

## Plastics Interlaboratory Testing Program

### Web Summary Report #105, 1st Qtr 2018

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## About CTS and the Plastics Interlaboratory Program

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

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

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

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

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## Key for Web Summary Report (Page 1 of 2)

<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 #105, 1st Qtr 2018

#### Analysis 704 - Tensile Stress at Yield

Material: ABS	Sample F49	6,794.38	psi	1.69% COV
	Sample F50	6,790.99	psi	1.64% COV

#### Analysis 705 - Tensile Stress at Break

Material: ABS	Sample F49	5,069.08	psi	4.21% COV
	Sample F50	5,023.80	psi	4.18% COV

#### Analysis 706 - Percent Elongation at Yield

Material: ABS	Sample F49	2.4632	Percent	3.14% COV
	Sample F50	2.4581	Percent	3.57% COV

#### Analysis 708 - Modulus of Elasticity

Material: ABS	Sample F49	350.26	ksi	4.45% COV
	Sample F50	352.20	ksi	4.87% COV

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

Material: ABS/PC	Sample E49	105.34	Degrees C	1.28% COV
	Sample E50	105.68	Degrees C	1.56% COV

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

Material: PP	Sample G49	84.376	Degrees C	3.43% COV
	Sample G50	84.722	Degrees C	5.35% COV

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

Material: ABS/PC	Sample N49	104.98	Degrees C	1.35% COV
	Sample N50	105.12	Degrees C	1.37% COV

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

Material: ABS/PC	Sample H49	138.74	Degrees C	0.598% COV
	Sample H50	138.99	Degrees C	0.624% COV

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

Material: ABS/PC	Sample R49	140.39	Degrees C	0.583% COV
	Sample R50	140.48	Degrees C	0.644% COV

#### Analysis 718 - Specific Gravity

Material: ABS	Sample T49	1.0457	sp gr 23/23 C	0.180% COV
	Sample T50	1.0458	sp gr 23/23 C	0.189% COV

#### Analysis 720 - Flexural Modulus

Material: ABS	Sample J49	376.27	ksi	4.27% COV
	Sample J50	375.82	ksi	4.21% COV

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

Material: ABS	Sample J49	11,517.51	psi	2.90% COV
	Sample J50	11,570.26	psi	2.82% COV

#### Analysis 722 - Flexural Stress at Yield

Material: ABS	Sample J49	11,564.09	psi	2.54% COV
	Sample J50	11,614.68	psi	2.57% COV

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

Material: HIPS	Sample C49	24.271	MPa	3.16% COV
	Sample C50	24.250	MPa	3.12% COV

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

Material: HIPS	Sample C49	20.967	MPa	4.63% COV
	Sample C50	20.911	MPa	4.42% COV



# Plastics Interlaboratory Testing Program

Results Summary for Report #105, 1st Qtr 2018

## Analysis 732 - Strain at Yield, ISO Method

Material: HIPS	Sample C49	1.2445	Percent	4.31% COV
	Sample C50	1.2408	Percent	4.19% COV

## Analysis 734 - Modulus of Elasticity, ISO Method

Material: HIPS	Sample C49	2,253.97	MPa	3.27% COV
	Sample C50	2,249.81	MPa	3.31% COV

## Analysis 736 - Flexural Modulus

Material: HIPS	Sample K49	2,224.97	MPa	3.06% COV
	Sample K50	2,236.81	MPa	4.83% COV

## Analysis 737 - Flexural Stress at 3.5% Strain

Material: HIPS	Sample K49	43.652	MPa	2.19% COV
	Sample K50	41.008	MPa	3.86% COV

## Analysis 738 - Flexural Stress at Yield

Material: HIPS	Sample K49	43.497	MPa	2.58% COV
	Sample K50	41.429	MPa	4.06% COV

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

Material: HDPE	Sample X49	8.0982	grams/10 mins	4.11% COV
	Sample X50	8.0949	grams/10 mins	3.95% COV

## Analysis 755 - Moisture Content

Material: HIPS	Sample Y49	0.01886	Percent	81.4% COV
	Sample Y50	0.02125	Percent	73.8% COV

## Analysis 757 - Ash Content

Material: PP	Sample L49	19.759	Percent	0.264% COV
	Sample L50	19.770	Percent	0.234% COV

## Analysis 760 - DSC Crystallization Temperature

Material: PP	Sample W49	121.61	Degrees Celsius	3.58% COV
	Sample W50	121.08	Degrees Celsius	3.54% COV

## Analysis 761 - DSC Melt Temperature

Material: PP	Sample W49	165.15	Degrees Celsius	0.985% COV
	Sample W50	165.17	Degrees Celsius	1.06% COV

## Analysis 762 - DSC Enthalpy of Crystallization

Material: PP	Sample W49	104.43	Joules Per Gram	9.16% COV
	Sample W50	104.32	Joules Per Gram	8.09% COV

## Analysis 763 - DSC Enthalpy of Fusion

Material: PP	Sample W49	102.51	Joules Per Gram	16.7% COV
	Sample W50	101.76	Joules Per Gram	16.4% COV

## Analysis 764 - DSC Glass Transition Temperature

Material: PET	Sample V49	86.092	Degrees Celsius	2.70% COV
	Sample V50	86.592	Degrees Celsius	2.61% COV

## Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B49	1,878.42	psi	14.1% COV
	Sample B50	1,670.65	psi	7.35% COV

## Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B49	3,718.43	psi	9.93% COV
	Sample B50	3,378.58	psi	8.29% COV



## Plastics Interlaboratory Testing Program

Results Summary for Report #105, 1st Qtr 2018

### Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B49	63.829	Percent	48.4% COV
	Sample B50	49.712	Percent	52.2% COV

### Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B49	850.94	Percent	21.0% COV
	Sample B50	820.22	Percent	18.2% COV

### Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B49	3.6689	mils	3.78% COV
	Sample B50	3.8348	mils	4.83% COV

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

Material: LDPE	Sample B49	30,451.61	psi	39.9% COV
	Sample B50	28,984.51	psi	35.1% COV

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

Material: LDPE	Sample B49	24,297.12	psi	36.7% COV
	Sample B50	24,103.14	psi	27.3% COV

### Analysis 780 - Static Friction

Material: LDPE	Sample P49	0.15013	COF	32.4% COV
	Sample P50	0.14080	COF	33.8% COV

### Analysis 781 - Kinetic Friction

Material: LDPE	Sample P49	0.11666	COF	34.4% COV
	Sample P50	0.10874	COF	26.1% COV

### Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q49	205.02	grams-force	24.6% COV
	Sample Q50	429.65	grams-force	30.0% COV

### Analysis 785 - Percent Haze

Material: LDPE	Sample D49	16.220	Percent	5.45% COV
	Sample D50	15.661	Percent	6.20% COV

### Analysis 786 - Total Transmittance

Material: LDPE	Sample D49	92.676	Percent	1.00% COV
	Sample D50	92.730	Percent	1.03% COV

### Analysis 790 - Notched Izod Impact

Material: HIPS	Sample S49	1.7587	ft.lbf/in	8.68% COV
	Sample S50	1.7408	ft.lbf/in	8.49% COV

### Analysis 791 - Notched Izod Impact

Material: ABS	Sample Z49	17.991	kJ/m <sup>2</sup>	4.85% COV
	Sample Z50	18.013	kJ/m <sup>2</sup>	5.64% COV

### Analysis 792 - Notched Charpy Impact

Material: ABS	Sample M49	19.017	kJ/m <sup>2</sup>	3.86% COV
	Sample M50	18.825	kJ/m <sup>2</sup>	3.35% COV



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 704

1st Qtr 2018

### Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2K8Z2N		6,798.1	3.8	0.03	6,799.6	8.6	0.08
3HB6U7		6,683.4	-111.0	-0.97	6,683.4	-107.6	-0.96
3NKZXF		6,596.2	-198.2	-1.73	6,579.8	-211.2	-1.89
4BUTEJ	*	6,665.0	-129.4	-1.13	6,520.4	-270.6	-2.43
4ZAJPQ		6,868.7	74.3	0.65	6,875.2	84.2	0.75
6F49LM		6,832.6	38.2	0.33	6,867.8	76.8	0.69
6YGW4E	X	7,211.3	417.0	3.63	6,799.4	8.4	0.08
7B4GRF		6,884.2	89.8	0.78	6,792.2	1.2	0.01
7NXPWC		6,640.0	-154.4	-1.34	6,746.0	-45.0	-0.40
7YCQAX		6,743.6	-50.8	-0.44	6,702.1	-88.9	-0.80
8KUBND		6,909.4	115.0	1.00	6,913.0	122.0	1.09
8XW26B		6,725.0	-69.4	-0.60	6,815.6	24.6	0.22
9XBMGY		6,956.7	162.3	1.41	6,959.6	168.6	1.51
ACMUKA		6,704.2	-90.2	-0.79	6,855.0	64.0	0.57
AJ47XA		6,666.2	-128.2	-1.12	6,675.6	-115.4	-1.03
BFZRRW		6,813.2	18.8	0.16	6,759.2	-31.8	-0.29
BT9F3E		6,871.4	77.0	0.67	6,867.2	76.2	0.68
DUC3EA		6,848.2	53.8	0.47	6,862.4	71.4	0.64
DVT4FQ		6,876.9	82.5	0.72	6,870.6	79.6	0.71
EJU6M		6,715.3	-79.1	-0.69	6,775.6	-15.3	-0.14
F4WZA8		7,055.4	261.0	2.27	6,985.6	194.6	1.75
FPXZR6	X	6,010.4	-784.0	-6.83	5,981.4	-809.6	-7.26
FV2ZZZ		6,717.9	-76.5	-0.67	6,634.4	-156.6	-1.40
FX6Q3U		6,880.9	86.6	0.75	6,891.7	100.7	0.90
JB6NMW		6,923.4	129.0	1.12	6,905.8	114.8	1.03
JE33AL		6,880.9	86.6	0.75	6,889.6	98.7	0.88
JTHJMH	X	6,392.4	-402.0	-3.50	6,333.4	-457.6	-4.10
K36VHV		6,521.2	-273.2	-2.38	6,524.8	-266.2	-2.39
KBZN2M		6,752.6	-41.8	-0.36	6,777.6	-13.4	-0.12
KEF2VH	X	6,318.6	-475.8	-4.14	6,311.9	-479.1	-4.30
LBEBBN		6,821.4	27.0	0.24	6,758.0	-33.0	-0.30
LEDXFC		6,691.8	-102.6	-0.89	6,766.1	-24.9	-0.22
LGGQDH		6,805.0	10.6	0.09	6,795.0	4.0	0.04
LHD4ZA		6,972.5	178.2	1.55	6,964.4	173.4	1.56
M64QE3		6,821.6	27.2	0.24	6,837.2	46.2	0.41





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 704**

**1st Qtr 2018**

**Tensile Stress at Yield - psi**

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
M7H36L		6,564.1	-230.3	-2.01	6,672.8	-118.2	-1.06
MLR4QA		6,738.2	-56.2	-0.49	6,701.7	-89.3	-0.80
N3R9XJ		6,825.0	30.6	0.27	6,736.4	-54.6	-0.49
NFEHH3	X	6,462.4	-332.0	-2.89	6,154.4	-636.6	-5.71
PR7QFW		6,950.9	156.5	1.36	6,959.7	168.7	1.51
QC6G4A	X	6,174.0	-620.4	-5.40	6,186.0	-605.0	-5.43
QNLUR7		6,755.0	-39.4	-0.34	6,766.4	-24.6	-0.22
TGCJA3		6,794.2	-0.2	0.00	6,802.4	11.4	0.10
TP9E8Z		6,870.4	76.0	0.66	6,890.4	99.4	0.89
UFFEEU		6,763.0	-31.4	-0.27	6,840.4	49.4	0.44
UJYH3Q		6,619.6	-174.8	-1.52	6,651.5	-139.5	-1.25
UL6U6L		6,670.6	-123.8	-1.08	6,799.8	8.8	0.08
UVVHZN		6,874.8	80.5	0.70	6,961.9	170.9	1.53
V3764P		6,676.6	-117.8	-1.03	6,676.5	-114.5	-1.03
V87A4N		6,798.6	4.2	0.04	6,814.2	23.2	0.21
V8YAWT		6,771.9	-22.5	-0.20	6,614.4	-176.6	-1.58
VDPJ7R		6,978.8	184.4	1.61	6,856.0	65.0	0.58
VJVFQR		6,766.0	-28.4	-0.25	6,744.0	-47.0	-0.42
Y2KRTA		6,714.7	-79.6	-0.69	6,669.1	-121.9	-1.09
YQ6YLM		6,779.0	-15.4	-0.13	6,775.5	-15.5	-0.14
YQMKHJ		6,922.4	128.0	1.12	6,925.2	134.2	1.20
Z4KBE9		6,941.1	146.7	1.28	6,787.9	-3.1	-0.03
ZQJKXA		6,890.2	95.8	0.83	6,834.8	43.8	0.39

Summary Statistics		
	Sample F49	Sample F50
<b>Grand Means</b>	6,794.38 psi	6,790.99 psi
<b>Std Dev Btwn Labs</b>	114.79 psi	111.51 psi
Statistics based on 52 of 58 reporting participants		

Sample F49: ABS & Sample F50: ABS



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

- FPXZR6 (X) - Data for both samples are low. Possible Systematic Error.
- 6YGW4E (X) - Inconsistent in testing between samples. Data for sample F49 are high.
- NFEHH3 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F50.
- KEF2VH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- JTHJMH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F49.
- QC6G4A (X) - Data for both samples are low. Possible Systematic Error.



# Plastics Interlaboratory Testing Program

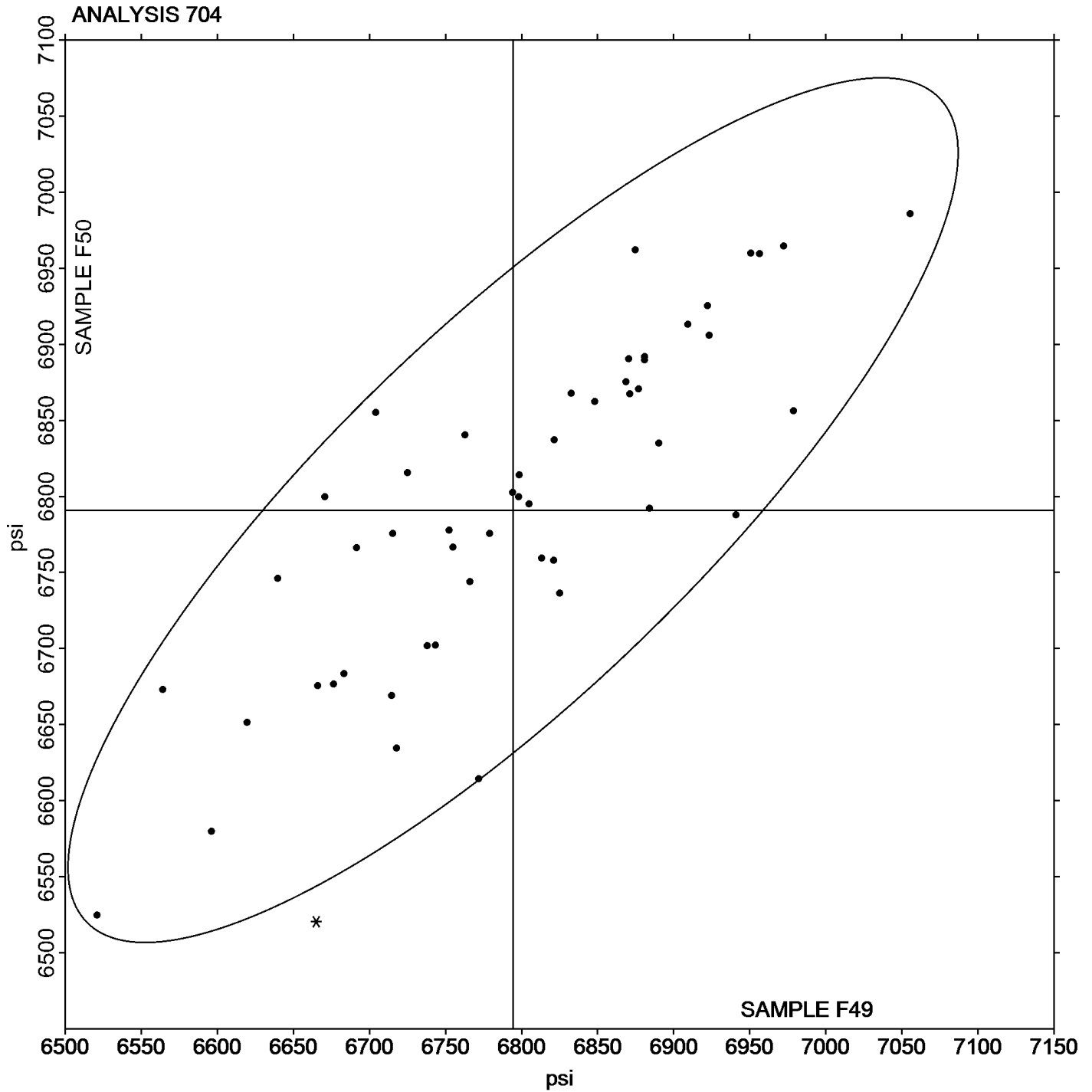
Report #105

## Analysis 704

1st Qtr 2018

### Tensile Stress at Yield - psi

Grand Mean Sample F49: 6,794.38 psi    Grand Mean Sample F50: 6,790.99 psi





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 705

1st Qtr 2018

### Tensile Stress at Break - psi

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2K8Z2N		5,111.8	42.7	0.20	4,984.2	-39.6	-0.19
3HB6U7		4,876.2	-192.9	-0.90	5,003.8	-20.0	-0.09
3NKZXF		4,861.8	-207.3	-0.97	4,695.0	-328.8	-1.56
4BUTEJ		4,818.0	-251.1	-1.18	4,684.8	-339.0	-1.61
4ZAJPQ		5,323.4	254.3	1.19	5,225.0	201.2	0.96
6F49LM		5,066.4	-2.7	-0.01	5,172.6	148.8	0.71
6YGW4E	X	6,030.7	961.6	4.50	5,125.7	101.9	0.48
7B4GRF		5,167.2	98.1	0.46	5,071.4	47.6	0.23
7NXPWC	*	4,536.0	-533.1	-2.50	4,780.0	-243.8	-1.16
7YCQAX	*	5,337.3	268.2	1.26	4,920.3	-103.5	-0.49
8KUBND		5,331.8	262.7	1.23	5,149.8	126.0	0.60
8XW26B		4,903.6	-165.5	-0.77	5,000.2	-23.6	-0.11
9XBMGY		5,030.5	-38.5	-0.18	5,030.2	6.4	0.03
ACMUKA	X	5,120.2	51.1	0.24	5,628.4	604.6	2.88
BFZRRW		5,367.4	298.3	1.40	5,129.6	105.8	0.50
BT9F3E	*	5,444.6	375.5	1.76	5,569.4	545.6	2.60
DVT4FQ	*	5,632.4	563.3	2.64	5,644.2	620.4	2.95
EJUU6M		4,817.3	-251.8	-1.18	4,752.1	-271.7	-1.29
F4WZA8		5,338.4	269.3	1.26	5,224.4	200.6	0.95
FV2ZXZ		4,933.9	-135.1	-0.63	4,775.3	-248.5	-1.18
FX6Q3U		5,067.4	-1.7	-0.01	5,003.0	-20.8	-0.10
JB6NMW		5,280.2	211.1	0.99	5,412.8	389.0	1.85
JE33AL		4,997.8	-71.3	-0.33	4,929.3	-94.5	-0.45
JTHJMH		4,867.6	-201.5	-0.94	4,874.4	-149.4	-0.71
K36VHV		4,674.6	-394.5	-1.85	4,764.8	-259.0	-1.23
KEF2VH		5,154.6	85.5	0.40	5,129.6	105.8	0.50
LBEBBN		4,978.2	-90.9	-0.43	4,997.0	-26.8	-0.13
LGGQDH		4,793.3	-275.8	-1.29	4,868.4	-155.4	-0.74
LHD4ZA		4,928.3	-140.7	-0.66	4,924.9	-98.9	-0.47
M64QE3		5,000.8	-68.3	-0.32	5,049.2	25.4	0.12
M7H36L		4,956.0	-113.1	-0.53	5,006.0	-17.8	-0.08
MLR4QA		5,083.2	14.1	0.07	5,053.5	29.7	0.14
N3R9XJ		4,945.8	-123.3	-0.58	4,963.2	-60.6	-0.29
NFEHH3		5,114.2	45.1	0.21	4,866.8	-157.0	-0.75
PR7QFW		5,423.9	354.8	1.66	5,153.3	129.5	0.62



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 705**

**1st Qtr 2018**

**Tensile Stress at Break - psi**

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QC6G4A	X	6,172.4	1,103.3	5.16	6,185.6	1,161.8	5.53
QRYYYZ		4,973.6	-95.4	-0.45	4,864.8	-159.0	-0.76
TGCJA3		5,012.6	-56.5	-0.26	5,012.8	-11.0	-0.05
TP9E8Z		4,983.8	-85.3	-0.40	4,972.4	-51.4	-0.24
UFFEEU		5,018.2	-50.9	-0.24	4,951.2	-72.6	-0.35
UJYH3Q		4,884.9	-184.2	-0.86	4,676.1	-347.7	-1.65
UVVHZN	*	5,192.4	123.3	0.58	5,482.5	458.7	2.18
V3764P		4,922.6	-146.5	-0.69	4,985.3	-38.5	-0.18
V87A4N		5,148.0	78.9	0.37	4,968.7	-55.1	-0.26
V8YAWT		5,314.2	245.1	1.15	5,081.0	57.2	0.27
VDPJ7R		5,168.8	99.7	0.47	5,011.8	-12.0	-0.06
VJVFQR		5,252.0	182.9	0.86	4,954.0	-69.8	-0.33
Y2KRTA		4,944.1	-125.0	-0.59	4,836.6	-187.2	-0.89
YQ6YLM		5,029.4	-39.7	-0.19	4,993.5	-30.3	-0.14
YQMKHJ		5,290.2	221.1	1.04	5,320.4	296.6	1.41
Z4KBE9		4,925.6	-143.5	-0.67	5,051.7	27.9	0.13
ZQJKXA		5,160.6	91.5	0.43	5,195.2	171.4	0.82

Summary Statistics		Sample F49	Sample F50
<b>Grand Means</b>		5,069.08 psi	5,023.80 psi
<b>Std Dev Btwn Labs</b>		213.62 psi	210.18 psi
Statistics based on 49 of 52 reporting participants			

Sample F49: ABS & Sample F50: ABS

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

- 6YGW4E (X) - Inconsistent in testing between samples. Data for sample F49 are high.
- ACMUKA (X) - Inconsistent in testing between samples. Data for sample F50 are high. Inconsistent within the determinations of sample F50.
- QC6G4A (X) - Data for both samples are high. Possible Systematic Error.



# Plastics Interlaboratory Testing Program

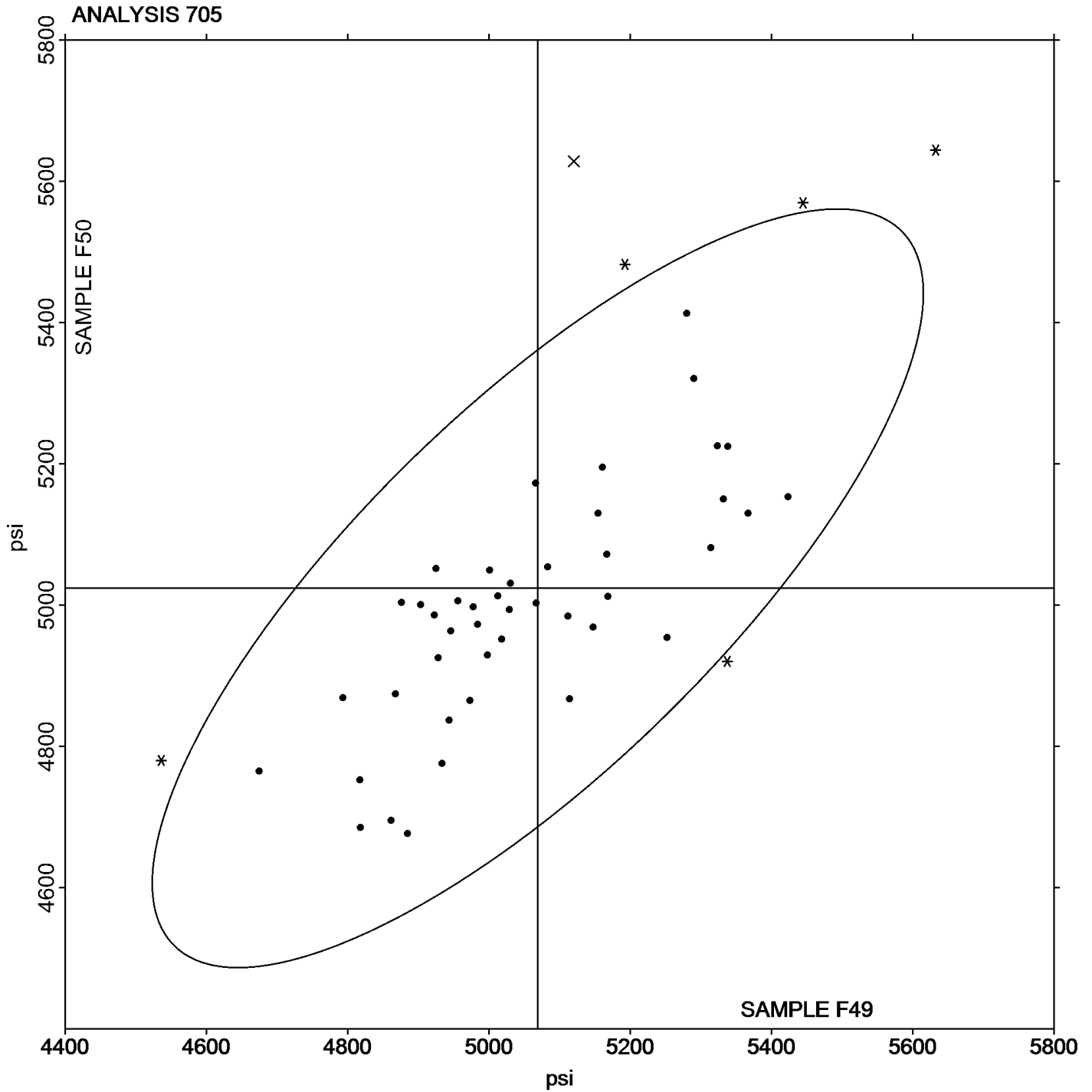
Report #105

## Analysis 705

1st Qtr 2018

### Tensile Stress at Break - psi

Grand Mean Sample F49: 5,069.08 psi    Grand Mean Sample F50: 5,023.80 psi





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 706

1st Qtr 2018

### Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2K8Z2N		2.367	-0.096	-1.24	2.294	-0.164	-1.86
3HB6U7		2.480	0.017	0.22	2.500	0.042	0.48
3NKZXF	X	2.988	0.525	6.78	3.096	0.638	7.26
4BUTEJ		2.422	-0.041	-0.53	2.392	-0.066	-0.75
4ZAJPQ		2.476	0.013	0.17	2.504	0.046	0.52
6F49LM		2.490	0.027	0.35	2.504	0.046	0.52
6YGW4E	X	4.828	2.365	30.56	4.792	2.334	26.58
7B4GRF		2.510	0.047	0.60	2.464	0.006	0.07
7NXPWC		2.508	0.045	0.58	2.558	0.100	1.14
7YCQAX		2.523	0.060	0.77	2.490	0.032	0.36
8KUBND		2.548	0.085	1.10	2.532	0.074	0.84
8XW26B		2.528	0.065	0.84	2.534	0.076	0.86
9XBMGY		2.644	0.181	2.34	2.632	0.174	1.98
ACMUKA	X	1.220	-1.243	-16.06	1.314	-1.144	-13.03
BFZRRW		2.432	-0.031	-0.40	2.418	-0.040	-0.46
BT9F3E		2.506	0.043	0.55	2.508	0.050	0.57
DUC3EA		2.540	0.077	0.99	2.560	0.102	1.16
DVT4FQ		2.440	-0.023	-0.30	2.354	-0.104	-1.19
EJU6M		2.494	0.031	0.40	2.518	0.060	0.68
F4WZA8		2.520	0.057	0.73	2.500	0.042	0.48
FV2ZXZ		2.342	-0.121	-1.57	2.294	-0.164	-1.87
FX6Q3U		2.498	0.035	0.45	2.488	0.030	0.34
JB6NMW		2.442	-0.021	-0.27	2.432	-0.026	-0.30
JE33AL		2.546	0.083	1.07	2.548	0.090	1.02
JTHJMH	X	2.030	-0.433	-5.60	2.076	-0.382	-4.35
K36VHV		2.492	0.029	0.37	2.500	0.042	0.48
KBZN2M		2.456	-0.007	-0.09	2.464	0.006	0.07
KEF2VH		2.400	-0.063	-0.82	2.440	-0.018	-0.21
LBEBBN	X	2.316	-0.147	-1.90	2.180	-0.278	-3.17
LGGQDH		2.320	-0.143	-1.85	2.278	-0.181	-2.06
LHD4ZA	*	2.223	-0.240	-3.10	2.221	-0.237	-2.70
M64QE3		2.536	0.073	0.94	2.508	0.050	0.57
M7H36L		2.340	-0.123	-1.59	2.400	-0.058	-0.66
MLR4QA		2.544	0.081	1.04	2.562	0.104	1.18
N3R9XJ	X	2.858	0.395	5.10	2.788	0.330	3.76



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 706**

**1st Qtr 2018**

**Percent Elongation at Yield - Percent**

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NFEHH3	*	2.374	-0.089	-1.15	2.266	-0.192	-2.19
QC6G4A	X	1.972	-0.491	-6.35	2.112	-0.346	-3.94
TGCJA3		2.470	0.007	0.09	2.436	-0.022	-0.25
TP9E8Z		2.462	-0.001	-0.02	2.500	0.042	0.48
UFFEEU		2.482	0.019	0.24	2.470	0.012	0.14
UJYH3Q		2.410	-0.053	-0.69	2.436	-0.022	-0.25
UL6U6L		2.486	0.023	0.29	2.506	0.048	0.55
UVVHZN		2.466	0.003	0.04	2.476	0.018	0.20
V3764P		2.450	-0.013	-0.17	2.460	0.002	0.02
V8YAWT		2.494	0.031	0.40	2.488	0.030	0.34
VDPJ7R	X	6.642	4.179	54.00	6.544	4.086	46.53
VJVFQR		2.416	-0.047	-0.61	2.434	-0.024	-0.27
Y2KRTA	X	3.000	0.537	6.94	3.000	0.542	6.17
YQ6YLM		2.518	0.055	0.71	2.510	0.052	0.59
YQMKHJ		2.344	-0.119	-1.54	2.388	-0.070	-0.80
ZQJKXA		2.516	0.053	0.68	2.474	0.016	0.18

Summary Statistics		
	Sample F49	Sample F50
<b>Grand Means</b>	2.4632 Percent	2.4581 Percent
<b>Stnd Dev Btwn Labs</b>	0.0774 Percent	0.0878 Percent
Statistics based on 42 of 51 reporting participants		

Sample F49: ABS & Sample F50: ABS





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

- 6YGW4E (X) - Extreme data.
- LBEBBN (X) - Inconsistent in testing between samples. Data for sample F50 are low. Inconsistent within the determinations of both samples.
- ACMUKA (X) - Extreme data.
- 3NKZXF (X) - Data for both samples are high. Possible Systematic Error.
- VDPJ7R (X) - Extreme data.
- Y2KRTA (X) - Data for both samples are high. Possible Systematic Error.
- N3R9XJ (X) - Data for both samples are high. Possible Systematic Error.
- JTHJMH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- QC6G4A (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample F49.





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 708

1st Qtr 2018

### Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2K8Z2N		341.59	-8.67	-0.56	356.86	4.66	0.27
3HB6U7		340.96	-9.30	-0.60	342.12	-10.08	-0.59
3NKZXF	X	264.34	-85.92	-5.52	261.06	-91.14	-5.31
4BUTEJ	*	388.22	37.96	2.44	373.08	20.88	1.22
4ZAJPQ		358.30	8.04	0.52	364.56	12.36	0.72
6F49LM		358.14	7.88	0.51	356.86	4.66	0.27
6YGW4E	*	341.71	-8.54	-0.55	369.27	17.07	1.00
7B4GRF		358.60	8.34	0.54	360.38	8.18	0.48
7NXPWC		335.20	-15.06	-0.97	337.20	-15.00	-0.87
7YCQAX		327.60	-22.65	-1.45	336.90	-15.29	-0.89
8XW26B		348.40	-1.86	-0.12	349.20	-3.00	-0.17
9XBMGY		342.00	-8.25	-0.53	341.65	-10.54	-0.61
ACMUKA	X	368.72	18.46	1.19	328.12	-24.08	-1.40
AJ47XA		354.41	4.16	0.27	356.76	4.56	0.27
BFZRRW	*	363.32	13.06	0.84	335.36	-16.84	-0.98
BT9F3E		359.74	9.48	0.61	357.20	5.00	0.29
DUC3EA		323.66	-26.60	-1.71	326.88	-25.32	-1.48
DVT4FQ		368.16	17.90	1.15	379.46	27.26	1.59
EJUJ6M		338.61	-11.65	-0.75	344.58	-7.61	-0.44
F4WZA8		343.50	-6.76	-0.43	342.16	-10.04	-0.58
FV2ZXZ		377.28	27.02	1.73	389.23	37.03	2.16
FX6Q3U		342.84	-7.41	-0.48	355.40	3.21	0.19
JB6NMW		374.40	24.14	1.55	378.60	26.40	1.54
JE33AL		333.62	-16.64	-1.07	327.21	-24.99	-1.46
JTHJMH		370.22	19.96	1.28	349.16	-3.04	-0.18
K36VHV		339.24	-11.02	-0.71	342.16	-10.04	-0.58
KBZN2M		361.74	11.48	0.74	359.98	7.78	0.45
KEF2VH		333.47	-16.79	-1.08	333.54	-18.66	-1.09
LBEBBN	*	387.46	37.20	2.39	404.26	52.06	3.03
LGGQDH		353.00	2.74	0.18	335.25	-16.95	-0.99
LHD4ZA		367.82	17.57	1.13	370.55	18.36	1.07
M64QE3		344.24	-6.02	-0.39	347.96	-4.24	-0.25
M7H36L		343.12	-7.14	-0.46	367.18	14.98	0.87
MLR4QA		320.95	-29.31	-1.88	318.96	-33.24	-1.94
N3R9XJ		343.60	-6.66	-0.43	349.00	-3.20	-0.19



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 708**

**1st Qtr 2018**

**Modulus of Elasticity - ksi**

WebCode	Data Flag	Sample F49			Sample F50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NFEHH3		356.86	6.60	0.42	355.08	2.88	0.17
QC6G4A	X	304.80	-45.46	-2.92	336.40	-15.80	-0.92
TGCJA3		342.68	-7.58	-0.49	349.12	-3.08	-0.18
TP9E8Z		362.35	12.09	0.78	363.58	11.39	0.66
UFFEEU		341.50	-8.76	-0.56	351.30	-0.90	-0.05
UJYH3Q		337.13	-13.13	-0.84	337.45	-14.75	-0.86
UL6U6L		339.66	-10.60	-0.68	339.38	-12.82	-0.75
UVVHZN		362.25	11.99	0.77	366.51	14.32	0.83
V3764P		343.54	-6.72	-0.43	345.04	-7.16	-0.42
V8YAWT		334.40	-15.85	-1.02	328.17	-24.03	-1.40
VJVFQR		362.20	11.94	0.77	358.60	6.40	0.37
Y2KRTA	X	434.98	84.73	5.44	430.30	78.11	4.55
YQ6YLM		358.40	8.14	0.52	363.40	11.20	0.65
YQMKHJ		350.22	-0.04	0.00	347.75	-4.45	-0.26
ZQJKXA		335.44	-14.82	-0.95	336.72	-15.48	-0.90

Summary Statistics		
	Sample F49	Sample F50
<b>Grand Means</b>	350.255 ksi	352.196 ksi
<b>Stnd Dev Btwn Labs</b>	15.576 ksi	17.157 ksi

Statistics based on 46 of 50 reporting participants

Sample F49: ABS & Sample F50: ABS

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

- ACMUKA (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample F49.
- 3NKZXF (X) - Data for both samples are low. Possible Systematic Error.
- Y2KRTA (X) - Data for both samples are high. Possible Systematic Error.
- QC6G4A (X) - Inconsistent in testing between samples. Data for sample F49 are low. Inconsistent within the determinations of sample F49.



