Collaborative Testing Services, Inc.

Fasteners & Metals Interlaboratory Testing Program

Summary Report Cycle 125, 1st Qtr 2019

About the Metals Program About CTS Key to Tables and Graphs

ABOUT THE FASTENERS & METALS PROGRAM

Collaborative Testing Services operates and maintains the program for Fasteners and Metals as part of a series of Proficiency and Interlaboratory Testing Programs offered by CTS in cooperation with various associations for a wide range of industries. Personnel from the National Institute of Standards and Technology (formerly the National Bureau of Standards), Industrial Fasteners Institute (IFI), and the Naval Shipyard Laboratories provide technical guidance and advice to this program.

The purpose of the program is to give participating laboratories a means to compare periodically the level and uniformity of their testing with that of other laboratories in the industry. It also provides a realistic assessment of the state of fasteners and metals testing proficiency.

In each report, there is a summary of the statistics for the analysis and a graphical representation of the data for each test. 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 TO TABLES AND GRAPHS for an explanation of terms and guidelines to interpreting the results.

ABOUT CTS

Founded in 1971, 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 50 countries, currently participate in the CTS programs.
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Key for Fasteners & Metals Program Web Summary Report

WebCode - Assigned laboratory identification number(temporary)used to ensure lab confidentiality while permitting a lab to locate its data in the report published on the CTS website.

Lab Mean - The average of the test results 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 (CPV) - 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. CPV = (LAB MEAN - GRAND MEAN)/ BETWEEN-LAB STANDARD DEVIATION. 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).

Instr. Code - A code indicating the manufacturer of the instrument used to perform the test (see separate INSTRUMENT CODE LIST for each test section).

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 Flags

Data Flag Type	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 (all tests exept Chemical Analyses). Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data are excluded. For Chemical Analyses see an additional Memo.
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.

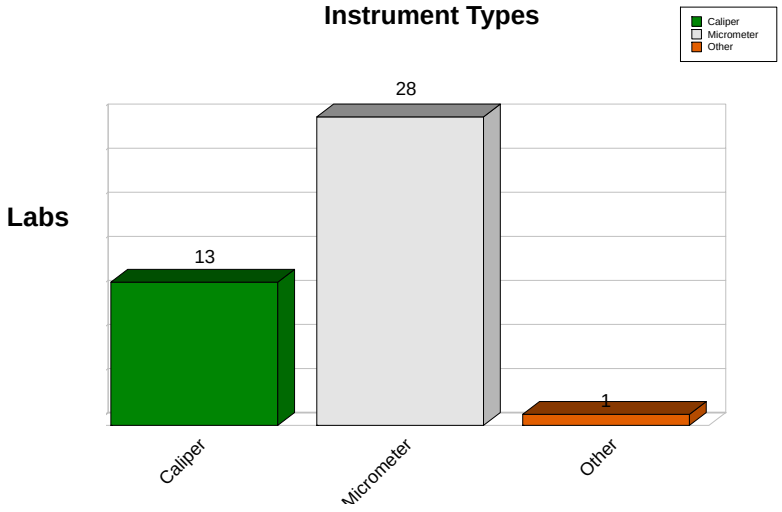
Fasteners and Metals Interlaboratory Testing Program

Analysis 101

Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM

Cycle 125
1st Qtr 2019

During Cycle 125, CTS conducted the Analysis #101 - Round Dimensional. For this test all participants received two samples I57 and I58 with nominal diameters; 0.5000 in. and 0.4996 in. Each sample is an English Class X gage pin with 0.00002 in roundness limit made from 52100 bearing steel, hardened to 60-62 Rockwell C. Laboratories were asked to determine the outside diameter of the pins. 42 laboratories that subscribed for this test reported testing results. The graph below shows a breakdown of the types of instruments used.



Analysis of the Results

The most convenient and common method of judging the quality of measurement results is by calculating the performance statistic, En, calculated as:

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Where the assigned value, Xref, is determined in a reference laboratory, Uref is the expanded uncertainty of Xref, and Ulab is the **Expanded Uncertainty** of a participant's result, Xlab. En is not calculated for Labs who did not report their Expanded Uncertainty.

Absolute values of En less than **1.00** should be obtained for the measurements to be acceptable.

The following graph and the table represent the results reported by participants. All tests were conducted at room temperature (20-23C or 68-77F).

Xref and Uref were determined by the gage pin manufacturer. The manufacturer is ISO 9001:2000 Certified and an ISO 17025 Accredited company. All master gages used in checking the plug gages are calibrated with standards traceable to NIST.

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xref1 = 0.5000 in.

Xref2 = 0.4996 in.

