

Here is a sample of an Individual Report sent to participants in the CTS Plastics Interlaboratory Testing Program. You can view the Summary Report of all participants' data on this Website.

Company Name
123 Main Street
Your Town, Your State 12345

**This is your Performance Analysis Report for the Plastics Interlaboratory Program
Cycle # 49, 1st Qtr 2004**

For guidance on interpreting this report, please refer to the [Report Guide](#), located in the Plastics section of our website www.collaborativetesting.com. If you need assistance with interpreting the statistics and terms used in the report, please reference the [Key to Individual Reports](#) that can be found on the reverse of this page. As always, you may contact the Plastics Program Analyst for assistance with any aspect of the program.

On each "Performance Analysis Report" there is a WebCode printed in the first column. Use your WebCodes to locate your results in the Summary Report that is now available on our website. In order to maintain confidentiality, your Web Code will be unique for each analysis and will change with each report.

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Key to Individual Reports in the Plastics Program

- Lab Code** - A permanent laboratory identification number used to maintain information on a confidential basis.
- WebCode** - A temporary assigned laboratory identification number used to ensure lab confidentiality while permitting a lab to locate its data in the Summary Report published on the CTS website www.collaborativetesting.com. The WebCode will be unique for each analysis and cycle.
- Lab Mean** - The average of the test determinations obtained by the participant.
- Grand Mean** - The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.
- Between-Lab Standard Deviation** - An indication of the precision of measurement between the laboratories.
- The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
- Comparative Performance Value** - An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa).
- Data Flag** - DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following table for an explanation of each symbol:

Data Flag	Statistically Included/Excluded	<u>ACTION REQUIRED</u>
*	INCLUDED	CAUTION -review testing procedure and monitor future results. Results fall outside the drawn 95% ellipse but within a 99% ellipse that is calculated but not drawn. Labs flagged with an * do not typically receive a specific note regarding the flag. If this error is repeated in future rounds, however, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required. Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data is excluded.
M	EXCLUDED	PROCEED - lab was unable to report data for at least one sample. However, a lab receiving two or more M flags for a test may need to stop and review its testing procedures.

