

## Plastics Interlaboratory Testing Program

### Web Summary Report #101, 1st Qtr 2017

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#### Analysis Analysis Name

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## About CTS and the Plastics Interlaboratory Program

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

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

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

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

For further information contact:

COLLABORATIVE TESTING SERVICES, INC.  
21331 Gentry Drive  
Sterling, VA 20166  
Phone: (571) 434-1925  
FAX: (571) 434-1937  
e-mail: [plastics@cts-interlab.com](mailto:plastics@cts-interlab.com)

Office Hours: 8:00 a.m. - 4:30 p.m. ET

## 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 #101, 1st Qtr 2017

#### Analysis 704 - Tensile Stress at Yield

Material: HIPS	Sample F41	3,782.86	psi	3.08% COV
	Sample F42	3,783.24	psi	3.30% COV

#### Analysis 705 - Tensile Stress at Break

Material: HIPS	Sample F41	3,394.91	psi	3.80% COV
	Sample F42	3,399.46	psi	3.74% COV

#### Analysis 706 - Percent Elongation at Yield

Material: HIPS	Sample F41	1.3642	Percent	4.36% COV
	Sample F42	1.3628	Percent	5.22% COV

#### Analysis 708 - Modulus of Elasticity

Material: HIPS	Sample F41	333.99	ksi	4.00% COV
	Sample F42	334.19	ksi	4.17% COV

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

Material: ABS	Sample E41	82.829	Degrees C	1.49% COV
	Sample E42	82.989	Degrees C	1.44% COV

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

Material: PP	Sample G41	68.983	Degrees C	1.48% COV
	Sample G42	68.975	Degrees C	1.80% COV

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

Material: HIPS	Sample N41	74.831	Degrees C	1.33% COV
	Sample N42	75.381	Degrees C	1.83% COV

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

Material: ABS	Sample H41	105.12	Degrees C	0.905% COV
	Sample H42	105.09	Degrees C	0.909% COV

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

Material: ABS	Sample R41	106.42	Degrees C	1.03% COV
	Sample R42	106.40	Degrees C	1.10% COV

#### Analysis 718 - Specific Gravity

Material: ABS	Sample T41	1.0459	sp gr 23/23 C	0.231% COV
	Sample T42	1.0458	sp gr 23/23 C	0.210% COV

#### Analysis 720 - Flexural Modulus

Material: ABS	Sample J41	369.76	ksi	4.29% COV
	Sample J42	370.40	ksi	4.35% COV

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

Material: ABS	Sample J41	11,109.19	psi	3.03% COV
	Sample J42	11,136.34	psi	2.87% COV

#### Analysis 722 - Flexural Stress at Yield

Material: ABS	Sample J41	11,123.57	psi	2.60% COV
	Sample J42	11,155.37	psi	2.47% COV

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

Material: ABS	Sample C41	48.982	MPa	1.87% COV
	Sample C42	49.038	MPa	1.71% COV

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

Material: ABS	Sample C41	34.938	MPa	5.40% COV
	Sample C42	35.028	MPa	5.28% COV



# Plastics Interlaboratory Testing Program

Results Summary for Report #101, 1st Qtr 2017

## Analysis 732 - Strain at Yield, ISO Method

Material: ABS	Sample C41	2.6585	Percent	2.21% COV
	Sample C42	2.6549	Percent	2.33% COV

## Analysis 734 - Modulus of Elasticity, ISO Method

Material: ABS	Sample C41	2,395.44	MPa	3.42% COV
	Sample C42	2,404.55	MPa	3.57% COV

## Analysis 736 - Flexural Modulus

Material: ABS	Sample K41	2,442.66	MPa	3.79% COV
	Sample K42	2,489.39	MPa	3.37% COV

## Analysis 737 - Flexural Stress at 3.5% Strain

Material: ABS	Sample K41	71.906	MPa	2.94% COV
	Sample K42	73.603	MPa	2.02% COV

## Analysis 738 - Flexural Stress at Yield

Material: ABS	Sample K41	73.628	MPa	2.98% COV
	Sample K42	74.948	MPa	2.28% COV

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

Material: HDPE	Sample X41	8.0920	grams/10 mins	3.81% COV
	Sample X42	8.1031	grams/10 mins	3.70% COV

## Analysis 755 - Moisture Content

Material: ABS/PC	Sample Y41	0.10505	Percent	14.9% COV
	Sample Y42	0.10432	Percent	15.3% COV

## Analysis 757 - Ash Content

Material: PP	Sample L41	19.756	Percent	0.248% COV
	Sample L42	19.760	Percent	0.217% COV

## Analysis 760 - DSC

Material: PP	Sample W41	106.67	Degrees Celsius	4.08% COV
	Sample W42	106.85	Degrees Celsius	3.82% COV

## Analysis 761 - DSC

Material: PP	Sample W41	164.31	Degrees Celsius	2.28% COV
	Sample W42	164.08	Degrees Celsius	2.26% COV

## Analysis 762 - DSC

Material: PP	Sample W41	99.244	Joules Per Gram	9.39% COV
	Sample W42	97.903	Joules Per Gram	10.3% COV

## Analysis 763 - DSC

Material: PP	Sample W41	92.766	Joules Per Gram	13.5% COV
	Sample W42	91.882	Joules Per Gram	14.0% COV

## Analysis 764 - DSC

Material: PET	Sample V41	86.662	Degrees Celsius	2.01% COV
	Sample V42	86.590	Degrees Celsius	1.77% COV

## Analysis 770 - Tensile Stress at Yield, Films

Material: LDPE	Sample B41	2,687.98	psi	26.8% COV
	Sample B42	2,706.12	psi	27.5% COV

## Analysis 771 - Tensile Stress at Break, Films

Material: LDPE	Sample B41	3,257.00	psi	9.40% COV
	Sample B42	3,252.41	psi	9.33% COV



## Plastics Interlaboratory Testing Program

Results Summary for Report #101, 1st Qtr 2017

### Analysis 772 - Elongation at Yield, Films

Material: LDPE	Sample B41	191.35	Percent	83.1% COV
	Sample B42	194.32	Percent	82.5% COV

### Analysis 773 - Elongation at Break, Films

Material: LDPE	Sample B41	342.73	Percent	16.2% COV
	Sample B42	339.30	Percent	14.6% COV

### Analysis 774 - Thickness of Film Specimens

Material: LDPE	Sample B41	2.6546	mils	3.20% COV
	Sample B42	2.6524	mils	2.16% COV

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

Material: LDPE	Sample B41	32,081.33	psi	18.5% COV
	Sample B42	33,126.39	psi	23.6% COV

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

Material: LDPE	Sample B41	28,099.73	psi	10.8% COV
	Sample B42	28,322.98	psi	14.5% COV

### Analysis 780 - Static Friction

Material: LDPE	Sample P41	0.13380	COF	50.7% COV
	Sample P42	0.13804	COF	50.5% COV

### Analysis 781 - Kinetic Friction

Material: LDPE	Sample P41	0.10987	COF	52.5% COV
	Sample P42	0.10911	COF	43.9% COV

### Analysis 782 - Tear Resistance of Film

Material: LDPE	Sample Q41	834.85	grams-force	10.5% COV
	Sample Q42	444.08	grams-force	8.06% COV

### Analysis 785 - Percent Haze

Material: LDPE	Sample D41	24.214	Percent	5.03% COV
	Sample D42	12.877	Percent	4.70% COV

### Analysis 786 - Total Transmittance

Material: LDPE	Sample D41	92.193	Percent	1.29% COV
	Sample D42	92.023	Percent	1.16% COV

### Analysis 790 - Notched Izod Impact

Material: ABS	Sample S41	5.4690	ft.lbf/in	8.70% COV
	Sample S42	5.4614	ft.lbf/in	8.65% COV

### Analysis 791 - Notched Izod Impact

Material: HIPS	Sample Z41	7.8723	kJ/m <sup>2</sup>	5.89% COV
	Sample Z42	7.8463	kJ/m <sup>2</sup>	5.67% COV

### Analysis 792 - Notched Charpy Impact

Material: HIPS	Sample M41	7.6393	kJ/m <sup>2</sup>	5.81% COV
	Sample M42	7.6292	kJ/m <sup>2</sup>	5.51% COV



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 704

1st Qtr 2017

### Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		3,863.0	80.1	0.69	3,874.3	91.0	0.73
2HAZF6	X	3,626.0	-156.9	-1.35	3,771.0	-12.2	-0.10
32GMG3		3,828.2	45.3	0.39	3,833.4	50.2	0.40
36F7GF		3,790.3	7.5	0.06	3,827.7	44.5	0.36
4HF7MP	*	3,934.9	152.1	1.31	4,026.3	243.1	1.94
6FBVD8		3,750.8	-32.1	-0.28	3,684.4	-98.8	-0.79
6FCQZL		4,054.8	271.9	2.34	4,080.8	297.6	2.38
6YMF DJ		3,691.2	-91.7	-0.79	3,669.0	-114.2	-0.91
6ZGBPR		3,892.4	109.5	0.94	3,932.2	149.0	1.19
7G39D6		3,745.2	-37.7	-0.32	3,752.5	-30.7	-0.25
84TQL4		3,689.8	-93.1	-0.80	3,678.2	-105.0	-0.84
8H9TZ6		3,843.0	60.1	0.52	3,866.4	83.2	0.67
9Q3LL4		3,984.0	201.1	1.73	3,931.8	148.6	1.19
9VA4P6		3,826.2	43.3	0.37	3,792.0	8.8	0.07
AT442D		3,996.4	213.6	1.83	4,048.3	265.0	2.12
BCCVX8		3,849.6	66.7	0.57	3,799.1	15.8	0.13
BEZ3ZU		3,778.3	-4.6	-0.04	3,726.9	-56.3	-0.45
BV7BVN		3,680.0	-102.9	-0.88	3,679.8	-103.4	-0.83
CC6M4N		3,730.1	-52.8	-0.45	3,773.8	-9.4	-0.08
CVLAR8		3,647.0	-135.9	-1.17	3,692.8	-90.4	-0.72
CWWRT3		3,798.2	15.3	0.13	3,751.2	-32.0	-0.26
D4TA29		3,774.6	-8.3	-0.07	3,803.4	20.2	0.16
FBNKW9		3,533.2	-249.7	-2.14	3,501.2	-282.0	-2.26
FMCCA6		3,709.6	-73.3	-0.63	3,698.4	-84.8	-0.68
GG8976		3,775.4	-7.5	-0.06	3,800.0	16.8	0.13
GXULKW		3,983.2	200.3	1.72	3,986.2	203.0	1.62
HFQE4A		3,818.2	35.3	0.30	3,782.4	-0.8	-0.01
HJRE7R		3,792.2	9.3	0.08	3,803.8	20.6	0.16
J6Q398		3,519.8	-263.1	-2.26	3,493.1	-290.1	-2.32
JUP6DZ		3,554.4	-228.5	-1.96	3,558.0	-225.2	-1.80
JYDJKW		3,667.0	-115.9	-0.99	3,667.8	-115.4	-0.92
KBBK4V		3,668.0	-114.9	-0.99	3,609.6	-173.6	-1.39
KDWNCR	X	3,607.4	-175.5	-1.51	3,720.4	-62.8	-0.50
L3BAYW		3,720.4	-62.5	-0.54	3,759.8	-23.4	-0.19
L7A2AT		3,878.2	95.3	0.82	3,875.8	92.6	0.74





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 704

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### Tensile Stress at Yield - psi

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
L8KXJ7		3,913.2	130.3	1.12	3,884.1	100.9	0.81
LQWMYP		3,924.8	141.9	1.22	3,919.0	135.8	1.09
LRLZBD		3,678.2	-104.7	-0.90	3,678.2	-105.0	-0.84
LUJ2NY		3,880.4	97.5	0.84	3,869.6	86.4	0.69
MG6E2D	X	4,572.7	789.9	6.78	4,562.8	779.6	6.24
MN6G6Y		3,718.6	-64.3	-0.55	3,739.8	-43.4	-0.35
PER7TQ	X	5.4	-3,777.4	-32.44	5.5	-3,777.8	-30.22
PF738N		3,817.0	34.1	0.29	3,791.6	8.4	0.07
RGN4WT	X	7,009.0	3,226.1	27.70	6,990.8	3,207.6	25.66
RL6AVM		3,867.2	84.3	0.72	3,851.0	67.8	0.54
TRRJKC		3,789.0	6.1	0.05	3,811.9	28.7	0.23
TYMN6Z		3,747.8	-35.1	-0.30	3,750.7	-32.5	-0.26
U7LKEQ		3,882.4	99.5	0.85	3,860.8	77.6	0.62
UJ76WY		3,581.3	-201.6	-1.73	3,599.9	-183.4	-1.47
V3WDUU		3,779.0	-3.9	-0.03	3,790.4	7.2	0.06
VV3BQX		3,793.6	10.8	0.09	3,842.3	59.0	0.47
WE7D26		3,576.7	-206.2	-1.77	3,568.0	-215.3	-1.72
WGVRG3		3,812.0	29.1	0.25	3,780.0	-3.2	-0.03
WKD2CL		3,852.4	69.5	0.60	3,847.0	63.8	0.51
WYR8NK		3,696.6	-86.3	-0.74	3,710.4	-72.8	-0.58
Y36RPT		3,758.2	-24.7	-0.21	3,781.6	-1.6	-0.01
YD7KCL		3,738.2	-44.7	-0.38	3,707.4	-75.8	-0.61
YZXYNL		3,884.1	101.3	0.87	3,872.5	89.3	0.71
Z8RYHJ	*	3,784.8	1.9	0.02	3,876.5	93.2	0.75
ZBR8PE		3,700.0	-82.9	-0.71	3,670.0	-113.2	-0.91
ZWC4AD		3,897.4	114.5	0.98	3,898.0	114.8	0.92

Summary Statistics		Sample F41	Sample F42
<b>Grand Means</b>		3,782.86 psi	3,783.24 psi
<b>Std Dev Btwn Labs</b>		116.46 psi	125.01 psi
Statistics based on 56 of 61 reporting participants			

Sample F41: HIPS & Sample F42: HIPS



## Plastics Interlaboratory Testing Program

### Analysis 704

#### Tensile Stress at Yield - psi

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

2HAZF6 (X) - Inconsistent in testing between samples.

KDWNCR (X) - Inconsistent in testing between samples.

RGN4WT (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

MG6E2D (X) - Data for both samples are high. Possible Systematic Error.

PER7TQ (X) - Extreme data.



# Plastics Interlaboratory Testing Program

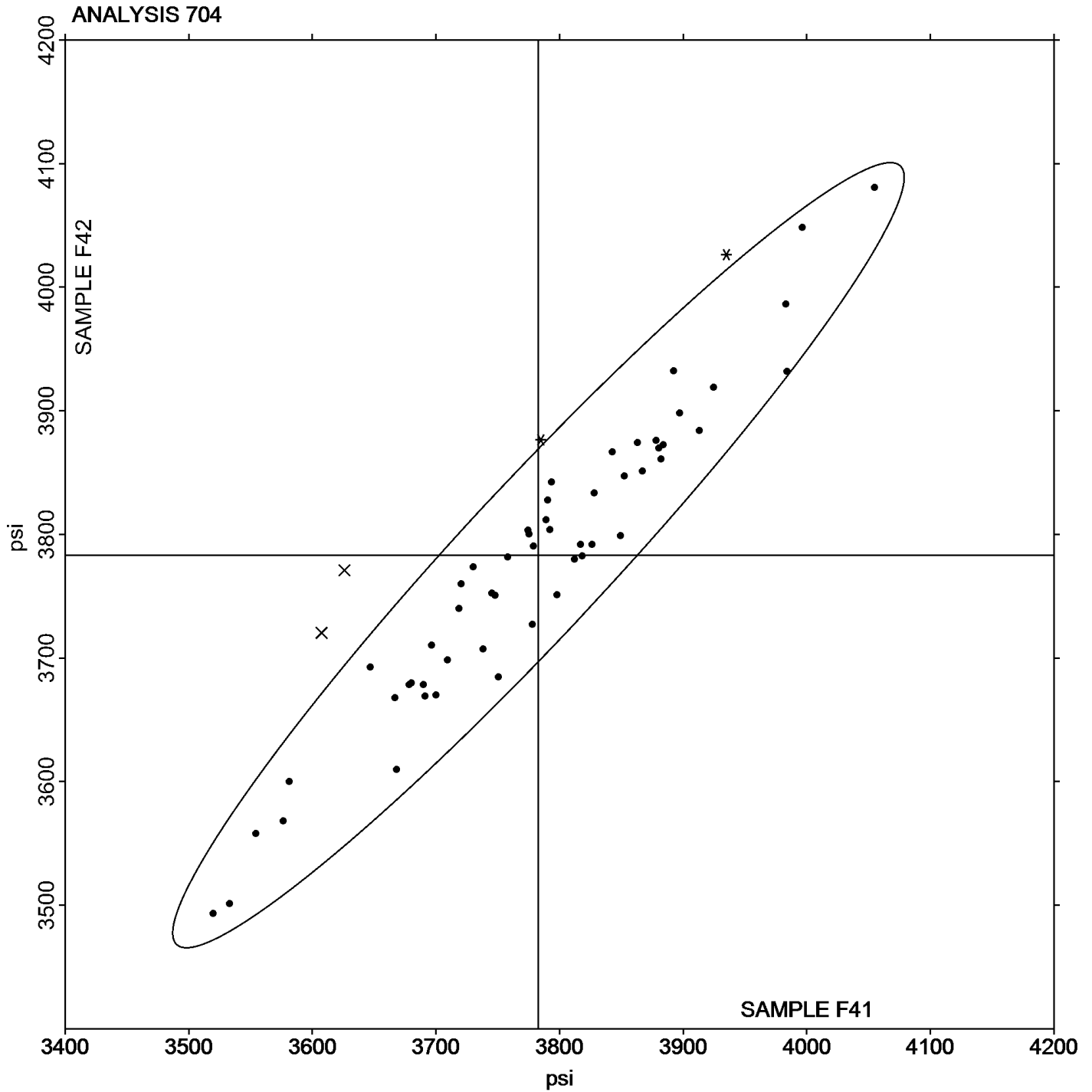
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## Analysis 704

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### Tensile Stress at Yield - psi

Grand Mean Sample F41: 3,782.86 psi    Grand Mean Sample F42: 3,783.24 psi





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 705

1st Qtr 2017

### Tensile Stress at Break - psi

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		3,419.7	24.8	0.19	3,352.1	-47.3	-0.37
2HAZF6		3,248.9	-146.0	-1.13	3,393.9	-5.5	-0.04
36F7GF		3,398.2	3.2	0.03	3,430.9	31.5	0.25
4HF7MP		3,473.1	78.2	0.61	3,521.4	122.0	0.96
6FCQZL		3,661.0	266.1	2.06	3,555.8	156.3	1.23
6YMF DJ		3,320.0	-74.9	-0.58	3,320.0	-79.5	-0.62
6ZGBPR		3,337.2	-57.7	-0.45	3,368.0	-31.5	-0.25
7G39D6		3,436.0	41.1	0.32	3,439.3	39.9	0.31
84TQL4		3,359.1	-35.8	-0.28	3,362.0	-37.5	-0.29
9Q3LL4		3,534.6	139.7	1.08	3,552.4	152.9	1.20
AT442D		3,592.0	197.1	1.53	3,619.5	220.1	1.73
BCCVX8		3,385.2	-9.7	-0.08	3,372.8	-26.7	-0.21
BEZ3ZU		3,365.8	-29.1	-0.23	3,390.7	-8.7	-0.07
BV7BVN		3,358.2	-36.7	-0.28	3,307.6	-91.9	-0.72
CC6M4N		3,441.9	47.0	0.36	3,443.8	44.3	0.35
CVLAR8		3,314.0	-80.9	-0.63	3,338.6	-60.9	-0.48
CWWRT3		3,194.4	-200.5	-1.56	3,135.0	-264.5	-2.08
D4TA29		3,302.0	-92.9	-0.72	3,319.2	-80.3	-0.63
FBNKW9		3,170.6	-224.4	-1.74	3,190.9	-208.6	-1.64
FMCCA6		3,237.4	-157.5	-1.22	3,323.0	-76.5	-0.60
GG8976		3,371.6	-23.3	-0.18	3,360.0	-39.5	-0.31
GXULKW		3,475.0	80.1	0.62	3,526.2	126.7	1.00
HFQE4A		3,424.0	29.1	0.23	3,323.6	-75.9	-0.60
HJRE7R		3,378.4	-16.5	-0.13	3,381.8	-17.7	-0.14
JUP6DZ		3,315.8	-79.1	-0.61	3,280.0	-119.5	-0.94
KBBK4V		3,351.4	-43.5	-0.34	3,274.6	-124.9	-0.98
KDWNCR		3,235.2	-159.7	-1.24	3,364.2	-35.3	-0.28
L3BAYW		3,252.4	-142.5	-1.11	3,245.8	-153.7	-1.21
L7A2AT		3,441.8	46.9	0.36	3,399.4	-0.1	0.00
L8KXJ7		3,486.6	91.7	0.71	3,511.6	112.2	0.88
LQWMYP		3,440.4	45.5	0.35	3,478.4	78.9	0.62
LRLZBD		3,211.2	-183.7	-1.43	3,246.0	-153.5	-1.21
MG6E2D	*	3,799.0	404.1	3.13	3,772.6	373.1	2.93
MN6G6Y		3,287.4	-107.5	-0.83	3,291.2	-108.3	-0.85
PER7TQ	X	5.5	-3,389.4	-26.29	5.5	-3,393.9	-26.66



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 705

1st Qtr 2017

### Tensile Stress at Break - psi

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PF738N		3,454.6	59.7	0.46	3,359.0	-40.5	-0.32
RL6AVM		3,585.2	190.3	1.48	3,483.0	83.5	0.66
TRRJKC		3,473.1	78.2	0.61	3,476.3	76.8	0.60
TTZVYT	*	3,718.6	323.7	2.51	3,779.6	380.1	2.99
TYMN6Z		3,277.9	-117.0	-0.91	3,309.8	-89.7	-0.70
U7LKEQ		3,478.1	83.2	0.65	3,553.9	154.5	1.21
UJ76WY		3,271.2	-123.7	-0.96	3,270.9	-128.5	-1.01
V3WDUU		3,386.4	-8.5	-0.07	3,483.2	83.7	0.66
VV3BQX		3,280.9	-114.1	-0.88	3,423.1	23.7	0.19
WGVRG3		3,440.0	45.1	0.35	3,448.0	48.5	0.38
WKD2CL		3,487.6	92.7	0.72	3,414.8	15.3	0.12
WYR8NK		3,407.0	12.1	0.09	3,377.4	-22.1	-0.17
Y36RPT		3,368.2	-26.7	-0.21	3,382.4	-17.1	-0.13
YD7KCL	*	3,391.0	-3.9	-0.03	3,239.4	-160.1	-1.26
YZXYNL		3,335.9	-59.0	-0.46	3,408.4	9.0	0.07
Z8RYHJ		3,500.9	106.0	0.82	3,465.9	66.4	0.52
ZBR8PE		3,216.2	-178.7	-1.39	3,217.4	-182.1	-1.43
ZWC4AD		3,443.2	48.3	0.37	3,487.0	87.5	0.69

#### Summary Statistics

	Sample F41	Sample F42
<b>Grand Means</b>	3,394.91 psi	3,399.46 psi
<b>Std Dev Btwn Labs</b>	128.92 psi	127.29 psi

Statistics based on 52 of 53 reporting participants

Sample F41: HIPS & Sample F42: HIPS

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

PER7TQ (X) - Extreme data.



# Plastics Interlaboratory Testing Program

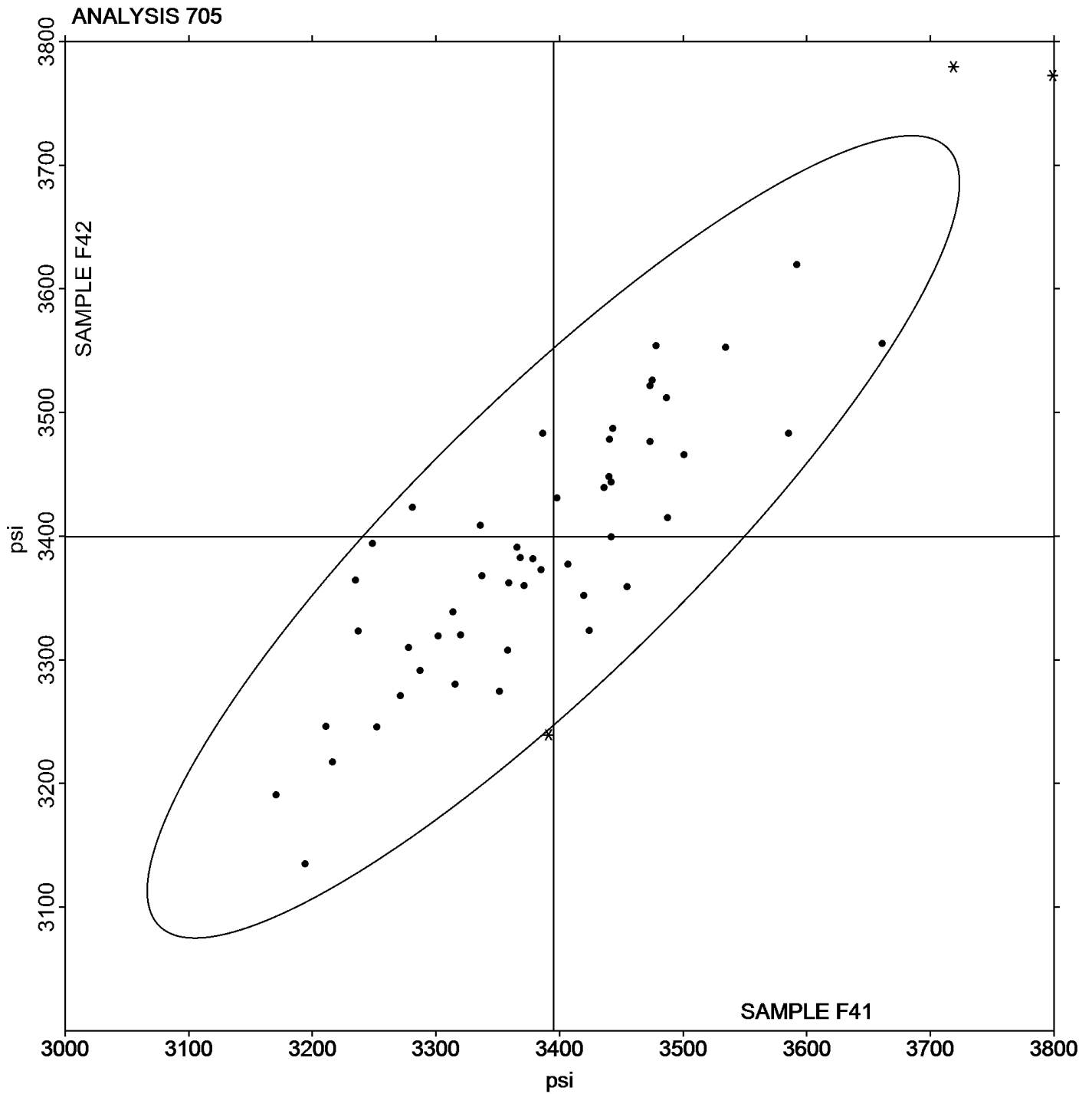
Report #101

## Analysis 705

1st Qtr 2017

### Tensile Stress at Break - psi

Grand Mean Sample F41: 3,394.91 psi    Grand Mean Sample F42: 3,399.46 psi





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 706

1st Qtr 2017

### Percent Elongation at Yield - Percent

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		1.402	0.038	0.64	1.394	0.031	0.44
2HAZF6		1.306	-0.058	-0.98	1.314	-0.049	-0.68
32GMG3		1.380	0.016	0.27	1.374	0.011	0.16
4HF7MP		1.373	0.009	0.16	1.401	0.038	0.54
6YMFDJ		1.318	-0.046	-0.78	1.294	-0.069	-0.97
6ZGBPR	*	1.422	0.058	0.97	1.342	-0.021	-0.29
7G39D6		1.392	0.028	0.47	1.412	0.049	0.69
84TQL4	X	0.600	-0.764	-12.85	0.899	-0.464	-6.52
9Q3LL4		1.376	0.012	0.20	1.402	0.039	0.55
9VA4P6		1.368	0.004	0.06	1.322	-0.041	-0.57
AT442D		1.422	0.058	0.98	1.496	0.133	1.87
BCCVX8		1.262	-0.102	-1.72	1.234	-0.129	-1.81
BV7BVN		1.308	-0.056	-0.94	1.314	-0.049	-0.68
CVLAR8	*	1.522	0.158	2.66	1.544	0.181	2.55
CWWRT3		1.304	-0.060	-1.01	1.258	-0.105	-1.47
D4TA29	X	3.694	2.330	39.21	3.558	2.195	30.84
FBNKW9	*	1.178	-0.186	-3.13	1.164	-0.199	-2.79
FMCCA6		1.340	-0.024	-0.41	1.320	-0.043	-0.60
GG8976		1.400	0.036	0.60	1.456	0.093	1.31
GXULKW		1.336	-0.028	-0.47	1.378	0.015	0.21
HFQE4A		1.372	0.008	0.13	1.368	0.005	0.07
HJRE7R		1.420	0.056	0.94	1.428	0.065	0.92
JUP6DZ		1.275	-0.090	-1.51	1.263	-0.100	-1.41
JYDJKW		1.344	-0.020	-0.34	1.322	-0.041	-0.57
KBBK4V	X	0.660	-0.704	-11.85	0.864	-0.499	-7.01
KDWNCR		1.328	-0.036	-0.61	1.390	0.027	0.38
L3BAYW	X	3.540	2.176	36.62	3.560	2.197	30.86
L7A2AT		1.430	0.066	1.11	1.416	0.053	0.75
L8KXJ7		1.372	0.008	0.14	1.384	0.021	0.30
LQWMYP		1.358	-0.006	-0.10	1.370	0.007	0.10
LRLZBD		1.316	-0.048	-0.81	1.344	-0.019	-0.26
MG6E2D	X	32.800	31.436	529.00	32.000	30.637	430.35
MN6G6Y		1.370	0.006	0.10	1.366	0.003	0.05
PER7TQ	X	0.022	-1.342	-22.59	0.018	-1.345	-18.89
PF738N	X	1.756	0.392	6.59	1.720	0.357	5.02



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 706**

**1st Qtr 2017**

**Percent Elongation at Yield - Percent**

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RGN4WT	X	43.206	41.842	704.11	40.152	38.789	544.86
RL6AVM		1.446	0.082	1.38	1.418	0.055	0.78
TYMN6Z		1.332	-0.032	-0.54	1.340	-0.023	-0.33
V3WDUU		1.300	-0.064	-1.08	1.240	-0.123	-1.72
VV3BQX		1.405	0.041	0.69	1.422	0.060	0.84
WGVRG3		1.360	-0.004	-0.07	1.366	0.003	0.05
WKD2CL		1.428	0.064	1.07	1.436	0.073	1.03
WYR8NK	X	3.834	2.470	41.56	3.688	2.325	32.66
Y36RPT		1.370	0.006	0.10	1.392	0.029	0.41
YD7KCL		1.386	0.022	0.37	1.366	0.003	0.05
YZXYNL		1.390	0.026	0.43	1.378	0.015	0.21
Z8RYHJ		1.336	-0.028	-0.47	1.332	-0.031	-0.43
ZBR8PE		1.410	0.046	0.77	1.356	-0.007	-0.09
ZWC4AD		1.408	0.044	0.74	1.394	0.031	0.44

Summary Statistics		
	Sample F41	Sample F42
<b>Grand Means</b>	1.3642 Percent	1.3628 Percent
<b>Stnd Dev Btwn Labs</b>	0.0594 Percent	0.0712 Percent

Statistics based on 40 of 49 reporting participants

Sample F41: HIPS & Sample F42: HIPS

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

- 84TQL4 (X) - Data for both samples are low. Inconsistent within the determinations of sample F42.
- KBBK4V (X) - Data for both samples are low. Inconsistent within the determinations of sample F42.
- PF738N (X) - Data for both samples are high.
- WYR8NK (X) - Data for both samples are high. Inconsistent within the determinations of sample F41.
- RGN4WT (X) - Extreme data.
- D4TA29 (X) - Data for both samples are high. Inconsistent within the determinations of sample F41.
- MG6E2D (X) - Extreme data.
- PER7TQ (X) - Extreme data.
- L3BAYW (X) - Data for both samples are high.





# Plastics Interlaboratory Testing Program

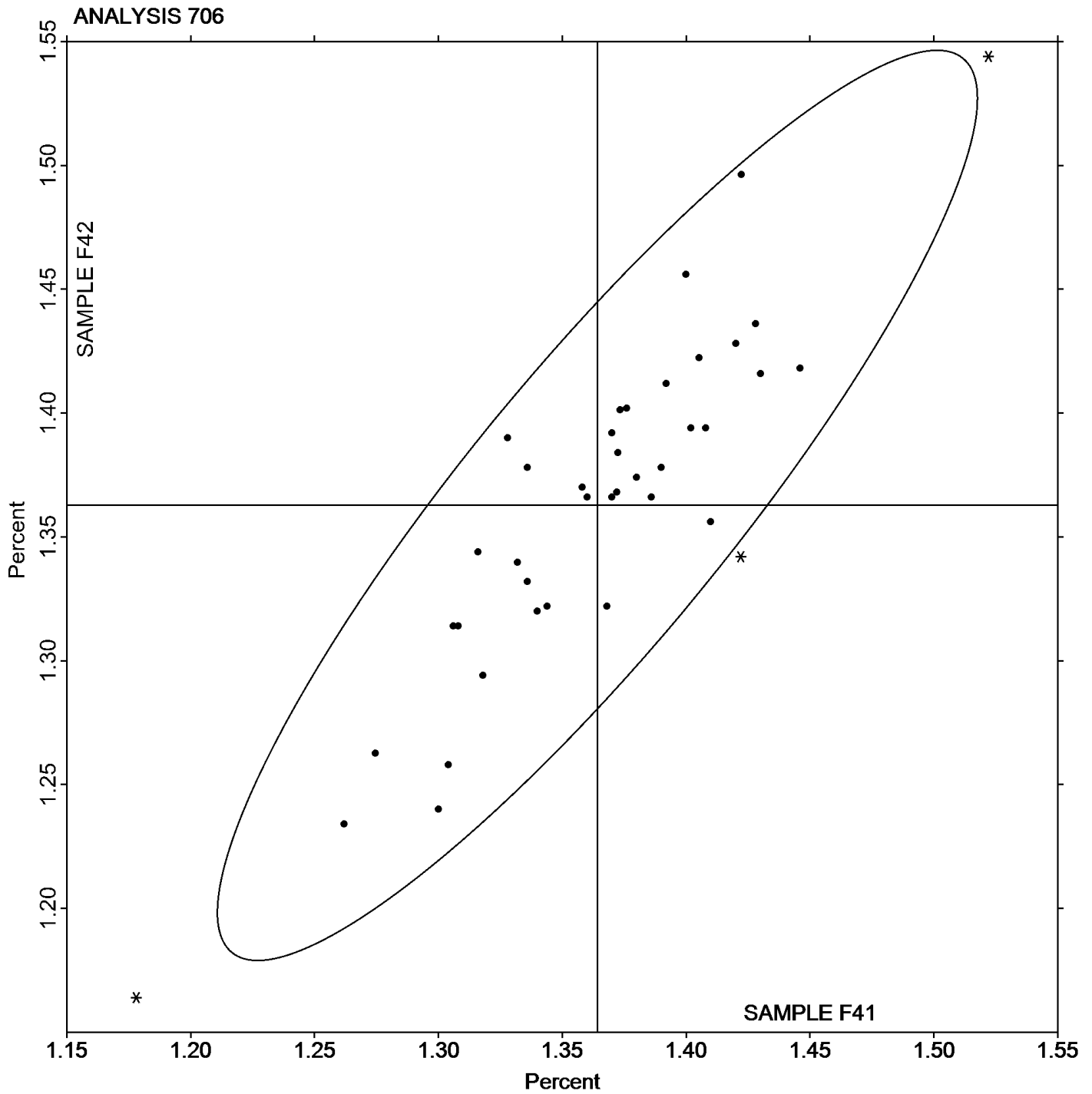
Report #101

## Analysis 706

1st Qtr 2017

### Percent Elongation at Yield - Percent

Grand Mean Sample F41: 1.3642 Percent    Grand Mean Sample F42: 1.3628 Percent





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 708

1st Qtr 2017

### Modulus of Elasticity - ksi

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		317.78	-16.21	-1.21	319.11	-15.07	-1.08
2HAZF6		345.13	11.14	0.83	349.72	15.53	1.11
32GMG3		340.78	6.79	0.51	335.96	1.77	0.13
4HF7MP		326.51	-7.48	-0.56	328.20	-5.99	-0.43
6FBVD8		335.95	1.95	0.15	340.10	5.92	0.42
6YMF DJ		323.80	-10.19	-0.76	323.60	-10.59	-0.76
6ZGBPR		332.56	-1.43	-0.11	333.12	-1.07	-0.08
7G39D6		309.32	-24.68	-1.85	304.04	-30.14	-2.16
84TQL4	*	325.47	-8.53	-0.64	343.45	9.26	0.66
9Q3LL4		332.80	-1.19	-0.09	329.34	-4.85	-0.35
9VA4P6		345.32	11.33	0.85	345.44	11.25	0.81
AT442D		348.39	14.39	1.08	345.73	11.54	0.83
BCCVX8	X	378.40	44.41	3.32	336.40	2.21	0.16
BV7BVN		320.72	-13.28	-0.99	324.34	-9.85	-0.71
CVLAR8	X	340.40	6.41	0.48	365.00	30.81	2.21
CWWRT3		346.76	12.77	0.96	345.58	11.39	0.82
EZ9BQ2		347.24	13.24	0.99	352.49	18.30	1.31
FBNKW9		335.62	1.63	0.12	332.46	-1.73	-0.12
FMCCA6		329.44	-4.55	-0.34	335.64	1.45	0.10
GG8976		325.41	-8.59	-0.64	325.03	-9.16	-0.66
GXULKW	*	369.12	35.13	2.63	367.20	33.01	2.37
HFQE4A		340.14	6.15	0.46	335.84	1.65	0.12
HJRE7R		323.64	-10.35	-0.78	325.72	-8.47	-0.61
JUP6DZ		352.50	18.51	1.39	350.04	15.85	1.14
JYDJKW		334.58	0.59	0.04	343.08	8.89	0.64
KBBK4V	X	744.56	410.57	30.73	558.98	224.79	16.13
KDWNCR	X	375.02	41.03	3.07	356.55	22.36	1.60
L3BAYW	X	126.45	-207.55	-15.54	126.59	-207.60	-14.90
L7A2AT		312.50	-21.50	-1.61	314.60	-19.59	-1.41
L8KXJ7		357.04	23.05	1.73	354.63	20.44	1.47
LRLZBD		333.88	-0.11	-0.01	328.08	-6.11	-0.44
LUJ2NY		355.72	21.73	1.63	355.58	21.39	1.53
MG6E2D	*	316.36	-17.64	-1.32	302.79	-31.40	-2.25
MN6G6Y		321.70	-12.29	-0.92	323.98	-10.21	-0.73
PER7TQ	X	55.11	-278.88	-20.88	85.37	-248.82	-17.86



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 708**

**1st Qtr 2017**

**Modulus of Elasticity - ksi**

WebCode	Data Flag	Sample F41			Sample F42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PF738N	X	267.54	-66.45	-4.97	272.20	-61.99	-4.45
RL6AVM		324.74	-9.25	-0.69	328.70	-5.49	-0.39
TYMN6Z		328.17	-5.83	-0.44	326.60	-7.59	-0.54
V3WDUU		314.00	-19.99	-1.50	318.80	-15.39	-1.10
VV3BQX		336.47	2.48	0.19	341.41	7.23	0.52
WGVRG3		348.80	14.81	1.11	350.40	16.21	1.16
WKD2CL		348.36	14.37	1.08	344.98	10.79	0.77
WYR8NK	X	133.32	-200.67	-15.02	135.22	-198.97	-14.28
Y36RPT		333.02	-0.97	-0.07	332.32	-1.87	-0.13
YD7KCL		323.22	-10.77	-0.81	329.48	-4.71	-0.34
YZXYNL		332.63	-1.36	-0.10	333.27	-0.92	-0.07
ZBR8PE	*	333.58	-0.41	-0.03	316.64	-17.55	-1.26
ZWC4AD		330.62	-3.37	-0.25	330.02	-4.17	-0.30

**Summary Statistics**

	Sample F41	Sample F42
<b>Grand Means</b>	333.995 ksi	334.188 ksi
<b>Std Dev Btwn Labs</b>	13.359 ksi	13.935 ksi

Statistics based on 40 of 48 reporting participants

Sample F41: HIPS & Sample F42: HIPS

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

- KBBK4V (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- KDWNCR (X) - Data for sample F41 are high. Inconsistent within the determinations of sample F41.
- PF738N (X) - Data for both samples are low. Possible Systematic Error.
- WYR8NK (X) - Data for both samples are low.
- PER7TQ (X) - Extreme data.
- BCCVX8 (X) - Data for sample F41 are high. Inconsistent within the determinations of sample F41.
- CVLAR8 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample F42.
- L3BAYW (X) - Data for both samples are low.



