

Plastics Interlaboratory Testing Program

Web Summary Report #108, 4th Qtr 2018

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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 #108, 4th Qtr 2018

Analysis 704 - Tensile Stress at Yield

Material: ABS	Sample F55	6,756.25	psi	2.11% COV
	Sample F56	6,761.90	psi	2.04% COV

Analysis 705 - Tensile Stress at Break

Material: ABS	Sample F55	5,029.88	psi	3.65% COV
	Sample F56	5,042.60	psi	4.48% COV

Analysis 706 - Percent Elongation at Yield

Material: ABS	Sample F55	2.4544	Percent	3.86% COV
	Sample F56	2.4604	Percent	3.64% COV

Analysis 708 - Modulus of Elasticity

Material: ABS	Sample F55	344.99	ksi	3.61% COV
	Sample F56	346.41	ksi	3.71% COV

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

Material: ABS/PC	Sample E55	108.58	Degrees C	1.39% COV
	Sample E56	108.73	Degrees C	1.47% COV

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

Material: PP	Sample G55	84.780	Degrees C	3.49% COV
	Sample G56	85.744	Degrees C	5.51% COV

Analysis 712 - Temperature of Deflection (1.80 MPa)

Material: ABS/PC	Sample N55	104.70	Degrees C	1.40% COV
	Sample N56	104.90	Degrees C	1.35% COV

Analysis 715 - Vicat Temperature (Rate A)

Material: ABS/PC	Sample H55	140.19	Degrees C	0.576% COV
	Sample H56	139.27	Degrees C	0.590% COV

Analysis 716 - Vicat Temperature (Rate B)

Material: ABS/PC	Sample R55	141.58	Degrees C	0.629% COV
	Sample R56	140.84	Degrees C	0.601% COV

Analysis 718 - Specific Gravity

Material: ABS	Sample T55	1.0481	sp gr 23/23 C	0.183% COV
	Sample T56	1.0467	sp gr 23/23 C	0.155% COV

Analysis 720 - Flexural Modulus

Material: ABS	Sample J55	365.27	ksi	4.60% COV
	Sample J56	365.59	ksi	4.57% COV

Analysis 721 - Flexural Stress at 5% Strain

Material: ABS	Sample J55	10,187.39	psi	3.59% COV
	Sample J56	10,188.49	psi	3.56% COV

Analysis 722 - Flexural Stress at Yield

Material: ABS	Sample J55	10,231.71	psi	3.27% COV
	Sample J56	10,226.10	psi	3.25% COV

Analysis 730 - Tensile Stress at Yield, ISO Method

Material: HIPS	Sample C55	24.125	MPa	3.15% COV
	Sample C56	24.747	MPa	3.22% COV

Analysis 731 - Tensile Stress at Break, ISO Method

Material: HIPS	Sample C55	21.085	MPa	3.48% COV
	Sample C56	20.053	MPa	3.38% COV



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Analysis 732 - Strain at Yield, ISO Method

Material: HIPS	Sample C55	1.2422	Percent	4.69% COV
	Sample C56	1.2455	Percent	5.21% COV

Analysis 734 - Modulus of Elasticity, ISO Method

Material: HIPS	Sample C55	2,262.36	MPa	4.45% COV
	Sample C56	2,252.46	MPa	5.07% COV

Analysis 736 - Flexural Modulus

Material: HIPS	Sample K55	2,265.31	MPa	5.38% COV
	Sample K56	2,266.49	MPa	5.26% COV

Analysis 737 - Flexural Stress at 3.5% Strain

Material: HIPS	Sample K55	38.860	MPa	4.94% COV
	Sample K56	38.816	MPa	5.16% COV

Analysis 738 - Flexural Stress at Yield

Material: HIPS	Sample K55	39.050	MPa	4.82% COV
	Sample K56	39.031	MPa	5.02% COV

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

Material: PP	Sample X55	12.502	grams/10 mins	5.09% COV
	Sample X56	11.751	grams/10 mins	5.15% COV

Analysis 755 - Moisture Content

Material: HIPS	Sample Y55	0.02949	Percent	22.7% COV
	Sample Y56	0.03116	Percent	21.8% COV

Analysis 757 - Ash Content

Material: PBT	Sample L55	30.534	Percent	0.831% COV
	Sample L56	30.521	Percent	0.827% COV

Analysis 760 - DSC Crystallization Temperature

Material: PBT	Sample W55	176.84	Degrees Celsius	2.91% COV
	Sample W56	176.78	Degrees Celsius	3.09% COV

Analysis 761 - DSC Melt Temperature

Material: PBT	Sample W55	223.99	Degrees Celsius	0.590% COV
	Sample W56	223.90	Degrees Celsius	0.556% COV

Analysis 762 - DSC Enthalpy of Crystallization

Material: PBT	Sample W55	47.679	Joules Per Gram	10.9% COV
	Sample W56	47.108	Joules Per Gram	12.7% COV

Analysis 763 - DSC Enthalpy of Fusion

Material: PBT	Sample W55	44.486	Joules Per Gram	17.6% COV
	Sample W56	44.064	Joules Per Gram	17.8% COV

Analysis 764 - DSC Glass Transition Temperature

Material: ABS	Sample V55	106.55	Degrees Celsius	2.15% COV
	Sample V56	106.54	Degrees Celsius	1.61% COV

Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B55	2,282.96	psi	21.1% COV
	Sample B56	2,368.60	psi	21.9% COV

Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B55	3,513.53	psi	8.79% COV
	Sample B56	3,692.65	psi	11.3% COV



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Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B55	80.965	Percent	68.9% COV
	Sample B56	85.090	Percent	62.0% COV

Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B55	593.62	Percent	20.1% COV
	Sample B56	606.43	Percent	21.9% COV

Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B55	2.9362	mils	3.69% COV
	Sample B56	2.9941	mils	3.23% COV

Analysis 775 - Secant Modulus at 1% Strain

Material: LDPE	Sample B55	30,143.71	psi	18.8% COV
	Sample B56	30,237.49	psi	17.2% COV

Analysis 776 - Secant Modulus at 2% Strain

Material: LDPE	Sample B55	27,853.98	psi	32.5% COV
	Sample B56	26,933.00	psi	18.3% COV

Analysis 780 - Static Friction

Material: LDPE	Sample P55	0.19940	COF	34.2% COV
	Sample P56	0.19111	COF	36.9% COV

Analysis 781 - Kinetic Friction

Material: LDPE	Sample P55	0.13366	COF	26.7% COV
	Sample P56	0.12933	COF	25.4% COV

Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q55	139.27	grams-force	27.6% COV
	Sample Q56	126.84	grams-force	30.6% COV

Analysis 785 - Percent Haze

Material: LDPE	Sample D55	28.080	Percent	9.21% COV
	Sample D56	31.266	Percent	8.74% COV

Analysis 786 - Total Transmittance

Material: LDPE	Sample D55	91.586	Percent	2.25% COV
	Sample D56	91.449	Percent	2.43% COV

Analysis 790 - Notched Izod Impact

Material: HIPS	Sample S55	1.6168	ft.lbf/in	6.08% COV
	Sample S56	1.6094	ft.lbf/in	6.08% COV

Analysis 791 - Notched Izod Impact

Material: ABS	Sample Z55	18.367	kJ/m ²	5.82% COV
	Sample Z56	20.105	kJ/m ²	5.93% COV

Analysis 792 - Notched Charpy Impact

Material: ABS	Sample M55	19.009	kJ/m ²	3.40% COV
	Sample M56	19.112	kJ/m ²	3.83% COV



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26ZXUE		6,813.6	57.3	0.40	6,872.6	110.7	0.80
2KZHUQ		6,750.8	-5.5	-0.04	6,746.5	-15.4	-0.11
3B2HAX		6,771.0	14.7	0.10	6,771.0	9.1	0.07
3E4ANM		6,660.8	-95.5	-0.67	6,646.0	-115.9	-0.84
3UXYHY		6,940.0	183.7	1.29	6,958.0	196.1	1.42
4Z3XTN		6,632.8	-123.5	-0.86	6,656.0	-105.9	-0.77
63YZ2Y		6,876.0	119.7	0.84	6,823.4	61.5	0.44
6NZ227		6,666.0	-90.3	-0.63	6,634.1	-127.8	-0.92
7TRVAU		6,827.0	70.7	0.50	6,813.9	52.0	0.38
82M779		6,601.8	-154.5	-1.08	6,631.4	-130.5	-0.94
84PVMX		6,874.0	117.7	0.82	6,818.3	56.4	0.41
8GU6CQ		6,826.0	69.7	0.49	6,826.0	64.1	0.46
8PMKXN		6,733.3	-23.0	-0.16	6,719.9	-41.9	-0.30
A2ENG9	X	6,177.4	-578.9	-4.05	6,149.4	-612.5	-4.43
BHX287		6,898.2	141.9	0.99	6,905.3	143.4	1.04
BK3M2X		6,869.2	112.9	0.79	6,863.6	101.7	0.74
BTC3LT		6,749.0	-7.3	-0.05	6,775.0	13.1	0.09
C3279K		6,979.2	222.9	1.56	7,021.2	259.3	1.88
CDGV8P	X	7,000.7	244.4	1.71	8,445.9	1,684.0	12.18
DU2YBW		6,590.6	-165.7	-1.16	6,631.0	-130.9	-0.95
DXKZ84	*	6,736.0	-20.3	-0.14	6,648.8	-113.1	-0.82
ENC2XT		6,767.2	11.0	0.08	6,779.1	17.2	0.12
EVAM2N		6,712.4	-43.9	-0.31	6,733.8	-28.1	-0.20
EZMCM4		6,740.0	-16.3	-0.11	6,761.2	-0.7	-0.01
F9BRRY		6,839.2	82.9	0.58	6,831.2	69.3	0.50
FMFMBZ		6,799.8	43.6	0.31	6,745.2	-16.7	-0.12
FTJRXE	X	6,961.8	205.5	1.44	7,145.0	383.1	2.77
G3M4WT		6,424.4	-331.8	-2.32	6,444.6	-317.3	-2.30
H4QHCX		7,048.3	292.1	2.04	7,014.4	252.5	1.83
HLXDAY		6,726.0	-30.3	-0.21	6,752.0	-9.9	-0.07
HWTPKR		6,746.2	-10.1	-0.07	6,755.2	-6.7	-0.05
J2JKGV	X	6,197.8	-558.5	-3.91	6,181.8	-580.1	-4.20
K47LYN		6,984.2	228.0	1.60	6,994.9	233.0	1.69
KTZN8G		6,903.6	147.3	1.03	6,884.2	122.3	0.88
KYQXGE		6,816.8	60.6	0.42	6,903.9	142.0	1.03



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Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
L3L6DU	X	5,489.2	-1,267.1	-8.87	5,499.4	-1,262.5	-9.13
LB6BD8	*	7,090.0	333.7	2.34	7,116.0	354.1	2.56
LCWBBK	X	6,216.0	-540.3	-3.78	6,136.6	-625.3	-4.52
LFTZRR		6,664.0	-92.3	-0.65	6,654.0	-107.9	-0.78
LKR8GU	*	6,954.0	197.7	1.38	6,862.0	100.1	0.72
N27FBU		6,599.9	-156.4	-1.09	6,592.4	-169.5	-1.23
NQ8KEJ		6,611.6	-144.7	-1.01	6,641.6	-120.3	-0.87
NQYX7H		6,937.8	181.6	1.27	6,970.4	208.5	1.51
P6JJK9	*	6,398.3	-358.0	-2.51	6,469.3	-292.6	-2.12
PKCGDQ	X	5,995.8	-760.4	-5.32	6,028.3	-733.6	-5.31
PLN2KG		6,666.0	-90.3	-0.63	6,678.0	-83.9	-0.61
QCHQCG		6,835.7	79.4	0.56	6,857.7	95.8	0.69
QKP94M		6,841.5	85.2	0.60	6,859.5	97.6	0.71
T67F79		6,817.2	60.9	0.43	6,789.2	27.3	0.20
T9UWQZ		6,571.2	-185.1	-1.30	6,578.6	-183.3	-1.33
TCMRJA		6,753.0	-3.3	-0.02	6,727.4	-34.5	-0.25
TJTRNV		6,768.6	12.3	0.09	6,756.0	-5.9	-0.04
TK2R2P		6,868.4	112.1	0.79	6,849.4	87.5	0.63
TLF9ZN		6,654.7	-101.5	-0.71	6,632.5	-129.4	-0.94
U8BCDF		6,619.0	-137.3	-0.96	6,610.6	-151.3	-1.09
UFLQ4N		6,928.0	171.7	1.20	6,924.0	162.1	1.17
V67YFE		6,805.0	48.8	0.34	6,789.1	27.2	0.20
VRCRBH		6,742.1	-14.2	-0.10	6,816.5	54.6	0.39
VW6V34		6,580.0	-176.3	-1.23	6,576.0	-185.9	-1.34
VWA6HG		6,752.6	-3.7	-0.03	6,770.2	8.3	0.06
XMBH2T		6,869.7	113.5	0.79	6,866.9	105.0	0.76
YAYJK8		6,741.2	-15.1	-0.11	6,747.0	-14.9	-0.11
YBBE7X	*	6,586.0	-170.3	-1.19	6,708.0	-53.9	-0.39
Z4QDME		6,577.4	-178.9	-1.25	6,566.8	-195.1	-1.41
ZJ2637		6,530.2	-226.1	-1.58	6,504.2	-257.7	-1.86
ZKKVKP		6,657.6	-98.6	-0.69	6,727.5	-34.4	-0.25
ZYWLCX		6,651.2	-105.1	-0.74	6,711.4	-50.5	-0.37



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Report #108

Analysis 704

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Tensile Stress at Yield - psi

Summary Statistics	<u>Sample F55</u>	<u>Sample F56</u>
Grand Means	6,756.25 psi	6,761.90 psi
Stnd Dev Btwn Labs	142.84 psi	138.26 psi
Statistics based on 60 of 67 reporting participants		

Sample F55: ABS & Sample F56: ABS

Comments on Assigned Data Flags for Test #704

- LCWBBK (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F56.
- FTJRXE (X) - Data for sample F56 are high. Inconsistent within the determinations of sample F55.
- PKCGDQ (X) - Data for both samples are low. Possible Systematic Error.
- L3L6DU (X) - Data for both samples are low. Possible Systematic Error.
- CDGV8P (X) - Data for sample F56 are high.
- A2ENG9 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F56.
- J2Jkgv (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

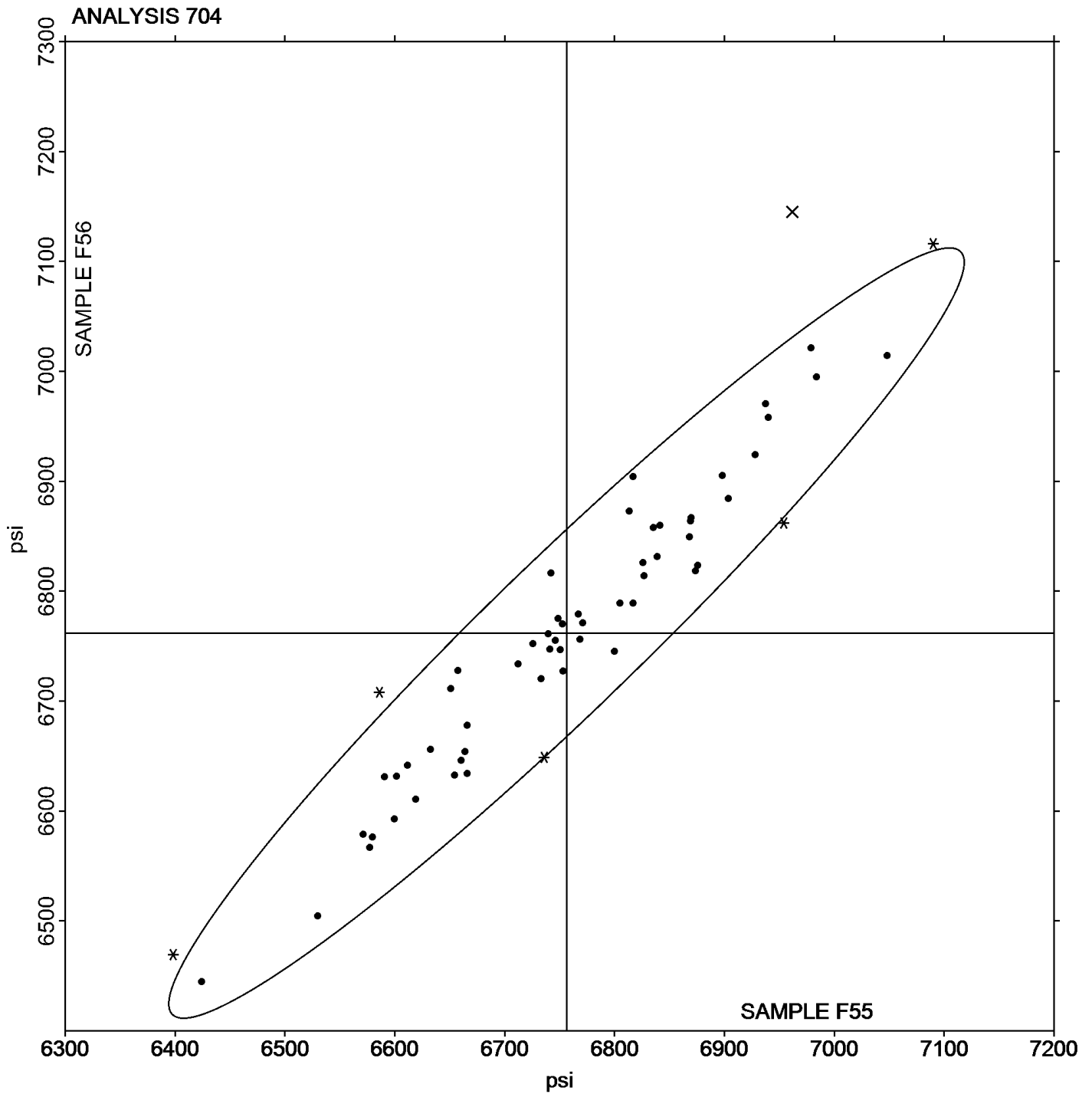
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Grand Mean Sample F55: 6,756.25 psi Grand Mean Sample F56: 6,761.90 psi





Plastics Interlaboratory Testing Program

Report #108

Analysis 705

4th Qtr 2018

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26ZXUE		5,098.4	68.5	0.37	5,191.4	148.8	0.66
2KZHUQ		5,077.5	47.6	0.26	5,120.0	77.4	0.34
3B2HAX		4,871.2	-158.7	-0.87	4,844.8	-197.8	-0.88
3E4ANM		4,712.3	-317.6	-1.73	4,747.4	-295.2	-1.31
3UXYHY		5,288.4	258.5	1.41	5,479.2	436.6	1.93
63YZ2Y		5,095.0	65.1	0.36	4,743.6	-299.0	-1.32
6NZ227		4,699.3	-330.6	-1.80	4,641.2	-401.4	-1.78
7TRVAU		5,070.6	40.7	0.22	5,054.6	12.0	0.05
82M779		5,023.4	-6.5	-0.04	4,886.8	-155.8	-0.69
84PVMX		5,182.8	152.9	0.83	5,099.3	56.7	0.25
8GU6CQ		5,002.4	-27.5	-0.15	4,934.0	-108.6	-0.48
9KPC3V	*	5,409.2	379.3	2.07	5,718.9	676.3	2.99
A2ENG9		4,780.8	-249.1	-1.36	4,740.4	-302.2	-1.34
BHX287		5,313.4	283.5	1.55	5,205.1	162.5	0.72
BK3M2X	*	5,201.4	171.5	0.94	5,628.6	586.0	2.59
BTC3LT		4,944.8	-85.1	-0.46	4,921.2	-121.4	-0.54
C3279K		5,143.9	114.0	0.62	4,958.1	-84.5	-0.37
DU2YBW		4,647.2	-382.7	-2.09	4,687.4	-355.2	-1.57
DXKZ84		5,183.6	153.7	0.84	4,943.2	-99.4	-0.44
ENC2XT		5,180.5	150.6	0.82	5,095.2	52.6	0.23
EZMCM4		5,136.4	106.5	0.58	5,084.4	41.8	0.19
F9BRRY		5,099.4	69.5	0.38	4,945.4	-97.2	-0.43
FMFMBZ		4,943.7	-86.2	-0.47	4,990.0	-52.6	-0.23
FTJRXE		4,957.6	-72.3	-0.39	4,815.2	-227.4	-1.01
G3M4WT	*	4,601.4	-428.5	-2.34	4,793.7	-248.9	-1.10
H4QHCX		5,408.9	379.0	2.07	5,261.0	218.4	0.97
HLXDAY		5,140.0	110.1	0.60	5,260.0	217.4	0.96
HWTPKR		4,986.0	-43.9	-0.24	5,017.0	-25.6	-0.11
J2JKGV		5,058.0	28.1	0.15	4,976.4	-66.2	-0.29
K47LYN		5,073.2	43.3	0.24	5,150.0	107.4	0.48
KTZN8G		5,221.0	191.1	1.04	5,182.4	139.8	0.62
KYQXGE		5,018.3	-11.5	-0.06	5,047.4	4.8	0.02
L3L6DU	X	4,167.6	-862.3	-4.70	4,081.6	-961.0	-4.25
LB6BD8		5,283.9	254.0	1.39	5,413.2	370.6	1.64
LCWBBK		4,788.0	-241.9	-1.32	4,874.0	-168.6	-0.75



Plastics Interlaboratory Testing Program

Report #108

Analysis 705

4th Qtr 2018

Tensile Stress at Break - psi

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LKR8GU		5,224.0	194.1	1.06	4,906.5	-136.1	-0.60
N27FBU		4,795.9	-234.0	-1.28	4,868.0	-174.6	-0.77
NQ8KEJ		4,942.0	-87.9	-0.48	4,857.0	-185.6	-0.82
NQYX7H		5,215.6	185.7	1.01	5,235.2	192.6	0.85
NX7BEZ	X	6,612.6	1,582.7	8.63	6,648.3	1,605.7	7.11
P6JJK9		4,702.5	-327.4	-1.79	4,658.4	-384.2	-1.70
PKCGDQ		4,777.5	-252.4	-1.38	4,774.8	-267.8	-1.19
PLN2KG		5,248.0	218.1	1.19	5,248.0	205.4	0.91
QCHQCG		4,904.1	-125.8	-0.69	4,973.1	-69.5	-0.31
QKP94M		4,917.7	-112.2	-0.61	5,084.8	42.2	0.19
T67F79	*	5,082.4	52.5	0.29	5,501.6	459.0	2.03
T9UWQZ		5,032.4	2.5	0.01	4,987.2	-55.4	-0.25
TCMRJA		5,015.6	-14.3	-0.08	4,833.2	-209.4	-0.93
TK2R2P		5,012.0	-17.9	-0.10	5,067.4	24.8	0.11
TLF9ZN		5,253.6	223.7	1.22	5,198.3	155.7	0.69
U8BCDF		4,813.9	-216.0	-1.18	4,860.7	-181.9	-0.81
V67YFE		4,996.1	-33.7	-0.18	5,087.5	44.9	0.20
VRCRBH		5,049.6	19.8	0.11	5,200.5	157.9	0.70
VW6V34		5,040.0	10.1	0.06	5,080.0	37.4	0.17
VWA6HG		4,945.4	-84.5	-0.46	4,972.4	-70.2	-0.31
XMBH2T		5,148.7	118.8	0.65	5,239.8	197.2	0.87
YAYJK8		5,122.0	92.1	0.50	5,106.4	63.8	0.28
YBBE7X		4,894.0	-135.9	-0.74	4,940.0	-102.6	-0.45
Z4QDME		4,977.4	-52.5	-0.29	5,083.6	41.0	0.18
ZKKVKP		4,917.2	-112.7	-0.61	5,099.6	57.0	0.25
ZYWLCX		5,093.6	63.7	0.35	5,199.0	156.4	0.69

Summary Statistics		Sample F55	Sample F56
Grand Means		5,029.88 psi	5,042.60 psi
Std Dev Btwn Labs		183.42 psi	225.87 psi
Statistics based on 59 of 61 reporting participants			

Sample F55: ABS & Sample F56: ABS



Plastics Interlaboratory Testing Program

Analysis 705

Tensile Stress at Break - psi

Report #108

4th Qtr 2018

Comments on Assigned Data Flags for Test #705

L3L6DU (X) - Data for both samples are low.

NX7BEZ (X) - Data for both samples are high.



Plastics Interlaboratory Testing Program

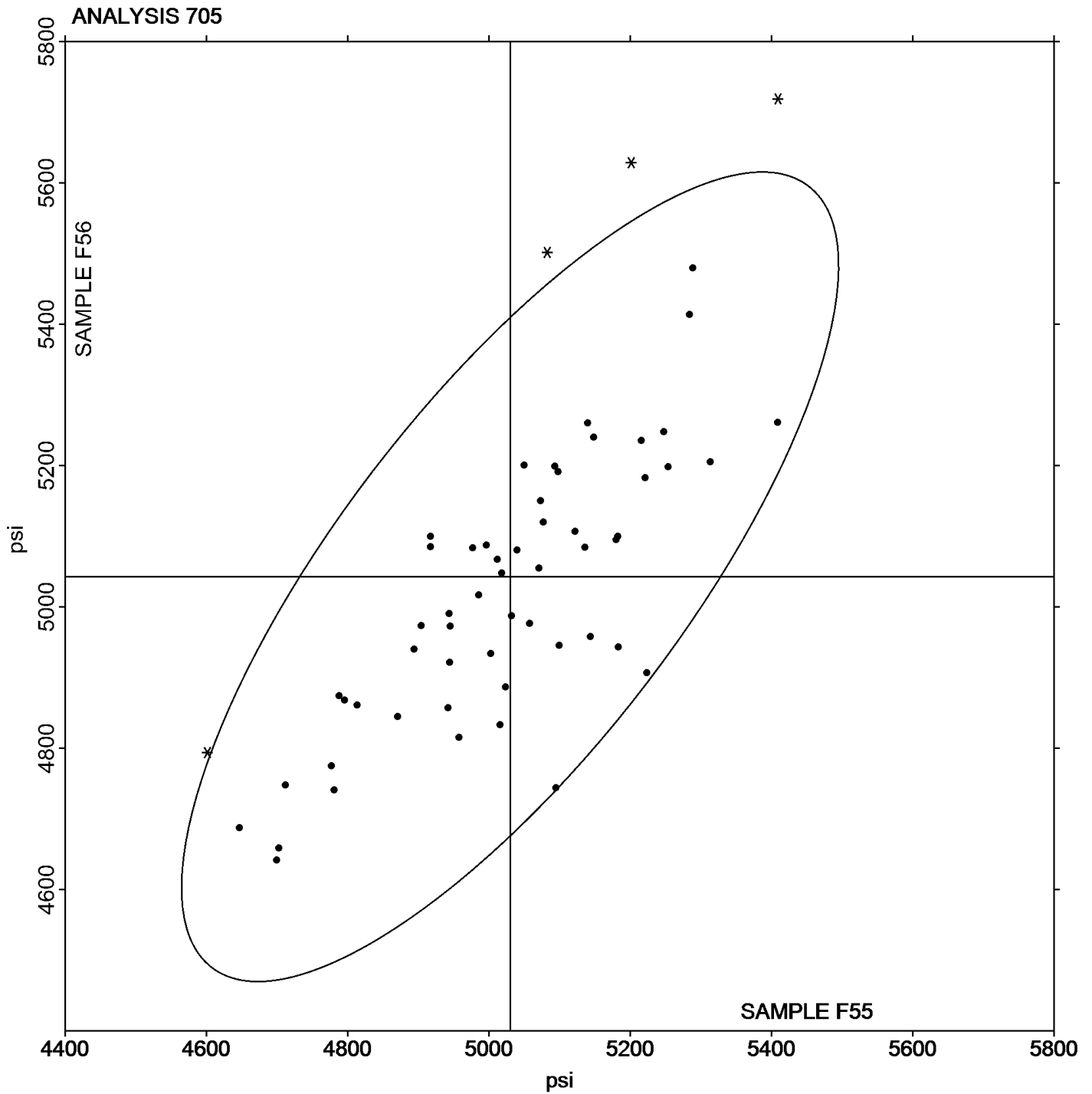
Report #108

Analysis 705

4th Qtr 2018

Tensile Stress at Break - psi

Grand Mean Sample F55: 5,029.88 psi Grand Mean Sample F56: 5,042.60 psi





Plastics Interlaboratory Testing Program

Report #108

Analysis 706

4th Qtr 2018

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26ZXUE		2.340	-0.114	-1.21	2.400	-0.060	-0.68
2KZHUQ		2.518	0.064	0.67	2.524	0.064	0.71
3B2HAX		2.500	0.046	0.48	2.480	0.020	0.22
3E4ANM		2.358	-0.096	-1.02	2.394	-0.066	-0.74
3UXYHY		2.516	0.062	0.65	2.552	0.092	1.02
63YZ2Y		2.524	0.070	0.73	2.528	0.068	0.76
6NZ227		2.500	0.046	0.48	2.500	0.040	0.44
84PVMX		2.464	0.010	0.10	2.478	0.018	0.20
8GU6CQ		2.480	0.026	0.27	2.462	0.002	0.02
A2ENG9	X	2.160	-0.294	-3.10	2.104	-0.356	-3.99
BHX287	X	2.880	0.426	4.49	2.900	0.440	4.91
BK3M2X		2.562	0.108	1.13	2.536	0.076	0.84
BTC3LT		2.486	0.032	0.33	2.486	0.026	0.29
C3279K		2.383	-0.072	-0.76	2.408	-0.053	-0.59
CDGV8P	X	2.210	-0.245	-2.58	2.837	0.377	4.21
DU2YBW		2.406	-0.048	-0.51	2.436	-0.024	-0.27
DXKZ84		2.390	-0.064	-0.68	2.384	-0.076	-0.85
ENC2XT		2.500	0.046	0.48	2.542	0.082	0.91
EVAM2N		2.510	0.056	0.59	2.500	0.040	0.44
EZMCM4		2.452	-0.002	-0.03	2.454	-0.006	-0.07
F9BRRY		2.458	0.004	0.04	2.432	-0.028	-0.32
FMFMBZ	X	6.348	3.894	41.06	6.412	3.952	44.18
G3M4WT	X	1.876	-0.578	-6.09	1.949	-0.512	-5.72
H4QHGX	X	7.548	5.094	53.71	7.358	4.898	54.76
HLXDAY		2.416	-0.038	-0.40	2.416	-0.044	-0.50
HWTPKR	*	2.392	-0.062	-0.66	2.480	0.020	0.22
J2JGV	X	2.062	-0.392	-4.14	2.056	-0.404	-4.52
K47LYN		2.678	0.224	2.36	2.676	0.216	2.41
KTZN8G		2.510	0.056	0.59	2.492	0.032	0.35
KYQXGE		2.432	-0.022	-0.24	2.466	0.006	0.06
L3L6DU	X	2.602	0.148	1.56	2.766	0.306	3.42
LB6BD8		2.562	0.108	1.13	2.570	0.110	1.23
LCWBBK	*	2.226	-0.228	-2.41	2.308	-0.152	-1.70
LKR8GU	X	2.180	-0.274	-2.89	2.326	-0.134	-1.50
N27FBU		2.276	-0.178	-1.88	2.287	-0.174	-1.94



Plastics Interlaboratory Testing Program

Report #108

Analysis 706

4th Qtr 2018

Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NQ8KEJ		2.528	0.074	0.78	2.512	0.052	0.58
NQYX7H		2.406	-0.048	-0.51	2.394	-0.066	-0.74
P6JJK9		2.644	0.190	2.00	2.642	0.182	2.03
PKCGDQ	*	2.236	-0.218	-2.30	2.222	-0.238	-2.67
PLN2KG		2.426	-0.028	-0.30	2.402	-0.058	-0.65
QCHQCG		2.518	0.064	0.67	2.530	0.070	0.78
QKP94M		2.526	0.072	0.76	2.526	0.066	0.73
T67F79		2.450	-0.004	-0.05	2.440	-0.020	-0.23
T9UWQZ		2.406	-0.048	-0.51	2.458	-0.002	-0.03
TCMRJA		2.548	0.094	0.99	2.534	0.074	0.82
TK2R2P		2.634	0.180	1.89	2.612	0.152	1.69
TLF9ZN		2.430	-0.024	-0.25	2.452	-0.008	-0.09
U8BCDF	X	3.000	0.546	5.75	3.000	0.540	6.03
V67YFE		2.536	0.082	0.86	2.544	0.084	0.93
VRCRBH		2.415	-0.039	-0.41	2.397	-0.063	-0.70
VW6V34		2.456	0.002	0.02	2.452	-0.008	-0.09
VWA6HG		2.446	-0.008	-0.09	2.466	0.006	0.06
YAYJK8		2.422	-0.032	-0.34	2.424	-0.036	-0.41
YBBE7X	M	1.089	-1.365	-14.40	No data reported for this sample		
Z4QDME		2.408	-0.046	-0.49	2.356	-0.104	-1.17
ZJ2637		2.390	-0.064	-0.68	2.402	-0.058	-0.65
ZKKVKP		2.398	-0.056	-0.59	2.404	-0.056	-0.63
ZYWLCX		2.294	-0.160	-1.69	2.280	-0.180	-2.02

Summary Statistics		
	Sample F55	Sample F56
Grand Means	2.4544 Percent	2.4604 Percent
Stnd Dev Btwn Labs	0.0948 Percent	0.0894 Percent
Statistics based on 47 of 58 reporting participants		

Sample F55: ABS & Sample F56: ABS



Comments on Assigned Data Flags for Test #706

- G3M4WT (X) - Data for both samples are low. Possible Systematic Error.
- FMFMBZ (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample F56.
- U8BCDF (X) - Data for both samples are high. Possible Systematic Error.
- L3L6DU (X) - Data for sample F56 are high.
- CDGV8P (X) - Data for sample F56 are high. Inconsistent within the determinations of both samples.
- YBBE7X (M) - Participant did not submit data for sample F56.
- A2ENG9 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F56.
- BHX287 (X) - Data for both samples are high. Possible Systematic Error.
- H4QHXC (X) - Data for both samples are high. Possible Systematic Error.
- J2JLKV (X) - Data for both samples are low. Possible Systematic Error.
- LKR8GU (X) - Data for sample F55 are low. Inconsistent within the determinations of sample F55.



Plastics Interlaboratory Testing Program

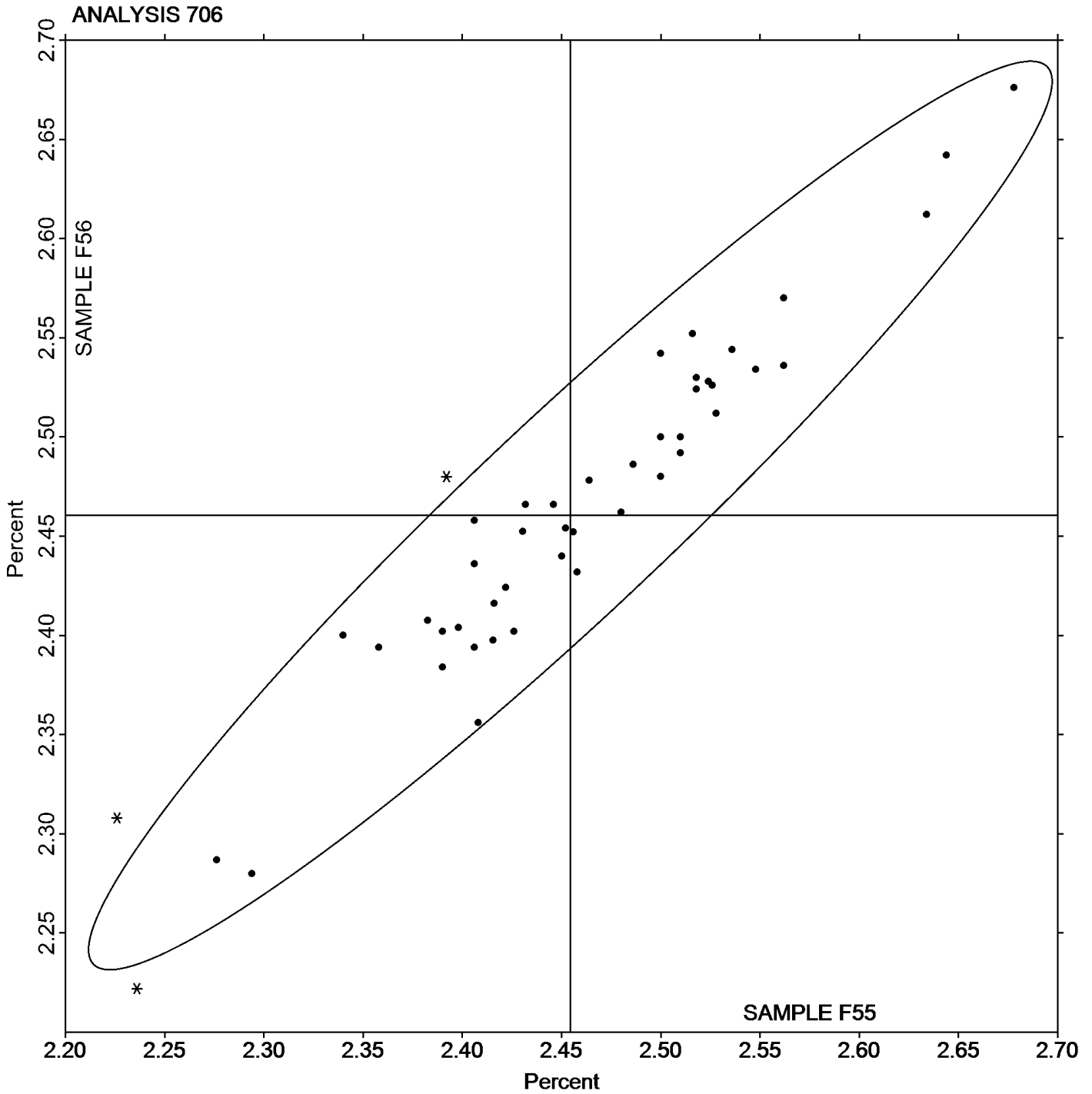
Report #108

Analysis 706

4th Qtr 2018

Percent Elongation at Yield - Percent

Grand Mean Sample F55: 2.4544 Percent Grand Mean Sample F56: 2.4604 Percent





Plastics Interlaboratory Testing Program

Report #108

Analysis 708

4th Qtr 2018

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26ZXUE	X	358.57	13.57	1.09	340.78	-5.63	-0.44
2KZHUQ		335.89	-9.10	-0.73	335.01	-11.40	-0.89
3B2HAX		350.80	5.81	0.47	352.00	5.59	0.44
3E4ANM		339.34	-5.66	-0.45	338.53	-7.88	-0.61
3UXYHY		356.60	11.61	0.93	363.40	16.99	1.32
63YZ2Y		343.00	-1.99	-0.16	351.20	4.79	0.37
6NZ227		338.29	-6.71	-0.54	338.64	-7.77	-0.60
84PVMX		361.44	16.44	1.32	365.38	18.97	1.48
8GU6CQ		359.22	14.23	1.14	360.82	14.41	1.12
A2ENG9		359.79	14.80	1.19	363.04	16.63	1.29
BK3M2X		354.40	9.41	0.76	359.34	12.93	1.01
BTC3LT		348.88	3.89	0.31	350.78	4.37	0.34
C3279K		345.20	0.21	0.02	346.19	-0.22	-0.02
DU2YBW		355.36	10.37	0.83	350.72	4.31	0.34
DXKZ84		328.88	-16.11	-1.30	328.08	-18.33	-1.43
ENC2XT		338.01	-6.99	-0.56	343.07	-3.34	-0.26
EVAM2N		319.76	-25.23	-2.03	325.54	-20.87	-1.62
EZMCM4		343.78	-1.21	-0.10	346.66	0.25	0.02
F9BRRY		357.06	12.07	0.97	357.20	10.79	0.84
G3M4WT	X	410.75	65.76	5.29	387.25	40.84	3.18
HLXDAY		347.00	2.01	0.16	347.80	1.39	0.11
HWTPKR		346.44	1.45	0.12	346.40	-0.01	0.00
J2JKGV		332.22	-12.77	-1.03	332.80	-13.61	-1.06
K47LYN		337.88	-7.11	-0.57	338.17	-8.24	-0.64
KYQXGE		361.38	16.39	1.32	361.84	15.43	1.20
L3L6DU	X	265.20	-79.79	-6.41	251.60	-94.81	-7.38
LB6BD8		327.40	-17.59	-1.41	330.20	-16.21	-1.26
LCWBBK	X	402.30	57.31	4.61	437.54	91.13	7.09
LKR8GU	X	306.60	-38.39	-3.09	342.20	-4.21	-0.33
N27FBU		355.15	10.15	0.82	360.85	14.44	1.12
NQ8KEJ		327.98	-17.01	-1.37	331.66	-14.75	-1.15
NQYX7H	*	376.98	31.99	2.57	377.38	30.97	2.41
P6JKK9		330.60	-14.39	-1.16	333.65	-12.76	-0.99
PKCGDQ		330.45	-14.55	-1.17	333.99	-12.42	-0.97
PLN2KG		354.80	9.81	0.79	355.60	9.19	0.72



Plastics Interlaboratory Testing Program

Report #108

Analysis 708

4th Qtr 2018

Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F55			Sample F56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QCHQCG		332.79	-12.20	-0.98	334.94	-11.47	-0.89
QKP94M		332.63	-12.36	-0.99	335.19	-11.22	-0.87
T67F79		340.16	-4.83	-0.39	342.58	-3.83	-0.30
T9UWQZ		348.32	3.33	0.27	342.96	-3.45	-0.27
TCMRJA		342.42	-2.57	-0.21	344.24	-2.17	-0.17
TJTRNV		355.72	10.72	0.86	360.70	14.29	1.11
TK2R2P		339.32	-5.67	-0.46	340.64	-5.77	-0.45
TLF9ZN	X	466.63	121.64	9.78	343.85	-2.56	-0.20
U8BCDF	X	457.45	112.45	9.04	455.95	109.54	8.53
V67YFE	*	333.50	-11.49	-0.92	324.78	-21.63	-1.68
VRCRBH	X	403.55	58.56	4.71	428.62	82.21	6.40
VW6V34		346.80	1.81	0.15	351.60	5.19	0.40
VWA6HG		325.00	-19.99	-1.61	327.20	-19.21	-1.50
YAYJK8		366.86	21.87	1.76	367.92	21.51	1.67
YBBE7X	M	769.40	424.41	34.12	No data reported for this sample		
Z4QDME		356.68	11.69	0.94	357.44	11.03	0.86
ZJ2637		353.06	8.07	0.65	349.86	3.45	0.27
ZKKVKP		348.50	3.51	0.28	349.38	2.97	0.23
ZYWLCX		338.99	-6.00	-0.48	333.03	-13.38	-1.04

Summary Statistics		
	Sample F55	Sample F56
Grand Means	344.994 ksi	346.409 ksi
Stnd Dev Btwn Labs	12.440 ksi	12.846 ksi
Statistics based on 45 of 54 reporting participants		

Sample F55: ABS & Sample F56: ABS



Comments on Assigned Data Flags for Test #708

- LCWBBK (X) - Data for both samples are high. Possible Systematic Error.
- G3M4WT (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample F55.
- 26ZXUE (X) - Inconsistent in testing between samples.
- U8BCDF (X) - Data for both samples are high. Possible Systematic Error.
- L3L6DU (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F56.
- VRCRBH (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample F55.
- YBBE7X (M) - Participant did not submit data for sample F56.
- TLF9ZN (X) - Data for sample F55 are high. Inconsistent within the determinations of both samples.
- LKR8GU (X) - Data for sample F55 are low. Inconsistent within the determinations of sample F56.