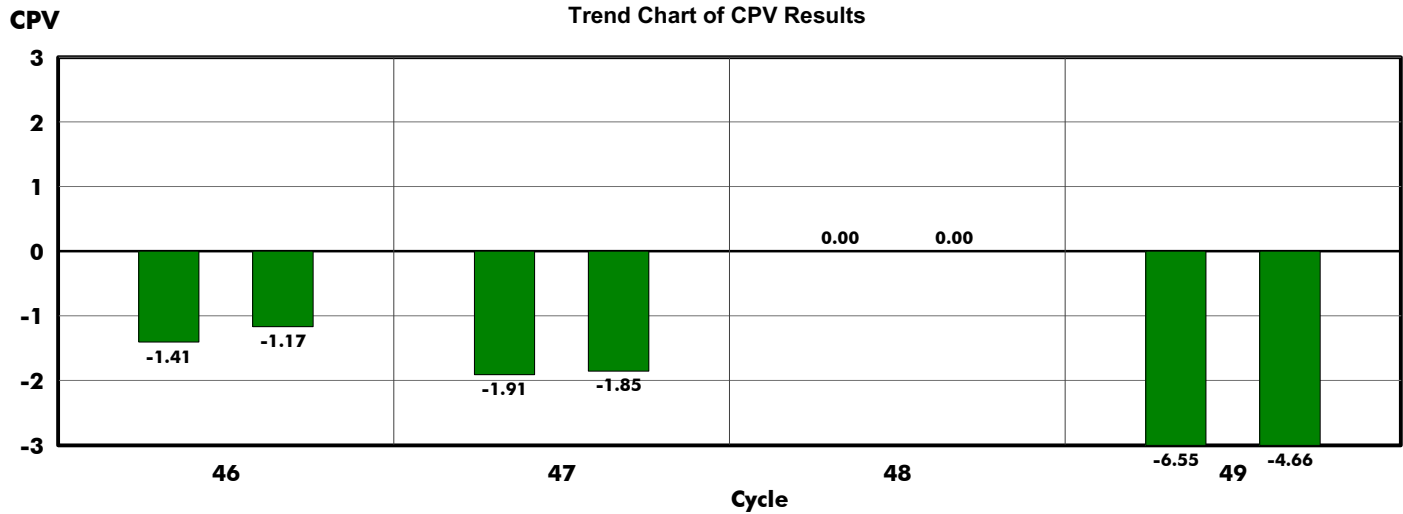
Graph

For each laboratory, the **Lab Mean** for the second sample (y-axis) is plotted against the **Lab Mean** for the first sample (x-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 included 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. Labs not receiving a data flag appear as points on the plot. If both Lab Means fall within the boundaries of the plot, your data point or Data Flag will be indicated by a small circle.



Performance Analysis Report - Trend Chart
Analysis #704: Tensile Stress at Yield
 using ASTM D638
 data in units of psi

Lab Code: U****A



A maximum of 4 test cycles are printed on this page. If there are fewer sets of bars than the maximum and the laboratory was enrolled for all cycles, then one of the following situations occurred: lab did not submit data for a particular test/testing cycle or the data sheets were received late.

WebCode	Test Cycle	Sample Code	$\left(\begin{matrix} \text{Lab Mean} \\ - \\ \text{Grand Mean} \end{matrix} \right) \div \text{Between Lab Std Dev} = \text{CPV}$		CPV	Data Flag (if assigned)	
AAAAA1	46	F29	9,050.4	9,214.03	116.43	-1.41	61 of 74 labs included
		F30	8,992.4	9,124.43	113.04	-1.17	
Testing Date: 2nd Qtr 2003			Sample F29: PC		Sample F30: PC		
BBBBB1	47	F31	6,361.4	6,615.79	133.37	-1.91	76 of 81 labs included
		F32	7,518.8	7,807.80	156.06	-1.85	
Testing Date: 3rd Qtr 2003			Sample F31: ABS		Sample F32: ABS		
CCCCC1	48	F33	No data reported for this sample.				
		F34	No data reported for this sample.				
Testing Date: 4th Qtr 2003			Sample F33: ABS/PC		Sample F34: ABS/PC		
DDDDD1	49	F35	3,330.1	4,141.66	123.82	-6.55	55 of 62 labs included
		F36	2,860.2	3,328.20	100.51	-4.66	
Testing Date: 1st Qtr 2004			Sample F35: HIPS		Sample F36: HIPS		

Action Item ! Your performance for this cycle was assigned an X Data Flag. Analyst Comment: Extremely low data for all samples.

