

Plastics Interlaboratory Testing Program

Web Summary Report #114, 2nd Qtr 2020

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About CTS and the Plastics Interlaboratory Program

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

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

The program allows laboratories to compare periodically the level and uniformity of their testing with that of other participating laboratories. It also provides a realistic assessment of the state of plastics testing proficiency.

For each test there is a summary of the statistics for the analysis and a graphical representation of the data. Also shown are notes concerning specific laboratory results, as well as significant findings related to instrument types or other testing variations. Refer to the KEY FOR SUMMARY REPORT for an explanation of terms and guidelines for interpreting the results.

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Key for Web Summary Report (Page 1 of 2)

WebCode	Assigned laboratory identification number (temporary) used to ensure lab confidentiality while permitting a lab to locate its data in the Plastics Web Summary Report published on the CTS web site. The WebCode for each analysis can be found in the Performance Analysis Report mailed to each participant.
Lab Mean	The average of the test results obtained by the participant.
Grand Mean	The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
Difference from Grand Mean	The difference of the LAB MEAN from the GRAND MEAN.
Between-Lab Standard Deviation	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Comparative Performance Value	An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa). The critical value for each CPV will vary depending on the number of labs participating in a test.
Inst Code	A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section) if instruments are tracked.
Data Flag	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

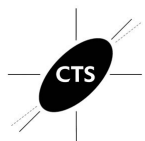
<u>DATA FLAG</u>	<u>STATISTICALLY INCLUDED/EXCLUDED</u>	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside 95% ellipse but within a 99% ellipse that is calculated but not drawn.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See specific notes following each table for more information on why the data is excluded.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample.

Graph - For each laboratory, the LAB MEAN for the first sample (x-axis) is plotted against the LAB MEAN for the second sample (y-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the GRAND MEANS for each sample. When 20 or more laboratories are in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above.

Common Problems Highlighted in Footnotes

1. **Extreme data** - The laboratory's results for one or both samples are so inconsistent with those of the other participants that the lab mean(s) fall outside the plot. The participant is advised to immediately review his data and/or testing procedure.
2. **Systematic bias** - The laboratory's results are either consistently high or low for both samples when compared to the other participants (the plotted point falls near the top or bottom of the ellipse). This indicates that the participant is performing the test with a constant bias. Causes of systematic errors include improper calibration, the particular make/model of equipment or a modification to the testing procedure.
3. **Inconsistency in testing between samples/sample sets** - The laboratory's results indicate that there are differences in the way the two samples tested (the plotted point falls to the side of the ellipse). This type of error may be attributed to the analyst deviating from the procedure when testing one of the samples or a material interaction occurrence with the instrument or room conditions. The inconsistency is reflected in the CPVs for the two samples, such as a +1.5 CPV for sample A and a -2.2 CPV for sample B. CTS also will specify if the laboratory's data for one sample are high/low compared to the other participants. If this inconsistency is slight, the lab's plotted point will be an * that falls on the edge of the ellipse.
4. **Inconsistency in testing within a sample** - The laboratory's within-lab standard deviation for a specified sample is high when compared to the other participants, often causing the lab's plotted point to fall outside of the ellipse.

Labs flagged with an * are not typically included in the footnotes of a data table. These labs may locate their position in the control ellipse and use the definitions above to help identify the type of testing error. An * should serve as a caution flag, a "yellow light", to a lab. If this error is repeated in future rounds, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm. Interlaboratory tests conducted at regular intervals permit a lab to recognize trends in testing.



Plastics Interlaboratory Testing Program

Results Summary for Report #114, 2nd Qtr 2020

Analysis 704 - Tensile Stress at Yield

Material: ABS	Sample F67	6,086.25	psi	3.08% COV
	Sample F68	6,083.08	psi	2.87% COV

Analysis 705 - Tensile Stress at Break

Material: ABS	Sample F67	4,923.14	psi	3.19% COV
	Sample F68	4,884.48	psi	2.90% COV

Analysis 706 - Percent Elongation at Yield

Material: ABS	Sample F67	2.3715	Percent	5.16% COV
	Sample F68	2.3744	Percent	5.23% COV

Analysis 708 - Modulus of Elasticity

Material: ABS	Sample F67	326.32	ksi	5.71% COV
	Sample F68	326.80	ksi	5.51% COV

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

Material: ABS/PC	Sample E67	105.47	Degrees C	1.76% COV
	Sample E68	105.84	Degrees C	1.52% COV

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

Material: PP	Sample G67	112.63	Degrees C	2.82% COV
	Sample G68	113.02	Degrees C	3.03% COV

Analysis 712 - Temperature of Deflection (1.80 MPa)

Material: ABS/PC	Sample N67	105.99	Degrees C	1.73% COV
	Sample N68	106.91	Degrees C	1.43% COV

Analysis 715 - Vicat Temperature (Rate A)

Material: ABS/PC	Sample H67	140.12	Degrees C	0.600% COV
	Sample H68	140.15	Degrees C	0.620% COV

Analysis 716 - Vicat Temperature (Rate B)

Material: ABS/PC	Sample R67	141.79	Degrees C	0.498% COV
	Sample R68	141.89	Degrees C	0.491% COV

Analysis 718 - Specific Gravity

Material: HIPS	Sample T67	1.0346	sp gr 23/23 C	0.222% COV
	Sample T68	1.0345	sp gr 23/23 C	0.228% COV

Analysis 720 - Flexural Modulus

Material: HIPS	Sample J67	335.18	ksi	6.25% COV
	Sample J68	334.81	ksi	6.35% COV

Analysis 721 - Flexural Stress at 5% Strain

Material: HIPS	Sample J67	5,937.60	psi	4.03% COV
	Sample J68	5,935.65	psi	4.31% COV

Analysis 722 - Flexural Stress at Yield

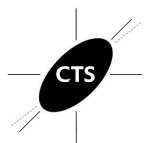
Material: HIPS	Sample J67	5,846.73	psi	5.76% COV
	Sample J68	5,844.29	psi	5.85% COV

Analysis 730 - Tensile Stress at Yield, ISO Method

Material: ABS/PC	Sample C67	50.806	MPa	1.68% COV
	Sample C68	50.874	MPa	1.62% COV

Analysis 731 - Tensile Stress at Break, ISO Method

Material: ABS/PC	Sample C67	46.639	MPa	5.18% COV
	Sample C68	46.013	MPa	3.48% COV



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Results Summary for Report #114, 2nd Qtr 2020

Analysis 732 - Strain at Yield, ISO Method

Material: ABS/PC	Sample C67	4.7051	Percent	3.97% COV
	Sample C68	4.7322	Percent	4.40% COV

Analysis 734 - Modulus of Elasticity, ISO Method

Material: ABS/PC	Sample C67	2,238.58	MPa	6.56% COV
	Sample C68	2,236.21	MPa	6.45% COV

Analysis 736 - Flexural Modulus

Material: ABS/PC	Sample K67	2,265.43	MPa	3.40% COV
	Sample K68	2,261.14	MPa	3.66% COV

Analysis 737 - Flexural Stress at 3.5% Strain

Material: ABS/PC	Sample K67	69.907	MPa	3.05% COV
	Sample K68	69.753	MPa	3.08% COV

Analysis 738 - Flexural Stress at Yield

Material: ABS/PC	Sample K67	79.433	MPa	5.67% COV
	Sample K68	79.473	MPa	5.80% COV

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

Material: PP	Sample X67	13.890	grams/10 mins	5.22% COV
	Sample X68	13.754	grams/10 mins	5.40% COV

Analysis 755 - Moisture Content

Material: HIPS	Sample Y67	0.02104	Percent	46.9% COV
	Sample Y68	0.02069	Percent	53.6% COV

Analysis 757 - Ash Content

Material: PBT	Sample L67	30.431	Percent	1.07% COV
	Sample L68	30.462	Percent	0.901% COV

Analysis 760 - DSC Crystallization Temperature

Material: PBT	Sample W67	176.39	Degrees Celsius	3.20% COV
	Sample W68	176.57	Degrees Celsius	3.21% COV

Analysis 761 - DSC Melt Temperature

Material: PBT	Sample W67	224.06	Degrees Celsius	0.671% COV
	Sample W68	223.82	Degrees Celsius	0.556% COV

Analysis 762 - DSC Enthalpy of Crystallization

Material: PBT	Sample W67	49.543	Joules Per Gram	18.6% COV
	Sample W68	49.671	Joules Per Gram	19.0% COV

Analysis 763 - DSC Enthalpy of Fusion

Material: PBT	Sample W67	41.191	Joules Per Gram	14.8% COV
	Sample W68	41.164	Joules Per Gram	16.1% COV

Analysis 764 - DSC Glass Transition Temperature

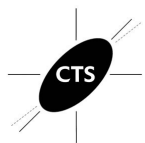
Material: ABS	Sample V67	106.42	Degrees Celsius	2.05% COV
	Sample V68	106.47	Degrees Celsius	2.03% COV

Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B67	2,727.86	psi	12.2% COV
	Sample B68	1,902.02	psi	9.27% COV

Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B67	3,627.62	psi	11.0% COV
	Sample B68	3,266.32	psi	15.3% COV



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Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B67	94.224	Percent	47.5% COV
	Sample B68	75.947	Percent	48.8% COV

Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B67	526.32	Percent	16.3% COV
	Sample B68	723.63	Percent	13.8% COV

Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B67	2.9522	mils	2.67% COV
	Sample B68	2.7651	mils	3.97% COV

Analysis 775 - Secant Modulus at 1% Strain

Material: LDPE	Sample B67	38,282.55	psi	17.7% COV
	Sample B68	29,174.41	psi	17.3% COV

Analysis 776 - Secant Modulus at 2% Strain

Material: LDPE	Sample B67	33,243.18	psi	14.8% COV
	Sample B68	25,052.58	psi	14.6% COV

Analysis 780 - Static Friction

Material: LDPE	Sample P67	0.16183	COF	34.3% COV
	Sample P68	0.16623	COF	35.8% COV

Analysis 781 - Kinetic Friction

Material: LDPE	Sample P67	0.10432	COF	38.8% COV
	Sample P68	0.10098	COF	43.2% COV

Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q67	319.89	grams-force	26.1% COV
	Sample Q68	359.74	grams-force	21.9% COV

Analysis 785 - Percent Haze

Material: LDPE	Sample D67	21.273	Percent	4.81% COV
	Sample D68	21.224	Percent	5.07% COV

Analysis 786 - Total Transmittance

Material: LDPE	Sample D67	92.447	Percent	1.24% COV
	Sample D68	92.495	Percent	1.22% COV

Analysis 790 - Notched Izod Impact

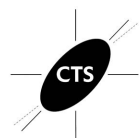
Material: HIPS	Sample S67	1.7432	ft.lbf/in	8.94% COV
	Sample S68	1.7362	ft.lbf/in	9.35% COV

Analysis 791 - Notched Izod Impact

Material: ABS	Sample Z67	19.436	kJ/m ²	5.88% COV
	Sample Z68	19.401	kJ/m ²	5.40% COV

Analysis 792 - Notched Charpy Impact

Material: ABS	Sample M67	19.068	kJ/m ²	4.37% COV
	Sample M68	19.077	kJ/m ²	4.71% COV



Plastics Interlaboratory Testing Program

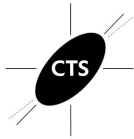
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Analysis 704

2nd Qtr 2020

Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F67			Sample F68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DZA7Q		6,047.9	-38.3	-0.20	6,120.6	37.5	0.22
3E9G9J		6,153.4	67.1	0.36	6,253.4	170.3	0.98
42VZDX	*	5,612.3	-474.0	-2.53	5,640.7	-442.4	-2.54
4GUM2E		6,143.9	57.6	0.31	6,167.1	84.0	0.48
4VDJ7H		5,994.0	-92.3	-0.49	6,016.6	-66.5	-0.38
676EWH	X	6,688.0	601.7	3.21	6,481.0	397.9	2.28
69CWVD		5,982.6	-103.7	-0.55	6,026.0	-57.1	-0.33
7GMHGM		6,121.4	35.1	0.19	5,988.2	-94.9	-0.54
A3UXRA		6,178.4	92.1	0.49	6,164.8	81.7	0.47
ANAEWK		6,090.0	3.7	0.02	6,090.8	7.7	0.04
ANBC3A		6,144.0	57.7	0.31	6,198.0	114.9	0.66
BW436W		6,000.2	-86.1	-0.46	6,084.6	1.5	0.01
CAK8XB		6,221.4	135.1	0.72	6,229.4	146.3	0.84
CEV8AF		6,222.0	135.7	0.72	6,234.0	150.9	0.87
CUU88B		5,896.0	-190.3	-1.02	5,902.0	-181.1	-1.04
CYMDG7		6,036.0	-50.3	-0.27	6,092.0	8.9	0.05
ELNLMD		5,917.6	-168.7	-0.90	6,061.5	-21.6	-0.12
F6D6C4		6,180.0	93.7	0.50	6,254.0	170.9	0.98
FAALT6		6,219.6	133.3	0.71	6,225.6	142.5	0.82
FLLWEA		6,062.4	-23.9	-0.13	5,905.0	-178.1	-1.02
HK89VL		5,793.0	-293.3	-1.56	5,873.4	-209.7	-1.20
HNJ89Z		6,074.4	-11.9	-0.06	5,986.0	-97.1	-0.56
K7CUL3		6,332.5	246.3	1.31	6,326.4	243.3	1.40
KXHT34		6,119.8	33.5	0.18	6,066.1	-17.0	-0.10
LCJKN9		5,964.4	-121.9	-0.65	5,858.8	-224.3	-1.29
M3PYVF		6,184.4	98.1	0.52	6,100.0	16.9	0.10
M4JKP7		5,899.0	-187.3	-1.00	5,882.0	-201.1	-1.15
MDNR67	*	5,662.8	-423.5	-2.26	5,572.0	-511.1	-2.93
MLJU94		6,254.2	167.9	0.90	6,215.6	132.5	0.76
MXWWU2		6,036.4	-49.9	-0.27	6,022.0	-61.1	-0.35
NK23YJ		6,041.6	-44.7	-0.24	6,015.2	-67.9	-0.39
NURQNU		6,328.1	241.8	1.29	6,285.7	202.6	1.16
PY3YT6		6,090.0	3.7	0.02	6,062.0	-21.1	-0.12
QQ3YU3		6,175.7	89.5	0.48	6,191.9	108.8	0.62
R7THMV		6,370.0	283.7	1.51	6,276.0	192.9	1.11



Plastics Interlaboratory Testing Program

Report #114

Analysis 704

2nd Qtr 2020

Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F67			Sample F68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
R88P9D		6,043.0	-43.2	-0.23	6,136.4	53.4	0.31
RE6ER3		6,172.4	86.1	0.46	6,042.8	-40.3	-0.23
T9YZNC	*	5,848.4	-237.9	-1.27	6,035.4	-47.7	-0.27
TEJ7ER		6,257.6	171.4	0.91	6,207.0	123.9	0.71
TP2XTT		6,273.4	187.1	1.00	6,215.0	131.9	0.76
UBYVHY		5,806.4	-279.9	-1.49	5,855.2	-227.9	-1.31
UJCKHT		6,135.1	48.9	0.26	6,164.5	81.4	0.47
VAECB8		6,327.2	240.9	1.29	6,243.0	159.9	0.92
VNDFFX		6,173.2	86.9	0.46	6,156.6	73.5	0.42
VTUN4X		6,120.6	34.4	0.18	6,120.6	37.6	0.22
VVYD4K		6,264.2	177.9	0.95	6,192.6	109.5	0.63
W26AP7		5,769.7	-316.6	-1.69	5,792.9	-290.2	-1.66
W9FNAM		6,188.2	101.9	0.54	6,239.8	156.7	0.90
WVFPLQ		6,235.4	149.1	0.80	6,179.0	95.9	0.55
X773UL		6,254.0	167.7	0.90	6,342.0	258.9	1.49
XBN4GT		6,183.6	97.3	0.52	6,040.8	-42.3	-0.24
XGDFV	*	5,556.8	-529.5	-2.83	5,646.2	-436.9	-2.51
XWKW2N		6,027.2	-59.1	-0.32	6,105.4	22.3	0.13
XX2TUN		6,173.2	86.9	0.46	6,100.2	17.1	0.10
Y6TV7J		5,831.1	-255.1	-1.36	5,826.8	-256.3	-1.47
YBKVR7		6,004.6	-81.6	-0.44	6,091.6	8.6	0.05
YKN7XV	X	7,023.0	936.7	5.00	6,213.4	130.3	0.75
YQCX44	X	4,712.0	-1,374.2	-7.33	4,739.6	-1,343.5	-7.71
YZ3JA2		6,388.0	301.7	1.61	6,356.0	272.9	1.57
ZMTXNN		6,333.8	247.5	1.32	6,258.4	175.3	1.01

Summary Statistics		
	Sample F67	Sample F68
Grand Means	6,086.25 psi	6,083.08 psi
Std Dev Btwn Labs	187.39 psi	174.33 psi
Statistics based on 57 of 60 reporting participants		

Sample F67: ABS & Sample F68: ABS



Plastics Interlaboratory Testing Program

Analysis 704

Tensile Stress at Yield - psi

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Comments on Assigned Data Flags for Test #704

YKN7XV (X) - Data for sample F67 are high. Inconsistent within the determinations of sample F67.

676EWH (X) - Data for sample F67 are high. Inconsistent within the determinations of both samples.

YQCX44 (X) - Data for both samples are low. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

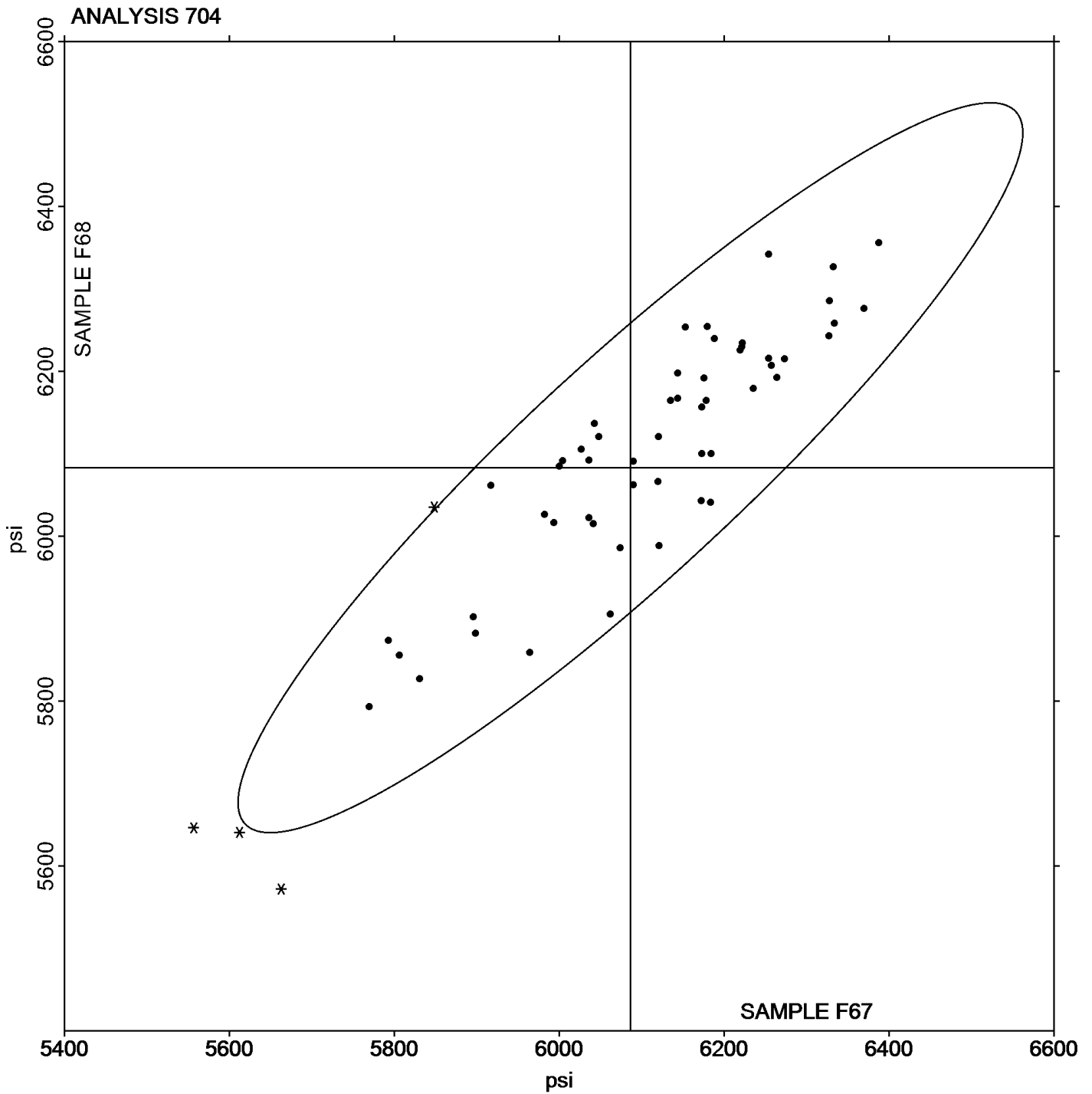
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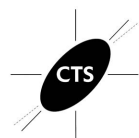
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Tensile Stress at Yield - psi

Grand Mean Sample F67: 6,086.25 psi Grand Mean Sample F68: 6,083.08 psi





Plastics Interlaboratory Testing Program

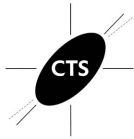
Report #114

Analysis 705

2nd Qtr 2020

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F67			Sample F68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DZA7Q		4,844.2	-79.0	-0.50	4,947.1	62.6	0.44
3E9G9J	X	4,968.8	45.7	0.29	4,605.2	-279.3	-1.97
42VZDX		5,050.5	127.3	0.81	5,049.8	165.3	1.17
4GUM2E		4,942.9	19.8	0.13	4,853.0	-31.5	-0.22
676EWH		4,974.6	51.5	0.33	4,883.6	-0.9	-0.01
69CWVD	X	4,467.4	-455.7	-2.90	4,871.0	-13.5	-0.10
7GMHGM		4,916.6	-6.5	-0.04	4,788.2	-96.3	-0.68
A3UXRA		4,996.6	73.5	0.47	4,977.4	92.9	0.66
ANAEWK		4,899.4	-23.7	-0.15	4,880.4	-4.1	-0.03
BW436W		4,797.8	-125.3	-0.80	4,738.8	-145.7	-1.03
CAK8XB		5,044.2	121.1	0.77	5,042.2	157.7	1.11
CEV8AF		4,956.0	32.9	0.21	4,980.0	95.5	0.67
CYMDG7		4,823.2	-99.9	-0.64	4,751.4	-133.1	-0.94
ELNLMD		4,685.3	-237.8	-1.51	4,733.5	-151.0	-1.06
F6D6C4		4,979.4	56.3	0.36	5,042.5	158.0	1.11
FAALT6		5,004.0	80.9	0.51	4,999.0	114.5	0.81
HK89VL		4,690.8	-232.3	-1.48	4,854.2	-30.3	-0.21
K7CUL3		4,969.2	46.1	0.29	4,991.7	107.2	0.76
KXHT34		4,923.2	0.1	0.00	4,938.9	54.4	0.38
LCJKN9		4,796.6	-126.5	-0.80	4,734.6	-149.9	-1.06
M3PYVF		5,032.0	108.9	0.69	4,866.0	-18.5	-0.13
M4JKP7	*	4,896.8	-26.3	-0.17	4,663.6	-220.9	-1.56
MDNR67		4,626.4	-296.7	-1.89	4,557.6	-326.9	-2.30
MLJU94		5,073.4	150.3	0.96	4,967.4	82.9	0.58
MZJD7U	*	5,321.6	398.5	2.53	5,060.0	175.5	1.24
NK23YJ		4,736.4	-186.7	-1.19	4,670.0	-214.5	-1.51
NURQNU		4,966.4	43.3	0.28	5,068.0	183.5	1.29
PY3YT6		4,886.0	-37.1	-0.24	4,842.0	-42.5	-0.30
QQ3YU3		4,986.5	63.4	0.40	4,956.4	71.9	0.51
R7THMV		5,107.1	184.0	1.17	4,976.5	92.0	0.65
R88P9D	X	4,993.8	70.7	0.45	5,628.5	744.0	5.25
RE6ER3		4,901.8	-21.3	-0.14	4,816.0	-68.5	-0.48
T9YZNC		5,051.6	128.5	0.82	4,886.0	1.5	0.01
TP2XTT		5,021.8	98.7	0.63	4,934.2	49.7	0.35
UBYVHY		4,754.4	-168.7	-1.07	4,757.6	-126.9	-0.89



Plastics Interlaboratory Testing Program

Report #114

Analysis 705

2nd Qtr 2020

Tensile Stress at Break - psi

WebCode	Data Flag	<u>Sample F67</u>			<u>Sample F68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
UJCKHT		4,855.5	-67.7	-0.43	4,906.8	22.3	0.16
VAECB8		5,134.4	211.3	1.34	5,033.4	148.9	1.05
VNDFFX		4,945.8	22.7	0.14	4,981.2	96.7	0.68
VTUN4X		4,974.8	51.7	0.33	4,931.3	46.8	0.33
W26AP7		4,673.2	-250.0	-1.59	4,719.6	-164.9	-1.16
W9FNAM		5,149.2	226.1	1.44	5,061.4	176.9	1.25
WVFPLO		4,990.6	67.5	0.43	4,933.2	48.7	0.34
X773UL		5,010.2	87.0	0.55	5,097.8	213.3	1.50
XBN4GT		4,968.4	45.3	0.29	4,813.8	-70.7	-0.50
XGDFV		4,573.8	-349.3	-2.22	4,607.8	-276.7	-1.95
XWKW2N		4,863.8	-59.3	-0.38	4,865.2	-19.3	-0.14
XX2TUN		4,900.2	-22.9	-0.15	4,836.0	-48.5	-0.34
Y6TV7J		4,607.6	-315.5	-2.01	4,552.8	-331.7	-2.34
YBKVR7		4,728.3	-194.9	-1.24	4,786.3	-98.2	-0.69
YKN7XV	X	5,615.4	692.3	4.40	4,993.6	109.1	0.77
YQCX44	X	5,114.6	191.4	1.22	5,303.4	418.9	2.95
YZ3JA2		5,124.0	200.9	1.28	5,110.0	225.5	1.59
ZMTXNN		5,154.2	231.1	1.47	5,011.0	126.5	0.89

Summary Statistics		<u>Sample F67</u>	<u>Sample F68</u>
Grand Means		4,923.14 psi	4,884.48 psi
Std Dev Btwn Labs		157.23 psi	141.81 psi
Statistics based on 48 of 53 reporting participants			

Sample F67: ABS & Sample F68: ABS

Comments on Assigned Data Flags for Test #705

69CWVD (X) - Data for sample F67 are low. Inconsistent within the determinations of sample F67.

YKN7XV (X) - Data for sample F67 are high. Inconsistent within the determinations of sample F67.

3E9G9J (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

R88P9D (X) - Data for sample F68 are high. Inconsistent within the determinations of both samples.

YQCX44 (X) - Data for sample F68 are high. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

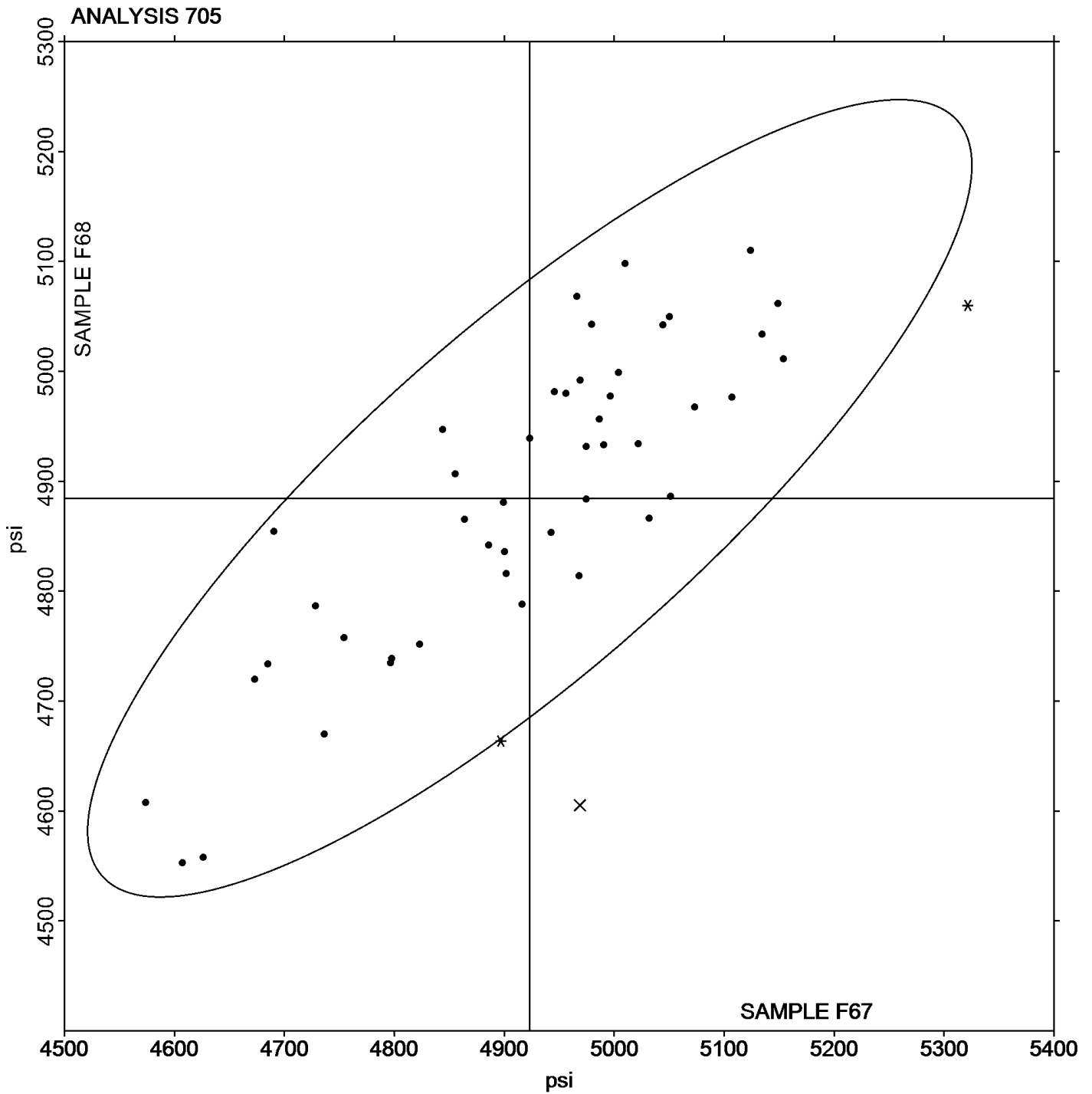
Report #114

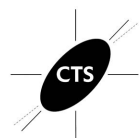
Analysis 705

2nd Qtr 2020

Tensile Stress at Break - psi

Grand Mean Sample F67: 4,923.14 psi Grand Mean Sample F68: 4,884.48 psi





Plastics Interlaboratory Testing Program

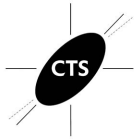
Report #114

Analysis 706

2nd Qtr 2020

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F67			Sample F68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DZA7Q		2.420	0.048	0.40	2.424	0.050	0.40
3E9G9J	X	3.060	0.688	5.63	2.472	0.098	0.79
42VZDX	*	2.000	-0.372	-3.04	2.000	-0.374	-3.01
4GUM2E		2.382	0.010	0.09	2.376	0.002	0.01
4VDJ7H		2.338	-0.034	-0.27	2.340	-0.034	-0.28
676EWH	X	1.716	-0.656	-5.36	1.740	-0.634	-5.11
69CWVD	*	2.404	0.032	0.27	2.314	-0.060	-0.49
7GMHGM		2.358	-0.014	-0.11	2.320	-0.054	-0.44
A3UXRA	X	2.822	0.450	3.68	3.364	0.990	7.97
ANAEWK		2.640	0.268	2.19	2.674	0.300	2.41
BW436W		2.378	0.006	0.05	2.416	0.042	0.34
CAK8XB		2.390	0.018	0.15	2.388	0.014	0.11
CEV8AF		2.480	0.108	0.89	2.480	0.106	0.85
CYMDG7		2.432	0.060	0.49	2.408	0.034	0.27
ELNLMD		2.378	0.006	0.05	2.426	0.052	0.42
F6D6C4		2.362	-0.010	-0.08	2.368	-0.006	-0.05
FAALT6		2.449	0.077	0.63	2.433	0.058	0.47
FLLWEA		2.412	0.040	0.33	2.370	-0.004	-0.04
HNJ89Z		2.400	0.028	0.23	2.360	-0.014	-0.12
K7CUL3		2.153	-0.219	-1.79	2.151	-0.223	-1.80
KXHT34	X	18.520	16.148	131.98	13.234	10.860	87.46
LCJKN9		2.208	-0.164	-1.34	2.192	-0.182	-1.47
M3PYVF		2.326	-0.046	-0.37	2.328	-0.046	-0.37
M4JKP7		2.352	-0.020	-0.16	2.344	-0.030	-0.24
MDNR67		2.352	-0.020	-0.16	2.358	-0.016	-0.13
MLJU94		2.458	0.086	0.71	2.434	0.060	0.48
NK23YJ		2.434	0.062	0.51	2.420	0.046	0.37
NURQNU		2.356	-0.016	-0.13	2.326	-0.048	-0.39
PY3YT6		2.380	0.008	0.07	2.420	0.046	0.37
QQ3YU3	X	3.000	0.628	5.14	3.000	0.626	5.04
R7THMV		2.496	0.124	1.02	2.444	0.070	0.56
R88P9D	*	2.010	-0.362	-2.95	2.012	-0.362	-2.92
RE6ER3		2.434	0.062	0.51	2.432	0.058	0.46
T9YZNC	X	2.238	-0.134	-1.09	2.420	0.046	0.37
TEJ7ER		2.378	0.006	0.05	2.360	-0.014	-0.12



Plastics Interlaboratory Testing Program

Report #114

Analysis 706

2nd Qtr 2020

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F67			Sample F68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
TP2XTT		2.388	0.016	0.13	2.476	0.102	0.82
UJCKHT		2.210	-0.161	-1.32	2.240	-0.135	-1.08
VAECB8		2.390	0.018	0.15	2.382	0.008	0.06
VNDFFX	*	2.680	0.308	2.52	2.700	0.326	2.62
VTUN4X		2.458	0.086	0.71	2.470	0.096	0.77
VVYD4K		2.484	0.112	0.92	2.412	0.038	0.30
W26AP7		2.278	-0.093	-0.76	2.291	-0.083	-0.67
W9FNAM		2.374	0.003	0.02	2.410	0.036	0.29
WVFPLQ		2.362	-0.010	-0.08	2.392	0.018	0.14
X773UL		2.332	-0.040	-0.32	2.328	-0.046	-0.37
XBN4GT		2.354	-0.018	-0.14	2.344	-0.030	-0.24
XGDFV	*	2.278	-0.094	-0.76	2.374	0.000	0.00
XWKW2N		2.326	-0.046	-0.37	2.394	0.020	0.16
XX2TUN		2.522	0.150	1.23	2.550	0.176	1.41
Y6TV7J		2.264	-0.108	-0.88	2.264	-0.110	-0.89
YBKVR7		2.390	0.018	0.15	2.406	0.032	0.25
YKN7XV		2.476	0.104	0.85	2.480	0.106	0.85
YQCX44	X	1.624	-0.748	-6.11	1.606	-0.768	-6.19
YZ3JA2	X	2.878	0.506	4.14	2.880	0.506	4.07
ZMTXNN		2.336	-0.036	-0.29	2.364	-0.010	-0.08

Summary Statistics		
	Sample F67	Sample F68
Grand Means	2.3715 Percent	2.3744 Percent
Std Dev Btwn Labs	0.1224 Percent	0.1242 Percent
Statistics based on 47 of 55 reporting participants		

Sample F67: ABS & Sample F68: ABS



Comments on Assigned Data Flags for Test #706

- T9YZNC (X) - Inconsistent in testing between samples.
- A3UXRA (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- KXHT34 (X) - Extreme data.
- QQ3YU3 (X) - Data for both samples are high. Possible Systematic Error.
- 676EWH (X) - Data for both samples are low. Possible Systematic Error.
- 3E9G9J (X) - Data for sample F67 are high. Inconsistent within the determinations of sample F67.
- YZ3JA2 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- YQCX44 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

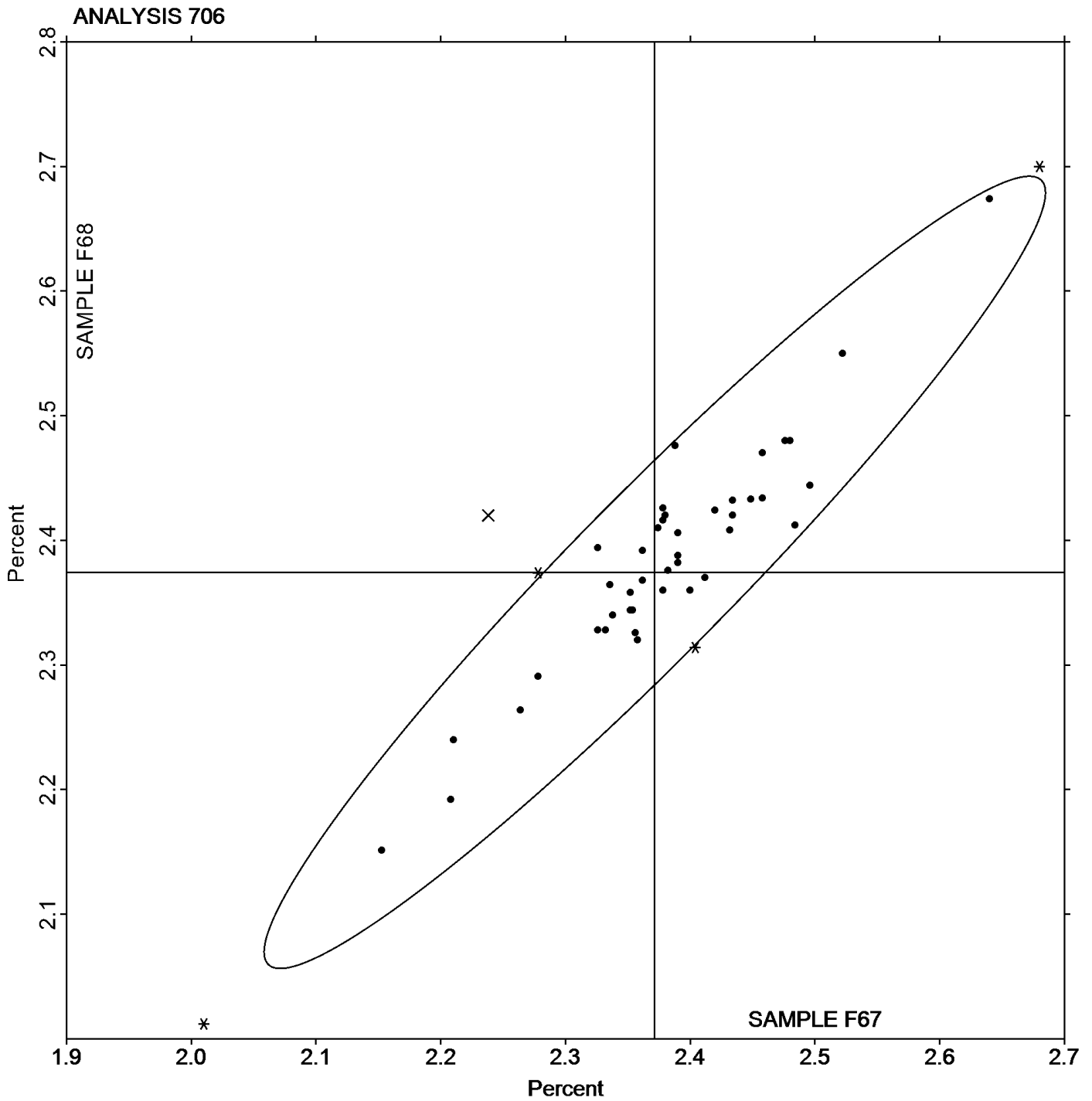
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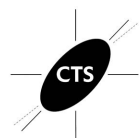
Analysis 706

2nd Qtr 2020

Percent Elongation at Yield - Percent

Grand Mean Sample F67: 2.3715 Percent Grand Mean Sample F68: 2.3744 Percent





Plastics Interlaboratory Testing Program

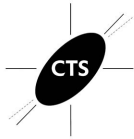
Report #114

Analysis 708

2nd Qtr 2020

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F67			Sample F68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DZA7Q		321.67	-4.65	-0.25	336.45	9.64	0.54
3E9G9J		319.40	-6.92	-0.37	322.68	-4.12	-0.23
42VZDX		314.48	-11.84	-0.64	315.22	-11.58	-0.64
4GUM2E		323.15	-3.18	-0.17	321.99	-4.82	-0.27
676EWH	X	444.40	118.08	6.34	433.20	106.40	5.90
69CWVD		324.04	-2.28	-0.12	339.16	12.36	0.69
7GMHGM		333.80	7.48	0.40	341.08	14.28	0.79
A3UXRA		294.03	-32.30	-1.73	289.14	-37.66	-2.09
ANAEWK		288.94	-37.38	-2.01	294.62	-32.18	-1.79
BW436W		312.00	-14.32	-0.77	308.94	-17.86	-0.99
CEV8AF		334.60	8.28	0.44	332.80	6.00	0.33
CYMDG7		322.62	-3.70	-0.20	329.38	2.58	0.14
ELNLMD		315.42	-10.90	-0.58	317.12	-9.69	-0.54
F6D6C4		348.44	22.11	1.19	353.22	26.41	1.47
FAALT6		334.15	7.82	0.42	339.40	12.60	0.70
FLLWEA		335.66	9.34	0.50	332.92	6.12	0.34
HNJ89Z		313.90	-12.42	-0.67	311.48	-15.32	-0.85
K7CUL3		327.04	0.71	0.04	325.85	-0.96	-0.05
KXHT34		368.25	41.92	2.25	362.82	36.02	2.00
LCJKN9		318.58	-7.75	-0.42	330.91	4.10	0.23
M3PYVF		338.78	12.46	0.67	338.46	11.66	0.65
M4JKP7		298.20	-28.12	-1.51	304.00	-22.80	-1.27
MDNR67		313.50	-12.82	-0.69	304.72	-22.08	-1.23
MLJU94		326.98	0.66	0.04	323.53	-3.28	-0.18
MXWWU2		340.32	14.00	0.75	347.50	20.70	1.15
NK23YJ		303.70	-22.62	-1.21	312.56	-14.24	-0.79
NURQNU		323.87	-2.45	-0.13	327.32	0.52	0.03
PY3YT6		320.00	-6.32	-0.34	317.80	-9.00	-0.50
QQ3YU3	X	424.15	97.83	5.25	438.86	112.05	6.22
R7THMV		307.32	-19.00	-1.02	307.04	-19.76	-1.10
R88P9D	*	378.50	52.18	2.80	365.56	38.76	2.15
RE6ER3		339.66	13.34	0.72	323.12	-3.68	-0.20
T9YZNC		310.44	-15.88	-0.85	321.30	-5.50	-0.31
TP2XTT		337.00	10.68	0.57	324.78	-2.02	-0.11
UJCKHT		339.42	13.09	0.70	342.81	16.01	0.89



Plastics Interlaboratory Testing Program

Report #114

Analysis 708

2nd Qtr 2020

Modulus of Elasticity - ksi

WebCode	Data Flag	<u>Sample F67</u>			<u>Sample F68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
VAECB8		357.78	31.46	1.69	351.42	24.62	1.37
VNDFFX		297.10	-29.22	-1.57	292.00	-34.80	-1.93
VTUN4X		317.35	-8.98	-0.48	309.80	-17.00	-0.94
VVYD4K		327.82	1.50	0.08	338.86	12.06	0.67
W26AP7		326.69	0.36	0.02	327.27	0.46	0.03
W9FNAM		332.00	5.68	0.30	327.80	1.00	0.06
WVFPLQ		331.62	5.30	0.28	321.08	-5.72	-0.32
X773UL		354.95	28.63	1.54	363.20	36.40	2.02
XBN4GT		317.76	-8.56	-0.46	311.40	-15.40	-0.85
XGDFV		313.80	-12.52	-0.67	318.40	-8.40	-0.47
XWKW2N		335.36	9.04	0.48	334.28	7.48	0.41
Y6TV7J		327.64	1.32	0.07	329.88	3.07	0.17
YBKVR7		326.63	0.30	0.02	333.39	6.58	0.37
YKN7XV	X	379.32	53.00	2.84	335.86	9.06	0.50
YQCX44		332.98	6.66	0.36	335.18	8.38	0.46
YZ3JA2		299.20	-27.12	-1.46	300.00	-26.80	-1.49
ZMTXNN		363.35	37.03	1.99	353.79	26.99	1.50

Summary Statistics		
	<u>Sample F67</u>	<u>Sample F68</u>
Grand Means	326.324 ksi	326.805 ksi
Std Dev Btwn Labs	18.637 ksi	18.019 ksi
Statistics based on 49 of 52 reporting participants		

Sample F67: ABS & Sample F68: ABS

Comments on Assigned Data Flags for Test #708

YKN7XV (X) - Data for sample F67 are high. Inconsistent within the determinations of sample F67.

