

## Plastics Interlaboratory Testing Program

### Web Summary Report #106, 2nd Qtr 2018

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#### Analysis Analysis Name

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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)

<b>WebCode</b>	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.
<b>Lab Mean</b>	The average of the test results obtained by the participant.
<b>Grand Mean</b>	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.
<b>Difference from Grand Mean</b>	The difference of the LAB MEAN from the GRAND MEAN.
<b>Between-Lab Standard Deviation</b>	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).
<b>Comparative Performance Value</b>	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.
<b>Inst Code</b>	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.
<b>Data Flag</b>	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	<b>CAUTION</b> - 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	<b>STOP</b> - 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	<b>PROCEED</b> - 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.

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### 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.

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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 #106, 2nd Qtr 2018

### Analysis 704 - Tensile Stress at Yield

Material: HIPS	Sample F51	3,720.06	psi	3.00% COV
	Sample F52	3,712.73	psi	2.90% COV

### Analysis 705 - Tensile Stress at Break

Material: HIPS	Sample F51	3,367.58	psi	2.54% COV
	Sample F52	3,365.81	psi	2.23% COV

### Analysis 706 - Percent Elongation at Yield

Material: HIPS	Sample F51	1.3160	Percent	4.30% COV
	Sample F52	1.3189	Percent	4.06% COV

### Analysis 708 - Modulus of Elasticity

Material: HIPS	Sample F51	334.26	ksi	5.10% COV
	Sample F52	334.94	ksi	5.96% COV

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

Material: HIPS	Sample E51	78.128	Degrees C	0.880% COV
	Sample E52	74.045	Degrees C	1.21% COV

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

Material: PP	Sample G51	111.12	Degrees C	5.05% COV
	Sample G52	86.131	Degrees C	8.41% COV

### Analysis 712 - Temperature of Deflection (1.80 MPa)

Material: ABS	Sample N51	79.012	Degrees C	1.28% COV
	Sample N52	79.004	Degrees C	1.24% COV

### Analysis 715 - Vicat Temperature (Rate A)

Material: HIPS	Sample H51	94.931	Degrees C	0.723% COV
	Sample H52	94.993	Degrees C	0.723% COV

### Analysis 716 - Vicat Temperature (Rate B)

Material: HIPS	Sample R51	97.214	Degrees C	0.701% COV
	Sample R52	97.270	Degrees C	0.642% COV

### Analysis 718 - Specific Gravity

Material: HIPS	Sample T51	1.0344	sp gr 23/23 C	0.224% COV
	Sample T52	1.0342	sp gr 23/23 C	0.213% COV

### Analysis 720 - Flexural Modulus

Material: HIPS	Sample J51	329.48	ksi	6.52% COV
	Sample J52	330.99	ksi	6.62% COV

### Analysis 721 - Flexural Stress at 5% Strain

Material: HIPS	Sample J51	5,912.47	psi	4.88% COV
	Sample J52	5,936.89	psi	5.08% COV

### Analysis 722 - Flexural Stress at Yield

Material: HIPS	Sample J51	5,875.21	psi	5.10% COV
	Sample J52	5,894.34	psi	5.16% COV

### Analysis 730 - Tensile Stress at Yield, ISO Method

Material: ABS	Sample C51	46.212	MPa	2.36% COV
	Sample C52	46.215	MPa	2.37% COV

### Analysis 731 - Tensile Stress at Break, ISO Method

Material: ABS	Sample C51	34.626	MPa	4.71% COV
	Sample C52	34.491	MPa	4.36% COV



## Plastics Interlaboratory Testing Program

Results Summary for Report #106, 2nd Qtr 2018

### Analysis 732 - Strain at Yield, ISO Method

Material: ABS	Sample C51	2.4224	Percent	3.66% COV
	Sample C52	2.4073	Percent	3.99% COV

### Analysis 734 - Modulus of Elasticity, ISO Method

Material: ABS	Sample C51	2,391.46	MPa	4.62% COV
	Sample C52	2,394.91	MPa	4.01% COV

### Analysis 736 - Flexural Modulus

Material: ABS	Sample K51	2,384.71	MPa	4.73% COV
	Sample K52	2,381.36	MPa	4.81% COV

### Analysis 737 - Flexural Stress at 3.5% Strain

Material: ABS	Sample K51	66.890	MPa	4.25% COV
	Sample K52	66.993	MPa	4.22% COV

### Analysis 738 - Flexural Stress at Yield

Material: ABS	Sample K51	67.432	MPa	3.52% COV
	Sample K52	67.584	MPa	3.34% COV

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

Material: PP	Sample X51	11.671	grams/10 mins	5.04% COV
	Sample X52	12.564	grams/10 mins	6.44% COV

### Analysis 755 - Moisture Content

Material: ABS	Sample Y51	0.19114	Percent	20.1% COV
	Sample Y52	0.17764	Percent	20.2% COV

### Analysis 757 - Ash Content

Material: PBT	Sample L51	30.538	Percent	0.975% COV
	Sample L52	30.551	Percent	0.978% COV

### Analysis 760 - DSC Crystallization Temperature

Material: PBT	Sample W51	177.76	Degrees Celsius	3.07% COV
	Sample W52	178.18	Degrees Celsius	3.14% COV

### Analysis 761 - DSC Melt Temperature

Material: PBT	Sample W51	223.64	Degrees Celsius	0.667% COV
	Sample W52	223.49	Degrees Celsius	0.677% COV

### Analysis 762 - DSC Enthalpy of Crystallization

Material: PBT	Sample W51	47.069	Joules Per Gram	8.46% COV
	Sample W52	46.999	Joules Per Gram	9.08% COV

### Analysis 763 - DSC Enthalpy of Fusion

Material: PBT	Sample W51	44.718	Joules Per Gram	13.5% COV
	Sample W52	44.528	Joules Per Gram	15.0% COV

### Analysis 764 - DSC Glass Transition Temperature

Material: ABS	Sample V51	104.75	Degrees Celsius	3.05% COV
	Sample V52	104.84	Degrees Celsius	3.03% COV

### Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B51	1,750.83	psi	14.5% COV
	Sample B52	2,336.54	psi	21.8% COV

### Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B51	3,116.71	psi	22.9% COV
	Sample B52	3,783.83	psi	21.6% COV



## Plastics Interlaboratory Testing Program

### Results Summary for Report #106, 2nd Qtr 2018

#### Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B51	58.323	Percent	47.0% COV
	Sample B52	74.229	Percent	53.7% COV

#### Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B51	650.83	Percent	14.9% COV
	Sample B52	623.98	Percent	15.6% COV

#### Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B51	3.1534	mils	4.90% COV
	Sample B52	3.0566	mils	3.64% COV

#### Analysis 775 - Secant Modulus at 1% Strain

Material: LDPE	Sample B51	28,247.70	psi	17.4% COV
	Sample B52	31,998.57	psi	17.4% COV

#### Analysis 776 - Secant Modulus at 2% Strain

Material: LDPE	Sample B51	23,482.85	psi	14.9% COV
	Sample B52	26,988.88	psi	14.9% COV

#### Analysis 780 - Static Friction

Material: LDPE	Sample P51	0.18932	COF	42.4% COV
	Sample P52	0.15855	COF	43.0% COV

#### Analysis 781 - Kinetic Friction

Material: LDPE	Sample P51	0.13287	COF	41.3% COV
	Sample P52	0.10709	COF	47.8% COV

#### Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q51	361.38	grams-force	25.5% COV
	Sample Q52	138.05	grams-force	17.9% COV

#### Analysis 785 - Percent Haze

Material: LDPE	Sample D51	30.383	Percent	8.96% COV
	Sample D52	27.181	Percent	9.04% COV

#### Analysis 786 - Total Transmittance

Material: LDPE	Sample D51	91.935	Percent	1.36% COV
	Sample D52	92.073	Percent	1.40% COV

#### Analysis 790 - Notched Izod Impact

Material: ABS	Sample S51	6.6247	ft.lbf/in	7.32% COV
	Sample S52	6.6535	ft.lbf/in	7.67% COV

#### Analysis 791 - Notched Izod Impact

Material: HIPS	Sample Z51	7.8895	kJ/m <sup>2</sup>	7.03% COV
	Sample Z52	7.8515	kJ/m <sup>2</sup>	6.89% COV

#### Analysis 792 - Notched Charpy Impact

Material: HIPS	Sample M51	7.5375	kJ/m <sup>2</sup>	3.76% COV
	Sample M52	7.5161	kJ/m <sup>2</sup>	3.74% COV



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 704

2nd Qtr 2018

### Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2MR79Z		3,749.8	29.7	0.27	3,735.6	22.9	0.21
2V46WJ		3,767.0	46.9	0.42	3,786.6	73.9	0.69
3WUNHH		3,838.4	118.3	1.06	3,825.4	112.7	1.05
449X3W		3,804.8	84.7	0.76	3,799.8	87.1	0.81
6MFK3U		3,664.2	-55.9	-0.50	3,666.4	-46.3	-0.43
74D827		3,880.0	159.9	1.43	3,805.0	92.3	0.86
7TY2E6		3,850.2	130.1	1.16	3,838.8	126.0	1.17
88XCFV		3,792.6	72.5	0.65	3,753.2	40.5	0.38
8M8KWB		3,776.8	56.8	0.51	3,730.4	17.7	0.16
BN9KQ8		3,623.8	-96.3	-0.86	3,674.8	-37.9	-0.35
BP2F7N		3,639.8	-80.3	-0.72	3,572.4	-140.3	-1.30
BVRLAQ		3,664.6	-55.5	-0.50	3,683.0	-29.7	-0.28
CJDXQR	*	3,571.8	-148.3	-1.33	3,701.8	-10.9	-0.10
CJYVGZ		3,801.2	81.1	0.73	3,785.0	72.3	0.67
D4ZWFM		3,812.4	92.4	0.83	3,748.8	36.1	0.34
DLVJUY	X	3,664.8	-55.3	-0.49	3,163.9	-548.9	-5.10
DM8CT8	X	3,121.4	-598.7	-5.36	3,164.8	-548.0	-5.09
DNK67L		3,684.4	-35.7	-0.32	3,634.0	-78.7	-0.73
DWUGED		3,843.0	122.9	1.10	3,898.4	185.6	1.72
E3WRDJ		3,696.3	-23.8	-0.21	3,688.1	-24.6	-0.23
EDF946		3,868.5	148.4	1.33	3,803.8	91.1	0.85
EEUFR		3,889.6	169.5	1.52	3,869.1	156.3	1.45
EJ2ECB	*	3,422.6	-297.4	-2.66	3,436.0	-276.8	-2.57
F63JY6		3,640.2	-79.9	-0.71	3,574.8	-137.9	-1.28
F64CZX		3,678.4	-41.7	-0.37	3,603.4	-109.3	-1.02
F7CNEE		3,716.4	-3.7	-0.03	3,667.6	-45.1	-0.42
FE7XK3		3,614.4	-105.7	-0.95	3,635.0	-77.7	-0.72
FYC9ML		3,775.6	55.5	0.50	3,737.8	25.1	0.23
GLMPTF		3,791.2	71.1	0.64	3,778.4	65.7	0.61
HA829G		3,770.4	50.3	0.45	3,747.6	34.9	0.32
HEH8VF		3,721.0	0.9	0.01	3,723.0	10.3	0.10
HR6ERG		3,762.3	42.3	0.38	3,756.5	43.8	0.41
JLEFMZ		3,736.0	15.9	0.14	3,748.0	35.3	0.33
JPXJHC		3,524.0	-196.1	-1.75	3,488.0	-224.7	-2.09
JZHQHM		3,844.7	124.6	1.12	3,840.6	127.9	1.19





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 704

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### Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
KKYMAW		3,634.2	-85.9	-0.77	3,577.8	-134.9	-1.25
KZR7Y8		3,616.0	-104.1	-0.93	3,676.0	-36.7	-0.34
LHLA6Z		3,756.4	36.3	0.33	3,682.4	-30.3	-0.28
MEFDTB		3,475.8	-244.3	-2.19	3,498.0	-214.7	-1.99
MH3QX8		3,786.8	66.7	0.60	3,797.0	84.3	0.78
N39K8P		3,701.6	-18.5	-0.17	3,687.4	-25.3	-0.24
N3PYBT		3,624.0	-96.1	-0.86	3,698.0	-14.7	-0.14
N4GVYM		3,900.5	180.5	1.61	3,932.6	219.9	2.04
NTFE6C		3,632.0	-88.1	-0.79	3,634.0	-78.7	-0.73
NXA96X		3,704.4	-15.6	-0.14	3,725.0	12.3	0.11
PQNTX7		3,728.1	8.0	0.07	3,767.8	55.1	0.51
R9J3Q2		3,753.6	33.6	0.30	3,789.9	77.1	0.72
RBMPGK		3,713.6	-6.5	-0.06	3,725.0	12.3	0.11
T3Q8M9		3,631.5	-88.6	-0.79	3,631.5	-81.2	-0.75
TLLT8Z		3,829.0	109.0	0.98	3,771.0	58.3	0.54
U43CJX		3,470.0	-250.1	-2.24	3,508.0	-204.7	-1.90
UFCW3Q		3,744.0	23.9	0.21	3,750.8	38.1	0.35
UXNT9H		3,635.4	-84.7	-0.76	3,582.4	-130.3	-1.21
VPRBD7		3,570.0	-150.1	-1.34	3,596.6	-116.1	-1.08
W4U2U6		3,647.4	-72.6	-0.65	3,669.5	-43.2	-0.40
WP9LTQ		3,771.0	51.0	0.46	3,762.3	49.6	0.46
YL4X3T		3,929.5	209.5	1.87	3,881.4	168.6	1.57
Z4ZFXF		3,748.0	27.9	0.25	3,635.0	-77.7	-0.72
Z8ZRUF		3,676.6	-43.5	-0.39	3,776.8	64.1	0.59
ZA8838		3,660.8	-59.3	-0.53	3,621.4	-91.3	-0.85
ZX8PZJ		3,926.6	206.5	1.85	3,936.4	223.7	2.08

Summary Statistics		Sample F51	Sample F52
<b>Grand Means</b>		3,720.06 psi	3,712.73 psi
<b>Std Dev Btwn Labs</b>		111.77 psi	107.71 psi
Statistics based on 59 of 61 reporting participants			

Sample F51: HIPS & Sample F52: HIPS



## Plastics Interlaboratory Testing Program

### Analysis 704

#### Tensile Stress at Yield - psi

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#### **Comments on Assigned Data Flags for Test #704**

- DM8CT8 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F52.
- DLVJUY (X) - Inconsistent in testing between samples. Data for sample F52 are low. Inconsistent within the determinations of both samples.



# Plastics Interlaboratory Testing Program

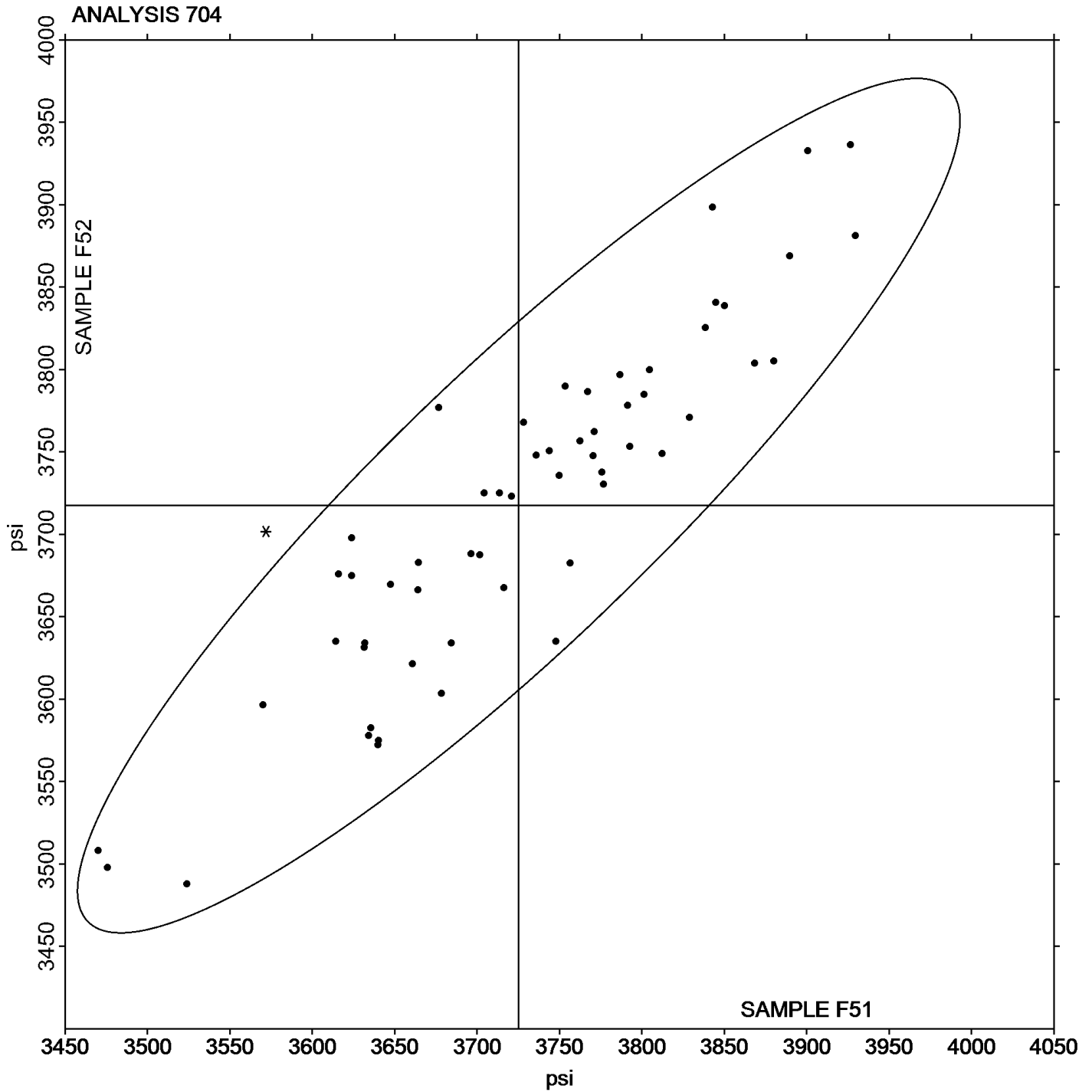
## Analysis 704

### Tensile Stress at Yield - psi

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Grand Mean Sample F51: 3,720.06 psi    Grand Mean Sample F52: 3,712.73 psi





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 705

2nd Qtr 2018

### Tensile Stress at Break - psi

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2MR79Z		3,365.0	-2.6	-0.03	3,424.2	58.4	0.78
2V46WJ		3,287.8	-79.8	-0.93	3,329.6	-36.2	-0.48
3WUNHH		3,497.8	130.2	1.52	3,505.0	139.2	1.86
449X3W		3,416.4	48.8	0.57	3,356.0	-9.8	-0.13
6MFK3U		3,277.7	-89.9	-1.05	3,265.6	-100.2	-1.34
74D827		3,473.3	105.7	1.24	3,410.0	44.2	0.59
7TY2E6		3,465.1	97.5	1.14	3,446.0	80.2	1.07
88XCFV		3,391.8	24.2	0.28	3,375.0	9.2	0.12
8M8KWB		3,388.1	20.5	0.24	3,370.7	4.9	0.07
BN9KQ8		3,337.2	-30.4	-0.36	3,399.6	33.8	0.45
BP2F7N		3,267.2	-100.4	-1.17	3,216.8	-149.0	-1.99
BVRLAQ		3,440.5	72.9	0.85	3,459.7	93.8	1.25
CJVYGG		3,400.2	32.6	0.38	3,415.2	49.4	0.66
D4ZWFM		3,502.1	134.5	1.57	3,500.0	134.1	1.79
DLVJUY	X	3,161.8	-205.8	-2.41	2,810.3	-555.5	-7.42
DM8CT8	X	3,095.4	-272.2	-3.18	3,085.9	-279.9	-3.74
DNK67L		3,255.8	-111.8	-1.31	3,235.8	-130.0	-1.74
DWUGED		3,417.0	49.5	0.58	3,439.7	73.9	0.99
E3WRDJ		3,404.7	37.1	0.43	3,366.1	0.3	0.00
EDF946		3,449.0	81.5	0.95	3,447.9	82.1	1.10
EEUFR		3,503.1	135.5	1.58	3,485.3	119.5	1.59
F63JY6	X	3,308.4	-59.2	-0.69	3,162.0	-203.8	-2.72
F7CNEE		3,355.2	-12.4	-0.14	3,315.6	-50.2	-0.67
FE7XK3		3,214.6	-153.0	-1.79	3,221.2	-144.6	-1.93
FYC9ML		3,362.2	-5.4	-0.06	3,404.6	38.8	0.52
GLMPTF		3,442.0	74.4	0.87	3,385.0	19.2	0.26
HA829G		3,424.0	56.4	0.66	3,355.0	-10.8	-0.14
HR6ERG		3,330.1	-37.5	-0.44	3,341.7	-24.1	-0.32
JLEFMZ		3,320.1	-47.4	-0.55	3,318.4	-47.4	-0.63
JZHQHM		3,401.7	34.2	0.40	3,358.5	-7.3	-0.10
KKYMAW		3,227.2	-140.4	-1.64	3,287.2	-78.6	-1.05
KZR7Y8	X	3,192.0	-175.6	-2.05	3,380.0	14.2	0.19
LHLA6Z		3,422.4	54.8	0.64	3,406.4	40.6	0.54
MEFDTB		3,340.0	-27.6	-0.32	3,303.2	-62.6	-0.84
MH3QX8		3,448.0	80.4	0.94	3,397.8	32.0	0.43



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 705**

**2nd Qtr 2018**

**Tensile Stress at Break - psi**

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
N39K8P		3,433.8	66.2	0.77	3,444.8	79.0	1.05
N3PYBT		3,370.0	2.4	0.03	3,360.0	-5.8	-0.08
NTFE6C	*	3,188.0	-179.6	-2.10	3,308.0	-57.8	-0.77
NXA96X		3,394.0	26.4	0.31	3,352.6	-13.2	-0.18
PQNTX7		3,373.6	6.0	0.07	3,397.4	31.6	0.42
R9J3Q2		3,420.3	52.7	0.62	3,408.7	42.9	0.57
RBMPGK		3,321.9	-45.7	-0.53	3,336.4	-29.4	-0.39
T3Q8M9		3,298.9	-68.7	-0.80	3,314.7	-51.1	-0.68
TLLT8Z		3,277.9	-89.7	-1.05	3,306.9	-58.9	-0.79
UFCW3Q		3,470.2	102.6	1.20	3,387.6	21.8	0.29
UXNT9H		3,386.2	18.6	0.22	3,363.4	-2.4	-0.03
VPRBD7		3,157.4	-210.2	-2.46	3,188.6	-177.2	-2.37
W4U2U6		3,225.4	-142.2	-1.66	3,271.8	-94.0	-1.26
WP9LTQ		3,298.2	-69.4	-0.81	3,312.7	-53.1	-0.71
Z4ZFXF		3,406.8	39.2	0.46	3,332.6	-33.2	-0.44
Z8ZRUF	*	3,341.4	-26.2	-0.31	3,463.2	97.4	1.30
ZX8PZJ		3,452.4	84.8	0.99	3,467.0	101.2	1.35

Summary Statistics		Sample F51	Sample F52
<b>Grand Means</b>		3,367.58 psi	3,365.81 psi
<b>Std Dev Btwn Labs</b>		85.53 psi	74.91 psi
Statistics based on 48 of 52 reporting participants			

Sample F51: HIPS & Sample F52: HIPS

**Comments on Assigned Data Flags for Test #705**

- DM8CT8 (X) - Data for both samples are low. Possible Systematic Error.
- F63JY6 (X) - Inconsistent in testing between samples. Data for sample F52 are low.
- KZR7Y8 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample F51.
- DLVJUY (X) - Inconsistent in testing between samples. Data for sample F52 are low. Inconsistent within the determinations of sample F52.



Plastics Interlaboratory Testing Program

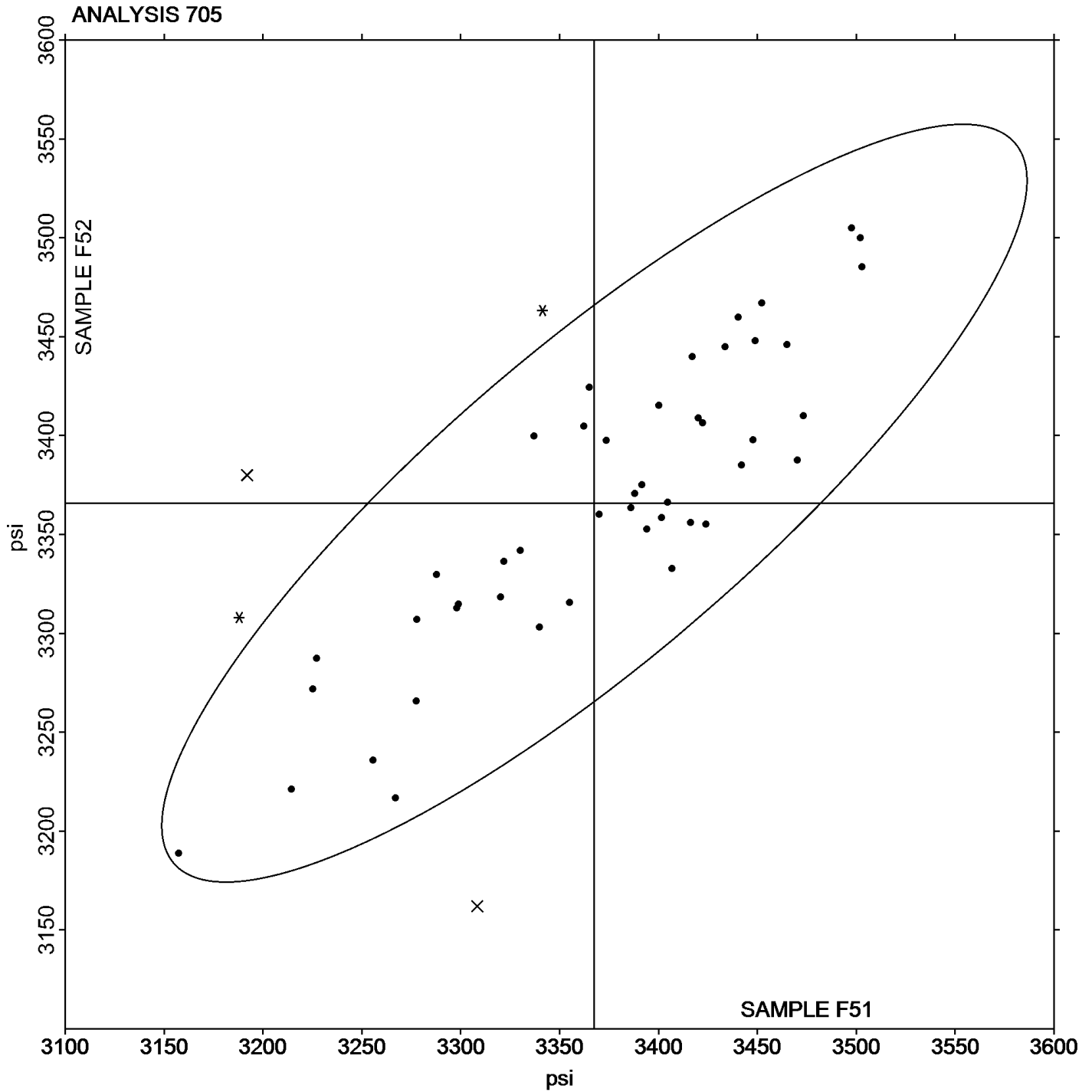
Report #106

Analysis 705

2nd Qtr 2018

Tensile Stress at Break - psi

Grand Mean Sample F51: 3,367.58 psi Grand Mean Sample F52: 3,365.81 psi





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 706

2nd Qtr 2018

### Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2MR79Z		1.240	-0.076	-1.34	1.260	-0.059	-1.10
2V46WJ		1.340	0.024	0.42	1.330	0.011	0.21
3WUNHH		1.306	-0.010	-0.18	1.272	-0.047	-0.88
449X3W		1.314	-0.002	-0.04	1.290	-0.029	-0.54
74D827	X	0.783	-0.534	-9.42	0.696	-0.623	-11.63
7TY2E6		1.358	0.042	0.75	1.310	-0.009	-0.16
88XCFV		1.364	0.048	0.85	1.364	0.045	0.84
8M8KWB		1.186	-0.130	-2.30	1.190	-0.129	-2.41
BN9KQ8		1.258	-0.058	-1.02	1.278	-0.041	-0.76
BP2F7N		1.350	0.034	0.60	1.348	0.029	0.54
BVRLAQ		1.378	0.062	1.10	1.392	0.073	1.36
CJDXQR		1.226	-0.090	-1.59	1.254	-0.065	-1.21
CJYGGZ		1.300	-0.016	-0.28	1.272	-0.047	-0.88
DLVJUY	X	1.840	0.524	9.25	1.580	0.261	4.87
DM8CT8	X	1.092	-0.224	-3.96	1.084	-0.235	-4.39
DNK67L		1.346	0.030	0.53	1.358	0.039	0.73
DWUGED		1.199	-0.117	-2.07	1.211	-0.108	-2.01
E3WRDJ		1.242	-0.074	-1.31	1.272	-0.047	-0.88
EDF946		1.340	0.024	0.42	1.364	0.045	0.84
EEUFR		1.428	0.111	1.97	1.418	0.099	1.85
F63JY6		1.396	0.080	1.41	1.378	0.059	1.10
F64CZX		1.360	0.044	0.78	1.360	0.041	0.77
F7CNEE		1.316	0.000	0.00	1.372	0.053	0.99
FE7XK3		1.284	-0.032	-0.57	1.312	-0.007	-0.13
FYC9ML		1.348	0.032	0.57	1.344	0.025	0.47
GLMPTF		1.350	0.034	0.60	1.330	0.011	0.21
HA829G		1.354	0.038	0.67	1.330	0.011	0.21
HR6ERG		1.264	-0.052	-0.92	1.266	-0.053	-0.99
JLEFMZ	X	1.100	-0.216	-3.82	1.198	-0.121	-2.26
JZHQHM		1.382	0.066	1.17	1.382	0.063	1.18
KKYMAW		1.252	-0.064	-1.13	1.294	-0.025	-0.47
KZR7Y8		1.239	-0.077	-1.36	1.286	-0.033	-0.62
LHLA6Z		1.300	-0.016	-0.28	1.282	-0.037	-0.69
MEFDTB		1.252	-0.064	-1.13	1.236	-0.083	-1.55
MH3QX8		1.354	0.038	0.67	1.336	0.017	0.32



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 706**

**2nd Qtr 2018**

**Percent Elongation at Yield - Percent**

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
N39K8P		1.300	-0.016	-0.28	1.284	-0.035	-0.65
N3PYBT		1.338	0.022	0.39	1.390	0.071	1.33
N4GVYM		1.400	0.084	1.48	1.404	0.085	1.59
NTFE6C		1.258	-0.058	-1.02	1.260	-0.059	-1.10
NXA96X	X	1.000	-0.316	-5.58	1.000	-0.319	-5.95
PQNTX7		1.318	0.002	0.04	1.328	0.009	0.17
RBMPGK		1.347	0.031	0.54	1.339	0.020	0.37
T3Q8M9	X	0.852	-0.464	-8.19	0.862	-0.457	-8.53
TLLT8Z		1.352	0.036	0.64	1.348	0.029	0.54
UFCW3Q	X	1.228	-0.088	-1.55	1.358	0.039	0.73
UXNT9H	X	1.149	-0.167	-2.94	1.075	-0.244	-4.55
VPRBD7		1.292	-0.024	-0.42	1.314	-0.005	-0.09
W4U2U6		1.304	-0.012	-0.21	1.298	-0.021	-0.39
WP9LTQ		1.400	0.084	1.48	1.400	0.081	1.51
YL4X3T	X	2.232	0.916	16.18	2.254	0.935	17.46
Z4ZFXF		1.322	0.006	0.11	1.276	-0.043	-0.80
Z8ZRUF		1.302	-0.014	-0.25	1.340	0.021	0.39
ZA8838		1.276	-0.040	-0.71	1.290	-0.029	-0.54
ZX8PZJ		1.386	0.070	1.24	1.390	0.071	1.33

Summary Statistics		
	Sample F51	Sample F52
<b>Grand Means</b>	1.3160 Percent	1.3189 Percent
<b>Std Dev Btwn Labs</b>	0.0566 Percent	0.0536 Percent

Statistics based on 45 of 54 reporting participants

Sample F51: HIPS & Sample F52: HIPS





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**Comments on Assigned Data Flags for Test #706**

UFCW3Q (X) - Inconsistent in testing between samples.

T3Q8M9 (X) - Data for both samples are low. Possible Systematic Error.

NXA96X (X) - Data for both samples are low. Possible Systematic Error.

DM8CT8 (X) - Data for both samples are low. Possible Systematic Error.

YL4X3T (X) - Extreme data.

74D827 (X) - Data for both samples are very low. Inconsistent within the determinations of both samples.

UXNT9H (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

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

JLEFMZ (X) - Inconsistent in testing between samples. Data for sample F51 are low. Inconsistent within the determinations of sample F51.



# Plastics Interlaboratory Testing Program

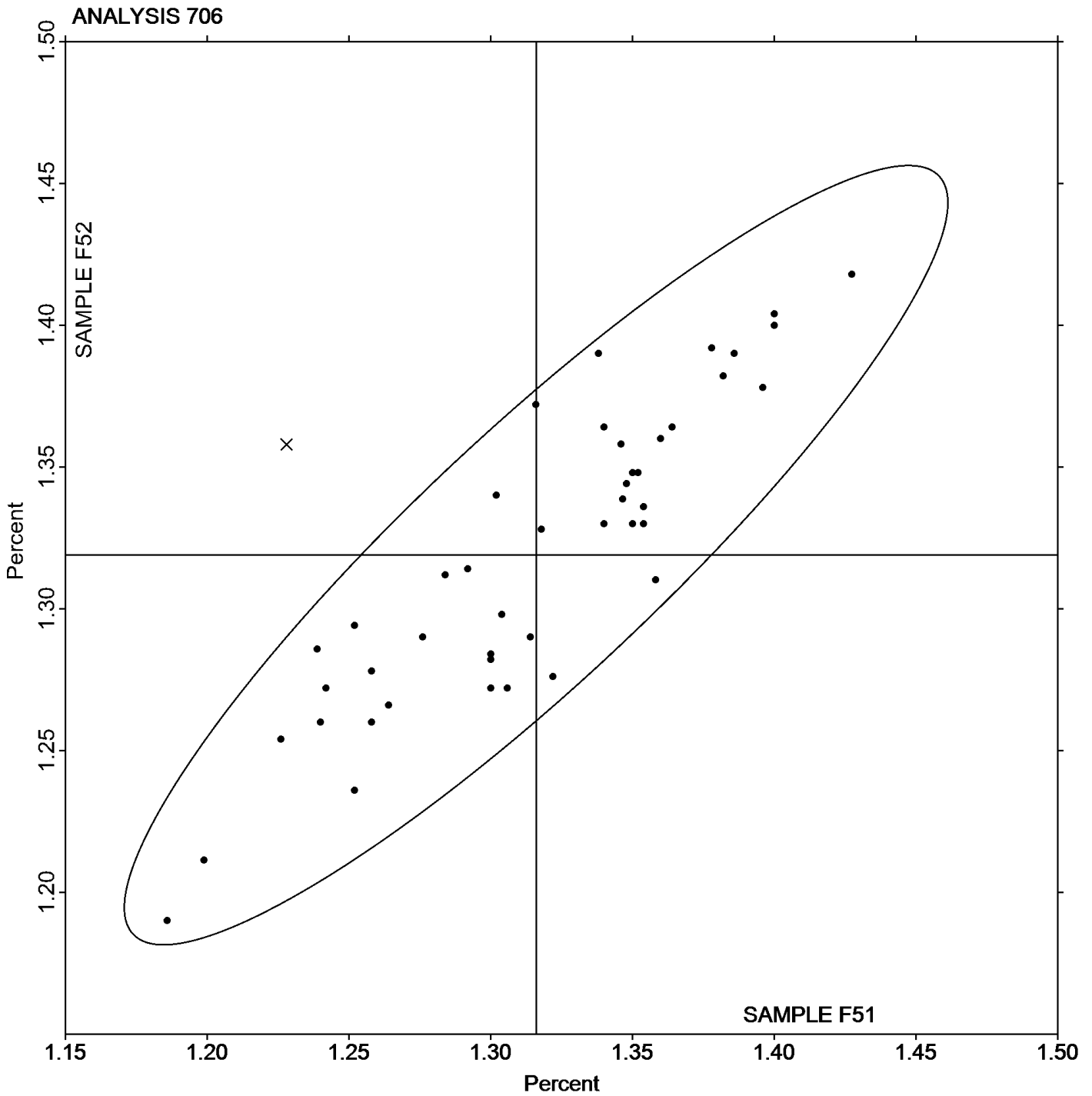
## Analysis 706

### Percent Elongation at Yield - Percent

Report #106

2nd Qtr 2018

Grand Mean Sample F51: 1.3160 Percent    Grand Mean Sample F52: 1.3189 Percent





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 708

2nd Qtr 2018

### Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2MR79Z		369.72	35.46	2.08	378.34	43.40	2.17
2V46WJ		342.22	7.96	0.47	341.42	6.48	0.32
3WUNHH		340.86	6.60	0.39	342.94	8.00	0.40
449X3W		337.68	3.42	0.20	356.98	22.04	1.10
74D827	X	601.75	267.49	15.70	440.00	105.06	5.26
7TY2E6	*	371.55	37.29	2.19	362.21	27.27	1.37
88XCFV		321.77	-12.49	-0.73	319.19	-15.75	-0.79
8M8KWB		330.11	-4.15	-0.24	327.50	-7.44	-0.37
BN9KQ8		336.92	2.66	0.16	338.38	3.44	0.17
BP2F7N	*	281.79	-52.47	-3.08	280.21	-54.73	-2.74
BVRLAQ		306.43	-27.83	-1.63	306.85	-28.09	-1.41
CJDXQR		351.48	17.22	1.01	354.36	19.42	0.97
CJVYGZ		339.76	5.50	0.32	335.22	0.28	0.01
DLVJUY	X	256.86	-77.40	-4.54	247.12	-87.82	-4.40
DM8CT8		330.97	-3.30	-0.19	332.98	-1.96	-0.10
DNK67L		318.70	-15.56	-0.91	317.34	-17.60	-0.88
DWUGED		350.90	16.64	0.98	351.63	16.69	0.84
E3WRDJ		351.22	16.96	1.00	350.60	15.66	0.78
EEUFR		320.35	-13.91	-0.82	318.59	-16.35	-0.82
F63JY6		317.20	-17.06	-1.00	304.80	-30.14	-1.51
F64CZX		312.74	-21.52	-1.26	295.28	-39.66	-1.99
F7CNEE		327.80	-6.46	-0.38	318.20	-16.74	-0.84
FE7XK3		347.60	13.34	0.78	355.52	20.58	1.03
FYC9ML		348.10	13.84	0.81	347.34	12.40	0.62
GLMPTF		335.06	0.80	0.05	336.72	1.78	0.09
HA829G		325.40	-8.86	-0.52	324.50	-10.44	-0.52
HEH8VF		346.57	12.31	0.72	346.62	11.68	0.58
HR6ERG		319.72	-14.54	-0.85	317.08	-17.86	-0.89
JLEFMZ	X	282.60	-51.66	-3.03	349.00	14.06	0.70
JZHQHM		315.26	-19.00	-1.12	314.85	-20.09	-1.01
KKYMAW		333.66	-0.60	-0.04	325.12	-9.82	-0.49
KZR7Y8		332.60	-1.66	-0.10	339.60	4.66	0.23
LHLA6Z		341.80	7.54	0.44	345.40	10.46	0.52
MEFDTB	*	343.88	9.62	0.56	366.02	31.08	1.56
N39K8P		327.54	-6.72	-0.39	331.92	-3.02	-0.15



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 708**

**2nd Qtr 2018**

**Modulus of Elasticity - ksi**

WebCode	Data Flag	Sample F51			Sample F52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
N3PYBT		315.00	-19.26	-1.13	319.60	-15.34	-0.77
NTFE6C		358.40	24.14	1.42	366.80	31.86	1.60
NXA96X	X	456.62	122.36	7.18	458.02	123.08	6.16
PQNTX7		335.66	1.40	0.08	339.31	4.37	0.22
RBMPGK	X	436.07	101.81	5.97	349.89	14.95	0.75
T3Q8M9	X	467.08	132.81	7.79	459.21	124.27	6.22
TLLT8Z		347.80	13.54	0.79	343.31	8.37	0.42
UFCW3Q	X	369.48	35.22	2.07	343.08	8.14	0.41
UXNT9H	X	370.50	36.24	2.13	398.80	63.86	3.20
VPRBD7	X	379.22	44.96	2.64	334.48	-0.46	-0.02
W4U2U6		316.48	-17.78	-1.04	317.69	-17.25	-0.86
WP9LTQ		325.93	-8.33	-0.49	325.93	-9.01	-0.45
Z4ZFXF		349.60	15.34	0.90	349.00	14.06	0.70
Z8ZRUF		328.52	-5.74	-0.34	344.66	9.72	0.49
ZA8838		344.78	10.52	0.62	338.94	4.00	0.20
ZX8PZJ		339.44	5.18	0.30	338.50	3.56	0.18

Summary Statistics		Sample F51	Sample F52
<b>Grand Means</b>		334.262 ksi	334.939 ksi
<b>Stnd Dev Btwn Labs</b>		17.042 ksi	19.971 ksi
Statistics based on 42 of 51 reporting participants			

Sample F51: HIPS & Sample F52: HIPS



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**Comments on Assigned Data Flags for Test #708**

- UFCW3Q (X) - Inconsistent in testing between samples.
- VPRBD7 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- T3Q8M9 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- NXA96X (X) - Data for both samples are high. Possible Systematic Error.
- 74D827 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- UXNT9H (X) - Inconsistent in testing between samples. Data for sample F52 are high. Inconsistent within the determinations of sample F51.
- RBMPGK (X) - Inconsistent in testing between samples. Data for sample F51 are high.
- DLVJUY (X) - Data for both samples are low. Possible Systematic Error.
- JLEFMZ (X) - Inconsistent in testing between samples. Data for sample F51 are low. Inconsistent within the determinations of sample F51.



