-304	-1.53	1,462	-307	-1.36	TO
QF7QHQ		1,822	21	0.10	1,656	-113	-0.50	TO
RXNLJY		1,875	74	0.37	1,872	103	0.46	IN
U462Z2		1,670	-131	-0.66	1,657	-112	-0.50	IM
WY2AWY		1,735	-66	-0.33	1,710	-59	-0.26	IN
XDVG7K		2,009	208	1.05	2,032	263	1.17	IN
XMKHVQ		2,000	200	1.00	1,954	185	0.82	IN

Summary Statistics		
	Sample B97	Sample B98
Grand Means	1,800.9 psi	1,768.9 psi
Std Dev Btwn Labs	199.0 psi	225.1 psi
Statistics based on 11 of 11 reporting participants		

Sample B97: LDPE & Sample B98: LDPE

Key to Instrument Codes Reported by Participants

- IM Instru-Met Instruments
- OA Oakland Testing
- WZ Zwick
- IN Instron
- TO Tinius Olsen



Plastics Interlaboratory Testing Program

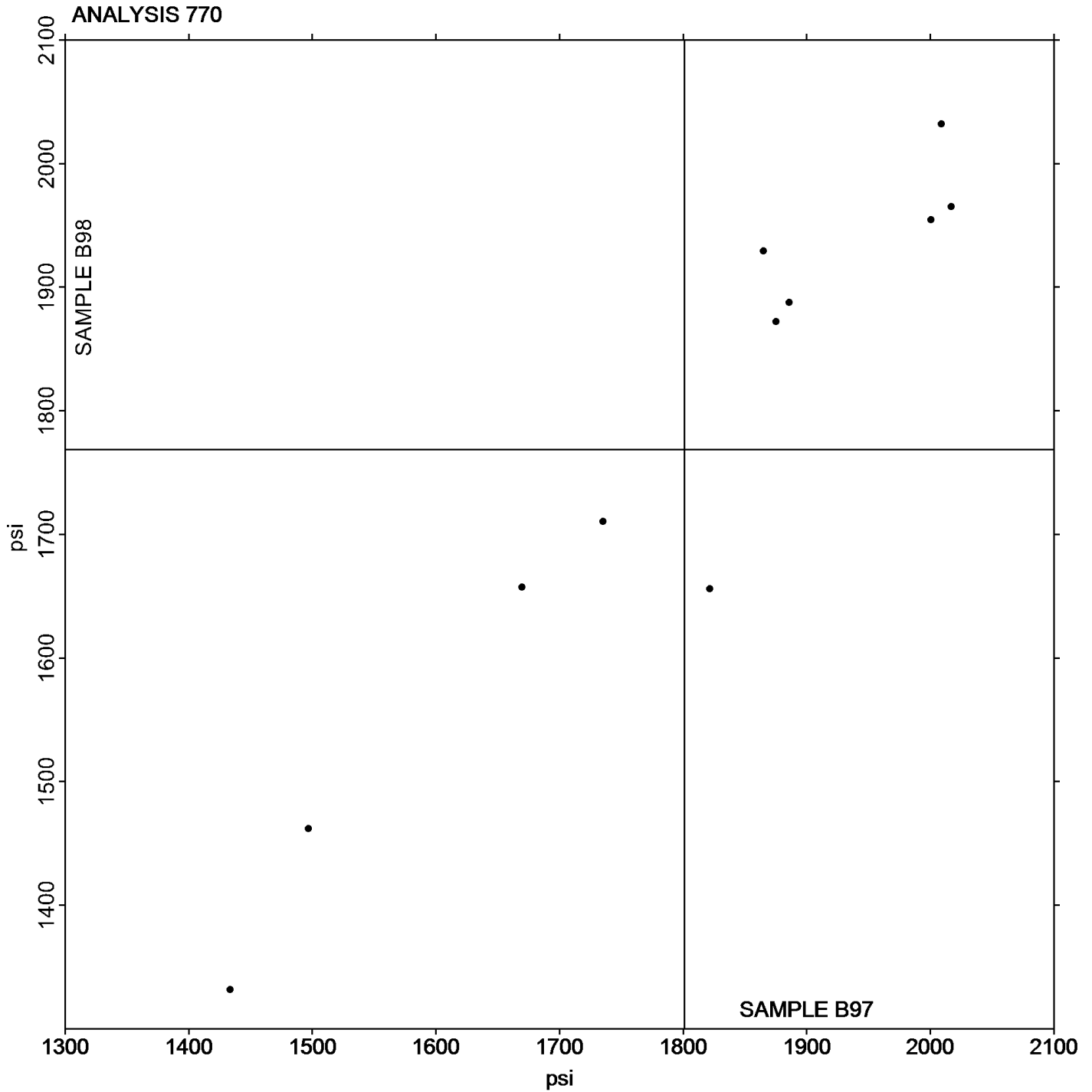
Report #129

Analysis 770

1st Qtr 2024

Tensile Stress at Yield, Film Samples - psi

Grand Mean Sample B97: 1,800.86 psi Grand Mean Sample B98: 1,768.86 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 #129

Analysis 771

1st Qtr 2024

Tensile Stress at Break, Film Samples - psi

WebCode	Data Flag	Sample B97			Sample B98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
468CZF		3,745	49	0.11	3,752	189	0.32	WZ
4HRY68		2,644	-1,051	-2.28	2,097	-1,466	-2.52	IN
4RX9LT		4,220	525	1.14	4,179	616	1.06	IN
A9NW84		3,968	273	0.59	3,958	394	0.68	OA
H2WE7Y		3,151	-545	-1.18	3,034	-529	-0.91	TO
QF7QHQ		3,903	208	0.45	3,383	-180	-0.31	TO
RXNLJY		3,832	137	0.30	3,762	199	0.34	IN
U462Z2		3,583	-112	-0.24	3,760	197	0.34	IM
WY2AWY		3,664	-31	-0.07	3,627	63	0.11	IN
XDVG7K		4,234	538	1.17	4,078	515	0.89	IN
XMKHVQ		3,705	10	0.02	3,566	3	0.01	IN

Summary Statistics		
	Sample B97	Sample B98
Grand Means	3,695.6 psi	3,563.3 psi
Std Dev Btwn Labs	460.3 psi	581.4 psi
Statistics based on 11 of 11 reporting participants		

Sample B97: LDPE & Sample B98: LDPE

Key to Instrument Codes Reported by Participants

- IM Instru-Met Instruments
- OA Oakland Testing
- WZ Zwick
- IN Instron
- TO Tinius Olsen



Plastics Interlaboratory Testing Program

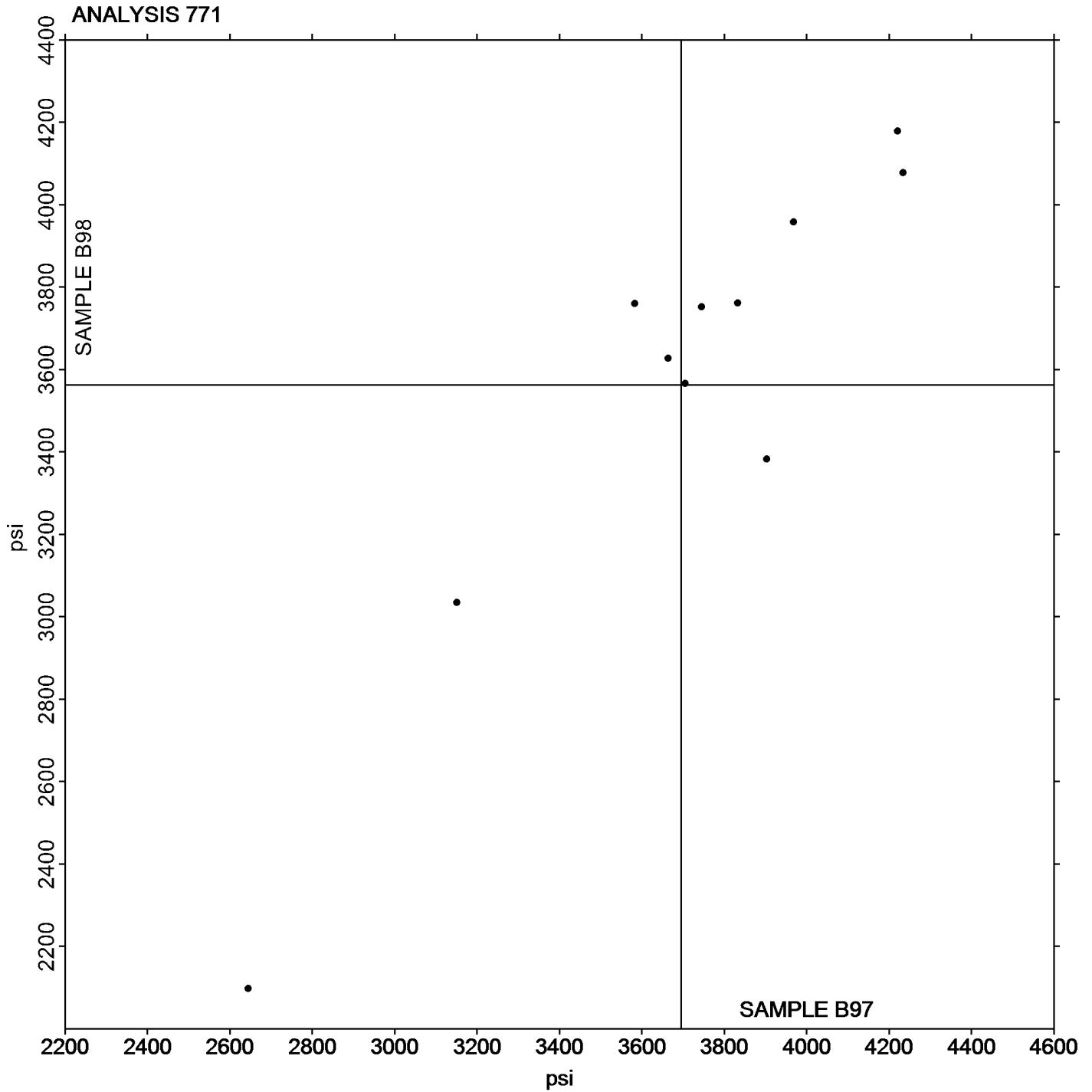
Report #129

Analysis 771

1st Qtr 2024

Tensile Stress at Break, Film Samples - psi

Grand Mean Sample B97: 3,695.56 psi Grand Mean Sample B98: 3,563.30 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 #129

Analysis 772

1st Qtr 2024

Percent Elongation at Yield, Films

WebCode	Data Flag	Sample B97			Sample B98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
468CZF		67.00	19.98	0.58	67.40	18.32	0.50	WZ
4HRY68		8.03	-38.99	-1.12	7.65	-41.43	-1.12	IN
4RX9LT		96.64	49.62	1.43	102.13	53.05	1.44	IN
H2WE7Y		21.78	-25.24	-0.73	23.57	-25.51	-0.69	TO
QF7QHQ		15.11	-31.91	-0.92	14.28	-34.80	-0.94	TO
RXNLJY		87.88	40.86	1.18	96.17	47.09	1.28	IN
U462Z2		13.98	-33.04	-0.95	14.05	-35.03	-0.95	IM
WY2AWY		17.96	-29.06	-0.84	19.57	-29.51	-0.80	IN
XDVG7K		64.89	17.87	0.51	67.76	18.68	0.51	IN
XMKHVQ		76.97	29.94	0.86	78.20	29.12	0.79	IN

Summary Statistics

	Sample B97	Sample B98
Grand Means	47.024 Percent	49.078 Percent
Std Dev Btwn Labs	34.735 Percent	36.879 Percent