# Plastics Interlaboratory Testing Program

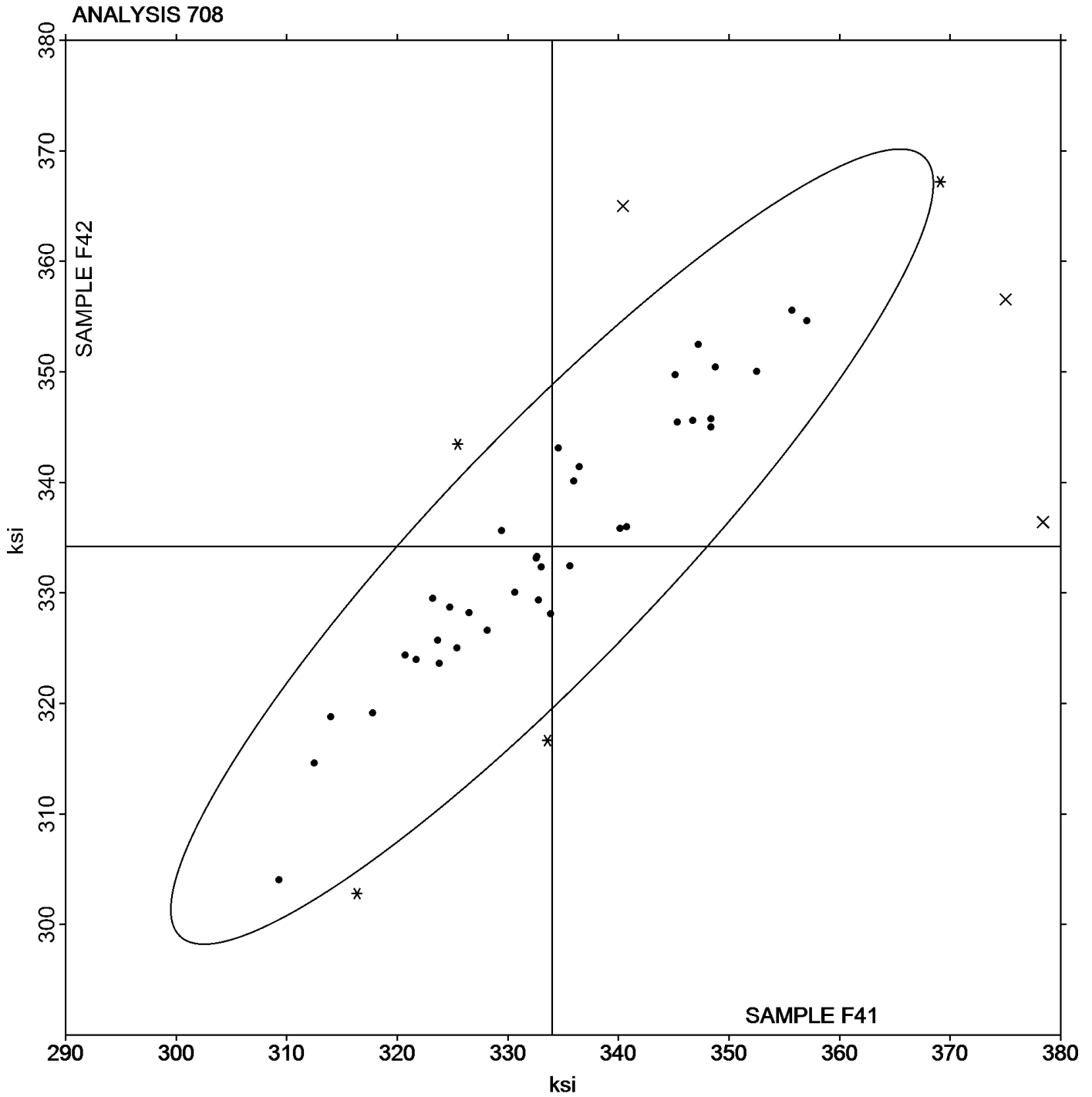
Report #101

## Analysis 708

1st Qtr 2017

### Modulus of Elasticity - ksi

Grand Mean Sample F41: 333.99 ksi    Grand Mean Sample F42: 334.19 ksi





**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 710**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample E41			Sample E42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24CQUJ		83.13	0.30	0.24	83.23	0.24	0.20	AT
2HAZF6		81.80	-1.03	-0.83	82.18	-0.81	-0.68	RO
36F7GF		84.28	1.45	1.17	83.70	0.71	0.60	TO
4TJEFB		82.25	-0.58	-0.47	83.20	0.21	0.18	XX
6XVLC8		83.78	0.95	0.76	84.23	1.24	1.04	XX
8KG7MF		83.55	0.72	0.58	83.15	0.16	0.13	TO
FBNKW9		82.45	-0.38	-0.31	82.50	-0.49	-0.41	TY
FMCCA6		82.98	0.15	0.12	82.90	-0.09	-0.07	CE
G3PFFD		81.53	-1.30	-1.05	81.63	-1.36	-1.14	XX
HJRE7R		82.53	-0.30	-0.25	82.68	-0.31	-0.26	RO
HMP2TL		83.28	0.45	0.36	83.25	0.26	0.22	CE
J6Q398		82.35	-0.48	-0.39	82.58	-0.41	-0.35	TO
JEBY32		82.85	0.02	0.02	82.73	-0.26	-0.22	DN
JYDJKW	*	80.40	-2.43	-1.96	81.55	-1.44	-1.21	TO
L3BAYW		85.15	2.32	1.88	84.98	1.99	1.66	CE
L7A2AT		81.88	-0.95	-0.77	82.45	-0.54	-0.45	TO
LQWMYP		82.40	-0.43	-0.35	82.88	-0.11	-0.10	DN
PF738N		82.13	-0.70	-0.57	82.28	-0.71	-0.60	TO
RL6AVM		84.50	1.67	1.35	84.18	1.19	0.99	DN
TTZVYT		80.90	-1.93	-1.56	80.73	-2.26	-1.90	TO
U7LKEQ		82.45	-0.38	-0.31	82.35	-0.64	-0.54	XX
WKD2CL		81.78	-1.05	-0.85	81.50	-1.49	-1.25	XX
WYR8NK		84.10	1.27	1.03	84.48	1.49	1.24	CE
YD7KCL	*	85.50	2.67	2.16	86.25	3.26	2.73	TO
ZBR8PE		82.83	0.00	0.00	83.20	0.21	0.18	CF

Summary Statistics		
	Sample E41	Sample E42
<b>Grand Means</b>	82.829 Degrees C	82.989 Degrees C
<b>Stnd Dev Btwn Labs</b>	1.238 Degrees C	1.194 Degrees C
Statistics based on 25 of 25 reporting participants		

Sample E41: ABS & Sample E42: ABS



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 710

1st Qtr 2017

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

---

#### Key to Instrument Codes Reported by Participants

AT Atlas

CE Ceast

CF Coesfeld

DN DYNISCO

RO Rosand

TO Tinius Olsen

TY Toyoseiki

XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

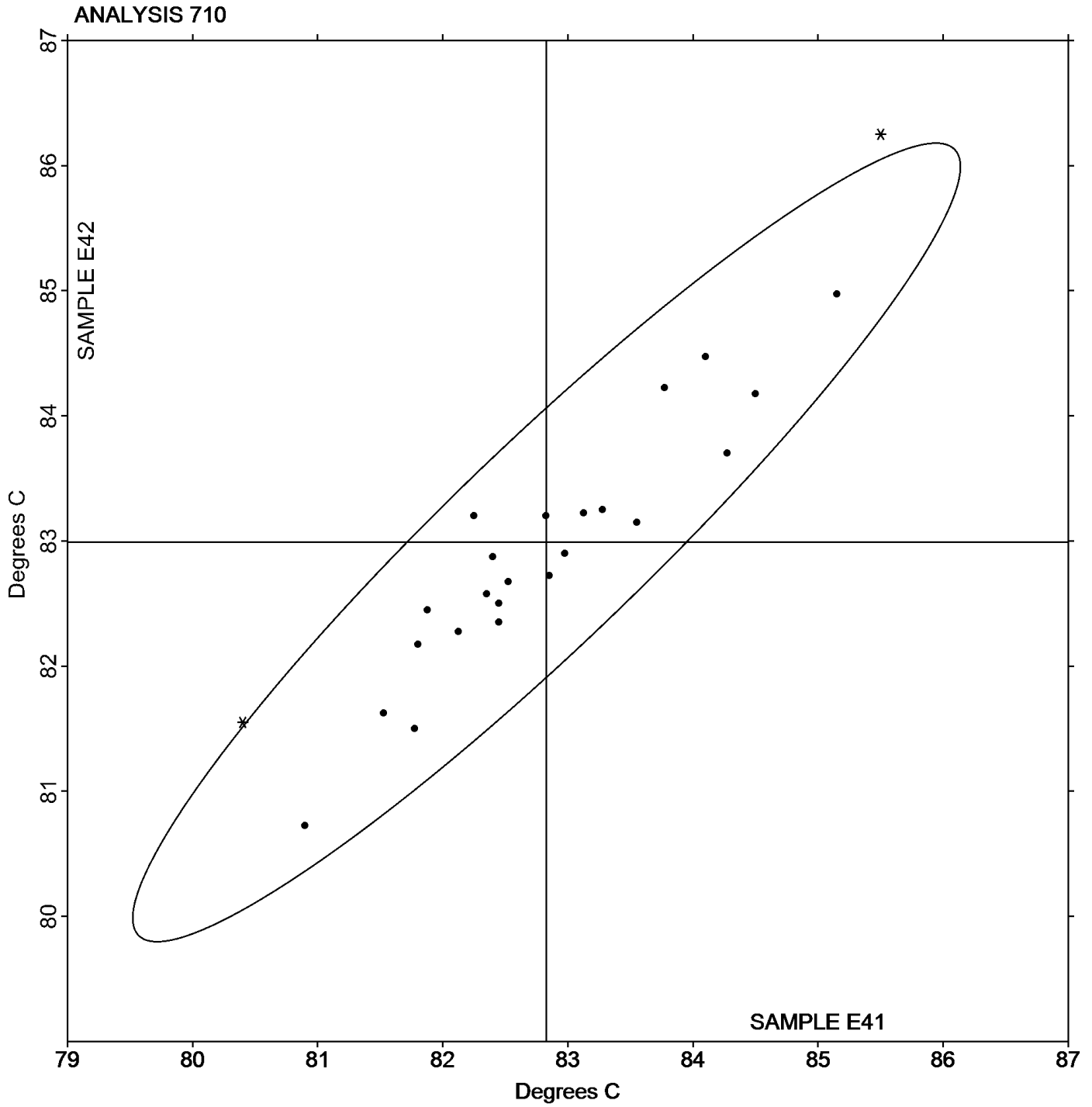
Report #101

## Analysis 710

1st Qtr 2017

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

Grand Mean Sample E41: 82.829 Degrees C    Grand Mean Sample E42: 82.989 Degrees C





**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 711**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample G41			Sample G42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
36F7GF		69.2	0.2	0.16	69.1	0.1	0.06	TO
6XVLC8		68.2	-0.8	-0.79	68.0	-1.0	-0.79	XX
9GB37B		67.3	-1.7	-1.67	67.3	-1.7	-1.39	AT
EYFKKM		69.0	0.0	0.04	69.1	0.1	0.08	CE
HMP2TL		69.4	0.4	0.36	71.1	2.2	1.73	CE
J6Q398		69.3	0.3	0.26	69.0	0.1	0.04	TO
JYDJKW		70.1	1.1	1.12	69.3	0.3	0.22	TO
L3BAYW	X	51.9	-17.1	-16.67	53.0	-16.0	-12.93	CE
L7A2AT		68.0	-1.0	-0.96	67.7	-1.3	-1.07	TO
WX3XHR		70.5	1.5	1.48	70.4	1.4	1.11	CE

Summary Statistics		
	Sample G41	Sample G42
<b>Grand Means</b>	68.98 Degrees C	68.98 Degrees C
<b>Stnd Dev Btwn Labs</b>	1.02 Degrees C	1.24 Degrees C
Statistics based on 9 of 10 reporting participants		

Sample G41: PP & Sample G42: PP

**Comments on Assigned Data Flags for Test #711**

L3BAYW (X) - Data for both samples are low and inconsistent in testing within Sample G41.

**Key to Instrument Codes Reported by Participants**

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







# Plastics Interlaboratory Testing Program

Report #101

## Analysis 712

1st Qtr 2017

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

WebCode	Data Flag	Sample N41			Sample N42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24CQUJ		75.90	1.07	1.08	75.25	-0.13	-0.10	AT
2F6CZE		75.35	0.52	0.52	75.60	0.22	0.16	CF
36F7GF		75.90	1.07	1.08	75.75	0.37	0.27	TO
6PXRE9		74.50	-0.33	-0.33	75.00	-0.38	-0.28	CE
6YMF DJ		75.00	0.17	0.17	77.80	2.42	1.75	XX
74E8YL		74.73	-0.11	-0.11	77.35	1.97	1.43	AT
7WC3YM		73.18	-1.66	-1.67	73.23	-2.16	-1.56	CE
8H9TZ6		73.35	-1.48	-1.49	75.50	0.12	0.09	XX
B2DRFC		76.50	1.67	1.68	76.38	0.99	0.72	XX
BJFANT		76.23	1.39	1.41	77.03	1.64	1.19	AT
DX67UG		73.85	-0.98	-0.99	73.88	-1.51	-1.09	TO
FBNKW9		74.58	-0.26	-0.26	74.50	-0.88	-0.64	TY
FMCCA6		74.35	-0.48	-0.49	74.75	-0.63	-0.46	TO
FNNJK7		75.50	0.67	0.67	75.35	-0.03	-0.02	DN
GG8976		74.35	-0.48	-0.49	76.70	1.32	0.96	CE
HAGF6M		75.68	0.84	0.85	75.88	0.49	0.36	DN
HMP2TL		73.45	-1.38	-1.39	74.18	-1.21	-0.88	CE
JEBY32		74.00	-0.83	-0.84	73.63	-1.76	-1.27	DN
JTN299		74.55	-0.28	-0.28	74.73	-0.66	-0.48	TY
L3BAYW		76.45	1.62	1.63	76.00	0.62	0.45	CE
L7A2AT		73.50	-1.33	-1.34	73.55	-1.83	-1.33	TO
MQBA9Q		76.23	1.39	1.41	75.98	0.59	0.43	CE
PUK9EE	X	65.83	-9.01	-9.08	66.83	-8.56	-6.21	CE
RGN4YD		75.70	0.87	0.88	75.38	-0.01	0.00	CE
TPZHGA		74.60	-0.23	-0.23	74.70	-0.68	-0.49	AT
TZG6RX	*	76.60	1.77	1.78	79.23	3.84	2.79	TO
UJPQTV		73.70	-1.13	-1.14	76.90	1.52	1.10	TO
V4Q973		74.68	-0.16	-0.16	74.55	-0.83	-0.60	CE
W7EXEN		74.45	-0.38	-0.38	74.28	-1.11	-0.80	TO
WE7D26		75.65	0.82	0.83	75.98	0.59	0.43	XX
WKD2CL		73.98	-0.86	-0.86	73.85	-1.53	-1.11	IN
WX3XHR		75.40	0.57	0.57	77.65	2.27	1.65	CF
YEHYFY		75.13	0.29	0.30	74.93	-0.46	-0.33	CE
YR9LVU		74.45	-0.38	-0.38	75.00	-0.38	-0.28	AT
Z8RYHJ		73.63	-1.21	-1.22	73.80	-1.58	-1.15	CE



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 712

1st Qtr 2017

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

WebCode	Data Flag	Sample N41			Sample N42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
ZXPGA2		74.05	-0.78	-0.79	74.15	-1.23	-0.89	CE

#### Summary Statistics

	Sample N41	Sample N42
<b>Grand Means</b>	74.831 Degrees C	75.381 Degrees C
<b>Stnd Dev Btwn Labs</b>	0.992 Degrees C	1.378 Degrees C

Statistics based on 35 of 36 reporting participants

Sample N41: HIPS & Sample N42: HIPS

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

PUK9EE (X) - Data for both samples are low.

#### 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



# Plastics Interlaboratory Testing Program

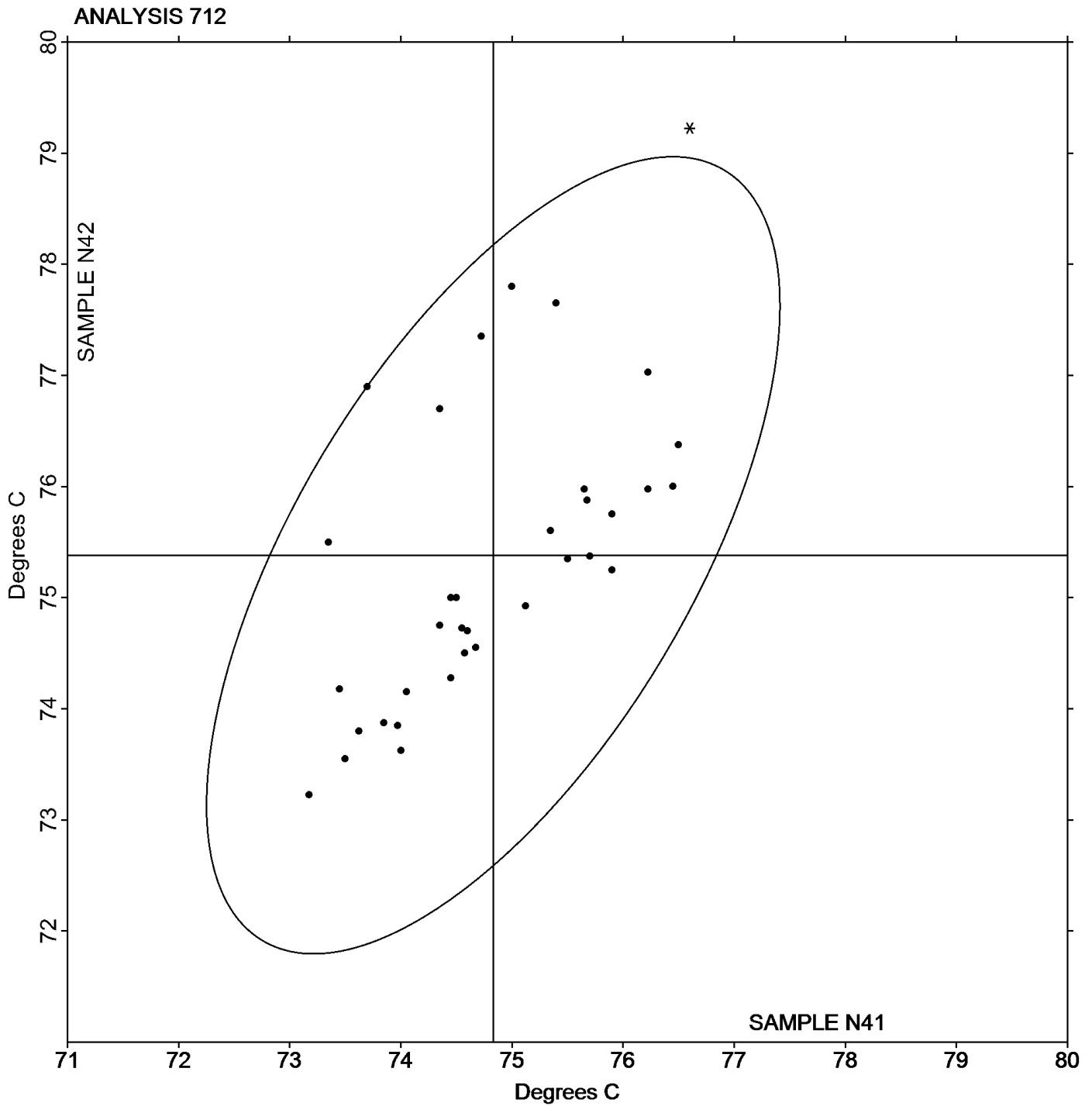
Report #101

## Analysis 712

1st Qtr 2017

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

Grand Mean Sample N41: 74.831 Degrees C    Grand Mean Sample N42: 75.381 Degrees C





**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 715**

**1st Qtr 2017**

**Vicat Softening Temperature (Rate A)**

WebCode	Data Flag	Sample H41			Sample H42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24CQUJ		105.12	0.00	0.00	105.08	-0.01	-0.01	AT
2HAZF6		104.83	-0.29	-0.30	104.87	-0.22	-0.23	RO
2LRZVK		105.30	0.18	0.19	105.48	0.39	0.41	CE
3M4EK8		105.67	0.55	0.57	105.17	0.08	0.08	CE
6PXRE9		105.08	-0.04	-0.04	105.02	-0.07	-0.08	CF
9VA4P6		104.15	-0.97	-1.02	104.22	-0.87	-0.91	AT
AT442D		104.70	-0.42	-0.44	104.45	-0.64	-0.67	DN
DGYWZB		106.13	1.01	1.06	105.78	0.69	0.73	TO
EYFKKM		103.90	-1.22	-1.28	103.95	-1.14	-1.19	CE
FBNKW9		104.52	-0.60	-0.63	104.45	-0.64	-0.67	TY
GG8976		107.18	2.06	2.17	107.20	2.11	2.21	CE
HFQE4A		104.53	-0.59	-0.62	104.75	-0.34	-0.36	CE
HMP2TL		104.82	-0.30	-0.32	104.53	-0.56	-0.58	CE
J6Q398		104.25	-0.87	-0.91	104.18	-0.91	-0.95	TO
L7A2AT		105.37	0.25	0.26	105.02	-0.07	-0.08	TO
R3947V	*	104.73	-0.39	-0.41	105.77	0.68	0.71	CE
RL6AVM		107.35	2.23	2.34	107.37	2.28	2.38	QA
WX3XHR		104.53	-0.59	-0.62	104.33	-0.76	-0.79	CF

Summary Statistics		
	Sample H41	Sample H42
<b>Grand Means</b>	105.120 Degrees C	105.090 Degrees C
<b>Stnd Dev Btwn Labs</b>	0.951 Degrees C	0.955 Degrees C
Statistics based on 18 of 18 reporting participants		

Sample H41: ABS & Sample H42: ABS

**Key to Instrument Codes Reported by Participants**

AT Atlas	CE Ceast
CF Coesfeld	DN DYNISCO
QA Qualitest	RO Rosand
TO Tinius Olsen	TY Toyoseiki



Plastics Interlaboratory Testing Program

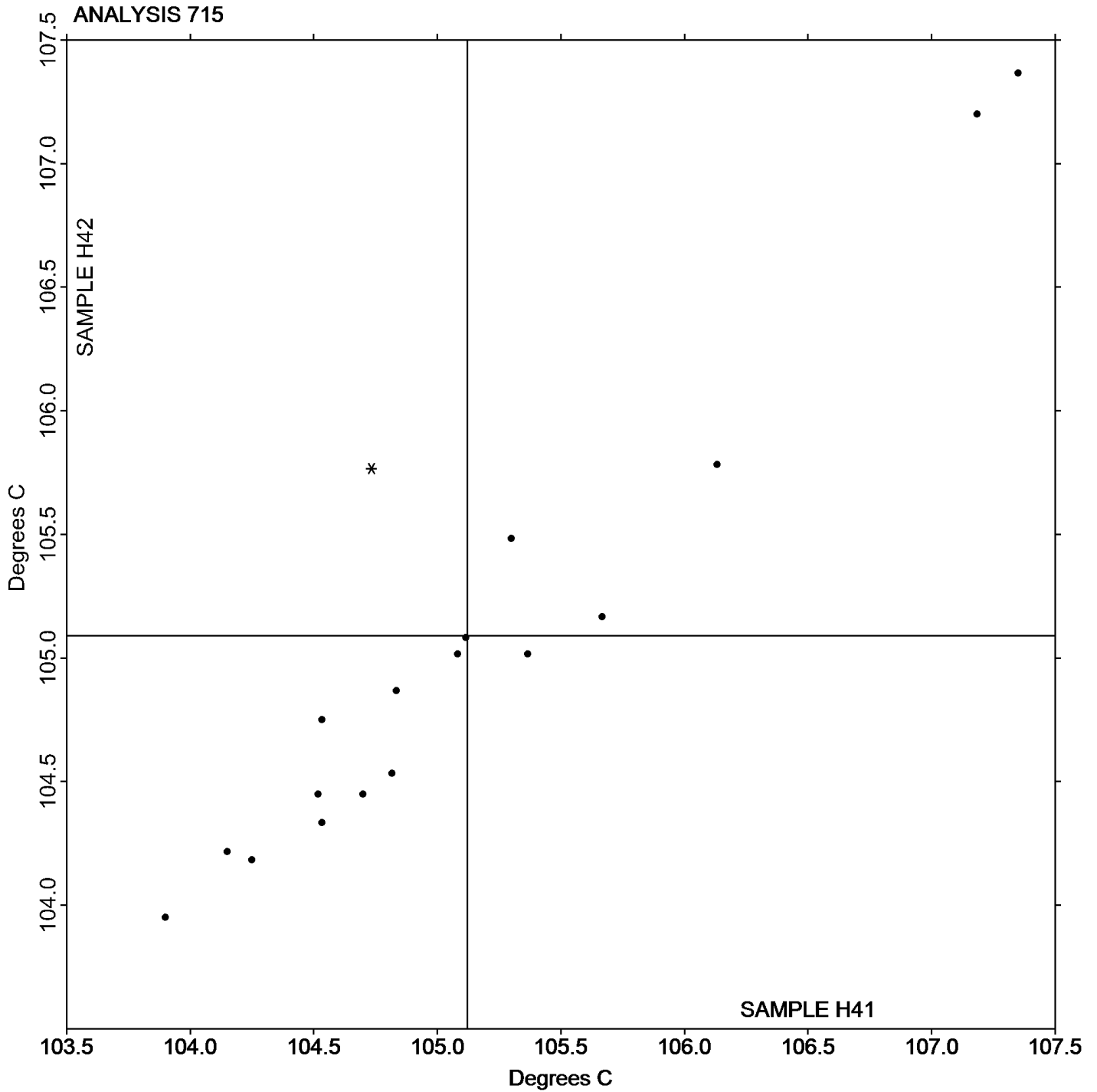
Report #101

Analysis 715

1st Qtr 2017

Vicat Softening Temperature (Rate A)

Grand Mean Sample H41: 105.12 Degrees C Grand Mean Sample H42: 105.09 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 #101**

**Analysis 716**

**1st Qtr 2017**

**Vicat Softening Temperature (Rate B)**

WebCode	Data Flag	<u>Sample R41</u>			<u>Sample R42</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24CQUJ		107.03	0.61	0.55	106.98	0.58	0.50	AT
2HAZF6		106.63	0.21	0.19	106.55	0.15	0.13	RO
36F7GF		107.90	1.48	1.34	107.85	1.45	1.24	TO
3M4EK8		106.33	-0.09	-0.08	106.37	-0.03	-0.03	CE
44M863		106.37	-0.06	-0.05	106.22	-0.18	-0.16	TO
6PXRE9		106.88	0.46	0.42	106.85	0.45	0.38	CF
9VA4P6		105.75	-0.67	-0.61	105.72	-0.68	-0.58	AT
AT442D		105.55	-0.87	-0.79	105.48	-0.92	-0.78	DN
DGYWZB		107.70	1.28	1.16	107.78	1.38	1.18	TO
EYFKKM		105.31	-1.11	-1.01	105.35	-1.05	-0.89	CE
FBNKW9		106.40	-0.02	-0.02	106.40	0.00	0.00	TY
GG8976	*	109.12	2.69	2.45	109.52	3.12	2.66	CE
HFQE4A		106.18	-0.24	-0.22	106.12	-0.28	-0.24	CE
J6Q398		105.43	-0.99	-0.90	105.47	-0.93	-0.80	TO
L7A2AT		106.53	0.11	0.10	106.38	-0.02	-0.01	TO
R3947V		105.97	-0.46	-0.41	106.00	-0.40	-0.34	CE
RL6AVM		104.15	-2.27	-2.06	104.08	-2.32	-1.98	DN
WX3XHR		106.37	-0.06	-0.05	106.07	-0.33	-0.28	CF

<b>Summary Statistics</b>		
	<u>Sample R41</u>	<u>Sample R42</u>
<b>Grand Means</b>	106.423 Degrees C	106.399 Degrees C
<b>Stnd Dev Btwn Labs</b>	1.101 Degrees C	1.171 Degrees C
Statistics based on 18 of 18 reporting participants		

Sample R41: ABS & Sample R42: ABS

**Key to Instrument Codes Reported by Participants**

- |              |                 |
|--------------|-----------------|
| AT Atlas     | CE Ceast        |
| CF Coesfeld  | DN DYNISCO      |
| RO Rosand    | TO Tinius Olsen |
| TY Toyoseiki |                 |



# Plastics Interlaboratory Testing Program

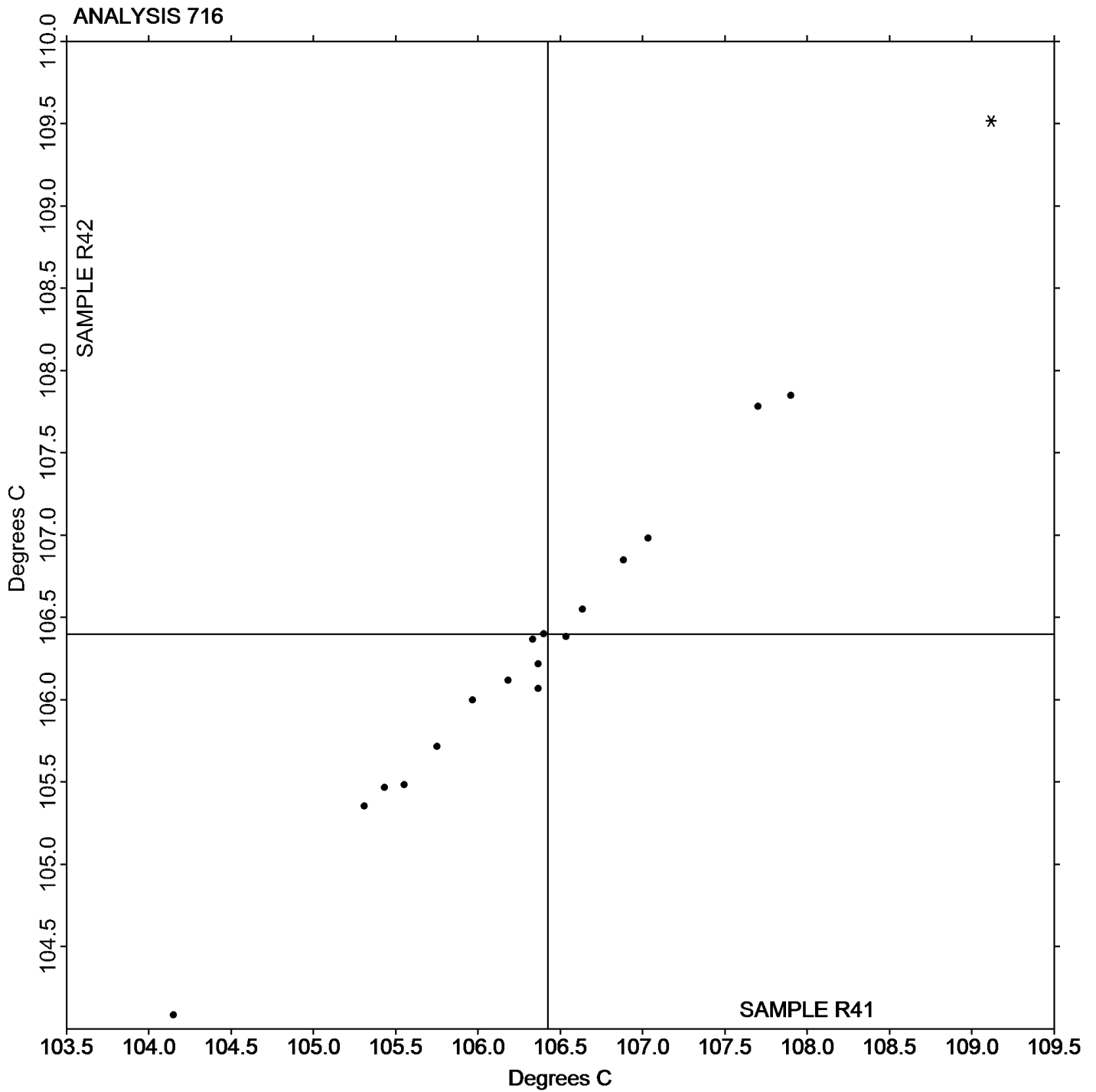
Report #101

## Analysis 716

1st Qtr 2017

### Vicat Softening Temperature (Rate B)

Grand Mean Sample R41: 106.42 Degrees C    Grand Mean Sample R42: 106.40 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 #101

## Analysis 718

1st Qtr 2017

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

WebCode	Data Flag	Sample T41			Sample T42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		1.04620	0.00034	0.14	1.04567	-0.00013	-0.06
2AHJTN	X	1.04300	-0.00286	-1.18	1.03800	-0.00780	-3.55
2MP944		1.04617	0.00031	0.13	1.04510	-0.00070	-0.32
32GMG3		1.04900	0.00314	1.30	1.04890	0.00310	1.41
36F7GF		1.04570	-0.00016	-0.06	1.04613	0.00033	0.15
3KC6MX		1.04460	-0.00126	-0.52	1.04530	-0.00050	-0.23
6FCQZL		1.04433	-0.00152	-0.63	1.04430	-0.00150	-0.68
6HZC9		1.04437	-0.00149	-0.62	1.04457	-0.00123	-0.56
6MPNJW		1.04900	0.00314	1.30	1.04867	0.00287	1.30
6TWV2B		1.04812	0.00226	0.94	1.04768	0.00188	0.86
6YMFDJ		1.04827	0.00241	1.00	1.04810	0.00230	1.05
7WXTWF		1.04420	-0.00166	-0.69	1.04447	-0.00133	-0.61
84TQL4		1.04167	-0.00419	-1.73	1.04167	-0.00413	-1.88
8CM4EA		1.04527	-0.00059	-0.24	1.04513	-0.00067	-0.30
8ERN7H		1.04467	-0.00119	-0.49	1.04323	-0.00257	-1.17
8H9TZ6		1.04700	0.00114	0.47	1.04533	-0.00047	-0.21
8M8AFM		1.04630	0.00044	0.18	1.04533	-0.00047	-0.21
8N3FP9		1.04633	0.00048	0.20	1.04700	0.00120	0.55
924CLF	*	1.04950	0.00364	1.51	1.04697	0.00117	0.53
9GB37B		1.04867	0.00281	1.16	1.04793	0.00213	0.97
9GQJ6C		1.04347	-0.00239	-0.99	1.04320	-0.00260	-1.18
A3MHZ8		1.04217	-0.00369	-1.53	1.04147	-0.00433	-1.97
B2DRFC		1.04493	-0.00092	-0.38	1.04447	-0.00133	-0.61
BCRPF8	X	1.04900	0.00314	1.30	1.04567	-0.00013	-0.06
BJFANT		1.04700	0.00114	0.47	1.04700	0.00120	0.55
BV7BVN		1.04667	0.00081	0.34	1.04600	0.00020	0.09
CC6M4N		1.04743	0.00158	0.65	1.04625	0.00046	0.21
CTXXT2		1.04030	-0.00556	-2.30	1.04047	-0.00533	-2.42
CUPE4N		1.04630	0.00044	0.18	1.04603	0.00023	0.11
CWWRT3		1.04607	0.00021	0.09	1.04673	0.00093	0.43
D4TA29		1.04987	0.00401	1.66	1.04830	0.00250	1.14
DX67UG		1.04667	0.00081	0.34	1.04833	0.00253	1.15
ET8ZWQ		1.04617	0.00031	0.13	1.04623	0.00043	0.20
EYFKKM		1.04503	-0.00082	-0.34	1.04620	0.00040	0.18
EZ9BQ2		1.04457	-0.00129	-0.53	1.04443	-0.00137	-0.62