# Plastics Interlaboratory Testing Program

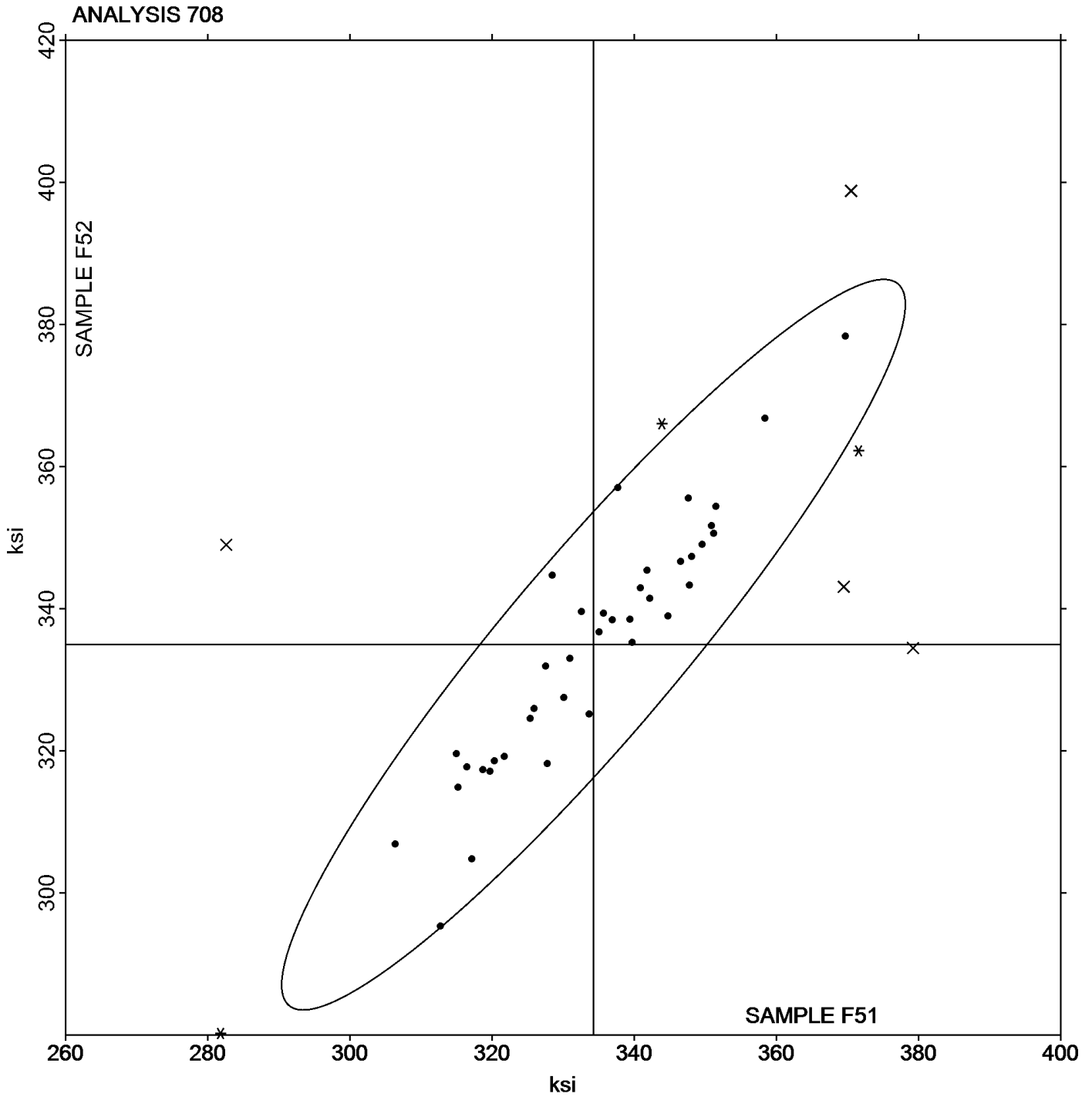
## Analysis 708

### Modulus of Elasticity - ksi

Report #106

2nd Qtr 2018

Grand Mean Sample F51: 334.26 ksi    Grand Mean Sample F52: 334.94 ksi





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 710**

**2nd Qtr 2018**

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

WebCode	Data Flag	Sample E51			Sample E52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
449X3W		78.73	0.60	0.87	74.20	0.16	0.17	TO
88XCFV		77.78	-0.35	-0.51	73.53	-0.52	-0.58	TO
8G4AAQ		78.65	0.52	0.76	75.03	0.98	1.09	XX
BN9KQ8		78.13	0.00	-0.01	73.65	-0.39	-0.44	CE
DLVJUY	X	91.23	13.10	19.07	89.20	15.16	16.88	CE
EDF946		77.17	-0.96	-1.39	73.01	-1.03	-1.15	TO
EEUUFR		78.20	0.07	0.10	74.13	0.08	0.09	ZW
F63JY6		78.34	0.21	0.30	74.44	0.40	0.44	XX
F64CZX		79.30	1.17	1.70	75.85	1.81	2.01	CE
F7CNEE		78.03	-0.10	-0.15	73.53	-0.52	-0.58	CE
FYC9ML		78.88	0.75	1.09	74.93	0.88	0.98	DN
GLMPTF		78.65	0.52	0.76	74.60	0.56	0.62	DN
HA829G		78.78	0.65	0.94	74.80	0.76	0.84	IN
HR6ERG	X	105.05	26.92	39.18	104.90	30.86	34.36	TY
JLEFMZ	X	73.39	-4.74	-6.90	68.79	-5.25	-5.85	XX
JZHQHM		79.18	1.05	1.52	75.15	1.11	1.23	AT
LHLA6Z		76.90	-1.23	-1.79	72.25	-1.79	-2.00	TO
MH3QX8		77.85	-0.28	-0.41	74.05	0.01	0.01	AT
N39K8P		78.23	0.10	0.14	73.73	-0.32	-0.36	TO
N4GVYM	*	77.35	-0.78	-1.13	74.15	0.11	0.12	CE
TLLT8Z		77.85	-0.28	-0.41	73.50	-0.54	-0.61	RO
UFCW3Q		78.35	0.22	0.32	74.65	0.61	0.67	XX
VPRBD7		77.83	-0.30	-0.44	73.28	-0.77	-0.86	CF
WP9LTQ		78.53	0.40	0.58	74.85	0.81	0.90	CF
ZA8838		76.68	-1.45	-2.12	72.28	-1.77	-1.97	TO
ZUBR3D		77.63	-0.50	-0.73	73.48	-0.57	-0.63	CE

Summary Statistics		
	Sample E51	Sample E52
<b>Grand Means</b>	78.128 Degrees C	74.045 Degrees C
<b>Std Dev Btwn Labs</b>	0.687 Degrees C	0.898 Degrees C
Statistics based on 23 of 26 reporting participants		

Sample E51: HIPS & Sample E52: HIPS



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 710

2nd Qtr 2018

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

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#### Comments on Assigned Data Flags for Test #710

HR6ERG (X) - Extreme data.

DLVJUY (X) - Extreme data.

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

#### 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

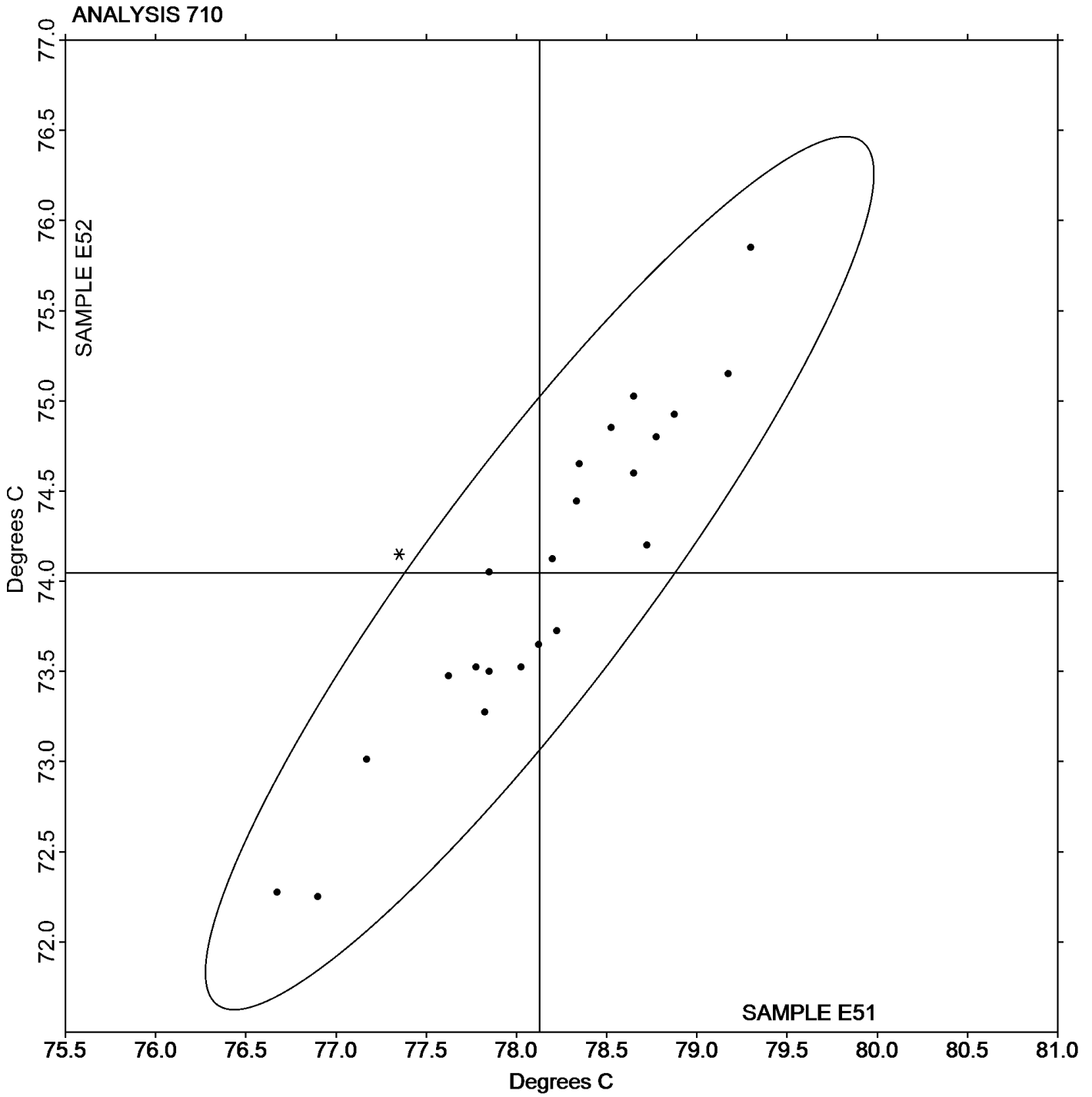
Report #106

## Analysis 710

2nd Qtr 2018

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

Grand Mean Sample E51: 78.128 Degrees C    Grand Mean Sample E52: 74.045 Degrees C





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 711**

**2nd Qtr 2018**

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

WebCode	Data Flag	Sample G51			Sample G52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
449X3W		107.7	-3.4	-0.61	82.9	-3.3	-0.45	TO
88XCFV		114.8	3.6	0.65	88.4	2.3	0.32	TO
D4ZWFM		105.7	-5.4	-0.97	82.1	-4.1	-0.56	XX
DLVJUY	*	122.8	11.7	2.09	108.1	21.9	3.03	CE
EDF946		110.9	-0.2	-0.04	81.7	-4.4	-0.61	TO
F63JY6		112.8	1.7	0.30	87.8	1.6	0.23	XX
JPDKKE		112.5	1.4	0.24	86.0	-0.2	-0.02	CE
M6C2Y2		100.4	-10.7	-1.92	78.4	-7.8	-1.07	CS
M8L4N8		108.7	-2.4	-0.44	83.8	-2.3	-0.32	CE
MH3QX8		106.3	-4.8	-0.86	82.8	-3.4	-0.46	AT
N4GVYM		116.6	5.5	0.97	89.3	3.2	0.44	CE
ZA8838		113.4	2.3	0.41	84.0	-2.1	-0.29	TO
ZUBR3D		112.2	1.0	0.18	84.6	-1.6	-0.21	CE

**Summary Statistics**

	Sample G51	Sample G52
<b>Grand Means</b>	111.12 Degrees C	86.13 Degrees C
<b>Stnd Dev Btwn Labs</b>	5.61 Degrees C	7.25 Degrees C

Statistics based on 13 of 13 reporting participants

Sample G51: PP & Sample G52: PP

**Key to Instrument Codes Reported by Participants**

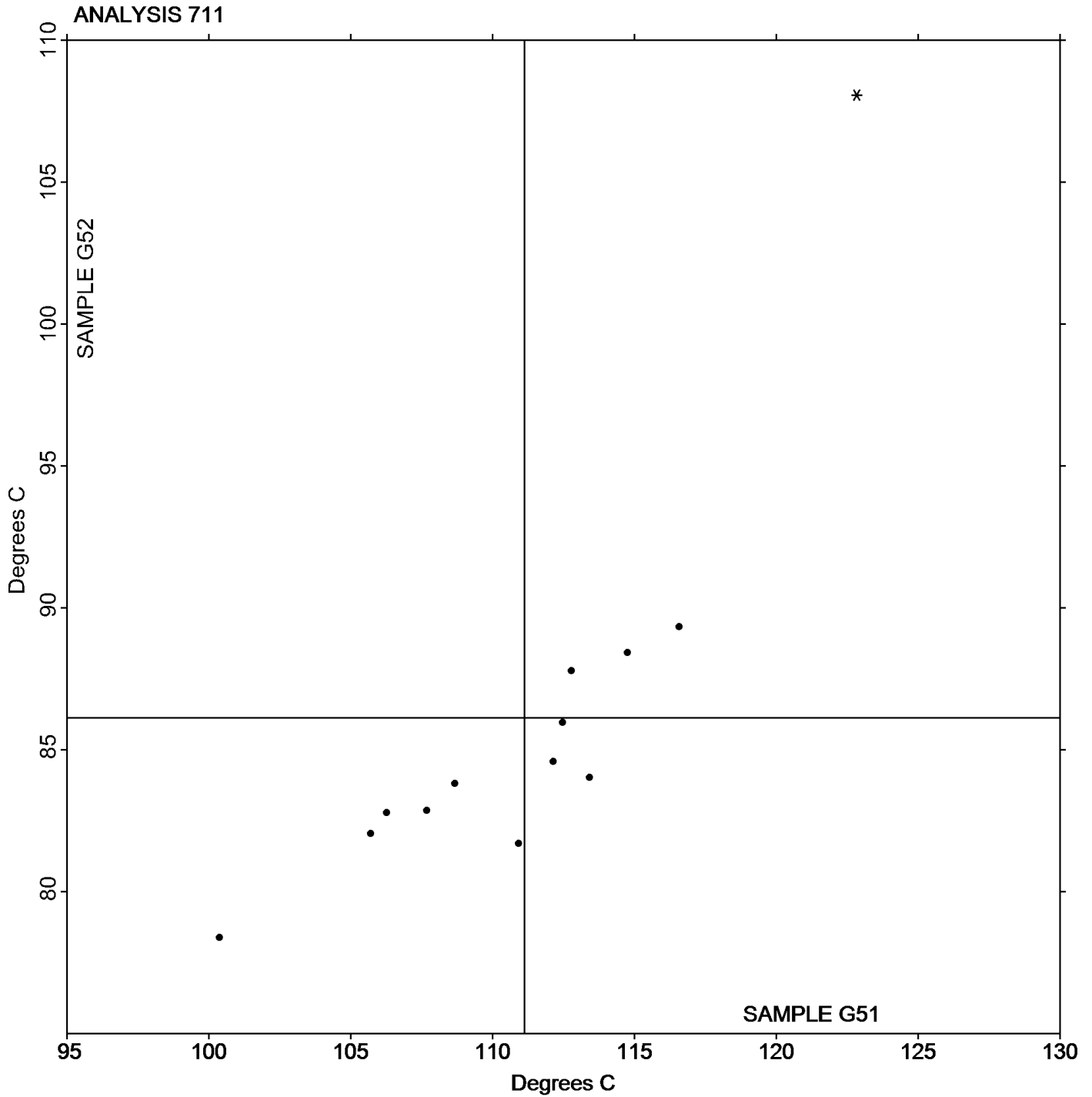
- AT Atlas
- CS CSI
- XX Instrument manufacturer not specified by lab
- CE Ceast
- TO Tinius Olsen



**Plastics Interlaboratory Testing Program**  
**Analysis 711**  
**Deflection Temp. Under Flexural Load (0.455 MPa) - Degrees C**

**Report #106**  
**2nd Qtr 2018**

**Grand Mean Sample G51: 111.12 Degrees C    Grand Mean Sample G52: 86.131 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 #106

## Analysis 712

2nd Qtr 2018

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

WebCode	Data Flag	Sample N51			Sample N52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2Y69TC		78.80	-0.21	-0.21	79.05	0.05	0.05	IN
6PNQPV		77.73	-1.29	-1.28	77.53	-1.48	-1.51	TO
7TEKY2		79.00	-0.01	-0.01	79.03	0.02	0.02	AT
84VQBW		78.58	-0.44	-0.43	78.48	-0.53	-0.54	CE
88XCFV		78.65	-0.36	-0.36	78.58	-0.43	-0.44	TO
9H9BFG		79.18	0.16	0.16	79.30	0.30	0.30	TO
D73Z33		79.18	0.16	0.16	78.75	-0.25	-0.26	IN
DLVJUY	X	94.87	15.85	15.73	95.20	16.20	16.59	CE
EDF946		79.06	0.04	0.04	79.47	0.47	0.48	TO
EEUFR		78.98	-0.04	-0.04	78.73	-0.28	-0.29	ZW
FZ7W7G		79.50	0.49	0.48	79.53	0.52	0.53	CF
GRLFQC		80.10	1.09	1.08	79.95	0.95	0.97	DN
HR6ERG	X	106.33	27.31	27.11	105.78	26.77	27.43	TY
JBFVQ		78.20	-0.81	-0.81	78.25	-0.75	-0.77	CE
JPDKKE		78.43	-0.58	-0.57	78.03	-0.97	-0.99	CF
JPXJHC	*	81.45	2.44	2.42	80.58	1.57	1.61	XX
JZHQM		79.20	0.19	0.19	78.95	-0.05	-0.05	AT
KLQHYQ		79.28	0.26	0.26	79.10	0.10	0.10	TY
M7PLQC		79.00	-0.01	-0.01	78.85	-0.15	-0.16	CF
N4GVYM		79.56	0.55	0.55	78.85	-0.15	-0.16	CE
NXB26R		80.40	1.39	1.38	80.95	1.95	1.99	DN
PQNTX7		79.90	0.89	0.88	79.43	0.42	0.43	CE
Q3YK27		80.45	1.44	1.43	80.88	1.87	1.92	CE
RQ24K4		77.95	-1.06	-1.05	78.05	-0.95	-0.98	CE
U43CJX		76.55	-2.46	-2.44	76.70	-2.30	-2.36	XX
UFCW3Q		78.10	-0.91	-0.91	78.13	-0.88	-0.90	IN
UTENKN		80.00	0.99	0.98	80.13	1.12	1.15	TO
YTZRZR		79.15	0.14	0.14	79.33	0.32	0.33	CE
Z4ZFXF		79.55	0.54	0.53	79.80	0.80	0.82	DN
ZGPHEM	*	78.03	-0.99	-0.98	79.13	0.12	0.12	CE
ZUBR3D		77.43	-1.59	-1.58	77.63	-1.38	-1.41	CE



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 712

2nd Qtr 2018

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

Summary Statistics		
	<u>Sample N51</u>	<u>Sample N52</u>
<b>Grand Means</b>	79.012 Degrees C	79.004 Degrees C
<b>Stnd Dev Btwn Labs</b>	1.008 Degrees C	0.976 Degrees C
Statistics based on 29 of 31 reporting participants		

Sample N51: ABS & Sample N52: ABS

#### Comments on Assigned Data Flags for Test #712

HR6ERG (X) - Extreme data.

DLVJUY (X) - Extreme data.

#### 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

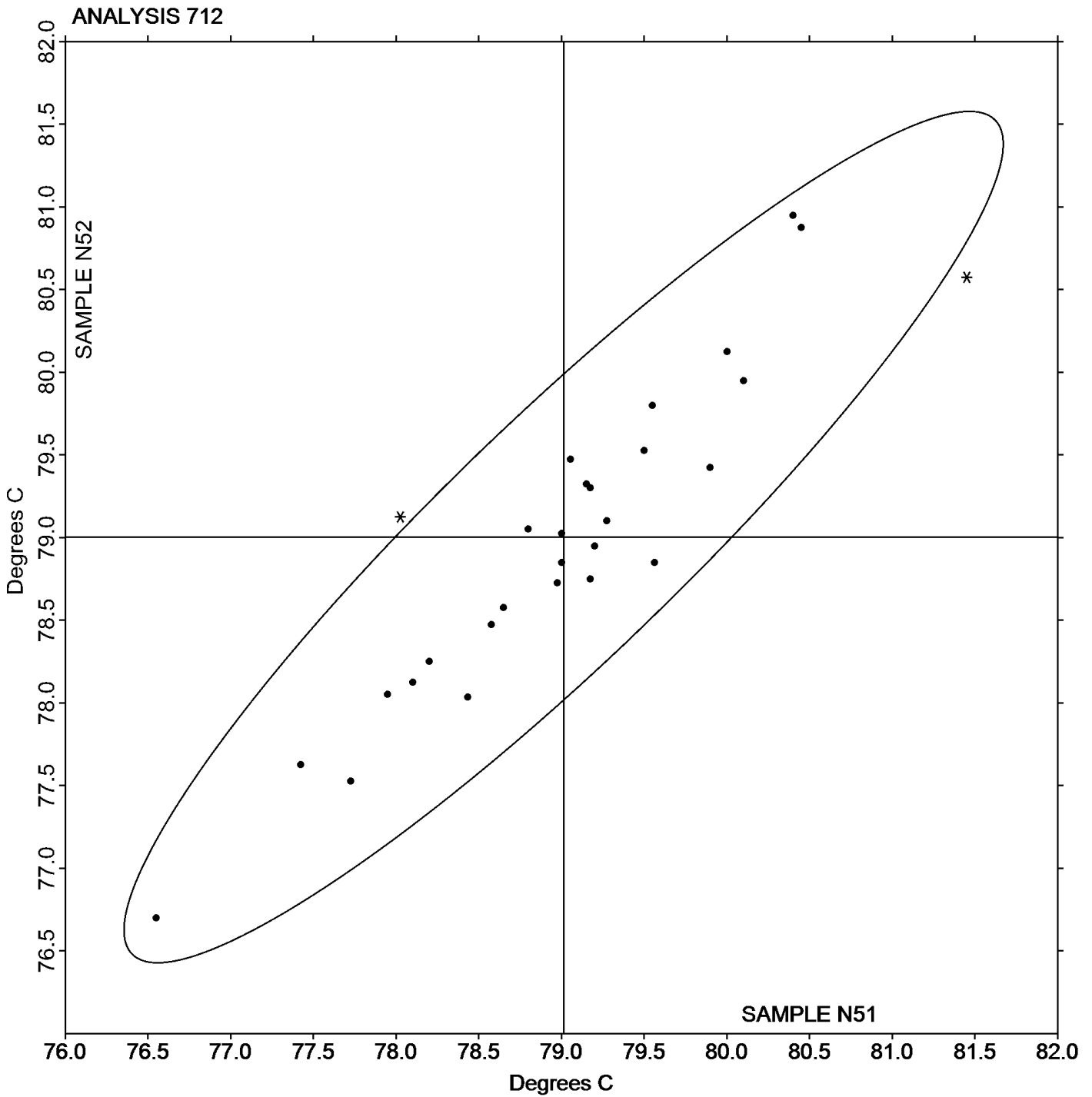
Report #106

## Analysis 712

2nd Qtr 2018

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

Grand Mean Sample N51: 79.012 Degrees C    Grand Mean Sample N52: 79.004 Degrees C





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 715**

**2nd Qtr 2018**

**Vicat Softening Temperature (Rate A)**

WebCode	Data Flag	Sample H51			Sample H52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
449X3W		95.77	0.84	1.22	95.77	0.77	1.13	TO
4G9REQ		95.03	0.10	0.15	95.07	0.07	0.11	CE
6PNQPV		93.75	-1.18	-1.72	93.73	-1.26	-1.83	XX
88XCFV		94.93	0.00	0.00	94.90	-0.09	-0.14	TO
EEUFR		96.23	1.30	1.90	96.25	1.26	1.83	CF
F7CNEE		95.07	0.14	0.20	95.18	0.19	0.28	CE
FCVZ6Z		94.72	-0.21	-0.31	94.72	-0.28	-0.40	TO
FYC9ML		93.72	-1.21	-1.77	93.78	-1.21	-1.76	QA
HR6ERG	X	138.82	43.89	63.95	138.87	43.87	63.91	TY
JPDKKE		94.90	-0.03	-0.04	94.70	-0.29	-0.43	CF
JZHQHM		95.43	0.50	0.73	95.47	0.47	0.69	AT
M8L4N8		94.50	-0.43	-0.63	94.62	-0.38	-0.55	CE
PDFU4E		93.97	-0.96	-1.40	94.47	-0.53	-0.77	CE
PQNTX7		94.78	-0.15	-0.21	94.92	-0.08	-0.11	CE
Q3YK27		96.22	1.29	1.87	96.45	1.46	2.12	CF
T3Q8M9		94.98	0.05	0.08	95.07	0.07	0.11	DN
TLLT8Z		94.95	0.02	0.03	94.78	-0.21	-0.31	RO
UBKMY		95.05	0.12	0.17	95.38	0.39	0.57	IN
WP9LTQ		95.02	0.09	0.13	94.78	-0.21	-0.31	CF
ZUBR3D		94.67	-0.26	-0.38	94.83	-0.16	-0.23	CE

Summary Statistics		
	Sample H51	Sample H52
<b>Grand Means</b>	94.931 Degrees C	94.993 Degrees C
<b>Stnd Dev Btwn Labs</b>	0.686 Degrees C	0.687 Degrees C
Statistics based on 19 of 20 reporting participants		

Sample H51: HIPS & Sample H52: HIPS

**Comments on Assigned Data Flags for Test #715**

HR6ERG (X) - Extreme data.



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 715

2nd Qtr 2018

### Vicat Softening Temperature (Rate A)

#### Key to Instrument Codes Reported by Participants

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





# Plastics Interlaboratory Testing Program

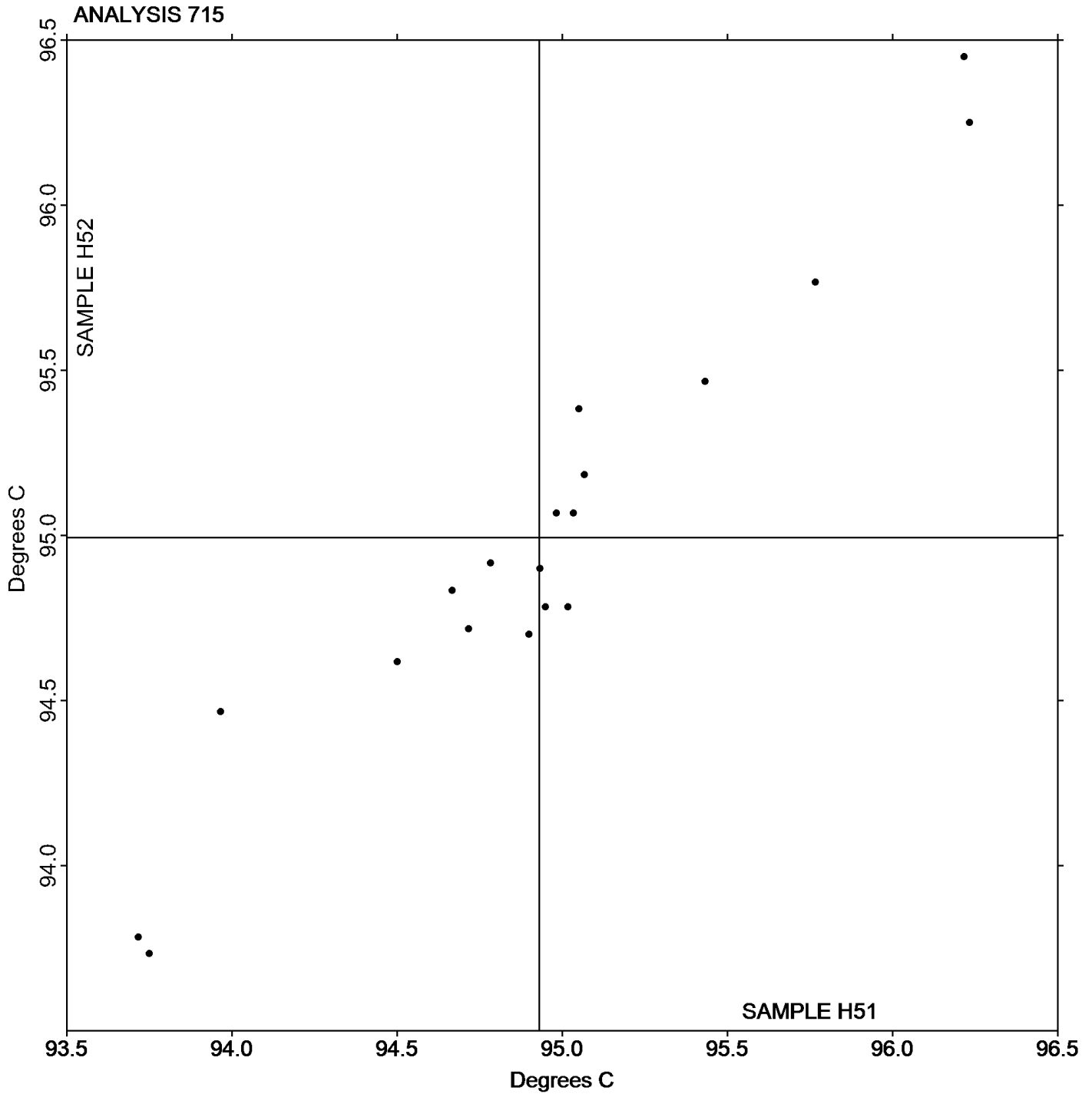
Report #106

## Analysis 715

2nd Qtr 2018

### Vicat Softening Temperature (Rate A)

Grand Mean Sample H51: 94.931 Degrees C    Grand Mean Sample H52: 94.993 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 #106**

**Analysis 716**

**2nd Qtr 2018**

**Vicat Softening Temperature (Rate B)**

WebCode	Data Flag	Sample R51			Sample R52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
449X3W		97.75	0.54	0.79	97.97	0.70	1.12	TO
4G9REQ		97.10	-0.11	-0.17	97.15	-0.12	-0.19	CE
88XCFV		96.90	-0.31	-0.46	97.03	-0.24	-0.38	TO
9UMER8		95.83	-1.38	-2.03	95.95	-1.32	-2.11	TO
EDF946		96.53	-0.68	-1.00	96.56	-0.71	-1.15	TO
EEUFR		97.80	0.59	0.86	97.98	0.71	1.14	CF
F7CNEE		97.10	-0.11	-0.17	97.12	-0.15	-0.25	CE
FCVZ6Z		96.67	-0.55	-0.80	96.85	-0.42	-0.67	TO
FYC9ML		97.62	0.40	0.59	97.83	0.56	0.90	DN
HR6ERG	X	140.97	43.75	64.18	140.80	43.53	69.76	TY
JPKKE		97.50	0.29	0.42	97.47	0.20	0.32	CF
JZHQM		98.12	0.90	1.32	97.90	0.63	1.01	AT
M8L4N8		96.50	-0.71	-1.05	96.42	-0.85	-1.37	CE
PDFU4E		96.20	-1.01	-1.49	96.52	-0.75	-1.21	CE
PQNTX7		97.47	0.25	0.37	97.60	0.33	0.53	CE
Q3YK27		98.62	1.40	2.06	98.30	1.03	1.65	CF
T3Q8M9		97.03	-0.18	-0.26	97.02	-0.25	-0.41	DN
TLLT8Z		97.22	0.00	0.00	97.28	0.01	0.02	RO
UBKMY		97.42	0.20	0.30	97.57	0.30	0.48	IN
WP9LTQ		97.70	0.49	0.71	97.62	0.35	0.56	CF

Summary Statistics		
	Sample R51	Sample R52
<b>Grand Means</b>	97.214 Degrees C	97.270 Degrees C
<b>Std Dev Btwn Labs</b>	0.682 Degrees C	0.624 Degrees C
Statistics based on 19 of 20 reporting participants		

Sample R51: HIPS & Sample R52: HIPS

**Comments on Assigned Data Flags for Test #716**

HR6ERG (X) - Extreme data.



# Plastics Interlaboratory Testing Program

## Analysis 716

### Vicat Softening Temperature (Rate B)

Report #106

2nd Qtr 2018

#### Key to Instrument Codes Reported by Participants

AT Atlas

CF Coesfeld

IN Instron

TO Tinius Olsen

CE Ceast

DN DYNISCO

RO Rosand

TY Toyoseiki





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 718**

**2nd Qtr 2018**

**Specific Gravity - sp gr 23/23 C**

WebCode	Data Flag	Sample T51			Sample T52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU		1.03220	-0.00223	-0.96	1.03100	-0.00317	-1.44
2JQZUU		1.03753	0.00311	1.34	1.03717	0.00300	1.36
2Y69TC		1.03587	0.00144	0.62	1.03520	0.00103	0.47
33YPFQ	X	1.03767	0.00324	1.40	1.04033	0.00616	2.79
3644YP		1.03387	-0.00056	-0.24	1.03347	-0.00070	-0.32
37ANMP		1.03117	-0.00326	-1.41	1.03207	-0.00210	-0.95
3DUMFJ		1.03427	-0.00016	-0.07	1.03347	-0.00070	-0.32
3HTWUR		1.03587	0.00144	0.62	1.03413	-0.00004	-0.02
43E3LE		1.03367	-0.00076	-0.33	1.03333	-0.00084	-0.38
4APGDH		1.03317	-0.00126	-0.54	1.03343	-0.00074	-0.33
7TEKY2		1.03267	-0.00176	-0.76	1.03267	-0.00150	-0.68
84VQBW	X	1.02975	-0.00468	-2.02	1.03290	-0.00127	-0.58
88XCFV		1.03430	-0.00013	-0.06	1.03423	0.00006	0.03
8BQKGG		1.03409	-0.00034	-0.15	1.03420	0.00003	0.01
9H9BFG	X	1.54847	0.51404	221.80	1.03597	0.00180	0.81
9NAMCE		1.03467	0.00024	0.10	1.03467	0.00050	0.22
9ZPE3A		1.03101	-0.00341	-1.47	1.03072	-0.00345	-1.56
AUHJL7		1.03320	-0.00123	-0.53	1.03360	-0.00057	-0.26
BE4EUK		1.03413	-0.00029	-0.13	1.03423	0.00006	0.03
BGAXY8		1.03730	0.00287	1.24	1.03697	0.00280	1.27
BJ2UM2		1.03567	0.00124	0.53	1.03600	0.00183	0.83
BKQ3QB	X	1.02900	-0.00543	-2.34	1.03333	-0.00084	-0.38
BN9KQ8		1.03000	-0.00443	-1.91	1.03033	-0.00384	-1.74
BP2F7N		1.03433	-0.00009	-0.04	1.03367	-0.00050	-0.23
C7ZYDB		1.03133	-0.00309	-1.34	1.03267	-0.00150	-0.68
CJDXQR		1.03510	0.00067	0.29	1.03543	0.00126	0.57
CJYGGZ		1.03143	-0.00299	-1.29	1.03233	-0.00184	-0.83
CMUD36		1.03673	0.00231	0.99	1.03643	0.00226	1.03
CXACQL	*	1.02967	-0.00476	-2.05	1.02867	-0.00550	-2.49
DBU4W8		1.03300	-0.00143	-0.62	1.03400	-0.00017	-0.08
DC6ZD6	*	1.02800	-0.00643	-2.77	1.02767	-0.00650	-2.95
DLVJUY		1.03100	-0.00343	-1.48	1.03200	-0.00217	-0.98
E7GLEP		1.03640	0.00197	0.85	1.03687	0.00270	1.22
E9PYWR		1.03337	-0.00106	-0.46	1.03233	-0.00184	-0.83
EDF946		1.03373	-0.00070	-0.30	1.03314	-0.00103	-0.47



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 718

2nd Qtr 2018

### Specific Gravity - sp gr 23/23 C

WebCode	Data Flag	Sample T51			Sample T52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
EEUFR		1.03607	0.00164	0.71	1.03547	0.00130	0.59
EJ2ECB		1.03200	-0.00243	-1.05	1.03133	-0.00284	-1.29
ETRQUJ		1.03690	0.00247	1.07	1.03780	0.00363	1.64
EZR4YT	X	1.03553	0.00111	0.48	1.03220	-0.00197	-0.89
F63JY6		1.03530	0.00087	0.38	1.03403	-0.00014	-0.06
F64CZX		1.03583	0.00141	0.61	1.03527	0.00110	0.50
FB9EJ6		1.03583	0.00141	0.61	1.03563	0.00146	0.66
FRWKXP		1.03270	-0.00173	-0.75	1.03260	-0.00157	-0.71
FT4UYV	*	1.02917	-0.00526	-2.27	1.02860	-0.00557	-2.52
GRLFQC		1.03617	0.00174	0.75	1.03633	0.00216	0.98
HA829G		1.03460	0.00017	0.07	1.03517	0.00100	0.45
HR6ERG	X	1.04673	0.01231	5.31	1.04640	0.01223	5.54
JBFQVQ		1.03550	0.00107	0.46	1.03573	0.00156	0.71
JPKKE		1.03600	0.00157	0.68	1.03450	0.00033	0.15
JPXJHC		1.03000	-0.00443	-1.91	1.03067	-0.00350	-1.59
JQNVU3		1.03243	-0.00199	-0.86	1.03260	-0.00157	-0.71
JZHQHM		1.03627	0.00184	0.79	1.03640	0.00223	1.01
L9XGVP		1.03660	0.00217	0.94	1.03643	0.00226	1.03
M8L4N8		1.03493	0.00051	0.22	1.03410	-0.00007	-0.03
MDP8GQ		1.03513	0.00071	0.30	1.03397	-0.00020	-0.09
MH3QX8		1.03847	0.00404	1.74	1.03787	0.00370	1.67
MR4DLX		1.03803	0.00361	1.56	1.03680	0.00263	1.19
N39K8P	X	1.03233	-0.00209	-0.90	1.03767	0.00350	1.58
N4GVYM		1.03557	0.00114	0.49	1.03553	0.00136	0.62
P99G7F		1.03330	-0.00113	-0.49	1.03450	0.00033	0.15
PQNTX7		1.03757	0.00314	1.35	1.03657	0.00240	1.09
Q9PVB6		1.03643	0.00201	0.87	1.03610	0.00193	0.87
QBUKDD		1.03403	-0.00039	-0.17	1.03323	-0.00094	-0.42
QMJK6F		1.03513	0.00071	0.30	1.03473	0.00056	0.26
RGWW74		1.03690	0.00247	1.07	1.03627	0.00210	0.95
RJX68T		1.03633	0.00191	0.82	1.03737	0.00320	1.45
RPRWLH		1.03450	0.00007	0.03	1.03383	-0.00034	-0.15
RQ24K4		1.03657	0.00214	0.92	1.03530	0.00113	0.51
T78PNQ		1.03213	-0.00229	-0.99	1.03147	-0.00270	-1.22
TDAUFA		1.03700	0.00257	1.11	1.03623	0.00206	0.93



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 718**

**2nd Qtr 2018**

**Specific Gravity - sp gr 23/23 C**

WebCode	Data Flag	Sample T51			Sample T52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
TW4B3R		1.03347	-0.00096	-0.41	1.03320	-0.00097	-0.44
U2T87A		1.03097	-0.00346	-1.49	1.03213	-0.00204	-0.92
U43CJX		1.03467	0.00024	0.10	1.03467	0.00050	0.22
U9TTRH		1.03633	0.00191	0.82	1.03633	0.00216	0.98
UFCW3Q		1.03403	-0.00039	-0.17	1.03500	0.00083	0.38
UWEL6P		1.03167	-0.00276	-1.19	1.03133	-0.00284	-1.29
V6AW4R		1.03483	0.00041	0.18	1.03430	0.00013	0.06
W27HXD	X	1.03233	-0.00209	-0.90	1.02933	-0.00484	-2.19
WP9LTQ		1.03367	-0.00076	-0.33	1.03343	-0.00074	-0.33
WTNEHX	*	1.03470	0.00027	0.12	1.03237	-0.00180	-0.82
YL4X3T		1.03557	0.00114	0.49	1.03383	-0.00034	-0.15
YTZRZR	X	1.02767	-0.00676	-2.92	1.03100	-0.00317	-1.44
Z4ZFXF		1.03653	0.00211	0.91	1.03597	0.00180	0.81
Z8ZRUF		1.03863	0.00421	1.81	1.03807	0.00390	1.77
ZA8838	X	1.03700	0.00257	1.11	1.03333	-0.00084	-0.38
ZGPHEM		1.03637	0.00194	0.84	1.03570	0.00153	0.69
ZUBR3D		1.03737	0.00294	1.27	1.03623	0.00206	0.93

Summary Statistics		Sample T51	Sample T52
<b>Grand Means</b>		1.034428 sp gr 23/23 C	1.034170 sp gr 23/23 C
<b>Std Dev Btwn Labs</b>		0.002318 sp gr 23/23 C	0.002207 sp gr 23/23 C
Statistics based on 77 of 87 reporting participants			

Sample T51: HIPS & Sample T52: HIPS



**Comments on Assigned Data Flags for Test #718**

- 33YPFQ (X) - Inconsistent in testing between samples. Data for sample T52 are high. Inconsistent within the determinations of both samples.
- N39K8P (X) - Inconsistent in testing between samples.
- EZR4YT (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T52.
- ZA8838 (X) - Inconsistent in testing between samples.
- 84VQBW (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- W27HXD (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample T51.
- HR6ERG (X) - Data for both samples are high. Possible Systematic Error.
- BKQ3QB (X) - Inconsistent in testing between samples.
- YTZRZR (X) - Inconsistent in testing between samples. Data for sample T51 are low. Inconsistent within the determinations of sample T51.
- 9H9BFG (X) - Extreme data.