Statistics based on 10 of 10 reporting participants

Sample B97: LDPE & Sample B98: LDPE

Key to Instrument Codes Reported by Participants

- | | |
|---------------------------|------------|
| IM Instru-Met Instruments | IN Instron |
| TO Tinius Olsen | WZ Zwick |



Plastics Interlaboratory Testing Program

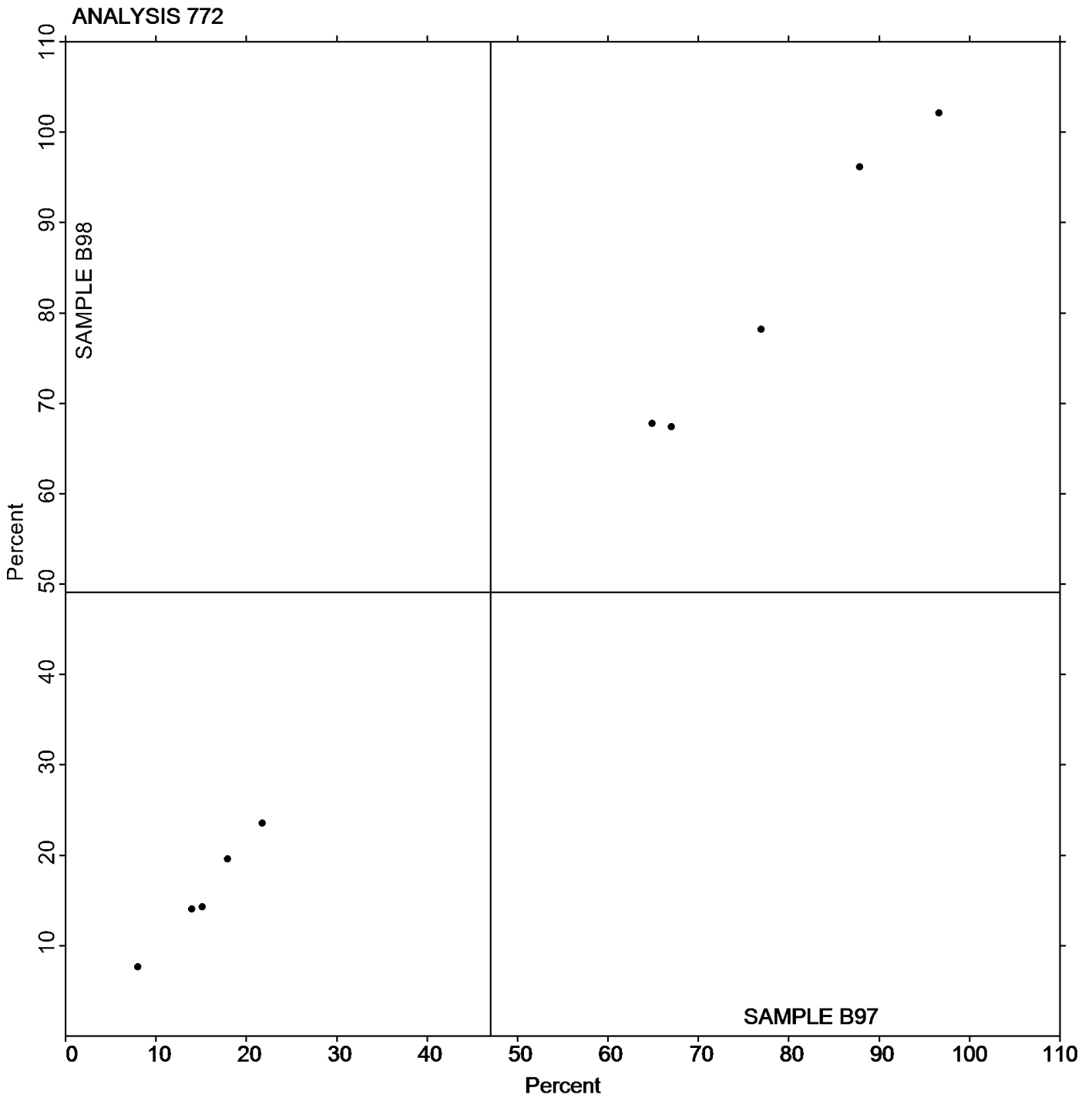
Report #129

Analysis 772

1st Qtr 2024

Percent Elongation at Yield, Films

Grand Mean Sample B97: 47.024 Percent Grand Mean Sample B98: 49.078 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 #129

Analysis 773

1st Qtr 2024

Percent Elongation at Break, Film Samples

WebCode	Data Flag	Sample B97			Sample B98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
468CZF		628.0	-127.8	-0.74	618.0	-130.7	-0.71	WZ
4HRY68		388.2	-367.6	-2.14	356.1	-392.5	-2.13	IN
4RX9LT		976.9	221.1	1.29	1,014.4	265.8	1.44	IN
A9NW84		814.8	59.0	0.34	814.6	65.9	0.36	OA
H2WE7Y		918.2	162.4	0.94	820.9	72.2	0.39	TO
QF7QHJ		752.2	-3.6	-0.02	710.2	-38.5	-0.21	TO
RXNLJY		965.5	209.7	1.22	944.2	195.5	1.06	IN
U462Z2		797.9	42.1	0.24	900.3	151.6	0.82	IM
WY2AWY		757.2	1.4	0.01	775.4	26.7	0.15	IN
XDVG7K		643.7	-112.1	-0.65	617.6	-131.1	-0.71	IN
XMKHVQ		671.3	-84.5	-0.49	663.5	-85.1	-0.46	IN

Summary Statistics		
	Sample B97	Sample B98
Grand Means	755.81 Percent	748.66 Percent
Std Dev Btwn Labs	171.95 Percent	184.17 Percent
Statistics based on 11 of 11 reporting participants		

Sample B97: LDPE & Sample B98: LDPE

Key to Instrument Codes Reported by Participants

- IM Instru-Met Instruments
- OA Oakland Testing
- WZ Zwick
- IN Instron
- TO Tinius Olsen



Plastics Interlaboratory Testing Program

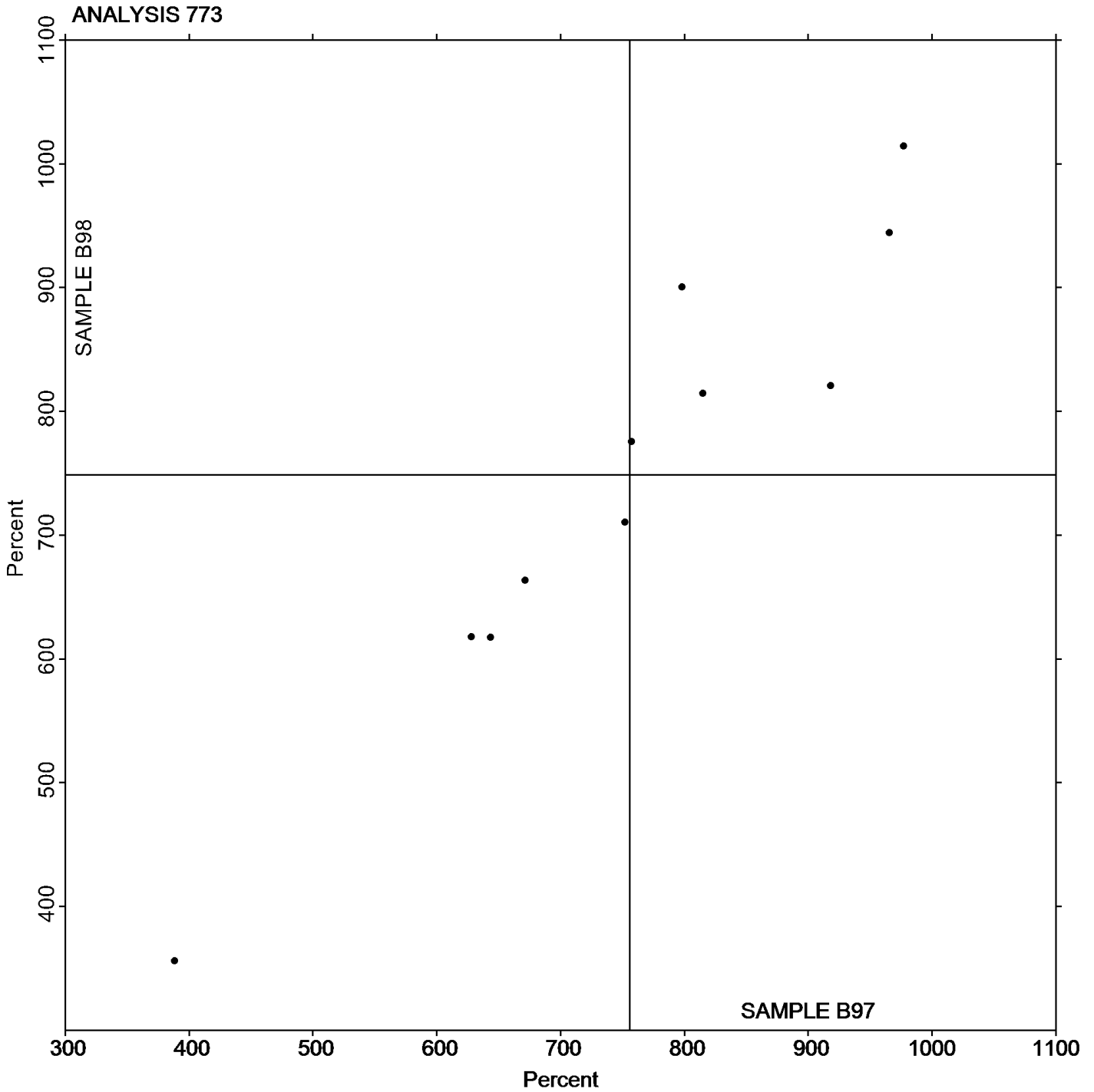
Report #129

Analysis 773

1st Qtr 2024

Percent Elongation at Break, Film Samples

Grand Mean Sample B97: 755.81 Percent Grand Mean Sample B98: 748.66 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 #129

Analysis 774

1st Qtr 2024

Thickness of Film Tensile Samples - mils

WebCode	Data Flag	<u>Sample B97</u>			<u>Sample B98</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
468CZF		3.8386	0.1583	1.71	3.6969	0.0349	0.31
4HRY68		3.7200	0.0397	0.43	3.5460	-0.1160	-1.03
4RX9LT		3.4750	-0.2053	-2.22	3.5100	-0.1520	-1.35
6PAMJA		3.6930	0.0127	0.14	3.6800	0.0180	0.16
A9NW84		3.6610	-0.0193	-0.21	3.7430	0.0810	0.72
H2WE7Y		3.6182	-0.0621	-0.67	3.6890	0.0271	0.24
RXNLJY		3.7190	0.0387	0.42	3.6830	0.0210	0.19
U462Z2		3.7900	0.1097	1.18	3.9300	0.2680	2.38
WY2AWY		3.6520	-0.0283	-0.31	3.6370	-0.0250	-0.22
XDVG7K		3.6350	-0.0453	-0.49	3.6110	-0.0510	-0.45
XMKHVQ		3.7300	0.0497	0.54	3.5300	-0.1320	-1.17
YVXFTE		3.6320	-0.0483	-0.52	3.6880	0.0260	0.23

Summary Statistics		
	<u>Sample B97</u>	<u>Sample B98</u>
Grand Means	3.68031 mils	3.66199 mils
Stnd Dev Btwn Labs	0.09262 mils	0.11240 mils
Statistics based on 12 of 12 reporting participants		