Plastics Interlaboratory Testing Program

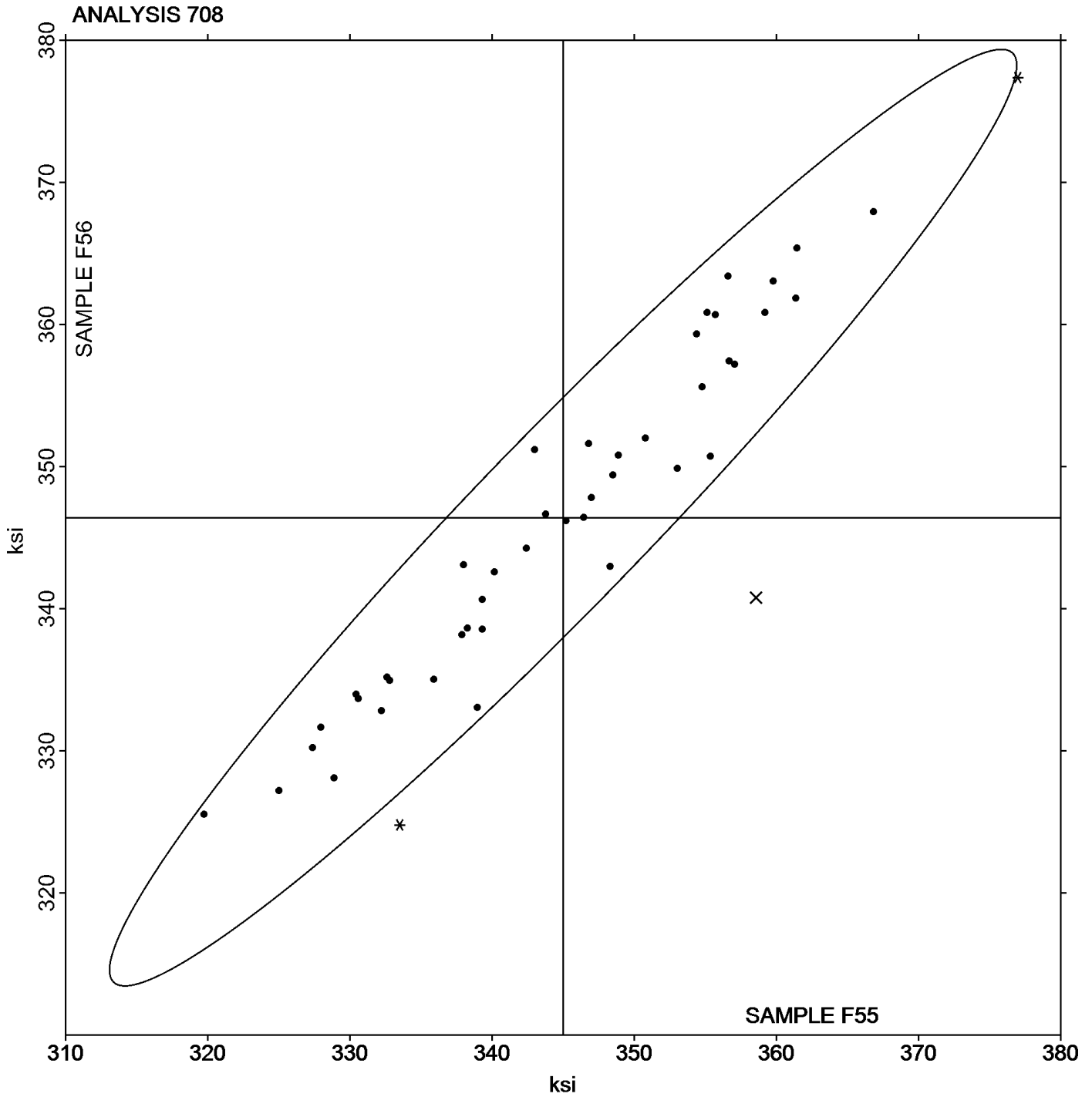
Analysis 708

Modulus of Elasticity - ksi

Report #108

4th Qtr 2018

Grand Mean Sample F55: 344.99 ksi Grand Mean Sample F56: 346.41 ksi





Plastics Interlaboratory Testing Program

Report #108

Analysis 710

4th Qtr 2018

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

WebCode	Data Flag	Sample E55			Sample E56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
26ZXUE		109.55	0.97	0.64	109.50	0.77	0.48	TO
3B2HAX		107.83	-0.76	-0.50	107.20	-1.53	-0.96	CE
3E4ANM		108.55	-0.03	-0.02	108.53	-0.21	-0.13	TY
4Z3XTN		107.05	-1.53	-1.01	107.40	-1.33	-0.83	CE
6NZ227		109.70	1.12	0.74	108.20	-0.53	-0.33	CF
84PVMX		108.75	0.17	0.11	108.75	0.02	0.01	TO
8GU6CQ		110.20	1.62	1.07	110.05	1.32	0.82	DN
9CJA9G		110.68	2.09	1.38	109.28	0.54	0.34	XX
BHX287		108.30	-0.28	-0.19	109.73	1.00	0.63	CE
BK3M2X		108.00	-0.58	-0.39	109.05	0.32	0.20	DN
BTC3LT		106.60	-1.98	-1.31	106.93	-1.81	-1.13	TO
DU2YBW		108.18	-0.41	-0.27	109.10	0.37	0.23	CE
EVAM2N	X	115.93	7.34	4.86	113.60	4.87	3.04	CE
F9BRRY		111.98	3.39	2.25	111.40	2.67	1.67	IN
H4QH CX		107.75	-0.83	-0.55	107.50	-1.23	-0.77	TO
HWTPKR		107.98	-0.61	-0.40	107.20	-1.53	-0.96	CF
JPRUZX		108.20	-0.38	-0.25	110.60	1.87	1.17	TO
K47LYN		107.90	-0.68	-0.45	108.50	-0.23	-0.14	ZW
KTZN8G		108.23	-0.36	-0.24	108.03	-0.71	-0.44	AT
KYQXGE		108.03	-0.56	-0.37	107.33	-1.41	-0.88	RO
L3L6DU		109.73	1.14	0.76	110.55	1.82	1.14	XX
NQYX7H		109.75	1.17	0.77	110.15	1.42	0.89	CE
QCHQCG		110.30	1.72	1.14	110.20	1.47	0.92	AT
QKP94M		110.41	1.83	1.21	110.38	1.64	1.03	AT
TK2R2P	X	115.68	7.09	4.69	116.28	7.54	4.71	CE
TTET7Q		104.85	-3.73	-2.47	105.05	-3.68	-2.30	CE
UGJT8A		107.43	-1.16	-0.77	107.53	-1.21	-0.75	CE
V67YFE		109.93	1.34	0.89	111.60	2.87	1.79	TO
W22TDE		108.20	-0.38	-0.25	108.70	-0.03	-0.02	TO
ZJ2637		106.30	-2.28	-1.51	106.05	-2.68	-1.67	TO



Plastics Interlaboratory Testing Program

Report #108

Analysis 710

4th Qtr 2018

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

Summary Statistics		
	<u>Sample E55</u>	<u>Sample E56</u>
Grand Means	108.582 Degrees C	108.731 Degrees C
Stnd Dev Btwn Labs	1.511 Degrees C	1.601 Degrees C
Statistics based on 28 of 30 reporting participants		

Sample E55: ABS/PC & Sample E56: ABS/PC

Comments on Assigned Data Flags for Test #710

EVAM2N (X) - Data for both samples are high. Possible Systematic Error.

TK2R2P (X) - Data for both samples are high. Possible Systematic Error.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

Report #108

Analysis 711

4th Qtr 2018

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

WebCode	Data Flag	Sample G55			Sample G56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4Z3XTN		85.8	1.0	0.34	83.7	-2.1	-0.44	CE
84PVMX		84.5	-0.3	-0.09	81.8	-3.9	-0.83	TO
BHX287		87.9	3.1	1.06	88.2	2.5	0.53	CE
FTJRXE		81.3	-3.5	-1.19	85.1	-0.6	-0.13	TO
H4QHCX		86.3	1.5	0.51	84.5	-1.3	-0.27	TO
KTZN8G		83.3	-1.5	-0.49	83.8	-2.0	-0.42	AT
L3L6DU		84.3	-0.5	-0.16	86.6	0.8	0.17	XX
LCWBBK		80.7	-4.1	-1.38	81.0	-4.8	-1.02	TO
PHM4XU		81.5	-3.3	-1.11	82.1	-3.6	-0.77	IN
T8CUX8		84.2	-0.6	-0.21	82.9	-2.8	-0.60	CE
TK2R2P		85.0	0.2	0.07	91.6	5.9	1.24	CE
TTET7Q		82.2	-2.6	-0.89	81.9	-3.9	-0.82	CE
UGJT8A		84.9	0.1	0.02	85.9	0.2	0.03	CE
V67YFE		88.8	4.0	1.36	89.0	3.2	0.68	TO
W22TDE		85.2	0.4	0.14	84.1	-1.7	-0.35	TO
WDQPDQ	*	92.9	8.1	2.73	101.7	15.9	3.37	CE
WJZV7C		85.4	0.6	0.20	86.5	0.8	0.16	CS
XMBH2T		85.6	0.8	0.29	86.1	0.4	0.08	XX
ZJ2637		81.3	-3.5	-1.19	82.9	-2.8	-0.60	TO

Summary Statistics		Sample G55	Sample G56
Grand Means		84.78 Degrees C	85.74 Degrees C
Stnd Dev Btwn Labs		2.96 Degrees C	4.72 Degrees C
Statistics based on 19 of 19 reporting participants			

Sample G55: PP & Sample G56: PP

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

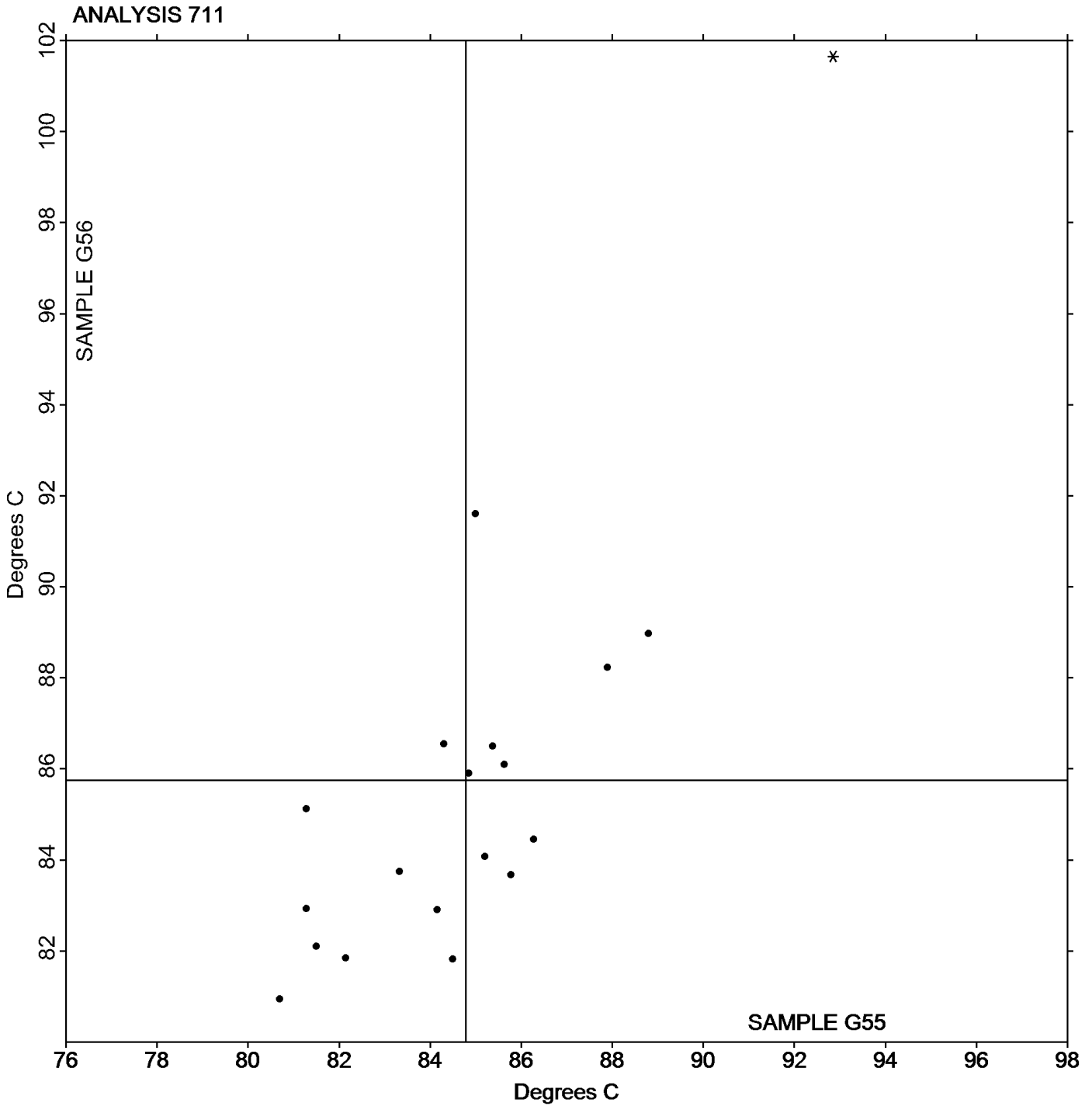
Report #108

Analysis 711

4th Qtr 2018

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

Grand Mean Sample G55: 84.780 Degrees C Grand Mean Sample G56: 85.744 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 #108

Analysis 712

4th Qtr 2018

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

WebCode	Data Flag	Sample N55			Sample N56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KD7TW		104.40	-0.30	-0.20	103.73	-1.17	-0.83	CE
3E4ANM		104.73	0.03	0.02	104.93	0.03	0.02	TY
3T2HB6	X	105.43	0.73	0.49	109.98	5.08	3.58	TO
4XELTJ		105.15	0.45	0.31	105.58	0.68	0.48	CF
4Z3XTN		103.38	-1.32	-0.90	103.53	-1.37	-0.97	CE
7HA7FT		105.65	0.95	0.65	105.40	0.50	0.35	CE
84PVMX		106.00	1.30	0.89	106.75	1.85	1.31	TO
894K9E		104.53	-0.17	-0.12	104.33	-0.57	-0.40	IN
8L7MEM		106.53	1.83	1.24	107.20	2.30	1.62	DN
8PPA2L		103.78	-0.92	-0.63	102.40	-2.50	-1.76	CE
9LNGMG		102.93	-1.77	-1.21	103.48	-1.42	-1.00	CF
9NDTMM		104.68	-0.02	-0.02	104.08	-0.82	-0.58	CE
BHX287		106.87	2.17	1.48	108.13	3.24	2.28	CE
DU2YBW		102.98	-1.72	-1.17	103.25	-1.65	-1.16	CE
EADYH8		103.68	-1.02	-0.70	103.98	-0.92	-0.65	IN
FZ4RFC		105.53	0.83	0.56	105.83	0.93	0.65	TO
G8ED3K		103.55	-1.15	-0.78	104.08	-0.82	-0.58	CE
H4QH CX		105.50	0.80	0.55	105.00	0.10	0.07	TO
JAUPPF		106.78	2.08	1.41	106.88	1.98	1.39	CE
JDDQVQ		103.60	-1.10	-0.75	104.83	-0.07	-0.05	CE
K47LYN		102.90	-1.80	-1.23	104.15	-0.75	-0.53	ZW
LFTZRR		104.85	0.15	0.10	105.05	0.15	0.11	XX
M8RAFF		104.50	-0.20	-0.14	103.48	-1.42	-1.00	CE
MK6FKE		104.68	-0.02	-0.02	104.93	0.03	0.02	TY
P6JKK9		104.80	0.10	0.07	106.03	1.13	0.79	CE
PLN2KG		105.43	0.73	0.49	104.60	-0.30	-0.21	TO
PZTBAB		105.25	0.55	0.37	104.48	-0.42	-0.30	AT
Q9VYGF		104.50	-0.20	-0.14	106.68	1.78	1.25	DN
QCHQCG		104.13	-0.57	-0.39	104.40	-0.50	-0.35	AT
UFLQ4N		103.80	-0.90	-0.61	103.55	-1.35	-0.95	XX
UGJT8A		102.28	-2.42	-1.65	103.10	-1.80	-1.27	CE
UM6X3G	*	108.90	4.20	2.86	108.58	3.68	2.59	DN
V67YFE		107.95	3.25	2.21	106.78	1.88	1.32	TO
VJZN9Q		103.20	-1.50	-1.02	104.50	-0.40	-0.28	IN
VXLZKZ		102.78	-1.92	-1.31	104.48	-0.42	-0.30	TO



Plastics Interlaboratory Testing Program

Report #108

Analysis 712

4th Qtr 2018

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

WebCode	Data Flag	Sample N55			Sample N56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
W22TDE		103.85	-0.85	-0.58	103.98	-0.92	-0.65	TO
WD9RY8		106.08	1.38	0.94	104.60	-0.30	-0.21	IN
WDQPDQ	X	107.15	2.45	1.67	110.75	5.85	4.12	CF
ZGYCEK		103.85	-0.85	-0.58	104.53	-0.37	-0.26	IN

Summary Statistics		Sample N55	Sample N56
Grand Means		104.700 Degrees C	104.897 Degrees C
Stnd Dev Btwn Labs		1.468 Degrees C	1.419 Degrees C
Statistics based on 37 of 39 reporting participants			

Sample N55: ABS/PC & Sample N56: ABS/PC

Comments on Assigned Data Flags for Test #712

3T2HB6 (X) - Data for sample N56 are high. Inconsistent within the determinations of both samples.

WDQPDQ (X) - Data for sample N56 are high.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

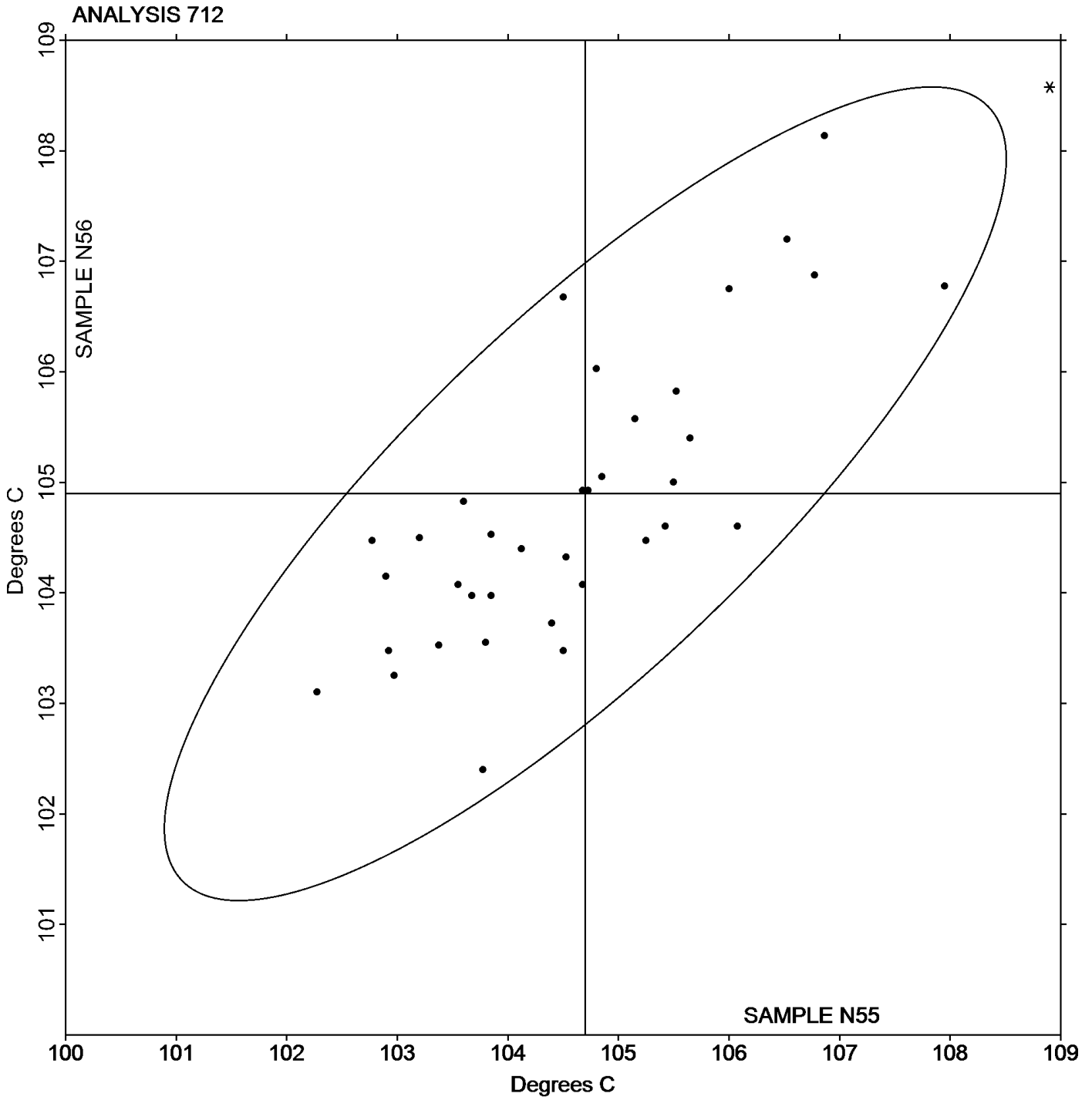
Report #108

Analysis 712

4th Qtr 2018

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

Grand Mean Sample N55: 104.70 Degrees C Grand Mean Sample N56: 104.90 Degrees C





Plastics Interlaboratory Testing Program

Report #108

Analysis 715

4th Qtr 2018

Vicat Softening Temperature (Rate A)

WebCode	Data Flag	Sample H55			Sample H56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
26ZXUE		141.32	1.13	1.39	140.23	0.96	1.17	TO
2KD7TW	X	141.00	0.81	1.00	141.12	1.85	2.25	CF
3B2HAX		140.11	-0.08	-0.10	139.38	0.10	0.13	CE
3E4ANM		140.22	0.03	0.03	139.32	0.05	0.05	TY
6NZ227		139.95	-0.24	-0.30	139.10	-0.17	-0.21	CF
6PH7J6		139.70	-0.49	-0.60	138.87	-0.40	-0.49	CE
8L7MEM		140.23	0.04	0.05	139.53	0.26	0.32	DN
DU2YBW		139.70	-0.49	-0.61	138.68	-0.59	-0.72	CE
FZ4RFC		139.05	-1.14	-1.41	137.82	-1.45	-1.77	XX
G3M4WT		139.70	-0.49	-0.61	138.67	-0.60	-0.74	DN
J86H84	X	138.63	-1.56	-1.93	139.45	0.18	0.22	TO
K47LYN	*	142.23	2.04	2.53	141.13	1.86	2.27	CF
KYQXGE		140.07	-0.12	-0.15	139.10	-0.17	-0.21	RO
P6JKK9		139.40	-0.79	-0.98	138.87	-0.40	-0.49	CE
PHM4XU		140.22	0.03	0.03	139.35	0.08	0.10	IN
QCHQCG		140.40	0.21	0.26	139.68	0.41	0.50	AT
T8CUX8		139.22	-0.97	-1.21	138.23	-1.04	-1.26	CE
TTET7Q		139.33	-0.86	-1.06	138.22	-1.05	-1.28	CE
UGJT8A		139.98	-0.21	-0.26	139.00	-0.27	-0.33	CE
V67YFE		141.07	0.88	1.08	140.00	0.73	0.89	TO
WDQPDQ		141.75	1.56	1.93	140.95	1.68	2.04	CF
XCTDXW		139.67	-0.52	-0.65	138.75	-0.52	-0.63	TO
XPYU2X		140.17	-0.02	-0.03	139.18	-0.09	-0.11	CE
ZEAUD2		140.73	0.54	0.67	139.92	0.65	0.79	TO

Summary Statistics		
	Sample H55	Sample H56
Grand Means	140.191 Degrees C	139.272 Degrees C
Std Dev Btwn Labs	0.808 Degrees C	0.821 Degrees C
Statistics based on 22 of 24 reporting participants		

Sample H55: ABS/PC & Sample H56: ABS/PC

Comments on Assigned Data Flags for Test #715

2KD7TW (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample H56.

J86H84 (X) - Inconsistent in testing between samples.



Plastics Interlaboratory Testing Program

Report #108

Analysis 715

4th Qtr 2018

Vicat Softening Temperature (Rate A)

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

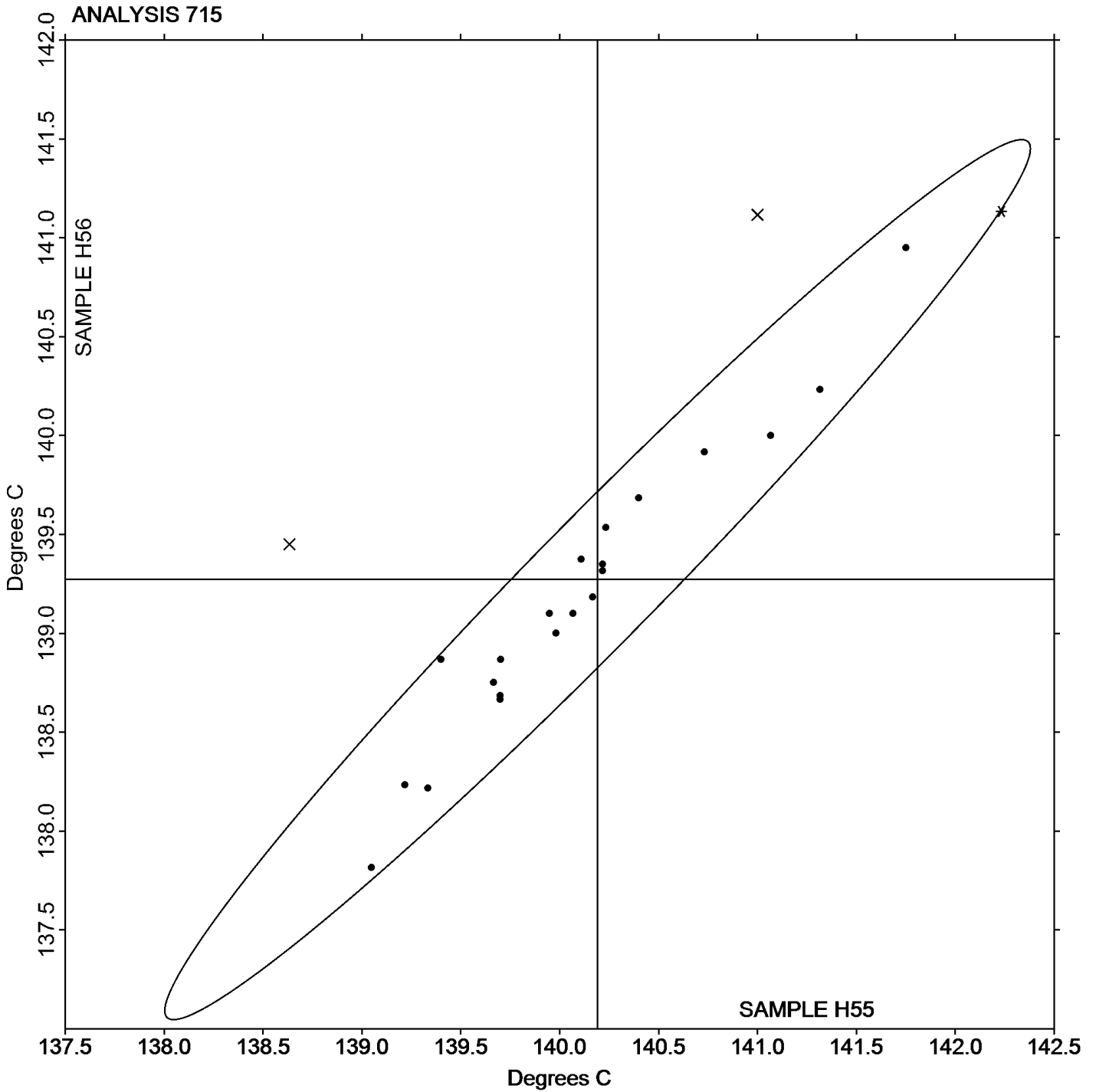
Analysis 715

Vicat Softening Temperature (Rate A)

Report #108

4th Qtr 2018

Grand Mean Sample H55: 140.19 Degrees C Grand Mean Sample H56: 139.27 Degrees C





Plastics Interlaboratory Testing Program

Report #108

Analysis 716

4th Qtr 2018

Vicat Softening Temperature (Rate B)

WebCode	Data Flag	Sample R55			Sample R56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
26ZXUE		142.52	0.93	1.05	141.80	0.96	1.14	TO
2KD7TW		141.88	0.30	0.34	141.23	0.40	0.47	CF
3B2HAX		141.77	0.18	0.21	140.78	-0.05	-0.06	CE
3E4ANM		142.43	0.85	0.95	141.42	0.58	0.69	TY
6NZ227		141.28	-0.30	-0.34	140.75	-0.09	-0.10	CF
6PH7J6		141.27	-0.32	-0.36	140.53	-0.30	-0.36	CE
8L7MEM		142.35	0.77	0.86	142.32	1.48	1.75	DN
ATWJ2V		142.15	0.57	0.64	141.08	0.25	0.29	WZ
BCNRYQ		142.25	0.67	0.75	140.93	0.10	0.11	CE
DU2YBW		141.10	-0.48	-0.54	140.48	-0.35	-0.42	CE
FZ4RFC		141.00	-0.58	-0.66	139.68	-1.15	-1.36	XX
G3M4WT		140.42	-1.17	-1.31	139.37	-1.47	-1.74	DN
J86H84	*	139.37	-2.22	-2.49	140.13	-0.70	-0.83	TO
K47LYN		142.85	1.27	1.42	142.10	1.26	1.49	CF
KYQXGE		141.83	0.25	0.28	140.62	-0.22	-0.26	RO
P6JJK9		141.20	-0.38	-0.43	141.10	0.26	0.31	CE
PHM4XU		142.77	1.18	1.33	141.67	0.83	0.98	IN
QCHQCG		141.45	-0.13	-0.15	141.63	0.80	0.94	AT
T8CUX8		140.78	-0.80	-0.90	139.75	-1.09	-1.28	CE
TTET7Q		140.38	-1.20	-1.35	139.43	-1.40	-1.66	CE
V67YFE		142.68	1.10	1.23	141.78	0.95	1.12	TO
WDQPDQ	X	147.80	6.22	6.98	147.35	6.51	7.69	CF
XCTDXW		141.28	-0.30	-0.34	140.52	-0.32	-0.38	TO
ZC6498		140.63	-0.95	-1.07	139.72	-1.12	-1.32	TO
ZEAUD2		142.37	0.78	0.88	141.23	0.40	0.47	TO

Summary Statistics		
	Sample R55	Sample R56
Grand Means	141.584 Degrees C	140.836 Degrees C
Std Dev Btwn Labs	0.890 Degrees C	0.847 Degrees C
Statistics based on 24 of 25 reporting participants		

Sample R55: ABS/PC & Sample R56: ABS/PC



Plastics Interlaboratory Testing Program

Analysis 716

Vicat Softening Temperature (Rate B)

Report #108

4th Qtr 2018

Comments on Assigned Data Flags for Test #716

WDQPDQ (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample R56.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

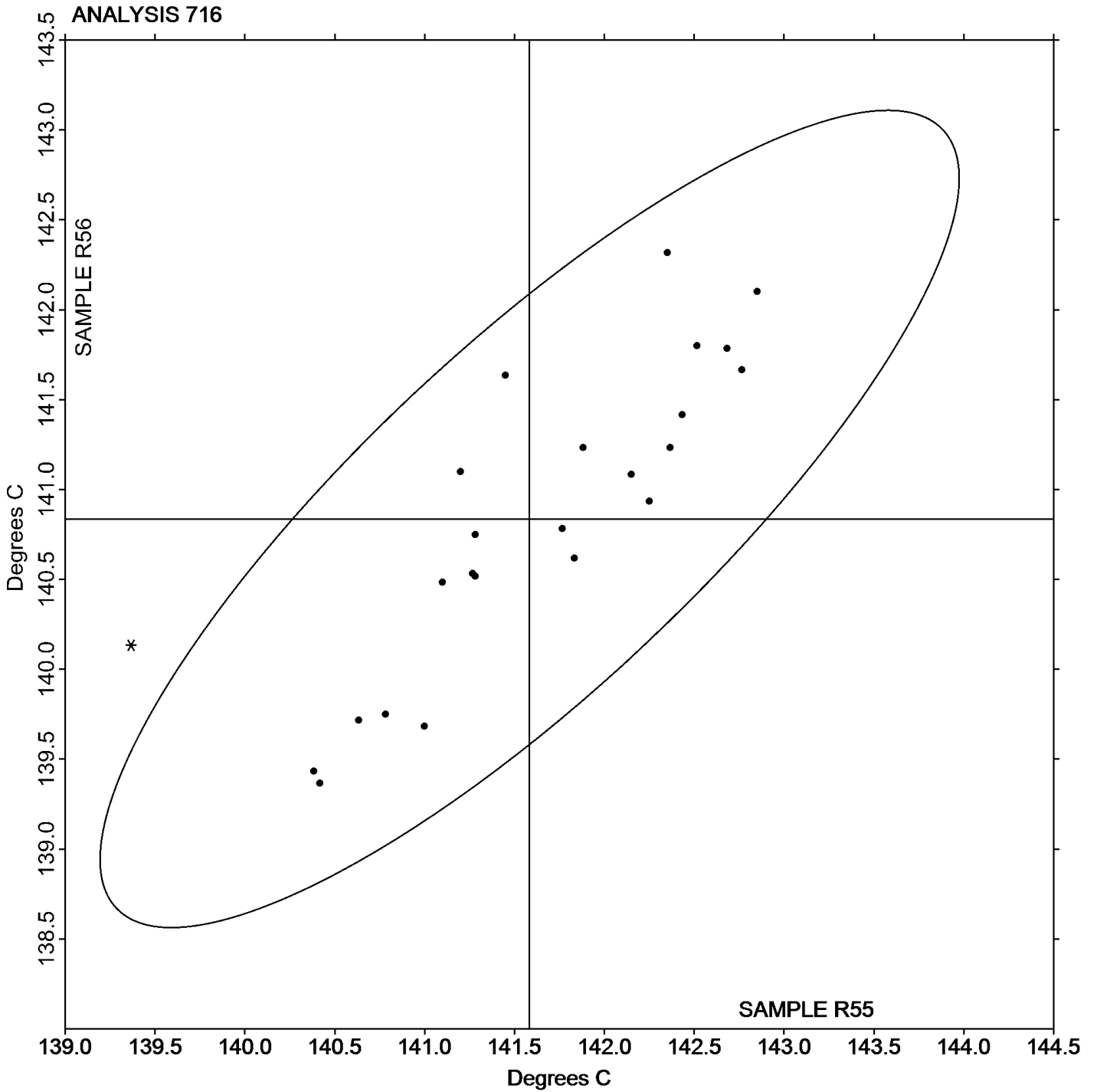
Report #108

Analysis 716

4th Qtr 2018

Vicat Softening Temperature (Rate B)

Grand Mean Sample R55: 141.58 Degrees C Grand Mean Sample R56: 140.84 Degrees C





Plastics Interlaboratory Testing Program

Report #108

Analysis 718

4th Qtr 2018

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T55			Sample T56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
32CUEV		1.04733	-0.00077	-0.40	1.04623	-0.00049	-0.30
32EF8M		1.04733	-0.00077	-0.40	1.04800	0.00128	0.79
3E4ANM	*	1.04800	-0.00011	-0.06	1.04433	-0.00239	-1.47
3HLCQM	X	1.06187	0.01376	7.19	1.06000	0.01328	8.17
3UXYHY		1.05053	0.00243	1.27	1.04950	0.00278	1.71
3ZXC94		1.04863	0.00053	0.27	1.04713	0.00041	0.25
4CX8CQ		1.05013	0.00203	1.06	1.04850	0.00178	1.09
4R8T29	X	1.04810	-0.00001	0.00	1.04327	-0.00346	-2.13
4Z3XTN		1.04750	-0.00061	-0.32	1.04567	-0.00106	-0.65
66P8AZ		1.04747	-0.00063	-0.33	1.04612	-0.00061	-0.37
6AKYL4		1.04960	0.00149	0.78	1.04877	0.00204	1.26
6DLZQ8		1.04783	-0.00027	-0.14	1.04620	-0.00052	-0.32
6NZ227		1.04730	-0.00081	-0.42	1.04543	-0.00129	-0.79
72LMW3		1.04733	-0.00077	-0.40	1.04567	-0.00106	-0.65
73ERFY		1.04533	-0.00277	-1.45	1.04467	-0.00206	-1.27
7HA7FT		1.04447	-0.00364	-1.90	1.04341	-0.00332	-2.04
7PDX6R		1.05023	0.00213	1.11	1.04830	0.00158	0.97
7VDEFX		1.04563	-0.00247	-1.29	1.04483	-0.00189	-1.16
82M779		1.04933	0.00123	0.64	1.04733	0.00061	0.38
84PVMX		1.05027	0.00216	1.13	1.04857	0.00184	1.14
8PMKXN		1.04743	-0.00067	-0.35	1.04550	-0.00122	-0.75
9KPC3V	X	1.03600	-0.01211	-6.33	1.03430	-0.01242	-7.65
9NDTMM		1.04787	-0.00024	-0.13	1.04680	0.00008	0.05
A6FPJQ		1.04660	-0.00151	-0.79	1.04590	-0.00082	-0.51
BHX287		1.04923	0.00113	0.59	1.04640	-0.00032	-0.20
BTC3LT	X	1.04867	0.00056	0.29	1.04367	-0.00306	-1.88
CDGV8P		1.04767	-0.00044	-0.23	1.04660	-0.00012	-0.08
CPC7FW		1.04877	0.00066	0.34	1.04720	0.00048	0.29
CTCHBW		1.04963	0.00153	0.80	1.04947	0.00274	1.69
DU2YBW		1.04930	0.00119	0.62	1.04660	-0.00012	-0.08
E9FVKP		1.04967	0.00156	0.81	1.04733	0.00061	0.38
EQWVUU		1.04743	-0.00067	-0.35	1.04747	0.00074	0.46
EVAM2N		1.04967	0.00156	0.81	1.04633	-0.00039	-0.24
F9BRRY	*	1.04363	-0.00447	-2.34	1.04220	-0.00452	-2.78
FJQNNP		1.04867	0.00056	0.29	1.04700	0.00028	0.17



Plastics Interlaboratory Testing Program

Report #108

Analysis 718

4th Qtr 2018

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T55			Sample T56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
FTJRXE		1.04687	-0.00124	-0.65	1.04610	-0.00062	-0.38
G4WDHY		1.04523	-0.00287	-1.50	1.04357	-0.00316	-1.94
G8ED3K		1.04830	0.00019	0.10	1.04773	0.00101	0.62
GQQABK	X	1.03477	-0.01334	-6.97	1.04460	-0.00212	-1.31
GVMUGN		1.04780	-0.00031	-0.16	1.04717	0.00044	0.27
GZW3NK		1.04733	-0.00077	-0.40	1.04500	-0.00172	-1.06
H4QHCX		1.04833	0.00023	0.12	1.04733	0.00061	0.38
HC789K		1.04780	-0.00031	-0.16	1.04700	0.00028	0.17
J86H84	X	1.04700	-0.00111	-0.58	1.04033	-0.00639	-3.93
JAUPPF		1.04600	-0.00211	-1.10	1.04500	-0.00172	-1.06
JDDQQV		1.04947	0.00136	0.71	1.04757	0.00084	0.52
K47LYN		1.04940	0.00129	0.68	1.04733	0.00061	0.38
K86XWA		1.04367	-0.00444	-2.32	1.04270	-0.00402	-2.48
KTZN8G		1.04967	0.00156	0.81	1.04790	0.00118	0.73
KXZQFN		1.05000	0.00189	0.99	1.04883	0.00211	1.30
L3L6DU		1.04533	-0.00277	-1.45	1.04500	-0.00172	-1.06
LCWBBK		1.05217	0.00406	2.12	1.04877	0.00204	1.26
LD4RLV		1.04963	0.00153	0.80	1.04803	0.00131	0.81
LFTZRR		1.04467	-0.00344	-1.80	1.04433	-0.00239	-1.47
M8RAFF		1.05143	0.00333	1.74	1.04953	0.00281	1.73
MEXWFU		1.04707	-0.00104	-0.54	1.04610	-0.00062	-0.38
MKZU4F		1.04580	-0.00231	-1.21	1.04437	-0.00236	-1.45
N9M2FQ	X	1.04033	-0.00777	-4.06	1.04100	-0.00572	-3.52
NQYX7H		1.04467	-0.00344	-1.80	1.04500	-0.00172	-1.06
P3AQAHA		1.05130	0.00319	1.67	1.04993	0.00321	1.98
P6JKK9		1.05130	0.00319	1.67	1.04893	0.00221	1.36
PLN2KG		1.04997	0.00186	0.97	1.04800	0.00128	0.79
PXXR63		1.04857	0.00046	0.24	1.04693	0.00021	0.13
PZTBAB		1.05033	0.00223	1.16	1.04867	0.00194	1.20
Q9VYGF		1.04867	0.00056	0.29	1.04833	0.00161	0.99
QCHQCG		1.04857	0.00046	0.24	1.04683	0.00011	0.07
QDD8TJ		1.04903	0.00093	0.48	1.04713	0.00041	0.25
QKP94M		1.04850	0.00039	0.20	1.04670	-0.00002	-0.01
QR8L4N		1.05033	0.00223	1.16	1.04843	0.00171	1.05
QUK4AX		1.04687	-0.00124	-0.65	1.04473	-0.00199	-1.22