# Plastics Interlaboratory Testing Program

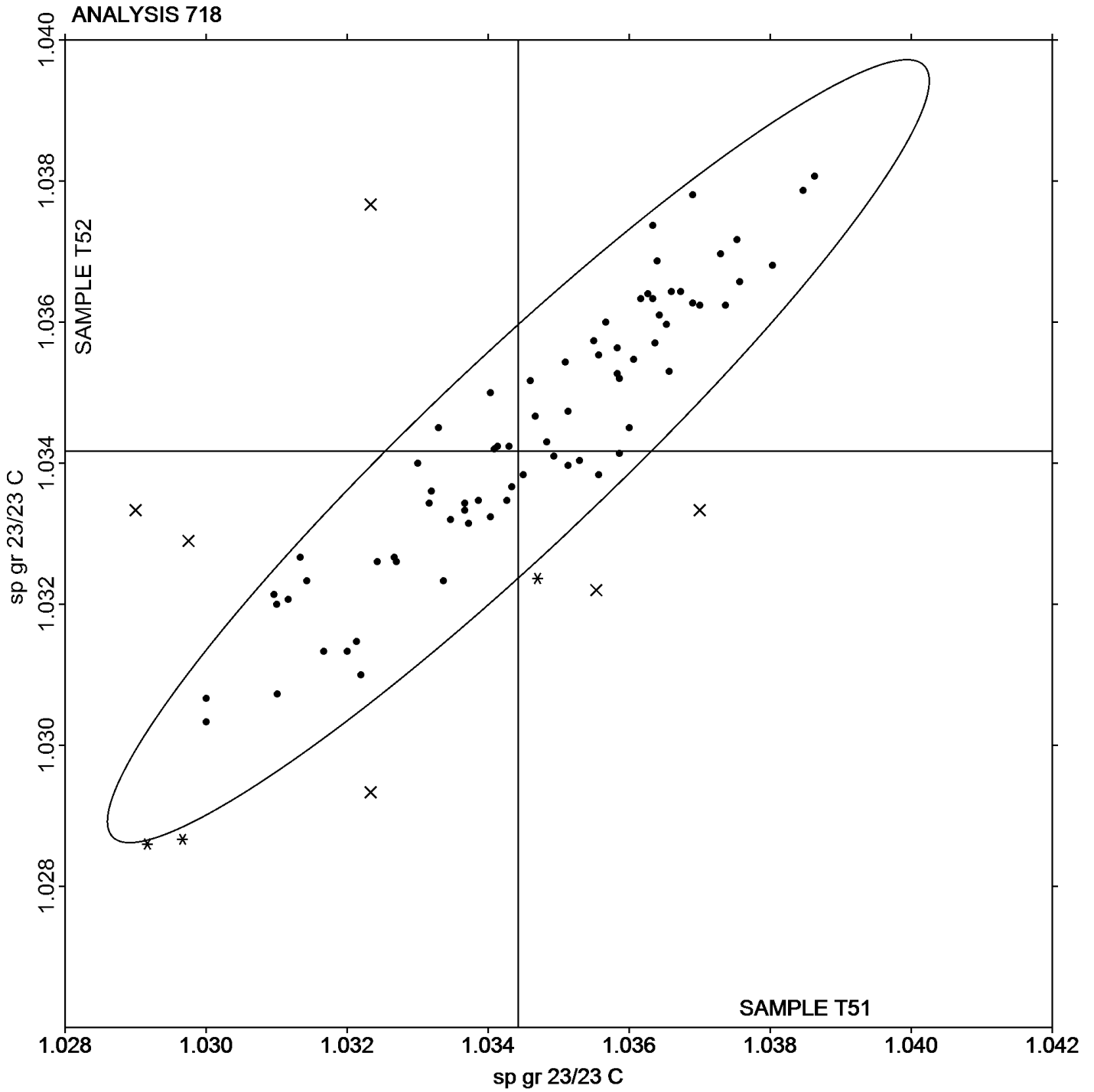
Analysis 718

Specific Gravity - sp gr 23/23 C

Report #106

2nd Qtr 2018

Grand Mean Sample T51: 1.0344 sp gr 23/23 C    Grand Mean Sample T52: 1.0342 sp gr 23/23 C





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 720

2nd Qtr 2018

### Flexural Modulus- ksi

WebCode	Data Flag	Sample J51			Sample J52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2V46WJ		356.0	26.5	1.24	360.3	29.4	1.34
3WUNHH		353.9	24.4	1.14	348.7	17.8	0.81
449X3W	X	6.6	-322.9	-15.04	6.7	-324.3	-14.79
6FVKMG		347.8	18.3	0.85	347.6	16.6	0.76
734DAD		312.8	-16.6	-0.77	307.9	-23.1	-1.05
74D827		303.5	-26.0	-1.21	312.1	-18.8	-0.86
7TY2E6		335.4	5.9	0.28	335.2	4.2	0.19
7UVE3W		330.3	0.8	0.04	330.2	-0.8	-0.04
84VQBW	X	295.4	-34.1	-1.59	313.1	-17.9	-0.81
88XCFV		333.3	3.8	0.18	332.3	1.3	0.06
BGAXY8		336.0	6.5	0.30	335.8	4.8	0.22
BN9KQ8		306.2	-23.3	-1.08	308.1	-22.9	-1.04
BP2F7N		315.1	-14.4	-0.67	312.7	-18.3	-0.83
BVRLAQ		323.0	-6.4	-0.30	324.9	-6.1	-0.28
C4YRGD		321.7	-7.8	-0.36	325.4	-5.5	-0.25
CJVYGZ		292.4	-37.1	-1.73	295.0	-36.0	-1.64
CTZ9L6		368.1	38.6	1.80	374.6	43.6	1.99
DLVJUY		355.1	25.6	1.19	358.8	27.8	1.27
DTGK2N		334.0	4.5	0.21	333.0	2.0	0.09
DWUGED		344.0	14.5	0.67	344.5	13.5	0.62
EDF946		332.0	2.5	0.12	330.7	-0.2	-0.01
EEUFR		318.7	-10.8	-0.50	321.1	-9.9	-0.45
EJ2ECB	X	1,909.0	1,579.5	73.56	1,891.3	1,560.3	71.17
F63JY6		285.6	-43.9	-2.04	288.4	-42.6	-1.94
F64CZX		332.2	2.7	0.13	330.0	-1.0	-0.05
F7CNEE		329.6	0.1	0.00	327.9	-3.1	-0.14
FLN4HA	X	496.6	167.2	7.79	505.1	174.1	7.94
FYC9ML		316.8	-12.7	-0.59	321.3	-9.7	-0.44
GLMPTF		344.6	15.1	0.70	345.8	14.9	0.68
GUWZ28		346.4	16.9	0.79	342.8	11.8	0.54
HA829G		343.3	13.8	0.64	347.4	16.4	0.75
HEH8VF		319.0	-10.5	-0.49	320.5	-10.5	-0.48
HR6ERG		370.1	40.7	1.89	366.1	35.1	1.60
JBFQVQ		347.4	17.9	0.83	353.2	22.2	1.01
JPXJHC		303.1	-26.3	-1.23	306.9	-24.1	-1.10



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 720

2nd Qtr 2018

### Flexural Modulus- ksi

WebCode	Data Flag	Sample J51			Sample J52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
JZHQHM		323.2	-6.3	-0.29	329.2	-1.8	-0.08
KKYMAW		327.0	-2.5	-0.12	327.3	-3.7	-0.17
L4RKCP		338.3	8.9	0.41	339.5	8.5	0.39
LHLA6Z	*	322.2	-7.3	-0.34	335.4	4.4	0.20
MABUY8		298.8	-30.6	-1.43	294.2	-36.7	-1.68
MEFDTB		302.8	-26.7	-1.24	305.5	-25.5	-1.16
MH3QX8		324.6	-4.9	-0.23	319.4	-11.6	-0.53
N39K8P		341.3	11.9	0.55	343.2	12.2	0.56
N3PYBT	X	400.4	70.9	3.30	378.2	47.2	2.15
N4GVYM		353.8	24.3	1.13	356.5	25.5	1.16
NTFE6C		319.2	-10.3	-0.48	321.0	-10.0	-0.46
NXA96X	X	42.2	-287.3	-13.38	40.9	-290.1	-13.23
PQNTX7	*	264.5	-65.0	-3.03	263.6	-67.4	-3.07
T3A7LR		319.6	-9.9	-0.46	326.0	-5.0	-0.23
TDAUFA		327.2	-2.3	-0.11	325.5	-5.5	-0.25
TLLT8Z		332.8	3.3	0.15	342.4	11.4	0.52
U43CJX		344.9	15.4	0.72	340.3	9.3	0.42
VPRBD7		327.9	-1.6	-0.07	327.5	-3.5	-0.16
WP9LTQ		312.2	-17.2	-0.80	313.5	-17.4	-0.80
XXFTZD		326.3	-3.2	-0.15	325.4	-5.6	-0.26
Z4ZFXF		340.2	10.7	0.50	341.8	10.8	0.49
Z8ZRUF	*	350.5	21.0	0.98	364.7	33.7	1.54
ZA8838	X	281.8	-47.7	-2.22	254.6	-76.4	-3.48
ZX8PZJ		378.4	48.9	2.28	380.3	49.3	2.25

Summary Statistics		
	Sample J51	Sample J52
<b>Grand Means</b>	329.48 ksi	330.99 ksi
<b>Stnd Dev Btwn Labs</b>	21.47 ksi	21.92 ksi
Statistics based on 52 of 59 reporting participants		

Sample J51: HIPS & Sample J52: HIPS



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**Comments on Assigned Data Flags for Test #720**

N3PYBT (X) - Inconsistent in testing between samples. Data for sample J51 are high.

ZA8838 (X) - Inconsistent in testing between samples. Data for sample J52 are low.

84VQBW (X) - Inconsistent in testing between samples.

449X3W (X) - Extreme data.

NXA96X (X) - Extreme data.

FLN4HA (X) - Data for both samples are high. Possible Systematic Error.

EJ2ECB (X) - Extreme data.

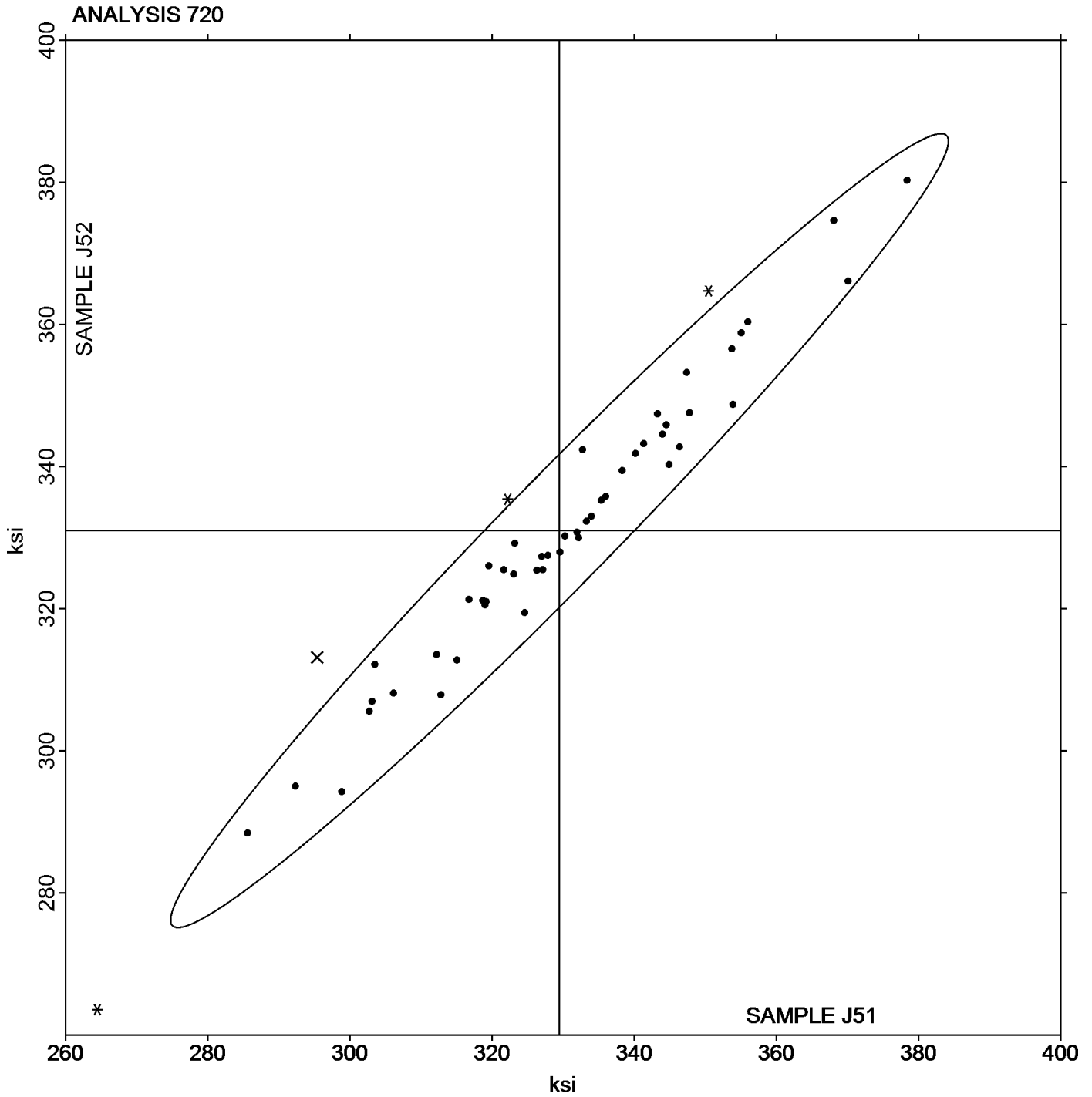


# Plastics Interlaboratory Testing Program

## Analysis 720 Flexural Modulus- ksi

Report #106  
2nd Qtr 2018

Grand Mean Sample J51: 329.48 ksi    Grand Mean Sample J52: 330.99 ksi





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 721

2nd Qtr 2018

### Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J51			Sample J52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2V46WJ		6,197	285	0.99	6,121	184	0.61
3WUNHH		6,378	466	1.61	6,293	356	1.18
449X3W	*	6,535	623	2.16	6,720	783	2.59
6FVKMG		6,089	176	0.61	6,040	104	0.34
734DAD		5,672	-240	-0.83	5,715	-222	-0.74
74D827		5,722	-191	-0.66	5,687	-250	-0.83
7TY2E6		5,862	-50	-0.17	5,930	-7	-0.02
84VQBW		5,757	-156	-0.54	5,852	-85	-0.28
88XCFV		5,683	-229	-0.79	5,665	-272	-0.90
BGAXY8		5,997	84	0.29	6,019	83	0.27
BP2F7N		5,426	-487	-1.69	5,389	-547	-1.81
BVRLAQ		5,857	-55	-0.19	5,861	-76	-0.25
C4YRGD		5,554	-359	-1.24	5,621	-316	-1.05
CJVYGZ		5,584	-328	-1.14	5,549	-388	-1.29
CTZ9L6		6,145	233	0.81	6,203	266	0.88
DLVJUY		6,350	437	1.52	6,397	460	1.52
DTGK2N		6,028	115	0.40	5,979	42	0.14
DWUGED		6,301	388	1.35	6,281	344	1.14
EEUFR		5,988	75	0.26	6,006	69	0.23
F63JY6	X	5,309	-604	-2.09	5,889	-48	-0.16
F7CNEE		5,792	-121	-0.42	5,805	-132	-0.44
FLN4HA	X	7,366	1,453	5.04	7,354	1,417	4.70
FYC9ML		5,826	-86	-0.30	5,867	-70	-0.23
GUWZ28		5,956	44	0.15	5,937	1	0.00
HA829G		5,985	73	0.25	5,987	50	0.17
HEH8VF		5,803	-109	-0.38	5,896	-40	-0.13
HR6ERG	X	11,242	5,330	18.48	11,221	5,284	17.51
JBFQVQ		6,066	154	0.53	6,185	248	0.82
JZHQHM		6,000	87	0.30	6,104	168	0.56
KKYMAW		5,601	-311	-1.08	5,630	-307	-1.02
L4RKCP		5,832	-81	-0.28	5,913	-24	-0.08
MABUY8		5,430	-482	-1.67	5,462	-475	-1.57
MEFDTB		6,045	133	0.46	6,037	100	0.33
MH3QX8		5,537	-376	-1.30	5,675	-262	-0.87
N39K8P		6,017	105	0.36	5,910	-26	-0.09



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 721**

**2nd Qtr 2018**

**Flexural Stress at 5% Strain - psi**

WebCode	Data Flag	Sample J51			Sample J52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
N3PYBT		6,378	466	1.61	6,406	469	1.55
NXA96X	X	2,142	-3,770	-13.07	2,096	-3,841	-12.73
PQNTX7		5,492	-420	-1.46	5,482	-454	-1.51
T3A7LR		5,679	-233	-0.81	5,792	-145	-0.48
TDAUFA		6,191	279	0.97	6,273	336	1.11
UFCW3Q		6,003	90	0.31	5,973	36	0.12
VPRBD7		5,848	-65	-0.23	5,892	-45	-0.15
WP9LTQ		5,876	-36	-0.13	5,890	-47	-0.16
Z4ZFXF		5,931	19	0.06	5,963	26	0.09
Z8ZRUF		6,149	236	0.82	6,227	290	0.96
ZA8838		5,327	-585	-2.03	5,241	-696	-2.31
ZX8PZJ		6,348	436	1.51	6,414	477	1.58

Summary Statistics		
	Sample J51	Sample J52
<b>Grand Means</b>	5,912.5 psi	5,936.9 psi
<b>Std Dev Btwn Labs</b>	288.4 psi	301.8 psi
Statistics based on 43 of 47 reporting participants		

Sample J51: HIPS & Sample J52: HIPS

**Comments on Assigned Data Flags for Test #721**

- HR6ERG (X) - Extreme data.
- NXA96X (X) - Extreme data.
- F63JY6 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J52.
- FLN4HA (X) - Data for both samples are high. Possible Systematic Error.



# Plastics Interlaboratory Testing Program

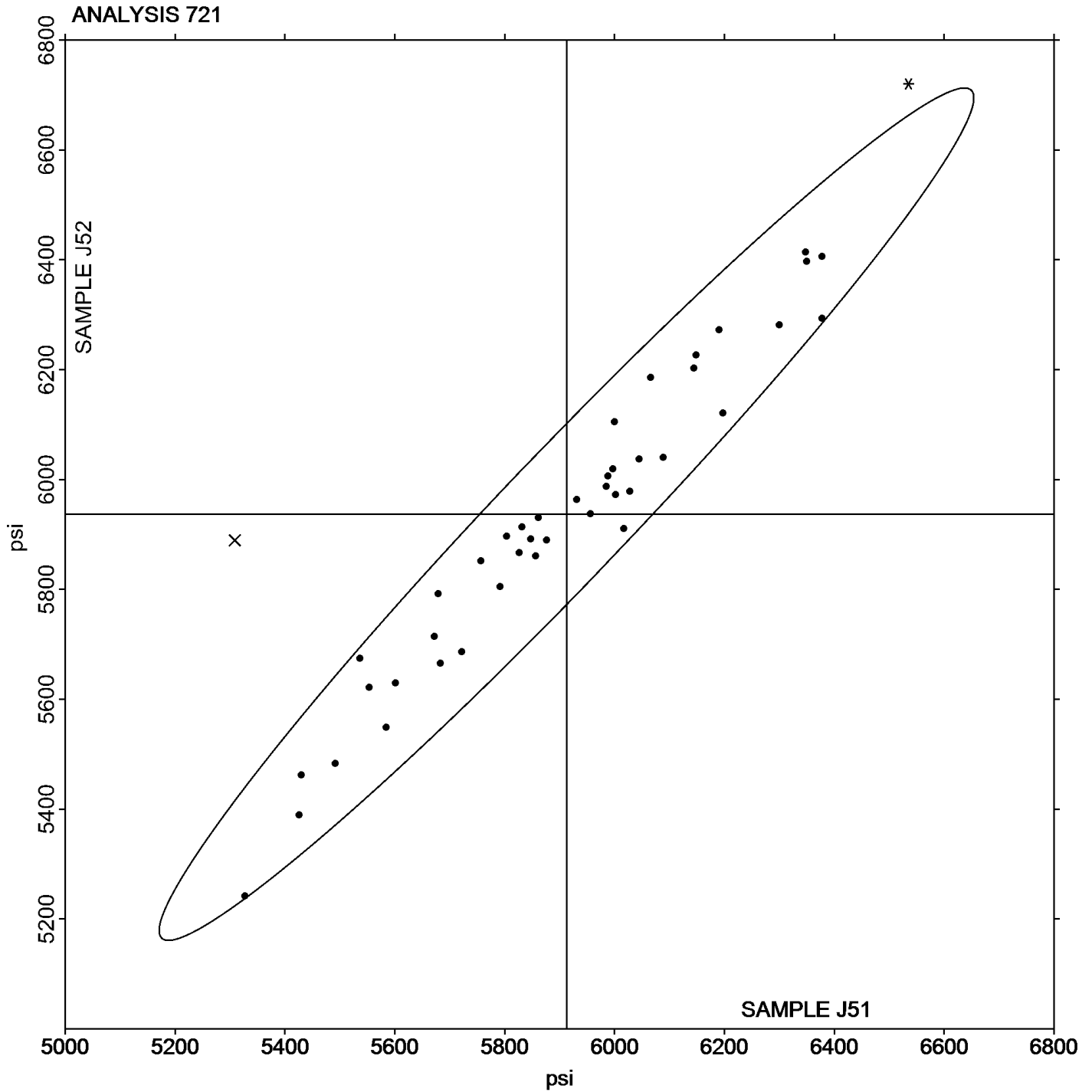
Report #106

## Analysis 721

2nd Qtr 2018

Flexural Stress at 5% Strain - psi

Grand Mean Sample J51: 5,912.47 psi    Grand Mean Sample J52: 5,936.89 psi







# Plastics Interlaboratory Testing Program

Report #106

## Analysis 722

2nd Qtr 2018

### Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J51			Sample J52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2V46WJ		6,180	305	1.02	6,116	221	0.73
3WUNHH		6,385	510	1.70	6,320	426	1.40
449X3W	X	4,756	-1,120	-3.74	4,170	-1,724	-5.67
6FVKMG		6,148	273	0.91	6,130	235	0.77
734DAD		5,701	-174	-0.58	5,741	-154	-0.51
74D827		5,519	-356	-1.19	5,619	-275	-0.91
7TY2E6		5,882	7	0.02	5,934	40	0.13
84VQBW		5,773	-102	-0.34	5,881	-13	-0.04
88XCFV		5,686	-189	-0.63	5,669	-225	-0.74
BGAXY8		5,961	86	0.29	5,975	80	0.26
BP2F7N		5,438	-437	-1.46	5,405	-490	-1.61
BVRLAQ		5,865	-10	-0.03	5,868	-26	-0.09
C4YRGD		5,570	-306	-1.02	5,644	-251	-0.82
CJVYGZ		5,611	-264	-0.88	5,567	-328	-1.08
CTZ9L6		6,167	292	0.98	6,221	327	1.08
DLVJUY		6,350	475	1.59	6,397	502	1.65
DTGK2N		6,057	182	0.61	6,013	119	0.39
DWUGED		6,445	570	1.90	6,475	580	1.91
EDF946		5,823	-52	-0.17	5,774	-121	-0.40
EEUFR		5,940	65	0.22	5,981	87	0.29
F7CNEE		5,939	63	0.21	5,962	68	0.22
FLN4HA	*	5,581	-295	-0.98	5,415	-480	-1.58
FYC9ML		5,831	-44	-0.15	5,868	-26	-0.09
GLMPTF		5,779	-97	-0.32	5,794	-100	-0.33
GUWZ28		5,968	92	0.31	5,949	55	0.18
HA829G		5,996	121	0.40	5,990	96	0.31
HR6ERG	X	11,301	5,426	18.12	11,307	5,413	17.81
JBFQVQ		6,094	219	0.73	6,223	328	1.08
JZHQHM		6,019	144	0.48	6,152	258	0.85
KKYMAW		5,619	-256	-0.86	5,643	-252	-0.83
L4RKCP		5,503	-373	-1.24	5,568	-327	-1.07
LHLA6Z		5,718	-157	-0.53	5,842	-53	-0.17
MABUY8		5,442	-433	-1.45	5,471	-423	-1.39
MEFDTB		6,098	223	0.75	6,088	193	0.64
MH3QX8		5,543	-332	-1.11	5,679	-215	-0.71



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 722**

**2nd Qtr 2018**

**Flexural Stress at Yield - psi**

WebCode	Data Flag	<u>Sample J51</u>			<u>Sample J52</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
N39K8P		6,067	192	0.64	5,939	45	0.15
N3PYBT		6,484	609	2.03	6,502	608	2.00
N4GVYM		6,220	345	1.15	6,340	446	1.47
NTFE6C		5,658	-217	-0.73	5,670	-224	-0.74
NXA96X	X	2,140	-3,736	-12.48	2,095	-3,799	-12.50
PQNTX7		5,501	-374	-1.25	5,497	-398	-1.31
T3A7LR		5,683	-192	-0.64	5,796	-98	-0.32
TLLT8Z		5,744	-132	-0.44	5,744	-151	-0.50
VPRBD7		5,884	9	0.03	5,918	24	0.08
XXFTZD		6,219	343	1.15	6,191	297	0.98
Z8ZRUF		6,372	497	1.66	6,380	485	1.60
ZA8838		5,341	-535	-1.79	5,252	-642	-2.11
ZX8PZJ		5,581	-295	-0.98	5,645	-250	-0.82

**Summary Statistics**

	<u>Sample J51</u>	<u>Sample J52</u>
<b>Grand Means</b>	5,875.2 psi	5,894.3 psi
<b>Stnd Dev Btwn Labs</b>	299.4 psi	303.9 psi

Statistics based on 45 of 48 reporting participants

Sample J51: HIPS & Sample J52: HIPS

**Comments on Assigned Data Flags for Test #722**

HR6ERG (X) - Extreme data.

449X3W (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample J52.

NXA96X (X) - Data for both samples are very low.



# Plastics Interlaboratory Testing Program

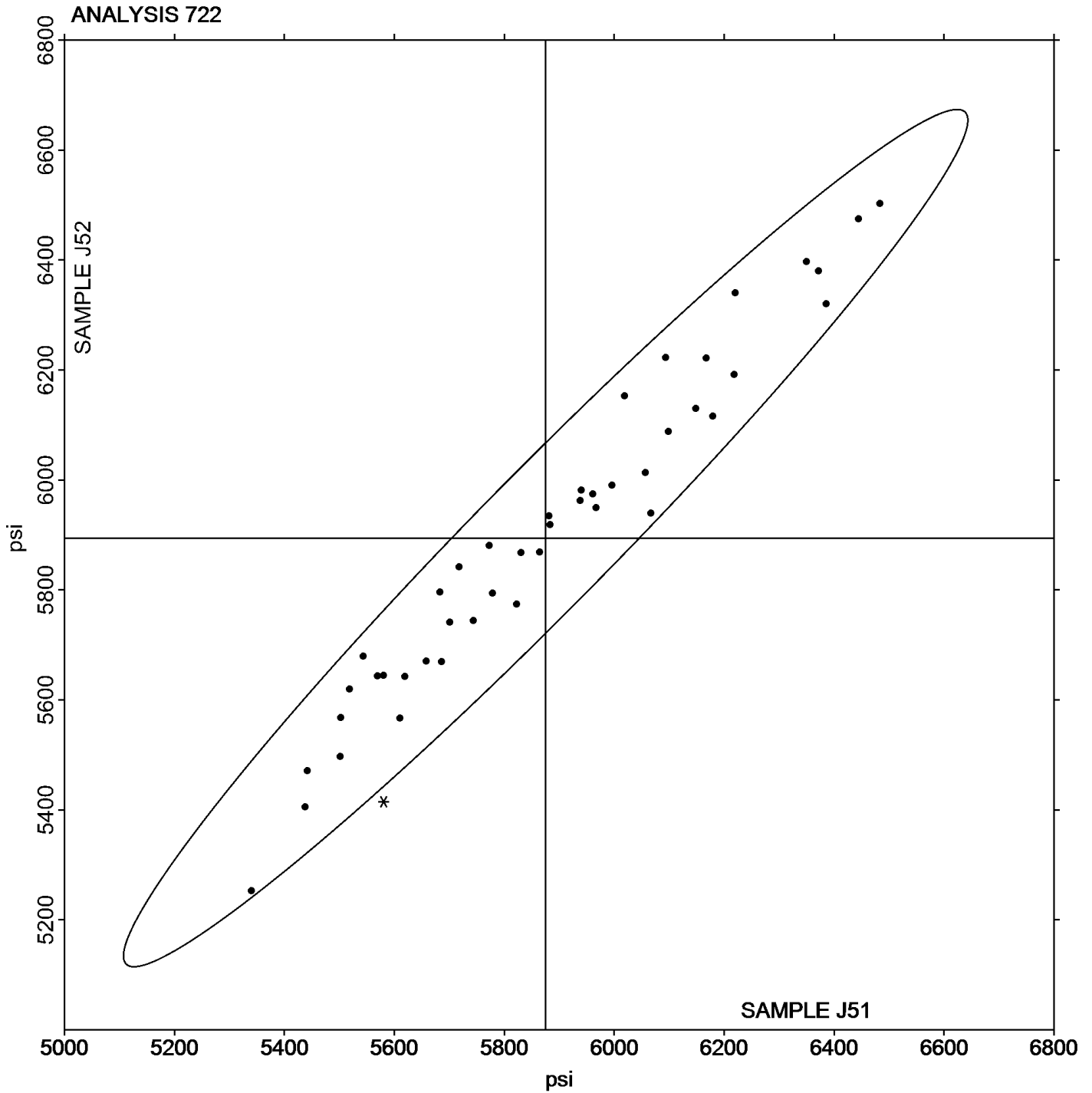
Report #106

## Analysis 722

2nd Qtr 2018

### Flexural Stress at Yield - psi

Grand Mean Sample J51: 5,875.21 psi    Grand Mean Sample J52: 5,894.34 psi





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 730

2nd Qtr 2018

### Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU		45.90	-0.31	-0.28	46.75	0.53	0.49
2Y69TC		45.54	-0.67	-0.61	45.88	-0.34	-0.31
33YPFQ		45.18	-1.03	-0.95	45.18	-1.03	-0.94
3HTWUR		48.81	2.59	2.38	48.73	2.51	2.29
3WUNHH		46.99	0.78	0.71	47.41	1.19	1.09
6MH72V		46.28	0.07	0.06	46.16	-0.06	-0.05
6PNQPV		47.34	1.13	1.03	48.12	1.91	1.74
6YTQEW		46.44	0.23	0.21	46.04	-0.17	-0.16
7TEKY2		46.73	0.52	0.47	46.85	0.64	0.58
7UVE3W		44.80	-1.41	-1.29	45.05	-1.17	-1.06
7WGC2M	X	1,799.60	1,753.39	1,606.00	1,823.60	1,777.39	1,622.35
84VQBW		46.31	0.10	0.09	45.77	-0.45	-0.41
CJDXQR		45.92	-0.29	-0.26	45.61	-0.60	-0.55
DLVJUY	X	43.88	-2.33	-2.14	41.28	-4.93	-4.50
DTGK2N		47.56	1.34	1.23	47.50	1.28	1.17
E7GLEP		45.37	-0.84	-0.77	45.68	-0.54	-0.49
EDF946		46.87	0.66	0.61	46.31	0.10	0.09
EEUFR		46.77	0.56	0.51	47.51	1.30	1.18
FNX6MG		45.08	-1.14	-1.04	44.69	-1.53	-1.40
FZ7W7G		46.94	0.73	0.67	46.40	0.19	0.17
GRLFQC		48.21	2.00	1.83	48.41	2.19	2.00
HA829G		45.54	-0.68	-0.62	45.60	-0.61	-0.56
HPYU3V		45.42	-0.80	-0.73	45.02	-1.19	-1.09
HR6ERG	X	23.90	-22.31	-20.44	24.04	-22.17	-20.24
HRJUTB		45.63	-0.58	-0.54	45.56	-0.65	-0.60
JBFQVQ		45.70	-0.51	-0.47	45.95	-0.26	-0.24
JPKKE		45.94	-0.27	-0.25	45.88	-0.33	-0.31
JPXJHC		44.60	-1.61	-1.48	44.88	-1.33	-1.22
JZHQHM		45.04	-1.17	-1.07	44.95	-1.26	-1.15
KLQHYQ		47.79	1.57	1.44	47.52	1.31	1.19
M4Z9ZT		45.62	-0.59	-0.54	45.38	-0.83	-0.76
M8L4N8		46.87	0.66	0.60	47.00	0.78	0.71
MWYA94		46.32	0.11	0.10	46.39	0.18	0.16
N4GVYM		47.00	0.78	0.72	47.33	1.12	1.02
NFC2V7		45.10	-1.11	-1.02	45.60	-0.61	-0.56



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 730**

**2nd Qtr 2018**

**Tensile Stress at Yield - MPa**

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NXB26R		44.45	-1.76	-1.61	44.95	-1.27	-1.16
PQNTX7		46.49	0.28	0.25	46.66	0.44	0.40
Q3YK27		47.68	1.47	1.34	46.78	0.57	0.52
QMJK6F		44.09	-2.12	-1.94	44.21	-2.01	-1.83
RDBADG		47.25	1.04	0.95	47.54	1.32	1.21
RPRWLH		45.90	-0.32	-0.29	45.67	-0.54	-0.50
RQ24K4		46.16	-0.06	-0.05	46.09	-0.13	-0.12
U2T87A		45.48	-0.74	-0.67	45.76	-0.46	-0.42
U43CJX	X	41.90	-4.31	-3.95	42.32	-3.90	-3.56
UBKMYX		45.08	-1.13	-1.04	45.06	-1.15	-1.05
UFCW3Q		44.96	-1.25	-1.15	44.34	-1.87	-1.71
UTENKN	X	37.74	-8.48	-7.76	37.66	-8.55	-7.81
V67GN6		47.70	1.49	1.36	46.98	0.77	0.70
YL4X3T		47.85	1.64	1.50	47.49	1.28	1.17
YTZRZR		46.76	0.55	0.51	46.64	0.42	0.38
Z4ZFXF		46.30	0.09	0.08	46.38	0.17	0.15
ZGPHM		44.83	-1.38	-1.27	44.89	-1.32	-1.21
ZPFZTV		47.60	1.39	1.27	47.80	1.58	1.45

Summary Statistics		
	Sample C51	Sample C52
<b>Grand Means</b>	46.212 MPa	46.215 MPa
<b>Std Dev Btwn Labs</b>	1.092 MPa	1.096 MPa
Statistics based on 48 of 53 reporting participants		

Sample C51: ABS & Sample C52: ABS

**Comments on Assigned Data Flags for Test #730**

- HR6ERG (X) - Extreme data.
- 7WGC2M (X) - Extreme data.
- DLVJUY (X) - Inconsistent in testing between samples. Data for sample C52 are low. Inconsistent within the determinations of sample C52.
- UTENKN (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- U43CJX (X) - Data for both samples are low. Possible Systematic Error.



# Plastics Interlaboratory Testing Program

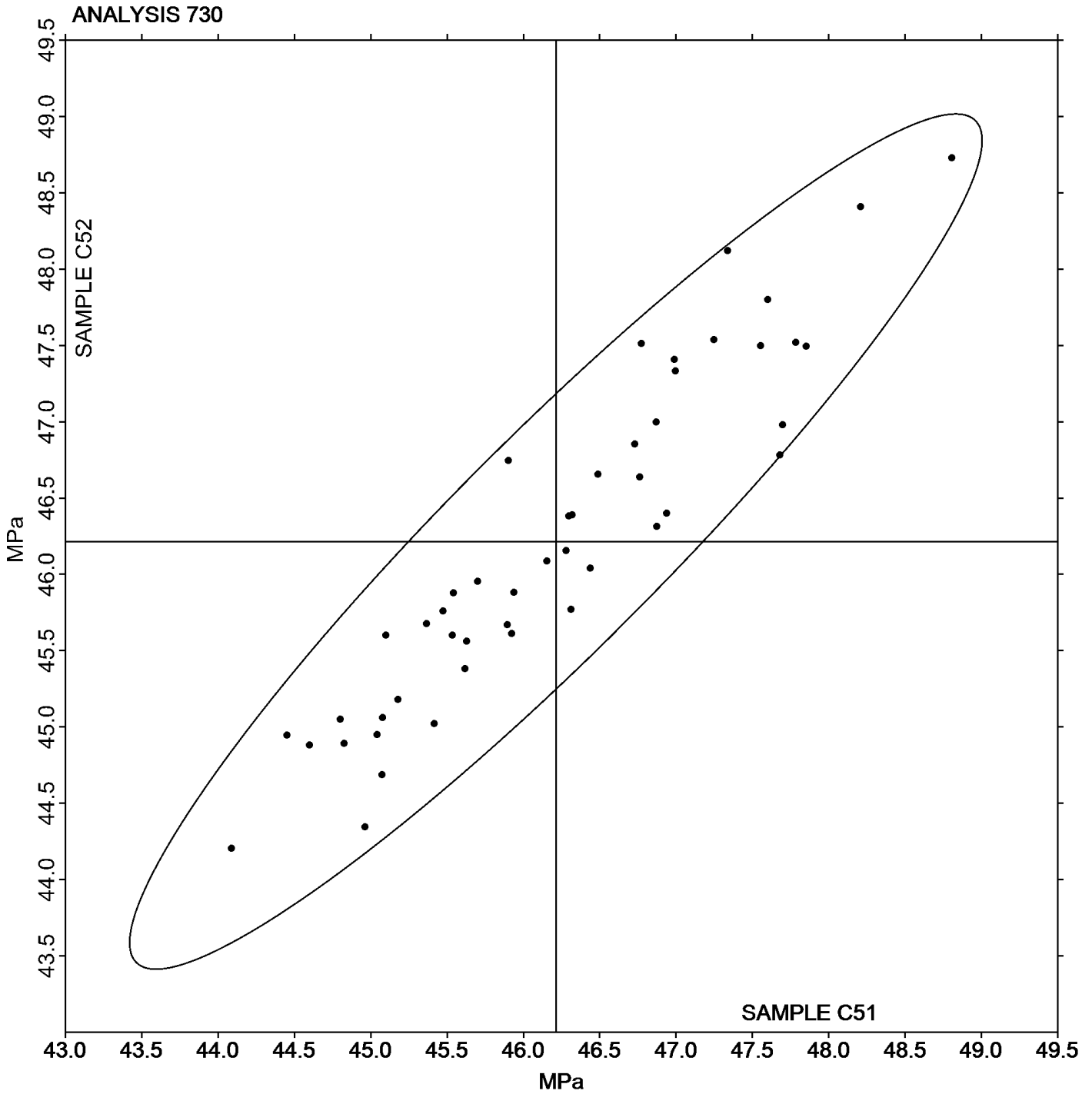
## Analysis 730

### Tensile Stress at Yield - MPa

Report #106

2nd Qtr 2018

Grand Mean Sample C51: 46.212 MPa    Grand Mean Sample C52: 46.215 MPa





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 731

2nd Qtr 2018

### Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU		35.43	0.81	0.49	36.10	1.60	1.07
2Y69TC	X	28.67	-5.95	-3.65	28.82	-5.67	-3.77
33YPFQ		36.68	2.05	1.26	35.94	1.45	0.96
3HTWUR		35.10	0.48	0.29	35.17	0.68	0.45
3WUNHH		36.27	1.65	1.01	35.50	1.01	0.67
6MH72V		34.27	-0.36	-0.22	34.08	-0.41	-0.27
6PNQPV		35.80	1.17	0.72	34.62	0.13	0.09
6YTQEW		34.24	-0.39	-0.24	34.74	0.25	0.17
7TEKY2		36.35	1.72	1.06	36.03	1.54	1.02
7UVE3W		32.31	-2.32	-1.42	32.87	-1.62	-1.08
7WGC2M		32.51	-2.11	-1.30	32.19	-2.31	-1.53
84VQBW		35.87	1.25	0.76	36.61	2.12	1.41
CJDXQR		37.31	2.68	1.64	36.73	2.24	1.49
DLVJUY	X	35.14	0.51	0.32	31.86	-2.63	-1.75
DTGK2N		33.84	-0.78	-0.48	34.77	0.28	0.19
EDF946		34.43	-0.19	-0.12	34.39	-0.10	-0.06
EEUFR		33.91	-0.71	-0.44	34.69	0.19	0.13
FNX6MG	*	34.39	-0.24	-0.14	36.15	1.66	1.10
FZ7W7G		33.82	-0.81	-0.49	33.04	-1.45	-0.97
GRLFQC		36.74	2.11	1.30	36.44	1.95	1.30
HA829G		32.63	-2.00	-1.23	33.40	-1.09	-0.72
HPYU3V		34.22	-0.41	-0.25	33.52	-0.97	-0.65
HR6ERG	X	20.24	-14.39	-8.83	20.70	-13.79	-9.18
HRJUTB		36.88	2.25	1.38	36.10	1.61	1.07
JBFQVQ		33.41	-1.22	-0.75	33.62	-0.87	-0.58
JPDKKE		33.30	-1.33	-0.81	33.10	-1.39	-0.93
JZHQHM	*	32.98	-1.64	-1.01	31.35	-3.14	-2.09
KLQHYQ	*	39.08	4.45	2.73	38.32	3.83	2.55
M4Z9ZT		33.04	-1.59	-0.97	33.04	-1.45	-0.97
M8L4N8		33.57	-1.06	-0.65	33.06	-1.43	-0.95
MH3QX8		34.22	-0.41	-0.25	34.42	-0.07	-0.05
MWYA94		34.56	-0.07	-0.04	33.68	-0.81	-0.54
NFC2V7		33.46	-1.17	-0.72	34.22	-0.27	-0.18
NR2UD2	*	37.90	3.27	2.01	35.72	1.23	0.82
NXB26R		35.44	0.82	0.50	35.16	0.67	0.45



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 731**

**2nd Qtr 2018**

**Tensile Stress at Break - MPa**

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PQNTX7		32.45	-2.17	-1.33	33.08	-1.42	-0.94
Q3YK27		34.80	0.17	0.11	34.52	0.03	0.02
QMJK6F		33.07	-1.56	-0.96	33.96	-0.54	-0.36
RDBADG		35.39	0.76	0.47	35.48	0.99	0.66
U2T87A		34.79	0.16	0.10	35.39	0.90	0.60
UBKMX Y		34.58	-0.05	-0.03	33.40	-1.09	-0.73
UFCW3Q		32.99	-1.63	-1.00	32.20	-2.29	-1.52
UTENKN		31.79	-2.84	-1.74	31.90	-2.59	-1.72
YTZRZR		34.14	-0.49	-0.30	34.63	0.14	0.09
Z4ZFXF		36.32	1.69	1.04	35.98	1.49	0.99
ZGPHEM		33.29	-1.33	-0.82	32.81	-1.68	-1.12
ZPFZTV		35.98	1.35	0.83	35.49	1.00	0.66

Summary Statistics		
	Sample C51	Sample C52
<b>Grand Means</b>	34.626 MPa	34.491 MPa
<b>Std Dev Btwn Labs</b>	1.629 MPa	1.503 MPa
Statistics based on 44 of 47 reporting participants		

Sample C51: ABS & Sample C52: ABS

**Comments on Assigned Data Flags for Test #731**

- 2Y69TC (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- HR6ERG (X) - Data for both samples are low. Possible Systematic Error.
- DLVJUY (X) - Inconsistent in testing between samples.