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 718

1st Qtr 2017

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

WebCode	Data Flag	Sample T41			Sample T42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
FBJ7J7		1.04427	-0.00159	-0.66	1.04443	-0.00137	-0.62
FBNKW9		1.04617	0.00031	0.13	1.04627	0.00047	0.21
GG8976		1.04620	0.00034	0.14	1.04730	0.00150	0.68
HAGF6M		1.04440	-0.00146	-0.60	1.04483	-0.00097	-0.44
HCP9KV		1.04713	0.00128	0.53	1.04720	0.00140	0.64
HFQE4A		1.04863	0.00278	1.15	1.04863	0.00283	1.29
HMP2TL		1.04683	0.00098	0.40	1.04623	0.00043	0.20
HQPCM2		1.04323	-0.00262	-1.09	1.04327	-0.00253	-1.15
J6Q398		1.04883	0.00298	1.23	1.04823	0.00243	1.11
JEBY32		1.04867	0.00281	1.16	1.04867	0.00287	1.30
JP9GDE	*	1.04367	-0.00219	-0.91	1.04633	0.00053	0.24
JRFU4T		1.04783	0.00198	0.82	1.04787	0.00207	0.94
JYDJKW		1.04873	0.00288	1.19	1.04640	0.00060	0.27
L3BAYW		1.04340	-0.00246	-1.02	1.04430	-0.00150	-0.68
L7A2AT		1.04440	-0.00146	-0.60	1.04510	-0.00070	-0.32
LE2L8E		1.04610	0.00024	0.10	1.04633	0.00053	0.24
LRLZBD		1.04333	-0.00252	-1.04	1.04433	-0.00147	-0.67
M8XE8Q	X	1.04610	0.00024	0.10	1.05163	0.00583	2.65
MA6AUU		1.04747	0.00161	0.67	1.04750	0.00170	0.77
PF738N		1.04800	0.00214	0.89	1.04833	0.00253	1.15
PGX2ET	*	1.04147	-0.00439	-1.82	1.04037	-0.00543	-2.47
PUK9EE		1.04653	0.00068	0.28	1.04710	0.00130	0.59
QY9KHA	X	1.03370	-0.01216	-5.03	1.04447	-0.00133	-0.61
RG8PTP		1.04813	0.00228	0.94	1.04930	0.00350	1.59
RGN4WT		1.04033	-0.00552	-2.29	1.04133	-0.00447	-2.03
T4ZJXJ		1.04783	0.00198	0.82	1.04787	0.00207	0.94
TPZHGA		1.04877	0.00291	1.20	1.04867	0.00287	1.30
TRRJKC		1.04507	-0.00079	-0.33	1.04473	-0.00107	-0.48
TTZVYT		1.04720	0.00134	0.56	1.04620	0.00040	0.18
UJ76WY		1.04700	0.00114	0.47	1.04600	0.00020	0.09
UVKZAB		1.04600	0.00014	0.06	1.04700	0.00120	0.55
V4Q973		1.04233	-0.00352	-1.46	1.04333	-0.00247	-1.12
V9MFQL		1.04610	0.00024	0.10	1.04527	-0.00053	-0.24
VV3BQX	X	1.05080	0.00494	2.05	1.05277	0.00697	3.17
W7EXEN		1.05037	0.00451	1.87	1.04997	0.00417	1.90



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 718**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample T41			Sample T42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WE7D26		1.04500	-0.00086	-0.35	1.04567	-0.00013	-0.06
WGVRG3	X	1.04667	0.00081	0.34	1.05233	0.00653	2.97
WKD2CL		1.04290	-0.00296	-1.22	1.04383	-0.00197	-0.89
WTP29H		1.04367	-0.00219	-0.91	1.04367	-0.00213	-0.97
WX3XHR		1.04300	-0.00286	-1.18	1.04400	-0.00180	-0.82
WYR8NK		1.04333	-0.00252	-1.04	1.04400	-0.00180	-0.82
XB4W7P		1.04883	0.00298	1.23	1.04833	0.00253	1.15
XP6T2V		1.04633	0.00048	0.20	1.04700	0.00120	0.55
XVQLAM	*	1.03830	-0.00756	-3.13	1.03943	-0.00637	-2.89
YD7KCL	*	1.04647	0.00061	0.25	1.04410	-0.00170	-0.77
YEHYFY	X	1.04133	-0.00452	-1.87	1.03933	-0.00647	-2.94
YR9LVU		1.04867	0.00281	1.16	1.04633	0.00053	0.24
Z7F9BZ		1.04530	-0.00056	-0.23	1.04543	-0.00037	-0.17
ZKXYA3		1.04770	0.00184	0.76	1.04807	0.00227	1.03
ZXPGA2		1.04850	0.00264	1.09	1.04853	0.00273	1.24
ZZUA2E		1.04420	-0.00166	-0.69	1.04437	-0.00143	-0.65

**Summary Statistics**

**Grand Means**

Sample T41  
1.045856 sp gr 23/23 C

Sample T42  
1.045798 sp gr 23/23 C

**Stnd Dev Btwn Labs**

0.002417 sp gr 23/23 C

0.002200 sp gr 23/23 C

Statistics based on 79 of 86 reporting participants

Sample T41: ABS & Sample T42: ABS

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

- BCRPF8 (X) - Inconsistent in testing between samples.
- W3BQX (X) - Inconsistent in testing between samples, data for Sample T42 are high.
- 2AHJTN (X) - Inconsistent in testing between samples, data for Sample T42 are low.
- WGVRG3 (X) - Inconsistent in testing between samples, data for Sample T42 are high.
- YEHYFY (X) - Inconsistent in testing between samples, data for Sample T42 are low.
- M8XE8Q (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- QY9KHA (X) - Inconsistent in testing between samples, data for Sample T41 are low. Inconsistent within the determinations of sample T41.



# Plastics Interlaboratory Testing Program

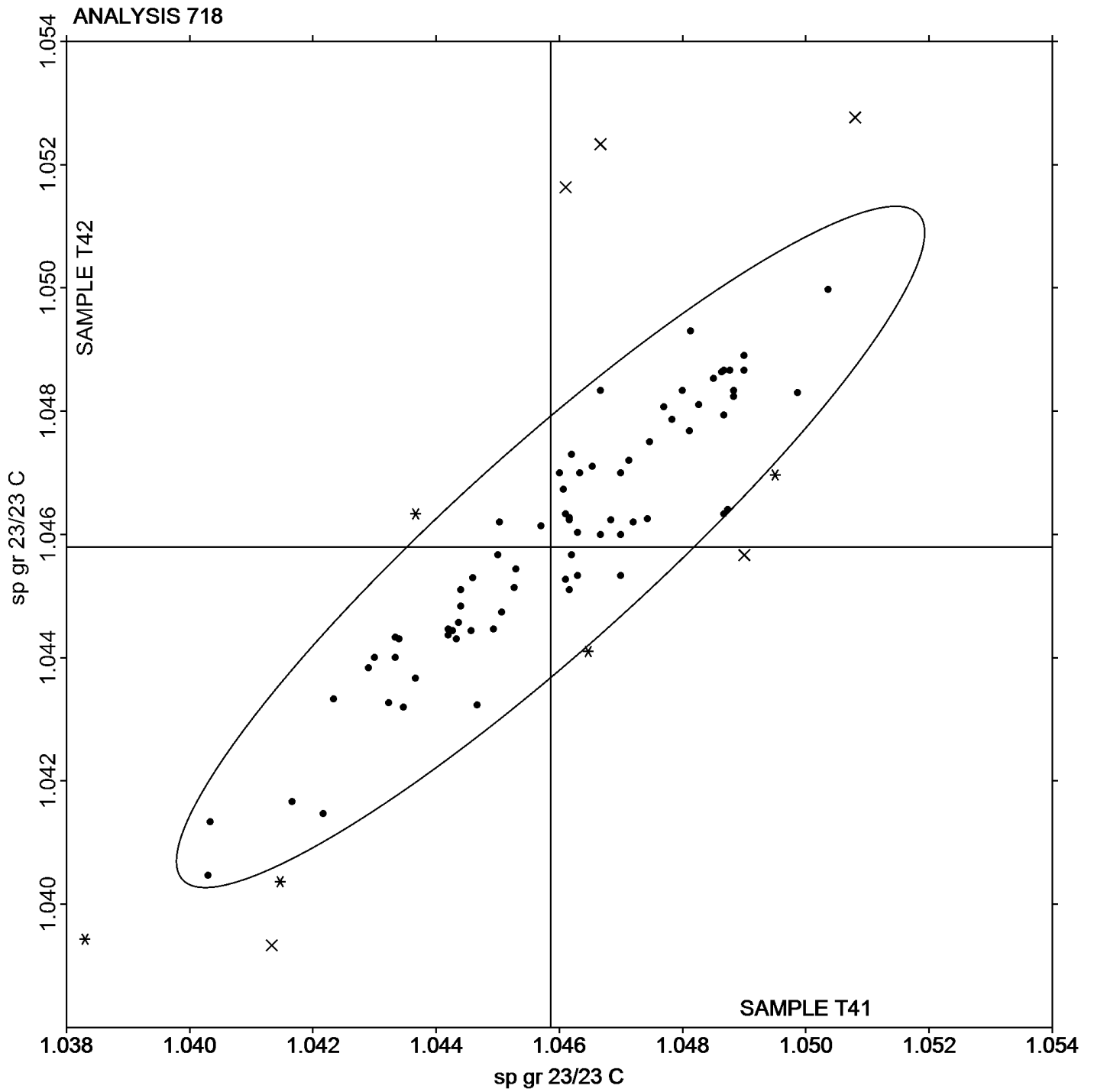
Report #101

## Analysis 718

1st Qtr 2017

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

Grand Mean Sample T41: 1.0459 sp gr 23/23 C    Grand Mean Sample T42: 1.0458 sp gr 23/23 C





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 720

1st Qtr 2017

### Flexural Modulus- ksi

WebCode	Data Flag	Sample J41			Sample J42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		374.2	4.4	0.28	374.1	3.7	0.23
2HAZF6		368.9	-0.8	-0.05	369.3	-1.1	-0.07
2HQ2EZ		347.7	-22.1	-1.39	347.8	-22.6	-1.40
32GMG3		365.1	-4.6	-0.29	359.6	-10.8	-0.67
4HF7MP		390.4	20.7	1.30	388.2	17.8	1.10
6FBVD8		377.1	7.3	0.46	378.6	8.2	0.51
6YMFDJ		342.6	-27.2	-1.71	346.0	-24.4	-1.51
6ZGBPR		376.1	6.4	0.40	373.3	2.9	0.18
7G39D6		373.1	3.3	0.21	373.8	3.4	0.21
84TQL4	X	119.8	-249.9	-15.75	120.6	-249.8	-15.50
8H9TZ6		370.1	0.4	0.02	371.9	1.5	0.09
947AW9		361.5	-8.3	-0.52	353.2	-17.2	-1.07
9Q3LL4		352.2	-17.6	-1.11	350.3	-20.1	-1.25
B748ZB		375.4	5.7	0.36	381.2	10.8	0.67
BCCVX8		376.6	6.9	0.43	377.1	6.7	0.41
BV7BVN	*	370.5	0.7	0.05	381.0	10.6	0.66
CC6M4N	*	411.0	41.2	2.60	412.1	41.7	2.59
EZ9BQ2		376.6	6.8	0.43	379.6	9.2	0.57
FBNKW9		360.5	-9.3	-0.58	362.5	-7.9	-0.49
FMCCA6		380.8	11.0	0.70	382.2	11.8	0.73
G3PFFD		383.8	14.1	0.89	383.1	12.7	0.79
G6RDQ7		383.4	13.7	0.86	384.4	14.0	0.87
GG8976		356.7	-13.1	-0.82	354.5	-15.9	-0.98
HFQE4A		367.6	-2.2	-0.14	368.3	-2.1	-0.13
HJRE7R		386.8	17.0	1.07	387.0	16.6	1.03
J6Q398		361.5	-8.3	-0.52	361.8	-8.6	-0.53
JDXYR6		343.0	-26.8	-1.69	342.6	-27.8	-1.73
JEBY32		360.5	-9.3	-0.58	366.7	-3.7	-0.23
JYDJKW	X	379.6	9.9	0.62	362.6	-7.8	-0.49
KBBK4V		365.6	-4.2	-0.26	362.2	-8.2	-0.51
KDWNCR		356.6	-13.2	-0.83	356.2	-14.2	-0.88
KMYP6X		376.3	6.5	0.41	378.2	7.8	0.48
L3BAYW	X	2.7	-367.0	-23.13	2.7	-367.7	-22.82
L7A2AT		366.6	-3.1	-0.20	368.7	-1.7	-0.11
L8KXJ7		376.6	6.8	0.43	378.6	8.2	0.51



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 720**

**1st Qtr 2017**

**Flexural Modulus- ksi**

WebCode	Data Flag	Sample J41			Sample J42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
LQWMYP		335.0	-34.7	-2.19	333.6	-36.8	-2.29
LUJ2NY		355.7	-14.0	-0.88	355.6	-14.8	-0.92
MG6E2D	X	426.9	57.1	3.60	432.9	62.5	3.88
PF738N		386.6	16.9	1.06	387.6	17.2	1.07
RL6AVM	*	347.9	-21.8	-1.38	357.5	-12.9	-0.80
V3WDUU		390.5	20.7	1.31	389.7	19.3	1.20
V9MFQL		365.1	-4.7	-0.30	365.5	-4.9	-0.30
VV3BQX		377.0	7.2	0.46	377.2	6.8	0.42
WE7D26	*	335.6	-34.1	-2.15	344.9	-25.5	-1.58
WGVRG3		377.6	7.8	0.49	377.0	6.6	0.41
WKD2CL		383.1	13.4	0.84	382.0	11.6	0.72
WYR8NK		399.4	29.7	1.87	405.7	35.3	2.19
Y36RPT		368.3	-1.4	-0.09	365.9	-4.5	-0.28
YD7KCL		394.5	24.8	1.56	394.9	24.5	1.52
Z8RYHJ		365.8	-4.0	-0.25	367.1	-3.3	-0.21
ZBR8PE		383.3	13.6	0.85	383.9	13.5	0.84
ZKXYA3		352.6	-17.2	-1.08	353.6	-16.8	-1.04
ZPYMTK		372.1	2.3	0.15	370.9	0.5	0.03
ZZUA2E	*	362.4	-7.4	-0.46	353.8	-16.6	-1.03

Summary Statistics		
	Sample J41	Sample J42
<b>Grand Means</b>	369.76 ksi	370.40 ksi
<b>Stnd Dev Btwn Labs</b>	15.87 ksi	16.11 ksi
Statistics based on 50 of 54 reporting participants		

Sample J41: ABS & Sample J42: ABS

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

- 84TQL4 (X) - Data for both samples are low.
- JYDJKW (X) - Inconsistent in testing between samples.
- MG6E2D (X) - Data for both samples are high. Possible Systematic Error.
- L3BAYW (X) - Extreme data.



# Plastics Interlaboratory Testing Program

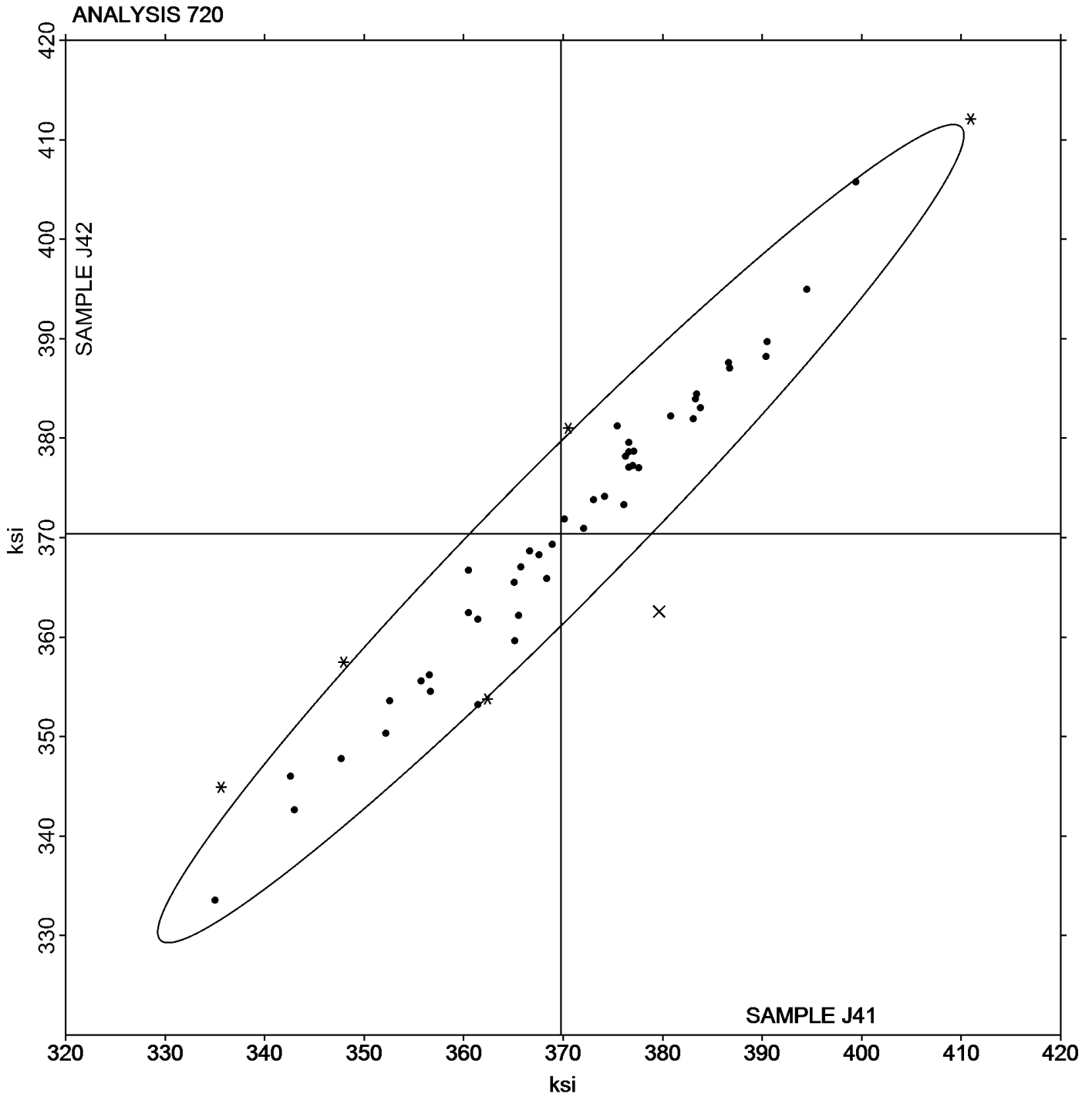
Report #101

## Analysis 720

1st Qtr 2017

### Flexural Modulus- ksi

Grand Mean Sample J41: 369.76 ksi    Grand Mean Sample J42: 370.40 ksi





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 721

1st Qtr 2017

### Flexural Stress at 5% Strain - psi

WebCode	Data Flag	Sample J41			Sample J42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		11,042	-68	-0.20	11,158	22	0.07
2HQ2EZ		10,441	-668	-1.98	10,431	-705	-2.20
32GMG3		11,560	451	1.34	11,460	324	1.01
4HF7MP		11,746	637	1.89	11,691	555	1.73
6FBVD8		11,473	364	1.08	11,527	390	1.22
6ZGBPR		11,503	394	1.17	11,360	224	0.70
7G39D6		10,958	-151	-0.45	11,001	-136	-0.42
84TQL4	X	5,715	-5,395	-16.03	5,749	-5,387	-16.84
947AW9		10,633	-476	-1.41	10,658	-478	-1.49
9Q3LL4		11,122	12	0.04	11,007	-130	-0.41
B748ZB		10,727	-382	-1.13	10,889	-248	-0.77
BCCVX8		11,655	546	1.62	11,638	502	1.57
BV7BVN		10,781	-328	-0.97	10,932	-204	-0.64
EZ9BQ2	*	10,972	-138	-0.41	10,745	-391	-1.22
FBNKW9		10,614	-495	-1.47	10,628	-508	-1.59
FMCCA6		11,280	171	0.51	11,300	164	0.51
G3PFFD		11,154	45	0.13	11,104	-32	-0.10
G6RDQ7		11,093	-16	-0.05	11,084	-53	-0.16
GG8976		11,060	-49	-0.15	11,160	24	0.07
HFQE4A		11,262	153	0.45	11,284	147	0.46
HJRE7R		11,284	175	0.52	11,324	188	0.59
JDXYR6		10,533	-576	-1.71	10,584	-552	-1.72
JEBY32		11,080	-30	-0.09	11,154	18	0.06
JYDJKW		11,136	27	0.08	11,042	-94	-0.29
KBBK4V		11,021	-88	-0.26	10,972	-164	-0.51
KDWNCR		10,721	-388	-1.15	10,901	-236	-0.74
KMYP6X	X	78	-11,031	-32.77	78	-11,058	-34.56
L3BAYW	X	79	-11,030	-32.77	80	-11,056	-34.55
L7A2AT		11,091	-19	-0.06	11,212	76	0.24
L8KXJ7		10,620	-489	-1.45	10,700	-436	-1.36
LQWMYP		11,399	290	0.86	11,353	217	0.68
MG6E2D		11,232	123	0.36	11,368	232	0.72
PF738N		11,322	213	0.63	11,529	393	1.23
RL6AVM		10,930	-179	-0.53	11,129	-7	-0.02
V3WDUU		11,323	214	0.64	11,431	294	0.92





**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 721**

**1st Qtr 2017**

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

WebCode	Data Flag	<u>Sample J41</u>			<u>Sample J42</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
VV3BQX		10,640	-469	-1.39	10,640	-496	-1.55
WKD2CL		11,276	167	0.50	11,429	293	0.91
WYR8NK		11,020	-89	-0.27	11,213	76	0.24
Y36RPT		10,827	-282	-0.84	10,828	-308	-0.96
YD7KCL		11,569	460	1.37	11,619	482	1.51
ZBR8PE		11,185	76	0.23	11,165	29	0.09
ZKXYA3		11,400	291	0.86	11,300	164	0.51
ZPYMTK		11,682	573	1.70	11,503	366	1.15

**Summary Statistics**

	<u>Sample J41</u>	<u>Sample J42</u>
<b>Grand Means</b>	11,109.2 psi	11,136.3 psi
<b>Std Dev Btwn Labs</b>	336.6 psi	320.0 psi

Statistics based on 40 of 43 reporting participants

Sample J41: ABS & Sample J42: ABS

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

- 84TQL4 (X) - Data for both samples are low. Possible Systematic Error.
- KMYP6X (X) - Extreme data.
- L3BAYW (X) - Extreme data.



# Plastics Interlaboratory Testing Program

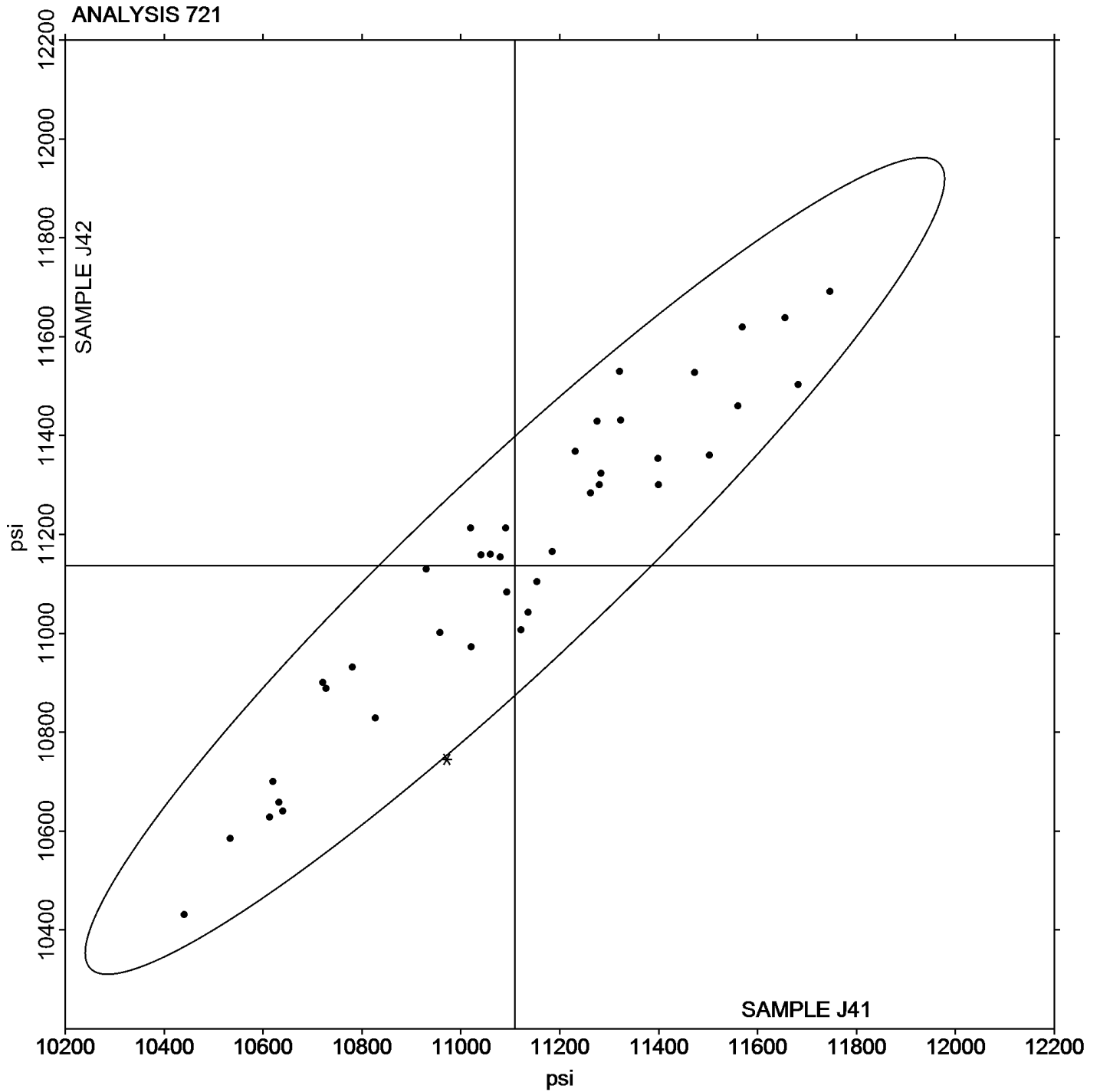
Report #101

## Analysis 721

1st Qtr 2017

Flexural Stress at 5% Strain - psi

Grand Mean Sample J41: 11,109.19 psi    Grand Mean Sample J42: 11,136.34 psi





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 722

1st Qtr 2017

### Flexural Stress at Yield - psi

WebCode	Data Flag	Sample J41			Sample J42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		11,090	-34	-0.12	11,198	42	0.15
2HAZF6		11,255	131	0.45	11,023	-132	-0.48
2HQ2EZ		10,482	-642	-2.22	10,464	-691	-2.51
4HF7MP		11,782	658	2.27	11,784	629	2.28
6ZGBPR		11,482	359	1.24	11,356	201	0.73
7G39D6		10,992	-132	-0.45	11,014	-141	-0.51
84TQL4	X	5,715	-5,409	-18.67	5,749	-5,406	-19.64
947AW9		10,735	-388	-1.34	10,804	-352	-1.28
9Q3LL4		11,176	52	0.18	11,046	-110	-0.40
B748ZB		10,853	-270	-0.93	11,055	-100	-0.36
BCCVX8		11,311	187	0.65	11,496	341	1.24
BV7BVN		10,833	-291	-1.00	10,981	-175	-0.64
CC6M4N		11,194	70	0.24	11,154	-2	-0.01
FBNKW9		10,669	-454	-1.57	10,681	-475	-1.72
FMCCA6		11,220	96	0.33	11,260	105	0.38
G3PFFD		11,154	30	0.11	11,104	-51	-0.19
G6RDQ7		11,152	28	0.10	11,149	-6	-0.02
GG8976		11,082	-41	-0.14	11,183	27	0.10
HJRE7R		11,324	200	0.69	11,356	201	0.73
JDXYR6		10,569	-555	-1.91	10,603	-552	-2.01
JEBY32		10,941	-182	-0.63	11,109	-47	-0.17
JYDJKW		11,146	22	0.08	11,048	-107	-0.39
KBBK4V		11,075	-49	-0.17	10,997	-158	-0.57
KDWNCR		10,765	-359	-1.24	10,959	-196	-0.71
KMYP6X		11,313	189	0.65	11,377	221	0.80
L3BAYW	X	128	-10,996	-37.95	129	-11,026	-40.06
L7A2AT		11,115	-9	-0.03	11,233	77	0.28
L8KXJ7		10,740	-384	-1.32	10,800	-355	-1.29
LQWMYP		11,403	280	0.97	11,361	206	0.75
MG6E2D		11,232	109	0.38	11,369	213	0.78
PF738N		11,402	278	0.96	11,574	418	1.52
RL6AVM		10,954	-170	-0.59	11,160	5	0.02
V3WDUU		11,363	239	0.83	11,438	282	1.03
V9MFQL		11,369	246	0.85	11,312	156	0.57
VV3BQX		10,740	-384	-1.32	10,740	-415	-1.51



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 722**

**1st Qtr 2017**

**Flexural Stress at Yield - psi**

WebCode	Data Flag	Sample J41			Sample J42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
WGVRG3		11,240	116	0.40	11,280	125	0.45
WKD2CL		11,325	201	0.69	11,455	299	1.09
WYR8NK		11,135	11	0.04	11,322	167	0.61
Y36RPT		10,875	-249	-0.86	10,860	-295	-1.07
Z8RYHJ		11,172	48	0.17	11,230	75	0.27
ZBR8PE		11,206	83	0.29	11,189	34	0.12
ZKXYA3		11,460	336	1.16	11,300	145	0.53
ZPYMTK		11,742	618	2.13	11,547	392	1.42

Summary Statistics		Sample J41	Sample J42
<b>Grand Means</b>		11,123.6 psi	11,155.4 psi
<b>Std Dev Btwn Labs</b>		289.7 psi	275.2 psi
Statistics based on 41 of 43 reporting participants			

Sample J41: ABS & Sample J42: ABS

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

84TQL4 (X) - Data for both samples are low.

L3BAYW (X) - Extreme data.



# Plastics Interlaboratory Testing Program

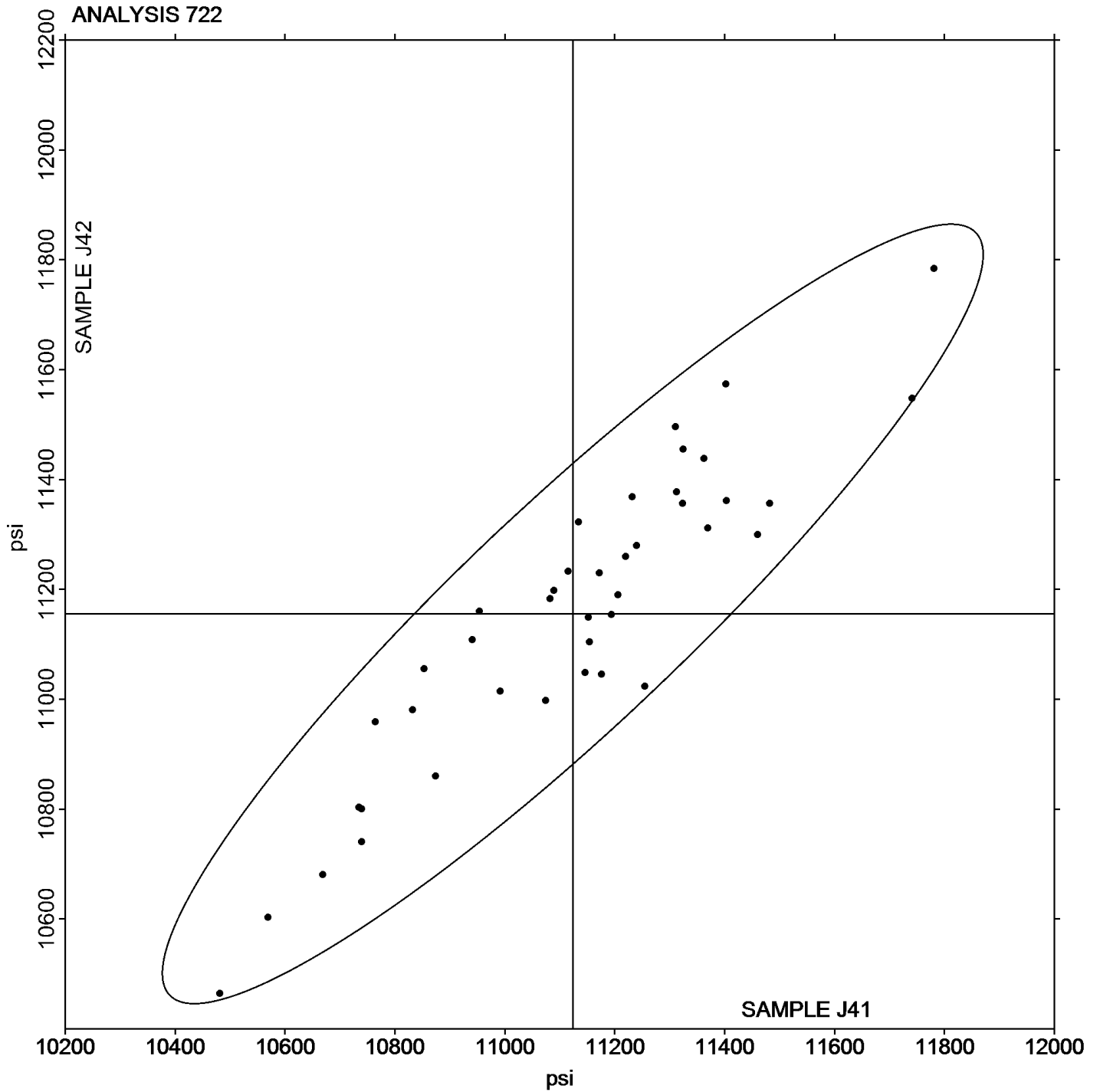
Report #101

## Analysis 722

1st Qtr 2017

### Flexural Stress at Yield - psi

Grand Mean Sample J41: 11,123.57 psi    Grand Mean Sample J42: 11,155.37 psi





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 730

1st Qtr 2017

### Tensile Stress at Yield - MPa

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		49.57	0.59	0.64	49.51	0.48	0.57
2F6CZE		49.44	0.46	0.50	49.40	0.36	0.43
2MP944		49.06	0.07	0.08	49.39	0.36	0.42
36F7GF		49.37	0.39	0.42	49.32	0.28	0.34
47TGRF		48.16	-0.82	-0.90	48.52	-0.52	-0.62
6PXRE9		50.46	1.48	1.61	50.26	1.22	1.46
6XVLC8		47.72	-1.26	-1.38	48.20	-0.84	-1.00
74E8YL		49.48	0.50	0.54	49.63	0.60	0.71
7WC3YM		48.74	-0.24	-0.26	48.96	-0.08	-0.09
7WXTWF		50.72	1.73	1.89	50.74	1.70	2.03
8H9TZ6	*	49.15	0.16	0.18	48.31	-0.73	-0.87
8KG7MF		48.32	-0.67	-0.73	48.45	-0.59	-0.70
B2DRFC	*	51.64	2.66	2.90	51.72	2.68	3.20
BJFANT		48.89	-0.09	-0.10	48.40	-0.64	-0.76
CK6MH7	X	44.72	-4.26	-4.65	46.02	-3.02	-3.60
CWWRT3		47.95	-1.03	-1.13	48.74	-0.30	-0.36
DX67UG		49.08	0.10	0.10	49.03	-0.01	-0.01
EYFKKM	X	47.47	-1.51	-1.65	46.28	-2.76	-3.29
FBNKW9		48.14	-0.84	-0.92	47.88	-1.16	-1.38
FMCCA6	X	48.42	-0.56	-0.61	47.49	-1.55	-1.85
FNNJK7		48.17	-0.81	-0.88	48.31	-0.72	-0.86
G6RDQ7		49.21	0.23	0.25	49.40	0.36	0.43
GG8976		49.81	0.83	0.91	50.09	1.06	1.26
HAGF6M		49.26	0.28	0.30	49.20	0.16	0.19
JEBY32		50.24	1.26	1.38	50.14	1.11	1.32
JTN299		50.47	1.49	1.62	50.45	1.41	1.68
K3FMAX		49.16	0.18	0.20	48.85	-0.19	-0.22
KJ4K9U		48.32	-0.66	-0.72	48.69	-0.35	-0.42
L3BAYW		49.30	0.32	0.35	49.04	0.00	0.00
L4FGZE		48.19	-0.79	-0.86	48.06	-0.98	-1.16
LNPBBU		48.71	-0.27	-0.30	48.63	-0.41	-0.48
LRLZBD	X	47.92	-1.06	-1.16	46.50	-2.54	-3.03
MA6AUU		47.53	-1.45	-1.58	48.07	-0.97	-1.16
MQBA9Q		49.20	0.22	0.24	49.25	0.21	0.25
PUK9EE		48.04	-0.94	-1.03	48.12	-0.92	-1.10



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 730**

**1st Qtr 2017**

**Tensile Stress at Yield - MPa**

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
QY9KHA	*	47.30	-1.69	-1.84	48.24	-0.80	-0.95
RFGNPL		48.88	-0.10	-0.11	49.08	0.04	0.05
RGN4YD		48.68	-0.30	-0.33	48.48	-0.56	-0.67
TZG6RX		48.34	-0.64	-0.70	48.28	-0.75	-0.90
UJPQTV		50.65	1.67	1.82	50.55	1.51	1.80
UVLZ8P		49.92	0.93	1.02	49.84	0.80	0.95
V4Q973		49.42	0.44	0.48	49.78	0.75	0.89
WE7D26		48.48	-0.50	-0.55	48.30	-0.74	-0.88
WKD2CL		48.34	-0.64	-0.70	48.62	-0.41	-0.49
WX3XHR		48.90	-0.08	-0.09	48.70	-0.34	-0.40
XLK7KP	X	47.21	-1.77	-1.94	49.59	0.55	0.66
Y36RPT		48.29	-0.69	-0.75	48.57	-0.47	-0.56
YD7KCL		47.55	-1.43	-1.56	47.75	-1.29	-1.54
YEHYFY		49.42	0.43	0.47	49.29	0.25	0.30
YR9LVU		48.63	-0.35	-0.39	48.63	-0.40	-0.48
Z8RYHJ		49.43	0.44	0.49	49.13	0.09	0.10
ZXPGA2		48.43	-0.55	-0.60	48.77	-0.27	-0.32

Summary Statistics		
	Sample C41	Sample C42
<b>Grand Means</b>	48.982 MPa	49.038 MPa
<b>Std Dev Btwn Labs</b>	0.916 MPa	0.838 MPa
Statistics based on 47 of 52 reporting participants		

Sample C41: ABS & Sample C42: ABS

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

- EYFKKM (X) - Inconsistent in testing between samples, data for sample C42 are low. Inconsistent within the determinations of sample C41.
- FMCCA6 (X) - Inconsistent in testing between samples.
- LRLZBD (X) - Inconsistent in testing between samples, data for sample C42 are low. Inconsistent within the determinations of sample C42.
- XLK7KP (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- CK6MH7 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample C41.