Sample Report

Performance Analysis Report - Current Cycle

Analysis #704: Tensile Stress at Yield

Test Cycle 49 - 1st Qtr 2004

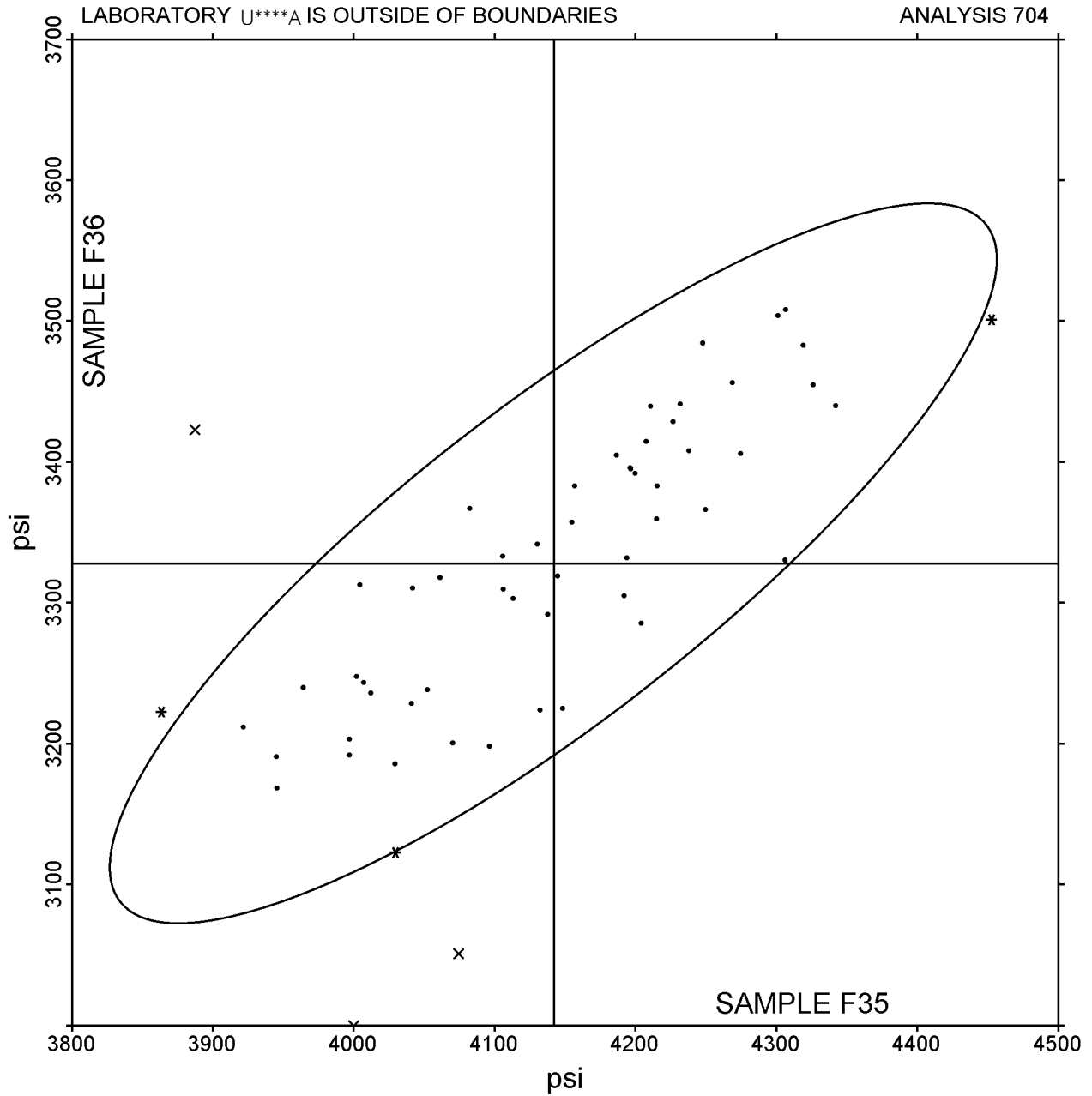
Data in units of: psi

Lab Code: U****A

WebCode: DDDDD1

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Sample Report



WebCode	Data Flag	Sample F35			Sample F36		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

DDDDD1	X	3,330.1	-811.6	-6.55	2,860.2	-468.0	-4.66
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Consensus Results (all laboratories)

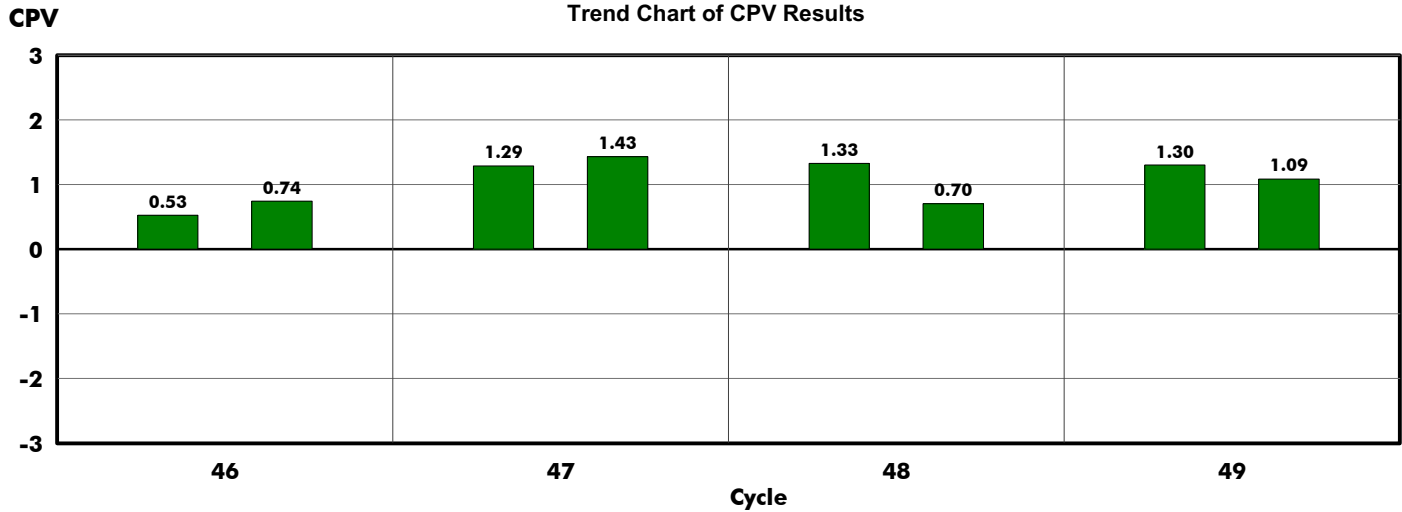
Grand Means	4,141.66 psi	3,328.20 psi
Btwn Lab Standard Deviation	123.82 psi	100.51 psi