Sample B97: LDPE & Sample B98: LDPE



Plastics Interlaboratory Testing Program

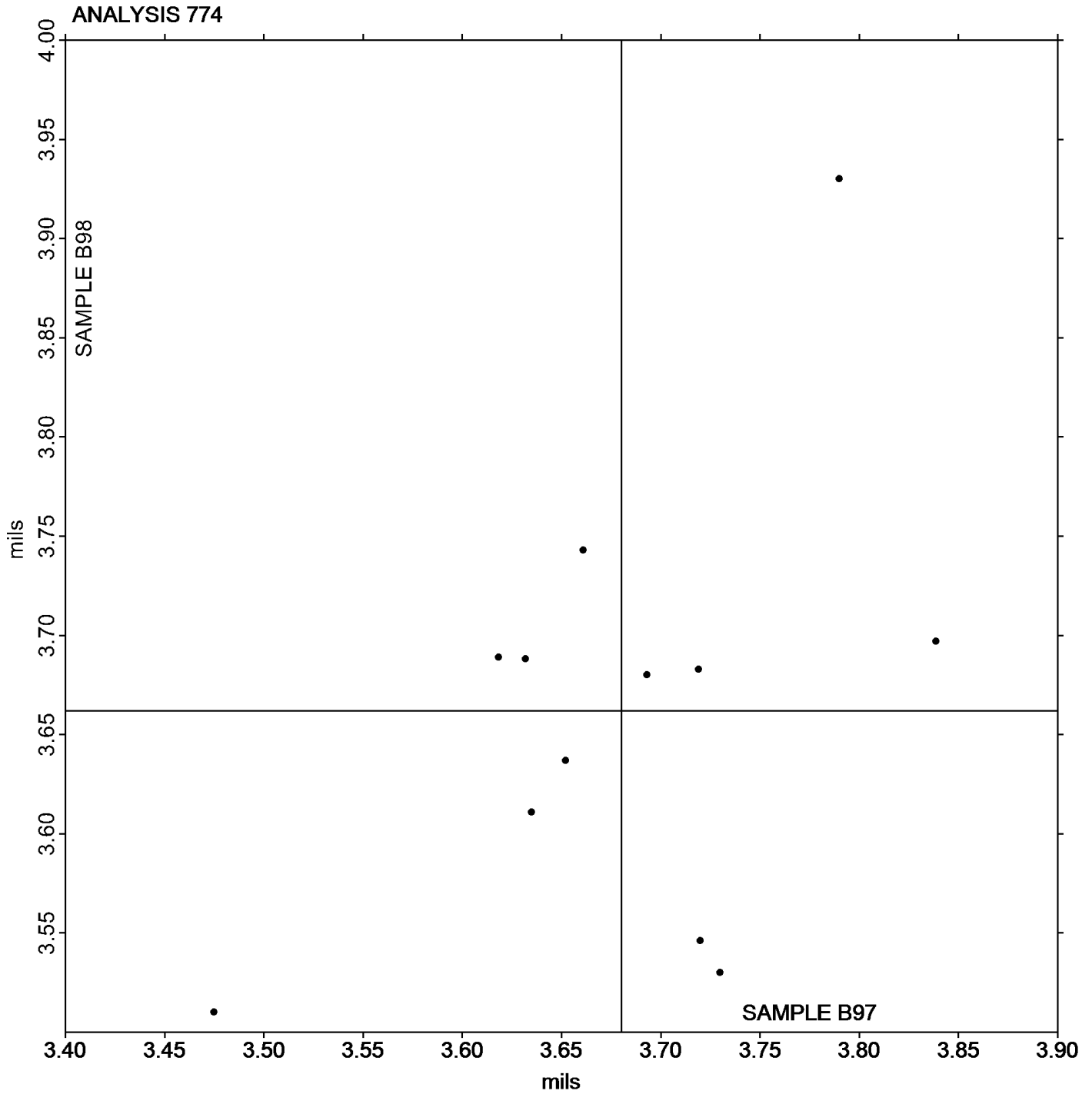
Report #129

Analysis 774

1st Qtr 2024

Thickness of Film Tensile Samples - mils

Grand Mean Sample B97: 3.6803 mils Grand Mean Sample B98: 3.6620 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 #129

Analysis 775

1st Qtr 2024

Secant Modulus at 1% Strain - psi

WebCode	Data Flag	Sample B97			Sample B98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4HRY68		30,432	-2,193	-0.60	30,265	-2,154	-0.70	IN
4RX9LT		30,706	-1,920	-0.52	30,943	-1,476	-0.48	IN
A9NW84		38,397	5,771	1.58	35,607	3,187	1.04	OA
H2WE7Y		28,370	-4,256	-1.16	28,810	-3,610	-1.18	TO
RXNLJY		29,399	-3,226	-0.88	29,409	-3,011	-0.98	IN
U462Z2		31,736	-889	-0.24	32,374	-46	-0.01	IM
WY2AWY		35,674	3,048	0.83	36,859	4,439	1.45	IN
XDVG7K		36,290	3,664	1.00	35,090	2,670	0.87	IN

Summary Statistics

	Sample B97	Sample B98
Grand Means	32,625.6 psi	32,419.6 psi
Stnd Dev Btwn Labs	3,661.3 psi	3,068.5 psi
Statistics based on 8 of 8 reporting participants		

Sample B97: LDPE & Sample B98: LDPE

Key to Instrument Codes Reported by Participants

- IM Instru-Met Instruments
- OA Oakland Testing
- IN Instron
- TO Tinius Olsen



Plastics Interlaboratory Testing Program

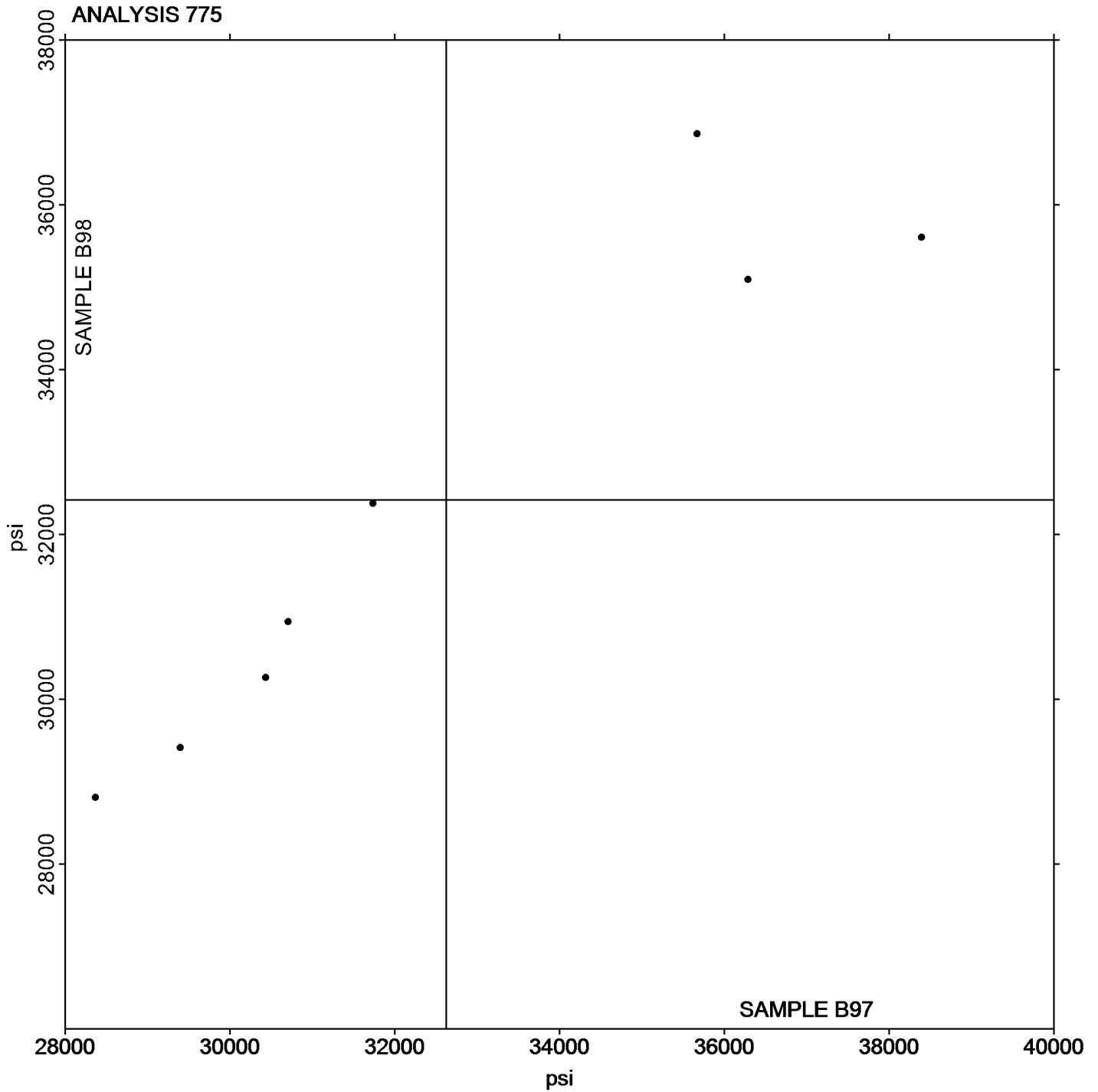
Report #129

Analysis 775

1st Qtr 2024

Secant Modulus at 1% Strain - psi

Grand Mean Sample B97: 32,625.58 psi Grand Mean Sample B98: 32,419.57 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 #129

Analysis 776

1st Qtr 2024

Secant Modulus at 2% Strain - psi

WebCode	Data Flag	Sample B97			Sample B98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4HRY68		27,538	-254	-0.13	27,180	-600	-0.30	MT
4RX9LT		27,795	3	0.00	28,122	342	0.17	IN
H2WE7Y		28,900	1,108	0.54	29,000	1,220	0.61	TO
RXNLJY		23,932	-3,860	-1.90	23,823	-3,957	-1.98	IN
U462Z2		26,955	-837	-0.41	27,275	-505	-0.25	IM
WY2AWY		29,195	1,403	0.69	29,549	1,769	0.88	IN
XDVG7K		30,230	2,438	1.20	29,510	1,730	0.87	IN

Summary Statistics		Sample B97	Sample B98
Grand Means		27,792.0 psi	27,779.9 psi
Std Dev Btwn Labs		2,033.4 psi	1,999.9 psi
Statistics based on 7 of 7 reporting participants			