# Plastics Interlaboratory Testing Program

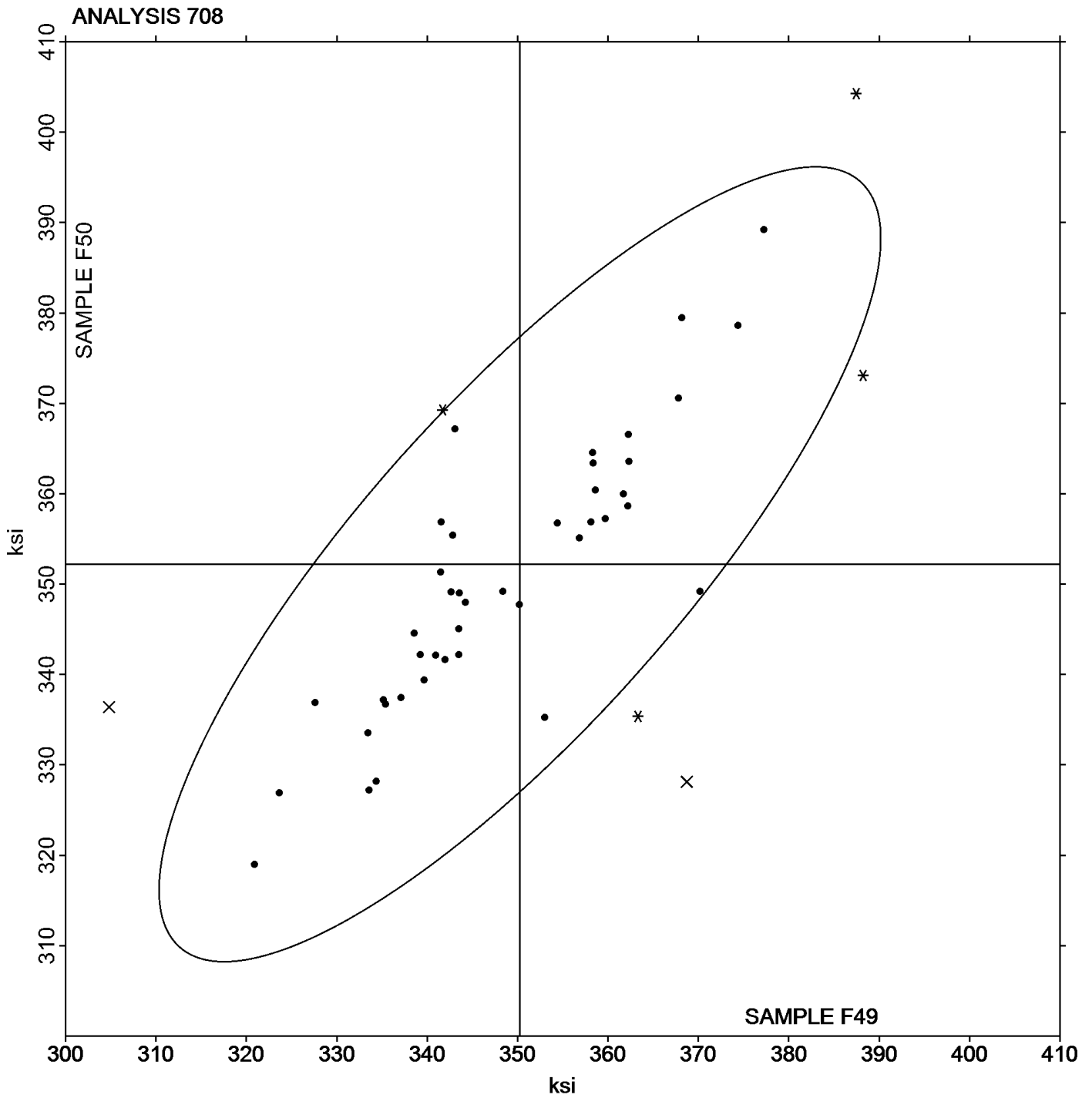
Report #105

## Analysis 708

1st Qtr 2018

### Modulus of Elasticity - ksi

Grand Mean Sample F49: 350.26 ksi    Grand Mean Sample F50: 352.20 ksi





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 710**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample E49			Sample E50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3HB6U7		105.18	-0.17	-0.13	104.48	-1.20	-0.73	CE
6F49LM		106.70	1.36	1.01	107.25	1.57	0.95	DN
7B4GRF	*	107.85	2.51	1.86	106.13	0.45	0.27	IN
8KUBND		103.13	-2.22	-1.65	103.65	-2.03	-1.23	AT
8XW26B		103.30	-2.04	-1.52	104.00	-1.68	-1.01	CE
9XBMGY		105.65	0.31	0.23	107.20	1.52	0.92	ZW
BT9F3E		106.35	1.01	0.75	105.70	0.02	0.01	DN
ETZMK9		104.88	-0.47	-0.35	105.08	-0.60	-0.36	CE
F4WZA8		104.78	-0.57	-0.42	103.90	-1.78	-1.07	CE
FX6Q3U		106.48	1.13	0.84	107.25	1.57	0.95	AT
JE33AL		107.18	1.83	1.36	107.90	2.22	1.35	AT
KBZN2M		102.93	-2.42	-1.80	102.95	-2.73	-1.65	TO
KEF2VH		105.90	0.56	0.41	107.43	1.75	1.06	CE
LBEBBN		105.20	-0.14	-0.11	105.43	-0.25	-0.15	XX
M64QE3		104.30	-1.04	-0.78	104.45	-1.23	-0.74	CF
M7H36L		105.18	-0.17	-0.13	105.68	0.00	0.00	CE
N3R9XJ	*	106.81	1.46	1.09	110.00	4.32	2.62	XX
QC6G4A	X	93.04	-12.31	-9.15	93.22	-12.46	-7.54	XX
RQLNLT		107.40	2.06	1.53	106.93	1.25	0.76	XX
UFFEEU		104.83	-0.52	-0.39	105.23	-0.45	-0.27	TO
UJYH3Q		105.05	-0.29	-0.22	104.90	-0.78	-0.47	TY
UVVHZN		103.98	-1.37	-1.02	104.08	-1.60	-0.97	RO
YQ6YLM		105.20	-0.14	-0.11	105.35	-0.33	-0.20	AT
Z4KBE9		104.71	-0.63	-0.47	105.61	-0.07	-0.04	TO

Summary Statistics		
	Sample E49	Sample E50
<b>Grand Means</b>	105.344 Degrees C	105.675 Degrees C
<b>Std Dev Btwn Labs</b>	1.346 Degrees C	1.653 Degrees C
Statistics based on 23 of 24 reporting participants		

Sample E49: ABS/PC & Sample E50: ABS/PC

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

QC6G4A (X) - Data for both samples are low.



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 710

1st Qtr 2018

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

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#### 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

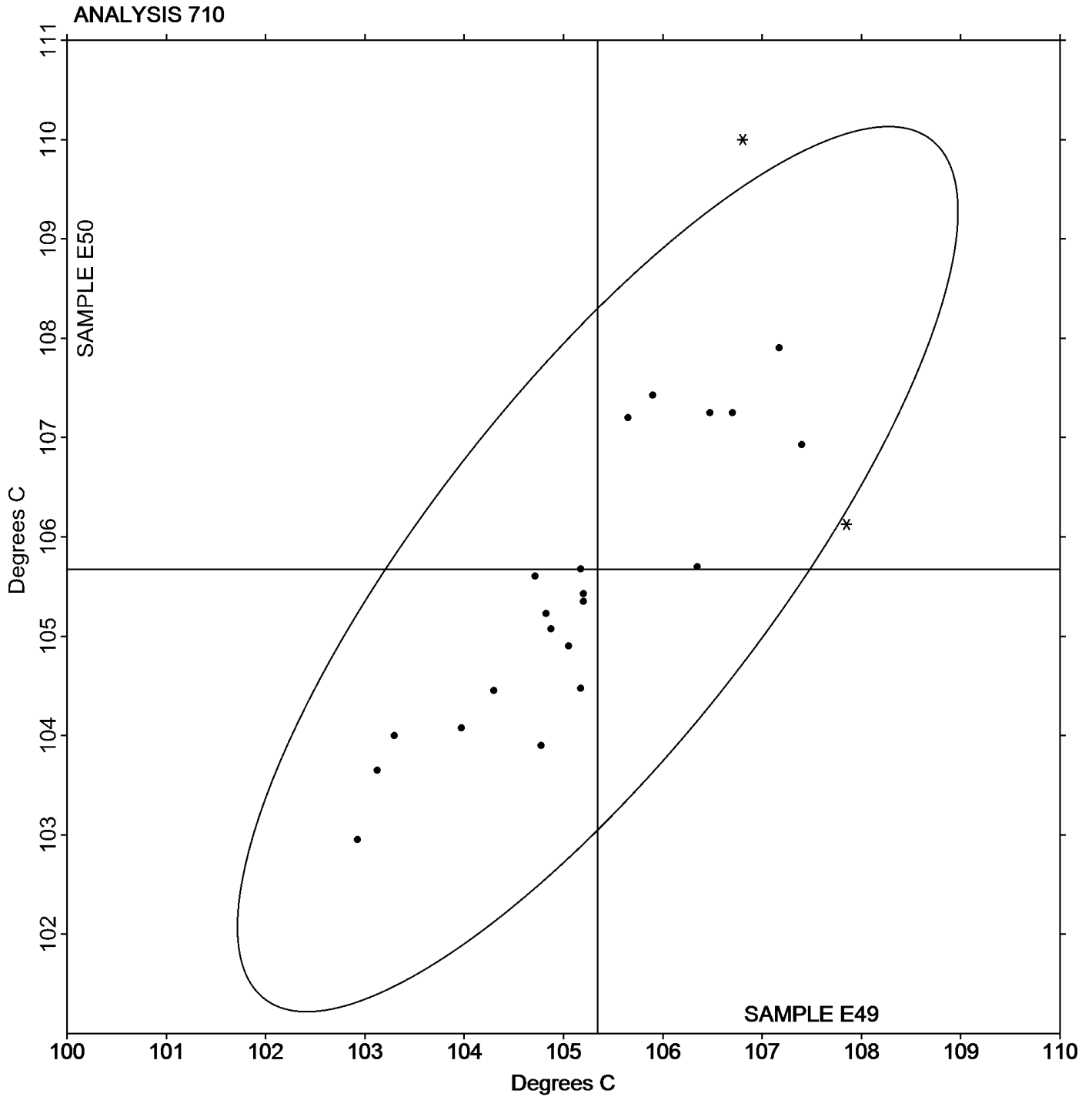
Report #105

## Analysis 710

1st Qtr 2018

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

Grand Mean Sample E49: 105.34 Degrees C    Grand Mean Sample E50: 105.68 Degrees C







# Plastics Interlaboratory Testing Program

Report #105

## Analysis 711

1st Qtr 2018

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

WebCode	Data Flag	Sample G49			Sample G50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
8KUBND		81.2	-3.2	-1.12	81.8	-3.0	-0.66	AT
ETZMK9		87.2	2.8	0.96	84.2	-0.5	-0.11	CE
F4WZA8		87.5	3.1	1.08	88.2	3.5	0.77	CE
KBZN2M		84.2	-0.2	-0.08	84.5	-0.2	-0.04	TO
KEF2VH		86.7	2.3	0.80	88.0	3.2	0.71	CE
N3R9XJ		88.1	3.7	1.27	94.6	9.9	2.17	XX
NHLXRU		86.9	2.5	0.86	89.1	4.3	0.95	CE
PR7QFW		82.7	-1.7	-0.58	82.5	-2.2	-0.48	XX
QC8YAL		79.8	-4.6	-1.60	77.8	-7.0	-1.54	CS
VZ2KD4		83.7	-0.7	-0.23	82.4	-2.3	-0.51	IN
WZJ4JM		84.2	-0.2	-0.06	83.2	-1.6	-0.35	CE
Z4KBE9		80.6	-3.8	-1.31	80.5	-4.2	-0.92	TO

#### Summary Statistics

##### Grand Means

Sample G49  
84.38 Degrees C

Sample G50  
84.72 Degrees C

##### Std Dev Btwn Labs

2.89 Degrees C

4.54 Degrees C

Statistics based on 12 of 12 reporting participants

Sample G49: PP & Sample G50: PP

#### Key to Instrument Codes Reported by Participants

AT Atlas

CE Ceast

CS CSI

IN Instron

TO Tinius Olsen

XX Instrument manufacturer not specified by lab



Plastics Interlaboratory Testing Program

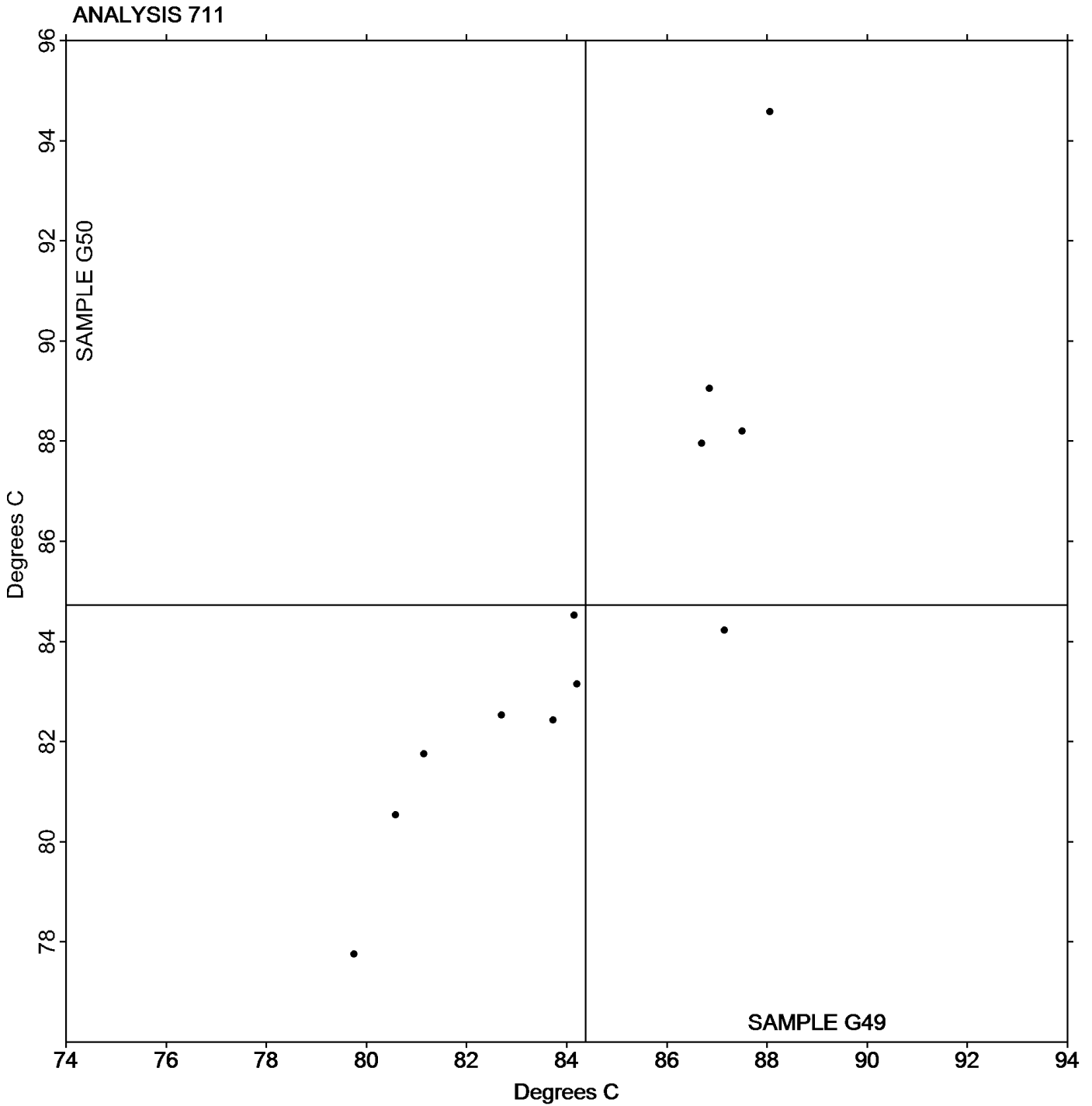
Report #105

Analysis 711

1st Qtr 2018

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

Grand Mean Sample G49: 84.376 Degrees C Grand Mean Sample G50: 84.722 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 #105

## Analysis 712

1st Qtr 2018

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

WebCode	Data Flag	Sample N49			Sample N50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2DQHRM		105.80	0.82	0.58	105.85	0.73	0.51	CE
44BP7G		104.05	-0.93	-0.65	104.13	-1.00	-0.69	CF
6YE9F9		104.58	-0.40	-0.28	104.53	-0.60	-0.41	CE
9XBMGY		104.78	-0.20	-0.14	105.65	0.53	0.37	ZW
BKX8MY	*	107.70	2.72	1.92	108.88	3.75	2.61	TO
EJU6M		106.45	1.47	1.04	106.83	1.70	1.18	CE
ETZMK9		103.85	-1.13	-0.79	104.35	-0.77	-0.54	CE
FPXZR6		105.83	0.85	0.60	106.23	1.10	0.77	XX
G29RU6		103.40	-1.58	-1.11	102.93	-2.20	-1.53	CE
HU3MAY		105.85	0.87	0.61	105.88	0.75	0.52	IN
JB6NMW	*	107.80	2.82	1.99	106.28	1.15	0.80	DN
JE33AL		104.60	-0.38	-0.26	104.68	-0.45	-0.31	AT
JNTQ6N		104.20	-0.78	-0.55	104.70	-0.42	-0.29	TO
KEF2VH		104.33	-0.65	-0.46	104.75	-0.37	-0.26	CE
KUBPM9		103.48	-1.50	-1.06	103.53	-1.60	-1.11	CE
LBEBBN		105.00	0.02	0.02	104.55	-0.57	-0.40	IN
LEDXFC		102.85	-2.13	-1.49	102.53	-2.60	-1.80	XX
MKF8L6		104.30	-0.68	-0.48	104.13	-1.00	-0.69	CE
MX2RPY		102.18	-2.80	-1.97	102.83	-2.30	-1.59	CE
NHLXRU		104.03	-0.94	-0.66	104.90	-0.22	-0.15	CF
QWX7QN		106.85	1.87	1.32	107.10	1.98	1.38	AT
RYHNYZ		104.65	-0.33	-0.23	105.25	0.13	0.09	AT
UJYH3Q		106.33	1.35	0.95	105.78	0.65	0.45	TY
UUEAQZ		105.48	0.50	0.35	105.90	0.78	0.54	TY
Z4KBE9		106.06	1.08	0.76	105.91	0.79	0.55	TO
ZKRK9G	X	111.00	6.02	4.24	112.60	7.48	5.20	DN

Summary Statistics		
	Sample N49	Sample N50
<b>Grand Means</b>	104.976 Degrees C	105.121 Degrees C
<b>Std Dev Btwn Labs</b>	1.422 Degrees C	1.439 Degrees C
Statistics based on 25 of 26 reporting participants		

Sample N49: ABS/PC & Sample N50: ABS/PC



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

ZKRK9G (X) - Data for both samples are high. Possible Systematic Error.

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

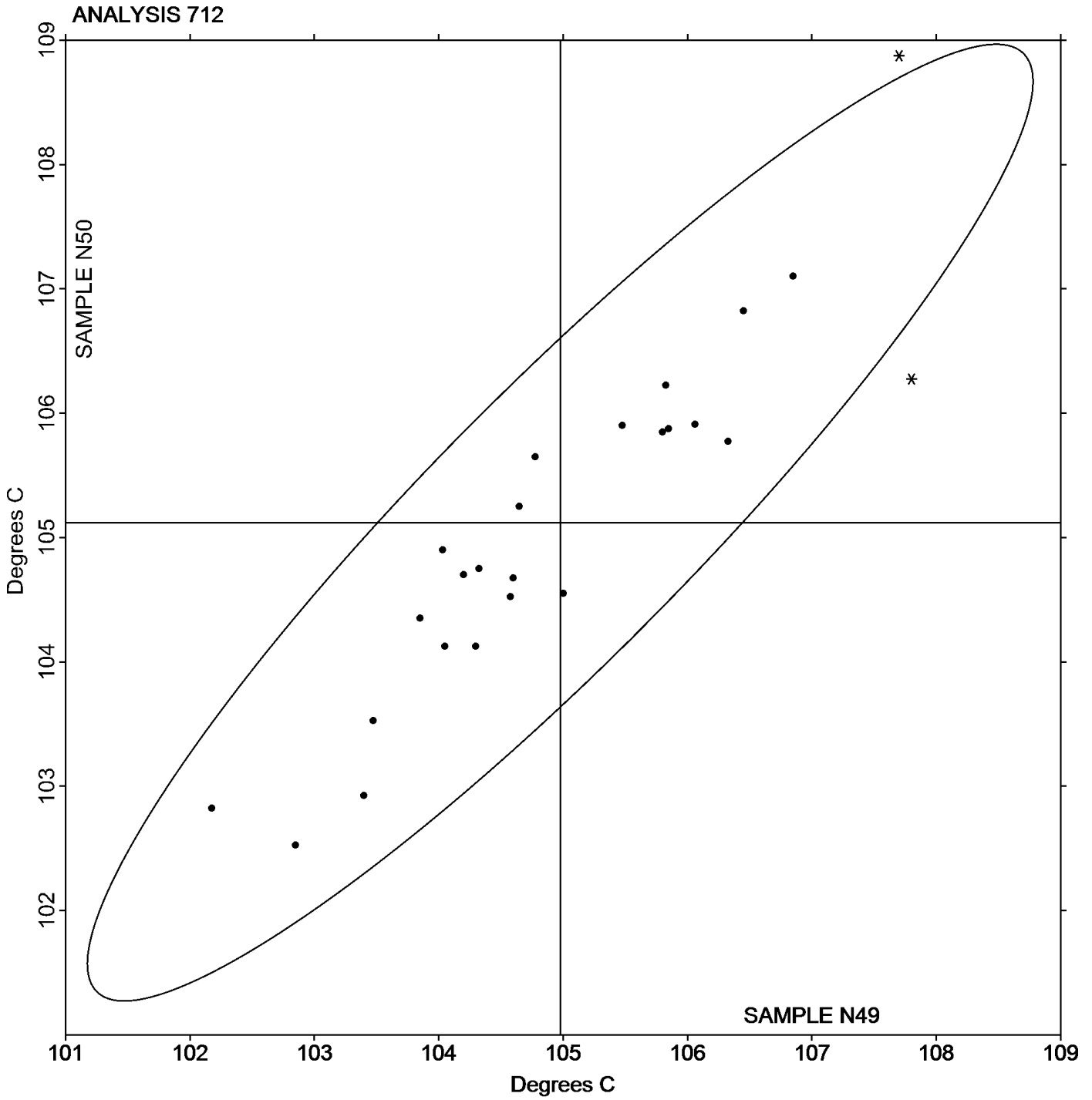
Report #105

## Analysis 712

1st Qtr 2018

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

Grand Mean Sample N49: 104.98 Degrees C    Grand Mean Sample N50: 105.12 Degrees C





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 715**

**1st Qtr 2018**

**Vicat Softening Temperature (Rate A)**

WebCode	Data Flag	Sample H49			Sample H50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		138.72	-0.02	-0.03	138.15	-0.84	-0.97	DN
3HB6U7		138.37	-0.37	-0.45	138.92	-0.08	-0.09	CE
6AVVPA		139.33	0.59	0.71	139.95	0.96	1.10	CE
8XW26B		137.78	-0.97	-1.16	138.62	-0.38	-0.43	CE
9XBMGY		140.10	1.36	1.64	140.80	1.81	2.08	CF
BT9F3E		137.03	-1.71	-2.06	137.08	-1.91	-2.20	QA
D6F8HJ		137.38	-1.36	-1.64	137.32	-1.68	-1.93	XX
EJUU6M		139.83	1.09	1.32	139.50	0.51	0.58	CE
ETZMK9		139.03	0.29	0.35	139.43	0.44	0.51	CE
F4WZA8		139.23	0.49	0.59	139.72	0.72	0.83	TO
GPQJM3		139.00	0.26	0.31	139.17	0.17	0.20	CE
JE33AL		138.92	0.18	0.21	139.45	0.46	0.53	AT
MKF8L6		140.37	1.63	1.96	140.08	1.09	1.26	CF
NHLXRU		138.43	-0.31	-0.37	138.93	-0.06	-0.07	CF
PAQEPQ		138.53	-0.21	-0.25	138.73	-0.26	-0.30	CE
UJYH3Q		138.82	0.08	0.09	138.87	-0.13	-0.15	TY
UVVHZN		138.38	-0.36	-0.43	138.78	-0.21	-0.24	RO
VZ2KD4		138.98	0.24	0.29	138.98	-0.01	-0.01	IN
WZJ4JM		138.10	-0.64	-0.77	138.47	-0.53	-0.61	CE
X3X6VK		138.48	-0.26	-0.31	138.92	-0.08	-0.09	CE

Summary Statistics		Sample H49	Sample H50
<b>Grand Means</b>		138.741 Degrees C	138.993 Degrees C
<b>Stnd Dev Btwn Labs</b>		0.830 Degrees C	0.868 Degrees C
Statistics based on 20 of 20 reporting participants			

Sample H49: ABS/PC & Sample H50: ABS/PC



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 715

1st 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

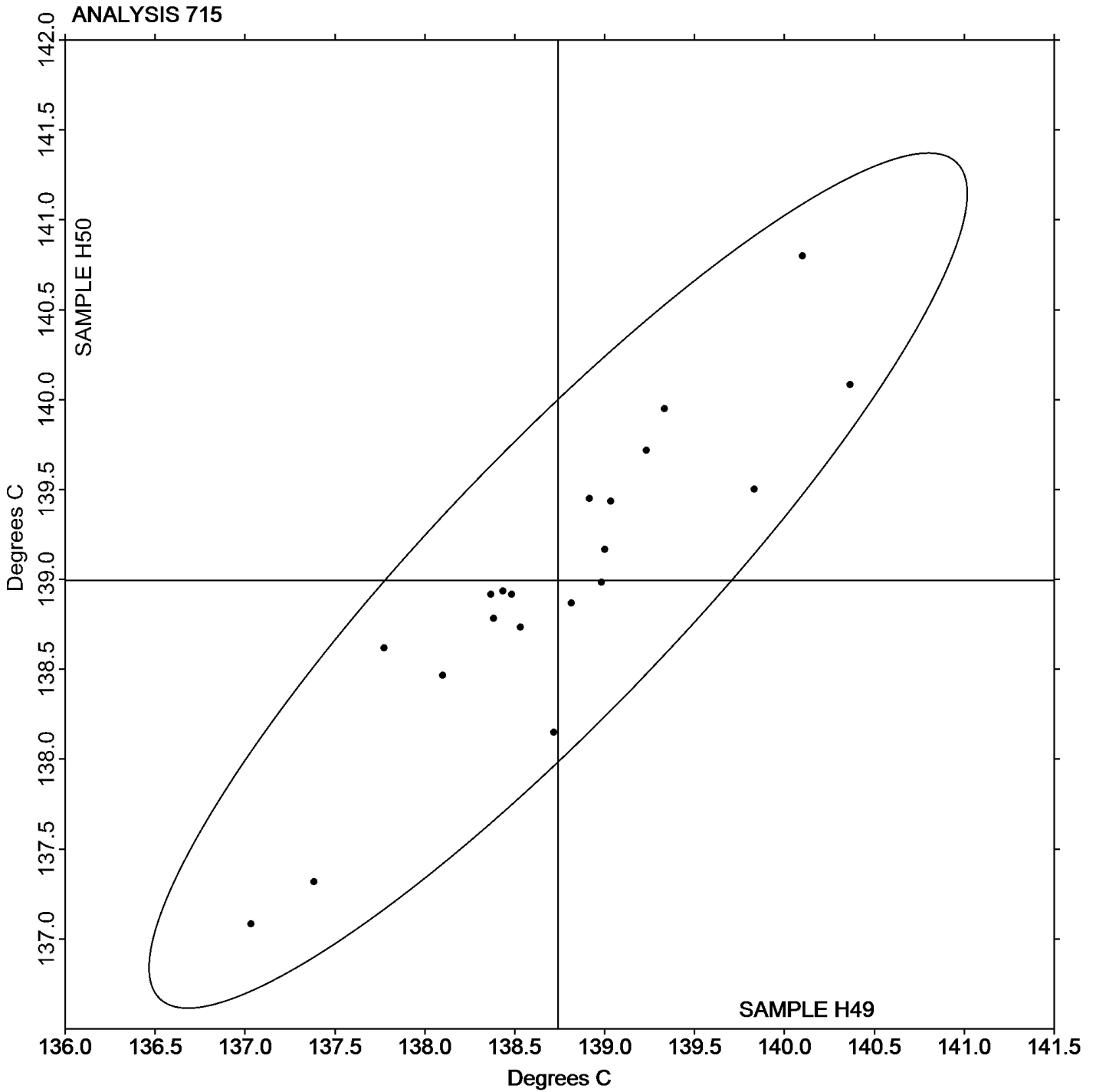
Report #105

Analysis 715

1st Qtr 2018

Vicat Softening Temperature (Rate A)

Grand Mean Sample H49: 138.74 Degrees C    Grand Mean Sample H50: 138.99 Degrees C







**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 716**

**1st Qtr 2018**

**Vicat Softening Temperature (Rate B)**

WebCode	Data Flag	Sample R49			Sample R50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		138.82	-1.57	-1.92	139.08	-1.40	-1.54	DN
3HB6U7		140.87	0.48	0.58	140.75	0.27	0.30	CE
8XW26B		139.73	-0.66	-0.80	140.03	-0.46	-0.50	CE
9XBMGY		140.48	0.09	0.11	141.37	0.89	0.98	CF
A349L7		139.67	-0.72	-0.88	139.33	-1.15	-1.27	TO
BT9F3E		139.50	-0.89	-1.09	139.20	-1.28	-1.42	DN
D6F8HJ		138.88	-1.51	-1.84	138.78	-1.70	-1.88	XX
EJU6M		141.43	1.04	1.27	141.78	1.30	1.44	CE
F4WZA8		140.90	0.51	0.62	141.18	0.70	0.78	TO
GPQJM3		140.05	-0.34	-0.42	140.38	-0.10	-0.11	CE
JE33AL		140.60	0.21	0.26	141.20	0.72	0.80	AT
MKF8L6		141.43	1.04	1.27	141.53	1.05	1.16	CF
NHLXRU		141.07	0.68	0.83	140.73	0.25	0.28	CF
PAQEPQ		140.31	-0.08	-0.10	139.80	-0.68	-0.75	CE
UJYH3Q		140.97	0.58	0.70	140.80	0.32	0.35	TY
UVVHZN		140.58	0.19	0.24	140.50	0.02	0.02	RO
VZ2KD4		140.83	0.44	0.54	140.58	0.10	0.11	IN
WZJ4JM		139.33	-1.06	-1.29	139.78	-0.70	-0.77	CE
X3X6VK		141.27	0.88	1.07	141.18	0.70	0.78	CE
Z4KBE9		141.08	0.69	0.85	141.60	1.12	1.24	TO

Summary Statistics		Sample R49	Sample R50
<b>Grand Means</b>		140.390 Degrees C	140.480 Degrees C
<b>Stnd Dev Btwn Labs</b>		0.818 Degrees C	0.905 Degrees C
Statistics based on 20 of 20 reporting participants			

Sample R49: ABS/PC & Sample R50: ABS/PC



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 716

1st Qtr 2018

### Vicat Softening Temperature (Rate B)

#### Key to Instrument Codes Reported by Participants

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



# Plastics Interlaboratory Testing Program

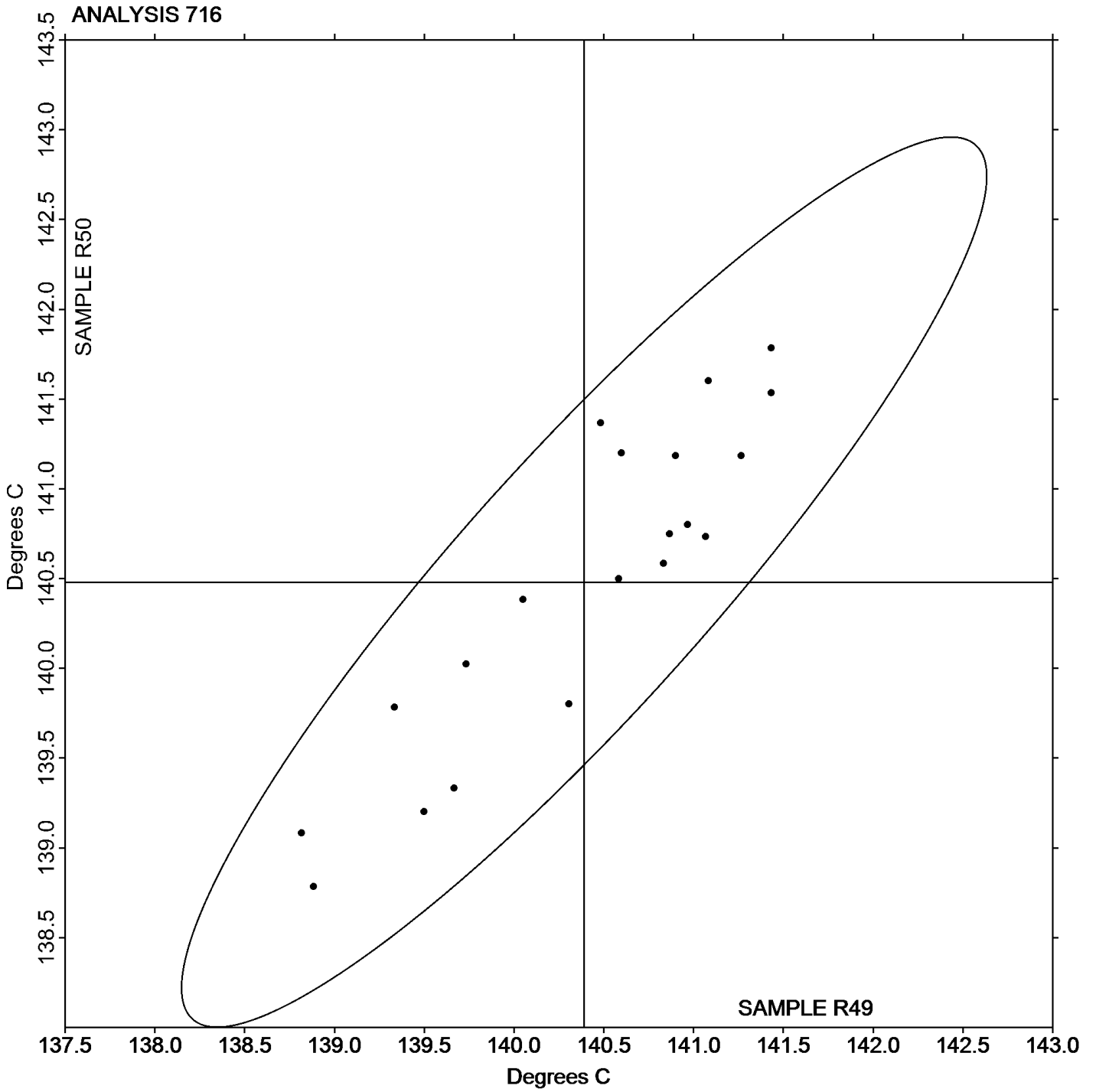
Report #105

Analysis 716

1st Qtr 2018

Vicat Softening Temperature (Rate B)

Grand Mean Sample R49: 140.39 Degrees C    Grand Mean Sample R50: 140.48 Degrees C





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 718

1st Qtr 2018

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

WebCode	Data Flag	Sample T49			Sample T50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
26F44Y		1.04600	0.00026	0.14	1.04567	-0.00011	-0.06
2DQHRM		1.04693	0.00120	0.64	1.04710	0.00132	0.67
3HB6U7		1.04440	-0.00134	-0.71	1.04420	-0.00158	-0.80
3L3WAH		1.04200	-0.00374	-1.99	1.04133	-0.00445	-2.25
4FR3TR		1.04813	0.00240	1.28	1.04810	0.00232	1.18
4ZAJPQ		1.04597	0.00023	0.12	1.04597	0.00019	0.09
6VBKUR	X	1.05000	0.00426	2.27	1.04800	0.00222	1.13
6YGW4E		1.04367	-0.00207	-1.10	1.04333	-0.00245	-1.24
744ZFP	*	1.05100	0.00526	2.80	1.05100	0.00522	2.65
7B4GRF	X	1.04447	-0.00127	-0.68	1.04163	-0.00415	-2.10
84FCBZ		1.04567	-0.00007	-0.04	1.04533	-0.00045	-0.23
88YDAR	X	0.81975	-0.22599	-120.23	0.82050	-0.22528	-114.22
8KUBND		1.04783	0.00210	1.12	1.04717	0.00139	0.70
8QZ8AY		1.04203	-0.00370	-1.97	1.04253	-0.00325	-1.65
9K43TY		1.04567	-0.00007	-0.04	1.04567	-0.00011	-0.06
9XBMGY		1.04730	0.00156	0.83	1.04733	0.00155	0.79
ALXUHQ		1.04618	0.00045	0.24	1.04612	0.00034	0.17
B7H7Q9		1.04867	0.00293	1.56	1.04767	0.00189	0.96
B8QJ9A		1.04520	-0.00054	-0.29	1.04497	-0.00081	-0.41
BTMYPW		1.04740	0.00166	0.89	1.04853	0.00275	1.40
BWN67N		1.04663	0.00090	0.48	1.04663	0.00085	0.43
CWMNP6		1.04480	-0.00094	-0.50	1.04493	-0.00085	-0.43
DUC3EA		1.04647	0.00073	0.39	1.04747	0.00169	0.85
EJUJ6M		1.04453	-0.00120	-0.64	1.04503	-0.00075	-0.38
ETZMK9		1.04843	0.00270	1.43	1.04763	0.00185	0.94
F73E28		1.04450	-0.00124	-0.66	1.04427	-0.00151	-0.77
FBR8ML		1.04300	-0.00274	-1.46	1.04200	-0.00378	-1.92
FGV4CD	X	1.04300	-0.00274	-1.46	1.04067	-0.00511	-2.59
FPXZR6		1.04333	-0.00240	-1.28	1.04300	-0.00278	-1.41
FX6Q3U		1.04547	-0.00027	-0.14	1.04573	-0.00005	-0.02
FZVWHK	X	1.05060	0.00486	2.59	1.04827	0.00249	1.26
G278YN		1.04497	-0.00077	-0.41	1.04433	-0.00145	-0.73
G29RU6		1.04687	0.00113	0.60	1.04713	0.00135	0.69
GCMT8P		1.04437	-0.00137	-0.73	1.04363	-0.00215	-1.09
HDCQQF		1.04503	-0.00070	-0.37	1.04530	-0.00048	-0.24