# Plastics Interlaboratory Testing Program

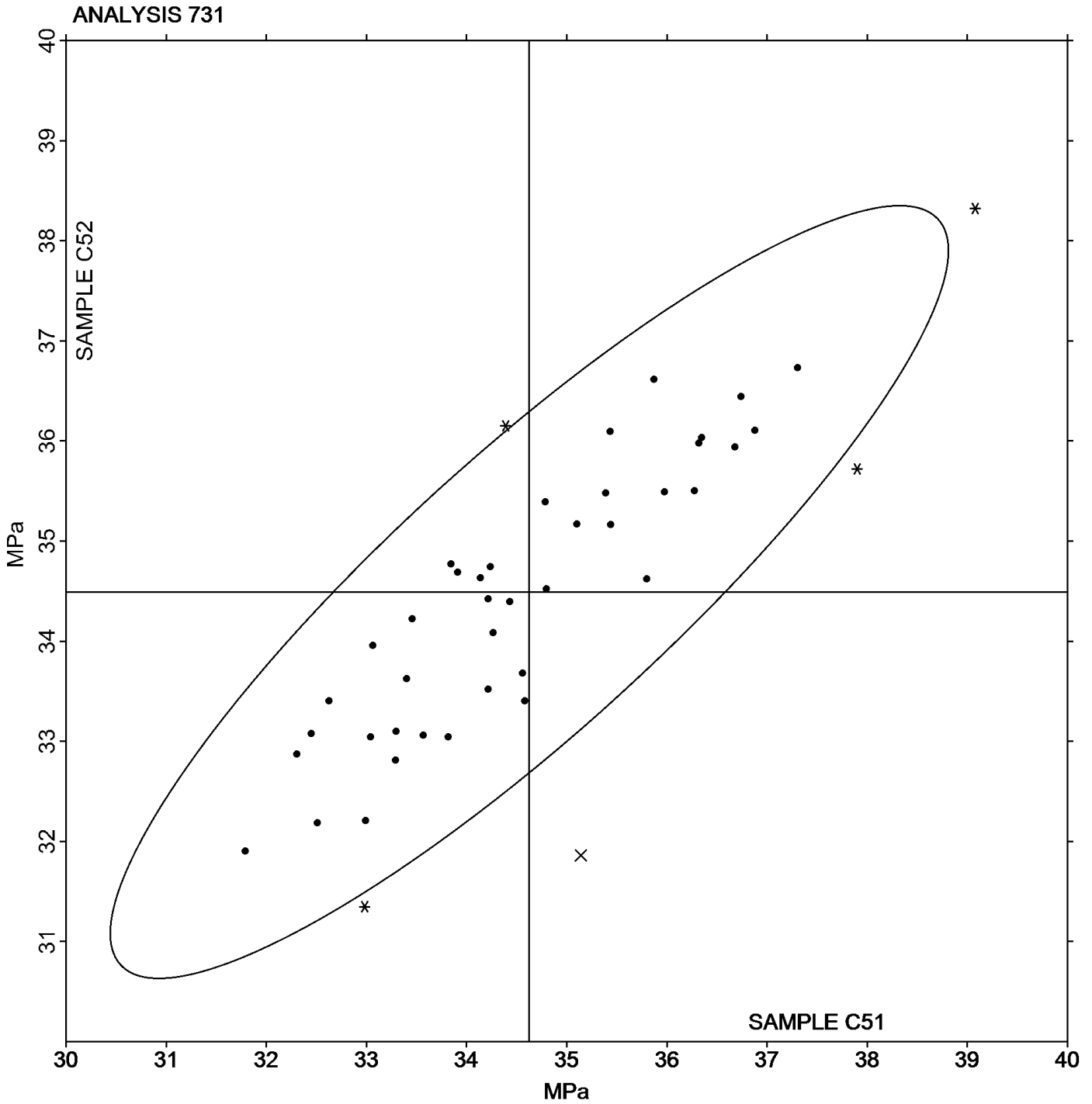
## Analysis 731

### Tensile Stress at Break - MPa

Report #106

2nd Qtr 2018

Grand Mean Sample C51: 34.626 MPa    Grand Mean Sample C52: 34.491 MPa





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 732

2nd Qtr 2018

### Percent Strain at Yield

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU	X	4.146	1.724	19.44	4.162	1.755	18.25
2Y69TC		2.491	0.068	0.77	2.530	0.123	1.28
33YPFQ		2.380	-0.042	-0.48	2.380	-0.027	-0.28
3HTWUR		2.502	0.080	0.90	2.502	0.095	0.98
3WUNHH		2.352	-0.070	-0.79	2.398	-0.009	-0.10
6MH72V		2.272	-0.150	-1.70	2.298	-0.109	-1.14
6YTQEW		2.414	-0.008	-0.09	2.396	-0.011	-0.12
7TEKY2		2.436	0.014	0.15	2.442	0.035	0.36
7WGC2M		2.364	-0.058	-0.66	2.362	-0.045	-0.47
84VQBW		2.400	-0.022	-0.25	2.306	-0.101	-1.05
CJDXQR		2.326	-0.096	-1.09	2.314	-0.093	-0.97
DLVJUY	*	2.260	-0.162	-1.83	2.140	-0.267	-2.78
DTGK2N		2.500	0.078	0.88	2.468	0.061	0.63
EDF946		2.470	0.048	0.54	2.454	0.047	0.49
EEUFR		2.540	0.118	1.33	2.558	0.151	1.57
FNX6MG		2.476	0.054	0.60	2.472	0.065	0.67
FZ7W7G		2.420	-0.002	-0.03	2.388	-0.019	-0.20
GRLFQC		2.436	0.014	0.15	2.456	0.049	0.51
HA829G		2.444	0.022	0.24	2.426	0.019	0.19
HPYU3V		2.593	0.171	1.93	2.515	0.107	1.12
HR6ERG	X	1.284	-1.138	-12.84	1.278	-1.129	-11.74
HRJUTB		2.462	0.039	0.44	2.408	0.001	0.01
JBFQVQ		2.388	-0.034	-0.39	2.378	-0.029	-0.30
JPKKE		2.440	0.018	0.20	2.460	0.053	0.55
JZHQHM		2.430	0.008	0.09	2.420	0.013	0.13
KLQHYQ		2.270	-0.152	-1.72	2.242	-0.165	-1.72
M4Z9ZT	X	3.154	0.732	8.25	3.350	0.943	9.80
M8L4N8		2.470	0.048	0.54	2.440	0.033	0.34
MWYA94		2.388	-0.034	-0.39	2.320	-0.087	-0.91
N4GVYM		2.466	0.044	0.49	2.458	0.051	0.53
NFC2V7	*	2.684	0.262	2.95	2.648	0.241	2.50
NXB26R		2.326	-0.096	-1.09	2.364	-0.043	-0.45
PQNTX7		2.382	-0.040	-0.46	2.390	-0.017	-0.18
Q3YK27		2.400	-0.022	-0.25	2.400	-0.007	-0.08
QMJK6F	X	2.335	-0.087	-0.99	2.485	0.078	0.81



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 732**

**2nd Qtr 2018**

**Percent Strain at Yield**

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RDBADG		2.350	-0.072	-0.82	2.360	-0.047	-0.49
RPRWLH		2.316	-0.106	-1.20	2.316	-0.091	-0.95
U2T87A	X	6.690	4.268	48.14	6.702	4.295	44.66
UBKMX Y		2.440	0.018	0.20	2.500	0.093	0.96
UFCW3Q		2.476	0.054	0.60	2.376	-0.031	-0.33
UTENKN		2.304	-0.118	-1.34	2.208	-0.199	-2.07
YTZRZR		2.572	0.150	1.69	2.538	0.131	1.36
Z4ZFXF		2.376	-0.046	-0.52	2.378	-0.029	-0.30
ZGPHEM		2.462	0.040	0.45	2.442	0.035	0.36
ZPFZTV		2.418	-0.004	-0.05	2.440	0.033	0.34

Summary Statistics		
	Sample C51	Sample C52
<b>Grand Means</b>	2.4224 Percent	2.4073 Percent
<b>Std Dev Btwn Labs</b>	0.0887 Percent	0.0962 Percent
Statistics based on 40 of 45 reporting participants		

Sample C51: ABS & Sample C52: ABS

**Comments on Assigned Data Flags for Test #732**

- 2ANMUU (X) - Extreme data.
- QMJK6F (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample C52.
- U2T87A (X) - Extreme data.
- HR6ERG (X) - Data for both samples are very low.
- M4Z9ZT (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

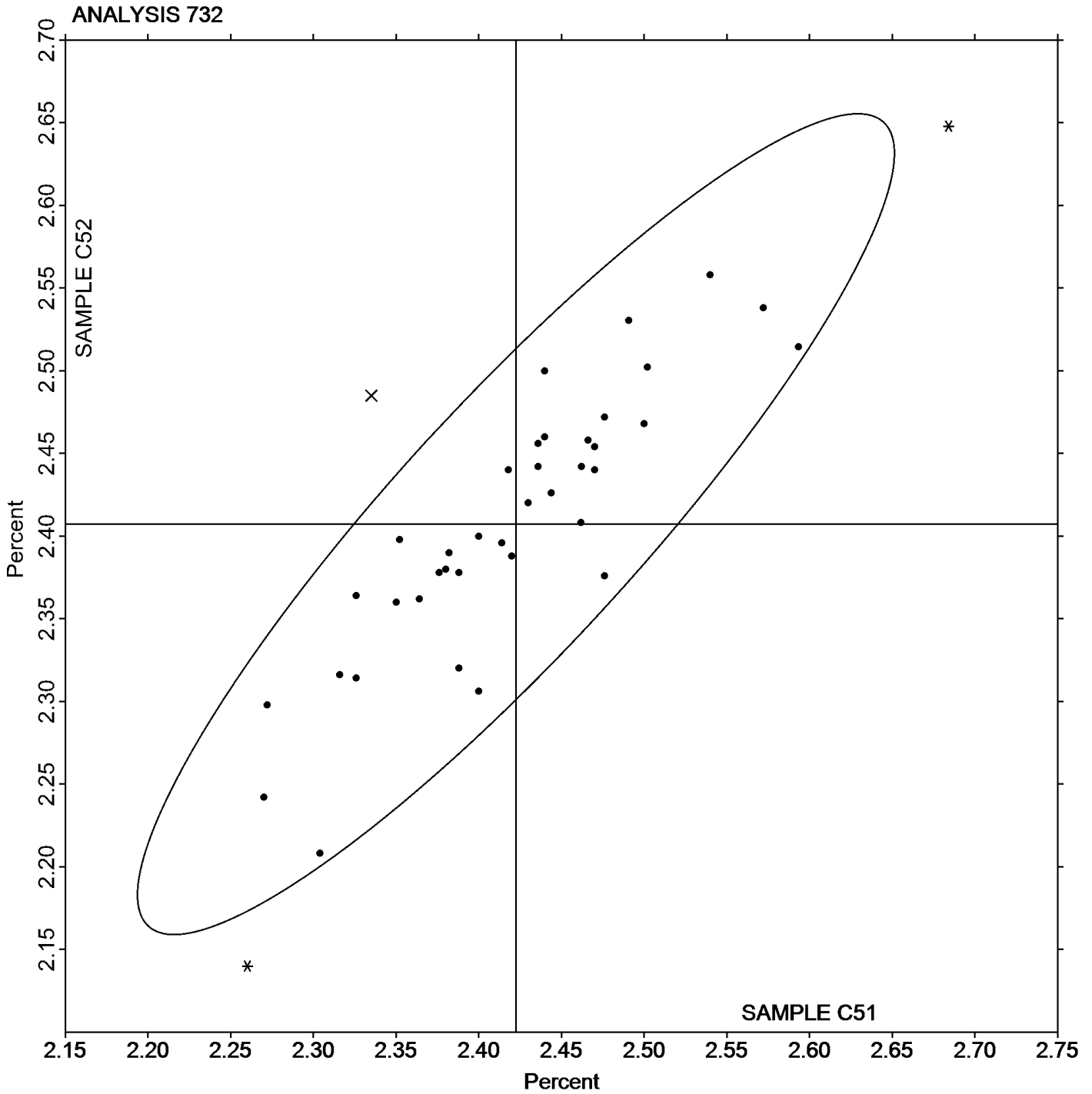


# Plastics Interlaboratory Testing Program

## Analysis 732 Percent Strain at Yield

Report #106  
2nd Qtr 2018

Grand Mean Sample C51: 2.4224 Percent    Grand Mean Sample C52: 2.4073 Percent





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 734**

**2nd Qtr 2018**

**Modulus of Elasticity - MPa**

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU	X	3,027	636	5.76	3,298	903	9.40
2Y69TC		2,324	-68	-0.61	2,302	-93	-0.97
33YPFQ		2,330	-61	-0.56	2,396	1	0.01
3HTWUR		2,368	-23	-0.21	2,385	-10	-0.11
3WUNHH		2,413	21	0.19	2,465	70	0.73
6MH72V		2,623	232	2.10	2,544	149	1.55
6YTQEW		2,334	-57	-0.52	2,343	-52	-0.54
7TEKY2		2,219	-172	-1.56	2,333	-62	-0.64
7WGC2M		2,395	4	0.03	2,398	3	0.03
84VQBW		2,374	-17	-0.16	2,442	47	0.49
CJDXQR	*	2,540	148	1.34	2,394	-1	-0.01
DLVJUY		2,323	-68	-0.62	2,277	-118	-1.23
DTGK2N		2,385	-6	-0.06	2,380	-15	-0.16
EDF946		2,329	-63	-0.57	2,327	-68	-0.70
EEUFR		2,306	-86	-0.78	2,353	-42	-0.43
FNX6MG		2,245	-146	-1.32	2,266	-129	-1.34
FZ7W7G		2,382	-9	-0.09	2,365	-30	-0.32
GRLFQC		2,534	143	1.29	2,543	149	1.55
HA829G		2,296	-96	-0.87	2,329	-66	-0.69
HPYU3V	X	2,251	-140	-1.27	2,078	-317	-3.30
HR6ERG		2,163	-228	-2.07	2,190	-205	-2.13
HRJUTB		2,276	-115	-1.04	2,225	-170	-1.77
JBFQVQ		2,491	100	0.90	2,504	109	1.13
JPKKE		2,458	67	0.60	2,450	55	0.57
JZHQHM		2,309	-83	-0.75	2,317	-78	-0.81
KLQHYQ		2,531	140	1.26	2,553	158	1.65
M4Z9ZT	X	1,808	-583	-5.28	1,706	-689	-7.17
M8L4N8		2,418	27	0.24	2,429	34	0.36
MWYA94		2,628	237	2.15	2,607	212	2.21
NFC2V7		2,255	-137	-1.24	2,316	-79	-0.82
NXB26R		2,310	-82	-0.74	2,307	-88	-0.92
PQNTX7		2,507	116	1.05	2,509	114	1.19
Q3YK27		2,436	45	0.40	2,425	30	0.32
QMJK6F		2,370	-22	-0.20	2,329	-66	-0.68
RDBADG		2,489	97	0.88	2,469	74	0.77



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 734**

**2nd Qtr 2018**

**Modulus of Elasticity - MPa**

WebCode	Data Flag	Sample C51			Sample C52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RPRWLH		2,486	94	0.85	2,520	125	1.30
RQ24K4		2,620	229	2.07	2,522	127	1.32
U2T87A	X	921	-1,470	-13.31	905	-1,490	-15.51
UBKMX Y		2,309	-83	-0.75	2,318	-77	-0.80
UFCW3Q		2,323	-68	-0.62	2,282	-113	-1.18
UTENKN		2,489	98	0.89	2,483	88	0.92
WTNEHX		2,391	0	0.00	2,375	-20	-0.21
YTZRZR		2,314	-78	-0.71	2,390	-5	-0.05
Z4ZFXF		2,394	3	0.03	2,414	19	0.19
ZGPHEM		2,363	-28	-0.25	2,416	21	0.22

Summary Statistics		
	Sample C51	Sample C52
<b>Grand Means</b>	2,391.5 MPa	2,394.9 MPa
<b>Std Dev Btwn Labs</b>	110.4 MPa	96.0 MPa
Statistics based on 41 of 45 reporting participants		

Sample C51: ABS & Sample C52: ABS

**Comments on Assigned Data Flags for Test #734**

- U2T87A (X) - Extreme data.
- HPYU3V (X) - Inconsistent in testing between samples. Data for sample C52 are low. Inconsistent within the determinations of sample C51.
- 2ANMUU (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- M4Z9ZT (X) - Data for both samples are low. Possible Systematic Error.



# Plastics Interlaboratory Testing Program

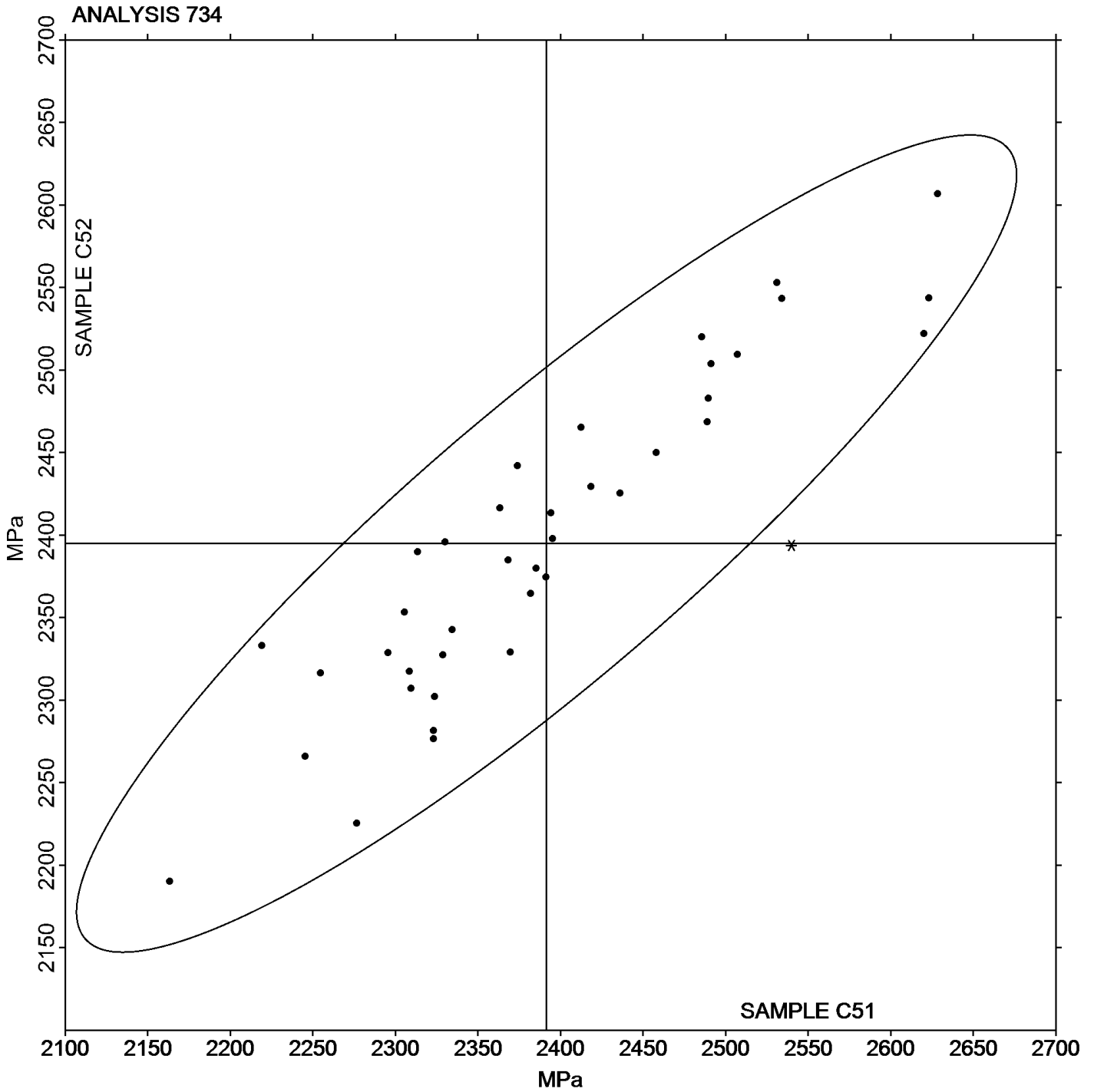
Report #106

Analysis 734

2nd Qtr 2018

Modulus of Elasticity - MPa

Grand Mean Sample C51: 2,391.46 MPa    Grand Mean Sample C52: 2,394.91 MPa





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 736

2nd Qtr 2018

### Flexural Modulus - MPa

WebCode	Data Flag	Sample K51			Sample K52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU	X	2,152	-233	-2.06	2,254	-127	-1.11
2Y69TC		2,450	65	0.58	2,448	66	0.58
3HTWUR		2,584	199	1.76	2,582	201	1.75
3WUNHH		2,602	217	1.92	2,602	221	1.93
6JUZXQ		2,467	83	0.73	2,483	102	0.89
6MH72V		2,557	172	1.52	2,557	175	1.53
6YTQEW		2,430	45	0.40	2,409	28	0.24
7TEKY2		2,337	-48	-0.42	2,334	-47	-0.41
7WGC2M		2,274	-111	-0.98	2,260	-121	-1.06
D73Z33		2,294	-91	-0.80	2,298	-83	-0.73
DC6ZD6		2,484	99	0.88	2,470	89	0.77
DLVJUY		2,449	64	0.57	2,473	92	0.80
DTGK2N		2,477	92	0.81	2,494	113	0.98
E7GLEP		2,314	-71	-0.63	2,316	-66	-0.57
EDF946		2,509	124	1.10	2,511	130	1.14
EEUUFR		2,354	-30	-0.27	2,355	-26	-0.23
FZ7W7G		2,516	131	1.17	2,507	126	1.10
GRLFQC		2,585	200	1.78	2,582	201	1.75
HA829G		2,372	-13	-0.11	2,375	-6	-0.05
HPYU3V		2,214	-170	-1.51	2,225	-157	-1.37
HR6ERG	X	2,235	-149	-1.32	2,295	-86	-0.75
JBFQVQ		2,408	23	0.21	2,378	-4	-0.03
JPKKE		2,380	-5	-0.04	2,362	-19	-0.17
JZHQHM		2,315	-70	-0.62	2,333	-49	-0.42
KLQHYQ		2,389	5	0.04	2,386	4	0.04
M8L4N8		2,309	-76	-0.67	2,268	-114	-0.99
N4GVYM		2,511	126	1.12	2,497	115	1.01
NFC2V7	X	2,348	-37	-0.33	2,227	-154	-1.35
NXB26R		2,377	-8	-0.07	2,391	10	0.09
PQNTX7		2,190	-195	-1.72	2,159	-223	-1.94
Q3YK27		2,360	-25	-0.22	2,366	-15	-0.13
Q6M29T		2,236	-148	-1.31	2,236	-145	-1.27
QMJK6F		2,271	-114	-1.01	2,291	-90	-0.79
RPRWLH		2,459	74	0.65	2,446	64	0.56
T3Q8M9		2,222	-162	-1.44	2,210	-171	-1.50





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 736**

**2nd Qtr 2018**

**Flexural Modulus - MPa**

WebCode	Data Flag	<u>Sample K51</u>			<u>Sample K52</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
UBKMX Y		2,283	-102	-0.90	2,246	-136	-1.19
UFCW3Q		2,320	-64	-0.57	2,325	-56	-0.49
UTENKN		2,263	-122	-1.08	2,280	-102	-0.89
WTNEHX		2,399	14	0.13	2,363	-18	-0.16
YTZRZR		2,259	-126	-1.11	2,280	-102	-0.89
Z4ZFXF		2,501	116	1.03	2,497	115	1.01
ZGPHEM		2,285	-100	-0.89	2,279	-102	-0.89

<b>Summary Statistics</b>		
	<u>Sample K51</u>	<u>Sample K52</u>
<b>Grand Means</b>	2,384.7 MPa	2,381.4 MPa
<b>Std Dev Btwn Labs</b>	112.8 MPa	114.5 MPa
Statistics based on 39 of 42 reporting participants		

Sample K51: ABS & Sample K52: ABS

**Comments on Assigned Data Flags for Test #736**

- 2ANMUU (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample K52.
- NFC2V7 (X) - Inconsistent in testing between samples.
- HR6ERG (X) - Inconsistent in testing between samples.



# Plastics Interlaboratory Testing Program

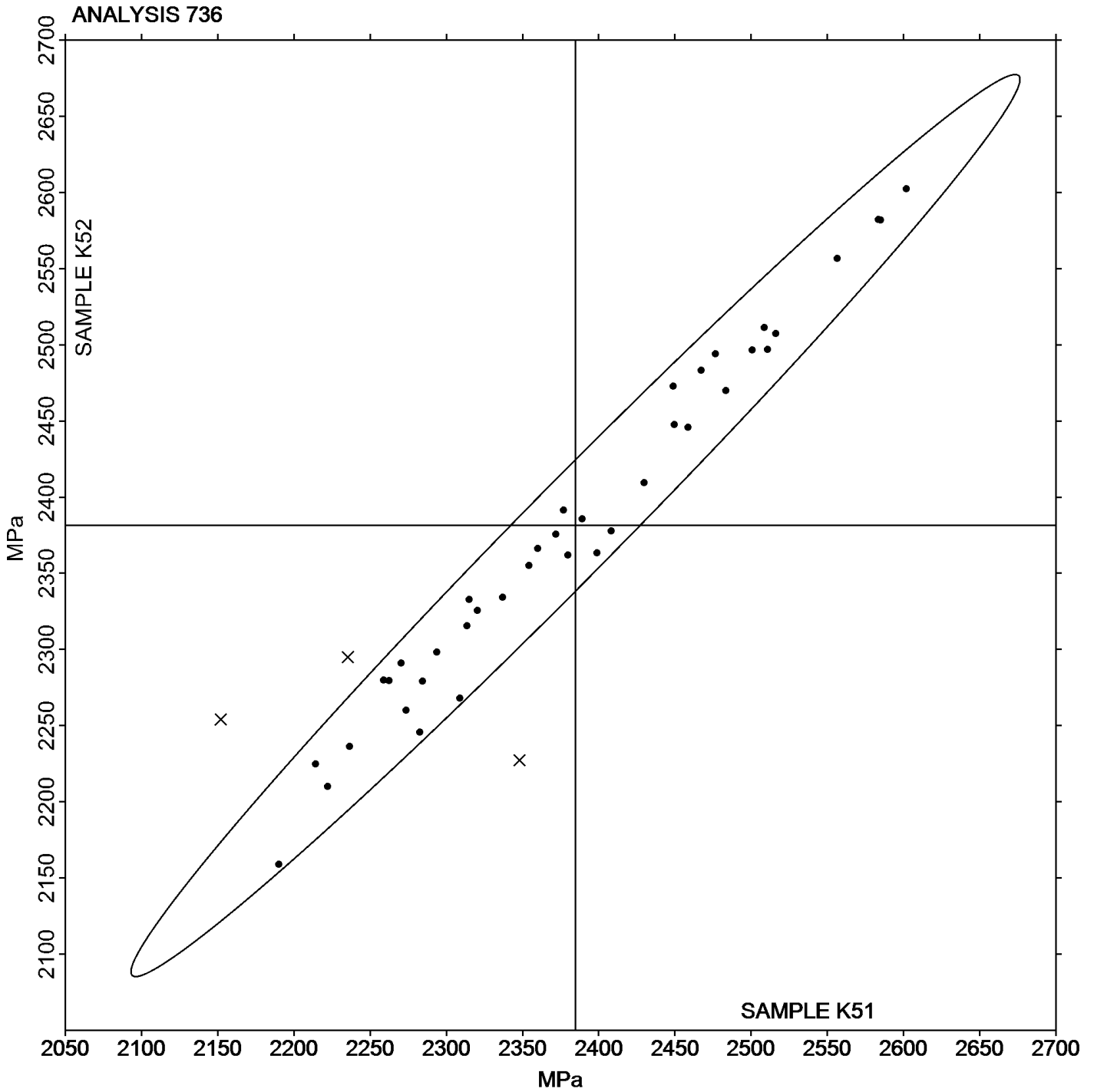
Analysis 736

Flexural Modulus - MPa

Report #106

2nd Qtr 2018

Grand Mean Sample K51: 2,384.71 MPa    Grand Mean Sample K52: 2,381.36 MPa





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 737

2nd Qtr 2018

### Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K51			Sample K52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU	X	4.82	-62.07	-21.83	4.40	-62.59	-22.16
2Y69TC		64.55	-2.34	-0.82	64.06	-2.93	-1.04
3HTWUR		73.68	6.79	2.39	73.44	6.44	2.28
3WUNHH		69.90	3.01	1.06	70.01	3.02	1.07
6JUZXQ		69.52	2.63	0.93	69.91	2.92	1.03
6YTQEW		68.66	1.77	0.62	68.16	1.17	0.41
7TEKY2		64.63	-2.26	-0.79	64.88	-2.12	-0.75
7WGC2M		65.12	-1.77	-0.62	66.01	-0.99	-0.35
D73Z33		64.34	-2.55	-0.90	65.14	-1.85	-0.66
DC6ZD6		66.17	-0.72	-0.25	65.60	-1.40	-0.49
DLVJUY		66.34	-0.55	-0.19	67.70	0.71	0.25
DTGK2N		69.99	3.10	1.09	69.92	2.93	1.04
EEUFR		69.61	2.72	0.96	69.60	2.60	0.92
FZ7W7G		70.66	3.77	1.32	70.78	3.79	1.34
GRLFQC		73.45	6.56	2.31	73.64	6.65	2.35
HA829G		66.95	0.06	0.02	66.97	-0.02	-0.01
HPYU3V		63.95	-2.94	-1.03	63.86	-3.13	-1.11
HR6ERG	X	43.73	-23.16	-8.15	41.56	-25.43	-9.00
JBFQVQ		67.89	1.00	0.35	67.17	0.18	0.06
JPDKKE		67.51	0.62	0.22	67.39	0.40	0.14
JZHQHM		66.81	-0.08	-0.03	66.95	-0.05	-0.02
KLQHYQ		68.78	1.89	0.66	68.30	1.31	0.46
M8L4N8		65.91	-0.98	-0.34	66.40	-0.59	-0.21
NFC2V7		63.74	-3.15	-1.11	64.40	-2.59	-0.92
NXB26R		66.34	-0.55	-0.19	66.99	0.00	0.00
PQNTX7		64.47	-2.42	-0.85	63.46	-3.54	-1.25
Q3YK27		65.34	-1.55	-0.55	65.58	-1.41	-0.50
Q6M29T		64.63	-2.26	-0.79	64.57	-2.42	-0.86
QMJK6F		63.91	-2.98	-1.05	64.95	-2.05	-0.72
RPRWLH		68.06	1.17	0.41	67.81	0.82	0.29
RQ24K4		71.82	4.93	1.73	71.82	4.82	1.71
T3Q8M9		62.63	-4.26	-1.50	62.70	-4.29	-1.52
UBKMYX		62.39	-4.50	-1.58	61.55	-5.44	-1.93
UFCW3Q		67.87	0.98	0.34	68.01	1.02	0.36
UTENKN		64.00	-2.89	-1.02	64.35	-2.64	-0.94



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 737**

**2nd Qtr 2018**

**Flexural Stress at 3.5% Strain - MPa**

WebCode	Data Flag	Sample K51			Sample K52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WTNEHX		67.20	0.31	0.11	68.14	1.15	0.41
YTZRZR		64.00	-2.89	-1.02	64.43	-2.56	-0.91
Z4ZFXF		68.01	1.12	0.39	67.92	0.93	0.33
ZGPHEM		66.09	-0.80	-0.28	66.17	-0.83	-0.29

Summary Statistics		
	Sample K51	Sample K52
<b>Grand Means</b>	66.890 MPa	66.993 MPa
<b>Stnd Dev Btwn Labs</b>	2.843 MPa	2.824 MPa
Statistics based on 37 of 39 reporting participants		

Sample K51: ABS & Sample K52: ABS

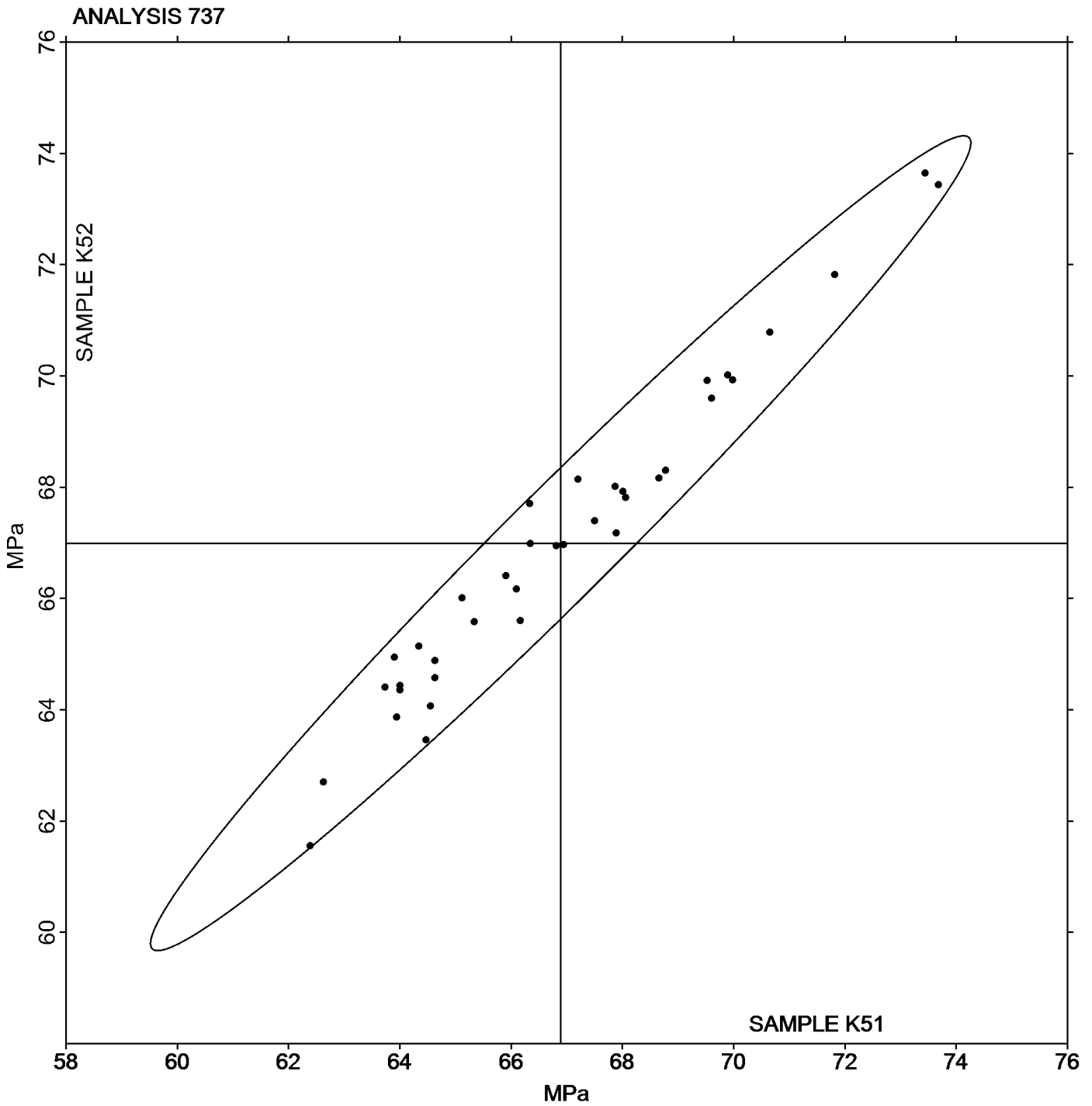
**Comments on Assigned Data Flags for Test #737**

HR6ERG (X) - Data for both samples are low. Possible Systematic Error.

2ANMUU (X) - Extreme data.



Grand Mean Sample K51: 66.890 MPa Grand Mean Sample K52: 66.993 MPa





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 738

2nd Qtr 2018

### Flexural Stress at Yield - MPa

WebCode	Data Flag	Sample K51			Sample K52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU		66.58	-0.85	-0.36	65.84	-1.74	-0.77
3WUNHH		70.80	3.37	1.42	70.81	3.22	1.43
6JUZXQ		69.96	2.52	1.06	70.43	2.85	1.26
6YTQEW		69.74	2.31	0.97	69.30	1.72	0.76
7TEKY2		65.34	-2.09	-0.88	65.73	-1.86	-0.82
7WGC2M		65.66	-1.77	-0.75	66.58	-1.00	-0.44
D73Z33		65.40	-2.03	-0.86	66.40	-1.18	-0.52
DC6ZD6		68.94	1.51	0.63	68.36	0.78	0.34
DLVJUY		66.34	-1.09	-0.46	67.70	0.12	0.05
DTGK2N		71.02	3.59	1.51	71.13	3.55	1.57
EDF946		68.88	1.45	0.61	69.08	1.50	0.66
EEUFR		70.99	3.56	1.50	70.85	3.27	1.45
FZ7W7G		71.24	3.80	1.60	71.41	3.83	1.69
HA829G		67.85	0.41	0.17	68.05	0.47	0.21
HR6ERG	X	43.76	-23.67	-9.96	42.14	-25.44	-11.27
JBFQVQ		68.97	1.53	0.65	68.25	0.67	0.30
JPDKKE		68.30	0.87	0.37	68.22	0.63	0.28
JZHQHM		67.81	0.38	0.16	68.09	0.50	0.22
KLQHYQ		69.36	1.93	0.81	68.90	1.32	0.58
M8L4N8		66.64	-0.79	-0.33	67.25	-0.33	-0.15
N4GVYM		71.13	3.69	1.55	70.91	3.32	1.47
NFC2V7		64.42	-3.01	-1.27	65.34	-2.24	-0.99
NXB26R		66.69	-0.74	-0.31	67.50	-0.09	-0.04
PQNTX7		65.38	-2.05	-0.86	64.36	-3.22	-1.43
Q3YK27		66.22	-1.21	-0.51	66.52	-1.06	-0.47
Q6M29T		65.75	-1.68	-0.71	65.89	-1.70	-0.75
QMJK6F		64.77	-2.66	-1.12	66.00	-1.58	-0.70
T3Q8M9		63.29	-4.14	-1.74	63.48	-4.10	-1.82
UBKMY		64.08	-3.35	-1.41	63.22	-4.36	-1.93
UFCW3Q		68.76	1.33	0.56	68.57	0.99	0.44
UTENKN		65.37	-2.07	-0.87	65.54	-2.05	-0.91
YL4X3T	X	71.78	4.35	1.83	74.36	6.78	3.00
YTZRZR		64.72	-2.71	-1.14	65.41	-2.18	-0.96



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 738

2nd Qtr 2018

### Flexural Stress at Yield - MPa

Summary Statistics	<u>Sample K51</u>	<u>Sample K52</u>
<b>Grand Means</b>	67.432 MPa	67.584 MPa
<b>Stnd Dev Btwn Labs</b>	2.376 MPa	2.259 MPa

Statistics based on 31 of 33 reporting participants

Sample K51: ABS & Sample K52: ABS

#### **Comments on Assigned Data Flags for Test #738**

HR6ERG (X) - Data for both samples are very low.