Sample B97: LDPE & Sample B98: LDPE

Key to Instrument Codes Reported by Participants

IM Instru-Met Instruments
 MT MTS/Sintech

IN Instron
 TO Tinius Olsen



Plastics Interlaboratory Testing Program

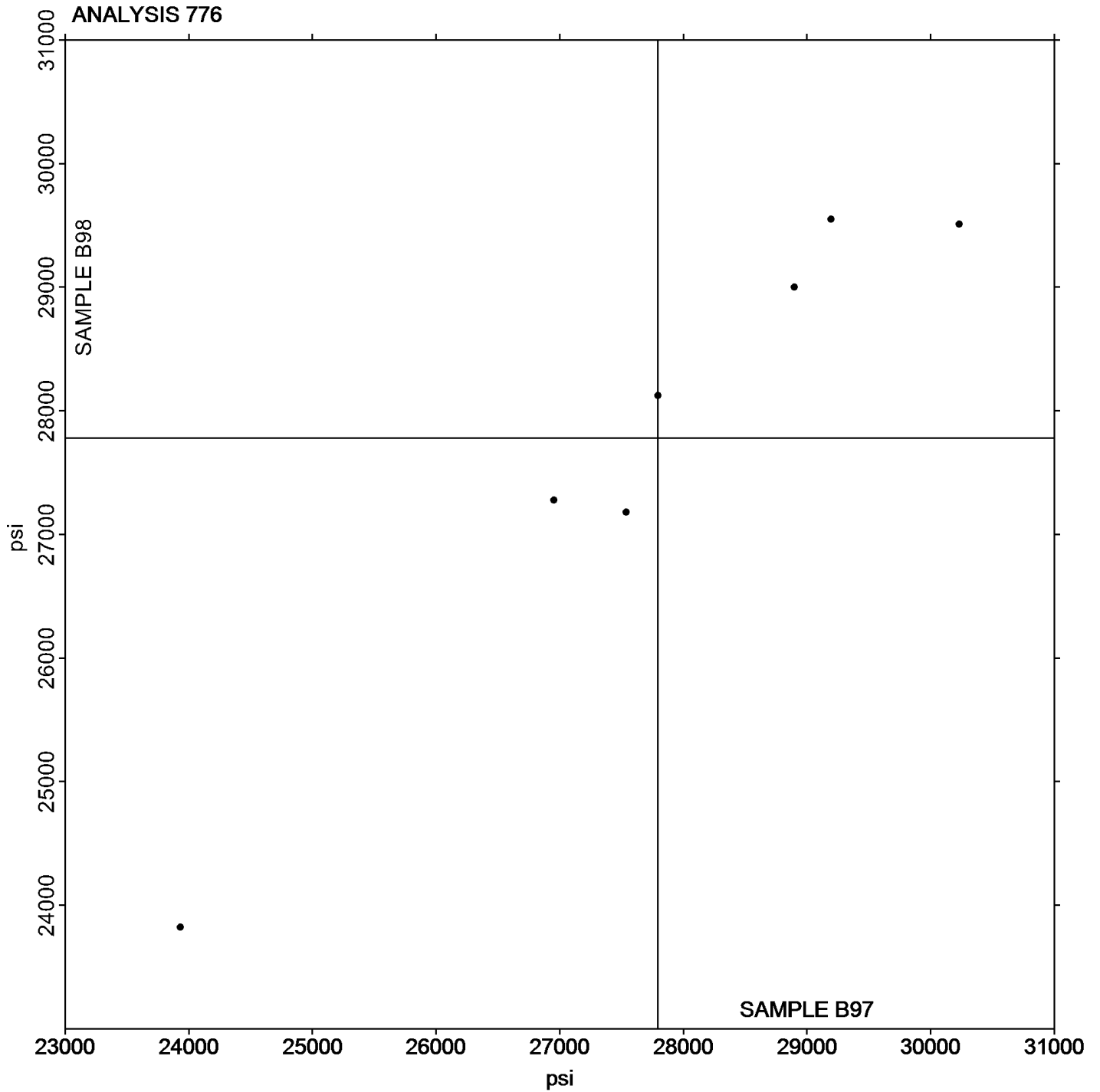
Report #129

Analysis 776

1st Qtr 2024

Secant Modulus at 2% Strain - psi

Grand Mean Sample B97: 27,791.99 psi Grand Mean Sample B98: 27,779.93 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 #129

Analysis 780

1st Qtr 2024

Coefficient of Static Friction

WebCode	Data Flag	Sample P97			Sample P98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2YLCPF		0.3210	0.1123	2.21	0.2338	0.0467	1.34	MI
468CZF		0.2040	-0.0047	-0.09	0.1800	-0.0071	-0.20	SA
4HRY68		0.1866	-0.0221	-0.43	0.1966	0.0095	0.27	MI
A9NW84		0.1998	-0.0089	-0.17	0.2022	0.0151	0.43	DY
H2WE7Y		0.1280	-0.0807	-1.58	0.1446	-0.0425	-1.22	RD
MQXB7K		0.2108	0.0021	0.04	0.1278	-0.0593	-1.70	IG
QF7QHQ		0.2336	0.0249	0.49	0.2258	0.0387	1.11	TO
U462Z2		0.2048	-0.0039	-0.08	0.1736	-0.0135	-0.39	TH
XDVG7K		0.1894	-0.0193	-0.38	0.1996	0.0125	0.36	TH

Summary Statistics		Sample P97	Sample P98
Grand Means		0.20866 COF	0.18711 COF
Stnd Dev Btwn Labs		0.05090 COF	0.03484 COF
Statistics based on 9 of 9 reporting participants			

Sample P97: LDPE & Sample P98: LDPE

Key to Instrument Codes Reported by Participants

- | | | | |
|----|---------------------|----|--|
| DY | Dynisco Model D1055 | IG | Instron |
| MI | MTS Insight | RD | RDM CF |
| SA | Shimadzu Autograph | TH | Thwing Albert Friction/Peel Tester Model 225-1 |
| TO | Tinius Olsen | | |



Plastics Interlaboratory Testing Program

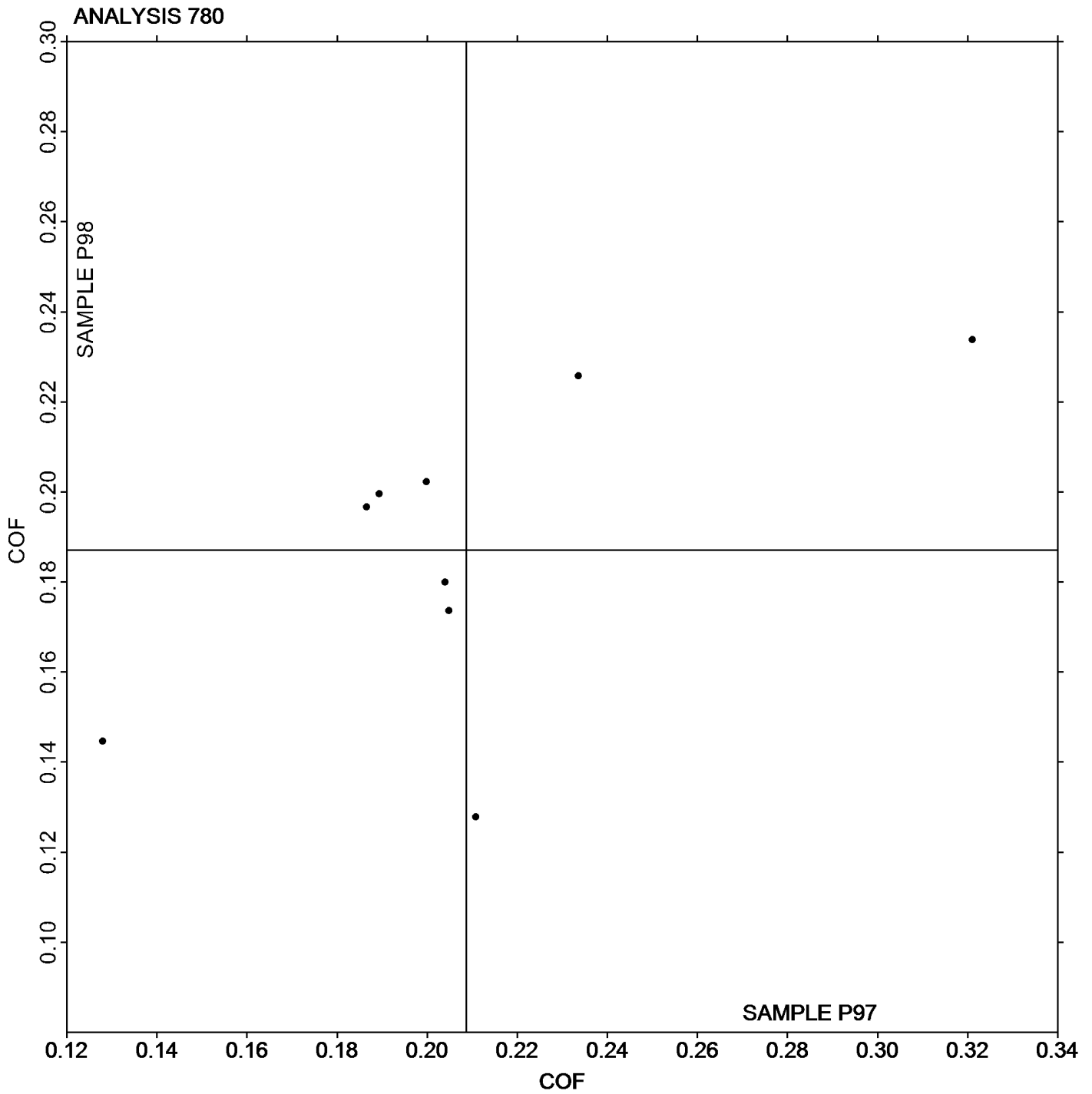
Report #129

Analysis 780

1st Qtr 2024

Coefficient of Static Friction

Grand Mean Sample P97: 0.20866 COF Grand Mean Sample P98: 0.18711 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 #129

Analysis 781

1st Qtr 2024

Coefficient of Kinetic Friction

WebCode	Data Flag	Sample P97			Sample P98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2YLCPF		0.2366	0.0816	2.17	0.1910	0.0514	1.25	MI
468CZF		0.1320	-0.0230	-0.61	0.1280	-0.0116	-0.28	SA
4HRY68		0.1282	-0.0268	-0.71	0.1224	-0.0172	-0.42	MI
A9NW84		0.1514	-0.0036	-0.10	0.1520	0.0124	0.30	DY
H2WE7Y		0.1234	-0.0316	-0.84	0.1370	-0.0026	-0.06	RD
MQXB7K		0.1406	-0.0143	-0.38	0.0562	-0.0835	-2.04	IG
QF7QHQ		0.1826	0.0276	0.74	0.1740	0.0344	0.84	TO
U462Z2		0.1240	-0.0310	-0.82	0.1170	-0.0226	-0.55	TH
XDVG7K		0.1760	0.0210	0.56	0.1790	0.0394	0.96	TH

Summary Statistics		Sample P97	Sample P98
Grand Means		0.15498 COF	0.13962 COF
Stnd Dev Btwn Labs		0.03756 COF	0.04099 COF
Statistics based on 9 of 9 reporting participants			

Sample P97: LDPE & Sample P98: LDPE

Key to Instrument Codes Reported by Participants

- | | | | |
|----|---------------------|----|--|
| DY | Dynisco Model D1055 | IG | Instron |
| MI | MTS Insight | RD | RDM CF |
| SA | Shimadzu Autograph | TH | Thwing Albert Friction/Peel Tester Model 225-1 |
| TO | Tinius Olsen | | |