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 718

1st Qtr 2018

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

WebCode	Data Flag	Sample T49			Sample T50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
JB6NMW	X	1.04510	-0.00064	-0.34	1.04797	0.00219	1.11
JE33AL		1.04577	0.00003	0.02	1.04590	0.00012	0.06
JMTU9Y		1.04357	-0.00217	-1.15	1.04363	-0.00215	-1.09
JNMJUF		1.04700	0.00126	0.67	1.04800	0.00222	1.13
K7NK8E		1.04457	-0.00117	-0.62	1.04487	-0.00091	-0.46
KBZN2M	*	1.04433	-0.00140	-0.75	1.04633	0.00055	0.28
KEF2VH	X	1.03983	-0.00590	-3.14	1.03740	-0.00838	-4.25
KUBPM9		1.04743	0.00170	0.90	1.04790	0.00212	1.07
L2QQKW		1.04200	-0.00374	-1.99	1.04133	-0.00445	-2.25
LBEBBN		1.04817	0.00243	1.29	1.04773	0.00195	0.99
LEDXFC		1.04733	0.00160	0.85	1.04733	0.00155	0.79
M7H36L		1.04367	-0.00207	-1.10	1.04467	-0.00111	-0.56
MX2RPY		1.04847	0.00273	1.45	1.04790	0.00212	1.07
N3R9XJ		1.04330	-0.00244	-1.30	1.04230	-0.00348	-1.76
NACJTY		1.04467	-0.00107	-0.57	1.04467	-0.00111	-0.56
NHLXRU	*	1.04450	-0.00124	-0.66	1.04650	0.00072	0.36
QEWBAQ		1.04633	0.00060	0.32	1.04693	0.00115	0.58
QNLUR7		1.04350	-0.00224	-1.19	1.04313	-0.00265	-1.34
QWX7QN		1.04367	-0.00207	-1.10	1.04500	-0.00078	-0.40
R4ATR4	*	1.04067	-0.00507	-2.70	1.04083	-0.00495	-2.51
RYHNYZ		1.04600	0.00026	0.14	1.04700	0.00122	0.62
TGCJA3		1.04727	0.00153	0.81	1.04697	0.00119	0.60
TXZUV6		1.04743	0.00170	0.90	1.04777	0.00199	1.01
UB87XP		1.04737	0.00163	0.87	1.04593	0.00015	0.08
UFFEEU	X	1.04500	-0.00074	-0.39	1.04200	-0.00378	-1.92
UJYH3Q		1.04673	0.00100	0.53	1.04640	0.00062	0.31
UL6U6L		1.04893	0.00320	1.70	1.04890	0.00312	1.58
VGPQP4		1.04627	0.00053	0.28	1.04653	0.00075	0.38
VG VXZC		1.04590	0.00016	0.09	1.04637	0.00059	0.30
WPFVWA		1.04677	0.00103	0.55	1.04680	0.00102	0.52
WUD6BH		1.04483	-0.00090	-0.48	1.04473	-0.00105	-0.53
WZJ4JM		1.04660	0.00086	0.46	1.04750	0.00172	0.87
X4C86E		1.04800	0.00226	1.20	1.04800	0.00222	1.13
XG37TV		1.04600	0.00026	0.14	1.04533	-0.00045	-0.23
XHCB8J		1.04473	-0.00100	-0.53	1.04470	-0.00108	-0.55



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 718**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample T49			Sample T50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
XVJWW4		1.04493	-0.00080	-0.43	1.04510	-0.00068	-0.35
YC8MDH		1.04767	0.00193	1.03	1.04813	0.00235	1.19
YFZVDJ		1.04480	-0.00094	-0.50	1.04400	-0.00178	-0.90
YKDND A		1.04503	-0.00070	-0.37	1.04440	-0.00138	-0.70
YWTG2J		1.04633	0.00060	0.32	1.04700	0.00122	0.62
Z4KBE9		1.04597	0.00023	0.12	1.04593	0.00015	0.08
ZKRK9G		1.04627	0.00053	0.28	1.04677	0.00099	0.50
ZL7V6Z		1.04457	-0.00117	-0.62	1.04460	-0.00118	-0.60
ZP3DLZ		1.04750	0.00176	0.94	1.04747	0.00169	0.85

Summary Statistics		Sample T49	Sample T50
<b>Grand Means</b>		1.045736 sp gr 23/23 C	1.045781 sp gr 23/23 C
<b>Stnd Dev Btwn Labs</b>		0.001880 sp gr 23/23 C	0.001972 sp gr 23/23 C
Statistics based on 71 of 79 reporting participants			

Sample T49: ABS & Sample T50: ABS

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

- JB6NMW (X) - Inconsistent in testing between samples.
- UFFEEU (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- FGV4CD (X) - Inconsistent in testing between samples.
- FZVWHK (X) - Inconsistent in testing between samples.
- 7B4GRF (X) - Inconsistent in testing between samples.
- 6VBKUR (X) - Inconsistent in testing between samples.
- KEF2VH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample T50.
- 88YDAR (X) - Extreme data.



Plastics Interlaboratory Testing Program

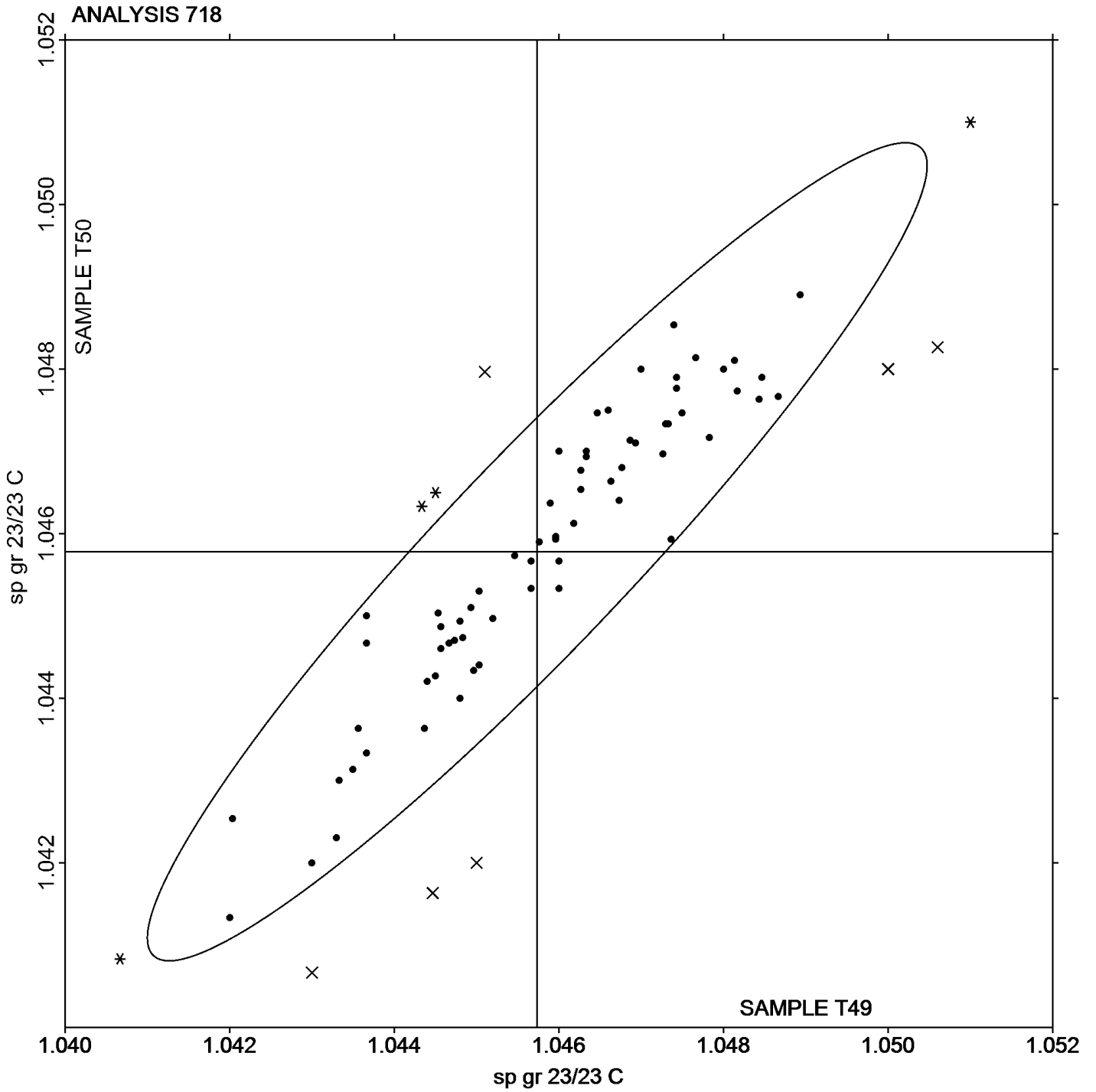
Report #105

Analysis 718

1st Qtr 2018

Specific Gravity - sp gr 23/23 C

Grand Mean Sample T49: 1.0457 sp gr 23/23 C    Grand Mean Sample T50: 1.0458 sp gr 23/23 C





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 720

1st Qtr 2018

### Flexural Modulus- ksi

WebCode	Data Flag	Sample J49			Sample J50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3HB6U7	X	319.1	-57.1	-3.56	293.9	-81.9	-5.18
3LWNYA		387.6	11.3	0.70	383.1	7.2	0.46
4FR3TR		358.6	-17.7	-1.10	358.3	-17.6	-1.11
4ZAJPQ		388.2	11.9	0.74	387.0	11.2	0.71
64Q9PT		398.1	21.8	1.36	399.4	23.6	1.49
6F49LM		382.3	6.0	0.37	380.3	4.4	0.28
6YE9F9		384.4	8.1	0.51	383.0	7.2	0.45
6YGW4E		388.9	12.7	0.79	386.3	10.5	0.66
7B4GRF		377.4	1.2	0.07	375.8	0.0	0.00
7NXPWC		349.4	-26.9	-1.67	346.6	-29.2	-1.85
8KUBND		379.0	2.7	0.17	382.4	6.6	0.42
8XW26B		368.2	-8.1	-0.50	363.9	-11.9	-0.75
9XBMGY		367.9	-8.3	-0.52	369.1	-6.7	-0.42
ACMUKA		352.2	-24.1	-1.50	349.5	-26.4	-1.66
AJ47XA		382.2	5.9	0.37	380.9	5.1	0.32
BFZRRW		386.8	10.5	0.65	384.3	8.5	0.54
BT9F3E		360.5	-15.8	-0.98	364.0	-11.8	-0.75
CGT33P		397.5	21.2	1.32	395.8	20.0	1.26
CVA3UA		362.4	-13.9	-0.86	365.2	-10.6	-0.67
DGAJVV		375.2	-1.0	-0.07	371.2	-4.6	-0.29
DUC3EA		370.5	-5.8	-0.36	372.4	-3.4	-0.22
EJU6M		372.8	-3.4	-0.21	371.0	-4.9	-0.31
F4WZA8		401.2	24.9	1.55	400.2	24.4	1.54
FHYMKA		369.0	-7.2	-0.45	367.2	-8.6	-0.54
FPWC4Y		389.5	13.3	0.83	388.1	12.3	0.77
FPXZR6		346.9	-29.3	-1.83	348.7	-27.1	-1.71
FX6Q3U	X	375.3	-1.0	-0.06	359.4	-16.4	-1.04
HJXLND		383.6	7.3	0.46	383.4	7.6	0.48
J6DECY		376.4	0.1	0.01	378.9	3.1	0.20
JB6NMW	X	401.8	25.5	1.59	392.2	16.4	1.03
JE33AL		348.1	-28.2	-1.76	350.4	-25.4	-1.60
JTHJMH		362.9	-13.3	-0.83	358.1	-17.7	-1.12
KBZN2M	X	380.7	4.5	0.28	395.4	19.6	1.24
KEF2VH		379.5	3.2	0.20	381.8	6.0	0.38
LBAZ9Q		368.2	-8.1	-0.50	368.6	-7.2	-0.45





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 720

1st Qtr 2018

### Flexural Modulus- ksi

WebCode	Data Flag	Sample J49			Sample J50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LBEBBN		390.9	14.6	0.91	389.9	14.1	0.89
LEDXFC		387.5	11.3	0.70	385.2	9.4	0.59
LGGQDH		368.9	-7.3	-0.46	366.5	-9.3	-0.59
LHD4ZA		357.1	-19.2	-1.20	358.8	-17.0	-1.08
M64QE3		399.5	23.2	1.44	397.2	21.4	1.35
M7H36L	X	189.4	-186.9	-11.64	184.3	-191.5	-12.10
MLR4QA		350.5	-25.7	-1.60	346.4	-29.5	-1.86
MMQYMY		385.5	9.2	0.57	387.3	11.5	0.73
N3R9XJ		350.8	-25.5	-1.59	354.6	-21.2	-1.34
QNLUR7		361.5	-14.8	-0.92	360.8	-15.1	-0.95
QVJNNJ		379.3	3.1	0.19	378.3	2.5	0.16
RWWKQ3		393.8	17.5	1.09	395.7	19.9	1.25
TGCJA3		366.1	-10.2	-0.64	366.0	-9.8	-0.62
UFFEEU		409.1	32.9	2.05	407.0	31.2	1.97
UJYH3Q		370.1	-6.1	-0.38	366.1	-9.7	-0.62
UL6U6L	*	359.4	-16.8	-1.05	366.4	-9.5	-0.60
UVVHZN	*	419.2	43.0	2.68	419.7	43.9	2.77
VJVFQR		386.4	10.1	0.63	386.4	10.6	0.67
W4GH8C		379.2	2.9	0.18	379.0	3.2	0.20
Y2KRTA		396.2	20.0	1.24	395.8	19.9	1.26
YQ6YLM	X	386.4	10.1	0.63	395.2	19.4	1.22
YQMKHJ		368.4	-7.9	-0.49	368.1	-7.7	-0.49
YWTG2J		374.9	-1.4	-0.09	374.7	-1.1	-0.07
Z4KBE9		382.8	6.5	0.41	382.6	6.7	0.43
ZCVKWA		371.3	-4.9	-0.31	373.7	-2.2	-0.14
ZQJKXA		371.0	-5.3	-0.33	369.1	-6.7	-0.43

Summary Statistics	Sample J49	Sample J50
<b>Grand Means</b>	376.27 ksi	375.82 ksi
<b>Stnd Dev Btwn Labs</b>	16.05 ksi	15.83 ksi

Statistics based on 55 of 61 reporting participants

Sample J49: ABS & Sample J50: ABS



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

JB6NMW (X) - Inconsistent in testing between samples.

YQ6YLM (X) - Inconsistent in testing between samples.

M7H36L (X) - Data for both samples are very low.

KBZN2M (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J50.

FX6Q3U (X) - Inconsistent in testing between samples.

3HB6U7 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.



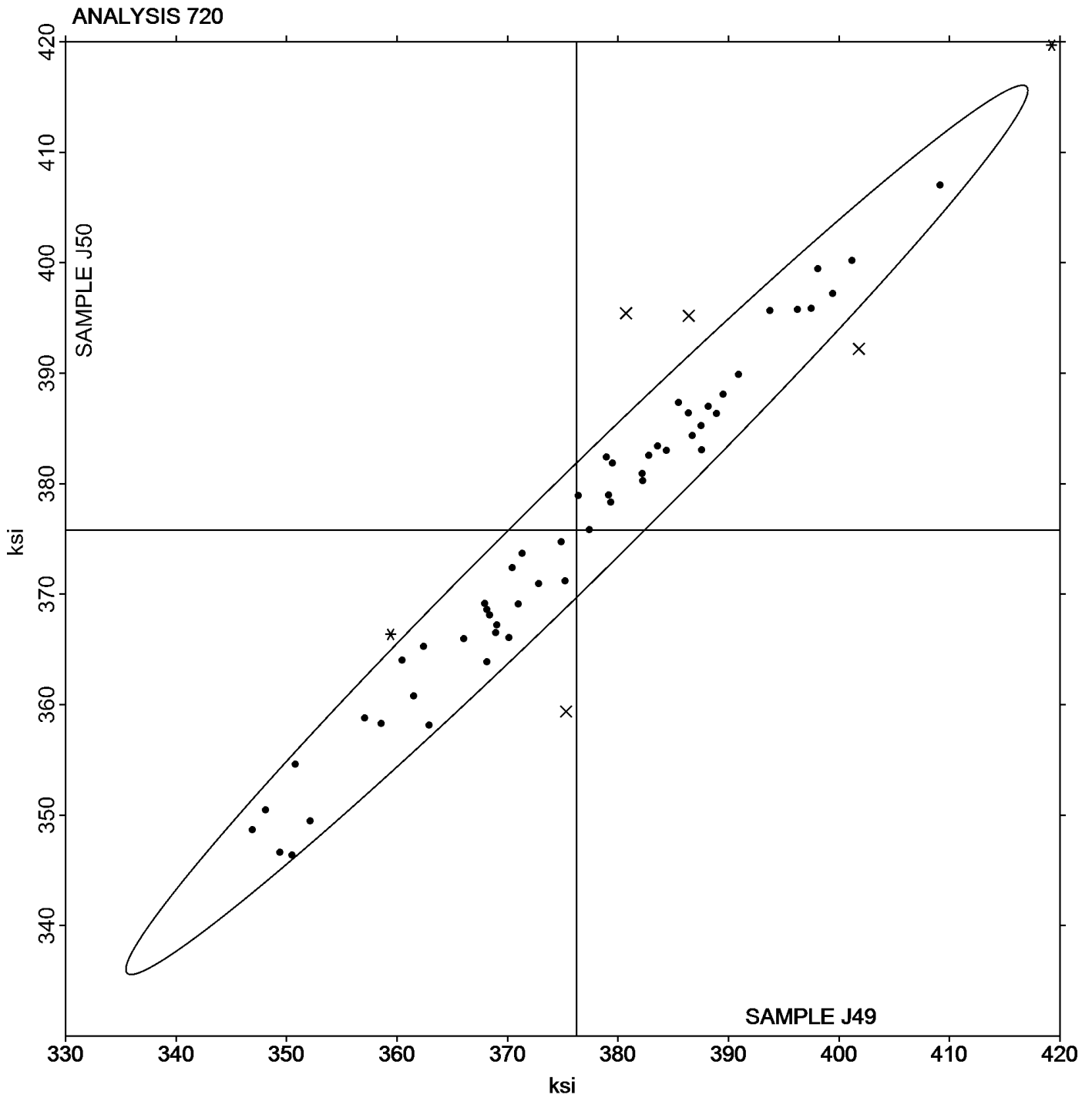
# Plastics Interlaboratory Testing Program

## Analysis 720 Flexural Modulus- ksi

Report #105

1st Qtr 2018

Grand Mean Sample J49: 376.27 ksi    Grand Mean Sample J50: 375.82 ksi





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 721

1st Qtr 2018

### Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J49			Sample J50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3HB6U7		11,514	-3	-0.01	11,516	-54	-0.17
3LWNYA	*	12,397	879	2.63	12,325	755	2.32
4FR3TR		11,281	-236	-0.71	11,608	38	0.12
4ZAJPQ		11,180	-338	-1.01	11,220	-350	-1.07
64Q9PT		11,717	199	0.60	11,789	219	0.67
6YE9F9		11,706	188	0.56	11,750	179	0.55
6YGW4E		11,400	-117	-0.35	11,362	-208	-0.64
7B4GRF		11,476	-41	-0.12	11,603	33	0.10
7NXPWC		10,900	-618	-1.85	11,060	-510	-1.57
8KUBND		11,119	-399	-1.19	11,345	-225	-0.69
8XW26B		11,574	56	0.17	11,669	99	0.30
9XBMGY		11,613	95	0.28	11,717	147	0.45
ACMUKA		11,385	-133	-0.40	11,320	-250	-0.77
AJ47XA		11,947	430	1.29	11,997	426	1.31
BFZRRW		11,513	-4	-0.01	11,644	73	0.22
CVA3UA		11,162	-356	-1.06	11,215	-355	-1.09
DGAJVV	*	11,670	152	0.46	11,370	-200	-0.61
EJUU6M		11,288	-229	-0.69	11,234	-336	-1.03
F4WZA8		12,000	482	1.44	11,960	390	1.20
FHYMKA		11,353	-165	-0.49	11,199	-371	-1.14
FPWC4Y		11,070	-447	-1.34	11,104	-467	-1.43
FX6Q3U		11,562	45	0.13	11,657	87	0.27
J6DECY		11,569	51	0.15	11,616	46	0.14
JB6NMW		11,789	271	0.81	11,728	158	0.48
JE33AL		11,451	-66	-0.20	11,583	13	0.04
JTHJMH	X	10,468	-1,050	-3.14	10,359	-1,212	-3.72
KBZN2M		11,477	-41	-0.12	11,623	53	0.16
KEF2VH		12,086	569	1.70	12,055	485	1.49
LBAZ9Q		11,166	-351	-1.05	11,175	-396	-1.21
LBEBBN		11,584	66	0.20	11,686	116	0.35
LGGQDH		11,647	129	0.39	11,638	68	0.21
LHD4ZA		12,340	823	2.46	12,401	831	2.55
M64QE3		11,618	100	0.30	11,867	296	0.91
M7H36L	X	8,038	-3,480	-10.41	7,875	-3,695	-11.33
MLR4QA		11,151	-367	-1.10	11,327	-244	-0.75



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 721**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample J49			Sample J50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MMQYMY		11,891	374	1.12	12,083	512	1.57
N3R9XJ		10,967	-550	-1.65	11,012	-558	-1.71
QVJNNJ		11,570	52	0.16	11,685	115	0.35
RWWKQ3		11,691	174	0.52	11,712	142	0.43
TGCJA3		11,765	248	0.74	11,713	143	0.44
UFFEEU		11,845	327	0.98	11,732	162	0.50
UJYH3Q		11,242	-276	-0.82	11,221	-350	-1.07
UL6U6L	X	9,009	-2,508	-7.50	9,886	-1,685	-5.17
W4GH8C		11,479	-39	-0.12	11,747	177	0.54
Y2KRTA		11,108	-410	-1.22	11,288	-282	-0.87
YQMKHJ		11,025	-492	-1.47	10,984	-586	-1.80
YWTG2J		11,727	209	0.63	11,769	199	0.61
ZCVKWA		11,359	-158	-0.47	11,415	-156	-0.48
ZQJKXA		11,431	-86	-0.26	11,510	-61	-0.19

Summary Statistics		
	Sample J49	Sample J50
<b>Grand Means</b>	11,517.5 psi	11,570.3 psi
<b>Stnd Dev Btwn Labs</b>	334.4 psi	326.0 psi
Statistics based on 46 of 49 reporting participants		

Sample J49: ABS & Sample J50: ABS

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

- UL6U6L (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- M7H36L (X) - Data for both samples are very low.
- JTHJMH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample J50.



# Plastics Interlaboratory Testing Program

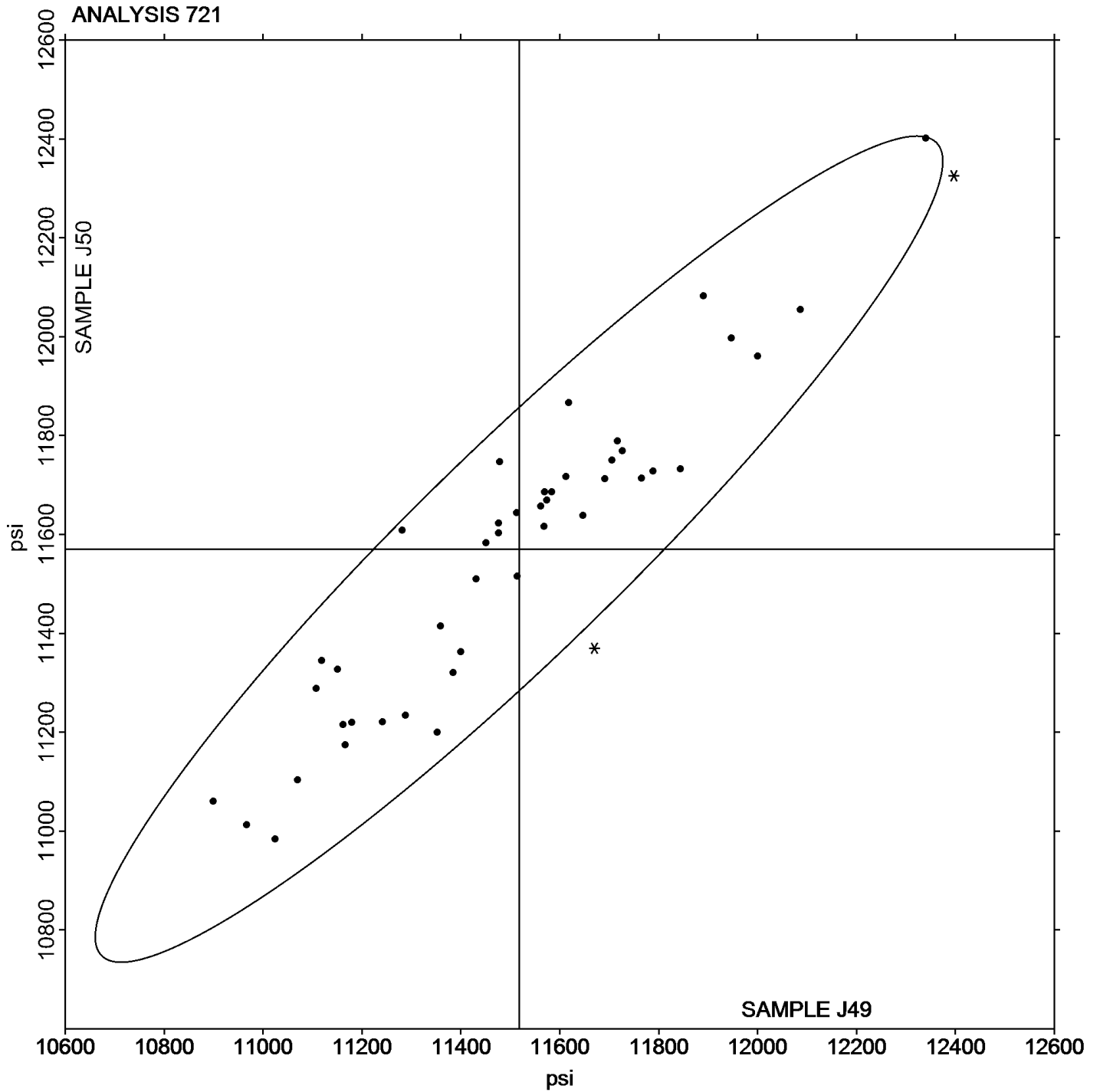
Report #105

## Analysis 721

1st Qtr 2018

Flexural Stress at 5% Strain - psi

Grand Mean Sample J49: 11,517.51 psi    Grand Mean Sample J50: 11,570.26 psi





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 722

1st Qtr 2018

### Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J49			Sample J50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3LWNYA	*	12,397	833	2.84	12,325	711	2.38
4FR3TR		11,335	-229	-0.78	11,659	44	0.15
4ZAJPQ		11,340	-224	-0.76	11,360	-255	-0.85
64Q9PT		11,788	224	0.76	11,871	256	0.86
6F49LM		11,342	-222	-0.76	11,420	-194	-0.65
6YE9F9		11,813	249	0.85	11,855	240	0.80
6YGW4E		11,400	-164	-0.56	11,365	-249	-0.83
7B4GRF		11,602	38	0.13	11,726	111	0.37
7NXPWC		10,940	-624	-2.13	11,100	-515	-1.72
8KUBND		11,242	-322	-1.10	11,449	-166	-0.55
8XW26B		11,697	133	0.45	11,780	166	0.55
9XBMGY		11,619	55	0.19	11,689	75	0.25
ACMUKA		11,466	-98	-0.33	11,426	-189	-0.63
BFZRRW		11,615	51	0.17	11,727	112	0.38
BT9F3E		11,333	-231	-0.79	11,438	-177	-0.59
CGT33P	X	12,883	1,318	4.49	12,867	1,252	4.19
CVA3UA	X	9,005	-2,559	-8.71	8,975	-2,640	-8.83
DGAJWV		11,689	125	0.42	11,391	-223	-0.75
EJU6M		11,379	-185	-0.63	11,340	-275	-0.92
F4WZA8		12,000	436	1.48	11,960	345	1.15
FHYMKA		11,442	-122	-0.42	11,323	-291	-0.97
FPWC4Y		11,239	-325	-1.11	11,272	-342	-1.14
FX6Q3U		11,472	-92	-0.31	11,339	-276	-0.92
J6DECY		11,606	42	0.14	11,634	20	0.07
JB6NMW		11,902	338	1.15	11,785	170	0.57
JE33AL		11,528	-36	-0.12	11,626	12	0.04
JTHJMH	X	10,312	-1,252	-4.26	10,640	-974	-3.26
KBZN2M		11,255	-309	-1.05	11,412	-203	-0.68
KEF2VH		12,086	522	1.78	12,055	440	1.47
LBAZ9Q		11,268	-296	-1.01	11,277	-338	-1.13
LBEBBN		11,452	-112	-0.38	11,752	137	0.46
LGGQDH	*	11,413	-151	-0.51	11,098	-516	-1.73
LHD4ZA	X	12,657	1,093	3.72	12,708	1,094	3.66
M64QE3		11,699	135	0.46	11,960	345	1.15
M7H36L	X	8,446	-3,118	-10.62	8,277	-3,338	-11.16



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 722**

**1st Qtr 2018**

**Flexural Stress at Yield - psi**

WebCode	Data Flag	Sample J49			Sample J50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
MLR4QA		11,194	-370	-1.26	11,356	-259	-0.87
MMQYMY		11,979	415	1.41	12,154	539	1.80
QVJNNJ		11,673	109	0.37	11,788	173	0.58
RWWKQ3		11,551	-13	-0.05	11,643	28	0.09
TGCJA3		11,805	241	0.82	11,755	140	0.47
UFFEEU		11,971	407	1.38	11,858	244	0.81
UJYH3Q		11,301	-263	-0.89	11,307	-307	-1.03
UL6U6L	X	9,083	-2,481	-8.45	9,960	-1,655	-5.53
UVVHZN		12,067	503	1.71	12,154	540	1.80
VJVFQR		11,660	96	0.33	11,720	105	0.35
W4GH8C		11,687	123	0.42	11,802	187	0.63
Y2KRTA		11,108	-456	-1.55	11,287	-328	-1.10
YQ6YLM	*	11,739	175	0.60	12,133	519	1.73
YQMKHJ		11,137	-427	-1.46	11,101	-514	-1.72
YWTG2J		11,720	156	0.53	11,723	108	0.36
Z4KBE9		11,713	149	0.51	11,705	90	0.30
ZCVKWA		11,359	-205	-0.70	11,444	-171	-0.57
ZQJKXA		11,488	-76	-0.26	11,546	-68	-0.23

Summary Statistics		
	Sample J49	Sample J50
<b>Grand Means</b>	11,564.1 psi	11,614.7 psi
<b>Stnd Dev Btwn Labs</b>	293.7 psi	299.0 psi
Statistics based on 47 of 53 reporting participants		

Sample J49: ABS & Sample J50: ABS

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

- UL6U6L (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- M7H36L (X) - Data for both samples are very low.
- CVA3UA (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample J49.
- LHD4ZA (X) - Data for both samples are high. Possible Systematic Error.
- CGT33P (X) - Data for both samples are high. Possible Systematic Error.
- JTHJMH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.





# Plastics Interlaboratory Testing Program

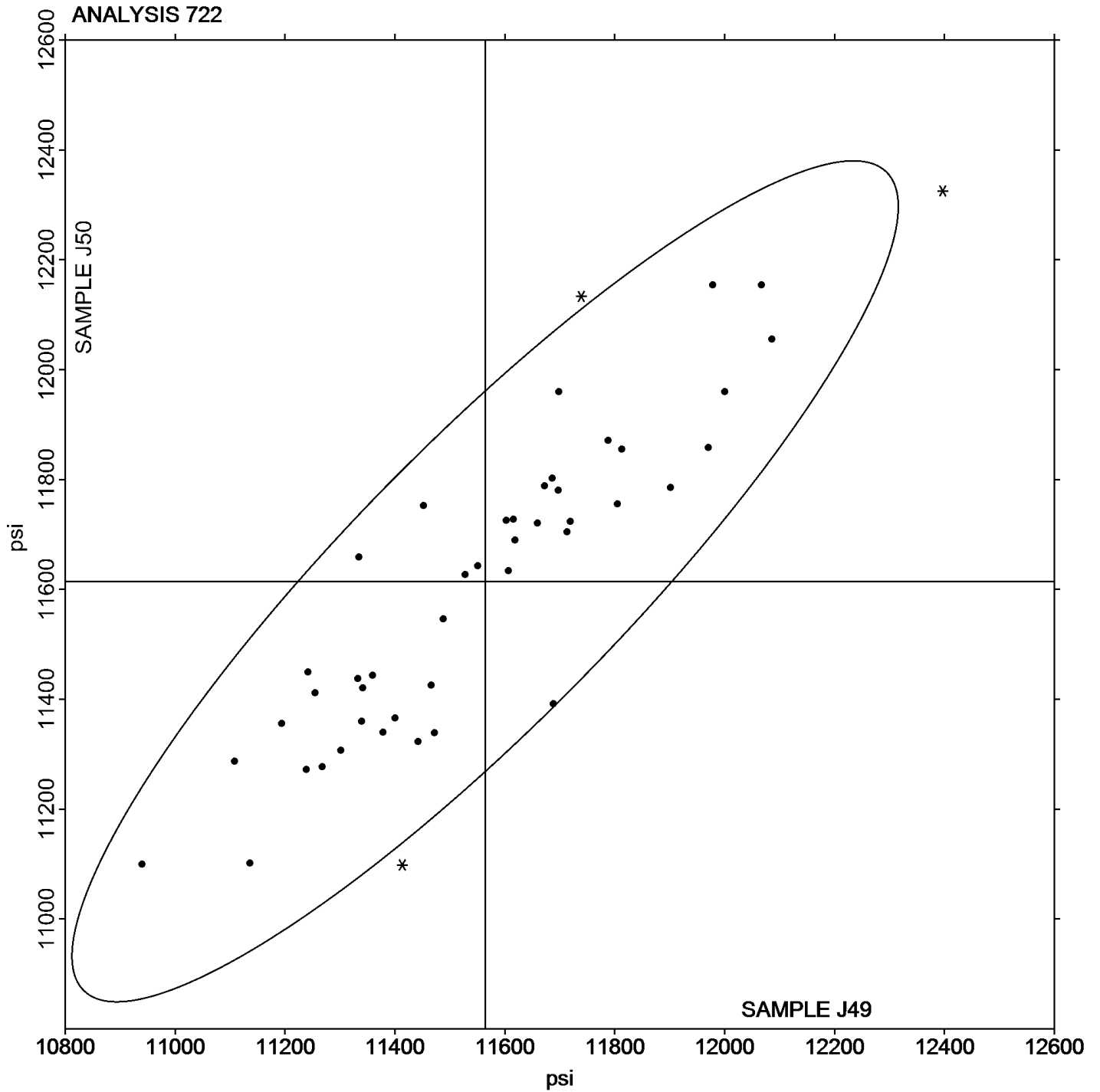
Report #105

## Analysis 722

1st Qtr 2018

### Flexural Stress at Yield - psi

Grand Mean Sample J49: 11,564.09 psi    Grand Mean Sample J50: 11,614.68 psi





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 730

1st Qtr 2018

### Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C49			Sample C50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DQHRM		23.34	-0.93	-1.21	23.45	-0.80	-1.06
2N8CYA		23.75	-0.52	-0.68	23.90	-0.35	-0.47
64Q9PT	*	25.56	1.29	1.68	25.18	0.93	1.23
6BXJCF		25.59	1.32	1.72	25.55	1.30	1.72
6YE9F9		24.24	-0.03	-0.04	24.31	0.06	0.07
7B4GRF		24.26	-0.01	-0.01	24.18	-0.07	-0.10
7BJVZP		24.90	0.63	0.82	24.79	0.54	0.71
9CC9VG		23.96	-0.31	-0.41	23.86	-0.39	-0.52
9XBMGY		24.55	0.28	0.37	24.53	0.28	0.37
B7H7Q9	X	19.26	-5.01	-6.53	18.48	-5.77	-7.63
BKX8MY		22.90	-1.37	-1.78	22.78	-1.47	-1.94
CCF34C	X	23.78	-0.49	-0.64	22.96	-1.29	-1.71
CCUQ3J		23.93	-0.34	-0.44	23.86	-0.39	-0.51
D6F8HJ		25.04	0.77	1.00	25.10	0.85	1.12
EJUU6M		24.42	0.15	0.20	24.29	0.04	0.06
FPXZR6	X	21.44	-2.83	-3.69	22.40	-1.85	-2.45
G29RU6		24.48	0.21	0.27	24.25	0.00	0.01
HJXLND		23.64	-0.63	-0.83	23.44	-0.81	-1.07
JB6NMW		24.52	0.25	0.32	24.58	0.33	0.44
JE33AL		22.92	-1.35	-1.76	23.01	-1.24	-1.64
JNTQ6N		24.44	0.17	0.21	24.36	0.11	0.15
KEF2VH		25.26	0.99	1.29	25.06	0.81	1.07
KUBPM9		24.20	-0.07	-0.09	24.06	-0.19	-0.25
L8DF68		25.35	1.08	1.41	25.34	1.09	1.44
LBEBBN		23.89	-0.38	-0.49	23.92	-0.33	-0.43
LEDXFC		23.30	-0.97	-1.27	23.36	-0.89	-1.17
LLW2NZ		24.91	0.64	0.84	25.11	0.86	1.14
MKF8L6		25.18	0.91	1.18	25.16	0.91	1.20
MLPEMD		23.96	-0.31	-0.41	23.98	-0.27	-0.36
MX2RPY		23.93	-0.34	-0.45	23.53	-0.72	-0.95
NACJTY	X	23.33	-0.94	-1.23	22.74	-1.51	-2.00
NFEHH3		23.90	-0.37	-0.48	23.92	-0.33	-0.43
NHLXRU		24.18	-0.09	-0.12	24.18	-0.07	-0.09
PCTFQN		24.04	-0.24	-0.31	24.16	-0.09	-0.12
QEWBAQ		25.33	1.06	1.38	25.36	1.11	1.46



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 730**

**1st Qtr 2018**

**Tensile Stress at Yield - MPa**

WebCode	Data Flag	Sample C49			Sample C50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QWX7QN	*	23.19	-1.08	-1.40	23.60	-0.65	-0.86
R4ATR4		24.24	-0.03	-0.04	24.49	0.24	0.31
RYHNYZ		23.65	-0.62	-0.81	23.50	-0.75	-0.99
UJYH3Q		23.90	-0.37	-0.48	24.04	-0.21	-0.28
UUEAQZ		25.54	1.27	1.65	25.70	1.45	1.92
VG VXZC		23.15	-1.13	-1.47	23.14	-1.11	-1.46
VZ2KD4		23.35	-0.92	-1.20	23.03	-1.22	-1.62
WZJ4JM		23.49	-0.78	-1.02	23.58	-0.67	-0.89
XG37TV		23.91	-0.37	-0.48	23.94	-0.31	-0.41
Z4KBE9		25.10	0.83	1.08	25.08	0.83	1.09
ZKRK9G		25.55	1.27	1.66	25.33	1.08	1.43
ZQJKXA		24.71	0.44	0.57	24.75	0.50	0.66

Summary Statistics		
	Sample C49	Sample C50
<b>Grand Means</b>	24.271 MPa	24.250 MPa
<b>Std Dev Btwn Labs</b>	0.768 MPa	0.756 MPa
Statistics based on 43 of 47 reporting participants		

Sample C49: HIPS & Sample C50: HIPS

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

- FPXZR6 (X) - Inconsistent in testing between samples. Data for sample C49 are low.
- B7H7Q9 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample C49.
- NACJTY (X) - Inconsistent in testing between samples.
- CCF34C (X) - Inconsistent in testing between samples.