YL4X3T (X) - Inconsistent in testing between samples. Data for sample K52 are high.



# Plastics Interlaboratory Testing Program

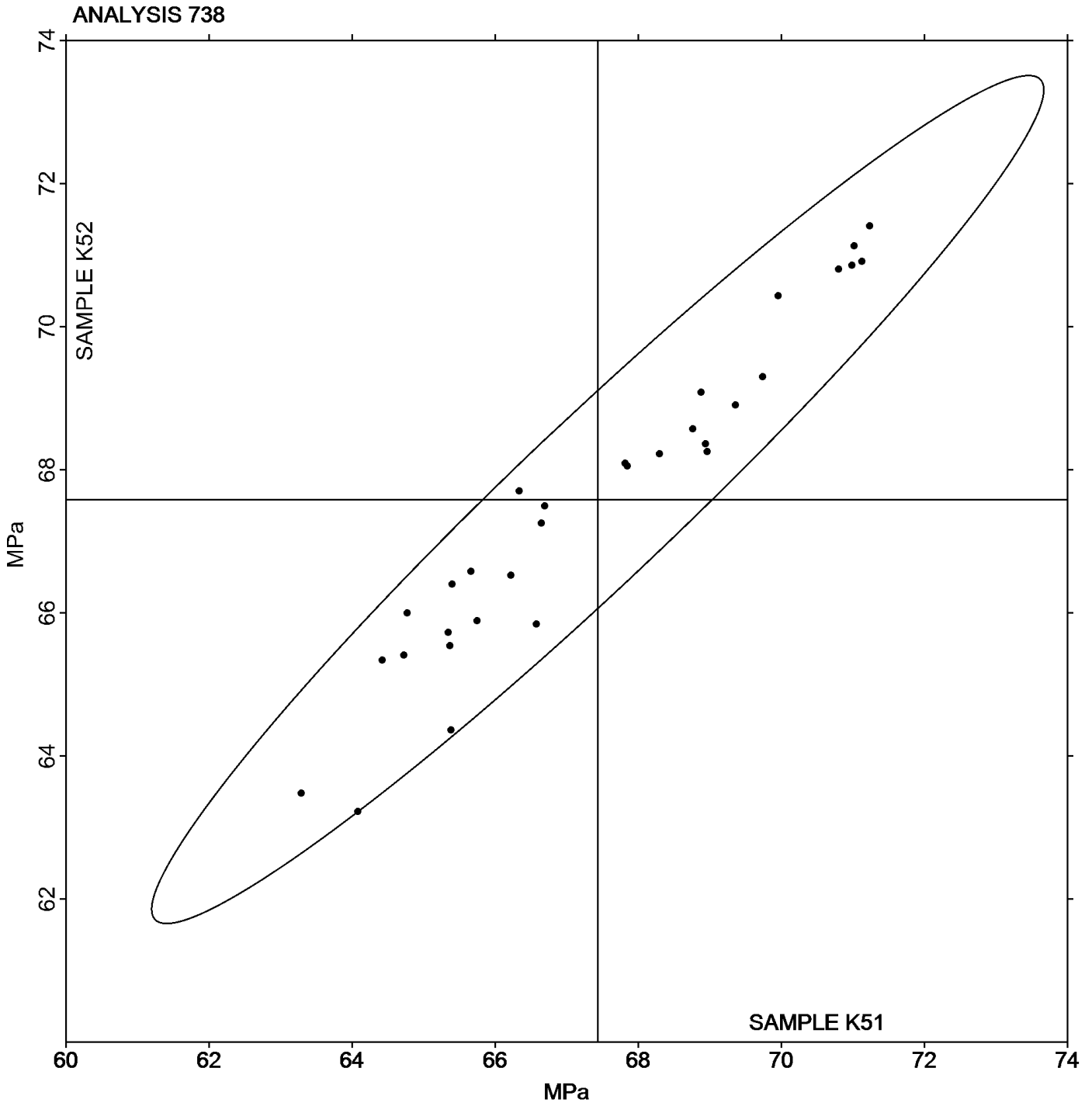
## Analysis 738

### Flexural Stress at Yield - MPa

Report #106

2nd Qtr 2018

Grand Mean Sample K51: 67.432 MPa    Grand Mean Sample K52: 67.584 MPa







# Plastics Interlaboratory Testing Program

Report #106

## Analysis 750

2nd Qtr 2018

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

WebCode	Data Flag	Sample X51			Sample X52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2ANMUJ	*	11.81	0.14	0.23	14.34	1.78	2.19	TO
2MR79Z	X	14.44	2.76	4.70	15.39	2.83	3.49	TO
2Y69TC	*	12.13	0.46	0.78	14.65	2.08	2.57	DY
37ANMP		11.56	-0.11	-0.19	12.81	0.25	0.31	TO
3CMF64		11.90	0.23	0.39	13.59	1.02	1.26	TO
3HTWUR		12.57	0.90	1.53	12.93	0.37	0.45	DY
43E3LE		11.40	-0.28	-0.47	11.41	-1.16	-1.43	DY
449X3W		10.85	-0.82	-1.40	12.00	-0.56	-0.70	TO
6MH72V		12.50	0.83	1.41	12.28	-0.28	-0.35	TO
6THUC9		11.16	-0.52	-0.88	12.17	-0.39	-0.49	TO
734DAD		12.00	0.33	0.56	13.00	0.44	0.54	TO
7NANF2		11.95	0.27	0.47	11.80	-0.76	-0.94	TO
9H9BFG		11.25	-0.42	-0.72	12.14	-0.42	-0.52	TO
9UMER8		11.45	-0.22	-0.38	11.75	-0.81	-1.01	TO
ADWVEW		11.38	-0.29	-0.50	12.23	-0.34	-0.42	WZ
BGAXY8		12.65	0.98	1.66	13.76	1.20	1.48	TO
BN9KQ8		11.25	-0.42	-0.71	11.86	-0.71	-0.88	TO
BVRLAQ		11.55	-0.12	-0.21	12.50	-0.06	-0.08	XX
C9VD9F		11.18	-0.50	-0.84	11.58	-0.99	-1.22	DY
CMUD36		12.30	0.63	1.07	13.40	0.84	1.03	TO
CXACQL		10.60	-1.07	-1.82	11.50	-1.06	-1.31	TO
DKJTTV		11.80	0.13	0.22	12.50	-0.06	-0.08	TO
DLVJUY		12.06	0.39	0.66	13.02	0.45	0.56	TO
DZVK8Z		11.36	-0.31	-0.53	11.16	-1.41	-1.74	TO
E7GLEP		11.14	-0.53	-0.91	11.81	-0.75	-0.93	TO
EDF946		11.60	-0.07	-0.12	12.64	0.07	0.09	TO
EEUFR		11.78	0.10	0.18	13.31	0.75	0.92	TO
ET9ZRQ		11.57	-0.10	-0.17	13.19	0.63	0.77	TO
ETRQUJ		10.95	-0.72	-1.23	11.45	-1.11	-1.38	DY
F63JY6	X	13.70	2.03	3.45	14.70	2.14	2.64	XX
F64CZX		11.55	-0.12	-0.21	11.60	-0.96	-1.19	TO
FB9EJ6		10.75	-0.92	-1.57	11.50	-1.06	-1.31	CE
FE7XK3		11.54	-0.14	-0.23	12.09	-0.48	-0.59	CE
FT4UYV		11.83	0.16	0.27	12.59	0.02	0.03	TO
FZ7W7G		10.79	-0.88	-1.50	11.87	-0.69	-0.85	GO



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 750

2nd Qtr 2018

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

WebCode	Data Flag	Sample X51			Sample X52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
GLMPTF		11.20	-0.47	-0.80	12.05	-0.51	-0.63	DY
GRLFQC		11.45	-0.23	-0.38	12.69	0.13	0.16	DY
HN9VLC		12.32	0.64	1.09	12.52	-0.05	-0.06	DY
HR6ERG	X	8.24	-3.43	-5.83	8.30	-4.27	-5.27	TY
HRJUTB		10.95	-0.72	-1.23	11.73	-0.83	-1.03	TO
JPKKE		11.50	-0.17	-0.29	12.47	-0.10	-0.12	GO
JPXJHC	X	14.19	2.51	4.27	13.42	0.86	1.06	XX
JZHQHM		12.32	0.65	1.10	13.17	0.61	0.75	TO
M8L4N8		11.82	0.14	0.24	12.77	0.21	0.25	DY
MDP8GQ		11.60	-0.07	-0.12	12.55	-0.01	-0.02	TO
MH3QX8		11.70	0.03	0.05	12.65	0.09	0.11	TO
MQEV LX		11.43	-0.24	-0.41	12.30	-0.27	-0.33	TO
N4GVYM		11.71	0.04	0.07	12.96	0.40	0.49	TO
NFC2V7		11.26	-0.41	-0.69	13.40	0.84	1.04	TO
NTFE6C		11.17	-0.51	-0.86	13.54	0.98	1.21	TO
NXB26R		11.39	-0.29	-0.49	12.03	-0.53	-0.66	TO
PQNTX7		10.44	-1.23	-2.09	12.08	-0.49	-0.60	GO
Q3YK27		11.84	0.17	0.29	13.10	0.53	0.66	GO
QVVN89	X	4.76	-6.91	-11.74	5.17	-7.39	-9.13	TM
RJX68T		11.15	-0.52	-0.89	11.35	-1.21	-1.50	DY
RKP8Q3		10.43	-1.24	-2.11	11.70	-0.86	-1.07	CE
RQ24K4		12.12	0.45	0.76	12.50	-0.06	-0.08	DY
T3Q8M9		12.28	0.61	1.03	12.34	-0.22	-0.27	DY
T78PNQ		10.65	-1.02	-1.74	11.75	-0.81	-1.01	WZ
T9D6Y3		12.69	1.01	1.72	12.73	0.17	0.21	TO
TLLT8Z		12.15	0.48	0.81	13.40	0.84	1.03	TO
TW4B3R		12.40	0.73	1.24	12.50	-0.06	-0.08	TO
U2T87A		11.30	-0.37	-0.63	11.80	-0.76	-0.94	KA
U43CJX		11.96	0.29	0.49	13.58	1.01	1.25	XX
UBKMYX	X	14.53	2.86	4.86	15.29	2.73	3.37	GO
UFCW3Q		12.80	1.13	1.92	13.10	0.54	0.66	TO
ULF3C2		12.00	0.33	0.56	14.00	1.44	1.77	TO
UTENKN		12.90	1.23	2.09	13.85	1.29	1.59	TO
UUTRG2		11.85	0.18	0.30	13.00	0.44	0.54	TO
V67GN6		12.10	0.43	0.73	12.70	0.14	0.17	TO



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 750

2nd Qtr 2018

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

WebCode	Data Flag	Sample X51			Sample X52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
VAJGKW		11.12	-0.55	-0.94	11.80	-0.77	-0.95	TO
VF788R		12.26	0.58	0.99	13.43	0.86	1.06	TO
VPRBD7		11.53	-0.14	-0.24	13.19	0.63	0.77	DY
WP9LTQ		11.22	-0.45	-0.77	12.05	-0.52	-0.64	WZ
X3WB2V	X	13.60	1.93	3.28	12.66	0.10	0.12	TO
XX37CX		12.50	0.82	1.40	13.60	1.03	1.27	QT
XXFTZD	X	13.89	2.22	3.77	13.41	0.84	1.04	RR
Y3R794		12.15	0.48	0.82	12.09	-0.47	-0.59	CE
YL4X3T		12.72	1.05	1.79	12.66	0.10	0.12	TO
YTZRZR		11.45	-0.23	-0.38	12.04	-0.53	-0.65	TO
Z4ZFXF		11.32	-0.35	-0.60	12.15	-0.41	-0.51	DY
ZA8838		11.32	-0.35	-0.60	11.90	-0.66	-0.82	CE
ZGPHM		12.35	0.68	1.15	13.80	1.24	1.53	TO
ZLD9CH		11.02	-0.66	-1.12	11.53	-1.03	-1.28	DA
ZUBR3D		11.65	-0.02	-0.04	12.25	-0.31	-0.39	TO
ZUEEFK	*	12.78	1.10	1.88	14.84	2.28	2.81	TO

#### Summary Statistics

##### Grand Means

##### Sample X51

11.671 grams/10 mins

##### Sample X52

12.564 grams/10 mins

##### Stnd Dev Btwn Labs

0.588 grams/10 mins

0.810 grams/10 mins

Statistics based on 78 of 86 reporting participants

Sample X51: PP & Sample X52: PP

#### Comments on Assigned Data Flags for Test #750

- JPXJHC (X) - Data for sample X51 are high. Inconsistent within the determinations of sample X52.
- UBKMX Y (X) - Data for both samples are high.
- 2MR79Z (X) - Data for both samples are high.
- HR6ERG (X) - Data for both samples are low.
- QVVN89 (X) - Data for both samples are very low.
- F63JY6 (X) - Data for sample X51 are high.
- X3WB2V (X) - Data for sample X51 are high. Inconsistent within the determinations of both samples.
- XXFTZD (X) - Data for sample X51 are high.



## Plastics Interlaboratory Testing Program

Report #106

### Analysis 750

2nd Qtr 2018

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

#### Key to Instrument Codes Reported by Participants

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

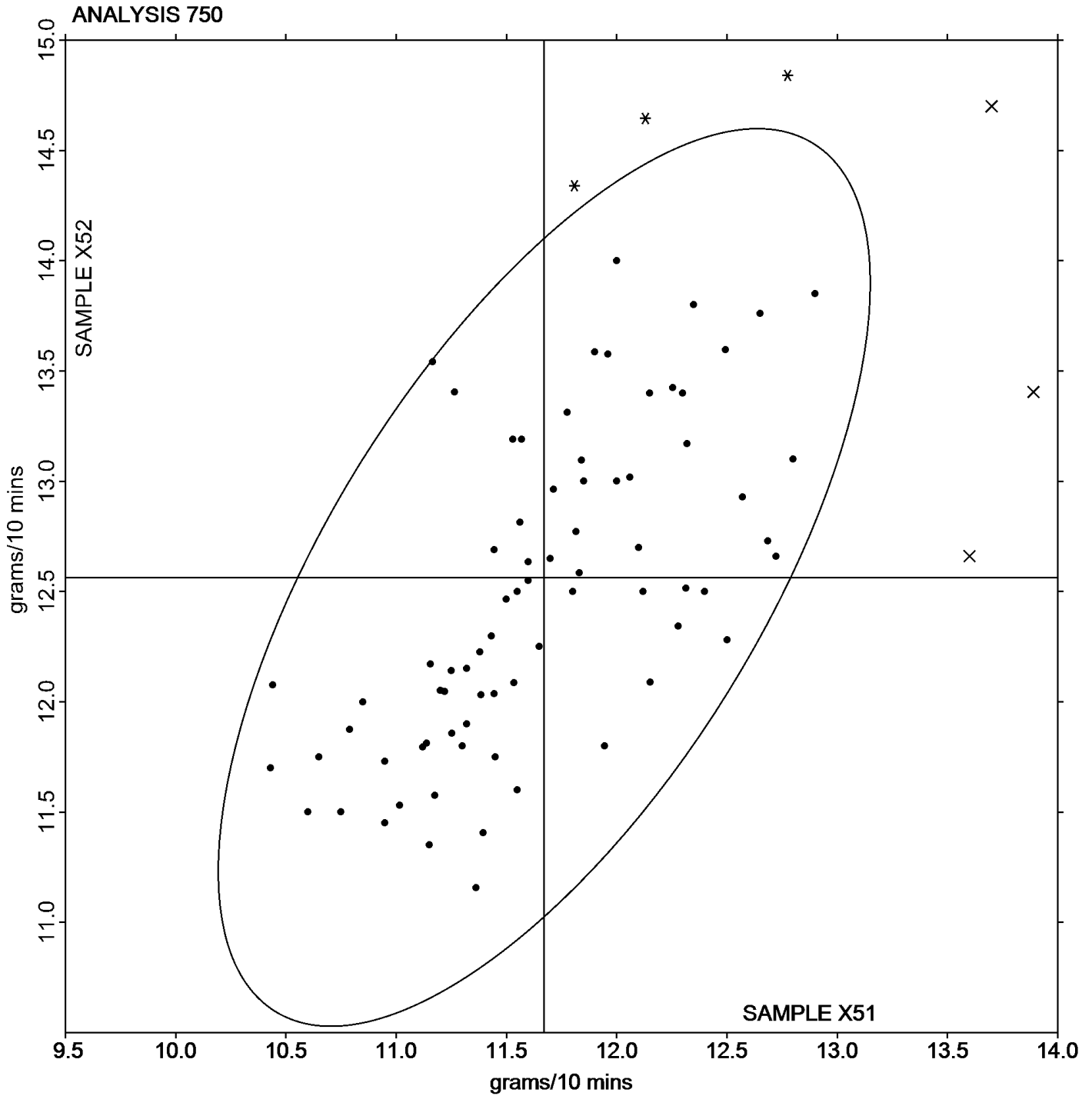
Report #106

## Analysis 750

2nd Qtr 2018

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

Grand Mean Sample X51: 11.671 grams/10 mins    Grand Mean Sample X52: 12.564 grams/10 mins





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 755**

**2nd Qtr 2018**

**Moisture Content of Plastics**

WebCode	Data Flag	Sample Y51			Sample Y52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
274TWT		0.09467	-0.09647	-2.51	0.09425	-0.08339	-2.33	MU
2ANMUU		0.18363	-0.00750	-0.19	0.17663	-0.00100	-0.03	AZ
33YPFQ		0.15733	-0.03380	-0.88	0.14533	-0.03230	-0.90	AZ
37ANMP		0.26250	0.07136	1.85	0.22500	0.04736	1.32	XX
43E3LE		0.20300	0.01186	0.31	0.19100	0.01336	0.37	AZ
6MH72V		0.20150	0.01036	0.27	0.18863	0.01100	0.31	MD
74D827		0.20827	0.01713	0.45	0.17797	0.00033	0.01	AZ
7TEKY2		0.13000	-0.06114	-1.59	0.11800	-0.05964	-1.66	CT
9H9BFG		0.14567	-0.04547	-1.18	0.14033	-0.03730	-1.04	CT
AZN4JB		0.18833	-0.00280	-0.07	0.17567	-0.00197	-0.05	ML
BGAXY8		0.21167	0.02053	0.53	0.20900	0.03136	0.87	MU
C9VD9F		0.20900	0.01786	0.46	0.19200	0.01436	0.40	MB
DZVK8Z		0.17167	-0.01947	-0.51	0.16633	-0.01130	-0.32	CT
E7GLEP		0.20873	0.01760	0.46	0.20880	0.03116	0.87	AQ
ETRQUJ		0.20567	0.01453	0.38	0.19367	0.01603	0.45	AZ
F63JY6		0.23157	0.04043	1.05	0.20623	0.02860	0.80	XX
F7CNEE	*	0.28333	0.09220	2.40	0.27667	0.09903	2.76	CS
FB9EJ6		0.18233	-0.00880	-0.23	0.16733	-0.01030	-0.29	MU
GAMZQL		0.15787	-0.03327	-0.86	0.12250	-0.05514	-1.54	MU
GLMPTF		0.18067	-0.01047	-0.27	0.17267	-0.00497	-0.14	MJ
GRLFQC		0.23950	0.04836	1.26	0.21800	0.04036	1.13	CT
HJQHVV		0.17453	-0.01660	-0.43	0.16360	-0.01404	-0.39	ML
JBFBVQ		0.18793	-0.00320	-0.08	0.17970	0.00206	0.06	MK
LHLA6Z		0.19200	0.00086	0.02	0.18100	0.00336	0.09	MJ
MDP8GQ		0.25900	0.06786	1.76	0.25867	0.08103	2.26	MU
MH3QX8		0.22067	0.02953	0.77	0.19633	0.01870	0.52	SA
NCDRMP		0.19770	0.00656	0.17	0.18780	0.01016	0.28	MK
NFC2V7		0.17250	-0.01864	-0.48	0.15450	-0.02314	-0.65	AZ
NTFE6C		0.11147	-0.07967	-2.07	0.11220	-0.06544	-1.83	AZ
NXB26R		0.17733	-0.01380	-0.36	0.16700	-0.01064	-0.30	MS
PBCYMW		0.19267	0.00153	0.04	0.18367	0.00603	0.17	CS
RJX68T		0.16167	-0.02947	-0.77	0.14033	-0.03730	-1.04	MS
RQ24K4		0.16933	-0.02180	-0.57	0.15433	-0.02330	-0.65	MR
T9D6Y3		0.17240	-0.01874	-0.49	0.15913	-0.01850	-0.52	MR
TW4B3R		0.20667	0.01553	0.40	0.19667	0.01903	0.53	ML



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 755**

**2nd Qtr 2018**

**Moisture Content of Plastics**

WebCode	Data Flag	Sample Y51			Sample Y52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
UFCW3Q	X	0.17130	-0.01984	-0.52	0.24353	0.06590	1.84	MK
YBZR4K		0.20090	0.00976	0.25	0.17007	-0.00757	-0.21	MT
YL4X3T	*	0.24567	0.05453	1.42	0.19233	0.01470	0.41	CT
Z4ZFXF		0.15700	-0.03414	-0.89	0.17200	-0.00564	-0.16	MB
ZGPHEM		0.19800	0.00686	0.18	0.19250	0.01486	0.41	ML

Summary Statistics		Sample Y51	Sample Y52
<b>Grand Means</b>		0.191137 Percent	0.177637 Percent
<b>Stnd Dev Btwn Labs</b>		0.038482 Percent	0.035846 Percent
Statistics based on 39 of 40 reporting participants			

Sample Y51: ABS & Sample Y52: ABS

**Comments on Assigned Data Flags for Test #755**

UFCW3Q (X) - Inconsistent in testing between samples.

**Key to Instrument Codes Reported by Participants**

<b>AQ</b> Aquastar	<b>AZ</b> Arizona Instruments Moisture Analyzer
<b>CS</b> Cosa Instruments	<b>CT</b> Computrac Moisture Analyzer
<b>MB</b> Omnimark Mark 3	<b>MD</b> Mettler Toledo DL37
<b>MJ</b> Mitsubishi KF Analyzer Series	<b>MK</b> Mitsubishi KF Analyzer CA
<b>ML</b> Metrohm Coulometer	<b>MR</b> Metrohm Coulineter 756 KF
<b>MS</b> Metrohm Coulometer 831 KF	<b>MT</b> Mettler Toledo DL39
<b>MU</b> Mettler Toledo	<b>SA</b> Sartorius MA30
<b>XX</b> Instrument manufacturer not specified by lab	



# Plastics Interlaboratory Testing Program

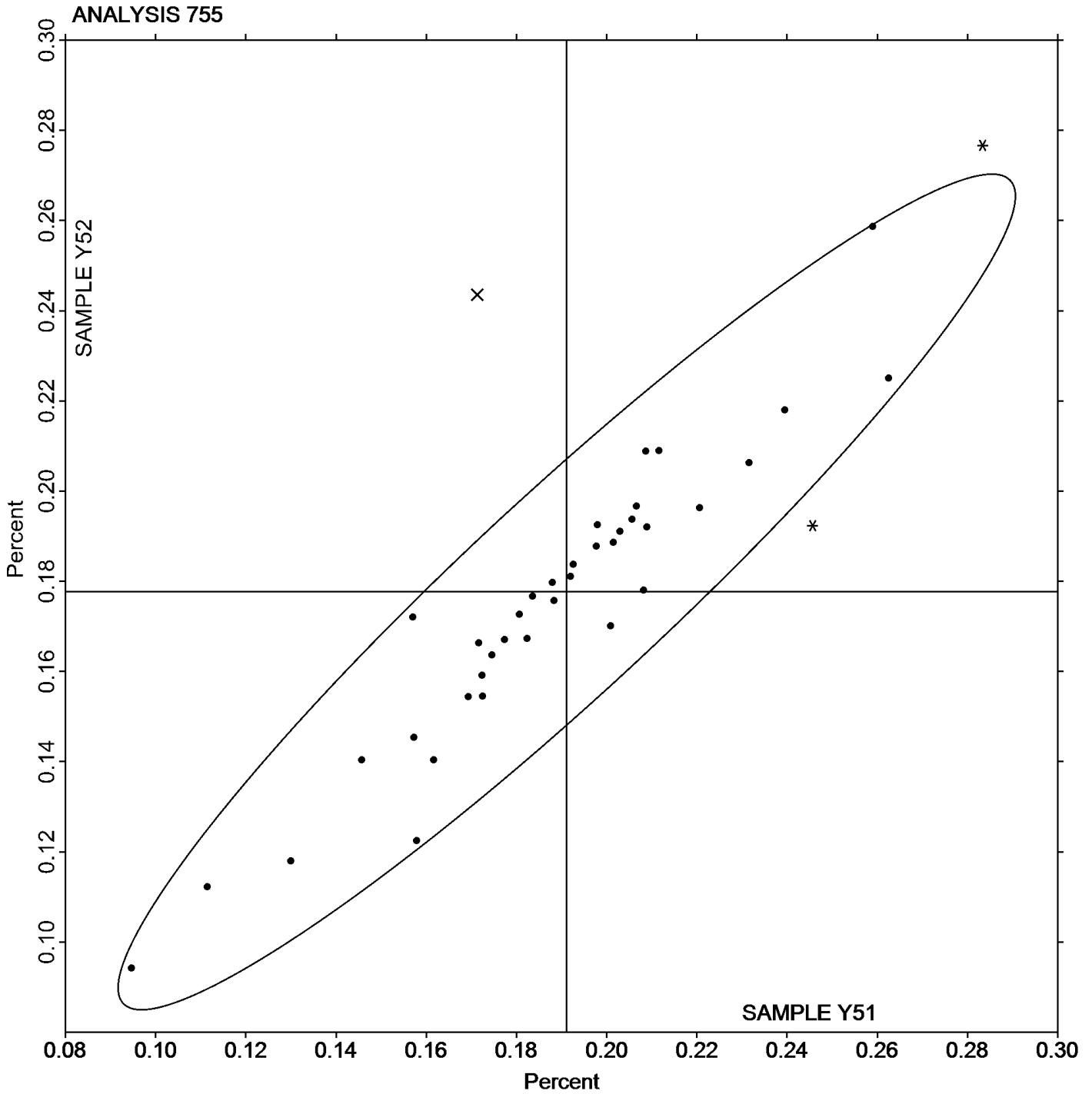
## Analysis 755

### Moisture Content of Plastics

Report #106

2nd Qtr 2018

Grand Mean Sample Y51: 0.19114 Percent    Grand Mean Sample Y52: 0.17764 Percent







# Plastics Interlaboratory Testing Program

Report #106

## Analysis 757

2nd Qtr 2018

### Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L51			Sample L52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2ANMUU		30.845	0.307	1.03	30.765	0.214	0.72
33YPFQ	X	30.645	0.107	0.36	29.255	-1.296	-4.34
3HTWUR		30.325	-0.213	-0.71	30.290	-0.261	-0.87
449X3W		30.455	-0.083	-0.28	30.625	0.074	0.25
6FVKMG		30.460	-0.078	-0.26	30.380	-0.171	-0.57
6MFK3U		30.904	0.366	1.23	30.982	0.431	1.44
6MH72V	X	35.410	4.872	16.36	35.785	5.234	17.53
7TEKY2	X	29.350	-1.188	-3.99	29.100	-1.451	-4.86
8G4AAQ		31.075	0.537	1.80	31.005	0.454	1.52
9H9BFG		30.520	-0.018	-0.06	30.545	-0.006	-0.02
BGAXY8		30.100	-0.438	-1.47	30.250	-0.301	-1.01
BN9KQ8		30.690	0.152	0.51	30.674	0.124	0.41
C9VD9F		30.560	0.022	0.07	30.595	0.044	0.15
D73Z33		30.715	0.177	0.60	30.685	0.134	0.45
DKJTTV		30.605	0.067	0.23	30.630	0.079	0.27
DZVK8Z		30.329	-0.209	-0.70	30.632	0.081	0.27
EDF946		30.220	-0.318	-1.07	30.355	-0.196	-0.65
EEUFR		30.380	-0.158	-0.53	30.365	-0.186	-0.62
ETRQUJ		31.010	0.472	1.59	30.945	0.394	1.32
EZR4YT		30.415	-0.123	-0.41	30.590	0.039	0.13
F63JY6	*	30.650	0.112	0.38	31.160	0.609	2.04
FB9EJ6		30.765	0.227	0.76	30.705	0.154	0.52
FT4UYV		30.685	0.147	0.49	30.660	0.109	0.36
GLMPTF		30.590	0.052	0.18	30.580	0.029	0.10
GRLFQC		30.315	-0.223	-0.75	30.200	-0.351	-1.17
HA829G		30.285	-0.253	-0.85	30.360	-0.191	-0.64
J6K277		30.650	0.112	0.38	30.885	0.334	1.12
JLEFMZ	X	39.150	8.612	28.92	33.530	2.979	9.98
JPKKE		30.465	-0.073	-0.24	30.505	-0.046	-0.15
JPXJHC	*	29.660	-0.878	-2.95	29.855	-0.696	-2.33
JZHQHM		30.400	-0.138	-0.46	30.425	-0.126	-0.42
M8L4N8		30.245	-0.293	-0.98	30.475	-0.076	-0.25
MDP8GQ		30.425	-0.113	-0.38	30.450	-0.101	-0.34
MH3QX8		30.765	0.227	0.76	30.885	0.334	1.12
MUGM2Q		30.229	-0.309	-1.04	30.121	-0.430	-1.44



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 757**

**2nd Qtr 2018**

**Ash Content in Thermoplastics - Percent**

WebCode	Data Flag	Sample L51			Sample L52		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
N4GVYM		30.245	-0.293	-0.98	30.280	-0.271	-0.91
NCDRMP		31.020	0.482	1.62	30.855	0.304	1.02
NFC2V7		30.334	-0.204	-0.68	30.630	0.080	0.27
NXB26R		30.550	0.012	0.04	30.420	-0.131	-0.44
P7EMFY		30.865	0.327	1.10	31.045	0.494	1.66
Q3YK27		30.445	-0.093	-0.31	30.260	-0.291	-0.97
QKZCY2		30.705	0.167	0.56	30.600	0.049	0.17
RGWW74		30.410	-0.128	-0.43	30.515	-0.036	-0.12
RJX68T		30.950	0.412	1.38	30.855	0.304	1.02
T9D6Y3		31.035	0.497	1.67	30.765	0.214	0.72
U43CJX		30.390	-0.148	-0.50	30.175	-0.376	-1.26
UBKMYX		30.325	-0.213	-0.71	30.325	-0.226	-0.76
UFCW3Q		30.360	-0.178	-0.60	30.210	-0.341	-1.14
V67GN6	*	30.750	0.212	0.71	30.250	-0.301	-1.01
WP9LTQ	*	31.208	0.670	2.25	31.398	0.847	2.84
YBZR4K		30.260	-0.278	-0.93	30.320	-0.231	-0.77
YTPNVF		30.132	-0.406	-1.36	30.276	-0.275	-0.92
YTZRZR	X	31.714	1.176	3.95	31.462	0.912	3.05
Z4ZFXF		30.785	0.247	0.83	30.445	-0.106	-0.35
ZGPHEM		30.380	-0.158	-0.53	30.325	-0.226	-0.76
ZLD9CH	X	34.720	4.182	14.04	31.100	0.549	1.84

Summary Statistics		
	Sample L51	Sample L52
<b>Grand Means</b>	30.5377 Percent	30.5505 Percent
<b>Std Dev Btwn Labs</b>	0.2978 Percent	0.2986 Percent
Statistics based on 50 of 56 reporting participants		

Sample L51: PBT & Sample L52: PBT



**Comments on Assigned Data Flags for Test #757**

33YPFQ (X) - Inconsistent in testing between samples. Data for sample L52 are low. Inconsistent within the determinations of sample L52.

7TEKY2 (X) - Data for both samples are low. Possible Systematic Error.

6MH72V (X) - Extreme data.

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

JLEFMZ (X) - Extreme data.

ZLD9CH (X) - Extreme data.



# Plastics Interlaboratory Testing Program

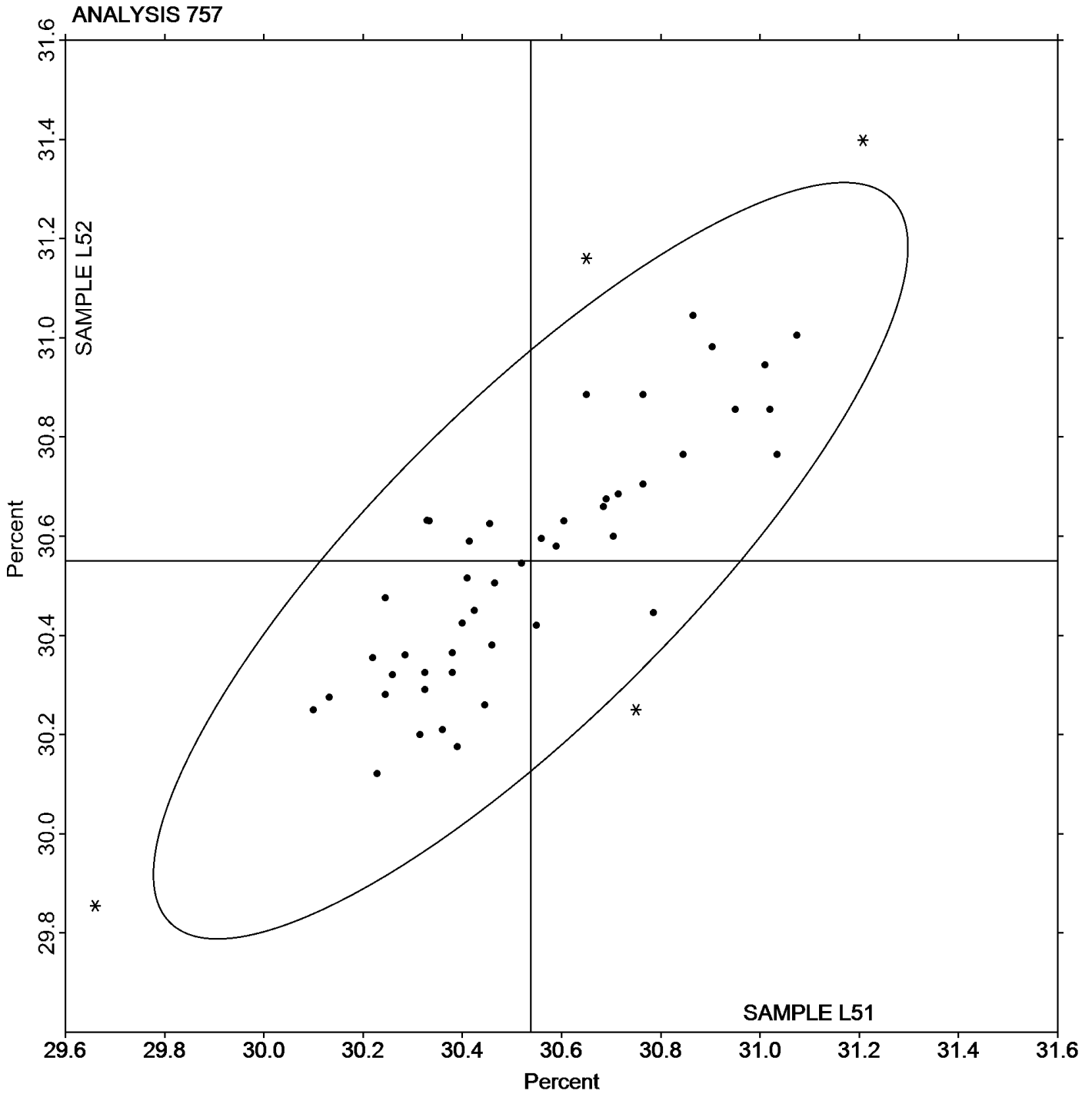
## Analysis 757

### Ash Content in Thermoplastics - Percent

Report #106

2nd Qtr 2018

Grand Mean Sample L51: 30.538 Percent    Grand Mean Sample L52: 30.551 Percent





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 760**

**2nd Qtr 2018**

**DSC Crystallization Temperature**

WebCode	Data Flag	<u>Sample W51</u>			<u>Sample W52</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2Y69TC		174.46	-3.30	-0.60	174.78	-3.40	-0.61	TA
37ANMP		170.53	-7.23	-1.33	171.43	-6.75	-1.21	NZ
6DTKQQ		176.83	-0.93	-0.17	176.80	-1.38	-0.25	PE
6MH72V		178.70	0.94	0.17	181.43	3.25	0.58	XX
7WGC2M		172.19	-5.57	-1.02	171.60	-6.58	-1.18	TA
8A6UFC		175.80	-1.96	-0.36	177.40	-0.78	-0.14	NZ
8M8KWB		184.07	6.31	1.16	184.30	6.12	1.10	TA
8WD3TM		180.20	2.44	0.45	179.89	1.71	0.31	XX
9UMER8		186.93	9.17	1.68	186.45	8.27	1.48	TA
CMUD36		180.47	2.71	0.50	180.07	1.89	0.34	TA
EEUFR		173.62	-4.14	-0.76	173.88	-4.30	-0.77	TA
GLMPTF		174.20	-3.56	-0.65	174.30	-3.88	-0.69	TA
JLEFMZ		179.58	1.82	0.33	179.80	1.62	0.29	PE
JPXJHC		170.62	-7.14	-1.31	169.86	-8.32	-1.49	TA
M7PLQC	X	224.47	46.71	8.57	224.50	46.32	8.29	XX
MDP8GQ		180.47	2.71	0.50	181.33	3.15	0.56	PE
MWYA94	*	193.50	15.74	2.89	193.54	15.36	2.75	TA
N3PYBT		173.61	-4.15	-0.76	172.25	-5.93	-1.06	TA
NTFE6C		183.56	5.80	1.06	184.11	5.93	1.06	MT
PQNTX7		176.68	-1.08	-0.20	179.40	1.22	0.22	TA
Q3YK27		173.73	-4.03	-0.74	173.13	-5.05	-0.90	TA
TTYW7L		175.63	-2.13	-0.39	175.73	-2.45	-0.44	MT
U43CJX		172.31	-5.45	-1.00	173.26	-4.92	-0.88	TA
V6AW4R		179.77	2.01	0.37	180.57	2.39	0.43	TA
YZ3QRG		178.77	1.01	0.18	180.97	2.79	0.50	TA

<b>Summary Statistics</b>		
	<u>Sample W51</u>	<u>Sample W52</u>
<b>Grand Means</b>	177.760 Degrees Celsius	178.178 Degrees Celsius
<b>Std Dev Btwn Labs</b>	5.452 Degrees Celsius	5.587 Degrees Celsius
Statistics based on 24 of 25 reporting participants		

Sample W51: PBT & Sample W52: PBT

**Comments on Assigned Data Flags for Test #760**

M7PLQC (X) - Data for both samples are high. Possible Systematic Error.