Plastics Interlaboratory Testing Program

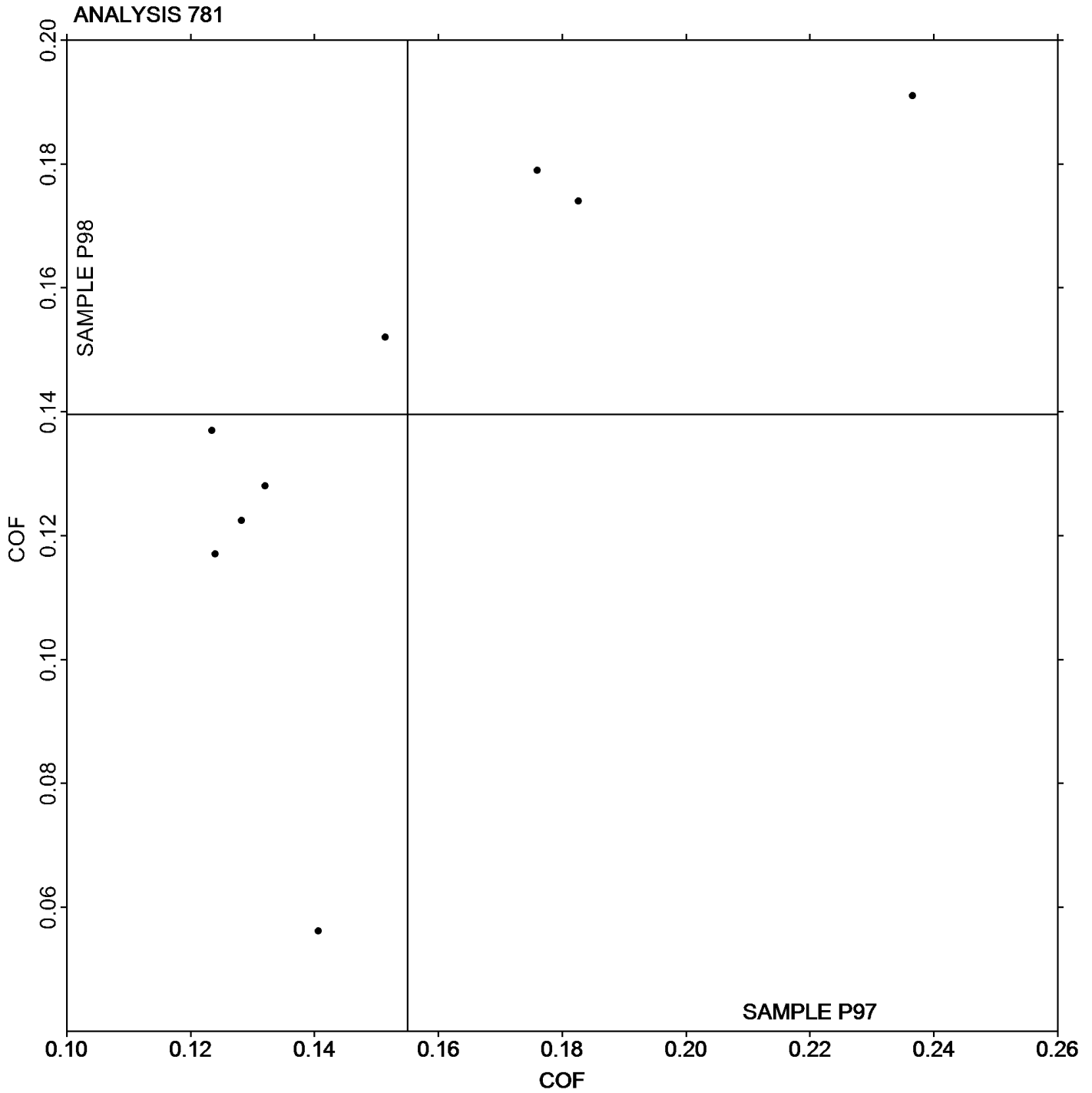
Report #129

Analysis 781

1st Qtr 2024

Coefficient of Kinetic Friction

Grand Mean Sample P97: 0.15498 COF Grand Mean Sample P98: 0.13962 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 #129

Analysis 782

1st Qtr 2024

Tear Resistance of Films

WebCode	Data Flag	Sample Q97			Sample Q98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4HRY68		365.0	20.9	0.46	326.1	-55.5	-0.99	TE
99QZN9		413.6	69.5	1.51	404.5	22.9	0.41	TE
A9NW84		357.6	13.5	0.29	457.0	75.4	1.34	TA
NAUVPQ		328.4	-15.7	-0.34	306.4	-75.2	-1.33	TA
U462Z2		278.3	-65.8	-1.43	412.0	30.4	0.54	EM
XDVG7K		321.6	-22.5	-0.49	383.6	2.0	0.04	TE

Summary Statistics		Sample Q97	Sample Q98
Grand Means		344.09 grams-force	381.60 grams-force
Stnd Dev Btwn Labs		45.90 grams-force	56.35 grams-force
Statistics based on 6 of 6 reporting participants			

Sample Q97: LDPE & Sample Q98: LDPE

Key to Instrument Codes Reported by Participants

- EM Elmendorf Tear Tester
- TA Thwing-Albert
- TE Thwing-Albert Pro Tear



Plastics Interlaboratory Testing Program

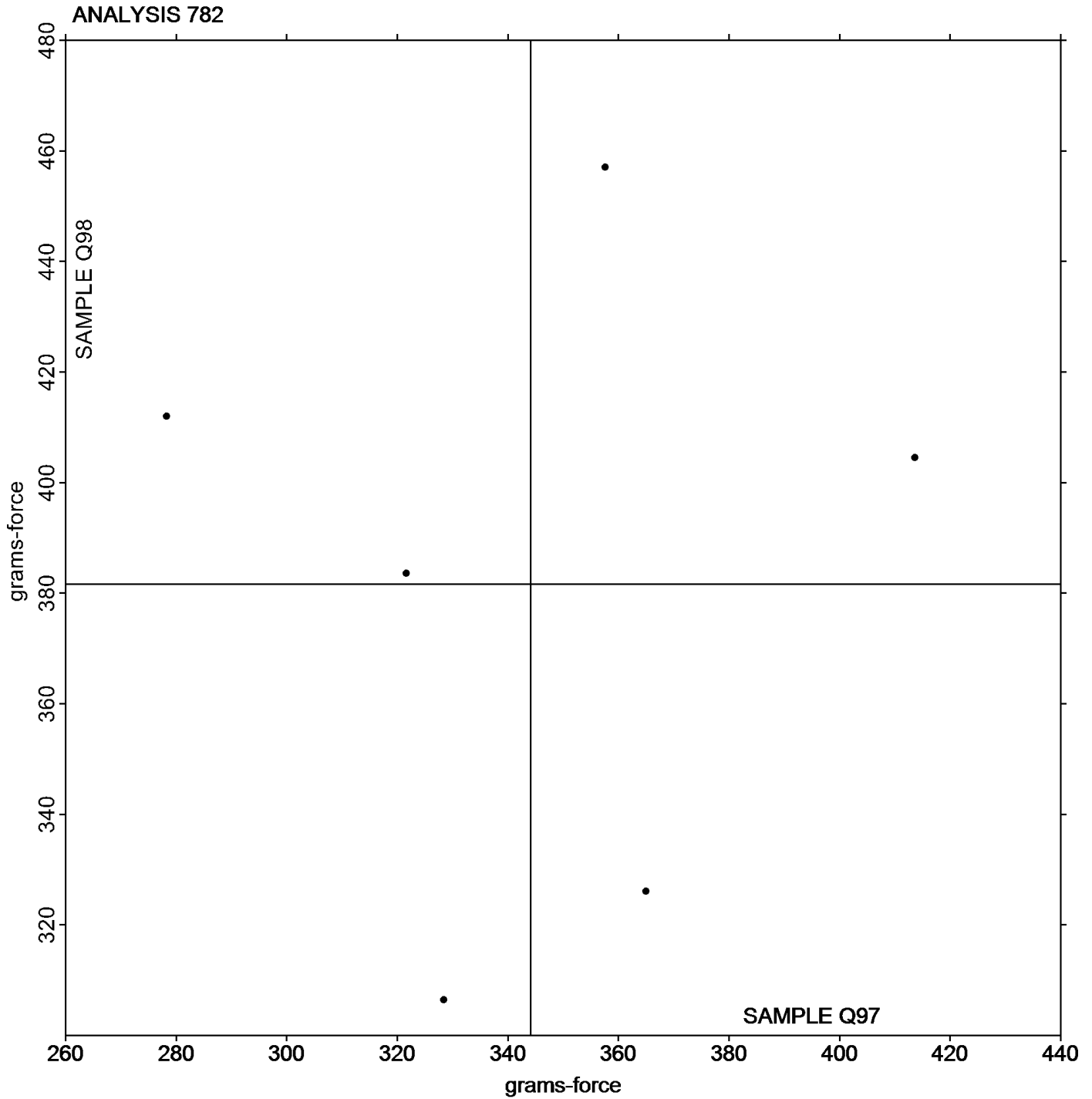
Report #129

Analysis 782

1st Qtr 2024

Tear Resistance of Films

Grand Mean Sample Q97: 344.09 grams-force Grand Mean Sample Q98: 381.60 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 #129

Analysis 785

1st Qtr 2024

Percent Haze of Film

WebCode	Data Flag	Sample D97			Sample D98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2HEP2M		10.045	-1.535	-2.23	11.685	-0.277	-0.46	BJ
33X8MR		11.398	-0.183	-0.27	11.120	-0.842	-1.41	XR
4DCQG9		12.245	0.665	0.96	11.060	-0.902	-1.51	BJ
4HRY68		12.188	0.607	0.88	11.438	-0.525	-0.88	BJ
8RQQ6C		10.761	-0.819	-1.19	11.985	0.023	0.04	BJ
99QZN9		11.225	-0.355	-0.52	11.589	-0.374	-0.63	BT
A9NW84		12.966	1.386	2.01	13.224	1.261	2.11	XR
FX44AA		11.013	-0.568	-0.82	11.275	-0.687	-1.15	BJ
JCUFJ3		11.088	-0.493	-0.71	12.313	0.350	0.59	BJ
L4R64N		11.538	-0.043	-0.06	11.870	-0.092	-0.15	BJ
NAUVPQ		11.713	0.132	0.19	12.088	0.125	0.21	BJ
P3R7LR		12.889	1.308	1.90	13.471	1.509	2.53	XR
R22JQL		11.386	-0.194	-0.28	12.006	0.044	0.07	BJ
RLQBWQ		11.300	-0.280	-0.41	12.263	0.300	0.50	BJ
T7W64M		11.100	-0.480	-0.70	12.015	0.053	0.09	XR
TRREDV		11.759	0.178	0.26	12.045	0.083	0.14	BJ
U462Z2		12.088	0.507	0.74	12.188	0.225	0.38	BJ
VFA92W		10.950	-0.630	-0.91	11.363	-0.600	-1.01	HL
WGMZUD		11.700	0.120	0.17	12.238	0.275	0.46	BJ
XDVG7K		12.025	0.445	0.64	11.865	-0.097	-0.16	BJ
YVXFTE		11.813	0.232	0.34	12.113	0.150	0.25	BJ

Summary Statistics		
	Sample D97	Sample D98
Grand Means	11.5803 Percent	11.9624 Percent
Stnd Dev Btwn Labs	0.6897 Percent	0.5968 Percent
Statistics based on 21 of 21 reporting participants		

Sample D97: LDPE & Sample D98: LDPE

Key to Instrument Codes Reported by Participants

- BJ BYK-Gardner Haze-Gard Plus/i
- BT BYK Gardner TCS Series
- HL Hunterlab Ultrascan
- XR X-Rite Spectrocolorimeter (any model)