# Plastics Interlaboratory Testing Program

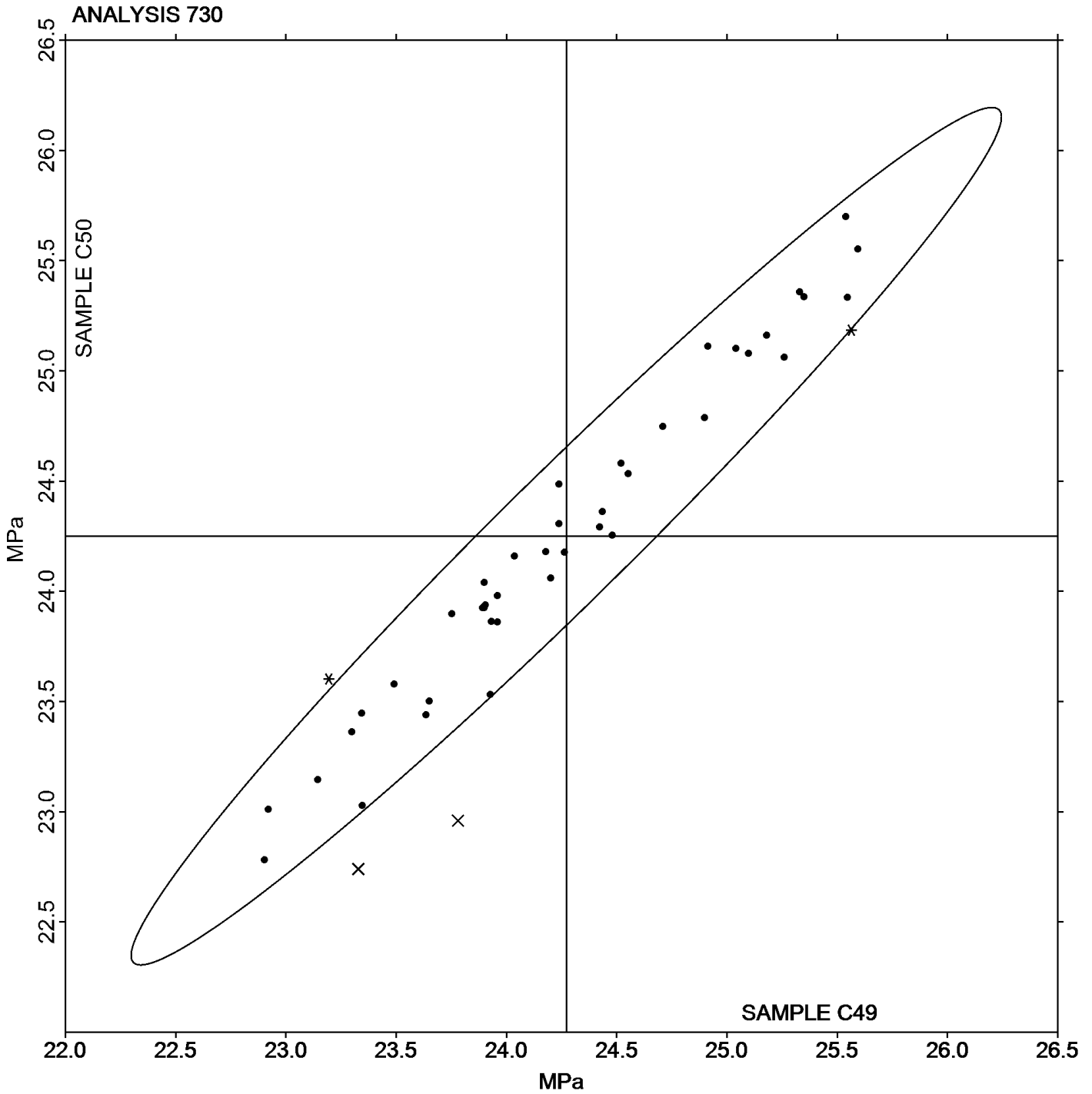
Report #105

Analysis 730

1st Qtr 2018

Tensile Stress at Yield - MPa

Grand Mean Sample C49: 24.271 MPa    Grand Mean Sample C50: 24.250 MPa





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 731

1st Qtr 2018

### Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C49			Sample C50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2N8CYA		20.68	-0.29	-0.30	20.75	-0.16	-0.17
64Q9PT		22.08	1.11	1.15	21.97	1.06	1.15
6BXJCF		22.33	1.36	1.40	22.35	1.44	1.56
6YE9F9		20.38	-0.59	-0.61	20.65	-0.26	-0.28
7B4GRF		21.48	0.51	0.53	21.00	0.09	0.09
7BJVZP	*	21.63	0.66	0.68	20.62	-0.30	-0.32
9CC9VG		20.46	-0.51	-0.52	20.60	-0.31	-0.34
9XBMGY		22.10	1.13	1.16	22.54	1.63	1.76
B7H7Q9	*	23.58	2.61	2.69	23.48	2.57	2.78
BKX8MY		20.33	-0.64	-0.66	20.81	-0.10	-0.10
CCUQ3J		20.72	-0.24	-0.25	20.42	-0.50	-0.54
D6F8HJ		22.59	1.63	1.68	22.18	1.27	1.38
EEX2CR		20.13	-0.83	-0.86	19.86	-1.05	-1.14
EJU6M		20.38	-0.59	-0.61	20.64	-0.27	-0.29
HJXLND		21.07	0.10	0.11	20.95	0.04	0.04
JB6NMW		21.60	0.63	0.65	21.56	0.65	0.70
JE33AL		20.32	-0.65	-0.67	20.84	-0.07	-0.08
JNTQ6N		20.67	-0.29	-0.30	20.36	-0.55	-0.59
KEF2VH		19.12	-1.85	-1.90	19.20	-1.71	-1.85
KUBPM9		21.35	0.39	0.40	21.09	0.18	0.19
L8DF68		21.85	0.88	0.90	21.70	0.79	0.86
LBEBBN		20.78	-0.19	-0.20	21.02	0.11	0.12
MKF8L6	X	20.08	-0.89	-0.91	21.52	0.61	0.66
MLPEMD		20.12	-0.85	-0.87	20.52	-0.39	-0.42
MX2RPY		20.89	-0.07	-0.08	20.38	-0.53	-0.58
NACJTY		20.03	-0.94	-0.97	19.83	-1.08	-1.17
NFEHH3	*	18.54	-2.43	-2.50	19.04	-1.87	-2.02
NHLXRU		20.42	-0.55	-0.56	20.32	-0.59	-0.64
PCTFQN		21.06	0.09	0.10	21.04	0.13	0.14
QEWBAQ		21.40	0.44	0.45	21.38	0.47	0.51
QWX7QN		20.99	0.03	0.03	20.61	-0.30	-0.32
RYHNYZ		20.56	-0.40	-0.42	20.38	-0.53	-0.58
UJYH3Q		20.24	-0.73	-0.75	20.70	-0.21	-0.23
UUEAQZ		21.22	0.25	0.26	21.40	0.49	0.53
VGXZC		20.07	-0.90	-0.92	19.35	-1.56	-1.69



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 731**

**1st Qtr 2018**

**Tensile Stress at Break - MPa**

WebCode	Data Flag	<u>Sample C49</u>			<u>Sample C50</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
VZ2KD4		20.27	-0.70	-0.72	19.89	-1.02	-1.11
WZJ4JM		20.35	-0.61	-0.63	20.72	-0.19	-0.20
Z4KBE9		21.86	0.89	0.92	21.54	0.63	0.68
ZKRK9G		22.42	1.45	1.50	21.80	0.89	0.96
ZQJKXA		21.65	0.68	0.70	22.02	1.11	1.21

<b>Summary Statistics</b>		
	<u>Sample C49</u>	<u>Sample C50</u>
<b>Grand Means</b>	20.967 MPa	20.911 MPa
<b>Stnd Dev Btwn Labs</b>	0.971 MPa	0.923 MPa
Statistics based on 39 of 40 reporting participants		

Sample C49: HIPS & Sample C50: HIPS

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

MKF8L6 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample C49.



# Plastics Interlaboratory Testing Program

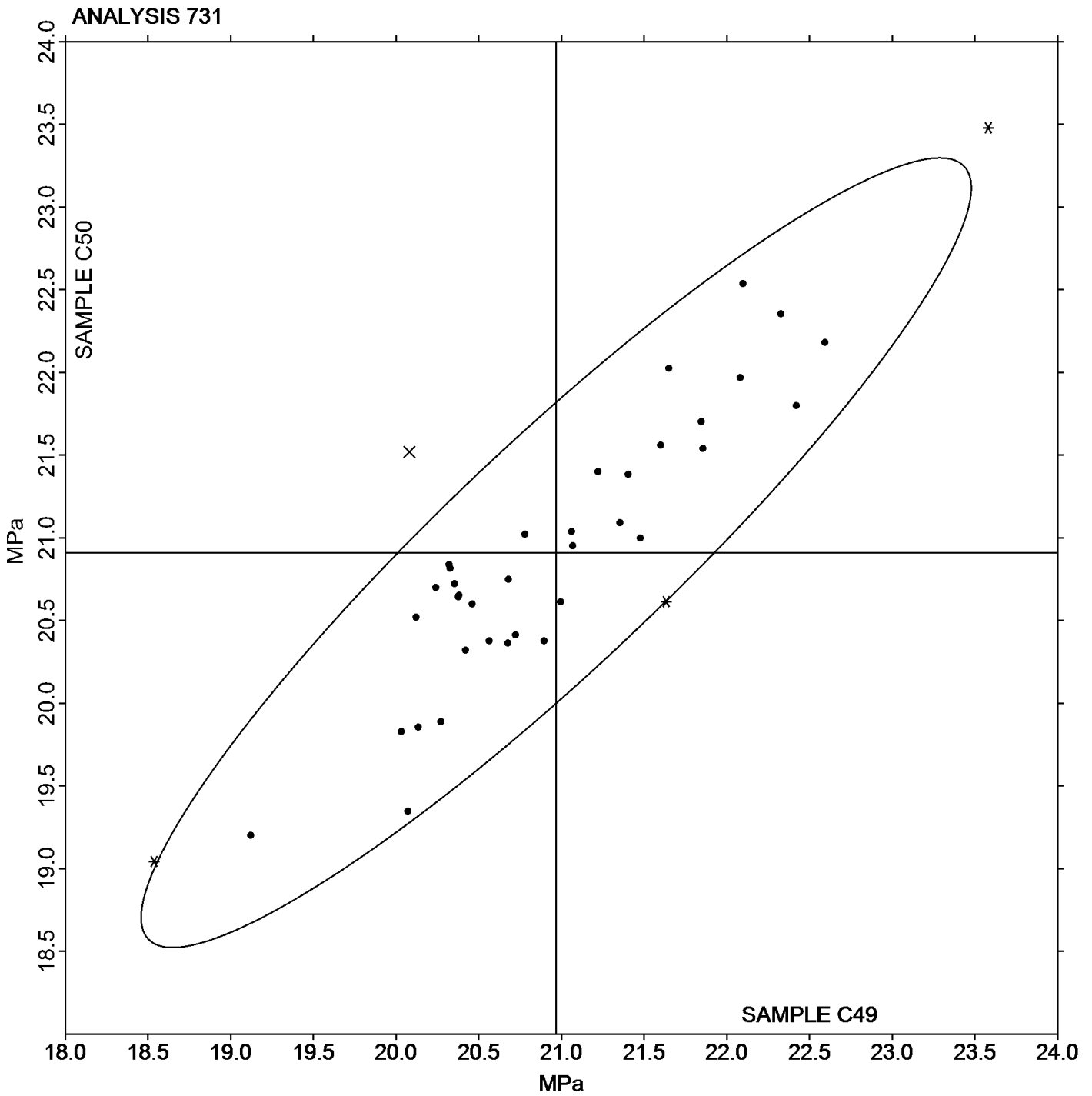
Report #105

## Analysis 731

1st Qtr 2018

Tensile Stress at Break - MPa

Grand Mean Sample C49: 20.967 MPa    Grand Mean Sample C50: 20.911 MPa





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 732

1st Qtr 2018

### Percent Strain at Yield

WebCode	Data Flag	Sample C49			Sample C50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DQHRM		1.248	0.004	0.07	1.223	-0.018	-0.35
2N8CYA	*	1.234	-0.010	-0.20	1.282	0.041	0.79
64Q9PT		1.238	-0.006	-0.12	1.222	-0.019	-0.36
6BXJCF		1.258	0.014	0.25	1.228	-0.013	-0.25
6YE9F9		1.196	-0.048	-0.90	1.220	-0.021	-0.40
7B4GRF		1.224	-0.020	-0.38	1.216	-0.025	-0.48
7BJVZP	X	42.950	41.706	778.40	32.764	31.523	605.73
9CC9VG		1.358	0.114	2.12	1.350	0.109	2.10
9XBMGY		1.276	0.032	0.59	1.274	0.033	0.64
B7H7Q9		1.220	-0.024	-0.46	1.200	-0.041	-0.78
BKX8MY	X	1.056	-0.188	-3.52	1.146	-0.095	-1.82
CCUQ3J		1.310	0.066	1.22	1.295	0.054	1.04
EJUU6M		1.266	0.022	0.40	1.252	0.011	0.22
JB6NMW		1.224	-0.020	-0.38	1.226	-0.015	-0.28
JE33AL		1.180	-0.064	-1.20	1.176	-0.065	-1.24
JNTQ6N		1.154	-0.090	-1.69	1.148	-0.093	-1.78
KEF2VH		1.300	0.056	1.04	1.280	0.039	0.75
KUBPM9		1.243	-0.001	-0.02	1.227	-0.014	-0.26
L8DF68		1.236	-0.008	-0.16	1.246	0.005	0.10
LBEBBN		1.228	-0.016	-0.31	1.218	-0.023	-0.44
LLW2NZ		1.154	-0.090	-1.69	1.178	-0.063	-1.21
MKF8L6		1.200	-0.044	-0.83	1.200	-0.041	-0.78
MLPEMD		1.340	0.096	1.78	1.328	0.087	1.68
MX2RPY		1.218	-0.026	-0.49	1.218	-0.023	-0.44
NACJTY		1.152	-0.092	-1.73	1.146	-0.095	-1.82
NFEHH3		1.174	-0.070	-1.32	1.186	-0.055	-1.05
NHLXRU		1.280	0.036	0.66	1.300	0.059	1.14
PCTFQN		1.248	0.004	0.07	1.248	0.007	0.14
QEWBAQ		1.278	0.034	0.63	1.280	0.039	0.75
QWX7QN		1.242	-0.002	-0.05	1.210	-0.031	-0.59
RYHNYZ		1.232	-0.012	-0.23	1.244	0.003	0.06
UJYH3Q		1.284	0.040	0.74	1.278	0.037	0.72
UUEAQZ	*	1.392	0.148	2.75	1.384	0.143	2.75
VG VXZC	X	1.206	-0.038	-0.72	1.376	0.135	2.60
VZ2KD4		1.206	-0.038	-0.72	1.214	-0.027	-0.51





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 732**

**1st Qtr 2018**

**Percent Strain at Yield**

WebCode	Data Flag	<u>Sample C49</u>			<u>Sample C50</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WZJ4JM		1.218	-0.026	-0.49	1.220	-0.021	-0.40
XG37TV		1.220	-0.024	-0.46	1.212	-0.029	-0.55
Z4KBE9		1.278	0.034	0.63	1.292	0.051	0.98
ZKRK9G		1.282	0.038	0.70	1.280	0.039	0.75
ZQJKXA		1.254	0.010	0.18	1.208	-0.033	-0.63

<b>Summary Statistics</b>		
	<u>Sample C49</u>	<u>Sample C50</u>
<b>Grand Means</b>	1.2445 Percent	1.2408 Percent
<b>Stnd Dev Btwn Labs</b>	0.0536 Percent	0.0520 Percent
Statistics based on 37 of 40 reporting participants		

Sample C49: HIPS & Sample C50: HIPS

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

- BKX8MY (X) - Inconsistent in testing between samples. Data for sample C49 are low. Inconsistent within the determinations of sample C50.
- VGXZC (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample C50.
- 7BJVZP (X) - Extreme data.





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 734

1st Qtr 2018

### Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C49			Sample C50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DQHRM		2,188	-66	-0.89	2,220	-30	-0.40
2N8CYA		2,166	-88	-1.19	2,161	-89	-1.19
64Q9PT		2,318	64	0.87	2,307	57	0.77
6YE9F9		2,290	36	0.49	2,296	47	0.63
7B4GRF		2,253	-1	-0.02	2,254	4	0.06
7BJVZP	*	2,250	-4	-0.05	2,151	-98	-1.32
9CC9VG		2,159	-95	-1.29	2,142	-108	-1.45
9XBMGY		2,191	-63	-0.85	2,203	-47	-0.63
B7H7Q9		2,196	-58	-0.79	2,188	-62	-0.83
BKX8MY	X	2,637	383	5.20	2,200	-49	-0.66
CCUQ3J	*	2,244	-10	-0.13	2,141	-108	-1.46
EJU6M		2,162	-92	-1.25	2,222	-28	-0.38
G29RU6	*	2,450	196	2.66	2,466	216	2.91
JB6NMW		2,248	-6	-0.08	2,254	4	0.05
JE33AL		2,155	-99	-1.34	2,165	-85	-1.15
JNTQ6N		2,269	15	0.21	2,259	9	0.13
KEF2VH		2,229	-25	-0.34	2,281	31	0.42
KUBPM9		2,252	-2	-0.02	2,217	-33	-0.44
L8DF68		2,299	45	0.61	2,308	58	0.78
LBEBBN		2,249	-5	-0.07	2,264	14	0.19
LLW2NZ	X	2,850	596	8.08	2,852	603	8.10
MKF8L6		2,283	29	0.39	2,284	34	0.45
MLPEMD		2,167	-87	-1.18	2,163	-87	-1.17
MX2RPY		2,317	63	0.85	2,303	54	0.72
NACJTY	X	2,555	301	4.08	2,711	461	6.20
NFEHH3		2,344	90	1.22	2,353	103	1.38
NHLXRU		2,250	-4	-0.05	2,246	-4	-0.05
PCTFQN		2,288	34	0.46	2,308	58	0.78
QEWBAQ		2,287	33	0.45	2,298	48	0.64
QWX7QN		2,187	-67	-0.91	2,174	-75	-1.01
RYHNYZ		2,235	-19	-0.26	2,227	-23	-0.30
UJYH3Q		2,163	-91	-1.23	2,190	-60	-0.80
UUEAQZ		2,438	184	2.50	2,423	174	2.33
VG VXZC		2,270	16	0.22	2,237	-13	-0.17
VZ2KD4	X	43	-2,211	-30.00	45	-2,204	-29.64



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 734**

**1st Qtr 2018**

**Modulus of Elasticity - MPa**

WebCode	Data Flag	<u>Sample C49</u>			<u>Sample C50</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WZJ4JM		2,138	-116	-1.58	2,163	-87	-1.16
XG37TV		2,321	67	0.91	2,306	56	0.76
YFZVDJ		2,233	-21	-0.29	2,229	-21	-0.28
Z4KBE9		2,293	39	0.53	2,311	62	0.83
ZKRK9G		2,364	110	1.49	2,296	46	0.62
ZQJKXA		2,250	-4	-0.05	2,232	-18	-0.24

<b>Summary Statistics</b>		
	<u>Sample C49</u>	<u>Sample C50</u>
<b>Grand Means</b>	2,254.0 MPa	2,249.8 MPa
<b>Std Dev Btwn Labs</b>	73.7 MPa	74.4 MPa
Statistics based on 37 of 41 reporting participants		

Sample C49: HIPS & Sample C50: HIPS

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

- NACJTY (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample C49.
- BKX8MY (X) - Inconsistent in testing between samples. Data for sample C49 are high. Inconsistent within the determinations of sample C49.
- VZ2KD4 (X) - Extreme data.
- LLW2NZ (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.



# Plastics Interlaboratory Testing Program

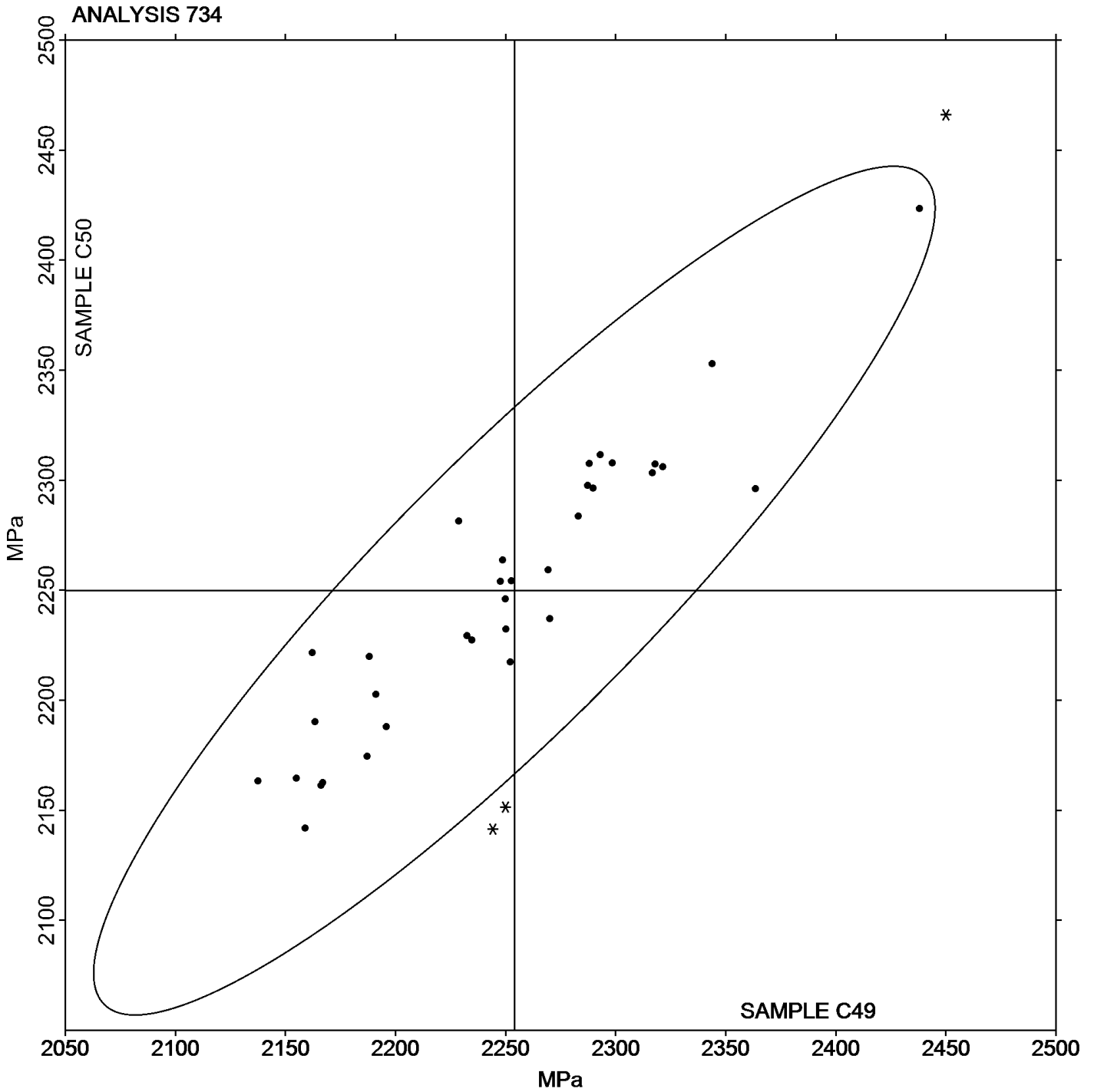
Report #105

Analysis 734

1st Qtr 2018

Modulus of Elasticity - MPa

Grand Mean Sample C49: 2,253.97 MPa    Grand Mean Sample C50: 2,249.81 MPa





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 736

1st Qtr 2018

### Flexural Modulus - MPa

WebCode	Data Flag	Sample K49			Sample K50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DQHRM		2,230	5	0.07	2,215	-22	-0.20
2K8Z2N		2,170	-55	-0.81	2,037	-200	-1.85
2N8CYA		2,268	43	0.63	2,258	21	0.19
64Q9PT		2,334	109	1.60	2,437	201	1.86
7B4GRF		2,265	40	0.58	2,230	-7	-0.06
9CC9VG		2,313	88	1.29	2,317	80	0.74
9XBMGY		2,228	3	0.04	2,266	29	0.27
BKX8MY		2,171	-54	-0.79	2,200	-37	-0.34
CCUQ3J		2,188	-37	-0.55	2,091	-146	-1.35
EJUU6M		2,233	8	0.11	2,155	-82	-0.76
HU3MAY		2,098	-127	-1.86	2,078	-159	-1.47
JB6NMW		2,265	40	0.58	2,385	148	1.37
JE33AL		2,112	-113	-1.65	2,140	-97	-0.90
JNTQ6N		2,161	-64	-0.95	2,195	-42	-0.39
KEF2VH		2,220	-5	-0.07	2,242	6	0.05
KUBPM9		2,254	29	0.42	2,302	65	0.60
LBEBBN		2,147	-78	-1.14	2,183	-54	-0.50
LLW2NZ	*	2,148	-77	-1.13	2,385	149	1.38
MKF8L6		2,156	-69	-1.01	2,125	-112	-1.04
MLPEMD		2,221	-4	-0.06	2,121	-116	-1.07
MX2RPY		2,257	32	0.48	2,251	14	0.13
NACJTY		2,136	-89	-1.31	2,127	-110	-1.02
NHLXRU		2,264	39	0.57	2,106	-131	-1.21
QEWBAQ		2,176	-49	-0.72	2,308	71	0.66
QWX7QN	*	2,426	201	2.96	2,441	205	1.89
RYHNYZ		2,243	18	0.26	2,216	-21	-0.19
UJYH3Q		2,235	10	0.15	2,295	58	0.54
UUEAQZ		2,306	81	1.19	2,280	43	0.40
VG VXZC		2,212	-13	-0.19	2,220	-17	-0.16
VZ2KD4		2,304	79	1.15	2,251	14	0.13
WZJ4JM		2,222	-3	-0.05	2,239	3	0.02
XG37TV		2,181	-44	-0.64	2,226	-11	-0.10
YFZVDJ		2,199	-26	-0.39	2,161	-76	-0.70
Z4KBE9		2,315	90	1.32	2,379	143	1.32
ZKRK9G	*	2,254	29	0.43	2,490	254	2.35



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 736

1st Qtr 2018

### Flexural Modulus - MPa

WebCode	Data Flag	<u>Sample K49</u>			<u>Sample K50</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
ZQJKXA		2,188	-37	-0.54	2,172	-65	-0.60

#### Summary Statistics

	<u>Sample K49</u>	<u>Sample K50</u>
<b>Grand Means</b>	2,225.0 MPa	2,236.8 MPa
<b>Stnd Dev Btwn Labs</b>	68.1 MPa	108.0 MPa

Statistics based on 36 of 36 reporting participants

Sample K49: HIPS & Sample K50: HIPS



# Plastics Interlaboratory Testing Program

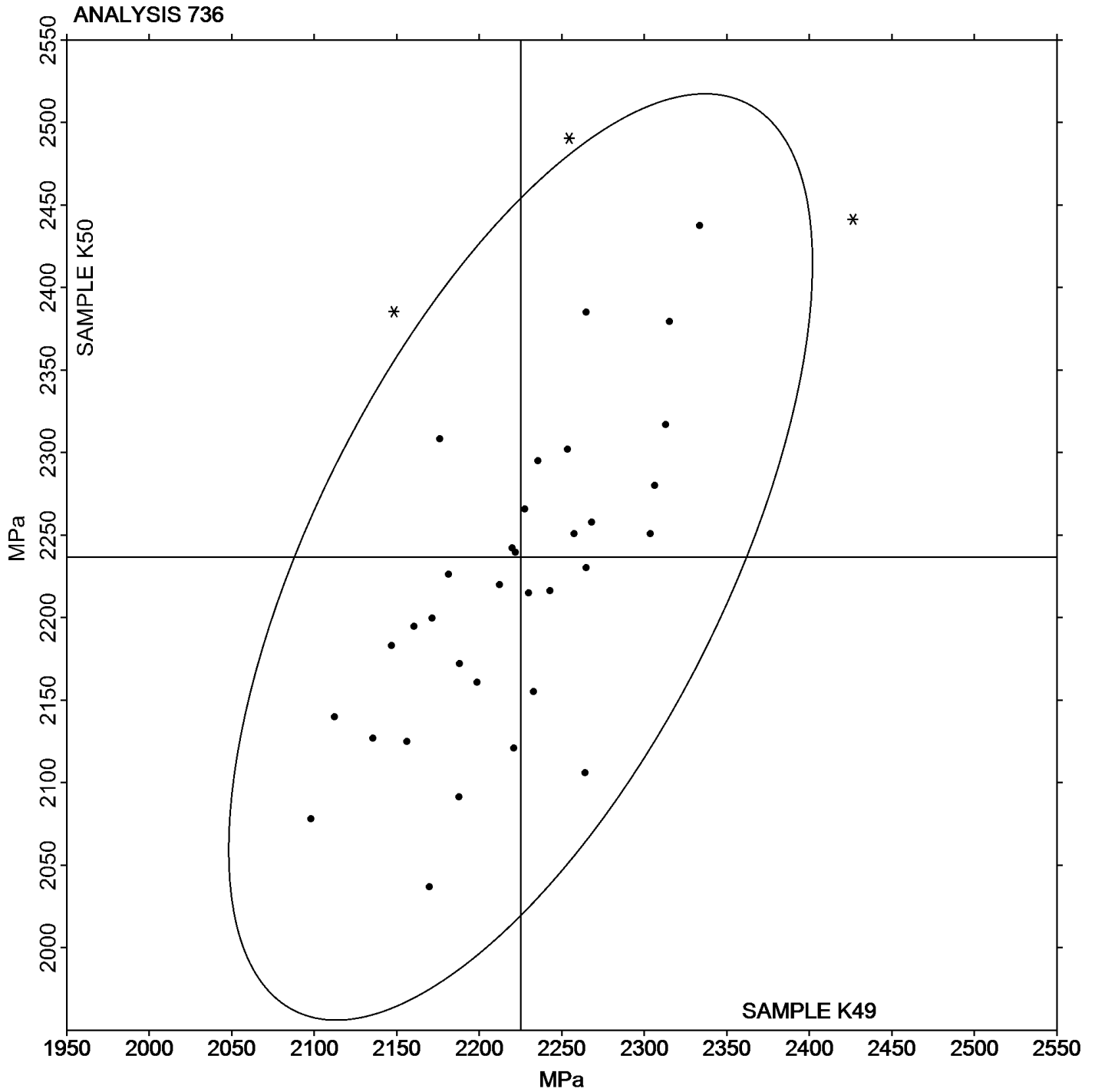
Report #105

Analysis 736

1st Qtr 2018

Flexural Modulus - MPa

Grand Mean Sample K49: 2,224.97 MPa    Grand Mean Sample K50: 2,236.81 MPa







# Plastics Interlaboratory Testing Program

Report #105

## Analysis 737

1st Qtr 2018

### Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K49			Sample K50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2K8Z2N		42.78	-0.88	-0.91	38.54	-2.47	-1.56
2N8CYA		43.68	0.03	0.03	41.22	0.21	0.14
64Q9PT		44.71	1.05	1.10	42.64	1.64	1.03
7B4GRF		43.33	-0.32	-0.34	40.54	-0.47	-0.30
9CC9VG		43.94	0.29	0.30	41.44	0.43	0.27
9XBMGY		45.00	1.35	1.41	42.84	1.83	1.16
BKX8MY		43.33	-0.33	-0.34	39.90	-1.11	-0.70
CCUQ3J		44.13	0.48	0.50	39.59	-1.42	-0.89
EJU6M		42.58	-1.07	-1.12	38.83	-2.17	-1.37
G29RU6		44.93	1.28	1.34	43.83	2.82	1.78
HU3MAY		42.02	-1.63	-1.70	39.46	-1.55	-0.98
JB6NMW		43.54	-0.12	-0.12	42.46	1.45	0.92
JE33AL		43.84	0.19	0.20	41.14	0.13	0.08
KEF2VH		45.54	1.89	1.97	42.94	1.93	1.22
KUBPM9		44.06	0.40	0.42	42.09	1.08	0.68
LBEBBN		43.80	0.15	0.16	41.00	-0.01	0.00
LLW2NZ	*	42.19	-1.46	-1.52	41.48	0.47	0.30
MKF8L6		41.90	-1.75	-1.83	38.80	-2.21	-1.39
MLPEMD		42.08	-1.57	-1.64	37.22	-3.79	-2.39
MX2RPY		43.83	0.17	0.18	40.72	-0.29	-0.18
NACJTY		42.85	-0.80	-0.83	40.27	-0.74	-0.47
NHLXRU		44.61	0.96	1.00	41.09	0.08	0.05
QEWBAQ		44.10	0.45	0.47	43.02	2.01	1.27
QWX7QN		43.79	0.14	0.15	41.15	0.14	0.09
RYHNYZ		42.92	-0.73	-0.77	40.28	-0.73	-0.46
UJYH3Q		43.73	0.08	0.08	41.56	0.55	0.35
UUEAQZ		44.86	1.21	1.26	42.08	1.07	0.68
VGXZC		42.87	-0.78	-0.82	39.93	-1.08	-0.68
VZ2KD4		42.86	-0.79	-0.83	39.59	-1.42	-0.89
WZJ4JM		44.40	0.74	0.78	40.72	-0.29	-0.18
XG37TV		43.34	-0.31	-0.32	41.73	0.72	0.45
YFZVDJ	X	39.65	-4.00	-4.18	36.70	-4.31	-2.72
ZKRK9G		45.23	1.58	1.65	44.52	3.51	2.22
ZQJKXA		43.75	0.10	0.10	40.64	-0.37	-0.23