QQ3YU3 (X) - Data for both samples are high. Possible Systematic Error.

676EWH (X) - Data for both samples are high. Possible Systematic Error.



Plastics Interlaboratory Testing Program

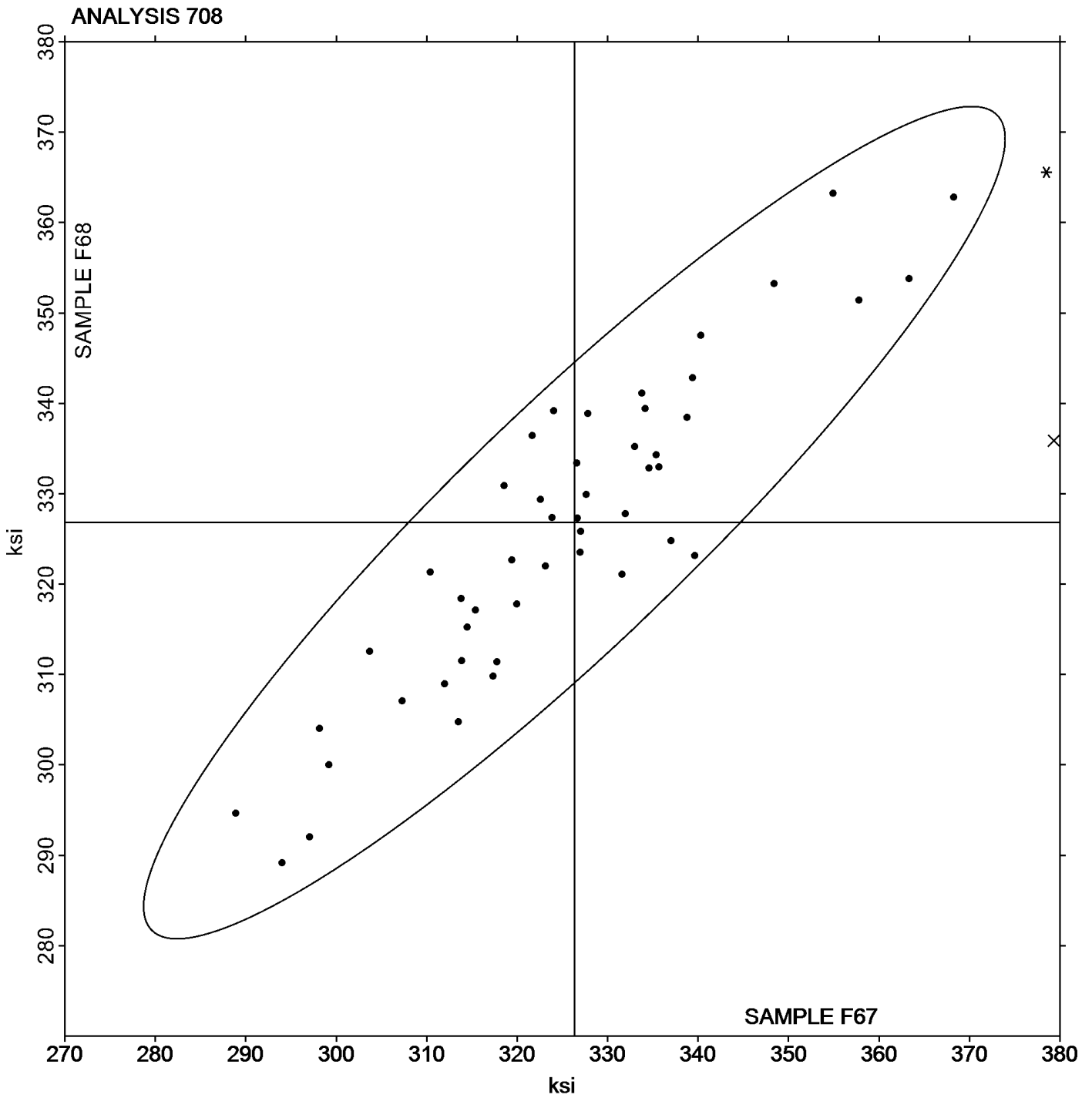
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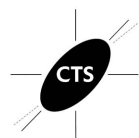
Analysis 708

2nd Qtr 2020

Modulus of Elasticity - ksi

Grand Mean Sample F67: 326.32 ksi Grand Mean Sample F68: 326.80 ksi





Plastics Interlaboratory Testing Program

Report #114

Analysis 710

2nd Qtr 2020

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

WebCode	Data Flag	<u>Sample E67</u>			<u>Sample E68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
42J6AE		104.08	-1.40	-0.75	103.75	-2.09	-1.30	TO
4GUM2E		107.03	1.55	0.84	107.23	1.38	0.86	AT
676EWH	*	102.35	-3.12	-1.68	107.65	1.81	1.13	XX
78EQAD		108.50	3.03	1.64	107.88	2.03	1.27	AT
7GMHGM		105.43	-0.05	-0.02	104.50	-1.34	-0.84	IN
ANAEWK		104.45	-1.02	-0.55	104.73	-1.12	-0.70	CF
BW436W		105.55	0.08	0.04	107.48	1.63	1.02	CE
ELNLMD		105.43	-0.05	-0.02	105.40	-0.44	-0.28	TY
FLLWEA		102.75	-2.72	-1.47	103.83	-2.02	-1.26	TO
HNJ89Z		110.25	4.78	2.58	108.20	2.36	1.47	CE
J8UKX9		106.93	1.45	0.79	107.50	1.66	1.03	IN
KXHT34		104.38	-1.10	-0.59	104.48	-1.37	-0.85	CE
MLJU94		105.70	0.23	0.12	105.10	-0.74	-0.46	IN
MZJD7U		105.70	0.23	0.12	107.28	1.43	0.89	TO
NK23YJ		105.75	0.28	0.15	106.15	0.31	0.19	CE
NURQNU		105.83	0.35	0.19	105.40	-0.44	-0.28	ZW
QZRR2T		105.43	-0.05	-0.02	105.75	-0.09	-0.06	IN
TEJ7ER		106.80	1.33	0.72	107.90	2.06	1.28	IN
VAECB8		104.40	-1.07	-0.58	103.90	-1.94	-1.21	TO
YBKVR7		105.45	-0.02	-0.01	105.35	-0.49	-0.31	RO
YKN7XV		102.73	-2.75	-1.48	103.28	-2.57	-1.60	IN

Summary Statistics		
	<u>Sample E67</u>	<u>Sample E68</u>
Grand Means	105.470 Degrees C	105.843 Degrees C
Std Dev Btwn Labs	1.853 Degrees C	1.606 Degrees C
Statistics based on 21 of 21 reporting participants		

Sample E67: ABS/PC & Sample E68: ABS/PC



Plastics Interlaboratory Testing Program

Report #114

Analysis 710

2nd Qtr 2020

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

Key to Instrument Codes Reported by Participants

AT Atlas

CF Coesfeld

RO Rosand

TY Toyoseiki

ZW Zwick

CE Ceast

IN Instron

TO Tinius Olsen

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

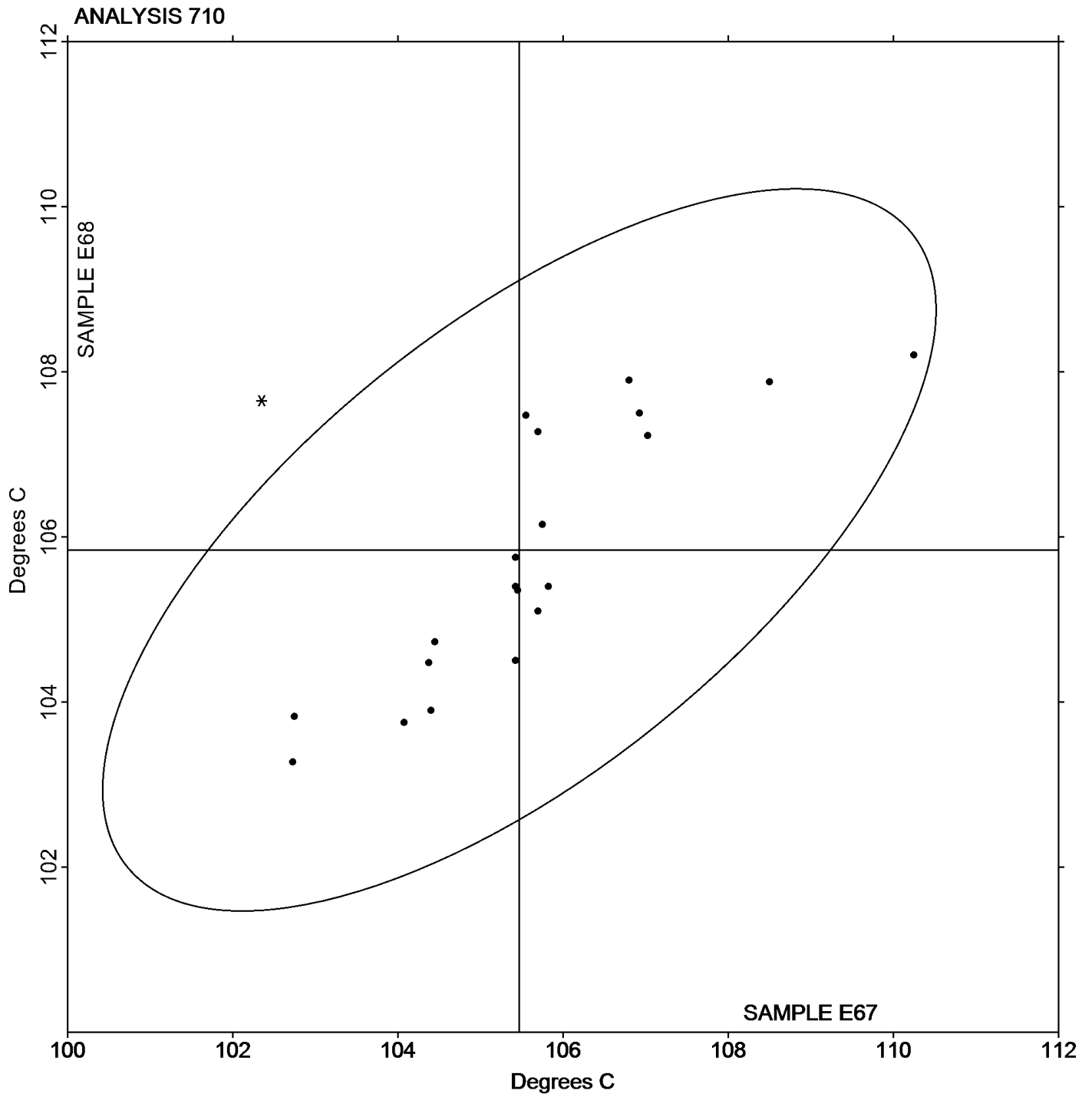
Report #114

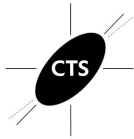
Analysis 710

2nd Qtr 2020

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

Grand Mean Sample E67: 105.47 Degrees C Grand Mean Sample E68: 105.84 Degrees C





Plastics Interlaboratory Testing Program

Report #114

Analysis 711

2nd Qtr 2020

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

WebCode	Data Flag	<u>Sample G67</u>			<u>Sample G68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4GUM2E		114.5	1.9	0.60	116.5	3.5	1.02	AT
CAK8XB		109.2	-3.4	-1.07	108.9	-4.1	-1.21	TO
CEV8AF		115.5	2.8	0.89	114.7	1.6	0.48	CE
FLLWEA		109.4	-3.2	-1.01	110.3	-2.7	-0.80	TO
MLJU94		110.4	-2.2	-0.69	110.8	-2.2	-0.65	IN
MZJD7U		114.5	1.9	0.59	116.5	3.4	1.00	TO
NURQNU		111.6	-1.0	-0.32	110.7	-2.3	-0.67	ZW
TEJ7ER		118.3	5.7	1.78	118.2	5.2	1.52	IN
XXEM83		110.2	-2.4	-0.76	110.7	-2.3	-0.68	CE

Summary Statistics		
	<u>Sample G67</u>	<u>Sample G68</u>
Grand Means	112.63 Degrees C	113.02 Degrees C
Stnd Dev Btwn Labs	3.17 Degrees C	3.43 Degrees C
Statistics based on 9 of 9 reporting participants		

Sample G67: PP & Sample G68: PP

Key to Instrument Codes Reported by Participants

- | | |
|-------------------|------------------------|
| AT Atlas | CE Ceast |
| IN Instron | TO Tinius Olsen |
| ZW Zwick | |



Plastics Interlaboratory Testing Program

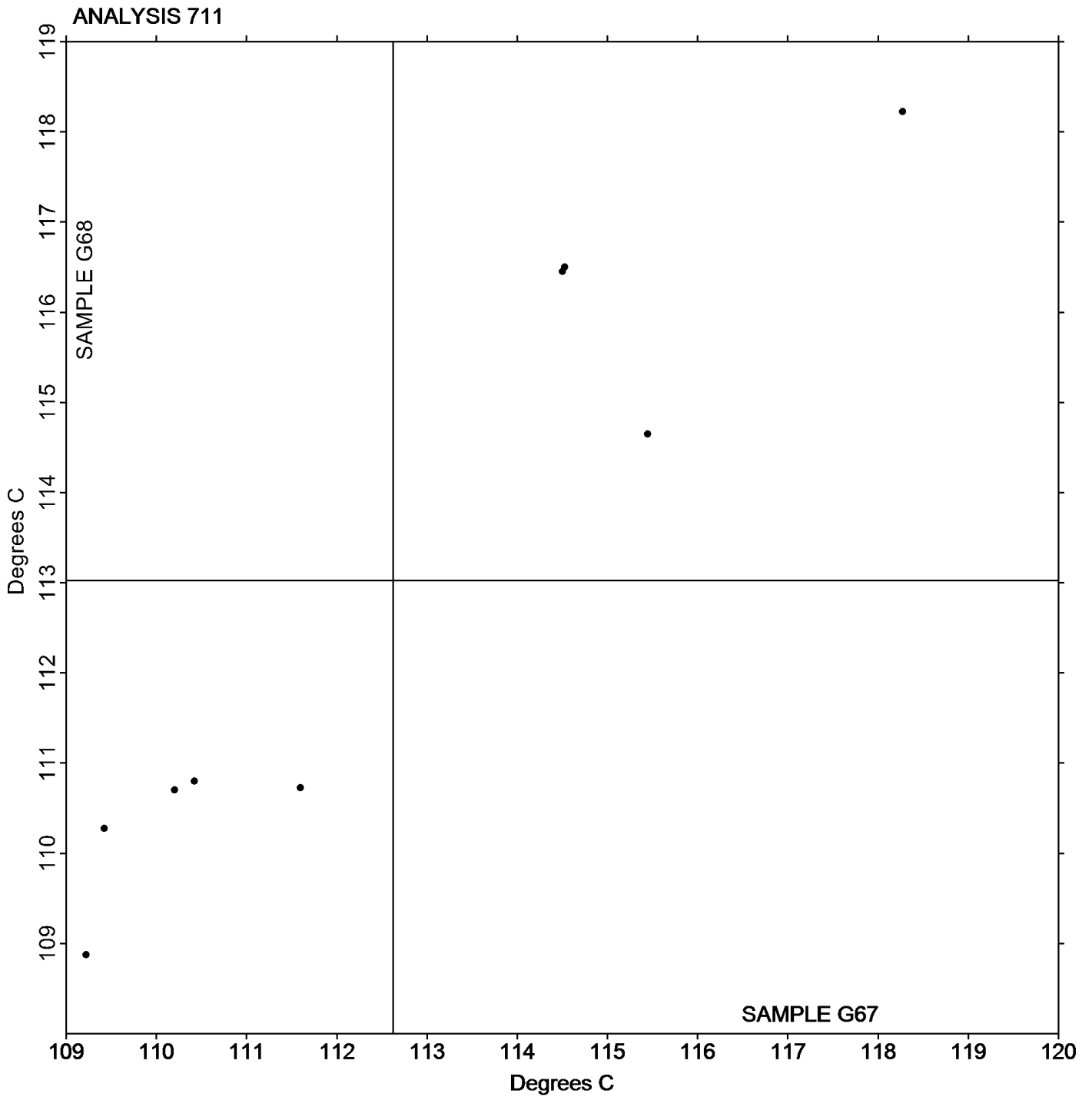
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Analysis 711

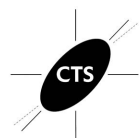
2nd Qtr 2020

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

Grand Mean Sample G67: 112.63 Degrees C Grand Mean Sample G68: 113.02 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 #114

Analysis 712

2nd Qtr 2020

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

WebCode	Data Flag	Sample N67			Sample N68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
264CEG		104.63	-1.37	-0.74	106.68	-0.24	-0.15	CE
42WTDR		108.50	2.51	1.36	108.25	1.34	0.88	TO
4GUM2E		106.70	0.71	0.38	106.53	-0.39	-0.25	AT
4QW3RJ		106.25	0.26	0.14	105.50	-1.41	-0.93	TO
4VDJ7H		104.23	-1.77	-0.96	107.55	0.64	0.42	CE
676EWH		107.20	1.21	0.66	107.80	0.89	0.58	XX
6CWJWD		106.80	0.81	0.44	105.58	-1.34	-0.88	IN
6VM2ED		104.48	-1.52	-0.83	104.98	-1.94	-1.27	ZW
78EQAD		105.13	-0.87	-0.47	107.05	0.14	0.09	AT
7EVEQZ		108.93	2.93	1.59	110.28	3.36	2.21	CE
83K4ZP		104.00	-1.99	-1.08	105.50	-1.41	-0.93	TO
ANBC3A		103.90	-2.09	-1.14	107.58	0.66	0.44	XX
BCDQHW		105.83	-0.17	-0.09	109.35	2.44	1.60	CE
CEV8AF		108.30	2.31	1.25	108.45	1.54	1.01	CF
CUU88B		103.13	-2.87	-1.56	107.40	0.49	0.32	XX
ELNLMD		105.93	-0.07	-0.04	108.20	1.29	0.85	TY
HBW8AK		106.43	0.43	0.23	106.05	-0.86	-0.56	XX
KT9J22		104.80	-1.19	-0.65	108.30	1.39	0.91	CE
LCXBBX		106.48	0.48	0.26	106.05	-0.86	-0.56	TY
LCXDZ3		106.73	0.73	0.40	107.00	0.09	0.06	TO
MLJU94		108.20	2.21	1.20	106.05	-0.86	-0.56	IN
NURQNU		104.05	-1.94	-1.06	104.05	-2.86	-1.88	ZW
Q23LP7		104.18	-1.82	-0.99	105.98	-0.94	-0.61	CE
R3QHMY	X	98.33	-7.67	-4.17	108.73	1.81	1.19	CE
TEJ7ER		104.23	-1.77	-0.96	105.40	-1.51	-0.99	IN
TMTT7R		108.00	2.01	1.09	106.35	-0.56	-0.37	CE
UEHQLR		109.73	3.73	2.03	106.18	-0.74	-0.48	CE
WNTYYV		108.75	2.76	1.50	107.50	0.59	0.39	CF
XABNTJ		106.20	0.21	0.11	110.35	3.44	2.26	TO
Y6TV7J		104.33	-1.67	-0.91	106.50	-0.41	-0.27	CE
YKN7XV		103.85	-2.14	-1.17	104.93	-1.99	-1.30	IN



Plastics Interlaboratory Testing Program

Report #114

Analysis 712

2nd Qtr 2020

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

Summary Statistics		
	<u>Sample N67</u>	<u>Sample N68</u>
Grand Means	105.994 Degrees C	106.911 Degrees C
Stnd Dev Btwn Labs	1.838 Degrees C	1.524 Degrees C
Statistics based on 30 of 31 reporting participants		

Sample N67: ABS/PC & Sample N68: ABS/PC

Comments on Assigned Data Flags for Test #712

R3QHMY (X) - Data for sample N67 are low.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

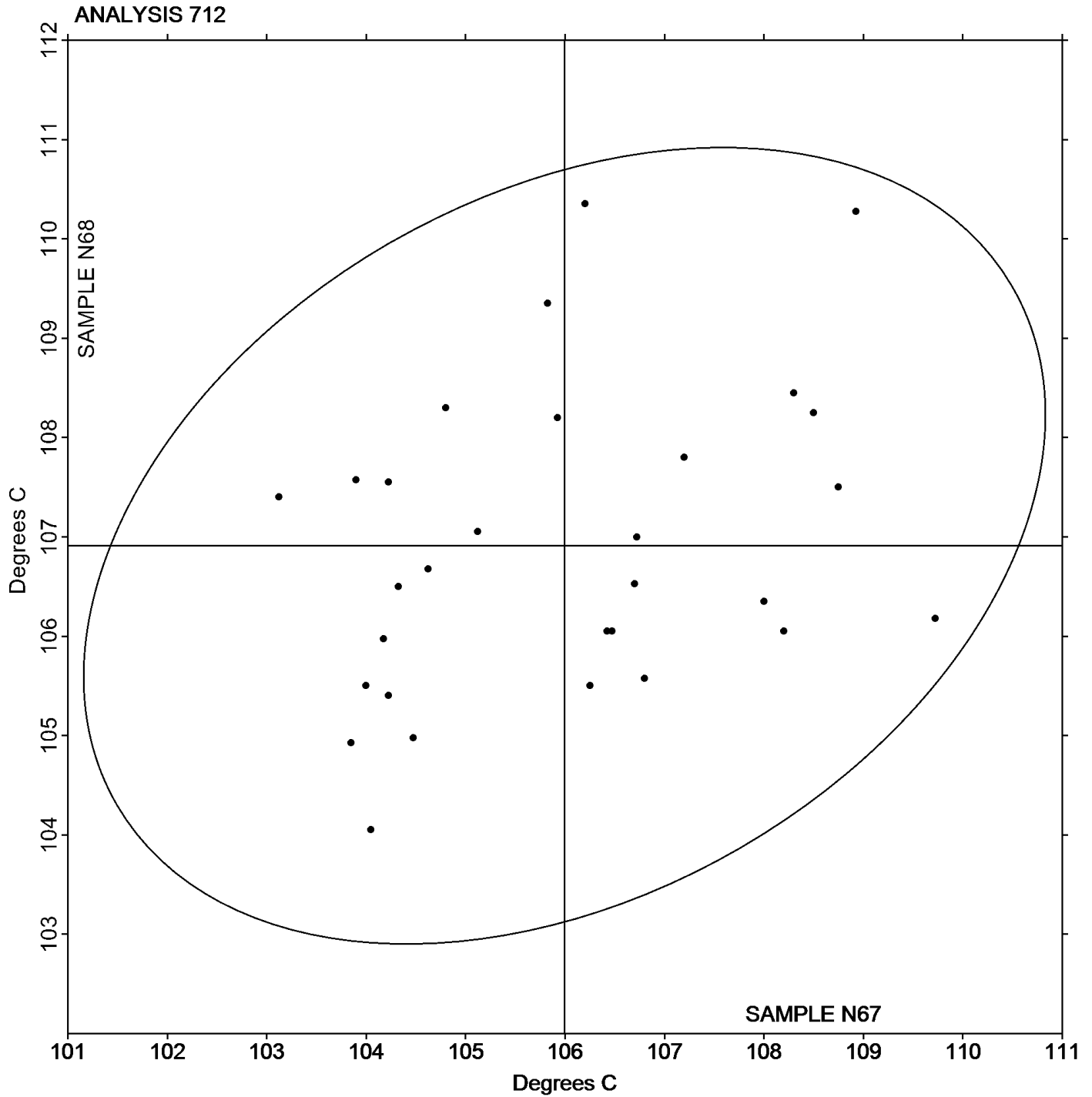
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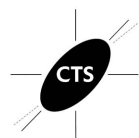
Analysis 712

2nd Qtr 2020

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

Grand Mean Sample N67: 105.99 Degrees C Grand Mean Sample N68: 106.91 Degrees C





Plastics Interlaboratory Testing Program

Report #114

Analysis 715

2nd Qtr 2020

Vicac Softening Temperature (Rate A)

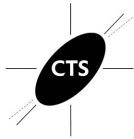
WebCode	Data Flag	Sample H67			Sample H68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
264CEG		141.50	1.38	1.64	141.55	1.40	1.61	CF
4GUM2E		140.17	0.04	0.05	140.52	0.36	0.42	WZ
676EWH		140.92	0.79	0.94	140.92	0.76	0.88	XX
69CWVD		139.75	-0.37	-0.44	139.93	-0.22	-0.25	TO
BCDQHW		139.27	-0.86	-1.02	139.28	-0.87	-1.00	CE
BW436W		141.03	0.91	1.08	140.92	0.76	0.88	CE
CEV8AF		139.53	-0.59	-0.70	139.57	-0.59	-0.67	CF
D8W3V6		139.40	-0.72	-0.86	138.85	-1.30	-1.50	TO
DZ8PPB		140.00	-0.12	-0.15	140.00	-0.15	-0.18	TO
ELNLMD		141.75	1.63	1.93	141.72	1.56	1.80	TY
HEWH4Y		140.00	-0.12	-0.15	140.05	-0.10	-0.12	CE
LNEQLD		139.32	-0.81	-0.96	139.33	-0.82	-0.94	AT
MLJU94		140.18	0.06	0.07	140.35	0.20	0.23	IN
NK23YJ		139.55	-0.57	-0.68	140.27	0.11	0.13	CE
NURQNU		141.57	1.44	1.72	141.70	1.55	1.78	CF
QZRR2T	X	128.33	-11.79	-14.01	128.28	-11.87	-13.65	IN
RE6ER3		139.92	-0.21	-0.25	140.15	0.00	0.00	RR
TUBX4Y		139.70	-0.42	-0.50	140.08	-0.07	-0.08	CE
VAECB8		138.75	-1.37	-1.63	138.62	-1.54	-1.77	TO
VY6RZR		140.10	-0.02	-0.03	139.83	-0.32	-0.37	CE
Y6TV7J		140.87	0.74	0.88	140.38	0.23	0.26	CE
YBKVR7		139.32	-0.81	-0.96	139.20	-0.95	-1.10	RO

Summary Statistics		Sample H67	Sample H68
Grand Means		140.123 Degrees C	140.153 Degrees C
Std Dev Btwn Labs		0.841 Degrees C	0.870 Degrees C
Statistics based on 21 of 22 reporting participants			

Sample H67: ABS/PC & Sample H68: ABS/PC

Comments on Assigned Data Flags for Test #715

QZRR2T (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

Report #114

Analysis 715

2nd Qtr 2020

Vicat Softening Temperature (Rate A)

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

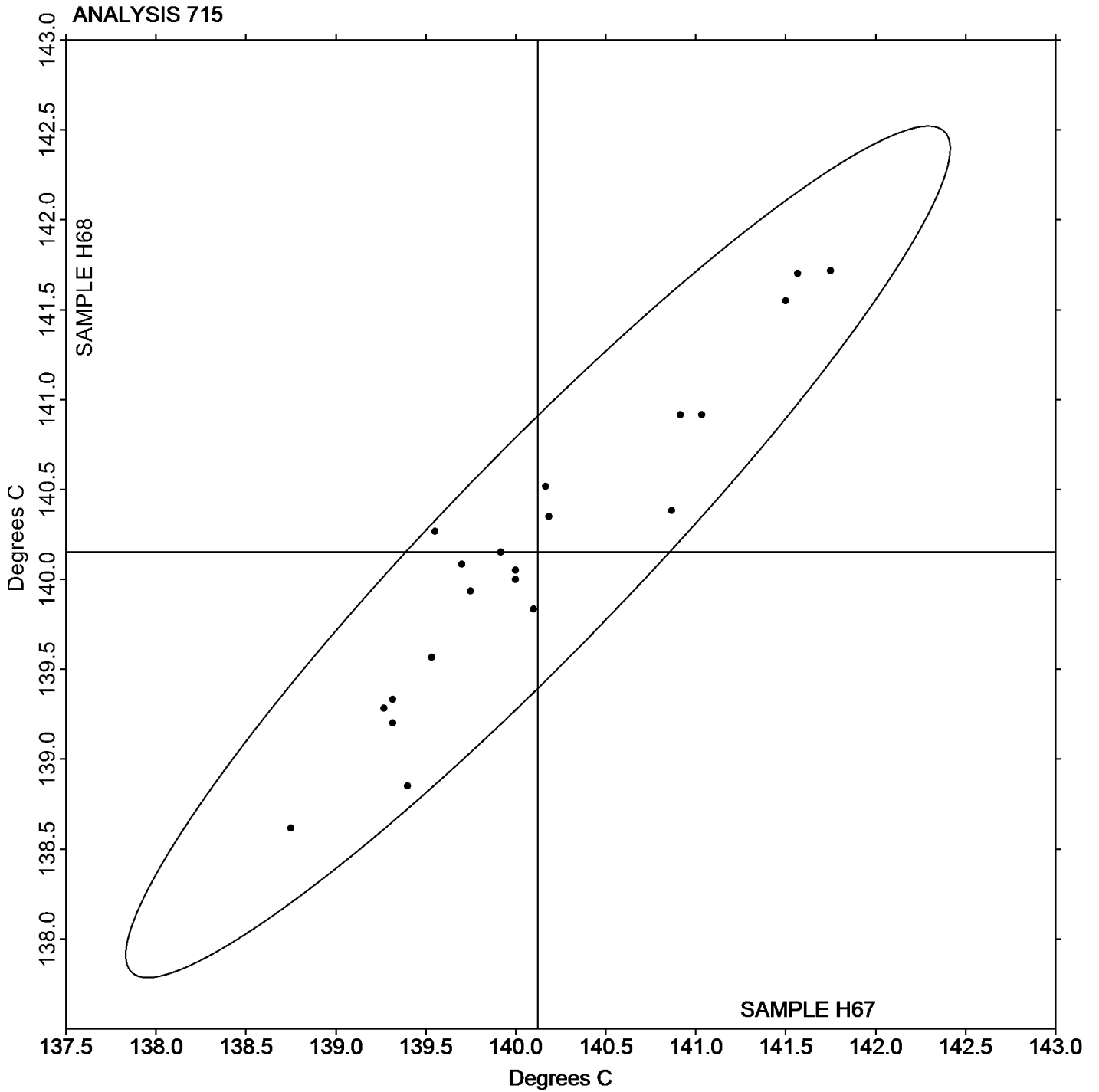
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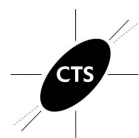
Analysis 715

2nd Qtr 2020

Vicat Softening Temperature (Rate A)

Grand Mean Sample H67: 140.12 Degrees C Grand Mean Sample H68: 140.15 Degrees C





Plastics Interlaboratory Testing Program

Report #114

Analysis 716

2nd Qtr 2020

Vicat Softening Temperature (Rate B)

WebCode	Data Flag	<u>Sample R67</u>			<u>Sample R68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
264CEG		142.90	1.11	1.56	142.60	0.71	1.02	CF
4GUM2E		142.47	0.67	0.95	142.70	0.81	1.17	AT
676EWH	*	140.92	-0.88	-1.24	142.20	0.31	0.45	XX
69CWVD		141.55	-0.24	-0.35	141.80	-0.09	-0.13	TO
BCDQHW		140.62	-1.18	-1.67	140.75	-1.14	-1.63	CE
BW436W		142.90	1.11	1.56	142.97	1.08	1.55	CE
CEV8AF		141.83	0.04	0.06	141.57	-0.32	-0.46	CF
D8W3V6		141.25	-0.54	-0.77	141.03	-0.85	-1.23	TO
DZ8PPB		141.83	0.04	0.06	141.83	-0.05	-0.08	XX
ELNLMD		142.37	0.57	0.81	142.50	0.61	0.88	TY
LNEQLD		141.20	-0.59	-0.84	141.23	-0.65	-0.94	AT
MLJU94		141.98	0.19	0.27	142.12	0.23	0.33	IN
NK23YJ		142.15	0.36	0.50	142.15	0.26	0.38	CE
NURQNU		142.67	0.87	1.23	142.52	0.63	0.90	CF
QZRR2T		142.40	0.61	0.86	142.25	0.36	0.52	IN
RE6ER3		141.48	-0.31	-0.44	141.55	-0.34	-0.48	RR
TUBX4Y		141.72	-0.08	-0.11	141.62	-0.27	-0.39	CE
VAECB8		140.80	-0.99	-1.41	140.68	-1.20	-1.73	TO
VY6RZR		141.28	-0.51	-0.72	141.40	-0.49	-0.70	CE
Y6TV7J		142.47	0.67	0.95	143.02	1.13	1.62	CE
YBKVR7		140.90	-0.89	-1.27	141.15	-0.74	-1.06	RO

Summary Statistics		
	<u>Sample R67</u>	<u>Sample R68</u>
Grand Means	141.794 Degrees C	141.887 Degrees C
Std Dev Btwn Labs	0.707 Degrees C	0.697 Degrees C
Statistics based on 21 of 21 reporting participants		

Sample R67: ABS/PC & Sample R68: ABS/PC



Plastics Interlaboratory Testing Program

Report #114

Analysis 716

2nd Qtr 2020

Vicat Softening Temperature (Rate B)

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

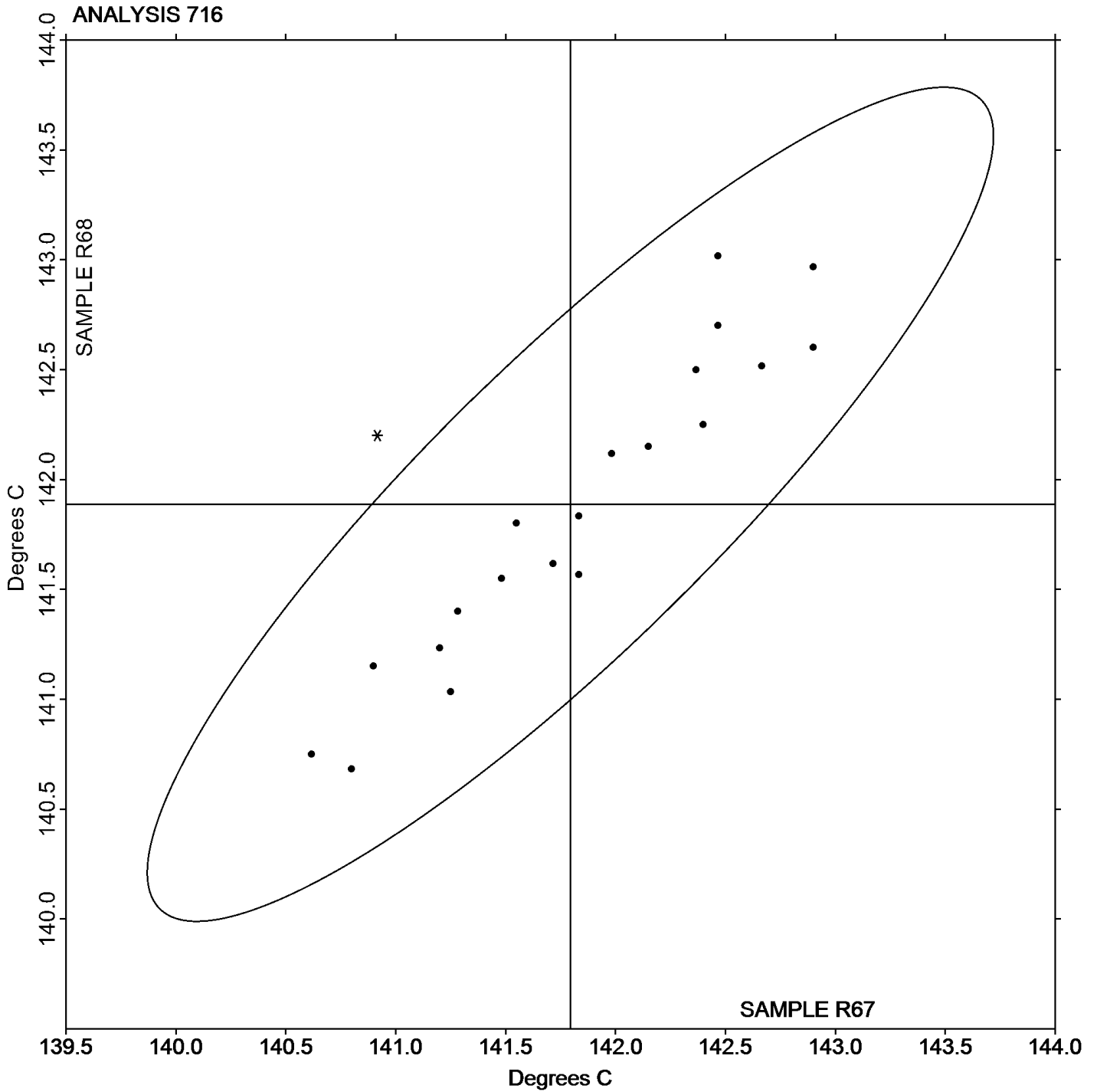
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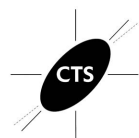
Analysis 716

2nd Qtr 2020

Vicat Softening Temperature (Rate B)

Grand Mean Sample R67: 141.79 Degrees C Grand Mean Sample R68: 141.89 Degrees C





Plastics Interlaboratory Testing Program

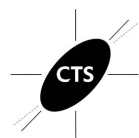
Report #114

Analysis 718

2nd Qtr 2020

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T67			Sample T68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2LTHQG		1.03567	0.00109	0.48	1.03567	0.00119	0.50
4GUM2E		1.03593	0.00136	0.59	1.03587	0.00139	0.59
4L3BFF		1.03700	0.00243	1.06	1.03567	0.00119	0.50
4QW3RJ		1.03340	-0.00117	-0.51	1.03337	-0.00111	-0.47
4VDJ7H		1.03400	-0.00057	-0.25	1.03500	0.00052	0.22
4YCLAX		1.03000	-0.00457	-1.99	1.03000	-0.00448	-1.90
676EWH		1.03460	0.00003	0.01	1.03247	-0.00201	-0.85
69CWVD		1.03690	0.00233	1.01	1.03660	0.00212	0.90
6CWJWD	X	1.04137	0.00679	2.96	1.03520	0.00072	0.30
6VM2ED		1.03433	-0.00024	-0.10	1.03500	0.00052	0.22
7GMHGM		1.03103	-0.00354	-1.54	1.03087	-0.00361	-1.53
8EVHYH		1.03700	0.00243	1.06	1.03467	0.00019	0.08
AFWLLN		1.03447	-0.00011	-0.05	1.03400	-0.00048	-0.20
ANBC3A		1.03467	0.00009	0.04	1.03533	0.00085	0.36
BAQ9ZC		1.03643	0.00186	0.81	1.03720	0.00272	1.15
BCDQHW		1.03467	0.00009	0.04	1.03477	0.00029	0.12
BW436W	*	1.02933	-0.00524	-2.28	1.03100	-0.00348	-1.47
BXU7WH		1.03620	0.00163	0.71	1.03547	0.00099	0.42
CAK8XB		1.03620	0.00163	0.71	1.03707	0.00259	1.10
CAKEUB		1.03657	0.00199	0.87	1.03697	0.00249	1.05
CEV8AF	X	1.03750	0.00293	1.27	1.03050	-0.00398	-1.69
CHVFFC		1.03523	0.00066	0.29	1.03597	0.00149	0.63
CTEX9H		1.03097	-0.00361	-1.57	1.03047	-0.00401	-1.70
CUU88B		1.03333	-0.00124	-0.54	1.03267	-0.00181	-0.77
CYMDG7	X	1.03547	0.00089	0.39	1.03173	-0.00275	-1.16
DPCELA		1.03407	-0.00051	-0.22	1.03423	-0.00025	-0.10
DYZAKQ	X	1.02770	-0.00687	-2.99	1.01840	-0.01608	-6.81
DZ8PPB		1.03297	-0.00161	-0.70	1.03310	-0.00138	-0.58
E4MGF4		1.03533	0.00076	0.33	1.03373	-0.00075	-0.32
E64VMD	*	1.03667	0.00209	0.91	1.03367	-0.00081	-0.34
ELNLMD		1.03200	-0.00257	-1.12	1.03267	-0.00181	-0.77
FLLWEA		1.03597	0.00139	0.61	1.03643	0.00195	0.83
FVCEU3		1.03403	-0.00054	-0.24	1.03343	-0.00105	-0.44
GZ44U8		1.03509	0.00052	0.23	1.03534	0.00086	0.36
HBGMM3		1.03490	0.00033	0.14	1.03527	0.00079	0.33



Plastics Interlaboratory Testing Program

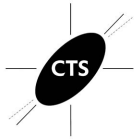
Report #114

Analysis 718

2nd Qtr 2020

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T67			Sample T68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
HBW8AK		1.03647	0.00189	0.82	1.03773	0.00325	1.38
HNJ89Z		1.03767	0.00309	1.35	1.03767	0.00319	1.35
HZZYT4		1.03520	0.00063	0.27	1.03577	0.00129	0.54
KAC6H3		1.03137	-0.00321	-1.40	1.03313	-0.00135	-0.57
KT9J22		1.03657	0.00199	0.87	1.03630	0.00182	0.77
KXHT34		1.03533	0.00076	0.33	1.03533	0.00085	0.36
LCJKN9		1.03600	0.00143	0.62	1.03533	0.00085	0.36
LQYM7W		1.03223	-0.00234	-1.02	1.03013	-0.00435	-1.84
MLJU94		1.03517	0.00059	0.26	1.03547	0.00099	0.42
MR4ULV	*	1.03233	-0.00224	-0.98	1.02957	-0.00491	-2.08
MZJD7U	X	1.00387	-0.03071	-13.38	1.03613	0.00165	0.70
NCTLAX		1.03597	0.00139	0.61	1.03517	0.00069	0.29
NG4LK4		1.03133	-0.00324	-1.41	1.03200	-0.00248	-1.05
NK23YJ	*	1.02767	-0.00691	-3.01	1.02833	-0.00615	-2.60
NURQNU		1.03697	0.00239	1.04	1.03697	0.00249	1.05
P238XE		1.03467	0.00009	0.04	1.03537	0.00089	0.38
Q23LP7		1.03690	0.00233	1.01	1.03763	0.00315	1.34
QDTHMX		1.03667	0.00209	0.91	1.03633	0.00185	0.78
QZTGAW		1.03727	0.00269	1.17	1.03673	0.00225	0.95
R3QHMY		1.03463	0.00006	0.03	1.03463	0.00015	0.06
R88P9D		1.03143	-0.00314	-1.37	1.03163	-0.00285	-1.21
TEJ7ER		1.03440	-0.00017	-0.08	1.03453	0.00005	0.02
TMTT7R		1.03367	-0.00091	-0.40	1.03167	-0.00281	-1.19
TPZ6NU		1.03433	-0.00024	-0.10	1.03400	-0.00048	-0.20
UEHQLR		1.03267	-0.00191	-0.83	1.03133	-0.00315	-1.33
VTUN4X		1.03333	-0.00124	-0.54	1.03367	-0.00081	-0.34
VVYD4K		1.03813	0.00356	1.55	1.03797	0.00349	1.48
WBR7NL		1.03407	-0.00051	-0.22	1.03330	-0.00118	-0.50
WWAFR6		1.04000	0.00543	2.36	1.04000	0.00552	2.34
X773UL		1.03707	0.00249	1.09	1.03697	0.00249	1.05
Y6TV7J		1.03573	0.00116	0.51	1.03703	0.00255	1.08
Y9CNMR		1.03407	-0.00051	-0.22	1.03443	-0.00005	-0.02
YKN7XV		1.03153	-0.00304	-1.32	1.03083	-0.00365	-1.54
YMBRQJ		1.03607	0.00149	0.65	1.03650	0.00202	0.86
YMX3LL	*	1.03100	-0.00357	-1.56	1.03333	-0.00115	-0.49



Plastics Interlaboratory Testing Program

Report #114

Analysis 718

2nd Qtr 2020

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T67			Sample T68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YQCX44		1.03500	0.00043	0.19	1.03500	0.00052	0.22

Summary Statistics		Sample T67	Sample T68
Grand Means		1.034574 sp gr 23/23 C	1.034481 sp gr 23/23 C
Stnd Dev Btwn Labs		0.002295 sp gr 23/23 C	0.002361 sp gr 23/23 C
Statistics based on 66 of 71 reporting participants			

Sample T67: HIPS & Sample T68: HIPS

Comments on Assigned Data Flags for Test #718

- CYMDG7 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T67.
- 6CWJWD (X) Data for sample T67 are high.
-
- MZJD7U (X) - Data for sample T67 are low.
- CEV8AF (X) - Inconsistent in testing between samples.
- DYZAKQ (X) - Data for both samples are low. Inconsistent within the determinations of both samples.