Plastics Interlaboratory Testing Program

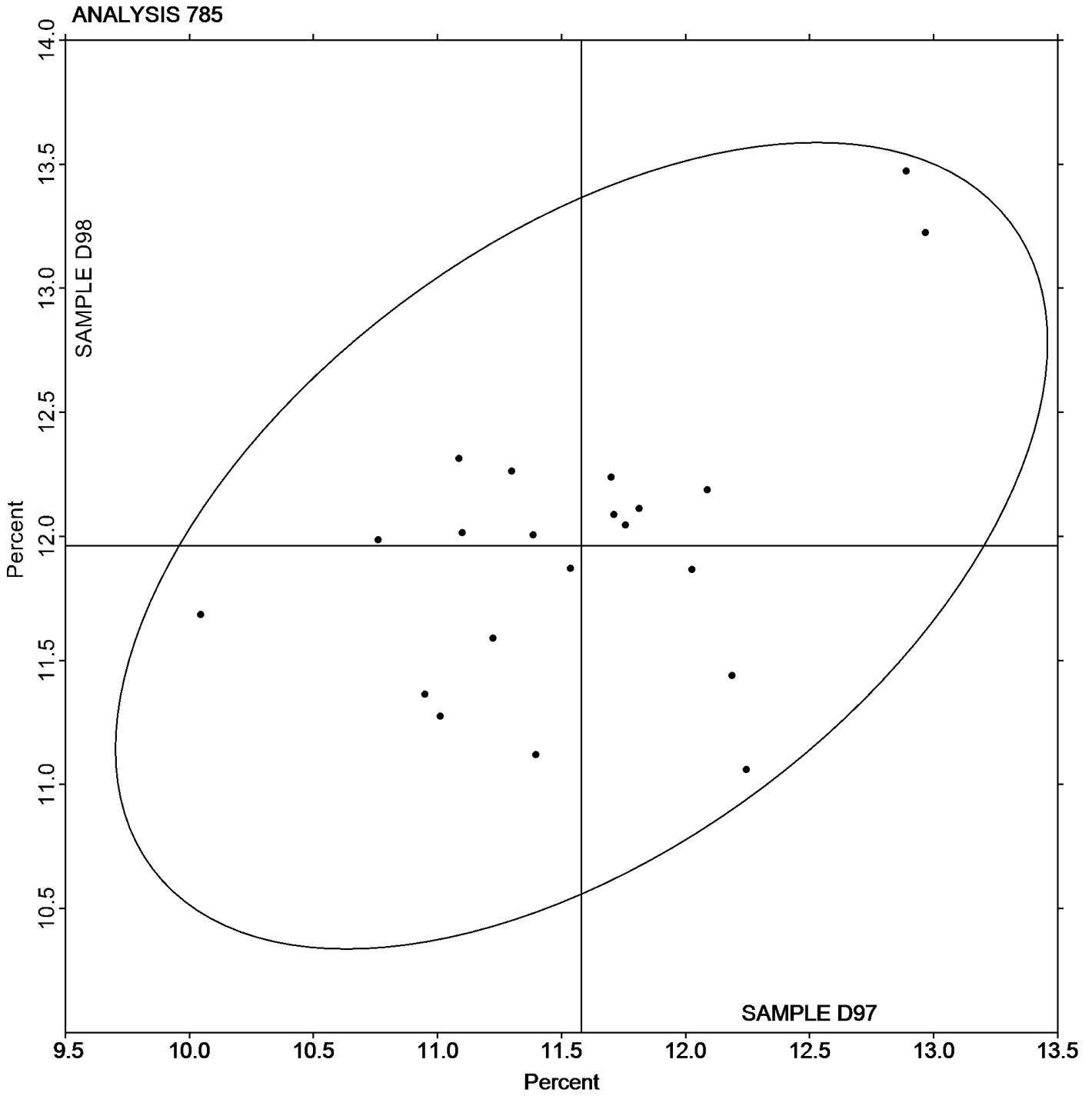
Report #129

Analysis 785

1st Qtr 2024

Percent Haze of Film

Grand Mean Sample D97: 11.580 Percent Grand Mean Sample D98: 11.962 Percent





Plastics Interlaboratory Testing Program

Report #129

Analysis 786

1st Qtr 2024

Total Luminous Transmittance of Film

WebCode	Data Flag	Sample D97			Sample D98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2HEP2M		93.50	0.82	0.69	93.59	0.72	0.61	BJ
33X8MR		91.64	-1.04	-0.88	91.80	-1.07	-0.92	XR
4DCQG9		93.34	0.65	0.55	93.45	0.58	0.50	BJ
4HRY68		92.98	0.29	0.25	93.09	0.22	0.19	BJ
8RQQ6C		93.96	1.28	1.08	94.29	1.42	1.21	BJ
99QZN9		92.58	-0.11	-0.09	92.68	-0.19	-0.17	BT
FX44AA		93.35	0.67	0.56	93.43	0.56	0.48	BJ
JCUFJ3		91.54	-1.15	-0.97	91.73	-1.14	-0.98	BJ
L4R64N		93.86	1.18	1.00	93.83	0.96	0.82	BJ
NAUVPQ		93.89	1.20	1.02	94.25	1.38	1.18	BJ
P3R7LR		92.01	-0.68	-0.57	92.17	-0.70	-0.59	XR
R22JQL		92.86	0.18	0.15	92.98	0.11	0.09	BJ
RLQBWQ		92.83	0.14	0.12	93.06	0.19	0.17	BJ
T7W64M		91.52	-1.16	-0.98	91.61	-1.26	-1.07	XR
TRREDV		92.87	0.19	0.16	93.20	0.33	0.28	BJ
U462Z2		93.50	0.82	0.69	93.71	0.84	0.72	BJ
VFA92W		90.94	-1.75	-1.47	91.25	-1.62	-1.39	HL
WGMZUD		93.68	0.99	0.84	93.76	0.89	0.76	BJ
XDVG7K	*	89.38	-3.31	-2.79	89.69	-3.18	-2.72	BJ
YVXFTE		93.46	0.78	0.66	93.84	0.97	0.83	BJ

Summary Statistics		
	Sample D97	Sample D98
Grand Means	92.683 Percent	92.869 Percent
Stnd Dev Btwn Labs	1.185 Percent	1.169 Percent
Statistics based on 20 of 20 reporting participants		

Sample D97: LDPE & Sample D98: LDPE

Key to Instrument Codes Reported by Participants

- BJ BYK-Gardner Haze-Gard Plus/i
- BT BYK Gardner TCS Plus Spectrophotometer
- HL Hunterlab Ultrascan XE
- XR X-Rite Spectrocolorimeter (any model)



Plastics Interlaboratory Testing Program

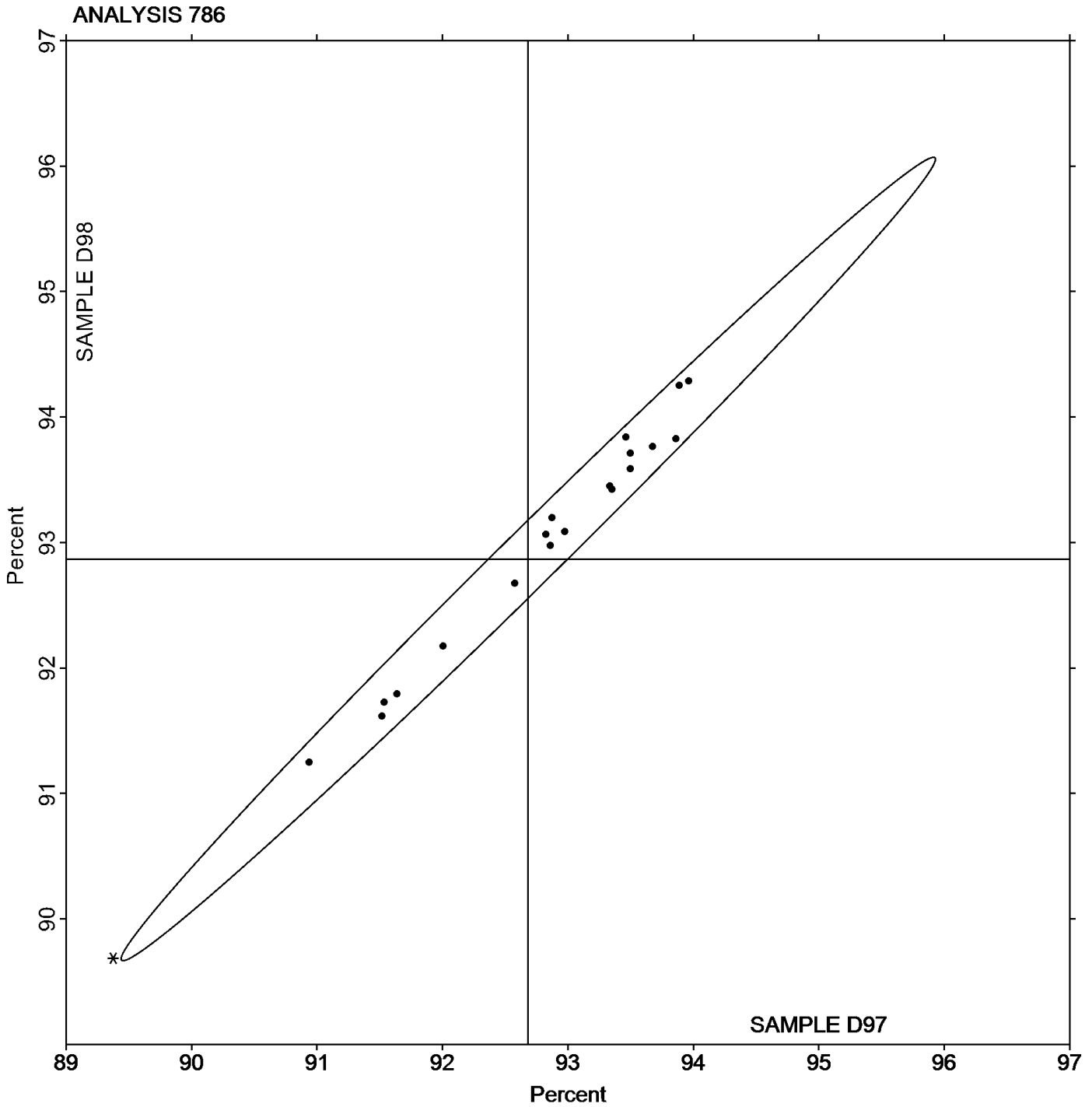
Report #129

Analysis 786

1st Qtr 2024

Total Luminous Transmittance of Film

Grand Mean Sample D97: 92.683 Percent Grand Mean Sample D98: 92.869 Percent





Plastics Interlaboratory Testing Program

Report #129

Analysis 790

1st Qtr 2024

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S97			Sample S98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2NN4L7	X	1.26	-9.45	-13.50	1.26	-9.48	-14.46	XX
2YLCFP		9.97	-0.74	-1.06	10.28	-0.46	-0.70	TO
3HCFKA		10.70	0.00	0.00	10.61	-0.13	-0.20	TM
4DCQG9		10.93	0.22	0.32	10.77	0.03	0.04	TY
4HRY68		11.36	0.65	0.93	11.53	0.79	1.21	TO
4NYP9D		11.13	0.42	0.61	10.97	0.23	0.35	XX
4RW7K8		9.58	-1.13	-1.61	9.68	-1.06	-1.62	IN
63E6UA		10.82	0.11	0.16	11.14	0.40	0.61	TO
6L6QKL		10.62	-0.09	-0.12	10.62	-0.12	-0.18	TO
6VWGG8		12.00	1.29	1.85	11.96	1.22	1.87	WZ
7YPX77		11.02	0.31	0.45	10.87	0.13	0.20	TY
93EGXE		10.08	-0.63	-0.89	10.22	-0.52	-0.79	TO
AYY9AF		10.38	-0.33	-0.47	10.45	-0.29	-0.44	WZ
C7PXWG		10.90	0.19	0.28	10.68	-0.06	-0.09	TO
DEHZPX		10.12	-0.59	-0.84	10.16	-0.58	-0.88	CE
DP2FRZ		9.84	-0.87	-1.24	10.37	-0.37	-0.57	DS
EG38Q6		10.37	-0.34	-0.48	10.37	-0.37	-0.57	TO
GAWAVX		9.52	-1.18	-1.69	9.62	-1.11	-1.70	TO
G DFA9T		10.81	0.11	0.15	10.70	-0.04	-0.06	TO
GTK4E8	X	10.30	-0.40	-0.58	11.25	0.52	0.79	TO
J6AE4P		11.02	0.31	0.45	10.94	0.20	0.31	TM
JCUFJ3		10.59	-0.11	-0.16	10.48	-0.25	-0.39	WZ
JQVAWW	X	1.18	-9.52	-13.61	1.18	-9.56	-14.59	TO
K7GCRR		10.44	-0.26	-0.37	10.47	-0.27	-0.41	TO
MNVA43		9.71	-0.99	-1.42	9.90	-0.83	-1.27	BA
MP6M2Q		9.95	-0.76	-1.08	10.08	-0.65	-1.00	TO
Q6RTDM		10.92	0.21	0.30	10.90	0.16	0.25	TO
QCL4GQ	*	12.78	2.07	2.96	12.75	2.01	3.07	TO
QF7QHQ		12.18	1.47	2.10	12.10	1.36	2.08	WZ
QLCKCL	X	1.06	-9.64	-13.78	1.09	-9.65	-14.72	XX
R22JQL		11.02	0.31	0.45	10.82	0.08	0.12	TO
RLQBWQ		10.85	0.15	0.21	10.86	0.12	0.19	CE
UHG8YJ		10.18	-0.52	-0.75	10.42	-0.32	-0.49	CE
UKPRYZ		11.13	0.42	0.60	11.22	0.48	0.73	XX
UZ6P42		10.42	-0.28	-0.41	10.65	-0.08	-0.13	IN