Plastics Interlaboratory Testing Program

Report #108

Analysis 718

4th Qtr 2018

Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T55			Sample T56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RKKFL8		1.04787	-0.00024	-0.13	1.04683	0.00011	0.07
RPGW36		1.04993	0.00183	0.95	1.04787	0.00114	0.70
T8CUX8		1.04600	-0.00211	-1.10	1.04400	-0.00272	-1.68
T9UWQZ	X	1.04677	-0.00134	-0.70	1.04190	-0.00482	-2.97
TCMRJA		1.04867	0.00056	0.29	1.04633	-0.00039	-0.24
TM7CRB		1.04660	-0.00151	-0.79	1.04730	0.00058	0.36
TMNVK3	X	1.04193	-0.00617	-3.23	1.03957	-0.00716	-4.40
TTET7Q		1.04540	-0.00271	-1.41	1.04507	-0.00166	-1.02
UFLQ4N		1.04567	-0.00244	-1.28	1.04500	-0.00172	-1.06
UGJT8A		1.04843	0.00033	0.17	1.04700	0.00028	0.17
UM6X3G		1.04933	0.00123	0.64	1.04667	-0.00006	-0.03
V67YFE		1.04790	-0.00021	-0.11	1.04683	0.00011	0.07
VXLZKZ		1.05083	0.00273	1.42	1.04777	0.00104	0.64
WD9RY8		1.05100	0.00289	1.51	1.04933	0.00261	1.61
WDQPDQ		1.04850	0.00039	0.20	1.04850	0.00178	1.09
WGE2CW		1.05000	0.00189	0.99	1.04800	0.00128	0.79
WL92QR	*	1.04500	-0.00311	-1.62	1.04633	-0.00039	-0.24
YAYJK8		1.04970	0.00159	0.83	1.04767	0.00094	0.58
YBQL63		1.04667	-0.00144	-0.75	1.04700	0.00028	0.17
YMUNYX		1.04650	-0.00161	-0.84	1.04570	-0.00102	-0.63
Z4WLXM		1.04760	-0.00051	-0.27	1.04607	-0.00066	-0.40
ZEAUD2		1.05043	0.00233	1.21	1.04837	0.00164	1.01
ZJ2637		1.04653	-0.00157	-0.82	1.04630	-0.00042	-0.26
ZN3XMN		1.04600	-0.00211	-1.10	1.04467	-0.00206	-1.27
ZNTDMZ		1.04880	0.00069	0.36	1.04703	0.00031	0.19

Summary Statistics

Grand Means

Sample T55
1.048108 sp gr 23/23 C

Sample T56
1.046722 sp gr 23/23 C

Std Dev Btwn Labs

0.001914 sp gr 23/23 C

0.001625 sp gr 23/23 C

Statistics based on 86 of 95 reporting participants

Sample T55: ABS & Sample T56: ABS



Comments on Assigned Data Flags for Test #718

- GQQABK (X) - Data for sample T55 are low. Inconsistent within the determinations of sample T55.
- BTC3LT (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T56.
- 9KPC3V (X) - Data for both samples are low. Possible Systematic Error.
- T9UWQZ (X) - Data for sample T56 are low. Inconsistent within the determinations of sample T55.
- 4R8T29 (X) - Inconsistent in testing between samples.
- 3HLCQM (X) - Data for both samples are high. Possible Systematic Error.
- J86H84 (X) - Data for sample T56 are low. Inconsistent within the determinations of both samples.
- N9M2FQ (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample T55.
- TMNVK3 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

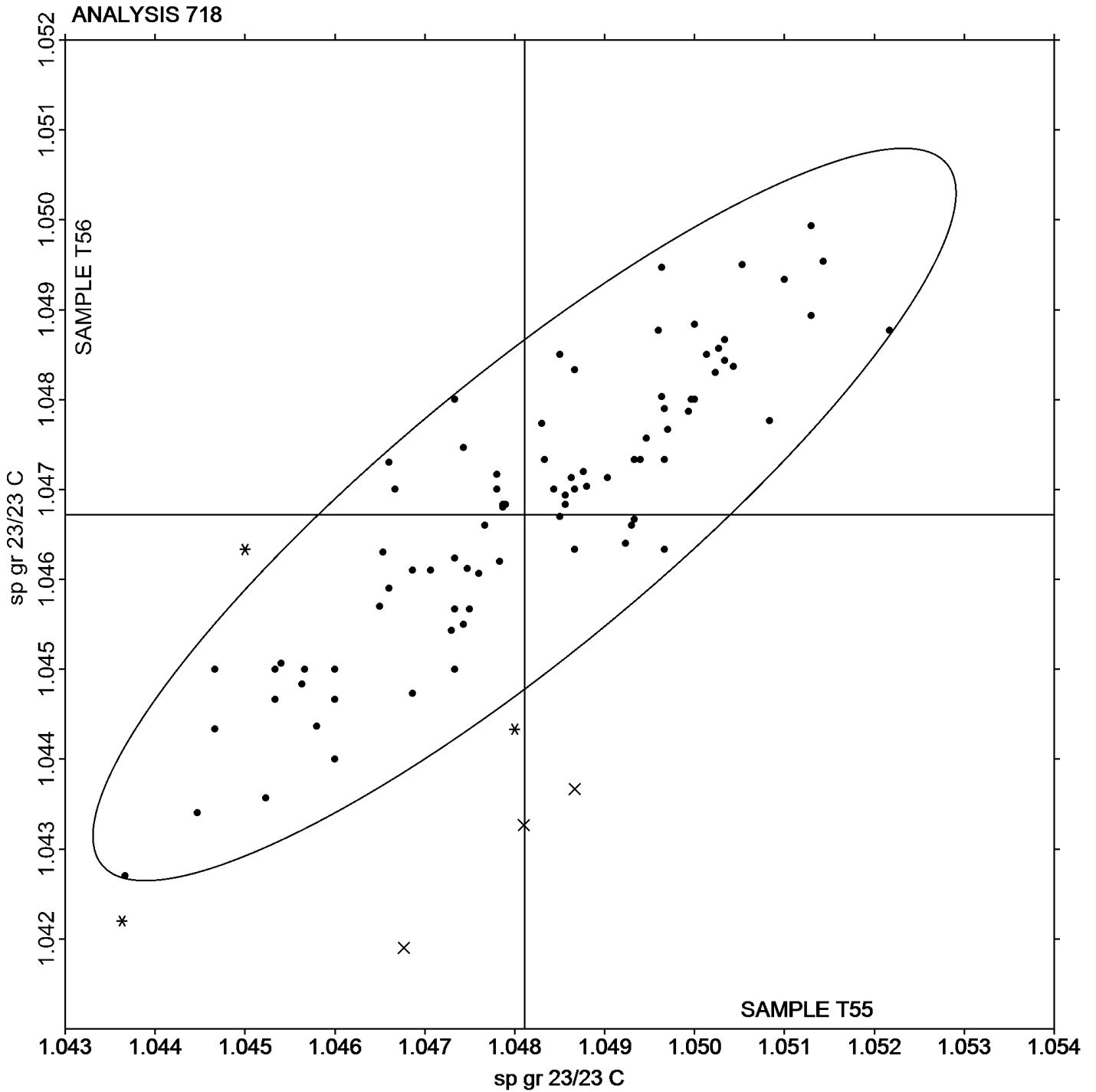
Analysis 718

Specific Gravity - sp gr 23/23 C

Report #108

4th Qtr 2018

Grand Mean Sample T55: 1.0481 sp gr 23/23 C Grand Mean Sample T56: 1.0467 sp gr 23/23 C





Plastics Interlaboratory Testing Program

Report #108

Analysis 720

4th Qtr 2018

Flexural Modulus- ksi

WebCode	Data Flag	Sample J55			Sample J56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26ZXUE		375.4	10.1	0.60	375.2	9.6	0.57
2KZHUQ		350.8	-14.5	-0.86	352.9	-12.7	-0.76
3B2HAX	X	308.1	-57.2	-3.41	312.4	-53.2	-3.18
3E4ANM		358.5	-6.8	-0.40	358.1	-7.5	-0.45
3UXYHY		368.8	3.5	0.21	367.4	1.8	0.11
4CX8CQ	X	365.7	0.5	0.03	352.4	-13.2	-0.79
4Z3XTN		385.0	19.7	1.17	386.3	20.7	1.24
63YZ2Y	X	372.8	7.5	0.45	382.8	17.2	1.03
6NZ227		362.5	-2.7	-0.16	364.6	-1.0	-0.06
82M779		325.1	-40.2	-2.39	324.4	-41.2	-2.46
84PVMX		377.7	12.4	0.74	380.4	14.8	0.88
8GU6CQ		375.5	10.2	0.61	373.5	7.9	0.48
8L7MEM		373.4	8.1	0.48	370.2	4.6	0.28
8PMKXN		355.9	-9.4	-0.56	354.2	-11.4	-0.68
987QQZ	X	334.4	-30.8	-1.84	343.3	-22.3	-1.34
9NDTMM		379.2	13.9	0.83	384.8	19.2	1.15
A2ENG9	X	323.2	-42.0	-2.50	336.4	-29.2	-1.75
BBFN98		366.6	1.4	0.08	365.8	0.2	0.01
BFQGLQ		362.0	-3.3	-0.19	361.6	-4.0	-0.24
BHX287	*	400.8	35.6	2.12	404.2	38.6	2.31
BK3M2X		347.0	-18.3	-1.09	349.1	-16.5	-0.99
BTC3LT		360.5	-4.8	-0.28	358.4	-7.2	-0.43
C3279K		372.6	7.3	0.44	371.1	5.6	0.33
CJ73F6		378.1	12.8	0.77	372.7	7.1	0.43
DU2YBW		358.0	-7.3	-0.44	358.7	-6.9	-0.41
DXKZ84		381.4	16.1	0.96	381.4	15.8	0.95
E3R4FH		345.9	-19.4	-1.15	346.6	-19.0	-1.13
EVAM2N		347.6	-17.6	-1.05	347.3	-18.3	-1.09
EZMCM4		339.1	-26.2	-1.56	339.8	-25.8	-1.54
F9BRRY		379.7	14.4	0.86	378.7	13.1	0.78
FTJRXE		385.5	20.2	1.21	383.2	17.6	1.05
G8ED3K		375.8	10.5	0.63	373.5	7.9	0.47
H4QHCX		379.9	14.6	0.87	382.1	16.5	0.99
HAFY6B		363.3	-1.9	-0.12	363.8	-1.8	-0.11
HLXDAY		363.0	-2.3	-0.14	361.4	-4.2	-0.25



Plastics Interlaboratory Testing Program

Report #108

Analysis 720

4th Qtr 2018

Flexural Modulus- ksi

WebCode	Data Flag	Sample J55			Sample J56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
HWTPKR		361.1	-4.2	-0.25	365.1	-0.5	-0.03
J2JKGV		387.7	22.4	1.34	391.1	25.5	1.52
J32CV8		332.0	-33.3	-1.98	332.3	-33.3	-1.99
JW8HRE		372.6	7.3	0.44	372.6	7.0	0.42
K47LYN		347.7	-17.6	-1.05	350.8	-14.8	-0.88
KTZN8G		370.2	4.9	0.29	369.9	4.3	0.26
KYQXGE		384.8	19.6	1.17	381.2	15.6	0.93
L3L6DU		338.8	-26.5	-1.58	341.2	-24.4	-1.46
L9P3ZF		374.5	9.2	0.55	379.3	13.7	0.82
LB6BD8		362.8	-2.5	-0.15	360.2	-5.4	-0.32
LCWBBK		372.5	7.2	0.43	372.3	6.7	0.40
LFTZRR		345.5	-19.8	-1.18	343.7	-21.9	-1.31
NQYX7H	X	11.0	-354.2	-21.10	11.2	-354.4	-21.20
P6JKK9		333.2	-32.0	-1.91	330.1	-35.5	-2.12
PLN2KG		373.6	8.3	0.50	368.8	3.2	0.19
PNW4EQ	X	349.3	-16.0	-0.95	341.1	-24.5	-1.47
QCHQCG		342.4	-22.8	-1.36	347.0	-18.6	-1.11
QKP94M		342.6	-22.7	-1.35	347.2	-18.4	-1.10
RJDTAL		358.5	-6.8	-0.40	360.3	-5.3	-0.31
RKKFL8		366.2	0.9	0.05	367.5	1.9	0.12
T67F79		393.5	28.3	1.68	396.2	30.6	1.83
T9UWQZ		380.5	15.2	0.91	380.6	15.0	0.90
TCMRJA		370.9	5.7	0.34	370.6	5.0	0.30
TJTRNV		353.8	-11.4	-0.68	353.9	-11.7	-0.70
TK2R2P	*	414.6	49.3	2.94	414.5	48.9	2.92
TTET7Q		371.0	5.7	0.34	371.2	5.6	0.33
TWXU7J		383.2	17.9	1.07	382.5	17.0	1.01
U8BCDF		358.9	-6.4	-0.38	363.7	-1.9	-0.11
UFLQ4N		371.0	5.7	0.34	368.1	2.5	0.15
UYYBX8		367.2	1.9	0.12	371.1	5.5	0.33
V67YFE		370.5	5.2	0.31	371.5	6.0	0.36
VQG7KD		351.8	-13.4	-0.80	353.7	-11.9	-0.71
VUHBEK		363.9	-1.4	-0.08	362.7	-2.9	-0.17
VW6V34		369.4	4.1	0.25	368.0	2.4	0.14
YAYJK8		377.6	12.4	0.74	376.6	11.0	0.66



Plastics Interlaboratory Testing Program

Report #108

Analysis 720

4th Qtr 2018

Flexural Modulus- ksi

WebCode	Data Flag	<u>Sample J55</u>			<u>Sample J56</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YHVEH7		375.0	9.8	0.58	376.4	10.8	0.64
YNDU33		355.4	-9.9	-0.59	357.7	-7.9	-0.47
ZJ2637		353.6	-11.7	-0.70	352.8	-12.8	-0.77
ZREAYX		337.4	-27.9	-1.66	339.7	-25.9	-1.55
ZYWLCX		357.9	-7.3	-0.44	356.5	-9.1	-0.54

Summary Statistics		
	<u>Sample J55</u>	<u>Sample J56</u>
Grand Means	365.27 ksi	365.59 ksi
Stnd Dev Btwn Labs	16.79 ksi	16.72 ksi
Statistics based on 68 of 75 reporting participants		

Sample J55: ABS & Sample J56: ABS

Comments on Assigned Data Flags for Test #720

- 3B2HAX (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample J55.
- 63YZ2Y (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J56.
- NQYX7H (X) - Data for both samples are low. Possible Systematic Error.
- 4CX8CQ (X) - Inconsistent in testing between samples.
- 987QQZ (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J56.
- A2ENG9 (X) - Inconsistent in testing between samples.
- PNW4EQ (X) - Inconsistent in testing between samples.

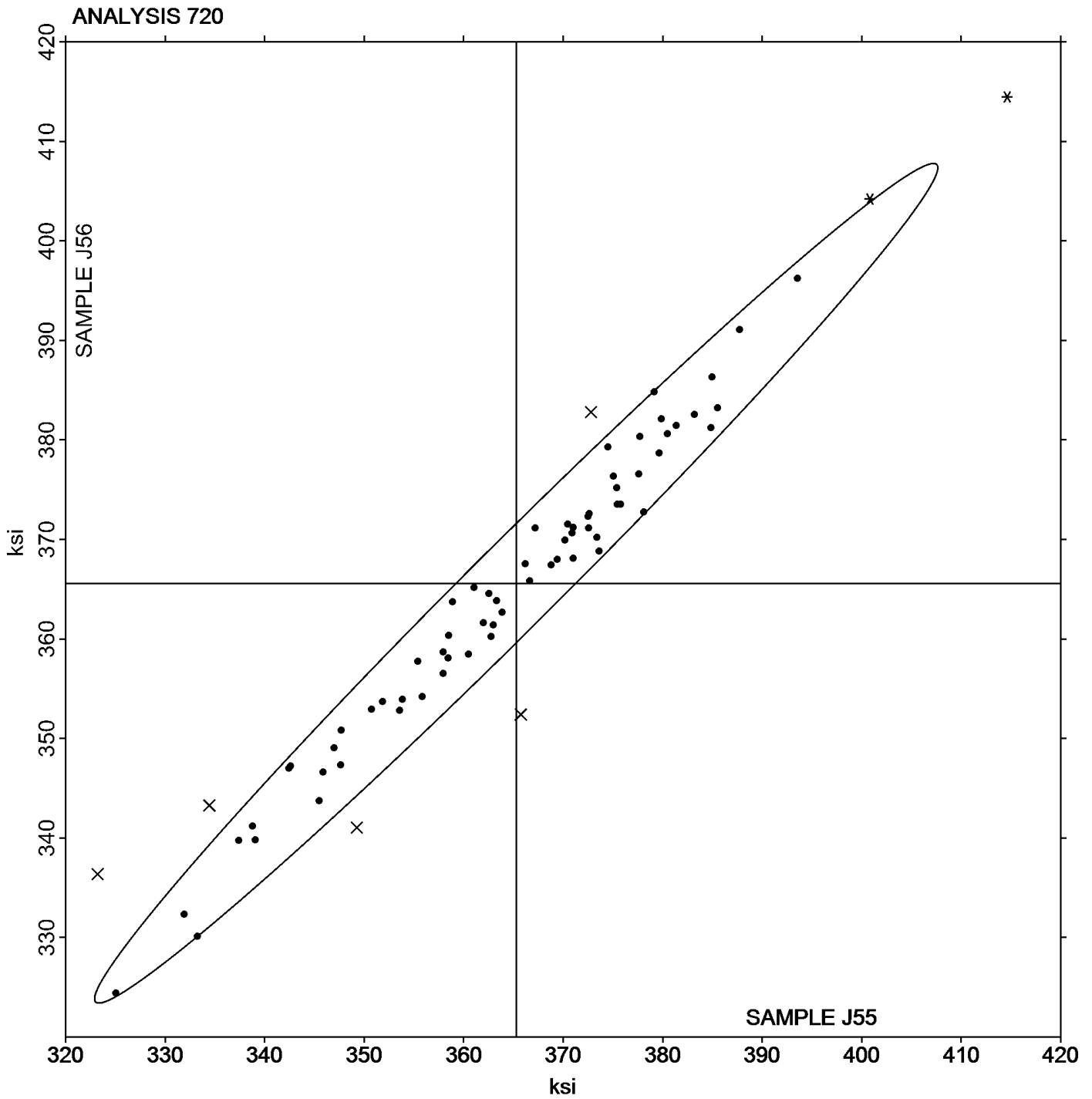


Plastics Interlaboratory Testing Program

Analysis 720 Flexural Modulus- ksi

Report #108
4th Qtr 2018

Grand Mean Sample J55: 365.27 ksi Grand Mean Sample J56: 365.59 ksi





Plastics Interlaboratory Testing Program

Report #108

Analysis 721

4th Qtr 2018

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J55			Sample J56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26ZXUE		10,420	233	0.64	10,420	232	0.64
2KZHUQ		10,037	-150	-0.41	10,068	-120	-0.33
3B2HAX		9,756	-432	-1.18	9,794	-394	-1.09
3E4ANM		9,902	-285	-0.78	9,916	-272	-0.75
3UXYHY		10,320	133	0.36	10,220	32	0.09
4CX8CQ		10,764	577	1.58	10,824	636	1.75
6NZ227		10,136	-51	-0.14	10,154	-35	-0.10
82M779	*	9,343	-844	-2.31	9,290	-898	-2.48
84PVMX		10,518	330	0.90	10,472	283	0.78
8L7MEM		10,420	233	0.64	10,440	252	0.69
987QQZ		10,211	23	0.06	10,066	-123	-0.34
9NDTMM		10,600	412	1.13	10,554	366	1.01
A2ENG9		10,112	-75	-0.21	10,096	-93	-0.26
BBFN98		10,342	155	0.42	10,305	117	0.32
BFQGLQ		10,060	-127	-0.35	10,060	-128	-0.35
BHX287		10,771	584	1.60	10,796	608	1.67
BK3M2X		10,110	-77	-0.21	10,154	-34	-0.10
BTC3LT		9,977	-211	-0.58	9,884	-304	-0.84
C3279K		10,551	364	1.00	10,662	473	1.30
CJ73F6		10,957	769	2.10	10,895	706	1.95
DU2YBW		10,506	319	0.87	10,495	307	0.84
DXKZ84		10,454	267	0.73	10,435	246	0.68
E3R4FH	*	9,337	-850	-2.32	9,455	-733	-2.02
EZMCM4		9,820	-367	-1.00	9,863	-325	-0.90
F9BRRY		10,261	74	0.20	10,290	102	0.28
HWTPKR		9,684	-504	-1.38	9,851	-337	-0.93
J2JGV	*	9,693	-495	-1.35	9,911	-278	-0.76
J32CV8	X	9,369	-819	-2.24	9,005	-1,183	-3.26
JW8HRE		10,468	280	0.77	10,454	265	0.73
K47LYN		10,380	193	0.53	10,465	276	0.76
KTZN8G		10,082	-106	-0.29	10,045	-144	-0.40
L3L6DU		9,993	-195	-0.53	10,023	-165	-0.45
L9P3ZF		10,556	369	1.01	10,613	424	1.17
LB6BD8		10,024	-163	-0.45	9,947	-241	-0.67
LCWBBK		9,930	-258	-0.70	9,975	-214	-0.59



Plastics Interlaboratory Testing Program

Report #108

Analysis 721

4th Qtr 2018

Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J55			Sample J56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NQYX7H	X	10,874	686	1.88	11,095	907	2.50
P6JKK9		9,682	-505	-1.38	9,673	-516	-1.42
PLN2KG		10,378	191	0.52	10,278	90	0.25
PNW4EQ		9,897	-290	-0.79	10,026	-162	-0.45
QCHQCG		10,157	-30	-0.08	10,197	8	0.02
QKP94M		10,151	-37	-0.10	10,187	-2	0.00
RJDTAL		10,084	-103	-0.28	10,078	-110	-0.30
RKKFL8		10,450	263	0.72	10,391	203	0.56
T67F79		10,756	568	1.55	10,752	563	1.55
T9UWQZ		10,326	138	0.38	10,303	114	0.31
TCMRJA		10,188	1	0.00	10,206	18	0.05
TJTRNV	*	10,380	192	0.53	10,187	-1	0.00
TK2R2P		10,780	593	1.62	10,807	618	1.70
TWXU7J		10,584	397	1.08	10,696	507	1.40
U8BCDF	X	9,328	-859	-2.35	9,696	-492	-1.36
UYYBX8		10,235	48	0.13	10,195	7	0.02
V67YFE		10,072	-116	-0.32	10,030	-159	-0.44
VQG7KD		9,719	-468	-1.28	9,746	-443	-1.22
VW6V34		10,540	353	0.96	10,480	292	0.80
YAYJK8		9,872	-315	-0.86	9,793	-395	-1.09
YHVEH7		10,170	-17	-0.05	10,109	-80	-0.22
YNDU33		10,096	-92	-0.25	10,074	-115	-0.32
ZJ2637		10,142	-45	-0.12	10,125	-64	-0.18
ZREAYX		10,255	68	0.19	10,350	161	0.44
ZYWLCX	*	9,271	-916	-2.50	9,170	-1,018	-2.81

Summary Statistics		
	Sample J55	Sample J56
Grand Means	10,187.4 psi	10,188.5 psi
Stnd Dev Btwn Labs	365.8 psi	363.0 psi
Statistics based on 57 of 60 reporting participants		

Sample J55: ABS & Sample J56: ABS



Plastics Interlaboratory Testing Program

Analysis 721

Flexural Stress at 5% Strain - psi

Report #108

4th Qtr 2018

Comments on Assigned Data Flags for Test #721

NQYX7H (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J56.

J32CV8 (X) - Data for sample J56 are low.

U8BCDF (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J55.



Plastics Interlaboratory Testing Program

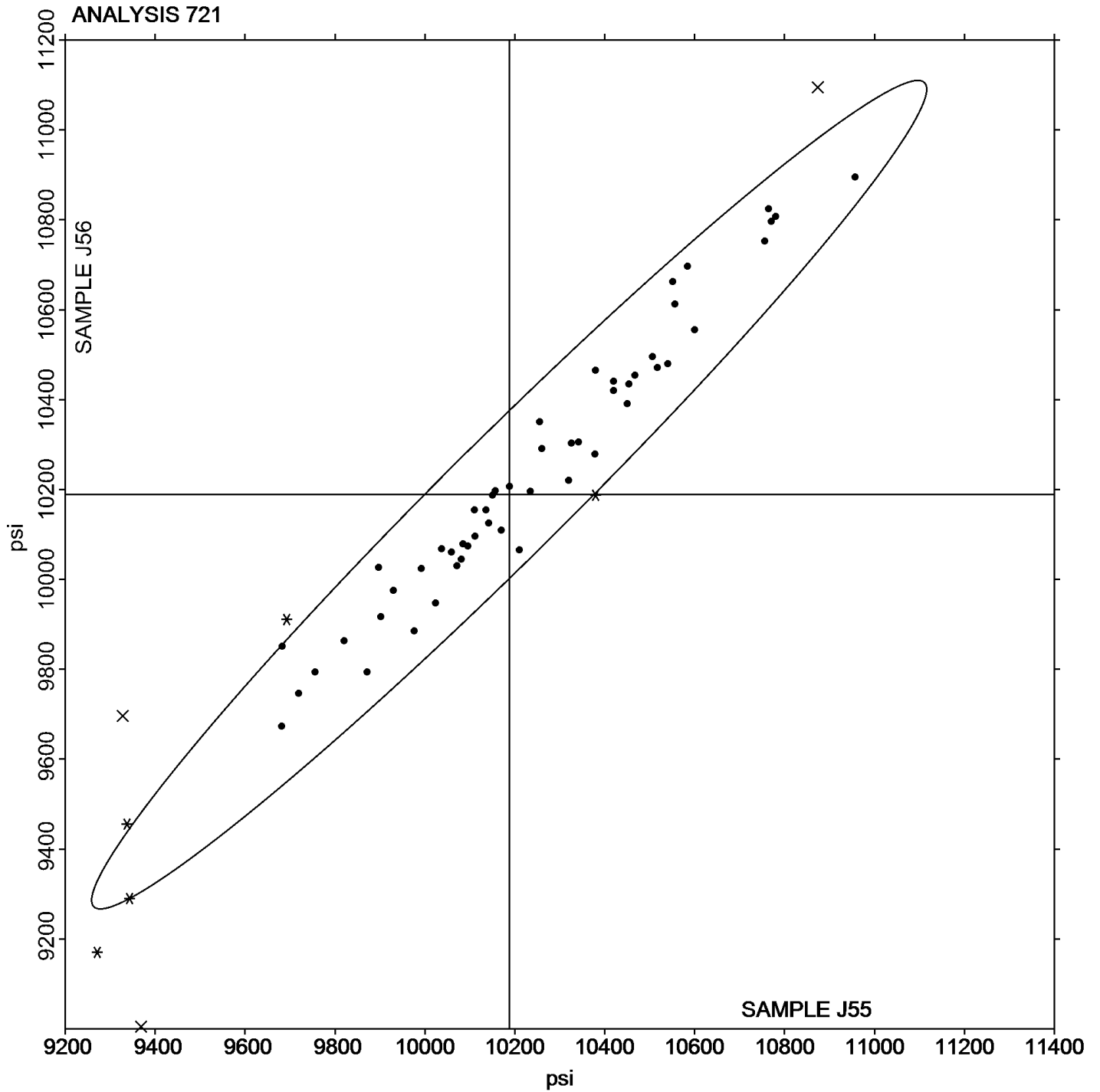
Report #108

Analysis 721

4th Qtr 2018

Flexural Stress at 5% Strain - psi

Grand Mean Sample J55: 10,187.39 psi Grand Mean Sample J56: 10,188.49 psi





Plastics Interlaboratory Testing Program

Report #108

Analysis 722

4th Qtr 2018

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J55			Sample J56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26ZXUE		10,420	188	0.56	10,420	194	0.58
2KZHUQ		10,067	-165	-0.49	10,096	-130	-0.39
3B2HAX		9,900	-332	-0.99	9,904	-322	-0.97
3E4ANM		9,958	-273	-0.82	9,964	-262	-0.79
3UXYHY		10,320	88	0.26	10,260	34	0.10
4Z3XTN	X	10,018	-214	-0.64	10,345	119	0.36
63YZ2Y	X	10,335	103	0.31	10,617	391	1.18
82M779	*	9,411	-821	-2.45	9,370	-856	-2.58
8GU6CQ		10,079	-152	-0.46	10,038	-188	-0.57
8L7MEM		9,836	-396	-1.18	9,796	-430	-1.29
987QQZ	*	10,182	-50	-0.15	9,979	-247	-0.74
9NDTMM		10,612	380	1.14	10,566	339	1.02
A2ENG9		10,144	-88	-0.26	10,129	-97	-0.29
BBFN98		10,368	136	0.41	10,335	109	0.33
BFQGLQ		10,120	-112	-0.33	10,100	-126	-0.38
BHX287		10,271	39	0.12	10,296	70	0.21
BK3M2X		10,134	-98	-0.29	10,178	-48	-0.15
BTC3LT		10,019	-213	-0.64	9,927	-299	-0.90
C3279K		10,558	327	0.98	10,676	450	1.35
CJ73F6		10,969	738	2.21	10,923	697	2.10
DXKZ84		10,471	239	0.71	10,440	214	0.64
E3R4FH		9,460	-772	-2.31	9,537	-689	-2.07
EZMCM4		9,859	-373	-1.12	9,901	-325	-0.98
F9BRRY		10,290	59	0.18	10,300	74	0.22
FTJRXE	X	8,457	-1,775	-5.31	8,338	-1,888	-5.68
G8ED3K		10,411	179	0.54	10,403	177	0.53
H4QH CX		10,631	399	1.19	10,598	372	1.12
HLXDAY		10,100	-132	-0.39	10,070	-156	-0.47
HWTPKR	*	9,766	-466	-1.39	9,918	-308	-0.93
J2J KGV	X	9,356	-876	-2.62	9,689	-537	-1.62
J32CV8	X	9,369	-863	-2.58	9,005	-1,221	-3.67
JW8HRE		10,434	203	0.61	10,392	166	0.50
K47LYN		10,404	172	0.51	10,489	263	0.79
KTZN8G		10,146	-86	-0.26	10,110	-116	-0.35
KYQXGE		10,443	211	0.63	10,327	101	0.30



Plastics Interlaboratory Testing Program

Report #108

Analysis 722

4th Qtr 2018

Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J55			Sample J56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
L9P3ZF		10,593	361	1.08	10,644	418	1.26
LB6BD8	X	9,308	-924	-2.76	9,630	-596	-1.79
LCWBBK		9,991	-241	-0.72	10,022	-204	-0.61
NQYX7H	X	421,495	411,263	1,229.57	441,043	430,817	1,295.93
P6JJK9		9,694	-537	-1.61	9,685	-542	-1.63
PLN2KG		10,420	188	0.56	10,310	84	0.25
PNW4EQ		9,883	-349	-1.04	9,999	-227	-0.68
QCHQCG		10,193	-39	-0.12	10,223	-3	-0.01
QKP94M		10,201	-31	-0.09	10,231	5	0.02
RJDTAL		10,099	-133	-0.40	10,087	-139	-0.42
RKKFL8		10,451	219	0.66	10,408	182	0.55
T67F79		10,744	512	1.53	10,752	526	1.58
T9UWQZ		10,370	138	0.41	10,334	108	0.32
TCMRJA		10,230	-2	-0.01	10,249	23	0.07
TK2R2P		10,796	564	1.69	10,813	587	1.77
TWXU7J		10,656	424	1.27	10,764	538	1.62
U8BCDF	X	9,327	-905	-2.71	9,696	-530	-1.60
UYYBX8		10,142	-90	-0.27	10,095	-131	-0.39
V67YFE		10,131	-101	-0.30	10,092	-134	-0.40
VQG7KD		9,760	-472	-1.41	9,786	-440	-1.32
VUHBEK		10,987	755	2.26	10,981	755	2.27
VW6V34		10,560	328	0.98	10,480	254	0.76
YAYJK8		9,984	-248	-0.74	9,940	-286	-0.86
YHVEH7		10,203	-28	-0.08	10,154	-72	-0.22
YNDU33		10,147	-85	-0.25	10,123	-103	-0.31
ZJ2637	M	No data reported for this sample			10,131	-95	-0.29
ZREAYX		10,264	33	0.10	10,371	145	0.44
ZYWLCX	X	9,134	-1,098	-3.28	9,022	-1,204	-3.62



Plastics Interlaboratory Testing Program

Report #108

Analysis 722

4th Qtr 2018

Flexural Stress at Yield - psi

Summary Statistics	<u>Sample J55</u>	<u>Sample J56</u>
Grand Means	10,231.7 psi	10,226.1 psi
Stnd Dev Btwn Labs	334.5 psi	332.4 psi
Statistics based on 53 of 63 reporting participants		

Sample J55: ABS & Sample J56: ABS

Comments on Assigned Data Flags for Test #722

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

63YZ2Y (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J56.

NQYX7H (X) - Extreme data.

ZJ2637 (M) - Participant did not submit data for sample J55.

FTJRXE (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample J55.

4Z3XTN (X) - Inconsistent in testing between samples.

J32CV8 (X) - Data for sample J56 are low.

U8BCDF (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J55.

LB6BD8 (X) - Data for sample J55 are low. Inconsistent within the determinations of sample J55.

J2Jkgv (X) - Inconsistent in testing between samples.



Plastics Interlaboratory Testing Program

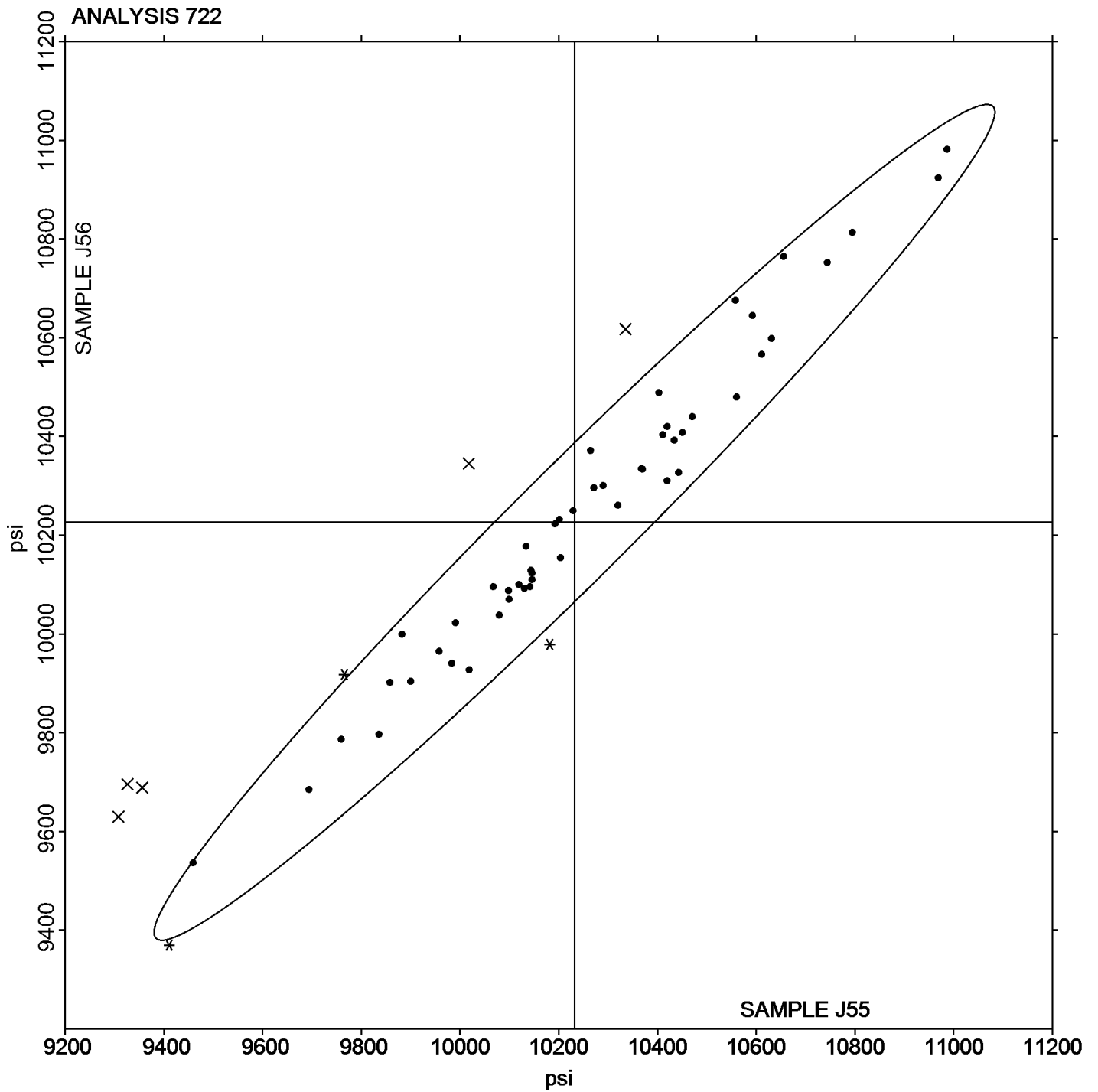
Analysis 722

Flexural Stress at Yield - psi

Report #108

4th Qtr 2018

Grand Mean Sample J55: 10,231.71 psi Grand Mean Sample J56: 10,226.10 psi





Plastics Interlaboratory Testing Program

Report #108

Analysis 730

4th Qtr 2018

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C55			Sample C56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KD7TW		25.10	0.97	1.28	25.68	0.93	1.17
3E4ANM		23.78	-0.35	-0.45	24.44	-0.31	-0.38
3HLCQM	*	23.85	-0.27	-0.36	23.87	-0.88	-1.10
3P7RYQ		25.78	1.65	2.17	26.26	1.51	1.90
3T2HB6		23.40	-0.72	-0.95	23.94	-0.80	-1.01
3ZXC94		22.84	-1.29	-1.69	23.48	-1.27	-1.59
4XELTJ		25.29	1.16	1.53	26.04	1.30	1.63
4Z246C		24.20	0.08	0.10	24.65	-0.10	-0.13
4Z3XTN		23.41	-0.72	-0.94	23.87	-0.87	-1.10
68Z6P3		23.04	-1.09	-1.43	23.64	-1.11	-1.39
7HA7FT		25.75	1.62	2.14	26.14	1.39	1.74
84PVMX		24.26	0.13	0.17	24.93	0.18	0.23
894K9E		23.36	-0.77	-1.01	23.88	-0.87	-1.09
8L7MEM		23.66	-0.47	-0.61	24.12	-0.63	-0.79
8PPA2L		24.03	-0.09	-0.12	24.64	-0.10	-0.13
9NDTMM		23.75	-0.38	-0.49	24.40	-0.35	-0.43
A6FPJQ		23.01	-1.12	-1.47	23.59	-1.16	-1.45
AR7BY6		24.21	0.09	0.12	24.49	-0.26	-0.33
BBFN98		24.97	0.85	1.12	25.70	0.95	1.19
BHX287		24.92	0.79	1.05	25.70	0.95	1.20
CDGV8P		23.71	-0.41	-0.55	24.85	0.11	0.13
DU2YBW		23.64	-0.48	-0.63	24.28	-0.47	-0.59
EADYH8		24.10	-0.03	-0.03	24.74	-0.01	-0.01
F9BRRY		24.22	0.09	0.12	24.89	0.14	0.18
FZ4RFC		24.95	0.82	1.08	25.18	0.43	0.54
G8ED3K		23.73	-0.40	-0.52	24.31	-0.43	-0.54
GQQABK		24.88	0.75	0.99	25.55	0.80	1.00
H4QH CX		24.77	0.64	0.85	24.90	0.16	0.19
HAFY6B		22.64	-1.49	-1.96	23.27	-1.48	-1.85
JAUPPF		25.11	0.98	1.29	25.28	0.54	0.67
JDDQVQ		24.49	0.36	0.48	25.15	0.41	0.51
JPRUZX		23.21	-0.92	-1.21	24.15	-0.60	-0.75
K47LYN		24.46	0.34	0.45	25.25	0.51	0.64
K86XWA		24.04	-0.09	-0.12	24.60	-0.15	-0.18
KTZN8G		23.85	-0.28	-0.36	24.52	-0.23	-0.28



Plastics Interlaboratory Testing Program

Report #108

Analysis 730

4th Qtr 2018

Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C55			Sample C56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
KW4MV9		24.05	-0.07	-0.09	24.78	0.04	0.05
LFTZRR		23.20	-0.93	-1.22	24.04	-0.71	-0.89
M8RAFF		23.72	-0.40	-0.53	24.32	-0.43	-0.54
MFBGBP		23.65	-0.48	-0.63	24.60	-0.14	-0.18
MK6FKE	*	24.98	0.85	1.12	26.13	1.38	1.73
NBTL27		23.66	-0.46	-0.61	23.81	-0.94	-1.18
P6JJK9	X	22.69	-1.44	-1.89	22.31	-2.43	-3.05
PHM4XU		23.28	-0.85	-1.11	23.72	-1.03	-1.29
PLN2KG		24.74	0.61	0.81	25.42	0.67	0.84
PZTBAB		23.58	-0.55	-0.72	24.05	-0.69	-0.87
Q9VYGF		23.63	-0.50	-0.65	24.21	-0.53	-0.67
QCHQCG		23.54	-0.59	-0.77	24.10	-0.65	-0.81
QDD8TJ		25.31	1.19	1.56	26.14	1.39	1.75
T67F79		24.18	0.05	0.07	24.90	0.15	0.19
T8CUX8		24.18	0.06	0.08	24.98	0.23	0.29
TCMRJA		23.16	-0.97	-1.28	23.46	-1.28	-1.61
TYPPBZ		24.21	0.09	0.12	25.00	0.25	0.32
UFLQ4N		23.71	-0.41	-0.54	24.34	-0.41	-0.51
UM6X3G		25.80	1.67	2.20	26.48	1.73	2.17
VER4ME		23.72	-0.41	-0.53	24.60	-0.15	-0.18
VJGQV8		25.62	1.49	1.96	26.49	1.74	2.18
VJZN9Q		24.00	-0.13	-0.16	24.78	0.03	0.04
VXLZKZ	X	23.08	-1.05	-1.38	22.72	-2.02	-2.54
W22TDE	X	23.46	-0.66	-0.87	20.24	-4.51	-5.66
WD9RY8		24.32	0.19	0.25	25.20	0.45	0.57
WDQPDQ		24.00	-0.13	-0.16	24.96	0.21	0.27
WTKE73		24.50	0.38	0.50	24.84	0.10	0.12
ZGYCEK		24.38	0.25	0.34	25.08	0.33	0.42



Plastics Interlaboratory Testing Program

Report #108

Analysis 730

4th Qtr 2018

Tensile Stress at Yield - MPa

Summary Statistics	<u>Sample C55</u>	<u>Sample C56</u>
Grand Means	24.125 MPa	24.747 MPa
Stnd Dev Btwn Labs	0.760 MPa	0.798 MPa

Statistics based on 60 of 63 reporting participants

Sample C55: HIPS & Sample C56: HIPS

Comments on Assigned Data Flags for Test #730

- VXLZKZ (X) - Inconsistent in testing between samples.
- P6JJK9 (X) - Data for sample C56 are low.
- W22TDE (X) - Data for sample C56 are low.