Results by Methodology (as reported by laboratory)

Test Methodology	Sample T67 <i>HIPS</i>			Sample T68 <i>HIPS</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)	1.034531	0.002000	0.000	1.034000	0.002000	0.000	49/53
ASTM D792 Method B (not water)	1.034575	0.003000	0.000	1.034000	0.003000	0.000	4/4
ISO 1183	1.034733	0.002000	0.000	1.035000	0.002000	0.000	13/14



Plastics Interlaboratory Testing Program

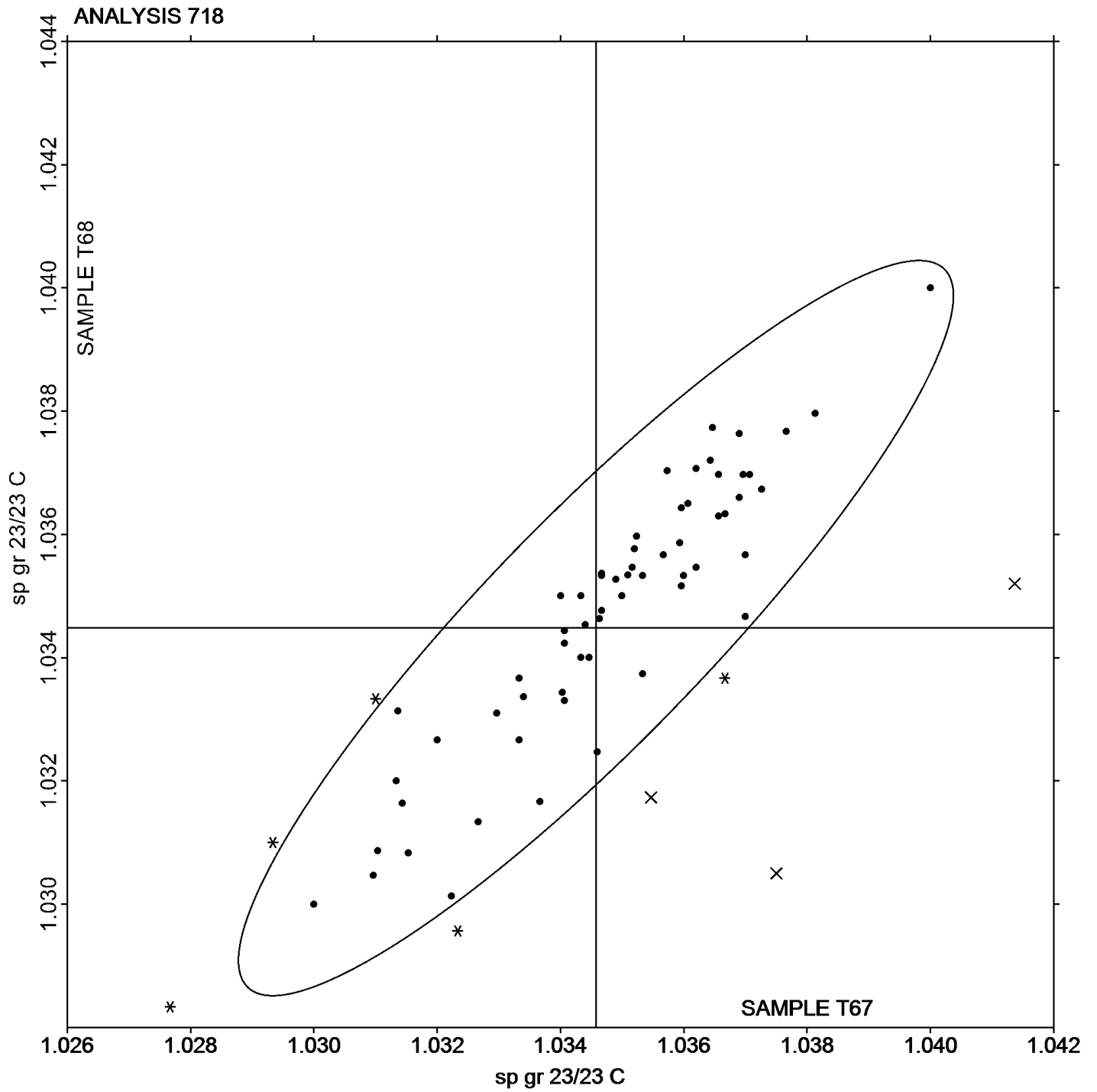
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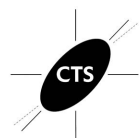
Analysis 718

2nd Qtr 2020

Specific Gravity - sp gr 23/23 C

Grand Mean Sample T67: 1.0346 sp gr 23/23 C Grand Mean Sample T68: 1.0345 sp gr 23/23 C





Plastics Interlaboratory Testing Program

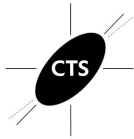
Report #114

Analysis 720

2nd Qtr 2020

Flexural Modulus- ksi

WebCode	Data Flag	Sample J67			Sample J68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2BA7DJ		326.9	-8.2	-0.39	321.6	-13.2	-0.62
2DZA7Q		333.1	-2.1	-0.10	328.3	-6.5	-0.31
42VZDX	*	376.2	41.0	1.96	385.5	50.7	2.38
4GUM2E		331.1	-4.1	-0.20	333.1	-1.7	-0.08
676EWH		325.4	-9.8	-0.47	327.4	-7.4	-0.35
78EQAD		348.8	13.6	0.65	346.7	11.8	0.56
7GMHGM		323.1	-12.1	-0.58	319.9	-14.9	-0.70
8M3FML		331.9	-3.3	-0.16	331.0	-3.8	-0.18
A3UXRA		339.4	4.2	0.20	337.1	2.3	0.11
ANAEWK		329.5	-5.7	-0.27	326.5	-8.3	-0.39
ANBC3A		348.1	12.9	0.62	347.5	12.7	0.60
CAK8XB		328.6	-6.6	-0.31	330.8	-4.0	-0.19
CUU88B		313.6	-21.6	-1.03	320.0	-14.9	-0.70
CYMDG7	X	351.6	16.4	0.79	335.4	0.6	0.03
ELNLMD		317.1	-18.1	-0.86	315.3	-19.5	-0.92
F2DTF6		339.6	4.4	0.21	337.8	3.0	0.14
F6D6C4		342.4	7.2	0.34	343.0	8.2	0.39
FAALT6		334.5	-0.6	-0.03	329.4	-5.4	-0.25
FLLWEA		337.6	2.4	0.12	338.8	4.0	0.19
GB22FL	*	281.7	-53.5	-2.55	279.1	-55.7	-2.62
GQCLED		313.4	-21.8	-1.04	315.1	-19.7	-0.93
H36LAE		338.4	3.2	0.15	334.6	-0.2	-0.01
HNJ89Z		327.5	-7.7	-0.37	329.3	-5.6	-0.26
K7CUL3		319.8	-15.4	-0.74	319.7	-15.1	-0.71
KVEVUW		338.2	3.0	0.14	336.7	1.9	0.09
KXHT34	X	257.2	-78.0	-3.72	260.6	-74.2	-3.49
LCJKN9	X	229.3	-105.9	-5.06	232.5	-102.3	-4.81
MLJU94		368.8	33.6	1.60	369.9	35.1	1.65
NURQNU		318.4	-16.8	-0.80	318.7	-16.2	-0.76
PAXA2C		348.6	13.4	0.64	349.7	14.9	0.70
PY3YT6		328.2	-7.0	-0.33	326.2	-8.6	-0.41
QQ3YU3		344.0	8.8	0.42	343.6	8.8	0.41
QT7RN2		296.4	-38.8	-1.85	296.0	-38.8	-1.83
R7THMV	*	357.2	22.0	1.05	367.2	32.4	1.52
R88P9D		369.6	34.4	1.64	367.2	32.4	1.53



Plastics Interlaboratory Testing Program

Report #114

Analysis 720

2nd Qtr 2020

Flexural Modulus- ksi

WebCode	Data Flag	<u>Sample J67</u>			<u>Sample J68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RE6ER3		309.3	-25.9	-1.24	315.7	-19.1	-0.90
T9YZNC		333.9	-1.3	-0.06	332.5	-2.3	-0.11
TEJ7ER		349.0	13.8	0.66	344.9	10.1	0.47
THK8GA		328.9	-6.3	-0.30	324.6	-10.2	-0.48
TP2XTT	*	373.3	38.1	1.82	361.8	27.0	1.27
UBYVHY		349.0	13.8	0.66	358.2	23.4	1.10
VAECB8		370.4	35.2	1.68	369.9	35.1	1.65
VVYD4K		311.9	-23.3	-1.11	317.5	-17.4	-0.82
W9FNAM		328.8	-6.4	-0.30	324.4	-10.4	-0.49
WVFPLQ		348.1	12.9	0.62	346.9	12.1	0.57
X773UL		343.0	7.8	0.37	343.6	8.8	0.41
XGDFV		289.2	-46.0	-2.20	293.4	-41.4	-1.95
Y6TV7J		296.0	-39.2	-1.87	296.8	-38.0	-1.79
YBKVR7		341.1	5.9	0.28	334.1	-0.8	-0.04
YKN7XV		354.2	19.0	0.91	356.7	21.9	1.03
YQCX44		354.5	19.3	0.92	349.5	14.7	0.69
YZ3JA2		366.8	31.6	1.51	374.0	39.2	1.84
ZMTXNN		331.4	-3.8	-0.18	327.1	-7.7	-0.36
ZPGEZG		338.3	3.1	0.15	331.3	-3.5	-0.17

Summary Statistics		
	<u>Sample J67</u>	<u>Sample J68</u>
Grand Means	335.18 ksi	334.81 ksi
Std Dev Btwn Labs	20.94 ksi	21.26 ksi

Statistics based on 51 of 54 reporting participants

Sample J67: HIPS & Sample J68: HIPS

Comments on Assigned Data Flags for Test #720

- CYMDG7 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J67.
- KXHT34 (X) - Data for both samples are low. Possible Systematic Error.
- LCJKN9 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

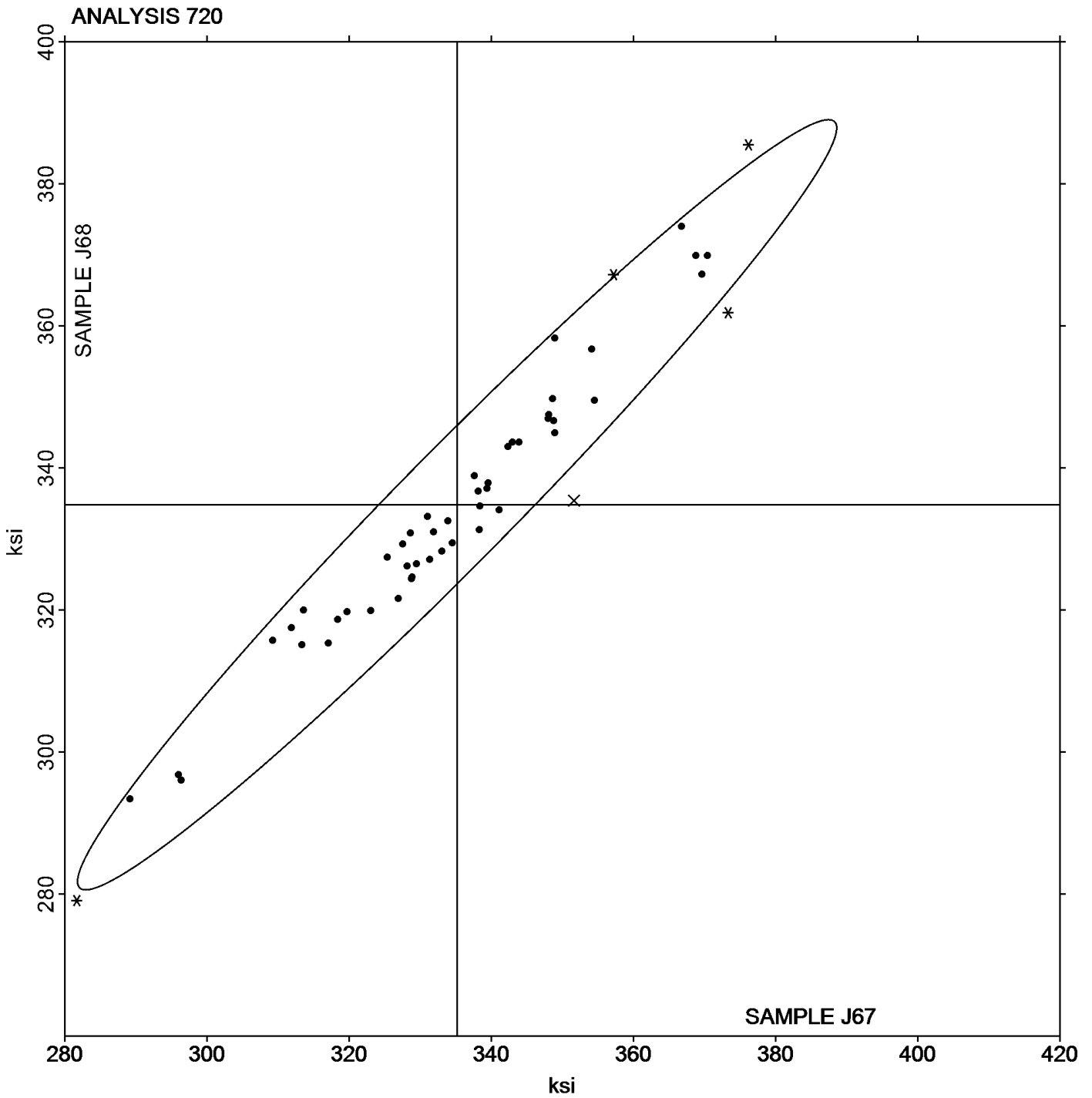
Report #114

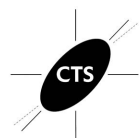
Analysis 720

2nd Qtr 2020

Flexural Modulus- ksi

Grand Mean Sample J67: 335.18 ksi Grand Mean Sample J68: 334.81 ksi





Plastics Interlaboratory Testing Program

Report #114

Analysis 721

2nd Qtr 2020

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J67			Sample J68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2BA7DJ		6,157	220	0.92	6,108	172	0.67
2DZA7Q		5,775	-162	-0.68	5,787	-148	-0.58
42VZDX		6,286	348	1.45	6,272	336	1.32
4GUM2E		5,979	41	0.17	6,014	79	0.31
676EWH		5,862	-76	-0.32	5,890	-46	-0.18
78EQAD		5,949	11	0.05	6,036	101	0.39
7GMHGM		5,729	-208	-0.87	5,714	-221	-0.87
8M3FML		5,865	-72	-0.30	5,879	-56	-0.22
A3UXRA		6,074	137	0.57	6,033	97	0.38
ANAEWK		5,735	-202	-0.84	5,669	-266	-1.04
CYMDG7		5,871	-67	-0.28	5,838	-97	-0.38
ELNLMD		5,822	-116	-0.48	5,778	-157	-0.62
F2DTF6		5,869	-69	-0.29	5,870	-66	-0.26
F6D6C4		5,782	-156	-0.65	5,804	-132	-0.51
FAALT6		5,665	-273	-1.14	5,566	-370	-1.45
FLLWEA		5,804	-134	-0.56	5,788	-148	-0.58
GB22FL	X	5,284	-653	-2.73	5,465	-471	-1.84
H36LAE		5,882	-55	-0.23	5,825	-110	-0.43
K7CUL3		6,177	240	1.00	6,186	251	0.98
KVEVUW		6,098	161	0.67	6,216	280	1.09
LCJKN9	X	2,741	-3,196	-13.35	2,789	-3,146	-12.31
MLJU94		6,220	283	1.18	6,204	269	1.05
MZJD7U		5,772	-166	-0.69	5,808	-128	-0.50
NURQNU		5,863	-75	-0.31	5,860	-75	-0.30
PAXA2C		6,179	242	1.01	6,270	334	1.31
QQ3YU3		5,684	-254	-1.06	5,708	-227	-0.89
QT7RN2		5,663	-275	-1.15	5,649	-287	-1.12
R7THMV	X	5,566	-371	-1.55	6,173	237	0.93
R88P9D	X	5,544	-394	-1.64	5,267	-668	-2.61
RE6ER3		5,615	-323	-1.35	5,713	-222	-0.87
T9YZNC		6,081	144	0.60	5,987	51	0.20
TP2XTT		6,379	441	1.84	6,353	418	1.63
VAECB8		6,136	199	0.83	6,149	214	0.84
VVYD4K		6,105	168	0.70	6,174	239	0.93
W9FNAM		5,871	-67	-0.28	5,790	-146	-0.57



Plastics Interlaboratory Testing Program

Report #114

Analysis 721

2nd Qtr 2020

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	<u>Sample J67</u>			<u>Sample J68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WVFPLQ		6,121	184	0.77	6,165	230	0.90
X773UL		5,816	-122	-0.51	5,828	-108	-0.42
XGDFV		5,415	-522	-2.18	5,362	-574	-2.25
Y6TV7J		5,668	-269	-1.12	5,620	-315	-1.23
YBKVR7		5,693	-245	-1.02	5,626	-309	-1.21
YKN7XV		6,037	99	0.41	6,134	199	0.78
YQCX44		5,906	-32	-0.13	5,842	-93	-0.36
YZ3JA2	*	6,518	580	2.42	6,478	542	2.12
ZMTXNN		6,379	442	1.84	6,430	494	1.93

Summary Statistics

	<u>Sample J67</u>	<u>Sample J68</u>
Grand Means	5,937.6 psi	5,935.6 psi
Stnd Dev Btwn Labs	239.5 psi	255.7 psi

Statistics based on 40 of 44 reporting participants

Sample J67: HIPS & Sample J68: HIPS

Comments on Assigned Data Flags for Test #721

- LCJKN9 (X) - Data for both samples are low. Possible Systematic Error.
- R7THMV (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- GB22FL (X) - Data for sample J67 are low.
- R88P9D (X) - Inconsistent in testing between samples.



Plastics Interlaboratory Testing Program

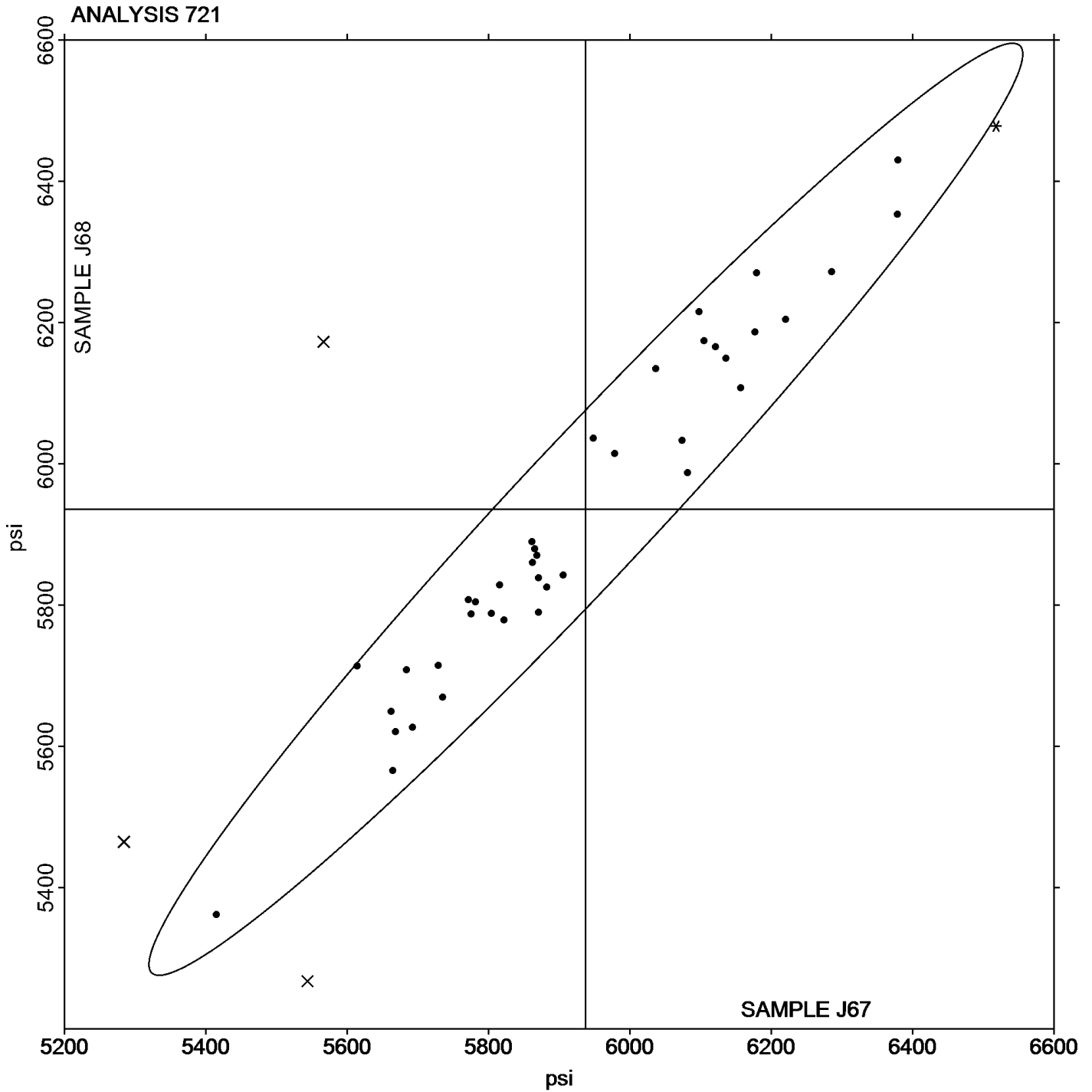
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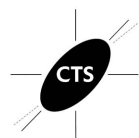
Analysis 721

2nd Qtr 2020

Flexural Stress at 5% Strain - psi

Grand Mean Sample J67: 5,937.60 psi Grand Mean Sample J68: 5,935.65 psi





Plastics Interlaboratory Testing Program

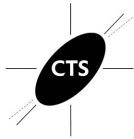
Report #114

Analysis 722

2nd Qtr 2020

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J67			Sample J68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2BA7DJ		6,162	315	0.94	6,108	263	0.77
2DZA7Q		5,784	-63	-0.19	5,793	-52	-0.15
42VZDX	*	5,061	-786	-2.33	5,190	-654	-1.91
4GUM2E		6,038	191	0.57	6,043	199	0.58
78EQAD		5,955	108	0.32	6,054	209	0.61
8M3FML		5,874	27	0.08	5,887	42	0.12
A3UXRA		6,098	251	0.75	6,068	224	0.66
ANAEWK		5,741	-106	-0.31	5,674	-170	-0.50
CAK8XB		5,861	14	0.04	5,641	-203	-0.59
CYMDG7		5,872	25	0.07	5,840	-5	-0.01
ELNLMD		5,833	-13	-0.04	5,796	-49	-0.14
F2DTF6		5,498	-348	-1.04	5,508	-336	-0.98
F6D6C4		5,794	-53	-0.16	5,818	-26	-0.08
FAALT6		5,671	-175	-0.52	5,575	-269	-0.79
GB22FL	*	5,337	-509	-1.51	5,545	-300	-0.88
H36LAE		5,890	43	0.13	5,818	-27	-0.08
K7CUL3		6,195	348	1.03	6,208	363	1.06
KVEVUW		6,215	368	1.09	6,384	539	1.58
KXHT34		6,120	273	0.81	6,127	283	0.83
LCJKN9	*	4,953	-894	-2.66	5,020	-824	-2.41
MLJU94		6,216	369	1.10	6,210	366	1.07
MZJD7U		5,773	-74	-0.22	5,860	15	0.04
NURQNU		5,825	-21	-0.06	5,826	-19	-0.05
PY3YT6		5,728	-119	-0.35	5,726	-118	-0.35
QQ3YU3		5,684	-163	-0.48	5,708	-136	-0.40
QT7RN2		5,961	114	0.34	5,946	102	0.30
R7THMV	X	5,558	-289	-0.86	6,162	318	0.93
R88P9D	*	5,563	-284	-0.84	5,308	-536	-1.57
RE6ER3		5,603	-244	-0.72	5,724	-120	-0.35
T9YZNC		6,243	396	1.18	6,111	266	0.78
TEJ7ER		6,035	188	0.56	5,985	141	0.41
THK8GA		5,831	-16	-0.05	5,844	0	0.00
UBYVHY		5,785	-62	-0.18	5,785	-60	-0.17
VAECB8		6,168	321	0.96	6,210	366	1.07
W9FNAM		5,884	37	0.11	5,812	-32	-0.09



Plastics Interlaboratory Testing Program

Report #114

Analysis 722

2nd Qtr 2020

Flexural Stress at Yield - psi

WebCode	Data Flag	<u>Sample J67</u>			<u>Sample J68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WVFPLQ		6,124	277	0.82	6,187	343	1.00
X773UL		5,828	-19	-0.06	5,840	-4	-0.01
Y6TV7J		5,668	-178	-0.53	5,623	-221	-0.65
YBKVR7		5,686	-161	-0.48	5,657	-188	-0.55
YKN7XV		6,048	201	0.60	6,141	297	0.87
YQCX44	*	5,031	-816	-2.42	4,923	-921	-2.69
YZ3JA2		6,542	695	2.07	6,500	656	1.92
ZMTXNN		6,386	539	1.60	6,438	594	1.74

Summary Statistics

	<u>Sample J67</u>	<u>Sample J68</u>
Grand Means	5,846.7 psi	5,844.3 psi
Std Dev Btwn Labs	336.5 psi	342.0 psi

Statistics based on 42 of 43 reporting participants

Sample J67: HIPS & Sample J68: HIPS

Comments on Assigned Data Flags for Test #722

R7THMV (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

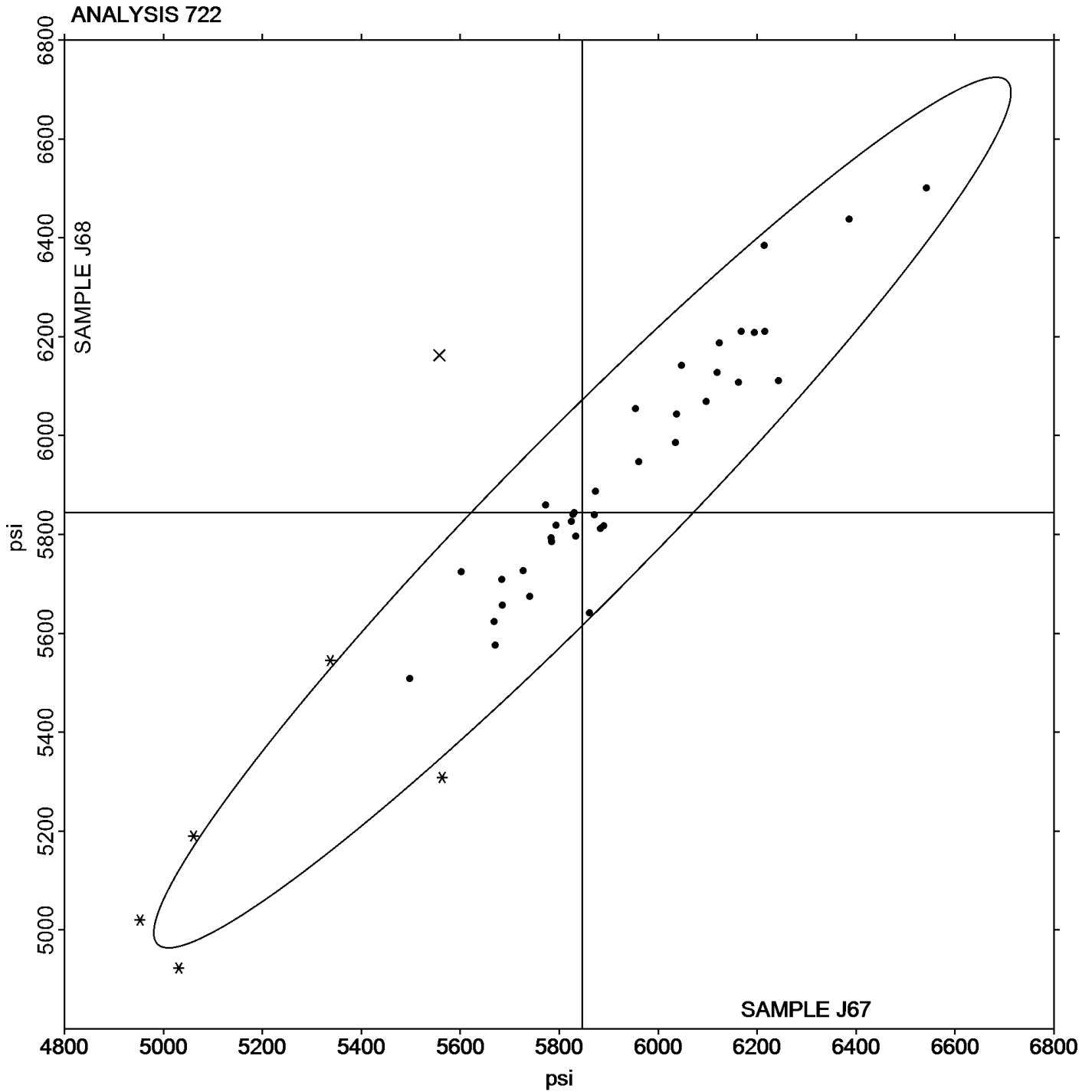
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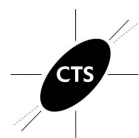
Analysis 722

2nd Qtr 2020

Flexural Stress at Yield - psi

Grand Mean Sample J67: 5,846.73 psi Grand Mean Sample J68: 5,844.29 psi





Plastics Interlaboratory Testing Program

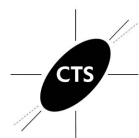
Report #114

Analysis 730

2nd Qtr 2020

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C67			Sample C68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		51.62	0.81	0.95	51.40	0.53	0.64
2LTHQG		50.35	-0.45	-0.53	50.39	-0.49	-0.59
42WTDR		49.66	-1.15	-1.34	50.11	-0.76	-0.92
4GUM2E		51.47	0.67	0.78	51.51	0.64	0.77
4VDJ7H		50.26	-0.55	-0.64	50.18	-0.69	-0.84
6CWJWD	X	51.71	0.91	1.06	52.91	2.03	2.46
6VM2ED		51.00	0.19	0.22	51.11	0.23	0.28
7EVEQZ		50.60	-0.20	-0.24	50.63	-0.24	-0.29
7GMHGM		49.56	-1.24	-1.46	49.97	-0.91	-1.10
83K4ZP		51.23	0.42	0.49	51.28	0.41	0.49
8EWFAD		51.99	1.19	1.39	52.13	1.25	1.52
8RY8TW		50.52	-0.29	-0.34	50.47	-0.40	-0.49
A2VR7A		49.48	-1.33	-1.55	49.98	-0.89	-1.08
ANBC3A		51.07	0.27	0.31	51.00	0.13	0.16
B4JM99		49.45	-1.35	-1.58	49.72	-1.15	-1.39
BCDQHW	X	52.61	1.81	2.12	50.63	-0.24	-0.29
BXU7WH		50.03	-0.78	-0.91	50.13	-0.75	-0.91
CEFBGG	X	48.88	-1.93	-2.26	50.69	-0.18	-0.22
CEV8AF		50.38	-0.43	-0.50	50.40	-0.47	-0.57
CUU88B		50.44	-0.37	-0.43	50.64	-0.23	-0.28
D8W3V6		51.24	0.43	0.51	51.22	0.35	0.42
DPCELA	*	50.14	-0.67	-0.78	49.48	-1.39	-1.69
ELNLMD		51.64	0.83	0.97	51.52	0.64	0.78
G3N96P		50.72	-0.09	-0.10	50.88	0.01	0.01
GQUU8E		50.42	-0.39	-0.45	50.22	-0.65	-0.79
HBGMM3		49.76	-1.05	-1.23	50.08	-0.79	-0.96
HBW8AK		49.93	-0.87	-1.02	50.13	-0.75	-0.90
HNJ89Z		49.93	-0.88	-1.03	49.85	-1.03	-1.24
KF3ER2	*	53.00	2.19	2.57	52.61	1.74	2.11
KVEVUW		50.50	-0.30	-0.36	50.86	-0.01	-0.02
LCXBBX		51.89	1.08	1.27	52.01	1.13	1.37
LFDJYX	*	50.98	0.17	0.20	51.74	0.86	1.04
MLJU94		51.70	0.90	1.05	51.46	0.58	0.71
NURQNU		52.06	1.25	1.47	52.02	1.15	1.39
P238XE		51.05	0.24	0.29	51.34	0.47	0.57



Plastics Interlaboratory Testing Program

Report #114

Analysis 730

2nd Qtr 2020

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C67			Sample C68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Q23LP7		50.55	-0.26	-0.30	50.17	-0.71	-0.86
QZRR2T		50.42	-0.39	-0.45	50.38	-0.49	-0.60
R3QHMY		51.97	1.17	1.37	51.76	0.89	1.08
RE6ER3		49.92	-0.89	-1.04	50.16	-0.71	-0.87
T9YZNC		50.52	-0.29	-0.34	50.81	-0.07	-0.08
TEJ7ER		50.75	-0.06	-0.07	51.17	0.30	0.36
TMTT7R	*	51.97	1.16	1.36	52.52	1.65	2.00
UEHQLR	X	48.74	-2.07	-2.42	50.04	-0.83	-1.01
UZCWURU		50.62	-0.19	-0.22	50.38	-0.49	-0.60
VNDFFX		50.20	-0.61	-0.71	50.12	-0.75	-0.91
VTUN4X		50.42	-0.39	-0.45	50.74	-0.13	-0.16
WE4B38	X	53.06	2.26	2.64	52.20	1.33	1.61
WNTYYV		51.59	0.79	0.92	51.62	0.75	0.90
XABNTJ		51.16	0.36	0.42	51.09	0.22	0.26
XGQAVW		50.94	0.13	0.16	50.92	0.05	0.06
Y6TV7J	X	49.46	-1.35	-1.58	46.40	-4.48	-5.43
YKN7XV	X	54.30	3.50	4.10	50.96	0.09	0.11
YZ3JA2	*	52.40	1.59	1.87	52.86	1.99	2.41
ZBD4CV		51.88	1.07	1.26	51.43	0.56	0.68
ZPGEZG		49.17	-1.64	-1.92	49.37	-1.51	-1.83
ZZLFNM		50.95	0.15	0.17	50.86	-0.01	-0.02

Summary Statistics		
	Sample C67	Sample C68
Grand Means	50.806 MPa	50.874 MPa
Std Dev Btwn Labs	0.853 MPa	0.825 MPa

Statistics based on 49 of 56 reporting participants

Sample C67: ABS/PC & Sample C68: ABS/PC



Comments on Assigned Data Flags for Test #730

BCDQHW (X) Inconsistent in testing between samples. Inconsistent within the determinations of sample C67.

-

6CWJWD (X) Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

-

YKN7XV (X) - Data for sample C67 are high. Inconsistent within the determinations of sample C67.

Y6TV7J (X) - Data for sample C68 are low. Inconsistent within the determinations of sample C68.

CEFBGG (X) - Inconsistent in testing between samples.

UEHQLR (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample C67.

WE4B38 (X) - Inconsistent in testing between samples.