# Plastics Interlaboratory Testing Program

## Analysis 760

### DSC Crystallization Temperature

Report #106

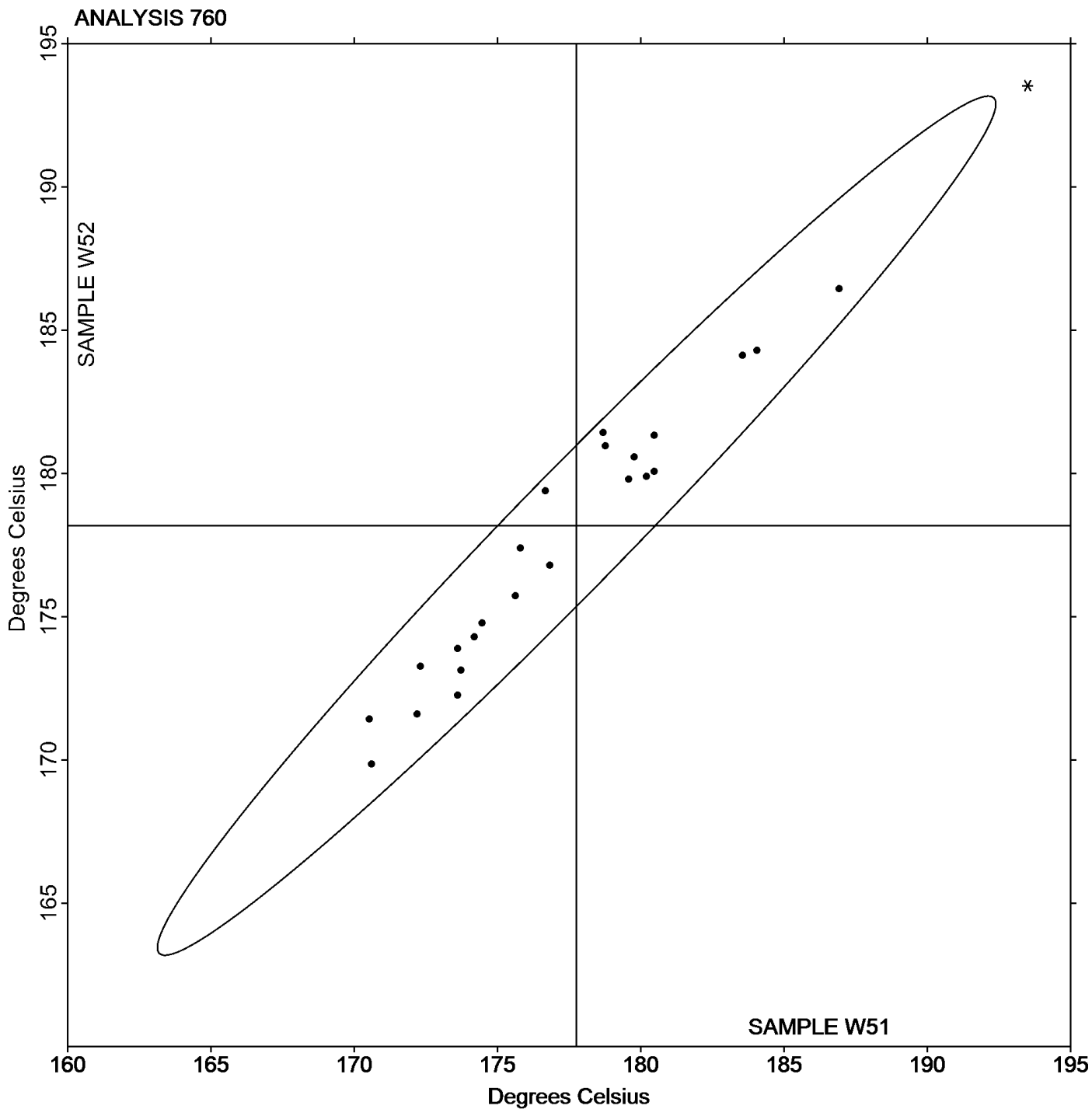
2nd Qtr 2018

#### 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		



Grand Mean Sample W51: 177.76 Degrees Celsius    Grand Mean Sample W52: 178.18 Degrees Celsius





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 761**

**2nd Qtr 2018**

**DSC Melt Temperature**

WebCode	Data Flag	Sample W51			Sample W52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2Y69TC		225.21	1.58	1.06	225.85	2.37	1.56	TA
37ANMP		222.97	-0.67	-0.45	222.97	-0.52	-0.34	NZ
6DTKQQ		223.90	0.26	0.18	223.97	0.48	0.32	PE
6MH72V		223.67	0.03	0.02	224.13	0.65	0.43	XX
7WGC2M		223.33	-0.31	-0.20	223.57	0.09	0.06	TA
8A6UFC		223.20	-0.44	-0.29	224.15	0.67	0.44	NZ
8M8KWB		225.03	1.40	0.94	224.93	1.45	0.96	TA
8WD3TM	*	218.79	-4.84	-3.25	219.01	-4.48	-2.96	XX
9UMER8		223.91	0.27	0.18	223.37	-0.12	-0.08	TA
CMUD36		221.47	-2.17	-1.45	221.73	-1.75	-1.16	TA
EEUFR		224.85	1.21	0.81	224.43	0.94	0.62	TA
GLMPTF		223.17	-0.47	-0.31	222.13	-1.35	-0.89	TA
JBFQVQ		223.43	-0.20	-0.14	223.82	0.34	0.22	MT
JLEFMZ		225.95	2.31	1.55	225.93	2.45	1.62	PE
JPXJHC		225.37	1.74	1.17	225.78	2.30	1.52	XX
MDP8GQ	*	224.27	0.63	0.42	222.37	-1.12	-0.74	PE
MWYA94		224.65	1.01	0.68	224.04	0.55	0.36	TA
N3PYBT		223.03	-0.60	-0.40	223.10	-0.38	-0.25	TA
NTFE6C		223.22	-0.41	-0.28	223.56	0.07	0.05	MT
NXB26R	X	225.38	1.74	1.17	215.48	-8.01	-5.29	TA
PQNTX7		223.54	-0.10	-0.07	223.37	-0.12	-0.08	TA
Q3YK27		223.57	-0.07	-0.05	223.13	-0.35	-0.23	TA
TTYW7L		221.80	-1.84	-1.23	221.70	-1.79	-1.18	MT
U43CJX		223.34	-0.30	-0.20	223.23	-0.26	-0.17	XX
V6AW4R		222.75	-0.89	-0.60	221.63	-1.86	-1.23	TA
YTPNVF		224.11	0.48	0.32	223.67	0.19	0.12	TA
YZ3QRG		226.00	2.36	1.59	225.03	1.55	1.02	TA

Summary Statistics		
	Sample W51	Sample W52
<b>Grand Means</b>	223.636 Degrees Celsius	223.485 Degrees Celsius
<b>Std Dev Btwn Labs</b>	1.491 Degrees Celsius	1.513 Degrees Celsius
Statistics based on 26 of 27 reporting participants		

Sample W51: PBT & Sample W52: PBT





# Plastics Interlaboratory Testing Program

## Analysis 761

### DSC Melt Temperature

Report #106

2nd Qtr 2018

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#### **Comments on Assigned Data Flags for Test #761**

NXB26R (X) - Inconsistent intesting between samples. Data for sample W52 are low.

#### **Key to Instrument Codes Reported by Participants**

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



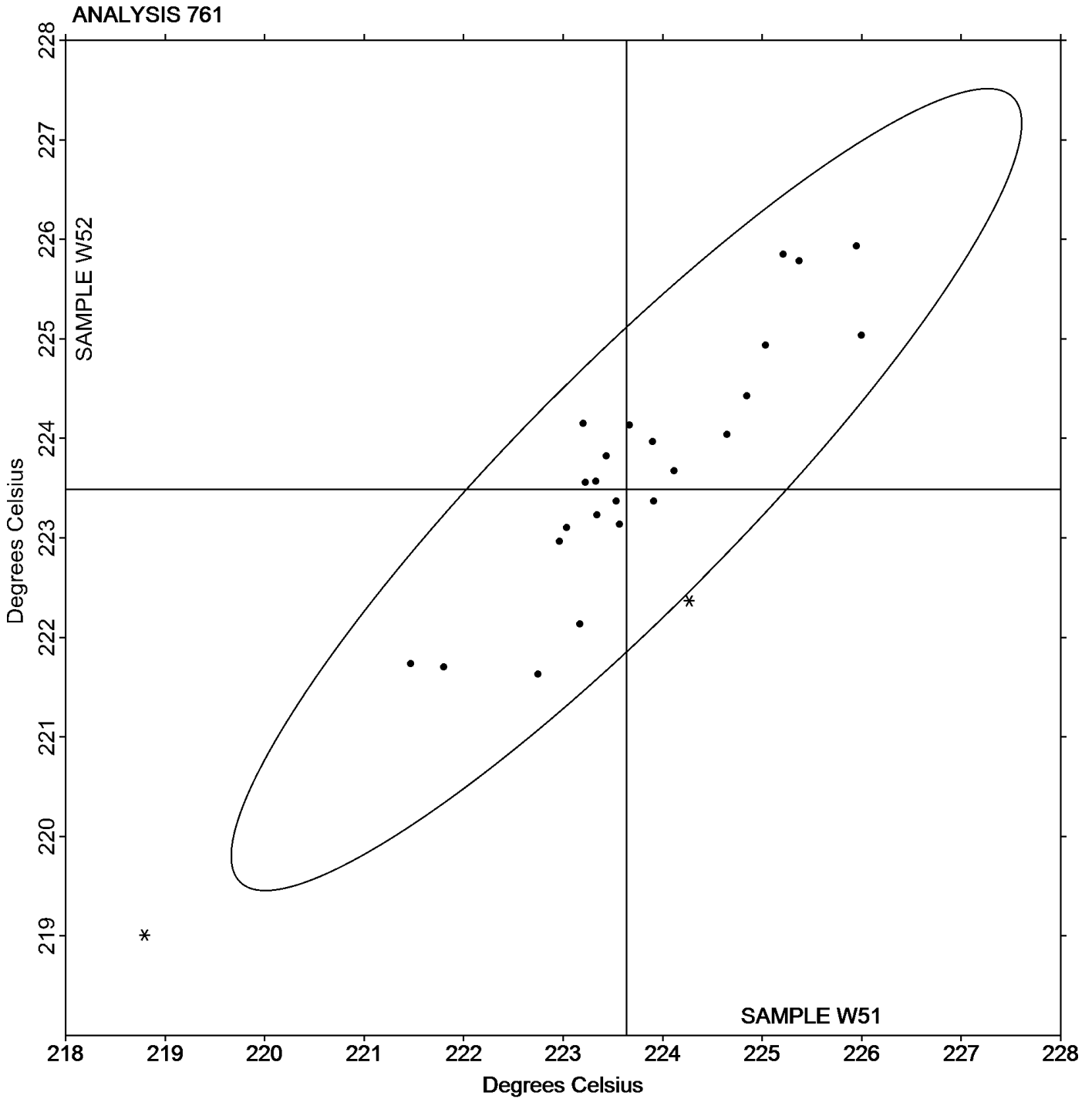
# Plastics Interlaboratory Testing Program

## Analysis 761 DSC Melt Temperature

Report #106

2nd Qtr 2018

Grand Mean Sample W51: 223.64 Degrees Celsius    Grand Mean Sample W52: 223.49 Degrees Celsius





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 762

2nd Qtr 2018

### DSC Enthalpy of Crystallization

WebCode	Data Flag	Sample W51			Sample W52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2Y69TC		43.22	-3.85	-0.97	42.43	-4.57	-1.07	TA
37ANMP		37.96	-9.11	-2.29	39.29	-7.71	-1.81	NZ
6DTKQQ		47.06	-0.01	0.00	44.15	-2.85	-0.67	PE
6MH72V	X	-44.54	-91.61	-23.00	-49.10	-96.10	-22.53	XX
7WGC2M		47.51	0.44	0.11	47.61	0.61	0.14	TA
8A6UFC		52.01	4.94	1.24	48.06	1.06	0.25	NZ
8M8KWB		51.13	4.06	1.02	51.23	4.23	0.99	TA
8WD3TM		46.91	-0.16	-0.04	45.75	-1.25	-0.29	XX
9UMER8		42.20	-4.87	-1.22	42.44	-4.56	-1.07	TA
CMUD36		54.06	6.99	1.76	53.72	6.72	1.58	TA
EEUFR		47.00	-0.07	-0.02	48.73	1.73	0.41	TA
GLMPTF		47.49	0.42	0.11	47.47	0.47	0.11	TA
MDP8GQ	X	-87.02	-134.09	-33.67	-52.77	-99.77	-23.39	PE
MWYA94		48.11	1.04	0.26	46.43	-0.57	-0.13	TA
N3PYBT		45.50	-1.57	-0.39	45.00	-2.00	-0.47	TA
PQNTX7		49.57	2.50	0.63	50.58	3.58	0.84	TA
Q3YK27		50.22	3.15	0.79	50.21	3.21	0.75	TA
V6AW4R		42.40	-4.67	-1.17	41.48	-5.52	-1.29	TA
YZ3QRG	*	47.83	0.76	0.19	54.40	7.40	1.73	TA

#### Summary Statistics

	Sample W51	Sample W52
<b>Grand Means</b>	47.069 Joules Per Gram	46.999 Joules Per Gram
<b>Std Dev Btwn Labs</b>	3.983 Joules Per Gram	4.266 Joules Per Gram

Statistics based on 17 of 19 reporting participants

Sample W51: PBT & Sample W52: PBT

#### Comments on Assigned Data Flags for Test #762

MDP8GQ (X) - Extreme data.

6MH72V (X) - Extreme data.

#### Key to Instrument Codes Reported by Participants

NZ Netzsch Instruments

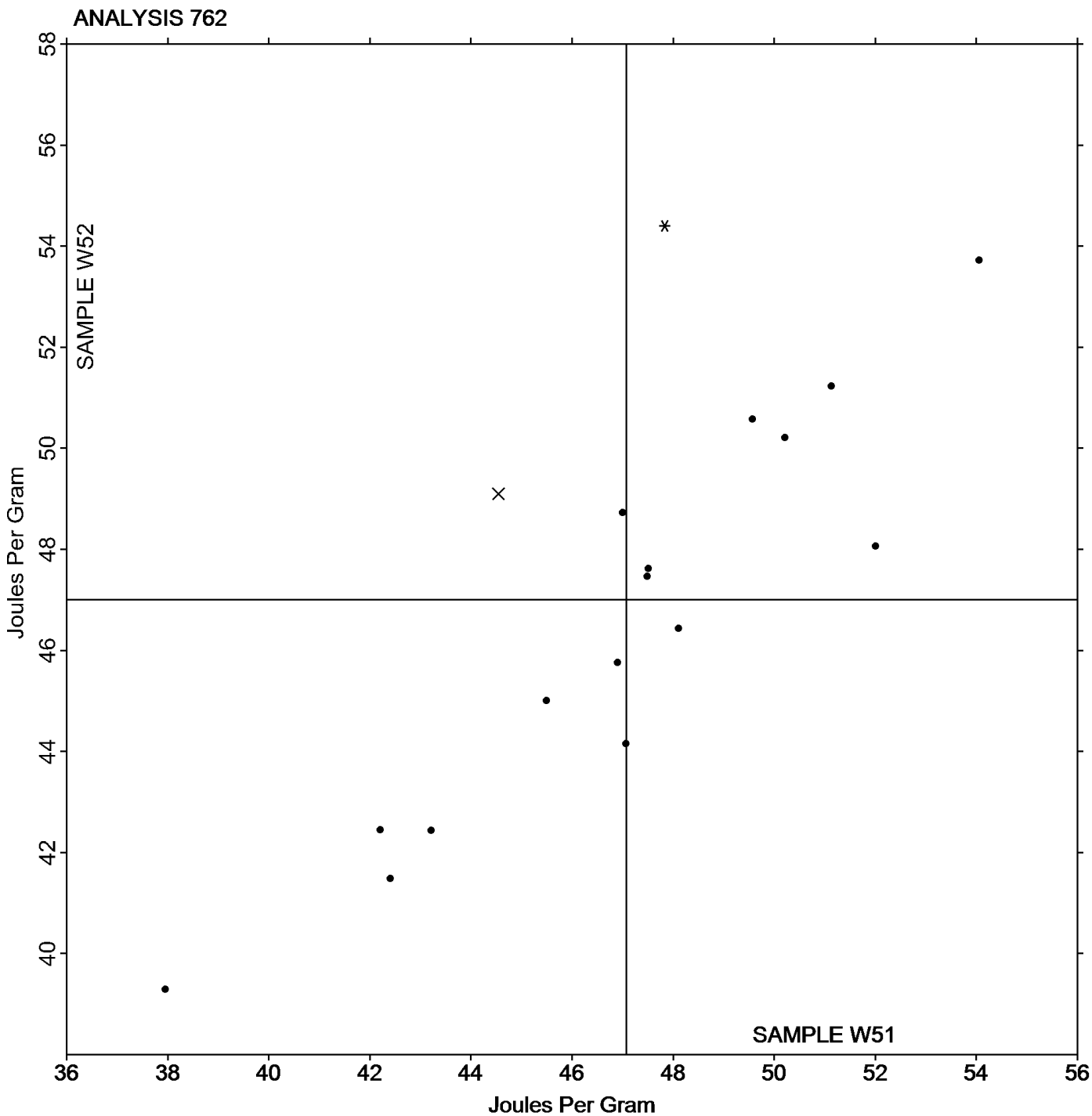
PE Perkins Elmer Instruments

TA TA Instruments

XX Instrument manufacturer not specified by lab



Grand Mean Sample W51: 47.069 Joules Per Gram    Grand Mean Sample W52: 46.999 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 #106

## Analysis 763

2nd Qtr 2018

### DSC Enthalpy of Fusion

WebCode	Data Flag	Sample W51			Sample W52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2Y69TC		44.96	0.24	0.04	44.06	-0.47	-0.07	TA
37ANMP		35.76	-8.95	-1.49	33.08	-11.44	-1.71	NZ
6DTKQQ		49.27	4.55	0.76	51.32	6.79	1.02	PE
6MH72V		44.53	-0.18	-0.03	51.27	6.74	1.01	XX
7WGC2M		36.96	-7.75	-1.29	37.53	-6.99	-1.05	TA
8A6UFC		45.65	0.93	0.15	45.64	1.11	0.17	NZ
8M8KWB		49.52	4.80	0.80	48.02	3.50	0.52	TA
8WD3TM		38.94	-5.78	-0.96	37.09	-7.44	-1.11	XX
9UMER8		42.61	-2.11	-0.35	45.12	0.59	0.09	TA
CMUD36		56.84	12.12	2.01	56.96	12.43	1.86	TA
EEUFR		37.41	-7.31	-1.21	38.30	-6.23	-0.93	TA
GLMPTF		37.00	-7.72	-1.28	38.18	-6.34	-0.95	TA
MDP8GQ		52.88	8.16	1.35	44.78	0.25	0.04	PE
MWYA94		48.61	3.89	0.65	47.96	3.44	0.51	TA
N3PYBT		45.91	1.19	0.20	45.20	0.68	0.10	TA
NXB26R		40.94	-3.77	-0.63	42.85	-1.68	-0.25	TA
PQNTX7		47.07	2.35	0.39	42.93	-1.59	-0.24	TA
Q3YK27		50.62	5.90	0.98	50.52	5.99	0.90	TA
V6AW4R		38.55	-6.17	-1.02	34.33	-10.19	-1.52	TA
YZ3QRG		50.33	5.62	0.93	55.40	10.87	1.63	TA

#### Summary Statistics

	Sample W51	Sample W52
<b>Grand Means</b>	44.718 Joules Per Gram	44.528 Joules Per Gram
<b>Stnd Dev Btwn Labs</b>	6.027 Joules Per Gram	6.689 Joules Per Gram

Statistics based on 20 of 20 reporting participants

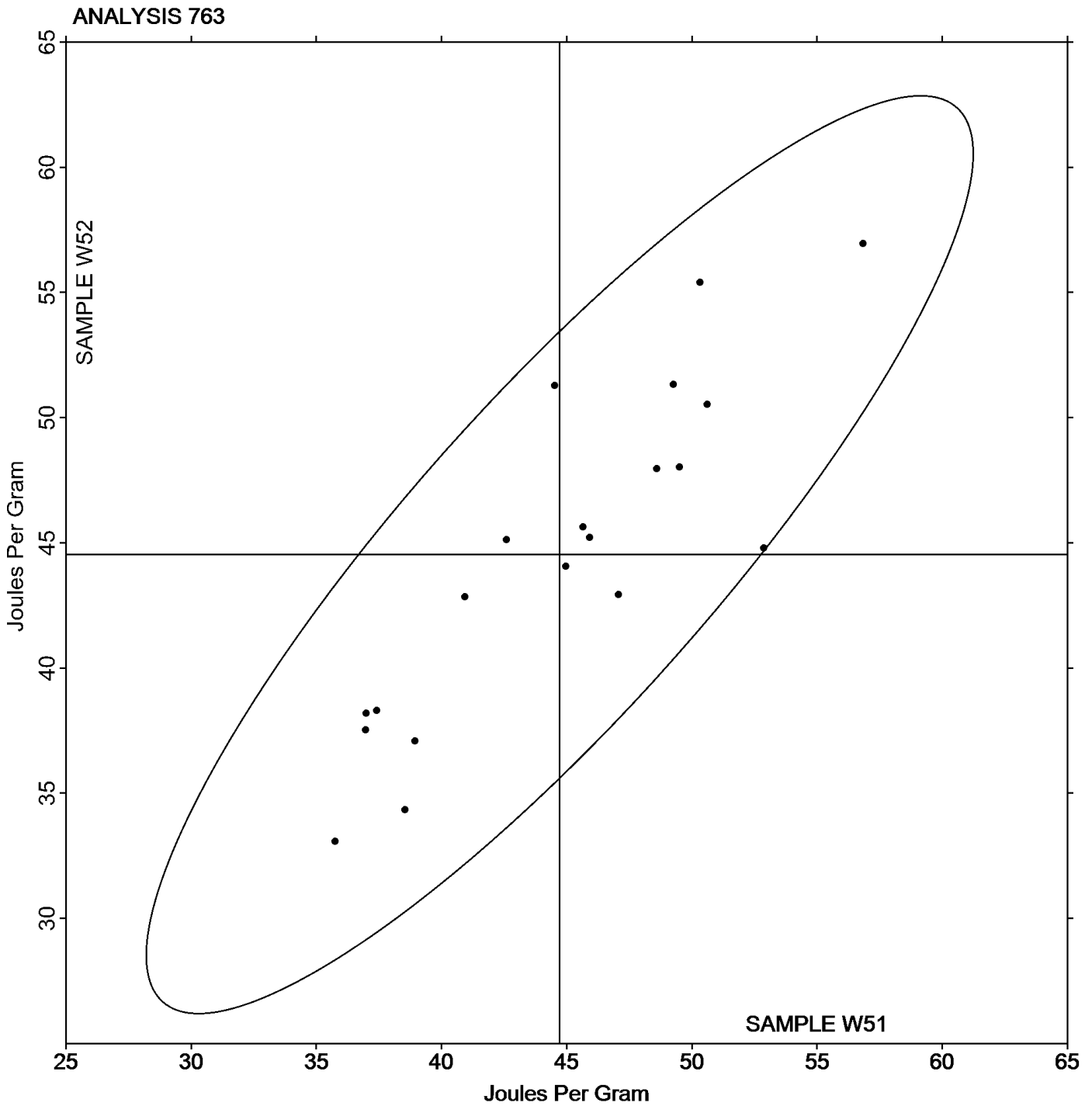
Sample W51: PBT & Sample W52: PBT

#### Key to Instrument Codes Reported by Participants

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



Grand Mean Sample W51: 44.718 Joules Per Gram    Grand Mean Sample W52: 44.528 Joules Per Gram





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 764**

**2nd Qtr 2018**

**DSC Glass Transition Temperature**

WebCode	Data Flag	Sample V51			Sample V52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
37ANMP	*	101.60	-3.15	-0.99	98.50	-6.34	-2.00	NZ
6DTKQQ		107.83	3.08	0.96	108.70	3.86	1.21	PE
6MH72V		101.47	-3.28	-1.03	102.30	-2.54	-0.80	XX
7WGC2M		108.17	3.42	1.07	108.43	3.59	1.13	TA
8A6UFC		106.00	1.25	0.39	106.60	1.76	0.55	NZ
8M8KWB		105.27	0.52	0.16	105.53	0.69	0.22	TA
8WD3TM		109.59	4.84	1.51	109.79	4.95	1.56	XX
9UMER8		101.82	-2.93	-0.92	101.91	-2.93	-0.92	TA
CMUD36		103.77	-0.98	-0.31	103.80	-1.04	-0.33	TA
EEUFR		108.22	3.47	1.09	107.99	3.15	0.99	TA
MDP8GQ		104.07	-0.68	-0.21	101.77	-3.07	-0.97	PE
MWYA94	*	96.53	-8.22	-2.57	100.27	-4.57	-1.44	TA
N3PYBT		105.30	0.55	0.17	104.87	0.03	0.01	TA
NTFE6C		108.12	3.37	1.05	108.02	3.18	1.00	MT
PQNTX7		104.61	-0.14	-0.04	105.78	0.94	0.29	TA
Q3YK27		104.23	-0.52	-0.16	104.23	-0.61	-0.19	TA
TTYW7L		106.30	1.55	0.48	106.50	1.66	0.52	MT
V6AW4R		105.97	1.22	0.38	105.88	1.04	0.33	TA
YZ3QRG		101.40	-3.35	-1.05	101.10	-3.74	-1.18	TA

Summary Statistics		
	Sample V51	Sample V52
<b>Grand Means</b>	104.751 Degrees Celsius	104.841 Degrees Celsius
<b>Std Dev Btwn Labs</b>	3.196 Degrees Celsius	3.177 Degrees Celsius
Statistics based on 19 of 19 reporting participants		

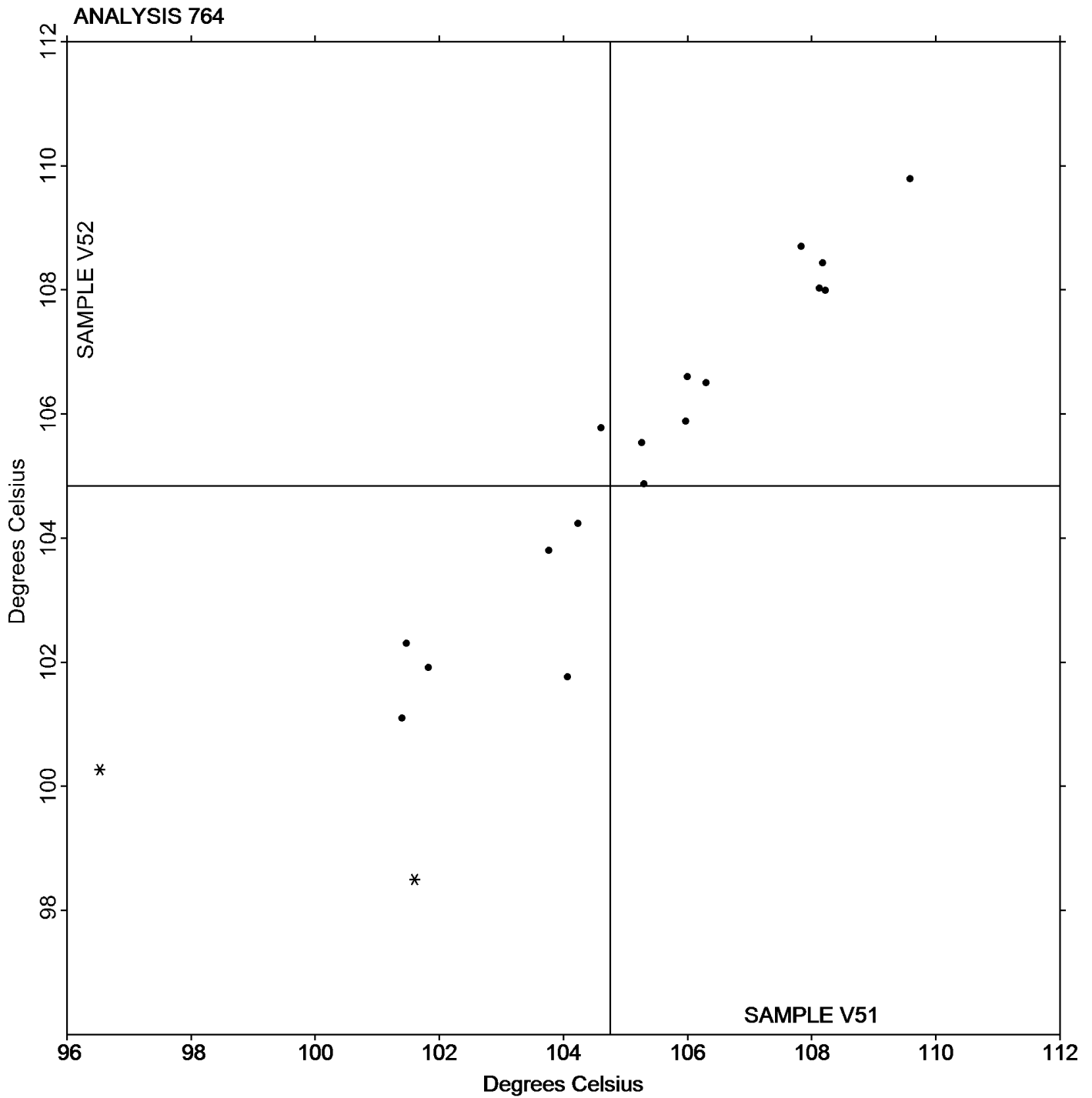
Sample V51: ABS & Sample V52: ABS

**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



Grand Mean Sample V51: 104.75 Degrees Celsius    Grand Mean Sample V52: 104.84 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 #106**

**Analysis 770**

**2nd Qtr 2018**

**Tensile Stress at Yield, Film Samples - psi**

WebCode	Data Flag	Sample B51			Sample B52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		1,414	-337	-1.33	1,438	-898	-1.76	MT
8A6UFC		1,752	1	0.00	2,719	383	0.75	IN
AL6AED		2,384	633	2.50	2,754	417	0.82	TO
BGAXY8		1,785	34	0.13	2,323	-13	-0.03	MT
D8CVK2		1,669	-82	-0.32	2,290	-46	-0.09	SH
FPMKU4		1,680	-71	-0.28	2,480	143	0.28	IN
NTWJNA		1,734	-17	-0.07	2,449	112	0.22	IN
QVVN89		1,820	69	0.27	2,470	134	0.26	OA
RHKEYP		1,708	-43	-0.17	2,462	125	0.25	IN
T3Q8M9	*	1,670	-81	-0.32	3,717	1,380	2.71	IN
T78PNQ		1,369	-382	-1.51	1,607	-729	-1.43	IN
TB3L7P		1,735	-16	-0.06	2,509	173	0.34	IN
VPRBD7		1,435	-316	-1.25	1,892	-444	-0.87	IN
WP9LTQ		2,185	434	1.72	1,844	-493	-0.97	WZ
Y3R794		1,972	221	0.87	2,119	-217	-0.43	IN
Z4ZFXF		1,724	-27	-0.11	2,240	-97	-0.19	IM
ZUBR3D		1,729	-22	-0.09	2,407	70	0.14	IN

Summary Statistics		
	Sample B51	Sample B52
<b>Grand Means</b>	1,750.8 psi	2,336.5 psi
<b>Std Dev Btwn Labs</b>	253.1 psi	510.2 psi
Statistics based on 17 of 17 reporting participants		

Sample B51: LDPE & Sample B52: LDPE

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

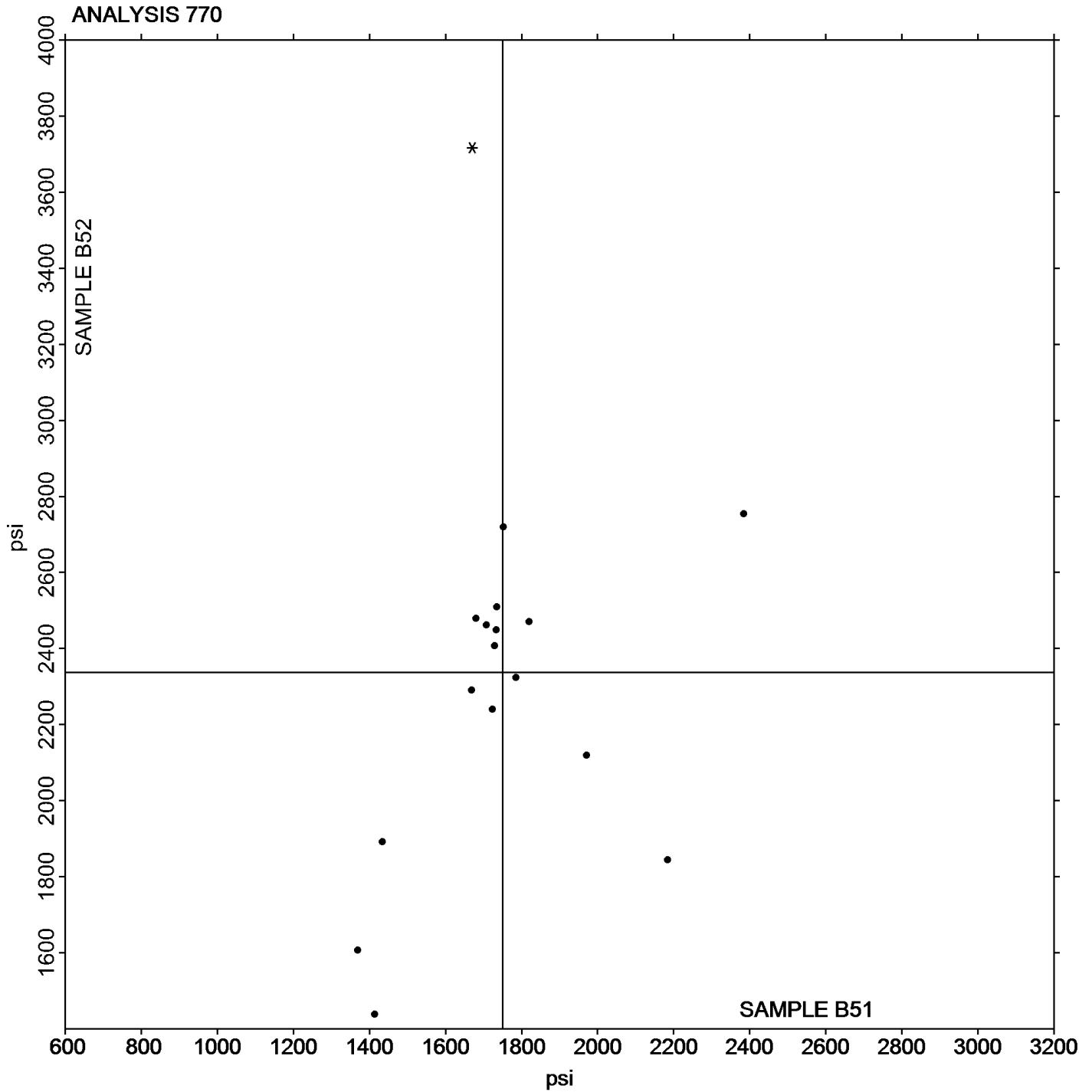
## Analysis 770

### Tensile Stress at Yield, Film Samples - psi

Report #106

2nd Qtr 2018

Grand Mean Sample B51: 1,750.83 psi    Grand Mean Sample B52: 2,336.54 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 #106**

**Analysis 771**

**2nd Qtr 2018**

**Tensile Stress at Break, Film Samples - psi**

WebCode	Data Flag	Sample B51			Sample B52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		3,202	85	0.12	4,021	237	0.29	MT
8A6UFC		3,347	231	0.32	4,096	312	0.38	IN
AL6AED		2,382	-735	-1.03	2,739	-1,044	-1.28	TO
BGAXY8		2,704	-413	-0.58	2,962	-821	-1.00	MT
D8CVK2		2,626	-491	-0.69	3,291	-493	-0.60	SH
FPMKU4		2,961	-156	-0.22	3,888	104	0.13	IN
NTWJNA		3,127	11	0.01	3,908	124	0.15	XX
QVVN89		3,212	96	0.13	3,954	170	0.21	OA
RHKEYP		2,974	-143	-0.20	3,740	-44	-0.05	IN
T3Q8M9		2,546	-571	-0.80	3,715	-69	-0.08	IN
T78PNQ		2,393	-724	-1.02	3,200	-584	-0.71	IN
TB3L7P		3,288	172	0.24	3,993	210	0.26	IN
V6AW4R		3,305	189	0.26	4,253	469	0.57	SH
VPRBD7		2,994	-123	-0.17	3,619	-165	-0.20	IN
WP9LTQ	*	4,151	1,034	1.45	3,790	6	0.01	WZ
Y3R794	*	5,421	2,304	3.23	6,652	2,868	3.51	IN
Z4ZFXF		2,953	-164	-0.23	3,325	-459	-0.56	IM
Z8ZRUF		2,290	-826	-1.16	2,925	-859	-1.05	UC
ZUBR3D		3,342	225	0.32	3,822	38	0.05	IN

Summary Statistics		Sample B51	Sample B52
<b>Grand Means</b>		3,116.7 psi	3,783.8 psi
<b>Stnd Dev Btwn Labs</b>		712.4 psi	817.5 psi
Statistics based on 19 of 19 reporting participants			

Sample B51: LDPE & Sample B52: LDPE

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

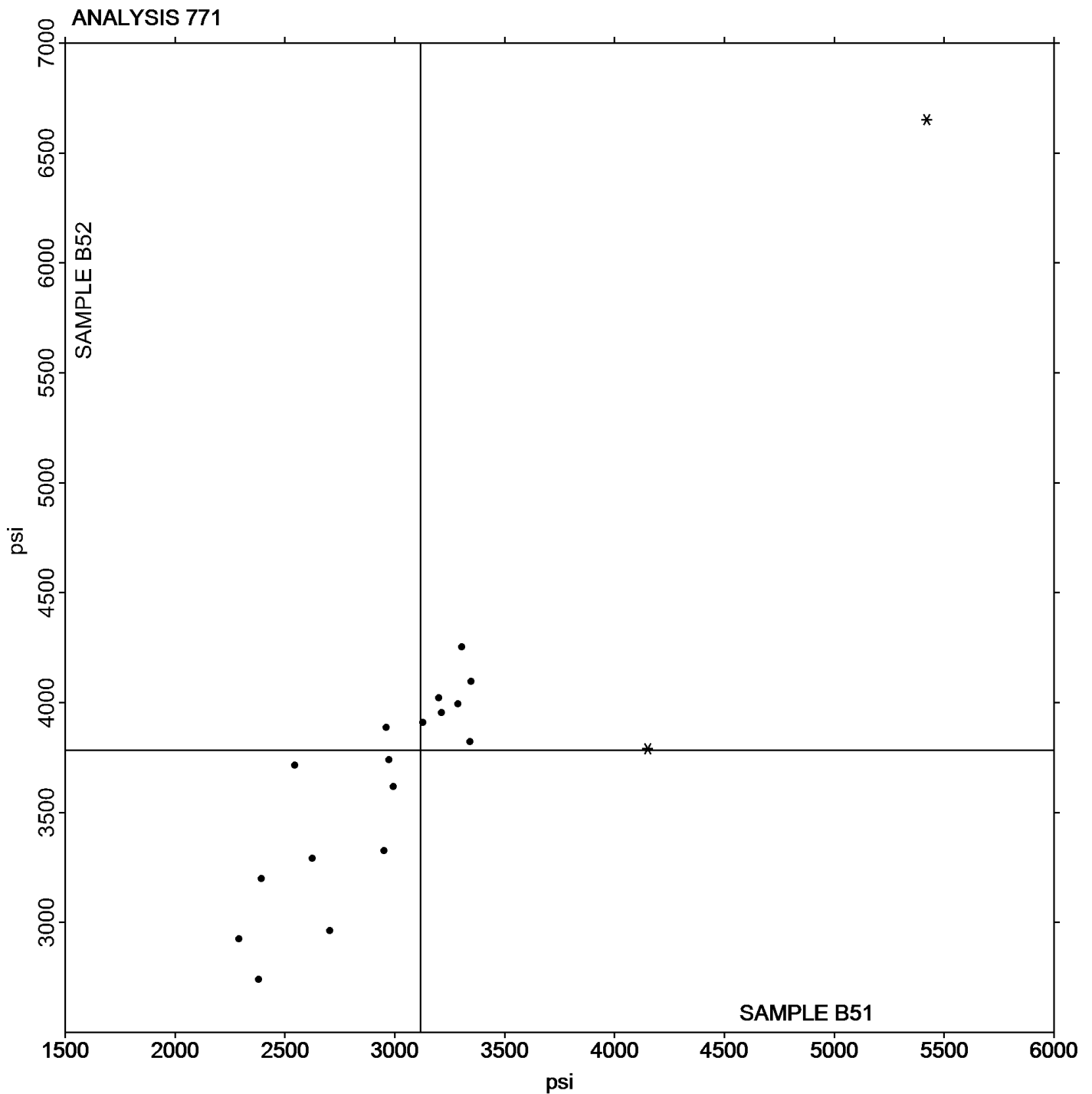
## Analysis 771

### Tensile Stress at Break, Film Samples - psi

Report #106

2nd Qtr 2018

Grand Mean Sample B51: 3,116.71 psi    Grand Mean Sample B52: 3,783.83 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 #106

## Analysis 772

2nd Qtr 2018

### Percent Elongation at Yield, Films

WebCode	Data Flag	Sample B51			Sample B52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		7.16	-51.17	-1.87	5.76	-68.47	-1.72	MT
8A6UFC		72.19	13.87	0.51	92.15	17.92	0.45	IN
AL6AED		51.75	-6.57	-0.24	38.85	-35.38	-0.89	TO
BGAXY8		73.83	15.51	0.57	103.64	29.41	0.74	MT
D8CVK2		58.57	0.24	0.01	98.82	24.59	0.62	SH
FPMKU4		72.92	14.60	0.53	89.43	15.20	0.38	IN
NTWJNA		92.27	33.95	1.24	115.20	40.97	1.03	IN
RHKEYP		77.55	19.23	0.70	119.71	45.48	1.14	IN
T3Q8M9	X	109.86	51.54	1.88	694.93	620.70	15.56	IN
T78PNQ		13.95	-44.37	-1.62	15.28	-58.95	-1.48	IN
TB3L7P		72.31	13.99	0.51	94.55	20.32	0.51	IN
VPRBD7		73.48	15.16	0.55	88.58	14.35	0.36	IN
WP9LTQ		63.47	5.15	0.19	54.52	-19.71	-0.49	WZ
Y3R794		5.52	-52.80	-1.93	5.03	-69.20	-1.73	IN
Z4ZFXF		79.86	21.54	0.79	109.42	35.19	0.88	IM
ZUBR3D		60.02	1.70	0.06	82.50	8.27	0.21	IN

#### Summary Statistics

	Sample B51	Sample B52
<b>Grand Means</b>	58.323 Percent	74.229 Percent
<b>Stnd Dev Btwn Labs</b>	27.392 Percent	39.898 Percent

Statistics based on 15 of 16 reporting participants

Sample B51: LDPE & Sample B52: 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

T3Q8M9 (X) - Extreme data.