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 737

1st Qtr 2018

### Flexural Stress at 3.5% Strain - MPa

Summary Statistics	<u>Sample K49</u>	<u>Sample K50</u>
<b>Grand Means</b>	43.652 MPa	41.008 MPa
<b>Stnd Dev Btwn Labs</b>	0.957 MPa	1.584 MPa

Statistics based on 33 of 34 reporting participants

Sample K49: HIPS & Sample K50: HIPS

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

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



# Plastics Interlaboratory Testing Program

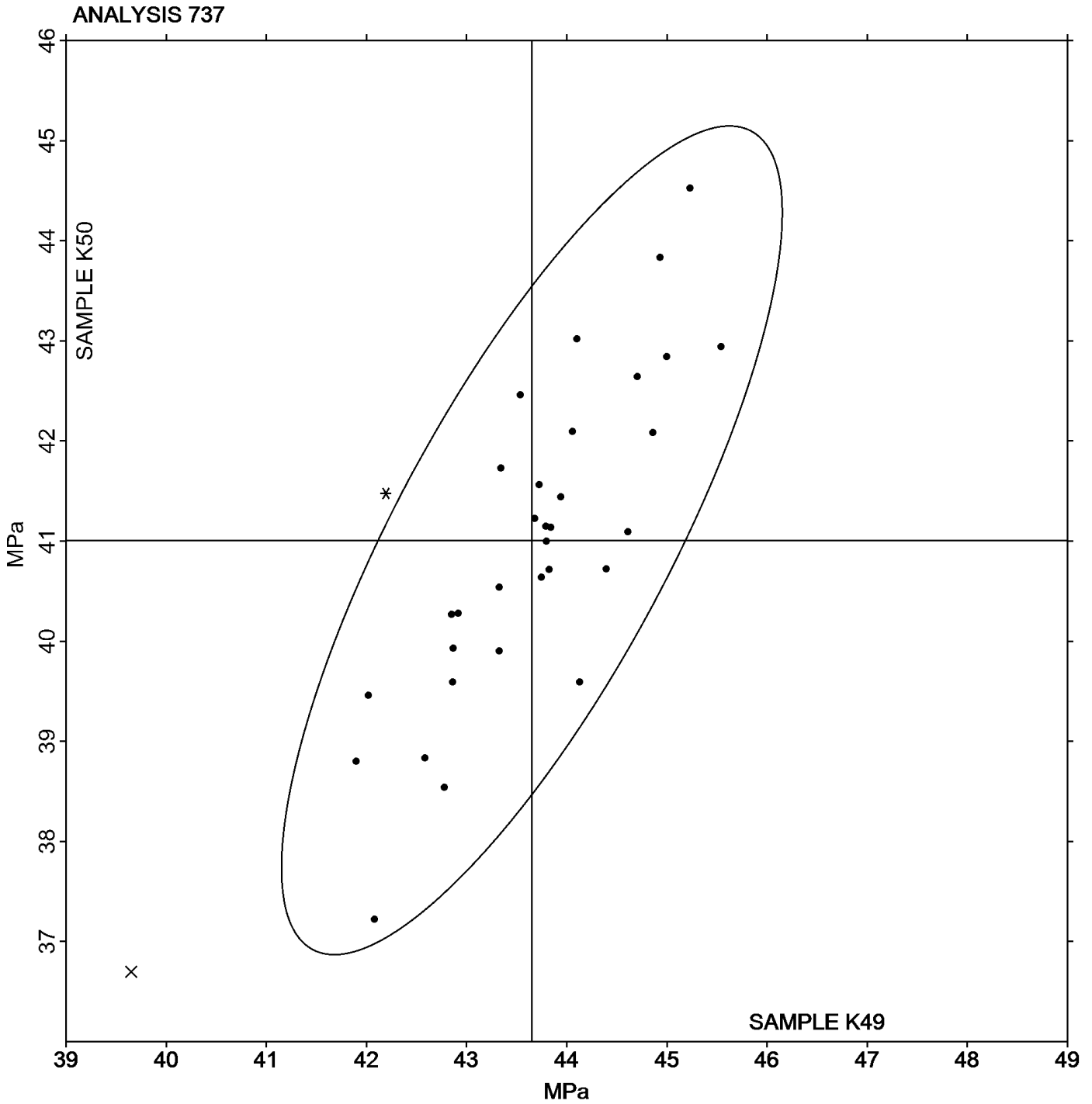
Report #105

## Analysis 737

1st Qtr 2018

### Flexural Stress at 3.5% Strain - MPa

Grand Mean Sample K49: 43.652 MPa    Grand Mean Sample K50: 41.008 MPa





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 738**

**1st Qtr 2018**

**Flexural Stress at Yield - MPa**

WebCode	Data Flag	Sample K49			Sample K50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2DQHRM	*	40.34	-3.16	-2.81	36.83	-4.60	-2.73
2K8Z2N		42.82	-0.68	-0.60	39.01	-2.42	-1.44
2N8CYA		43.79	0.29	0.26	42.14	0.71	0.42
64Q9PT		44.76	1.26	1.12	43.72	2.29	1.36
7B4GRF		43.59	0.10	0.09	41.67	0.24	0.14
9CC9VG		43.98	0.48	0.43	42.46	1.03	0.61
9XBMGY		45.29	1.80	1.60	44.11	2.68	1.59
BKX8MY		42.90	-0.59	-0.53	40.80	-0.63	-0.37
EJU6M		42.71	-0.78	-0.70	39.27	-2.16	-1.28
HU3MAY		42.00	-1.50	-1.33	40.40	-1.03	-0.61
JE33AL		43.89	0.39	0.35	42.11	0.68	0.40
JNTQ6N		43.54	0.04	0.04	41.94	0.51	0.30
KEF2VH		45.54	2.04	1.82	42.94	1.51	0.90
KUBPM9		44.21	0.71	0.63	43.71	2.28	1.36
LBEBBN		44.00	0.50	0.45	42.00	0.57	0.34
LLW2NZ	*	42.22	-1.28	-1.14	42.44	1.01	0.60
MKF8L6		41.98	-1.52	-1.35	39.76	-1.67	-0.99
MLPEMD		42.60	-0.90	-0.80	38.50	-2.93	-1.74
NACJTY		42.91	-0.58	-0.52	40.46	-0.97	-0.57
NHLXRU		44.81	1.32	1.17	42.35	0.92	0.55
QWX7QN		44.00	0.50	0.45	41.32	-0.11	-0.06
RYHNYZ		43.11	-0.39	-0.34	40.79	-0.63	-0.38
UJYH3Q		43.76	0.26	0.23	42.14	0.71	0.42
UUEAQZ		45.10	1.60	1.43	43.46	2.03	1.21
VG VXZC		42.93	-0.57	-0.51	40.52	-0.90	-0.54
VZ2KD4		42.93	-0.57	-0.50	40.25	-1.18	-0.70
WZJ4JM		44.49	0.99	0.88	42.81	1.38	0.82
Z4KBE9		43.48	-0.02	-0.02	41.98	0.55	0.33
ZQJKXA		43.73	0.24	0.21	41.54	0.11	0.07



# Plastics Interlaboratory Testing Program

Report #105

Analysis 738

1st Qtr 2018

Flexural Stress at Yield - MPa

Summary Statistics	<u>Sample K49</u>	<u>Sample K50</u>
<b>Grand Means</b>	43.497 MPa	41.429 MPa
<b>Stnd Dev Btwn Labs</b>	1.124 MPa	1.684 MPa

Statistics based on 29 of 29 reporting participants

Sample K49: HIPS & Sample K50: HIPS





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 750

1st Qtr 2018

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

WebCode	Data Flag	Sample X49			Sample X50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2DQHRM		7.53	-0.57	-1.72	7.53	-0.57	-1.78	DY
2K8Z2N		7.66	-0.44	-1.32	7.69	-0.40	-1.26	DY
3HB6U7		8.01	-0.09	-0.28	7.89	-0.20	-0.64	WZ
6EN4PA		7.95	-0.15	-0.46	8.03	-0.07	-0.22	TO
6F49LM		7.80	-0.30	-0.90	7.60	-0.49	-1.55	WZ
6YGW4E	X	11.40	3.30	9.93	11.58	3.49	10.90	TO
79L4JE		8.30	0.20	0.61	8.40	0.31	0.95	TO
7BJVZP		8.64	0.54	1.63	8.60	0.51	1.58	TO
7FXEEL		8.17	0.07	0.22	8.23	0.14	0.42	TO
84FCBZ		8.44	0.34	1.01	8.46	0.37	1.14	DY
8KUBND		8.40	0.30	0.91	8.55	0.46	1.42	TO
9K43TY		8.20	0.10	0.29	8.23	0.13	0.41	DY
9WCRLA		8.50	0.40	1.21	8.50	0.41	1.27	TO
9XBMGY		7.67	-0.43	-1.30	7.71	-0.39	-1.22	TO
A349L7		7.95	-0.15	-0.45	8.00	-0.09	-0.30	TO
B8QJ9A		8.40	0.30	0.91	8.30	0.21	0.64	TO
BKX8MY		8.30	0.20	0.61	8.25	0.16	0.49	TO
BQNGXW		8.34	0.24	0.73	8.23	0.13	0.41	WZ
BW72NP		7.94	-0.16	-0.48	7.96	-0.13	-0.42	XX
CCF34C	X	11.65	3.55	10.68	11.93	3.84	12.00	TO
CGT33P		8.67	0.57	1.70	8.59	0.50	1.55	RR
DUC3EA		7.65	-0.45	-1.35	7.80	-0.29	-0.92	TO
EJP9UZ		8.11	0.01	0.02	7.94	-0.16	-0.50	DY
EJUJ6M		7.80	-0.30	-0.90	7.91	-0.18	-0.58	GO
ETZMK9		8.17	0.07	0.22	8.16	0.06	0.19	TO
F4BLLU		8.47	0.38	1.13	8.46	0.36	1.13	TO
F4WZA8		7.65	-0.45	-1.35	7.60	-0.49	-1.55	XX
F73E28		8.20	0.10	0.31	8.10	0.01	0.02	TY
FPXZR6		7.53	-0.57	-1.72	7.46	-0.64	-1.99	XX
G22YMF	X	10.30	2.20	6.62	10.42	2.33	7.27	CE
G29RU6		8.35	0.25	0.76	8.20	0.11	0.33	DY
GDHLWG		8.33	0.23	0.70	8.33	0.23	0.73	TO
GEP24M		7.89	-0.20	-0.61	7.85	-0.24	-0.76	TO
HVBW2V		8.35	0.25	0.75	8.31	0.22	0.67	TO
HVDKP2		7.60	-0.50	-1.49	7.73	-0.37	-1.15	QT



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 750

1st Qtr 2018

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

WebCode	Data Flag	Sample X49			Sample X50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
HZK87J		8.07	-0.03	-0.10	8.11	0.01	0.03	TO
JB6NMW		8.27	0.17	0.52	8.23	0.14	0.42	DY
JE33AL		8.44	0.34	1.01	8.33	0.23	0.72	TO
JMTU9Y		8.20	0.10	0.31	8.25	0.16	0.49	DY
K28KK8		8.30	0.20	0.61	8.30	0.21	0.64	TO
K36VHV		8.10	0.00	0.01	8.10	0.01	0.02	CE
KBZN2M		7.76	-0.34	-1.01	7.68	-0.41	-1.29	CE
KEF2VH	*	7.93	-0.17	-0.51	8.23	0.14	0.42	TO
L2QQKW		8.00	-0.10	-0.30	8.10	0.01	0.02	TO
LBEBBN	X	0.14	-7.96	-23.93	0.14	-7.96	-24.89	TO
LEDXFC		7.85	-0.25	-0.75	7.67	-0.42	-1.33	XX
LLW2NZ		8.15	0.05	0.16	8.16	0.06	0.19	TO
LN3EJL		8.38	0.28	0.85	8.33	0.24	0.74	TO
M64QE3	X	1.32	-6.78	-20.39	1.32	-6.77	-21.20	DY
M7H36L		8.55	0.45	1.36	8.59	0.49	1.54	TO
MKF8L6		8.56	0.46	1.39	8.33	0.23	0.72	GO
MLPEMD		7.76	-0.34	-1.03	7.65	-0.44	-1.39	TO
MLR4QA		8.35	0.25	0.76	8.30	0.21	0.64	XX
MX2RPY		8.43	0.33	1.00	8.41	0.31	0.97	TO
N3R9XJ		8.00	-0.10	-0.30	8.00	-0.09	-0.30	XX
NHLXRU		8.08	-0.02	-0.05	8.10	0.00	0.00	GO
PG9P27		8.20	0.10	0.30	8.22	0.12	0.38	CE
PKNBWy		8.51	0.41	1.24	8.48	0.38	1.19	TO
PXBF4V		8.49	0.39	1.16	8.51	0.42	1.30	TO
QEWBAQ	X	8.01	-0.09	-0.27	8.36	0.27	0.84	DY
QWX7QN		7.69	-0.41	-1.23	7.89	-0.20	-0.64	TO
R4ATR4		7.90	-0.20	-0.60	7.95	-0.14	-0.45	KA
T7C4AP		7.90	-0.20	-0.60	8.10	0.01	0.02	DY
TKCPQT	X	7.52	-0.58	-1.74	7.97	-0.12	-0.39	TM
TU47J4	*	7.15	-0.95	-2.85	7.22	-0.88	-2.75	TO
UJYH3Q		8.24	0.14	0.43	8.30	0.20	0.63	TY
UVVHZN		8.60	0.50	1.51	8.60	0.51	1.58	TO
VGBGKA		8.15	0.05	0.14	8.04	-0.06	-0.19	TO
VJVFQR		7.84	-0.26	-0.79	7.83	-0.26	-0.83	TO
VZ2KD4		8.04	-0.06	-0.19	8.01	-0.09	-0.28	WZ





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 750

1st Qtr 2018

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

WebCode	Data Flag	Sample X49			Sample X50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
W4GH8C		8.30	0.20	0.61	8.35	0.26	0.80	TO
WPFVWA	*	7.21	-0.89	-2.67	7.36	-0.73	-2.30	CE
WZJ4JM		8.21	0.11	0.34	8.15	0.06	0.17	DY
XVJWW4	*	8.18	0.08	0.25	7.87	-0.22	-0.70	TO
YC8MDH		8.35	0.25	0.76	8.40	0.31	0.95	TO
YKDND A	X	9.65	1.55	4.67	8.00	-0.09	-0.30	WZ
YWTG2J		8.18	0.08	0.25	8.32	0.23	0.70	TO
Z4KBE9		7.51	-0.59	-1.77	7.58	-0.51	-1.61	TO
ZKRK9G		8.24	0.14	0.42	8.24	0.14	0.44	DY
ZL8G32		8.10	0.00	-0.01	8.04	-0.06	-0.18	TO

#### Summary Statistics

##### Grand Means

##### Sample X49

8.098 grams/10 mins

##### Sample X50

8.095 grams/10 mins

##### Std Dev Btwn Labs

0.333 grams/10 mins

0.320 grams/10 mins

Statistics based on 72 of 80 reporting participants

Sample X49: HDPE & Sample X50: HDPE

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

- 6YGW4E (X) - Data for both samples are very high.
- LBEBBN (X) - Extreme data.
- YKDND A (X) - Inconsistent in testing between samples. Data for sample X49 are high.
- QEWBAQ (X) - Inconsistent in testing between samples.
- M64QE3 (X) - Extreme data.
- CCF34C (X) - Data for both samples are very high.
- TKCPQT (X) - Inconsistent in testing between samples.
- G22YMF (X) - Data for both samples are high. Possible Systematic Error.

#### Key to Instrument Codes Reported by Participants

CE	Ceast	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

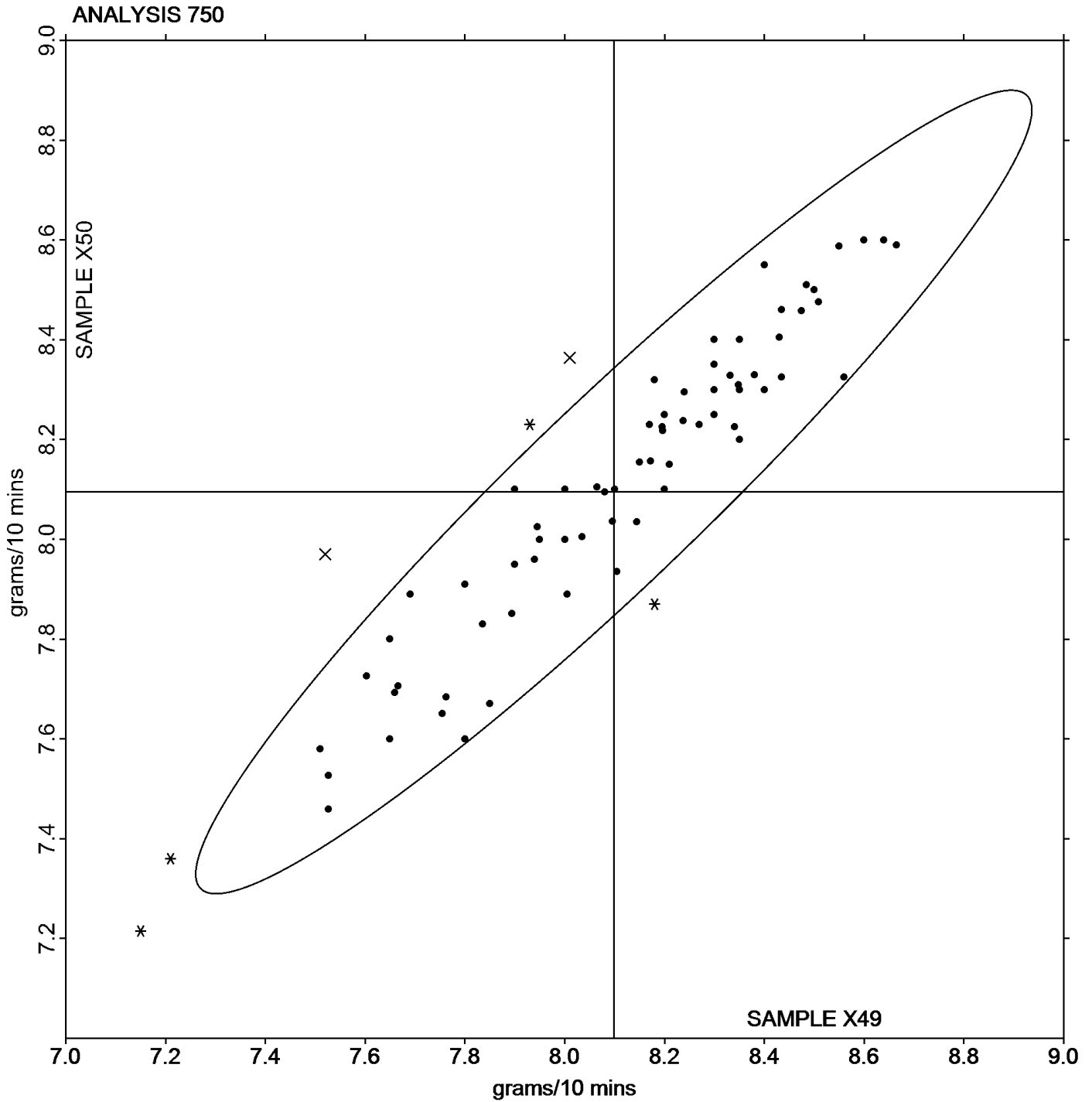
Report #105

## Analysis 750

1st Qtr 2018

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

Grand Mean Sample X49: 8.0982 grams/10 mins    Grand Mean Sample X50: 8.0949 grams/10 mins





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 755

1st Qtr 2018

### Moisture Content of Plastics

WebCode	Data Flag	Sample Y49			Sample Y50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
4EQE6M		0.01123	-0.00763	-0.50	0.01497	-0.00628	-0.40	MU
4ZRLHK		0.01627	-0.00260	-0.17	0.01937	-0.00188	-0.12	MK
6F49LM		0.01033	-0.00853	-0.56	0.01500	-0.00625	-0.40	MJ
6YGW4E		0.00810	-0.01076	-0.70	0.00813	-0.01311	-0.84	AZ
84FCBZ		0.01040	-0.00846	-0.55	0.00970	-0.01155	-0.74	MS
8KUBND	X	0.14467	0.12580	8.20	0.14667	0.12542	8.00	SA
8XW26B		0.00000	-0.01886	-1.23	0.00000	-0.02124	-1.36	CS
9K43TY		0.01007	-0.00880	-0.57	0.00957	-0.01168	-0.75	AZ
B7H7Q9	X	0.05733	0.03847	2.51	0.04633	0.02509	1.60	AZ
B8QJ9A		0.05000	0.03114	2.03	0.05333	0.03209	2.05	ML
EJP9UZ	*	0.05900	0.04014	2.62	0.06000	0.03875	2.47	MB
FL9UVL	X	0.06107	0.04220	2.75	0.04953	0.02829	1.81	MT
G29RU6		0.01543	-0.00343	-0.22	0.01360	-0.00765	-0.49	MR
GEP24M		0.00467	-0.01420	-0.93	0.00667	-0.01458	-0.93	CT
HZK87J		0.00657	-0.01230	-0.80	0.00843	-0.01281	-0.82	MR
JB6NMW	*	0.06700	0.04814	3.14	0.07000	0.04875	3.11	MB
JMTU9Y		0.03667	0.01780	1.16	0.04333	0.02209	1.41	AZ
KUBPM9		0.01362	-0.00525	-0.34	0.01460	-0.00665	-0.42	MK
LBEBBN		0.00767	-0.01120	-0.73	0.00933	-0.01191	-0.76	MK
LGGQDH		0.00907	-0.00980	-0.64	0.01370	-0.00755	-0.48	AZ
LLW2NZ		0.01700	-0.00186	-0.12	0.01673	-0.00451	-0.29	MU
MLPEMD		0.03000	0.01114	0.73	0.02700	0.00575	0.37	AZ
MX2RPY		0.01880	-0.00006	0.00	0.02395	0.00270	0.17	ML
N3R9XJ		0.01957	0.00070	0.05	0.02613	0.00489	0.31	XX
NACJTY		0.01100	-0.00786	-0.51	0.01900	-0.00225	-0.14	MK
QWX7QN		0.01490	-0.00396	-0.26	0.01570	-0.00555	-0.35	MS
RYHNYZ	X	0.01300	-0.00586	-0.38	0.03300	0.01175	0.75	AZ
V43HT3		0.01200	-0.00686	-0.45	0.01367	-0.00758	-0.48	ML
VJVFQR		0.01347	-0.00540	-0.35	0.01767	-0.00358	-0.23	AZ
W36RX9		0.01167	-0.00720	-0.47	0.01310	-0.00815	-0.52	ML
WPFVWA		0.01480	-0.00406	-0.26	0.01677	-0.00448	-0.29	MU
YQ6YLM		0.01219	-0.00667	-0.43	0.01781	-0.00344	-0.22	MJ
YWTG2J		0.03080	0.01194	0.78	0.03000	0.00875	0.56	MU
ZCF7NY		0.01166	-0.00720	-0.47	0.01459	-0.00665	-0.42	MU
ZHMU78		0.01967	0.00080	0.05	0.02500	0.00375	0.24	CS



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 755**

**1st Qtr 2018**

**Moisture Content of Plastics**

WebCode	Data Flag	Sample Y49			Sample Y50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ZKRK9G		0.03000	0.01114	0.73	0.03300	0.01175	0.75	CT

Summary Statistics				
	Sample Y49		Sample Y50	
<b>Grand Means</b>	0.018863 Percent		0.021245 Percent	
<b>Stnd Dev Btwn Labs</b>	0.015345 Percent		0.015670 Percent	
Statistics based on 32 of 36 reporting participants				

Sample Y49: HIPS & Sample Y50: HIPS

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

- 8KUBND (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- B7H7Q9 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample Y49.
- RYHNYZ (X) - Inconsistent in testing between samples.
- FL9UVL (X) - Inconsistent in testing between samples. Data for sample Y49 are high.

**Key to Instrument Codes Reported by Participants**

<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>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

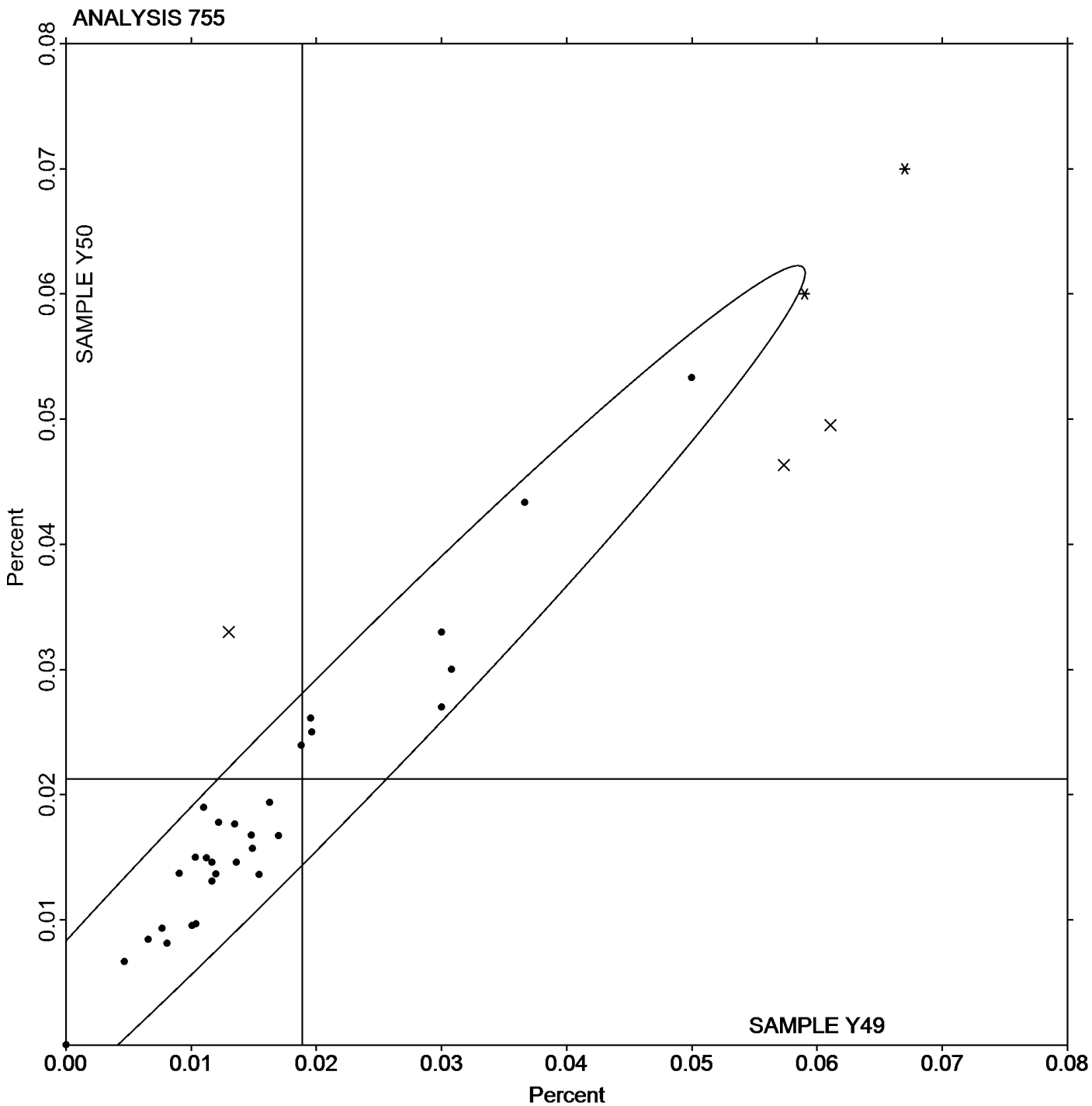
## Analysis 755

### Moisture Content of Plastics

Report #105

1st Qtr 2018

Grand Mean Sample Y49: 0.01886 Percent    Grand Mean Sample Y50: 0.02125 Percent





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 757

1st Qtr 2018

### Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L49			Sample L50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
3HB6U7		19.768	0.009	0.18	19.791	0.021	0.45
4ZRLHK		19.765	0.006	0.11	19.745	-0.025	-0.55
6AVVPA		19.775	0.016	0.30	19.785	0.015	0.32
6F49LM		19.780	0.021	0.40	19.780	0.010	0.21
6YGW4E	X	19.565	-0.194	-3.73	19.735	-0.035	-0.77
7B4GRF		19.735	-0.024	-0.47	19.755	-0.015	-0.33
84FCBZ		19.685	-0.074	-1.43	19.720	-0.050	-1.09
8KUBND		19.810	0.051	0.97	19.785	0.015	0.32
9XBMGY		19.715	-0.044	-0.85	19.790	0.020	0.42
B7H7Q9	X	93.635	73.876	1,417.86	84.205	64.435	1,393.28
BW72NP		19.740	-0.019	-0.37	19.805	0.035	0.75
CCF34C	X	19.650	-0.109	-2.10	19.600	-0.170	-3.68
EJP9UZ		19.800	0.041	0.78	19.790	0.020	0.42
F4WZA8		19.750	-0.009	-0.18	19.790	0.020	0.42
F8W7QY		19.795	0.036	0.69	19.765	-0.005	-0.12
FL9UVL		19.803	0.044	0.84	19.806	0.036	0.77
FPXZR6	*	19.624	-0.135	-2.60	19.639	-0.131	-2.84
FX6Q3U		19.780	0.021	0.40	19.795	0.025	0.53
GEP24M		19.745	-0.014	-0.27	19.680	-0.090	-1.95
HU3MAY		19.725	-0.034	-0.66	19.770	0.000	-0.01
HZK87J		19.815	0.056	1.07	19.825	0.055	1.18
JB6NMW		19.755	-0.004	-0.08	19.745	-0.025	-0.55
JE33AL		19.745	-0.014	-0.27	19.840	0.070	1.51
JMTU9Y	*	19.625	-0.134	-2.58	19.660	-0.110	-2.39
K28KK8		19.780	0.021	0.40	19.770	0.000	-0.01
KZXBWF		19.797	0.038	0.72	19.771	0.001	0.01
LBEBBN	X	19.815	0.056	1.07	19.400	-0.370	-8.01
LEDXFC		19.680	-0.079	-1.52	19.690	-0.080	-1.74
LLW2NZ		19.780	0.021	0.40	19.820	0.050	1.07
M7DVUC		19.820	0.061	1.17	19.840	0.070	1.51
M7H36L		19.828	0.069	1.32	19.777	0.006	0.14
MKF8L6		19.780	0.021	0.40	19.795	0.025	0.53
MLPEMD		19.777	0.018	0.34	19.856	0.086	1.85
MX2RPY		19.780	0.021	0.40	19.785	0.015	0.32
N3R9XJ	X	19.560	-0.199	-3.82	19.730	-0.040	-0.87



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 757**

**1st Qtr 2018**

**Ash Content in Thermoplastics - Percent**

WebCode	Data Flag	Sample L49			Sample L50		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
NACJTY		19.821	0.061	1.18	19.784	0.013	0.28
NFEHH3		19.770	0.011	0.21	19.740	-0.030	-0.66
NHLXRU	X	20.045	0.286	5.48	20.045	0.275	5.94
PKNBWY		19.786	0.026	0.51	19.797	0.026	0.56
PY79TM		19.735	-0.024	-0.47	19.795	0.025	0.53
QC6G4A	X	19.685	-0.074	-1.43	19.345	-0.425	-9.20
QEWBAQ		19.795	0.036	0.69	19.780	0.010	0.21
QVJNNJ		19.770	0.011	0.21	19.800	0.030	0.64
QWX7QN	*	19.860	0.101	1.93	19.760	-0.010	-0.22
RQLNLT	X	35.295	15.536	298.17	35.230	15.460	334.29
RYHNYZ	X	19.250	-0.509	-9.77	19.150	-0.620	-13.41
TXZUV6		19.685	-0.074	-1.43	19.730	-0.040	-0.87
UB87XP		19.645	-0.114	-2.19	19.725	-0.045	-0.98
VDPJ7R		19.769	0.009	0.18	19.774	0.003	0.07
WPFVWA		19.710	-0.049	-0.95	19.690	-0.080	-1.74
WZJ4JM		19.820	0.061	1.17	19.790	0.020	0.42
XVJWW4		19.749	-0.011	-0.21	19.754	-0.016	-0.35
YWTG2J		19.795	0.036	0.69	19.805	0.035	0.75
Z4KBE9		19.755	-0.004	-0.08	19.820	0.050	1.07
ZKRK9G		19.705	-0.054	-1.04	19.730	-0.040	-0.87

Summary Statistics		
	Sample L49	Sample L50
<b>Grand Means</b>	19.7593 Percent	19.7704 Percent
<b>Stnd Dev Btwn Labs</b>	0.0521 Percent	0.0462 Percent
Statistics based on 46 of 55 reporting participants		

Sample L49: PP & Sample L50: PP



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

6YGW4E (X) - Data for sample L49 are low.

B7H7Q9 (X) - Extreme data.

LBEBBN (X) - Data for sample L50 are low. Inconsistent within the determinations of sample L50.

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

RQLNLT (X) - Extreme data.

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

CCF34C (X) - Data for sample L50 are low. Inconsistent within the determinations of both samples.

N3R9XJ (X) - Data for sample L49 are low. Inconsistent within the determinations of sample L49.

QC6G4A (X) - Data for sample L50 are low.