Plastics Interlaboratory Testing Program

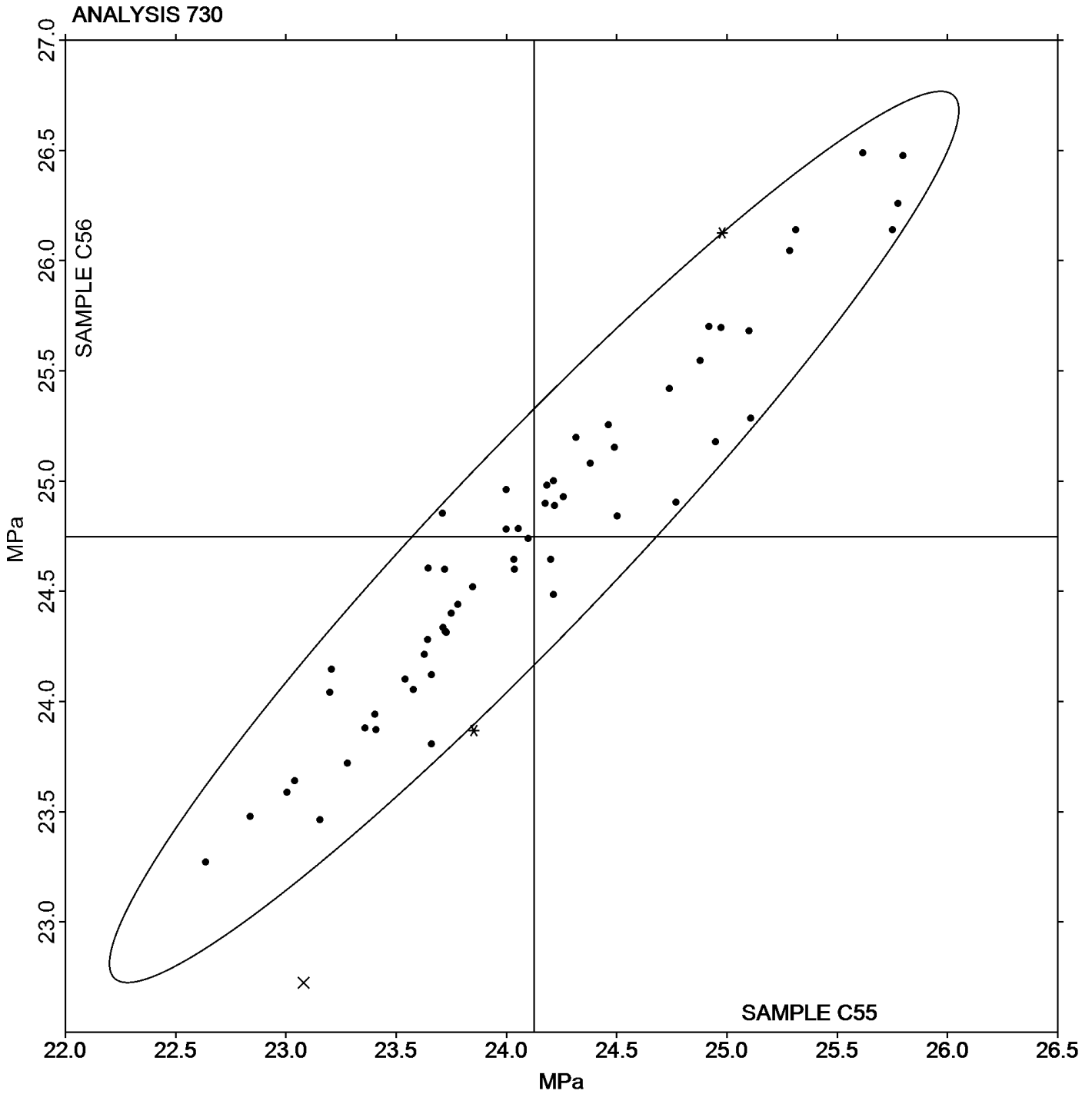
Analysis 730

Tensile Stress at Yield - MPa

Report #108

4th Qtr 2018

Grand Mean Sample C55: 24.125 MPa Grand Mean Sample C56: 24.747 MPa





Plastics Interlaboratory Testing Program

Report #108

Analysis 731

4th Qtr 2018

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C55			Sample C56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KD7TW		21.68	0.60	0.81	20.06	0.01	0.01
3E4ANM		20.36	-0.72	-0.99	19.30	-0.75	-1.11
3HLCQM	*	19.87	-1.21	-1.65	19.98	-0.07	-0.10
3P7RYQ		21.62	0.53	0.72	20.92	0.87	1.28
3T2HB6		20.64	-0.44	-0.60	19.98	-0.08	-0.11
3ZXC94		19.60	-1.49	-2.03	19.14	-0.92	-1.35
4XELTJ		21.54	0.46	0.63	20.14	0.08	0.12
4Z246C		20.85	-0.24	-0.33	20.33	0.28	0.41
7HA7FT		22.58	1.50	2.04	21.28	1.23	1.81
84PVMX		21.43	0.35	0.47	20.49	0.43	0.64
894K9E		20.98	-0.10	-0.14	19.56	-0.49	-0.73
8E6XNN		20.35	-0.73	-1.00	19.03	-1.02	-1.51
8L7MEM		20.72	-0.36	-0.50	19.78	-0.27	-0.40
8PPA2L		21.27	0.18	0.25	19.95	-0.11	-0.15
9NDTMM		20.58	-0.50	-0.69	19.78	-0.27	-0.40
AR7BY6	*	20.71	-0.37	-0.51	18.63	-1.43	-2.10
BBFN98		21.27	0.19	0.26	20.23	0.17	0.26
BHX287		22.00	0.92	1.25	20.68	0.63	0.92
DU2YBW		20.42	-0.66	-0.90	19.63	-0.42	-0.62
EADYH8		21.40	0.32	0.43	19.94	-0.11	-0.17
F9BRRY		20.86	-0.22	-0.30	20.13	0.07	0.11
FZ4RFC		22.26	1.17	1.60	20.28	0.22	0.33
G8ED3K		19.87	-1.21	-1.65	19.63	-0.43	-0.63
GQQABK		21.91	0.82	1.12	21.24	1.19	1.75
H4QHCX		21.99	0.91	1.23	20.75	0.69	1.02
HAFY6B		20.78	-0.30	-0.41	20.01	-0.05	-0.07
JAUPPF		22.40	1.32	1.79	21.13	1.08	1.59
JPRUZX		20.71	-0.37	-0.51	19.34	-0.72	-1.06
K47LYN		22.39	1.31	1.78	21.26	1.20	1.78
K86XWA		20.55	-0.54	-0.74	19.11	-0.95	-1.40
KTZN8G		21.01	-0.07	-0.10	20.26	0.21	0.30
KW4MV9		20.60	-0.48	-0.66	19.66	-0.39	-0.58
M8RAFF		20.81	-0.28	-0.38	19.56	-0.50	-0.73
MFGBGP		20.74	-0.34	-0.47	20.13	0.08	0.12
MK6FKE		21.12	0.04	0.05	20.46	0.41	0.60



Plastics Interlaboratory Testing Program

Report #108

Analysis 731

4th Qtr 2018

Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C55			Sample C56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NBTL27	X	18.72	-2.36	-3.22	17.53	-2.52	-3.72
P6JKK9		19.96	-1.12	-1.53	18.59	-1.46	-2.15
PHM4XU		19.88	-1.20	-1.64	18.90	-1.15	-1.70
PLN2KG		21.82	0.74	1.00	20.60	0.55	0.81
PZTBAB		20.68	-0.41	-0.55	19.97	-0.08	-0.12
Q9VYGF		21.33	0.25	0.34	20.25	0.20	0.29
QCHQCG		21.18	0.10	0.13	20.10	0.05	0.07
QDD8TJ		21.76	0.68	0.92	20.80	0.75	1.10
T67F79		20.03	-1.05	-1.43	19.51	-0.55	-0.81
T8CUX8		21.59	0.51	0.69	20.62	0.56	0.83
TCMRJA		21.02	-0.06	-0.09	20.02	-0.03	-0.05
TYPPBZ		21.20	0.11	0.15	19.61	-0.44	-0.65
UM6X3G		22.74	1.66	2.26	21.30	1.25	1.84
VER4ME		20.48	-0.60	-0.82	19.44	-0.61	-0.90
VJGQV8	*	21.31	0.23	0.31	21.44	1.38	2.04
VJZN9Q		20.78	-0.31	-0.42	19.94	-0.11	-0.17
WD9RY8	X	18.98	-2.10	-2.87	20.38	0.32	0.48
WDQPDQ		20.80	-0.28	-0.39	19.80	-0.25	-0.37
WTKE73		21.50	0.42	0.57	20.05	0.00	0.00
ZGYCEK		21.54	0.46	0.62	20.12	0.07	0.10

Summary Statistics		
	Sample C55	Sample C56
Grand Means	21.085 MPa	20.053 MPa
Stnd Dev Btwn Labs	0.734 MPa	0.679 MPa
Statistics based on 53 of 55 reporting participants		

Sample C55: HIPS & Sample C56: HIPS

Comments on Assigned Data Flags for Test #731

WD9RY8 (X) - Data for sample C55 are low. Inconsistent within the determinations of sample C55.

NBTL27 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

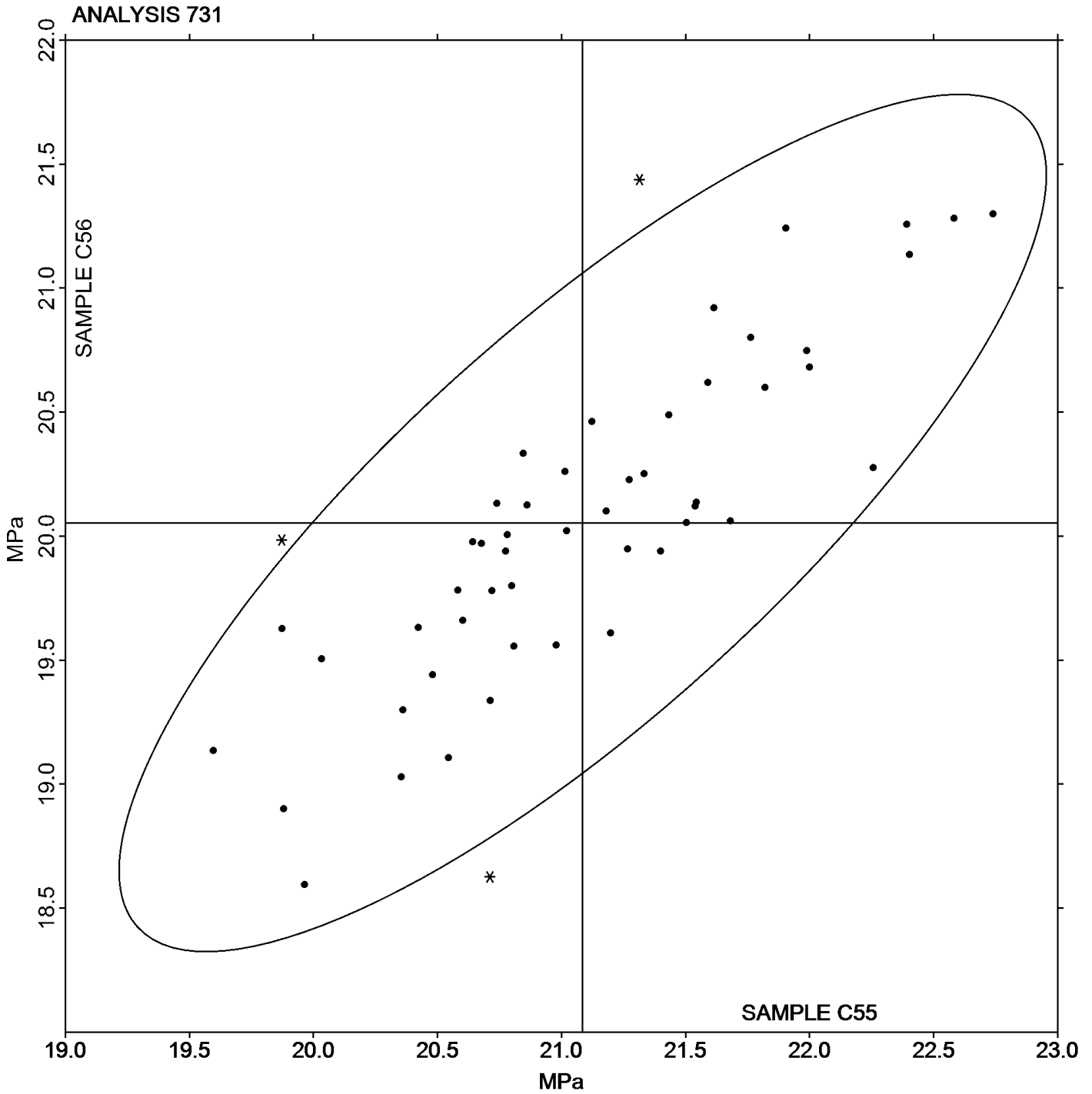
Analysis 731

Tensile Stress at Break - MPa

Report #108

4th Qtr 2018

Grand Mean Sample C55: 21.085 MPa Grand Mean Sample C56: 20.053 MPa





Plastics Interlaboratory Testing Program

Report #108

Analysis 732

4th Qtr 2018

Percent Strain at Yield

WebCode	Data Flag	Sample C55			Sample C56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KD7TW		1.200	-0.042	-0.72	1.200	-0.045	-0.70
3E4ANM		1.256	0.014	0.24	1.288	0.043	0.66
3HLCQM		1.230	-0.012	-0.21	1.200	-0.045	-0.70
3P7RYQ		1.269	0.027	0.46	1.295	0.050	0.76
3T2HB6		1.214	-0.028	-0.48	1.200	-0.045	-0.70
3ZXC94		1.224	-0.018	-0.31	1.202	-0.043	-0.67
4XELTJ		1.240	-0.002	-0.04	1.244	-0.001	-0.02
4Z246C		1.200	-0.042	-0.73	1.257	0.012	0.18
7HA7FT	X	1.474	0.232	3.98	1.580	0.335	5.16
84PVMX		1.224	-0.018	-0.31	1.226	-0.019	-0.30
894K9E	X	1.520	0.278	4.77	1.496	0.251	3.86
8L7MEM	X	1.636	0.394	6.76	1.598	0.353	5.43
8PPA2L	X	0.681	-0.561	-9.64	0.574	-0.672	-10.35
9NDTMM		1.232	-0.010	-0.18	1.284	0.039	0.59
A6FPJQ		1.144	-0.098	-1.69	1.134	-0.111	-1.72
AR7BY6		1.202	-0.040	-0.68	1.228	-0.017	-0.26
BBFN98		1.190	-0.052	-0.90	1.206	-0.039	-0.61
BHX287		1.300	0.058	0.99	1.280	0.035	0.53
CDGV8P		1.144	-0.098	-1.68	1.125	-0.121	-1.86
DU2YBW		1.196	-0.046	-0.79	1.200	-0.045	-0.70
EADYH8		1.360	0.118	2.02	1.382	0.137	2.10
F9BRRY		1.246	0.004	0.07	1.218	-0.027	-0.42
G8ED3K		1.164	-0.078	-1.34	1.191	-0.055	-0.84
GQQABK	X	36.764	35.522	609.94	55.258	54.013	832.59
H4QH CX	X	1.798	0.556	9.54	1.856	0.611	9.41
JAUPPF	X	1.250	0.008	0.13	1.496	0.251	3.86
JPRUZX		1.358	0.116	1.99	1.372	0.127	1.95
K47LYN		1.284	0.042	0.72	1.306	0.061	0.93
K86XWA		1.220	-0.022	-0.38	1.185	-0.060	-0.93
KTZN8G		1.214	-0.028	-0.48	1.220	-0.025	-0.39
KW4MV9	*	1.316	0.074	1.27	1.248	0.003	0.04
M8RAFF		1.180	-0.062	-1.07	1.146	-0.099	-1.53
MFBGBP		1.230	-0.012	-0.21	1.232	-0.013	-0.21
MK6FKE		1.162	-0.080	-1.38	1.178	-0.067	-1.04
NBTL27	*	1.388	0.146	2.50	1.370	0.125	1.92



Plastics Interlaboratory Testing Program

Report #108

Analysis 732

4th Qtr 2018

Percent Strain at Yield

WebCode	Data Flag	Sample C55			Sample C56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
P6JJK9		1.244	0.002	0.03	1.246	0.001	0.01
PHM4XU		1.260	0.018	0.31	1.260	0.015	0.22
PLN2KG		1.246	0.004	0.07	1.246	0.001	0.01
PZTBAB		1.252	0.010	0.17	1.268	0.023	0.35
Q9VYGF		1.240	-0.002	-0.04	1.175	-0.070	-1.08
QCHQCG		1.200	-0.042	-0.72	1.200	-0.045	-0.70
QDD8TJ		1.292	0.050	0.86	1.298	0.053	0.81
T67F79		1.172	-0.070	-1.21	1.192	-0.053	-0.82
T8CUX8		1.212	-0.030	-0.52	1.250	0.005	0.07
TCMRJA	X	1.060	-0.182	-3.13	0.998	-0.247	-3.81
TYPPBZ		1.185	-0.057	-0.98	1.201	-0.044	-0.68
UM6X3G		1.278	0.036	0.61	1.284	0.039	0.59
VER4ME		1.224	-0.018	-0.31	1.248	0.003	0.04
VJGQV8		1.266	0.024	0.41	1.296	0.051	0.78
VJZN9Q		1.340	0.098	1.68	1.376	0.131	2.01
W22TDE	X	1.198	-0.044	-0.76	0.984	-0.261	-4.03
WD9RY8		1.310	0.068	1.16	1.329	0.084	1.29
WDQPDQ		1.300	0.058	0.99	1.300	0.055	0.84
WTKE73		1.198	-0.044	-0.76	1.152	-0.093	-1.44
ZGYCEK		1.334	0.092	1.58	1.352	0.107	1.64

Summary Statistics		
	Sample C55	Sample C56
Grand Means	1.2422 Percent	1.2455 Percent
Stnd Dev Btwn Labs	0.0582 Percent	0.0649 Percent
Statistics based on 46 of 55 reporting participants		

Sample C55: HIPS & Sample C56: HIPS



Comments on Assigned Data Flags for Test #732

- GQQABK (X) - Extreme data.
- TCMRJA (X) - Data for both samples are low. Possible Systematic Error.
- 894K9E (X) - Data for both samples are high. Possible Systematic Error.
- W22TDE (X) - Data for sample C56 are low.
- 7HA7FT (X) - Data for both samples are high. Possible Systematic Error.
- JAUPPF (X) - Data for sample C56 are high.
- 8PPA2L (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- H4QHCX (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample C55.
- 8L7MEM (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.



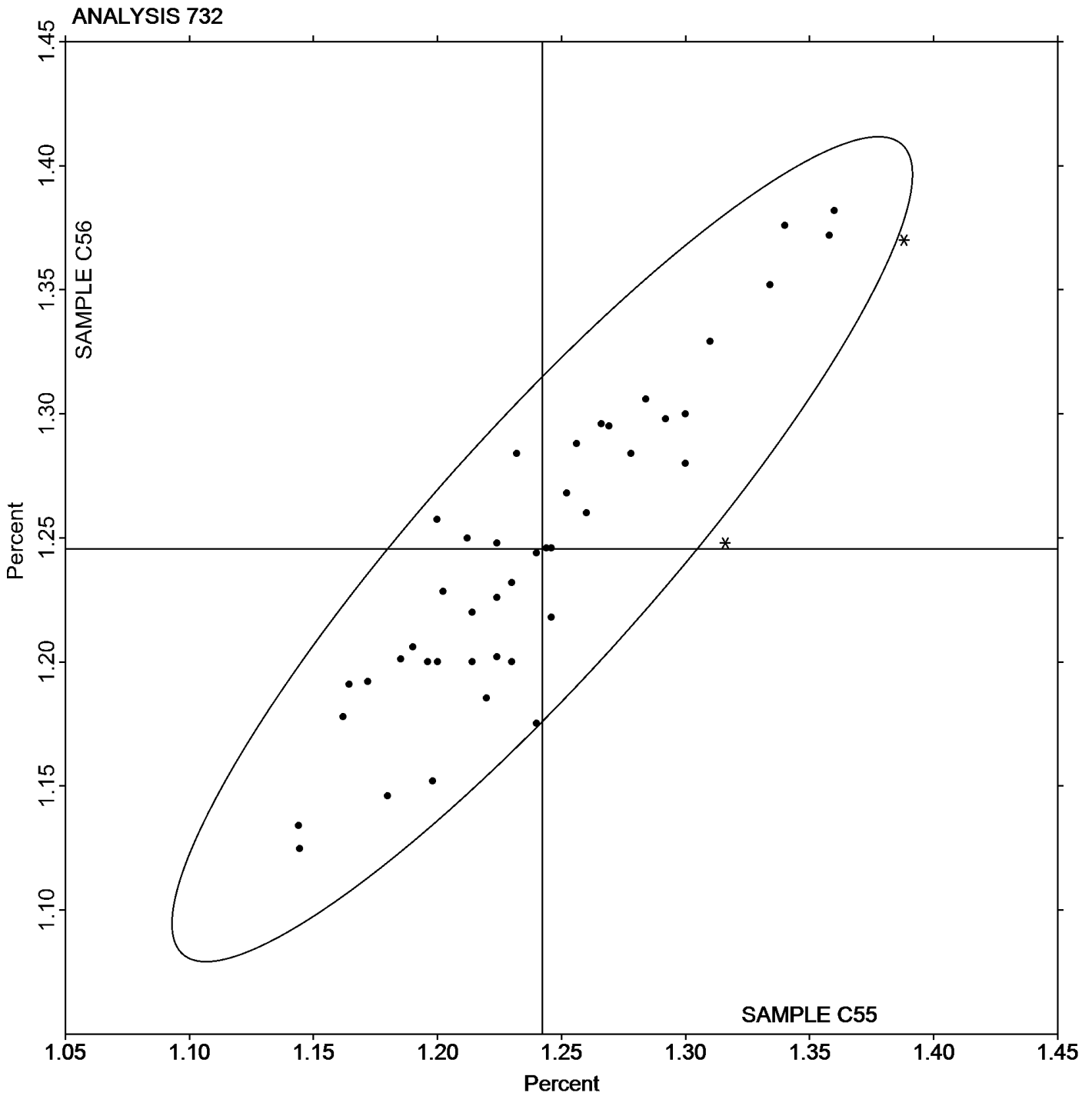
Plastics Interlaboratory Testing Program

Analysis 732 Percent Strain at Yield

Report #108

4th Qtr 2018

Grand Mean Sample C55: 1.2422 Percent Grand Mean Sample C56: 1.2455 Percent





Plastics Interlaboratory Testing Program

Report #108

Analysis 734

4th Qtr 2018

Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C55			Sample C56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KD7TW		2,302	40	0.39	2,262	10	0.08
3E4ANM		2,193	-69	-0.69	2,157	-96	-0.84
3HLCQM		2,221	-41	-0.41	2,212	-40	-0.35
3P7RYQ	X	2,264	1	0.01	2,400	148	1.29
3T2HB6		2,303	41	0.41	2,279	27	0.23
3ZXC94		2,262	-1	-0.01	2,286	33	0.29
4R8T29		2,261	-1	-0.01	2,192	-61	-0.53
4XELTJ		2,352	90	0.89	2,333	81	0.71
4Z246C		2,267	5	0.05	2,277	24	0.21
7HA7FT		2,098	-164	-1.63	2,047	-205	-1.80
84PVMX		2,256	-7	-0.07	2,200	-53	-0.46
894K9E		2,207	-55	-0.55	2,161	-91	-0.80
8L7MEM	*	1,976	-286	-2.84	1,968	-284	-2.49
8PPA2L		2,250	-12	-0.12	2,248	-4	-0.04
9NDTMM		2,260	-3	-0.03	2,227	-25	-0.22
A6FPJQ		2,308	45	0.45	2,284	31	0.27
AR7BY6		2,290	28	0.27	2,321	68	0.60
BBFN98		2,272	9	0.09	2,229	-23	-0.20
DU2YBW		2,251	-11	-0.11	2,234	-18	-0.16
EADYH8	X	4,636	2,374	23.58	4,603	2,350	20.57
F9BRRY		2,235	-28	-0.28	2,254	2	0.02
G8ED3K	X	2,552	289	2.88	2,373	121	1.06
GQQABK	X	4,222	1,960	19.47	3,384	1,131	9.91
JAUPPF		2,062	-201	-1.99	2,029	-224	-1.96
JDDQVQ		2,484	222	2.20	2,462	210	1.83
JPRUZX		2,212	-50	-0.50	2,178	-74	-0.65
K47LYN		2,180	-83	-0.82	2,150	-102	-0.90
K86XWA	X	5,653	3,391	33.68	5,093	2,841	24.87
KTZN8G	*	2,225	-37	-0.37	2,293	41	0.35
KW4MV9	X	2,373	111	1.10	2,200	-53	-0.46
M8RAFF		2,310	47	0.47	2,307	55	0.48
MFGBGP	X	2,345	82	0.82	2,185	-67	-0.59
MK6FKE		2,476	214	2.12	2,520	268	2.34
NBTL27		2,407	144	1.44	2,469	217	1.90
P6JKK9		2,189	-74	-0.73	2,190	-62	-0.54



Plastics Interlaboratory Testing Program

Report #108

Analysis 734

4th Qtr 2018

Modulus of Elasticity - MPa

WebCode	Data Flag	<u>Sample C55</u>			<u>Sample C56</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PHM4XU		2,517	254	2.53	2,542	289	2.53
PLN2KG		2,299	36	0.36	2,320	67	0.59
PZTBAB		2,241	-22	-0.22	2,153	-99	-0.87
Q9VYGF		2,201	-61	-0.61	2,224	-28	-0.25
QCHQCG		2,194	-68	-0.68	2,168	-84	-0.74
QDD8TJ		2,220	-42	-0.42	2,259	7	0.06
T67F79		2,332	70	0.70	2,334	81	0.71
T8CUX8		2,269	7	0.07	2,248	-4	-0.04
TCMRJA		2,405	142	1.41	2,397	145	1.27
TYPPBZ		2,276	14	0.13	2,269	16	0.14
UM6X3G		2,384	122	1.21	2,353	101	0.88
VER4ME		2,165	-97	-0.96	2,148	-105	-0.92
VJZN9Q		2,196	-67	-0.66	2,186	-67	-0.59
W22TDE		2,250	-12	-0.12	2,250	-2	-0.02
WD9RY8		2,198	-65	-0.64	2,191	-61	-0.53
WDQPDQ		2,274	12	0.12	2,292	40	0.35
WTKE73		2,350	88	0.87	2,355	103	0.90
ZGYCEK		2,191	-71	-0.71	2,153	-99	-0.87

Summary Statistics

	<u>Sample C55</u>	<u>Sample C56</u>
Grand Means	2,262.4 MPa	2,252.5 MPa
Std Dev Btwn Labs	100.7 MPa	114.2 MPa

Statistics based on 46 of 53 reporting participants

Sample C55: HIPS & Sample C56: HIPS



Comments on Assigned Data Flags for Test #734

- GQQABK (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- K86XWA (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- 3P7RYQ (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample C55.
- G8ED3K (X) - Data for sample C55 are high.
- EADYH8 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample C55.
- MFBGBP (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- KW4MV9 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample C55.



Plastics Interlaboratory Testing Program

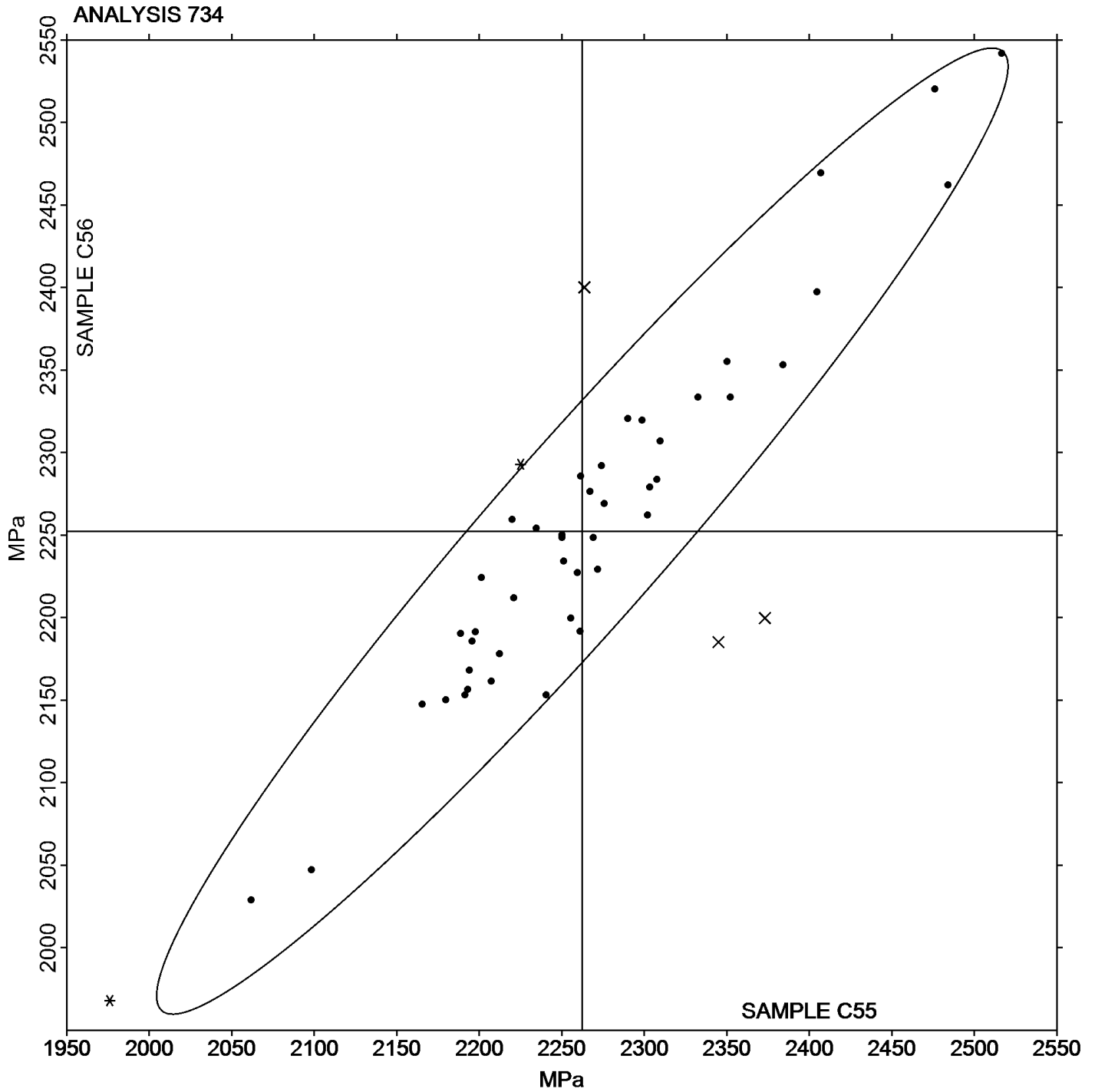
Analysis 734

Modulus of Elasticity - MPa

Report #108

4th Qtr 2018

Grand Mean Sample C55: 2,262.36 MPa Grand Mean Sample C56: 2,252.46 MPa





Plastics Interlaboratory Testing Program

Report #108

Analysis 736

4th Qtr 2018

Flexural Modulus - MPa

WebCode	Data Flag	Sample K55			Sample K56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2BCLUB		2,357	91	0.75	2,352	86	0.72
2KD7TW	*	2,328	62	0.51	2,249	-18	-0.15
3E4ANM		2,322	56	0.46	2,309	43	0.36
3P7RYQ		2,282	16	0.13	2,237	-30	-0.25
3T2HB6		2,036	-230	-1.88	2,068	-199	-1.67
3ZXC94		2,146	-119	-0.98	2,149	-118	-0.99
4R8T29		2,217	-49	-0.40	2,187	-80	-0.67
4XELTJ		2,358	93	0.76	2,293	27	0.22
4Z246C		2,328	62	0.51	2,315	48	0.40
4Z3XTN		2,207	-58	-0.48	2,215	-51	-0.43
7HA7FT		2,477	211	1.73	2,466	199	1.67
84PVMX		2,314	49	0.40	2,314	48	0.40
894K9E		2,189	-76	-0.62	2,226	-40	-0.34
8L7MEM	X	2,414	149	1.22	2,786	520	4.36
8PPA2L		2,184	-82	-0.67	2,177	-89	-0.75
A6FPJQ		2,301	35	0.29	2,304	37	0.31
AR7BY6		2,160	-106	-0.87	2,154	-113	-0.95
BBFN98		2,373	107	0.88	2,367	100	0.84
BHX287		2,243	-23	-0.19	2,271	5	0.04
CDGV8P	X	1,245	-1,021	-8.37	939	-1,328	-11.14
DU2YBW		2,194	-71	-0.59	2,231	-35	-0.30
EADYH8		2,198	-67	-0.55	2,139	-128	-1.07
F9BRRY		2,231	-35	-0.28	2,225	-42	-0.35
G3M4WT		2,133	-132	-1.08	2,123	-143	-1.20
G8ED3K		2,189	-77	-0.63	2,183	-83	-0.70
GQQABK		2,238	-27	-0.22	2,230	-36	-0.31
H4QH CX		2,270	4	0.04	2,236	-31	-0.26
JAUPPF		2,557	291	2.39	2,565	299	2.50
JPRUZX		2,267	2	0.02	2,255	-12	-0.10
K47LYN		2,222	-43	-0.36	2,221	-45	-0.38
KW4MV9	X	1,420	-845	-6.93	1,434	-832	-6.98
LR9ZA6		2,452	186	1.53	2,461	195	1.63
M8RAFF		2,266	0	0.00	2,260	-6	-0.05
MF BGBP	X	2,235	-31	-0.25	2,378	111	0.93
MK6FKE		2,225	-40	-0.33	2,232	-34	-0.29



Plastics Interlaboratory Testing Program

Report #108

Analysis 736

4th Qtr 2018

Flexural Modulus - MPa

WebCode	Data Flag	Sample K55			Sample K56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MPU3AT	*	2,060	-205	-1.68	2,141	-126	-1.05
P6JJK9		2,160	-106	-0.87	2,180	-87	-0.73
PHM4XU		2,255	-10	-0.08	2,257	-9	-0.08
PLN2KG		2,356	90	0.74	2,388	122	1.02
PVUWKZ	X	1,827	-439	-3.60	1,772	-495	-4.15
PZTBAB		2,185	-80	-0.66	2,193	-73	-0.61
Q9VYGF		2,270	5	0.04	2,277	10	0.09
QCHQCG		2,229	-36	-0.29	2,235	-31	-0.26
QDD8TJ		2,429	164	1.35	2,432	166	1.39
T67F79	*	2,571	306	2.51	2,601	334	2.80
T8CUX8		2,135	-130	-1.07	2,159	-107	-0.90
TCMRJA		1,991	-275	-2.25	2,009	-258	-2.16
TMNVK3		2,326	61	0.50	2,322	55	0.46
TTET7Q		2,308	43	0.35	2,320	53	0.45
TYPPBZ		2,123	-142	-1.17	2,147	-120	-1.00
UM6X3G		2,491	225	1.85	2,491	224	1.88
VER4ME		2,259	-6	-0.05	2,289	23	0.19
VJZN9Q		2,201	-65	-0.53	2,205	-62	-0.52
VXLZKZ	*	2,324	58	0.48	2,398	131	1.10
WD9RY8		2,464	199	1.63	2,421	155	1.30
WDQPDQ		2,216	-49	-0.40	2,238	-28	-0.24
ZGYCEK		2,183	-83	-0.68	2,142	-124	-1.04

Summary Statistics

	Sample K55	Sample K56
Grand Means	2,265.3 MPa	2,266.5 MPa
Std Dev Btwn Labs	121.9 MPa	119.2 MPa

Statistics based on 52 of 57 reporting participants

Sample K55: HIPS & Sample K56: HIPS



Comments on Assigned Data Flags for Test #736

MFBGBP (X) - Inconsistent in testing between samples.

CDGV8P (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

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

8L7MEM (X) - Data for sample K56 are high.

KW4MV9 (X) - Data for both samples are low. Possible Systematic Error.



Plastics Interlaboratory Testing Program

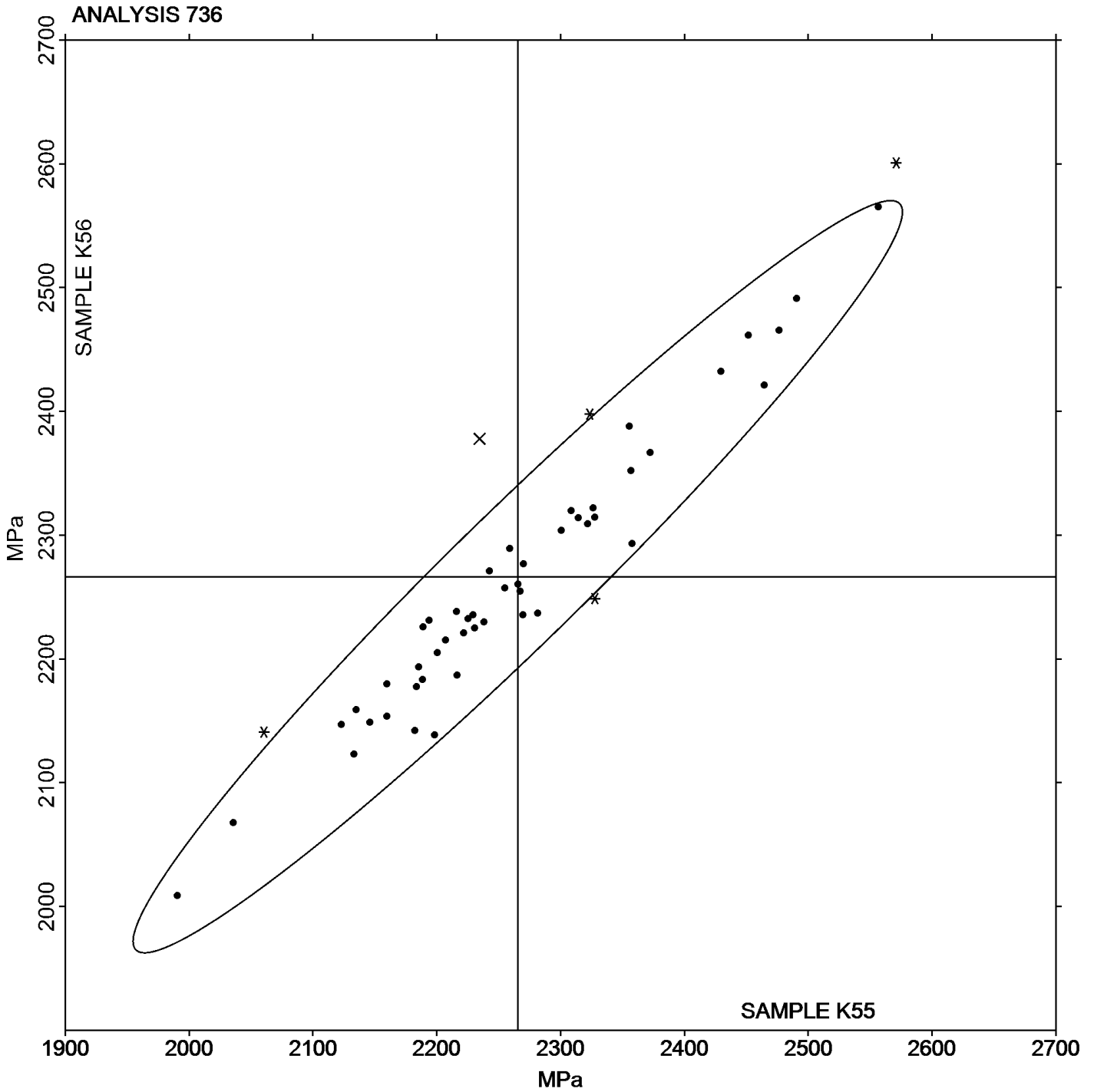
Analysis 736

Flexural Modulus - MPa

Report #108

4th Qtr 2018

Grand Mean Sample K55: 2,265.31 MPa Grand Mean Sample K56: 2,266.49 MPa





Plastics Interlaboratory Testing Program

Report #108

Analysis 737

4th Qtr 2018

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K55			Sample K56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2BCLUB		41.00	2.14	1.11	41.08	2.26	1.13
2KD7TW		38.92	0.06	0.03	38.36	-0.46	-0.23
3E4ANM		39.61	0.75	0.39	39.46	0.64	0.32
3P7RYQ		39.60	0.74	0.39	39.47	0.65	0.33
3T2HB6		37.84	-1.02	-0.53	38.09	-0.72	-0.36
3ZXC94		37.11	-1.75	-0.91	37.25	-1.57	-0.78
4R8T29		38.19	-0.67	-0.35	37.92	-0.89	-0.45
4XELTJ		40.67	1.81	0.94	40.77	1.95	0.97
4Z246C		40.54	1.68	0.88	40.14	1.33	0.66
7HA7FT		41.23	2.37	1.23	41.42	2.60	1.30
84PVMX		39.73	0.87	0.45	39.74	0.93	0.46
894K9E	*	35.46	-3.40	-1.77	36.00	-2.82	-1.41
8L7MEM	X	41.20	2.34	1.22	44.52	5.70	2.85
8PPA2L		37.83	-1.03	-0.54	37.47	-1.35	-0.67
A6FPJQ		38.79	-0.07	-0.04	38.76	-0.06	-0.03
AR7BY6		39.08	0.22	0.11	39.00	0.18	0.09
BBFN98		40.65	1.79	0.93	40.59	1.77	0.88
BHX287		38.60	-0.26	-0.14	39.06	0.24	0.12
DU2YBW		39.56	0.70	0.36	39.68	0.87	0.43
EADYH8	*	36.22	-2.64	-1.38	35.28	-3.54	-1.77
F9BRRY		38.46	-0.40	-0.21	38.42	-0.40	-0.20
G3M4WT		36.33	-2.53	-1.32	36.50	-2.32	-1.16
G8ED3K		38.55	-0.31	-0.16	38.73	-0.09	-0.05
GQQABK	X	4.88	-33.98	-17.71	4.90	-33.92	-16.94
JAUPPF		41.28	2.42	1.26	41.42	2.61	1.30
JDDQQV		40.14	1.28	0.67	40.53	1.71	0.85
JPRUZX		38.84	-0.02	-0.01	38.48	-0.34	-0.17
K47LYN		40.95	2.09	1.09	40.23	1.41	0.71
KW4MV9	*	33.76	-5.10	-2.66	33.81	-5.01	-2.50
LR9ZA6		40.98	2.12	1.11	40.94	2.12	1.06
M8RAFF		38.83	-0.03	-0.01	38.86	0.04	0.02
MFGBGP	X	39.01	0.15	0.08	35.69	-3.13	-1.56
MK6FKE		39.85	0.99	0.52	39.92	1.11	0.55
MPU3AT		36.62	-2.24	-1.17	35.88	-2.94	-1.47
P6JKK9		37.13	-1.73	-0.90	37.35	-1.47	-0.73



Plastics Interlaboratory Testing Program

Report #108

Analysis 737

4th Qtr 2018

Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	<u>Sample K55</u>			<u>Sample K56</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PHM4XU		37.91	-0.95	-0.50	37.77	-1.04	-0.52
PLN2KG		40.01	1.15	0.60	40.35	1.53	0.77
PVUWKZ	*	36.11	-2.75	-1.43	35.13	-3.68	-1.84
PZTBAB		37.94	-0.92	-0.48	38.10	-0.71	-0.36
Q9VYGF		38.84	-0.02	-0.01	38.84	0.02	0.01
QCHQCG		38.86	0.00	0.00	38.92	0.10	0.05
QDD8TJ		41.71	2.85	1.48	41.55	2.74	1.37
T67F79		43.20	4.34	2.26	43.26	4.44	2.22
T8CUX8		39.01	0.15	0.08	39.32	0.51	0.25
TCMRJA		38.56	-0.30	-0.15	39.04	0.22	0.11
TMNVK3		39.08	0.22	0.12	38.70	-0.12	-0.06
TYPPBZ		38.35	-0.51	-0.26	38.51	-0.30	-0.15
UM6X3G		43.04	4.18	2.18	42.95	4.14	2.07
VER4ME		39.36	0.50	0.26	39.44	0.62	0.31
VJZN9Q		34.95	-3.91	-2.04	34.38	-4.44	-2.22
WD9RY8		37.66	-1.20	-0.63	37.41	-1.41	-0.70
WDQPDQ		39.11	0.25	0.13	39.54	0.73	0.36
ZGYCEK		36.94	-1.92	-1.00	37.00	-1.82	-0.91

Summary Statistics		
	<u>Sample K55</u>	<u>Sample K56</u>
Grand Means	38.860 MPa	38.816 MPa
Std Dev Btwn Labs	1.918 MPa	2.003 MPa
Statistics based on 50 of 53 reporting participants		

Sample K55: HIPS & Sample K56: HIPS

Comments on Assigned Data Flags for Test #737

- GQQABK (X) - Data for both samples are low. Possible Systematic Error.
- MFGBBP (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample K56.
- 8L7MEM (X) - Data for sample K56 are high.