# Plastics Interlaboratory Testing Program

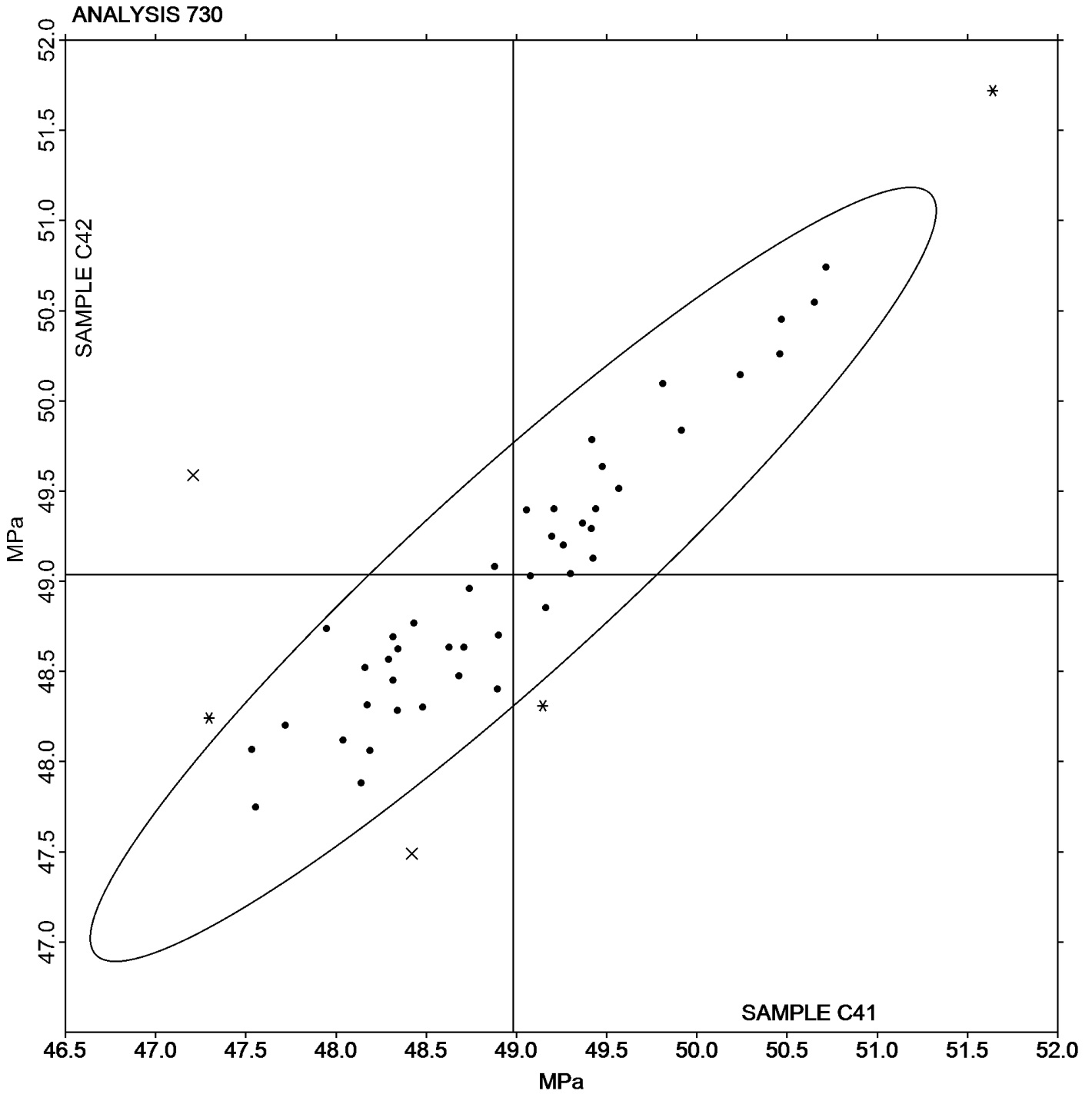
Report #101

Analysis 730

1st Qtr 2017

Tensile Stress at Yield - MPa

Grand Mean Sample C41: 48.982 MPa    Grand Mean Sample C42: 49.038 MPa







# Plastics Interlaboratory Testing Program

Report #101

## Analysis 731

1st Qtr 2017

### Tensile Stress at Break - MPa

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		33.04	-1.90	-1.01	33.37	-1.65	-0.89
2F6CZE	X	45.76	10.82	5.73	45.72	10.69	5.78
47TGRF		35.16	0.22	0.12	36.69	1.67	0.90
6PXRE9		34.22	-0.72	-0.38	35.98	0.95	0.51
6XVLC8		36.54	1.60	0.85	36.64	1.61	0.87
74E8YL		36.39	1.45	0.77	35.36	0.33	0.18
7WC3YM		36.44	1.50	0.80	35.46	0.43	0.23
7WXTWF		34.97	0.03	0.02	35.45	0.42	0.23
8KG7MF		34.62	-0.32	-0.17	34.63	-0.40	-0.21
B2DRFC		37.32	2.38	1.26	37.62	2.59	1.40
CWWRT3		36.50	1.57	0.83	36.41	1.38	0.75
DX67UG		35.14	0.20	0.11	34.78	-0.24	-0.13
EYFKKM	*	30.48	-4.46	-2.36	30.08	-4.94	-2.67
FBNKW9		34.56	-0.38	-0.20	33.40	-1.63	-0.88
FMCCA6		35.34	0.40	0.21	36.10	1.07	0.58
FNNJK7		32.39	-2.55	-1.35	32.78	-2.25	-1.22
G6RDQ7		32.30	-2.64	-1.40	32.28	-2.75	-1.48
GG8976		33.50	-1.44	-0.76	34.38	-0.65	-0.35
HAGF6M		36.40	1.46	0.77	36.42	1.39	0.75
JEBY32		38.37	3.44	1.82	38.82	3.79	2.05
JTN299		35.73	0.79	0.42	36.70	1.67	0.90
K3FMAX		35.08	0.14	0.08	34.54	-0.48	-0.26
KJ4K9U		38.23	3.29	1.74	37.60	2.58	1.39
L3BAYW		35.46	0.52	0.28	35.08	0.05	0.03
L4FGZE		33.63	-1.31	-0.69	33.05	-1.98	-1.07
LNPBBU		32.39	-2.55	-1.35	32.90	-2.13	-1.15
LRLZBD	X	47.92	12.98	6.88	46.50	11.47	6.20
MA6AUU		34.14	-0.80	-0.42	34.35	-0.68	-0.37
PUK9EE	X	46.70	11.76	6.23	47.46	12.43	6.72
QY9KHA		32.01	-2.92	-1.55	32.84	-2.19	-1.18
RFGNPL		34.98	0.04	0.02	35.34	0.31	0.17
RGN4YD		38.20	3.26	1.73	38.51	3.49	1.88
TPZHGA	*	35.82	0.88	0.47	38.92	3.89	2.10
TZG6RX		35.69	0.76	0.40	35.11	0.08	0.04
UJPTV		34.40	-0.54	-0.29	34.74	-0.29	-0.15



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 731**

**1st Qtr 2017**

**Tensile Stress at Break - MPa**

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
UVLZ8P		35.68	0.75	0.40	35.61	0.58	0.32
V4Q973		37.41	2.48	1.31	35.64	0.61	0.33
WKD2CL		33.89	-1.05	-0.55	34.52	-0.51	-0.27
WX3XHR		32.68	-2.26	-1.20	33.14	-1.89	-1.02
XLK7KP		34.04	-0.89	-0.47	34.69	-0.34	-0.18
Y36RPT		36.90	1.97	1.04	36.02	0.99	0.53
YD7KCL		32.65	-2.29	-1.21	34.40	-0.63	-0.34
YEHYFY	*	37.21	2.27	1.20	33.97	-1.05	-0.57
YR9LVU		35.29	0.35	0.18	34.22	-0.81	-0.44
Z8RYHJ		32.20	-2.74	-1.45	32.62	-2.41	-1.30

Summary Statistics		
	Sample C41	Sample C42
<b>Grand Means</b>	34.938 MPa	35.028 MPa
<b>Std Dev Btwn Labs</b>	1.887 MPa	1.850 MPa
Statistics based on 42 of 45 reporting participants		

Sample C41: ABS & Sample C42: ABS

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

- PUK9EE (X) - Data for both samples are high. Possible Systematic Error.
- 2F6CZE (X) - Data for both samples are high. Possible Systematic Error.
- LRLZBD (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample C42.



# Plastics Interlaboratory Testing Program

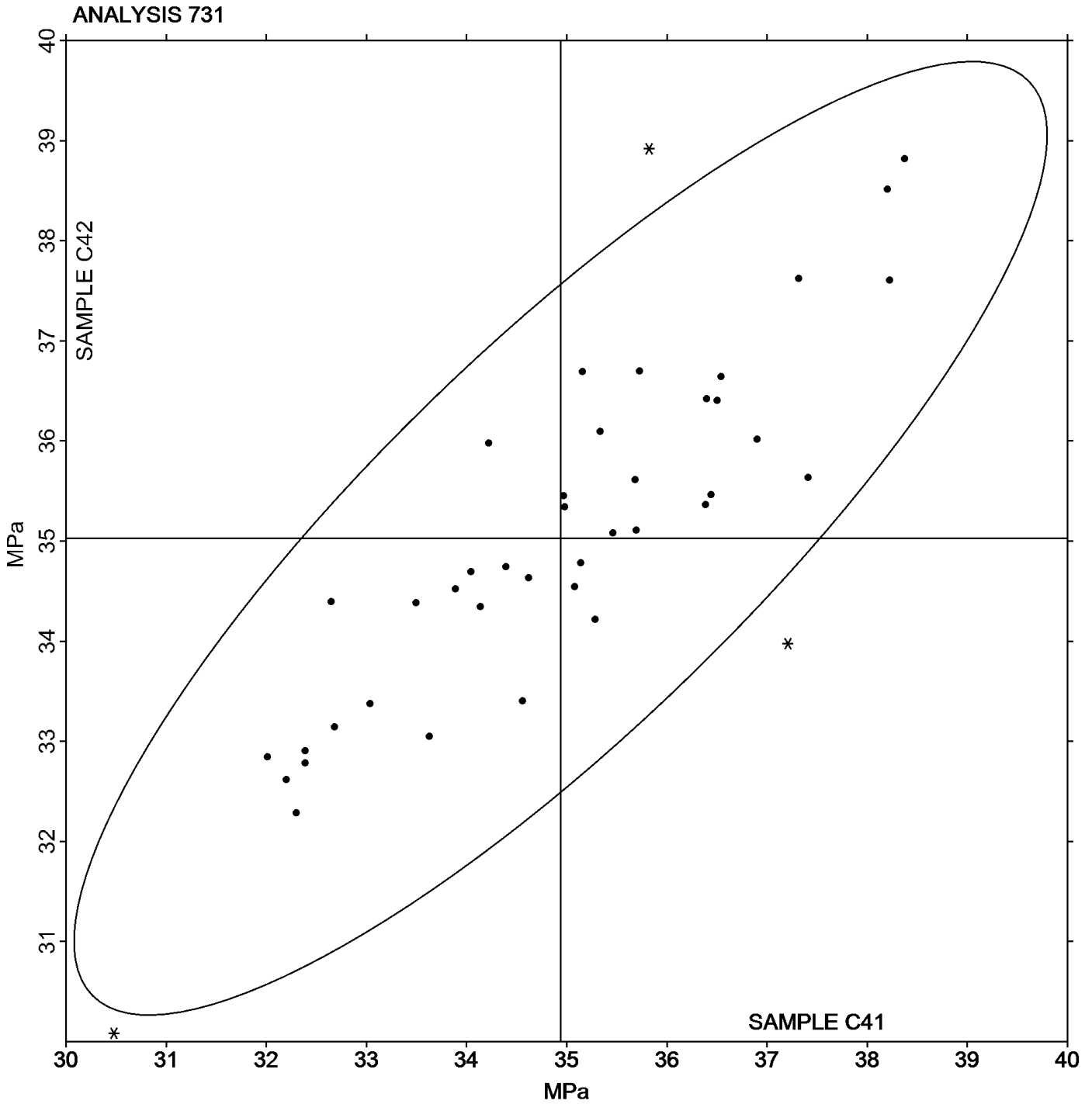
Report #101

## Analysis 731

1st Qtr 2017

Tensile Stress at Break - MPa

Grand Mean Sample C41: 34.938 MPa    Grand Mean Sample C42: 35.028 MPa





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 732

1st Qtr 2017

### Percent Strain at Yield

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		2.704	0.045	0.77	2.694	0.039	0.63
2F6CZE		2.638	-0.021	-0.35	2.620	-0.035	-0.56
2MP944		2.564	-0.095	-1.61	2.596	-0.059	-0.95
47TGRF		2.534	-0.125	-2.12	2.538	-0.117	-1.89
6PXRE9		2.600	-0.059	-1.00	2.600	-0.055	-0.89
6XVLC8		2.660	0.001	0.02	2.680	0.025	0.41
74E8YL		2.748	0.089	1.52	2.708	0.053	0.86
7WC3YM	X	2.500	-0.159	-2.70	2.320	-0.335	-5.42
7WXTWF		2.754	0.095	1.63	2.750	0.095	1.54
8KG7MF		2.636	-0.023	-0.38	2.652	-0.003	-0.05
B2DRFC		2.660	0.001	0.02	2.662	0.007	0.12
BJFANT		2.770	0.111	1.90	2.802	0.147	2.38
CK6MH7	X	2.220	-0.439	-7.47	2.440	-0.215	-3.48
CWWRT3		2.562	-0.097	-1.64	2.556	-0.099	-1.60
DX67UG	X	3.192	0.533	9.09	3.170	0.515	8.33
EYFKKM		2.660	0.001	0.02	2.602	-0.053	-0.86
FBNKW9		2.556	-0.103	-1.75	2.552	-0.103	-1.66
FMCCA6		2.632	-0.027	-0.45	2.660	0.005	0.08
FNNJK7		2.652	-0.007	-0.11	2.654	-0.001	-0.01
G6RDQ7		2.630	-0.029	-0.49	2.660	0.005	0.08
GG8976		2.714	0.055	0.94	2.694	0.039	0.63
HAGF6M		2.688	0.029	0.50	2.696	0.041	0.67
JEBY32		2.690	0.031	0.54	2.636	-0.019	-0.31
JTN299		2.695	0.036	0.61	2.677	0.022	0.35
K3FMAX		2.634	-0.025	-0.42	2.580	-0.075	-1.21
KJ4K9U		2.564	-0.095	-1.61	2.606	-0.049	-0.79
L3BAYW	X	3.220	0.561	9.57	3.260	0.605	9.79
L4FGZE		2.690	0.031	0.54	2.676	0.021	0.34
LNPBBU		2.682	0.023	0.40	2.682	0.027	0.44
LRLZBD		2.622	-0.037	-0.62	2.560	-0.095	-1.53
MA6AUU	*	2.664	0.005	0.09	2.754	0.099	1.60
MQBA9Q		2.660	0.001	0.02	2.660	0.005	0.08
PUK9EE	X	3.364	0.705	12.02	3.550	0.895	14.48
QY9KHA	X	2.582	-0.077	-1.30	2.718	0.063	1.02
RFGNPL	X	2.926	0.267	4.56	2.834	0.179	2.90



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 732**

**1st Qtr 2017**

**Percent Strain at Yield**

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RGN4YD		2.620	-0.039	-0.66	2.631	-0.024	-0.39
TZG6RX		2.636	-0.023	-0.38	2.594	-0.061	-0.98
UJPQTV		2.690	0.031	0.54	2.682	0.027	0.44
UVLZ8P		2.694	0.035	0.60	2.686	0.031	0.50
V4Q973	X	3.880	1.221	20.81	5.720	3.065	49.58
WKD2CL		2.778	0.119	2.04	2.784	0.129	2.09
WX3XHR		2.740	0.081	1.39	2.720	0.065	1.05
XLK7KP		2.632	-0.027	-0.45	2.614	-0.041	-0.66
Y36RPT		2.672	0.013	0.23	2.674	0.019	0.31
YD7KCL		2.670	0.011	0.20	2.646	-0.009	-0.14
YEHYFY	X	3.722	1.063	18.12	4.026	1.371	22.18
YR9LVU		2.630	-0.029	-0.49	2.648	-0.007	-0.11
Z8RYHJ	X	8.980	6.321	107.69	8.846	6.191	100.14

**Summary Statistics**

	Sample C41	Sample C42
<b>Grand Means</b>	2.6585 Percent	2.6549 Percent
<b>Std Dev Btwn Labs</b>	0.0587 Percent	0.0618 Percent

Statistics based on 38 of 48 reporting participants

Sample C41: ABS & Sample C42: ABS

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

- PUK9EE (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- Z8RYHJ (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- RFGNPL (X) - Data for both samples are high. Possible Systematic Error.
- V4Q973 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- YEHYFY (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- QY9KHA (X) - Inconsistent in testing between samples.
- DX67UG (X) - Data for both samples are high.
- 7WC3YM (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample C42.
- L3BAYW (X) - Data for both samples are high.
- CK6MH7 (X) - Data for both samples are low. Inconsistent within the determinations of both samples.



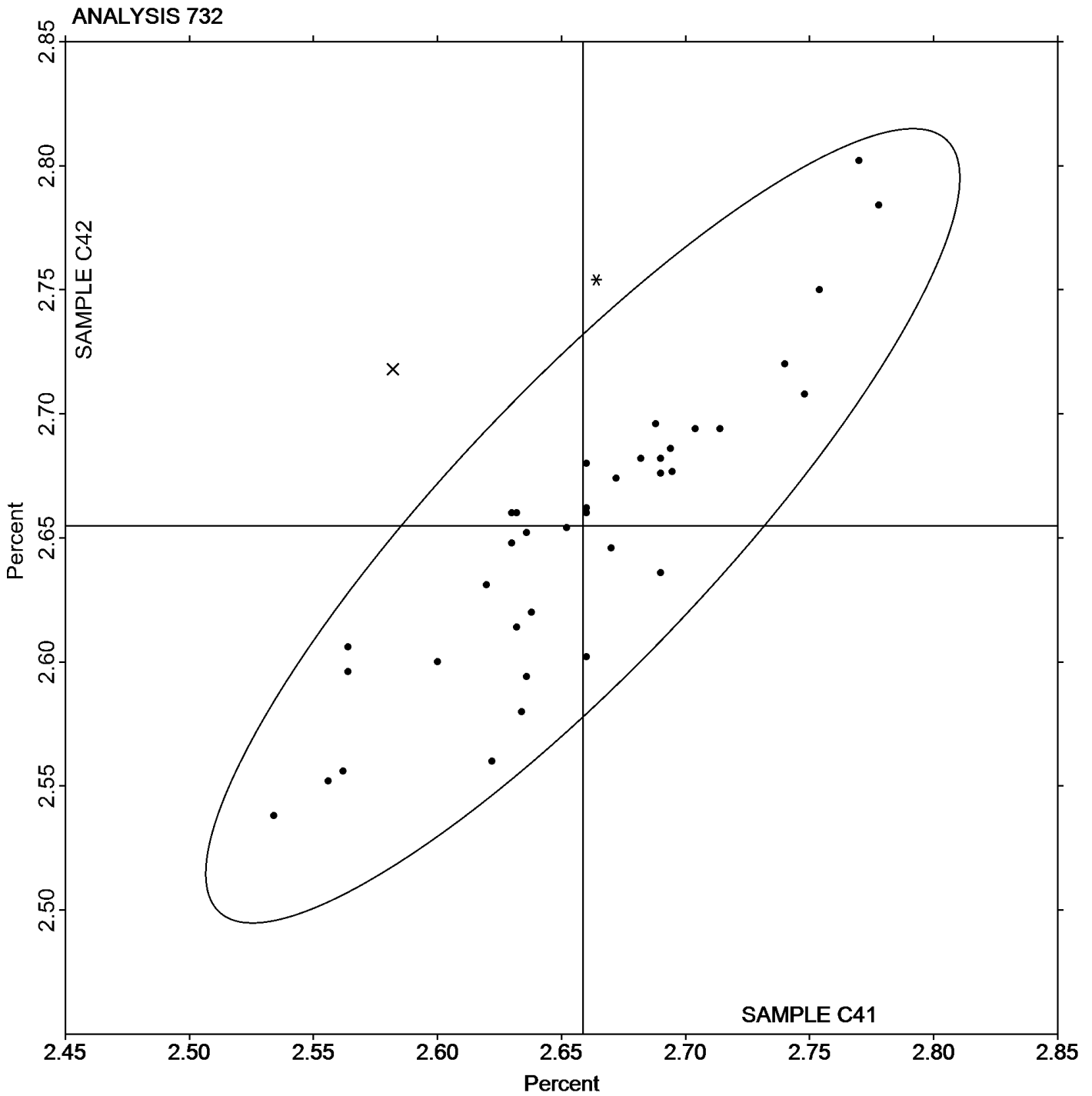
# Plastics Interlaboratory Testing Program

## Analysis 732 Percent Strain at Yield

Report #101

1st Qtr 2017

Grand Mean Sample C41: 2.6585 Percent    Grand Mean Sample C42: 2.6549 Percent





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 734

1st Qtr 2017

### Modulus of Elasticity - MPa

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		2,320	-75	-0.92	2,340	-65	-0.76
2F6CZE		2,376	-19	-0.24	2,382	-23	-0.26
2MP944		2,495	99	1.21	2,534	130	1.51
36F7GF		2,510	115	1.40	2,520	115	1.34
47TGRF		2,522	127	1.55	2,493	88	1.03
6PXRE9		2,401	6	0.07	2,394	-11	-0.13
6XVLC8		2,482	87	1.06	2,454	49	0.58
74E8YL	*	2,348	-47	-0.58	2,455	50	0.58
7WC3YM		2,499	103	1.26	2,561	156	1.82
7WXTWF		2,249	-147	-1.79	2,287	-118	-1.37
8KG7MF		2,404	8	0.10	2,402	-3	-0.03
B2DRFC		2,528	133	1.62	2,554	149	1.74
BJFANT		2,304	-91	-1.11	2,332	-73	-0.85
CK6MH7		2,471	75	0.92	2,527	122	1.42
CWWRT3		2,527	132	1.61	2,512	108	1.26
DX67UG		2,393	-2	-0.02	2,404	-1	-0.01
EYFKKM		2,375	-21	-0.25	2,376	-29	-0.33
FBNKW9		2,283	-113	-1.37	2,295	-109	-1.27
FMCCA6		2,474	79	0.96	2,485	80	0.93
FNNJK7		2,414	18	0.22	2,407	3	0.03
G6RDQ7		2,355	-40	-0.49	2,360	-44	-0.51
GG8976		2,377	-18	-0.22	2,382	-22	-0.26
HAGF6M		2,325	-70	-0.86	2,316	-89	-1.03
JEBY32		2,371	-25	-0.30	2,421	16	0.19
JTN299		2,461	65	0.80	2,445	41	0.47
K3FMAX		2,352	-43	-0.52	2,398	-6	-0.07
KJ4K9U		2,382	-13	-0.16	2,339	-66	-0.77
L4FGZE		2,475	80	0.97	2,521	116	1.35
LNPBBU		2,382	-14	-0.17	2,426	21	0.25
LRLZBD		2,372	-23	-0.29	2,364	-41	-0.47
MA6AUU		2,339	-57	-0.69	2,325	-80	-0.93
MQBA9Q		2,241	-154	-1.88	2,216	-188	-2.19
PUK9EE		2,243	-153	-1.86	2,275	-130	-1.51
QY9KHA		2,408	13	0.16	2,379	-26	-0.30
RFGNPL		2,389	-6	-0.07	2,339	-66	-0.77



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 734**

**1st Qtr 2017**

**Modulus of Elasticity - MPa**

WebCode	Data Flag	Sample C41			Sample C42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
RGN4YD		2,382	-13	-0.16	2,353	-52	-0.60
TZG6RX	X	2,526	131	1.59	2,838	433	5.05
UJPQTV		2,382	-14	-0.17	2,357	-48	-0.55
UVLZ8P		2,339	-57	-0.69	2,346	-59	-0.69
V4Q973	X	2,303	-93	-1.13	2,127	-277	-3.23
WKD2CL		2,431	35	0.43	2,406	2	0.02
WX3XHR		2,350	-45	-0.55	2,402	-3	-0.03
XLK7KP		2,572	177	2.15	2,524	119	1.39
Y36RPT		2,264	-131	-1.60	2,279	-126	-1.47
YD7KCL		2,351	-45	-0.55	2,308	-97	-1.13
YEHYFY	X	2,039	-356	-4.34	1,937	-468	-5.45
YR9LVU	*	2,378	-18	-0.22	2,492	87	1.01
ZXPGA2		2,500	105	1.28	2,522	117	1.37

Summary Statistics		
	Sample C41	Sample C42
<b>Grand Means</b>	2,395.4 MPa	2,404.6 MPa
<b>Std Dev Btwn Labs</b>	82.0 MPa	85.9 MPa
Statistics based on 45 of 48 reporting participants		

Sample C41: ABS & Sample C42: ABS

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

- TZG6RX (X) - Inconsistent in testing between samples, data for sample C42 are high. Inconsistent within the determinations of both samples.
- V4Q973 (X) - Inconsistent in testing between samples, data for sample C42 are low. Inconsistent within the determinations of both samples.
- YEHYFY (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.





# Plastics Interlaboratory Testing Program

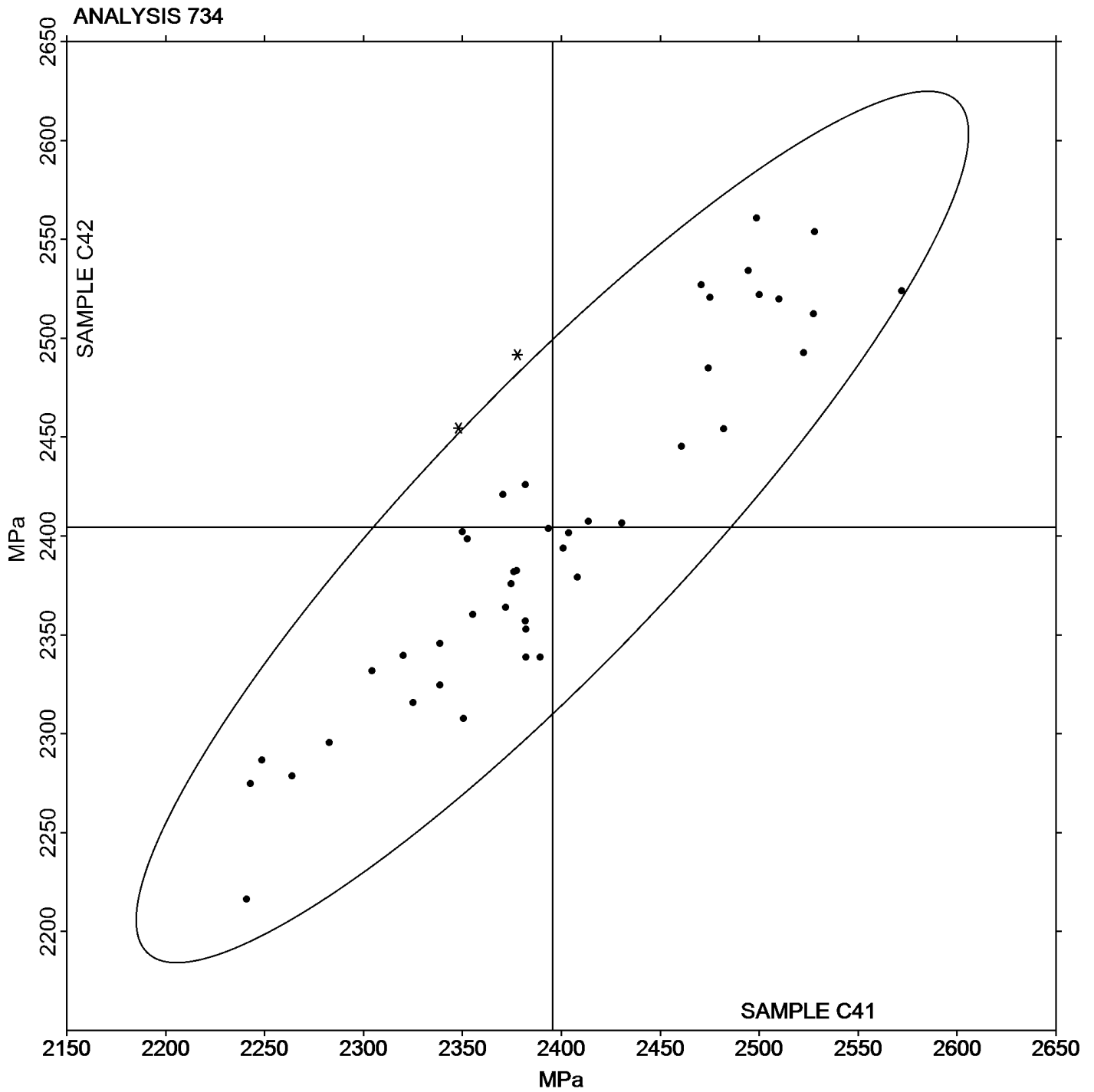
Report #101

Analysis 734

1st Qtr 2017

Modulus of Elasticity - MPa

Grand Mean Sample C41: 2,395.44 MPa    Grand Mean Sample C42: 2,404.55 MPa





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 736

1st Qtr 2017

### Flexural Modulus - MPa

WebCode	Data Flag	Sample K41			Sample K42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		2,390	-53	-0.57	2,451	-38	-0.46
2F6CZE		2,405	-37	-0.41	2,363	-127	-1.51
2MP944		2,488	45	0.49	2,560	71	0.84
36F7GF		2,488	45	0.49	2,548	58	0.70
47TGRF		2,433	-9	-0.10	2,410	-79	-0.94
6PXRE9		2,501	58	0.63	2,440	-49	-0.58
74E8YL		2,477	35	0.37	2,564	74	0.89
7WC3YM	*	2,712	270	2.92	2,715	225	2.69
7WXTWF		2,494	51	0.56	2,541	51	0.61
8KG7MF		2,440	-3	-0.03	2,552	63	0.75
AT442D		2,448	5	0.06	2,455	-34	-0.40
B2DRFC		2,503	60	0.65	2,493	4	0.04
BJFANT		2,425	-17	-0.19	2,526	36	0.43
CK6MH7		2,499	56	0.61	2,477	-12	-0.14
DX67UG		2,482	39	0.42	2,457	-33	-0.39
E7V432		2,421	-22	-0.23	2,420	-69	-0.83
EYFKKM		2,331	-112	-1.21	2,418	-72	-0.86
FBNKW9		2,433	-9	-0.10	2,447	-42	-0.51
FNNJK7		2,372	-70	-0.76	2,456	-34	-0.40
G6RDQ7		2,484	41	0.45	2,579	89	1.07
GG8976		2,406	-37	-0.40	2,442	-48	-0.57
HAGF6M		2,483	41	0.44	2,498	8	0.10
JEBY32		2,351	-92	-0.99	2,356	-133	-1.59
JTN299		2,419	-24	-0.26	2,492	3	0.03
K3FMAX		2,381	-62	-0.67	2,482	-7	-0.08
L3BAYW		2,488	45	0.49	2,503	14	0.16
LNPBBU		2,499	56	0.61	2,499	10	0.12
MA6AAU		2,289	-154	-1.66	2,390	-100	-1.19
MQBA9Q		2,264	-178	-1.93	2,331	-158	-1.88
PUK9EE		2,570	128	1.38	2,655	165	1.97
RFGNPL		2,401	-42	-0.45	2,487	-2	-0.03
RGN4YD		2,498	56	0.60	2,545	56	0.66
TPZHGA		2,305	-137	-1.48	2,379	-111	-1.32
TZG6RX		2,361	-82	-0.88	2,466	-23	-0.28
UJPQTV		2,332	-110	-1.19	2,395	-95	-1.13



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 736

1st Qtr 2017

### Flexural Modulus - MPa

WebCode	Data Flag	Sample K41			Sample K42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
V4Q973		2,621	178	1.93	2,620	130	1.55
WKD2CL		2,320	-122	-1.32	2,396	-93	-1.11
WX3XHR		2,420	-23	-0.25	2,544	55	0.65
Y36RPT		2,400	-43	-0.47	2,529	39	0.47
YD7KCL		2,639	196	2.12	2,639	149	1.78
YEHYFY		2,566	124	1.34	2,599	110	1.31
YR9LVU		2,385	-58	-0.62	2,463	-26	-0.31
Z8RYHJ		2,409	-34	-0.37	2,462	-27	-0.32

#### Summary Statistics

	Sample K41	Sample K42
<b>Grand Means</b>	2,442.7 MPa	2,489.4 MPa
<b>Std Dev Btwn Labs</b>	92.5 MPa	83.9 MPa

Statistics based on 43 of 43 reporting participants

Sample K41: ABS & Sample K42: ABS



# Plastics Interlaboratory Testing Program

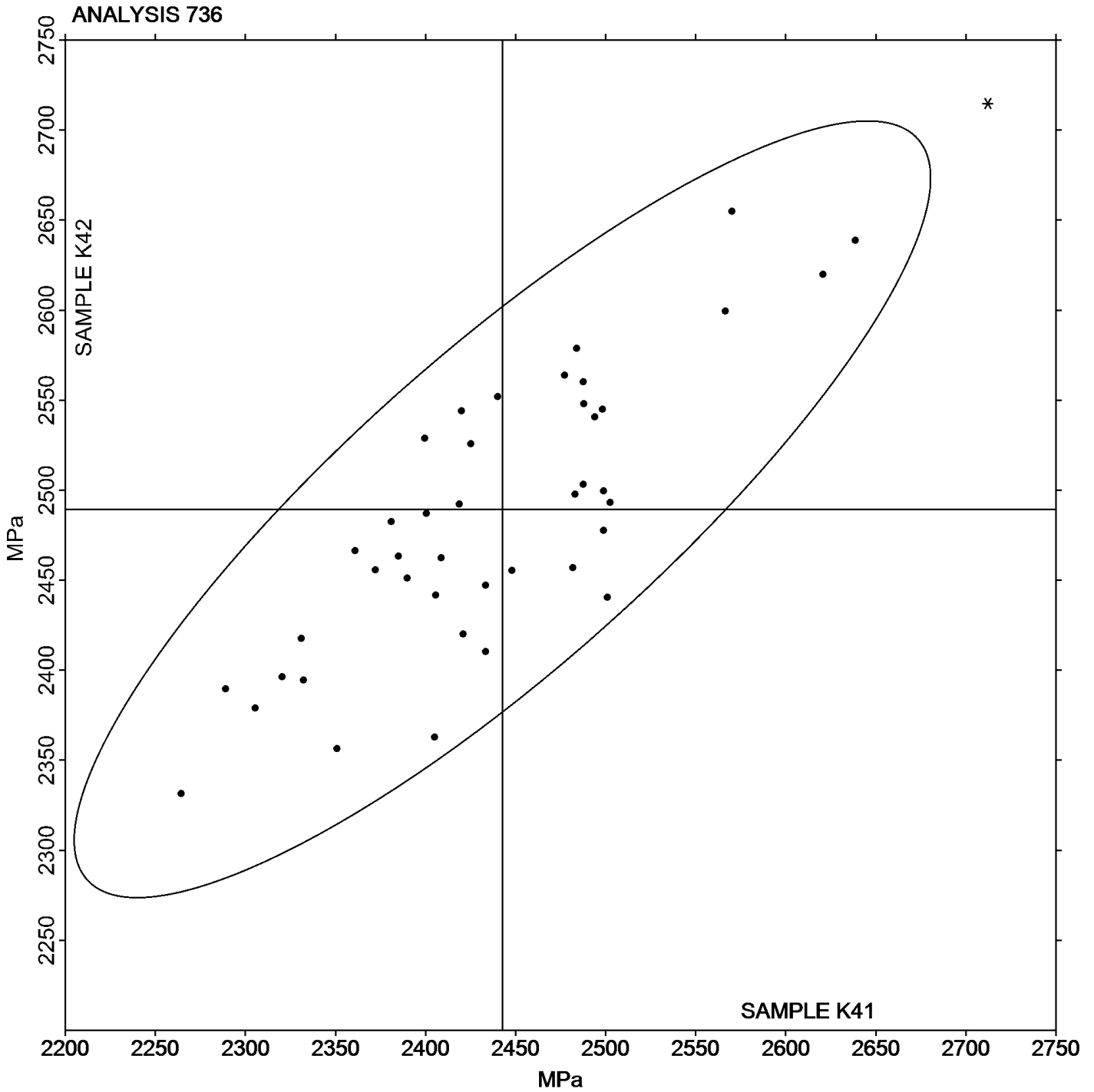
Report #101

Analysis 736

1st Qtr 2017

Flexural Modulus - MPa

Grand Mean Sample K41: 2,442.66 MPa    Grand Mean Sample K42: 2,489.39 MPa





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 737

1st Qtr 2017

### Flexural Stress at 3.5% Strain - MPa

WebCode	Data Flag	Sample K41			Sample K42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		70.72	-1.19	-0.56	72.90	-0.70	-0.47
2F6CZE		73.13	1.22	0.58	73.25	-0.35	-0.23
2MP944	*	72.45	0.54	0.26	76.60	3.00	2.02
47TGRF		75.15	3.25	1.53	75.77	2.16	1.45
6PXRE9		71.20	-0.71	-0.33	72.04	-1.56	-1.05
74E8YL		72.65	0.74	0.35	75.25	1.64	1.10
7WC3YM		74.82	2.91	1.38	74.74	1.14	0.76
7WXTWF		73.56	1.65	0.78	74.55	0.95	0.64
8KG7MF		71.09	-0.81	-0.38	74.11	0.51	0.34
AT442D		72.29	0.38	0.18	72.66	-0.95	-0.64
B2DRFC		77.26	5.35	2.53	76.56	2.96	1.99
BJFANT		69.80	-2.10	-0.99	73.07	-0.53	-0.36
DX67UG		71.78	-0.13	-0.06	71.49	-2.12	-1.42
E7V432		73.49	1.59	0.75	73.34	-0.26	-0.18
EYFKKM		70.43	-1.48	-0.70	73.33	-0.28	-0.19
FBNKW9		72.02	0.11	0.05	72.24	-1.36	-0.92
FNNJK7		70.64	-1.27	-0.60	73.27	-0.34	-0.23
G6RDQ7		71.52	-0.39	-0.18	73.91	0.30	0.20
GG8976		72.00	0.09	0.04	73.09	-0.51	-0.34
HAGF6M		72.17	0.26	0.12	72.83	-0.78	-0.52
JEBY32		72.12	0.21	0.10	72.50	-1.10	-0.74
JTN299		71.82	-0.08	-0.04	75.02	1.41	0.95
K3FMAX		70.13	-1.77	-0.84	73.51	-0.09	-0.06
L3BAYW	X	2,485.30	2,413.39	1,140.21	2,493.22	2,419.62	1,626.07
LNPBBU		73.70	1.79	0.85	73.60	0.00	0.00
MA6AUU		67.49	-4.42	-2.09	71.07	-2.53	-1.70
PUK9EE		72.04	0.13	0.06	74.69	1.09	0.73
RFGNPL		67.26	-4.65	-2.19	71.44	-2.16	-1.45
RGN4YD		72.99	1.09	0.51	75.40	1.80	1.21
TPZHGA		70.62	-1.29	-0.61	73.04	-0.57	-0.38
TZG6RX		67.52	-4.38	-2.07	70.13	-3.47	-2.33
UJPQTV		72.46	0.55	0.26	73.66	0.05	0.04
V4Q973		74.82	2.92	1.38	74.49	0.88	0.59
WKD2CL		70.27	-1.64	-0.77	72.68	-0.93	-0.62
WX3XHR		72.24	0.33	0.16	75.47	1.86	1.25



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 737**

**1st Qtr 2017**

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

WebCode	Data Flag	<u>Sample K41</u>			<u>Sample K42</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
Y36RPT		69.66	-2.25	-1.06	72.29	-1.32	-0.88
YD7KCL		74.13	2.22	1.05	74.03	0.42	0.29
YEHYFY		71.93	0.03	0.01	73.90	0.29	0.20
YR9LVU		69.35	-2.56	-1.21	71.76	-1.84	-1.24
Z8RYHJ		72.42	0.51	0.24	75.38	1.78	1.20
ZXPGA2		75.11	3.21	1.51	75.09	1.49	1.00

**Summary Statistics**

	<u>Sample K41</u>	<u>Sample K42</u>
<b>Grand Means</b>	71.906 MPa	73.603 MPa
<b>Stnd Dev Btwn Labs</b>	2.117 MPa	1.488 MPa

Statistics based on 40 of 41 reporting participants

Sample K41: ABS & Sample K42: ABS

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

L3BAYW (X) - Extreme data.