Consensus statistics based on 55 of 62 reporting participants



Performance Analysis Report - Trend Chart
Analysis #712: Temperature of Deflection (1.80 MPa)
 using ISO 75, Method Af
 data in units of Degrees C

Lab Code: U****A



A maximum of 4 test cycles are printed on this page. If there are fewer sets of bars than the maximum and the laboratory was enrolled for all cycles, then one of the following situations occurred: lab did not submit data for a particular test/testing cycle or the data sheets were received late.

$$\text{WebCode} \quad \text{Test Cycle} \quad \text{Sample Code} \quad \left(\begin{array}{cc} \text{Lab Mean} & - & \text{Grand Mean} \end{array} \right) \div \text{Between Lab Std Dev} = \text{CPV} \quad \text{Data Flag (if assigned)}$$

AAAAA2	46	N29	125.08	124.359	1.355	0.53	31 of 32 labs included
		N30	125.58	124.571	1.350	0.74	
Testing Date: 2nd Qtr 2003		Sample N29: PC		Sample N30: PC			

BBBBB2	47	N31	83.85	82.594	0.973	1.29	29 of 33 labs included
		N32	81.83	80.572	0.876	1.43	
Testing Date: 3rd Qtr 2003		Sample N31: ABS		Sample N32: ABS			

CCCCC2	48	N33	105.98	103.622	1.770	1.33	32 of 32 labs included
		N34	98.78	97.124	2.350	0.70	
Testing Date: 4th Qtr 2003		Sample N33: ABS/PC		Sample N34: ABS/PC			

DDDDD2	49	N35	78.25	76.571	1.290	1.30	30 of 33 labs included
		N36	75.20	73.919	1.180	1.09	
Testing Date: 1st Qtr 2004		Sample N35: HIPS		Sample N36: HIPS			

Sample Report

Performance Analysis Report - Current Cycle

Analysis #712: Temperature of Deflection (1.80 MPa)