# Plastics Interlaboratory Testing Program

Report #105

## Analysis 760

1st Qtr 2018

### DSC Crystallization Temperature

WebCode	Data Flag	Sample W49			Sample W50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
29HABH		121.67	0.06	0.01	120.80	-0.28	-0.06	PE
2DQHRM		113.59	-8.02	-1.84	113.64	-7.44	-1.74	TA
3NKZXF		119.40	-2.21	-0.51	119.00	-2.08	-0.49	XX
44BP7G		125.53	3.92	0.90	123.47	2.39	0.56	XX
6F49LM		125.17	3.56	0.82	124.63	3.56	0.83	TA
7NXPWC		126.72	5.11	1.17	126.64	5.57	1.30	TA
9XBMGY		112.71	-8.90	-2.04	112.28	-8.80	-2.05	TA
A349L7		125.67	4.06	0.93	124.51	3.43	0.80	TA
EJUU6M		119.40	-2.21	-0.51	117.67	-3.41	-0.80	TA
F73E28		126.50	4.89	1.12	125.23	4.15	0.97	TA
FPXZR6		121.91	0.30	0.07	120.43	-0.65	-0.15	TA
FV2ZXZ		127.22	5.61	1.29	126.60	5.52	1.29	TA
LEDXFC		121.67	0.06	0.01	122.12	1.04	0.24	TA
LLW2NZ		114.63	-6.98	-1.60	113.53	-7.54	-1.76	PE
ME8ZND		122.35	0.74	0.17	122.94	1.86	0.43	PE
MKF8L6		124.53	2.92	0.67	125.10	4.02	0.94	TA
NACJTY		121.63	0.02	0.01	120.47	-0.61	-0.14	TA
NFEHH3		123.67	2.06	0.47	122.47	1.39	0.32	TA
PCTFQN		121.31	-0.30	-0.07	121.85	0.78	0.18	TA
QC6G4A		116.33	-5.28	-1.21	116.48	-4.60	-1.07	PE
VJVFQR		118.11	-3.50	-0.80	118.45	-2.63	-0.61	MT
YC8MDH		125.67	4.06	0.93	125.40	4.32	1.01	TA

#### Summary Statistics

##### Grand Means

Sample W49  
121.609 Degrees Celsius

Sample W50  
121.077 Degrees Celsius

##### Std Dev Btwn Labs

4.354 Degrees Celsius

4.283 Degrees Celsius

Statistics based on 22 of 22 reporting participants

Sample W49: PP & Sample W50: PP

#### Key to Instrument Codes Reported by Participants

MT Mettler Toledo Instruments

PE Perkins Elmer Instruments

TA TA Instruments

XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

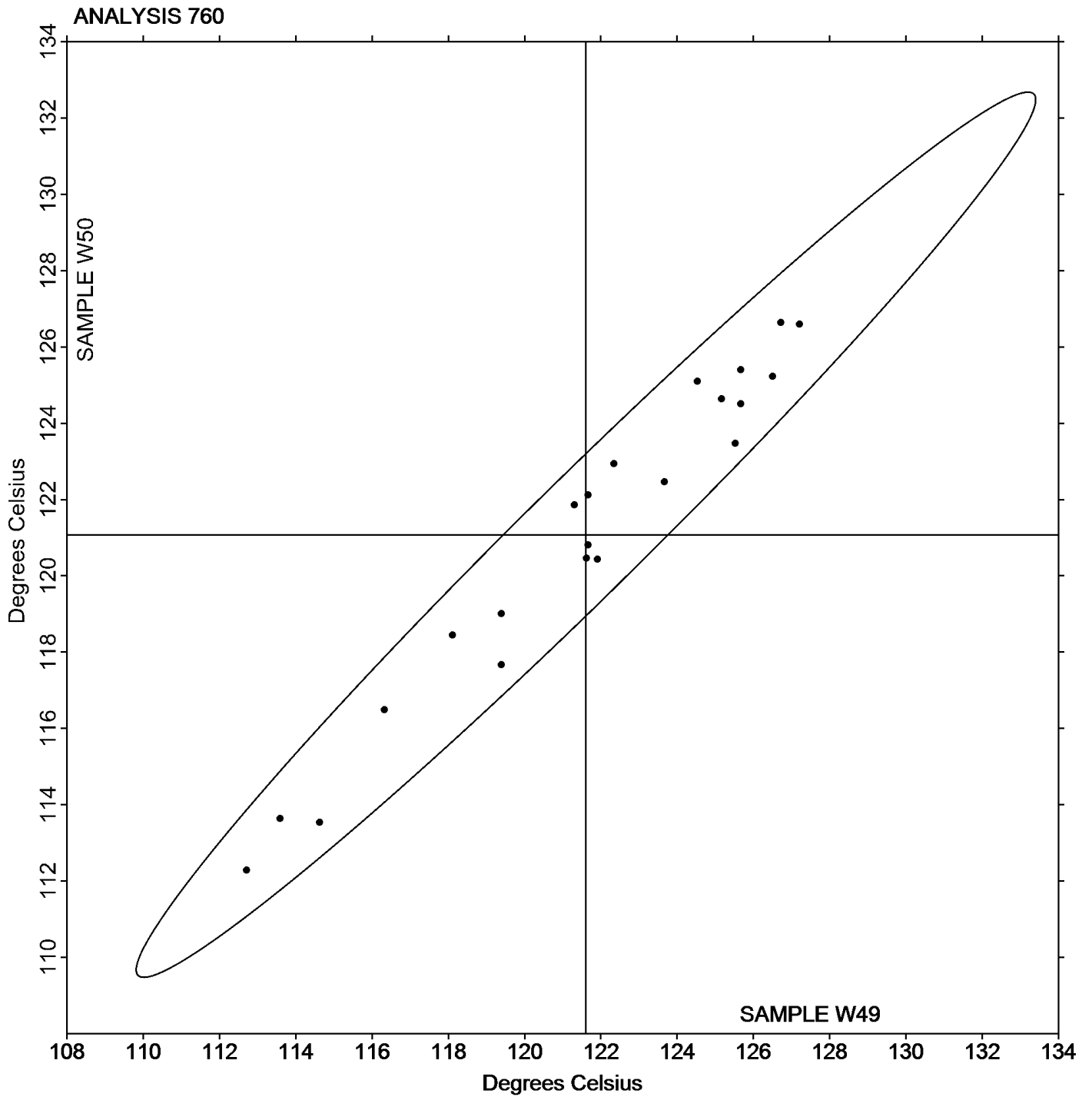
Report #105

Analysis 760

1st Qtr 2018

DSC Crystallization Temperature

Grand Mean Sample W49: 121.61 Degrees Celsius    Grand Mean Sample W50: 121.08 Degrees Celsius





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 761

1st Qtr 2018

### DSC Melt Temperature

WebCode	Data Flag	Sample W49			Sample W50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
29HABH		168.93	3.79	2.33	168.73	3.57	2.03	PE
2DQHRM		165.03	-0.12	-0.07	164.81	-0.36	-0.20	TA
3NKZXF		165.63	0.49	0.30	166.10	0.93	0.53	XX
6F49LM		164.00	-1.15	-0.71	165.10	-0.07	-0.04	TA
7NXPWC		163.53	-1.61	-0.99	163.74	-1.42	-0.81	TA
9XBMGY		166.17	1.02	0.63	166.55	1.39	0.79	TA
A349L7		163.39	-1.76	-1.08	163.24	-1.93	-1.10	TA
EJUU6M		162.13	-3.01	-1.85	161.80	-3.37	-1.92	TA
F73E28		163.80	-1.34	-0.83	163.62	-1.54	-0.88	TA
FPXZR6		166.62	1.47	0.90	167.71	2.54	1.45	XX
FV2ZZXZ		165.83	0.69	0.42	166.00	0.84	0.48	TA
KUBPM9		163.24	-1.91	-1.17	163.13	-2.04	-1.16	MT
LEDXFC		165.16	0.02	0.01	164.45	-0.72	-0.41	XX
LLW2NZ		165.57	0.42	0.26	165.13	-0.03	-0.02	PE
ME8ZND		167.50	2.36	1.45	166.58	1.42	0.81	PE
MKF8L6		164.53	-0.61	-0.38	164.27	-0.90	-0.51	TA
NACJTY		167.27	2.12	1.30	167.90	2.73	1.56	TA
NFEHH3		165.87	0.72	0.44	166.67	1.50	0.86	TA
PCTFQN		166.07	0.92	0.57	166.03	0.86	0.49	TA
PKNBWY		165.75	0.61	0.37	165.71	0.54	0.31	TA
QC6G4A		163.16	-1.98	-1.22	162.87	-2.29	-1.31	PE
VJVFQR		165.44	0.30	0.18	164.89	-0.28	-0.16	MT
YC8MDH		163.73	-1.41	-0.87	163.77	-1.40	-0.80	TA

#### Summary Statistics

	Sample W49	Sample W50
<b>Grand Means</b>	165.147 Degrees Celsius	165.165 Degrees Celsius
<b>Stnd Dev Btwn Labs</b>	1.626 Degrees Celsius	1.755 Degrees Celsius

Statistics based on 23 of 23 reporting participants

Sample W49: PP & Sample W50: PP

#### Key to Instrument Codes Reported by Participants

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



# Plastics Interlaboratory Testing Program

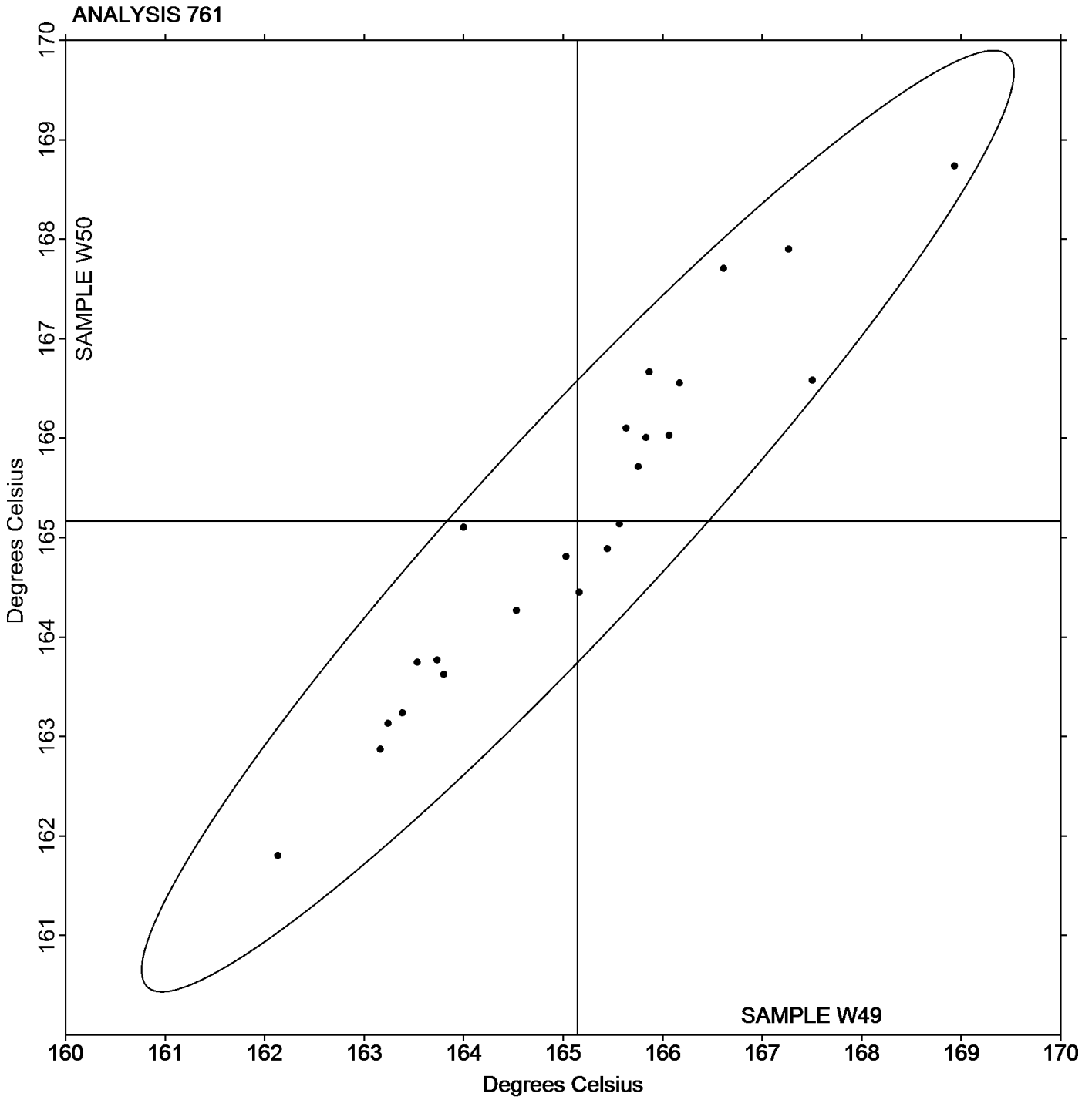
Report #105

Analysis 761

1st Qtr 2018

DSC Melt Temperature

Grand Mean Sample W49: 165.15 Degrees Celsius    Grand Mean Sample W50: 165.17 Degrees Celsius





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 762**

**1st Qtr 2018**

**DSC Enthalpy of Crystallization**

WebCode	Data Flag	Sample W49			Sample W50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
29HABH		110.54	6.11	0.64	112.56	8.23	0.97	PE
2DQHRM	*	86.79	-17.64	-1.84	100.40	-3.92	-0.46	TA
3NKZXF		98.17	-6.26	-0.65	99.19	-5.13	-0.61	XX
6F49LM		101.48	-2.95	-0.31	100.37	-3.95	-0.47	TA
7NXPWC		114.87	10.44	1.09	113.93	9.61	1.14	TA
9XBMGY		92.36	-12.06	-1.26	90.82	-13.50	-1.60	TA
A349L7		106.43	2.01	0.21	99.48	-4.85	-0.57	TA
EJUU6M		101.03	-3.39	-0.35	104.23	-0.09	-0.01	TA
F73E28		95.14	-9.28	-0.97	98.13	-6.19	-0.73	TA
FV2ZZXZ		105.73	1.31	0.14	101.68	-2.64	-0.31	TA
LLW2NZ		104.60	0.17	0.02	104.35	0.03	0.00	PE
ME8ZND	X	-118.92	-223.35	-23.36	-123.89	-228.22	-27.03	PE
MKF8L6		104.93	0.51	0.05	104.53	0.21	0.02	TA
NACJTY		109.17	4.74	0.50	104.20	-0.12	-0.01	TA
NFEHH3		128.33	23.90	2.50	127.96	23.63	2.80	XX
PCTFQN		102.43	-1.99	-0.21	99.12	-5.20	-0.62	TA
YC8MDH		108.80	4.37	0.46	108.23	3.91	0.46	TA

Summary Statistics		Sample W49	Sample W50
<b>Grand Means</b>		104.426 Joules Per Gram	104.324 Joules Per Gram
<b>Std Dev Btwn Labs</b>		9.561 Joules Per Gram	8.444 Joules Per Gram
Statistics based on 16 of 17 reporting participants			

Sample W49: PP & Sample W50: PP

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

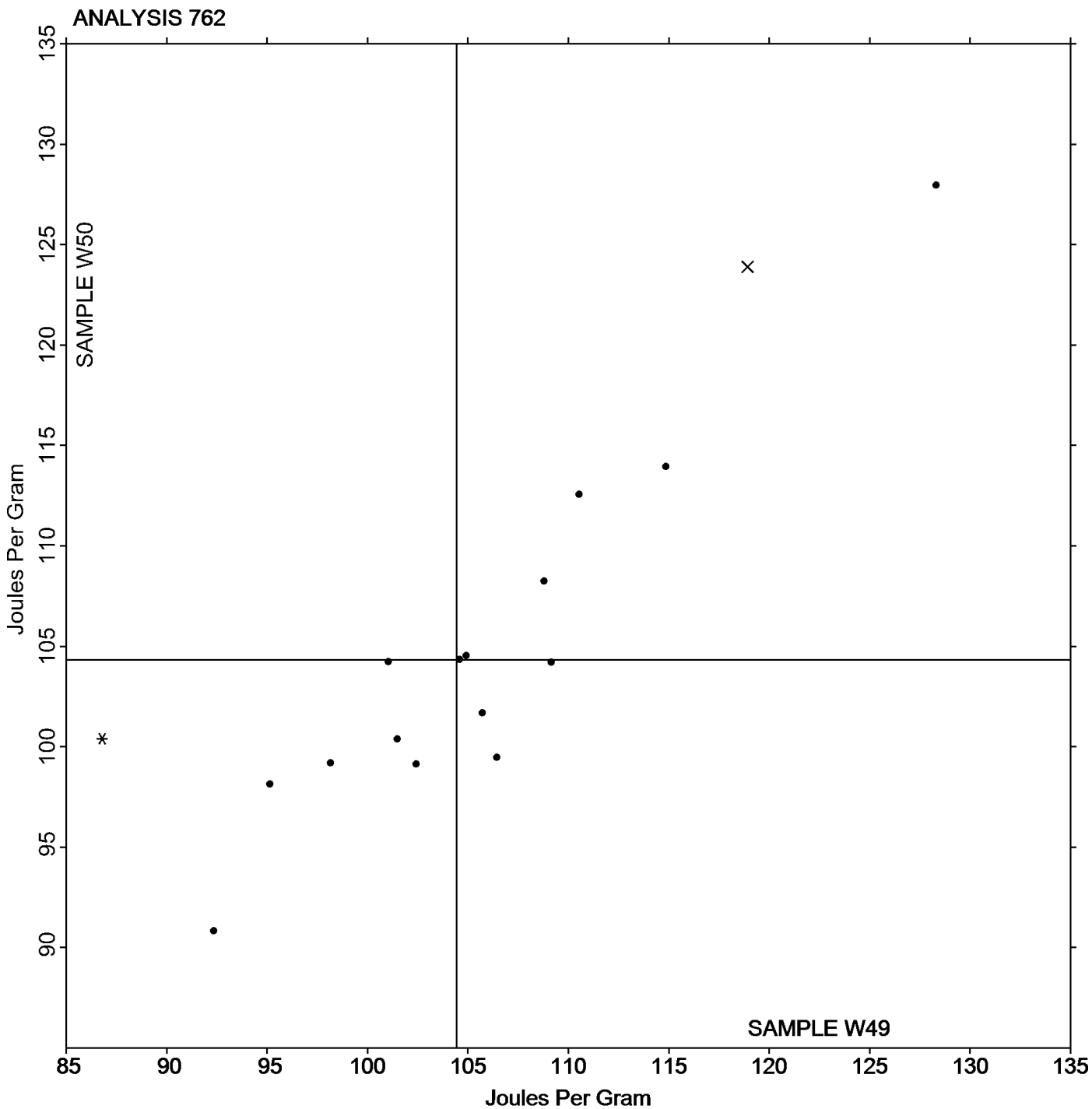
ME8ZND (X) - Extreme data.

**Key to Instrument Codes Reported by Participants**

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



Grand Mean Sample W49: 104.43 Joules Per Gram    Grand Mean Sample W50: 104.32 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 #105**

**Analysis 763**

**1st Qtr 2018**

**DSC Enthalpy of Fusion**

WebCode	Data Flag	Sample W49			Sample W50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
29HABH		106.99	4.48	0.26	108.21	6.45	0.39	PE
2DQHRM	*	72.77	-29.74	-1.74	89.35	-12.41	-0.74	TA
3NKZXF		93.99	-8.52	-0.50	94.02	-7.74	-0.46	XX
6F49LM		101.56	-0.94	-0.06	99.63	-2.13	-0.13	TA
7NXPWC		104.53	2.03	0.12	104.43	2.68	0.16	TA
9XBMGY		88.45	-14.06	-0.82	87.86	-13.89	-0.83	TA
A349L7		102.77	0.26	0.02	91.05	-10.71	-0.64	TA
EJUU6M		101.90	-0.61	-0.04	104.57	2.81	0.17	TA
F73E28		84.35	-18.16	-1.06	82.43	-19.32	-1.15	TA
FV2ZZXZ		107.10	4.59	0.27	103.50	1.74	0.10	TA
LLW2NZ		90.67	-11.84	-0.69	87.25	-14.51	-0.87	XX
ME8ZND		119.40	16.89	0.99	123.94	22.18	1.33	PE
MKF8L6		111.67	9.16	0.54	108.37	6.61	0.39	TA
NACJTY		105.49	2.99	0.17	100.87	-0.89	-0.05	TA
NFEHH3	*	151.12	48.61	2.85	150.71	48.95	2.92	XX
PCTFQN		88.87	-13.64	-0.80	83.96	-17.80	-1.06	TA
YC8MDH		111.00	8.49	0.50	109.73	7.98	0.48	TA

Summary Statistics		
	Sample W49	Sample W50
<b>Grand Means</b>	102.507 Joules Per Gram	101.757 Joules Per Gram
<b>Std Dev Btwn Labs</b>	17.085 Joules Per Gram	16.738 Joules Per Gram
Statistics based on 17 of 17 reporting participants		

Sample W49: PP & Sample W50: PP

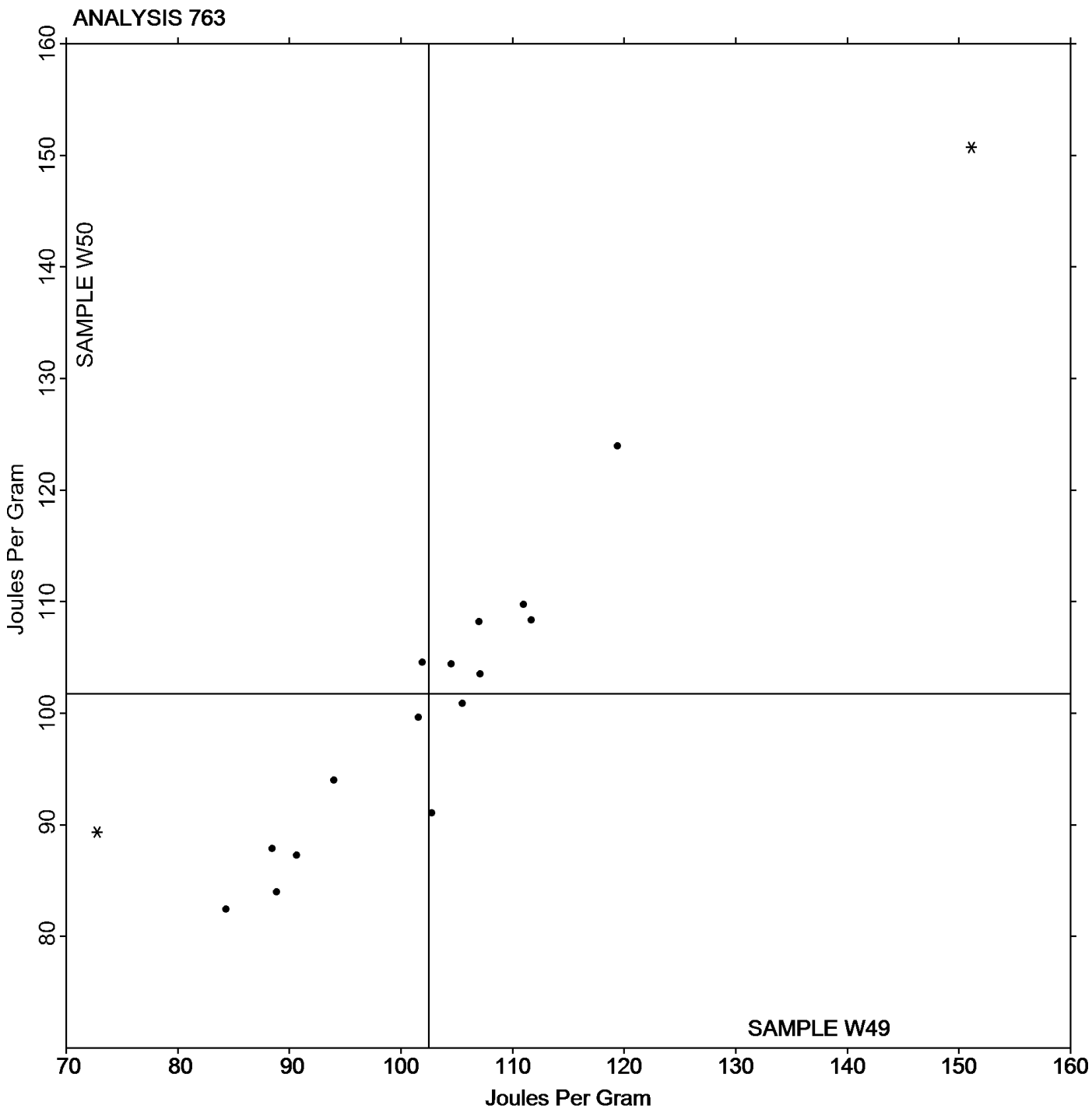
**Key to Instrument Codes Reported by Participants**

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





Grand Mean Sample W49: 102.51 Joules Per Gram    Grand Mean Sample W50: 101.76 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 #105**

**Analysis 764**

**1st Qtr 2018**

**DSC Glass Transition Temperature**

WebCode	Data Flag	Sample V49			Sample V50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
29HABH		89.80	3.71	1.60	89.60	3.01	1.33	PE
3NKZXF		87.33	1.24	0.53	86.53	-0.06	-0.03	XX
6F49LM		87.23	1.14	0.49	88.27	1.68	0.74	TA
7NXPWC		83.48	-2.61	-1.12	83.38	-3.21	-1.42	TA
9XBMGY		88.04	1.95	0.84	88.10	1.51	0.67	TA
A349L7		84.14	-1.95	-0.84	84.41	-2.18	-0.97	TA
EJU6M		88.00	1.91	0.82	89.40	2.81	1.24	TA
F73E28		86.17	0.08	0.03	85.17	-1.42	-0.63	TA
FV2ZXZ		85.96	-0.14	-0.06	86.22	-0.37	-0.16	TA
LLW2NZ		85.53	-0.56	-0.24	87.57	0.98	0.43	XX
ME8ZND		87.98	1.89	0.81	88.55	1.96	0.87	PE
MKF8L6		85.80	-0.29	-0.13	86.67	0.08	0.03	TA
NACJTY		86.53	0.44	0.19	86.17	-0.42	-0.19	TA
PCTFQN	*	82.69	-3.41	-1.47	86.53	-0.06	-0.03	TA
QC6G4A		80.84	-5.26	-2.26	81.05	-5.54	-2.46	PE
VJVFQR		88.83	2.74	1.18	88.92	2.33	1.03	MT
YC8MDH		85.20	-0.89	-0.38	85.53	-1.06	-0.47	TA

Summary Statistics		
	Sample V49	Sample V50
<b>Grand Means</b>	86.092 Degrees Celsius	86.592 Degrees Celsius
<b>Std Dev Btwn Labs</b>	2.323 Degrees Celsius	2.257 Degrees Celsius
Statistics based on 17 of 17 reporting participants		

Sample V49: PET & Sample V50: PET

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

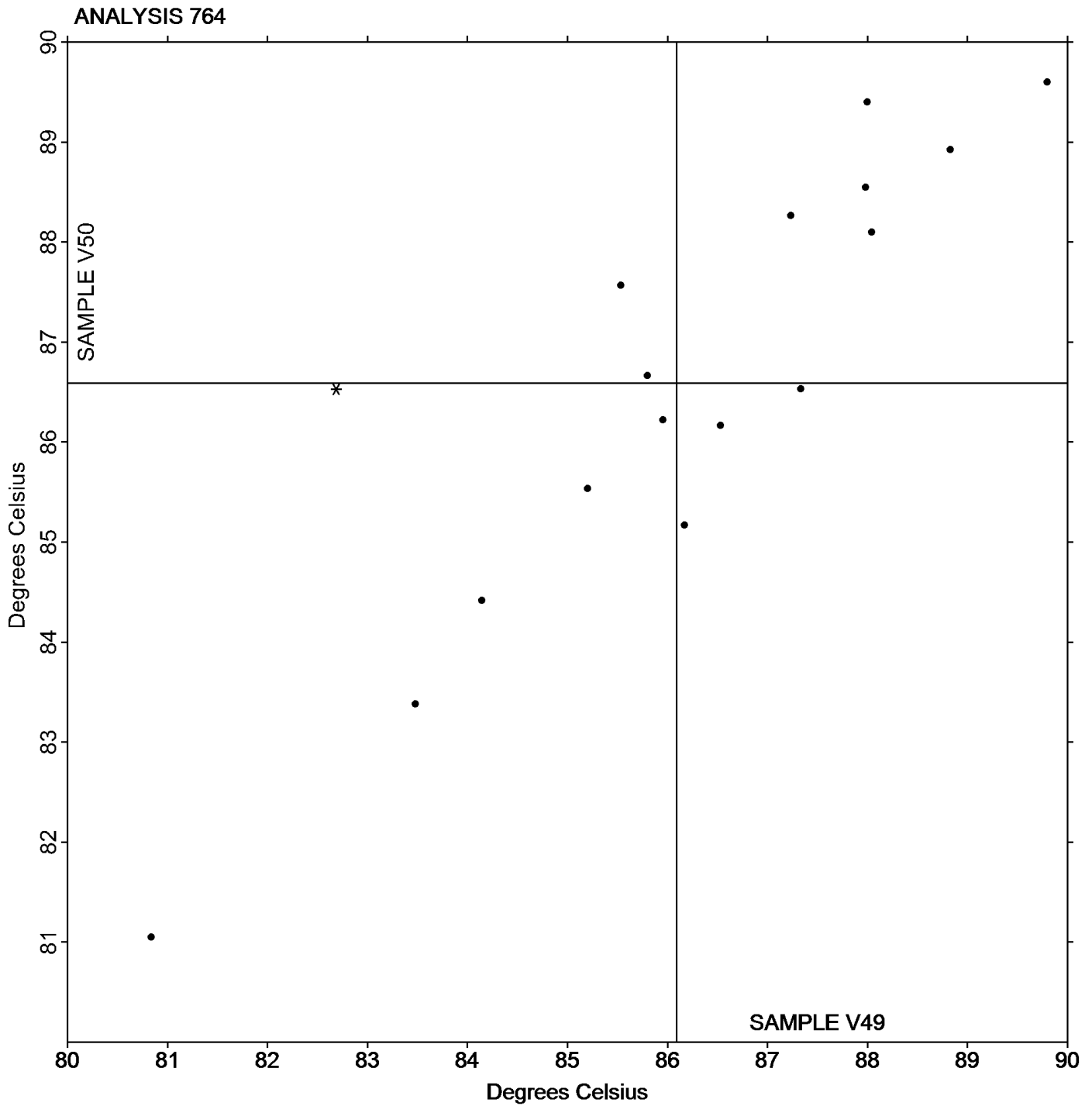
Report #105

## Analysis 764

1st Qtr 2018

### DSC Glass Transition Temperature

Grand Mean Sample V49: 86.092 Degrees Celsius    Grand Mean Sample V50: 86.592 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 #105**

**Analysis 770**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample B49			Sample B50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		1,931	52	0.20	1,669	-1	-0.01	IN
372AWV		1,590	-288	-1.09	1,365	-305	-2.49	IN
3HB6U7		2,198	320	1.20	1,780	110	0.89	WZ
6NYA2Z		1,969	91	0.34	1,683	13	0.10	SH
EA7Y77		2,008	129	0.49	1,674	3	0.02	IN
ETZMK9		1,989	110	0.42	1,714	44	0.36	IN
JB6NMW		2,214	335	1.26	1,857	187	1.52	XX
M64QE3		1,373	-506	-1.91	1,612	-58	-0.48	IN
PG9P27		1,607	-272	-1.02	1,625	-45	-0.37	IN
PZGUKA		2,047	168	0.63	1,748	77	0.63	IN
TKCPQT		1,995	117	0.44	1,738	67	0.55	OA
YKDND A		1,622	-257	-0.97	1,582	-89	-0.72	IN

Summary Statistics		
	Sample B49	Sample B50
<b>Grand Means</b>	1,878.4 psi	1,670.7 psi
<b>Stnd Dev Btwn Labs</b>	265.4 psi	122.8 psi
Statistics based on 12 of 12 reporting participants		

Sample B49: LDPE & Sample B50: LDPE

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- XX Instrument manufacturer not specified by lab
- OA Oakland Testing
- WZ Zwick



Plastics Interlaboratory Testing Program

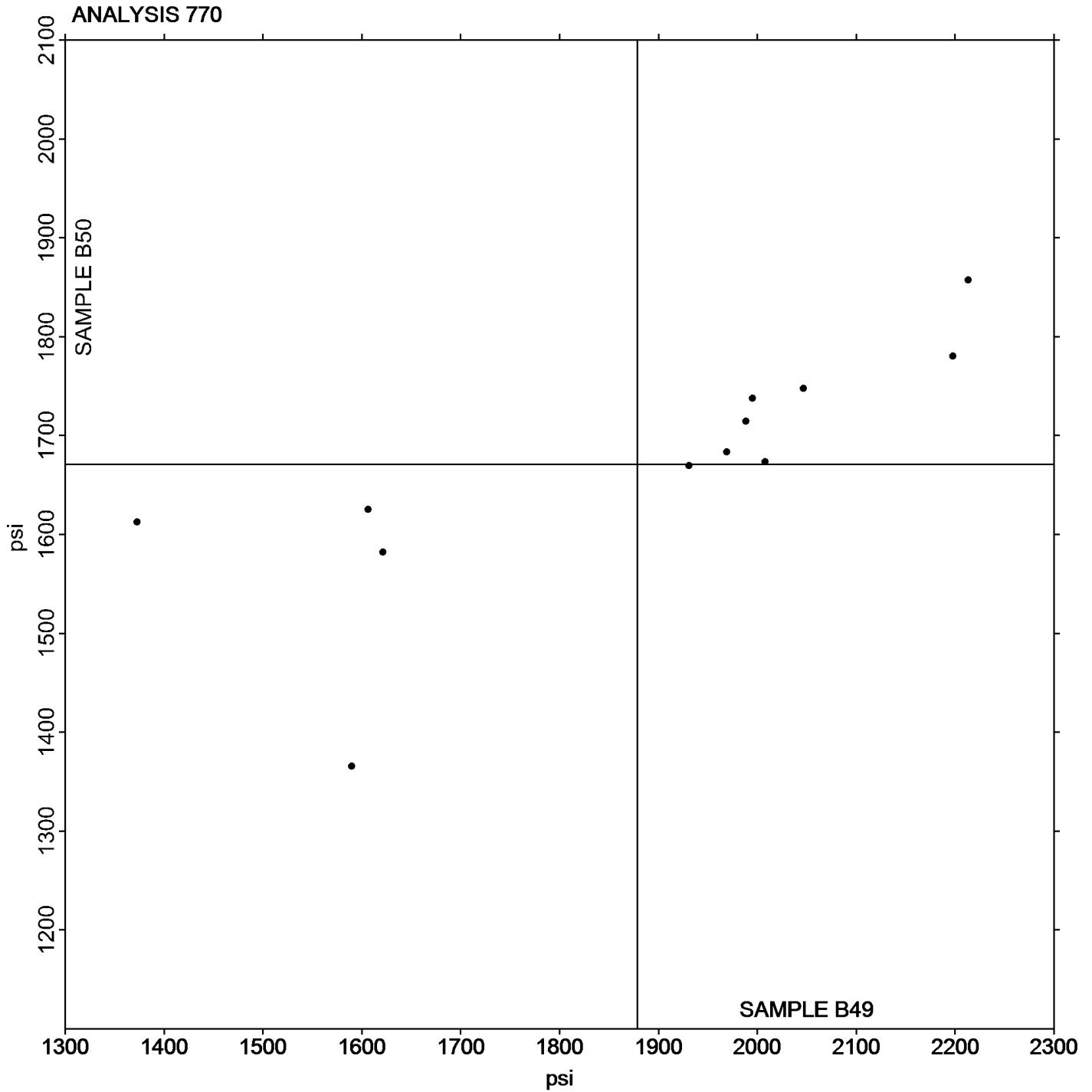
Report #105

Analysis 770

1st Qtr 2018

Tensile Stress at Yield, Film Samples - psi

Grand Mean Sample B49: 1,878.42 psi Grand Mean Sample B50: 1,670.65 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 #105**

**Analysis 771**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample B49			Sample B50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		3,456	-262	-0.71	2,983	-396	-1.41	IN
372AWV		3,465	-253	-0.69	2,908	-471	-1.68	IN
3HB6U7		4,184	466	1.26	3,654	275	0.98	WZ
6NYA2Z		3,643	-76	-0.20	3,332	-47	-0.17	SH
EA7Y77		3,980	261	0.71	3,588	209	0.75	IN
ETZMK9		4,052	334	0.90	3,702	323	1.15	IN
F73E28		3,804	86	0.23	3,133	-246	-0.88	SH
JB6NMW		4,339	620	1.68	3,781	402	1.44	XX
M64QE3		3,603	-116	-0.31	3,195	-183	-0.65	IN
PG9P27		3,703	-15	-0.04	3,570	191	0.68	IN
PZGUKA		3,815	96	0.26	3,557	178	0.64	IN
TKCPQT		3,794	76	0.20	3,498	119	0.42	OA
UL6U6L		2,915	-804	-2.18	3,284	-94	-0.34	UC
YKDND A		3,306	-413	-1.12	3,117	-262	-0.93	IN

Summary Statistics		
	Sample B49	Sample B50
<b>Grand Means</b>	3,718.4 psi	3,378.6 psi
<b>Stnd Dev Btwn Labs</b>	369.3 psi	280.1 psi
Statistics based on 14 of 14 reporting participants		

Sample B49: LDPE & Sample B50: LDPE

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- WZ Zwick
- OA Oakland Testing
- UC United
- XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

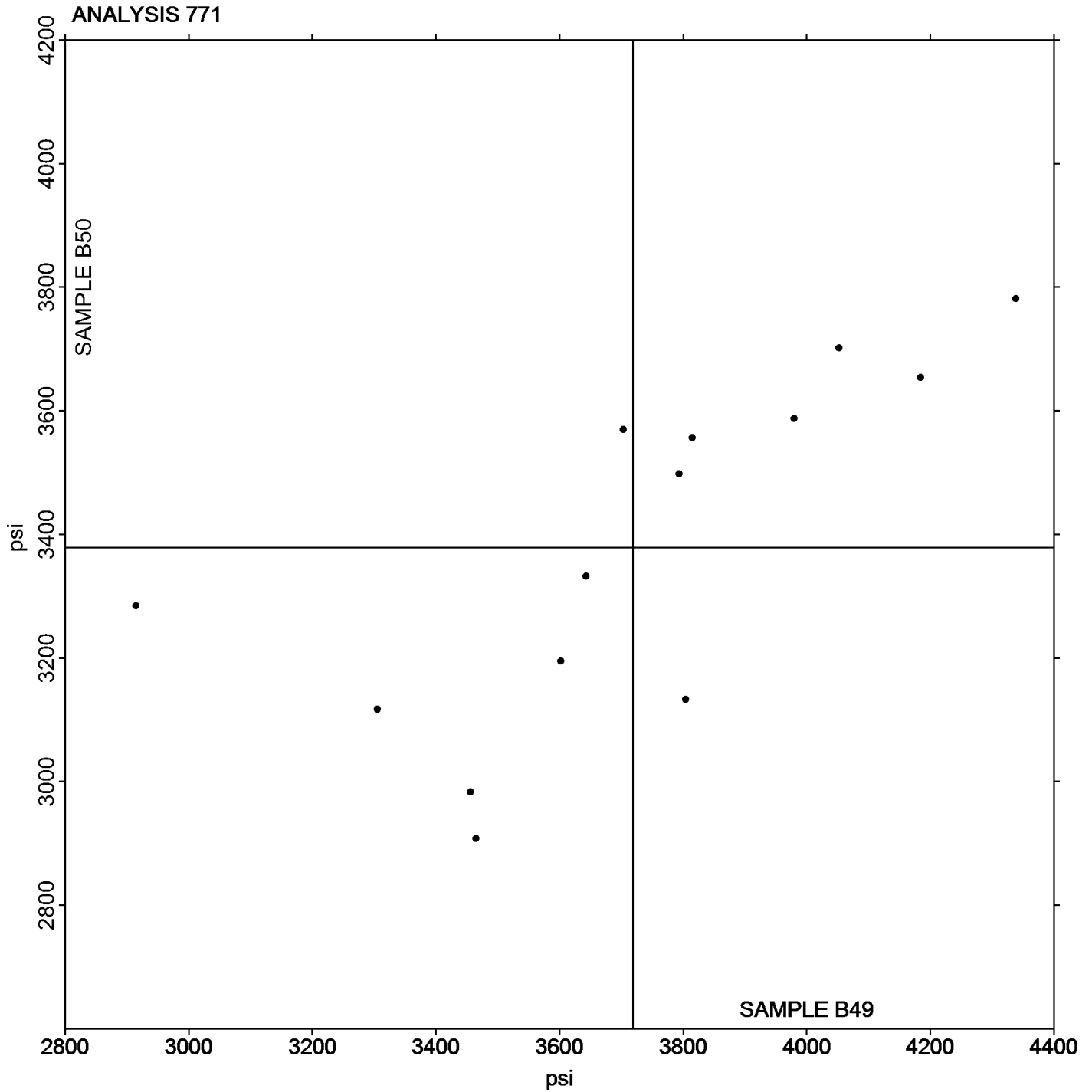
Report #105

## Analysis 771

1st Qtr 2018

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

Grand Mean Sample B49: 3,718.43 psi    Grand Mean Sample B50: 3,378.58 psi



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



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 772**

**1st Qtr 2018**

**Percent Elongation at Yield, Films**

WebCode	Data Flag	Sample B49			Sample B50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		106.89	43.06	1.39	85.73	36.02	1.39	IN
372AWV		40.50	-23.33	-0.75	37.50	-12.21	-0.47	IN
3HB6U7		64.90	1.07	0.03	54.52	4.81	0.19	WZ
6NYA2Z		77.76	13.93	0.45	64.03	14.31	0.55	SH
EA7Y77		80.52	16.69	0.54	69.08	19.37	0.75	IN
ETZMK9		64.55	0.72	0.02	17.00	-32.71	-1.26	IN
JB6NMW		82.39	18.56	0.60	68.00	18.29	0.70	XX
M64QE3		72.89	9.06	0.29	57.47	7.76	0.30	IN
PG9P27		9.70	-54.13	-1.75	11.94	-37.77	-1.46	IN
PZGUKA		89.72	25.89	0.84	69.37	19.66	0.76	IN
YKDND A		12.30	-51.53	-1.67	12.18	-37.53	-1.45	IN