Plastics Interlaboratory Testing Program

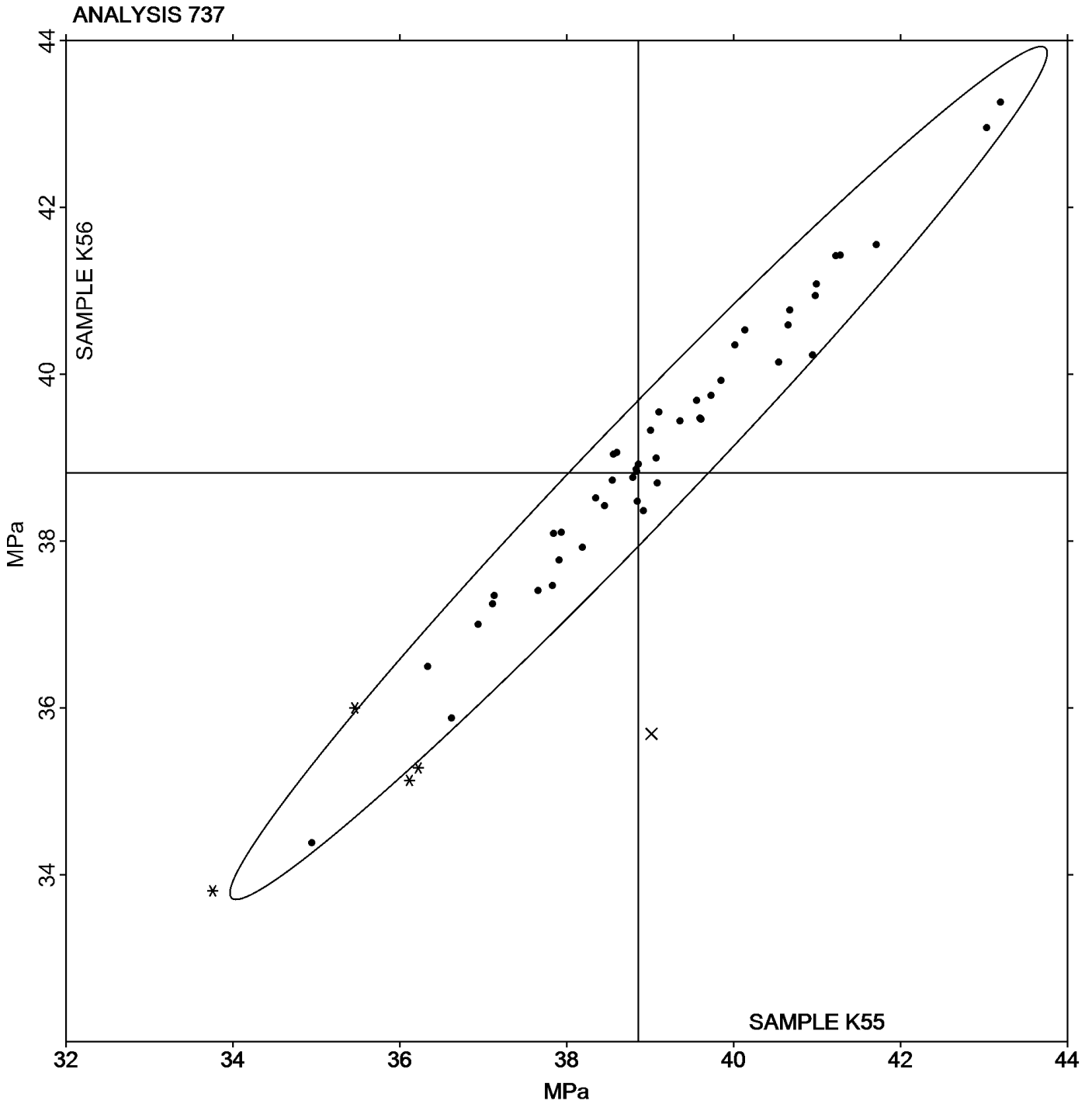
Analysis 737

Flexural Stress at 3.5% Strain - MPa

Report #108

4th Qtr 2018

Grand Mean Sample K55: 38.860 MPa Grand Mean Sample K56: 38.816 MPa





Plastics Interlaboratory Testing Program

Report #108

Analysis 738

4th Qtr 2018

Flexural Stress at Yield - MPa

WebCode	Data Flag	Sample K55			Sample K56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2BCLUB		41.36	2.31	1.23	41.39	2.36	1.20
2KD7TW		39.28	0.23	0.12	38.72	-0.31	-0.16
3E4ANM		39.86	0.81	0.43	39.80	0.77	0.39
3T2HB6		38.68	-0.37	-0.20	38.95	-0.08	-0.04
3ZXC94		37.44	-1.61	-0.86	37.68	-1.35	-0.69
4XELTJ		40.90	1.85	0.98	41.00	1.97	1.01
4Z246C		41.10	2.05	1.09	40.59	1.56	0.80
4Z3XTN		36.57	-2.48	-1.32	36.18	-2.85	-1.45
7HA7FT		41.83	2.78	1.48	42.00	2.97	1.52
894K9E		36.08	-2.97	-1.58	36.72	-2.31	-1.18
8L7MEM	X	38.44	-0.61	-0.32	41.58	2.55	1.30
8PPA2L		38.10	-0.95	-0.50	37.70	-1.33	-0.68
AR7BY6		39.54	0.49	0.26	39.52	0.49	0.25
BBFN98		41.13	2.08	1.11	41.01	1.98	1.01
BHX287		38.60	-0.45	-0.24	39.06	0.03	0.01
CDGV8P		38.96	-0.09	-0.05	38.98	-0.05	-0.03
EADYH8		37.18	-1.87	-0.99	36.16	-2.87	-1.47
F9BRRY		38.82	-0.23	-0.12	38.66	-0.37	-0.19
G3M4WT		36.89	-2.16	-1.15	36.85	-2.18	-1.11
G8ED3K		39.56	0.51	0.27	39.07	0.04	0.02
GQQABK		39.18	0.13	0.07	39.08	0.05	0.03
H4QHXCX		37.96	-1.09	-0.58	38.73	-0.30	-0.15
JAUPPF		41.17	2.12	1.13	41.36	2.33	1.19
JPRUZX		39.27	0.22	0.12	39.03	0.00	0.00
K47LYN		41.43	2.38	1.26	40.71	1.68	0.86
KW4MV9		34.49	-4.56	-2.42	34.74	-4.29	-2.19
LR9ZA6		41.54	2.49	1.32	41.60	2.57	1.31
MFBGBP	X	39.55	0.50	0.27	35.77	-3.26	-1.66
MK6FKE		40.16	1.11	0.59	40.45	1.42	0.73
MPU3AT		37.29	-1.76	-0.93	36.93	-2.10	-1.07
P6JKK9		38.15	-0.90	-0.48	38.41	-0.62	-0.31
PHM4XU		38.38	-0.67	-0.36	37.98	-1.05	-0.54
PVUWKZ		36.67	-2.38	-1.27	35.71	-3.32	-1.69
PZTBAB		38.10	-0.95	-0.51	38.35	-0.68	-0.35
Q9VYGF		39.19	0.14	0.07	38.95	-0.08	-0.04



Plastics Interlaboratory Testing Program

Report #108

Analysis 738

4th Qtr 2018

Flexural Stress at Yield - MPa

WebCode	Data Flag	<u>Sample K55</u>			<u>Sample K56</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QCHQCG		39.67	0.62	0.33	39.79	0.76	0.39
T67F79	*	44.22	5.17	2.75	44.07	5.04	2.57
T8CUX8	*	40.09	1.04	0.55	41.22	2.19	1.12
TCMRJA		38.94	-0.11	-0.06	39.42	0.39	0.20
TMNVK3		39.55	0.50	0.27	39.26	0.23	0.12
TYPPBZ		39.39	0.34	0.18	39.87	0.84	0.43
VER4ME		39.88	0.83	0.44	40.02	0.99	0.51
VJZN9Q		35.63	-3.43	-1.82	35.16	-3.87	-1.98
WDQPDQ		39.74	0.69	0.37	40.25	1.22	0.62
ZGYCEK		37.18	-1.87	-0.99	37.16	-1.87	-0.96

Summary Statistics		
	<u>Sample K55</u>	<u>Sample K56</u>
Grand Means	39.050 MPa	39.031 MPa
Std Dev Btwn Labs	1.882 MPa	1.959 MPa
Statistics based on 43 of 45 reporting participants		

Sample K55: HIPS & Sample K56: HIPS

Comments on Assigned Data Flags for Test #738

- MFBGBP (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample K56.
- 8L7MEM (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.



Plastics Interlaboratory Testing Program

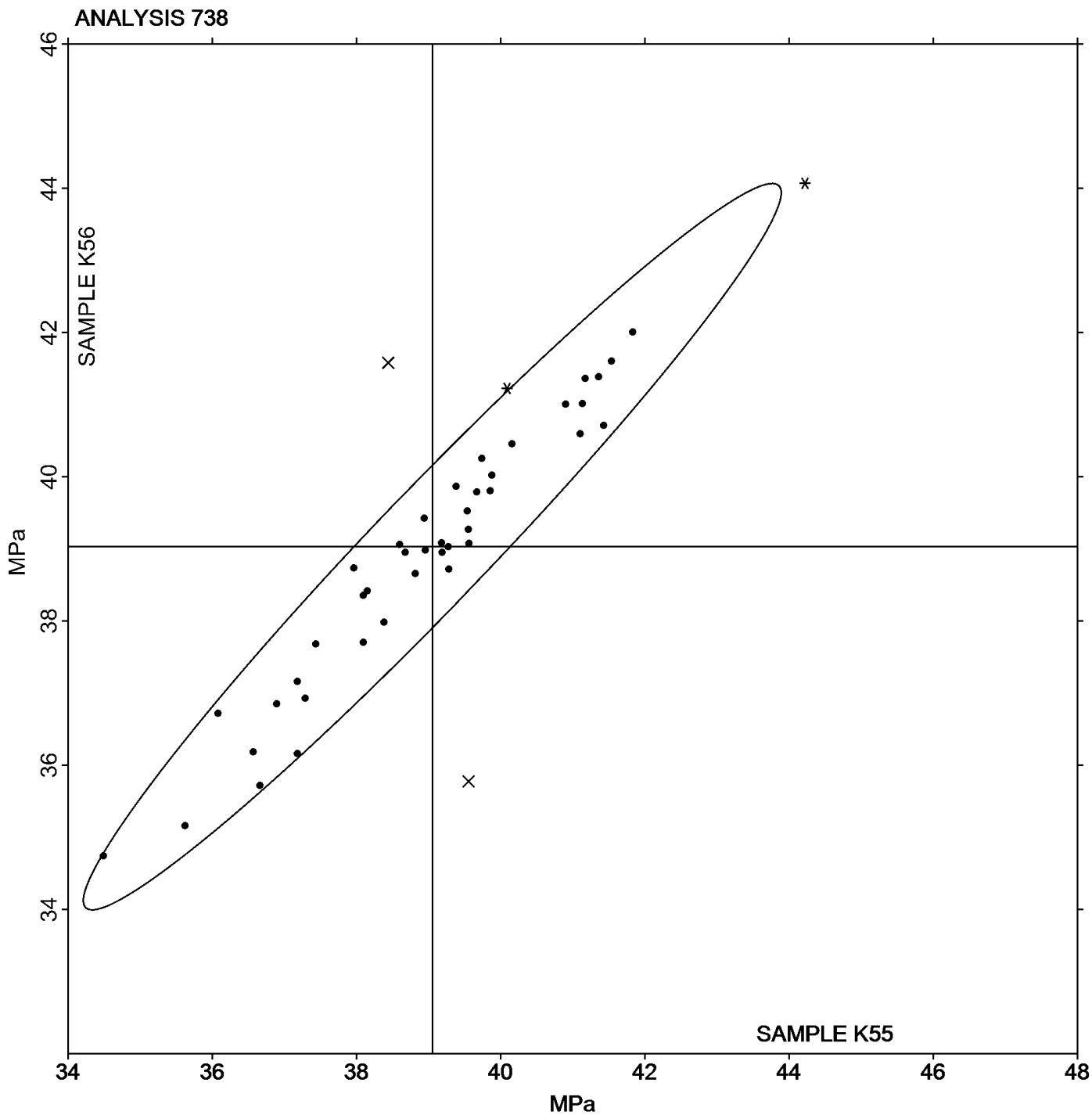
Analysis 738

Flexural Stress at Yield - MPa

Report #108

4th Qtr 2018

Grand Mean Sample K55: 39.050 MPa Grand Mean Sample K56: 39.031 MPa





Plastics Interlaboratory Testing Program

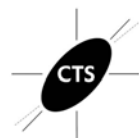
Report #108

Analysis 750

4th Qtr 2018

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

WebCode	Data Flag	Sample X55			Sample X56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
23J9VB		12.32	-0.19	-0.29	12.08	0.33	0.54	TO
26ZXUE		12.50	0.00	0.00	11.50	-0.25	-0.41	TO
2KD7TW		12.52	0.01	0.02	11.74	-0.01	-0.02	GO
2KZHUQ		12.35	-0.15	-0.24	11.60	-0.15	-0.25	XX
3E4ANM		12.27	-0.23	-0.37	11.45	-0.30	-0.50	TY
3T2HB6	*	13.23	0.72	1.14	13.27	1.51	2.50	TO
4X9G7V		12.60	0.10	0.15	12.70	0.95	1.57	DY
4XELTJ		11.88	-0.63	-0.99	11.77	0.01	0.02	GO
4Z3XTN		12.16	-0.35	-0.55	11.28	-0.47	-0.78	TO
68Z6P3		12.65	0.15	0.23	11.60	-0.15	-0.25	TO
6JBMEK		11.11	-1.40	-2.20	10.76	-0.99	-1.64	CE
6NZ227		12.19	-0.31	-0.49	11.48	-0.28	-0.46	WZ
72LMW3		11.74	-0.76	-1.20	11.51	-0.24	-0.40	DY
7HA7FT		12.27	-0.23	-0.37	11.55	-0.20	-0.33	TO
7PDX6R		11.95	-0.55	-0.87	12.10	0.35	0.58	TO
7PXP2G		12.00	-0.50	-0.79	11.50	-0.25	-0.41	TO
7VDEFX	*	12.30	-0.20	-0.32	10.30	-1.45	-2.40	TO
84PVMX		13.12	0.62	0.97	12.16	0.41	0.68	KA
894K9E		11.86	-0.65	-1.02	11.69	-0.07	-0.11	CE
8GU6CQ		11.30	-1.20	-1.89	11.00	-0.75	-1.24	WZ
8L7MEM	X	12.20	-0.30	-0.48	13.60	1.85	3.05	TO
9KPC3V		12.10	-0.40	-0.63	12.30	0.55	0.91	TY
AWXHFT		12.63	0.13	0.20	11.65	-0.10	-0.17	TO
BHX287		12.10	-0.40	-0.63	11.45	-0.30	-0.50	TO
CDGV8P		13.65	1.15	1.80	12.93	1.18	1.95	TO
CU6DU2		12.30	-0.20	-0.32	12.00	0.25	0.41	TO
DQ3PZU		11.19	-1.32	-2.07	11.03	-0.72	-1.19	TO
DU2YBW		12.23	-0.27	-0.43	11.29	-0.47	-0.77	DY
E9C7FT		12.10	-0.41	-0.64	11.10	-0.65	-1.07	TO
EADYH8		12.64	0.14	0.21	11.57	-0.19	-0.31	CE
EJXBPD		11.98	-0.52	-0.81	11.78	0.03	0.05	TO
EVAM2N		11.45	-1.05	-1.65	10.80	-0.95	-1.57	TO
EY7DYM		13.58	1.08	1.69	12.41	0.66	1.09	TO
FJGE2K		13.05	0.55	0.86	12.05	0.30	0.49	TO
FTJRXE		12.65	0.15	0.23	12.05	0.30	0.49	TO



Plastics Interlaboratory Testing Program

Report #108

Analysis 750

4th Qtr 2018

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

WebCode	Data Flag	Sample X55			Sample X56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
G3M4WT		12.30	-0.20	-0.32	11.65	-0.10	-0.17	DY
G4WDHY		12.72	0.21	0.33	11.74	-0.02	-0.03	TO
GQQABK		12.00	-0.50	-0.79	12.09	0.34	0.56	TO
H4QHCX	X	5.10	-7.40	-11.64	4.85	-6.90	-11.40	TO
HF4J9R	X	14.95	2.45	3.85	12.38	0.63	1.04	TO
HLXDAY		13.25	0.75	1.18	12.45	0.70	1.15	TO
HWTPKR		12.24	-0.27	-0.42	11.27	-0.49	-0.80	DY
JAUPPF		12.26	-0.24	-0.38	11.52	-0.23	-0.38	TO
JDDQVQ		13.04	0.54	0.85	11.87	0.11	0.19	DY
JDRC3H		12.50	-0.01	-0.01	12.34	0.58	0.96	QT
JPRUZX		13.60	1.10	1.73	12.40	0.65	1.07	AT
K47LYN		13.22	0.72	1.14	12.20	0.45	0.74	TO
K86XWA		12.05	-0.45	-0.71	11.35	-0.40	-0.66	KA
KLPD3U	X	5.43	-7.07	-11.12	5.06	-6.69	-11.05	TM
KTZN8G		13.15	0.65	1.02	12.00	0.25	0.41	TO
KYQXGE		13.60	1.10	1.73	11.90	0.15	0.25	TO
L3L6DU		11.47	-1.04	-1.63	11.61	-0.14	-0.23	XX
L9P3ZF		13.10	0.60	0.94	11.75	0.00	0.00	TO
LD4RLV		11.79	-0.71	-1.12	10.78	-0.98	-1.61	CE
LFTZRR		12.98	0.48	0.75	12.22	0.47	0.77	XX
LR9ZA6		12.23	-0.28	-0.44	11.47	-0.29	-0.47	TO
M8RAFF		13.65	1.15	1.80	12.35	0.60	0.99	TO
MBVTTE		12.28	-0.23	-0.36	12.23	0.47	0.78	DY
MEXWFU		13.61	1.11	1.74	11.83	0.08	0.13	DY
MKZU4F		12.65	0.15	0.23	11.65	-0.10	-0.17	TO
NMMY23		12.68	0.18	0.28	11.65	-0.10	-0.17	CE
NQYX7H	X	1.27	-11.23	-17.66	1.17	-10.58	-17.48	TO
NYY6GB		12.50	-0.01	-0.01	11.65	-0.10	-0.17	TO
P2DFDF		11.78	-0.73	-1.14	11.00	-0.75	-1.24	WZ
P6JKK9	*	12.06	-0.44	-0.70	10.07	-1.68	-2.78	GO
PHM4XU		12.80	0.30	0.47	11.70	-0.05	-0.08	WZ
PLN2KG		12.55	0.04	0.07	11.75	-0.01	-0.01	DY
Q9VYGF	*	10.73	-1.77	-2.79	10.49	-1.27	-2.09	TO
QCHQCG		12.36	-0.14	-0.22	11.33	-0.43	-0.70	TO
QDD8TJ		12.74	0.24	0.37	11.63	-0.12	-0.20	DY



Plastics Interlaboratory Testing Program

Report #108

Analysis 750

4th Qtr 2018

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

WebCode	Data Flag	Sample X55			Sample X56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
QUK4AX		12.95	0.45	0.70	11.90	0.15	0.25	DY
RKKFL8		13.40	0.90	1.41	12.45	0.70	1.15	TO
T8CUX8		12.45	-0.06	-0.09	11.64	-0.11	-0.18	DY
TCMRJA		12.50	0.00	0.00	12.15	0.40	0.66	TO
TK2R2P	*	11.30	-1.21	-1.90	12.10	0.35	0.58	CE
TTET7Q		12.67	0.17	0.26	12.00	0.24	0.40	KA
UFLQ4N		12.98	0.48	0.75	12.30	0.55	0.91	XX
UGJT8A	*	12.50	0.00	0.00	13.15	1.40	2.31	TO
UM6X3G		12.69	0.19	0.30	11.59	-0.16	-0.26	DY
VGU9T8		13.45	0.95	1.49	13.25	1.50	2.48	TO
VJZN9Q		12.16	-0.34	-0.53	11.70	-0.05	-0.09	CE
VRDK86		13.19	0.68	1.08	12.73	0.98	1.61	DY
VUHBEK		14.06	1.56	2.45	12.68	0.92	1.53	RR
VXLZKZ		11.95	-0.55	-0.87	11.32	-0.43	-0.71	TO
WD9RY8	X	35.91	23.40	36.80	35.09	23.34	38.55	DY
WDQPDQ		12.51	0.00	0.00	11.60	-0.15	-0.25	GO
WL92QR		12.75	0.25	0.39	11.80	0.05	0.08	TO
X749AG	X	10.00	-2.50	-3.93	9.90	-1.85	-3.06	TO
XY4GWY		12.55	0.05	0.08	11.35	-0.40	-0.66	DA
YAYJK8		13.27	0.77	1.21	13.15	1.40	2.31	TO
YC8RTQ	X	17.71	5.20	8.18	16.46	4.71	7.78	TO
Z4QDME		11.89	-0.62	-0.97	11.40	-0.35	-0.58	TO
ZC6498		13.20	0.70	1.10	11.25	-0.50	-0.83	TO
ZGYCEK		12.54	0.04	0.06	11.10	-0.65	-1.07	CE
ZJ2637		12.80	0.30	0.47	11.20	-0.55	-0.91	CE
ZM98JV		12.30	-0.21	-0.33	11.37	-0.38	-0.63	CE
ZN3XMN		13.03	0.53	0.83	11.76	0.01	0.02	TO
ZNTDMZ		12.35	-0.15	-0.24	11.35	-0.40	-0.66	WZ



Plastics Interlaboratory Testing Program

Report #108

Analysis 750

4th Qtr 2018

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

Summary Statistics		
	<u>Sample X55</u>	<u>Sample X56</u>
Grand Means	12.502 grams/10 mins	11.751 grams/10 mins
Stnd Dev Btwn Labs	0.636 grams/10 mins	0.605 grams/10 mins
Statistics based on 90 of 98 reporting participants		

Sample X55: PP & Sample X56: PP

Comments on Assigned Data Flags for Test #750

- X749AG (X) - Data for both samples are low.
- WD9RY8 (X) - Data for both samples are high. Inconsistent within the determinations of sample X56.
- NQYX7H (X) - Data for both samples are low.
- HF4J9R (X) - Data for sample X55 are high. Inconsistent within the determinations of sample X56.
- KLPD3U (X) - Data for both samples are low.
- YC8RTQ (X) - Data for both samples are high.
- H4QHXCX (X) - Data for both samples are low.
- 8L7MEM (X) - Data for sample X56 are high.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

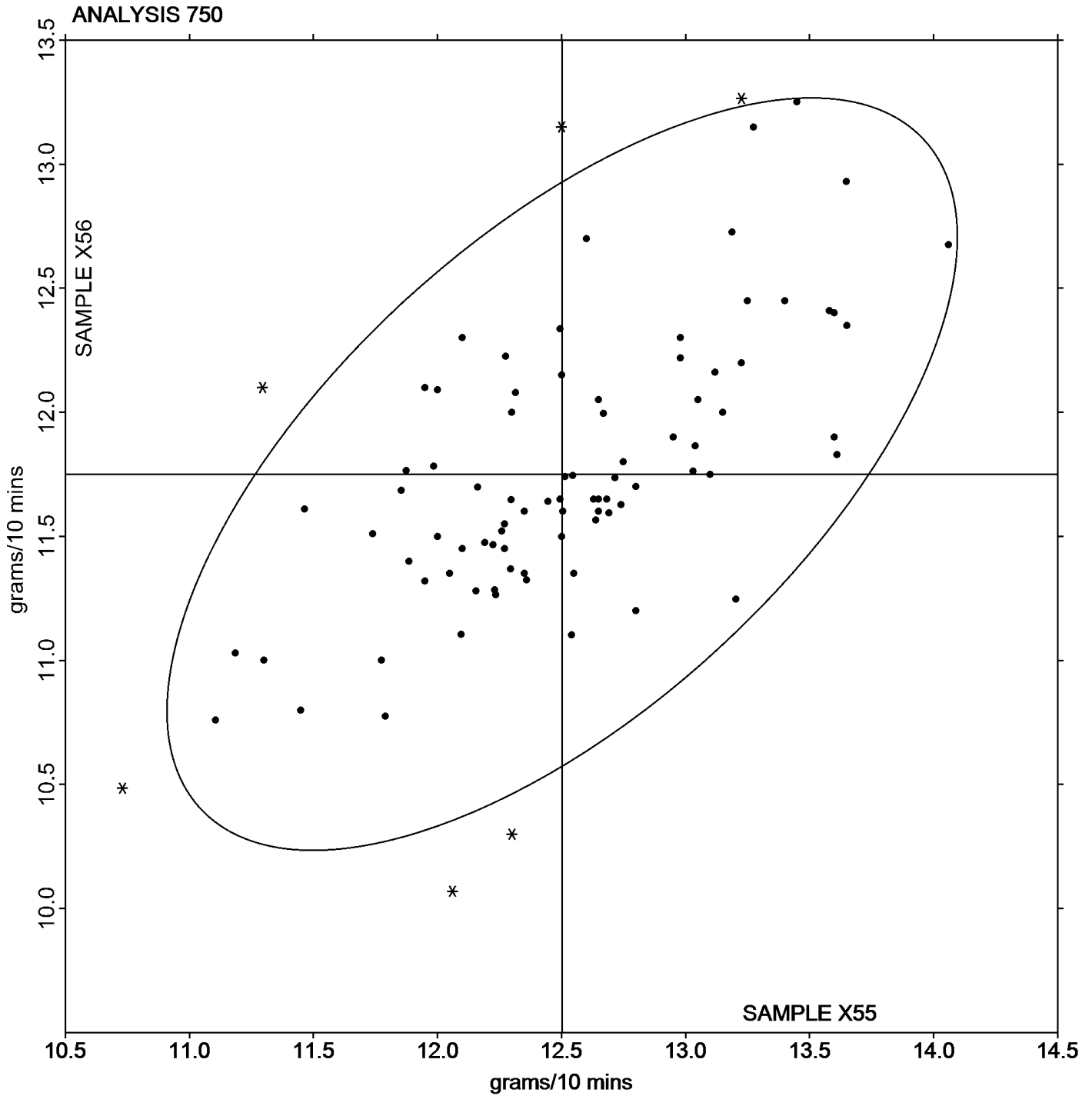
Report #108

Analysis 750

4th Qtr 2018

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

Grand Mean Sample X55: 12.502 grams/10 mins Grand Mean Sample X56: 11.751 grams/10 mins





Plastics Interlaboratory Testing Program

Report #108

Analysis 755

4th Qtr 2018

Moisture Content of Plastics

WebCode	Data Flag	Sample Y55			Sample Y56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3B2HAX		0.02426	-0.00523	-0.78	0.02799	-0.00317	-0.47	CS
4749T4		0.03767	0.00818	1.22	0.03367	0.00250	0.37	AZ
4GPC8G		0.02531	-0.00417	-0.62	0.02711	-0.00406	-0.60	MU
4JVVUG		0.02076	-0.00873	-1.31	0.02762	-0.00354	-0.52	MU
63YZ2Y		0.02868	-0.00081	-0.12	0.02654	-0.00463	-0.68	MJ
72LMW3		0.02873	-0.00075	-0.11	0.03233	0.00117	0.17	AZ
73ERFY	X	0.05750	0.02801	4.19	0.05700	0.02584	3.80	SB
7VDEFX	X	0.08933	0.05985	8.95	0.09900	0.06784	9.97	MU
894K9E		0.03400	0.00451	0.68	0.04100	0.00984	1.45	AZ
8GU6CQ		0.02633	-0.00315	-0.47	0.02933	-0.00183	-0.27	MJ
APYRFB		0.02428	-0.00521	-0.78	0.02348	-0.00769	-1.13	MU
BJ9YJ3		0.03400	0.00451	0.68	0.03800	0.00684	1.00	SB
CDGV8P		0.03350	0.00401	0.60	0.03400	0.00284	0.42	CT
CX83L8		0.02871	-0.00078	-0.12	0.02903	-0.00213	-0.31	MU
DU2YBW		0.02533	-0.00415	-0.62	0.02500	-0.00616	-0.91	MU
EADYH8		0.02900	-0.00049	-0.07	0.03900	0.00784	1.15	AZ
EH22DP		0.03410	0.00461	0.69	0.03757	0.00640	0.94	MK
FTJRXE		0.03150	0.00201	0.30	0.03600	0.00484	0.71	BA
G8ED3K		0.03158	0.00210	0.31	0.03226	0.00109	0.16	MK
GQQABK	X	0.14063	0.11115	16.63	0.14587	0.11470	16.86	AZ
HLXDAY		0.02550	-0.00399	-0.60	0.02577	-0.00540	-0.79	AZ
JDDQQV		0.02033	-0.00915	-1.37	0.02433	-0.00683	-1.00	MR
KTZN8G	X	0.17133	0.14185	21.22	0.17233	0.14117	20.75	SA
L3L6DU	*	0.03413	0.00465	0.70	0.02237	-0.00880	-1.29	XX
LB6BD8		0.02590	-0.00359	-0.54	0.03150	0.00034	0.05	AZ
LD4RLV		0.02700	-0.00249	-0.37	0.02767	-0.00350	-0.51	MU
LR9ZA6	X	0.05250	0.02301	3.44	0.08100	0.04984	7.32	MB
M8RAFF		0.04550	0.01601	2.40	0.04750	0.01634	2.40	ML
MBVTTE	X	0.07500	0.04551	6.81	0.07100	0.03984	5.85	MB
MEXWFU	*	0.01100	-0.01849	-2.77	0.01933	-0.01183	-1.74	MS
MKZU4F		0.04000	0.01051	1.57	0.03667	0.00550	0.81	ML
PLN2KG	X	0.06900	0.03951	5.91	0.07800	0.04684	6.88	MB
PZTBAB	X	0.03467	0.00518	0.77	0.05267	0.02150	3.16	CT
Q9VYGF		0.03123	0.00175	0.26	0.03563	0.00447	0.66	MS
QUK4AX		0.02667	-0.00282	-0.42	0.02667	-0.00450	-0.66	AZ



Plastics Interlaboratory Testing Program

Report #108

Analysis 755

4th Qtr 2018

Moisture Content of Plastics

WebCode	Data Flag	Sample Y55			Sample Y56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
RKKFL8	X	0.01933	-0.01015	-1.52	0.04033	0.00917	1.35	AZ
TAH8LY		0.03733	0.00785	1.17	0.03700	0.00584	0.86	ML
TCMRJA		0.01867	-0.01082	-1.62	0.01933	-0.01183	-1.74	MK
TLEF62		0.02877	-0.00072	-0.11	0.03357	0.00240	0.35	ML
UM6X3G		0.02650	-0.00299	-0.45	0.02150	-0.00966	-1.42	CT
VJZN9Q		0.03900	0.00951	1.42	0.04250	0.01134	1.67	AZ
VXLZKZ		0.02880	-0.00069	-0.10	0.02667	-0.00450	-0.66	AQ
ZGYCEK		0.03600	0.00651	0.97	0.03750	0.00634	0.93	AZ
ZJMRM8		0.03200	0.00251	0.38	0.03533	0.00417	0.61	CS
ZN3XMN	X	0.37133	0.34185	51.15	0.36867	0.33750	49.61	XX

Summary Statistics		Sample Y55	Sample Y56
Grand Means		0.029488 Percent	0.031165 Percent
Std Dev Btwn Labs		0.006683 Percent	0.006804 Percent
Statistics based on 35 of 45 reporting participants			

Sample Y55: HIPS & Sample Y56: HIPS

Comments on Assigned Data Flags for Test #755

- GQQABK (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample Y56.
- KTZN8G (X) - Data for both samples are high. Inconsistent within the determinations of both samples. Possible Systematic Error.
- PLN2KG (X) - Data for both samples are high. Possible Systematic Error.
- 7VDEFX (X) - Data for both samples are high. Inconsistent within the determinations of both samples. Possible Systematic Error.
- LR9ZA6 (X) - Data for both samples are high. Inconsistent within the determinations of sample Y55. Possible Systematic Error.
- MBVTTE (X) - Data for both samples are high. Possible Systematic Error.
- 73ERFY (X) - Data for both samples are high. Possible Systematic Error.
- ZN3XMN (X) - Data for both samples are high. Inconsistent within the determinations of both samples. Possible Systematic Error.
- RKKFL8 (X) - Inconsistent in testing between samples.
- PZTBAB (X) - Data for sample Y56 are high. Inconsistent within the determinations of sample Y55.



Plastics Interlaboratory Testing Program

Analysis 755

Moisture Content of Plastics

Report #108

4th Qtr 2018

Key to Instrument Codes Reported by Participants

AQ	Aquastar	AZ	Arizona Instruments Moisture Analyzer
BA	Brabender Aquatrac	CS	Cosa Instruments
CT	Computrac Moisture Analyzer	MB	Omnimark Mark 3
MJ	Mitsubishi KF Analyzer Series	MK	Mitsubishi KF Analyzer CA
ML	Metrohm Coulometer	MR	Metrohm Coulometer 756 KF
MS	Metrohm Coulometer 831 KF	MU	Mettler Toledo
SA	Sartorius MA30	SB	Sartorius Mark 3
XX	Instrument manufacturer not specified by lab		



Plastics Interlaboratory Testing Program

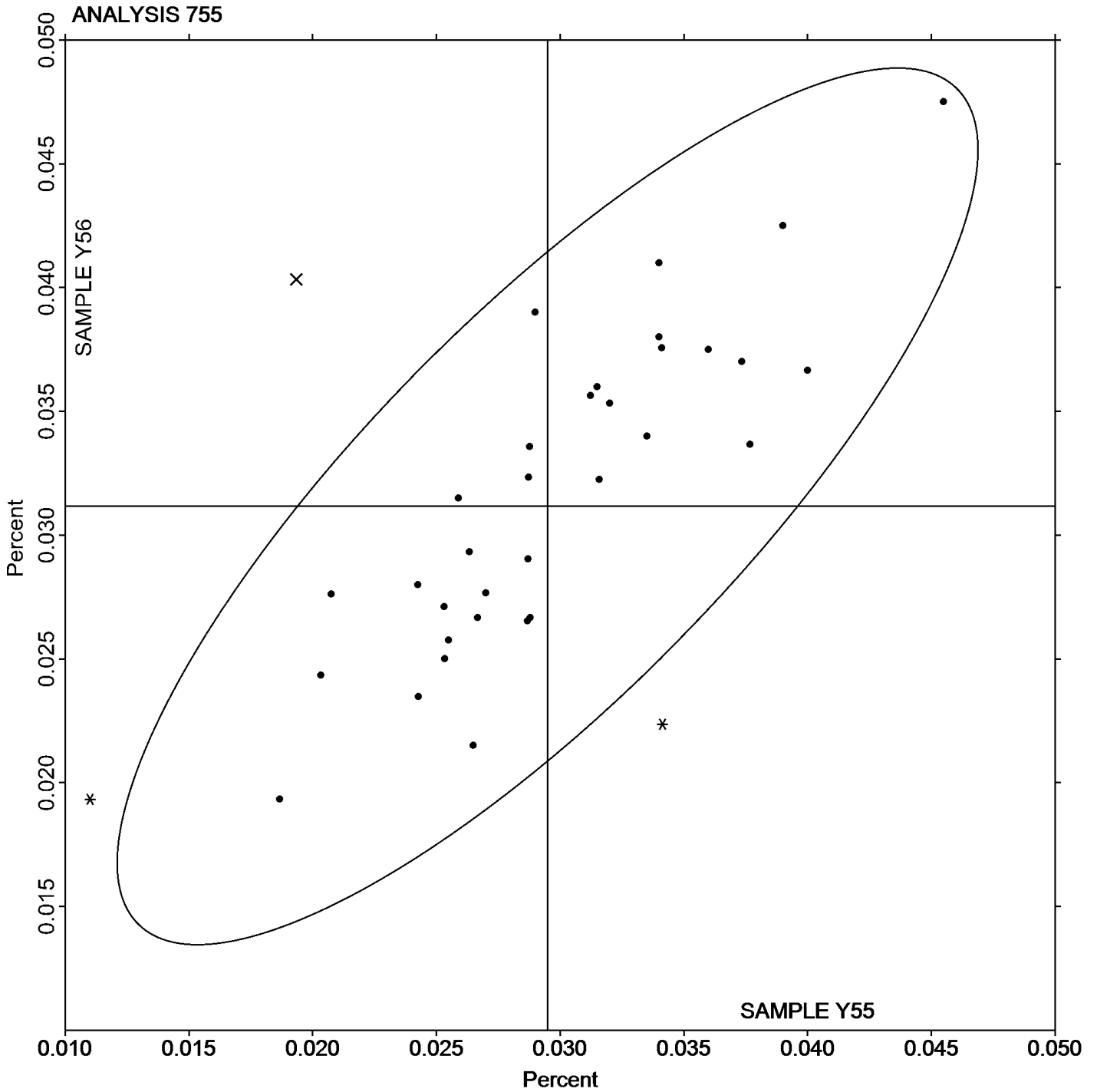
Analysis 755

Moisture Content of Plastics

Report #108

4th Qtr 2018

Grand Mean Sample Y55: 0.02949 Percent Grand Mean Sample Y56: 0.03116 Percent





Plastics Interlaboratory Testing Program

Report #108

Analysis 757

4th Qtr 2018

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L55			Sample L56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2KD7TW		30.585	0.051	0.20	30.410	-0.111	-0.44
476AF9	X	32.847	2.313	9.12	32.897	2.376	9.41
4Z3XTN		30.480	-0.054	-0.21	30.540	0.019	0.07
68Z6P3	X	37.100	6.566	25.88	37.210	6.689	26.50
6NZ227		30.830	0.296	1.17	30.729	0.207	0.82
7HA7FT		30.468	-0.066	-0.26	30.433	-0.089	-0.35
7VDEFX		30.810	0.276	1.09	30.495	-0.026	-0.10
84PVMX		30.740	0.206	0.81	30.680	0.159	0.63
894K9E		30.702	0.168	0.66	30.600	0.078	0.31
8GU6CQ		30.595	0.061	0.24	30.535	0.014	0.05
987QQZ		30.335	-0.199	-0.78	30.450	-0.071	-0.28
9CJA9G	*	31.150	0.616	2.43	31.300	0.779	3.08
9DTKJR		30.850	0.316	1.25	30.650	0.129	0.51
BJ9YJ3		30.520	-0.014	-0.05	30.640	0.119	0.47
DU2YBW		30.400	-0.134	-0.53	30.315	-0.206	-0.82
EADYH8		30.487	-0.046	-0.18	30.601	0.080	0.32
EH22DP		30.695	0.161	0.64	30.775	0.254	1.00
F9BRRY		30.020	-0.514	-2.02	30.075	-0.446	-1.77
FJGE2K		30.570	0.036	0.14	30.585	0.064	0.25
FMFMBZ		31.114	0.580	2.29	31.070	0.549	2.17
G4WDHY		30.507	-0.027	-0.10	30.689	0.167	0.66
JAUPPF		30.900	0.366	1.44	30.875	0.354	1.40
JUFMNK		30.500	-0.034	-0.13	30.403	-0.119	-0.47
K47LYN		30.685	0.151	0.60	30.515	-0.006	-0.03
KTZN8G		30.920	0.386	1.52	30.830	0.309	1.22
L3L6DU		30.110	-0.424	-1.67	30.080	-0.441	-1.75
LD4RLV	*	30.270	-0.264	-1.04	30.615	0.094	0.37
LFTZRR		30.234	-0.300	-1.18	30.061	-0.461	-1.83
LR9ZA6		30.170	-0.364	-1.43	30.305	-0.216	-0.86
M8RAFF		30.350	-0.184	-0.72	30.510	-0.011	-0.04
MBVTTE	X	30.010	-0.524	-2.06	30.530	0.009	0.03
MEXWFU		30.355	-0.179	-0.70	30.495	-0.026	-0.10
N6PGAL		30.940	0.406	1.60	30.865	0.344	1.36
NQYX7H	X	26.026	-4.508	-17.77	19.980	-10.542	-41.76
PHM4XU		30.105	-0.429	-1.69	30.315	-0.206	-0.82



Plastics Interlaboratory Testing Program

Report #108

Analysis 757

4th Qtr 2018

Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L55			Sample L56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PLN2KG		30.540	0.006	0.03	30.785	0.264	1.04
PVUWKZ	X	29.705	-0.829	-3.27	30.775	0.254	1.00
PZTBAB	X	30.905	0.371	1.46	31.440	0.919	3.64
Q9VYGF		30.615	0.081	0.32	30.530	0.009	0.03
QCHQCG		30.425	-0.109	-0.43	30.390	-0.131	-0.52
QDD8TJ		30.280	-0.254	-1.00	30.290	-0.231	-0.92
QKP94M		30.425	-0.109	-0.43	30.400	-0.121	-0.48
QR8L4N		30.560	0.026	0.10	30.780	0.259	1.02
QUK4AX		30.520	-0.014	-0.05	30.475	-0.046	-0.18
RKKFL8		30.215	-0.319	-1.26	30.325	-0.196	-0.78
T8CUX8		30.615	0.081	0.32	30.540	0.019	0.07
TTET7Q		30.931	0.397	1.57	30.836	0.315	1.25
TWXU7J		30.615	0.081	0.32	30.645	0.124	0.49
UAGVJN		30.502	-0.031	-0.12	30.365	-0.157	-0.62
UFLQ4N		30.355	-0.179	-0.70	30.225	-0.296	-1.17
UM6X3G		30.400	-0.134	-0.53	30.350	-0.171	-0.68
UNGG3D		30.595	0.061	0.24	30.638	0.117	0.46
VJZN9Q		30.606	0.072	0.28	30.374	-0.147	-0.58
WDQPDQ		30.375	-0.159	-0.63	30.275	-0.246	-0.98
X9GU9G		30.422	-0.111	-0.44	30.274	-0.248	-0.98
XY4GWY		30.105	-0.429	-1.69	30.020	-0.501	-1.99
YKM9LZ		30.690	0.156	0.62	30.770	0.249	0.99
ZGYCEK		30.562	0.029	0.11	30.385	-0.136	-0.54

Summary Statistics		
	Sample L55	Sample L56
Grand Means	30.5336 Percent	30.5213 Percent
Std Dev Btwn Labs	0.2537 Percent	0.2524 Percent
Statistics based on 52 of 58 reporting participants		

Sample L55: PBT & Sample L56: PBT



Comments on Assigned Data Flags for Test #757

NQYX7H (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

PZTBAB (X) - Data for sample L56 are high.