Plastics Interlaboratory Testing Program

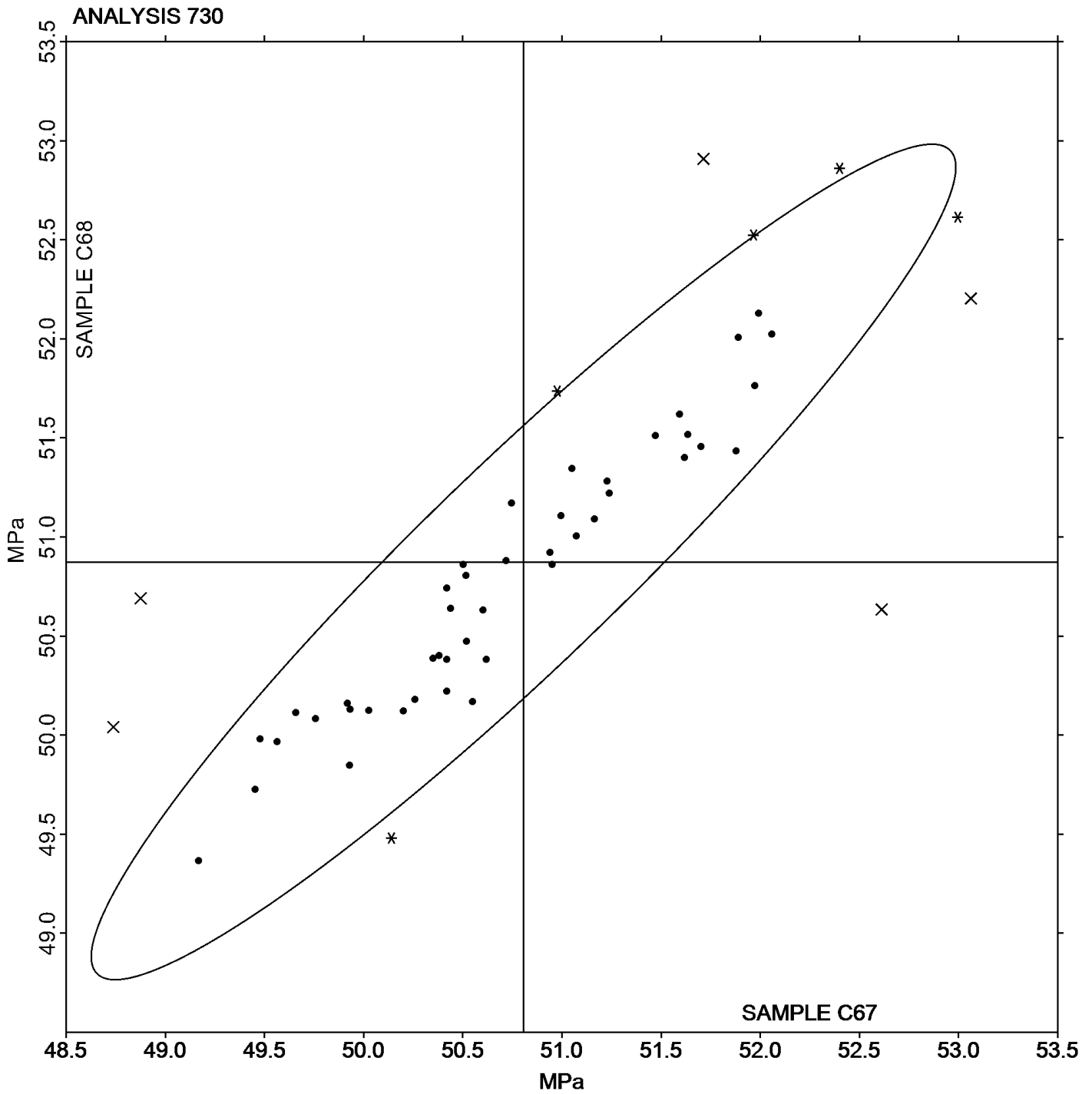
Report #114

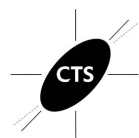
Analysis 730

2nd Qtr 2020

Tensile Stress at Yield - MPa

Grand Mean Sample C67: 50.806 MPa Grand Mean Sample C68: 50.874 MPa





Plastics Interlaboratory Testing Program

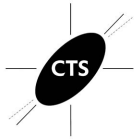
Report #114

Analysis 731

2nd Qtr 2020

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C67			Sample C68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		45.34	-1.30	-0.54	45.10	-0.91	-0.57
2LTHQG		49.02	2.38	0.98	45.32	-0.69	-0.43
42WTDR		45.06	-1.58	-0.65	44.70	-1.31	-0.82
4GUM2E		45.65	-0.99	-0.41	46.37	0.36	0.23
6CWJWD	*	46.82	0.18	0.08	50.08	4.07	2.54
6VM2ED		44.74	-1.90	-0.79	45.10	-0.92	-0.57
7EVEQZ		44.07	-2.57	-1.06	43.98	-2.04	-1.27
7GMHGM		50.65	4.02	1.66	45.34	-0.68	-0.42
83K4ZP		45.11	-1.53	-0.63	45.57	-0.44	-0.27
8EWFAD		45.49	-1.15	-0.48	47.20	1.18	0.74
8RY8TW		44.56	-2.08	-0.86	45.18	-0.83	-0.52
A2VR7A		44.68	-1.96	-0.81	44.80	-1.21	-0.76
B4JM99		43.29	-3.35	-1.39	43.77	-2.24	-1.40
BCDQHW	*	52.56	5.92	2.45	46.21	0.20	0.12
BXU7WH		45.03	-1.61	-0.67	45.12	-0.89	-0.56
CEFBGG		49.22	2.58	1.07	46.50	0.49	0.30
CEV8AF		46.24	-0.40	-0.17	44.74	-1.27	-0.80
D8W3V6		45.62	-1.02	-0.42	45.32	-0.69	-0.43
DPCELA		44.24	-2.40	-0.99	43.56	-2.45	-1.53
ELNLMD		44.83	-1.81	-0.75	46.48	0.47	0.29
G3N96P		48.11	1.47	0.61	47.49	1.48	0.92
GQUU8E		45.65	-0.98	-0.41	46.72	0.71	0.44
HBW8AK		52.64	6.00	2.48	47.43	1.42	0.89
KF3ER2		46.79	0.15	0.06	47.72	1.70	1.06
KVEVUW	*	52.46	5.82	2.41	46.51	0.50	0.31
LCXBBX		46.37	-0.27	-0.11	46.67	0.65	0.41
LFDJYX		49.49	2.85	1.18	47.04	1.02	0.64
MLJU94		44.45	-2.19	-0.91	44.56	-1.45	-0.91
NURQNU		48.64	2.00	0.83	48.12	2.11	1.32
P238XE		49.69	3.05	1.26	47.50	1.49	0.93
Q23LP7		46.08	-0.56	-0.23	48.04	2.02	1.26
QZRR2T		45.18	-1.46	-0.60	45.10	-0.91	-0.57
R3QHMY		46.14	-0.49	-0.20	47.12	1.11	0.69
RE6ER3		49.62	2.98	1.23	46.48	0.47	0.29
T9YZNC		44.47	-2.17	-0.90	45.58	-0.43	-0.27



Plastics Interlaboratory Testing Program

Report #114

Analysis 731

2nd Qtr 2020

Tensile Stress at Break - MPa

WebCode	Data Flag	<u>Sample C67</u>			<u>Sample C68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
TMTT7R		50.01	3.38	1.40	48.06	2.04	1.28
UEHQLR	X	51.82	5.19	2.15	40.15	-5.86	-3.67
UZCWRU		47.68	1.04	0.43	49.00	2.99	1.87
VNDFFX		43.48	-3.16	-1.31	42.66	-3.35	-2.10
VTUN4X		44.24	-2.40	-0.99	44.74	-1.27	-0.80
WE4B38	X	47.26	0.62	0.26	51.67	5.66	3.54
WNTYYV		45.47	-1.17	-0.48	45.70	-0.32	-0.20
XABNTJ		45.97	-0.66	-0.28	46.68	0.67	0.42
XGQAVW		46.22	-0.42	-0.17	45.76	-0.25	-0.16
Y6TV7J		46.03	-0.61	-0.25	44.53	-1.48	-0.92
YKN7XV		48.16	1.52	0.63	46.34	0.32	0.20
YZ3JA2		48.18	1.54	0.64	49.08	3.07	1.92
ZBD4CV		44.24	-2.40	-0.99	42.43	-3.58	-2.24
ZPGEZG		45.93	-0.71	-0.29	46.22	0.21	0.13
ZZLFNM		45.05	-1.58	-0.66	44.92	-1.09	-0.68

Summary Statistics		
	<u>Sample C67</u>	<u>Sample C68</u>
Grand Means	46.639 MPa	46.013 MPa
Stnd Dev Btwn Labs	2.416 MPa	1.600 MPa
Statistics based on 48 of 50 reporting participants		

Sample C67: ABS/PC & Sample C68: ABS/PC

Comments on Assigned Data Flags for Test #731

UEHQLR (X) - Data for sample C68 are low. Inconsistent within the determinations of sample C68.

WE4B38 (X) - Data for sample C68 are high.



Plastics Interlaboratory Testing Program

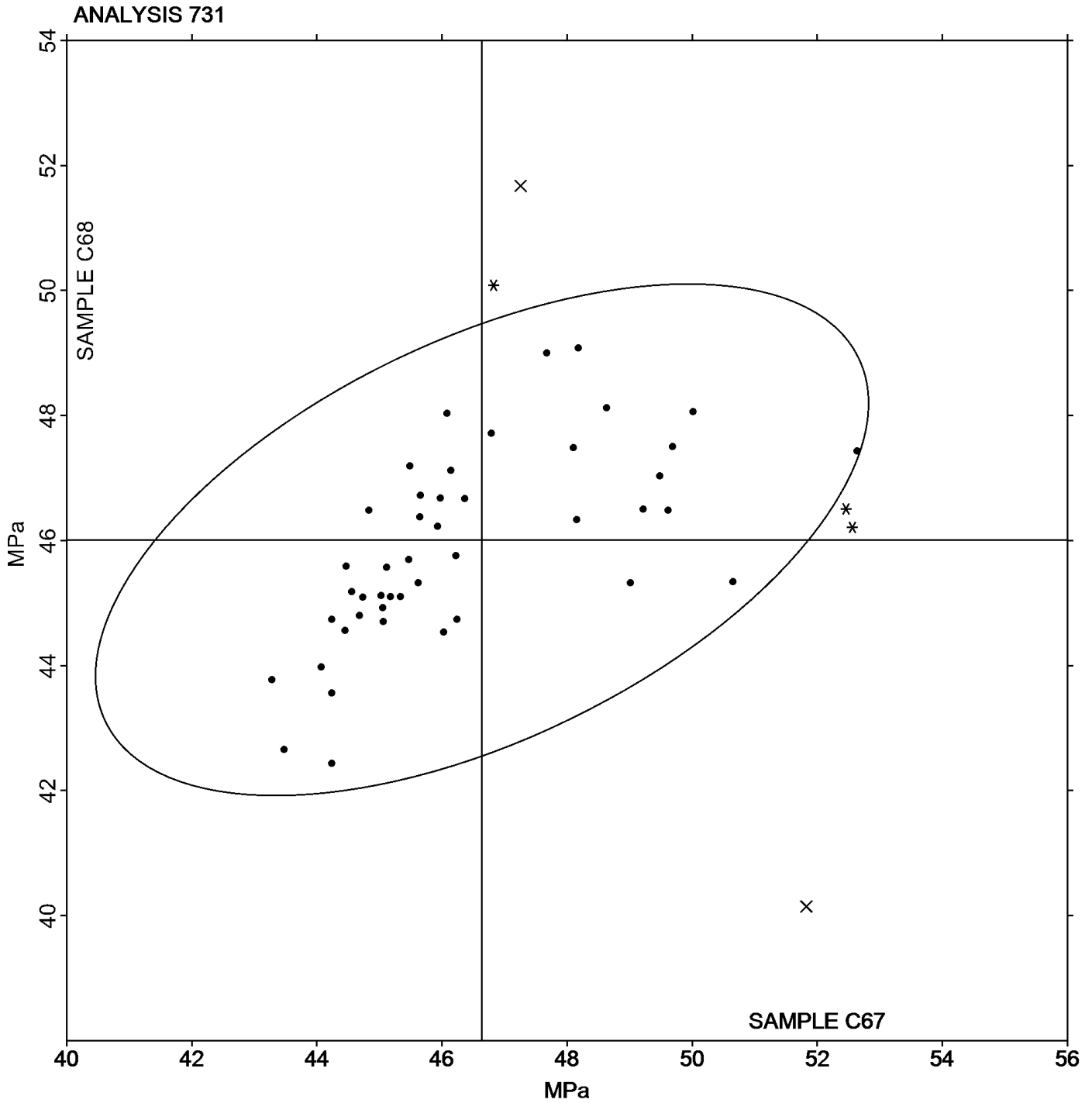
Report #114

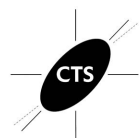
Analysis 731

2nd Qtr 2020

Tensile Stress at Break - MPa

Grand Mean Sample C67: 46.639 MPa Grand Mean Sample C68: 46.013 MPa





Plastics Interlaboratory Testing Program

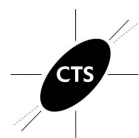
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Analysis 732

2nd Qtr 2020

Percent Strain at Yield

WebCode	Data Flag	Sample C67			Sample C68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		4.720	0.015	0.08	4.640	-0.092	-0.44
2LTHQG		4.512	-0.193	-1.03	4.580	-0.152	-0.73
42WTDR		4.780	0.075	0.40	4.872	0.140	0.67
4GUM2E		4.732	0.027	0.14	4.726	-0.006	-0.03
4VDJ7H		4.610	-0.095	-0.51	4.500	-0.232	-1.11
6VM2ED		4.792	0.087	0.46	4.756	0.024	0.11
7EVEQZ		4.739	0.034	0.18	4.729	-0.003	-0.01
7GMHGM		4.628	-0.077	-0.41	4.712	-0.020	-0.10
83K4ZP		4.460	-0.245	-1.31	4.440	-0.292	-1.40
8EWFAD		4.885	0.180	0.96	5.032	0.300	1.44
8RY8TW		4.686	-0.020	-0.10	4.795	0.062	0.30
A2VR7A		4.622	-0.083	-0.44	4.712	-0.020	-0.10
B4JM99	X	3.437	-1.268	-6.78	3.529	-1.203	-5.77
BXU7WH	X	22.604	17.898	95.72	23.732	19.000	91.15
CEFBGG		4.622	-0.083	-0.44	4.704	-0.028	-0.14
CEV8AF		4.840	0.135	0.72	4.820	0.088	0.42
D8W3V6		4.720	0.015	0.08	4.620	-0.112	-0.54
DPCELA	X	5.492	0.787	4.21	4.786	0.054	0.26
ELNLMD		4.520	-0.185	-0.99	4.626	-0.106	-0.51
G3N96P		4.716	0.011	0.06	4.752	0.020	0.09
GQUU8E		4.822	0.117	0.62	4.836	0.104	0.50
HBGMM3		4.598	-0.107	-0.57	4.576	-0.156	-0.75
HBW8AK		4.564	-0.141	-0.75	4.674	-0.058	-0.28
HNJ89Z		4.540	-0.165	-0.88	4.680	-0.052	-0.25
KF3ER2		4.747	0.042	0.22	4.741	0.009	0.04
KVEVUW		4.692	-0.013	-0.07	4.762	0.030	0.14
LCXBBX		4.588	-0.117	-0.63	4.572	-0.160	-0.77
LFDJYX		4.574	-0.131	-0.70	4.656	-0.076	-0.37
MLJU94		4.914	0.209	1.12	4.940	0.208	1.00
NURQNU		4.920	0.215	1.15	4.982	0.250	1.20
P238XE		4.610	-0.095	-0.51	4.720	-0.012	-0.06
Q23LP7	X	5.004	0.299	1.60	4.806	0.074	0.35
QZRR2T		4.680	-0.025	-0.13	4.740	0.008	0.04
R3QHMY		4.896	0.191	1.02	4.866	0.134	0.64
RE6ER3		4.770	0.065	0.35	4.862	0.130	0.62



Plastics Interlaboratory Testing Program

Report #114

Analysis 732

2nd Qtr 2020

Percent Strain at Yield

WebCode	Data Flag	<u>Sample C67</u>			<u>Sample C68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
T9YZNC	X	4.198	-0.507	-2.71	3.912	-0.820	-3.93
TEJ7ER		4.736	0.031	0.17	4.770	0.038	0.18
TMTT7R	*	5.254	0.549	2.94	5.292	0.560	2.69
UEHQLR	X	8.102	3.397	18.17	8.168	3.436	16.48
UZCWRU		4.466	-0.239	-1.28	4.434	-0.298	-1.43
VNDFFX	*	5.156	0.451	2.41	5.318	0.586	2.81
VTUN4X	X	44.240	39.535	211.43	44.740	40.008	191.93
WE4B38		4.600	-0.105	-0.56	4.472	-0.260	-1.25
WNTYYV		4.886	0.181	0.97	4.874	0.142	0.68
XABNTJ		4.914	0.209	1.12	4.884	0.152	0.73
XGQAVW		4.746	0.041	0.22	4.760	0.028	0.13
Y6TV7J		4.476	-0.229	-1.23	4.486	-0.246	-1.18
YKN7XV		4.770	0.065	0.35	4.792	0.060	0.29
YZ3JA2	*	4.172	-0.533	-2.85	4.130	-0.602	-2.89
ZBD4CV	X	5.506	0.801	4.28	5.340	0.608	2.92
ZZLFNM		4.646	-0.059	-0.32	4.650	-0.082	-0.39

Summary Statistics		
	<u>Sample C67</u>	<u>Sample C68</u>
Grand Means	4.7051 Percent	4.7322 Percent
Std Dev Btwn Labs	0.1870 Percent	0.2085 Percent
Statistics based on 43 of 51 reporting participants		

Sample C67: ABS/PC & Sample C68: ABS/PC

Comments on Assigned Data Flags for Test #732

- T9YZNC (X) - Data for both samples are low. Inconsistent within the determinations of both samples.
- Q23LP7 (X) - Inconsistent in testing between samples.
- ZBD4CV (X) - Data for both samples are high. Inconsistent within the determinations of sample C68.
- B4JM99 (X) - Data for both samples are low. Possible Systematic Error.
- BXU7WH (X) - Extreme data.
- VTUN4X (X) - Extreme data.
- UEHQLR (X) - Extreme data.
- DPCELA (X) - Data for sample C67 are high. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

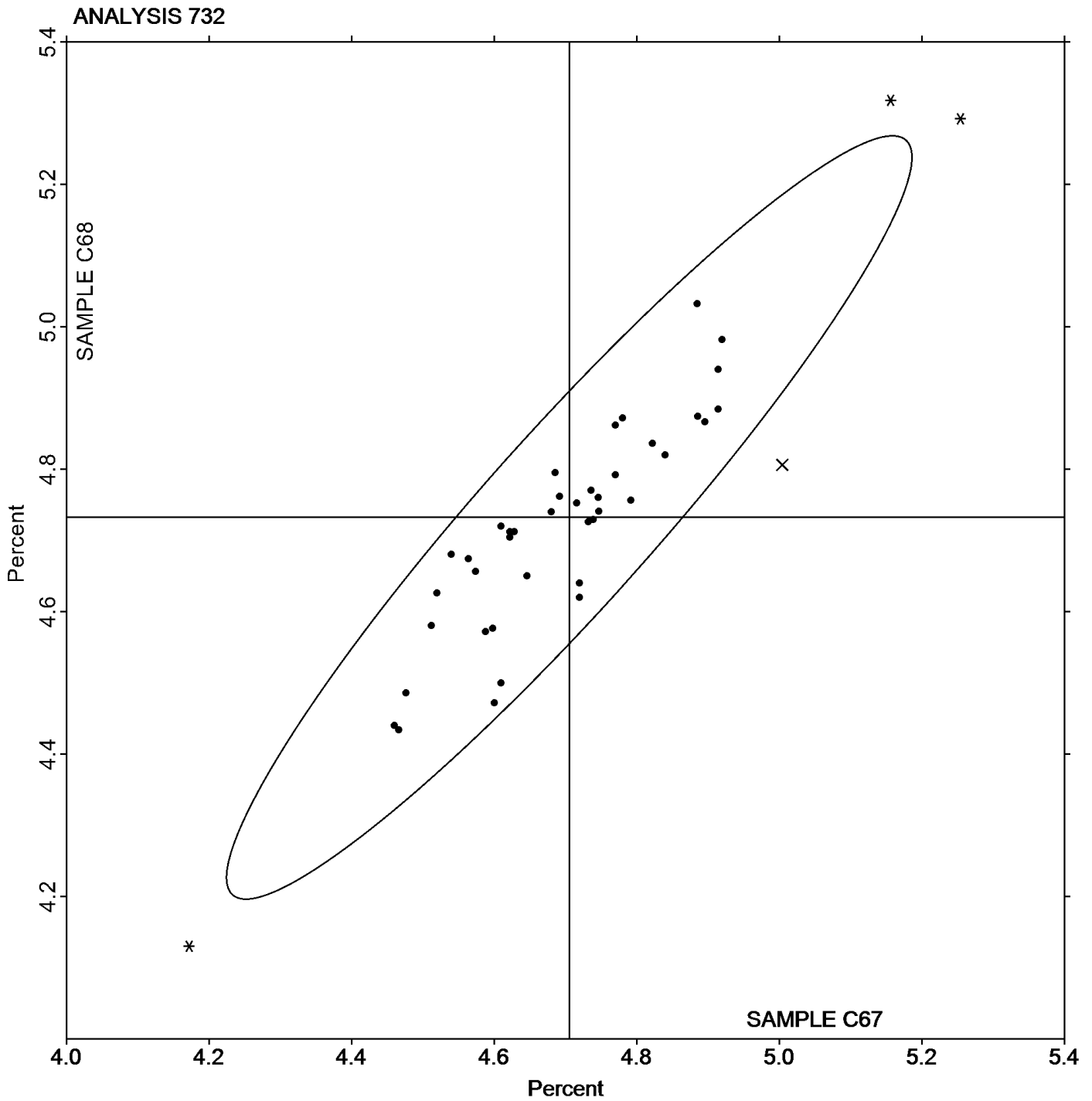
Analysis 732

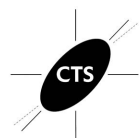
Percent Strain at Yield

Report #114

2nd Qtr 2020

Grand Mean Sample C67: 4.7051 Percent Grand Mean Sample C68: 4.7322 Percent





Plastics Interlaboratory Testing Program

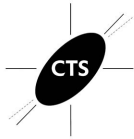
Report #114

Analysis 734

2nd Qtr 2020

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C67			Sample C68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		2,292	54	0.37	2,278	42	0.29
42WTDR		2,206	-32	-0.22	2,216	-21	-0.14
4GUM2E		2,218	-20	-0.14	2,208	-28	-0.19
4VDJ7H		2,192	-47	-0.32	2,173	-63	-0.44
6CWJWD		2,189	-49	-0.34	2,159	-77	-0.54
6VM2ED		2,261	22	0.15	2,285	49	0.34
7EVEQZ		2,173	-66	-0.45	2,183	-53	-0.37
7GMHGM		2,268	30	0.20	2,239	3	0.02
83K4ZP		2,248	10	0.07	2,284	48	0.33
8EWFAD	X	2,639	401	2.73	2,310	74	0.51
8RY8TW		2,351	113	0.77	2,278	42	0.29
A2VR7A		2,248	10	0.07	2,207	-29	-0.20
B4JM99		2,486	248	1.69	2,500	264	1.83
CEFBGG		2,561	323	2.20	2,587	351	2.43
CEV8AF		2,270	31	0.21	2,258	22	0.15
D8W3V6		2,206	-33	-0.22	2,206	-30	-0.21
DPCELA		2,238	-1	-0.01	2,259	23	0.16
ELNLMD		2,328	90	0.61	2,325	88	0.61
G3N96P		2,154	-85	-0.58	2,181	-55	-0.38
GQUU8E		2,167	-72	-0.49	2,179	-57	-0.40
HBGMM3		2,306	67	0.46	2,285	49	0.34
HBW8AK		2,156	-83	-0.56	2,139	-97	-0.67
HNJ89Z		2,144	-94	-0.64	2,150	-86	-0.60
KF3ER2		2,352	114	0.77	2,300	64	0.44
KVEVUW		2,284	46	0.31	2,368	132	0.92
LCXBBX		2,370	132	0.90	2,337	101	0.70
LFDJYX		2,397	158	1.08	2,385	149	1.03
MLJU94		1,991	-247	-1.69	2,069	-167	-1.16
NURQNU		2,176	-62	-0.43	2,154	-83	-0.57
P238XE		2,344	105	0.72	2,303	67	0.46
Q23LP7	*	1,996	-243	-1.65	2,088	-148	-1.03
QZRR2T	*	2,640	401	2.74	2,665	429	2.97
R3QHMY		2,150	-88	-0.60	2,153	-83	-0.58
RE6ER3		2,288	50	0.34	2,250	14	0.10
T9YZNC		2,185	-54	-0.37	2,166	-70	-0.49



Plastics Interlaboratory Testing Program

Report #114

Analysis 734

2nd Qtr 2020

Modulus of Elasticity - MPa

WebCode	Data Flag	<u>Sample C67</u>			<u>Sample C68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
TMTT7R	X	1,634	-604	-4.12	1,795	-442	-3.06
UEHQLR	X	1,477	-761	-5.19	1,479	-757	-5.25
UZCWURU	X	2,349	110	0.75	2,506	270	1.87
VNDFFX	*	1,963	-275	-1.88	1,903	-333	-2.31
VTUN4X		2,036	-203	-1.38	2,046	-190	-1.32
WE4B38		1,887	-352	-2.40	1,900	-336	-2.33
WNTYYV		2,224	-15	-0.10	2,213	-24	-0.16
XABNTJ		2,187	-51	-0.35	2,206	-31	-0.21
XGQAVW		2,277	39	0.26	2,270	34	0.24
Y6TV7J		2,258	20	0.13	2,188	-48	-0.33
YKN7XV		2,380	141	0.96	2,305	68	0.47
YZ3JA2		2,402	163	1.11	2,428	192	1.33
ZBD4CV		2,011	-228	-1.55	2,034	-202	-1.40
ZZLFNM		2,272	34	0.23	2,320	83	0.58

Summary Statistics

	<u>Sample C67</u>	<u>Sample C68</u>
Grand Means	2,238.6 MPa	2,236.2 MPa
Stnd Dev Btwn Labs	146.8 MPa	144.3 MPa

Statistics based on 45 of 49 reporting participants

Sample C67: ABS/PC & Sample C68: ABS/PC

Comments on Assigned Data Flags for Test #734

8EWFAD (X) - Data for sample C67 are high. Inconsistent within the determinations of both samples.

TMTT7R (X) - Data for both samples are low. Inconsistent within the determinations of sample C67.

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

UZCWURU (X) Inconsistent in testing between samples. Inconsistent within the determinations of sample C68.



Plastics Interlaboratory Testing Program

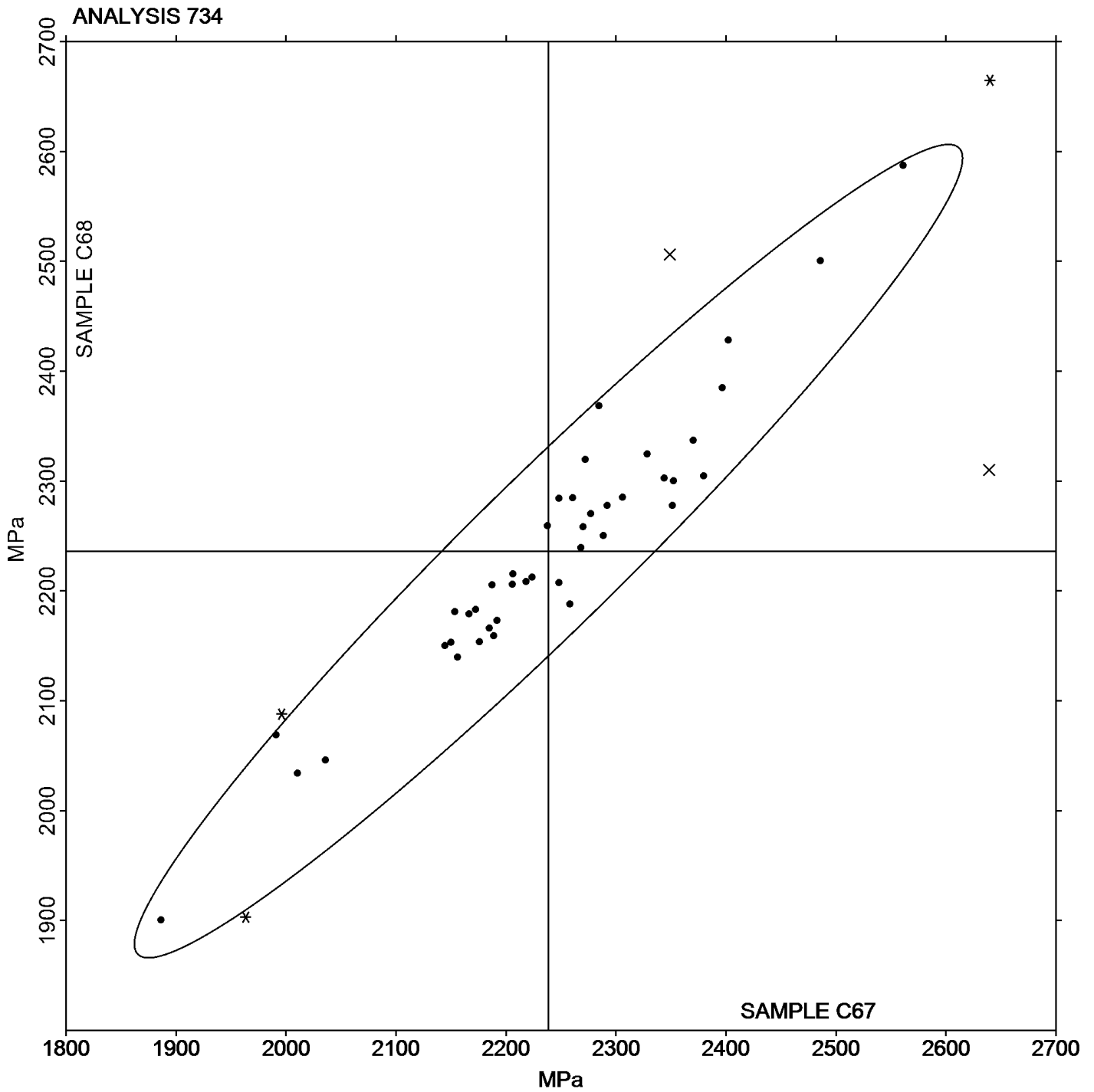
Report #114

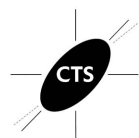
Analysis 734

2nd Qtr 2020

Modulus of Elasticity - MPa

Grand Mean Sample C67: 2,238.58 MPa Grand Mean Sample C68: 2,236.21 MPa





Plastics Interlaboratory Testing Program

Report #114

Analysis 736

2nd Qtr 2020

Flexural Modulus - MPa

WebCode	Data Flag	Sample K67			Sample K68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		2,286	21	0.27	2,263	2	0.02
42WTDR		2,078	-187	-2.43	2,077	-184	-2.23
4GUM2E		2,232	-33	-0.43	2,241	-20	-0.24
4VDJ7H		2,132	-133	-1.73	2,124	-137	-1.66
6CWJWD		2,280	15	0.19	2,247	-14	-0.17
6VM2ED		2,283	17	0.23	2,279	18	0.21
78EQAD		2,333	67	0.87	2,336	75	0.91
7EVEQZ		2,273	7	0.10	2,259	-2	-0.03
7GMHGM		2,193	-73	-0.94	2,166	-96	-1.15
83K4ZP		2,162	-104	-1.35	2,142	-119	-1.44
8EWFAD		2,270	5	0.06	2,274	13	0.16
A2VR7A		2,310	44	0.58	2,294	33	0.39
B4JM99	*	2,047	-218	-2.84	2,045	-216	-2.61
BCDQHW		2,334	69	0.89	2,337	76	0.92
CEV8AF		2,292	27	0.35	2,316	55	0.66
DPCELA	X	2,006	-259	-3.37	2,074	-187	-2.26
ELNLMD		2,229	-37	-0.48	2,189	-72	-0.87
HBGMM3		2,255	-11	-0.14	2,254	-8	-0.09
HBW8AK	X	1,910	-355	-4.61	1,905	-357	-4.31
KF3ER2		2,278	13	0.16	2,278	17	0.20
LCXBBX		2,277	12	0.15	2,258	-3	-0.04
MLJU94		2,324	59	0.76	2,312	50	0.61
NURQNU		2,222	-43	-0.56	2,231	-30	-0.36
P238XE		2,357	92	1.19	2,353	92	1.11
Q23LP7		2,282	16	0.21	2,269	8	0.10
QZRR2T		2,371	105	1.37	2,372	111	1.34
R3QHMY		2,298	32	0.42	2,288	27	0.33
T9YZNC	*	2,288	23	0.29	2,228	-33	-0.40
TEJ7ER		2,195	-71	-0.92	2,209	-52	-0.63
TMTT7R		2,257	-8	-0.11	2,246	-15	-0.18
UEHQLR	X	80	-2,185	-28.38	80	-2,182	-26.37
UZCWRU		2,346	81	1.05	2,341	80	0.97
VNDFFX		2,353	88	1.14	2,364	102	1.24
WE4B38	*	2,376	111	1.44	2,426	165	1.99
WNTYYV		2,261	-4	-0.06	2,268	7	0.09



Plastics Interlaboratory Testing Program

Report #114

Analysis 736

2nd Qtr 2020

Flexural Modulus - MPa

WebCode	Data Flag	<u>Sample K67</u>			<u>Sample K68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WWAFR6		2,266	1	0.01	2,299	38	0.46
XABNTJ		2,302	37	0.48	2,326	65	0.78
XGQAVW		2,331	66	0.86	2,323	61	0.74
Y6TV7J		2,121	-144	-1.87	2,108	-154	-1.86
YKN7XV		2,279	14	0.18	2,279	18	0.22
YZ3JA2	X	2,544	279	3.62	2,482	221	2.67
ZBD4CV		2,312	47	0.61	2,303	42	0.51

Summary Statistics		<u>Sample K67</u>	<u>Sample K68</u>
Grand Means		2,265.4 MPa	2,261.1 MPa
Std Dev Btwn Labs		77.0 MPa	82.7 MPa
Statistics based on 38 of 42 reporting participants			

Sample K67: ABS/PC & Sample K68: ABS/PC

Comments on Assigned Data Flags for Test #736

- UEHQLR (X) - Extreme data.
- DPCELA (X) - Data for sample K67 are low. Inconsistent within the determinations of sample K68.
- YZ3JA2 (X) - Data for sample K67 are high. Inconsistent within the determinations of sample K67.
- HBW8AK (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

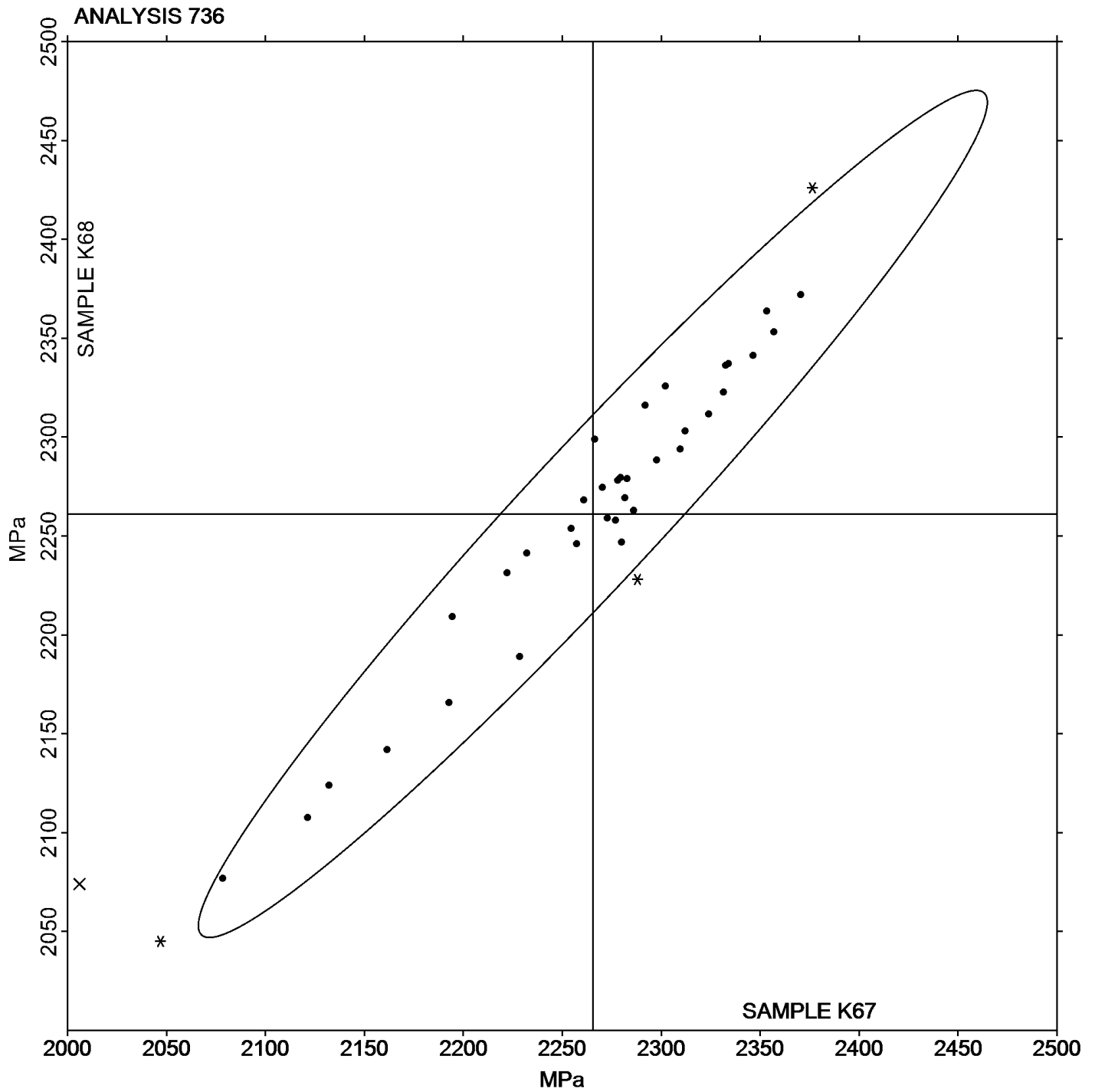
Analysis 736

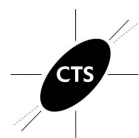
Flexural Modulus - MPa

Report #114

2nd Qtr 2020

Grand Mean Sample K67: 2,265.43 MPa Grand Mean Sample K68: 2,261.14 MPa





Plastics Interlaboratory Testing Program

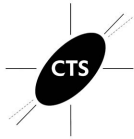
Report #114

Analysis 737

2nd Qtr 2020

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K67			Sample K68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		68.72	-1.19	-0.56	68.30	-1.45	-0.68
2LTHQG		66.83	-3.08	-1.44	67.26	-2.49	-1.16
42WTDR		66.36	-3.55	-1.66	66.54	-3.21	-1.50
4GUM2E		69.57	-0.34	-0.16	70.11	0.36	0.17
4VDJ7H		68.59	-1.32	-0.62	68.56	-1.19	-0.55
6CWJWD		65.76	-4.15	-1.94	65.03	-4.72	-2.20
6VM2ED		70.71	0.80	0.38	70.77	1.02	0.47
78EQAD		70.31	0.40	0.19	70.06	0.31	0.14
7EVEQZ		68.93	-0.98	-0.46	68.68	-1.07	-0.50
7GMHGM		67.83	-2.08	-0.97	67.35	-2.40	-1.12
83K4ZP		68.42	-1.48	-0.70	69.15	-0.60	-0.28
8EWFAD		68.22	-1.68	-0.79	68.03	-1.72	-0.80
A2VR7A		64.68	-5.23	-2.45	64.50	-5.25	-2.45
BCDQHW		72.89	2.99	1.40	73.08	3.32	1.55
CEV8AF		71.78	1.88	0.88	71.96	2.21	1.03
DPCELA	X	68.62	-1.29	-0.61	70.36	0.61	0.28
ELNLMD		69.42	-0.49	-0.23	68.82	-0.93	-0.43
HBGMM3		69.33	-0.58	-0.27	69.26	-0.49	-0.23
HBW8AK	X	58.99	-10.92	-5.12	58.96	-10.79	-5.03
KF3ER2		70.82	0.91	0.43	70.28	0.53	0.25
LCXBBX		71.06	1.16	0.54	70.92	1.17	0.54
MLJU94		72.16	2.25	1.06	72.19	2.44	1.13
NURQNU		70.13	0.22	0.10	69.89	0.14	0.06
P238XE		71.38	1.48	0.69	71.11	1.36	0.63
Q23LP7		69.51	-0.40	-0.19	69.13	-0.62	-0.29
QZRR2T		69.40	-0.51	-0.24	69.41	-0.34	-0.16
R3QHMY		71.38	1.47	0.69	71.58	1.82	0.85
T9YZNC	*	70.58	0.67	0.32	69.06	-0.70	-0.32
TMTT7R		71.41	1.50	0.71	70.97	1.22	0.57
UEHQLR		68.24	-1.67	-0.78	67.51	-2.24	-1.04
VNDFFX		71.92	2.01	0.94	71.36	1.60	0.75
WE4B38	X	74.96	5.05	2.37	76.23	6.47	3.01
WNTYYV		71.83	1.93	0.90	71.63	1.87	0.87
WWAFR6		72.54	2.63	1.23	72.62	2.87	1.33
XABNTJ		69.26	-0.65	-0.30	69.87	0.12	0.05



Plastics Interlaboratory Testing Program

Report #114

Analysis 737

2nd Qtr 2020

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	<u>Sample K67</u>			<u>Sample K68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
XGQAVW		70.60	0.69	0.32	70.36	0.61	0.28
Y6TV7J		68.37	-1.54	-0.72	68.42	-1.33	-0.62
YKN7XV		70.52	0.62	0.29	70.83	1.08	0.50
YZ3JA2	*	75.46	5.55	2.60	75.00	5.25	2.44
ZBD4CV		71.63	1.72	0.81	71.26	1.51	0.70

Summary Statistics		
	<u>Sample K67</u>	<u>Sample K68</u>
Grand Means	69.907 MPa	69.753 MPa
Std Dev Btwn Labs	2.132 MPa	2.148 MPa

Statistics based on 37 of 40 reporting participants

Sample K67: ABS/PC & Sample K68: ABS/PC

Comments on Assigned Data Flags for Test #737

- DPCELA (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample K68.
- WE4B38 (X) - Data for sample K68 are high. Inconsistent within the determinations of sample K68.
- HBW8AK (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

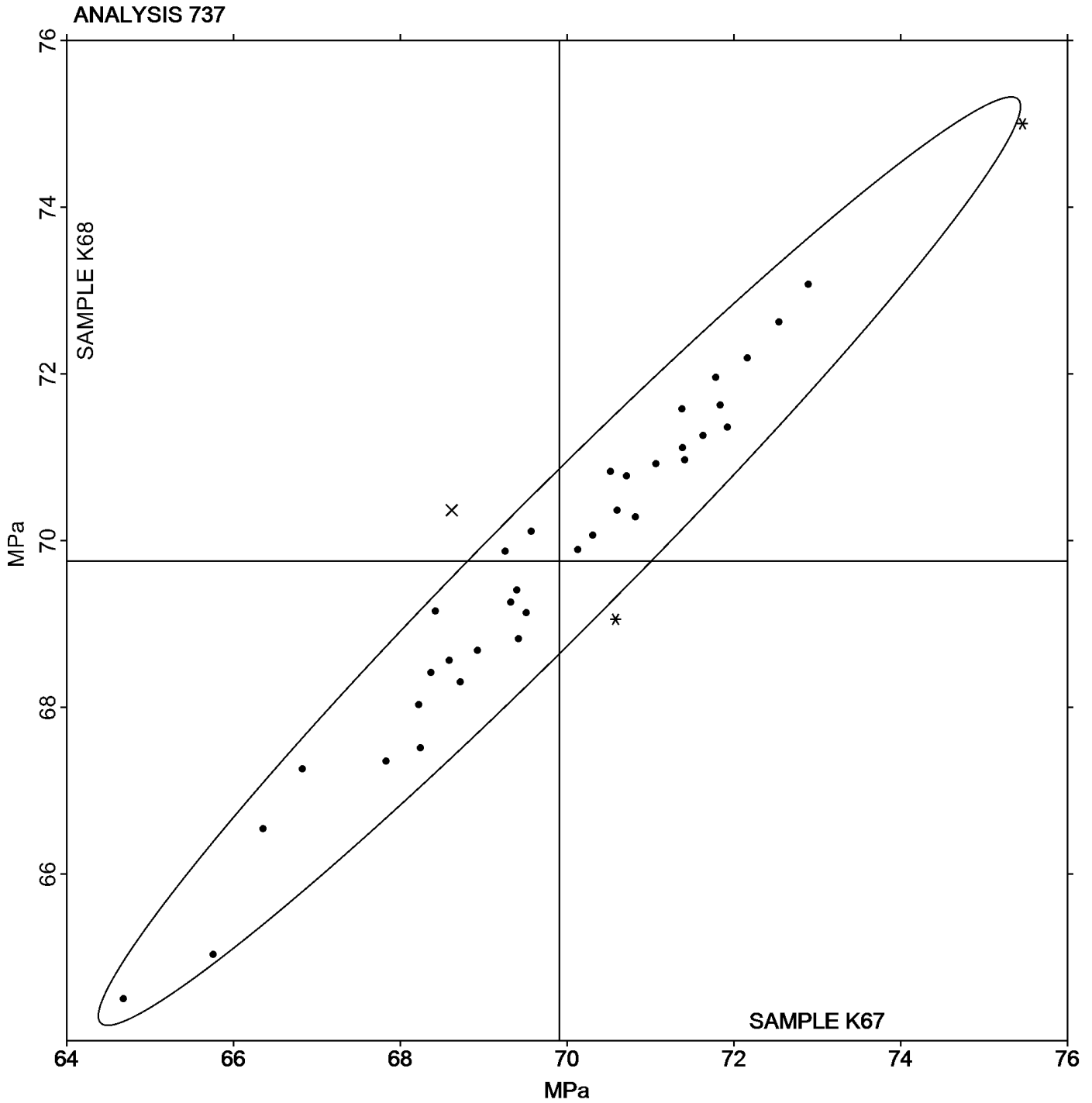
Report #114

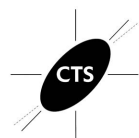
Analysis 737

2nd Qtr 2020

Flexural Stress at 3.5% Strain - MPa

Grand Mean Sample K67: 69.907 MPa Grand Mean Sample K68: 69.753 MPa





Plastics Interlaboratory Testing Program

Report #114

Analysis 738

2nd Qtr 2020

Flexural Stress at Yield - MPa

WebCode	Data Flag	Sample K67			Sample K68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		78.82	-0.61	-0.14	78.08	-1.39	-0.30
42WTDR		76.26	-3.17	-0.70	76.50	-2.97	-0.64
4GUM2E		81.27	1.84	0.41	82.63	3.16	0.68
4VDJ7H		79.00	-0.43	-0.10	79.60	0.13	0.03
6VM2ED		82.63	3.20	0.71	82.81	3.34	0.72
78EQAD		80.63	1.20	0.27	80.07	0.60	0.13
7EVEQZ		79.76	0.33	0.07	79.84	0.37	0.08
83K4ZP		78.48	-0.95	-0.21	79.78	0.31	0.07
A2VR7A		71.96	-7.47	-1.66	71.98	-7.49	-1.62
BCDQHW		84.08	4.65	1.03	84.44	4.97	1.08
CEV8AF		81.94	2.51	0.56	82.13	2.66	0.58
DPCELA		81.10	1.67	0.37	81.74	2.27	0.49
ELNLMD		81.30	1.87	0.41	80.72	1.25	0.27
HBW8AK		69.67	-9.76	-2.17	69.57	-9.90	-2.15
KF3ER2		70.82	-8.61	-1.91	70.28	-9.19	-1.99
LCXBBX		81.38	1.95	0.43	81.27	1.80	0.39
MLJU94		83.32	3.89	0.86	83.92	4.45	0.96
NURQNU		83.02	3.59	0.80	82.25	2.78	0.60
QZRR2T		78.56	-0.87	-0.19	78.50	-0.97	-0.21
R3QHMY		71.38	-8.06	-1.79	71.58	-7.90	-1.71
T9YZNC		84.82	5.38	1.20	85.08	5.61	1.22
TEJ7ER		77.56	-1.87	-0.42	78.19	-1.28	-0.28
TMTT7R		82.72	3.29	0.73	82.69	3.22	0.70
UEHQLR		80.16	0.73	0.16	79.32	-0.15	-0.03
UZCWRU		81.16	1.73	0.38	80.82	1.35	0.29
WNTYYV		80.80	1.37	0.30	80.75	1.27	0.28
WWAFR6	*	67.68	-11.75	-2.61	66.92	-12.55	-2.72
XABNTJ		80.36	0.93	0.21	80.81	1.33	0.29
XGQAVW		81.28	1.85	0.41	81.06	1.59	0.34
Y6TV7J		83.46	4.03	0.89	83.49	4.02	0.87
YKN7XV		81.08	1.65	0.37	81.75	2.27	0.49
YZ3JA2		85.38	5.95	1.32	84.54	5.07	1.10
ZBD4CV	X	6.03	-73.40	-16.30	6.06	-73.41	-15.92



Plastics Interlaboratory Testing Program

Report #114

Analysis 738

2nd Qtr 2020

Flexural Stress at Yield - MPa

Summary Statistics	<u>Sample K67</u>	<u>Sample K68</u>
Grand Means	79.433 MPa	79.473 MPa
Stnd Dev Btwn Labs	4.504 MPa	4.612 MPa

Statistics based on 32 of 33 reporting participants

Sample K67: ABS/PC & Sample K68: ABS/PC

Comments on Assigned Data Flags for Test #738

ZBD4CV (X) - Extreme data.