# Plastics Interlaboratory Testing Program

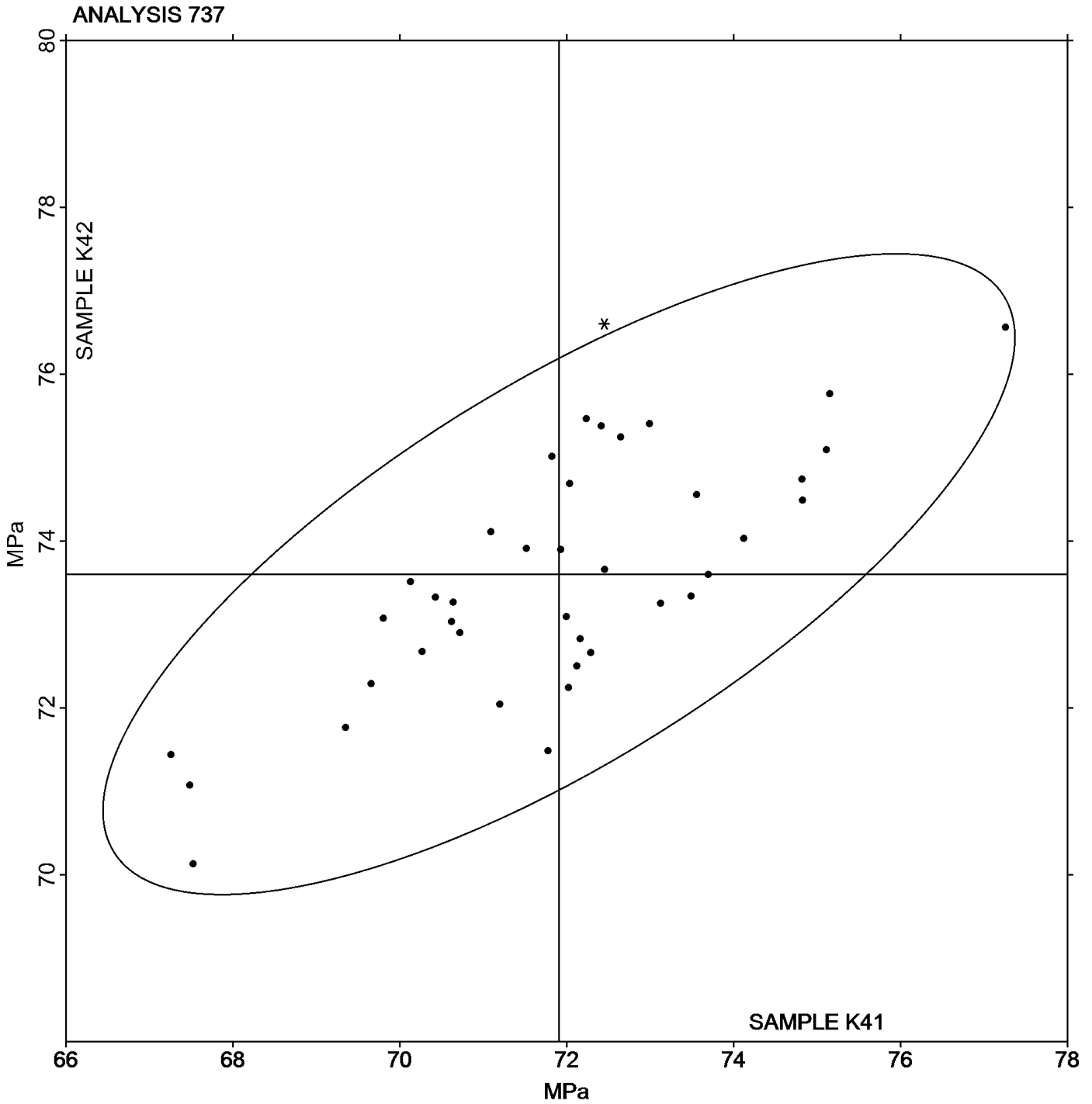
Report #101

## Analysis 737

1st Qtr 2017

### Flexural Stress at 3.5% Strain - MPa

Grand Mean Sample K41: 71.906 MPa    Grand Mean Sample K42: 73.603 MPa





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 738

1st Qtr 2017

### Flexural Stress at Yield - MPa

WebCode	Data Flag	Sample K41			Sample K42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		72.82	-0.81	-0.37	74.49	-0.46	-0.27
2F6CZE		73.13	-0.50	-0.23	73.25	-1.69	-0.99
2MP944	*	73.17	-0.46	-0.21	77.51	2.56	1.50
36F7GF		73.39	-0.23	-0.11	74.68	-0.26	-0.15
47TGRF		76.91	3.29	1.50	77.66	2.71	1.58
6PXRE9		72.82	-0.81	-0.37	73.32	-1.63	-0.95
74E8YL		75.12	1.49	0.68	77.04	2.09	1.22
7WC3YM		75.88	2.25	1.03	75.76	0.81	0.47
8KG7MF		73.61	-0.02	-0.01	75.69	0.74	0.44
AT442D		74.14	0.51	0.23	74.66	-0.29	-0.17
B2DRFC	*	80.59	6.96	3.17	79.13	4.19	2.45
CK6MH7		76.52	2.89	1.32	75.78	0.83	0.49
DX67UG		72.90	-0.73	-0.33	72.70	-2.25	-1.31
E7V432		73.49	-0.13	-0.06	73.34	-1.61	-0.94
EYFKKM		72.26	-1.37	-0.62	74.64	-0.30	-0.18
FBNKW9		73.88	0.25	0.11	74.38	-0.57	-0.33
G6RDQ7		73.47	-0.16	-0.07	75.21	0.26	0.15
GG8976		73.71	0.08	0.04	74.28	-0.67	-0.39
JEBY32		74.67	1.04	0.47	75.00	0.05	0.03
JTN299		74.24	0.62	0.28	76.82	1.87	1.09
K3FMAX		71.99	-1.64	-0.75	75.06	0.11	0.07
L3BAYW		72.08	-1.55	-0.71	72.40	-2.55	-1.49
LNPBBU		75.04	1.41	0.64	74.86	-0.09	-0.05
MA6AAU		69.65	-3.98	-1.81	72.92	-2.03	-1.19
PUK9EE		75.54	1.91	0.87	77.18	2.23	1.31
RFGNPL		68.94	-4.69	-2.14	72.66	-2.29	-1.34
RGN4YD		75.52	1.89	0.86	77.41	2.47	1.44
TPZHGA		72.71	-0.92	-0.42	74.59	-0.36	-0.21
TZG6RX		69.39	-4.23	-1.93	71.68	-3.27	-1.91
UJPQTV		74.71	1.08	0.49	75.45	0.50	0.29
V4Q973		76.02	2.39	1.09	75.49	0.54	0.31
WKD2CL		71.98	-1.65	-0.75	74.12	-0.82	-0.48
WX3XHR		74.44	0.81	0.37	76.50	1.55	0.91
Y36RPT		71.41	-2.22	-1.01	73.37	-1.58	-0.92
YEHYFY		72.99	-0.64	-0.29	74.37	-0.58	-0.34





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 738

1st Qtr 2017

### Flexural Stress at Yield - MPa

WebCode	Data Flag	<u>Sample K41</u>			<u>Sample K42</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
YR9LVU		71.18	-2.44	-1.11	73.18	-1.76	-1.03
Z8RYHJ		73.93	0.31	0.14	76.48	1.53	0.90

#### Summary Statistics

##### Grand Means

##### Sample K41

73.628 MPa

##### Sample K42

74.948 MPa

##### Std Dev Btwn Labs

2.195 MPa

1.710 MPa

Statistics based on 37 of 37 reporting participants

Sample K41: ABS & Sample K42: ABS



# Plastics Interlaboratory Testing Program

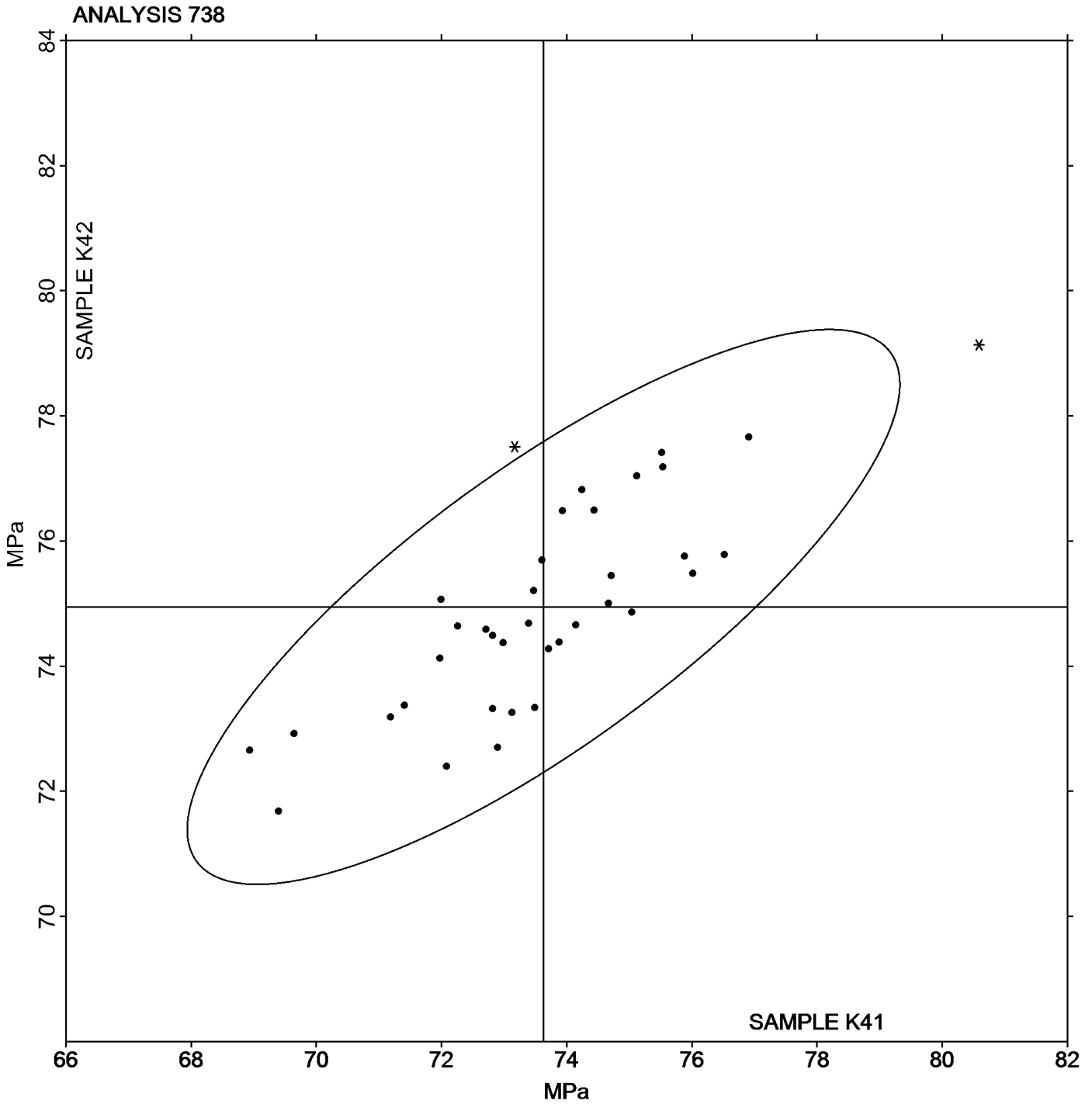
Report #101

Analysis 738

1st Qtr 2017

Flexural Stress at Yield - MPa

Grand Mean Sample K41: 73.628 MPa    Grand Mean Sample K42: 74.948 MPa





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 750

1st Qtr 2017

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

WebCode	Data Flag	Sample X41			Sample X42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24CQUJ		8.06	-0.04	-0.12	8.06	-0.05	-0.16	TO
2AHJTN		8.35	0.26	0.84	8.30	0.20	0.66	TO
2F6CZE		8.16	0.07	0.22	8.02	-0.08	-0.28	GO
2HAZF6		8.10	0.01	0.03	8.20	0.10	0.32	TO
36F7GF		8.34	0.24	0.79	8.31	0.20	0.67	TO
3TJ4VY		7.98	-0.11	-0.35	8.00	-0.11	-0.36	TO
44M863		8.00	-0.09	-0.30	7.85	-0.25	-0.84	TO
4RTH4H		8.15	0.06	0.19	8.29	0.18	0.61	TO
64WVKM		8.29	0.19	0.63	8.11	0.00	0.01	TO
6FCQZL		8.20	0.11	0.35	8.20	0.10	0.32	TY
6PXRE9		7.83	-0.26	-0.84	7.72	-0.38	-1.28	WZ
6YMFDJ		8.21	0.11	0.37	8.26	0.16	0.54	KA
74E8YL	*	7.86	-0.24	-0.77	8.23	0.13	0.42	WZ
7G39D6		8.25	0.16	0.51	8.25	0.15	0.49	XX
7WXTWF		8.01	-0.08	-0.28	8.16	0.06	0.19	DY
84TQL4	X	11.51	3.41	11.08	11.30	3.19	10.66	TO
8CM4EA		7.95	-0.15	-0.48	8.17	0.07	0.22	DY
8ERN7H	X	6.75	-1.34	-4.36	6.85	-1.25	-4.18	DY
8H9TZ6		8.16	0.06	0.20	8.12	0.02	0.06	XX
8KG7MF		8.15	0.06	0.19	8.10	0.00	-0.01	AT
8M8AFM		8.56	0.47	1.53	8.40	0.29	0.98	DY
924CLF		7.76	-0.34	-1.09	7.87	-0.24	-0.79	CE
946WAQ		7.83	-0.26	-0.86	7.89	-0.21	-0.71	TM
ARPGN3		8.04	-0.06	-0.18	8.12	0.02	0.06	TO
AT442D	X	8.08	-0.01	-0.04	7.51	-0.59	-1.97	DY
B2DRFC		8.27	0.17	0.56	8.27	0.17	0.56	XX
BJFANT		7.89	-0.20	-0.66	8.06	-0.05	-0.16	TO
BKQCCF		8.08	-0.01	-0.04	8.05	-0.05	-0.18	TO
BTECGP		8.43	0.34	1.09	8.38	0.28	0.93	TO
CC6M4N		8.30	0.21	0.68	8.40	0.30	0.99	TO
CTXXT2		8.30	0.20	0.66	8.24	0.14	0.46	TO
DX67UG	X	13.00	4.91	15.93	12.85	4.75	15.85	TO
EYFKKM		8.16	0.06	0.20	8.13	0.03	0.09	DY
FBNKW9		8.13	0.04	0.12	8.18	0.08	0.26	TY
FMCCA6		8.40	0.31	1.00	8.50	0.40	1.32	TO



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 750

1st Qtr 2017

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

WebCode	Data Flag	Sample X41			Sample X42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
FNNJK7		7.60	-0.49	-1.60	7.50	-0.60	-2.01	WZ
GG8976	*	7.35	-0.75	-2.42	7.24	-0.86	-2.88	GO
HAGF6M		8.11	0.02	0.06	8.14	0.03	0.11	DY
HFQE4A		8.40	0.31	1.00	8.35	0.25	0.82	TO
HJRE7R		8.20	0.11	0.35	8.25	0.15	0.49	TO
HMP2TL		8.00	-0.09	-0.30	8.20	0.10	0.32	TO
J6Q398		8.08	-0.01	-0.03	8.04	-0.06	-0.21	TO
JEBY32		7.85	-0.24	-0.79	8.00	-0.10	-0.34	TO
JP9GDE		8.21	0.12	0.39	8.14	0.04	0.13	DY
JRFU4T		8.15	0.06	0.19	8.10	0.00	-0.01	DY
JYDJKW		7.55	-0.54	-1.75	7.56	-0.54	-1.80	CE
KDWNCR	*	7.90	-0.19	-0.62	8.25	0.15	0.49	TO
KMYP6X		8.27	0.18	0.58	8.29	0.18	0.61	WZ
L3BAYW		8.33	0.23	0.76	8.38	0.27	0.91	TO
L4FGZE		8.15	0.06	0.19	8.06	-0.04	-0.14	XX
LUJ2NY		8.60	0.51	1.65	8.53	0.43	1.43	TO
N6NQ8R	*	7.33	-0.76	-2.47	7.33	-0.77	-2.58	TO
PQ62QF		8.40	0.31	1.00	8.45	0.35	1.16	DY
PUK9EE		7.76	-0.33	-1.07	7.81	-0.29	-0.98	CE
QC2WYT		8.55	0.46	1.49	8.50	0.40	1.32	TO
RFGNPL		7.95	-0.14	-0.46	7.90	-0.20	-0.68	TO
RGN4YD	*	7.19	-0.90	-2.93	7.37	-0.74	-2.46	WZ
T4ZJXJ	*	8.91	0.82	2.65	8.86	0.75	2.51	DY
TCC39P		8.08	-0.01	-0.04	8.05	-0.05	-0.17	TO
TPZHGA		8.40	0.31	1.00	8.50	0.40	1.32	TO
TXRX8Z		8.30	0.21	0.67	8.20	0.09	0.32	CE
TZG6RX		8.05	-0.04	-0.14	8.05	-0.05	-0.18	TO
ULW9MJ		8.42	0.32	1.05	8.42	0.31	1.04	TO
V4Q973		8.23	0.14	0.45	8.20	0.10	0.32	TO
VMAXTJ		8.35	0.26	0.84	8.34	0.24	0.79	TO
WE7D26		7.40	-0.69	-2.23	7.44	-0.66	-2.21	XX
WFZ48J		8.00	-0.09	-0.30	8.00	-0.10	-0.34	TO
WGVRG3		8.04	-0.06	-0.18	7.88	-0.23	-0.76	TO
WKD2CL	*	7.75	-0.34	-1.11	8.15	0.05	0.16	TO
WX3XHR		8.05	-0.04	-0.14	8.10	0.00	-0.01	GO



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 750**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample X41			Sample X42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
WYR8NK		8.41	0.31	1.02	8.50	0.40	1.32	TO
YEHYFY		8.18	0.09	0.29	8.21	0.11	0.36	TO
ZBR8PE		7.67	-0.43	-1.39	7.59	-0.52	-1.73	DY
ZBU29K		7.78	-0.32	-1.03	7.73	-0.37	-1.25	TO
ZXPGA2		8.20	0.11	0.35	8.05	-0.05	-0.18	DY
ZZUA2E	*	8.35	0.26	0.84	7.99	-0.11	-0.38	TO

**Summary Statistics**

	Sample X41	Sample X42
<b>Grand Means</b>	8.092 grams/10 mins	8.103 grams/10 mins
<b>Std Dev Btwn Labs</b>	0.308 grams/10 mins	0.300 grams/10 mins

Statistics based on 72 of 76 reporting participants

Sample X41: HDPE & Sample X42: HDPE

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

- 84TQL4 (X) - Data for both samples are high.
- 8ERN7H (X) - Data for both samples are low. Possible Systematic Error.
- AT442D (X) - Inconsistent in testing between samples.
- DX67UG (X) - Data for both samples are high.

**Key to Instrument Codes Reported by Participants**

AT Atlas	CE Ceast
DY Dynisco	GO Gottfert
KA Kayeness	TM TMI
TO Tinius Olsen	TY Toyoseiki Seisakusho
WZ Zwick	XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

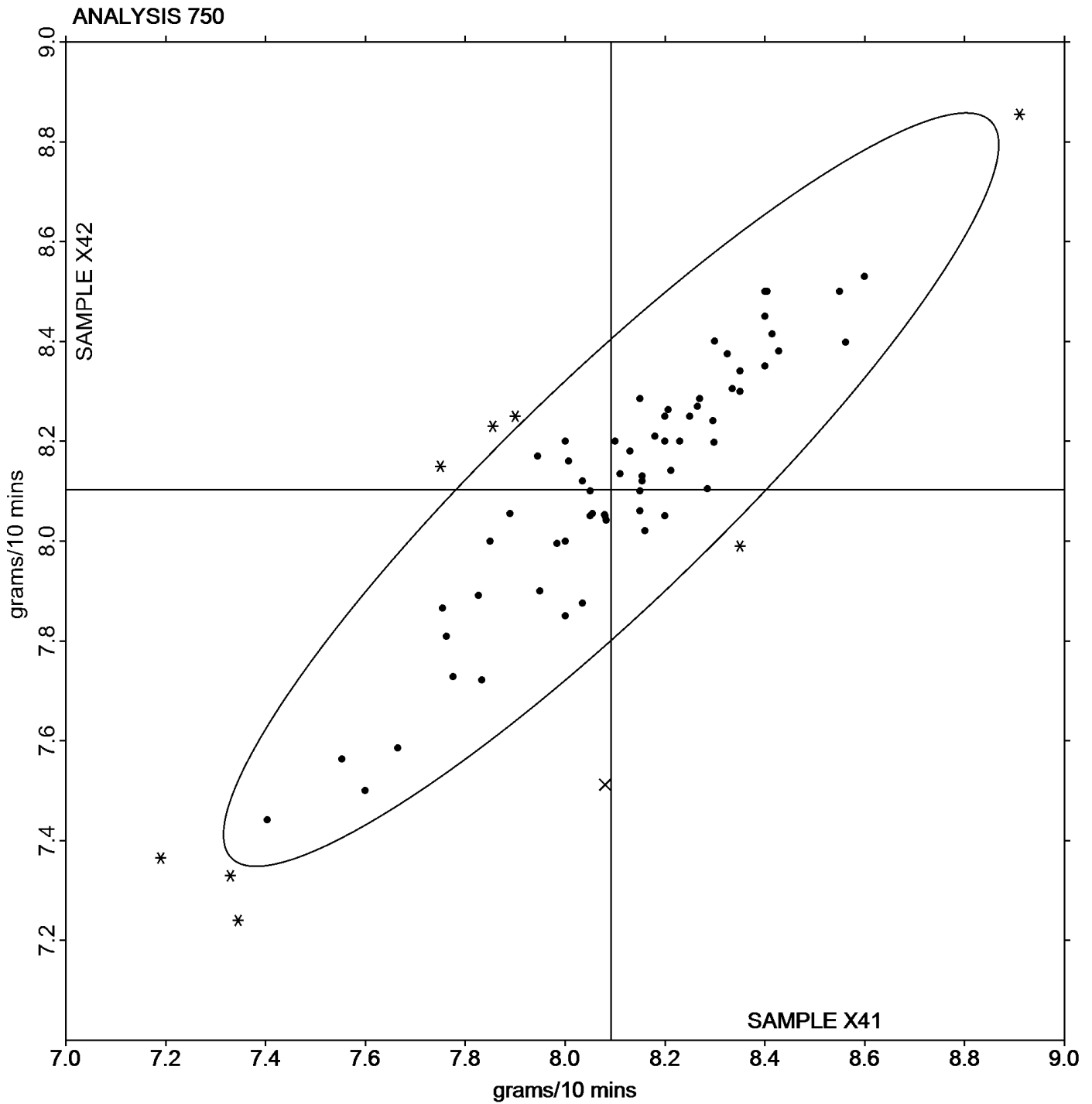
Report #101

## Analysis 750

1st Qtr 2017

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

Grand Mean Sample X41: 8.0920 grams/10 mins    Grand Mean Sample X42: 8.1031 grams/10 mins





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 755

1st Qtr 2017

### Moisture Content of Plastics

WebCode	Data Flag	Sample Y41			Sample Y42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MP944		0.10833	0.00329	0.21	0.10733	0.00302	0.19	MK
4RTH4H	X	0.10600	0.00095	0.06	0.12600	0.02168	1.36	MB
84TQL4		0.10297	-0.00208	-0.13	0.09677	-0.00755	-0.47	AZ
8CM4EA		0.13643	0.03139	2.00	0.12693	0.02262	1.42	AZ
924CLF		0.09000	-0.01505	-0.96	0.08830	-0.01602	-1.01	MU
ARPGN3		0.08237	-0.02268	-1.45	0.08283	-0.02148	-1.35	MR
B2DRFC		0.10000	-0.00505	-0.32	0.09800	-0.00632	-0.40	CT
BJFANT		0.11133	0.00629	0.40	0.11067	0.00635	0.40	XX
CC6M4N		0.11667	0.01162	0.74	0.12333	0.01902	1.19	MU
DBBCQ2		0.09373	-0.01131	-0.72	0.10113	-0.00318	-0.20	MU
DX67UG	X	0.02567	-0.07938	-5.06	0.03000	-0.07432	-4.67	CT
E23MJ6		0.13333	0.02829	1.80	0.14000	0.03568	2.24	XX
EKTHUH		0.10867	0.00362	0.23	0.10833	0.00402	0.25	CS
HAGF6M		0.07300	-0.03205	-2.04	0.06900	-0.03532	-2.22	MB
HFQE4A		0.11950	0.01445	0.92	0.12000	0.01568	0.98	ML
J6Q398		0.11013	0.00509	0.32	0.10930	0.00498	0.31	AQ
JP9GDE		0.10333	-0.00171	-0.11	0.09167	-0.01265	-0.79	AZ
JRFU4T		0.12300	0.01795	1.15	0.11433	0.01002	0.63	AZ
LNTKZU		0.09467	-0.01038	-0.66	0.09567	-0.00865	-0.54	ML
MQBA9Q		0.10550	0.00045	0.03	0.11103	0.00672	0.42	MD
NRFLYP		0.08860	-0.01645	-1.05	0.08497	-0.01934	-1.21	MU
PUK9EE		0.10410	-0.00095	-0.06	0.10263	-0.00168	-0.11	MK
RFGNPL		0.10950	0.00445	0.28	0.10800	0.00368	0.23	AZ
T4ZJXJ		0.10733	0.00229	0.15	0.10933	0.00502	0.31	MJ
TCC39P		0.07900	-0.02605	-1.66	0.08567	-0.01865	-1.17	CT
TPZHGA		0.13500	0.02995	1.91	0.13433	0.03002	1.88	SA
WGVRG3		0.11533	0.01029	0.66	0.11333	0.00902	0.57	MU
WKD2CL		0.08767	-0.01738	-1.11	0.08433	-0.01998	-1.26	MK
ZG6FAE		0.10350	-0.00155	-0.10	0.10497	0.00065	0.04	ML
ZPYMTK		0.10067	-0.00438	-0.28	0.10033	-0.00398	-0.25	XX
ZXPGA2		0.10267	-0.00238	-0.15	0.10267	-0.00165	-0.10	MR



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 755

1st Qtr 2017

### Moisture Content of Plastics

Summary Statistics		
	<u>Sample Y41</u>	<u>Sample Y42</u>
<b>Grand Means</b>	0.105046 Percent	0.104317 Percent
<b>Std Dev Btwn Labs</b>	0.015680 Percent	0.015924 Percent
Statistics based on 29 of 31 reporting participants		

Sample Y41: ABS/PC & Sample Y42: ABS/PC

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

4RTH4H (X) - Inconsistent in testing between samples.

DX67UG (X) - Data for both samples are low. Possible Systematic Error.

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

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







# Plastics Interlaboratory Testing Program

Report #101

## Analysis 757

1st Qtr 2017

### Ash Content in Thermoplastics - Percent

WebCode	Data Flag	Sample L41			Sample L42		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
24CQUJ		19.761	0.005	0.10	19.676	-0.084	-1.96
2LRZVK		19.755	-0.001	-0.02	19.680	-0.080	-1.88
2MP944		19.725	-0.031	-0.64	19.735	-0.025	-0.59
36F7GF		19.680	-0.076	-1.56	19.790	0.030	0.69
4LPEEK		19.782	0.025	0.52	19.785	0.025	0.57
4RTH4H		19.765	0.009	0.18	19.735	-0.025	-0.59
4TJEFB		19.810	0.054	1.10	19.750	-0.010	-0.24
6PXRE9		19.675	-0.081	-1.66	19.720	-0.040	-0.94
74E8YL	X	19.390	-0.366	-7.48	19.690	-0.070	-1.64
7WXTWF		19.755	-0.001	-0.02	19.785	0.025	0.57
84TQL4		19.674	-0.083	-1.69	19.726	-0.035	-0.81
8H9TZ6	X	19.594	-0.162	-3.31	19.559	-0.201	-4.70
924CLF		19.769	0.013	0.27	19.800	0.039	0.91
9VA4P6		19.770	0.014	0.28	19.785	0.025	0.57
ARPGN3		19.720	-0.036	-0.74	19.760	0.000	-0.01
B2DRFC		19.805	0.049	1.00	19.785	0.025	0.57
BJFANT		19.780	0.024	0.49	19.805	0.045	1.04
CC6M4N		19.700	-0.056	-1.15	19.800	0.040	0.92
CWWRT3		19.750	-0.006	-0.12	19.745	-0.015	-0.36
DX67UG		19.700	-0.056	-1.15	19.710	-0.050	-1.18
EKTHUH		19.790	0.034	0.69	19.755	-0.005	-0.13
ET8ZWQ		19.796	0.039	0.81	19.792	0.031	0.73
EYFKKM		19.790	0.034	0.69	19.855	0.095	2.21
FMCCA6		19.760	0.004	0.08	19.755	-0.005	-0.13
FNNJK7	X	19.570	-0.186	-3.80	19.530	-0.230	-5.38
HAGF6M		19.790	0.034	0.69	19.805	0.045	1.04
HFQE4A		19.845	0.089	1.82	19.840	0.080	1.86
J6Q398		19.749	-0.007	-0.14	19.761	0.001	0.01
JEBY32		19.695	-0.061	-1.25	19.715	-0.045	-1.06
JP9GDE		19.790	0.034	0.69	19.790	0.030	0.69
JRFU4T		19.765	0.009	0.18	19.715	-0.045	-1.06
K3FMAX		19.740	-0.016	-0.33	19.735	-0.025	-0.59
LRLZBD		19.805	0.049	1.00	19.770	0.010	0.22
MQBA9Q		19.775	0.019	0.39	19.760	0.000	-0.01
NJA7BQ		19.769	0.012	0.25	19.774	0.014	0.32



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 757**

**1st Qtr 2017**

**Ash Content in Thermoplastics - Percent**

WebCode	Data Flag	<u>Sample L41</u>			<u>Sample L42</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
PUK9EE		19.675	-0.081	-1.66	19.670	-0.090	-2.11
QC2WYT		19.755	-0.001	-0.02	19.750	-0.010	-0.24
RFGNPL		19.787	0.031	0.64	19.840	0.080	1.86
RGN4WT		19.800	0.044	0.90	19.750	-0.010	-0.24
RGN4YD		19.800	0.044	0.90	19.775	0.015	0.34
RV74K7	X	19.605	-0.151	-3.09	19.265	-0.495	-11.57
T4ZJXJ		19.765	0.009	0.18	19.790	0.030	0.69
TCC39P	*	19.601	-0.155	-3.17	19.664	-0.096	-2.25
TPZHGA		19.760	0.004	0.08	19.720	-0.040	-0.94
V4Q973		19.785	0.029	0.59	19.760	0.000	-0.01
VMAXTJ		19.775	0.019	0.40	19.792	0.031	0.73
W7EXEN		19.650	-0.106	-2.17	19.730	-0.030	-0.71
WE7D26	X	19.621	-0.135	-2.76	19.566	-0.195	-4.55
WKD2CL		19.795	0.039	0.80	19.800	0.040	0.92
WX3XHR		19.820	0.064	1.31	19.765	0.005	0.11
WYR8NK	X	20.026	0.270	5.51	19.959	0.199	4.64
YD7KCL		19.755	-0.001	-0.02	19.750	-0.010	-0.24
YEHYFY		19.780	0.024	0.49	19.790	0.030	0.69

<b>Summary Statistics</b>		
	<u>Sample L41</u>	<u>Sample L42</u>
<b>Grand Means</b>	19.7561 Percent	19.7604 Percent
<b>Stnd Dev Btwn Labs</b>	0.0489 Percent	0.0428 Percent
Statistics based on 47 of 53 reporting participants		

Sample L41: PP & Sample L42: PP

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

- WE7D26 (X) - Data for both samples are low.
- 74E8YL (X) - Data for sample L41 are low. Inconsistent within the determinations of both samples.
- WYR8NK (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- FNNJK7 (X) - Data for both samples are low.
- 8H9TZ6 (X) - Data for both samples are low.
- RV74K7 (X) - Data for both samples are low. Inconsistent within the determinations of sample L42.