Summary Statistics		
	Sample B49	Sample B50
<b>Grand Means</b>	63.829 Percent	49.712 Percent
<b>Std Dev Btwn Labs</b>	30.911 Percent	25.953 Percent
Statistics based on 11 of 11 reporting participants		

Sample B49: LDPE & Sample B50: LDPE

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

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- WZ Zwick
- XX Instrument manufacturer not specified by lab





# Plastics Interlaboratory Testing Program

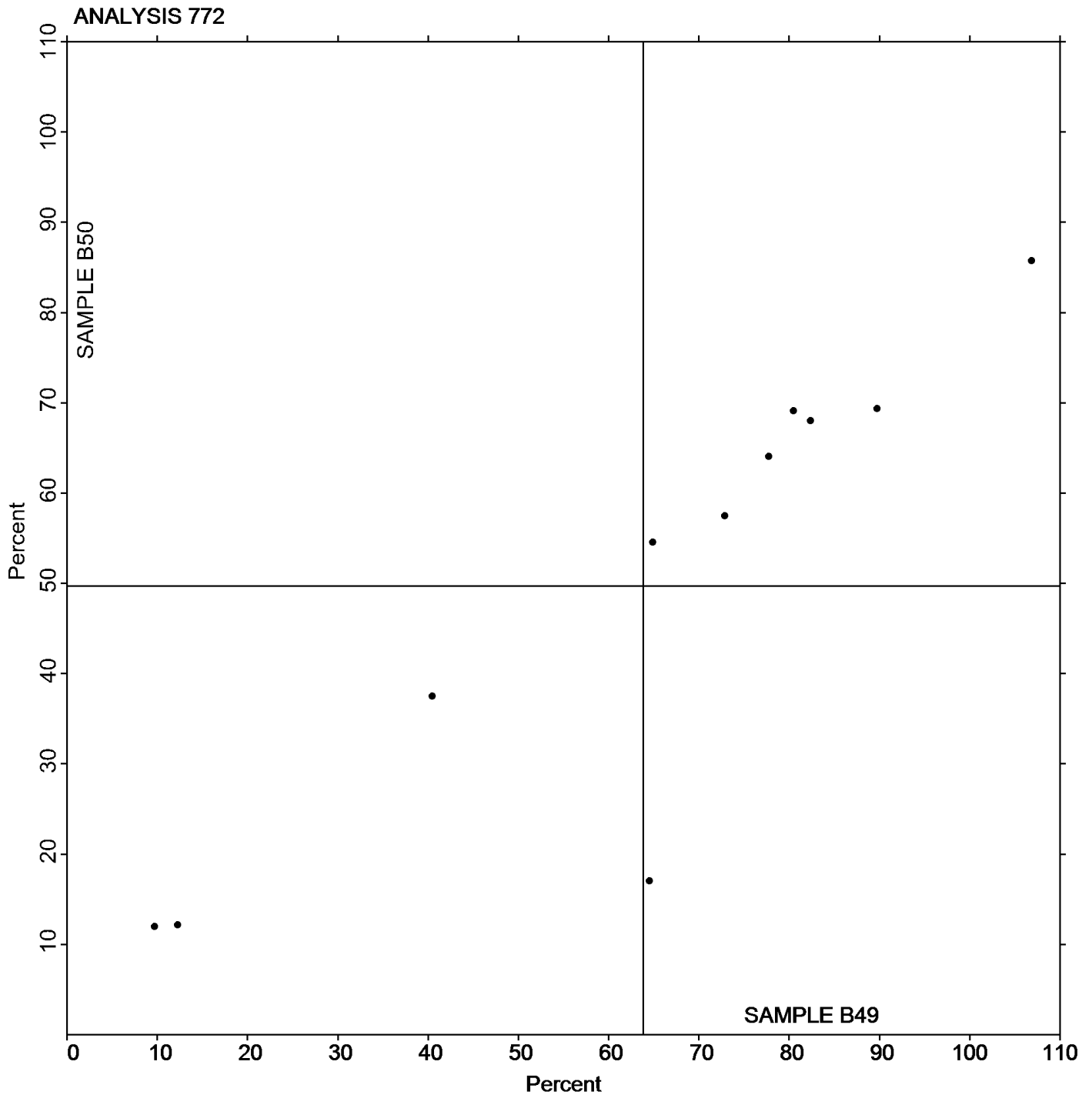
Report #105

## Analysis 772

1st Qtr 2018

### Percent Elongation at Yield, Films

Grand Mean Sample B49: 63.829 Percent    Grand Mean Sample B50: 49.712 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 #105**

**Analysis 773**

**1st Qtr 2018**

**Percent Elongation at Break, Film Samples**

WebCode	Data Flag	Sample B49			Sample B50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		940.1	89.2	0.50	770.2	-50.0	-0.33	IN
372AWV		1,229.6	378.7	2.12	1,134.6	314.4	2.10	IN
3HB6U7		652.0	-198.9	-1.11	637.0	-183.2	-1.22	WZ
6NYA2Z		855.6	4.7	0.03	820.4	0.2	0.00	SH
EA7Y77		786.5	-64.4	-0.36	778.4	-41.8	-0.28	IN
ETZMK9		689.0	-161.9	-0.91	641.6	-178.6	-1.19	IN
F73E28		1,166.6	315.7	1.77	1,106.0	285.8	1.91	SH
JB6NMW		859.8	8.8	0.05	798.1	-22.1	-0.15	XX
M64QE3		772.3	-78.6	-0.44	734.4	-85.8	-0.57	IN
PG9P27		721.4	-129.5	-0.72	681.4	-138.8	-0.93	IN
PZGUKA		958.5	107.6	0.60	927.0	106.8	0.71	IN
TKCPQT		866.3	15.3	0.09	805.2	-15.0	-0.10	OA
UL6U6L	*	611.9	-239.0	-1.34	856.8	36.6	0.24	UC
YKDND A		803.5	-47.4	-0.27	791.9	-28.3	-0.19	IN

Summary Statistics		
	Sample B49	Sample B50
<b>Grand Means</b>	850.94 Percent	820.22 Percent
<b>Stnd Dev Btwn Labs</b>	178.71 Percent	149.65 Percent
Statistics based on 14 of 14 reporting participants		

Sample B49: LDPE & Sample B50: LDPE

**Key to Instrument Codes Reported by Participants**

- |             |   |
|-------------|---|
| IN Instron  | OA Oakland Testing                              |
| SH Shimadzu | UC United                                       |
| WZ Zwick    | XX Instrument manufacturer not specified by lab |



# Plastics Interlaboratory Testing Program

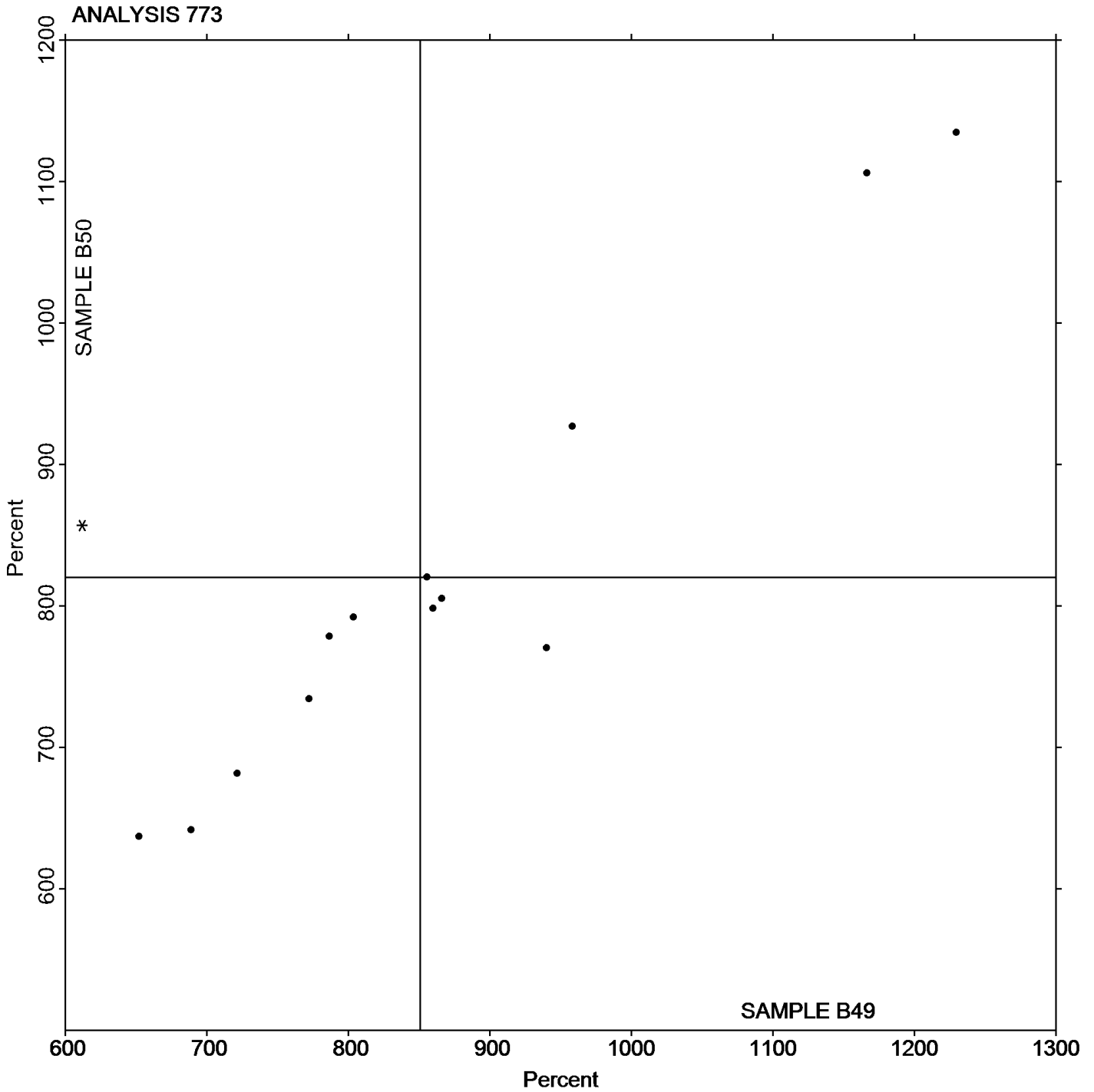
Report #105

## Analysis 773

1st Qtr 2018

### Percent Elongation at Break, Film Samples

Grand Mean Sample B49: 850.94 Percent    Grand Mean Sample B50: 820.22 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 #105**

**Analysis 774**

**1st Qtr 2018**

**Thickness of Film Tensile Samples - mils**

WebCode	Data Flag	<u>Sample B49</u>			<u>Sample B50</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
2K8Z2N		3.9331	0.2641	1.91	4.1102	0.2755	1.49
372AWV		3.6930	0.0241	0.17	3.8544	0.0196	0.11
3HB6U7		3.5485	-0.1204	-0.87	3.9339	0.0992	0.54
6NYA2Z		3.6615	-0.0074	-0.05	3.7355	-0.0993	-0.54
EA7Y77		3.5960	-0.0729	-0.53	3.9960	0.1612	0.87
ETZMK9		3.6670	-0.0019	-0.01	3.8740	0.0392	0.21
F73E28		3.7362	0.0673	0.49	4.1732	0.3384	1.83
JB6NMW		3.4720	-0.1969	-1.42	3.4380	-0.3968	-2.14
M64QE3		3.5570	-0.1119	-0.81	3.7040	-0.1308	-0.71
PG9P27		3.8426	0.1737	1.25	3.7442	-0.0906	-0.49
PZGUKA		3.7900	0.1211	0.87	3.9250	0.0902	0.49
TKCPQT		3.8180	0.1491	1.08	3.9290	0.0942	0.51
UL6U6L		3.4100	-0.2589	-1.87	3.5800	-0.2548	-1.38
VGD3GP		3.6240	-0.0449	-0.32	3.7760	-0.0588	-0.32
XBWGKN		3.6240	-0.0449	-0.32	3.7480	-0.0868	-0.47
YKDND A		3.7300	0.0611	0.44	3.8350	0.0002	0.00

<b>Summary Statistics</b>		
	<u>Sample B49</u>	<u>Sample B50</u>
<b>Grand Means</b>	3.66893 mils	3.83478 mils
<b>Stnd Dev Btwn Labs</b>	0.13854 mils	0.18506 mils
Statistics based on 16 of 16 reporting participants		

Sample B49: LDPE & Sample B50: LDPE





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 775**

**1st Qtr 2018**

**Secant Modulus at 1% Strain - psi**

WebCode	Data Flag	Sample B49			Sample B50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		2,126	-28,326	-2.33	6,530	-22,455	-2.21	IN
372AWV		24,832	-5,620	-0.46	21,257	-7,728	-0.76	IN
3HB6U7		35,317	4,865	0.40	31,909	2,924	0.29	WZ
6NYA2Z		44,276	13,824	1.14	42,008	13,024	1.28	SH
ETZMK9		34,775	4,323	0.36	32,657	3,672	0.36	IN
JB6NMW		37,790	7,338	0.60	35,254	6,269	0.62	XX
M64QE3		26,673	-3,779	-0.31	26,842	-2,142	-0.21	IN
TKCPQT		37,226	6,774	0.56	34,236	5,251	0.52	OA
YKDND A		31,050	599	0.05	30,168	1,184	0.12	IN

Summary Statistics		Sample B49	Sample B50
<b>Grand Means</b>		30,451.6 psi	28,984.5 psi
<b>Stnd Dev Btwn Labs</b>		12,154.2 psi	10,176.3 psi
Statistics based on 9 of 9 reporting participants			

Sample B49: LDPE & Sample B50: LDPE

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- XX Instrument manufacturer not specified by lab
- OA Oakland Testing
- WZ Zwick



# Plastics Interlaboratory Testing Program

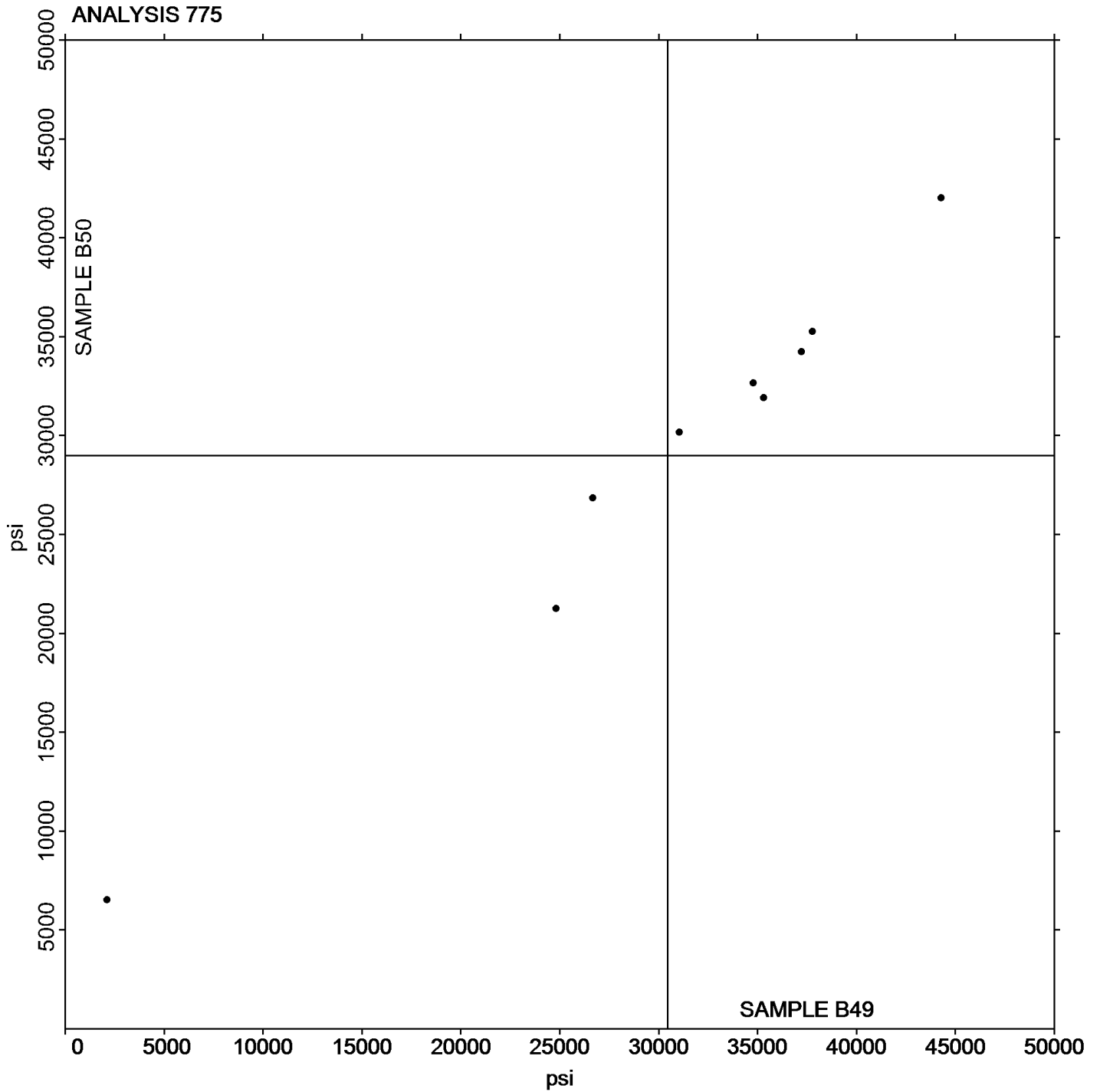
Report #105

## Analysis 775

1st Qtr 2018

Secant Modulus at 1% Strain - psi

Grand Mean Sample B49: 30,451.61 psi    Grand Mean Sample B50: 28,984.51 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 #105**

**Analysis 776**

**1st Qtr 2018**

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

WebCode	Data Flag	<u>Sample B49</u>			<u>Sample B50</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N		10,945	-13,352	-1.50	15,636	-8,467	-1.29	IN
372AWV		24,326	29	0.00	21,415	-2,689	-0.41	IN
6NYA2Z		32,948	8,651	0.97	31,455	7,352	1.12	SH
JB6NMW		31,807	7,510	0.84	30,031	5,928	0.90	XX
M64QE3		21,459	-2,838	-0.32	21,979	-2,124	-0.32	IN

<b>Summary Statistics</b>		<u>Sample B49</u>	<u>Sample B50</u>
<b>Grand Means</b>		24,297.1 psi	24,103.1 psi
<b>Std Dev Btwn Labs</b>		8,910.2 psi	6,569.3 psi
Statistics based on 5 of 5 reporting participants			

Sample B49: LDPE & Sample B50: LDPE

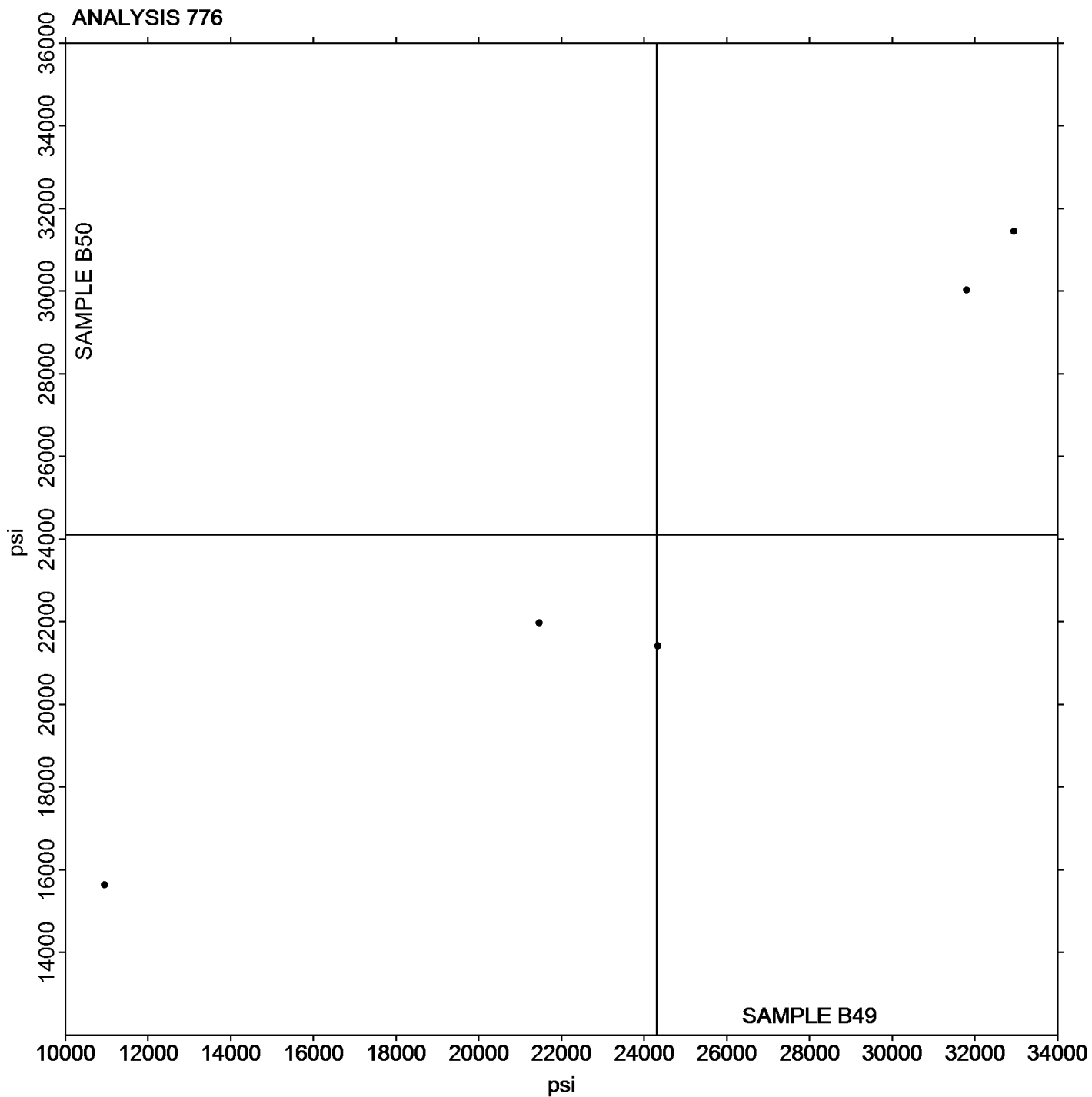
**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- XX Instrument manufacturer not specified by lab





Grand Mean Sample B49: 24,297.12 psi    Grand Mean Sample B50: 24,103.14 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 #105**

**Analysis 780**

**1st Qtr 2018**

**Coefficient of Static Friction**

WebCode	Data Flag	Sample P49			Sample P50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3HB6U7		0.1846	0.0345	0.71	0.1990	0.0582	1.22	TH
4ZAJPQ		0.1283	-0.0219	-0.45	0.0810	-0.0598	-1.26	IG
6NYA2Z		0.1853	0.0352	0.72	0.1563	0.0155	0.33	SA
ETZMK9		0.1312	-0.0189	-0.39	0.0848	-0.0560	-1.18	TH
F73E28		0.1346	-0.0155	-0.32	0.1514	0.0106	0.22	SA
QC8YAL		0.0398	-0.1103	-2.27	0.0814	-0.0594	-1.25	LI
TKCPQT		0.1768	0.0267	0.55	0.1976	0.0568	1.20	TH
UB87XP		0.1820	0.0319	0.66	0.1460	0.0052	0.11	IS
XHCB8J		0.1886	0.0385	0.79	0.1697	0.0289	0.61	IG
YKDND A	<b>M</b>	No data reported for this sample			0.1330	-0.0078	-0.16	TN

Summary Statistics		
	Sample P49	Sample P50
<b>Grand Means</b>	0.15013 COF	0.14080 COF
<b>Std Dev Btwn Labs</b>	0.04858 COF	0.04753 COF
Statistics based on 9 of 10 reporting participants		

Sample P49: LDPE & Sample P50: LDPE

**Comments on Assigned Data Flags for Test #780**

YKDND A (M) - Participant did not submit data for sample P49.

**Key to Instrument Codes Reported by Participants**

<b>IG</b> Instron	<b>IS</b> Instron 5000 Series
<b>LI</b> Lloyd Instruments	<b>SA</b> Shimadzu Autograph
<b>TH</b> Thwing Albert Friction/Peel Tester Model 225-1	<b>TN</b> TMI #32-06



# Plastics Interlaboratory Testing Program

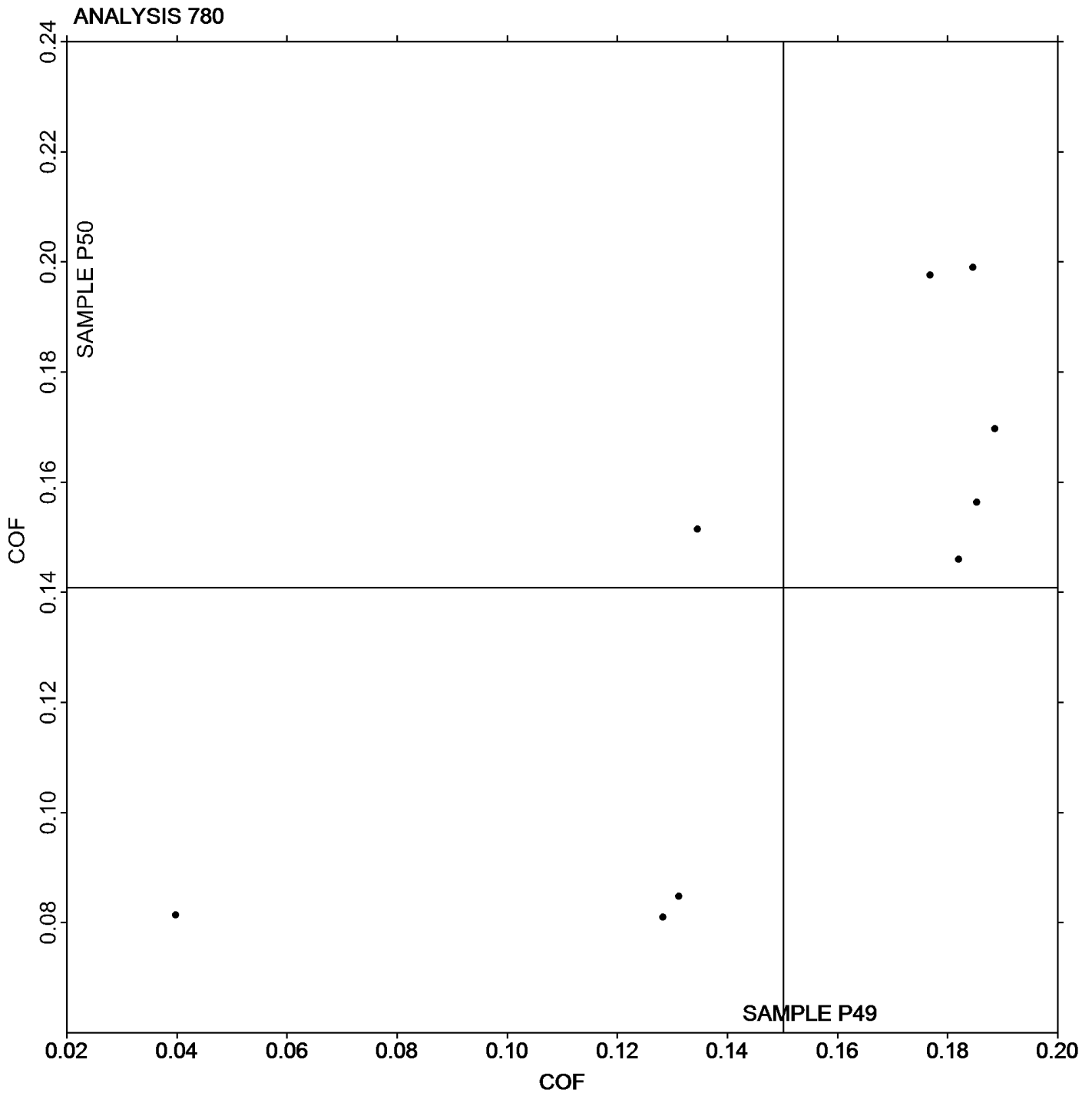
Report #105

## Analysis 780

1st Qtr 2018

### Coefficient of Static Friction

Grand Mean Sample P49: 0.15013 COF    Grand Mean Sample P50: 0.14080 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 #105

## Analysis 781

1st Qtr 2018

### Coefficient of Kinetic Friction

WebCode	Data Flag	Sample P49			Sample P50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3HB6U7		0.1106	-0.0061	-0.15	0.0988	-0.0099	-0.35	TH
4ZAJPQ		0.1132	-0.0035	-0.09	0.0858	-0.0230	-0.81	IG
6NYA2Z		0.1210	0.0043	0.11	0.1058	-0.0030	-0.11	SA
ETZMK9		0.1240	0.0073	0.18	0.0870	-0.0217	-0.77	TH
F73E28		0.0916	-0.0251	-0.63	0.1200	0.0113	0.40	SA
QC8YAL		0.0316	-0.0851	-2.12	0.0772	-0.0315	-1.11	XX
TKCPQT		0.1416	0.0249	0.62	0.1618	0.0531	1.87	TH
UB87XP		0.1382	0.0215	0.54	0.0980	-0.0107	-0.38	IS
XHCB8J		0.1782	0.0615	1.53	0.1443	0.0356	1.26	IG
YKDND A	M	No data reported for this sample			0.0956	-0.0131	-0.46	TN

Summary Statistics		
	Sample P49	Sample P50
<b>Grand Means</b>	0.11666 COF	0.10874 COF
<b>Std Dev Btwn Labs</b>	0.04009 COF	0.02835 COF
Statistics based on 9 of 10 reporting participants		

Sample P49: LDPE & Sample P50: LDPE

#### Comments on Assigned Data Flags for Test #781

YKDND A (M) - Participant did not submit data for sample P49.

#### Key to Instrument Codes Reported by Participants

IG	Instron	IS	Instron 5000 Series
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

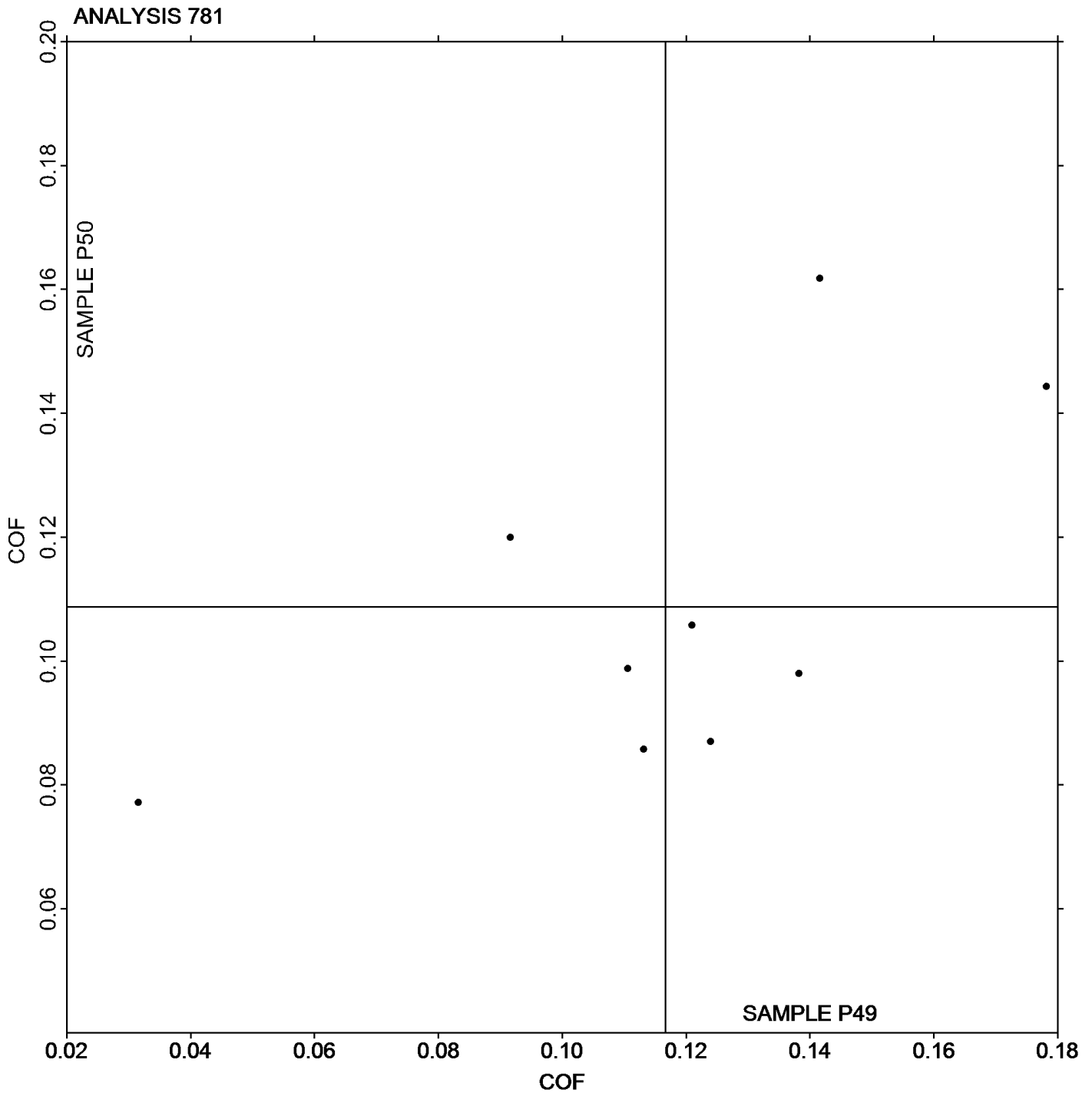
Report #105

Analysis 781

1st Qtr 2018

Coefficient of Kinetic Friction

Grand Mean Sample P49: 0.11666 COF    Grand Mean Sample P50: 0.10874 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 #105

## Analysis 782

1st Qtr 2018

### Tear Resistance of Films

WebCode	Data Flag	Sample Q49			Sample Q50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3HB6U7		216.2	11.2	0.22	531.6	102.0	0.79	TA
6NYA2Z		211.4	6.4	0.13	458.7	29.1	0.23	TE
8D7WFX		96.2	-108.9	-2.16	95.4	-334.3	-2.59	EM
ETZMK9		248.0	43.0	0.85	470.7	41.0	0.32	TE
F73E28		174.6	-30.4	-0.60	468.3	38.6	0.30	LO
JB6NMW		260.4	55.4	1.10	490.8	61.1	0.47	XX
PG9P27		245.9	40.9	0.81	419.7	-10.0	-0.08	SZ
TKCPQT		177.6	-27.4	-0.54	480.6	51.0	0.40	TE
YKDND A		214.9	9.9	0.20	451.1	21.4	0.17	TM

#### Summary Statistics

	Sample Q49	Sample Q50
<b>Grand Means</b>	205.02 grams-force	429.65 grams-force
<b>Stnd Dev Btwn Labs</b>	50.47 grams-force	128.97 grams-force

Statistics based on 9 of 9 reporting participants

Sample Q49: LDPE & Sample Q50: LDPE

#### Key to Instrument Codes Reported by Participants

EM	Elmendorf Tear Tester	LO	Lorentzen & Wettre Model II
SZ	Textest FX 3700	TA	Thwing-Albert
TE	Thwing-Albert Pro Tear	TM	TMI No. 83-1100
XX	Instrument make/model not specified by lab		