Plastics Interlaboratory Testing Program

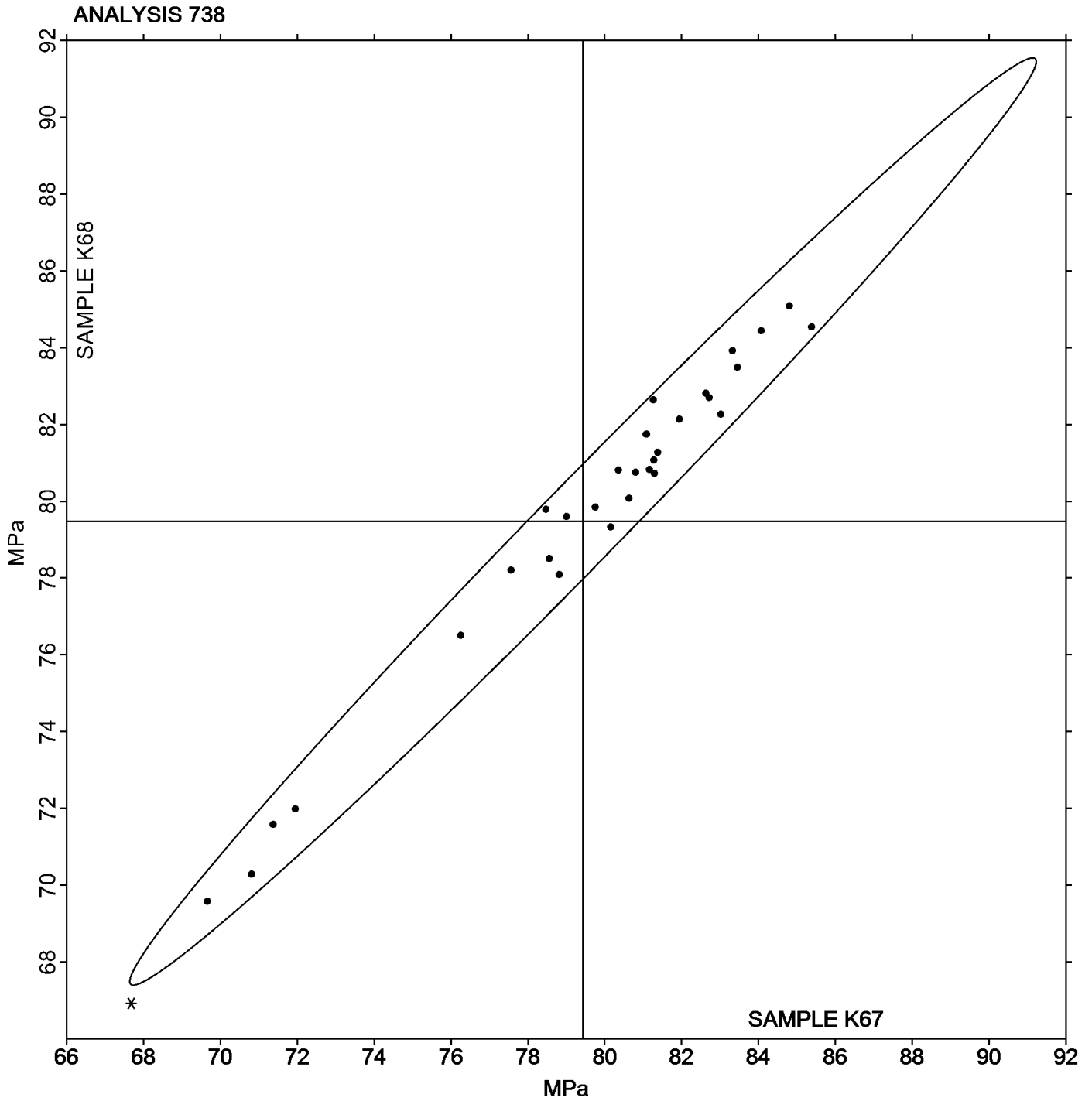
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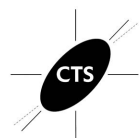
Analysis 738

2nd Qtr 2020

Flexural Stress at Yield - MPa

Grand Mean Sample K67: 79.433 MPa Grand Mean Sample K68: 79.473 MPa





Plastics Interlaboratory Testing Program

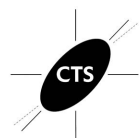
Report #114

Analysis 750

2nd Qtr 2020

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

WebCode	Data Flag	Sample X67			Sample X68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
264CEG		13.86	-0.03	-0.04	13.86	0.11	0.14	GO
2DZA7Q		14.80	0.91	1.26	14.75	1.00	1.34	TO
2EEEZH		12.38	-1.51	-2.08	12.80	-0.95	-1.28	TO
2LTHQG		13.84	-0.05	-0.08	13.49	-0.27	-0.36	TO
3HMEEK		12.83	-1.06	-1.46	12.50	-1.25	-1.69	TO
3Q3XXK		13.78	-0.11	-0.15	14.06	0.30	0.41	TO
4GUM2E		13.62	-0.27	-0.37	13.53	-0.23	-0.31	TO
4VDJ7H		12.50	-1.39	-1.92	13.00	-0.75	-1.01	TO
676EWH	X	16.30	2.41	3.33	20.38	6.62	8.91	XX
6CWJWD	X	9.49	-4.40	-6.07	8.63	-5.12	-6.89	DY
8EVHYH		14.89	1.00	1.37	15.31	1.56	2.10	DY
A2VR7A	*	13.66	-0.23	-0.32	12.26	-1.50	-2.02	TO
AATE7L		14.19	0.30	0.41	14.70	0.95	1.27	TO
AFWLLN		14.20	0.31	0.43	14.25	0.50	0.67	WZ
AJFH69	X	1.43	-12.46	-17.18	1.50	-12.25	-16.50	TO
ANAEWK		13.31	-0.58	-0.80	13.26	-0.50	-0.67	DY
ANBC3A		14.57	0.68	0.93	14.69	0.93	1.25	XX
BAQ9ZC		13.06	-0.83	-1.15	13.10	-0.66	-0.89	CE
BCDQHW		14.69	0.80	1.10	14.25	0.50	0.67	DY
BUXGFB		13.78	-0.11	-0.15	13.88	0.13	0.17	DY
BW436W		13.70	-0.19	-0.26	13.45	-0.30	-0.41	WZ
CAK8XB		13.40	-0.49	-0.68	13.05	-0.70	-0.95	TO
CEFBGG		13.00	-0.89	-1.23	13.20	-0.55	-0.75	WZ
CEV8AF		14.25	0.36	0.49	14.52	0.76	1.03	GO
CTEX9H		13.90	0.01	0.01	13.80	0.05	0.06	TO
CUU88B		14.75	0.86	1.18	15.14	1.38	1.86	XX
D2M42Q	*	14.14	0.25	0.34	12.88	-0.88	-1.18	DY
DPCELA		12.33	-1.56	-2.16	12.96	-0.80	-1.08	WZ
E64VMD		12.93	-0.96	-1.32	13.19	-0.57	-0.76	TO
ELNLMD		14.14	0.25	0.34	13.57	-0.19	-0.25	TY
EZV8EH	X	13.60	-0.29	-0.40	15.00	1.25	1.68	TY
FLLWEA		14.35	0.46	0.63	14.30	0.55	0.74	CE
G2E7G7		12.35	-1.54	-2.12	11.90	-1.85	-2.50	TO
H68M76		14.36	0.47	0.65	14.37	0.62	0.83	TO
HBW8AK		13.25	-0.64	-0.88	12.85	-0.90	-1.22	WZ



Plastics Interlaboratory Testing Program

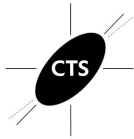
Report #114

Analysis 750

2nd Qtr 2020

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

WebCode	Data Flag	Sample X67			Sample X68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
HNJ89Z		13.75	-0.14	-0.19	13.35	-0.40	-0.54	TO
J8UKX9	*	15.05	1.16	1.60	13.85	0.10	0.13	TO
JK2DMY	X	8.66	-5.23	-7.22	11.94	-1.81	-2.44	HA
JLV6VY	X	16.22	2.33	3.21	16.36	2.61	3.51	TO
KAC6H3	X	16.82	2.93	4.04	16.27	2.52	3.39	TO
KF3ER2	X	4.81	-9.08	-12.53	4.84	-8.92	-12.01	XX
KXHT34		14.96	1.07	1.48	14.95	1.20	1.61	TO
LCXDZ3		14.45	0.56	0.77	14.50	0.75	1.00	DY
MZJD7U		14.15	0.26	0.36	14.35	0.60	0.80	TO
NG4LK4		14.30	0.41	0.57	14.10	0.35	0.47	TO
NMR7Q6	X	0.47	-13.42	-18.51	0.48	-13.27	-17.87	TM
NURQNU	*	14.77	0.88	1.21	13.56	-0.19	-0.26	TO
P238XE		13.90	0.01	0.01	12.90	-0.85	-1.15	TO
PY3YT6		14.09	0.20	0.27	14.09	0.33	0.45	TO
Q23LP7		15.05	1.16	1.60	14.75	1.00	1.34	TO
Q2M8FB		14.23	0.34	0.46	14.09	0.33	0.45	DY
QZRR2T		13.35	-0.54	-0.75	13.16	-0.60	-0.81	WZ
QZTGAW		14.75	0.86	1.19	14.50	0.75	1.00	DY
R3QHMY		14.05	0.16	0.22	13.48	-0.27	-0.37	DY
RYQDTQ		13.50	-0.39	-0.54	13.50	-0.25	-0.34	TO
TEJ7ER		13.43	-0.46	-0.63	13.19	-0.57	-0.77	TO
TEXP3V		13.61	-0.28	-0.39	13.76	0.01	0.01	TO
THK8GA		14.72	0.83	1.15	14.53	0.77	1.04	RR
TMTT7R		13.76	-0.13	-0.19	13.70	-0.06	-0.08	TO
TTZANT		13.49	-0.40	-0.55	14.16	0.41	0.55	TO
TUBX4Y	X	6.40	-7.49	-10.33	6.25	-7.50	-10.10	TO
U3JW9U		13.60	-0.29	-0.40	13.73	-0.02	-0.03	XX
UEHQLR		13.78	-0.11	-0.15	13.70	-0.06	-0.08	TO
UJCKHT		13.11	-0.78	-1.08	12.93	-0.83	-1.11	XX
VAECB8		14.25	0.36	0.50	14.25	0.50	0.67	TO
WNTYYV		14.95	1.06	1.46	14.86	1.11	1.49	GO
X6ZFLN		12.79	-1.10	-1.52	12.76	-1.00	-1.34	DY
XBN4GT	X	4.76	-9.13	-12.60	4.75	-9.00	-12.12	TO
XWKW2N		14.00	0.11	0.15	13.81	0.05	0.07	TO
XX2TUN		13.93	0.04	0.05	13.89	0.14	0.19	TO



Plastics Interlaboratory Testing Program

Report #114

Analysis 750

2nd Qtr 2020

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

WebCode	Data Flag	Sample X67			Sample X68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
Y6TV7J		12.85	-1.04	-1.43	12.62	-1.14	-1.53	GO
YBKVR7		14.00	0.11	0.15	13.85	0.10	0.13	TO
YKN7XV		15.35	1.46	2.01	14.65	0.90	1.21	TO
Z6NQ9L		14.36	0.47	0.65	14.19	0.43	0.58	TO

Summary Statistics

	Sample X67	Sample X68
Grand Means	13.890 grams/10 mins	13.754 grams/10 mins
Stnd Dev Btwn Labs	0.725 grams/10 mins	0.743 grams/10 mins

Statistics based on 63 of 74 reporting participants

Sample X67: PP & Sample X68: PP

Comments on Assigned Data Flags for Test #750

6CWJWD (X) - Data for both samples are low. Inconsistent within the determinations of sample X67.

EZV8EH (X) - Inconsistent in testing between samples.

JLV6VY (X) - Data for both samples are high. Inconsistent within the determinations of sample X67.

AJFH69 (X) - Extreme data.

JK2DMY (X) - Data for sample X67 are low. Inconsistent within the determinations of sample X68.

TUBX4Y (X) - Data for both samples are low. Possible Systematic Error.

XBN4GT (X) - Data for both samples are low. Possible Systematic Error.

NMR7Q6 (X) - Extreme data.

676EWH (X) - Data for both samples are high. Possible Systematic Error.

KF3ER2 (X) - Data for both samples are low. Possible Systematic Error.

KAC6H3 (X) - Data for both samples are high. Possible Systematic Error.

Results by Methodology (as reported by laboratory)

Test Methodology	Sample X67			Sample X68			Labs Incl / Rpt
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM	
Procedure A of ASTM D1238	13.882	0.723	-0.01	13.743	0.733	-0.01	37/44
Procedure B of ASTM D1238	14.196	0.444	0.31	14.144	0.504	0.39	12/12
Procedure A of ISO 1133	13.462	0.930	-0.43	13.301	0.900	-0.45	9/12
Procedure B of ISO 1133	13.983	0.679	0.09	13.710	0.689	-0.04	5/6



Plastics Interlaboratory Testing Program

Report #114

Analysis 750

2nd Qtr 2020

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

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

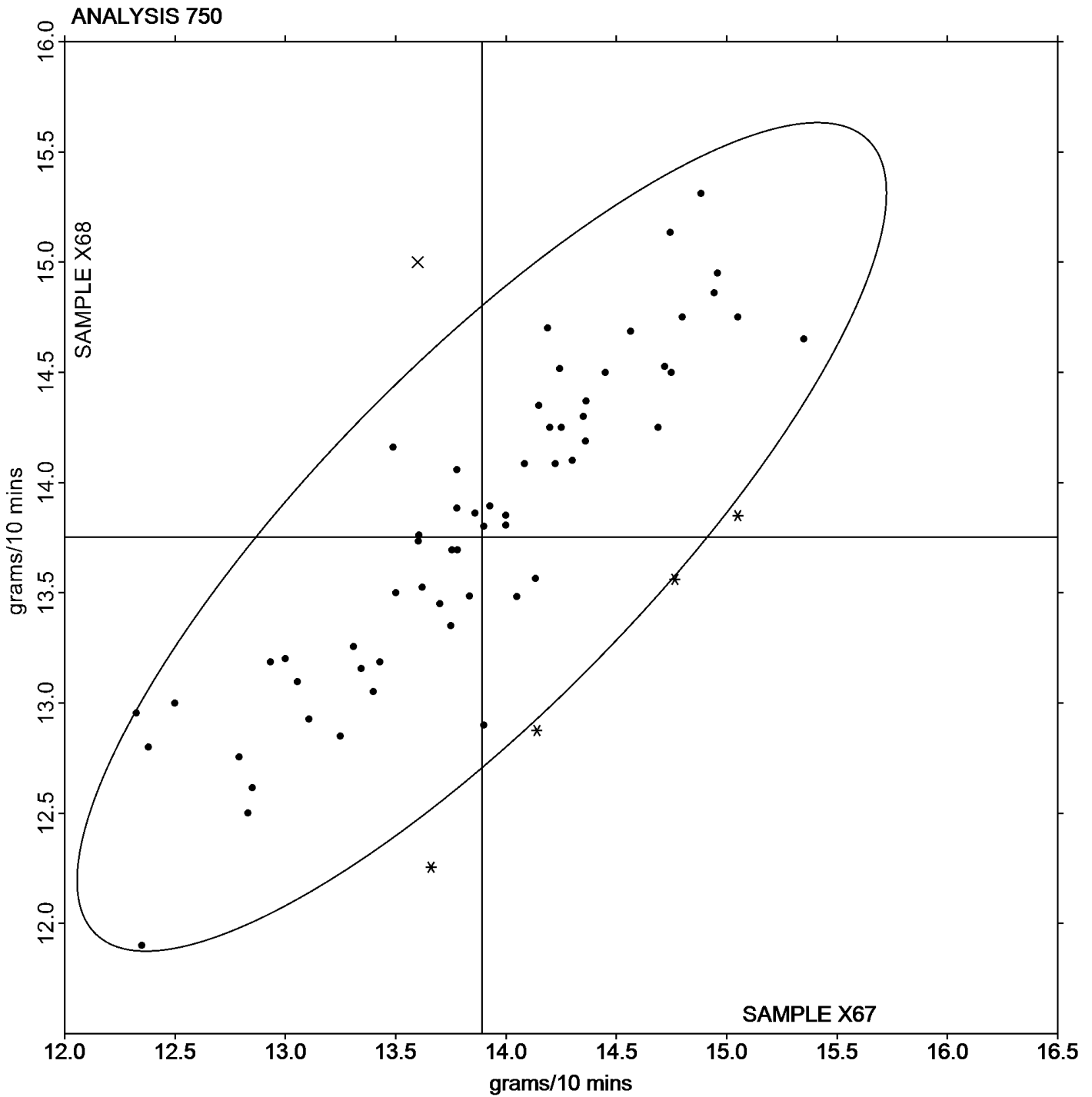
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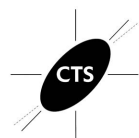
Analysis 750

2nd Qtr 2020

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

Grand Mean Sample X67: 13.890 grams/10 mins Grand Mean Sample X68: 13.754 grams/10 mins





Plastics Interlaboratory Testing Program

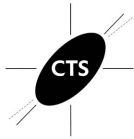
Report #114

Analysis 755

2nd Qtr 2020

Moisture Content of Plastics

WebCode	Data Flag	Sample Y67			Sample Y68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2LTHQG		0.01760	-0.00344	-0.35	0.01650	-0.00419	-0.38	ML
3HMEEK		0.00833	-0.01271	-1.29	0.00767	-0.01303	-1.17	CT
4QW3RJ		0.01133	-0.00971	-0.98	0.01033	-0.01036	-0.93	CT
6VM2ED		0.02733	0.00629	0.64	0.02833	0.00764	0.69	CT
8EVHYH		0.01240	-0.00864	-0.88	0.01100	-0.00969	-0.87	AZ
A2VR7A		0.01950	-0.00154	-0.16	0.02000	-0.00069	-0.06	AZ
ANTGL9		0.01523	-0.00581	-0.59	0.01350	-0.00719	-0.65	MK
B8G8CR		0.03780	0.01676	1.70	0.04270	0.02201	1.98	MT
BAQ9ZC		0.01600	-0.00504	-0.51	0.01567	-0.00503	-0.45	MU
BW436W		0.03950	0.01846	1.87	0.04550	0.02481	2.24	AZ
CAK8XB	*	0.04700	0.02596	2.63	0.04933	0.02864	2.58	SA
E3UQ94		0.01431	-0.00673	-0.68	0.01809	-0.00260	-0.23	MU
J8UKX9		0.01963	-0.00141	-0.14	0.02097	0.00027	0.02	MD
KAC6H3		0.02933	0.00829	0.84	0.02100	0.00031	0.03	XX
KT9J22		0.02433	0.00329	0.33	0.02333	0.00264	0.24	MR
KTREH4		0.01233	-0.00871	-0.88	0.01230	-0.00839	-0.76	ML
MZJD7U		0.01897	-0.00208	-0.21	0.01880	-0.00189	-0.17	BA
N2BR9D		0.00727	-0.01378	-1.40	0.00717	-0.01353	-1.22	AZ
P238XE		0.02417	0.00312	0.32	0.03290	0.01221	1.10	AZ
PRF4W8		0.03350	0.01246	1.26	0.03400	0.01331	1.20	CT
PY3YT6		0.01323	-0.00781	-0.79	0.01180	-0.00889	-0.80	AZ
Q23LP7		0.02250	0.00146	0.15	0.01550	-0.00519	-0.47	ML
QZTGAW		0.02033	-0.00071	-0.07	0.01900	-0.00169	-0.15	MU
R3QHMY	*	0.03070	0.00966	0.98	0.02071	0.00002	0.00	XX
R7THMV		0.01830	-0.00274	-0.28	0.01577	-0.00493	-0.44	AZ
UKKYPY		0.02300	0.00196	0.20	0.02300	0.00231	0.21	CS
VAECB8	X	0.12000	0.09896	10.04	0.12000	0.09931	8.95	MU
WWAFR6		0.01523	-0.00581	-0.59	0.01350	-0.00719	-0.65	MK
X6ZFLN		0.01000	-0.01104	-1.12	0.01100	-0.00969	-0.87	MB
ZZLFNM	X	0.16933	0.14829	15.04	0.16033	0.13964	12.58	MI



Plastics Interlaboratory Testing Program

Report #114

Analysis 755

2nd Qtr 2020

Moisture Content of Plastics

Summary Statistics		
	<u>Sample Y67</u>	<u>Sample Y68</u>
Grand Means	0.021042 Percent	0.020692 Percent
Std Dev Btwn Labs	0.009859 Percent	0.011098 Percent
Statistics based on 28 of 30 reporting participants		

Sample Y67: HIPS & Sample Y68: HIPS

Comments on Assigned Data Flags for Test #755

ZZLFNM (X) - Extreme data.

VAECB8 (X) - Extreme data.

Results by Methodology (as reported by laboratory)

Test Methodology	Sample Y67 <i>HIPS</i>			Sample Y68 <i>HIPS</i>			Labs Incl / Rpt
	Group Mean	Btwn Lab STD	Diff from GM	Group Mean	Btwn Lab STD	Diff from GM	
ASTM D6869	0.020340	0.009000	-0.0007	0.022000	0.011000	0.0010	7/8
ISO 15512 Method B	0.023020	0.009000	0.0020	0.022000	0.012000	0.0010	5/5
ASTM D6980	0.024722	0.011000	0.0037	0.025000	0.012000	0.0044	9/9
ASTM D7191	0.015600	0.008000	-0.0054	0.013000	0.005000	-0.0074	7/7

Key to Instrument Codes Reported by Participants

AZ Arizona Instruments Moisture Analyzer	BA Brabender Aquatrac
CS Cosa Instruments	CT Computrac Moisture Analyzer
MB Omnimark Mark 3	MD Mettler Toledo DL37
MI Mitsubishi MCI Series	MK Mitsubishi KF Analyzer CA
ML Metrohm Coulometer	MR Metrohm Coulineter 756 KF
MT Mettler Toledo DL39	MU Mettler Toledo
SA Sartorius MA30	XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

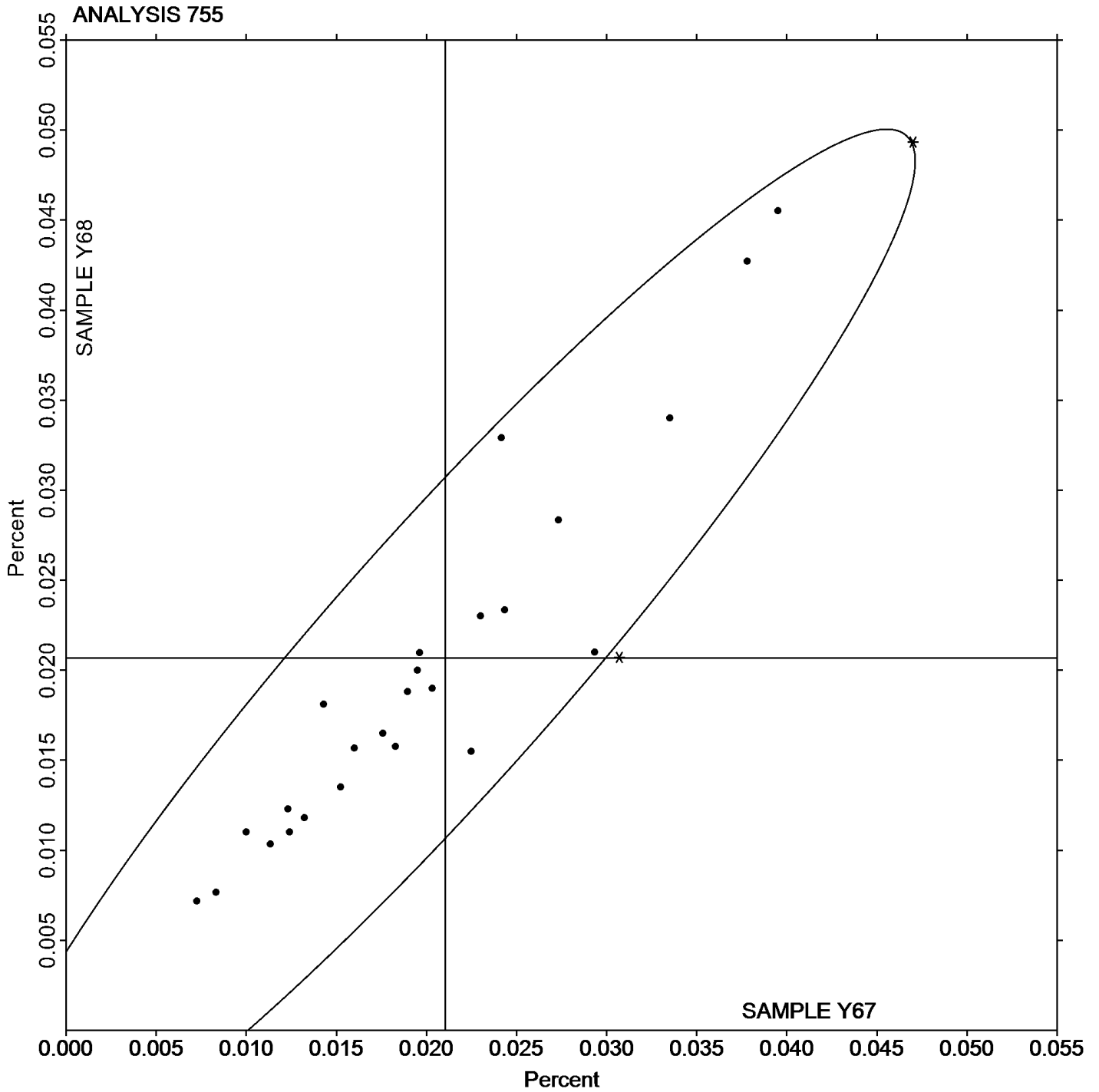
Analysis 755

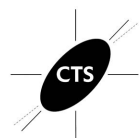
Moisture Content of Plastics

Report #114

2nd Qtr 2020

Grand Mean Sample Y67: 0.02104 Percent Grand Mean Sample Y68: 0.02069 Percent





Plastics Interlaboratory Testing Program

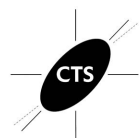
Report #114

Analysis 757

2nd Qtr 2020

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L67			Sample L68		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
264CEG		30.485	0.054	0.17	30.690	0.228	0.83
2LTHQG		30.505	0.074	0.23	30.665	0.203	0.74
2QMEDM		30.721	0.290	0.89	30.647	0.185	0.67
2V3M2M		30.241	-0.190	-0.58	30.235	-0.227	-0.83
3HMEEK		30.510	0.079	0.24	30.795	0.333	1.21
42WTDR	X	30.435	0.004	0.01	29.710	-0.752	-2.74
4GUM2E		30.230	-0.201	-0.62	30.335	-0.127	-0.46
4QW3RJ	X	32.050	1.619	4.96	31.300	0.838	3.06
676EWH	X	31.000	0.569	1.74	30.250	-0.212	-0.77
6VM2ED		30.900	0.469	1.44	30.640	0.178	0.65
78EQAD		30.370	-0.061	-0.19	30.230	-0.232	-0.84
7CN4RC		30.350	-0.081	-0.25	30.575	0.113	0.41
7EVEQZ		30.630	0.199	0.61	30.670	0.208	0.76
7GMHGM		30.295	-0.136	-0.42	30.195	-0.267	-0.97
A2VR7A		30.265	-0.166	-0.51	30.480	0.018	0.07
ANBC3A		29.890	-0.541	-1.66	29.925	-0.537	-1.96
ANTGL9		30.665	0.234	0.72	30.310	-0.152	-0.55
B8G8CR		30.322	-0.109	-0.33	30.429	-0.032	-0.12
BAQ9ZC		30.790	0.359	1.10	30.740	0.278	1.01
BCDQHW		30.455	0.024	0.07	30.505	0.043	0.16
CAK8XB		30.545	0.114	0.35	30.545	0.083	0.30
CEV8AF	*	29.590	-0.841	-2.58	29.925	-0.537	-1.96
CUU88B		30.520	0.089	0.27	30.250	-0.212	-0.77
DHRFNA	X	69.487	39.056	119.60	69.706	39.244	143.03
DZ8PPB		30.555	0.124	0.38	30.475	0.013	0.05
FJENW3		30.555	0.124	0.38	30.540	0.078	0.29
HFUJDX		30.545	0.114	0.35	30.491	0.029	0.11
KT9J22		30.050	-0.381	-1.17	30.050	-0.412	-1.50
KXHT34		30.115	-0.316	-0.97	30.255	-0.207	-0.75
MLJU94		31.130	0.699	2.14	31.155	0.693	2.53
N2BR9D		30.555	0.124	0.38	30.350	-0.112	-0.41
NURQNU		30.205	-0.226	-0.69	30.355	-0.107	-0.39
P238XE		30.180	-0.251	-0.77	30.125	-0.337	-1.23
Q23LP7		30.440	0.009	0.03	30.805	0.343	1.25
Q7FHCV		30.230	-0.201	-0.62	30.360	-0.102	-0.37



Plastics Interlaboratory Testing Program

Report #114

Analysis 757

2nd Qtr 2020

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	<u>Sample L67</u>			<u>Sample L68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QZRR2T		30.425	-0.006	-0.02	30.485	0.023	0.08
QZTGAW		30.100	-0.331	-1.01	30.000	-0.462	-1.68
R3QHMY		30.300	-0.131	-0.40	30.425	-0.037	-0.13
RYQDTQ		30.680	0.249	0.76	30.695	0.233	0.85
TEJ7ER		30.465	0.034	0.10	30.470	0.008	0.03
TMTT7R		31.033	0.602	1.84	30.884	0.422	1.54
UEHQLR		31.070	0.639	1.96	30.915	0.453	1.65
VAECB8		30.205	-0.226	-0.69	30.265	-0.197	-0.72
VTUN4X		30.325	-0.106	-0.32	30.440	-0.022	-0.08
VVYD4K		30.285	-0.146	-0.45	30.385	-0.077	-0.28
WNTYYV		31.000	0.569	1.74	30.980	0.518	1.89
X6ZFLN	*	29.690	-0.741	-2.27	30.245	-0.217	-0.79
YKN7XV		30.545	0.114	0.35	30.380	-0.082	-0.30

Summary Statistics		
	<u>Sample L67</u>	<u>Sample L68</u>
Grand Means	30.4310 Percent	30.4617 Percent
Std Dev Btwn Labs	0.3266 Percent	0.2744 Percent
Statistics based on 44 of 48 reporting participants		

Sample L67: PBT & Sample L68: PBT

Comments on Assigned Data Flags for Test #757

42WTDR (X) - Data for sample L68 are low.

DHRFNA (X) - Extreme data.

676EWH (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L68.

4QW3RJ (X) - Data for both samples are high. Inconsistent within the determinations of sample L68.