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 760

1st Qtr 2017

### DSC Crystallization Temperature

WebCode	Data Flag	Sample W41			Sample W42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MP944	*	102.67	-4.00	-0.92	101.03	-5.82	-1.42	TA
6PXRE9		106.50	-0.17	-0.04	105.87	-0.99	-0.24	TA
74E8YL		104.86	-1.80	-0.41	105.87	-0.98	-0.24	PE
8H9TZ6		106.17	-0.49	-0.11	106.65	-0.20	-0.05	TA
8RWWZR		110.90	4.23	0.97	111.77	4.91	1.20	TA
C4DPGB		103.83	-2.83	-0.65	104.03	-2.82	-0.69	XX
CTXXT2		102.17	-4.50	-1.03	103.37	-3.49	-0.85	XX
FNNJK7		107.73	1.07	0.24	107.60	0.75	0.18	TA
GG8976		107.70	1.03	0.24	107.47	0.61	0.15	TA
KBBK4V		109.90	3.24	0.74	109.46	2.61	0.64	TA
MQBA9Q		100.33	-6.33	-1.45	102.53	-4.32	-1.06	PE
PUK9EE		107.33	0.67	0.15	107.33	0.48	0.12	TA
QY9KHA		104.42	-2.25	-0.52	104.97	-1.88	-0.46	TA
RGN4YD		106.39	-0.28	-0.06	106.36	-0.49	-0.12	TA
W7P7UZ		109.74	3.07	0.71	109.80	2.95	0.72	TA
WE7D26		105.51	-1.16	-0.27	105.40	-1.45	-0.36	TA
WGVRG3		103.78	-2.89	-0.66	104.45	-2.41	-0.59	MT
XLK7KP	*	120.06	13.40	3.07	119.37	12.52	3.06	TA

#### Summary Statistics

	Sample W41	Sample W42
<b>Grand Means</b>	106.667 Degrees Celsius	106.852 Degrees Celsius
<b>Std Dev Btwn Labs</b>	4.357 Degrees Celsius	4.086 Degrees Celsius

Statistics based on 18 of 18 reporting participants

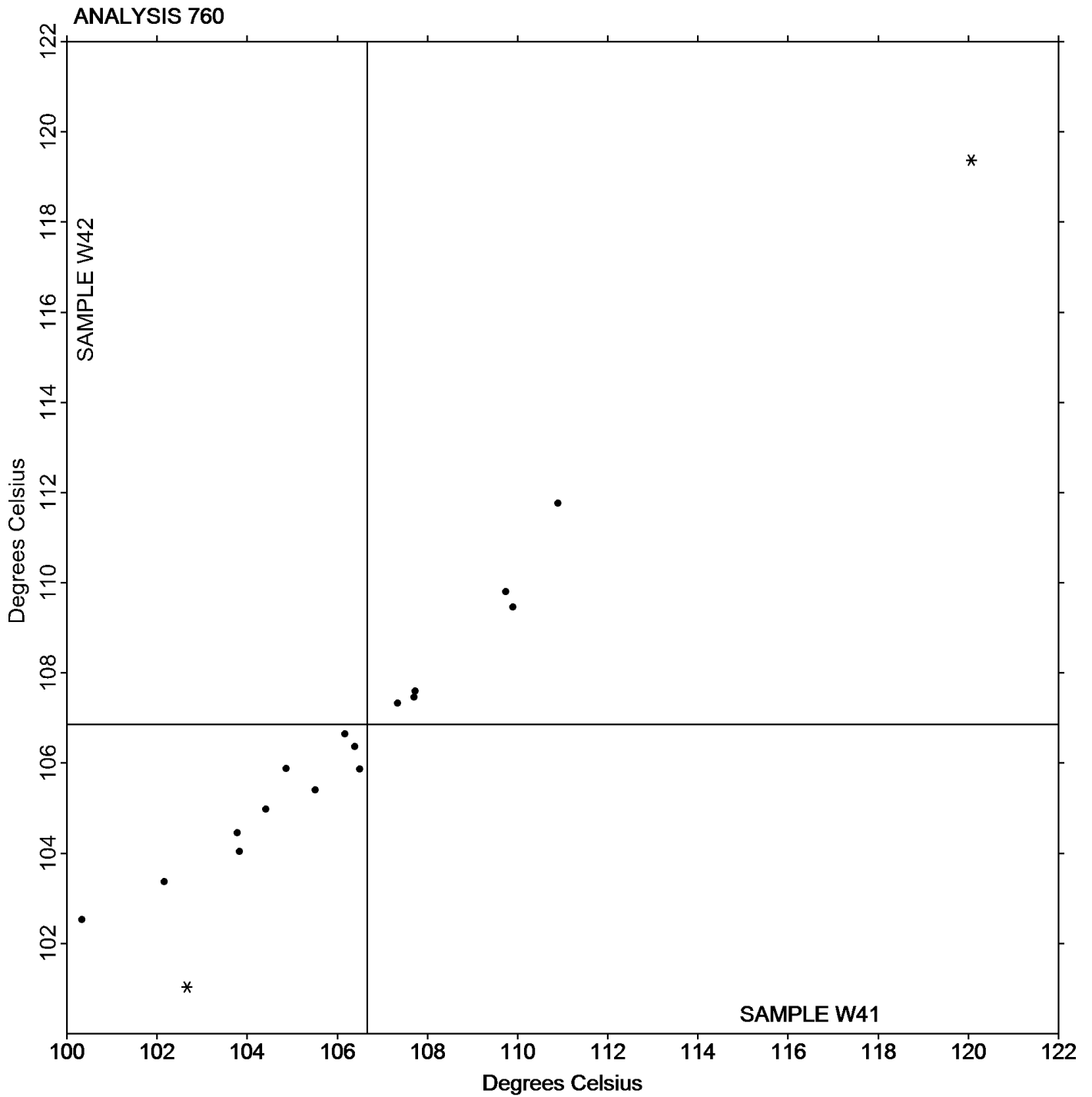
Sample W41: PP & Sample W42: PP

#### 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



Grand Mean Sample W41: 106.67 Degrees Celsius    Grand Mean Sample W42: 106.85 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 #101

## Analysis 761

1st Qtr 2017

### DSC Melt Temperature

WebCode	Data Flag	Sample W41			Sample W42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MP944	*	166.60	2.29	0.61	170.03	5.95	1.60	TA
6FCQZL		162.78	-1.53	-0.41	162.59	-1.50	-0.40	TA
6PXRE9		165.67	1.36	0.36	166.13	2.05	0.55	TA
74E8YL		164.51	0.21	0.05	162.21	-1.88	-0.51	PE
8H9TZ6		164.49	0.19	0.05	164.08	0.00	0.00	XX
8RWWZR		154.27	-10.04	-2.68	154.63	-9.45	-2.55	TA
C4DPGB		165.27	0.96	0.26	164.53	0.45	0.12	XX
CTXXT2		169.40	5.09	1.36	168.47	4.38	1.18	XX
FNNJK7		164.27	-0.04	-0.01	164.47	0.38	0.10	TA
GG8976		164.20	-0.11	-0.03	162.67	-1.42	-0.38	TA
KBBK4V		162.98	-1.32	-0.35	164.93	0.84	0.23	TA
MQBA9Q		169.97	5.66	1.51	167.93	3.85	1.04	PE
PUK9EE		160.67	-3.64	-0.97	160.00	-4.08	-1.10	TA
QY9KHA		166.01	1.70	0.46	165.41	1.33	0.36	TA
RGN4YD		164.73	0.43	0.11	165.11	1.03	0.28	TA
VMAXTJ		163.26	-1.05	-0.28	164.08	0.00	0.00	TA
W7P7UZ		164.69	0.38	0.10	163.47	-0.61	-0.17	TA
WE7D26		167.76	3.46	0.92	167.71	3.63	0.98	XX
WGVRG3		167.67	3.36	0.90	166.33	2.25	0.61	MT
XLK7KP		156.96	-7.35	-1.96	156.90	-7.18	-1.94	TA

#### Summary Statistics

	Sample W41	Sample W42
<b>Grand Means</b>	164.308 Degrees Celsius	164.084 Degrees Celsius
<b>Std Dev Btwn Labs</b>	3.740 Degrees Celsius	3.710 Degrees Celsius

Statistics based on 20 of 20 reporting participants

Sample W41: PP & Sample W42: 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



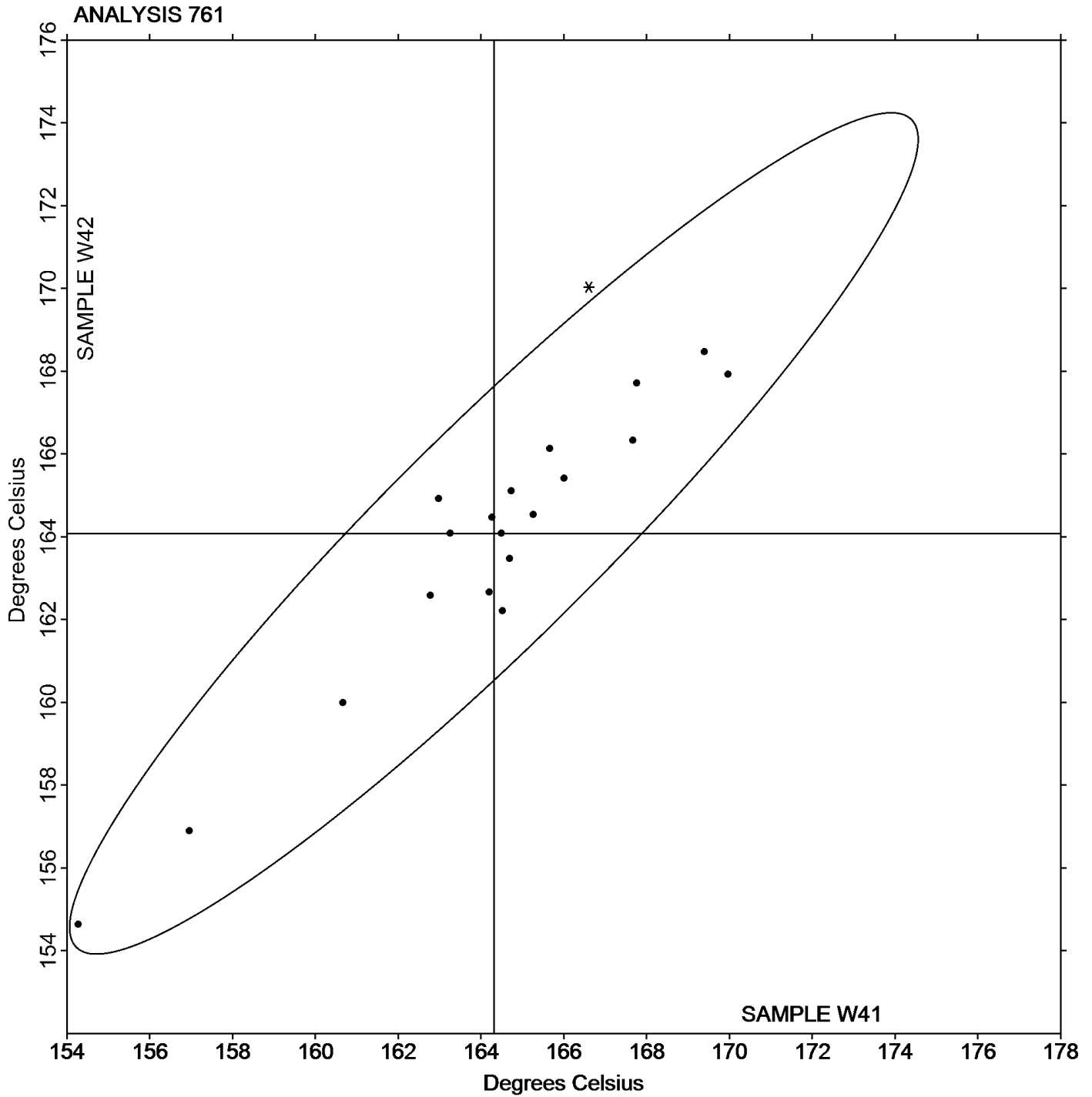
# Plastics Interlaboratory Testing Program

## Analysis 761 DSC Melt Temperature

Report #101

1st Qtr 2017

Grand Mean Sample W41: 164.31 Degrees Celsius    Grand Mean Sample W42: 164.08 Degrees Celsius







**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 762**

**1st Qtr 2017**

**DSC Enthalpy of Crystallization**

WebCode	Data Flag	Sample W41			Sample W42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MP944	*	89.66	-9.58	-1.03	75.41	-22.49	-2.24	TA
6PXRE9		94.77	-4.48	-0.48	93.53	-4.37	-0.43	TA
8RWWZR		101.67	2.42	0.26	102.20	4.30	0.43	TA
C4DPGB		119.73	20.49	2.20	112.37	14.46	1.44	XX
CTXXT2		110.50	11.26	1.21	111.10	13.20	1.31	XX
FNNJK7		97.11	-2.13	-0.23	97.18	-0.73	-0.07	TA
GG8976		96.60	-2.64	-0.28	97.83	-0.07	-0.01	TA
KBBK4V		106.63	7.39	0.79	108.90	11.00	1.09	TA
MQBA9Q		87.22	-12.03	-1.29	90.51	-7.40	-0.74	PE
PUK9EE		102.87	3.62	0.39	102.20	4.30	0.43	TA
QY9KHA		87.11	-12.13	-1.30	88.63	-9.27	-0.92	TA
W7P7UZ		96.84	-2.41	-0.26	95.13	-2.77	-0.28	TA
XLK7KP		99.47	0.22	0.02	97.75	-0.15	-0.01	TA

**Summary Statistics**

	Sample W41	Sample W42
<b>Grand Means</b>	99.244 Joules Per Gram	97.903 Joules Per Gram
<b>Std Dev Btwn Labs</b>	9.315 Joules Per Gram	10.063 Joules Per Gram

Statistics based on 13 of 13 reporting participants

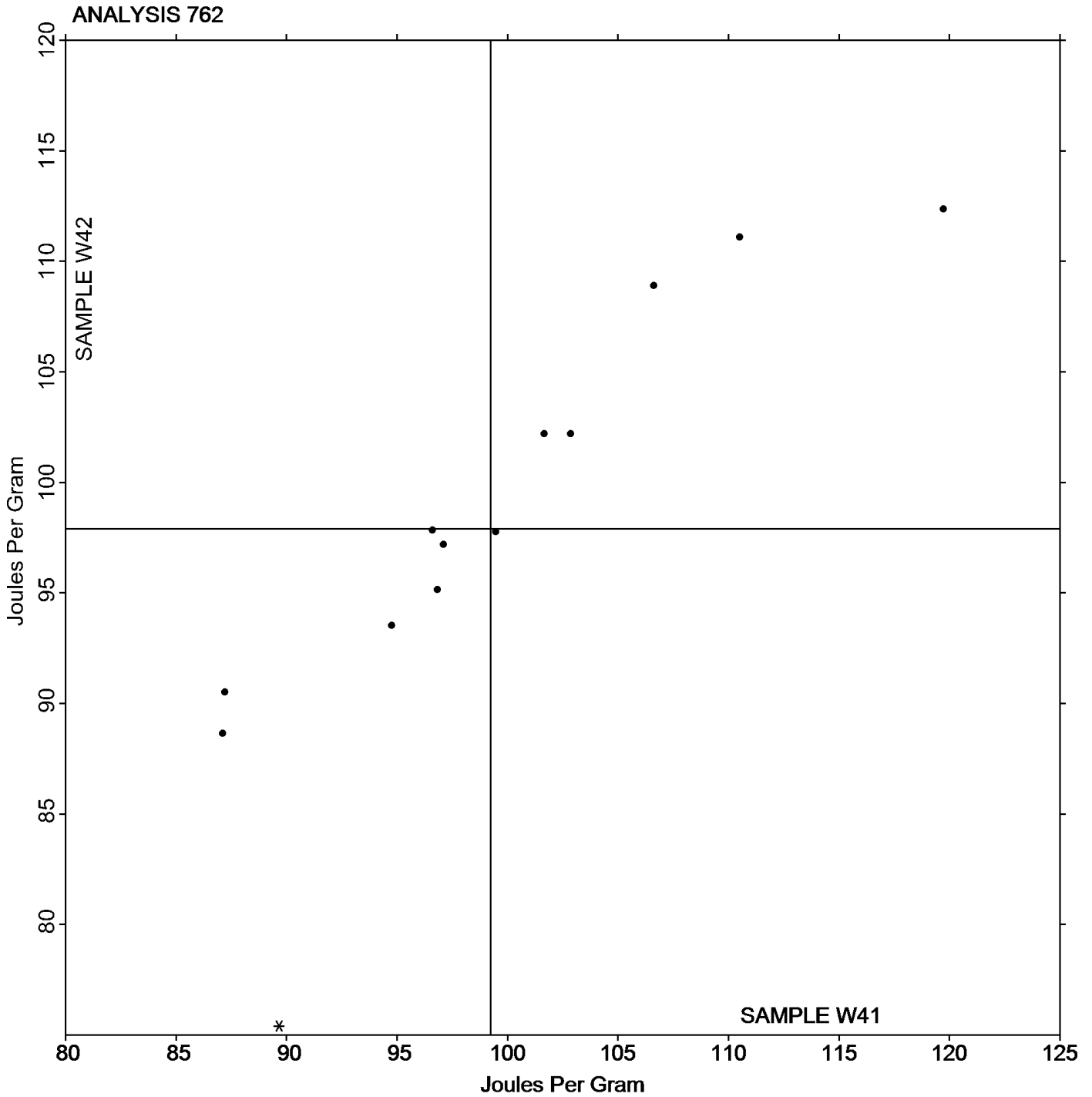
Sample W41: PP & Sample W42: PP

**Key to Instrument Codes Reported by Participants**

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



Grand Mean Sample W41: 99.244 Joules Per Gram    Grand Mean Sample W42: 97.903 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 #101

## Analysis 763

1st Qtr 2017

### DSC Enthalpy of Fusion

WebCode	Data Flag	Sample W41			Sample W42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MP944		85.36	-7.40	-0.59	70.03	-21.85	-1.70	TA
6FCQZL		80.50	-12.27	-0.98	85.32	-6.56	-0.51	TA
6PXRE9		98.03	5.27	0.42	98.57	6.68	0.52	TA
8RWWZR		101.30	8.53	0.68	103.17	11.28	0.88	TA
BJFANT		74.48	-18.29	-1.45	78.91	-12.98	-1.01	XX
C4DPGB		109.37	16.60	1.32	101.40	9.52	0.74	XX
CTXXT2		119.80	27.03	2.15	119.47	27.58	2.14	XX
FNNJK7		89.49	-3.28	-0.26	89.93	-1.96	-0.15	TA
GG8976		86.50	-6.27	-0.50	83.20	-8.68	-0.67	TA
KBBK4V		83.30	-9.47	-0.75	82.37	-9.51	-0.74	TA
MQBA9Q		89.99	-2.78	-0.22	96.80	4.92	0.38	PE
PUK9EE		92.47	-0.30	-0.02	96.60	4.72	0.37	TA
QY9KHA		77.12	-15.65	-1.24	74.86	-17.02	-1.32	TA
W7P7UZ		100.19	7.42	0.59	96.96	5.08	0.39	TA
XLK7KP		103.60	10.83	0.86	100.65	8.77	0.68	TA

#### Summary Statistics

##### Grand Means

##### Sample W41

92.766 Joules Per Gram

##### Sample W42

91.882 Joules Per Gram

##### Stnd Dev Btwn Labs

12.568 Joules Per Gram

12.876 Joules Per Gram

Statistics based on 15 of 15 reporting participants

Sample W41: PP & Sample W42: PP

#### Key to Instrument Codes Reported by Participants

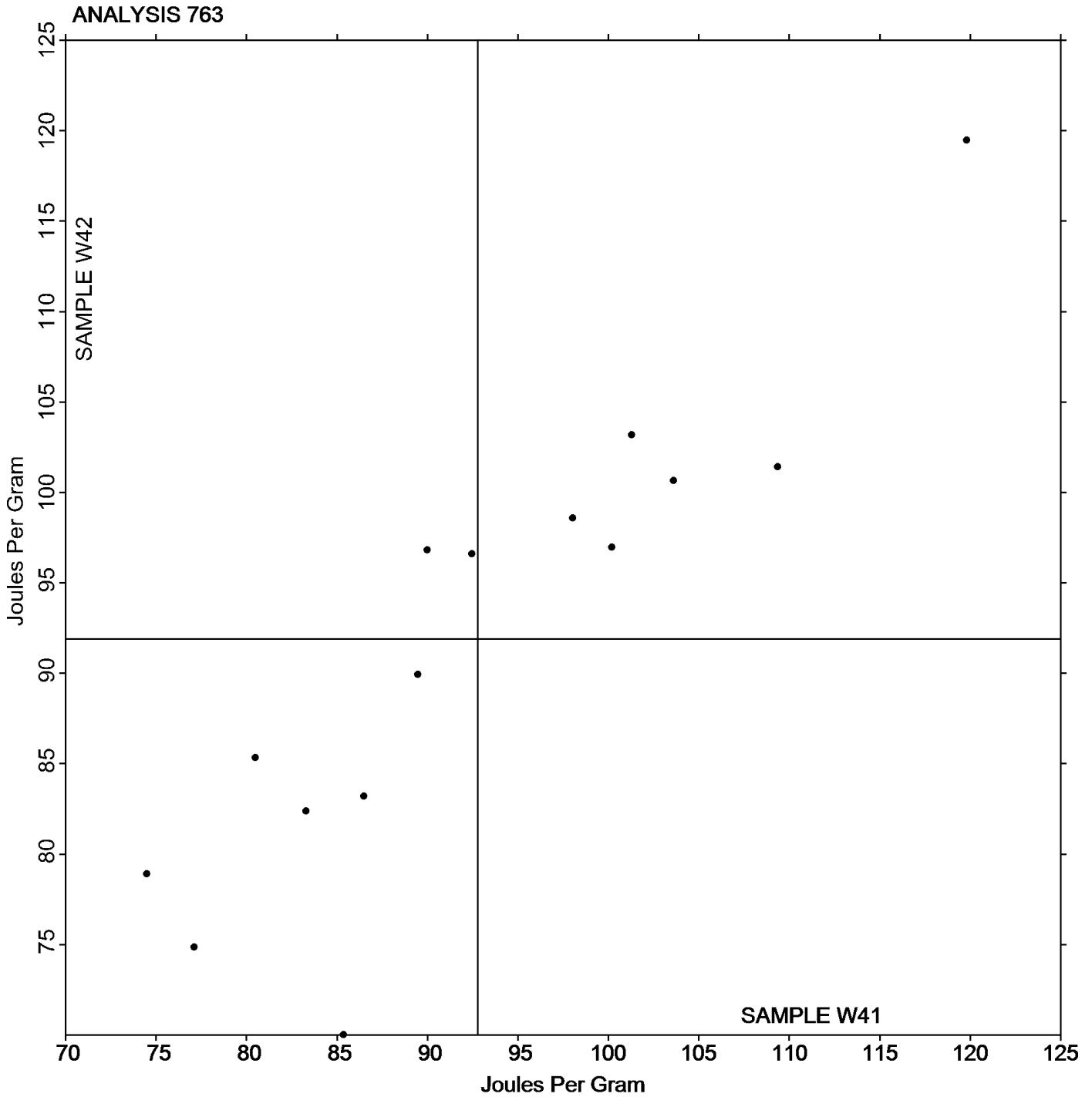
PE Perkins Elmer Instruments

TA TA Instruments

XX Instrument manufacturer not specified by lab



Grand Mean Sample W41: 92.766 Joules Per Gram    Grand Mean Sample W42: 91.882 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 #101**

**Analysis 764**

**1st Qtr 2017**

**DSC Glass Transition Temperature**

WebCode	Data Flag	<u>Sample V41</u>			<u>Sample V42</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2MP944		88.43	1.77	1.02	87.97	1.38	0.90	TA
6FCQZL		87.50	0.84	0.48	87.08	0.49	0.32	TA
6PXRE9		86.20	-0.46	-0.26	86.03	-0.56	-0.36	TA
8RWWZR		86.90	0.24	0.14	86.90	0.31	0.20	TA
BJFANT		88.20	1.54	0.88	88.08	1.49	0.97	XX
C4DPGB		83.73	-2.93	-1.68	84.50	-2.09	-1.36	XX
CTXXT2		84.50	-2.16	-1.24	84.37	-2.22	-1.45	XX
FNNJK7		86.37	-0.30	-0.17	86.60	0.01	0.01	TA
GG8976		87.80	1.14	0.65	87.87	1.28	0.83	TA
KBBK4V		83.65	-3.02	-1.73	84.24	-2.35	-1.53	TA
MQBA9Q		89.33	2.67	1.53	88.23	1.64	1.07	PE
PUK9EE		84.67	-2.00	-1.14	84.67	-1.92	-1.26	TA
QY9KHA		88.28	1.62	0.93	86.85	0.26	0.17	TA
W7P7UZ		86.24	-0.42	-0.24	85.39	-1.20	-0.78	TA
WGVRG3		87.88	1.22	0.70	88.33	1.74	1.13	MT
XLK7KP		86.91	0.25	0.14	88.34	1.75	1.14	TA

**Summary Statistics**

	<u>Sample V41</u>	<u>Sample V42</u>
<b>Grand Means</b>	86.662 Degrees Celsius	86.590 Degrees Celsius
<b>Stnd Dev Btwn Labs</b>	1.744 Degrees Celsius	1.532 Degrees Celsius

Statistics based on 16 of 16 reporting participants

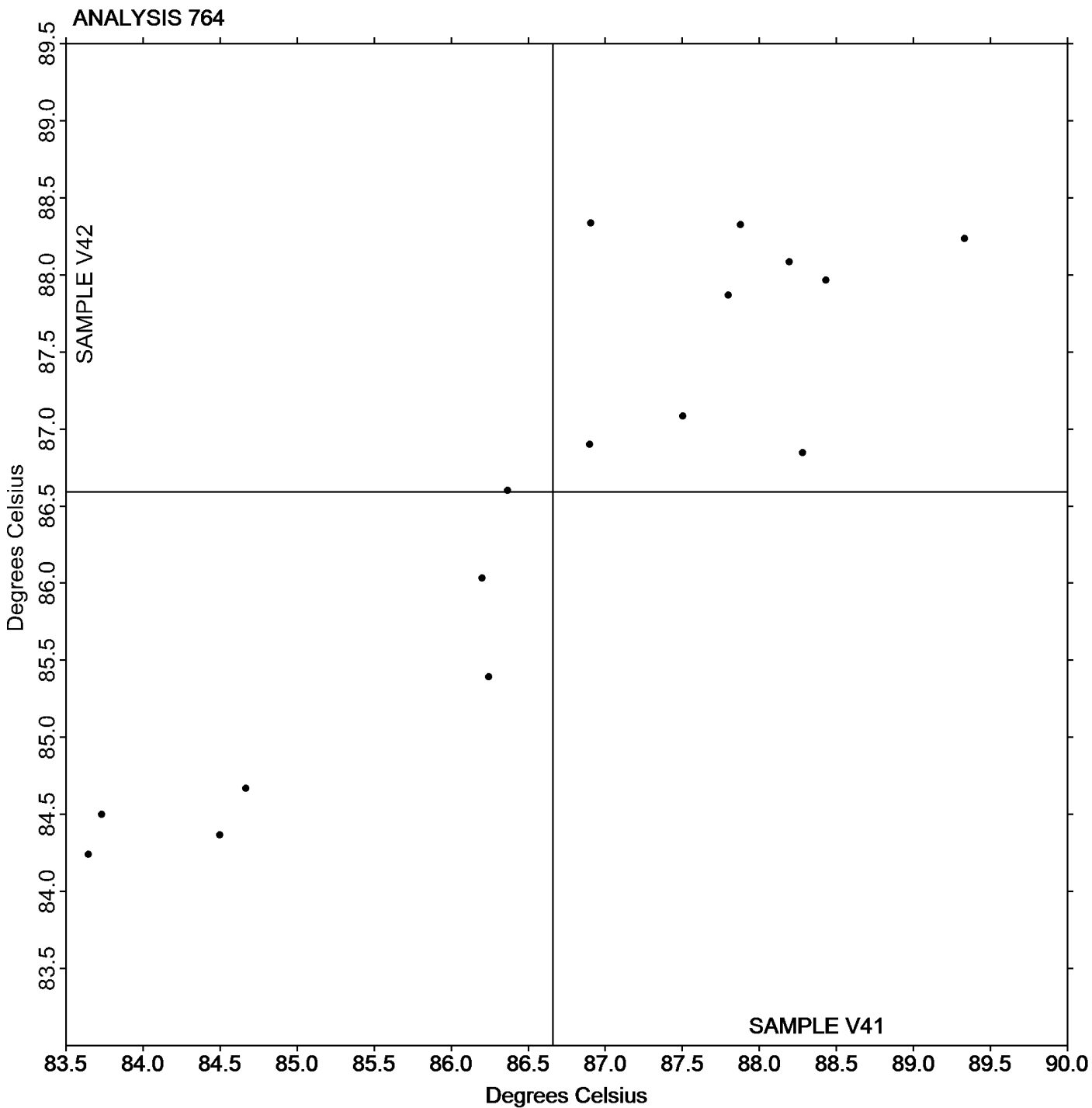
Sample V41: PET & Sample V42: PET

**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



Grand Mean Sample V41: 86.662 Degrees Celsius    Grand Mean Sample V42: 86.590 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 #101**

**Analysis 770**

**1st Qtr 2017**

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

WebCode	Data Flag	<u>Sample B41</u>			<u>Sample B42</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
7A3G2C		2,633	-55	-0.08	2,754	48	0.06	SH
8TUM8G		3,266	578	0.80	3,263	557	0.75	IN
AT442D		3,407	719	1.00	3,434	728	0.98	IN
C4DPGB		3,319	631	0.88	3,391	685	0.92	IN
FACDM9		3,387	699	0.97	3,414	708	0.95	IN
HFQE4A		2,761	73	0.10	2,681	-25	-0.03	IN
HMP2TL		2,893	205	0.28	2,905	199	0.27	IN
HQPCM2		1,540	-1,148	-1.60	1,526	-1,181	-1.58	IN
L7A2AT		1,795	-893	-1.24	1,797	-910	-1.22	MT
TXRX8Z		1,703	-985	-1.37	1,667	-1,039	-1.39	IN
V3WDUU		3,232	544	0.76	3,291	585	0.78	IN
W9KH3N		1,806	-882	-1.23	1,784	-922	-1.24	IN
WYBZH3		3,203	515	0.72	3,274	568	0.76	XX

**Summary Statistics**

	<u>Sample B41</u>	<u>Sample B42</u>
<b>Grand Means</b>	2,688.0 psi	2,706.1 psi
<b>Std Dev Btwn Labs</b>	719.7 psi	745.4 psi

Statistics based on 13 of 13 reporting participants

Sample B41: LDPE & Sample B42: LDPE

**Key to Instrument Codes Reported by Participants**

IN	Instron	MT	MTS/Sintech
SH	Shimadzu	XX	Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

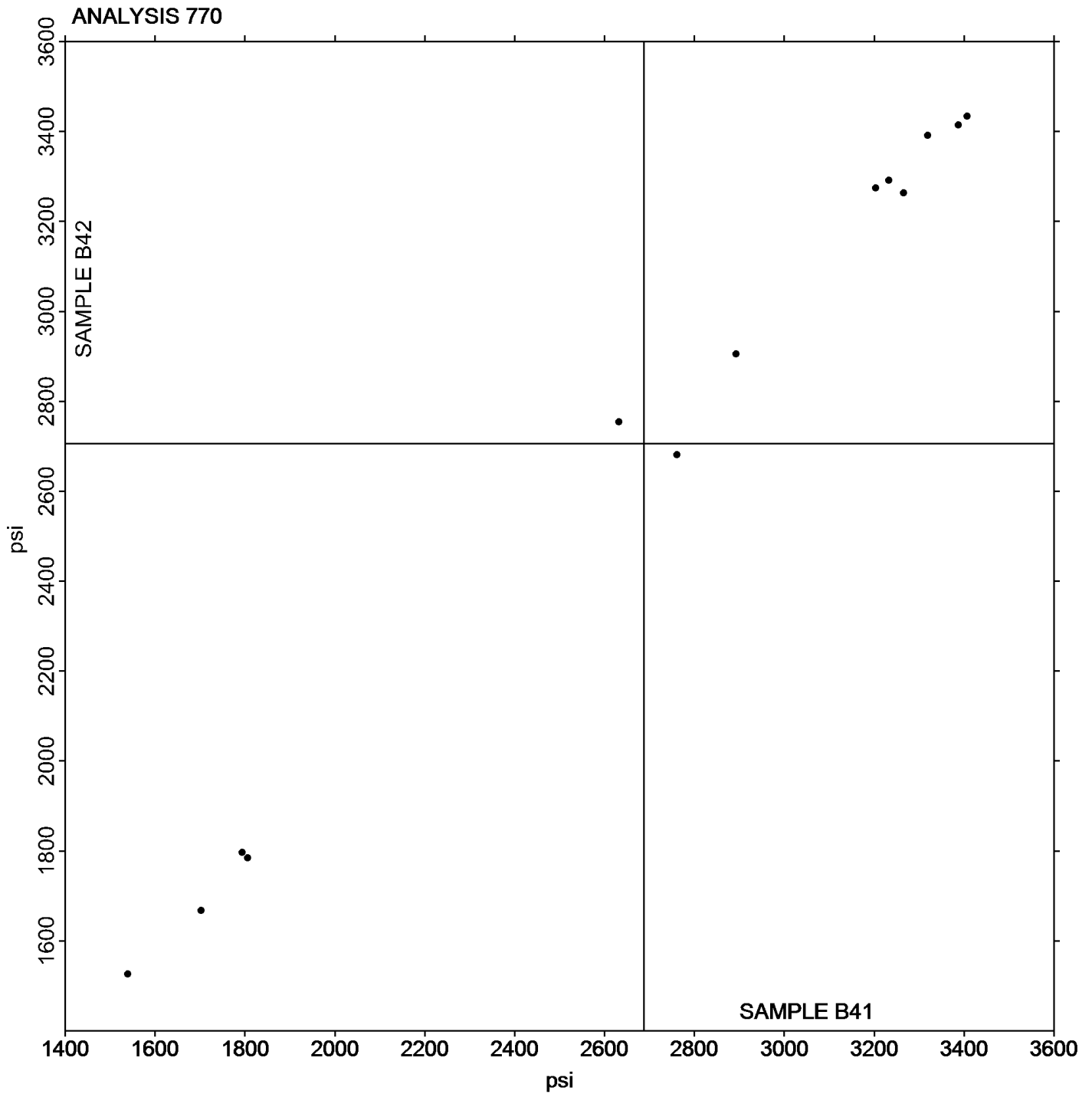
Report #101

## Analysis 770

1st Qtr 2017

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

Grand Mean Sample B41: 2,687.98 psi    Grand Mean Sample B42: 2,706.12 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 #101**

**Analysis 771**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample B41			Sample B42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
32GMG3		3,922	665	2.17	3,895	643	2.12	UC
6FCQZL		3,375	118	0.38	3,327	75	0.25	SH
7A3G2C		3,221	-36	-0.12	3,268	16	0.05	SH
8TUM8G		3,377	120	0.39	3,257	5	0.02	IN
AT442D		3,372	115	0.38	3,409	156	0.51	IN
C4DPGB		3,369	112	0.36	3,390	138	0.45	IN
FACDM9		3,438	181	0.59	3,414	162	0.53	IN
HFQE4A		3,316	59	0.19	3,195	-57	-0.19	IN
HMP2TL		3,409	151	0.49	3,456	203	0.67	IN
HQPCM2		2,804	-453	-1.48	2,778	-475	-1.56	IN
L7A2AT		3,503	246	0.80	3,504	252	0.83	MT
TXRX8Z		3,136	-121	-0.39	3,112	-140	-0.46	IN
V3WDUU		3,232	-25	-0.08	3,291	38	0.13	IN
W9KH3N		2,638	-619	-2.02	2,680	-572	-1.88	IN
WYBZH3		3,163	-94	-0.31	3,269	16	0.05	XX
ZBR8PE		2,837	-420	-1.37	2,792	-460	-1.52	IN

Summary Statistics		Sample B41	Sample B42
<b>Grand Means</b>		3,257.0 psi	3,252.4 psi
<b>Stnd Dev Btwn Labs</b>		306.1 psi	303.6 psi
Statistics based on 16 of 16 reporting participants			

Sample B41: LDPE & Sample B42: LDPE

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- XX Instrument manufacturer not specified by lab
- MT MTS/Sintech
- UC United



# Plastics Interlaboratory Testing Program

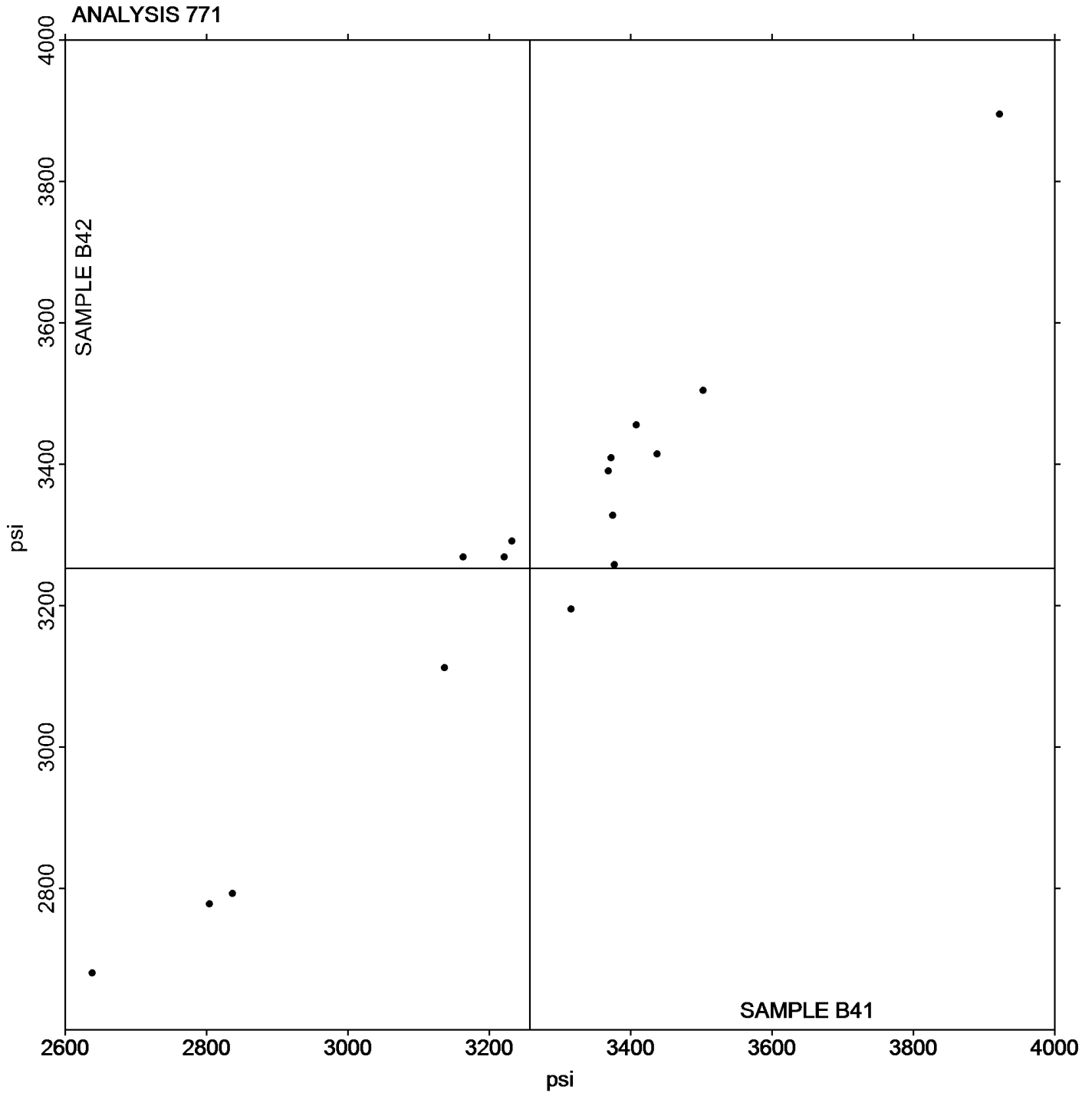
Report #101

## Analysis 771

1st Qtr 2017

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

Grand Mean Sample B41: 3,257.00 psi    Grand Mean Sample B42: 3,252.41 psi



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



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 772**

**1st Qtr 2017**

**Percent Elongation at Yield, Films**

WebCode	Data Flag	<u>Sample B41</u>			<u>Sample B42</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
7A3G2C		150.62	-40.73	-0.26	142.69	-51.63	-0.32	SH
8TUM8G		233.28	41.93	0.26	275.37	81.05	0.51	IN
AT442D		421.21	229.85	1.45	419.70	225.37	1.41	IN
C4DPGB		273.87	82.52	0.52	329.59	135.27	0.84	IN
FACDM9		346.75	155.40	0.98	326.28	131.96	0.82	IN
HFQE4A		125.61	-65.74	-0.41	126.59	-67.73	-0.42	IN
HMP2TL		123.54	-67.81	-0.43	100.02	-94.30	-0.59	IN
HQPCM2		12.21	-179.14	-1.13	11.16	-183.16	-1.14	IN
L7A2AT		9.05	-182.31	-1.15	8.57	-185.76	-1.16	MT
TXX8Z		8.99	-182.36	-1.15	9.24	-185.09	-1.15	IN
V3WUUU		473.00	281.65	1.77	445.40	251.08	1.57	IN
W9KH3N		39.05	-152.30	-0.96	38.94	-155.38	-0.97	IN
WYBZH3		270.43	79.08	0.50	292.68	98.36	0.61	XX

<b>Summary Statistics</b>		
	<u>Sample B41</u>	<u>Sample B42</u>
<b>Grand Means</b>	191.354 Percent	194.325 Percent
<b>Std Dev Btwn Labs</b>	159.030 Percent	160.309 Percent
Statistics based on 13 of 13 reporting participants		

Sample B41: LDPE & Sample B42: LDPE

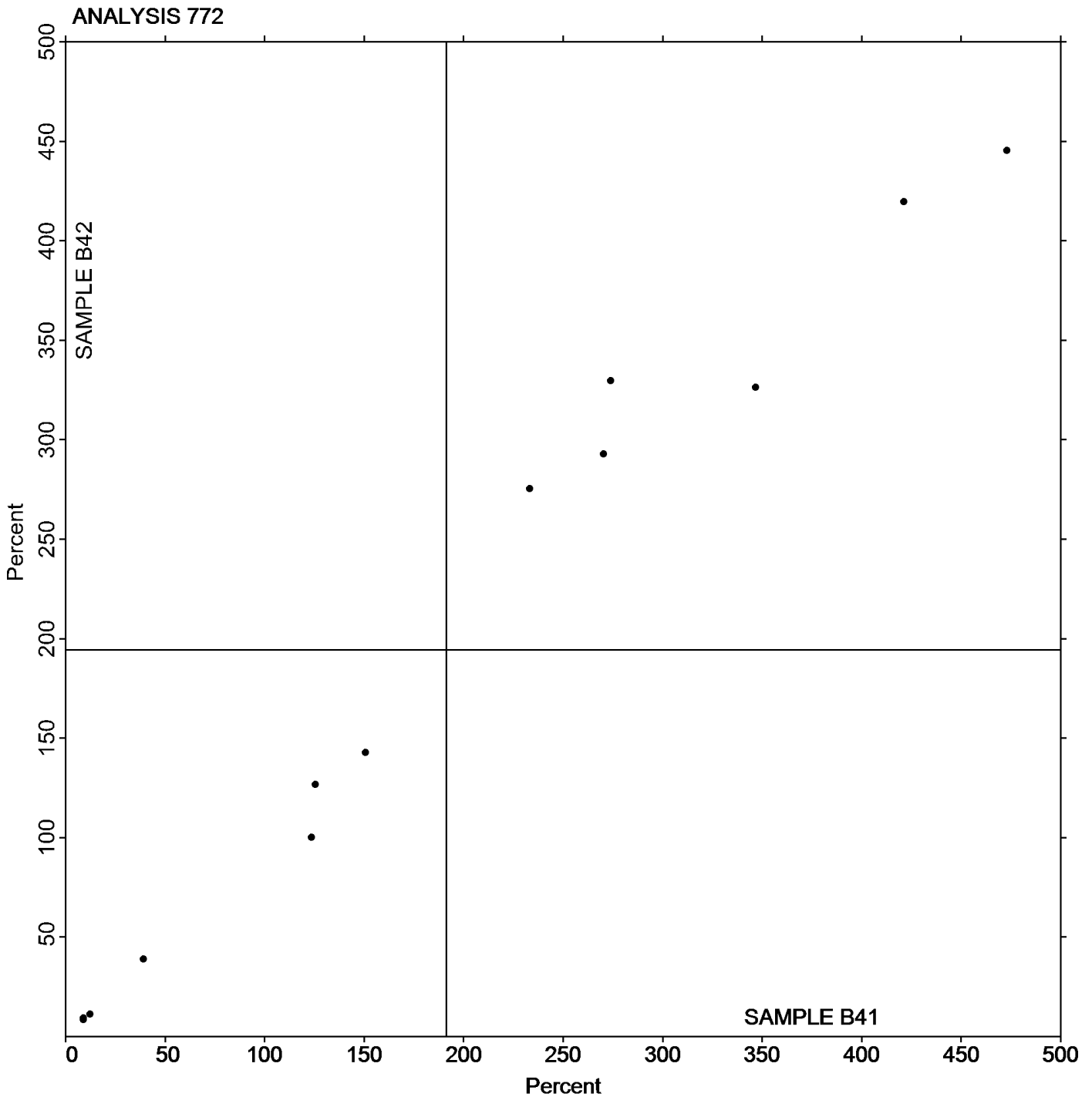
Note: Results for test 772 exhibit higher variability than historical averages. Participant's should use caution when interpreting results.