68Z6P3 (X) - Data for both samples are high. Possible Systematic Error.

476AF9 (X) - Data for both samples are high. Possible Systematic Error.

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

PVUWKZ (X) - Data for sample L55 are low.



Plastics Interlaboratory Testing Program

Report #108

Analysis 760

4th Qtr 2018

DSC Crystallization Temperature

WebCode	Data Flag	Sample W55			Sample W56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KD7TW		174.57	-2.27	-0.44	174.97	-1.81	-0.33	TA
3E3RTT	X	174.53	-2.31	-0.45	180.83	4.05	0.74	TA
4Z3XTN		173.37	-3.47	-0.68	173.40	-3.38	-0.62	TA
7PDX6R		179.63	2.79	0.54	179.57	2.79	0.51	TA
8AVMT9		179.40	2.56	0.50	178.10	1.32	0.24	NZ
9KPC3V		183.48	6.64	1.29	183.70	6.92	1.27	TA
9LNGMG		173.43	-3.41	-0.66	173.43	-3.35	-0.61	XX
D2GU22		171.77	-5.07	-0.99	170.20	-6.58	-1.21	PE
HLXDAY		180.67	3.83	0.74	182.00	5.22	0.96	MT
LFTZRR		173.14	-3.70	-0.72	172.01	-4.77	-0.87	TA
LKR8GU	*	175.47	-1.37	-0.27	178.25	1.47	0.27	PE
LR9ZA6		173.13	-3.71	-0.72	173.20	-3.58	-0.66	XX
P6JKK9		189.37	12.53	2.43	189.87	13.09	2.40	TA
RXQWK3		176.24	-0.60	-0.12	176.02	-0.76	-0.14	MT
UFLQ4N		173.32	-3.52	-0.68	173.43	-3.35	-0.61	TA
VRCRBH		181.61	4.77	0.93	181.92	5.14	0.94	TA
VW6V34		182.48	5.64	1.10	181.79	5.01	0.92	TA
VWA6HG		169.51	-7.33	-1.43	167.69	-9.09	-1.66	XX
WD9RY8		174.32	-2.52	-0.49	173.72	-3.06	-0.56	TA
X9GU9G		181.44	4.60	0.89	181.02	4.24	0.78	MT
ZC6498	X	187.25	10.41	2.02	176.67	-0.11	-0.02	TA
ZN3XMN		170.47	-6.37	-1.24	171.30	-5.48	-1.00	NZ

Summary Statistics		
	Sample W55	Sample W56
Grand Means	176.841 Degrees Celsius	176.780 Degrees Celsius
Std Dev Btwn Labs	5.146 Degrees Celsius	5.460 Degrees Celsius
Statistics based on 20 of 22 reporting participants		

Sample W55: PBT & Sample W56: PBT

Comments on Assigned Data Flags for Test #760

ZC6498 (X) - Inconsistent in testing between samples.

3E3RTT (X) - Inconsistent in testing between samples.



Plastics Interlaboratory Testing Program

Analysis 760

DSC Crystallization Temperature

Report #108

4th Qtr 2018

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

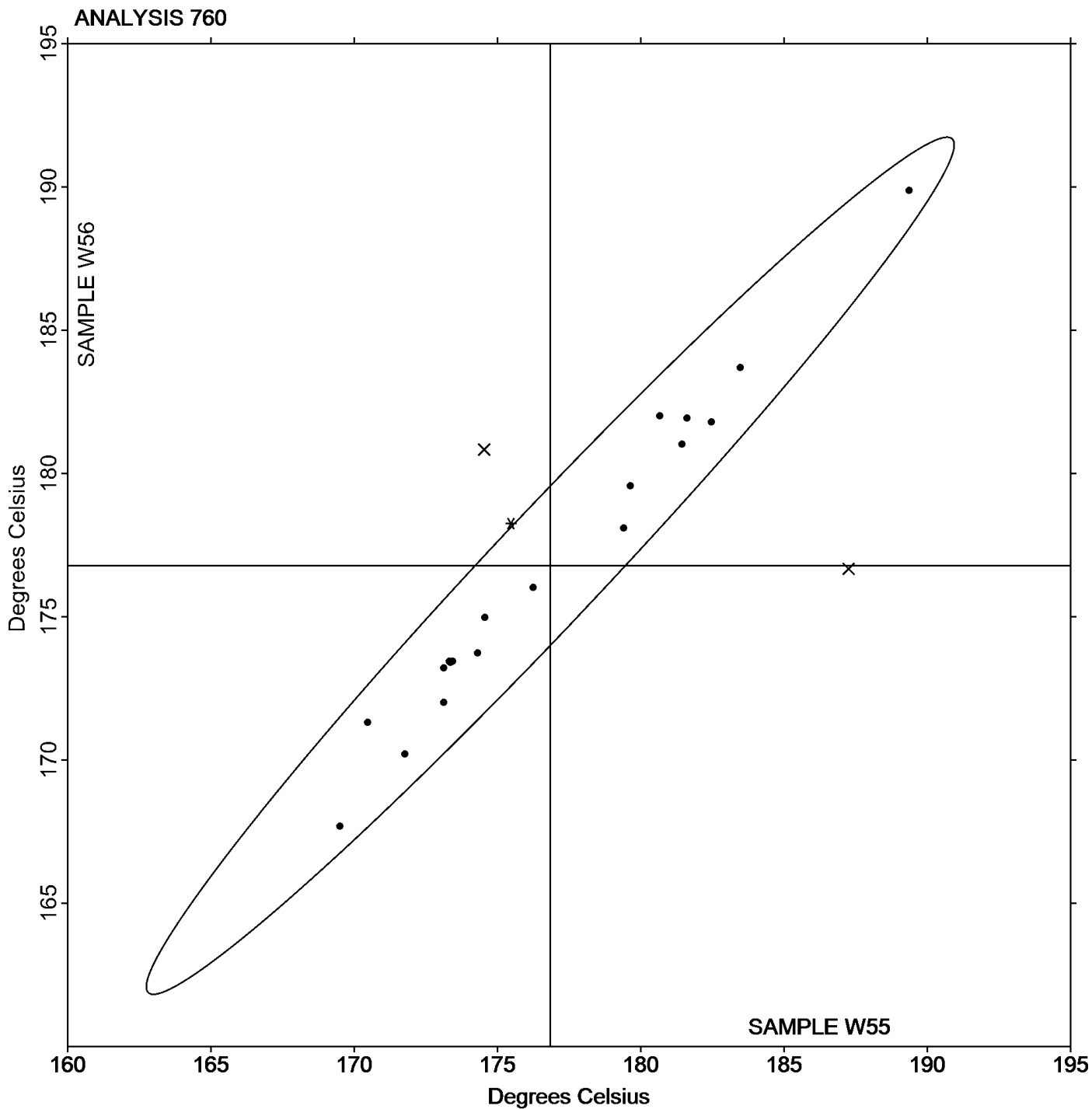
Analysis 760

DSC Crystallization Temperature

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Grand Mean Sample W55: 176.84 Degrees Celsius Grand Mean Sample W56: 176.78 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #108

Analysis 761

4th Qtr 2018

DSC Melt Temperature

WebCode	Data Flag	<u>Sample W55</u>			<u>Sample W56</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KD7TW		222.13	-1.86	-1.41	222.03	-1.87	-1.50	TA
3E3RTT		226.67	2.67	2.02	226.50	2.60	2.09	TA
4Z3XTN		222.77	-1.23	-0.93	222.60	-1.30	-1.04	TA
7PDX6R		222.23	-1.76	-1.33	222.13	-1.77	-1.42	TA
7VDEFX		224.77	0.77	0.59	224.33	0.43	0.35	PE
8AVMT9		224.60	0.61	0.46	222.90	-1.00	-0.80	NZ
9KPC3V		222.06	-1.93	-1.46	222.05	-1.85	-1.49	TA
D2GU22		223.27	-0.73	-0.55	224.07	0.17	0.13	PE
G8ED3K		223.76	-0.23	-0.18	223.14	-0.76	-0.61	MT
HLXDAY		224.44	0.45	0.34	223.78	-0.12	-0.10	MT
JUFMNK		224.61	0.62	0.47	224.34	0.44	0.36	TA
LFTZRR		226.07	2.08	1.57	225.37	1.47	1.18	XX
LKR8GU		224.08	0.09	0.07	224.63	0.73	0.58	PE
LR9ZA6		223.53	-0.46	-0.35	224.07	0.17	0.13	XX
P6JKK9		224.85	0.85	0.65	224.00	0.10	0.08	TA
RXQWK3		221.96	-2.04	-1.54	222.05	-1.85	-1.48	MT
UFLQ4N		223.80	-0.20	-0.15	223.77	-0.13	-0.10	XX
VRCRBH		224.67	0.68	0.51	224.94	1.04	0.84	TA
VW6V34		223.38	-0.62	-0.47	223.67	-0.23	-0.18	TA
VWA6HG		224.29	0.30	0.23	225.69	1.79	1.44	XX
WD9RY8		225.30	1.31	0.99	225.28	1.38	1.10	TA
X9GU9G		223.23	-0.76	-0.58	223.79	-0.11	-0.09	MT
ZC6498		223.04	-0.96	-0.72	223.11	-0.79	-0.63	TA
ZN3XMN		226.33	2.34	1.77	225.37	1.47	1.18	NZ

Summary Statistics		
	<u>Sample W55</u>	<u>Sample W56</u>
Grand Means	223.993 Degrees Celsius	223.901 Degrees Celsius
Std Dev Btwn Labs	1.321 Degrees Celsius	1.246 Degrees Celsius
Statistics based on 24 of 24 reporting participants		

Sample W55: PBT & Sample W56: PBT



Plastics Interlaboratory Testing Program

Analysis 761

DSC Melt Temperature

Report #108

4th Qtr 2018

Key to Instrument Codes Reported by Participants

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



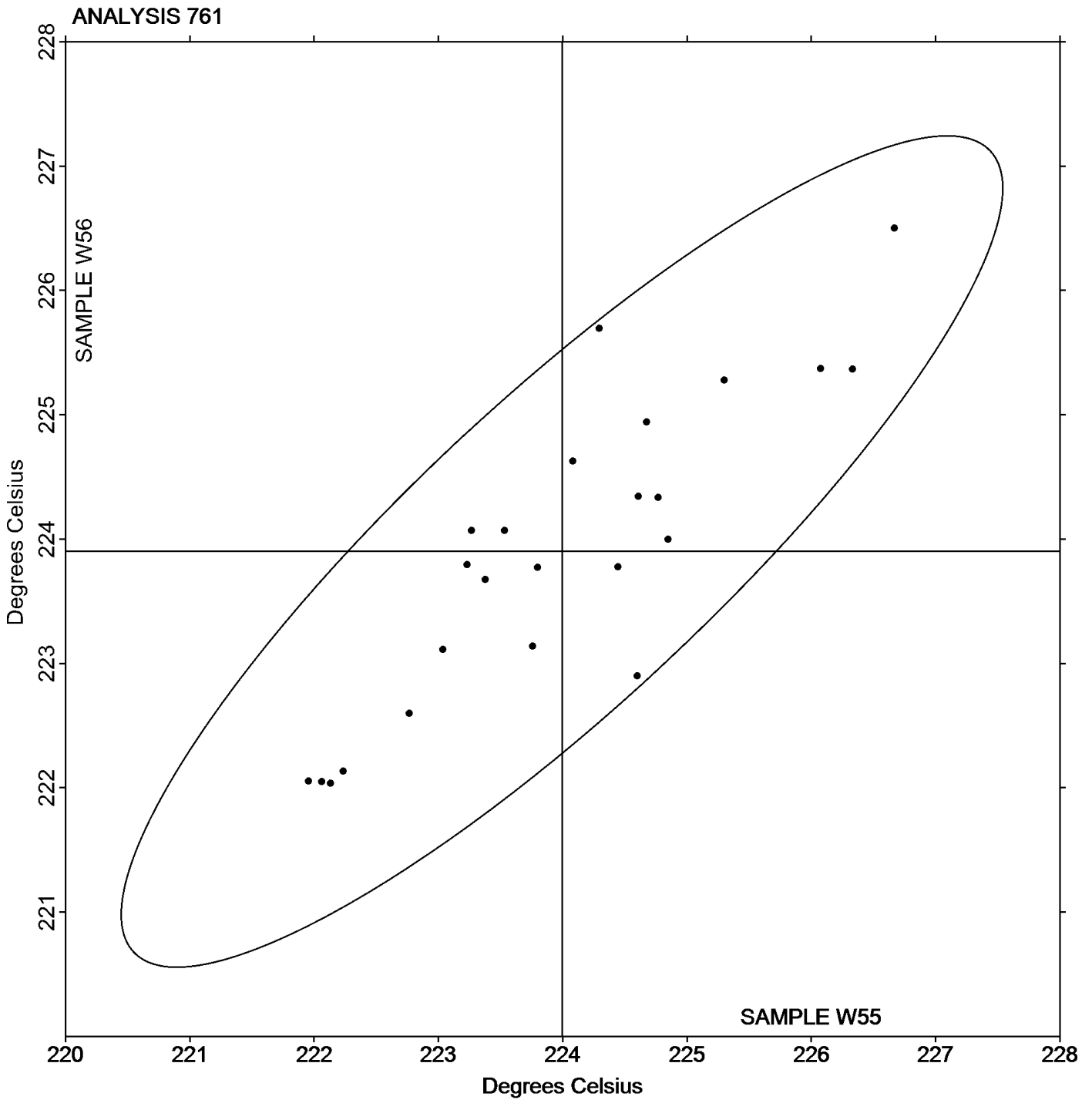
Plastics Interlaboratory Testing Program

Analysis 761 DSC Melt Temperature

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4th Qtr 2018

Grand Mean Sample W55: 223.99 Degrees Celsius Grand Mean Sample W56: 223.90 Degrees Celsius





Plastics Interlaboratory Testing Program

Report #108

Analysis 762

4th Qtr 2018

DSC Enthalpy of Crystallization

WebCode	Data Flag	Sample W55			Sample W56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KD7TW		49.80	2.12	0.41	53.00	5.89	0.98	TA
3E3RTT		51.80	4.12	0.79	52.57	5.46	0.91	TA
4Z3XTN		48.97	1.29	0.25	47.54	0.43	0.07	TA
7PDX6R		52.33	4.65	0.89	52.80	5.69	0.95	TA
8AVMT9		45.09	-2.59	-0.50	43.37	-3.74	-0.62	NZ
9KPC3V		39.10	-8.58	-1.64	35.71	-11.39	-1.90	TA
D2GU22		46.22	-1.46	-0.28	40.91	-6.19	-1.03	PE
LR9ZA6	*	40.20	-7.48	-1.43	48.73	1.63	0.27	XX
P6JKK9		52.11	4.43	0.85	50.41	3.30	0.55	TA
VRCRBH		57.30	9.62	1.84	57.15	10.04	1.67	TA
VW6V34		49.10	1.42	0.27	49.00	1.89	0.31	TA
VWA6HG		53.78	6.10	1.17	50.89	3.78	0.63	XX
WD9RY8		43.13	-4.55	-0.87	42.58	-4.53	-0.75	TA
X9GU9G		48.78	1.10	0.21	49.04	1.93	0.32	MT
ZC6498		42.64	-5.04	-0.97	41.42	-5.69	-0.95	TA
ZN3XMN		42.52	-5.16	-0.99	38.62	-8.49	-1.41	NZ

Summary Statistics

Grand Means

Sample W55

47.679 Joules Per Gram

Sample W56

47.108 Joules Per Gram

Std Dev Btwn Labs

5.219 Joules Per Gram

6.000 Joules Per Gram

Statistics based on 16 of 16 reporting participants

Sample W55: PBT & Sample W56: PBT

Key to Instrument Codes Reported by Participants

MT Mettler Toledo Instruments

NZ Netzsch Instruments

PE Perkins Elmer Instruments

TA TA Instruments

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

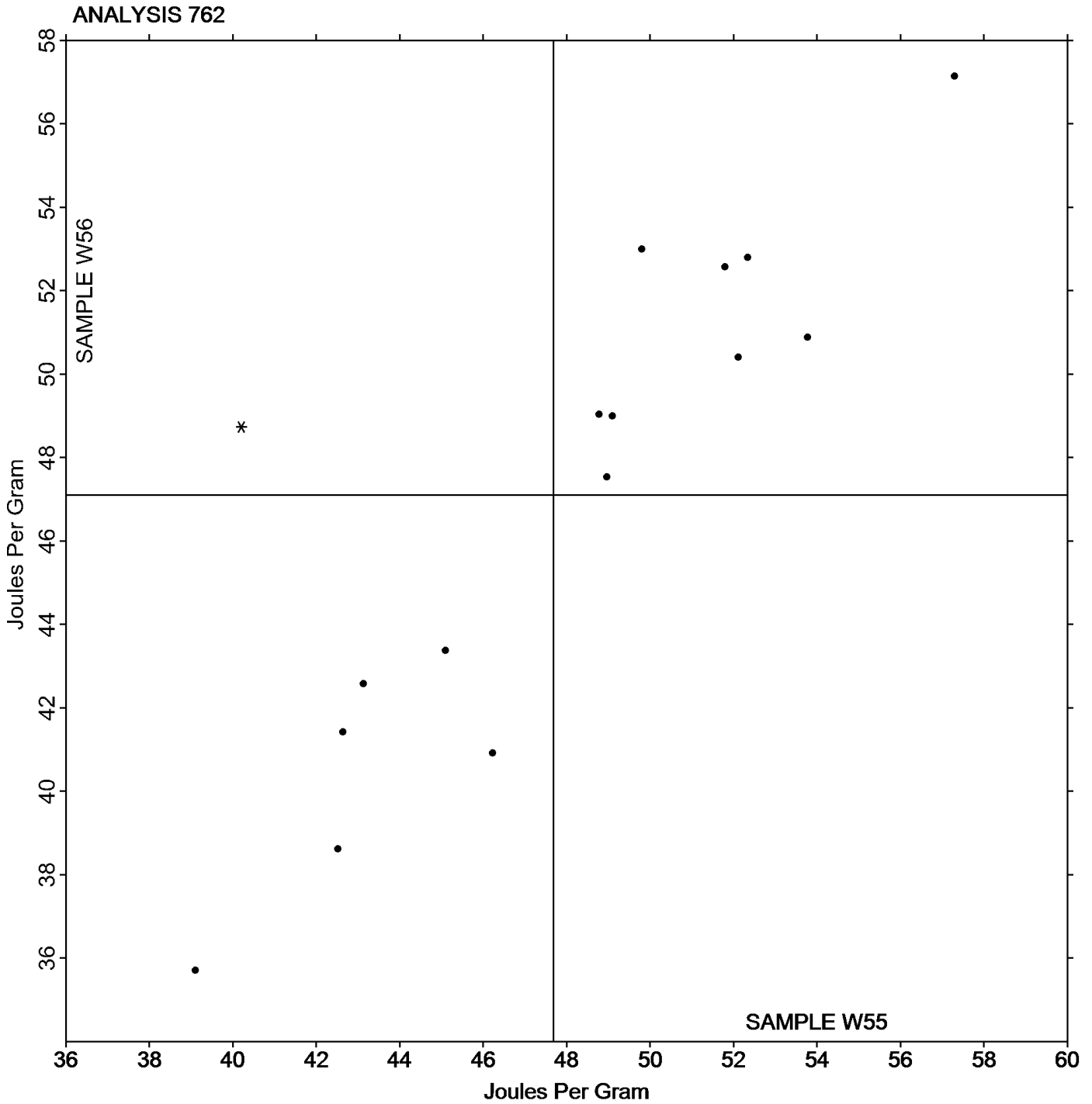
Analysis 762

DSC Enthalpy of Crystallization

Report #108

4th Qtr 2018

Grand Mean Sample W55: 47.679 Joules Per Gram Grand Mean Sample W56: 47.108 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 #108

Analysis 763

4th Qtr 2018

DSC Enthalpy of Fusion

WebCode	Data Flag	Sample W55			Sample W56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KD7TW		52.10	7.61	0.97	53.17	9.10	1.16	TA
3E3RTT		52.87	8.38	1.07	51.90	7.84	1.00	TA
4Z3XTN		47.36	2.87	0.37	47.13	3.07	0.39	TA
7PDX6R		56.40	11.91	1.52	56.83	12.77	1.63	TA
8AVMT9		35.13	-9.36	-1.19	36.52	-7.54	-0.96	NZ
9KPC3V		33.67	-10.82	-1.38	31.30	-12.76	-1.63	TA
D2GU22	*	43.83	-0.66	-0.08	36.27	-7.79	-0.99	PE
LR9ZA6		31.33	-13.15	-1.68	36.27	-7.80	-0.99	XX
P6JKK9		45.72	1.24	0.16	44.98	0.91	0.12	TA
VRCRBH		53.04	8.55	1.09	51.94	7.88	1.00	TA
VW6V34		47.76	3.27	0.42	49.04	4.97	0.63	TA
VWA6HG		47.58	3.09	0.39	45.09	1.03	0.13	XX
WD9RY8		44.63	0.14	0.02	44.82	0.76	0.10	TA
X9GU9G		48.80	4.31	0.55	49.05	4.99	0.64	MT
ZC6498		36.13	-8.36	-1.07	35.87	-8.19	-1.04	TA
ZN3XMN		35.44	-9.05	-1.15	34.83	-9.23	-1.18	NZ

Summary Statistics		
	Sample W55	Sample W56
Grand Means	44.486 Joules Per Gram	44.064 Joules Per Gram
Stnd Dev Btwn Labs	7.838 Joules Per Gram	7.851 Joules Per Gram
Statistics based on 16 of 16 reporting participants		

Sample W55: PBT & Sample W56: PBT

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

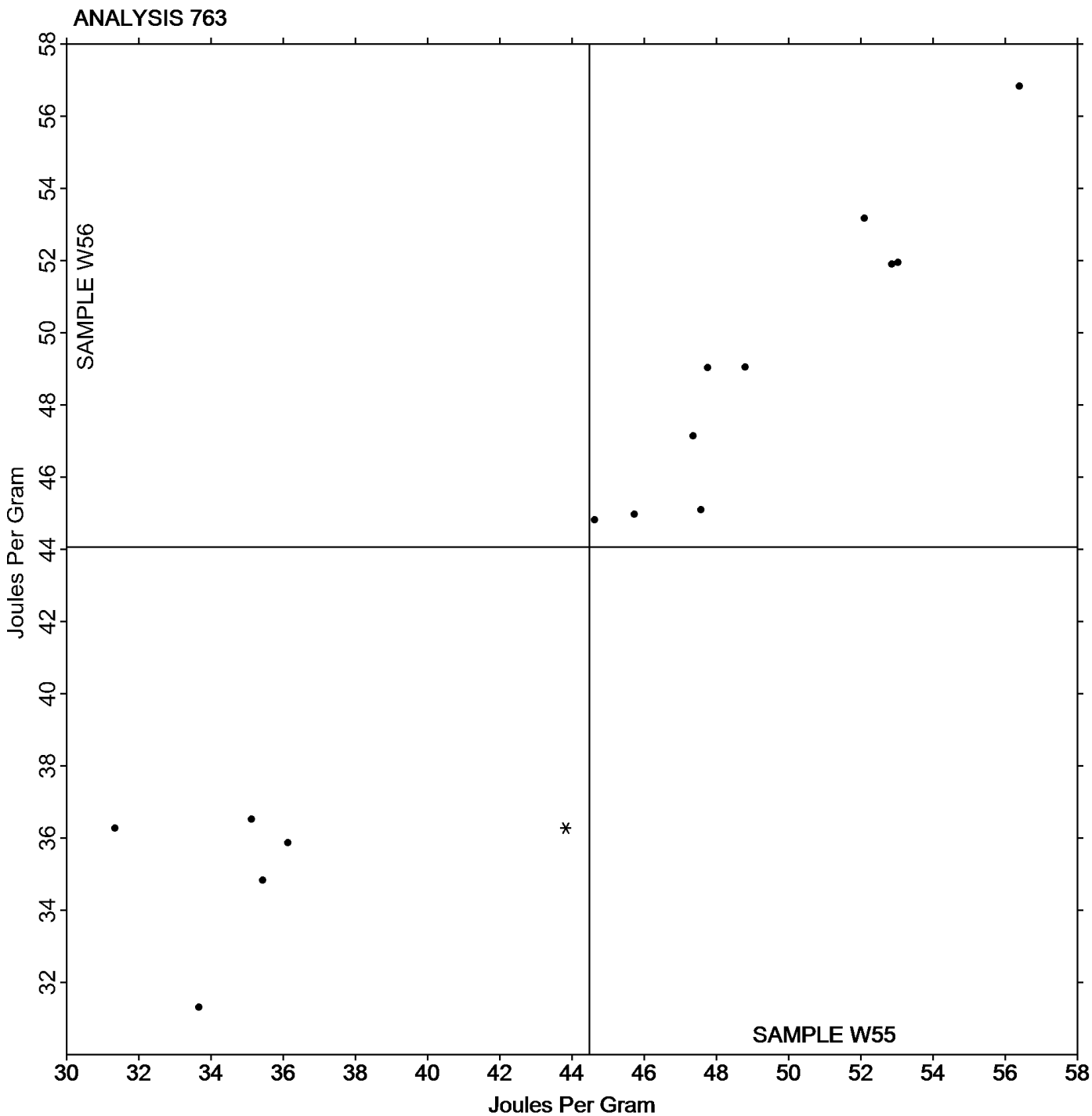
Analysis 763

DSC Enthalpy of Fusion

Report #108

4th Qtr 2018

Grand Mean Sample W55: 44.486 Joules Per Gram Grand Mean Sample W56: 44.064 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 #108

Analysis 764

4th Qtr 2018

DSC Glass Transition Temperature

WebCode	Data Flag	Sample V55			Sample V56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KD7TW		103.93	-2.61	-1.14	104.60	-1.94	-1.13	TA
3E3RTT		109.03	2.49	1.09	108.00	1.46	0.85	TA
4Z3XTN		107.73	1.19	0.52	107.20	0.66	0.38	TA
7PDX6R		103.73	-2.81	-1.23	104.97	-1.58	-0.92	TA
8AVMT9	*	112.50	5.95	2.60	109.70	3.16	1.84	NZ
9KPC3V		106.11	-0.44	-0.19	106.54	-0.01	0.00	TA
D2GU22		107.60	1.05	0.46	107.97	1.42	0.83	PE
HLXDAY		108.53	1.99	0.87	108.89	2.34	1.37	MT
LKR8GU		105.08	-1.46	-0.64	106.06	-0.48	-0.28	PE
LR9ZA6		106.97	0.42	0.18	106.80	0.26	0.15	XX
P6JKK9		105.64	-0.90	-0.39	104.68	-1.86	-1.08	TA
RXQWK3		106.58	0.03	0.01	106.64	0.09	0.05	MT
VRCRBH		104.52	-2.02	-0.88	104.39	-2.15	-1.25	TA
VW6V34		103.89	-2.65	-1.16	104.53	-2.02	-1.17	TA
VWA6HG		106.70	0.15	0.07	106.73	0.18	0.11	XX
X9GU9G		104.56	-1.99	-0.87	104.74	-1.80	-1.05	MT
ZC6498	X	-79.53	-186.08	-81.27	-79.38	-185.92	-108.31	TA
ZN3XMN		108.17	1.62	0.71	108.80	2.26	1.32	NZ

Summary Statistics		
	Sample V55	Sample V56
Grand Means	106.546 Degrees Celsius	106.542 Degrees Celsius
Std Dev Btwn Labs	2.290 Degrees Celsius	1.717 Degrees Celsius
Statistics based on 17 of 18 reporting participants		

Sample V55: ABS & Sample V56: ABS

Comments on Assigned Data Flags for Test #764

ZC6498 (X) - Extreme data.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

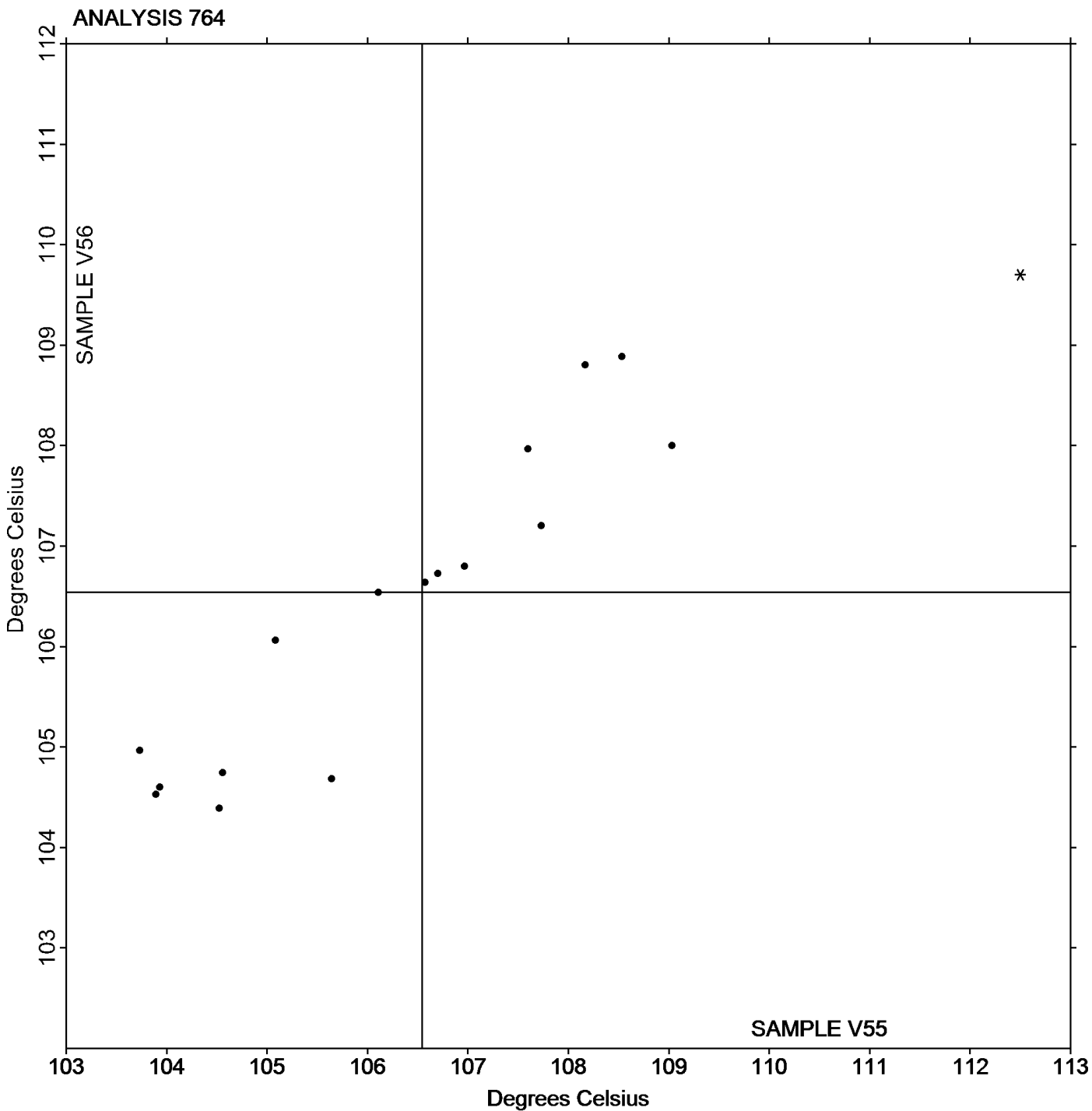
Analysis 764

DSC Glass Transition Temperature

Report #108

4th Qtr 2018

Grand Mean Sample V55: 106.55 Degrees Celsius Grand Mean Sample V56: 106.54 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 #108

Analysis 770

4th Qtr 2018

Tensile Stress at Yield, Film Samples - psi

WebCode	Data Flag	Sample B55			Sample B56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6NZ227		1,823	-460	-0.95	1,803	-566	-1.09	WZ
8AVMT9		2,388	105	0.22	2,512	144	0.28	IN
9PJFVK		2,289	6	0.01	2,421	52	0.10	SH
9XURNQ	X	4	-2,279	-4.73	4	-2,364	-4.55	IN
A8X6HY	X	5	-2,278	-4.73	4	-2,364	-4.55	XX
BNY7VX	X	4	-2,279	-4.73	4	-2,365	-4.55	XX
CKUZTW	X	5	-2,278	-4.73	5	-2,364	-4.55	XX
DPMKAL	X	5	-2,278	-4.73	4	-2,364	-4.55	XX
G27839	*	2,523	240	0.50	2,906	538	1.03	IN
G3M4WT		3,462	1,179	2.45	3,540	1,172	2.25	IN
HWTPKR		1,990	-293	-0.61	2,146	-223	-0.43	IN
K9BDYN	X	4	-2,279	-4.73	4	-2,364	-4.55	XX
KLPD3U		2,271	-12	-0.02	2,506	138	0.26	OA
MDZLKR		2,373	90	0.19	2,489	121	0.23	IN
P3AQAH		2,546	263	0.55	2,534	166	0.32	LI
P7DF2P		2,391	108	0.22	2,454	85	0.16	IN
PLN2KG		2,537	254	0.53	2,589	220	0.42	IM
RKKFL8	X	3,098	815	1.69	2,487	118	0.23	MT
RKN644		2,370	87	0.18	2,406	38	0.07	IN
RMPRJ9	X	4	-2,278	-4.73	4	-2,364	-4.55	XX
TK2R2P		2,422	139	0.29	2,408	39	0.08	MT
UCKLH6	X	4	-2,279	-4.73	4	-2,364	-4.55	XX
UGJT8A		2,405	122	0.25	2,497	128	0.25	IN
UJ6T3G		1,631	-652	-1.35	1,753	-615	-1.18	TO
V67YFE		1,542	-741	-1.54	1,531	-837	-1.61	IN
X2RAW3	X	4	-2,279	-4.73	5	-2,364	-4.55	IR
YAYJK8		3,026	743	1.54	3,155	786	1.51	XX
Z48JXY	X	4	-2,279	-4.73	4	-2,364	-4.55	XX
ZM98JV		1,622	-661	-1.37	1,586	-783	-1.51	IN
ZNTDMZ		1,767	-516	-1.07	1,766	-602	-1.16	IN



Plastics Interlaboratory Testing Program

Report #108

Analysis 770

4th Qtr 2018

Tensile Stress at Yield, Film Samples - psi

Summary Statistics		
	<u>Sample B55</u>	<u>Sample B56</u>
Grand Means	2,283.0 psi	2,368.6 psi
Std Dev Btwn Labs	482.0 psi	519.9 psi
Statistics based on 19 of 30 reporting participants		

Sample B55: LDPE & Sample B56: LDPE

Comments on Assigned Data Flags for Test #770

- RKKFL8 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample B55.
- X2RAW3 (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- 9XURNQ (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- UCKLH6 (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- RMPRJ9 (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- Z48JXY (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- DPMKAL (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- A8X6HY (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- K9BDYN (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- CKUZTW (X) - Extreme data. Lab may have used incorrect units not used by CTS.
- BNY7VX (X) - Extreme data. Lab may have used incorrect units not used by CTS.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

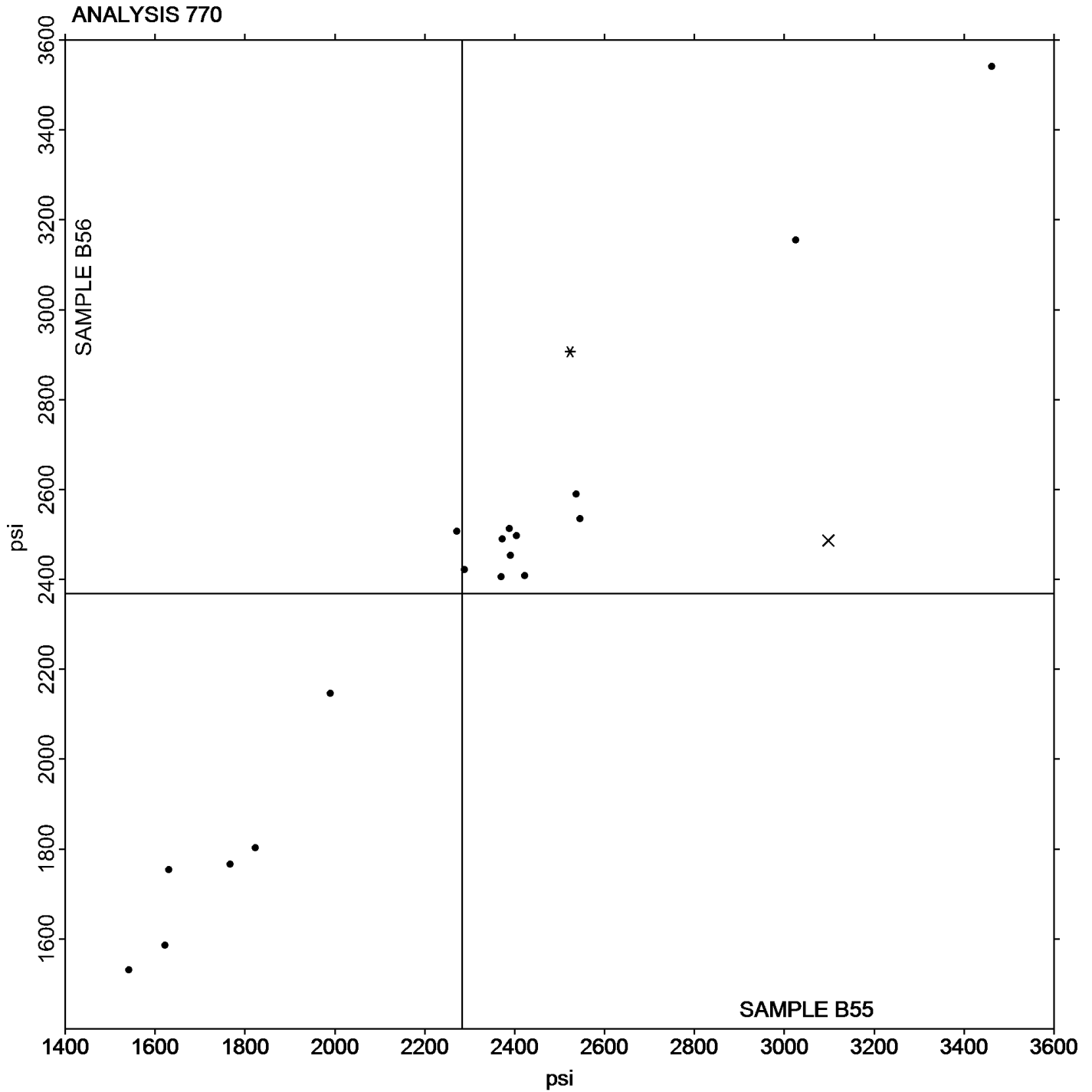
Analysis 770

Tensile Stress at Yield, Film Samples - psi

Report #108

4th Qtr 2018

Grand Mean Sample B55: 2,282.96 psi Grand Mean Sample B56: 2,368.60 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 #108

Analysis 771

4th Qtr 2018

Tensile Stress at Break, Film Samples - psi

WebCode	Data Flag	Sample B55			Sample B56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6NZ227		3,278	-236	-0.76	3,665	-28	-0.07	WZ
8AVMT9		3,733	219	0.71	4,052	359	0.86	IN
9KPC3V	*	3,681	168	0.54	4,909	1,217	2.90	SH
9PJFVK		3,328	-185	-0.60	3,385	-307	-0.73	SH
G27839		3,710	196	0.64	3,723	30	0.07	IN
G3M4WT		3,452	-61	-0.20	3,512	-181	-0.43	IN
HVLACZ		2,876	-637	-2.06	3,336	-357	-0.85	IN
HWTPKR		3,371	-142	-0.46	3,685	-8	-0.02	IN
KLPD3U		3,419	-95	-0.31	3,740	47	0.11	OA
MDZLKR		3,701	187	0.61	3,983	291	0.69	IN
P3AQAH		4,089	576	1.86	3,704	11	0.03	LI
P7DF2P		3,725	211	0.68	3,738	46	0.11	IN
PLN2KG		3,784	270	0.88	3,856	163	0.39	IM
RKKFL8		3,715	201	0.65	4,146	453	1.08	MT
RKN644		3,637	123	0.40	3,504	-188	-0.45	IN
TK2R2P		3,191	-323	-1.05	3,249	-444	-1.06	MT
UGJT8A		3,724	211	0.68	3,970	277	0.66	IN
UJ6T3G	X	1,612	-1,902	-6.16	1,754	-1,939	-4.63	TO
V67YFE		3,206	-307	-1.00	3,194	-498	-1.19	IN
YAYJK8		2,854	-659	-2.14	2,836	-857	-2.05	UC
ZM98JV		3,605	92	0.30	3,555	-137	-0.33	IN
ZNTDMZ		3,705	192	0.62	3,804	111	0.26	IN

Summary Statistics		
	Sample B55	Sample B56
Grand Means	3,513.5 psi	3,692.6 psi
Std Dev Btwn Labs	308.7 psi	418.9 psi
Statistics based on 21 of 22 reporting participants		

Sample B55: LDPE & Sample B56: LDPE

Comments on Assigned Data Flags for Test #771

UJ6T3G (X) - Data for both samples are low.