Plastics Interlaboratory Testing Program

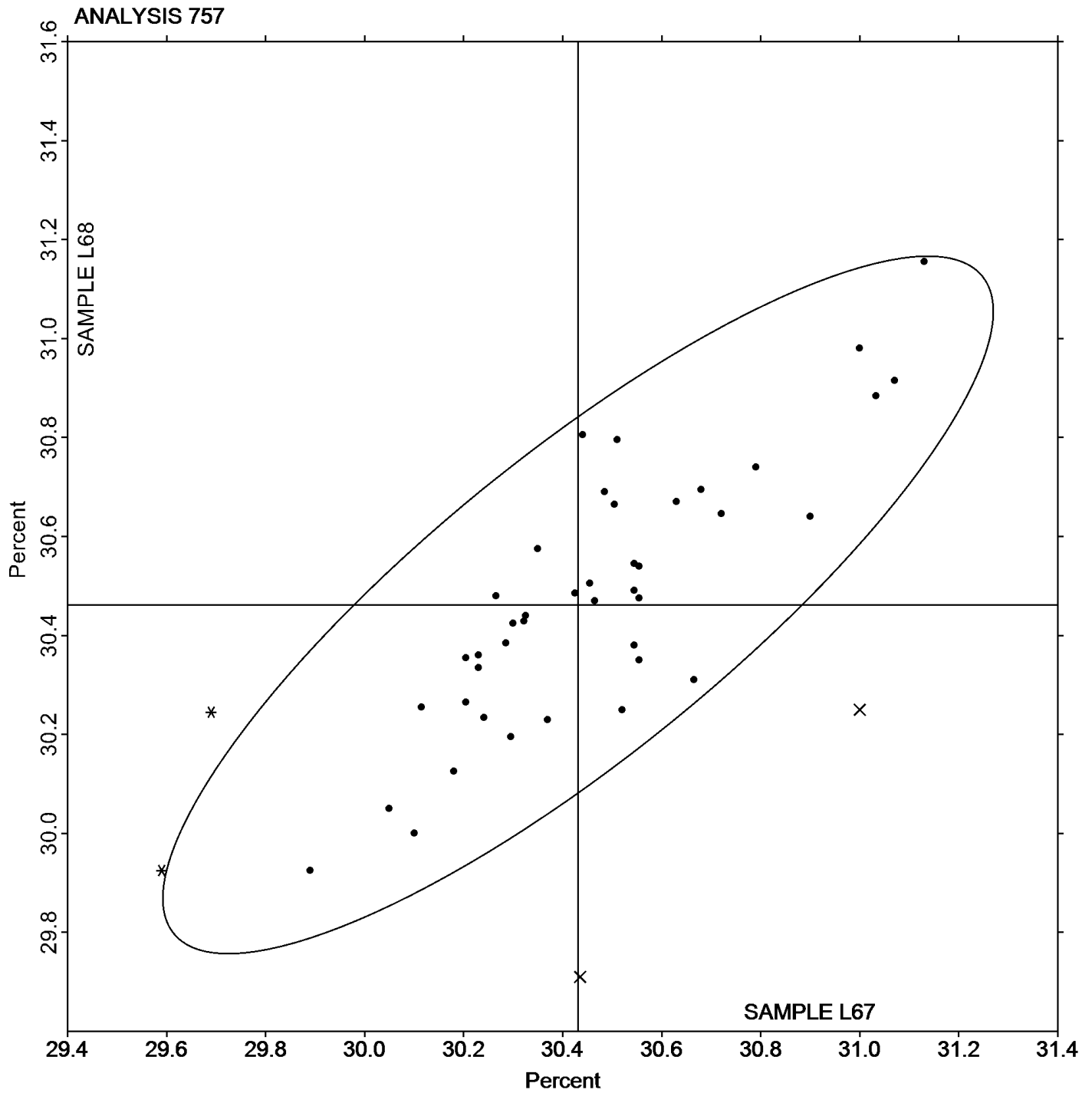
Analysis 757

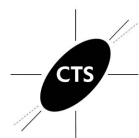
Ash Content in Thermoplastics - Percent

Report #114

2nd Qtr 2020

Grand Mean Sample L67: 30.431 Percent Grand Mean Sample L68: 30.462 Percent





Plastics Interlaboratory Testing Program

Report #114

Analysis 760

2nd Qtr 2020

DSC Crystallization Temperature

WebCode	Data Flag	<u>Sample W67</u>			<u>Sample W68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6CWJWD		185.61	9.22	1.63	186.60	10.03	1.77	TA
737BQG		171.23	-5.16	-0.91	170.87	-5.71	-1.01	PE
7GMHGM		185.17	8.77	1.55	185.87	9.29	1.64	TA
ANBC3A		171.89	-4.51	-0.80	172.28	-4.30	-0.76	TA
B8G8CR		180.08	3.68	0.65	179.66	3.09	0.55	TA
CUU88B		173.89	-2.51	-0.44	172.40	-4.17	-0.74	TA
DPCELA		173.85	-2.54	-0.45	173.06	-3.51	-0.62	TA
EZV8EH		185.62	9.23	1.63	184.87	8.30	1.47	SH
J8UKX9	X	224.43	48.04	8.50	224.00	47.43	8.37	TA
KAC6H3		169.30	-7.09	-1.26	171.13	-5.44	-0.96	NZ
NURQNU		174.18	-2.21	-0.39	174.21	-2.37	-0.42	TA
PLEWDX		177.00	0.61	0.11	175.70	-0.87	-0.15	NZ
PY3YT6		183.00	6.60	1.17	183.72	7.15	1.26	MT
WDWWXM		174.73	-1.66	-0.29	175.71	-0.87	-0.15	XX
WWAFR6		176.00	-0.39	-0.07	176.00	-0.57	-0.10	TA
XBN4GT		166.68	-9.72	-1.72	167.55	-9.02	-1.59	XX
Y6TV7J		174.60	-1.79	-0.32	174.20	-2.37	-0.42	TA
Z2MP84		179.47	3.07	0.54	180.63	4.06	0.72	NZ
ZZLFNM		172.77	-3.63	-0.64	173.83	-2.74	-0.48	TA

Summary Statistics		
	<u>Sample W67</u>	<u>Sample W68</u>
Grand Means	176.392 Degrees Celsius	176.572 Degrees Celsius
Std Dev Btwn Labs	5.650 Degrees Celsius	5.664 Degrees Celsius
Statistics based on 18 of 19 reporting participants		

Sample W67: PBT & Sample W68: PBT

Comments on Assigned Data Flags for Test #760

J8UKX9 (X) - Data for both samples are high. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

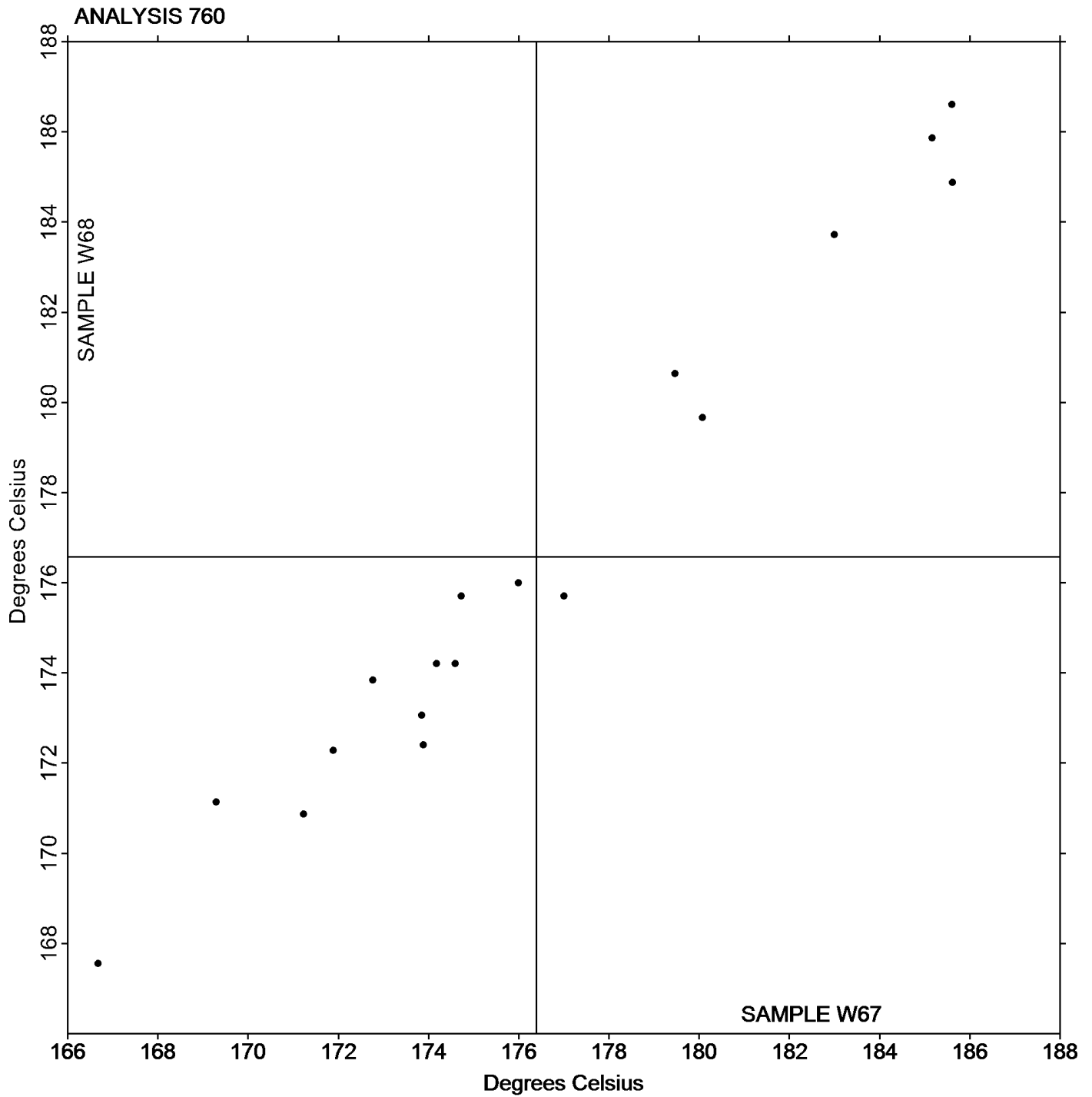
Report #114

Analysis 760

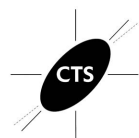
2nd Qtr 2020

DSC Crystallization Temperature

Grand Mean Sample W67: 176.39 Degrees Celsius Grand Mean Sample W68: 176.57 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 #114

Analysis 761

2nd Qtr 2020

DSC Melt Temperature

WebCode	Data Flag	<u>Sample W67</u>			<u>Sample W68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2LTHQG		225.71	1.65	1.10	224.91	1.09	0.88	TA
6CWJWD		226.11	2.05	1.37	225.07	1.25	1.00	TA
737BQG		223.40	-0.66	-0.44	223.50	-0.32	-0.26	PE
7GMHGM		223.50	-0.56	-0.37	223.03	-0.79	-0.64	TA
ANBC3A		225.17	1.11	0.74	224.54	0.71	0.57	XX
B8G8CR		221.90	-2.16	-1.43	221.57	-2.26	-1.81	TA
CUU88B		224.57	0.51	0.34	225.07	1.24	1.00	XX
DPCELA		224.49	0.43	0.29	224.60	0.78	0.62	TA
EZV8EH		223.51	-0.54	-0.36	223.23	-0.60	-0.48	SH
HFUJDX		223.73	-0.33	-0.22	224.38	0.56	0.45	TA
KAC6H3		223.83	-0.22	-0.15	223.32	-0.51	-0.41	NZ
MZJD7U		222.83	-1.22	-0.81	223.07	-0.76	-0.61	TA
NURQNU		223.49	-0.57	-0.38	223.43	-0.39	-0.32	TA
P238XE		224.00	-0.06	-0.04	224.53	0.71	0.57	SH
PLEWDX	X	231.00	6.94	4.62	226.40	2.58	2.07	NZ
PY3YT6		225.66	1.61	1.07	224.28	0.45	0.36	MT
WDWWXM		221.14	-2.91	-1.94	221.45	-2.38	-1.91	XX
WWAFR6		222.00	-2.06	-1.37	222.00	-1.82	-1.47	TA
XBN4GT		227.66	3.61	2.40	226.64	2.81	2.26	XX
Y6TV7J		223.83	-0.22	-0.15	223.73	-0.09	-0.07	TA
Z2MP84		224.77	0.71	0.47	224.43	0.61	0.49	NZ
ZZLFNM		223.87	-0.19	-0.13	223.53	-0.29	-0.23	TA

Summary Statistics		
	<u>Sample W67</u>	<u>Sample W68</u>
Grand Means	224.056 Degrees Celsius	223.824 Degrees Celsius
Std Dev Btwn Labs	1.503 Degrees Celsius	1.244 Degrees Celsius
Statistics based on 21 of 22 reporting participants		

Sample W67: PBT & Sample W68: PBT

Comments on Assigned Data Flags for Test #761

PLEWDX (X) - Data for sample W67 are high.



Plastics Interlaboratory Testing Program

Report #114

Analysis 761

2nd Qtr 2020

DSC Melt 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



Plastics Interlaboratory Testing Program

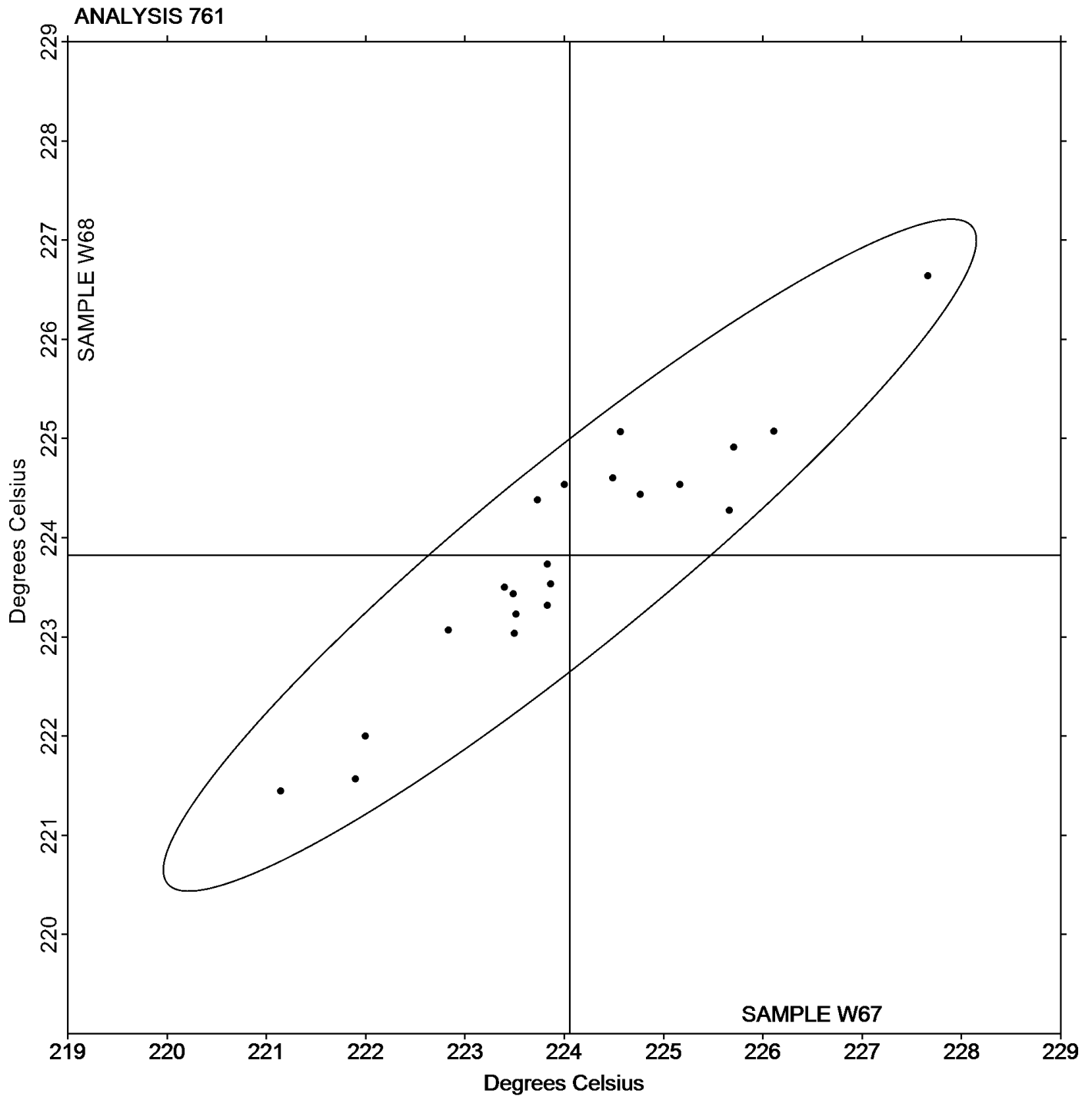
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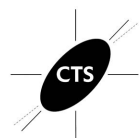
Analysis 761

2nd Qtr 2020

DSC Melt Temperature

Grand Mean Sample W67: 224.06 Degrees Celsius Grand Mean Sample W68: 223.82 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #114

Analysis 762

2nd Qtr 2020

DSC Enthalpy of Crystallization

WebCode	Data Flag	Sample W67			Sample W68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6CWJWD		49.95	0.41	0.04	54.14	4.47	0.47	TA
737BQG		42.57	-6.98	-0.76	38.39	-11.28	-1.20	PE
7GMHGM		46.51	-3.03	-0.33	46.85	-2.82	-0.30	TA
B8G8CR		62.82	13.28	1.44	61.71	12.04	1.28	TA
DPCELA		49.08	-0.46	-0.05	48.93	-0.74	-0.08	TA
EZV8EH		39.26	-10.28	-1.12	39.09	-10.58	-1.12	SH
KAC6H3		40.37	-9.17	-1.00	42.48	-7.19	-0.76	NZ
NURQNU		50.12	0.58	0.06	49.68	0.01	0.00	TA
PLEWDX	*	76.26	26.72	2.90	76.49	26.82	2.85	NZ
WDWXXM		51.61	2.06	0.22	50.67	1.00	0.11	XX
WWAFR6		46.17	-3.38	-0.37	46.13	-3.54	-0.38	TA
XBN4GT		46.93	-2.61	-0.28	48.26	-1.41	-0.15	XX
Y6TV7J		46.73	-2.82	-0.31	45.68	-3.99	-0.42	TA
Z2MP84		45.40	-4.14	-0.45	44.95	-4.72	-0.50	NZ
ZZLFNM		49.36	-0.18	-0.02	51.60	1.93	0.20	TA

Summary Statistics

Grand Means

Sample W67

49.543 Joules Per Gram

Sample W68

49.671 Joules Per Gram

Std Dev Btwn Labs

9.205 Joules Per Gram

9.416 Joules Per Gram

Statistics based on 15 of 15 reporting participants

Sample W67: PBT & Sample W68: PBT

Key to Instrument Codes Reported by Participants

NZ Netzsch Instruments

PE Perkins Elmer Instruments

SH Shimadzu

TA TA Instruments

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

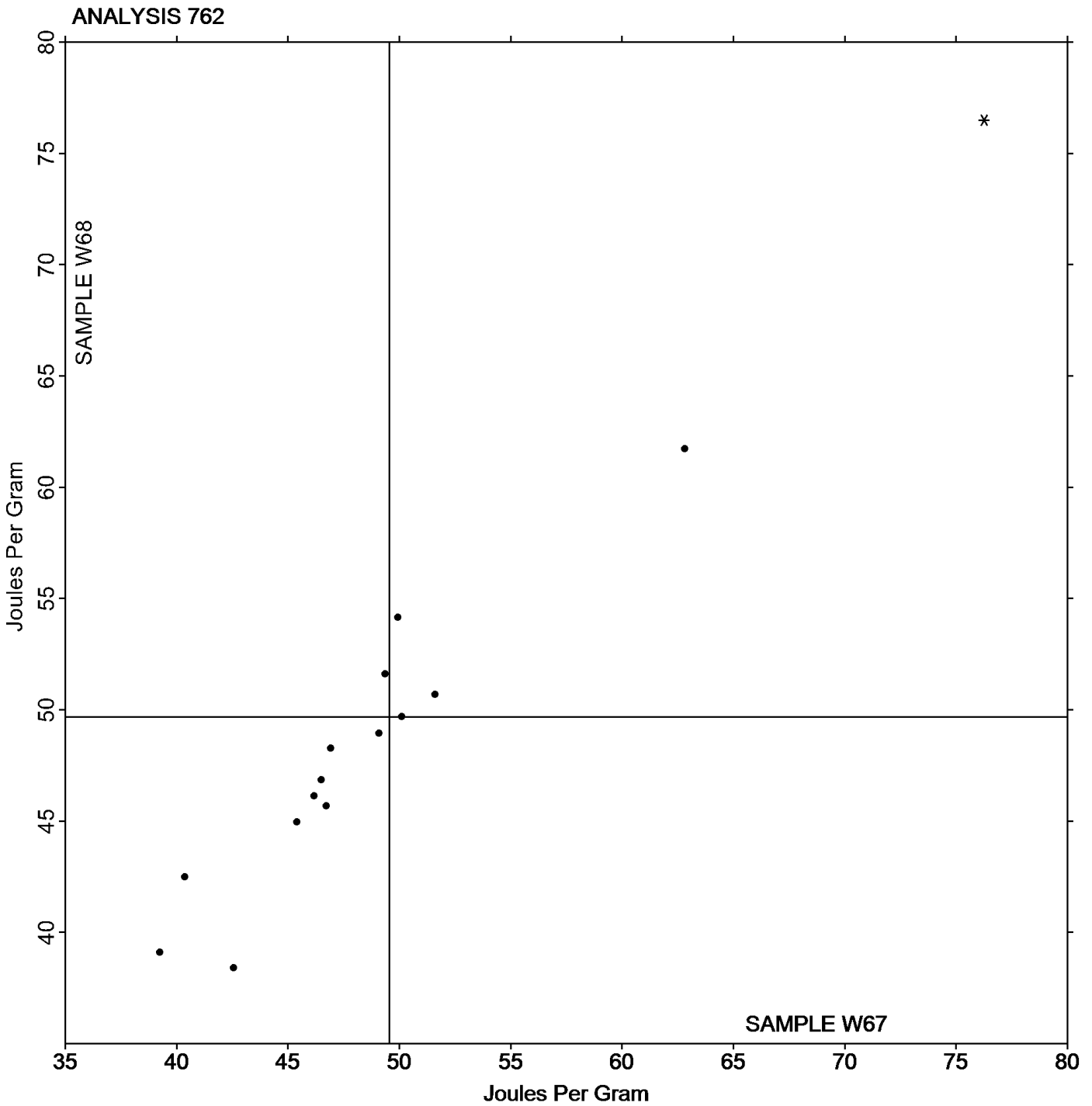
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Analysis 762

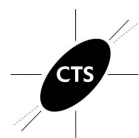
2nd Qtr 2020

DSC Enthalpy of Crystallization

Grand Mean Sample W67: 49.543 Joules Per Gram Grand Mean Sample W68: 49.671 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 #114

Analysis 763

2nd Qtr 2020

DSC Enthalpy of Fusion

WebCode	Data Flag	<u>Sample W67</u>			<u>Sample W68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2LTHQG		36.48	-4.71	-0.77	37.31	-3.85	-0.58	TA
6CWJWD		43.93	2.73	0.45	37.95	-3.21	-0.49	TA
737BQG		39.34	-1.85	-0.30	37.86	-3.30	-0.50	PE
7GMHGM		47.11	5.92	0.97	46.97	5.81	0.88	TA
B8G8CR		56.91	15.72	2.58	56.25	15.09	2.28	TA
DPCELA		38.65	-2.54	-0.42	38.78	-2.39	-0.36	TA
EZV8EH		35.24	-5.95	-0.98	35.25	-5.91	-0.89	SH
JK2DMY		46.37	5.18	0.85	48.43	7.27	1.10	NZ
KAC6H3		33.29	-7.90	-1.30	33.42	-7.74	-1.17	NZ
NURQNU		38.02	-3.17	-0.52	38.93	-2.23	-0.34	TA
PLEWDX		46.77	5.58	0.92	52.72	11.56	1.74	NZ
WDWWXM		47.70	6.51	1.07	47.45	6.29	0.95	XX
WWAFR6		36.70	-4.49	-0.74	35.27	-5.90	-0.89	TA
XBN4GT		39.31	-1.88	-0.31	38.85	-2.31	-0.35	XX
Y6TV7J		39.59	-1.60	-0.26	38.51	-2.65	-0.40	TA
Z2MP84		35.16	-6.03	-0.99	36.26	-4.90	-0.74	NZ
ZZLFNM		39.68	-1.51	-0.25	39.57	-1.59	-0.24	TA

Summary Statistics		
	<u>Sample W67</u>	<u>Sample W68</u>
Grand Means	41.191 Joules Per Gram	41.164 Joules Per Gram
Std Dev Btwn Labs	6.097 Joules Per Gram	6.627 Joules Per Gram
Statistics based on 17 of 17 reporting participants		

Sample W67: PBT & Sample W68: PBT

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

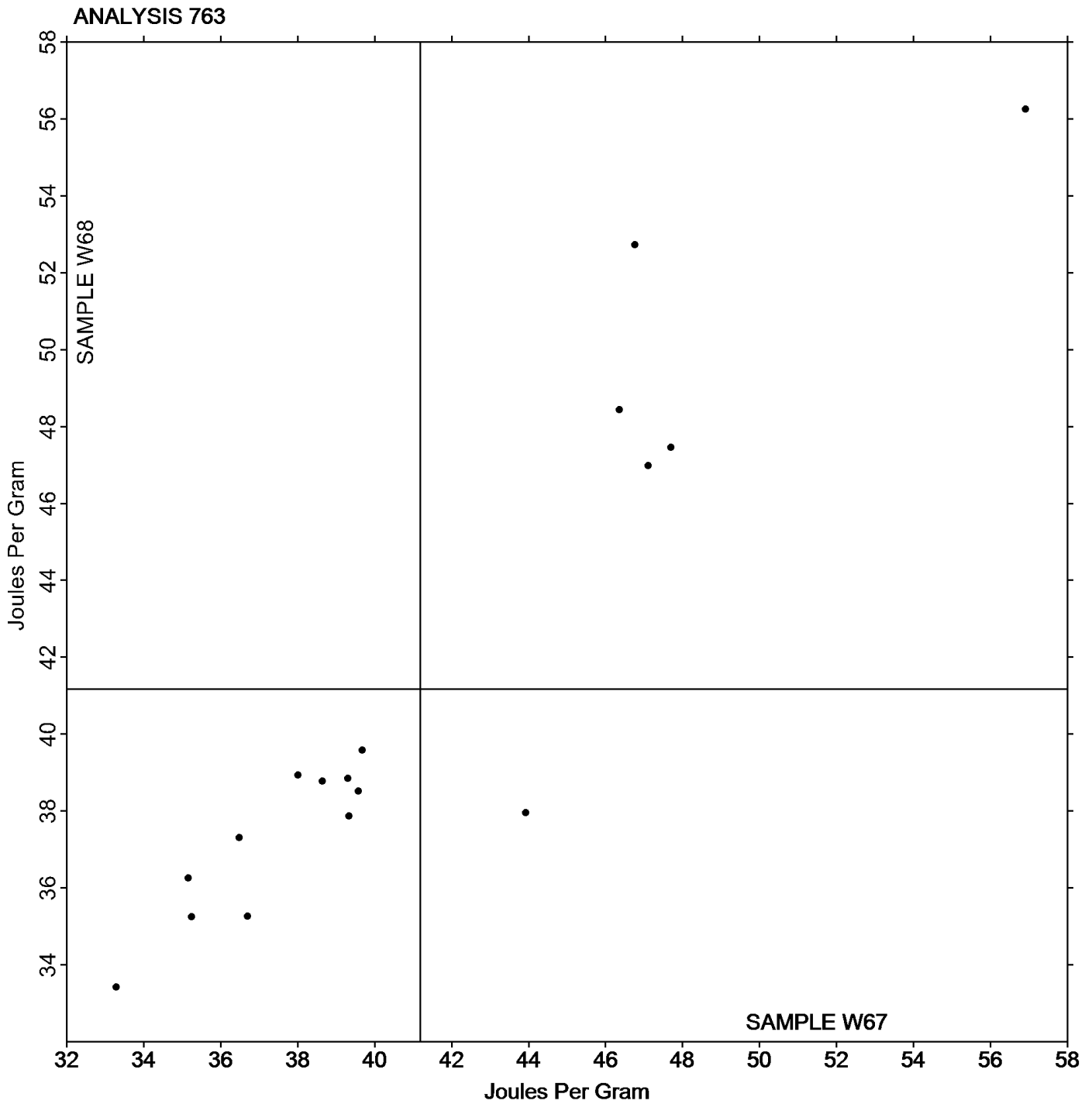
Analysis 763

DSC Enthalpy of Fusion

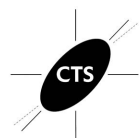
Report #114

2nd Qtr 2020

Grand Mean Sample W67: 41.191 Joules Per Gram Grand Mean Sample W68: 41.164 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 #114

Analysis 764

2nd Qtr 2020

DSC Glass Transition Temperature

WebCode	Data Flag	Sample V67			Sample V68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
264CEG	*	107.31	0.89	0.41	106.22	-0.26	-0.12	TA
2LTHQG		109.10	2.68	1.23	109.18	2.70	1.25	TA
737BQG		106.77	0.34	0.16	107.00	0.53	0.24	PE
7GMHGM		104.80	-1.62	-0.74	104.80	-1.67	-0.77	TA
B8G8CR	X	137.11	30.69	14.06	137.34	30.87	14.27	TA
DPCELA		106.56	0.13	0.06	106.99	0.52	0.24	TA
EZV8EH		103.37	-3.06	-1.40	103.77	-2.71	-1.25	SH
JK2DMY		106.07	-0.36	-0.16	105.77	-0.71	-0.33	NZ
KAC6H3		108.33	1.91	0.88	108.30	1.83	0.84	NZ
NURQNU		107.95	1.53	0.70	107.93	1.46	0.68	TA
P238XE		103.33	-3.09	-1.42	103.47	-3.01	-1.39	TA
PLEWDX	X	100.00	-6.42	-2.94	95.00	-11.47	-5.30	NZ
PY3YT6		110.62	4.20	1.92	110.57	4.10	1.90	MT
WDWWXM		102.25	-4.17	-1.91	102.13	-4.34	-2.01	XX
WWAFR6		105.00	-1.42	-0.65	105.33	-1.14	-0.53	TA
XBN4GT		107.59	1.16	0.53	107.21	0.74	0.34	XX
Y6TV7J		105.60	-0.82	-0.38	105.70	-0.77	-0.36	TA
Z2MP84		107.23	0.81	0.37	107.87	1.39	0.64	NZ
ZZLFNM		107.30	0.88	0.40	107.80	1.33	0.61	TA

Summary Statistics

	Sample V67	Sample V68
Grand Means	106.423 Degrees Celsius	106.472 Degrees Celsius
Std Dev Btwn Labs	2.183 Degrees Celsius	2.163 Degrees Celsius

Statistics based on 17 of 19 reporting participants

Sample V67: ABS & Sample V68: ABS

Comments on Assigned Data Flags for Test #764

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

B8G8CR (X) - Data for both samples are high. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

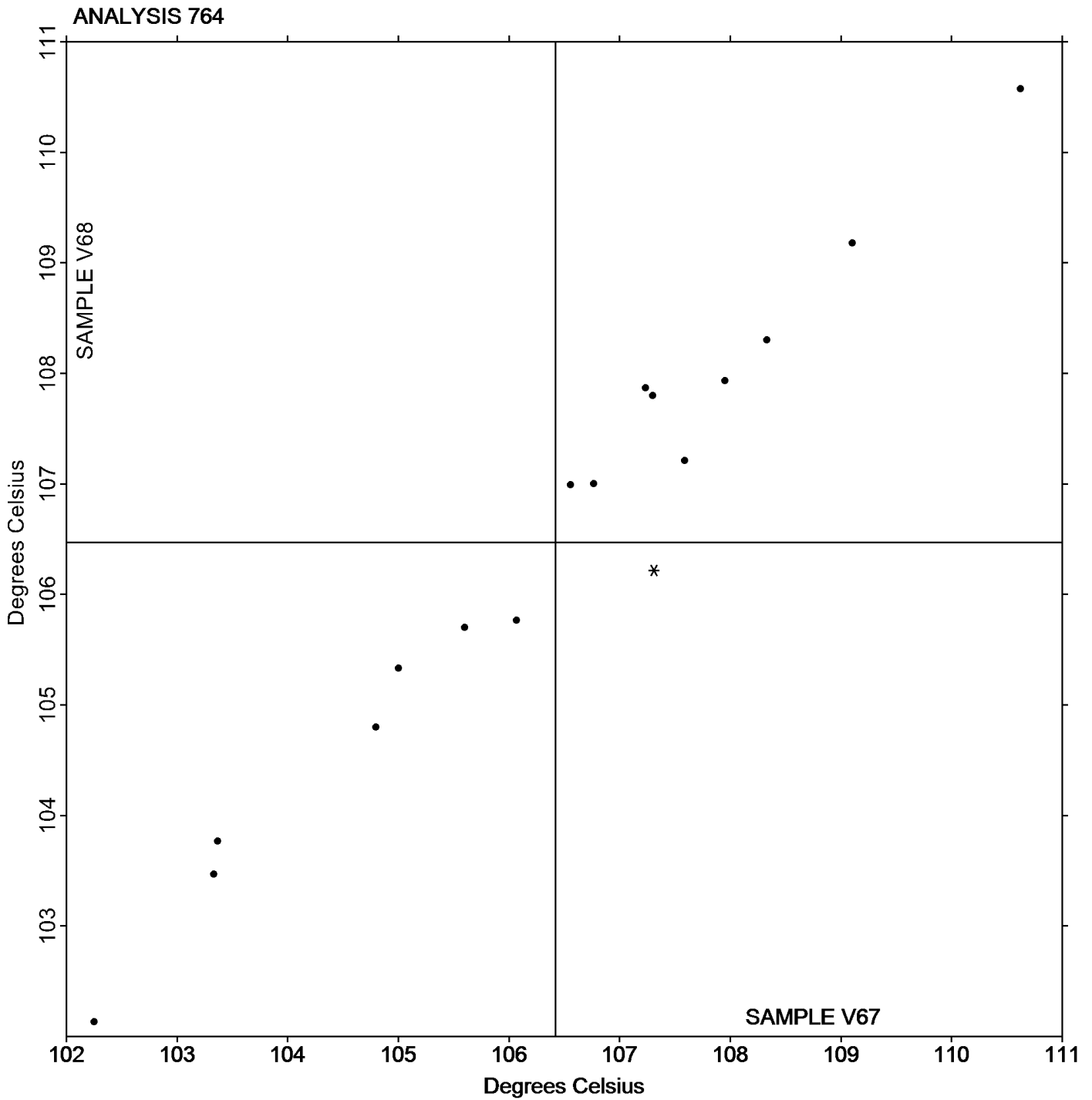
Report #114

Analysis 764

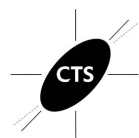
2nd Qtr 2020

DSC Glass Transition Temperature

Grand Mean Sample V67: 106.42 Degrees Celsius Grand Mean Sample V68: 106.47 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 #114

Analysis 770

2nd Qtr 2020

Tensile Stress at Yield, Film Samples - psi

WebCode	Data Flag	Sample B67			Sample B68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
49D8CQ		3,243	515	1.54	2,107	205	1.16	SH
4DBQHV	X	11	-2,717	-8.14	7	-1,895	-10.75	IN
6QCQMJ	X	9	-2,719	-8.14	7	-1,895	-10.75	XX
9RDQDU		2,680	-48	-0.14	1,905	3	0.01	IN
A9JE2E	X	6	-2,722	-8.15	5	-1,897	-10.76	IN
AFWLLN		2,708	-20	-0.06	1,893	-9	-0.05	IN
BDNWDC	X	6	-2,722	-8.16	4	-1,898	-10.76	XX
EFFZUA	X	6	-2,722	-8.15	5	-1,897	-10.76	IN
EW8ZL9	X	6	-2,722	-8.15	6	-1,896	-10.75	XX
F9JH2J	X	5	-2,722	-8.16	4	-1,898	-10.76	IN
FE6KZ9	X	10	-2,718	-8.14	7	-1,895	-10.75	XX
FT6G38		2,804	76	0.23	2,006	104	0.59	MT
MLJU94		1,891	-837	-2.51	1,460	-442	-2.50	IN
MWGFV2	X	6	-2,722	-8.15	5	-1,897	-10.76	IN
NMR7Q6		2,715	-13	-0.04	1,804	-98	-0.56	OA
PLEWDX		2,784	56	0.17	1,963	61	0.34	IN
RE6ER3		2,826	98	0.29	2,003	100	0.57	MT
U3JW9U		2,800	72	0.22	1,992	90	0.51	LI
WTCWRR		2,829	101	0.30	1,888	-14	-0.08	SH
Z76RCN	X	6	-2,722	-8.15	6	-1,896	-10.75	XX

Summary Statistics

	Sample B67	Sample B68
Grand Means	2,727.9 psi	1,902.0 psi
Stnd Dev Btwn Labs	333.8 psi	176.3 psi
Statistics based on 10 of 20 reporting participants		

Sample B67: LDPE & Sample B68: LDPE



Comments on Assigned Data Flags for Test #770

4DBQHV (X) - Extreme data.

F9JH2J (X) - Extreme data.

FE6KZ9 (X) - Extreme data.

EFFZUA (X) - Extreme data.

A9JE2E (X) - Extreme data.

MWGFV2 (X) Extreme data.

-

6QCQMJ (X) - Extreme data.

EW8ZL9 (X) - Extreme data.

BDNWDC (X) Extreme data.

-

Z76RCN (X) - Extreme data.

Key to Instrument Codes Reported by Participants

IN Instron

LI Lloyd Instruments

MT MTS/Sintech

OA Oakland Testing

SH Shimadzu

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

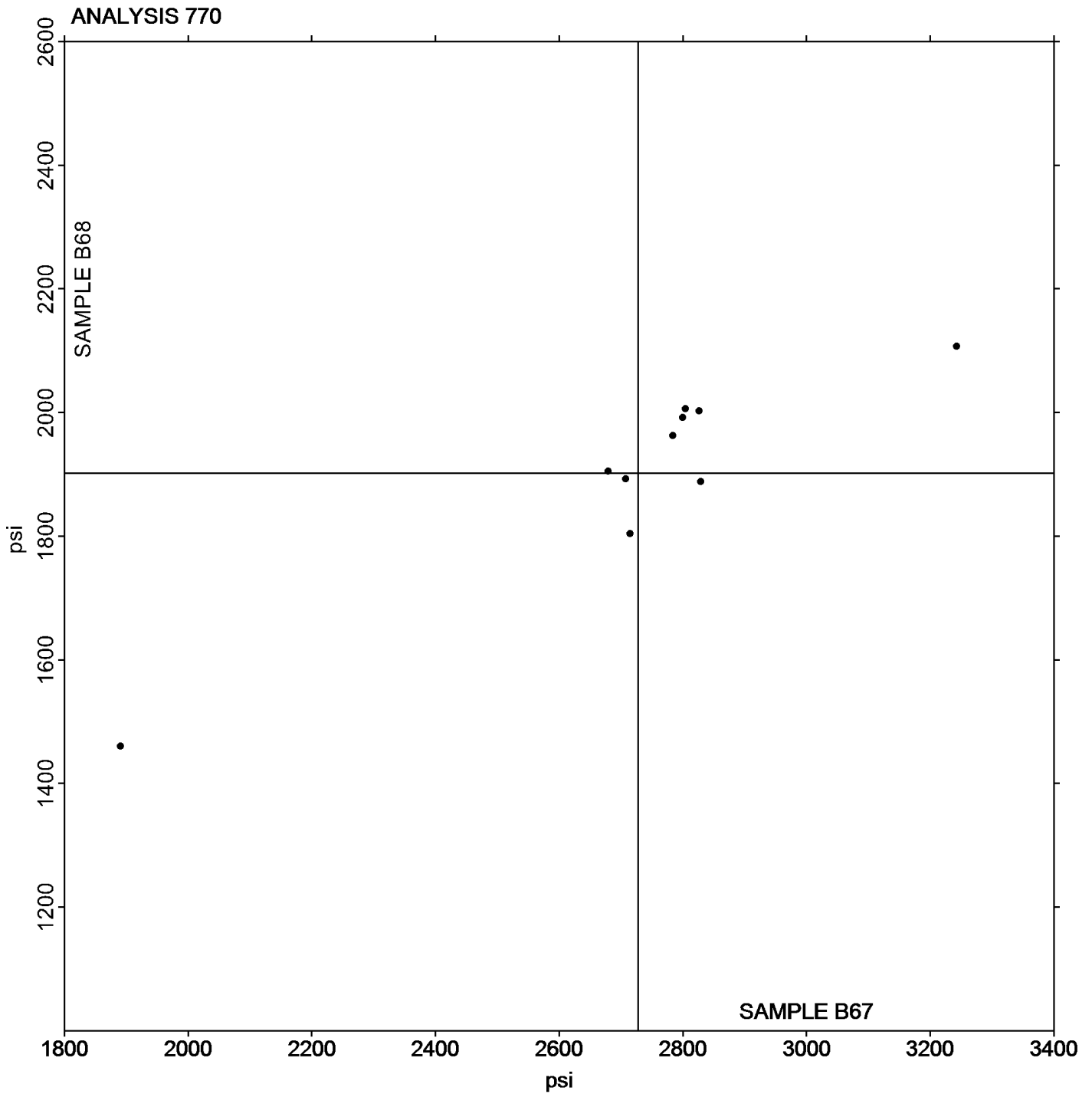
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Analysis 770

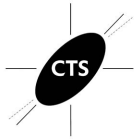
2nd Qtr 2020

Tensile Stress at Yield, Film Samples - psi

Grand Mean Sample B67: 2,727.86 psi Grand Mean Sample B68: 1,902.02 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 #114

Analysis 771

2nd Qtr 2020

Tensile Stress at Break, Film Samples - psi

WebCode	Data Flag	<u>Sample B67</u>			<u>Sample B68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
49D8CQ		4,100	473	1.18	3,039	-228	-0.46	SH
9RDQDU		3,560	-68	-0.17	3,324	57	0.11	IN
AFWLLN		3,850	222	0.56	3,626	360	0.72	IN
CTFUE8		2,614	-1,014	-2.54	2,047	-1,220	-2.44	IN
EZV8EH		3,888	260	0.65	3,817	551	1.10	SH
MLJU94		3,289	-339	-0.85	2,817	-449	-0.90	IN
NMR7Q6		3,738	110	0.28	3,382	115	0.23	OA
PLEWDX		3,514	-114	-0.29	3,791	524	1.05	IN
RE6ER3		3,726	98	0.25	3,303	37	0.07	MT
U3JW9U		3,827	199	0.50	3,440	174	0.35	LI
WTCWRR		3,799	171	0.43	3,345	79	0.16	SH

Summary Statistics

	<u>Sample B67</u>	<u>Sample B68</u>
Grand Means	3,627.6 psi	3,266.3 psi
Std Dev Btwn Labs	399.0 psi	500.4 psi

Statistics based on 11 of 11 reporting participants

Sample B67: LDPE & Sample B68: LDPE

Key to Instrument Codes Reported by Participants

- | | |
|-----------------------|-----------------------------|
| IN Instron | LI Lloyd Instruments |
| MT MTS/Sintech | OA Oakland Testing |
| SH Shimadzu | |



Plastics Interlaboratory Testing Program

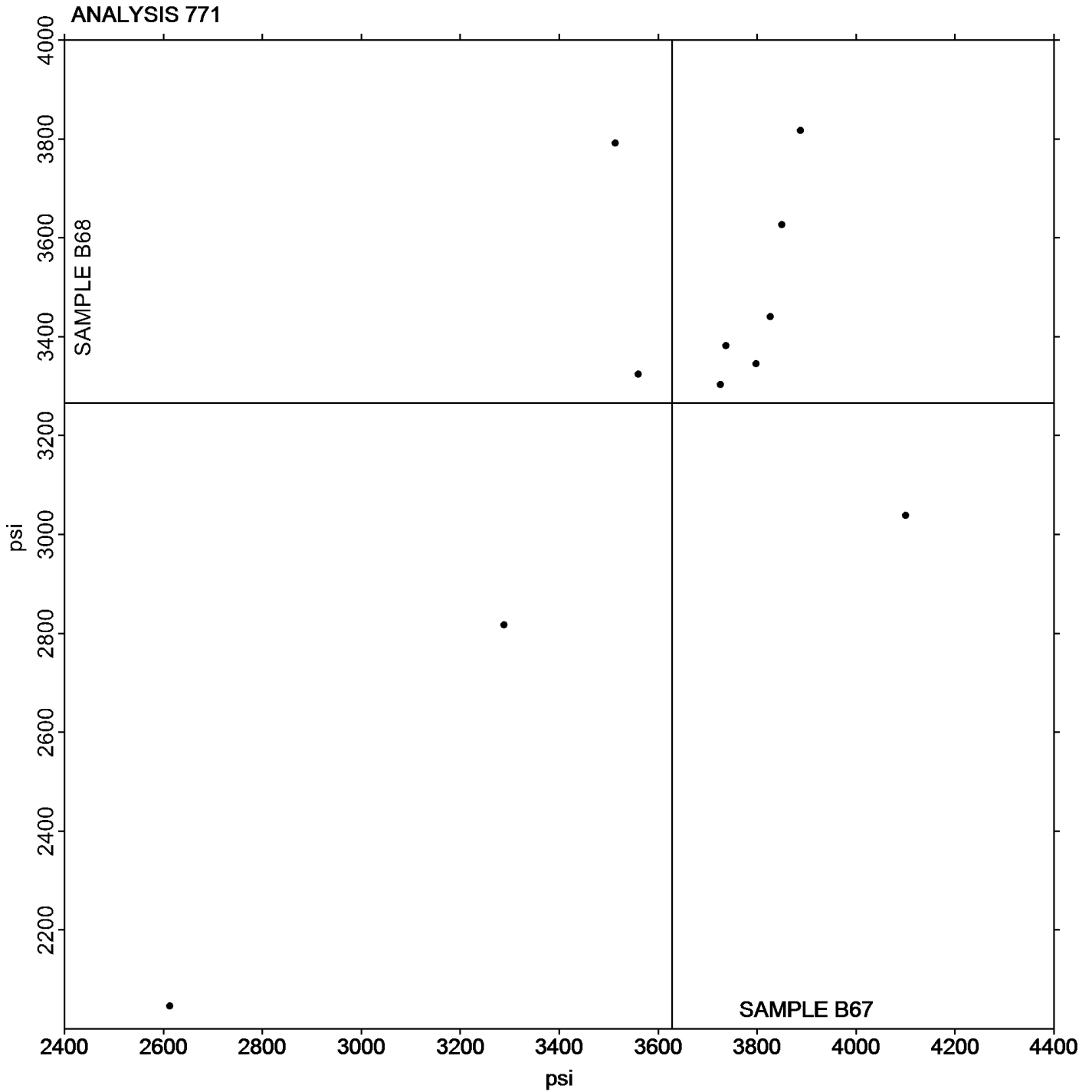
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Analysis 771