#### Key to Instrument Codes Reported by Participants

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



# Plastics Interlaboratory Testing Program

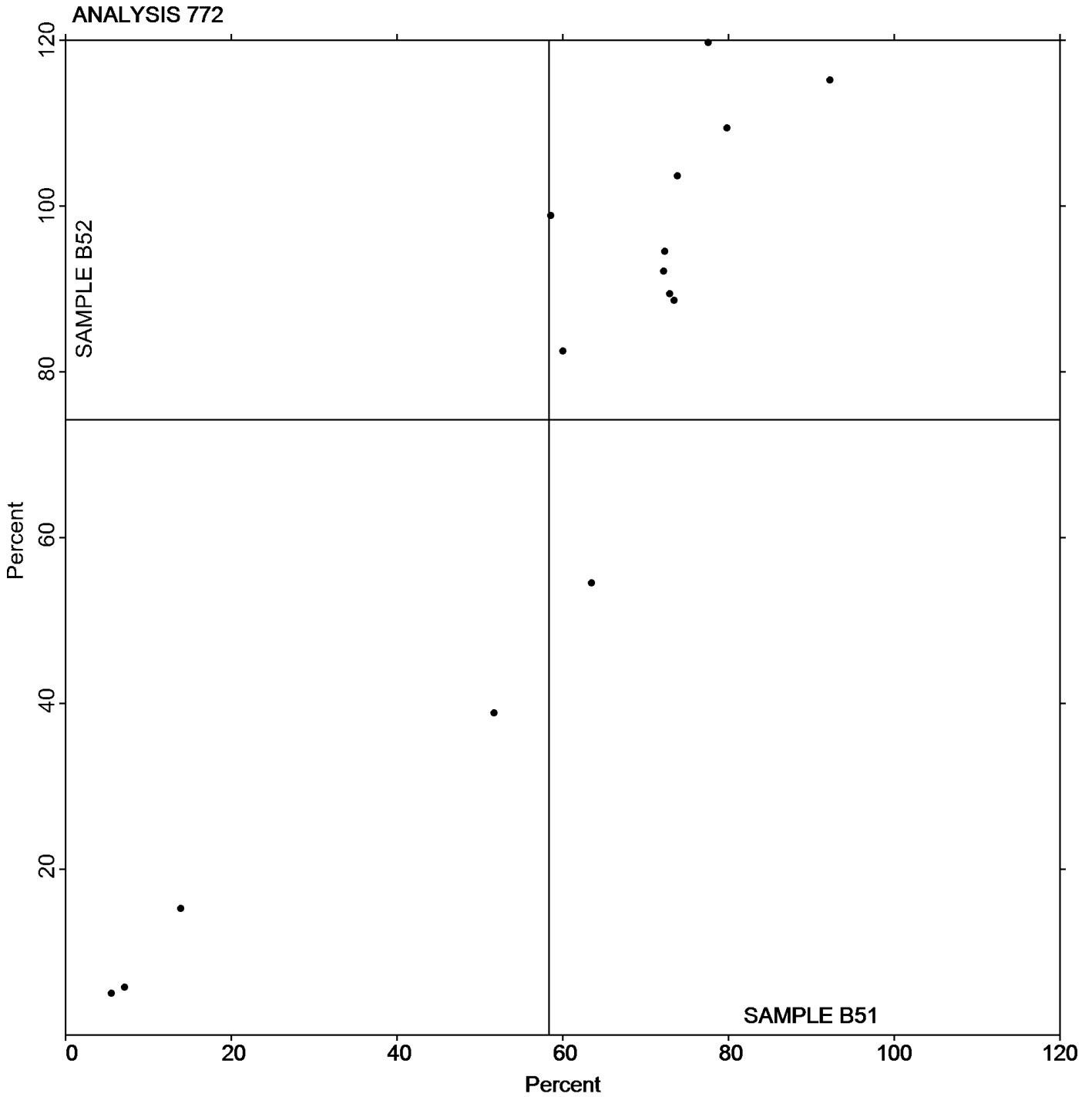
Report #106

## Analysis 772

2nd Qtr 2018

### Percent Elongation at Yield, Films

Grand Mean Sample B51: 58.323 Percent    Grand Mean Sample B52: 74.229 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 #106**

**Analysis 773**

**2nd Qtr 2018**

**Percent Elongation at Break, Film Samples**

WebCode	Data Flag	Sample B51			Sample B52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		566.9	-83.9	-0.87	564.4	-59.6	-0.61	MT
8A6UFC		587.8	-63.1	-0.65	548.6	-75.4	-0.78	IN
AL6AED	X	52.2	-598.7	-6.18	40.3	-583.7	-6.00	TO
BGAXY8		495.5	-155.3	-1.60	444.5	-179.5	-1.85	MT
D8CVK2		561.4	-89.4	-0.92	601.1	-22.9	-0.24	SH
FPMKU4		548.1	-102.7	-1.06	531.2	-92.8	-0.95	IN
NTWJNA		686.4	35.6	0.37	647.6	23.6	0.24	IN
QVVN89		653.3	2.5	0.03	678.4	54.4	0.56	OA
RHKEYP		835.6	184.8	1.91	732.8	108.8	1.12	IN
T3Q8M9		640.0	-10.8	-0.11	695.6	71.6	0.74	IN
T78PNQ		640.9	-9.9	-0.10	582.9	-41.1	-0.42	IN
TB3L7P		579.8	-71.0	-0.73	522.9	-101.1	-1.04	IN
V6AW4R		823.9	173.1	1.79	839.6	215.6	2.22	SH
VPRBD7		611.7	-39.1	-0.40	658.3	34.3	0.35	IN
WP9LTQ		652.0	1.2	0.01	637.0	13.0	0.13	WZ
Y3R794		817.7	166.9	1.72	772.1	148.1	1.52	IN
Z4ZFXF		682.2	31.4	0.32	626.7	2.7	0.03	IM
Z8ZRUF		711.6	60.7	0.63	612.2	-11.8	-0.12	UC
ZUBR3D		620.2	-30.6	-0.32	535.9	-88.1	-0.91	IN

Summary Statistics		
	Sample B51	Sample B52
<b>Grand Means</b>	650.83 Percent	623.98 Percent
<b>Stnd Dev Btwn Labs</b>	96.81 Percent	97.22 Percent
Statistics based on 18 of 19 reporting participants		

Sample B51: LDPE & Sample B52: LDPE

**Comments on Assigned Data Flags for Test #773**

AL6AED (X) - Data for both samples are low

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

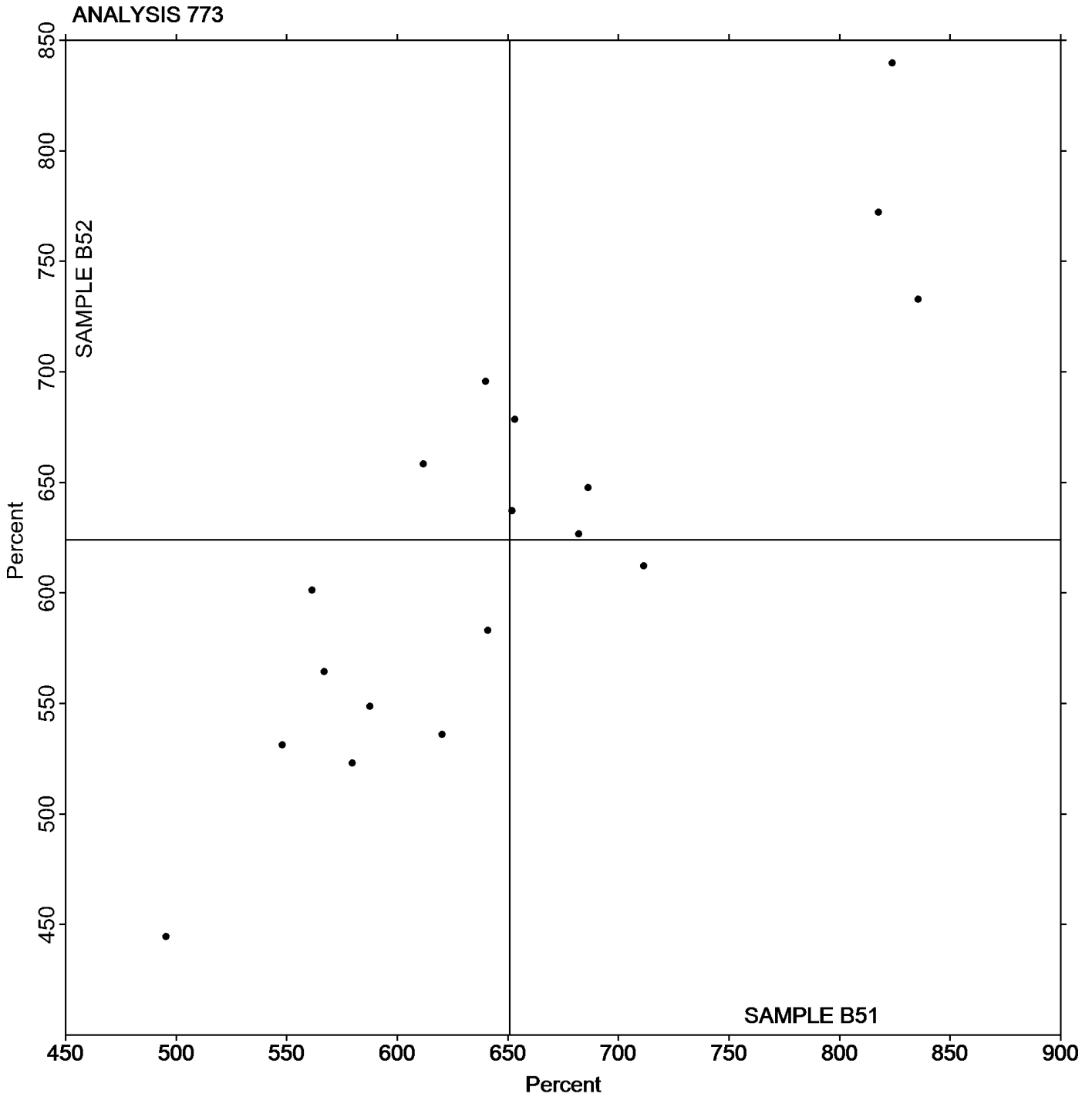
Report #106

## Analysis 773

2nd Qtr 2018

### Percent Elongation at Break, Film Samples

Grand Mean Sample B51: 650.83 Percent    Grand Mean Sample B52: 623.98 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 #106**

**Analysis 774**

**2nd Qtr 2018**

**Thickness of Film Tensile Samples - mils**

WebCode	Data Flag	<u>Sample B51</u>			<u>Sample B52</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
88XCFV		3.1730	0.0196	0.13	3.1140	0.0574	0.52
8A6UFC		3.0490	-0.1044	-0.68	2.9920	-0.0646	-0.58
AL6AED		3.1182	-0.0353	-0.23	3.1300	0.0734	0.66
BGAXY8		3.1920	0.0386	0.25	3.1030	0.0464	0.42
D8CVK2		2.9382	-0.2152	-1.39	3.1386	0.0821	0.74
FPMKU4		3.3940	0.2406	1.56	2.8960	-0.1606	-1.44
NTWJNA		3.0510	-0.1024	-0.66	2.9840	-0.0726	-0.65
QVVN89		3.0610	-0.0924	-0.60	2.9900	-0.0666	-0.60
RHKEYP		3.3450	0.1916	1.24	2.9650	-0.0916	-0.82
T3Q8M9		3.2953	0.1418	0.92	3.0472	-0.0093	-0.08
T78PNQ		3.4000	0.2466	1.60	3.1000	0.0434	0.39
TB3L7P		3.1650	0.0116	0.07	2.9180	-0.1386	-1.24
V6AW4R		2.9213	-0.2322	-1.50	2.9882	-0.0684	-0.61
VPRBD7		2.8380	-0.3154	-2.04	2.9780	-0.0786	-0.71
WP9LTQ		3.2757	0.1222	0.79	3.3465	0.2899	2.60
Y3R794		3.2048	0.0513	0.33	3.0434	-0.0132	-0.12
Z4ZFXF		3.1800	0.0266	0.17	3.2580	0.2014	1.81
Z7JUZZ		3.1200	-0.0334	-0.22	3.0500	-0.0066	-0.06
Z8ZRUF	X	0.0050	-3.1485	-20.38	0.0028	-3.0538	-27.43
ZUBR3D		3.1940	0.0406	0.26	3.0330	-0.0236	-0.21

<b>Summary Statistics</b>		
	<u>Sample B51</u>	<u>Sample B52</u>
<b>Grand Means</b>	3.15344 mils	3.05658 mils
<b>Stnd Dev Btwn Labs</b>	0.15446 mils	0.11132 mils
Statistics based on 19 of 20 reporting participants		

Sample B51: LDPE & Sample B52: LDPE

**Comments on Assigned Data Flags for Test #774**

Z8ZRUF (X) - Extreme data.



# Plastics Interlaboratory Testing Program

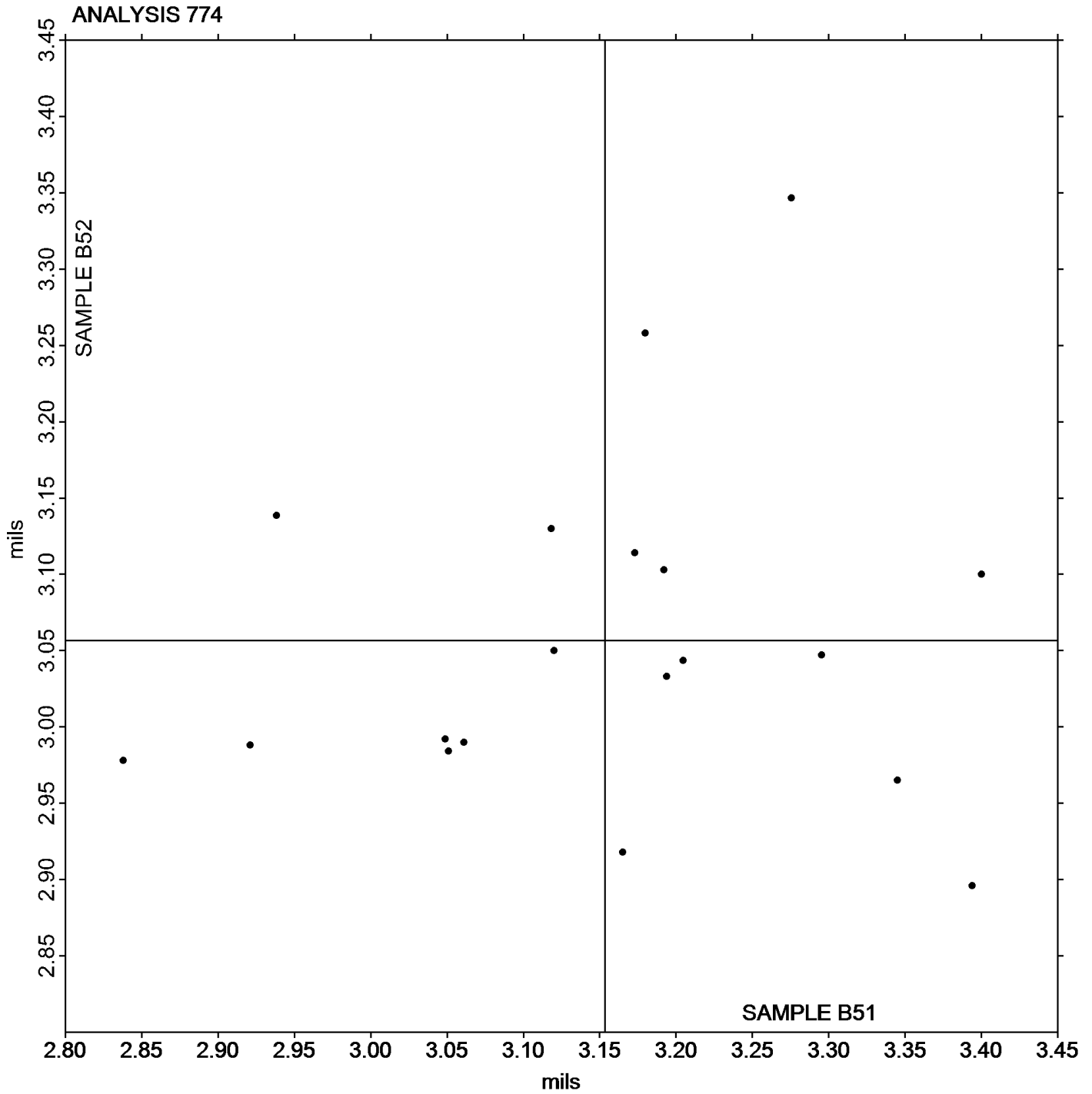
## Analysis 774

### Thickness of Film Tensile Samples - mils

Report #106

2nd Qtr 2018

Grand Mean Sample B51: 3.1534 mils    Grand Mean Sample B52: 3.0566 mils



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



# Plastics Interlaboratory Testing Program

Report #106

## Analysis 775

2nd Qtr 2018

### Secant Modulus at 1% Strain - psi

WebCode	Data Flag	Sample B51			Sample B52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		28,330	83	0.02	32,920	922	0.17	MT
8A6UFC		29,610	1,362	0.28	34,420	2,422	0.44	IN
AL6AED	X	198,598	170,351	34.71	217,196	185,197	33.34	TO
BGAXY8		27,706	-541	-0.11	31,295	-703	-0.13	MT
D8CVK2		34,819	6,571	1.34	44,830	12,832	2.31	SH
FPMKU4		27,097	-1,150	-0.23	32,916	917	0.17	IN
QVVN89		31,921	3,673	0.75	33,892	1,893	0.34	OA
T3Q8M9		22,965	-5,283	-1.08	23,666	-8,332	-1.50	IN
T78PNQ		23,815	-4,433	-0.90	28,532	-3,466	-0.62	IN
TB3L7P		26,938	-1,310	-0.27	32,740	742	0.13	IN
TR8N94	X	3	-28,245	-5.75	3	-31,996	-5.76	XX
VPRBD7		17,704	-10,543	-2.15	21,832	-10,167	-1.83	IN
WP9LTQ		33,272	5,024	1.02	34,737	2,738	0.49	WZ
Z4ZFXF		34,824	6,576	1.34	31,343	-656	-0.12	IM
ZUBR3D		28,219	-29	-0.01	32,857	859	0.15	IN

Summary Statistics		Sample B51	Sample B52
<b>Grand Means</b>		28,247.7 psi	31,998.6 psi
<b>Stnd Dev Btwn Labs</b>		4,908.1 psi	5,555.1 psi
Statistics based on 13 of 15 reporting participants			

Sample B51: LDPE & Sample B52: LDPE

### Comments on Assigned Data Flags for Test #775

TR8N94 (X) - Data for both samples are low

AL6AED (X) - Extreme data.

### Key to Instrument Codes Reported by Participants

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



# Plastics Interlaboratory Testing Program

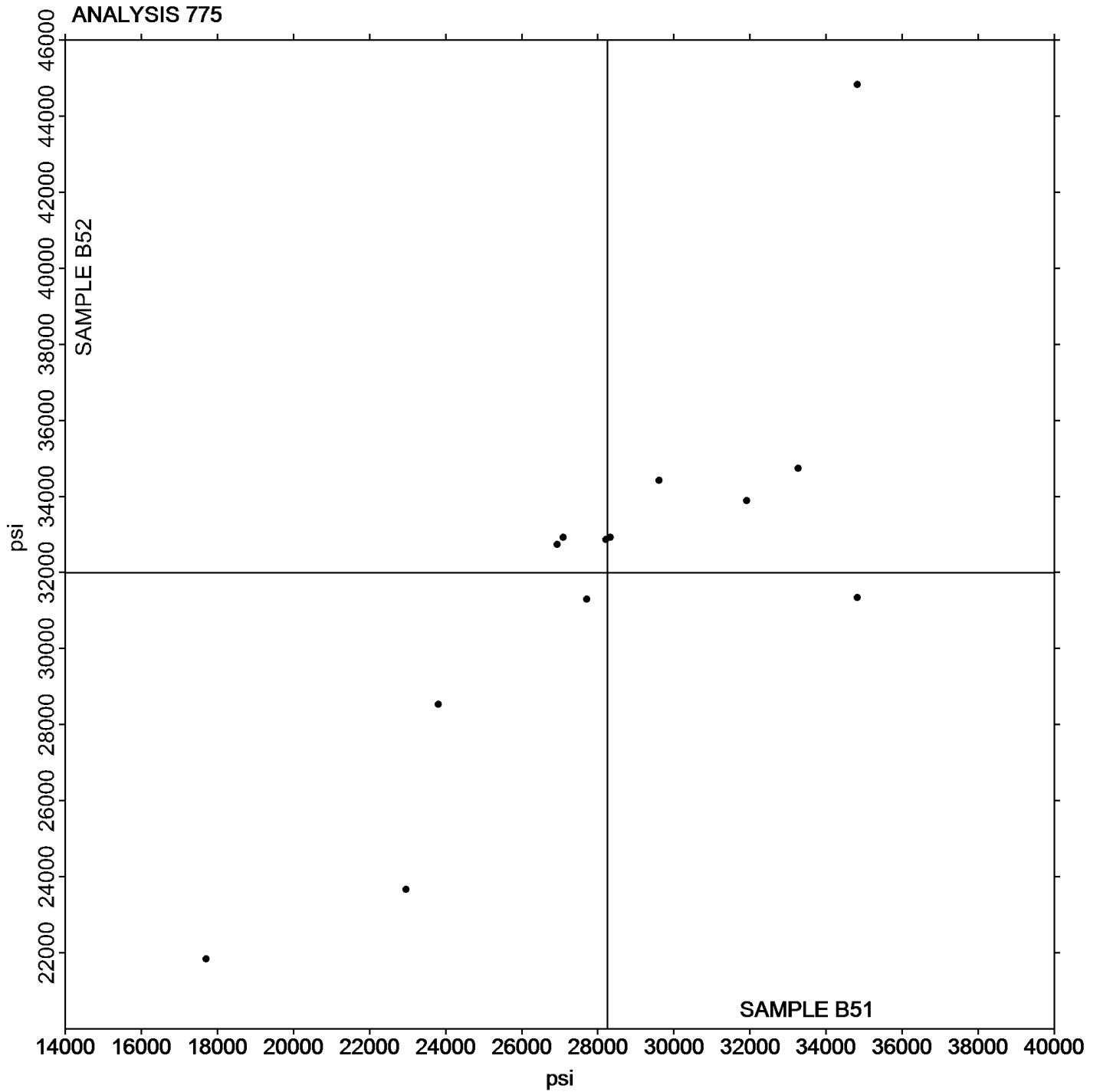
Report #106

## Analysis 775

2nd Qtr 2018

Secant Modulus at 1% Strain - psi

Grand Mean Sample B51: 28,247.70 psi    Grand Mean Sample B52: 31,998.57 psi



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



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 776**

**2nd Qtr 2018**

**Secant Modulus at 2% Strain - psi**

WebCode	Data Flag	Sample B51			Sample B52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		24,693	1,210	0.35	28,801	1,812	0.45	MT
8A6UFC		24,842	1,359	0.39	29,196	2,207	0.55	IN
AL6AED	X	194,072	170,589	48.91	628,124	601,135	149.65	TO
BGAXY8		23,624	141	0.04	26,860	-129	-0.03	MT
D8CVK2		26,715	3,232	0.93	31,943	4,954	1.23	SH
FPMKU4		23,616	134	0.04	28,857	1,868	0.46	IN
T3Q8M9		23,912	429	0.12	25,237	-1,752	-0.44	IN
TB3L7P		23,809	326	0.09	28,447	1,458	0.36	IN
VPRBD7		14,594	-8,888	-2.55	17,692	-9,297	-2.31	IN
Z4ZFXF		25,540	2,057	0.59	25,867	-1,122	-0.28	IM

Summary Statistics		Sample B51	Sample B52
<b>Grand Means</b>		23,482.8 psi	26,988.9 psi
<b>Std Dev Btwn Labs</b>		3,487.9 psi	4,017.0 psi
Statistics based on 9 of 10 reporting participants			

Sample B51: LDPE & Sample B52: LDPE

**Comments on Assigned Data Flags for Test #776**

AL6AED (X) - Extreme data.

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

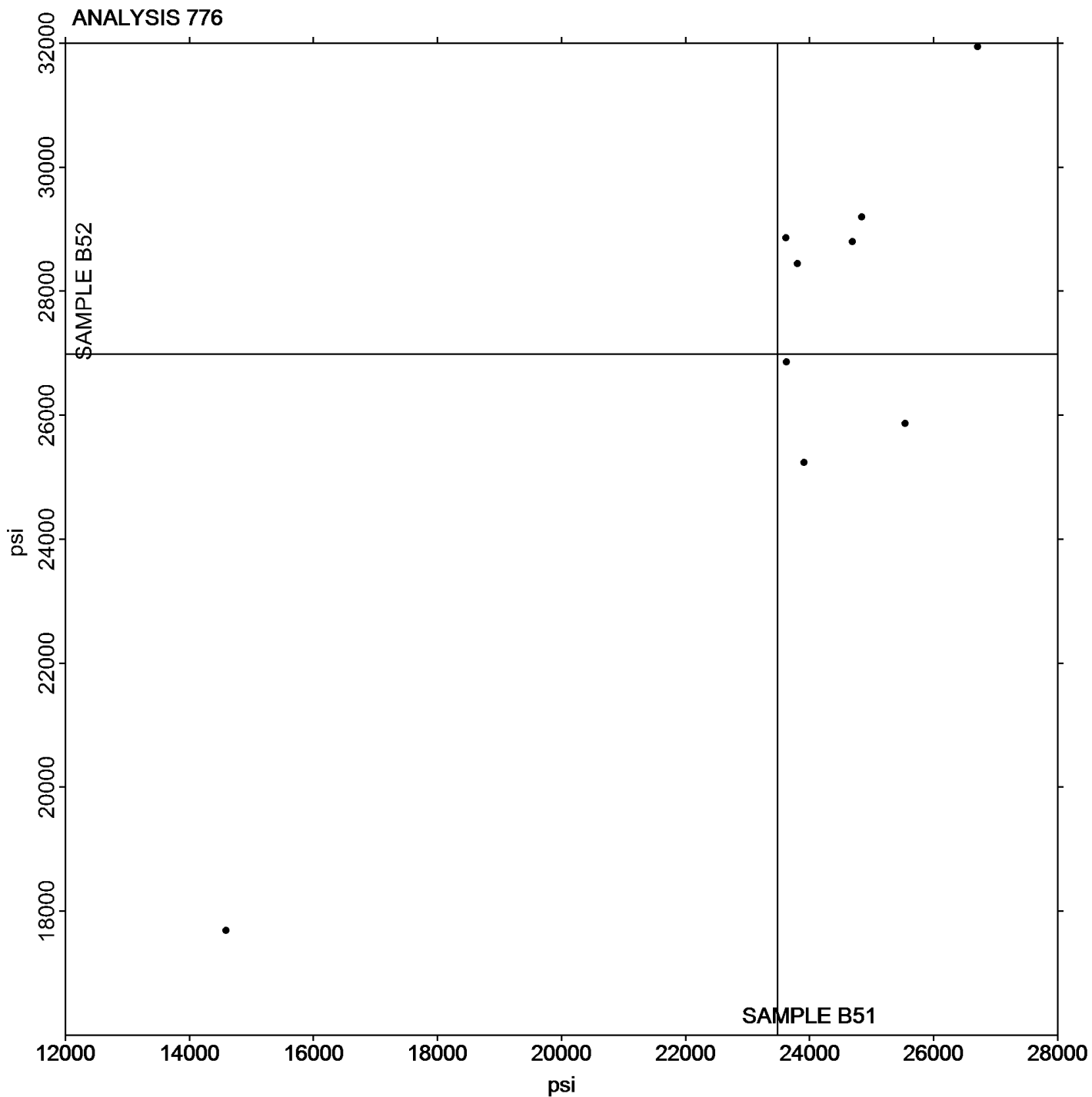
Report #106

## Analysis 776

2nd Qtr 2018

Secant Modulus at 2% Strain - psi

Grand Mean Sample B51: 23,482.85 psi    Grand Mean Sample B52: 26,988.88 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 #106**

**Analysis 780**

**2nd Qtr 2018**

**Coefficient of Static Friction**

WebCode	Data Flag	Sample P51			Sample P52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		0.2670	0.0777	0.97	0.1864	0.0278	0.41	MI
8A6UFC		0.1360	-0.0533	-0.66	0.1000	-0.0586	-0.86	TH
AL6AED		0.1914	0.0021	0.03	0.1828	0.0242	0.36	RD
BE4EUK		0.1428	-0.0466	-0.58	0.0787	-0.0799	-1.17	IG
BGAXY8		0.3214	0.1321	1.65	0.3122	0.1536	2.26	MT
D8CVK2		0.3082	0.1188	1.48	0.2118	0.0532	0.78	SA
L9XGVP		0.1162	-0.0731	-0.91	0.0823	-0.0763	-1.12	IG
M6C2Y2		0.0246	-0.1647	-2.05	0.0494	-0.1092	-1.60	LI
Q9PVB6		0.1961	0.0068	0.08	0.2054	0.0468	0.69	IG
QVVN89		0.2442	0.0549	0.68	0.1702	0.0116	0.17	DY
RGWW74		0.2004	0.0111	0.14	0.1752	0.0166	0.24	IS
T78PNQ		0.1318	-0.0575	-0.72	0.1666	0.0080	0.12	TN
V6AW4R		0.2260	0.0367	0.46	0.1886	0.0300	0.44	SA
WP9LTQ		0.2230	0.0337	0.42	0.1838	0.0252	0.37	TH
ZUBR3D		0.1108	-0.0785	-0.98	0.0850	-0.0736	-1.08	TH

Summary Statistics		
	Sample P51	Sample P52
<b>Grand Means</b>	0.18932 COF	0.15855 COF
<b>Std Dev Btwn Labs</b>	0.08028 COF	0.06812 COF
Statistics based on 15 of 15 reporting participants		

Sample P51: LDPE & Sample P52: 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

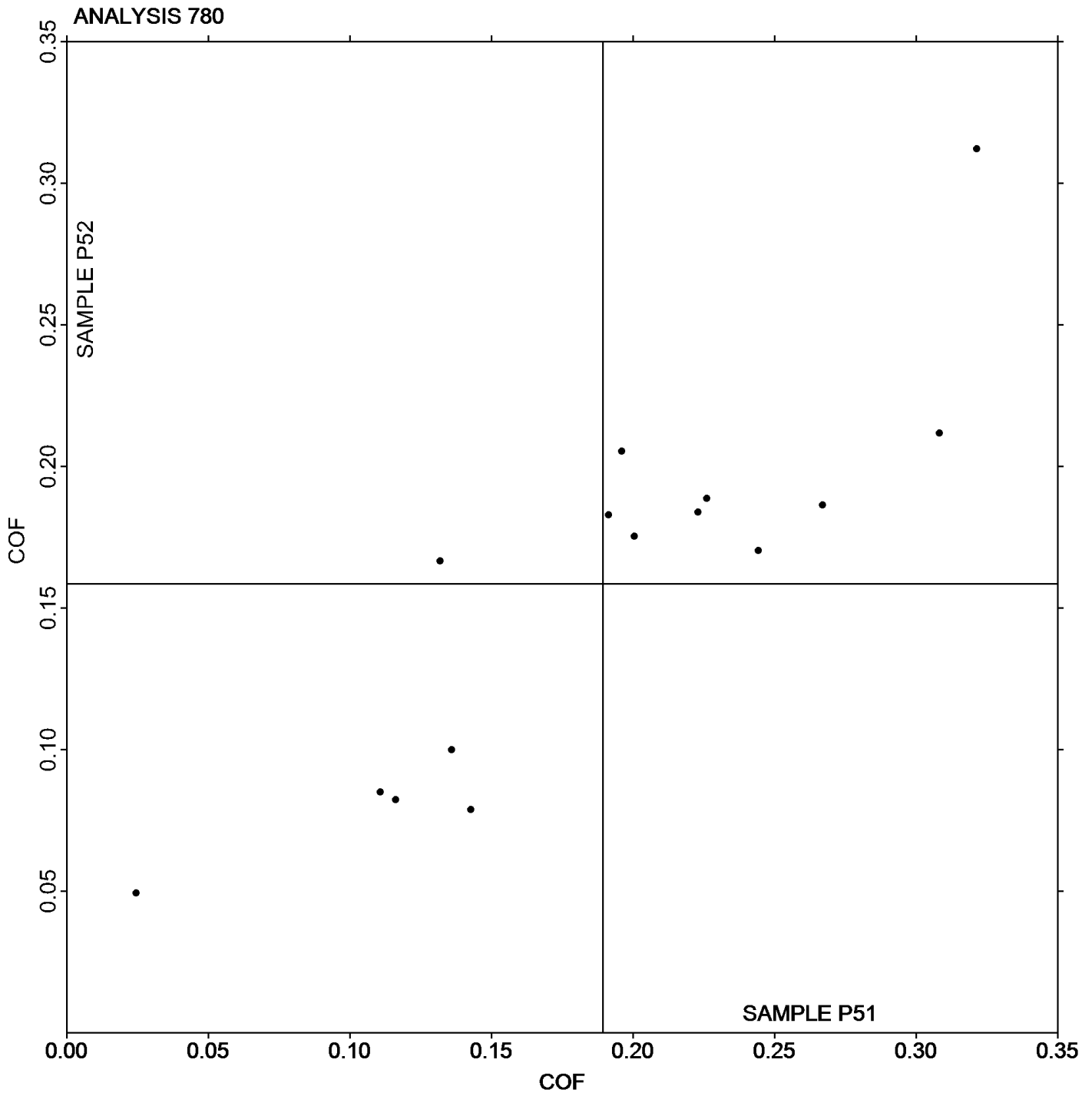
## Analysis 780

### Coefficient of Static Friction

Report #106

2nd Qtr 2018

Grand Mean Sample P51: 0.18932 COF    Grand Mean Sample P52: 0.15855 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 #106**

**Analysis 781**

**2nd Qtr 2018**

**Coefficient of Kinetic Friction**

WebCode	Data Flag	Sample P51			Sample P52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
88XCFV		0.1262	-0.0067	-0.12	0.0904	-0.0167	-0.33	MI
8A6UFC		0.1220	-0.0109	-0.20	0.0720	-0.0351	-0.69	TH
AL6AED		0.1840	0.0511	0.93	0.1724	0.0653	1.28	RD
BE4EUK		0.1268	-0.0061	-0.11	0.0761	-0.0310	-0.61	IG
BGAXY8		0.1792	0.0463	0.84	0.1714	0.0643	1.26	MT
D8CVK2		0.1924	0.0595	1.08	0.1268	0.0197	0.38	SA
L9XGVP		0.0728	-0.0601	-1.10	0.0650	-0.0421	-0.82	IG
M6C2Y2		0.0364	-0.0965	-1.76	0.0560	-0.0511	-1.00	XX
Q9PVB6		0.2499	0.1171	2.13	0.2404	0.1333	2.61	IG
QVVN89		0.1832	0.0503	0.92	0.1154	0.0083	0.16	DY
RGWW74		0.0952	-0.0377	-0.69	0.0852	-0.0219	-0.43	IS
T78PNQ		0.0932	-0.0397	-0.72	0.1028	-0.0043	-0.08	TN
V6AW4R		0.1142	-0.0187	-0.34	0.0830	-0.0241	-0.47	SA
WP9LTQ		0.1090	-0.0239	-0.43	0.0724	-0.0347	-0.68	TH
ZUBR3D		0.1086	-0.0243	-0.44	0.0770	-0.0301	-0.59	TH

Summary Statistics		
	Sample P51	Sample P52
<b>Grand Means</b>	0.13287 COF	0.10709 COF
<b>Std Dev Btwn Labs</b>	0.05487 COF	0.05118 COF
Statistics based on 15 of 15 reporting participants		

Sample P51: LDPE & Sample P52: 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

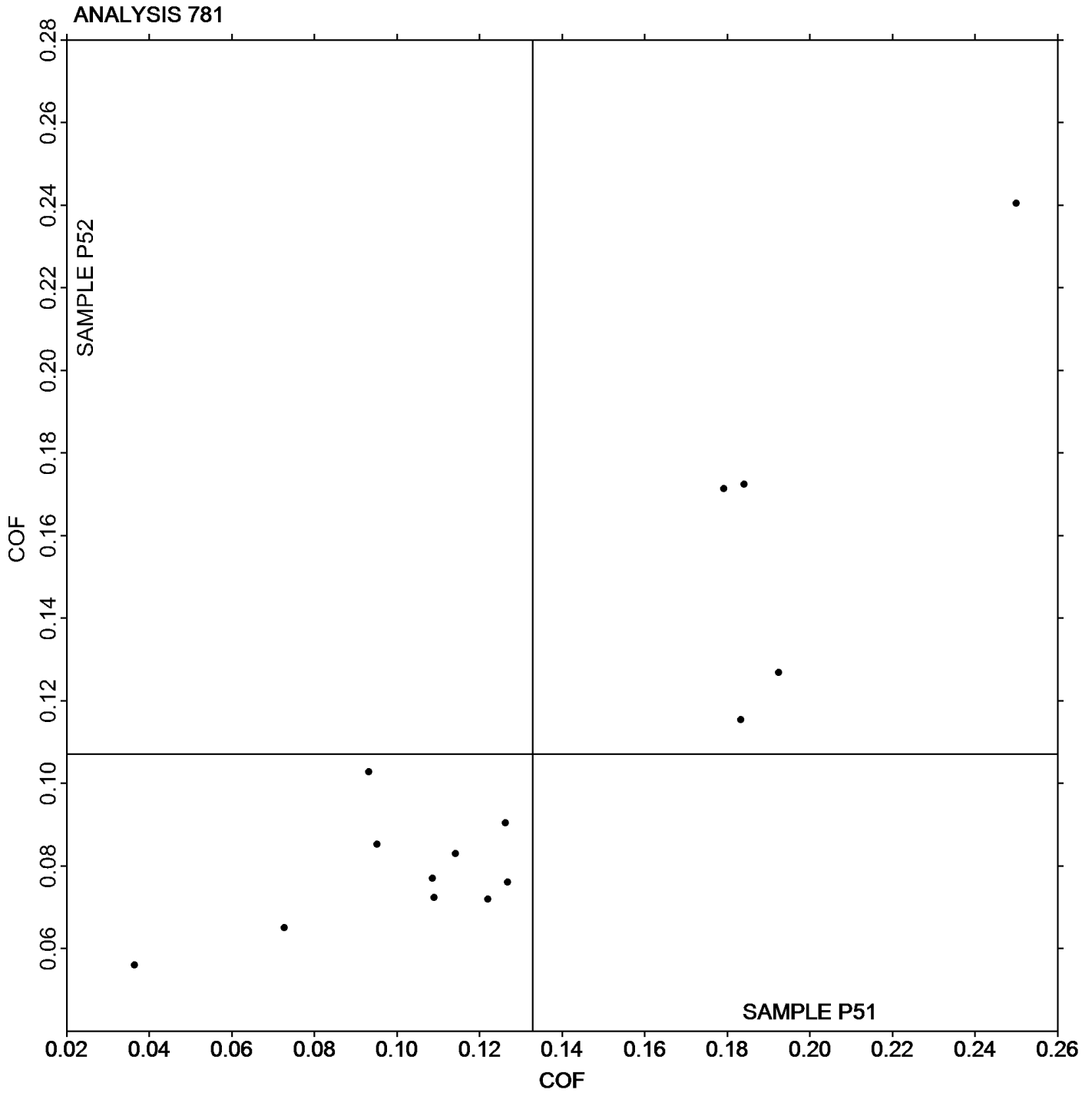
## Analysis 781

### Coefficient of Kinetic Friction

Report #106

2nd Qtr 2018

Grand Mean Sample P51: 0.13287 COF    Grand Mean Sample P52: 0.10709 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 #106

## Analysis 782

2nd Qtr 2018

### Tear Resistance of Films

WebCode	Data Flag	Sample Q51			Sample Q52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6TZPTA		172.5	-188.9	-2.05	172.0	34.0	1.38	EM
88XCFV		431.7	70.3	0.76	121.0	-17.0	-0.69	TE
8A6UFC		407.1	45.7	0.50	115.2	-22.8	-0.93	TE
D8CVK2		370.4	9.0	0.10	123.7	-14.4	-0.58	TE
FPMKU4		508.3	146.9	1.60	119.3	-18.8	-0.76	TM
QVVN89		276.8	-84.6	-0.92	141.1	3.0	0.12	TA
T78PNQ		468.0	106.6	1.16	111.4	-26.6	-1.08	TM
V6AW4R		376.9	15.5	0.17	120.7	-17.3	-0.70	LO
WP9LTQ		302.4	-58.9	-0.64	153.0	15.0	0.61	TA
Y3R794		393.7	32.3	0.35	189.9	51.9	2.10	SZ
Z4ZFXF		337.5	-23.9	-0.26	153.2	15.2	0.62	EM
ZUBR3D		291.3	-70.1	-0.76	136.0	-2.0	-0.08	TE