Plastics Interlaboratory Testing Program

Analysis 771

Tensile Stress at Break, Film Samples - psi

Report #108

4th Qtr 2018

Key to Instrument Codes Reported by Participants

IM Instru-Met Instruments

LI Lloyd Instruments

OA Oakland Testing

TO Tinius Olsen

WZ Zwick

IN Instron

MT MTS/Sintech

SH Shimadzu

UC United



Plastics Interlaboratory Testing Program

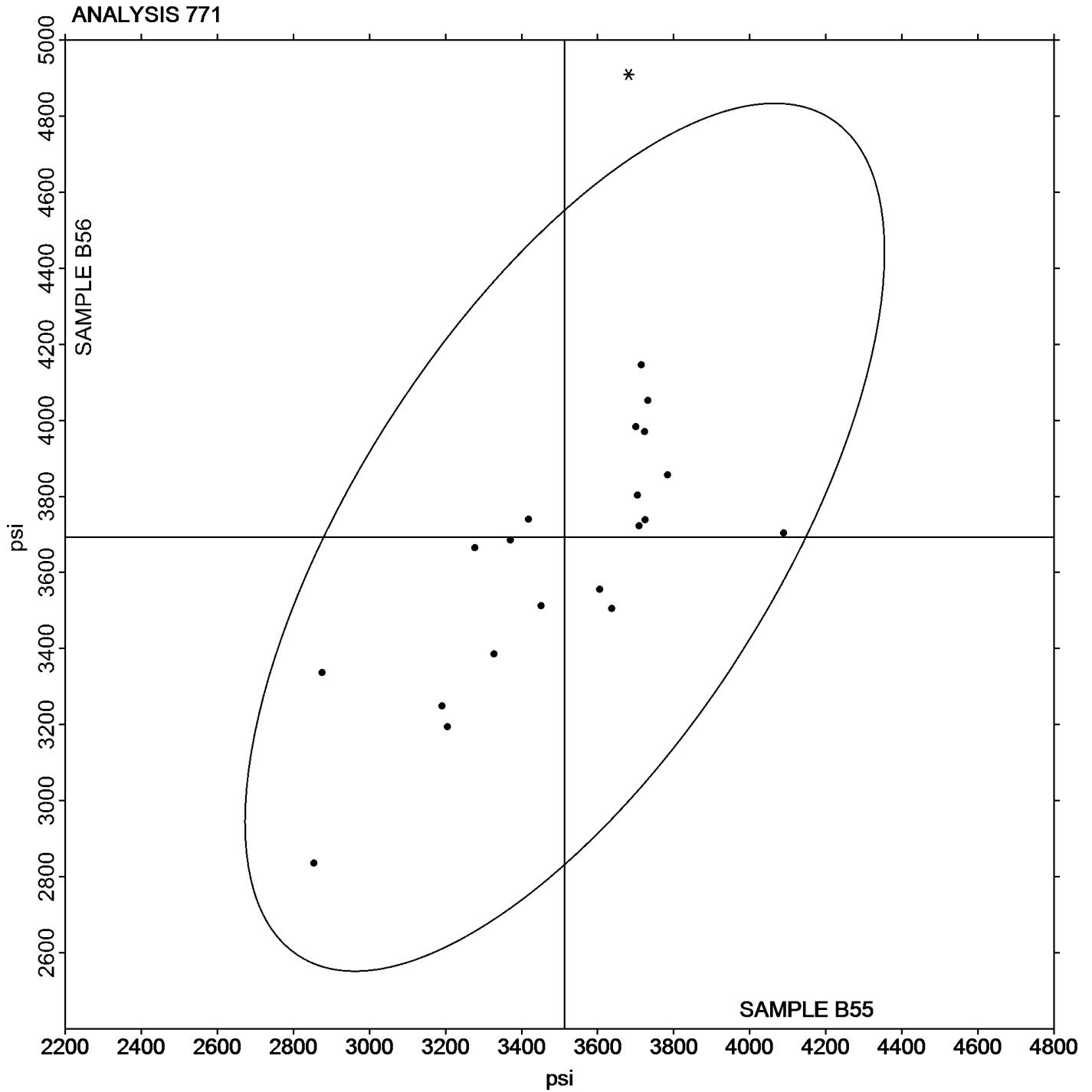
Analysis 771

Tensile Stress at Break, Film Samples - psi

Report #108

4th Qtr 2018

Grand Mean Sample B55: 3,513.53 psi Grand Mean Sample B56: 3,692.65 psi





Plastics Interlaboratory Testing Program

Report #108

Analysis 772

4th Qtr 2018

Percent Elongation at Yield, Films

WebCode	Data Flag	Sample B55			Sample B56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6NZ227		32.81	-48.15	-0.86	33.34	-51.75	-0.98	WZ
8AVMT9		86.66	5.70	0.10	88.67	3.58	0.07	IN
9PJFVK		98.76	17.79	0.32	116.86	31.77	0.60	SH
G27839		104.87	23.91	0.43	115.53	30.44	0.58	IN
G3M4WT	X	620.48	539.52	9.68	609.74	524.65	9.95	IN
HWTPKR		93.72	12.75	0.23	102.17	17.08	0.32	IN
MDZLKR		88.11	7.15	0.13	92.19	7.10	0.13	IN
P3AQAH		97.06	16.10	0.29	109.01	23.92	0.45	LI
P7DF2P		85.19	4.23	0.08	90.24	5.15	0.10	IN
PLN2KG		103.87	22.91	0.41	106.13	21.04	0.40	IM
RKKFL8	X	377.23	296.27	5.31	116.50	31.41	0.60	MT
RKN644		81.38	0.42	0.01	97.53	12.44	0.24	IN
TK2R2P		67.69	-13.27	-0.24	74.82	-10.27	-0.19	MT
UGJT8A		74.86	-6.10	-0.11	80.02	-5.07	-0.10	IN
UJ6T3G	*	246.83	165.87	2.97	222.30	137.21	2.60	TO
V67YFE		8.62	-72.35	-1.30	8.29	-76.80	-1.46	IN
ZM98JV		7.85	-73.11	-1.31	7.53	-77.56	-1.47	IN
ZNTDMZ		17.16	-63.80	-1.14	16.80	-68.29	-1.30	IN

Summary Statistics

	Sample B55	Sample B56
Grand Means	80.965 Percent	85.090 Percent
Std Dev Btwn Labs	55.755 Percent	52.726 Percent

Statistics based on 16 of 18 reporting participants

Sample B55: LDPE & Sample B56: LDPE

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

Comments on Assigned Data Flags for Test #772

RKKFL8 (X) - Data for sample B55 are high. Inconsistent within the determinations of sample B55.

G3M4WT (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

Key to Instrument Codes Reported by Participants

IM Instru-Met Instruments	IN Instron
LI Lloyd Instruments	MT MTS/Sintech
SH Shimadzu	TO Tinius Olsen
WZ Zwick	



Plastics Interlaboratory Testing Program

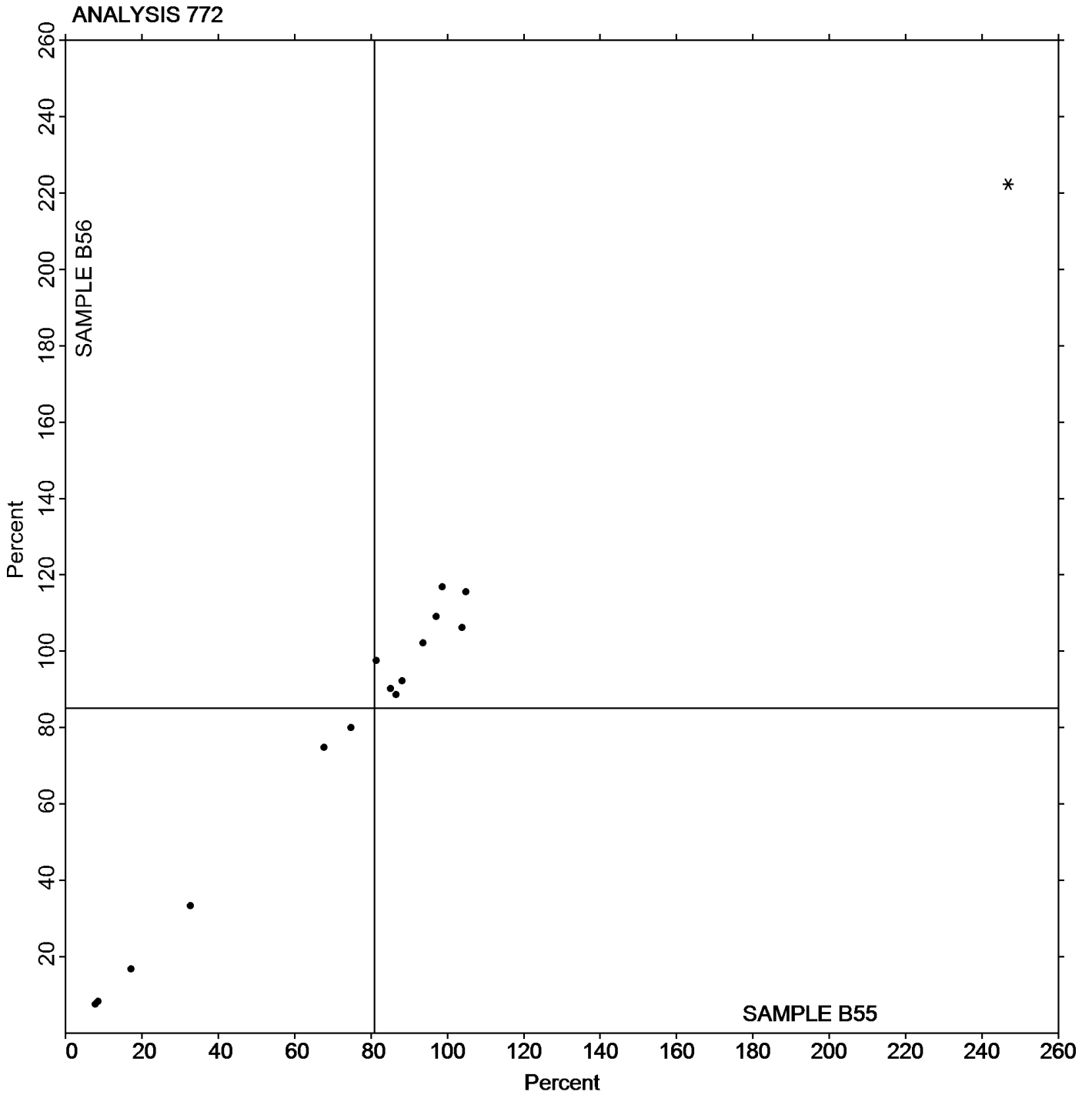
Report #108

Analysis 772

4th Qtr 2018

Percent Elongation at Yield, Films

Grand Mean Sample B55: 80.965 Percent Grand Mean Sample B56: 85.090 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 #108

Analysis 773

4th Qtr 2018

Percent Elongation at Break, Film Samples

WebCode	Data Flag	Sample B55			Sample B56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6NZ227		667.0	73.4	0.62	751.0	144.6	1.09	WZ
8AVMT9		537.0	-56.7	-0.48	555.9	-50.5	-0.38	IN
9KPC3V		805.9	212.3	1.78	887.6	281.2	2.12	SH
9PJFVK		596.5	2.9	0.02	570.8	-35.7	-0.27	SH
G27839		590.5	-3.1	-0.03	578.3	-28.1	-0.21	IN
G3M4WT		621.1	27.5	0.23	612.2	5.8	0.04	IN
HVLACZ		647.4	53.8	0.45	703.5	97.0	0.73	IN
HWTPKR		627.0	33.4	0.28	657.8	51.3	0.39	IN
KLPD3U		677.4	83.7	0.70	663.0	56.5	0.43	OA
MDZLKR		524.9	-68.7	-0.58	555.0	-51.5	-0.39	IN
P3AQAH		752.4	158.8	1.33	648.1	41.7	0.31	LI
P7DF2P		539.8	-53.8	-0.45	542.0	-64.5	-0.49	IN
PLN2KG		624.2	30.6	0.26	640.6	34.2	0.26	IM
RKKFL8		650.0	56.4	0.47	789.5	183.1	1.38	MT
RKN644		725.7	132.1	1.11	688.4	82.0	0.62	IN
TK2R2P		457.2	-136.4	-1.14	515.8	-90.6	-0.68	MT
UGJT8A		499.5	-94.1	-0.79	520.1	-86.3	-0.65	IN
UJ6T3G	*	254.6	-339.0	-2.85	246.0	-360.4	-2.72	TO
V67YFE		512.4	-81.2	-0.68	481.4	-125.0	-0.94	IN
ZM98JV		492.3	-101.3	-0.85	470.4	-136.0	-1.02	IN
ZNTDMZ		663.2	69.6	0.58	657.8	51.4	0.39	IN

Summary Statistics		
	Sample B55	Sample B56
Grand Means	593.62 Percent	606.43 Percent
Std Dev Btwn Labs	119.16 Percent	132.69 Percent

Statistics based on 21 of 21 reporting participants

Sample B55: LDPE & Sample B56: LDPE

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

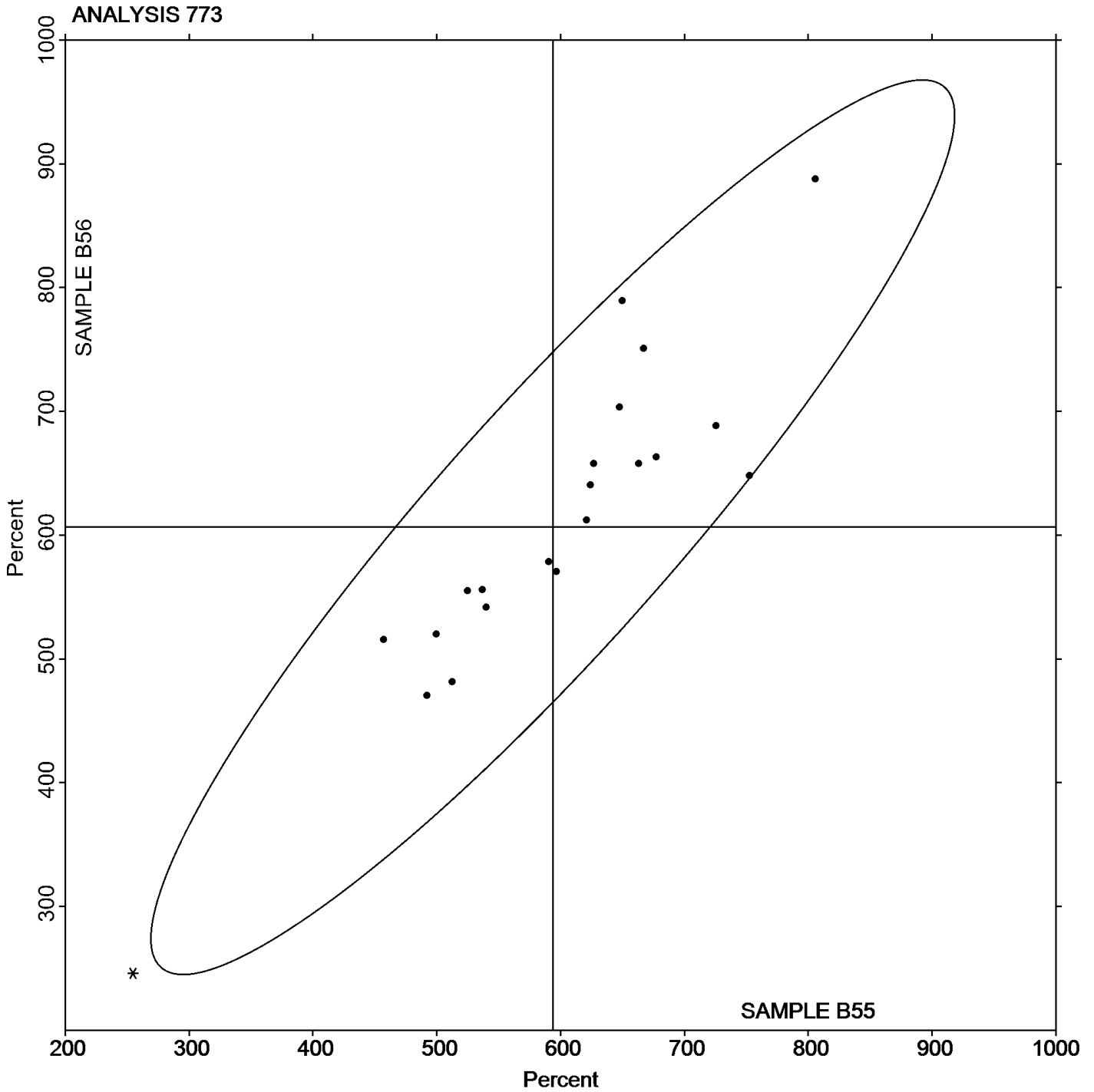
Report #108

Analysis 773

4th Qtr 2018

Percent Elongation at Break, Film Samples

Grand Mean Sample B55: 593.62 Percent Grand Mean Sample B56: 606.43 Percent





Plastics Interlaboratory Testing Program

Report #108

Analysis 774

4th Qtr 2018

Thickness of Film Tensile Samples - mils

WebCode	Data Flag	Sample B55			Sample B56		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
6NZ227		2.9725	0.0363	0.34	3.0646	0.0706	0.73
8AVMT9		2.9920	0.0558	0.52	2.9620	-0.0321	-0.33
9KPC3V	X	2.9094	-0.0268	-0.25	2.3701	-0.6240	-6.46
9PJFVK		2.9323	-0.0039	-0.04	2.9292	-0.0649	-0.67
G27839		2.8650	-0.0712	-0.66	2.8810	-0.1131	-1.17
G3M4WT		2.8937	-0.0425	-0.39	2.9528	-0.0413	-0.43
HVLACZ		2.9252	-0.0110	-0.10	2.9055	-0.0885	-0.92
HWTPKR		2.9660	0.0298	0.28	2.8610	-0.1331	-1.38
KLPD3U	*	3.0780	0.1418	1.31	2.8220	-0.1721	-1.78
MDZLKR		2.9790	0.0428	0.40	3.0230	0.0289	0.30
P3AQAH		2.7989	-0.1374	-1.27	3.0001	0.0060	0.06
P7DF2P		2.9750	0.0388	0.36	3.0900	0.0959	0.99
PLN2KG		2.8280	-0.1082	-1.00	3.0300	0.0359	0.37
RKKFL8		2.6810	-0.2552	-2.36	2.9790	-0.0151	-0.16
RKN644		3.0050	0.0688	0.64	3.1600	0.1659	1.72
TK2R2P		2.8800	-0.0562	-0.52	3.0900	0.0959	0.99
UGJT8A		2.9020	-0.0342	-0.32	2.9640	-0.0301	-0.31
UJ6T3G		3.1182	0.1819	1.68	3.0827	0.0887	0.92
V67YFE		3.1570	0.2208	2.04	3.2110	0.2169	2.25
YAYJK8		2.8500	-0.0862	-0.80	2.8900	-0.1041	-1.08
YM7AMF		3.0240	0.0878	0.81	2.9870	-0.0071	-0.07
YTC77F		2.8540	-0.0822	-0.76	3.0010	0.0069	0.07
ZM98JV		2.8465	-0.0897	-0.83	2.9174	-0.0767	-0.79
ZNTDMZ		3.0100	0.0738	0.68	3.0600	0.0659	0.68

Summary Statistics		
	Sample B55	Sample B56
Grand Means	2.93623 mils	2.99405 mils
Stnd Dev Btwn Labs	0.10825 mils	0.09657 mils
Statistics based on 23 of 24 reporting participants		

Sample B55: LDPE & Sample B56: LDPE

Comments on Assigned Data Flags for Test #774

9KPC3V (X) - Data for sample B56 are low.



Plastics Interlaboratory Testing Program

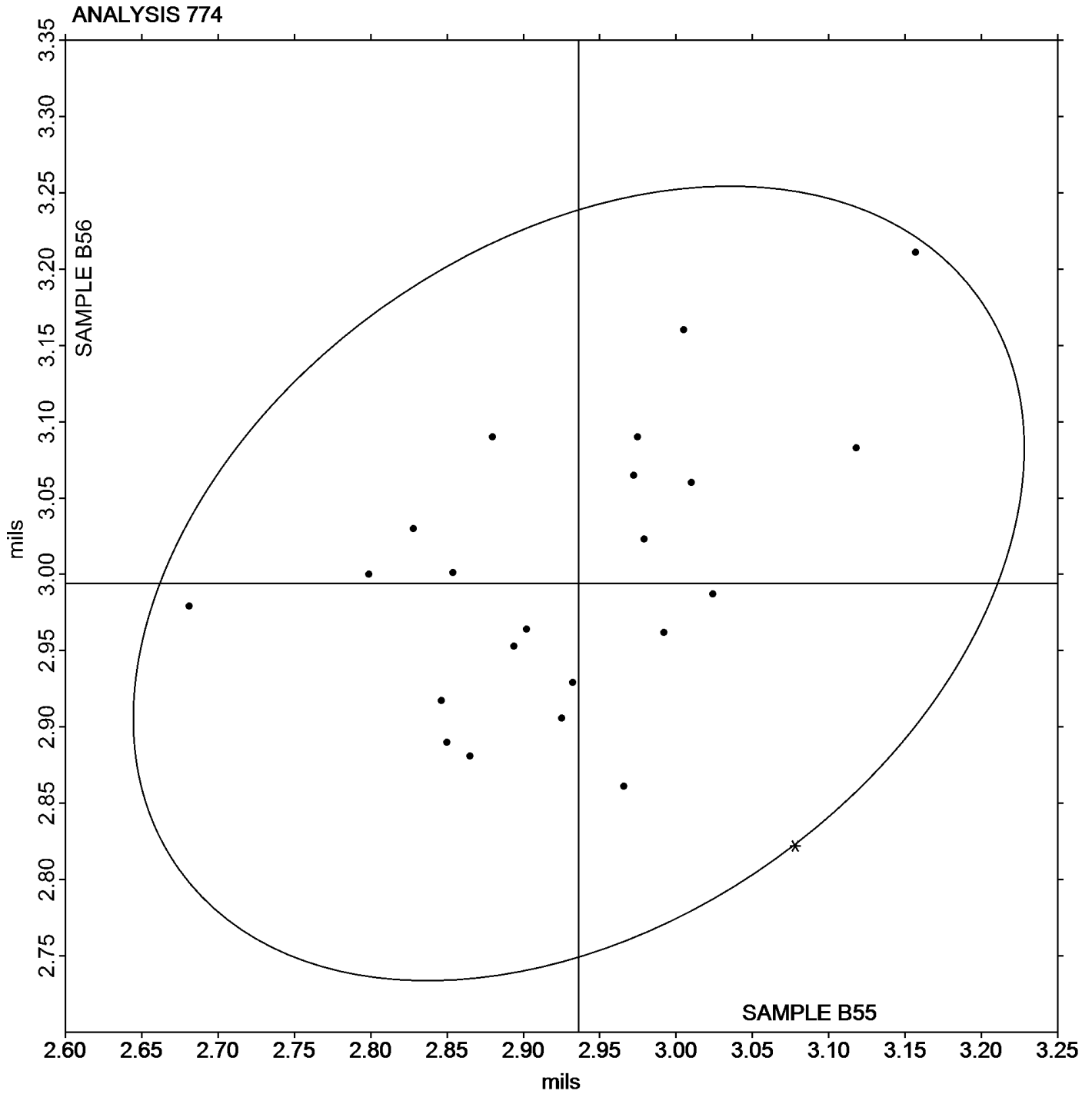
Report #108

Analysis 774

4th Qtr 2018

Thickness of Film Tensile Samples - mils

Grand Mean Sample B55: 2.9362 mils Grand Mean Sample B56: 2.9941 mils





Plastics Interlaboratory Testing Program

Report #108

Analysis 775

4th Qtr 2018

Secant Modulus at 1% Strain - psi

WebCode	Data Flag	Sample B55			Sample B56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6NZ227		34,084	3,940	0.69	32,576	2,338	0.45	WZ
8AVMT9		32,837	2,693	0.47	34,785	4,547	0.87	IN
9PJFVK	X	51,540	21,396	3.77	34,459	4,221	0.81	SH
G3M4WT		20,845	-9,299	-1.64	21,359	-8,879	-1.71	IN
HVLACZ		20,810	-9,334	-1.64	22,112	-8,125	-1.56	IN
HWTPKR		24,755	-5,388	-0.95	24,772	-5,465	-1.05	IN
KLPD3U		33,704	3,560	0.63	32,657	2,420	0.47	OA
MDZLKR		30,645	501	0.09	30,956	718	0.14	IN
P3AQAH		32,312	2,168	0.38	32,221	1,984	0.38	LI
P7DF2P		31,635	1,492	0.26	29,297	-941	-0.18	IN
PLN2KG		38,610	8,466	1.49	37,946	7,709	1.48	IM
RKKFL8		33,123	2,979	0.52	33,147	2,909	0.56	MT
TK2R2P		33,169	3,025	0.53	32,648	2,410	0.46	MT
UGJT8A		32,665	2,521	0.44	33,194	2,956	0.57	IN
UJ6T3G		18,603	-11,541	-2.03	20,373	-9,864	-1.90	TO
V67YFE		32,367	2,223	0.39	33,092	2,855	0.55	MT
ZNTDMZ		32,137	1,993	0.35	32,666	2,429	0.47	IN

Summary Statistics		Sample B55	Sample B56
Grand Means		30,143.7 psi	30,237.5 psi
Std Dev Btwn Labs		5,677.0 psi	5,201.6 psi
Statistics based on 16 of 17 reporting participants			

Sample B55: LDPE & Sample B56: LDPE

Comments on Assigned Data Flags for Test #775

9PJFVK (X) - Data for sample B55 are high. Inconsistent within the determinations of sample B55.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

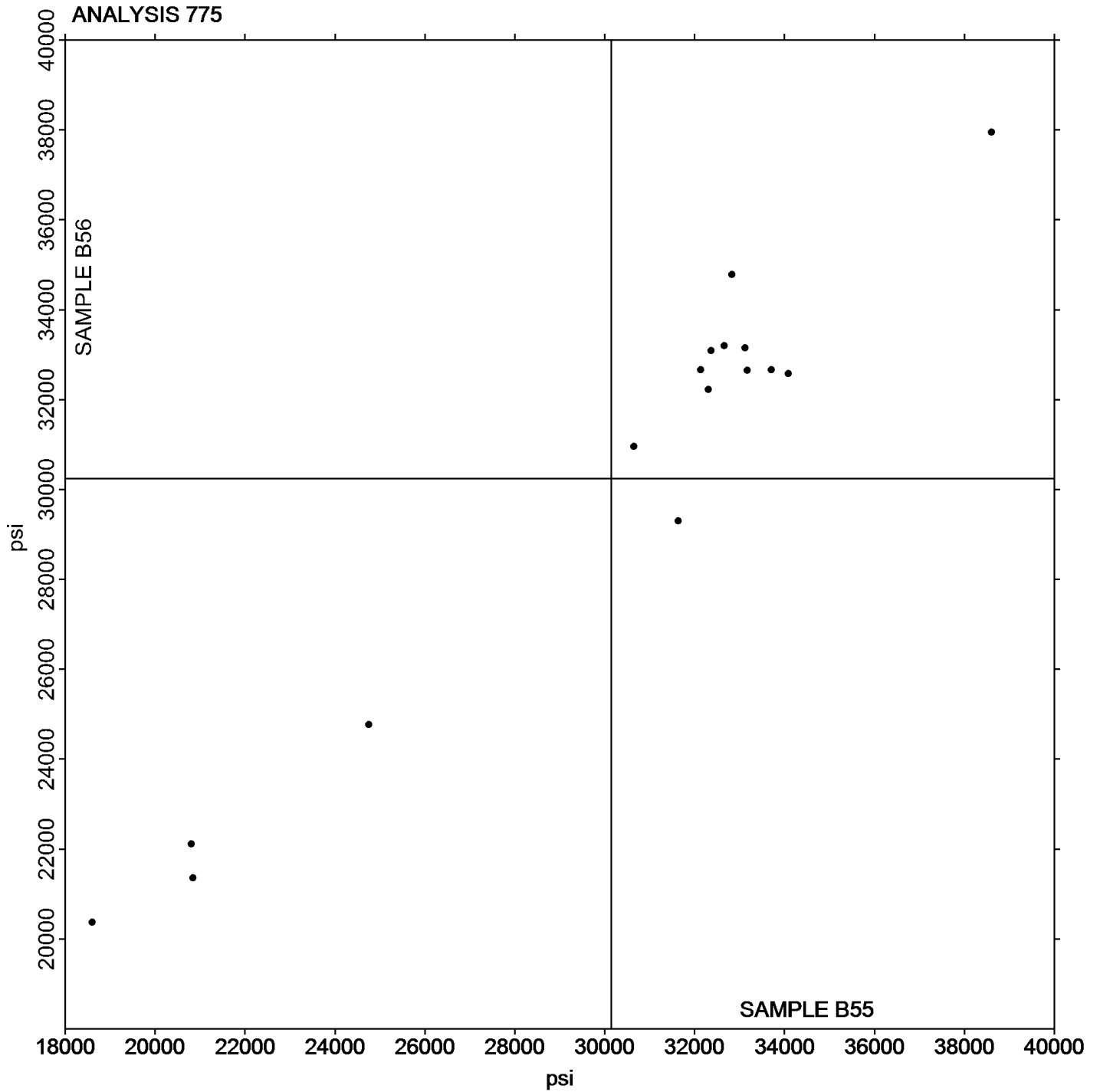
Report #108

Analysis 775

4th Qtr 2018

Secant Modulus at 1% Strain - psi

Grand Mean Sample B55: 30,143.71 psi Grand Mean Sample B56: 30,237.49 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 #108

Analysis 776

4th Qtr 2018

Secant Modulus at 2% Strain - psi

WebCode	Data Flag	Sample B55			Sample B56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
8AVMT9		28,061	207	0.02	30,026	3,092	0.63	IN
9PJFVK	*	56,034	28,180	3.11	37,319	10,386	2.11	SH
G3M4WT		21,743	-6,111	-0.68	21,849	-5,084	-1.03	IN
HVLACZ		22,658	-5,196	-0.57	24,266	-2,667	-0.54	IN
HWTPKR		20,334	-7,520	-0.83	20,383	-6,550	-1.33	IN
MDZLKR		27,240	-614	-0.07	27,533	600	0.12	IN
P3AQAH		27,933	79	0.01	28,064	1,131	0.23	LI
P7DF2P		28,103	249	0.03	26,133	-800	-0.16	IN
PLN2KG		28,592	738	0.08	29,097	2,164	0.44	IM
RKKFL8		28,388	534	0.06	28,276	1,343	0.27	MT
TK2R2P		28,654	800	0.09	29,112	2,179	0.44	MT
UJ6T3G		15,744	-12,110	-1.34	16,922	-10,012	-2.03	TO
V67YFE		28,618	764	0.08	29,498	2,565	0.52	MT
ZNTDMZ		27,854	0	0.00	28,585	1,652	0.33	IN

Summary Statistics		
	Sample B55	Sample B56
Grand Means	27,854.0 psi	26,933.0 psi
Stnd Dev Btwn Labs	9,047.5 psi	4,933.0 psi
Statistics based on 14 of 14 reporting participants		

Sample B55: LDPE & Sample B56: LDPE

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

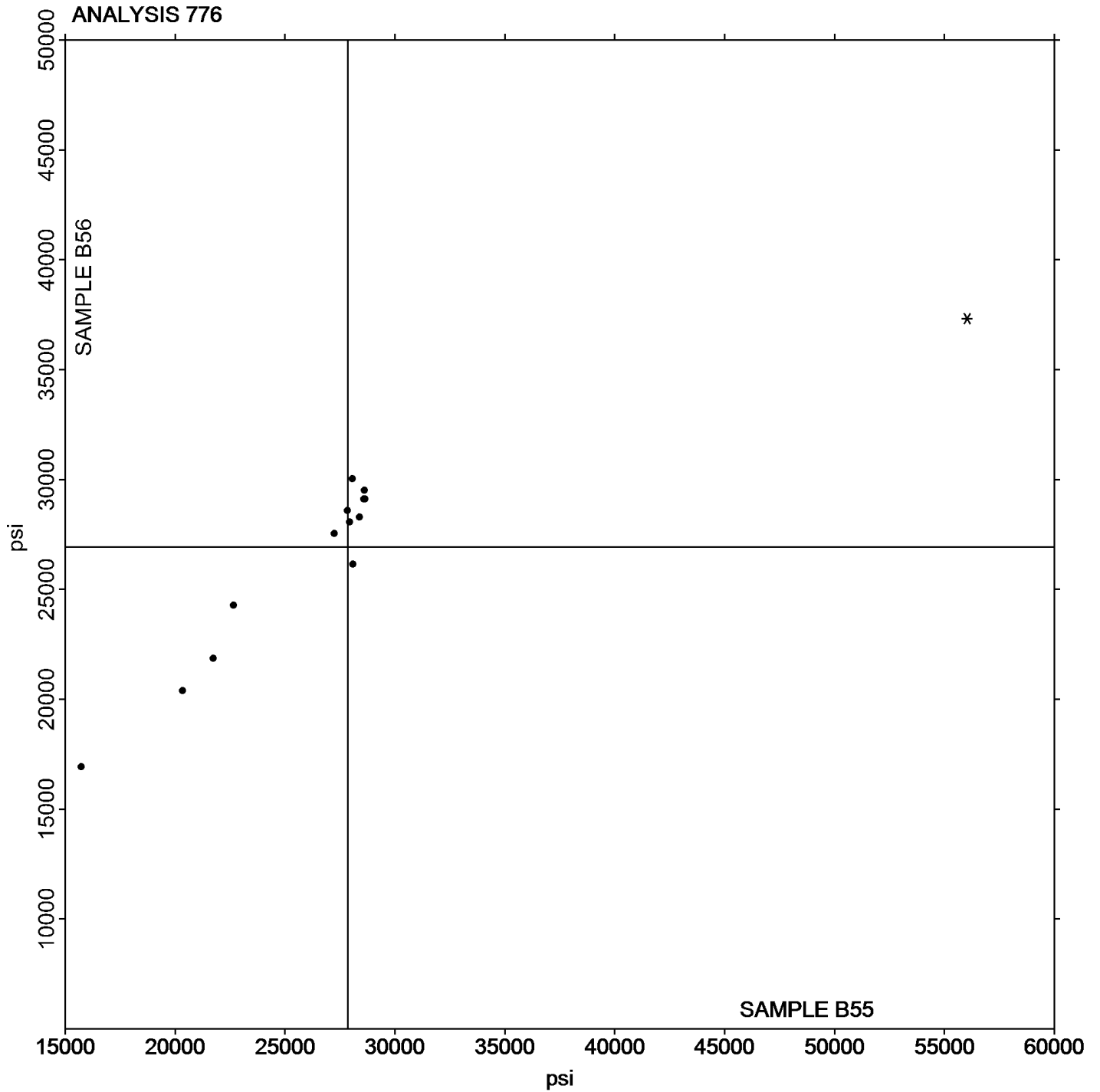
Report #108

Analysis 776

4th Qtr 2018

Secant Modulus at 2% Strain - psi

Grand Mean Sample B55: 27,853.98 psi Grand Mean Sample B56: 26,933.00 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 #108

Analysis 780

4th Qtr 2018

Coefficient of Static Friction

WebCode	Data Flag	Sample P55			Sample P56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3UXYHY		0.1758	-0.0236	-0.35	0.1646	-0.0265	-0.38	IG
6DLZQ8		0.1820	-0.0174	-0.26	0.1496	-0.0415	-0.59	IG
6NZ227		0.1450	-0.0544	-0.80	0.1546	-0.0365	-0.52	TH
8AVMT9		0.1080	-0.0914	-1.34	0.1220	-0.0691	-0.98	TH
9KPC3V		0.2280	0.0286	0.42	0.2320	0.0409	0.58	SA
9PJFVK		0.3080	0.1086	1.59	0.3198	0.1287	1.83	SA
KLPD3U		0.2896	0.0902	1.32	0.2460	0.0549	0.78	DY
QR8L4N		0.2402	0.0408	0.60	0.1804	-0.0107	-0.15	IS
RKKFL8		0.2794	0.0800	1.17	0.3034	0.1123	1.59	MT
UGJT8A		0.1570	-0.0424	-0.62	0.1708	-0.0203	-0.29	TH
UJ6T3G		0.1882	-0.0112	-0.16	0.1808	-0.0103	-0.15	RD
V67YFE		0.2390	0.0396	0.58	0.2898	0.0987	1.40	MI
WJZV7C		0.0734	-0.1260	-1.85	0.1008	-0.0903	-1.28	LI
X2RAW3		0.1420	-0.0574	-0.84	0.1220	-0.0691	-0.98	TN
ZNTDMZ		0.2354	0.0360	0.53	0.1300	-0.0611	-0.87	TN

Summary Statistics		
	Sample P55	Sample P56
Grand Means	0.19940 COF	0.19111 COF
Std Dev Btwn Labs	0.06811 COF	0.07042 COF
Statistics based on 15 of 15 reporting participants		

Sample P55: LDPE & Sample P56: LDPE

Key to Instrument Codes Reported by Participants

DY	Dynisco Model D1055	IG	Instron
IS	Instron 5000 Series	LI	Lloyd Instruments
MI	MTS Insight	MT	MTS Q-Test
RD	RDM CF	SA	Shimadzu Autograph
TH	Thwing Albert Friction/Peel Tester Model 225-1	TN	TMI #32-06



Plastics Interlaboratory Testing Program

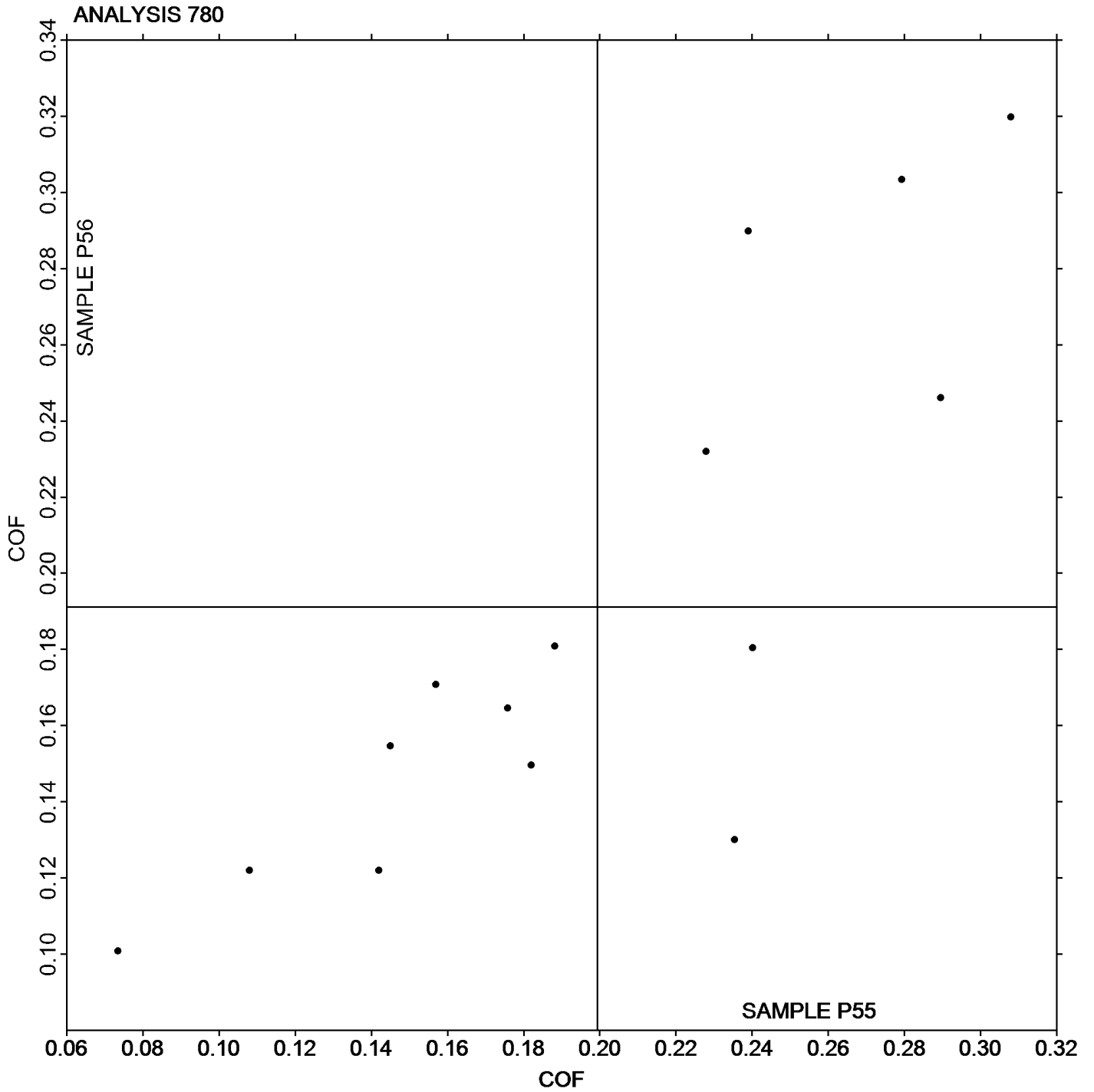
Analysis 780

Coefficient of Static Friction

Report #108

4th Qtr 2018

Grand Mean Sample P55: 0.19940 COF Grand Mean Sample P56: 0.19111 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 #108

Analysis 781

4th Qtr 2018

Coefficient of Kinetic Friction

WebCode	Data Flag	Sample P55			Sample P56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3UXYHY		0.1051	-0.0285	-0.80	0.0940	-0.0354	-1.08	IG
6DLZQ8		0.1184	-0.0153	-0.43	0.1033	-0.0261	-0.79	IG
6NZ227		0.0680	-0.0657	-1.84	0.0686	-0.0607	-1.85	TH
8AVMT9		0.0880	-0.0457	-1.28	0.1000	-0.0293	-0.89	TH
9KPC3V		0.1320	-0.0017	-0.05	0.1300	0.0007	0.02	SA
9PJFVK		0.2017	0.0680	1.91	0.2019	0.0726	2.21	SA
9XURNQ		0.1140	-0.0197	-0.55	0.1160	-0.0133	-0.41	XX
A8X6HY		0.1660	0.0323	0.91	0.1660	0.0367	1.12	XX
BNY7VX		0.1480	0.0143	0.40	0.1460	0.0167	0.51	XX
CKUZTW		0.1420	0.0083	0.23	0.1220	-0.0073	-0.22	XX
DPMKAL		0.1560	0.0223	0.63	0.1200	-0.0093	-0.28	XX
K9BDYN		0.1540	0.0203	0.57	0.1340	0.0047	0.14	XX
KLPD3U		0.1866	0.0529	1.49	0.1746	0.0453	1.38	DY
QR8L4N		0.1248	-0.0089	-0.25	0.1092	-0.0201	-0.61	IS
RKKFL8		0.1392	0.0055	0.16	0.1502	0.0209	0.64	MT
RMPRJ9		0.1260	-0.0077	-0.21	0.1180	-0.0113	-0.35	XX
UCKLH6		0.1440	0.0103	0.29	0.1220	-0.0073	-0.22	XX
UGJT8A		0.1628	0.0291	0.82	0.1796	0.0503	1.53	TH
UJ6T3G		0.1790	0.0453	1.27	0.1686	0.0393	1.20	RD
V67YFE		0.1140	-0.0197	-0.55	0.1116	-0.0177	-0.54	MI
WJZV7C	*	0.0550	-0.0787	-2.21	0.0842	-0.0451	-1.38	XX
X2RAW3		0.1500	0.0163	0.46	0.1480	0.0187	0.57	TN
Z48JXY		0.1400	0.0063	0.18	0.1400	0.0107	0.33	XX
ZNTDMZ		0.0932	-0.0405	-1.14	0.0962	-0.0331	-1.01	TN

Summary Statistics		Sample P55	Sample P56
Grand Means		0.13366 COF	0.12933 COF
Stnd Dev Btwn Labs		0.03563 COF	0.03281 COF
Statistics based on 24 of 24 reporting participants			