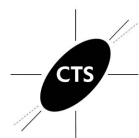
2nd Qtr 2020

Tensile Stress at Break, Film Samples - psi

Grand Mean Sample B67: 3,627.62 psi Grand Mean Sample B68: 3,266.32 psi



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



Plastics Interlaboratory Testing Program

Report #114

Analysis 772

2nd Qtr 2020

Percent Elongation at Yield, Films

WebCode	Data Flag	<u>Sample B67</u>			<u>Sample B68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
49D8CQ		133.61	39.39	0.88	98.97	23.02	0.62	SH
9RDQDU		125.72	31.50	0.70	100.91	24.96	0.67	IN
AFWLLN		107.10	12.88	0.29	89.32	13.37	0.36	IN
MLJU94		7.64	-86.59	-1.94	7.65	-68.29	-1.84	IN
PLEWDX		41.85	-52.37	-1.17	26.37	-49.58	-1.34	IN
RE6ER3		108.90	14.68	0.33	100.10	24.15	0.65	MT
U3JW9U		112.53	18.31	0.41	87.40	11.45	0.31	LI
WTCWRR		116.45	22.22	0.50	96.85	20.90	0.56	SH

Summary Statistics

	<u>Sample B67</u>	<u>Sample B68</u>
Grand Means	94.224 Percent	75.947 Percent
Std Dev Btwn Labs	44.711 Percent	37.043 Percent
Statistics based on 8 of 8 reporting participants		

Sample B67: LDPE & Sample B68: LDPE

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

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

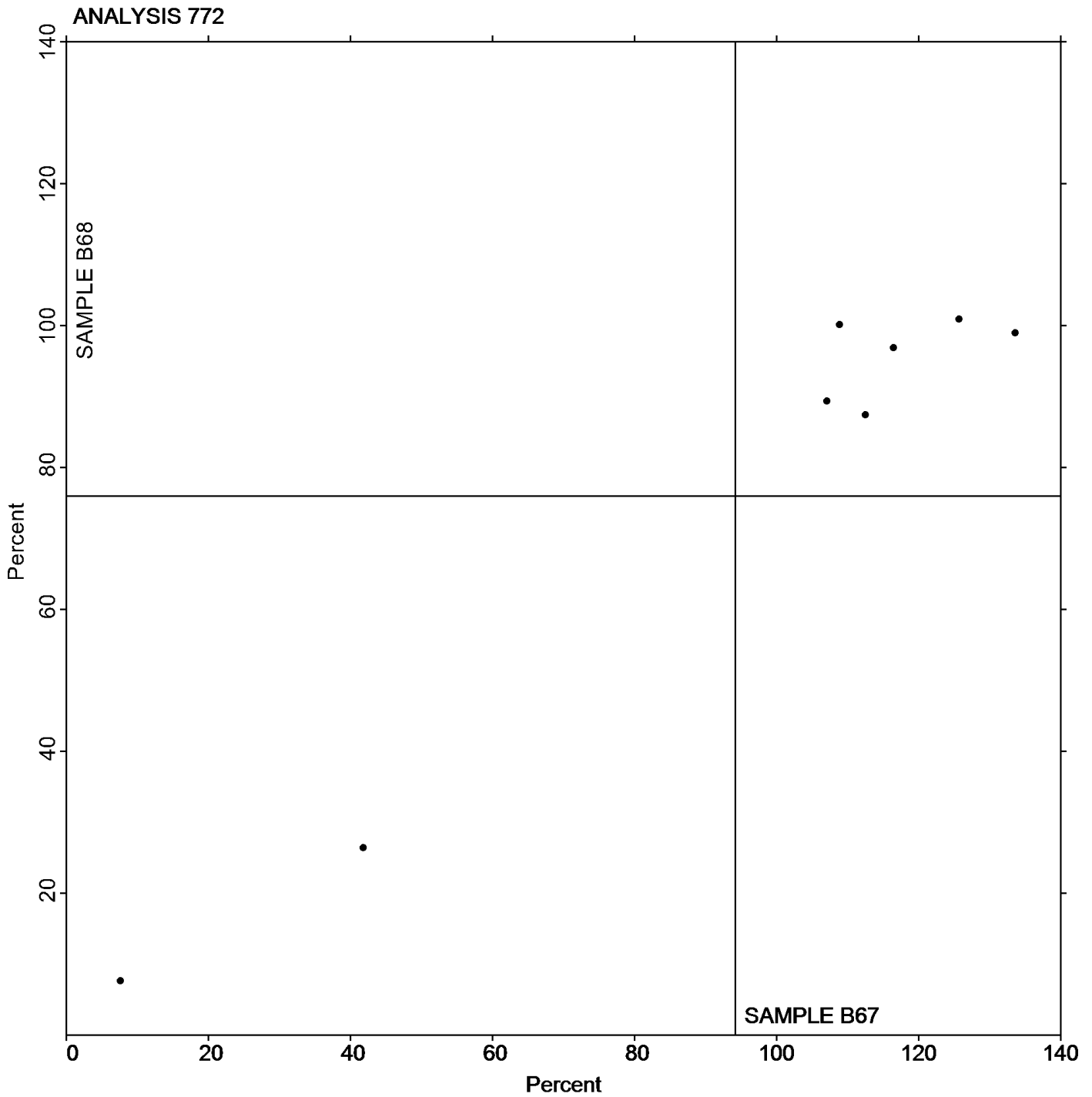
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Analysis 772

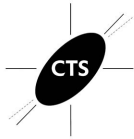
2nd Qtr 2020

Percent Elongation at Yield, Films

Grand Mean Sample B67: 94.224 Percent Grand Mean Sample B68: 75.947 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 #114

Analysis 773

2nd Qtr 2020

Percent Elongation at Break, Film Samples

WebCode	Data Flag	<u>Sample B67</u>			<u>Sample B68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
49D8CQ		618.3	92.0	1.07	710.7	-12.9	-0.13	SH
9RDQDU		589.8	63.5	0.74	781.9	58.3	0.58	IN
AFWLLN		588.7	62.4	0.73	828.8	105.2	1.06	IN
CTFUE8		554.8	28.5	0.33	694.8	-28.8	-0.29	IN
EZV8EH		553.8	27.5	0.32	574.4	-149.2	-1.50	SH
MLJU94		371.5	-154.8	-1.81	863.3	139.7	1.40	IN
NMR7Q6		525.3	-1.0	-0.01	773.0	49.4	0.50	OA
PLEWDX		392.9	-133.4	-1.56	624.7	-98.9	-0.99	IN
RE6ER3		436.2	-90.1	-1.05	564.7	-158.9	-1.59	MT
U3JW9U		578.9	52.6	0.61	774.7	51.1	0.51	LI
WTCWRR		579.3	53.0	0.62	768.8	45.2	0.45	SH

Summary Statistics

	<u>Sample B67</u>	<u>Sample B68</u>
Grand Means	526.32 Percent	723.63 Percent
Std Dev Btwn Labs	85.68 Percent	99.68 Percent

Statistics based on 11 of 11 reporting participants

Sample B67: LDPE & Sample B68: LDPE

Key to Instrument Codes Reported by Participants

- IN** Instron
- LI** Lloyd Instruments
- MT** MTS/Sintech
- OA** Oakland Testing
- SH** Shimadzu



Plastics Interlaboratory Testing Program

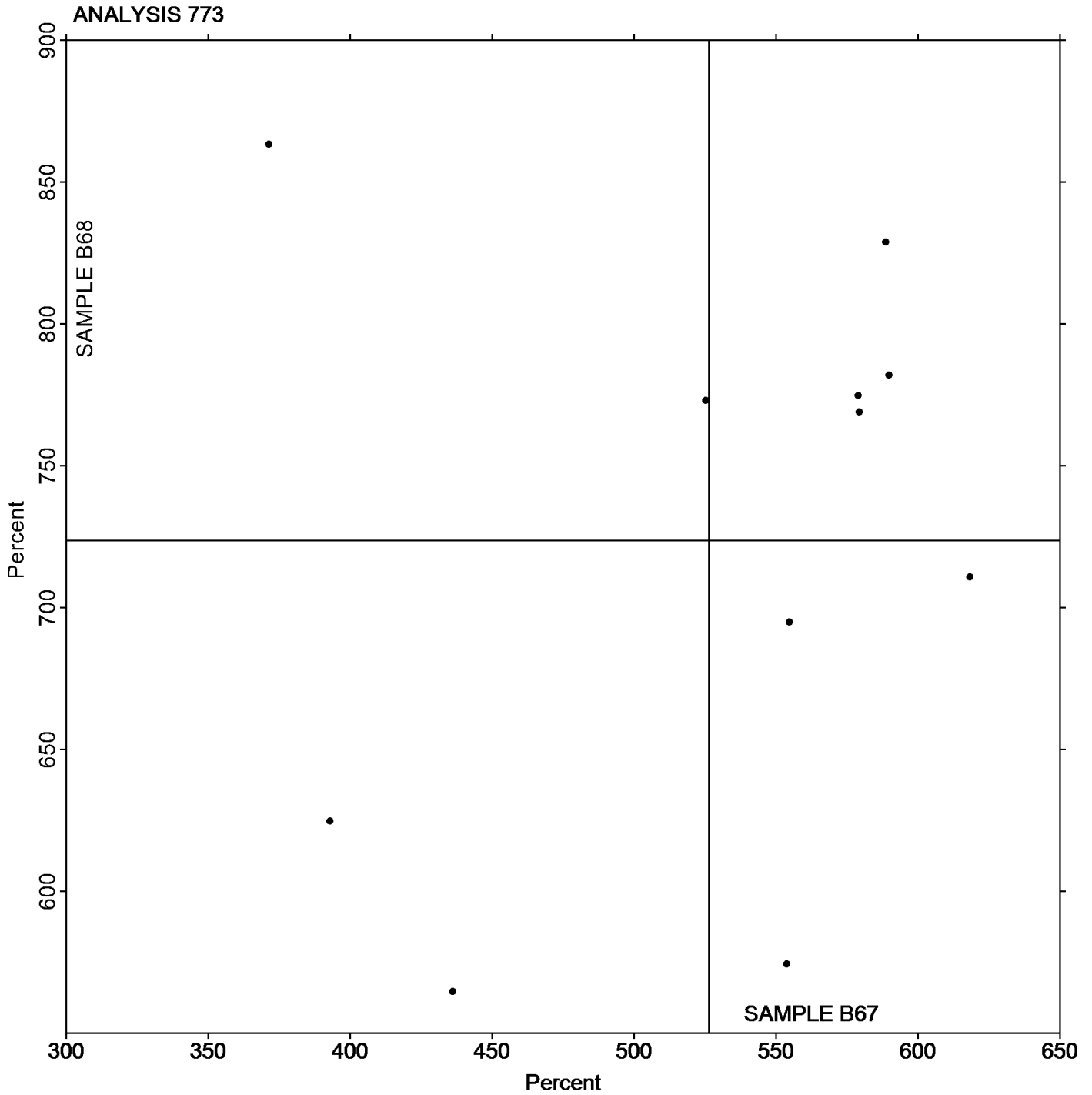
Report #114

Analysis 773

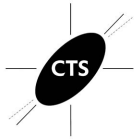
2nd Qtr 2020

Percent Elongation at Break, Film Samples

Grand Mean Sample B67: 526.32 Percent Grand Mean Sample B68: 723.63 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 #114

Analysis 774

2nd Qtr 2020

Thickness of Film Tensile Samples - mils

WebCode	Data Flag	<u>Sample B67</u>			<u>Sample B68</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
49D8CQ		2.8898	-0.0625	-0.79	2.7520	-0.0132	-0.12
9RDQDU		2.9640	0.0118	0.15	2.7810	0.0159	0.14
AFWLLN		3.0180	0.0658	0.83	2.7920	0.0269	0.24
CTFUE8		2.9567	0.0045	0.06	2.7677	0.0026	0.02
EZV8EH		2.9370	-0.0152	-0.19	2.6811	-0.0840	-0.77
K3JKL3		2.7580	-0.1942	-2.46	2.5660	-0.1991	-1.82
MLJU94		2.9950	0.0428	0.54	2.7970	0.0319	0.29
NMR7Q6		3.0000	0.0478	0.61	3.0000	0.2349	2.14
PLEWDX		2.9800	0.0278	0.35	2.7110	-0.0541	-0.49
QNVQCV		3.0000	0.0478	0.61	2.8300	0.0649	0.59
RE6ER3		3.0740	0.1218	1.54	2.9040	0.1389	1.27
U3JW9U		2.9319	-0.0203	-0.26	2.6918	-0.0734	-0.67
WTCWRR		2.8745	-0.0778	-0.98	2.6733	-0.0919	-0.84

Summary Statistics

	<u>Sample B67</u>	<u>Sample B68</u>
Grand Means	2.95222 mils	2.76514 mils
Std Dev Btwn Labs	0.07895 mils	0.10965 mils

Statistics based on 13 of 13 reporting participants

Sample B67: LDPE & Sample B68: LDPE



Plastics Interlaboratory Testing Program

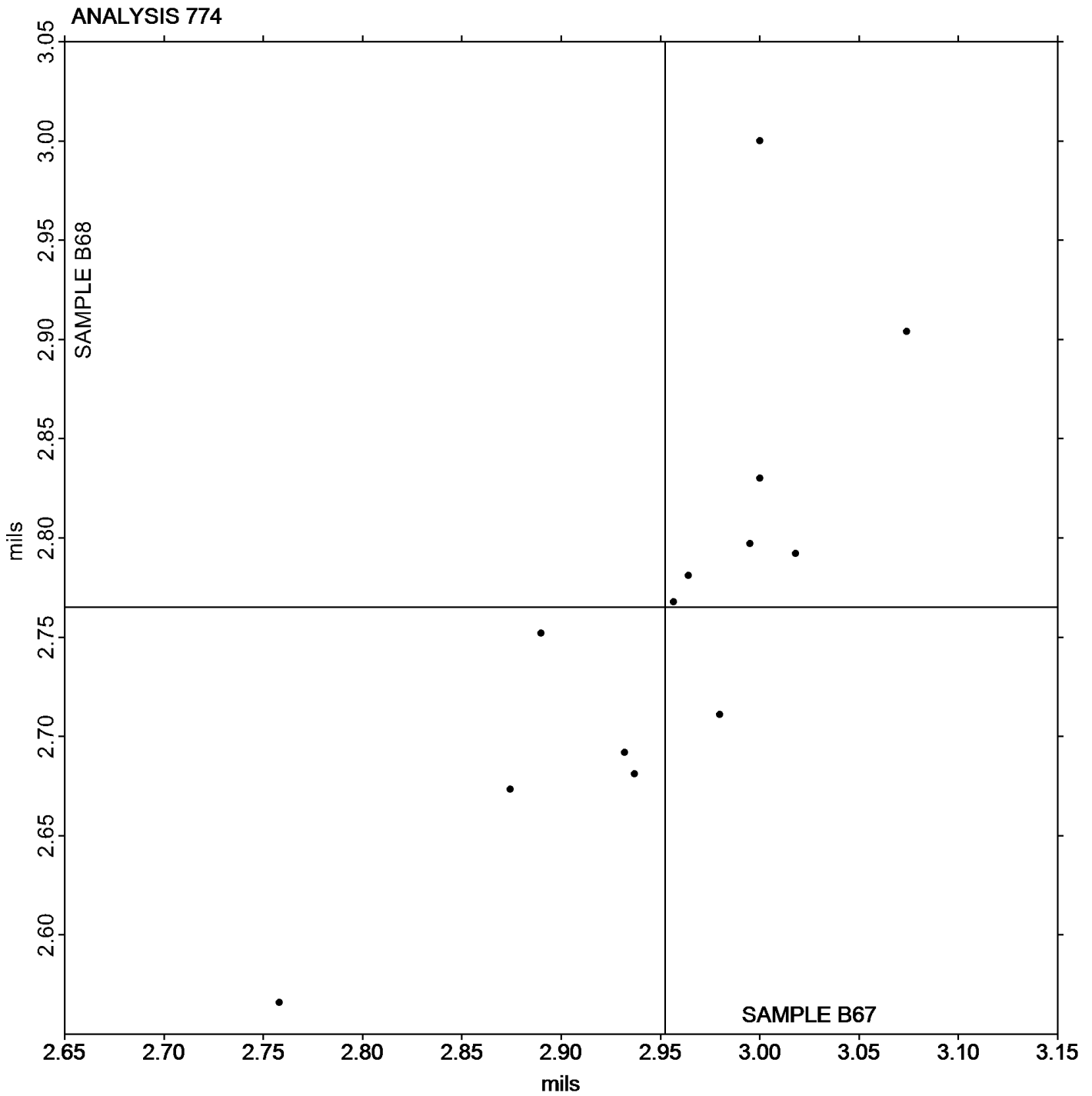
Report #114

Analysis 774

2nd Qtr 2020

Thickness of Film Tensile Samples - mils

Grand Mean Sample B67: 2.9522 mils Grand Mean Sample B68: 2.7651 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 #114

Analysis 775

2nd Qtr 2020

Secant Modulus at 1% Strain - psi

WebCode	Data Flag	<u>Sample B67</u>			<u>Sample B68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
49D8CQ		36,904	-1,379	-0.20	32,899	3,725	0.74	SH
9RDQDU		40,723	2,441	0.36	29,514	340	0.07	IN
AFWLLN		42,012	3,730	0.55	31,540	2,366	0.47	IN
CTFUE8		23,153	-15,130	-2.23	17,951	-11,224	-2.22	IN
MLJU94		43,313	5,030	0.74	32,081	2,906	0.57	IN
NMR7Q6		36,841	-1,442	-0.21	26,452	-2,722	-0.54	OA
PLEWDX		46,197	7,914	1.17	34,732	5,558	1.10	IN
RE6ER3		31,072	-7,211	-1.06	24,038	-5,137	-1.02	MT
U3JW9U		40,167	1,884	0.28	30,046	872	0.17	LI
WTCWRR		42,444	4,162	0.61	32,491	3,317	0.66	SH

Summary Statistics		
	<u>Sample B67</u>	<u>Sample B68</u>
Grand Means	38,282.6 psi	29,174.4 psi
Stnd Dev Btwn Labs	6,778.6 psi	5,060.2 psi
Statistics based on 10 of 10 reporting participants		

Sample B67: LDPE & Sample B68: LDPE

Key to Instrument Codes Reported by Participants

- | | |
|-----------------------|-----------------------------|
| IN Instron | LI Lloyd Instruments |
| MT MTS/Sintech | OA Oakland Testing |
| SH Shimadzu | |



Plastics Interlaboratory Testing Program

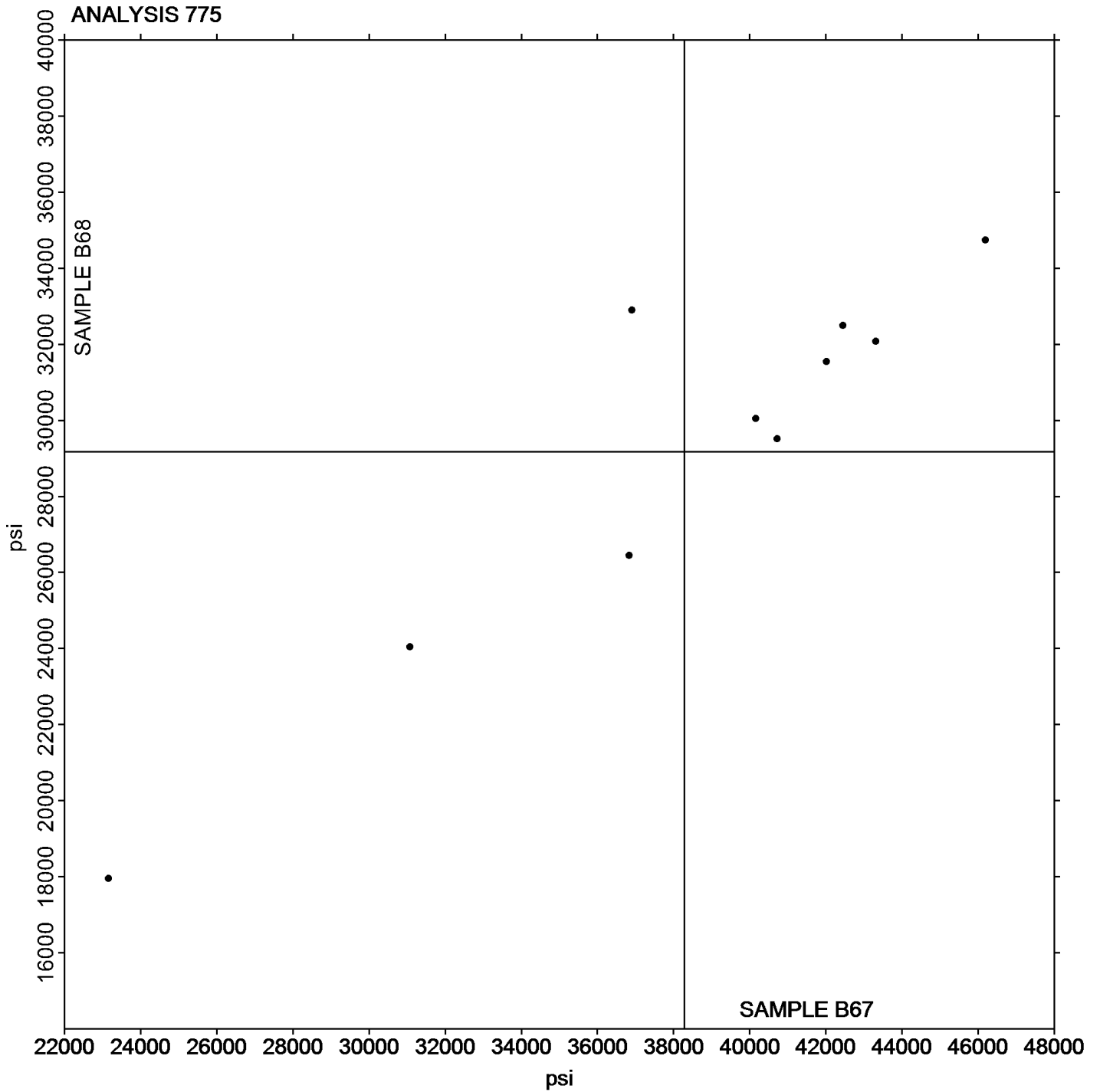
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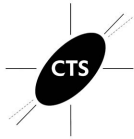
2nd Qtr 2020

Secant Modulus at 1% Strain - psi

Grand Mean Sample B67: 38,282.55 psi Grand Mean Sample B68: 29,174.41 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 #114

Analysis 776

2nd Qtr 2020

Secant Modulus at 2% Strain - psi

WebCode	Data Flag	<u>Sample B67</u>			<u>Sample B68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
49D8CQ		32,663	-580	-0.12	26,342	1,289	0.35	SH
9RDQDU		33,608	364	0.07	24,561	-492	-0.13	IN
AFWLLN		35,668	2,425	0.49	26,734	1,682	0.46	IN
CTFUE8		22,066	-11,178	-2.28	16,568	-8,484	-2.31	IN
MLJU94		36,132	2,889	0.59	26,755	1,702	0.46	MT
PLEWDX		38,567	5,324	1.09	28,809	3,756	1.02	IN
U3JW9U		33,833	590	0.12	25,664	611	0.17	LI
WTCWRR		33,409	166	0.03	24,989	-64	-0.02	SH

Summary Statistics

	<u>Sample B67</u>	<u>Sample B68</u>
Grand Means	33,243.2 psi	25,052.6 psi
Std Dev Btwn Labs	4,904.2 psi	3,666.5 psi
Statistics based on 8 of 8 reporting participants		

Sample B67: LDPE & Sample B68: LDPE

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

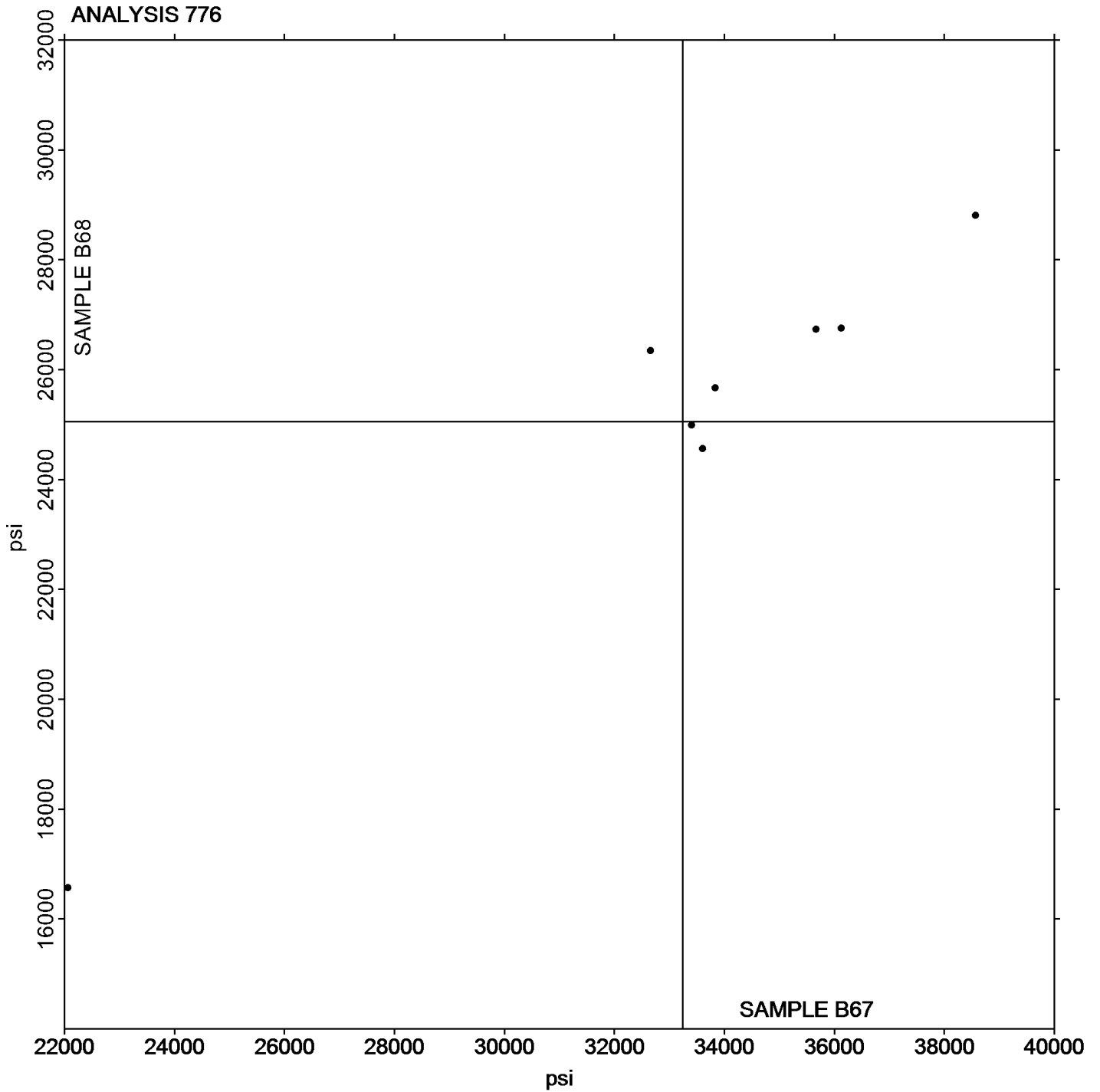
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Analysis 776

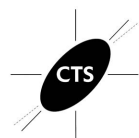
2nd Qtr 2020

Secant Modulus at 2% Strain - psi

Grand Mean Sample B67: 33,243.18 psi Grand Mean Sample B68: 25,052.58 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 #114

Analysis 780

2nd Qtr 2020

Coefficient of Static Friction

WebCode	Data Flag	<u>Sample P67</u>			<u>Sample P68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2V3M2M		0.1950	0.0332	0.60	0.2278	0.0616	1.04	IS
AFWLLN		0.1960	0.0342	0.62	0.1494	-0.0168	-0.28	TM
CYMDG7		0.2286	0.0668	1.20	0.2282	0.0620	1.04	TH
EZV8EH		0.2340	0.0722	1.30	0.2640	0.0978	1.64	SA
MLJU94	X	2.1622	2.0004	36.07	2.1994	2.0332	34.21	MI
NMR7Q6		0.1366	-0.0252	-0.45	0.1498	-0.0164	-0.28	DY
PLEWDX		0.0960	-0.0658	-1.19	0.1040	-0.0622	-1.05	TH
WTCWRR		0.1410	-0.0208	-0.38	0.1545	-0.0117	-0.20	SA
X773UL		0.1521	-0.0097	-0.18	0.1102	-0.0560	-0.94	IG
Y9CNMR		0.0771	-0.0847	-1.53	0.1082	-0.0581	-0.98	IG

Summary Statistics		
	<u>Sample P67</u>	<u>Sample P68</u>
Grand Means	0.16183 COF	0.16623 COF
Stnd Dev Btwn Labs	0.05546 COF	0.05944 COF
Statistics based on 9 of 10 reporting participants		

Sample P67: LDPE & Sample P68: LDPE

Comments on Assigned Data Flags for Test #780

MLJU94 (X) - Extreme data.

Key to Instrument Codes Reported by Participants

DY Dynisco Model D1055	IG Instron
IS Instron 5000 Series	MI MTS Insight
SA Shimadzu Autograph	TH Thwing Albert Friction/Peel Tester Model 225-1
TM TMI Slip and Friction Tester	



Plastics Interlaboratory Testing Program

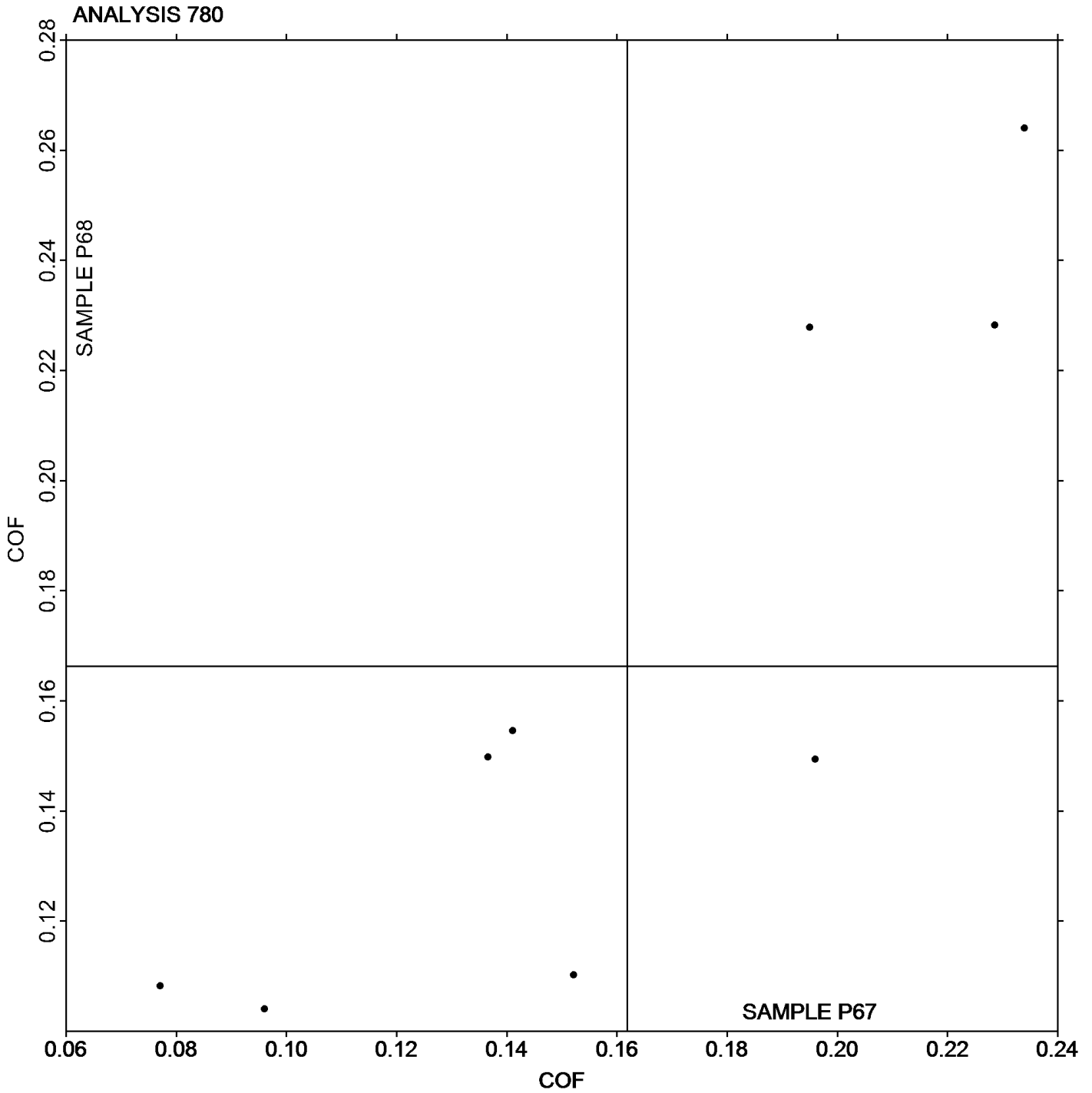
Report #114

Analysis 780

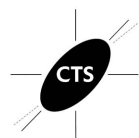
2nd Qtr 2020

Coefficient of Static Friction

Grand Mean Sample P67: 0.16183 COF Grand Mean Sample P68: 0.16623 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 #114

Analysis 781

2nd Qtr 2020

Coefficient of Kinetic Friction

WebCode	Data Flag	Sample P67			Sample P68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4DBQHV		0.1440	0.0397	0.98	0.1500	0.0490	1.13	DY
6QCQMJ		0.0500	-0.0543	-1.34	0.0500	-0.0510	-1.17	XX
A9JE2E		0.0500	-0.0543	-1.34	0.0500	-0.0510	-1.17	DY
AFWLLN		0.1126	0.0083	0.20	0.1142	0.0132	0.30	TM
BDNWDC	*	0.1160	0.0117	0.29	0.0500	-0.0510	-1.17	XX
CYMDG7		0.1274	0.0231	0.57	0.1272	0.0262	0.60	TH
EFFZUA		0.1160	0.0117	0.29	0.0900	-0.0110	-0.25	XX
EW8ZL9		0.1600	0.0557	1.38	0.1620	0.0610	1.40	XX
EZV8EH		0.1220	0.0177	0.44	0.1420	0.0410	0.94	SA
F9JH2J		0.1560	0.0517	1.28	0.1500	0.0490	1.13	DY
FE6KZ9		0.1720	0.0677	1.67	0.1680	0.0670	1.54	XX
MLJU94	X	1.0228	0.9185	22.70	1.1872	1.0862	24.93	MI
MWGFV2		0.0500	-0.0543	-1.34	0.0500	-0.0510	-1.17	DY
NMR7Q6		0.0900	-0.0143	-0.35	0.0988	-0.0022	-0.05	DY
PLEWDX		0.0820	-0.0223	-0.55	0.0820	-0.0190	-0.44	TH
WTCWRR		0.0543	-0.0500	-1.24	0.0445	-0.0565	-1.30	SA
X773UL		0.0718	-0.0325	-0.80	0.0661	-0.0349	-0.80	IG
Y9CNMR		0.0735	-0.0308	-0.76	0.0868	-0.0142	-0.33	IG
Z76RCN		0.1300	0.0257	0.63	0.1360	0.0350	0.80	XX

Summary Statistics

	Sample P67	Sample P68
Grand Means	0.10432 COF	0.10098 COF
Std Dev Btwn Labs	0.04046 COF	0.04358 COF

Statistics based on 18 of 19 reporting participants

Sample P67: LDPE & Sample P68: LDPE

Comments on Assigned Data Flags for Test #781

MLJU94 (X) - Extreme data.

Key to Instrument Codes Reported by Participants

DY Dynisco Model D1055	IG Instron
MI MTS Insight	SA Shimadzu Autograph
TH Thwing Albert Friction/Peel Tester Model 225-1	TM TMI Slip and Friction Tester
XX Instrument make/model not specified by lab	



Plastics Interlaboratory Testing Program

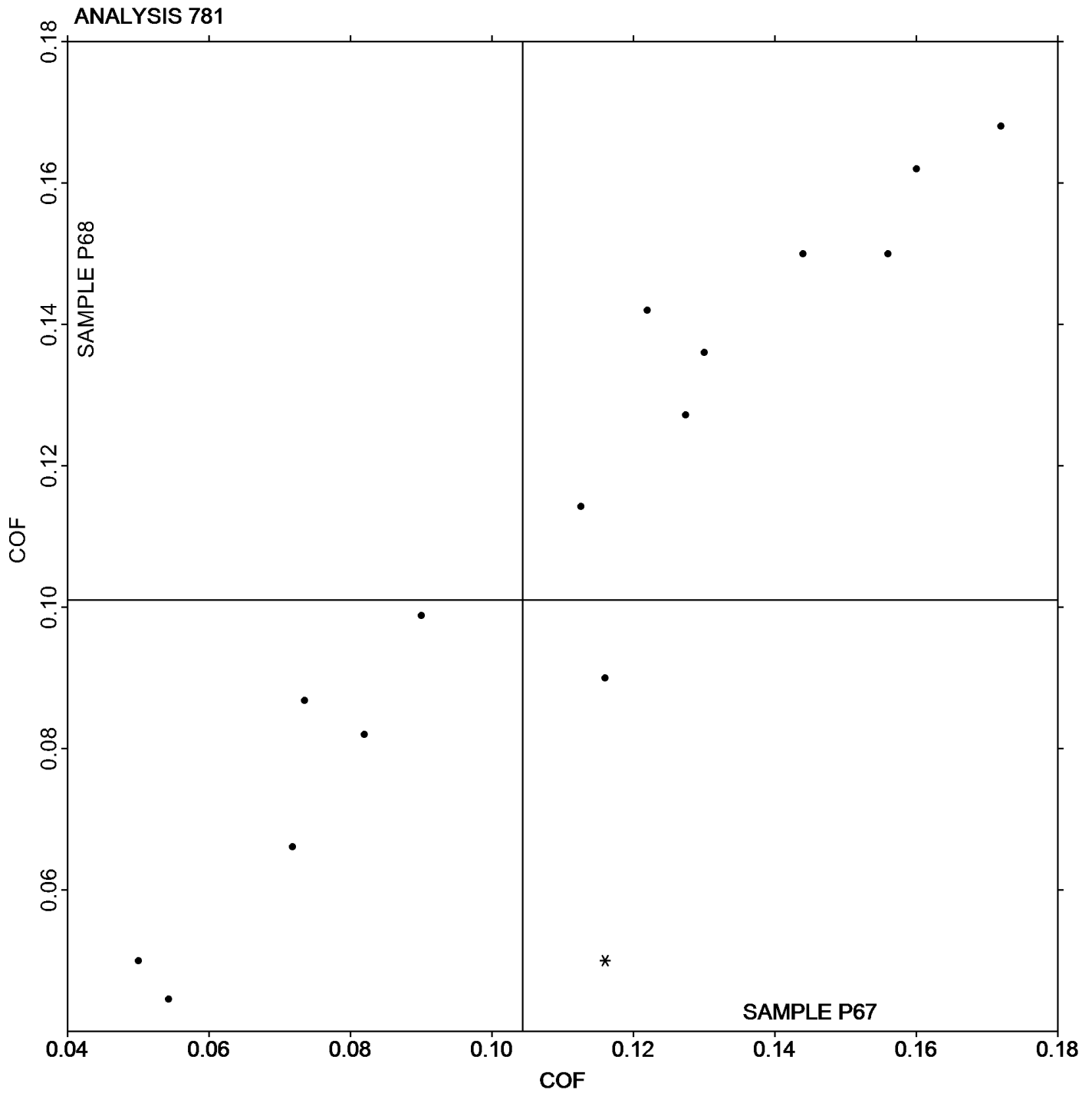
Report #114

Analysis 781

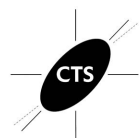
2nd Qtr 2020

Coefficient of Kinetic Friction

Grand Mean Sample P67: 0.10432 COF Grand Mean Sample P68: 0.10098 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 #114

Analysis 782

2nd Qtr 2020

Tear Resistance of Films

WebCode	Data Flag	<u>Sample Q67</u>			<u>Sample Q68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
AFWLLN		271.3	-48.6	-0.58	339.1	-20.6	-0.26	TM
EZV8EH		456.0	136.1	1.63	454.4	94.6	1.20	LO
MLJU94		297.2	-22.7	-0.27	405.6	45.9	0.58	TE
NMR7Q6		268.2	-51.7	-0.62	326.4	-33.3	-0.42	TA
PLEWDX		386.9	67.0	0.80	401.9	42.2	0.54	TE
WTCWRR		239.8	-80.1	-0.96	231.0	-128.7	-1.64	TE

Summary Statistics

	<u>Sample Q67</u>	<u>Sample Q68</u>
Grand Means	319.89 grams-force	359.74 grams-force
Std Dev Btwn Labs	83.65 grams-force	78.67 grams-force

Statistics based on 6 of 6 reporting participants

Sample Q67: LDPE & Sample Q68: LDPE

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

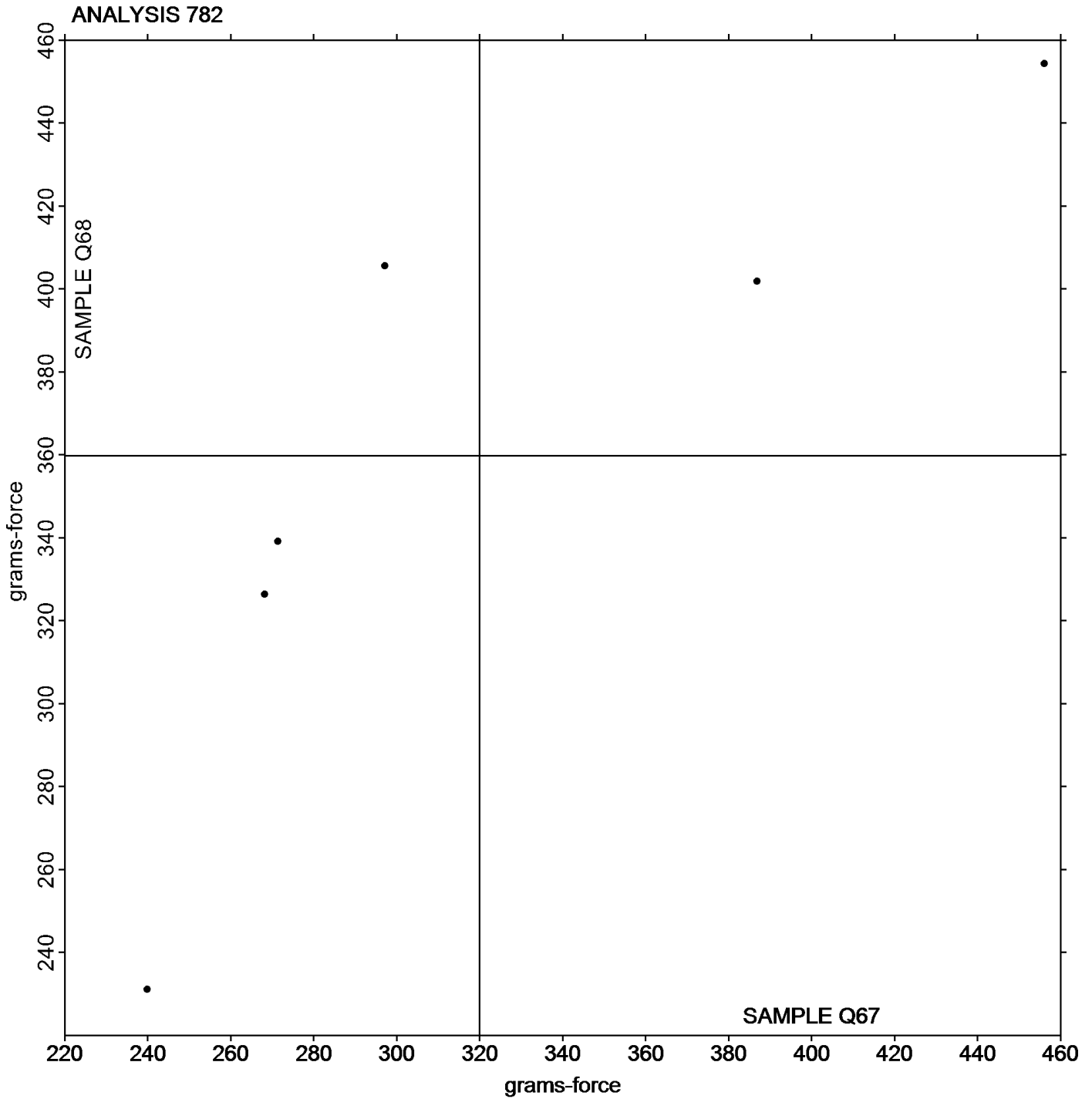
Report #114

Analysis 782

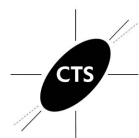
2nd Qtr 2020

Tear Resistance of Films

Grand Mean Sample Q67: 319.89 grams-force Grand Mean Sample Q68: 359.74 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 #114

Analysis 785

2nd Qtr 2020

Percent Haze of Film

WebCode	Data Flag	Sample D67			Sample D68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KVC7G		21.425	0.152	0.15	21.413	0.188	0.17	BJ
3DW2EH		20.083	-1.190	-1.16	19.785	-1.439	-1.34	XR
42J6AE		23.025	1.752	1.71	22.675	1.451	1.35	BT
86LENC		19.963	-1.310	-1.28	19.163	-2.062	-1.92	HL
8FKANT		20.471	-0.802	-0.78	20.330	-0.894	-0.83	XX
AFWLLN		21.888	0.615	0.60	22.088	0.863	0.80	BJ
BPELCH		20.895	-0.378	-0.37	21.348	0.123	0.11	BJ
CYMDG7		19.638	-1.635	-1.60	19.788	-1.437	-1.33	BH
D3XN8F		20.150	-1.123	-1.10	20.150	-1.074	-1.00	BJ
ELNLM D		21.500	0.227	0.22	21.275	0.051	0.05	BJ
G4ZNYQ		22.083	0.810	0.79	21.879	0.655	0.61	XR
GB22FL		22.750	1.477	1.45	22.550	1.326	1.23	XX
GV9AVK		20.300	-0.973	-0.95	20.408	-0.817	-0.76	XR
HEWH4Y		21.113	-0.160	-0.16	21.263	0.038	0.04	BJ
JVVUCZ	X	22.920	1.647	1.61	21.094	-0.130	-0.12	XX
K3JKL3		21.225	-0.048	-0.05	20.825	-0.399	-0.37	BJ
LNEQLD		19.726	-1.547	-1.51	19.751	-1.473	-1.37	HL
MLJU94		20.988	-0.285	-0.28	21.563	0.338	0.31	BJ
N3LTWW		21.415	0.142	0.14	21.308	0.083	0.08	BJ
NMR7Q6		22.153	0.880	0.86	21.928	0.703	0.65	XR
PLEWDX		21.575	0.302	0.30	21.750	0.526	0.49	BJ
VEBY92		20.513	-0.760	-0.74	20.900	-0.324	-0.30	BJ
VNDFFX		21.313	0.040	0.04	21.025	-0.199	-0.19	BJ
WED46P	*	24.004	2.731	2.67	24.393	3.168	2.94	XR
WTCWRR		21.175	-0.098	-0.10	20.888	-0.337	-0.31	BJ
XWKW2N		21.788	0.515	0.50	21.838	0.613	0.57	BJ
YKN7XV		21.813	0.540	0.53	21.188	-0.037	-0.03	BJ
ZZLFNM		21.400	0.127	0.12	21.588	0.363	0.34	BJ



Plastics Interlaboratory Testing Program

Report #114

Analysis 785

2nd Qtr 2020

Percent Haze of Film

Summary Statistics		
	<u>Sample D67</u>	<u>Sample D68</u>
Grand Means	21.2728 Percent	21.2242 Percent
Std Dev Btwn Labs	1.0222 Percent	1.0764 Percent
Statistics based on 27 of 28 reporting participants		

Sample D67: LDPE & Sample D68: LDPE

Comments on Assigned Data Flags for Test #785

JVVUCZ (X) - Inconsistent in testing between samples.

