

Key to Individual Reports for the Industry Programs

Lab Code	-	A permanent laboratory identification number used to maintain information on a confidential basis.
WebCode	-	A laboratory identification number that is unique for each cycle. WebCodes are used as a security step when participants claim data entry on the CTS Portal. They also allow for the publication of our Summary Reports on the CTS Website www.collaborativetesting.com which show all results from participating laboratories while ensuring the strictest of confidentiality. The WebCode assigned for each cycle are provided to laboratories at sample shipment or they can be found in the Performance Analysis Report.
Lab Mean	-	The average of the test determinations obtained by the participant. For the Rubber Program Tensile and Hardness analyses the average of the median values obtained for each sample set is used.
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.
ΔE	-	For Color Tests: The calculated total color difference between the two samples. For the Hunter L,a,b Analyses it is calculated in Hunter units (ΔE). For the L*,a*,b* analyses it is calculated in CIELAB units (ΔE*).
Difference from Grand Mean	-	The difference of the Lab Mean from the Grand Mean
Between-Lab Standard Deviation	-	An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).
Comparative Performance Value (CPV)	-	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 CPV is unit less indication of how well a laboratory's results agree with the other participants.
Data Flag	-	DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol.

Data Flag	Statistically Included/Excluded	ACTION REQUIRED
*	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 cycle may need to stop and review its testing procedures.

- Graph** - For each Analysis, the Lab Means for the second sample (y-axis) is plotted against the Lab Means 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. If your data received an “*” or “X” data flag, the plotted point is replaced with the data flag. Not all flagged data points can be represented on the graph.

Additional Terms in the Containerboard Reports

The Containerboard Program is unique in that it focuses on continual testing of one sample type per analysis instead of two samples. The statistical analysis has more cumulative data instead of bivariate analysis and graphs. Terms are similar to those in other Industry Programs, but will relate directly to the frequency of the testing. The basic terms are defined below, but many will be used in combination with a frequency identifier (weekly, wk, Month, etc.)

Laboratory Data

- Mean - The average of the test determinations obtained by the laboratory.
- SD - The sample standard deviation of the test determinations obtained by the laboratory.
- SD Wk - The standard deviation of all the laboratory's reported Weekly Means, including those flagged with an 'X'.
- SD Months - For the cumulative period, the standard deviation of the laboratory's Lab Means, including those flagged with an 'X'.
- Wks Includ - The number of weeks included in the cumulative period.
- Months - The number of months included in the cumulative period.

Consensus Data

- Mean - For each testing period, the average of the Means for all the included laboratories.
- Avg SD - For each testing period, the average of the SDs for all the included laboratories.
- SD btwn Labs - For each testing period, the standard deviation of the included laboratory Means about the Consensus Mean.
- SD btwn Wks - For the relevant testing period, the average of the laboratory between-week standard deviations (SD Wks) for all the included laboratories.
- AVG SD Month - The average of the laboratory between month standard deviations (SD Months) for all the included laboratories in the cumulative period.

Additional Terms

- Consistency (k) - Ratio of a laboratory's within-lab standard deviation (SD) to the corresponding average within-lab standard deviation (Avg SD)
- Constancy (c) - Ratio of a laboratory's SD Months/SD Wks to the corresponding Avg SD Months/SD btwn Wks.
- Labs Includ - The number of laboratories reporting data that do not receive an 'X' flag on their Mean for that weekly, month, or cumulative period.
- Labs Excl'd - The number of laboratories reporting data that were excluded from the calculation of the consensus data for that week because of outlying results.
- Labs not rcvd - The number of laboratories failing to report for that testing period.