Test Cycle 49 - 1st Qtr 2004

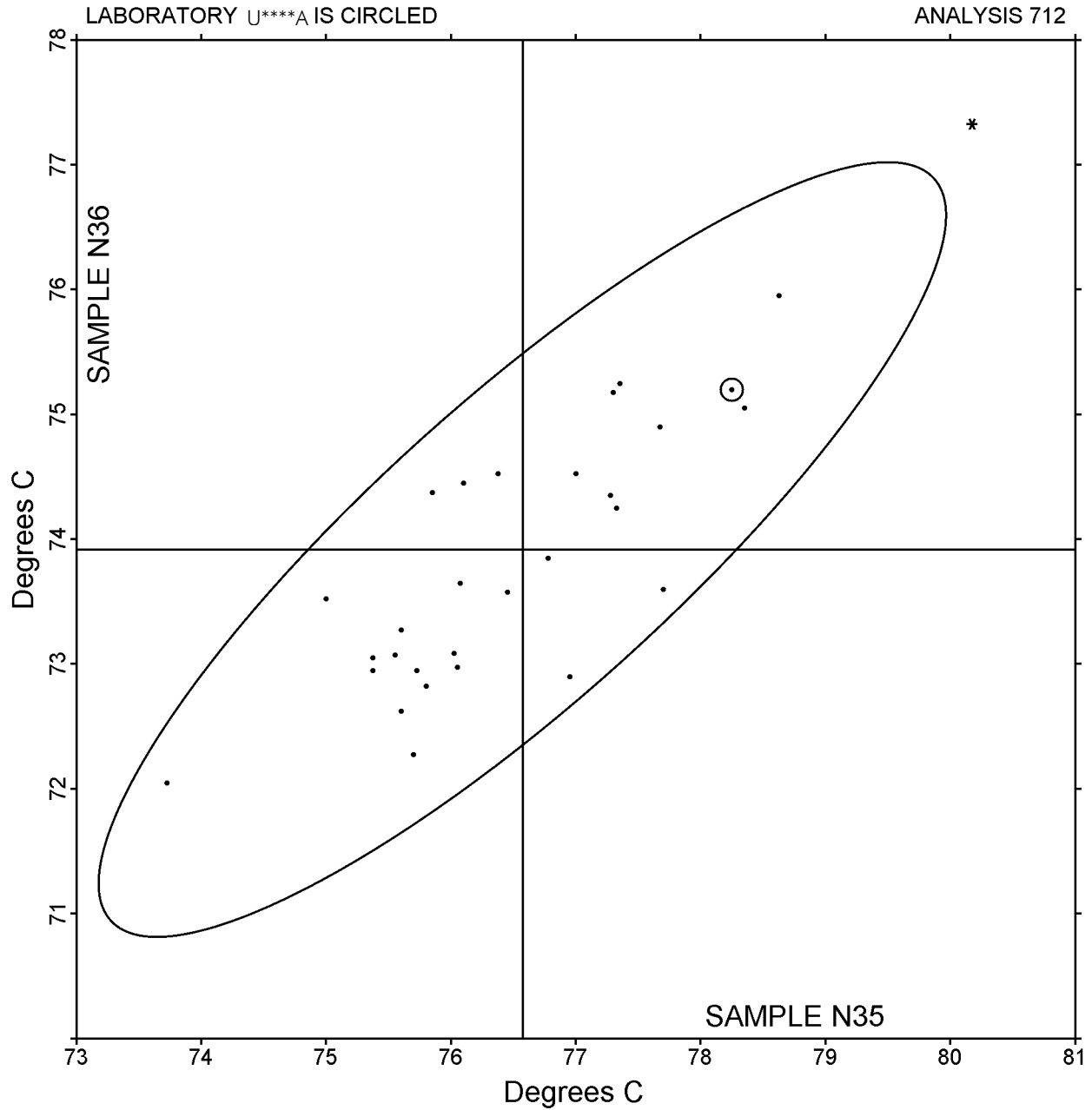
Data in units of: Degrees C

Lab Code: U****A

WebCode: DDDDD2

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Sample Report



WebCode	Data Flag	Sample N35			Sample N36		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

DDDDD2		78.25	1.68	1.30	75.20	1.28	1.09
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Consensus Results (all laboratories)