Key to Instrument Codes Reported by Participants

- BH** BYK-Gardner/Pacific Scientific Model XL-211
- BT** BYK Gardner TCS Series
- XR** X-Rite Spectrocolorimeter (any model)
- BJ** BYK-Gardner Haze-Gard Plus/i
- HL** Hunterlab Ultrascan
- XX** Instrument make/model not specified by lab

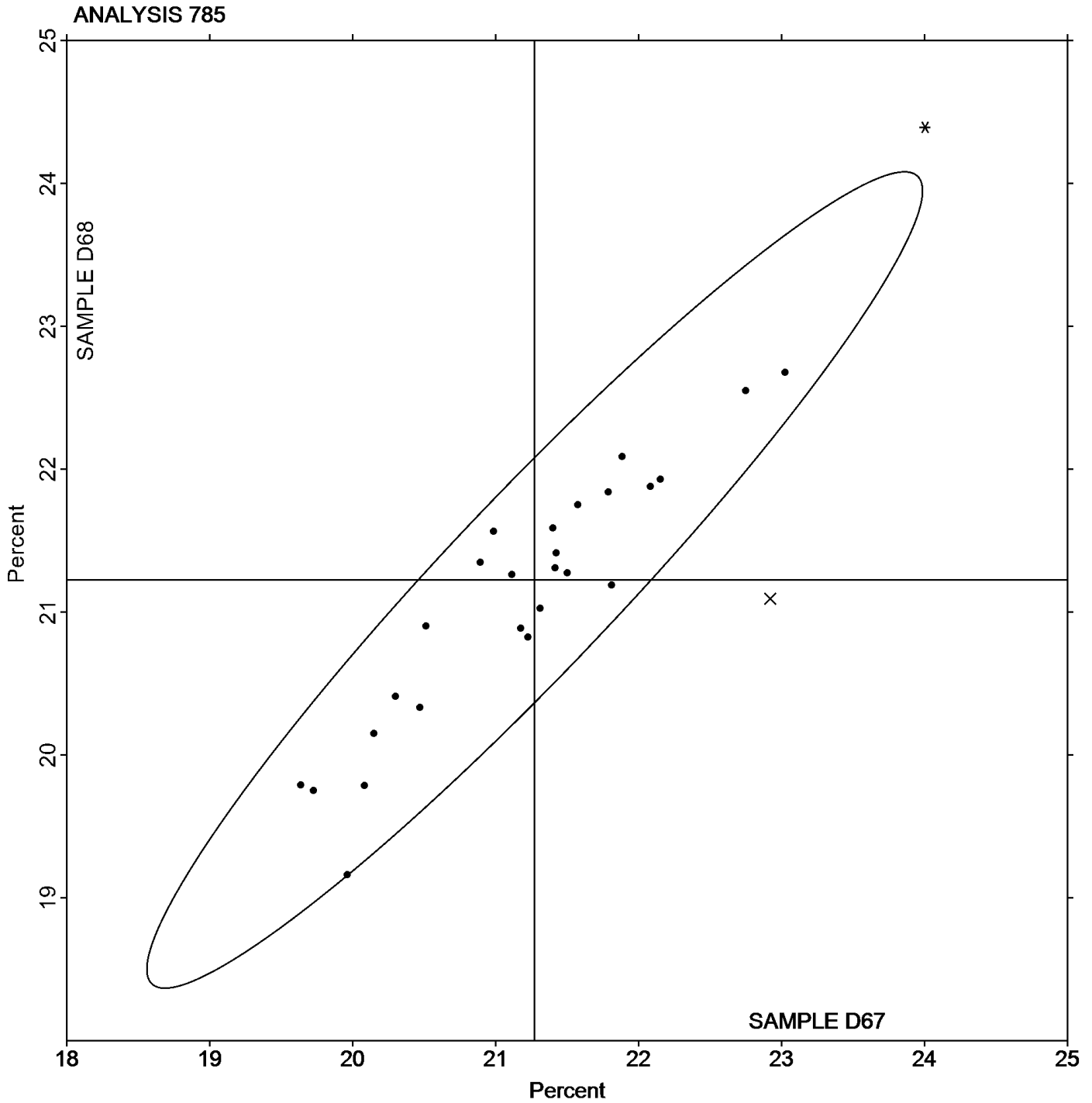


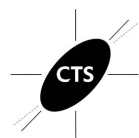
Plastics Interlaboratory Testing Program

Analysis 785
Percent Haze of Film

Report #114
2nd Qtr 2020

Grand Mean Sample D67: 21.273 Percent Grand Mean Sample D68: 21.224 Percent





Plastics Interlaboratory Testing Program

Report #114

Analysis 786

2nd Qtr 2020

Total Luminous transmittance of film

WebCode	Data Flag	Sample D67			Sample D68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KVC7G		93.15	0.70	0.61	93.23	0.73	0.65	BJ
3DW2EH	*	91.55	-0.89	-0.78	92.03	-0.47	-0.41	XR
42J6AE		93.09	0.65	0.56	93.14	0.65	0.58	BT
86LENC		90.29	-2.16	-1.88	90.48	-2.02	-1.79	HL
8FKANT		91.05	-1.39	-1.22	91.12	-1.38	-1.22	XX
AFWLLN		93.51	1.07	0.93	93.49	0.99	0.88	BJ
BPELCH		93.42	0.97	0.85	93.48	0.98	0.87	BJ
CYMDG7		90.64	-1.81	-1.58	90.76	-1.73	-1.54	BH
D3XN8F		90.90	-1.55	-1.35	90.85	-1.65	-1.46	BJ
ELNLMD		93.13	0.68	0.59	93.23	0.73	0.65	BJ
G4ZNYQ		92.15	-0.30	-0.26	92.18	-0.32	-0.28	XR
GB22FL		93.19	0.74	0.65	93.30	0.80	0.71	XX
GV9AVK		91.13	-1.31	-1.14	91.14	-1.35	-1.20	XR
HEWH4Y		93.14	0.69	0.60	93.21	0.72	0.64	BJ
JVVUCZ		92.54	0.09	0.08	92.75	0.25	0.23	XX
K3JKL3		93.35	0.90	0.79	93.39	0.89	0.79	BJ
LNEQLD	*	90.65	-1.80	-1.57	90.40	-2.10	-1.86	HL
MLJU94		92.39	-0.06	-0.05	92.34	-0.16	-0.14	BJ
N3LTWW		92.44	0.00	0.00	92.39	-0.11	-0.10	BJ
PLEWDX		92.24	-0.21	-0.18	92.29	-0.21	-0.18	BJ
VEBY92		93.13	0.68	0.59	93.30	0.80	0.71	BJ
VNDFFX		94.89	2.44	2.13	94.66	2.17	1.92	BJ
WED46P		92.31	-0.14	-0.12	92.33	-0.16	-0.14	XR
WTCWRR		92.61	0.17	0.14	92.66	0.17	0.15	BJ
XWKW2N		92.58	0.13	0.11	92.65	0.15	0.14	BJ
ZZLFNM		94.16	1.72	1.50	94.09	1.59	1.41	BJ

Summary Statistics		Sample D67	Sample D68
Grand Means		92.447 Percent	92.495 Percent
Std Dev Btwn Labs		1.147 Percent	1.126 Percent

Statistics based on 26 of 26 reporting participants

Sample D67: LDPE & Sample D68: LDPE



Plastics Interlaboratory Testing Program

Report #114

Analysis 786

2nd Qtr 2020

Total Luminous transmittance of film

Key to Instrument Codes Reported by Participants

BH BYK-Gardner/Pacific Scientific Model XL-211	BJ BYK-Gardner Haze-Gard Plus/i
BT BYK Gardner TCS Plus Spectrophotometer	HL Hunterlab Ultrascan XE
XR X-Rite Spectrocolorimeter (any model)	XX Instrument make/model not specified by lab



Plastics Interlaboratory Testing Program

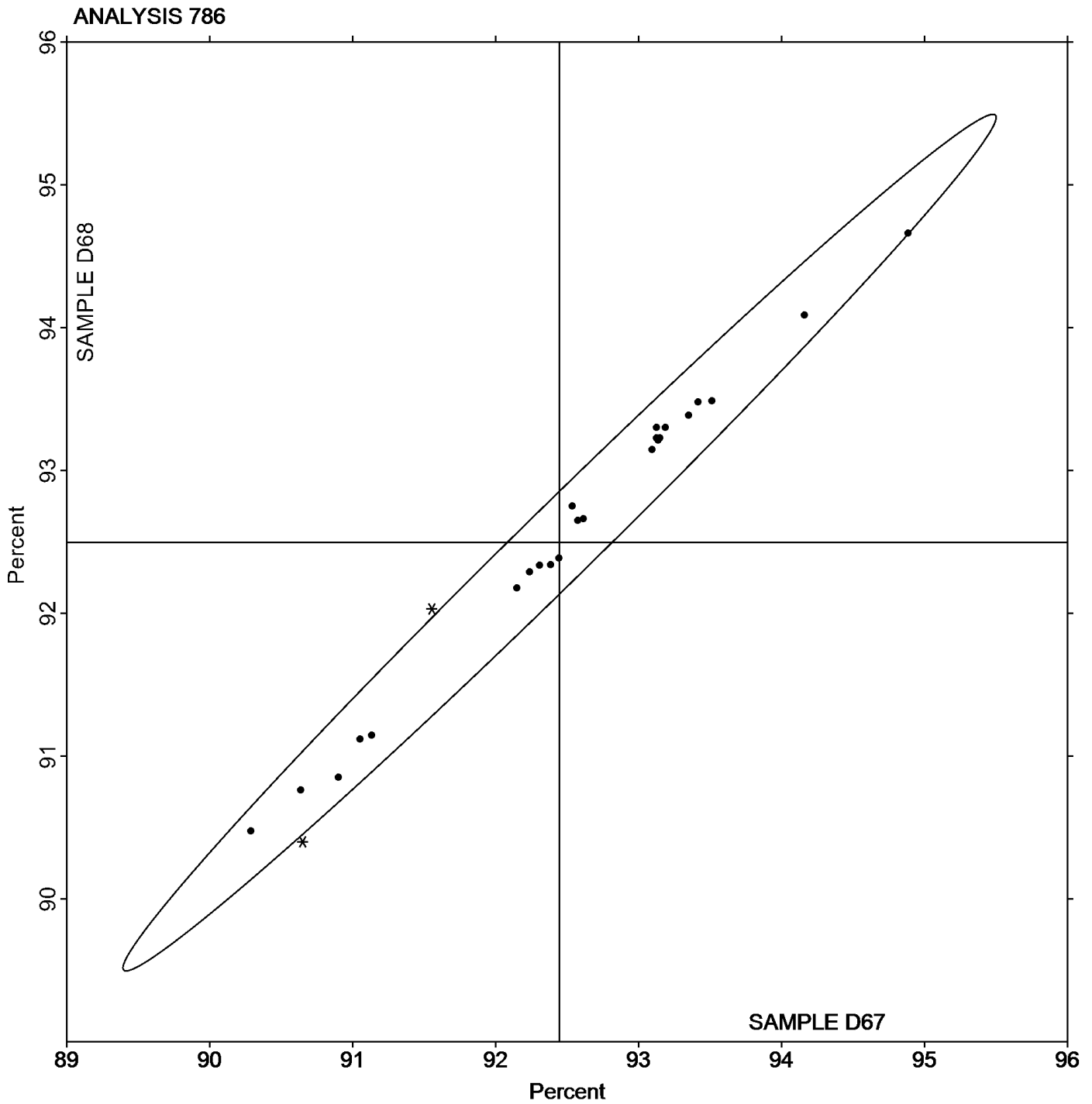
Analysis 786

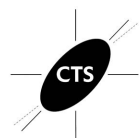
Total Luminous transmittance of film

Report #114

2nd Qtr 2020

Grand Mean Sample D67: 92.447 Percent Grand Mean Sample D68: 92.495 Percent





Plastics Interlaboratory Testing Program

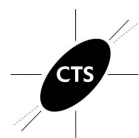
Report #114

Analysis 790

2nd Qtr 2020

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S67			Sample S68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2DZA7Q		1.59	-0.16	-1.00	1.57	-0.17	-1.03	CE
2EEEZH		1.83	0.08	0.53	1.84	0.10	0.63	TM
4GUM2E		1.76	0.02	0.10	1.88	0.14	0.86	WZ
4VDJ7H	X	8.88	7.14	45.80	8.99	7.25	44.68	CE
676EWH	*	2.05	0.30	1.95	2.14	0.41	2.51	XX
69CWVD		1.67	-0.07	-0.47	1.64	-0.10	-0.62	TO
6VM2ED		1.78	0.04	0.23	1.70	-0.04	-0.22	TO
7DJMVX		1.67	-0.07	-0.47	1.73	-0.01	-0.06	TM
7GMHGM		1.78	0.04	0.25	1.86	0.12	0.76	TM
ANAEWK		2.12	0.38	2.42	2.11	0.37	2.29	CE
ANBC3A		1.69	-0.06	-0.36	1.71	-0.02	-0.15	XX
BW436W		1.64	-0.11	-0.67	1.63	-0.10	-0.63	TO
BXU7WH		1.76	0.02	0.13	1.75	0.01	0.06	TM
CAK8XB		1.63	-0.12	-0.74	1.76	0.02	0.15	TO
CTEX9H		1.60	-0.14	-0.93	1.59	-0.15	-0.92	TO
CUU88B		1.72	-0.02	-0.14	1.65	-0.09	-0.56	XX
DZ8PPB		1.56	-0.18	-1.18	1.56	-0.18	-1.09	TM
ELNLMD		1.71	-0.03	-0.22	1.70	-0.04	-0.25	TY
FAALT6		2.04	0.30	1.92	2.02	0.29	1.77	TO
FLLWEA		1.68	-0.07	-0.42	1.50	-0.23	-1.44	TO
FT6G38		1.59	-0.15	-0.98	1.59	-0.15	-0.90	XX
J8UKX9		1.66	-0.08	-0.51	1.65	-0.09	-0.54	IN
JLV6VY		1.81	0.06	0.42	1.89	0.15	0.94	BA
KXHT34		1.76	0.01	0.09	1.70	-0.04	-0.23	TO
MLJU94		1.56	-0.19	-1.20	1.54	-0.19	-1.20	TO
MZJD7U		1.78	0.04	0.24	1.57	-0.16	-1.00	TO
NG4LK4		1.85	0.10	0.66	1.84	0.11	0.66	TO
NK23YJ		1.65	-0.09	-0.57	1.85	0.11	0.69	TO
NURQNU		1.67	-0.07	-0.47	1.65	-0.08	-0.52	WZ
PY3YT6		1.94	0.20	1.29	1.98	0.24	1.50	RR
QZRR2T		1.65	-0.09	-0.57	1.66	-0.08	-0.47	WZ
R88P9D		1.95	0.21	1.33	1.96	0.22	1.37	TM
T9YZNC		1.74	-0.01	-0.03	1.73	-0.01	-0.05	WZ
TEJ7ER		1.65	-0.09	-0.60	1.60	-0.13	-0.83	CE
THK8GA		1.61	-0.13	-0.85	1.64	-0.10	-0.62	TO



Plastics Interlaboratory Testing Program

Report #114

Analysis 790

2nd Qtr 2020

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S67			Sample S68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
TUBX4Y		2.06	0.31	2.01	1.90	0.16	0.98	TO
VAECB8		1.67	-0.07	-0.44	1.65	-0.09	-0.53	TO
VTUN4X		1.62	-0.12	-0.78	1.60	-0.14	-0.86	TO
VVYD4K		1.68	-0.06	-0.41	1.70	-0.04	-0.24	TO
VY6RZR		1.56	-0.19	-1.20	1.65	-0.09	-0.53	TO
XBN4GT		1.60	-0.14	-0.92	1.60	-0.14	-0.84	TO
XWKW2N		1.61	-0.13	-0.84	1.61	-0.12	-0.76	CE
Y6TV7J		1.57	-0.18	-1.13	1.55	-0.19	-1.17	CE
YBKVR7		1.76	0.02	0.10	1.76	0.02	0.15	TO
YKN7XV	*	1.97	0.22	1.43	1.72	-0.02	-0.11	TM
YQCX44		2.12	0.37	2.39	2.12	0.38	2.37	TM
YZ3JA2		1.84	0.10	0.63	1.85	0.11	0.69	TO

Summary Statistics		
	Sample S67	Sample S68
Grand Means	1.743 ft.lbf/in	1.736 ft.lbf/in
Std Dev Btwn Labs	0.156 ft.lbf/in	0.162 ft.lbf/in
Statistics based on 46 of 47 reporting participants		

Sample S67: HIPS & Sample S68: HIPS

Comments on Assigned Data Flags for Test #790

4VDJ7H (X) - Extreme data.

Key to Instrument Codes Reported by Participants

- BA** Baldwin
- IN** Instron
- TM** TMI
- TY** Toyoseiki
- XX** Instrument manufacturer not specified by lab
- CE** Ceast
- RR** Ray-Ran Polymer Testing Equipment
- TO** Tinius Olsen
- WZ** Zwick



Plastics Interlaboratory Testing Program

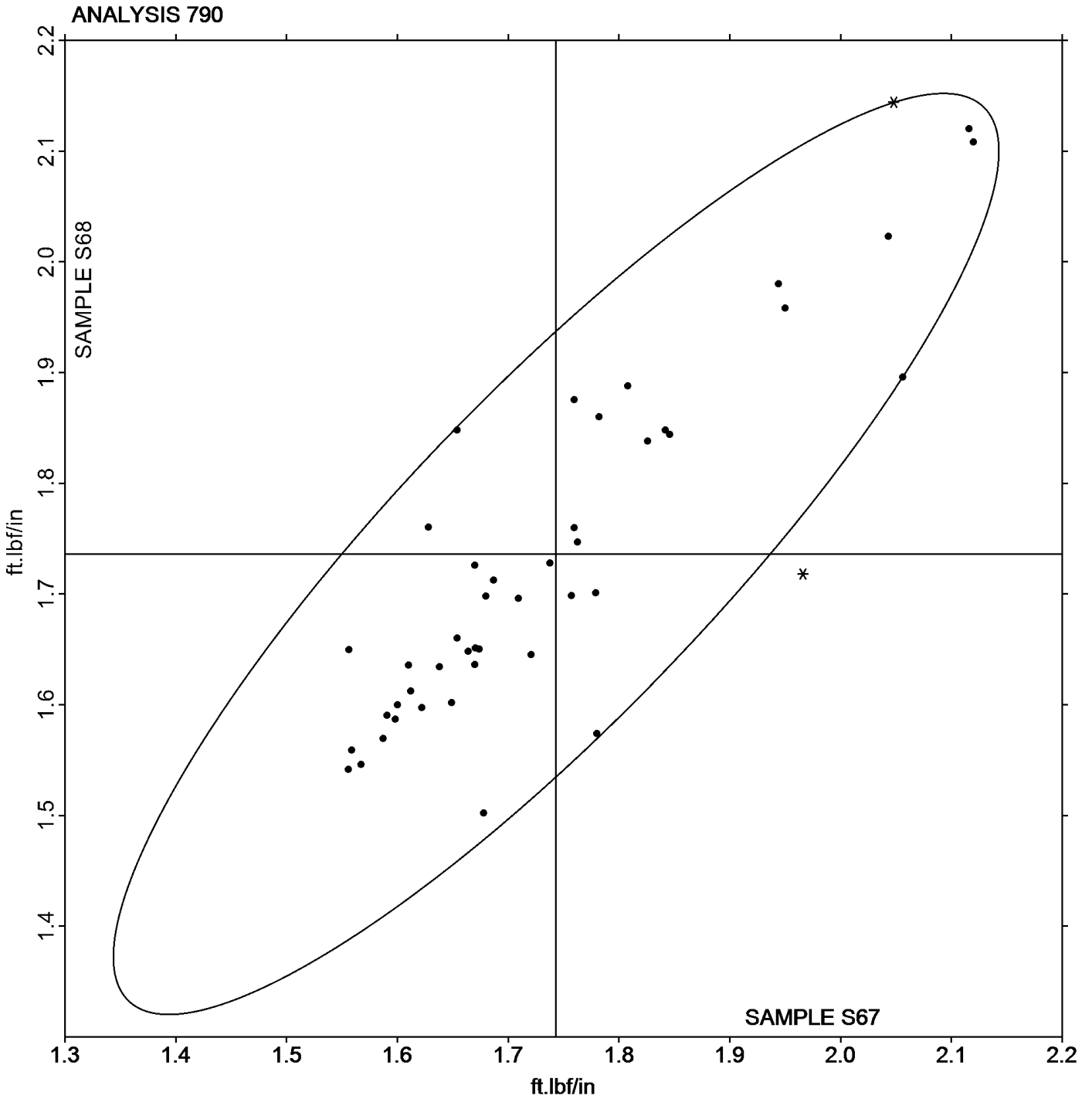
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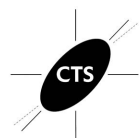
Analysis 790

2nd Qtr 2020

Notched Izod Impact - ft.lbf/in

Grand Mean Sample S67: 1.7432 ft.lbf/in Grand Mean Sample S68: 1.7362 ft.lbf/in





Plastics Interlaboratory Testing Program

Report #114

Analysis 791

2nd Qtr 2020

Notched Izod Impact - kJ/m²

WebCode	Data Flag	Sample Z67			Sample Z68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
264CEG		19.06000	-0.37643	-0.33	18.97000	-0.43053	-0.41	WZ
2LTHQG		20.10600	0.66957	0.59	20.32000	0.91947	0.88	TO
4GUM2E		19.68000	0.24357	0.21	19.24200	-0.15853	-0.15	WZ
4QW3RJ	X	8.89800	10.53843	-9.22	9.16600	-10.23453	-9.76	TM
4VDJ7H		20.16000	0.72357	0.63	20.30000	0.89947	0.86	CE
6CWJWD		20.69580	1.25937	1.10	20.63140	1.23087	1.17	CE
7EVEQZ		18.98540	-0.45103	-0.39	19.18640	-0.21413	-0.20	CE
BCDQHW		19.96600	0.52957	0.46	20.02800	0.62747	0.60	CE
CEV8AF		19.39600	-0.04043	-0.04	19.40200	0.00147	0.00	WZ
ELNLMD		19.71600	0.27957	0.24	19.62800	0.22747	0.22	XX
HBGMM3		18.65800	-0.77843	-0.68	18.70400	-0.69653	-0.66	CE
KDBJ38		22.06000	2.62357	2.30	21.57400	2.17347	2.07	XX
KT9J22		19.66000	0.22357	0.20	19.57200	0.17147	0.16	CE
MLJU94		19.04320	-0.39323	-0.34	19.00040	-0.40013	-0.38	XX
NCTLAX		18.61640	-0.82003	-0.72	18.54800	-0.85253	-0.81	XX
NURQNU		19.60000	0.16357	0.14	19.73200	0.33147	0.32	WZ
QVYMCV		17.73400	-1.70243	-1.49	17.91000	-1.49053	-1.42	CE
QZRR2T	X	19.56000	0.12357	0.11	20.62200	1.22147	1.17	WZ
TMTT7R		19.05400	-0.38243	-0.33	18.98200	-0.41853	-0.40	TO
UEHQLR		19.38200	-0.05443	-0.05	19.12800	-0.27253	-0.26	TO
VTUN4X		19.13580	-0.30063	-0.26	19.27060	-0.12993	-0.12	TO
WE4B38		16.50800	-2.92843	-2.56	16.60400	-2.79653	-2.67	XX
ZBD4CV		21.38488	1.94845	1.71	20.99890	1.59837	1.52	CE
ZZLFNM		19.00000	-0.43643	-0.38	19.08000	-0.32053	-0.31	TO

Summary Statistics		
	Sample Z67	Sample Z68
Grand Means	19.436431 kJ/m ²	19.400532 kJ/m ²
Std Dev Btwn Labs	1.142594 kJ/m ²	1.048190 kJ/m ²
Statistics based on 22 of 24 reporting participants		

Sample Z67: ABS & Sample Z68: ABS

Comments on Assigned Data Flags for Test #791

QZRR2T (X) - Inconsistent in testing between samples.

4QW3RJ (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

Report #114

Analysis 791

2nd Qtr 2020

Notched Izod Impact - kJ/m²

Key to Instrument Codes Reported by Participants

CE Ceast

TM TMI

TO Tinius Olsen

WZ Zwick

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

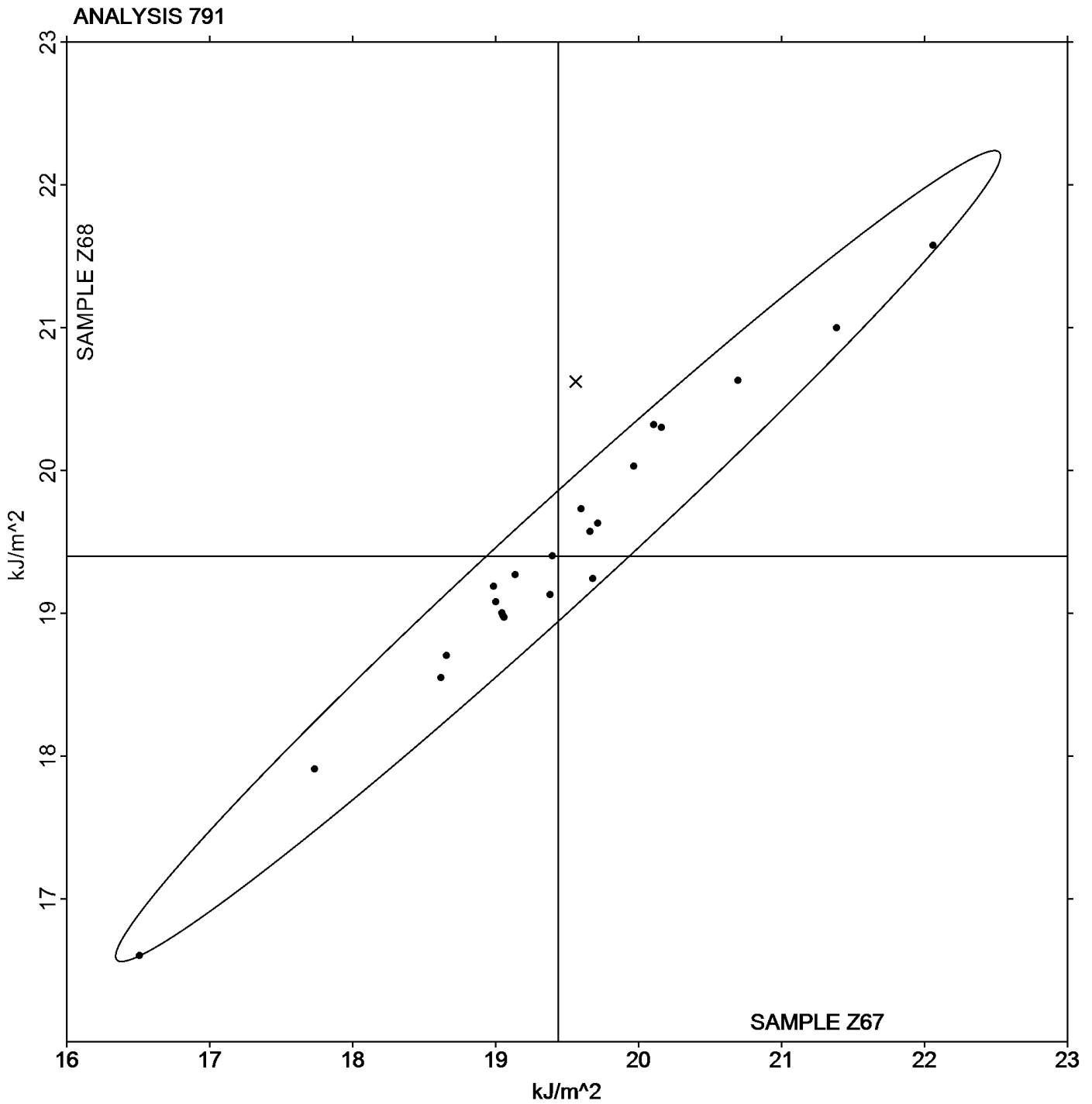
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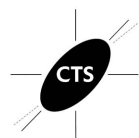
Analysis 791

2nd Qtr 2020

Notched Izod Impact - kJ/m²

Grand Mean Sample Z67: 19.436 kJ/m² Grand Mean Sample Z68: 19.401 kJ/m²





Plastics Interlaboratory Testing Program

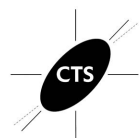
Report #114

Analysis 792

2nd Qtr 2020

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M67			Sample M68			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
264CEG		19.26	0.19	0.23	18.47	-0.60	-0.67	WZ
2LTHQG		18.25	-0.82	-0.98	17.79	-1.29	-1.43	TO
4GUM2E		19.48	0.41	0.50	19.48	0.41	0.45	WZ
4VDJ7H		19.24	0.17	0.20	18.66	-0.42	-0.47	IN
676EWH	X	22.81	3.75	4.49	22.56	3.49	3.88	XX
6CWJWD		20.22	1.16	1.39	20.07	0.99	1.10	CE
7EVEQZ		19.93	0.86	1.04	20.38	1.30	1.45	IN
83K4ZP		19.30	0.23	0.28	19.02	-0.06	-0.06	TO
8RY8TW		18.55	-0.52	-0.62	18.50	-0.58	-0.64	WZ
A2VR7A		19.19	0.12	0.14	19.52	0.44	0.49	CE
ANBC3A		17.26	-1.81	-2.17	16.99	-2.09	-2.32	XX
BCDQHW		20.70	1.63	1.96	20.83	1.76	1.95	CE
CEV8AF		20.00	0.93	1.11	20.10	1.03	1.14	WZ
CUU88B		18.53	-0.54	-0.64	18.37	-0.71	-0.79	XX
ELNLMD		19.56	0.49	0.59	19.61	0.54	0.60	TY
FJENW3		18.73	-0.33	-0.40	19.44	0.37	0.41	TO
HBGMM3		19.87	0.81	0.97	19.88	0.81	0.90	CE
HBW8AK		20.26	1.19	1.43	20.39	1.31	1.46	WZ
HNJ89Z	X	24.40	5.33	6.40	24.48	5.40	6.01	TO
J8UKX9		19.69	0.62	0.74	19.44	0.36	0.40	IN
KF3ER2		18.79	-0.28	-0.34	18.80	-0.27	-0.30	CE
KVEVUW		18.74	-0.33	-0.40	19.10	0.03	0.03	PO
LCXBBX		18.57	-0.49	-0.59	18.69	-0.38	-0.43	WZ
LNEQLD		19.08	0.01	0.01	19.54	0.47	0.52	TM
MLJU94		17.88	-1.19	-1.43	18.62	-0.46	-0.51	XX
NURQNU		19.09	0.03	0.03	18.85	-0.23	-0.25	WZ
P238XE		19.19	0.12	0.14	19.30	0.22	0.25	IN
Q23LP7		18.99	-0.08	-0.09	19.19	0.12	0.13	TO
QZRR2T		18.67	-0.40	-0.48	18.50	-0.57	-0.64	TM
R3QHMY		18.86	-0.21	-0.25	18.84	-0.24	-0.26	WZ
TEJ7ER		18.75	-0.32	-0.39	18.99	-0.09	-0.10	CE
TMTT7R		18.56	-0.51	-0.61	18.05	-1.03	-1.15	TO
UEHQLR		19.18	0.12	0.14	19.50	0.42	0.47	TO
UZCWURU		19.07	0.00	0.00	18.79	-0.29	-0.32	TO
VNDFFX		19.69	0.62	0.74	19.11	0.04	0.04	TO



Plastics Interlaboratory Testing Program

Report #114

Analysis 792

2nd Qtr 2020

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	<u>Sample M67</u>			<u>Sample M68</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
WE4B38	*	16.81	-2.26	-2.71	16.60	-2.47	-2.75	XX
WNTYYV		18.39	-0.67	-0.81	18.45	-0.63	-0.70	WZ
XABNTJ		20.51	1.44	1.72	20.26	1.19	1.32	TO
XGQAVW		17.65	-1.42	-1.71	17.74	-1.33	-1.48	XX
Y6TV7J		20.20	1.13	1.36	20.35	1.27	1.41	WZ
YBKVR7		18.75	-0.31	-0.38	19.45	0.37	0.41	TO
YKN7XV	X	21.46	2.39	2.87	20.15	1.08	1.20	TM
YZ3JA2		19.28	0.21	0.25	19.38	0.30	0.34	TO

Summary Statistics

	<u>Sample M67</u>	<u>Sample M68</u>
Grand Means	19.068 kJ/m ²	19.077 kJ/m ²
Std Dev Btwn Labs	0.834 kJ/m ²	0.899 kJ/m ²

Statistics based on 40 of 43 reporting participants

Sample M67: ABS & Sample M68: ABS

Comments on Assigned Data Flags for Test #792

HNJ89Z (X) - Data for both samples are high. Possible Systematic Error.

YKN7XV (X) - Data for sample M67 are high. Inconsistent within the determinations of sample M67.

676EWH (X) - Data for both samples are high. Possible Systematic Error.

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

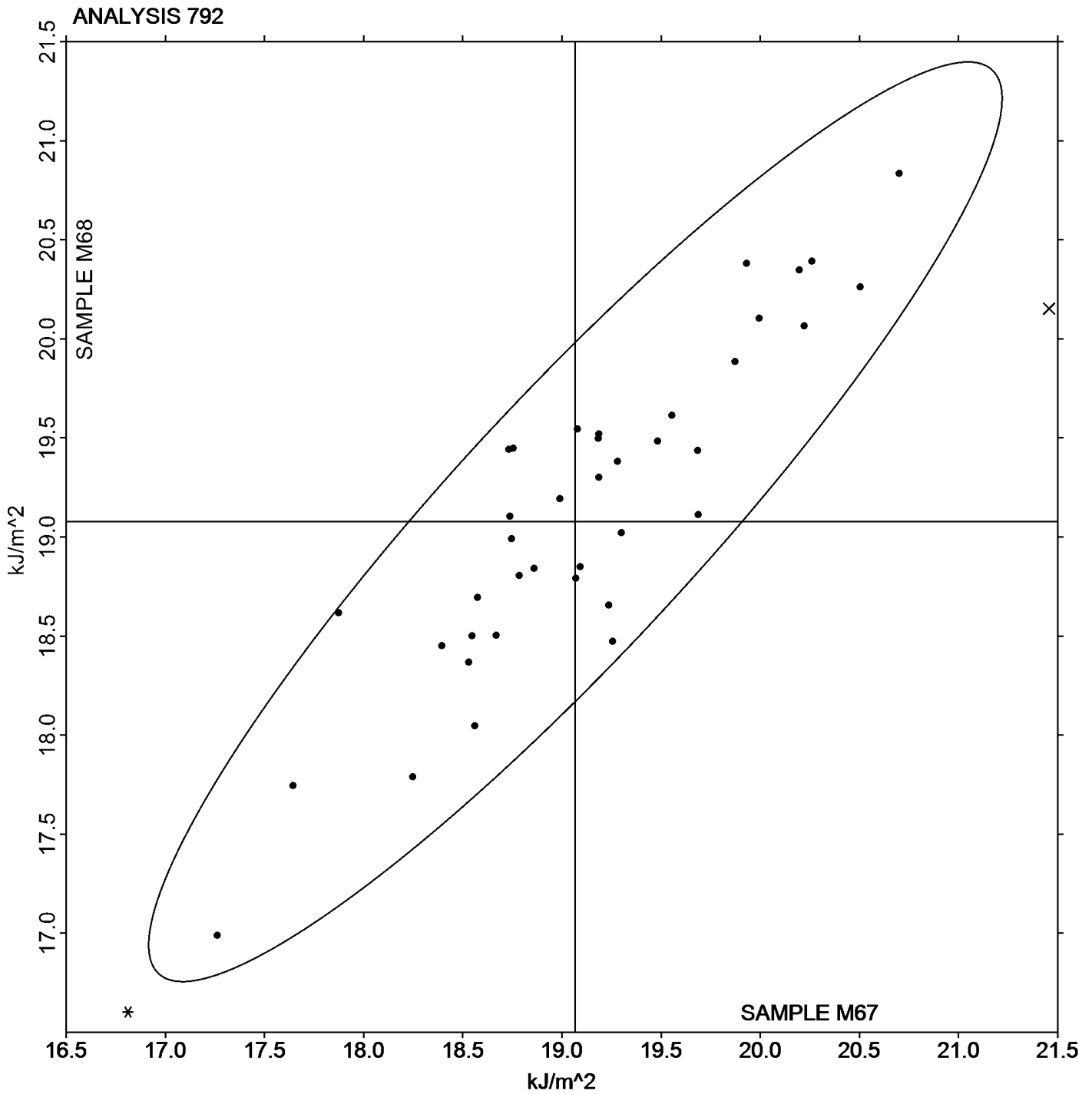
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Analysis 792

2nd Qtr 2020

Notched Charpy Impact - kJ/m²

Grand Mean Sample M67: 19.068 kJ/m² Grand Mean Sample M68: 19.077 kJ/m²



-End of Report-