Sample P55: LDPE & Sample P56: LDPE



Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

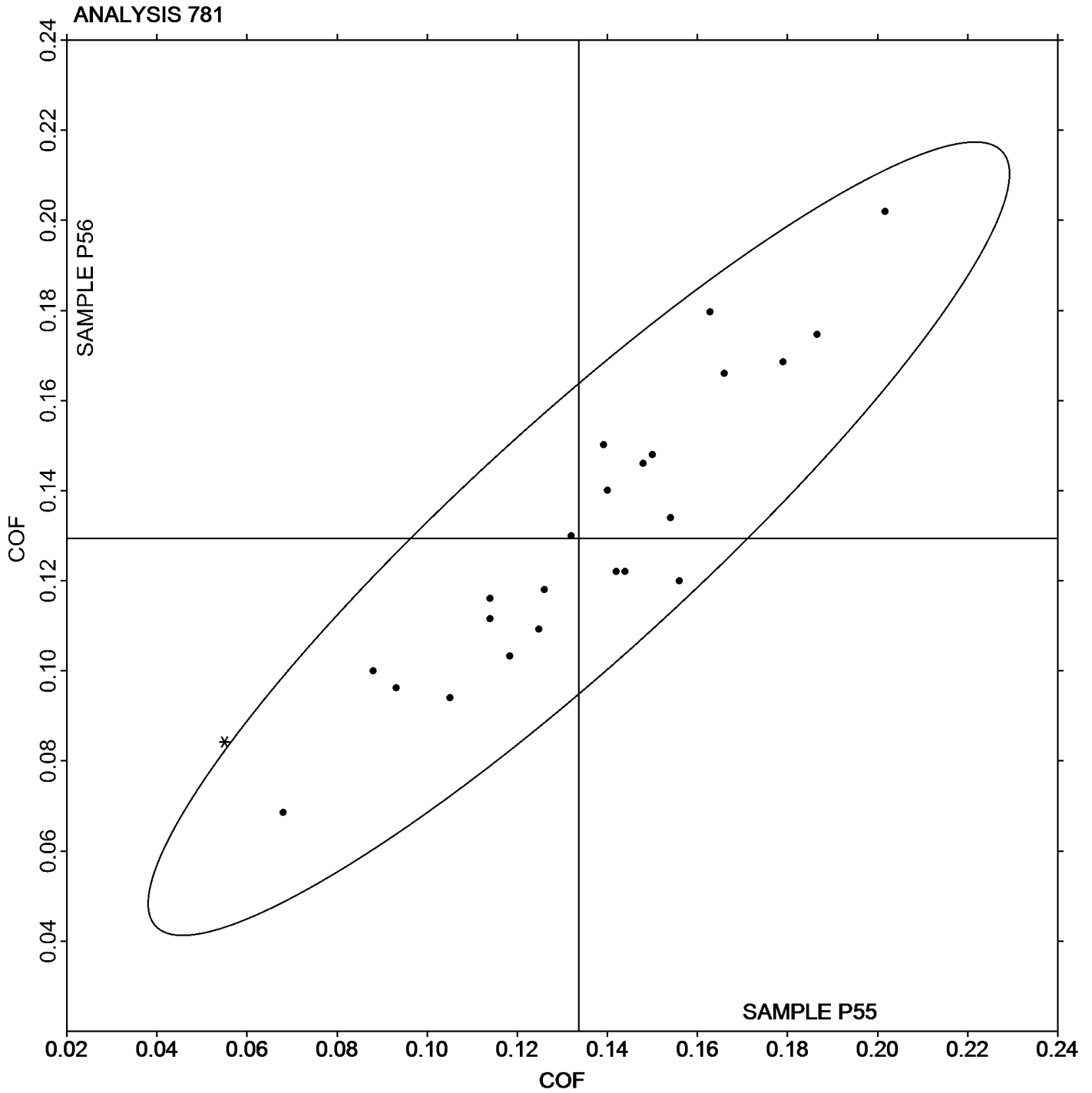
Analysis 781

Coefficient of Kinetic Friction

Report #108

4th Qtr 2018

Grand Mean Sample P55: 0.13366 COF Grand Mean Sample P56: 0.12933 COF





Plastics Interlaboratory Testing Program

Report #108

Analysis 782

4th Qtr 2018

Tear Resistance of Films

WebCode	Data Flag	Sample Q55			Sample Q56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6NZ227		167.6	28.3	0.74	174.4	47.5	1.23	TA
8AVMT9		129.0	-10.3	-0.27	123.3	-3.6	-0.09	TE
9KPC3V		126.4	-12.8	-0.33	99.1	-27.7	-0.72	LO
9PJFVK		246.4	107.1	2.79	215.7	88.8	2.29	TE
KLPD3U		103.0	-36.2	-0.94	97.6	-29.2	-0.75	TA
MUA9B9		120.0	-19.3	-0.50	119.0	-7.8	-0.20	EM
P7DF2P		133.7	-5.6	-0.14	106.3	-20.6	-0.53	TM
PLN2KG		152.4	13.2	0.34	113.4	-13.4	-0.35	EM
TK2R2P		126.8	-12.5	-0.32	119.8	-7.0	-0.18	TA
UGJT8A		121.1	-18.2	-0.47	101.2	-25.6	-0.66	TE
V67YFE		135.8	-3.4	-0.09	114.4	-12.4	-0.32	TE
ZM98JV		158.0	18.7	0.49	180.6	53.8	1.39	SZ
ZNTDMZ		90.2	-49.1	-1.28	84.2	-42.6	-1.10	TM

Summary Statistics

	Sample Q55	Sample Q56
Grand Means	139.27 grams-force	126.84 grams-force
Std Dev Btwn Labs	38.40 grams-force	38.75 grams-force

Statistics based on 13 of 13 reporting participants

Sample Q55: LDPE & Sample Q56: LDPE

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

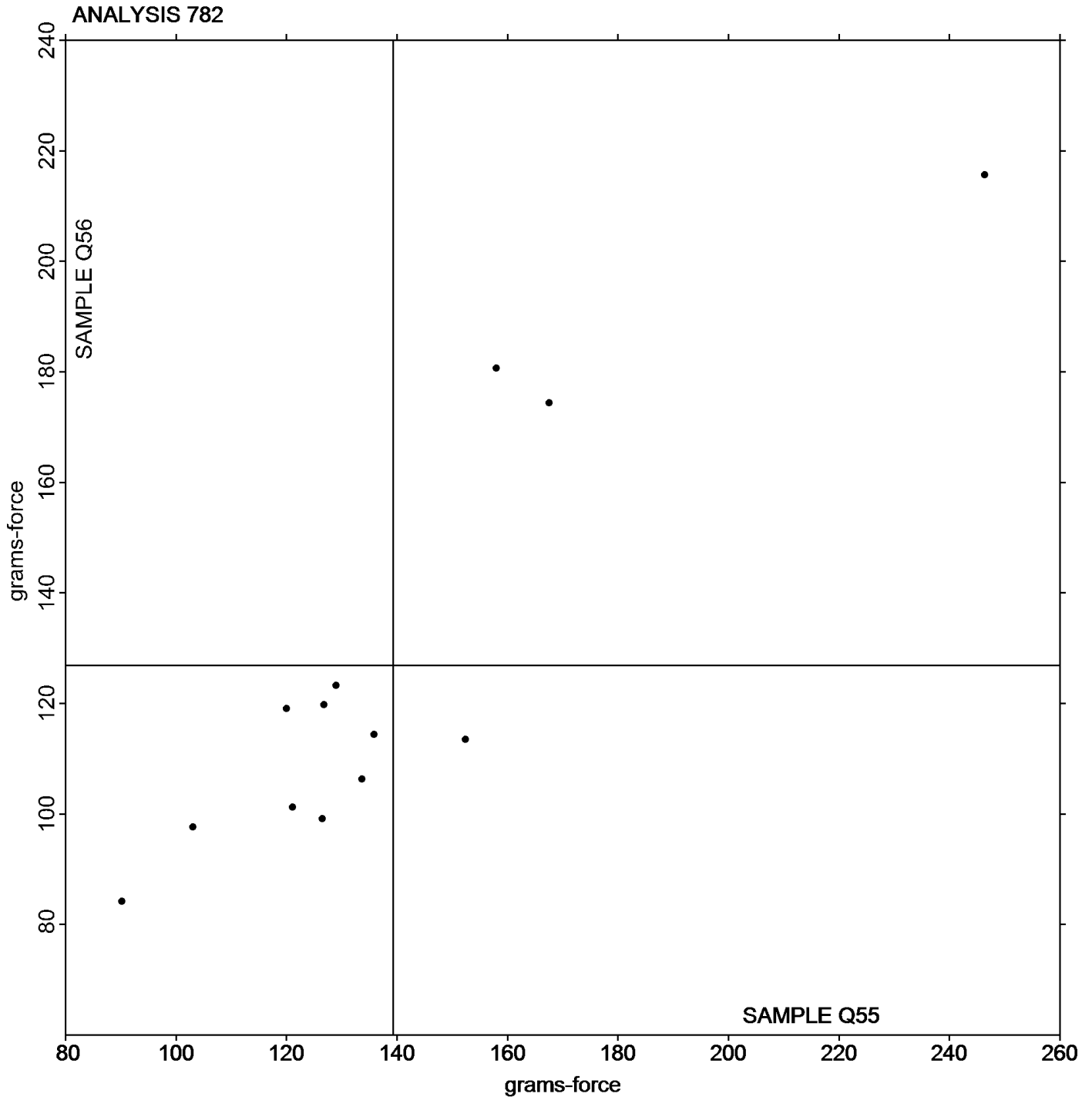
Report #108

Analysis 782

4th Qtr 2018

Tear Resistance of Films

Grand Mean Sample Q55: 139.27 grams-force Grand Mean Sample Q56: 126.84 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 #108

Analysis 785

4th Qtr 2018

Percent Haze of Film

WebCode	Data Flag	Sample D55			Sample D56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3E4ANM		29.638	1.558	0.60	33.575	2.309	0.84	BJ
6C48GY		29.138	1.058	0.41	32.100	0.834	0.31	BJ
6NZ227		29.563	1.483	0.57	32.388	1.122	0.41	BJ
77GQQR		26.920	-1.160	-0.45	31.693	0.427	0.16	BJ
7TRVAU		26.034	-2.046	-0.79	28.185	-3.081	-1.13	XR
8AVMT9		30.063	1.983	0.77	33.975	2.709	0.99	BJ
9PJFVK		29.463	1.383	0.53	32.888	1.622	0.59	BJ
C6KVGH		29.438	1.358	0.52	33.550	2.284	0.84	BJ
HVYZZB		23.625	-4.455	-1.72	27.975	-3.291	-1.20	HL
HWTPKR		26.456	-1.623	-0.63	28.496	-2.769	-1.01	HC
KLPD3U		21.805	-6.275	-2.43	25.851	-5.414	-1.98	XR
LWHWEE		25.368	-2.712	-1.05	33.036	1.771	0.65	XX
M3N8NK		29.725	1.645	0.64	32.430	1.164	0.43	XX
NLFDUP		28.800	0.720	0.28	32.275	1.009	0.37	BJ
QR8L4N		30.113	2.033	0.79	33.250	1.984	0.73	BJ
R7MQHZ		24.256	-3.823	-1.48	27.585	-3.681	-1.35	XR
RAN9PN	*	26.725	-1.355	-0.52	23.888	-7.378	-2.70	XR
TCMRJA	*	33.275	5.195	2.01	29.888	-1.378	-0.50	BJ
UGJT8A		29.375	1.295	0.50	32.775	1.509	0.55	BJ
V67YFE		29.938	1.858	0.72	33.513	2.247	0.82	BJ
WR8P26		24.401	-3.678	-1.42	28.108	-3.158	-1.16	XR
WRC3NZ		29.225	1.145	0.44	33.813	2.547	0.93	BJ
XPYU2X		29.813	1.733	0.67	33.313	2.047	0.75	BJ
YTC77F		29.525	1.445	0.56	32.650	1.384	0.51	BJ
Z4QDME		26.188	-1.892	-0.73	31.275	0.009	0.00	BJ
ZM98JV		28.800	0.720	0.28	32.738	1.472	0.54	BJ
ZNTDMZ		30.488	2.408	0.93	32.963	1.697	0.62	BJ

Summary Statistics		Sample D55	Sample D56
Grand Means		28.0797 Percent	31.2656 Percent
Std Dev Btwn Labs		2.5865 Percent	2.7332 Percent
Statistics based on 27 of 27 reporting participants			

Sample D55: LDPE & Sample D56: LDPE



Plastics Interlaboratory Testing Program

Analysis 785

Percent Haze of Film

Report #108

4th Qtr 2018

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

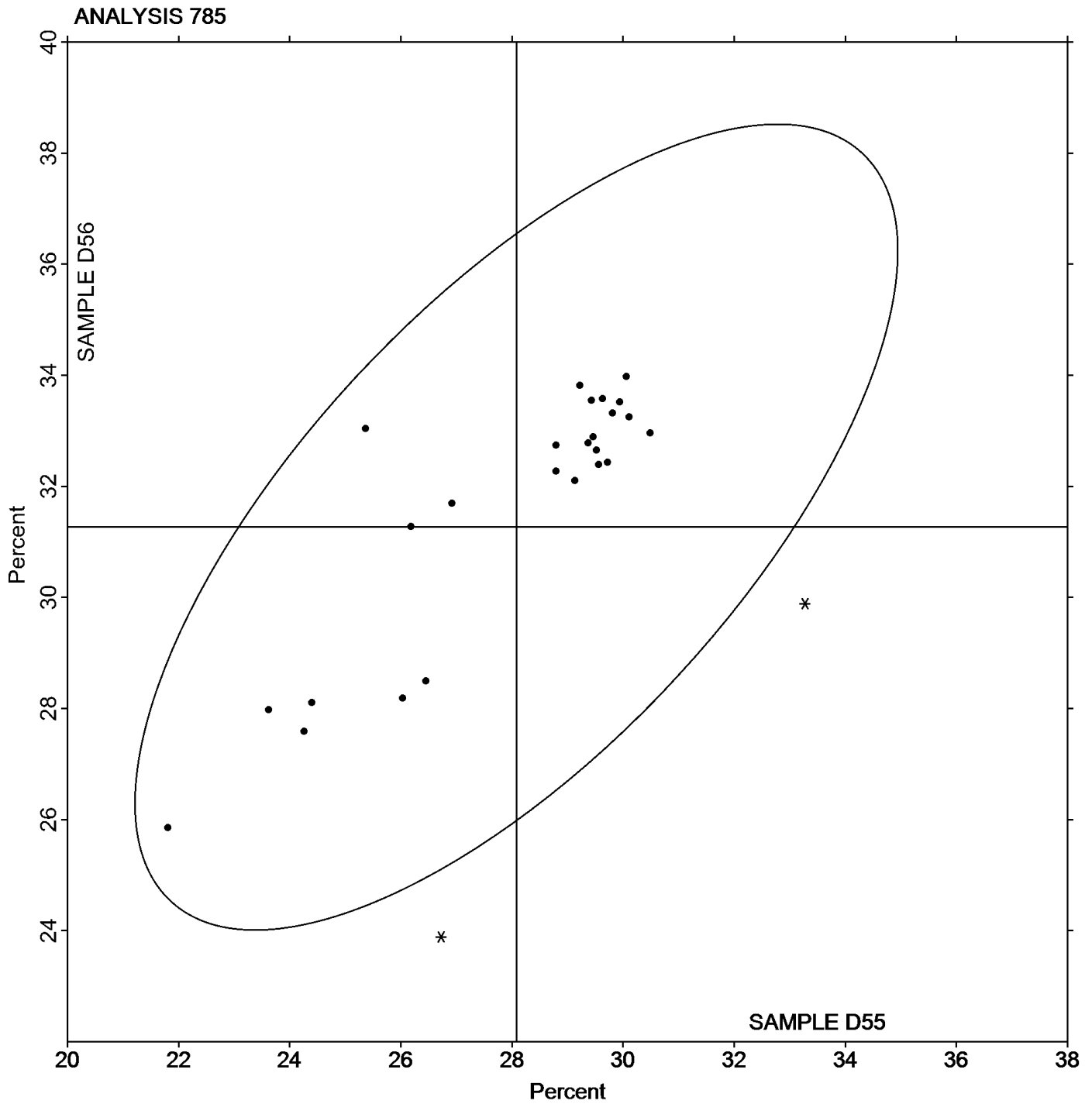
Analysis 785

Percent Haze of Film

Report #108

4th Qtr 2018

Grand Mean Sample D55: 28.080 Percent Grand Mean Sample D56: 31.266 Percent





Plastics Interlaboratory Testing Program

Report #108

Analysis 786

4th Qtr 2018

Total Luminous transmittance of film

WebCode	Data Flag	Sample D55			Sample D56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3E4ANM		92.74	1.15	0.56	92.65	1.20	0.54	BJ
6C48GY		93.00	1.41	0.69	93.11	1.66	0.75	BJ
6NZ227		95.18	3.59	1.74	95.13	3.68	1.66	BJ
77GQQR		92.33	0.75	0.36	92.14	0.69	0.31	BJ
7TRVAU		91.07	-0.52	-0.25	91.06	-0.39	-0.18	XR
8AVMT9	X	71.58	-20.01	-9.71	68.96	-22.49	-10.13	BJ
9PJFVK		92.55	0.96	0.47	92.30	0.85	0.38	BJ
C6KVGH		92.93	1.34	0.65	92.63	1.18	0.53	BJ
HVYZZB		89.06	-2.52	-1.22	88.68	-2.77	-1.25	HL
HWTPKR		89.45	-2.14	-1.04	89.64	-1.81	-0.82	HC
KLPD3U	*	85.66	-5.92	-2.87	84.80	-6.65	-3.00	XR
LWHWEE	*	88.03	-3.56	-1.73	86.80	-4.65	-2.10	XX
M3N8NK		93.46	1.88	0.91	93.38	1.93	0.87	XX
NLFDUP		93.08	1.49	0.72	93.03	1.58	0.71	BJ
QR8L4N		93.14	1.55	0.75	92.78	1.33	0.60	BJ
R7MQHZ		90.28	-1.30	-0.63	90.18	-1.27	-0.57	XR
RAN9PN	*	89.63	-1.95	-0.95	90.20	-1.25	-0.56	XR
TCMRJA		91.26	-0.32	-0.16	91.40	-0.05	-0.02	BJ
V67YFE		91.90	0.31	0.15	91.93	0.48	0.21	BJ
WR8P26		91.33	-0.26	-0.13	91.32	-0.13	-0.06	XR
WRC3NZ		92.80	1.21	0.59	92.59	1.14	0.51	BJ
XPYU2X		91.74	0.15	0.07	91.99	0.54	0.24	BJ
YTC77F		93.93	2.34	1.13	93.78	2.33	1.05	BJ
Z4QDME		92.04	0.45	0.22	91.93	0.48	0.21	BJ
ZM98JV		90.45	-1.14	-0.55	90.35	-1.10	-0.50	BJ
ZNTDMZ		92.64	1.05	0.51	92.48	1.03	0.46	BJ

Summary Statistics		
	Sample D55	Sample D56
Grand Means	91.586 Percent	91.449 Percent
Stnd Dev Btwn Labs	2.061 Percent	2.219 Percent

Statistics based on 25 of 26 reporting participants

Sample D55: LDPE & Sample D56: LDPE



Plastics Interlaboratory Testing Program

Report #108

Analysis 786

4th Qtr 2018

Total Luminous transmittance of film

Comments on Assigned Data Flags for Test #786

8AVMT9 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

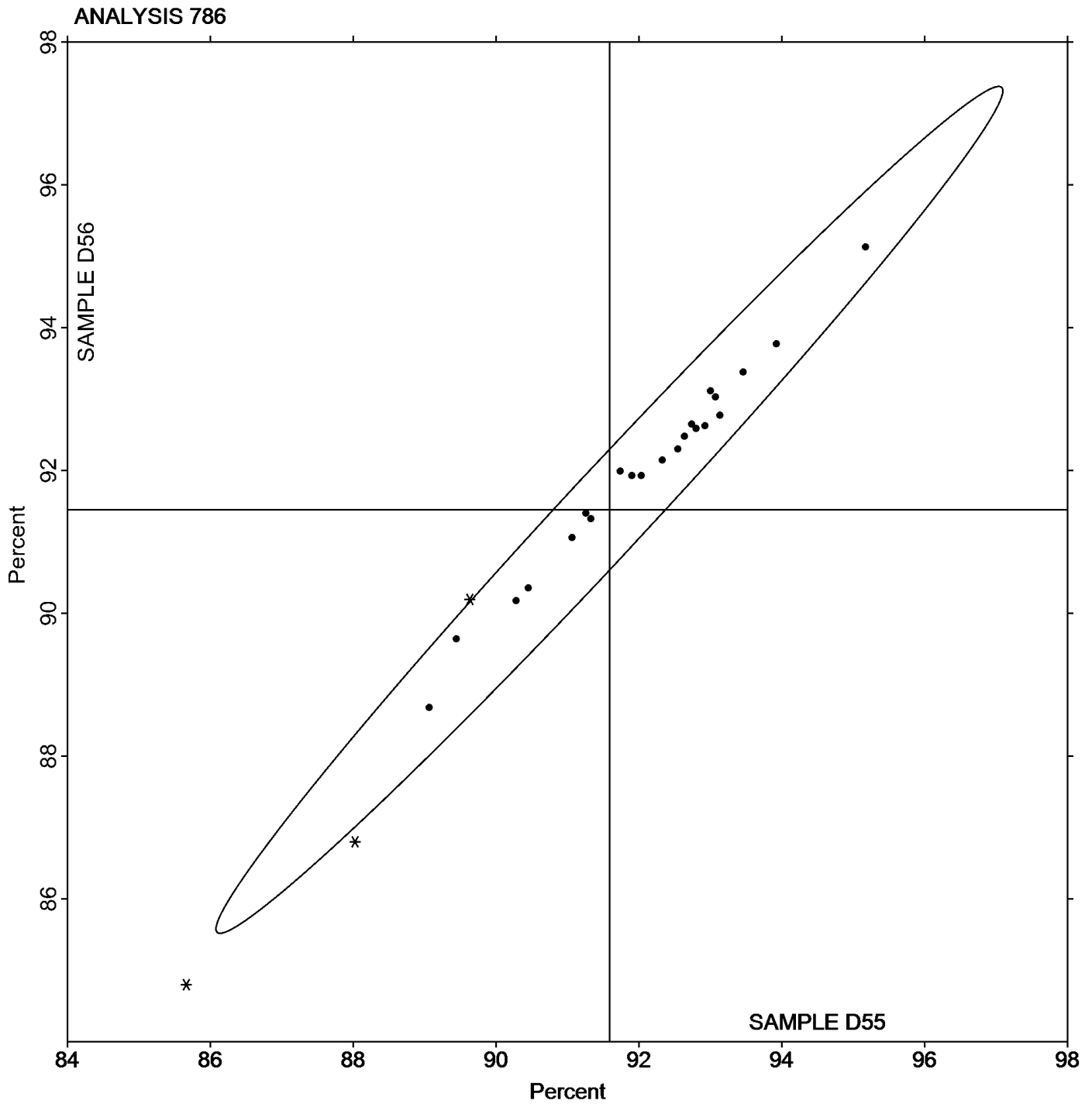
Analysis 786

Total Luminous transmittance of film

Report #108

4th Qtr 2018

Grand Mean Sample D55: 91.586 Percent Grand Mean Sample D56: 91.449 Percent





Plastics Interlaboratory Testing Program

Report #108

Analysis 790

4th Qtr 2018

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WebCode	Data Flag	Sample S55			Sample S56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
26ZXUE		1.54	-0.07	-0.75	1.55	-0.05	-0.56	TO
2KZHUQ		1.72	0.10	1.02	1.68	0.07	0.75	XX
3B2HAX		1.67	0.06	0.56	1.68	0.07	0.68	CE
3E4ANM		1.60	-0.02	-0.20	1.55	-0.06	-0.60	TY
4749T4		1.73	0.11	1.15	1.77	0.16	1.66	WZ
4CX8CQ		1.60	-0.01	-0.13	1.60	-0.01	-0.12	TO
4Z3XTN		1.53	-0.09	-0.89	1.49	-0.11	-1.17	CE
63YZ2Y		1.67	0.05	0.54	1.66	0.05	0.53	TO
68Z6P3	*	1.36	-0.26	-2.61	1.36	-0.25	-2.58	TO
6NZ227		1.51	-0.11	-1.10	1.54	-0.07	-0.72	WZ
7P7XXW		1.67	0.06	0.59	1.68	0.07	0.71	TO
7PDX6R		1.60	-0.02	-0.21	1.58	-0.03	-0.28	TO
7PXP2G		1.62	0.00	-0.01	1.54	-0.07	-0.73	TO
84PVMX		1.52	-0.10	-1.03	1.55	-0.06	-0.63	BA
8GU6CQ		1.60	-0.02	-0.18	1.60	-0.01	-0.13	TO
9CJA9G		1.45	-0.17	-1.68	1.45	-0.16	-1.59	DS
AWXHFT		1.55	-0.07	-0.70	1.50	-0.11	-1.08	TM
BCNRYQ		1.57	-0.04	-0.45	1.56	-0.05	-0.50	TO
BHX287		1.56	-0.06	-0.61	1.52	-0.09	-0.93	TO
BK3M2X		1.61	-0.01	-0.11	1.57	-0.04	-0.38	TM
BTC3LT		1.62	0.01	0.07	1.60	-0.01	-0.07	TO
C3279K		1.55	-0.07	-0.67	1.55	-0.06	-0.63	WZ
DFK7HJ		1.79	0.17	1.73	1.75	0.14	1.41	WZ
DU2YBW		1.50	-0.12	-1.23	1.53	-0.08	-0.83	CE
F9BRRY		1.62	0.00	0.03	1.60	-0.01	-0.14	TM
FMFMBZ		1.78	0.17	1.68	1.81	0.20	2.05	XX
FTJRXE	X	5.58	3.96	40.31	5.55	3.94	40.28	TO
G3M4WT		1.71	0.10	0.99	1.71	0.10	1.01	WZ
H4QHXCX		1.57	-0.05	-0.50	1.61	0.00	0.04	TM
HF4J9R		1.69	0.07	0.75	1.72	0.11	1.11	BA
HLXDAY		1.55	-0.06	-0.64	1.57	-0.04	-0.42	TM
HWTPKR	X	1.94	0.32	3.29	1.96	0.35	3.58	CE
JPRUZX		1.80	0.19	1.88	1.82	0.21	2.12	CS
K47LYN		1.56	-0.06	-0.58	1.58	-0.03	-0.34	WZ
KTZN8G		1.59	-0.02	-0.23	1.59	-0.02	-0.16	TO



Plastics Interlaboratory Testing Program

Report #108

Analysis 790

4th Qtr 2018

Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S55			Sample S56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
KYQXGE		1.71	0.09	0.92	1.65	0.04	0.39	TO
L3L6DU	*	1.87	0.26	2.62	1.89	0.28	2.87	XX
LB6BD8		1.67	0.05	0.52	1.59	-0.02	-0.16	TO
LCWBBK	X	1.88	0.26	2.68	1.72	0.11	1.17	TO
LFTZRR		1.59	-0.03	-0.29	1.56	-0.05	-0.52	XX
NQYX7H	X	1.46	-0.16	-1.60	1.58	-0.03	-0.30	TO
NY6GB		1.74	0.12	1.21	1.72	0.11	1.15	TM
P6JKK9	X	1.55	-0.06	-0.63	1.66	0.05	0.53	CE
PHM4XU	X	0.52	-1.10	-11.20	0.50	-1.11	-11.29	TM
PLN2KG		1.63	0.02	0.18	1.62	0.01	0.13	CE
PZTBAB		1.67	0.05	0.55	1.64	0.04	0.36	TO
QKP94M	X	1.81	0.19	1.96	2.17	0.56	5.77	TM
T67F79		1.65	0.03	0.35	1.66	0.05	0.51	CE
T8CUX8		1.63	0.01	0.09	1.60	-0.01	-0.14	CE
TCMRJA	X	0.64	-0.97	-9.89	0.66	-0.95	-9.71	TM
TK2R2P		1.58	-0.04	-0.40	1.62	0.01	0.13	TM
TTET7Q	X	1.59	-0.03	-0.27	2.02	0.41	4.18	TO
UFLQ4N		1.61	-0.01	-0.06	1.59	-0.02	-0.20	XX
UGJT8A		1.71	0.09	0.93	1.66	0.05	0.54	CE
V67YFE		1.52	-0.10	-1.01	1.52	-0.09	-0.88	TO
VUHBEK		1.49	-0.13	-1.29	1.49	-0.12	-1.18	TO
VW6V34		1.66	0.04	0.42	1.70	0.09	0.97	WZ
WL92QR		1.76	0.14	1.47	1.70	0.09	0.92	TO
YAYJK8		1.46	-0.16	-1.64	1.49	-0.12	-1.18	TO
Z4QDME		1.58	-0.04	-0.37	1.56	-0.05	-0.50	CE
ZJ2637		1.55	-0.07	-0.68	1.54	-0.07	-0.71	TO
ZYWLCX	X	1.48	-0.13	-1.35	2.15	0.54	5.50	TO

Summary Statistics

Grand Means

Sample S55

1.617 ft.lbf/in

Sample S56

1.609 ft.lbf/in

Std Dev Btwn Labs

0.098 ft.lbf/in

0.098 ft.lbf/in

Statistics based on 52 of 62 reporting participants

Sample S55: HIPS & Sample S56: HIPS



Comments on Assigned Data Flags for Test #790

- ZYWLCX (X) - Data for sample S56 are high. Inconsistent within the determinations of both samples.
- LCWBBK (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- TCMRJA (X) - Data for both samples are low. Possible Systematic Error.
- NQYX7H (X) - Inconsistent in testing between samples.
- FTJRXE (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- P6JJK9 (X) - Inconsistent in testing between samples.
- PHM4XU (X) - Data for both samples are low. Possible Systematic Error.
- TTET7Q (X) - Data for sample S56 are high.
- HWTPKR (X) - Data for both samples are high. Possible Systematic Error.
- QKP94M (X) - Data for sample S56 are high.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

Report #108

Analysis 791

4th Qtr 2018

Notched Izod Impact - kJ/m²

WebCode	Data Flag	Sample Z55			Sample Z56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2KD7TW		18.62000	0.25263	0.24	20.74000	0.63460	0.53	WZ
3E4ANM		17.59600	-0.77137	-0.72	19.36600	-0.73940	-0.62	XX
3T2HB6		17.64200	-0.72537	-0.68	18.48600	-1.61940	-1.36	CE
4Z246C		17.14200	-1.22537	-1.15	18.12800	-1.97740	-1.66	TO
7HA7FT		18.29408	-0.07329	-0.07	19.60084	-0.50456	-0.42	TO
7VDEFX		19.60880	1.24143	1.16	21.63840	1.53300	1.29	XX
84PVMX		18.66360	0.29623	0.28	20.30660	0.20120	0.17	CE
894K9E		20.61000	2.24263	2.10	22.19800	2.09260	1.75	CE
8L7MEM		20.86000	2.49263	2.33	22.22000	2.11460	1.77	TO
A6FPJQ		17.65800	-0.70937	-0.66	20.44200	0.33660	0.28	CE
BHX287		18.09400	-0.27337	-0.26	19.02000	-1.08540	-0.91	TO
CDGV8P		16.51220	-1.85517	-1.73	18.16140	-1.94400	-1.63	TO
EADYH8		18.13600	-0.23137	-0.22	20.41400	0.30860	0.26	IN
G8ED3K		17.96828	-0.39909	-0.37	18.94644	-1.15896	-0.97	TM
GQQABK	X	19.70200	1.33463	1.25	7.92220	-12.18320	-10.21	TM
H4QHXCX		18.71888	0.35151	0.33	19.95878	-0.14662	-0.12	TM
JAUPPF		17.78200	-0.58537	-0.55	19.18600	-0.91940	-0.77	TO
JDDQQV		19.19000	0.82263	0.77	20.09000	-0.01540	-0.01	CE
K47LYN		17.17200	-1.19537	-1.12	19.08600	-1.01940	-0.85	WZ
LR9ZA6		18.86000	0.49263	0.46	20.70000	0.59460	0.50	XX
Q9VYGF		19.71400	1.34663	1.26	21.60600	1.50060	1.26	TO
QCHQCG		18.18000	-0.18737	-0.18	19.39200	-0.71340	-0.60	WZ
TTET7Q		18.22000	-0.14737	-0.14	20.76000	0.65460	0.55	TO
VJZN9Q		20.16200	1.79463	1.68	22.20400	2.09860	1.76	IN
VXLZKZ		17.68740	-0.67997	-0.64	19.34200	-0.76340	-0.64	TO
WD9RY8		16.76980	-1.59757	-1.49	19.72160	-0.38380	-0.32	CE
WDQPDQ		17.61400	-0.75337	-0.70	19.68000	-0.42540	-0.36	WZ
YKM9LZ		18.30000	-0.06737	-0.06	20.02000	-0.08540	-0.07	TM
ZGYCEK		19.31200	0.94463	0.88	21.22200	1.11660	0.94	CE
ZKKVKP		18.55400	0.18663	0.17	21.62600	1.52060	1.27	XX
ZNTDMZ		17.38000	-0.98737	-0.92	18.90000	-1.20540	-1.01	CE



Plastics Interlaboratory Testing Program

Report #108

Analysis 791

4th Qtr 2018

Notched Izod Impact - kJ/m²

Summary Statistics		
	<u>Sample Z55</u>	<u>Sample Z56</u>
Grand Means	18.367368 kJ/m ²	20.105402 kJ/m ²
Stnd Dev Btwn Labs	1.069805 kJ/m ²	1.192940 kJ/m ²
Statistics based on 30 of 31 reporting participants		

Sample Z55: ABS & Sample Z56: ABS

Comments on Assigned Data Flags for Test #791

GQQABK (X) - Data for sample Z56 are low.

Key to Instrument Codes Reported by Participants

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



Plastics Interlaboratory Testing Program

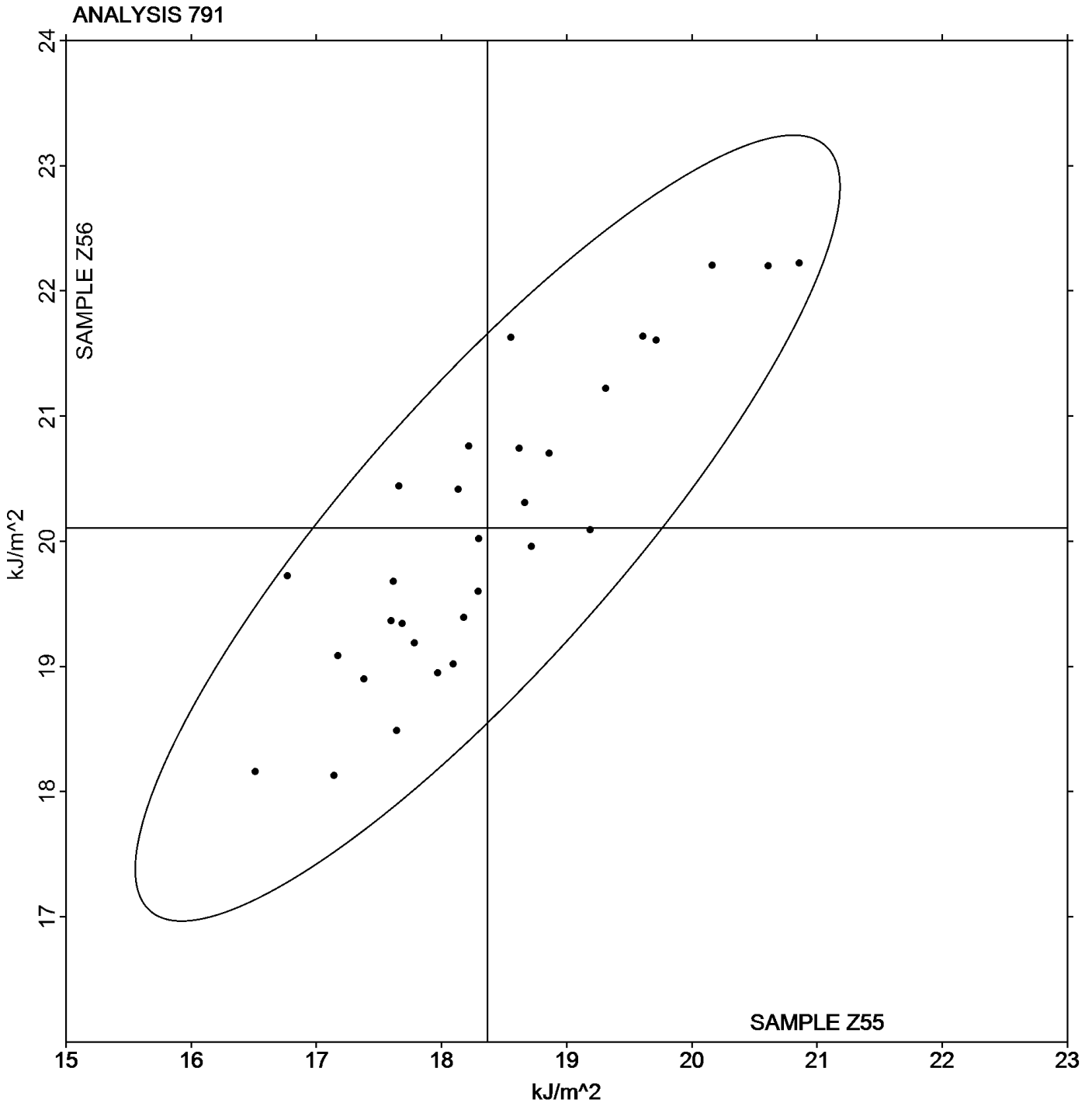
Report #108

Analysis 791

4th Qtr 2018

Notched Izod Impact - kJ/m^2

Grand Mean Sample Z55: 18.367 kJ/m^2 Grand Mean Sample Z56: 20.105 kJ/m^2





Plastics Interlaboratory Testing Program

Report #108

Analysis 792

4th Qtr 2018

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M55			Sample M56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
26ZXUE		18.58	-0.43	-0.67	18.94	-0.17	-0.23	TO
2KD7TW	X	25.18	6.17	9.56	22.98	3.87	5.29	WZ
3E4ANM		19.14	0.13	0.20	18.84	-0.27	-0.37	TY
3T2HB6		18.11	-0.90	-1.39	17.92	-1.19	-1.63	CE
4XELTJ		18.78	-0.23	-0.35	18.72	-0.39	-0.53	WZ
4Z3XTN		19.13	0.12	0.19	18.15	-0.96	-1.32	CE
6NZ227		18.54	-0.46	-0.72	18.47	-0.64	-0.88	WZ
6PH7J6		18.47	-0.54	-0.84	18.45	-0.66	-0.91	TM
7HA7FT		19.24	0.24	0.37	19.93	0.82	1.12	TO
7VDEFX		19.68	0.67	1.03	18.51	-0.60	-0.82	TO
84PVMX		18.43	-0.58	-0.90	19.21	0.10	0.13	CE
894K9E		19.93	0.92	1.42	20.32	1.21	1.65	CE
8L7MEM	X	21.70	2.69	4.17	22.82	3.71	5.07	TO
8PPA2L		18.42	-0.59	-0.92	17.76	-1.35	-1.85	CE
9NDTMM		17.82	-1.19	-1.84	18.89	-0.23	-0.31	PO
A6FPJQ		19.66	0.65	1.01	19.70	0.59	0.80	CE
BHX287		19.52	0.51	0.79	18.66	-0.46	-0.62	TO
CDGV8P		17.86	-1.15	-1.78	19.19	0.08	0.10	TO
EADYH8		18.92	-0.08	-0.13	19.97	0.86	1.17	IN
EVAM2N	X	22.94	3.93	6.09	21.82	2.71	3.70	TO
G8ED3K		18.59	-0.42	-0.65	19.77	0.66	0.91	TM
H4QHCX		18.77	-0.24	-0.37	19.83	0.72	0.98	TM
JAUPPF		18.51	-0.50	-0.78	18.63	-0.49	-0.66	TO
K47LYN		18.73	-0.28	-0.44	17.93	-1.18	-1.61	WZ
KYQXGE		19.08	0.07	0.10	18.66	-0.45	-0.62	TO
LFTZRR	X	17.06	-1.95	-3.02	16.59	-2.52	-3.45	XX
LR9ZA6		19.70	0.69	1.07	19.72	0.61	0.83	TM
M8RAFF		19.35	0.34	0.52	19.59	0.48	0.66	TM
MK6FKE		18.46	-0.54	-0.84	18.80	-0.31	-0.42	CE
NX7BEZ		20.53	1.52	2.36	19.23	0.12	0.16	XX
P6JJK9		18.68	-0.33	-0.51	18.66	-0.45	-0.62	CE
PHM4XU		19.14	0.14	0.21	19.61	0.50	0.68	TM
PLN2KG		18.98	-0.03	-0.04	17.76	-1.35	-1.85	IN
Q9VYGF		18.42	-0.58	-0.91	19.52	0.41	0.56	TO
QCHQCG		19.24	0.23	0.35	19.62	0.51	0.70	WZ



Plastics Interlaboratory Testing Program

Report #108

Analysis 792

4th Qtr 2018

Notched Charpy Impact - kJ/m²

WebCode	Data Flag	Sample M55			Sample M56			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
QDD8TJ		19.78	0.77	1.20	19.52	0.41	0.56	WZ
T8CUX8		18.80	-0.21	-0.33	18.94	-0.17	-0.23	CE
TCMRJA		19.30	0.29	0.45	19.53	0.42	0.58	TM
TMNVK3		18.98	-0.03	-0.04	19.61	0.50	0.68	TO
TTET7Q		19.54	0.53	0.82	20.24	1.13	1.54	TO
TYPPBZ		18.45	-0.56	-0.86	18.90	-0.21	-0.29	XX
UFLQ4N		18.13	-0.88	-1.36	17.64	-1.47	-2.01	XX
UGJT8A	X	15.88	-3.13	-4.85	15.96	-3.15	-4.31	CE
UM6X3G		19.20	0.19	0.29	17.68	-1.44	-1.96	WZ
VER4ME		18.58	-0.43	-0.66	19.02	-0.09	-0.12	XX
VJGQV8		19.17	0.17	0.26	19.73	0.62	0.85	CE
VJZN9Q		19.22	0.21	0.33	19.53	0.41	0.57	IN
VRCRBH	X	22.03	3.02	4.68	23.02	3.90	5.34	XX
VXLZKZ		18.74	-0.27	-0.41	18.88	-0.23	-0.32	TO
WD9RY8		20.38	1.37	2.12	20.31	1.19	1.63	CE
WDQPDQ		18.90	-0.11	-0.17	19.84	0.73	0.99	WZ
ZGYCEK		18.98	-0.03	-0.05	19.88	0.77	1.05	CE
ZJ2637	*	20.98	1.97	3.05	19.41	0.30	0.41	TO
ZKKVKP		18.89	-0.12	-0.18	19.73	0.62	0.84	XX

Summary Statistics		
	Sample M55	Sample M56
Grand Means	19.009 kJ/m ²	19.112 kJ/m ²
Std Dev Btwn Labs	0.645 kJ/m ²	0.731 kJ/m ²
Statistics based on 48 of 54 reporting participants		

Sample M55: ABS & Sample M56: ABS

Comments on Assigned Data Flags for Test #792

- LFTZRR (X) - Data for both samples are low.
- UGJT8A (X) - Data for both samples are low.
- EVAM2N (X) - Data for both samples are high.
- 2KD7TW (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- VRCRBH (X) - Data for both samples are high. Inconsistent within the determinations of sample M55.
- 8L7MEM (X) - Data for both samples are high. Inconsistent within the determinations of sample M55.



Plastics Interlaboratory Testing Program

Report #108

Analysis 792

4th Qtr 2018

Notched Charpy Impact - kJ/m^2

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

Report #108

Analysis 792

4th Qtr 2018

Notched Charpy Impact - kJ/m^2

Grand Mean Sample M55: 19.009 kJ/m^2 Grand Mean Sample M56: 19.112 kJ/m^2