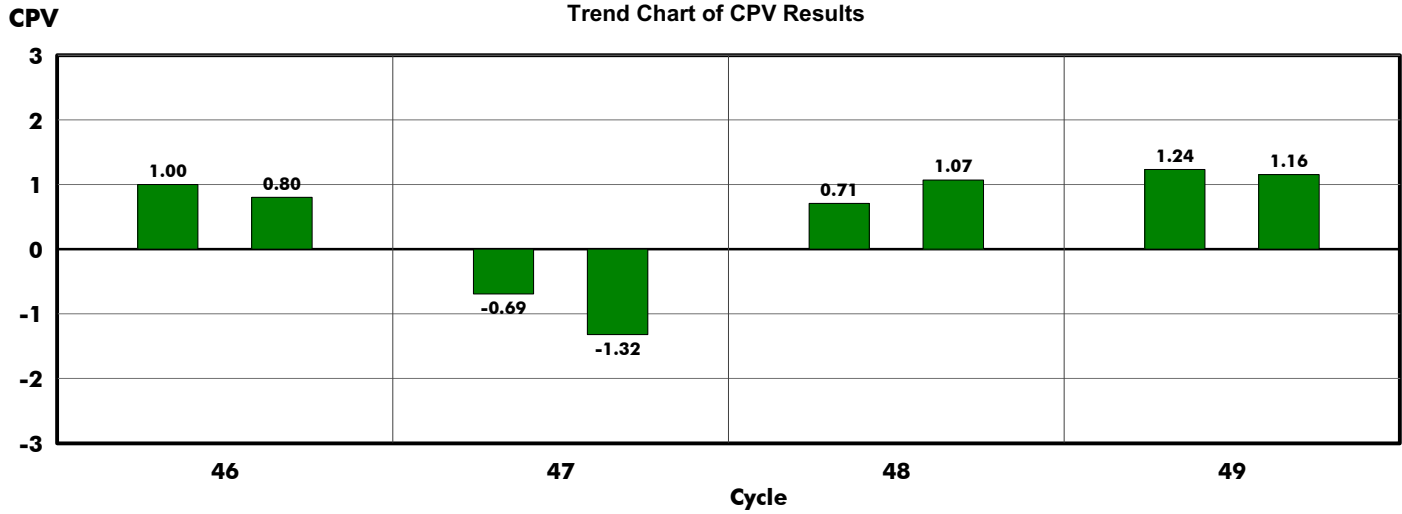
Grand Means	76.571 Degrees C	73.919 Degrees C
Btwn Lab Standard Deviation	1.290 Degrees C	1.180 Degrees C

Consensus statistics based on 30 of 33 reporting participants



Performance Analysis Report - Trend Chart
Analysis #750: Flow Rate (190C or 230C/2.16 kg)
 using ASTM D1238 or ISO 1133
 data in units of grams/10 mins

Lab Code: U****A



A maximum of 4 test cycles are printed on this page. If there are fewer sets of bars than the maximum and the laboratory was enrolled for all cycles, then one of the following situations occurred: lab did not submit data for a particular test/testing cycle or the data sheets were received late.

$$\text{WebCode} \quad \text{Test Cycle} \quad \text{Sample Code} \quad \left(\begin{array}{cc} \text{Lab Mean} & - & \text{Grand Mean} \end{array} \right) \div \text{Between Lab Std Dev} = \text{CPV} \quad \text{Data Flag (if assigned)}$$

AAAAA3	46	X29	8.14	7.873	0.267	1.00	131 of 150 labs included
		X30	7.72	7.539	0.219	0.80	
Testing Date: 2nd Qtr 2003		Sample X29: LDPE			Sample X30: LDPE		

BBBBB3	47	X31	5.15	5.356	0.295	-0.69	137 of 148 labs included
		X32	5.17	5.527	0.269	-1.32	
Testing Date: 3rd Qtr 2003		Sample X31: PP			Sample X32: PP		

CCCCC3	48	X33	13.62	13.204	0.579	0.71	122 of 135 labs included
		X34	12.50	11.751	0.699	1.07	
Testing Date: 4th Qtr 2003		Sample X33: PP			Sample X34: PP		

DDDDD3	49	X35	8.17	7.828	0.279	1.24	105 of 115 labs included
		X36	7.80	7.491	0.269	1.16	
Testing Date: 1st Qtr 2004		Sample X35: LDPE			Sample X36: LDPE		