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- MT MTS/Sintech
- XX Instrument manufacturer not specified by lab



Grand Mean Sample B41: 191.35 Percent    Grand Mean Sample B42: 194.32 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 #101**

**Analysis 773**

**1st Qtr 2017**

**Percent Elongation at Break, Film Samples**

WebCode	Data Flag	<u>Sample B41</u>			<u>Sample B42</u>			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
32GMG3		357.0	14.3	0.26	302.5	-36.8	-0.74	UC
6FCQZL		342.1	-0.6	-0.01	368.5	29.2	0.59	SH
7A3G2C		361.6	18.9	0.34	345.5	6.2	0.13	SH
8TUM8G		282.5	-60.3	-1.09	275.9	-63.4	-1.28	IN
AT442D		425.3	82.6	1.49	423.2	83.9	1.70	IN
C4DPGB		312.5	-30.3	-0.55	329.6	-9.7	-0.20	IN
FACDM9		346.8	4.0	0.07	326.3	-13.0	-0.26	IN
HFQE4A		402.7	60.0	1.08	397.7	58.4	1.18	IN
HMP2TL		306.8	-35.9	-0.65	299.5	-39.8	-0.81	IN
HQPCM2		326.0	-16.7	-0.30	340.9	1.6	0.03	IN
L7A2AT		312.0	-30.7	-0.55	308.5	-30.8	-0.62	MT
TXRX8Z		293.4	-49.4	-0.89	297.4	-41.9	-0.85	IN
V3WDUU		473.0	130.3	2.35	445.4	106.1	2.15	IN
W9KH3N		290.3	-52.4	-0.95	300.6	-38.7	-0.78	IN
WYBZH3		274.2	-68.5	-1.24	298.2	-41.1	-0.83	XX
ZBR8PE		377.5	34.8	0.63	369.1	29.8	0.60	IN

**Summary Statistics**

	<u>Sample B41</u>	<u>Sample B42</u>
<b>Grand Means</b>	342.73 Percent	339.30 Percent
<b>Stnd Dev Btwn Labs</b>	55.45 Percent	49.40 Percent

Statistics based on 16 of 16 reporting participants

Sample B41: LDPE & Sample B42: LDPE

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- XX Instrument manufacturer not specified by lab
- MT MTS/Sintech
- UC United



# Plastics Interlaboratory Testing Program

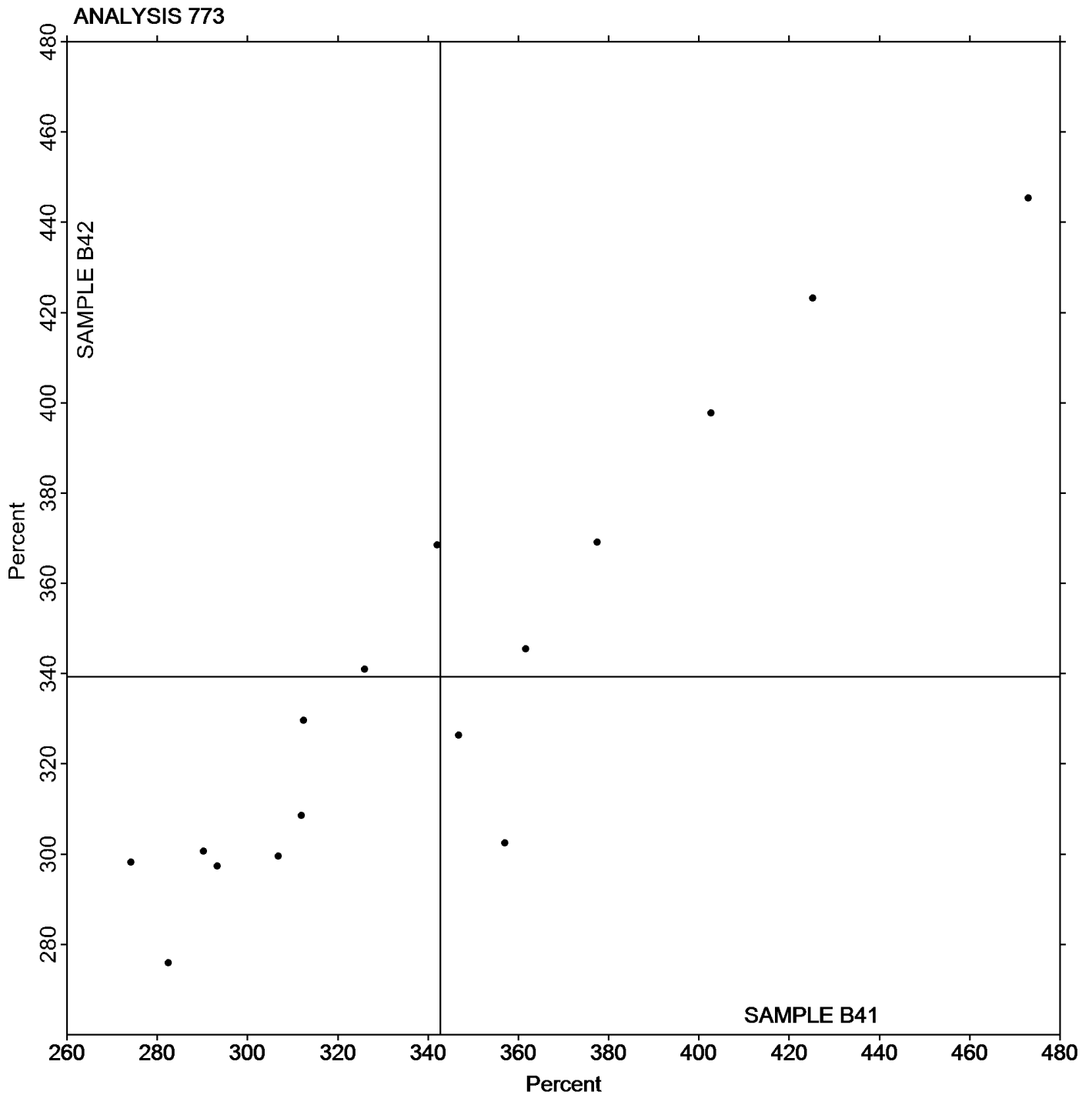
Report #101

## Analysis 773

1st Qtr 2017

### Percent Elongation at Break, Film Samples

Grand Mean Sample B41: 342.73 Percent    Grand Mean Sample B42: 339.30 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 #101**

**Analysis 774**

**1st Qtr 2017**

**Thickness of Film Tensile Samples - mils**

WebCode	Data Flag	<u>Sample B41</u>			<u>Sample B42</u>		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV
32GMG3	X	2.1300	-0.5246	-6.17	2.1300	-0.5224	-9.13
6FCQZL		2.5433	-0.1112	-1.31	2.6811	0.0287	0.50
7A3G2C		2.6508	-0.0037	-0.04	2.5457	-0.1066	-1.86
8TUM8G		2.5790	-0.0756	-0.89	2.6540	0.0016	0.03
AT442D		2.7244	0.0699	0.82	2.7205	0.0681	1.19
C4DPGB		2.5990	-0.0556	-0.65	2.6370	-0.0154	-0.27
FACDM9		2.5650	-0.0896	-1.05	2.6500	-0.0024	-0.04
GZJT6U		2.5950	-0.0596	-0.70	2.6020	-0.0504	-0.88
HFQE4A		2.6900	0.0354	0.42	2.6500	-0.0024	-0.04
HLXZUR		2.6940	0.0394	0.46	2.6710	0.0186	0.33
HMP2TL		2.5930	-0.0616	-0.72	2.6250	-0.0274	-0.48
HQPCM2		2.8100	0.1554	1.83	2.6600	0.0076	0.13
L7A2AT		2.5650	-0.0896	-1.05	2.5800	-0.0724	-1.26
TXRX8Z		2.7245	0.0699	0.82	2.7087	0.0564	0.98
V3WDUU		2.7400	0.0854	1.01	2.6800	0.0276	0.48
W9KH3N		2.7323	0.0778	0.92	2.7520	0.0997	1.74
WYBZH3		2.5591	-0.0955	-1.12	2.5591	-0.0933	-1.63
ZBR8PE		2.7630	0.1084	1.28	2.7140	0.0616	1.08

**Summary Statistics**

	<u>Sample B41</u>	<u>Sample B42</u>
<b>Grand Means</b>	2.65456 mils	2.65236 mils
<b>Stnd Dev Btwn Labs</b>	0.08497 mils	0.05722 mils

Statistics based on 17 of 18 reporting participants

Sample B41: LDPE & Sample B42: LDPE

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

32GMG3 (X) - Data for both samples are low.







**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 775**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample B41			Sample B42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
7A3G2C	*	39,795	7,714	1.30	52,994	19,867	2.54	SH
8TUM8G		33,079	997	0.17	34,468	1,342	0.17	IN
AT442D		24,392	-7,689	-1.30	28,300	-4,826	-0.62	IN
C4DPGB		37,043	4,961	0.84	36,873	3,746	0.48	IN
FACDM9		32,681	600	0.10	31,756	-1,370	-0.17	IN
HFQE4A		33,887	1,805	0.30	32,560	-566	-0.07	IN
HMP2TL		35,721	3,640	0.61	35,813	2,686	0.34	IN
HQPCM2		20,830	-11,251	-1.90	19,780	-13,346	-1.70	IN
L7A2AT		33,846	1,765	0.30	33,826	699	0.09	MT
V3WDUU		33,347	1,266	0.21	34,087	961	0.12	IN
W9KH3N		39,944	7,862	1.32	37,565	4,439	0.57	IN
WYBZH3		25,711	-6,370	-1.07	26,097	-7,029	-0.90	XX
ZBR8PE		26,782	-5,299	-0.89	26,524	-6,602	-0.84	IN

**Summary Statistics**

	Sample B41	Sample B42
<b>Grand Means</b>	32,081.3 psi	33,126.4 psi
<b>Std Dev Btwn Labs</b>	5,936.4 psi	7,828.8 psi
Statistics based on 13 of 13 reporting participants		

Sample B41: LDPE & Sample B42: LDPE

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- MT MTS/Sintech
- XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

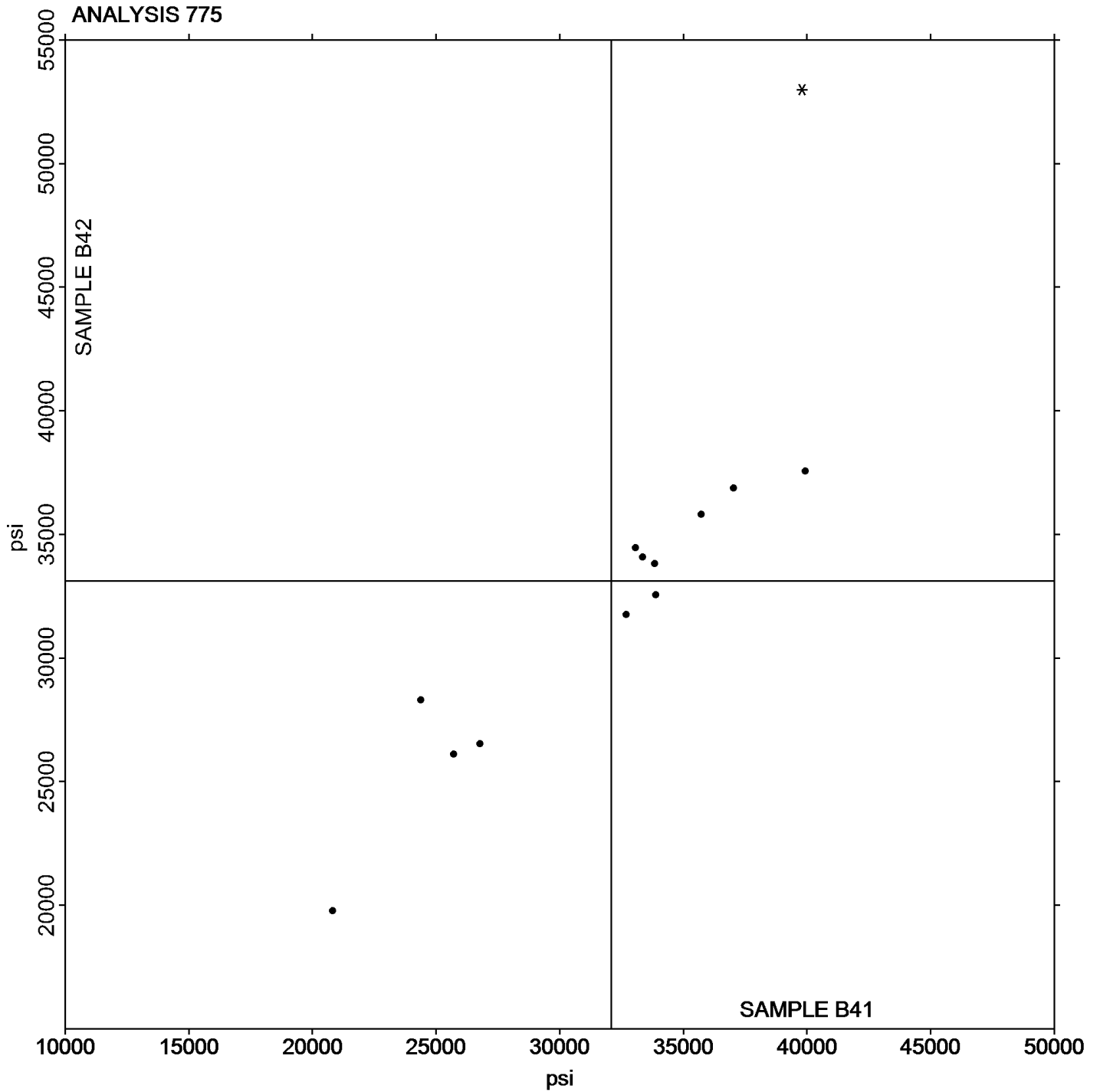
Report #101

## Analysis 775

1st Qtr 2017

Secant Modulus at 1% Strain - psi

Grand Mean Sample B41: 32,081.33 psi    Grand Mean Sample B42: 33,126.39 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 #101**

**Analysis 776**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample B41			Sample B42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
7A3G2C		31,313	3,213	1.06	36,623	8,300	2.03	SH
8TUM8G		29,024	924	0.30	30,116	1,793	0.44	IN
AT442D		26,684	-1,416	-0.47	25,295	-3,028	-0.74	IN
C4DPGB		31,409	3,309	1.09	31,424	3,101	0.76	IN
FACDM9		29,676	1,576	0.52	28,626	303	0.07	IN
HFQE4A		29,357	1,257	0.41	28,211	-112	-0.03	IN
HQPCM2		22,728	-5,372	-1.77	22,203	-6,120	-1.49	IN
L7A2AT		28,744	644	0.21	29,283	960	0.23	MT
V3WDUU		28,016	-84	-0.03	28,745	422	0.10	IN
W9KH3N		31,009	2,910	0.96	30,284	1,961	0.48	IN
WYBZH3		27,029	-1,071	-0.35	27,876	-447	-0.11	XX
ZBR8PE		22,209	-5,891	-1.94	21,190	-7,133	-1.74	IN

Summary Statistics		Sample B41	Sample B42
<b>Grand Means</b>		28,099.7 psi	28,323.0 psi
<b>Stnd Dev Btwn Labs</b>		3,042.1 psi	4,095.1 psi
Statistics based on 12 of 12 reporting participants			

Sample B41: LDPE & Sample B42: LDPE

**Key to Instrument Codes Reported by Participants**

- IN Instron
- SH Shimadzu
- MT MTS/Sintech
- XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

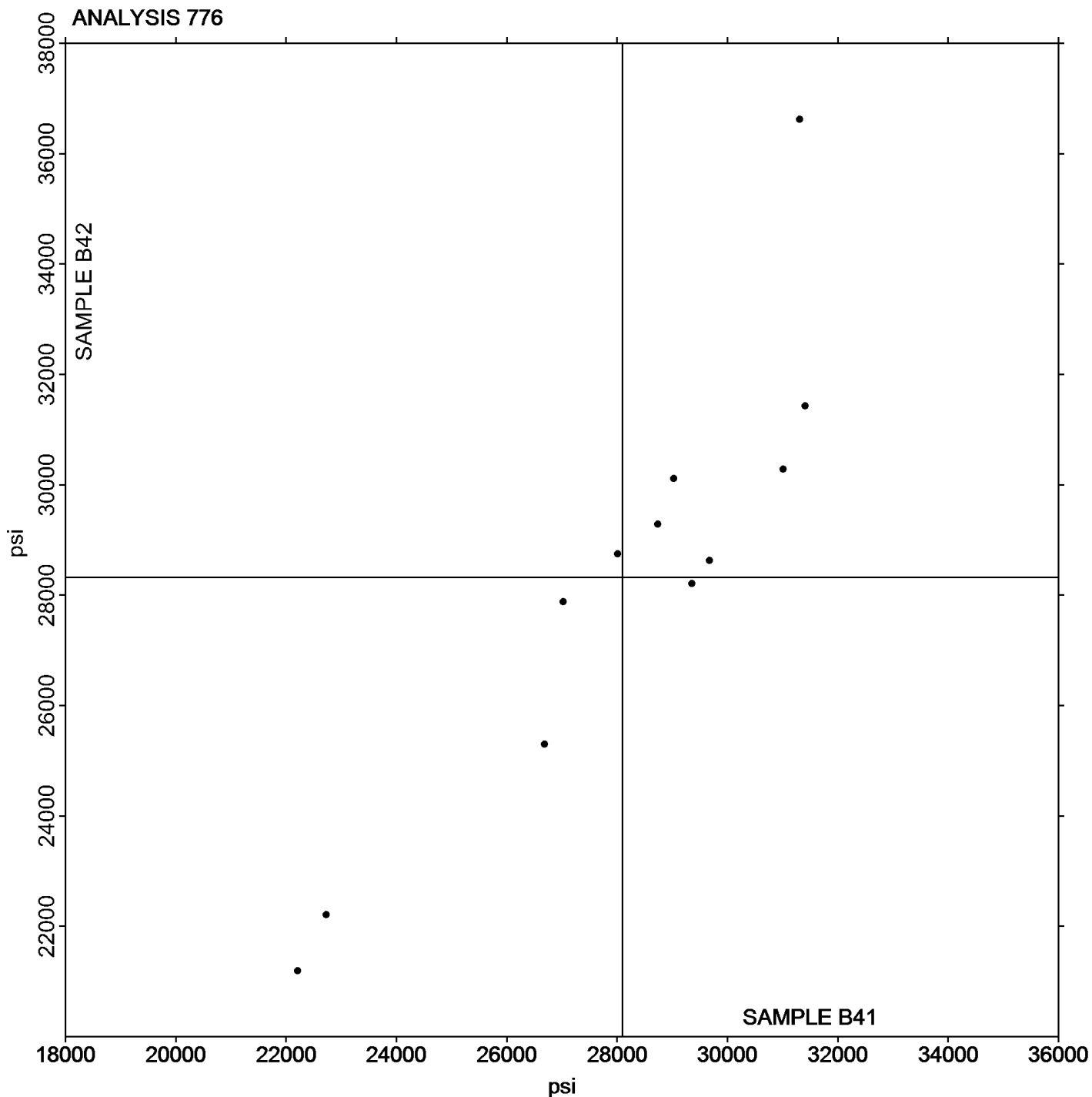
Report #101

## Analysis 776

1st Qtr 2017

Secant Modulus at 2% Strain - psi

Grand Mean Sample B41: 28,099.73 psi    Grand Mean Sample B42: 28,322.98 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 #101**

**Analysis 780**

**1st Qtr 2017**

**Coefficient of Static Friction**

WebCode	Data Flag	Sample P41			Sample P42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6FCQZL		0.1458	0.0120	0.18	0.1600	0.0220	0.31	SA
7A3G2C		0.2818	0.1480	2.18	0.3201	0.1821	2.61	SA
C4DPGB		0.1180	-0.0158	-0.23	0.1340	-0.0040	-0.06	TH
E23MJ6		0.1168	-0.0170	-0.25	0.1186	-0.0194	-0.28	IP
FCF7G8		0.0258	-0.1080	-1.59	0.0228	-0.1152	-1.65	TN
HFQE4A		0.2170	0.0832	1.23	0.1758	0.0378	0.54	IS
HMP2TL		0.1380	0.0042	0.06	0.1324	-0.0056	-0.08	TH
HQPCM2		0.1372	0.0034	0.05	0.1510	0.0130	0.19	TN
L7A2AT		0.1822	0.0484	0.71	0.1878	0.0498	0.71	MI
RGN4WT		0.0740	-0.0598	-0.88	0.0800	-0.0580	-0.83	KA
VV3BQX		0.0925	-0.0413	-0.61	0.0972	-0.0408	-0.59	IG
WTP29H		0.0560	-0.0778	-1.15	0.1120	-0.0260	-0.37	IG
WYBZH3		0.1544	0.0206	0.30	0.1028	-0.0352	-0.51	RD

**Summary Statistics**

	Sample P41	Sample P42
<b>Grand Means</b>	0.13380 COF	0.13804 COF
<b>Std Dev Btwn Labs</b>	0.06788 COF	0.06974 COF

Statistics based on 13 of 13 reporting participants

Sample P41: LDPE & Sample P42: LDPE

**Key to Instrument Codes Reported by Participants**

IG	Instron	IP	Instron 4000 Series
IS	Instron 5000 Series	KA	Kayeness Inc.
MI	MTS Insight	RD	RDM CF
SA	Shimadzu Autograph	TH	Thwing Albert Friction/Peel Tester Model 225-1
TN	TMI #32-06		



# Plastics Interlaboratory Testing Program

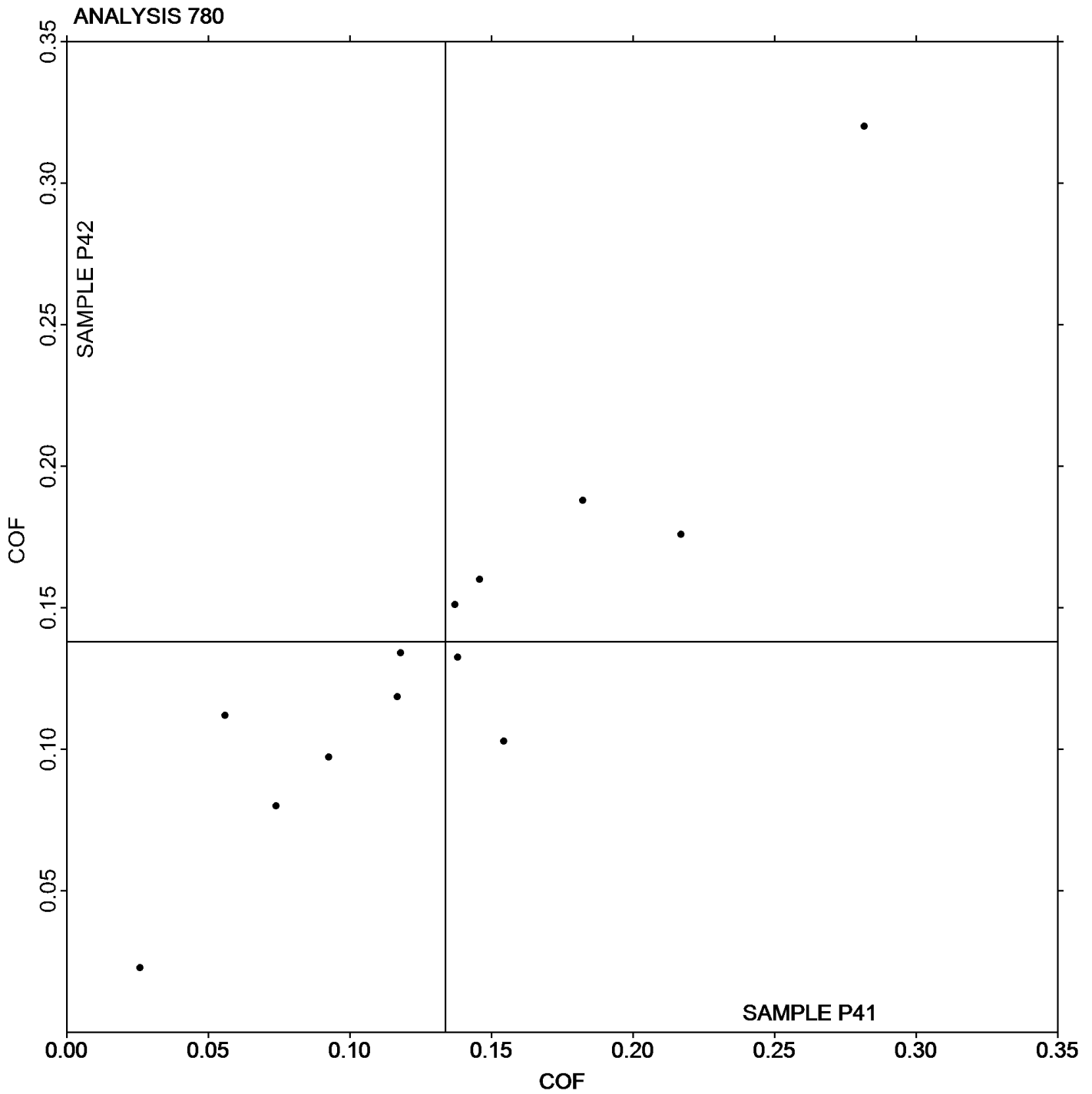
Report #101

## Analysis 780

1st Qtr 2017

### Coefficient of Static Friction

Grand Mean Sample P41: 0.13380 COF    Grand Mean Sample P42: 0.13804 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 #101**

**Analysis 781**

**1st Qtr 2017**

**Coefficient of Kinetic Friction**

WebCode	Data Flag	Sample P41			Sample P42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6FCQZL		0.1056	-0.0043	-0.07	0.1084	-0.0007	-0.01	SA
7A3G2C		0.2277	0.1178	2.04	0.2321	0.1230	2.57	SA
C4DPGB		0.1020	-0.0079	-0.14	0.1160	0.0069	0.14	TH
E23MJ6		0.0858	-0.0241	-0.42	0.0878	-0.0213	-0.44	IP
FCF7G8		0.0210	-0.0889	-1.54	0.0192	-0.0899	-1.88	TN
HFQE4A		0.1886	0.0787	1.37	0.1408	0.0317	0.66	IS
HMP2TL		0.1312	0.0213	0.37	0.1226	0.0135	0.28	TH
HQPCM2		0.0934	-0.0165	-0.29	0.0986	-0.0105	-0.22	TN
L7A2AT		0.1198	0.0099	0.17	0.1304	0.0213	0.44	MI
RGN4WT		0.1020	-0.0079	-0.14	0.1020	-0.0071	-0.15	KA
VV3BQX		0.0862	-0.0237	-0.41	0.0927	-0.0164	-0.34	IG
WTP29H		0.0180	-0.0919	-1.59	0.0680	-0.0411	-0.86	IG
WYBZH3		0.1470	0.0371	0.64	0.0998	-0.0093	-0.19	RD

**Summary Statistics**

	Sample P41	Sample P42
<b>Grand Means</b>	0.10987 COF	0.10911 COF
<b>Std Dev Btwn Labs</b>	0.05767 COF	0.04792 COF

Statistics based on 13 of 13 reporting participants

Sample P41: LDPE & Sample P42: LDPE

**Key to Instrument Codes Reported by Participants**

IG	Instron	IP	Instron 4000 Series
IS	Instron 5000 Series	KA	Kayeness Inc.
MI	MTS Insight	RD	RDM CF
SA	Shimadzu Autograph	TH	Thwing Albert Friction/Peel Tester Model 225-1
TN	TMI #32-06		



# Plastics Interlaboratory Testing Program

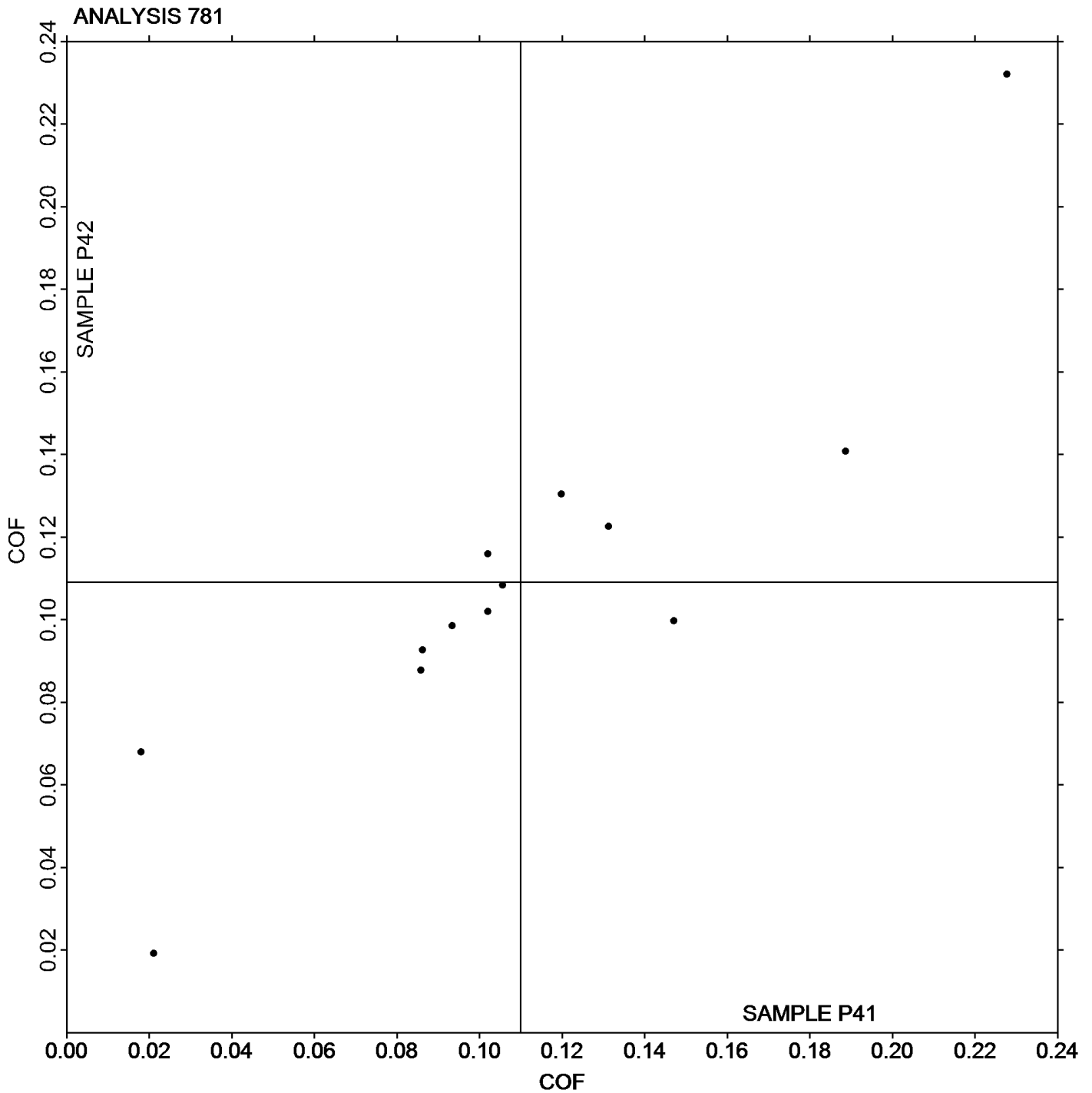
Report #101

## Analysis 781

1st Qtr 2017

### Coefficient of Kinetic Friction

Grand Mean Sample P41: 0.10987 COF    Grand Mean Sample P42: 0.10911 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 #101**

**Analysis 782**

**1st Qtr 2017**

**Tear Resistance of Films**

WebCode	Data Flag	Sample Q41			Sample Q42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
6FCQZL		904.7	69.8	0.79	414.4	-29.7	-0.83	EM
7A3G2C		727.1	-107.8	-1.22	414.7	-29.4	-0.82	TE
8TUM8G		935.9	101.1	1.15	483.8	39.7	1.11	TM
C4DPGB		849.6	14.8	0.17	463.4	19.3	0.54	TE
HFQE4A		916.1	81.3	0.92	443.0	-1.1	-0.03	TE
HMP2TL		805.4	-29.4	-0.33	466.6	22.5	0.63	TE
HQPCM2		824.4	-10.4	-0.12	467.6	23.5	0.66	TM
L7A2AT		674.3	-160.5	-1.82	469.0	25.0	0.70	TE
TXRX8Z		876.1	41.3	0.47	374.2	-69.9	-1.95	SZ

**Summary Statistics**

	Sample Q41	Sample Q42
<b>Grand Means</b>	834.85 grams-force	444.08 grams-force
<b>Stnd Dev Btwn Labs</b>	88.02 grams-force	35.81 grams-force