Plastics Interlaboratory Testing Program

Report #129

Analysis 790

1st Qtr 2024

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S97			Sample S98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
XDF3WQ		10.25	-0.45	-0.65	10.13	-0.61	-0.92	WZ
XDVG7K		10.82	0.11	0.16	10.44	-0.30	-0.45	CE
Y9JXFQ		10.60	-0.11	-0.16	10.53	-0.21	-0.32	TO
YVT2GE	*	10.99	0.28	0.40	11.49	0.75	1.14	TM
Z44PRR		11.43	0.72	1.03	11.40	0.66	1.01	IN

Summary Statistics		
	Sample S97	Sample S98
Grand Means	10.706 ft.lbf/in	10.739 ft.lbf/in
Stnd Dev Btwn Labs	0.700 ft.lbf/in	0.655 ft.lbf/in
Statistics based on 36 of 40 reporting participants		

Sample S97: ABS/PC & Sample S98: ABS/PC

Comments on Assigned Data Flags for Test #790

- QLCKCL (X) - Data for both samples are low.
- JQVAWW (X) - Data for both samples are low.
- GTK4E8 (X) - Inconsistent in testing between samples.
- 2NN4L7 (X) - Data for both samples are low.

Key to Instrument Codes Reported by Participants

- | | |
|---|-----------------|
| BA Baldwin | CE Ceast |
| DS Dynisco | IN Instron |
| TM TMI | TO Tinius Olsen |
| TY Toyoseiki | WZ Zwick |
| XX Instrument manufacturer not specified by lab | |



Plastics Interlaboratory Testing Program

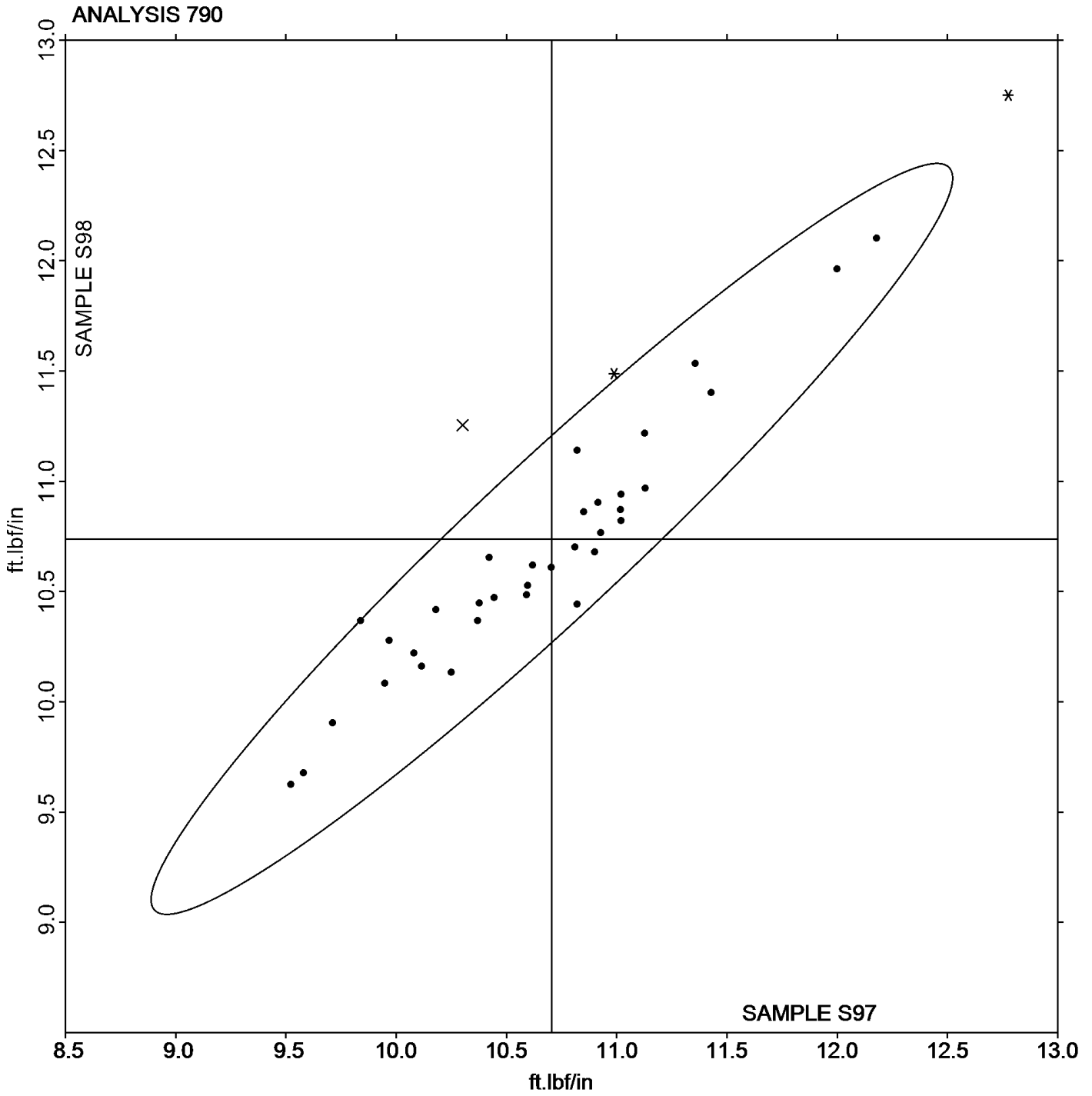
Report #129

Analysis 790

1st Qtr 2024

Notched Izod Impact - ft.lbf/in

Grand Mean Sample S97: 10.706 ft.lbf/in Grand Mean Sample S98: 10.739 ft.lbf/in





Plastics Interlaboratory Testing Program

Report #129

Analysis 791

1st Qtr 2024

Notched Izod Impact - kJ/m²

WebCode	Data Flag	Sample Z97			Sample Z98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH		9.50	0.08	0.16	9.67	0.25	0.51	CE
2NN4L7		9.00	-0.42	-0.84	8.99	-0.43	-0.86	XX
4DCQG9		9.43	0.00	0.01	9.18	-0.24	-0.47	XX
4ECYYM		9.20	-0.22	-0.44	9.31	-0.11	-0.21	CE
4HRY68		9.27	-0.16	-0.31	9.09	-0.33	-0.66	TO
7WJDFL		8.75	-0.67	-1.34	8.83	-0.59	-1.17	CE
7YPX77		9.09	-0.33	-0.66	9.20	-0.22	-0.43	TY
93EGXE		9.17	-0.25	-0.51	9.13	-0.28	-0.57	TO
AYY9AF		9.31	-0.11	-0.22	9.23	-0.19	-0.39	WZ
C7PXWG		10.70	1.28	2.55	10.58	1.16	2.33	TO
EYL3Z8	X	10.92	1.50	3.00	8.95	-0.47	-0.94	CE
FBNJDA		10.67	1.25	2.49	10.60	1.18	2.37	WZ
GGXYLX		9.65	0.23	0.46	9.24	-0.18	-0.37	TY
K6RFCT		9.14	-0.29	-0.57	9.13	-0.29	-0.57	IN
MP6M2Q		9.16	-0.26	-0.52	9.71	0.29	0.58	TO
PLWDK7		9.84	0.42	0.83	10.12	0.70	1.41	CE
Q2THHM		9.34	-0.08	-0.16	9.12	-0.30	-0.60	CE
QHG6W7		9.29	-0.13	-0.27	9.31	-0.11	-0.22	CE
QLCKCL		8.20	-1.22	-2.44	8.38	-1.04	-2.08	XX
T89CHW		9.19	-0.23	-0.46	9.24	-0.18	-0.35	TO
TL8RPX		9.27	-0.15	-0.30	9.24	-0.18	-0.36	XX
WBBHLR		9.42	-0.01	-0.01	9.38	-0.04	-0.09	IN
WGMZUD	*	9.61	0.19	0.38	10.26	0.84	1.69	XX
WLD3MY		9.44	0.02	0.04	9.49	0.07	0.15	TO
XDF3WQ		9.61	0.18	0.37	9.41	-0.01	-0.01	WZ
XDVG7K		10.08	0.66	1.32	9.68	0.26	0.52	CE
XPWP8C		9.40	-0.02	-0.04	9.30	-0.12	-0.24	WZ
XWBQ7L		9.24	-0.18	-0.36	9.06	-0.36	-0.72	TO
YT7GFG		9.85	0.43	0.86	9.84	0.43	0.85	WZ



Plastics Interlaboratory Testing Program

Report #129

Analysis 791

1st Qtr 2024

Notched Izod Impact - kJ/m²

Summary Statistics		
	<u>Sample Z97</u>	<u>Sample Z98</u>
Grand Means	9.422 kJ/m ²	9.419 kJ/m ²
Stnd Dev Btwn Labs	0.501 kJ/m ²	0.499 kJ/m ²
Statistics based on 28 of 29 reporting participants		

Sample Z97: HIPS & Sample Z98: HIPS

Comments on Assigned Data Flags for Test #791

EYL3Z8 (X) - Data for sample Z97 are high.