Sample Report

Performance Analysis Report - Current Cycle

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

Test Cycle 49 - 1st Qtr 2004

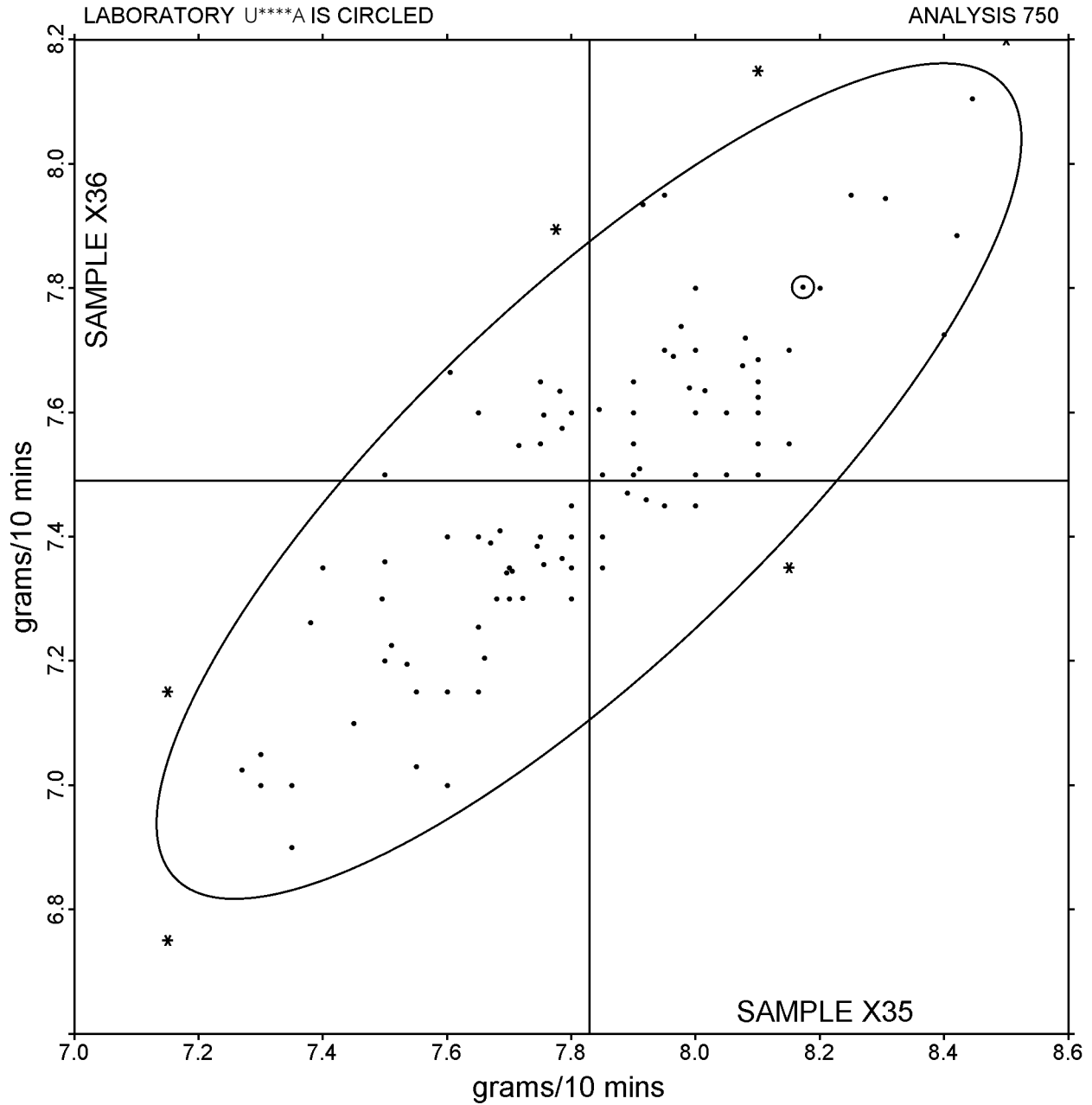
Data in units of: grams/10 mins

Lab Code: U****A

WebCode: DDDDD3

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Sample Report



WebCode	Data Flag	Sample X35			Sample X36		
		Lab Mean	Diff from Grand Mean	CPV	Lab Mean	Diff from Grand Mean	CPV

DDDDD3		8.17	0.34	1.24	7.80	0.31	1.16
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Consensus Results (all laboratories)

Grand Means	7.828 grams/10 mins	7.491 grams/10 mins
Btwn Lab Standard Deviation	0.279 grams/10 mins	0.269 grams/10 mins

Consensus statistics based on 105 of 115 reporting participants