Statistics based on 9 of 9 reporting participants

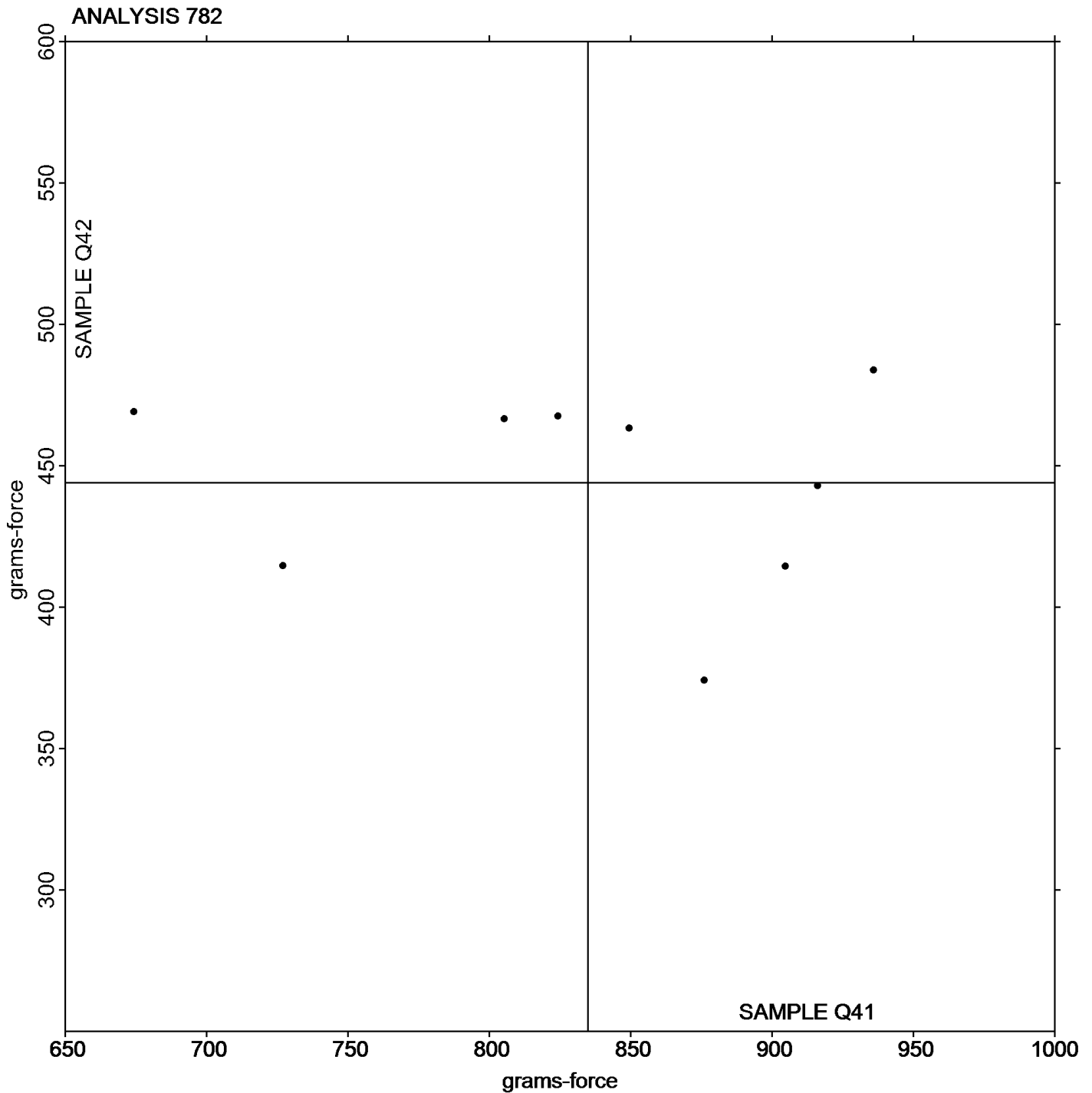
Sample Q41: LDPE & Sample Q42: LDPE

**Key to Instrument Codes Reported by Participants**

EM	Elmendorf Tear Tester	SZ	Textest FX 3700
TE	Thwing-Albert Pro Tear	TM	TMI No. 83-1100



Grand Mean Sample Q41: 834.85 grams-force    Grand Mean Sample Q42: 444.08 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 #101

## Analysis 785

1st Qtr 2017

### Percent Haze of Film

WebCode	Data Flag	Sample D41			Sample D42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2LRZVK		24.113	-0.101	-0.08	11.763	-1.115	-1.84	BJ
2WD43J		25.610	1.396	1.15	13.009	0.132	0.22	BH
7A3G2C		23.988	-0.226	-0.19	14.063	1.185	1.96	BJ
7YHK6V		23.154	-1.060	-0.87	13.180	0.303	0.50	XR
8Y2LQE		23.563	-0.651	-0.53	12.975	0.098	0.16	BJ
BEZ3ZU		24.764	0.550	0.45	13.754	0.877	1.45	XR
C4DPGB		24.625	0.411	0.34	12.438	-0.440	-0.73	BJ
CFAVBA		21.311	-2.903	-2.38	12.938	0.060	0.10	XR
D63Q34		26.713	2.499	2.05	13.125	0.248	0.41	DA
F9T9NK		23.963	-0.251	-0.21	12.655	-0.222	-0.37	BJ
FBNKW9		23.663	-0.551	-0.45	12.150	-0.727	-1.20	BJ
FUFQ3E	*	20.853	-3.361	-2.76	13.024	0.147	0.24	HL
GZJT6U		24.963	0.749	0.61	13.575	0.698	1.15	BJ
HFQE4A		24.313	0.099	0.08	12.363	-0.515	-0.85	BT
HJRE7R		23.988	-0.226	-0.19	13.250	0.373	0.62	BJ
HMP2TL		25.513	1.299	1.07	12.588	-0.290	-0.48	BJ
HQPCM2		25.588	1.374	1.13	13.513	0.635	1.05	BJ
J32VNB		24.650	0.436	0.36	12.338	-0.540	-0.89	BJ
L7A2AT		24.400	0.186	0.15	13.350	0.473	0.78	BJ
LUJ2NY		24.275	0.061	0.05	13.663	0.785	1.30	DS
MZJBKX		23.999	-0.215	-0.18	12.613	-0.265	-0.44	BJ
TQPVW7		23.913	-0.301	-0.25	11.638	-1.240	-2.05	BJ
TXRX8Z		25.075	0.861	0.71	12.625	-0.252	-0.42	BJ
UZUDVH		24.563	0.349	0.29	12.200	-0.677	-1.12	BG
WKD2CL		24.800	0.586	0.48	13.200	0.323	0.53	BJ
ZBR8PE		23.210	-1.004	-0.82	12.820	-0.057	-0.09	HC

#### Summary Statistics

	Sample D41	Sample D42
<b>Grand Means</b>	24.2139 Percent	12.8771 Percent
<b>Std Dev Btwn Labs</b>	1.2188 Percent	0.6046 Percent

Statistics based on 26 of 26 reporting participants

Sample D41: LDPE & Sample D42: LDPE



# Plastics Interlaboratory Testing Program

Report #101

Analysis 785

1st Qtr 2017

Percent Haze of Film

## Key to Instrument Codes Reported by Participants

<b>BG</b>	BYK-Gardner/Pacific Scientific	<b>BH</b>	BYK-Gardner/Pacific Scientific Model XL-211
<b>BJ</b>	BYK-Gardner Haze-Gard Plus	<b>BT</b>	BYK Gardner TCS Series
<b>DA</b>	Datacolor SF 600 Series	<b>DS</b>	Diffusion Systems EEL 57D Hazemeter
<b>HC</b>	Hunterlab ColorQuest	<b>HL</b>	Hunterlab Ultrascan
<b>XR</b>	X-Rite Spectrocolorimeter (any model)		



# Plastics Interlaboratory Testing Program

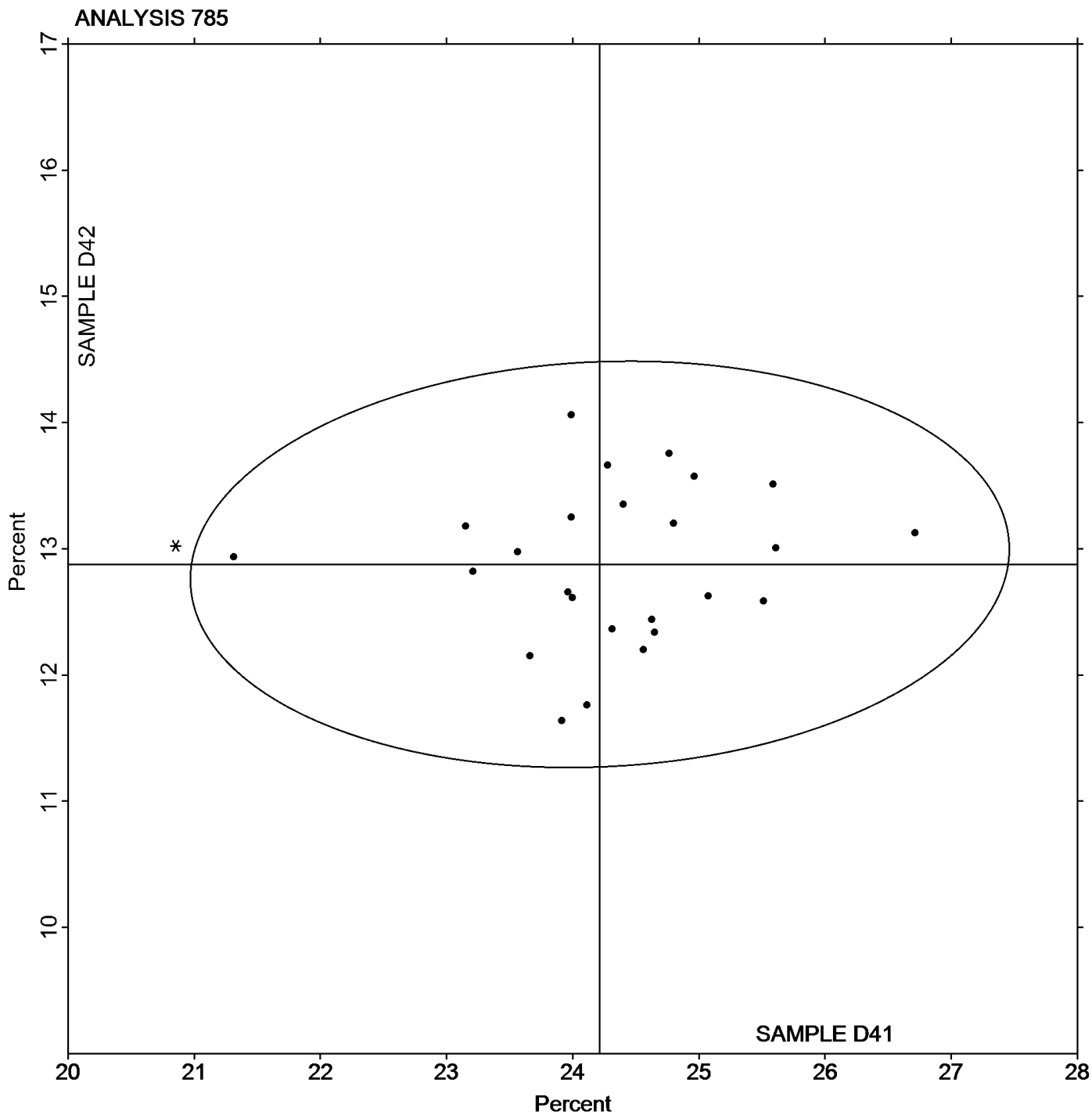
Report #101

Analysis 785

1st Qtr 2017

Percent Haze of Film

Grand Mean Sample D41: 24.214 Percent    Grand Mean Sample D42: 12.877 Percent





**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 786**

**1st Qtr 2017**

**Total Luminous transmittance of film**

WebCode	Data Flag	Sample D41			Sample D42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2LRZVK		92.10	-0.09	-0.08	91.54	-0.49	-0.45	BJ
2WD43J		91.23	-0.97	-0.81	91.10	-0.92	-0.86	BH
7A3G2C	X	73.30	-18.89	-15.88	78.63	-13.40	-12.53	BJ
7YHK6V		91.40	-0.79	-0.67	91.15	-0.88	-0.82	XR
8Y2LQE		92.95	0.76	0.64	92.78	0.75	0.70	BJ
BEZ3ZU		91.62	-0.58	-0.48	91.14	-0.88	-0.83	XR
C4DPGB		93.48	1.28	1.08	93.14	1.11	1.04	BJ
CFAVBA		91.16	-1.04	-0.87	90.71	-1.31	-1.23	XR
D63Q34		89.60	-2.59	-2.18	89.88	-2.14	-2.00	DA
F9T9NK		92.57	0.38	0.32	92.44	0.42	0.39	BJ
FBNKW9		92.63	0.43	0.36	92.54	0.51	0.48	BJ
FUFQ3E		89.69	-2.51	-2.11	90.10	-1.92	-1.80	HL
GZJT6U		94.11	1.92	1.61	93.71	1.69	1.58	BJ
HFQE4A		92.90	0.71	0.59	92.91	0.89	0.83	BJ
HJRE7R		93.61	1.42	1.19	93.34	1.31	1.23	BJ
HMP2TL		93.11	0.92	0.77	92.86	0.84	0.79	BJ
HQPCM2		93.11	0.92	0.77	92.79	0.76	0.72	BJ
J32VNB		93.15	0.96	0.80	93.03	1.00	0.94	BJ
L7A2AT		91.59	-0.61	-0.51	91.43	-0.60	-0.56	BJ
MZJBKX		92.95	0.76	0.64	92.70	0.67	0.63	BJ
TQPVW7		92.30	0.11	0.09	92.03	0.00	0.00	BJ
TXRX8Z		91.20	-0.99	-0.83	90.99	-1.04	-0.97	BJ
UZUDVH		92.94	0.74	0.63	92.71	0.69	0.64	XX
ZBR8PE		91.04	-1.15	-0.97	91.54	-0.49	-0.45	HC

Summary Statistics		
	Sample D41	Sample D42
<b>Grand Means</b>	92.193 Percent	92.023 Percent
<b>Std Dev Btwn Labs</b>	1.190 Percent	1.069 Percent
Statistics based on 23 of 24 reporting participants		

Sample D41: LDPE & Sample D42: LDPE

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

7A3G2C (X) - Data for both samples are low. Inconsistent within the determinations of both samples.



# Plastics Interlaboratory Testing Program

## Analysis 786

### Total Luminous transmittance of film

Report #101

1st Qtr 2017

#### 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>DA</b>	Datacolor SF 600 Series	<b>HC</b>	Hunterlab ColorQuest
<b>HL</b>	Hunterlab Ultrascan XE	<b>XR</b>	X-Rite Spectrocolorimeter (any model)
<b>XX</b>	Instrument make/model not specified by lab		



# Plastics Interlaboratory Testing Program

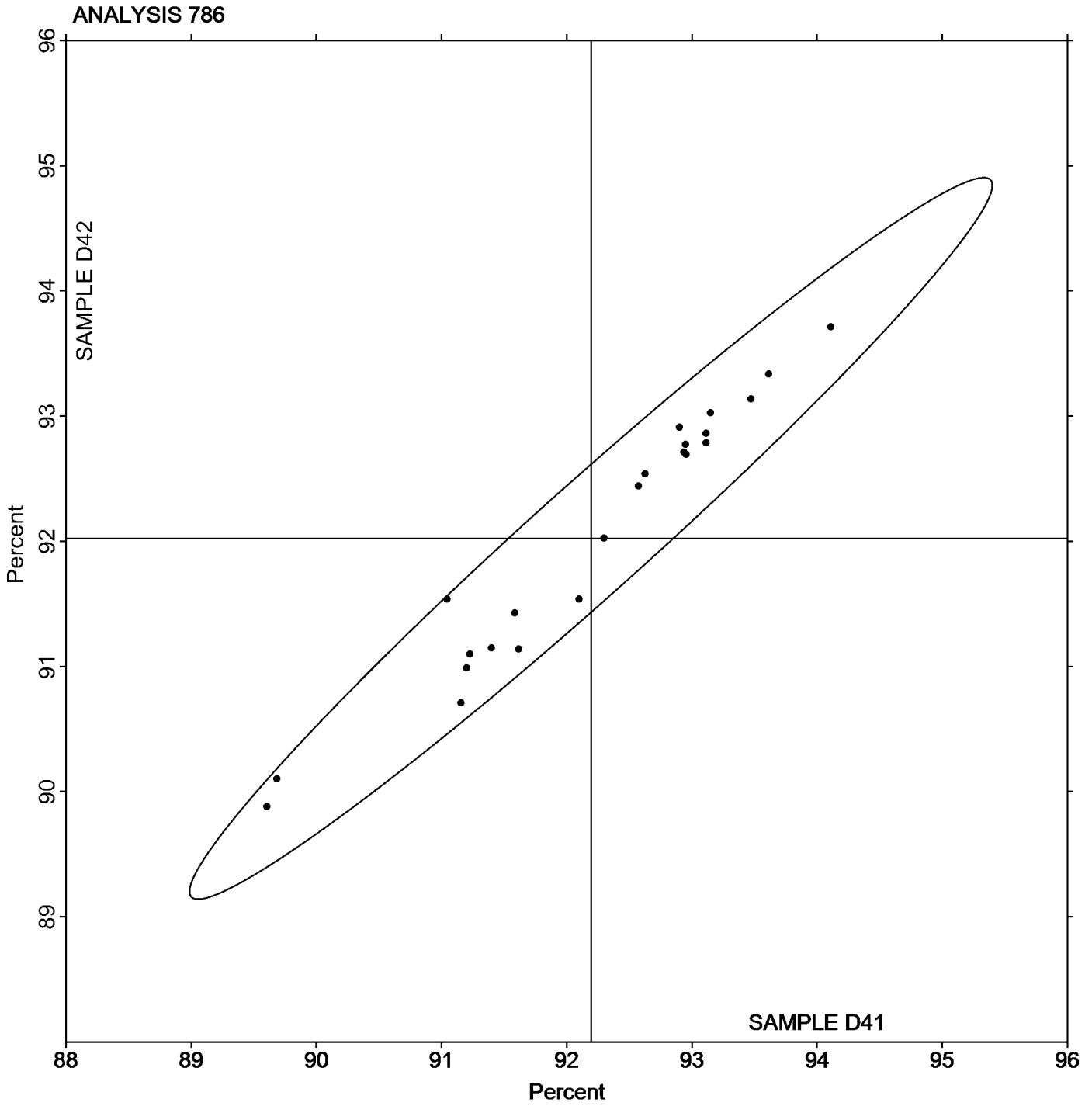
## Analysis 786

### Total Luminous transmittance of film

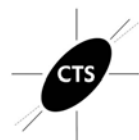
Report #101

1st Qtr 2017

Grand Mean Sample D41: 92.193 Percent    Grand Mean Sample D42: 92.023 Percent







# Plastics Interlaboratory Testing Program

Report #101

## Analysis 790

1st Qtr 2017

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

WebCode	Data Flag	Sample S41			Sample S42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
2AHJTN		5.02	-0.45	-0.95	4.96	-0.50	-1.06	TO
2HAZF6		5.83	0.36	0.76	5.81	0.35	0.74	TO
32GMG3		5.76	0.29	0.61	5.68	0.22	0.47	TO
36F7GF		5.24	-0.22	-0.47	5.26	-0.20	-0.43	CE
3M4EK8		5.07	-0.40	-0.85	5.46	0.00	0.01	TO
4HF7MP		4.93	-0.54	-1.13	5.34	-0.12	-0.26	WZ
7G39D6		5.67	0.20	0.43	5.54	0.08	0.16	XX
84TQL4	X	1.95	-3.52	-7.39	1.99	-3.47	-7.35	TM
8H9TZ6		5.44	-0.03	-0.06	5.15	-0.31	-0.65	XX
8KG7MF	*	6.27	0.80	1.68	6.63	1.17	2.47	CS
8M8AFM	X	0.23	-5.24	-11.02	0.22	-5.24	-11.09	IN
AT442D		5.94	0.47	0.99	5.94	0.47	1.00	WZ
BCCVX8		5.48	0.01	0.02	5.13	-0.33	-0.70	TO
BKQCCF		4.89	-0.58	-1.22	4.90	-0.57	-1.20	BA
CC6M4N		5.17	-0.30	-0.63	5.03	-0.44	-0.92	TO
EYFKKM		5.59	0.12	0.26	5.58	0.12	0.25	CE
FBNKW9		5.25	-0.22	-0.46	5.28	-0.18	-0.39	TY
FMCCA6		4.99	-0.48	-1.00	5.15	-0.31	-0.67	TO
G3PFFD		5.48	0.01	0.01	5.67	0.21	0.45	XX
GG8976	*	6.49	1.03	2.15	6.83	1.37	2.90	CE
HFQE4A		5.44	-0.03	-0.06	5.36	-0.10	-0.22	TM
HJRE7R		5.00	-0.47	-0.98	5.03	-0.43	-0.92	TO
HMP2TL		5.15	-0.32	-0.67	5.27	-0.19	-0.41	CE
J6Q398		5.45	-0.02	-0.05	5.70	0.24	0.50	TO
JDXYR6	X	1.62	-3.85	-8.08	1.69	-3.77	-7.99	TO
JEBY32		5.09	-0.37	-0.79	5.05	-0.42	-0.88	TO
JYDJKW		5.60	0.13	0.27	5.27	-0.19	-0.41	TO
KBBK4V	X	1.73	-3.74	-7.86	1.79	-3.67	-7.77	XX
L3BAYW		5.33	-0.14	-0.30	5.46	0.00	0.00	TO
L7A2AT		5.30	-0.17	-0.35	5.63	0.17	0.36	TO
LQWMYP		5.75	0.28	0.59	5.59	0.12	0.26	CE
LRLZBD		5.51	0.04	0.09	5.31	-0.15	-0.31	TO
MQBA9Q		5.65	0.18	0.39	5.60	0.14	0.29	TO
PF738N	*	6.94	1.47	3.09	6.73	1.27	2.69	TO
RL6AVM		5.21	-0.26	-0.55	5.08	-0.39	-0.82	TM



**Plastics Interlaboratory Testing Program**

**Report #101**

**Analysis 790**

**1st Qtr 2017**

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

WebCode	Data Flag	Sample S41			Sample S42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
RL74ET		5.46	-0.01	-0.02	5.69	0.23	0.49	TM
ULW9MJ		5.63	0.16	0.34	5.74	0.28	0.59	TM
V9MFQL		4.35	-1.12	-2.35	4.63	-0.83	-1.76	TO
WE7D26		5.52	0.05	0.10	5.27	-0.20	-0.41	XX
WFZ48J	X	0.76	-4.71	-9.90	0.75	-4.72	-9.98	TO
WGVRG3		5.56	0.10	0.20	5.36	-0.10	-0.21	TM
WKD2CL	X	5.76	0.29	0.61	4.32	-1.14	-2.41	TM
WYR8NK		6.11	0.64	1.35	5.86	0.40	0.85	TO
Y36RPT		5.26	-0.21	-0.45	5.32	-0.14	-0.29	CE
YD7KCL		5.62	0.15	0.31	5.25	-0.21	-0.44	TM
YR9LVU		5.58	0.11	0.23	5.61	0.15	0.31	TO
Z8RYHJ		5.49	0.02	0.04	5.16	-0.31	-0.65	TM
ZBR8PE		5.70	0.23	0.49	5.61	0.14	0.31	CE
ZWC4AD		6.02	0.56	1.17	5.91	0.45	0.96	CE
ZZUA2E		4.41	-1.06	-2.23	4.48	-0.98	-2.07	TO

Summary Statistics		
	Sample S41	Sample S42
<b>Grand Means</b>	5.469 ft.lbf/in	5.461 ft.lbf/in
<b>Stnd Dev Btw Labs</b>	0.476 ft.lbf/in	0.472 ft.lbf/in
Statistics based on 44 of 50 reporting participants		

Sample S41: ABS & Sample S42: ABS

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

- 84TQL4 (X) - Data for both samples are low. Possible Systematic Error.
- KBBK4V (X) - Data for both samples are low. Possible Systematic Error.
- WKD2CL (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample S42.
- 8M8AFM (X) - Data for both samples are low. Possible Systematic Error.
- JDXR6 (X) - Data for both samples are low. Possible Systematic Error.
- WFZ48J (X) - Data for both samples are low.



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 790

1st Qtr 2017

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

#### Key to Instrument Codes Reported by Participants

BA	Baldwin	CE	Ceast
CS	CSI	IN	Instron
TM	TMI	TO	Tinius Olsen
TY	Toyoseiki	WZ	Zwick
XX	Instrument manufacturer not specified by lab		



# Plastics Interlaboratory Testing Program

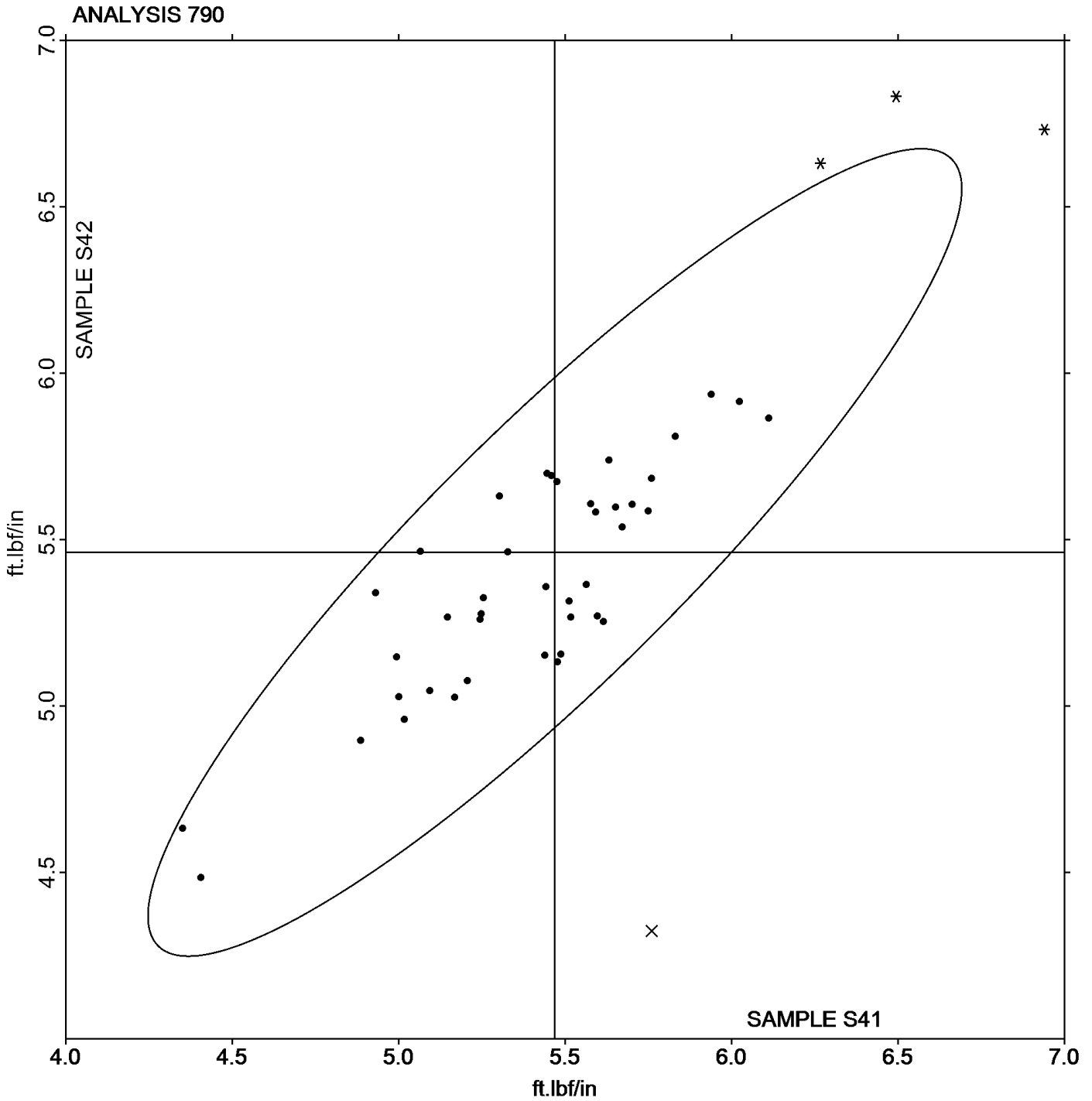
## Analysis 790

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

Report #101

1st Qtr 2017

Grand Mean Sample S41: 5.4690 ft.lbf/in    Grand Mean Sample S42: 5.4614 ft.lbf/in





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 791

1st Qtr 2017

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

WebCode	Data Flag	Sample Z41			Sample Z42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24CQUJ		7.46820	-0.40405	-0.87	7.04980	-0.79649	-1.79	TM
6PXRE9		7.58600	-0.28625	-0.62	7.83000	-0.01629	-0.04	WZ
74E8YL		7.50400	-0.36825	-0.79	7.76000	-0.08629	-0.19	TO
97RN6T		8.42140	0.54915	1.19	7.85880	0.01251	0.03	XX
BJFANT		7.90000	0.02775	0.06	7.96000	0.11371	0.26	XX
BT3XDB		7.35600	-0.51625	-1.11	7.20400	-0.64229	-1.44	TM
DX67UG		7.26940	-0.60285	-1.30	7.03140	-0.81489	-1.83	TM
FBNKW9		7.56600	-0.30625	-0.66	7.61000	-0.23629	-0.53	XX
FNNJK7		7.81400	-0.05825	-0.13	7.88400	0.03771	0.08	TO
L3BAYW		8.50600	0.63375	1.37	8.65400	0.80771	1.82	TO
LRLZBD		7.72020	-0.15205	-0.33	7.55840	-0.28789	-0.65	TO
NM7366		7.86600	-0.00625	-0.01	7.87400	0.02771	0.06	CE
PUK9EE		8.03200	0.15975	0.34	8.11600	0.26971	0.61	TM
RFGNPL		8.43200	0.55975	1.21	8.69800	0.85171	1.91	IN
RGN4YD		8.29880	0.42655	0.92	8.23960	0.39331	0.88	CE
TPZHGA		7.65400	-0.21825	-0.47	7.68600	-0.16029	-0.36	TO
TZG6RX		7.80800	-0.06425	-0.14	7.65400	-0.19229	-0.43	CE
UZUDVH	*	9.34200	1.46975	3.17	8.76000	0.91371	2.05	TM
V4Q973		7.82200	-0.05025	-0.11	7.82200	-0.02429	-0.05	TO
WNRN46		7.89800	0.02575	0.06	7.94400	0.09771	0.22	TM
WX3XHR		7.64000	-0.23225	-0.50	7.71800	-0.12829	-0.29	WZ
YEHYFY		7.71000	-0.16225	-0.35	7.62000	-0.22629	-0.51	TO
Z8RYHJ		7.34600	-0.52625	-1.14	7.67300	-0.17329	-0.39	TM
ZXPGA2		7.97400	0.10175	0.22	8.10600	0.25971	0.58	CE

Summary Statistics		Sample Z41	Sample Z42
<b>Grand Means</b>		7.872250 kJ/m <sup>2</sup>	7.846292 kJ/m <sup>2</sup>
<b>Std Dev Btwn Labs</b>		0.463377 kJ/m <sup>2</sup>	0.444812 kJ/m <sup>2</sup>
Statistics based on 24 of 24 reporting participants			

Sample Z41: HIPS & Sample Z42: HIPS



# Plastics Interlaboratory Testing Program

Report #101

Analysis 791

1st Qtr 2017

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

## Key to Instrument Codes Reported by Participants

CE Ceast

TM TMI

WZ Zwick

IN Instron

TO Tinius Olsen

XX Instrument manufacturer not specified by lab



# Plastics Interlaboratory Testing Program

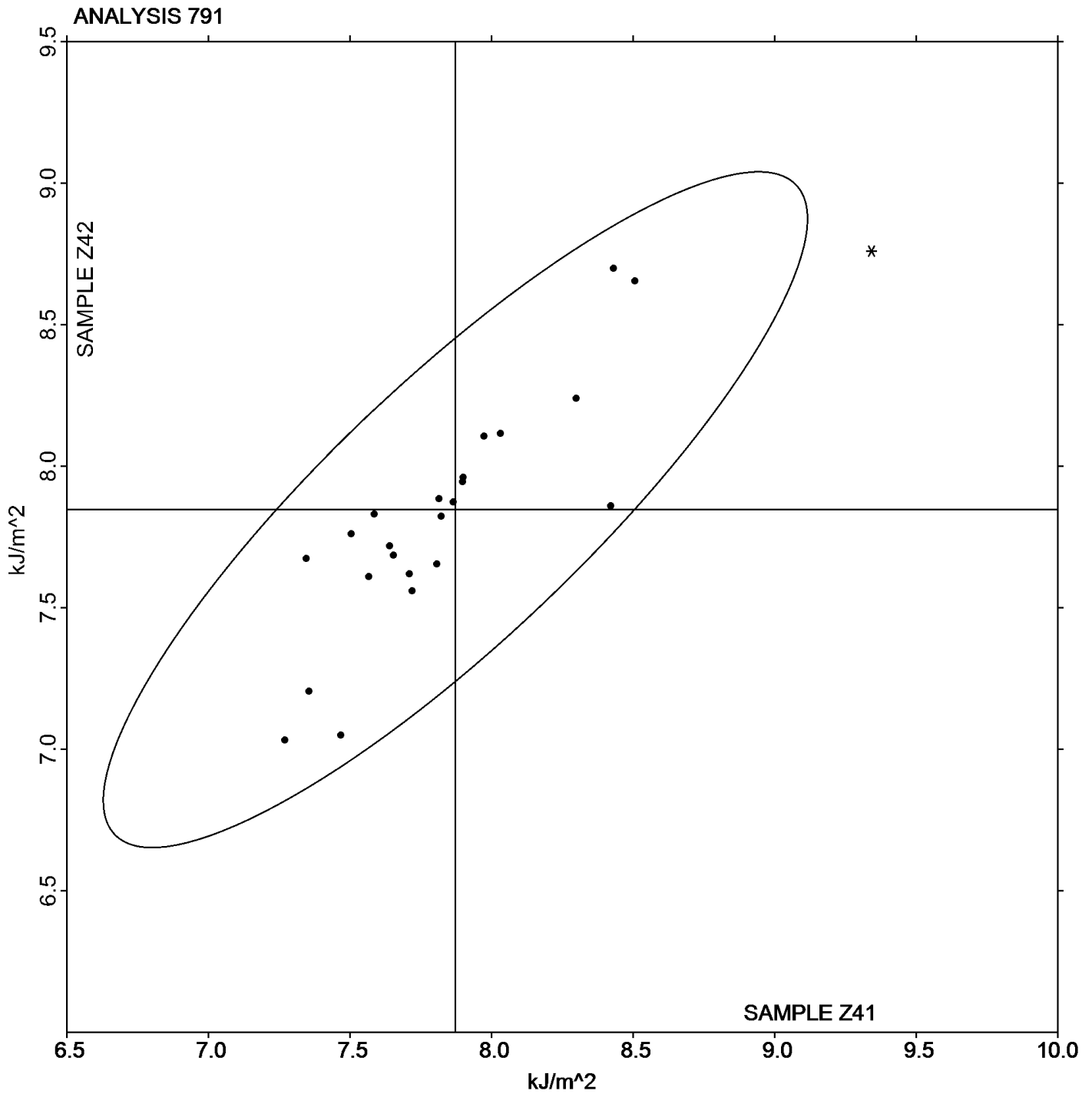
Report #101

## Analysis 791

1st Qtr 2017

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

Grand Mean Sample Z41:  $7.8723 \text{ kJ/m}^2$  Grand Mean Sample Z42:  $7.8463 \text{ kJ/m}^2$





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 792

1st Qtr 2017

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

WebCode	Data Flag	Sample M41			Sample M42			Instr Code
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV	
24CQUJ		7.58	-0.06	-0.13	7.77	0.14	0.33	TM
2F6CZE		7.60	-0.04	-0.09	7.43	-0.20	-0.47	WZ
2HAZF6		7.90	0.26	0.58	8.19	0.56	1.32	TO
2MP944		8.01	0.37	0.84	7.69	0.06	0.14	TM
36F7GF		7.45	-0.19	-0.43	7.46	-0.17	-0.41	CE
6PXRE9		7.62	-0.02	-0.04	7.68	0.05	0.12	WZ
7WC3YM		7.06	-0.58	-1.30	6.99	-0.64	-1.52	CE
7WXTWF		7.84	0.20	0.45	7.80	0.17	0.41	WZ
8H9TZ6		7.18	-0.46	-1.03	7.32	-0.31	-0.74	XX
B2DRFC		7.70	0.06	0.14	7.67	0.04	0.09	XX
BJFANT		7.34	-0.30	-0.67	7.36	-0.27	-0.65	XX
CK6MH7		7.47	-0.17	-0.39	7.27	-0.36	-0.86	TM
DX67UG	X	5.82	-1.82	-4.11	6.04	-1.59	-3.77	TM
EYFKKM		7.33	-0.31	-0.70	7.43	-0.20	-0.48	CE
FBNKW9		7.65	0.01	0.02	7.58	-0.05	-0.12	TY
GG8976		7.41	-0.23	-0.52	7.03	-0.60	-1.42	CE
HAGF6M		7.34	-0.30	-0.68	7.60	-0.03	-0.08	IN
HMP2TL		7.51	-0.13	-0.29	7.55	-0.08	-0.18	CE
JTN299		7.28	-0.36	-0.81	7.24	-0.39	-0.93	CE
JYDJKW	*	7.37	-0.27	-0.60	8.08	0.45	1.08	TO
KJ4K9U		8.20	0.56	1.26	8.12	0.49	1.16	TO
L3BAYW	*	8.74	1.10	2.48	8.02	0.39	0.92	TO
L4FGZE		8.22	0.58	1.32	7.96	0.33	0.78	CE
LNPBBU		7.62	-0.02	-0.04	7.74	0.11	0.26	XX
LP322P	*	8.85	1.21	2.73	8.85	1.22	2.90	WZ
PUK9EE		7.65	0.01	0.03	7.56	-0.07	-0.16	TM
R3947V		7.76	0.12	0.27	7.44	-0.19	-0.46	TM
TPZHGA		7.67	0.03	0.07	7.69	0.06	0.15	TO
TZG6RX		7.69	0.05	0.12	7.90	0.27	0.65	CE
V4Q973		7.86	0.22	0.50	7.71	0.08	0.19	TO
WE7D26		7.02	-0.62	-1.40	6.83	-0.80	-1.89	XX
WKD2CL		8.09	0.45	1.01	8.52	0.89	2.11	TM
WX3XHR		7.45	-0.19	-0.44	7.32	-0.31	-0.73	WZ
YEHYFY		7.67	0.03	0.07	7.52	-0.11	-0.27	TO
Z8RYHJ		6.61	-1.03	-2.33	7.11	-0.52	-1.23	TM





# Plastics Interlaboratory Testing Program

Report #101

## Analysis 792

1st Qtr 2017

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

Summary Statistics		
	<u>Sample M41</u>	<u>Sample M42</u>
<b>Grand Means</b>	7.639 kJ/m <sup>2</sup>	7.629 kJ/m <sup>2</sup>
<b>Stnd Dev Btwn Labs</b>	0.444 kJ/m <sup>2</sup>	0.421 kJ/m <sup>2</sup>
Statistics based on 34 of 35 reporting participants		

Sample M41: HIPS & Sample M42: HIPS

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

DX67UG (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample M42.

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

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



# Plastics Interlaboratory Testing Program

Report #101

## Analysis 792

1st Qtr 2017

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

Grand Mean Sample M41:  $7.6393 \text{ kJ/m}^2$  Grand Mean Sample M42:  $7.6292 \text{ kJ/m}^2$