#### Summary Statistics

##### Grand Means

##### Sample Q51

361.38 grams-force

##### Sample Q52

138.05 grams-force

##### Std Dev Btwn Labs

92.02 grams-force

24.67 grams-force

Statistics based on 12 of 12 reporting participants

Sample Q51: LDPE & Sample Q52: LDPE

#### Key to Instrument Codes Reported by Participants

EM Elmendorf Tear Tester  
 SZ Textest FX 3700  
 TE Thwing-Albert Pro Tear

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



# Plastics Interlaboratory Testing Program

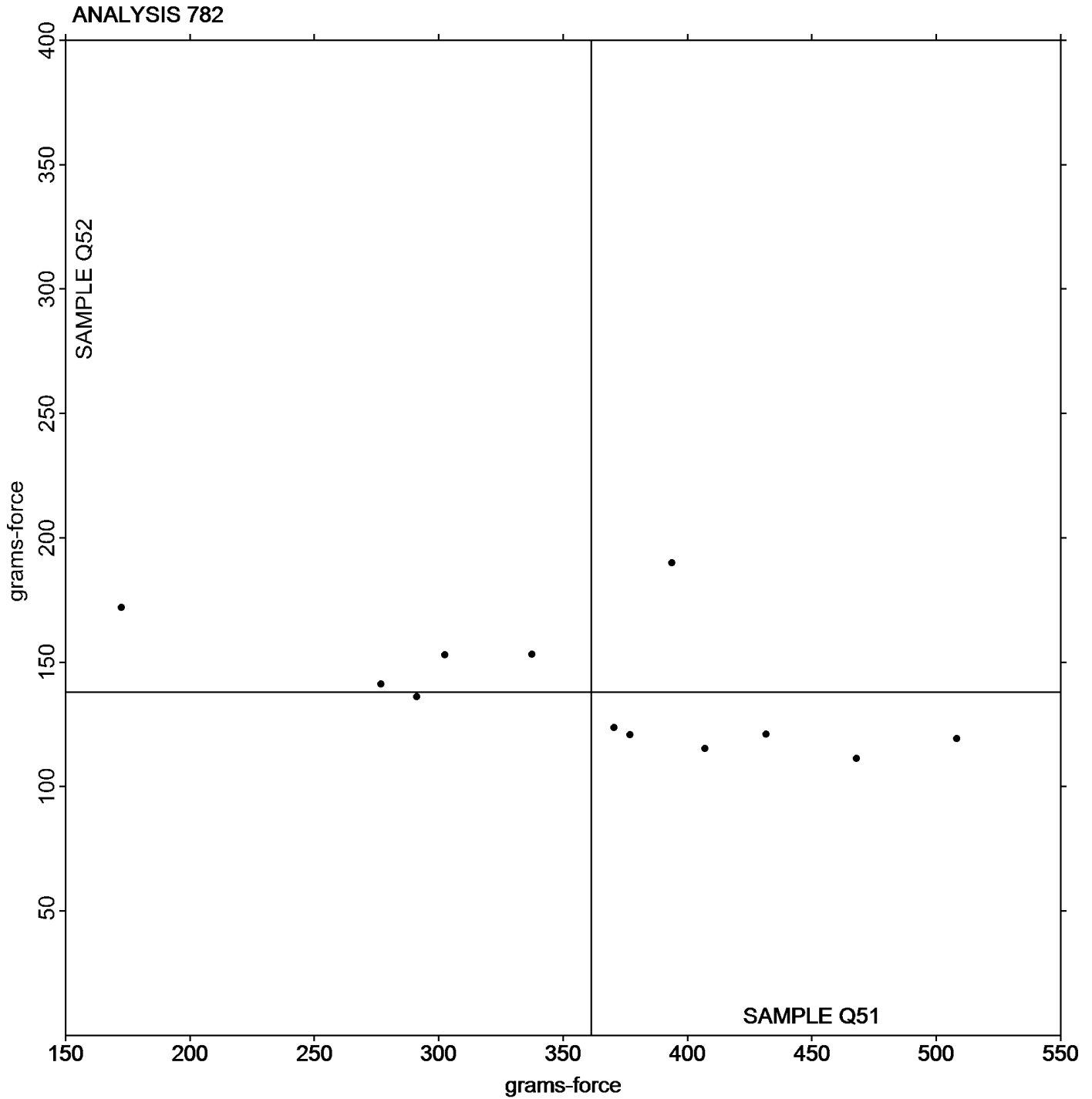
## Analysis 782

### Tear Resistance of Films

Report #106

2nd Qtr 2018

Grand Mean Sample Q51: 361.38 grams-force    Grand Mean Sample Q52: 138.05 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 #106**

**Analysis 785**

**2nd Qtr 2018**

**Percent Haze of Film**

WebCode	Data Flag	Sample D51			Sample D52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
33J49A		27.175	-3.208	-1.18	25.188	-1.994	-0.81	HL
449X3W		32.250	1.867	0.69	29.788	2.606	1.06	BJ
7KM4BX		32.338	1.955	0.72	28.750	1.569	0.64	BJ
7ZGECH	*	30.725	0.342	0.13	25.638	-1.544	-0.63	BJ
88XCFV		30.863	0.480	0.18	27.800	0.619	0.25	BJ
8A6UFC		32.525	2.142	0.79	29.000	1.819	0.74	BJ
8DGUEP		26.903	-3.480	-1.28	23.865	-3.316	-1.35	XR
9T94P9		31.263	0.880	0.32	27.688	0.506	0.21	BJ
D8CVK2		32.538	2.155	0.79	29.125	1.944	0.79	BJ
FE7XK3		29.813	-0.570	-0.21	26.475	-0.706	-0.29	BJ
GYNFAE		32.338	1.955	0.72	28.350	1.169	0.48	BJ
H34ANQ		31.311	0.929	0.34	27.120	-0.061	-0.02	BH
HR6ERG		31.963	1.580	0.58	28.600	1.419	0.58	BJ
KUJZ78	*	21.546	-8.836	-3.25	18.844	-8.338	-3.39	XR
MQXQCZ		31.325	0.942	0.35	28.250	1.069	0.43	BJ
QVVN89		25.451	-4.931	-1.81	23.299	-3.883	-1.58	XR
R9J3Q2		26.753	-3.630	-1.33	24.173	-3.009	-1.22	XR
RGWW74		32.300	1.917	0.70	29.438	2.256	0.92	BJ
RL3RKX		30.650	0.267	0.10	27.045	-0.136	-0.06	BJ
T78PNQ		31.758	1.375	0.50	28.700	1.519	0.62	BJ
TR8N94		32.038	1.655	0.61	27.300	0.119	0.05	BJ
UFCW3Q		33.275	2.892	1.06	30.100	2.919	1.19	BJ
VPRBD7		27.645	-2.738	-1.01	25.935	-1.246	-0.51	HC
WP9LTQ		31.680	1.297	0.48	29.140	1.959	0.80	BJ
Y3R794		30.963	0.580	0.21	27.713	0.531	0.22	BJ
YCF7F2		31.338	0.955	0.35	28.375	1.194	0.49	BJ
ZUBR3D		31.613	1.230	0.45	28.200	1.019	0.41	BJ

Summary Statistics		Sample D51	Sample D52
<b>Grand Means</b>		30.3827 Percent	27.1813 Percent
<b>Std Dev Btwn Labs</b>		2.7225 Percent	2.4580 Percent
Statistics based on 27 of 27 reporting participants			

Sample D51: LDPE & Sample D52: LDPE



# Plastics Interlaboratory Testing Program

## Analysis 785 Percent Haze of Film

Report #106  
2nd Qtr 2018

### Key to Instrument Codes Reported by Participants

<b>BH</b>	BYK-Gardner/Pacific Scientific Model XL-211	<b>BJ</b>	BYK-Gardner Haze-Gard Plus
<b>HC</b>	Hunterlab ColorQuest	<b>HL</b>	Hunterlab Ultrascan
<b>XR</b>	X-Rite Spectrocolorimeter (any model)		



# Plastics Interlaboratory Testing Program

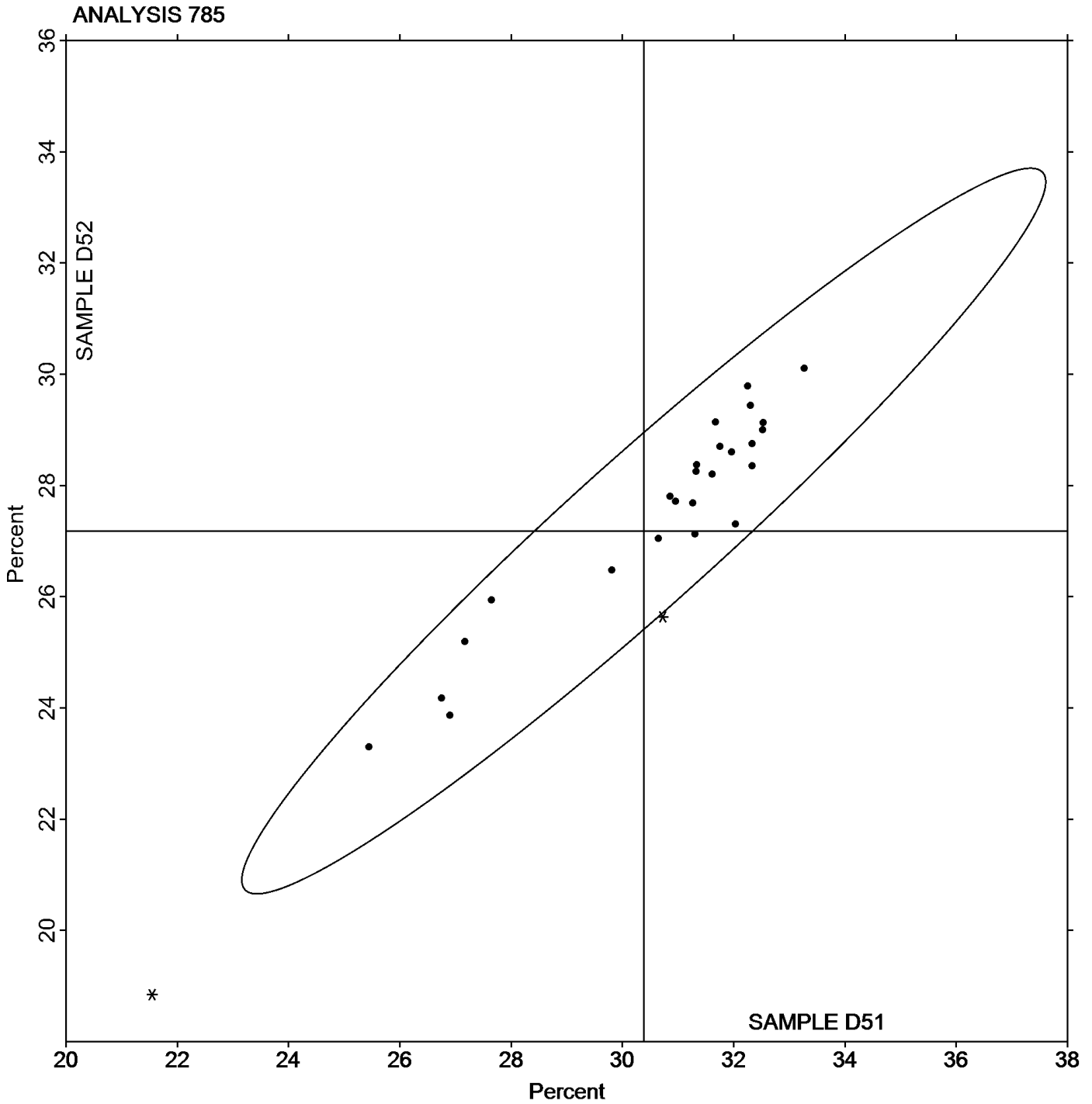
Analysis 785

Percent Haze of Film

Report #106

2nd Qtr 2018

Grand Mean Sample D51: 30.383 Percent    Grand Mean Sample D52: 27.181 Percent





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 786**

**2nd Qtr 2018**

**Total Luminous transmittance of film**

WebCode	Data Flag	Sample D51			Sample D52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
33J49A		88.75	-3.19	-2.55	88.86	-3.21	-2.49	HL
449X3W		92.16	0.23	0.18	92.16	0.09	0.07	BJ
7KM4BX	*	91.29	-0.65	-0.52	92.09	0.01	0.01	BJ
7ZGECH		92.93	0.99	0.79	93.25	1.18	0.91	BJ
88XCFV		90.26	-1.67	-1.34	90.30	-1.77	-1.37	BJ
8A6UFC		93.15	1.21	0.97	93.20	1.13	0.87	BJ
8DGUEP		90.69	-1.24	-1.00	90.78	-1.29	-1.00	XR
9T94P9		92.90	0.96	0.77	92.91	0.84	0.65	BJ
D8CVK2		91.45	-0.49	-0.39	91.93	-0.15	-0.11	BJ
FE7XK3		92.31	0.38	0.30	92.39	0.31	0.24	BJ
GYNFAE		92.61	0.68	0.54	92.90	0.83	0.64	BJ
H34ANQ		91.59	-0.35	-0.28	91.59	-0.49	-0.38	BH
HR6ERG		92.76	0.83	0.66	92.90	0.83	0.64	BJ
KUJZ78		91.24	-0.69	-0.56	91.30	-0.77	-0.60	XR
MQXQCZ		92.95	1.01	0.81	92.79	0.71	0.55	BJ
QVVN89	X	84.01	-7.93	-6.35	84.49	-7.59	-5.88	XR
R9J3Q2		91.25	-0.68	-0.55	91.24	-0.83	-0.64	XR
RGWW74		92.96	1.03	0.82	93.33	1.25	0.97	BJ
RL3RKX		92.32	0.38	0.31	92.18	0.11	0.08	BJ
T78PNQ		92.63	0.69	0.55	92.94	0.86	0.67	BJ
TR8N94		93.55	1.61	1.29	93.83	1.75	1.36	BJ
UFCW3Q		91.20	-0.74	-0.59	91.21	-0.86	-0.67	BJ
VPRBD7		89.54	-2.39	-1.92	89.45	-2.63	-2.03	HC
WP9LTQ		92.82	0.88	0.71	92.90	0.83	0.64	BJ
Y3R794		90.49	-1.45	-1.16	90.60	-1.47	-1.14	BJ
YCF7F2		93.09	1.15	0.92	93.47	1.40	1.08	BJ
ZUBR3D		93.43	1.49	1.19	93.41	1.34	1.04	BJ

Summary Statistics		Sample D51	Sample D52
<b>Grand Means</b>		91.935 Percent	92.073 Percent
<b>Std Dev Btwn Labs</b>		1.248 Percent	1.290 Percent
Statistics based on 26 of 27 reporting participants			

Sample D51: LDPE & Sample D52: LDPE





# Plastics Interlaboratory Testing Program

## Analysis 786

### Total Luminous transmittance of film

Report #106

2nd Qtr 2018

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#### **Comments on Assigned Data Flags for Test #786**

QVWN89 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample D51.

#### **Key to Instrument Codes Reported by Participants**

<b>BH</b>	BYK-Gardner/Pacific Scientific Model XL-211	<b>BJ</b>	BYK-Gardner Haze-Gard Plus
<b>HC</b>	Hunterlab ColorQuest	<b>HL</b>	Hunterlab Ultrascan XE
<b>XR</b>	X-Rite Spectrocolorimeter (any model)		



# Plastics Interlaboratory Testing Program

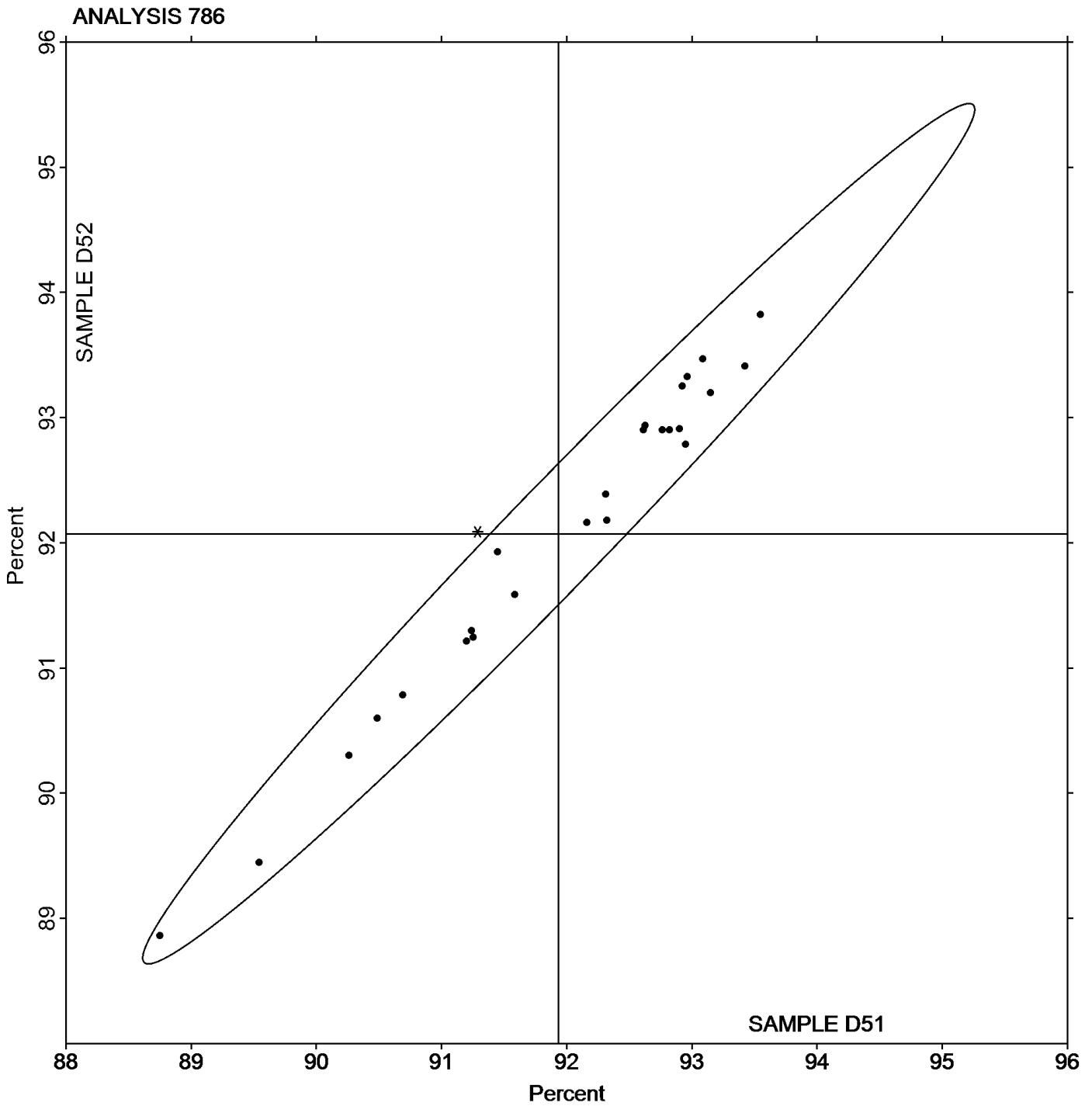
## Analysis 786

### Total Luminous transmittance of film

Report #106

2nd Qtr 2018

Grand Mean Sample D51: 91.935 Percent    Grand Mean Sample D52: 92.073 Percent





# Plastics Interlaboratory Testing Program

Report #106

## Analysis 790

2nd Qtr 2018

### Notched Izod Impact - ft.lbf/in

WebCode	Data Flag	Sample S51			Sample S52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3CMF64		6.40	-0.22	-0.45	6.31	-0.35	-0.68	BA
3WUNHH		6.65	0.03	0.05	6.66	0.01	0.02	CE
449X3W		6.44	-0.19	-0.39	6.37	-0.28	-0.55	TO
4G9REQ		6.46	-0.16	-0.34	6.61	-0.05	-0.09	TO
6MFK3U		7.20	0.57	1.18	7.20	0.54	1.06	XX
74D827		6.67	0.05	0.09	7.34	0.68	1.34	TO
7NANF2		6.80	0.18	0.37	6.87	0.22	0.43	TM
7TEKY2		7.14	0.52	1.06	7.22	0.57	1.11	TO
88XCFV		6.35	-0.28	-0.58	6.40	-0.26	-0.50	TO
8G4AAQ		6.29	-0.34	-0.70	6.38	-0.27	-0.53	DS
BN9KQ8		6.18	-0.45	-0.92	5.87	-0.78	-1.54	TO
BVRLAQ		6.37	-0.25	-0.52	6.33	-0.32	-0.63	XX
CJDXQR		5.70	-0.92	-1.90	5.92	-0.73	-1.43	TO
CMUD36		6.73	0.11	0.23	6.41	-0.24	-0.47	TO
CXACQL		6.68	0.06	0.12	6.79	0.13	0.26	TO
DLVJUY	*	5.17	-1.45	-3.00	5.37	-1.28	-2.51	TO
DWUGED		6.59	-0.04	-0.08	6.71	0.06	0.11	WZ
EDF946		6.10	-0.52	-1.08	6.76	0.11	0.21	CE
EEUFR		6.96	0.34	0.70	6.73	0.08	0.15	WZ
EZR4YT		6.16	-0.47	-0.97	6.20	-0.45	-0.88	WZ
F63JY6		6.48	-0.14	-0.29	6.45	-0.20	-0.40	XX
F7CNEE		6.99	0.37	0.76	6.70	0.05	0.10	CE
FE7XK3		7.14	0.52	1.07	7.41	0.76	1.49	CE
FHRDHP		6.49	-0.14	-0.28	6.86	0.21	0.41	WZ
FYC9ML		6.63	0.00	0.00	6.78	0.12	0.24	TM
GLMPTF		6.46	-0.17	-0.34	5.87	-0.79	-1.54	TO
HA829G		7.21	0.58	1.20	7.31	0.66	1.29	TM
HR6ERG	X	1.78	-4.85	-9.99	1.79	-4.86	-9.53	TY
JPXJHC		7.06	0.44	0.90	6.98	0.33	0.64	XX
KKYMAW		6.68	0.06	0.12	6.56	-0.10	-0.19	TO
LHLA6Z		7.06	0.44	0.90	7.02	0.37	0.73	TO
M8L4N8		6.94	0.31	0.64	7.03	0.38	0.75	CE
MH3QX8		7.22	0.60	1.24	7.24	0.59	1.16	TO
N39K8P	*	7.89	1.27	2.62	7.54	0.88	1.73	TO
N3PYBT		7.25	0.62	1.28	7.74	1.09	2.13	WZ



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 790**

**2nd Qtr 2018**

**Notched Izod Impact - ft.lbf/in**

WebCode	Data Flag	Sample S51			Sample S52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
N4GVYM		6.29	-0.33	-0.68	5.98	-0.67	-1.31	CE
NTFE6C		6.73	0.10	0.21	6.57	-0.09	-0.17	TM
PQNTX7		6.40	-0.22	-0.46	6.54	-0.11	-0.21	CE
T3Q8M9		7.17	0.55	1.13	6.94	0.28	0.55	WZ
TDAUFA		7.45	0.83	1.70	7.44	0.78	1.53	TO
TLLT8Z		6.94	0.32	0.66	7.20	0.55	1.08	TO
U43CJX		7.04	0.42	0.86	6.83	0.17	0.34	XX
UBKMYX		6.76	0.13	0.27	7.01	0.36	0.71	TM
ULF3C2		5.91	-0.72	-1.48	6.02	-0.63	-1.24	TO
V67GN6		6.30	-0.33	-0.67	6.34	-0.31	-0.61	TO
VPRBD7		6.61	-0.02	-0.03	6.58	-0.08	-0.15	CE
WD2T7K		6.43	-0.19	-0.40	6.49	-0.17	-0.33	TM
WP9LTQ		5.94	-0.68	-1.41	6.04	-0.61	-1.20	WZ
XXFTZD		5.82	-0.81	-1.66	5.65	-1.00	-1.97	TO
Z4ZFXF		6.71	0.09	0.18	6.39	-0.26	-0.51	CE
ZA8838	*	6.35	-0.27	-0.56	7.07	0.42	0.82	TO
ZUBR3D		6.45	-0.17	-0.36	6.28	-0.37	-0.72	CE

Summary Statistics		
	Sample S51	Sample S52
<b>Grand Means</b>	6.625 ft.lbf/in	6.654 ft.lbf/in
<b>Std Dev Btwn Labs</b>	0.485 ft.lbf/in	0.510 ft.lbf/in
Statistics based on 51 of 52 reporting participants		

Sample S51: ABS & Sample S52: ABS

**Comments on Assigned Data Flags for Test #790**

HR6ERG (X) - Data for both samples are low. Possible Systematic Error.

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

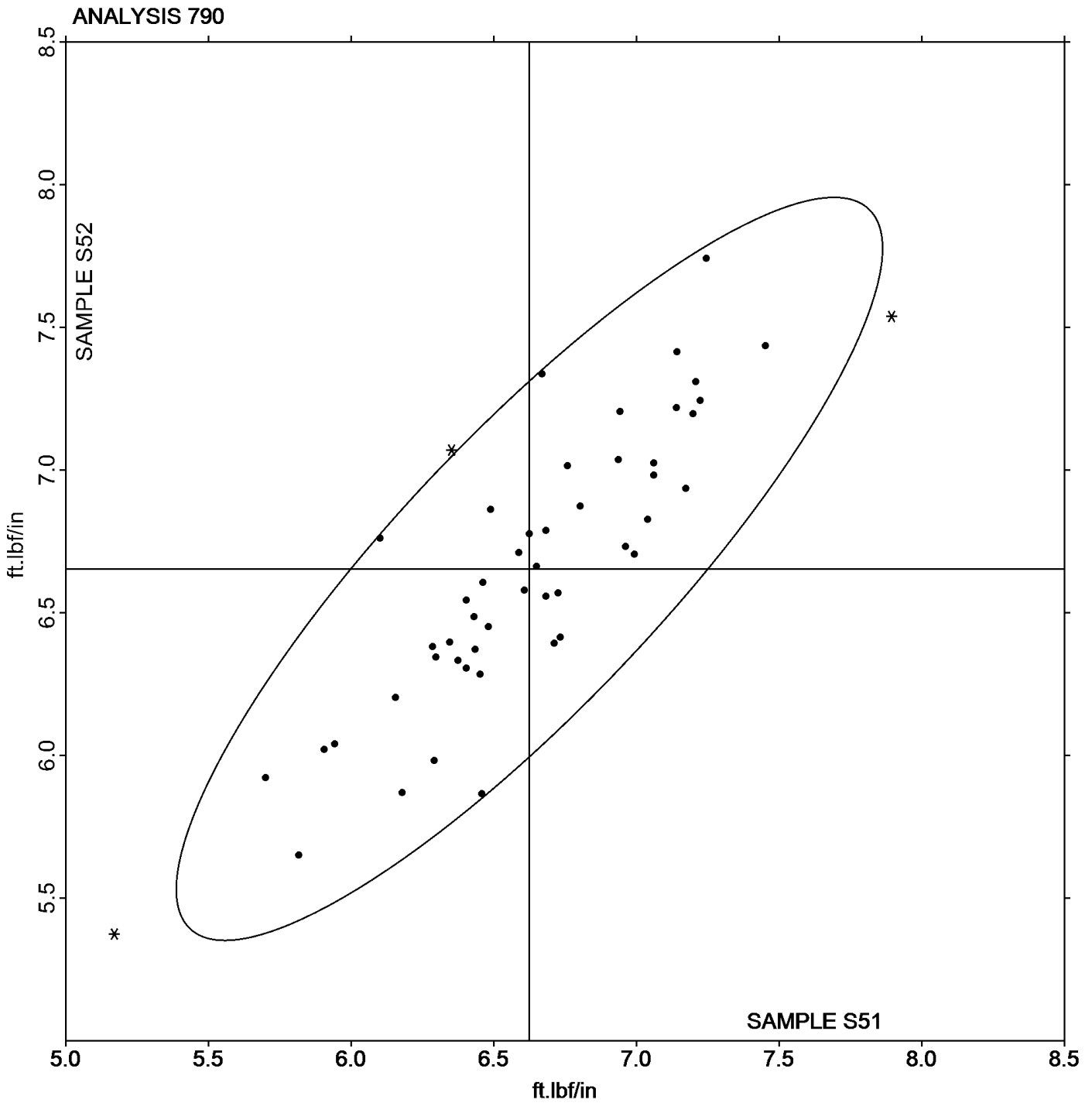
## Analysis 790

### Notched Izod Impact - ft.lbf/in

Report #106

2nd Qtr 2018

Grand Mean Sample S51: 6.6247 ft.lbf/in    Grand Mean Sample S52: 6.6535 ft.lbf/in





**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 791**

**2nd Qtr 2018**

**Notched Izod Impact - kJ/m<sup>2</sup>**

WebCode	Data Flag	Sample Z51			Sample Z52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2ANMUU		7.63000	-0.25951	-0.47	7.82380	-0.02770	-0.05	TM
2Y69TC		7.48800	-0.40151	-0.72	7.64260	-0.20890	-0.39	CE
6MH72V		8.25260	0.36309	0.65	7.82800	-0.02350	-0.04	XX
DLVJUY		7.72800	-0.16151	-0.29	7.64200	-0.20950	-0.39	TO
E3WRDJ		8.87200	0.98249	1.77	8.94800	1.09650	2.03	XX
E7GLEP	*	6.12080	-1.76871	-3.19	6.16560	-1.68590	-3.12	TO
EEUFR		7.94200	0.05249	0.09	7.95400	0.10250	0.19	WZ
HR6ERG	X	18.15400	10.26449	18.50	17.94600	10.09450	18.66	XX
J6K277		7.95400	0.06449	0.12	7.56200	-0.28950	-0.54	TM
JBFQVQ		7.75300	-0.13651	-0.25	7.69040	-0.16110	-0.30	TM
JPKKE		8.46000	0.57049	1.03	8.10000	0.24850	0.46	WZ
JZHQM		7.70600	-0.18351	-0.33	7.62000	-0.23150	-0.43	WZ
MDP8GQ		8.41452	0.52501	0.95	8.25186	0.40036	0.74	XX
NFC2V7		8.65400	0.76449	1.38	8.72200	0.87050	1.61	IN
NXB26R		7.73200	-0.15751	-0.28	7.80000	-0.05150	-0.10	TO
Q3YK27		7.86000	-0.02951	-0.05	7.94000	0.08850	0.16	WZ
RPRWLH		7.99000	0.10049	0.18	7.94000	0.08850	0.16	CE
RQ24K4		7.97200	0.08249	0.15	8.02000	0.16850	0.31	CE
UTENKN		7.88200	-0.00751	-0.01	8.14600	0.29450	0.54	CE
YL4X3T		7.66810	-0.22141	-0.40	7.73650	-0.11500	-0.21	TO
YTZRZR		7.71114	-0.17837	-0.32	7.49721	-0.35429	-0.65	TO

Summary Statistics		Sample Z51	Sample Z52
<b>Grand Means</b>		7.889508 kJ/m <sup>2</sup>	7.851499 kJ/m <sup>2</sup>
<b>Std Dev Btwn Labs</b>		0.554804 kJ/m <sup>2</sup>	0.540919 kJ/m <sup>2</sup>
Statistics based on 20 of 21 reporting participants			

Sample Z51: HIPS & Sample Z52: HIPS

**Comments on Assigned Data Flags for Test #791**

HR6ERG (X) - Extreme data.



# Plastics Interlaboratory Testing Program

## Analysis 791

### Notched Izod Impact - $\text{kJ/m}^2$

Report #106

2nd Qtr 2018

#### Key to Instrument Codes Reported by Participants

CE Ceast

TM TMI

WZ Zwick

IN Instron

TO Tinius Olsen

XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

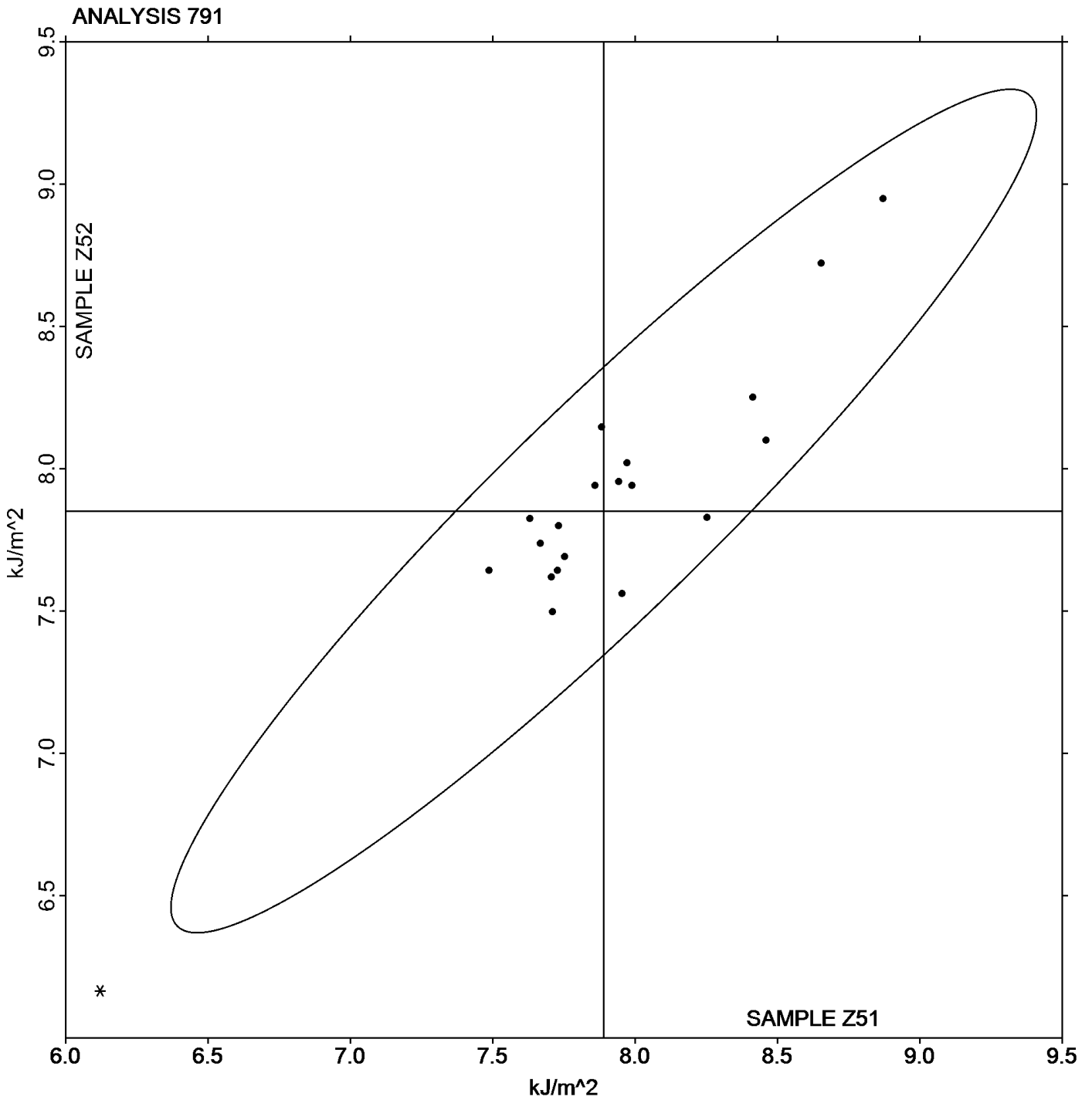
Report #106

Analysis 791

2nd Qtr 2018

Notched Izod Impact -  $\text{kJ/m}^2$

Grand Mean Sample Z51:  $7.8895 \text{ kJ/m}^2$  Grand Mean Sample Z52:  $7.8515 \text{ kJ/m}^2$







# Plastics Interlaboratory Testing Program

Report #106

## Analysis 792

2nd Qtr 2018

### Notched Charpy Impact - kJ/m<sup>2</sup>

WebCode	Data Flag	Sample M51			Sample M52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2Y69TC	*	7.81	0.27	0.96	7.46	-0.06	-0.21	CE
3HTWUR		7.70	0.16	0.57	7.80	0.28	1.01	WZ
6MH72V	X	7.69	0.15	0.53	9.11	1.59	5.68	TM
6YTQEW		7.76	0.22	0.78	7.68	0.16	0.58	XX
84VQBW	X	4.05	-3.49	-12.33	3.88	-3.64	-12.96	PO
9H9BFG		7.47	-0.06	-0.22	7.45	-0.07	-0.25	TM
CJDXQR		7.22	-0.32	-1.11	7.26	-0.26	-0.92	TO
DC6ZD6	X	3.20	-4.34	-15.33	3.20	-4.32	-15.37	TO
DLVJUY		7.87	0.34	1.19	7.83	0.31	1.10	TO
E3WRDJ		7.66	0.12	0.44	7.68	0.17	0.60	XX
E7GLEP		7.51	-0.03	-0.09	7.54	0.03	0.10	TO
EDF946	X	7.48	-0.06	-0.20	7.87	0.36	1.27	CE
EEUFR		7.80	0.27	0.94	7.81	0.30	1.05	WZ
F64CZX	X	11.92	4.38	15.48	11.74	4.22	15.04	TO
FZ7W7G		7.92	0.38	1.35	7.84	0.32	1.15	WZ
GRLFQC		7.59	0.05	0.19	7.58	0.06	0.21	WZ
HR6ERG	X	19.02	11.48	40.56	19.29	11.77	41.93	TY
HRJUTB		7.92	0.39	1.37	8.00	0.49	1.73	TO
JBFQVQ	X	5.92	-1.62	-5.72	5.99	-1.53	-5.45	TM
JPDKKE		7.10	-0.44	-1.54	7.13	-0.39	-1.38	WZ
JPXJHC		6.84	-0.70	-2.46	6.82	-0.70	-2.48	XX
JZHQHM		8.03	0.49	1.74	7.97	0.45	1.60	WZ
KLQHYQ		7.48	-0.06	-0.20	7.41	-0.10	-0.37	CE
M8L4N8		7.38	-0.15	-0.54	7.32	-0.19	-0.68	CE
MDP8GQ		7.50	-0.04	-0.13	7.65	0.13	0.48	TO
N4GVYM		7.53	-0.01	-0.03	7.60	0.08	0.30	CE
NXB26R		7.28	-0.25	-0.90	7.21	-0.31	-1.10	TO
PDFU4E		8.04	0.50	1.76	7.97	0.46	1.62	TM
PQNTX7		7.46	-0.08	-0.27	7.46	-0.06	-0.20	CE
Q3YK27		7.86	0.32	1.14	7.82	0.30	1.08	WZ
RPRWLH		7.81	0.27	0.96	7.78	0.27	0.95	CE
TLLT8Z		7.35	-0.19	-0.66	7.52	0.00	0.01	TO
U43CJX		7.01	-0.52	-1.85	6.98	-0.53	-1.90	XX
UBKMY		7.48	-0.06	-0.20	7.47	-0.05	-0.17	TM
UFCW3Q		7.38	-0.16	-0.55	7.60	0.09	0.31	TM



**Plastics Interlaboratory Testing Program**

**Report #106**

**Analysis 792**

**2nd Qtr 2018**

**Notched Charpy Impact - kJ/m<sup>2</sup>**

WebCode	Data Flag	Sample M51			Sample M52			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
UTENKN		7.66	0.12	0.43	7.48	-0.03	-0.12	CE
WP9LTQ		7.24	-0.30	-1.06	7.07	-0.44	-1.58	WZ
YL4X3T		7.70	0.16	0.56	7.64	0.13	0.45	TO
YTZRZR		7.47	-0.06	-0.23	7.56	0.05	0.17	TO
Z4ZFXF		7.28	-0.26	-0.92	7.19	-0.33	-1.18	IN
ZA8838		7.50	-0.03	-0.12	7.41	-0.10	-0.37	TO
ZGPHEM		7.68	0.14	0.50	7.48	-0.04	-0.14	TM
ZPFZTV		7.27	-0.27	-0.96	7.33	-0.19	-0.68	CE
ZUBR3D		7.30	-0.24	-0.83	7.29	-0.22	-0.79	CE

Summary Statistics		
	Sample M51	Sample M52
<b>Grand Means</b>	7.537 kJ/m <sup>2</sup>	7.516 kJ/m <sup>2</sup>
<b>Stnd Dev Btwn Labs</b>	0.283 kJ/m <sup>2</sup>	0.281 kJ/m <sup>2</sup>
Statistics based on 37 of 44 reporting participants		

Sample M51: HIPS & Sample M52: HIPS

**Comments on Assigned Data Flags for Test #792**

- F64CZX (X) - Extreme data.
- EDF946 (X) - Inconsistent in testing between samples.
- 84VQBW (X) - Data for both samples are very low.
- JBFQVQ (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample M52.
- 6MH72V (X) - Inconsistent in testing between samples. Data for sample M52 are high.
- HR6ERG (X) - Extreme data.
- DC6ZD6 (X) - Extreme data.

**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 #106

Analysis 792

2nd Qtr 2018

Notched Charpy Impact - kJ/m<sup>2</sup>

Grand Mean Sample M51: 7.5375 kJ/m<sup>2</sup> Grand Mean Sample M52: 7.5161 kJ/m<sup>2</sup>