# Plastics Interlaboratory Testing Program

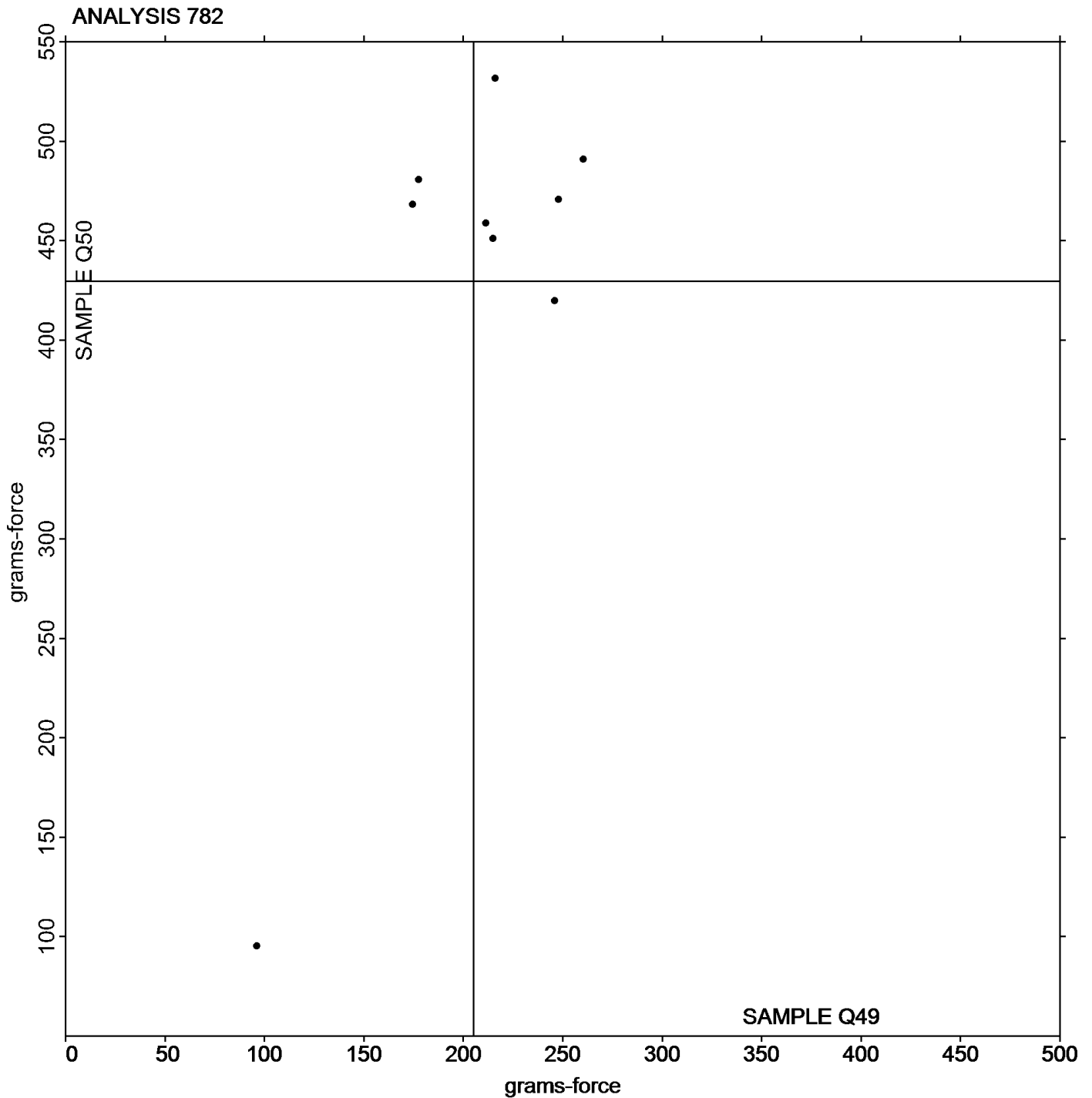
Report #105

## Analysis 782

1st Qtr 2018

### Tear Resistance of Films

Grand Mean Sample Q49: 205.02 grams-force    Grand Mean Sample Q50: 429.65 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 #105

## Analysis 785

1st Qtr 2018

### Percent Haze of Film

WebCode	Data Flag	Sample D49			Sample D50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3HB6U7		15.440	-0.780	-0.88	15.680	0.019	0.02	BJ
6AVVPA		16.525	0.305	0.35	15.038	-0.624	-0.64	BJ
6NYA2Z		16.675	0.455	0.51	16.213	0.551	0.57	BJ
7XJ4JF		16.749	0.529	0.60	16.838	1.176	1.21	XR
C9KBX2		16.320	0.100	0.11	15.753	0.091	0.09	BJ
ETZMK9		16.800	0.580	0.66	16.113	0.451	0.46	BJ
F4WZA8		17.125	0.905	1.02	15.913	0.251	0.26	BJ
F72T2K		15.488	-0.732	-0.83	15.688	0.026	0.03	BJ
G7EG3C		16.303	0.083	0.09	16.399	0.737	0.76	BH
H2FKVW	*	13.581	-2.638	-2.98	12.364	-3.298	-3.39	XR
K36VHV	X	22.275	6.055	6.85	21.850	6.189	6.37	BJ
LBEBBN		17.100	0.880	1.00	15.938	0.276	0.28	BJ
M64QE3		16.479	0.259	0.29	16.148	0.486	0.50	HC
PG9P27		16.013	-0.207	-0.23	15.588	-0.074	-0.08	BJ
RDZCAJ		15.800	-0.420	-0.47	14.488	-1.174	-1.21	BJ
RFR4QV		16.363	0.143	0.16	15.675	0.014	0.01	BJ
RJNY44		14.674	-1.546	-1.75	14.118	-1.544	-1.59	HL
TKCPQT		17.369	1.149	1.30	16.770	1.109	1.14	XR
U8663U		16.433	0.213	0.24	16.536	0.875	0.90	BJ
UB87XP		15.900	-0.320	-0.36	16.013	0.351	0.36	BJ
UCV6V6		15.775	-0.445	-0.50	15.275	-0.386	-0.40	BJ
UJYH3Q		15.375	-0.845	-0.96	15.088	-0.574	-0.59	BJ
V87A4N		17.290	1.070	1.21	16.771	1.110	1.14	XR
XBWGKN		17.263	1.043	1.18	15.850	0.189	0.19	BJ
YKDND A		16.438	0.218	0.25	15.625	-0.036	-0.04	BJ

Summary Statistics		
	Sample D49	Sample D50
<b>Grand Means</b>	16.2197 Percent	15.6615 Percent
<b>Std Dev Btwn Labs</b>	0.8844 Percent	0.9717 Percent
Statistics based on 24 of 25 reporting participants		

Sample D49: LDPE & Sample D50: LDPE





# Plastics Interlaboratory Testing Program

Report #105

Analysis 785

1st Qtr 2018

Percent Haze of Film

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## **Comments on Assigned Data Flags for Test #785**

K36VHV (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample D50.

## **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

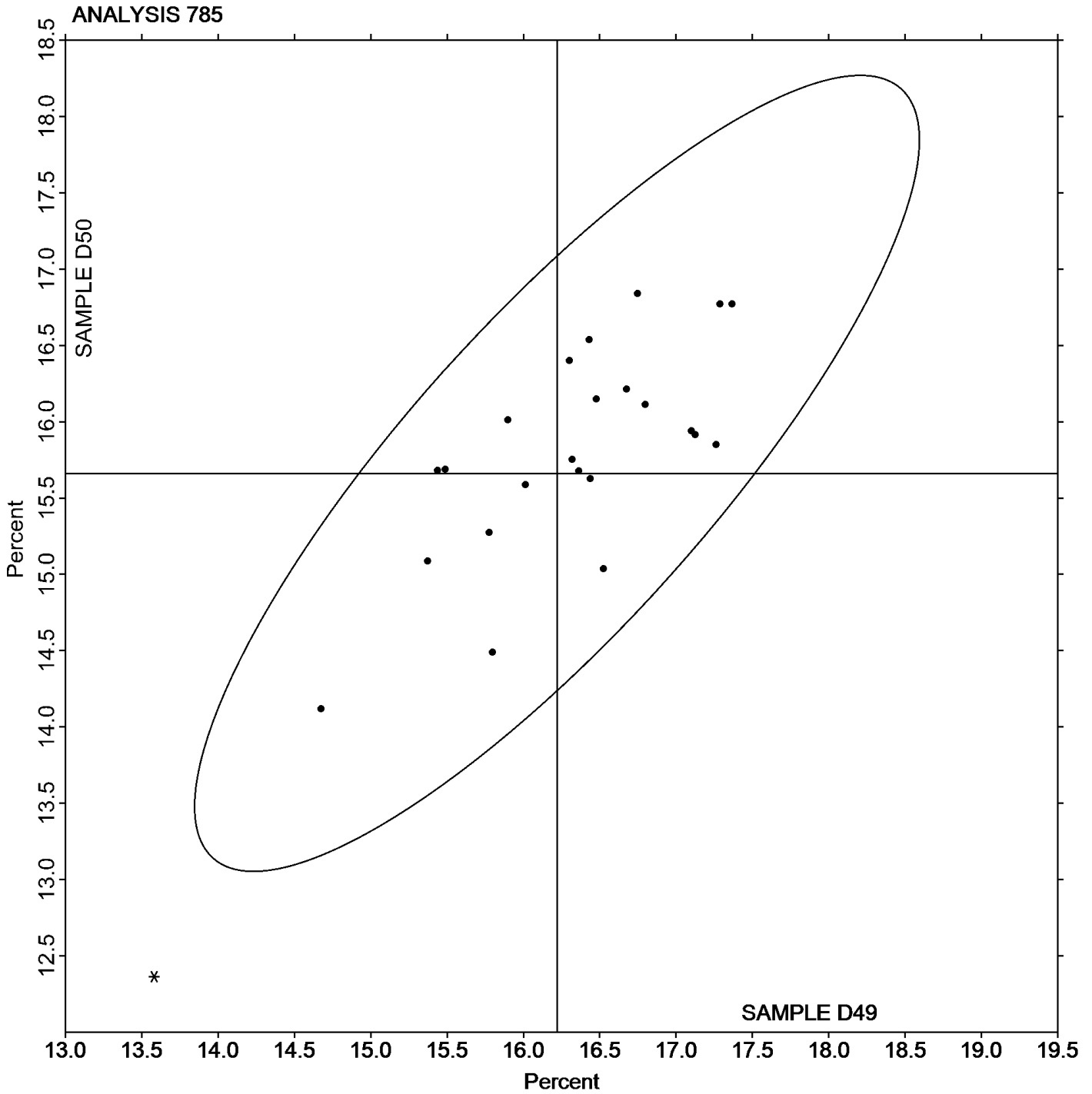
Report #105

Analysis 785

1st Qtr 2018

Percent Haze of Film

Grand Mean Sample D49: 16.220 Percent    Grand Mean Sample D50: 15.661 Percent





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 786**

**1st Qtr 2018**

**Total Luminous transmittance of film**

WebCode	Data Flag	Sample D49			Sample D50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
3HB6U7		93.42	0.74	0.80	93.18	0.45	0.47	BJ
6AVVPA	X	92.21	-0.46	-0.50	93.54	0.81	0.85	BJ
6NYA2Z		92.78	0.10	0.11	92.80	0.07	0.07	BJ
7XJ4JF		91.85	-0.82	-0.88	91.56	-1.17	-1.22	XR
C9KBX2		93.08	0.40	0.43	93.14	0.41	0.43	BJ
ETZMK9		93.34	0.66	0.71	93.55	0.82	0.86	BJ
F4WZA8		92.48	-0.20	-0.22	92.55	-0.18	-0.19	BJ
F72T2K		93.38	0.70	0.75	93.49	0.76	0.79	BJ
G7EG3C		91.58	-1.10	-1.18	91.58	-1.15	-1.21	BH
H2FKVW	X	91.39	-1.29	-1.38	92.21	-0.52	-0.54	XR
K36VHV		92.41	-0.26	-0.28	92.25	-0.48	-0.50	BJ
LBEBBN		92.64	-0.04	-0.04	92.81	0.08	0.09	BJ
M64QE3		92.28	-0.39	-0.42	92.22	-0.51	-0.54	HC
PG9P27		91.08	-1.60	-1.72	91.24	-1.49	-1.56	BJ
RDZCAJ		92.86	0.19	0.20	92.99	0.26	0.27	BJ
RFR4QV		93.28	0.60	0.64	93.26	0.53	0.56	BJ
RJNY44		90.68	-2.00	-2.15	90.85	-1.88	-1.97	HL
TKCPQT		91.41	-1.26	-1.36	91.34	-1.39	-1.45	XR
U8663U		93.16	0.49	0.52	93.43	0.70	0.73	BJ
UB87XP		93.96	1.29	1.38	93.98	1.25	1.30	BJ
UCV6V6		93.15	0.47	0.51	93.41	0.68	0.71	BJ
UJYH3Q		93.38	0.70	0.75	93.48	0.75	0.78	BJ
V87A4N		91.78	-0.89	-0.96	91.94	-0.79	-0.83	XR
XBWGKN		94.43	1.75	1.88	94.54	1.81	1.89	BJ
YKDND A		93.16	0.49	0.52	93.21	0.48	0.51	BJ

Summary Statistics		
	Sample D49	Sample D50
<b>Grand Means</b>	92.676 Percent	92.730 Percent
<b>Std Dev Btwn Labs</b>	0.931 Percent	0.955 Percent
Statistics based on 23 of 25 reporting participants		

Sample D49: LDPE & Sample D50: LDPE



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 786

1st Qtr 2018

### Total Luminous transmittance of film

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

6AVPA (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample D49.

H2FKVW (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample D50.

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

**BH** BYK-Gardner/Pacific Scientific Model XL-211

**BJ** BYK-Gardner Haze-Gard Plus

**HC** Hunterlab ColorQuest

**HL** Hunterlab Ultrascan XE

**XR** X-Rite Spectrocolorimeter (any model)



# Plastics Interlaboratory Testing Program

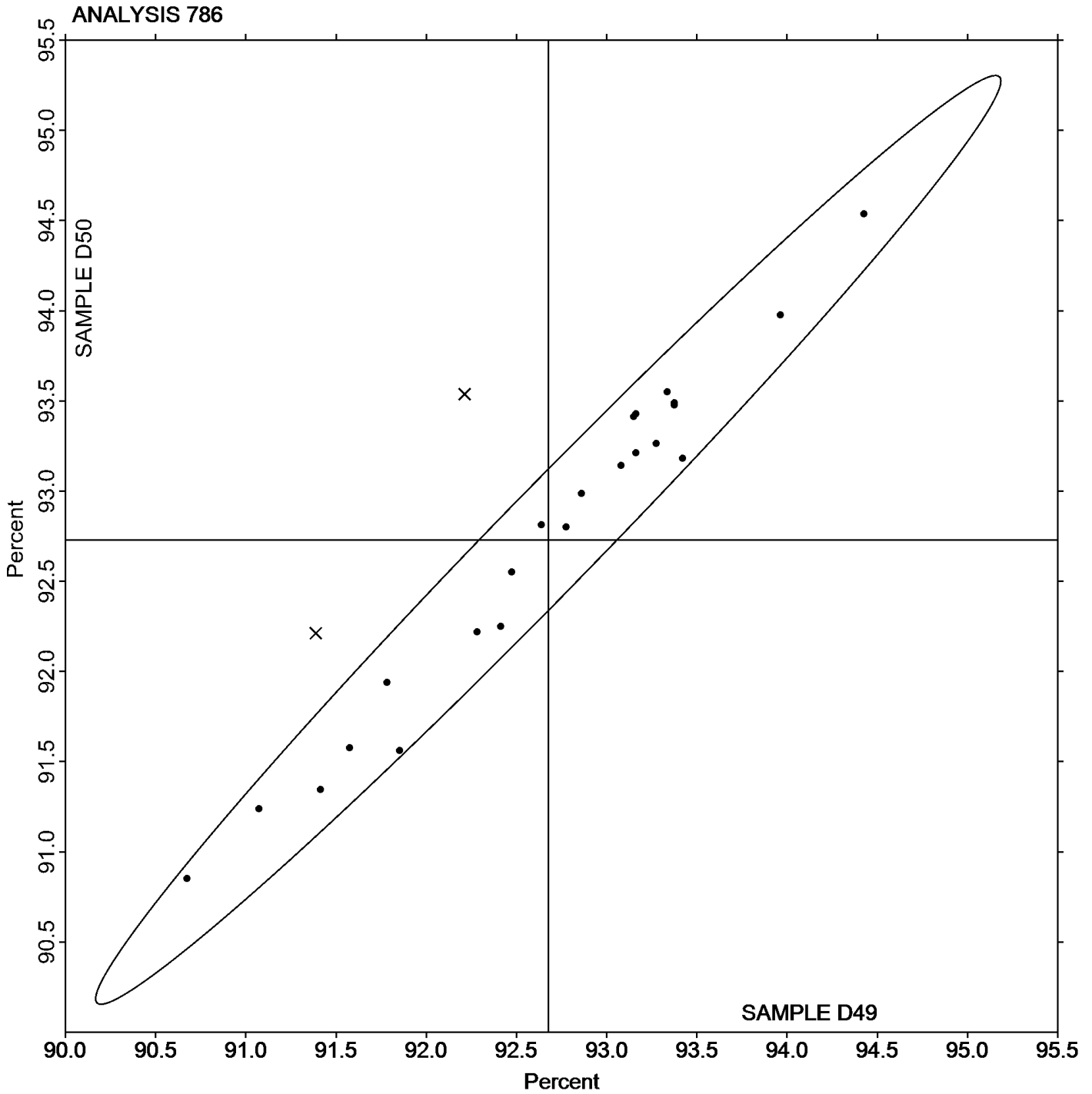
Report #105

## Analysis 786

1st Qtr 2018

### Total Luminous transmittance of film

Grand Mean Sample D49: 92.676 Percent    Grand Mean Sample D50: 92.730 Percent





# Plastics Interlaboratory Testing Program

Report #105

## Analysis 790

1st Qtr 2018

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

WebCode	Data Flag	Sample S49			Sample S50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2K8Z2N	*	2.16	0.40	2.64	2.04	0.30	2.04	WZ
3HB6U7		1.68	-0.08	-0.53	1.66	-0.08	-0.55	WZ
4FR3TR		1.76	0.00	0.01	1.73	-0.01	-0.05	TO
6EN4PA		1.71	-0.05	-0.32	1.68	-0.06	-0.40	TM
6F49LM		1.72	-0.04	-0.26	1.70	-0.04	-0.27	TO
6YGW4E		1.85	0.09	0.57	1.72	-0.02	-0.14	TM
7B4GRF		1.63	-0.13	-0.87	1.68	-0.06	-0.38	TM
7FXEEL		1.84	0.08	0.51	1.76	0.02	0.10	TM
7NXPWC		1.81	0.05	0.35	1.82	0.08	0.52	WZ
8KUBND		1.77	0.01	0.07	1.77	0.03	0.22	TO
8XW26B		1.80	0.05	0.30	1.76	0.02	0.13	CE
9WCRLA		1.78	0.02	0.11	1.78	0.04	0.29	TO
9XBMGY		1.71	-0.05	-0.34	1.71	-0.04	-0.24	WZ
BT9F3E		1.64	-0.12	-0.76	1.60	-0.14	-0.95	TM
CCF34C		1.69	-0.07	-0.46	1.62	-0.12	-0.84	TO
CGT33P		1.54	-0.22	-1.43	1.52	-0.22	-1.49	TO
EJUU6M		1.51	-0.25	-1.65	1.53	-0.21	-1.42	CE
ETZMK9		1.80	0.04	0.28	1.77	0.03	0.20	CE
F4WZA8		1.66	-0.10	-0.65	1.70	-0.04	-0.28	TO
FPXZR6		1.64	-0.12	-0.79	1.61	-0.13	-0.85	XX
FX6Q3U		1.75	-0.01	-0.07	1.74	0.00	-0.01	TM
GPQJM3		1.66	-0.10	-0.63	1.64	-0.10	-0.65	TO
JB6NMW		1.63	-0.13	-0.87	1.63	-0.11	-0.75	CE
K36VHV		1.73	-0.03	-0.18	1.70	-0.04	-0.29	CE
KBZN2M		1.62	-0.14	-0.90	1.54	-0.20	-1.33	TO
KEF2VH		1.64	-0.12	-0.77	1.61	-0.13	-0.91	TO
L2QQKW	X	1.93	0.17	1.11	2.05	0.31	2.10	TO
LBEBBN		1.82	0.06	0.38	1.80	0.06	0.41	TM
LEDXFC		1.78	0.02	0.14	1.72	-0.02	-0.12	XX
LGGQDH		1.74	-0.02	-0.11	1.74	0.00	-0.01	TO
LHD4ZA		1.58	-0.18	-1.19	1.55	-0.19	-1.31	WZ
LN3EJL		1.76	0.00	0.01	1.71	-0.03	-0.19	BA
M64QE3	*	2.09	0.33	2.18	2.14	0.40	2.69	CE
M7H36L		1.75	-0.01	-0.09	1.71	-0.03	-0.22	TO
MLR4QA		1.48	-0.28	-1.81	1.48	-0.27	-1.79	XX



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 790**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample S49			Sample S50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
N3R9XJ		2.08	0.32	2.08	2.03	0.29	1.94	XX
NACJTY		1.86	0.10	0.65	1.86	0.11	0.78	TM
NE4T3X		1.86	0.10	0.63	1.93	0.19	1.27	TO
RQLNLT	*	1.36	-0.40	-2.64	1.35	-0.39	-2.62	DS
RYHNYZ		1.76	0.00	0.02	1.72	-0.02	-0.13	TO
UFFEEU		1.65	-0.11	-0.72	1.64	-0.10	-0.65	TO
UJYH3Q		1.78	0.02	0.11	1.79	0.05	0.33	TY
UL6U6L		1.69	-0.07	-0.48	1.72	-0.02	-0.13	TO
UVVHZN		1.81	0.05	0.35	1.81	0.07	0.47	TO
VB6K2A		1.87	0.11	0.70	1.92	0.18	1.20	WZ
VDPJ7R		2.02	0.26	1.71	2.02	0.28	1.89	XX
VJVFQR		1.75	0.00	-0.03	1.71	-0.03	-0.19	TM
VZ2KD4		1.62	-0.13	-0.88	1.70	-0.04	-0.26	TM
WZJ4JM		1.80	0.04	0.28	1.73	-0.01	-0.07	CE
X3X6VK		1.95	0.19	1.27	1.87	0.13	0.89	TO
YC8MDH		1.71	-0.04	-0.29	1.70	-0.04	-0.28	TO
YQ6YLM		1.82	0.06	0.38	1.79	0.05	0.36	TO
YQMKHJ		2.02	0.26	1.71	2.02	0.28	1.90	TO
Z4KBE9		1.75	-0.01	-0.07	1.80	0.06	0.37	CE
ZAV8JH		2.06	0.30	1.94	1.96	0.22	1.48	TM
ZQJKXA		1.82	0.06	0.42	1.79	0.04	0.30	CE

Summary Statistics		
	Sample S49	Sample S50
<b>Grand Means</b>	1.759 ft.lbf/in	1.741 ft.lbf/in
<b>Stnd Dev Btwn Labs</b>	0.153 ft.lbf/in	0.148 ft.lbf/in
Statistics based on 55 of 56 reporting participants		

Sample S49: HIPS & Sample S50: HIPS

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

L2QQKW (X) - Inconsistent in testing between samples.



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 790

1st Qtr 2018

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

#### 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

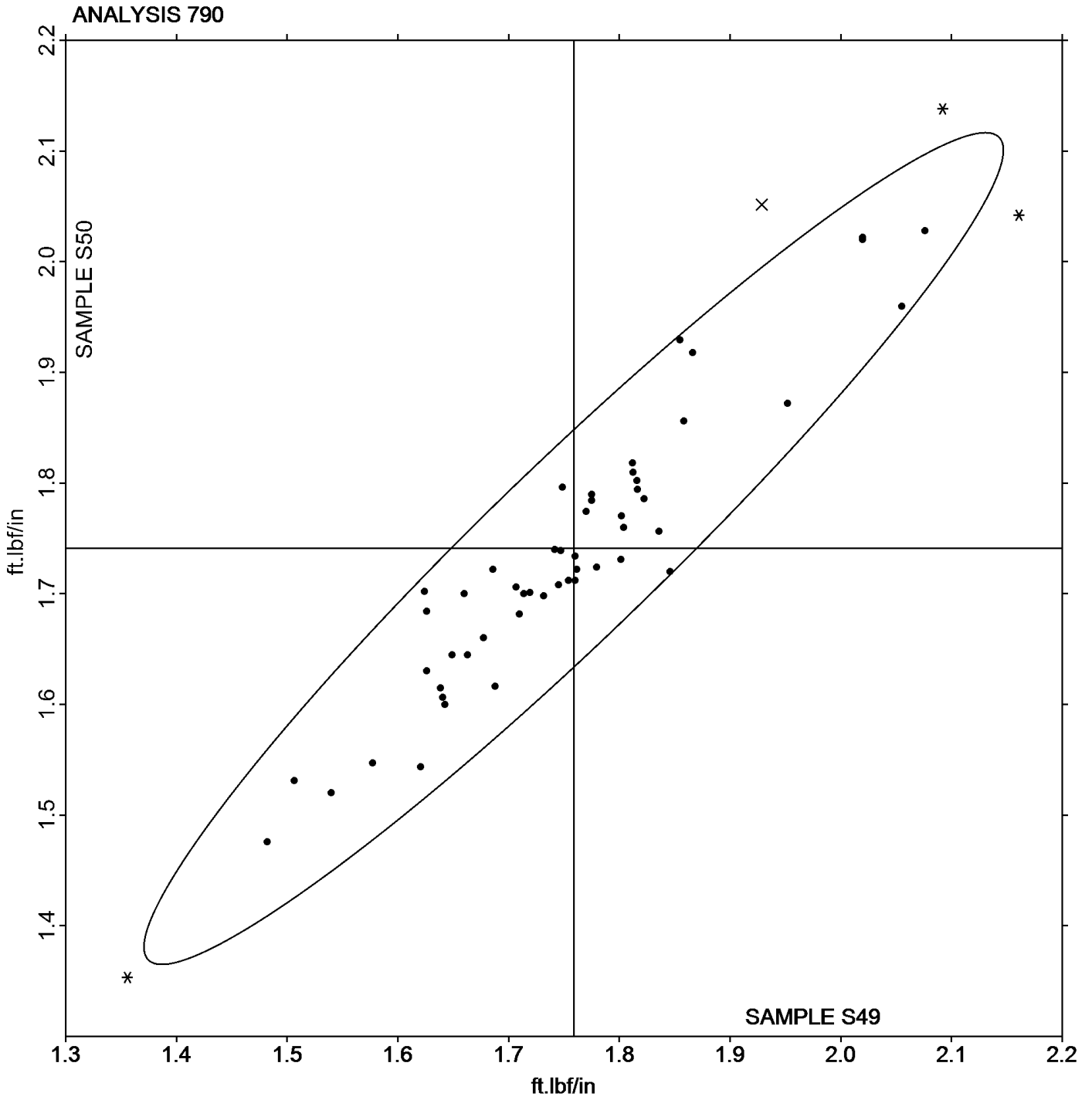
Report #105

## Analysis 790

1st Qtr 2018

Notched Izod Impact - ft.lbf/in

Grand Mean Sample S49: 1.7587 ft.lbf/in    Grand Mean Sample S50: 1.7408 ft.lbf/in





**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 791**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample Z49			Sample Z50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2DQHRM		15.63200	-2.35922	-2.70	15.91340	-2.09936	-2.07	CE
9XBMGY		18.59000	0.59878	0.69	18.52400	0.51124	0.50	WZ
BKX8MY	*	17.88000	-0.11122	-0.13	16.30200	-1.71076	-1.68	CE
F4WZA8		17.95000	-0.04122	-0.05	17.27600	-0.73676	-0.72	TO
G29RU6		18.27800	0.28678	0.33	18.70600	0.69324	0.68	CE
HVBW2V		17.71760	-0.27362	-0.31	17.60700	-0.40576	-0.40	TO
JE33AL		18.35000	0.35878	0.41	17.93800	-0.07476	-0.07	WZ
KEF2VH		18.74800	0.75678	0.87	18.92800	0.91524	0.90	TO
KUBPM9		19.17640	1.18518	1.36	19.55120	1.53844	1.51	TM
LLW2NZ		18.92800	0.93678	1.07	19.05000	1.03724	1.02	TM
MKF8L6		17.35000	-0.64122	-0.73	17.39000	-0.62276	-0.61	WZ
MLPEMD		17.74200	-0.24922	-0.29	18.67600	0.66324	0.65	IN
NHLXRU		17.86400	-0.12722	-0.15	17.82200	-0.19076	-0.19	WZ
PY79TM		18.00000	0.00878	0.01	18.60000	0.58724	0.58	TM
QWX7QN		18.79000	0.79878	0.91	19.05400	1.04124	1.02	TO
UJYH3Q		18.15400	0.16278	0.19	17.94600	-0.06676	-0.07	XX
V3764P		18.32000	0.32878	0.38	18.37200	0.35924	0.35	XX
XG37TV		16.37200	-1.61922	-1.85	16.57400	-1.43876	-1.42	CE

Summary Statistics		Sample Z49	Sample Z50
<b>Grand Means</b>		17.991222 kJ/m <sup>2</sup>	18.012756 kJ/m <sup>2</sup>
<b>Stnd Dev Btwn Labs</b>		0.873241 kJ/m <sup>2</sup>	1.016511 kJ/m <sup>2</sup>
Statistics based on 18 of 18 reporting participants			

Sample Z49: ABS & Sample Z50: ABS

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

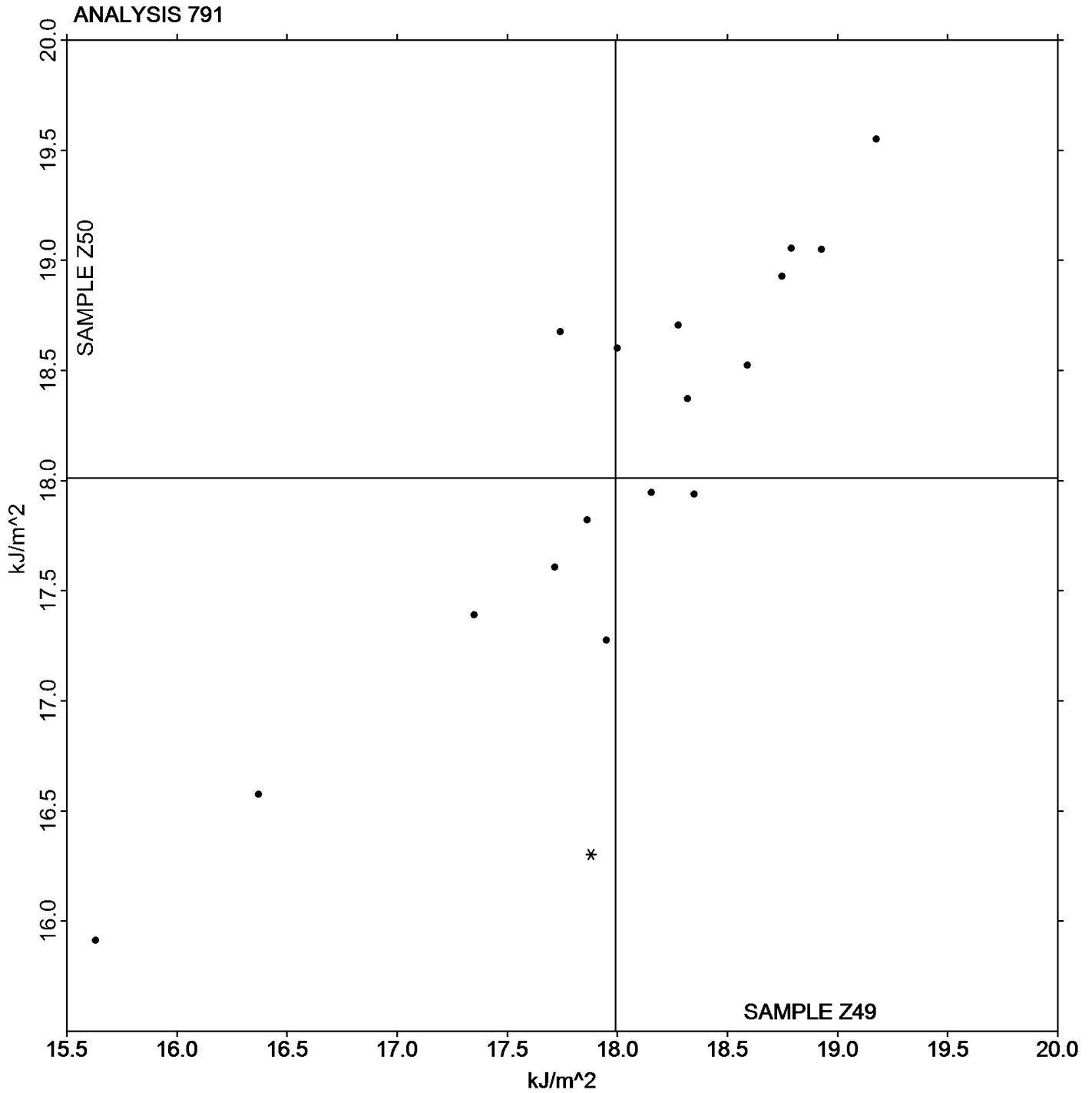
Report #105

## Analysis 791

1st Qtr 2018

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

Grand Mean Sample Z49:  $17.991 \text{ kJ/m}^2$  Grand Mean Sample Z50:  $18.013 \text{ kJ/m}^2$



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 #105

## Analysis 792

1st Qtr 2018

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

WebCode	Data Flag	Sample M49			Sample M50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2DQHRM		17.39	-1.63	-2.21	17.81	-1.01	-1.61	CE
3HB6U7		17.26	-1.76	-2.40	17.71	-1.11	-1.77	WZ
6BXJCF		19.57	0.55	0.75	18.83	0.01	0.01	CE
6YE9F9		19.02	0.00	0.00	18.47	-0.35	-0.56	PO
7BJVZP		19.08	0.06	0.08	18.67	-0.16	-0.25	TO
9CC9VG		18.67	-0.34	-0.47	18.49	-0.34	-0.54	XX
9XBMGY		19.53	0.51	0.70	18.83	0.01	0.01	WZ
BKX8MY		18.55	-0.46	-0.63	18.71	-0.11	-0.18	CE
DUC3EA	X	24.64	5.62	7.65	24.18	5.36	8.48	TO
EJU6M		19.57	0.55	0.75	19.48	0.66	1.04	CE
ETZMK9		20.09	1.08	1.46	19.34	0.52	0.82	CE
FPXZR6		18.07	-0.95	-1.29	17.68	-1.15	-1.82	XX
HVBW2V		18.40	-0.62	-0.84	18.21	-0.62	-0.97	TO
JB6NMW		19.46	0.44	0.60	19.56	0.74	1.16	IN
JE33AL		20.08	1.06	1.44	19.39	0.57	0.90	WZ
KBZN2M		18.89	-0.13	-0.17	19.44	0.62	0.98	TO
KEF2VH		18.39	-0.63	-0.86	17.66	-1.16	-1.84	TO
KUBPM9		18.13	-0.89	-1.20	18.20	-0.63	-0.99	TM
LBEBBN		19.40	0.39	0.53	19.03	0.20	0.32	TM
LEDXFC		18.02	-0.99	-1.35	18.09	-0.73	-1.16	XX
LLW2NZ		19.60	0.58	0.79	19.16	0.34	0.53	TM
MKF8L6		19.56	0.54	0.74	19.41	0.59	0.93	WZ
MX2RPY		19.43	0.42	0.57	19.01	0.18	0.29	TM
NHLXRU		19.08	0.07	0.09	18.54	-0.28	-0.44	WZ
PAQEPQ		19.67	0.65	0.88	19.40	0.57	0.91	TM
QEWBAQ		19.76	0.74	1.01	19.06	0.24	0.37	WZ
QWX7QN		18.74	-0.28	-0.38	18.65	-0.18	-0.28	TO
UJYH3Q		19.02	0.00	0.00	19.29	0.47	0.74	TY
UUEAQZ		18.78	-0.24	-0.32	18.42	-0.40	-0.64	CE
UVVHZN	*	19.94	0.92	1.26	20.32	1.50	2.37	TO
V3764P		17.86	-1.15	-1.57	18.03	-0.79	-1.26	XX
VZ2KD4	X	14.54	-4.48	-6.09	14.92	-3.91	-6.19	TM
WZJ4JM		19.14	0.13	0.17	18.96	0.14	0.22	CE
XG37TV		18.65	-0.36	-0.49	19.10	0.27	0.43	CE
Z4KBE9		19.66	0.64	0.87	19.42	0.60	0.94	CE



**Plastics Interlaboratory Testing Program**

**Report #105**

**Analysis 792**

**1st Qtr 2018**

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

WebCode	Data Flag	Sample M49			Sample M50			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ZK RK9G		19.75	0.74	1.00	19.34	0.51	0.81	WZ
ZL7V6Z		19.38	0.36	0.49	19.15	0.32	0.51	TO

Summary Statistics		Sample M49	Sample M50
<b>Grand Means</b>		19.017 kJ/m <sup>2</sup>	18.825 kJ/m <sup>2</sup>
<b>Std Dev Btwn Labs</b>		0.735 kJ/m <sup>2</sup>	0.631 kJ/m <sup>2</sup>
Statistics based on 35 of 37 reporting participants			

Sample M49: ABS & Sample M50: ABS

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

DUC3EA (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample M50.

VZ2KD4 (X) - Data for both samples are low. Possible Systematic Error.

**Key to Instrument Codes Reported by Participants**

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



# Plastics Interlaboratory Testing Program

Report #105

## Analysis 792

1st Qtr 2018

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

Grand Mean Sample M49:  $19.017 \text{ kJ/m}^2$     Grand Mean Sample M50:  $18.825 \text{ kJ/m}^2$