Key to Instrument Codes Reported by Participants

CE Ceast

IN Instron

TO Tinius Olsen

TY Toyoseiki

WZ Zwick

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

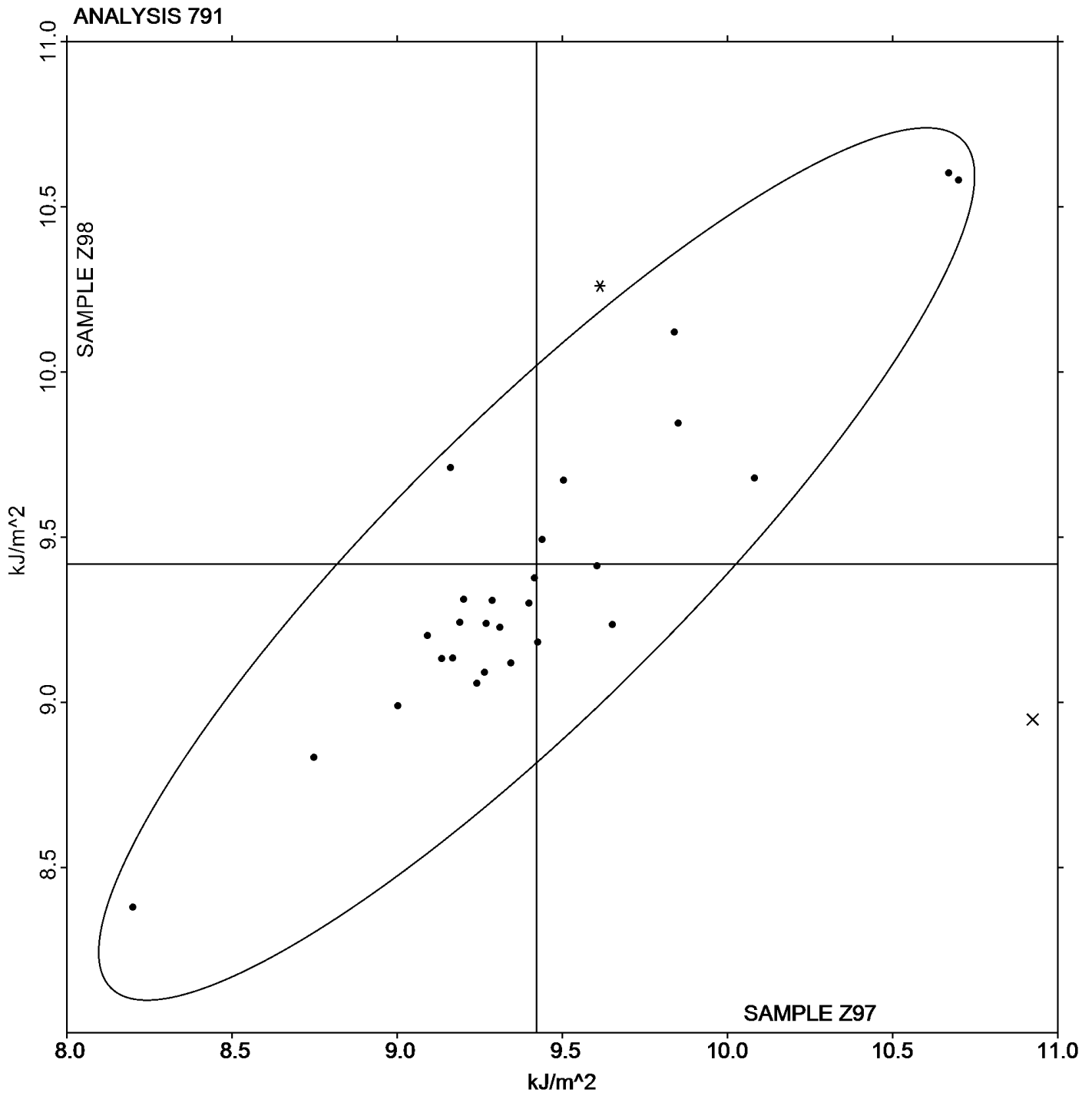
Report #129

Analysis 791

1st Qtr 2024

Notched Izod Impact - kJ/m^2

Grand Mean Sample Z97: 9.4223 kJ/m^2 Grand Mean Sample Z98: 9.4188 kJ/m^2





Plastics Interlaboratory Testing Program

Report #129

Analysis 792

1st Qtr 2024

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M97			Sample M98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
27PLZH	X	56.69	6.97	1.55	50.66	0.99	0.18	CE
2NN4L7		44.80	-4.93	-1.10	43.82	-5.85	-1.08	XX
4DCQG9		49.75	0.03	0.01	47.49	-2.18	-0.40	TY
4ECYYM		48.12	-1.60	-0.36	46.21	-3.47	-0.64	CE
4HRY68		50.85	1.13	0.25	51.89	2.22	0.41	TO
4NYP9D		51.88	2.15	0.48	53.75	4.08	0.75	XX
4RW7K8		42.12	-7.61	-1.69	41.49	-8.19	-1.51	IN
6L8TJJ		42.86	-6.86	-1.53	43.14	-6.54	-1.21	XX
7WJDFL		46.81	-2.91	-0.65	46.31	-3.37	-0.62	CE
82B2E4		55.00	5.28	1.17	54.86	5.18	0.96	WZ
8A8WF9		54.09	4.37	0.97	53.81	4.14	0.76	TO
8NLU6N		52.28	2.56	0.57	52.49	2.82	0.52	WZ
93EGXE		41.61	-8.12	-1.81	41.76	-7.91	-1.46	TO
9C8K94		53.75	4.02	0.90	54.02	4.34	0.80	TM
9YE63F		53.03	3.31	0.74	51.42	1.75	0.32	PO
AYY9AF		53.60	3.88	0.86	56.23	6.55	1.21	WZ
BEA3J4		49.27	-0.46	-0.10	50.16	0.49	0.09	WZ
C7PXWG		53.03	3.30	0.73	50.48	0.81	0.15	TO
DEHZPX		46.33	-3.39	-0.76	43.95	-5.72	-1.06	WZ
EPCW44		46.63	-3.10	-0.69	45.86	-3.82	-0.71	TO
EYL3Z8		47.18	-2.54	-0.57	44.49	-5.19	-0.96	CE
FBNJDA		48.58	-1.14	-0.25	45.79	-3.88	-0.72	WZ
GAWAVX		46.57	-3.16	-0.70	47.59	-2.08	-0.39	TO
GGXYLX		48.88	-0.85	-0.19	51.21	1.53	0.28	TY
HAPMRP		45.02	-4.70	-1.05	46.43	-3.24	-0.60	CE
JCUFJ3		47.37	-2.36	-0.52	45.76	-3.91	-0.72	WZ
JQVAWW		59.83	10.10	2.25	59.30	9.63	1.78	TO
K6RFCT		43.90	-5.83	-1.30	43.40	-6.28	-1.16	IN
L3HZPZ		56.37	6.64	1.48	53.90	4.22	0.78	CE
PLWDK7		51.08	1.35	0.30	50.20	0.53	0.10	IN
Q2THHM		54.88	5.16	1.15	57.20	7.53	1.39	CE
Q4F2JK	*	57.78	8.05	1.79	62.58	12.91	2.38	WZ
QHG6W7		42.37	-7.36	-1.64	41.68	-8.00	-1.48	CE
QLCKCL		46.06	-3.67	-0.82	44.54	-5.13	-0.95	XX
WGMZUD		51.10	1.37	0.31	50.13	0.46	0.09	WZ



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Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M97			Sample M98			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
WLD3MY		51.68	1.95	0.43	52.27	2.60	0.48	TO
XDF3WQ		47.42	-2.31	-0.51	47.73	-1.95	-0.36	WZ
XDVG7K	*	57.32	7.59	1.69	63.06	13.39	2.47	CE
XH9UVU		52.00	2.28	0.51	51.71	2.04	0.38	WZ
XPWP8C		47.44	-2.29	-0.51	46.92	-2.75	-0.51	WZ
XWBQ7L		49.40	-0.33	-0.07	52.83	3.16	0.58	TO
YT7GFG		50.73	1.00	0.22	48.76	-0.91	-0.17	WZ

Summary Statistics		
	Sample M97	Sample M98
Grand Means	49.726 kJ/m ²	49.674 kJ/m ²
Std Dev Btwn Labs	4.492 kJ/m ²	5.413 kJ/m ²
Statistics based on 41 of 42 reporting participants		

Sample M97: ABS/PC & Sample M98: ABS/PC

Comments on Assigned Data Flags for Test #792

27PLZH (X) - Inconsistent in testing between samples.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

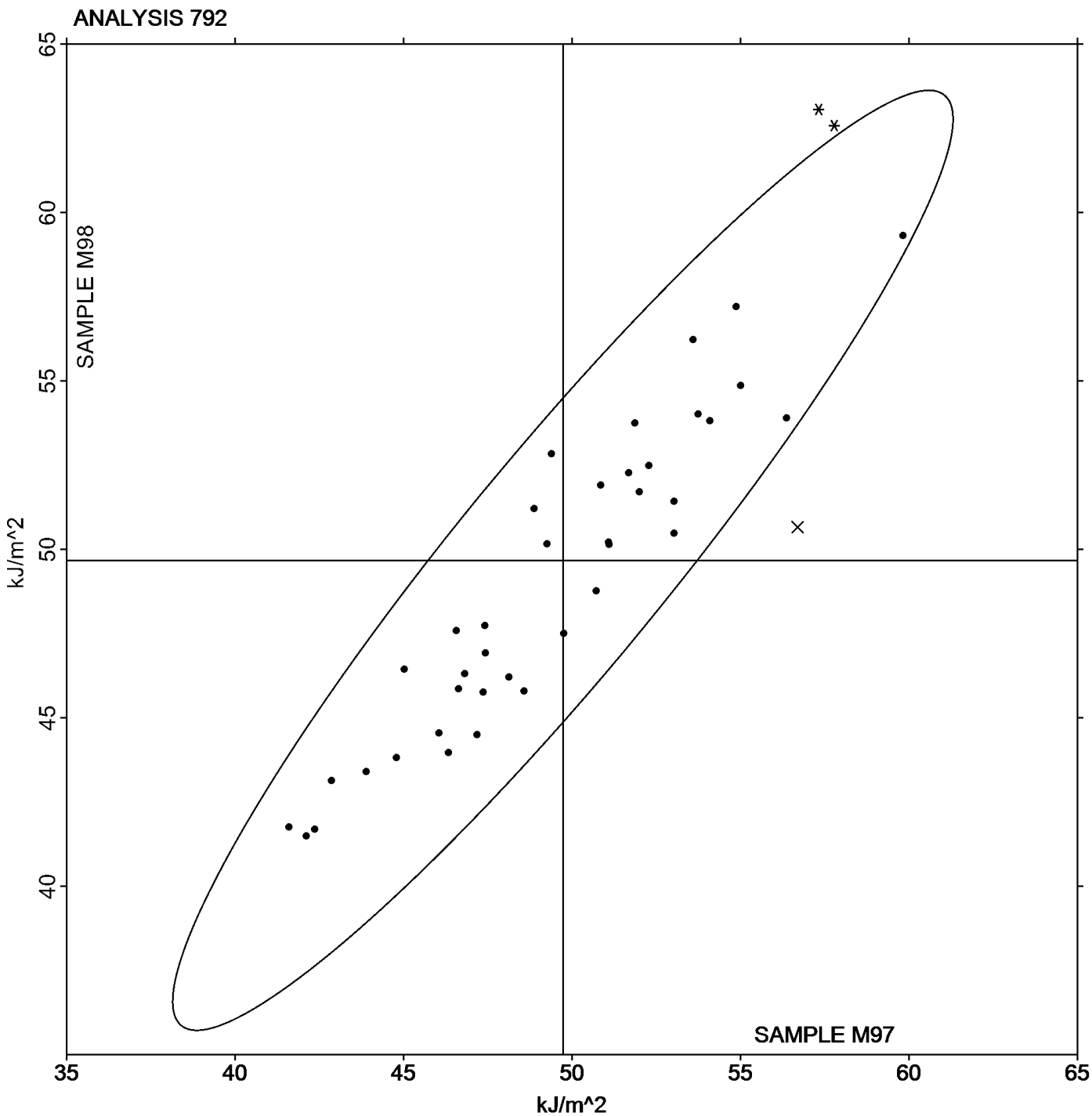
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Analysis 792

1st Qtr 2024

Notched Charpy Impact - kJ/m^2

Grand Mean Sample M97: 49.726 kJ/m^2 Grand Mean Sample M98: 49.674 kJ/m^2



-End of Report-