WebCode	Data Flag (if assigned)	Reference Uncertainty (Uref)	Expanded Uncertainty (Ulab)	Sample I57 Lab Mean (Xlab)	Sample I57 Performance Statistic (En1)	Sample I58 Lab Mean (Xlab)	Sample I58 Performance Statistic (En2)	Instrument
2AULKR		0.00004	0.00003	0.49998	-0.47	0.49958	-0.30	Micrometer
447MFP		0.00004	0.00040	0.49998	-0.05	0.49953	-0.17	Micrometer
44JETD		0.00004	0.00042	0.50000	0.00	0.49950	-0.24	Caliper
4GQUYN		0.00004	0.00016	0.49998	-0.14	0.49958	-0.10	Micrometer
4KMJFV		0.00004	0.00070	0.50050	0.71	0.50000	0.57	Caliper
6A2B47		0.00004	0.00021	0.49990	-0.47	0.49950	-0.47	Micrometer
7F86VG	X	0.00004	0.00008	0.49990	-1.12	0.49946	-1.57	Micrometer
9B44TP		0.00004	0.00130	0.49950	-0.38	0.49900	-0.46	Caliper
9UHP7K	X	0.00004	0.00000	0.50006	1.58	0.49965	1.35	Micrometer
9YUHGJ		0.00004	0.00016	0.50012	0.73	0.49967	0.42	Micrometer
ACAYMT		0.00004	0.00015	0.49995	-0.32	0.49955	-0.32	Micrometer
B8H3JM		0.00004	0.00015	0.49994	-0.41	0.49954	-0.37	Micrometer
C6B6RR		0.00004	0.00176	0.50000	0.00	0.49978	0.10	Caliper
CJ7UWG		0.00004	0.00062	0.50000	0.00	0.49930	-0.48	Caliper
CTW8MM		0.00004	0.00116	0.49950	-0.43	0.49920	-0.34	Caliper
DBC94N		0.00004	0.00030	0.49999	-0.03	0.49956	-0.14	Other
FCW6YE		0.00004	0.00015	0.49988	-0.77	0.49950	-0.64	Micrometer
FLGM2L	X	0.00004	0.00046	0.49950	-1.08	0.49900	-1.30	Caliper
FQRRPE		0.00004	0.00144	0.50000	0.00	0.49950	-0.07	Caliper
G4JHED		0.00004	0.00030	0.49990	-0.33	0.49950	-0.33	Micrometer
G6V3V8	X	0.00004	0.00009	0.49994	-0.61	0.49950	-1.02	Micrometer
GR6KCU		0.00004	0.00011	0.49998	-0.17	0.49950	-0.85	Micrometer
HWU6PF		0.00004	Not Reported	0.49990		0.49949		Micrometer
LE2X69		0.00004	0.00047	0.49987	-0.28	0.49945	-0.32	Micrometer
LKNTUJ		0.00004	0.00150	0.49950	-0.33	0.49900	-0.40	Caliper
LWXE3Q		0.00004	0.00058	0.50000	0.00	0.49950	-0.17	Caliper
MKMTH3		0.00004	0.00022	0.50000	0.00	0.49960	0.00	Micrometer
MRFNX8		0.00004	Not Reported	0.50000		0.49950		Micrometer
MV4896		0.00004	0.00002	0.49998	-0.33	0.49961	0.14	Micrometer
PM7YZJ		0.00004	Not Reported	0.49930		0.49880		Caliper
PYHJ4D		0.00004	0.00005	0.50000	0.00	0.49955	-0.78	Micrometer
Q6YMYY		0.00004	0.00040	0.49988	-0.30	0.49948	-0.30	Micrometer
UWDV2W		0.00004	0.00008	0.49997	-0.35	0.49957	-0.37	Micrometer

$$E_n = \frac{\left(X_{lab} - X_{ref}\right)}{\sqrt{U_{lab}^2 + U_{ref}^2}}$$

Xref1 = 0.5000 in. Xref2 = 0.4996 in.

WebCode	Data Flag (if assigned)	Reference Uncertainty (Uref)	Expanded Uncertainty (Ulab)	Sample I57 Lab Mean (Xlab)	Sample I57 Performance Statistic (En1)	Sample I58 Lab Mean (Xlab)	Sample I58 Performance Statistic (En2)	Instrument
VDXXYC		0.00004	0.00042	0.49985	-0.36	0.49944	-0.38	Micrometer
W23GWB		0.00004	0.00059	0.50005	0.08	0.49966	0.10	Micrometer
WDEEPX		0.00004	0.00020	0.50000	0.00	0.49960	0.00	Micrometer
WGRT4B		0.00004	0.00030	0.49987	-0.43	0.49952	-0.26	Micrometer
WYBB64		0.00004	0.00015	0.49999	-0.05	0.49961	0.04	Micrometer
XDPC32		0.00004	0.00092	0.49950	-0.54	0.49900	-0.65	Caliper
YMENAT		0.00004	0.00020	0.49996	-0.19	0.49957	-0.16	Micrometer
ZG3P4Z		0.00004	0.00040	0.49997	-0.07	0.49954	-0.15	Micrometer
ZU73CK		0.00004	0.00210	0.49900	-0.48	0.49900	-0.29	Caliper

Summary Statistics

		Sample I57		Sample I58	
Reference Uncertainty = 0.00004 in.	Reference Diameters:	0.5000	inch	0.4996	inch

Samples I57, I58 : 52100 Steel, 52100 Steel

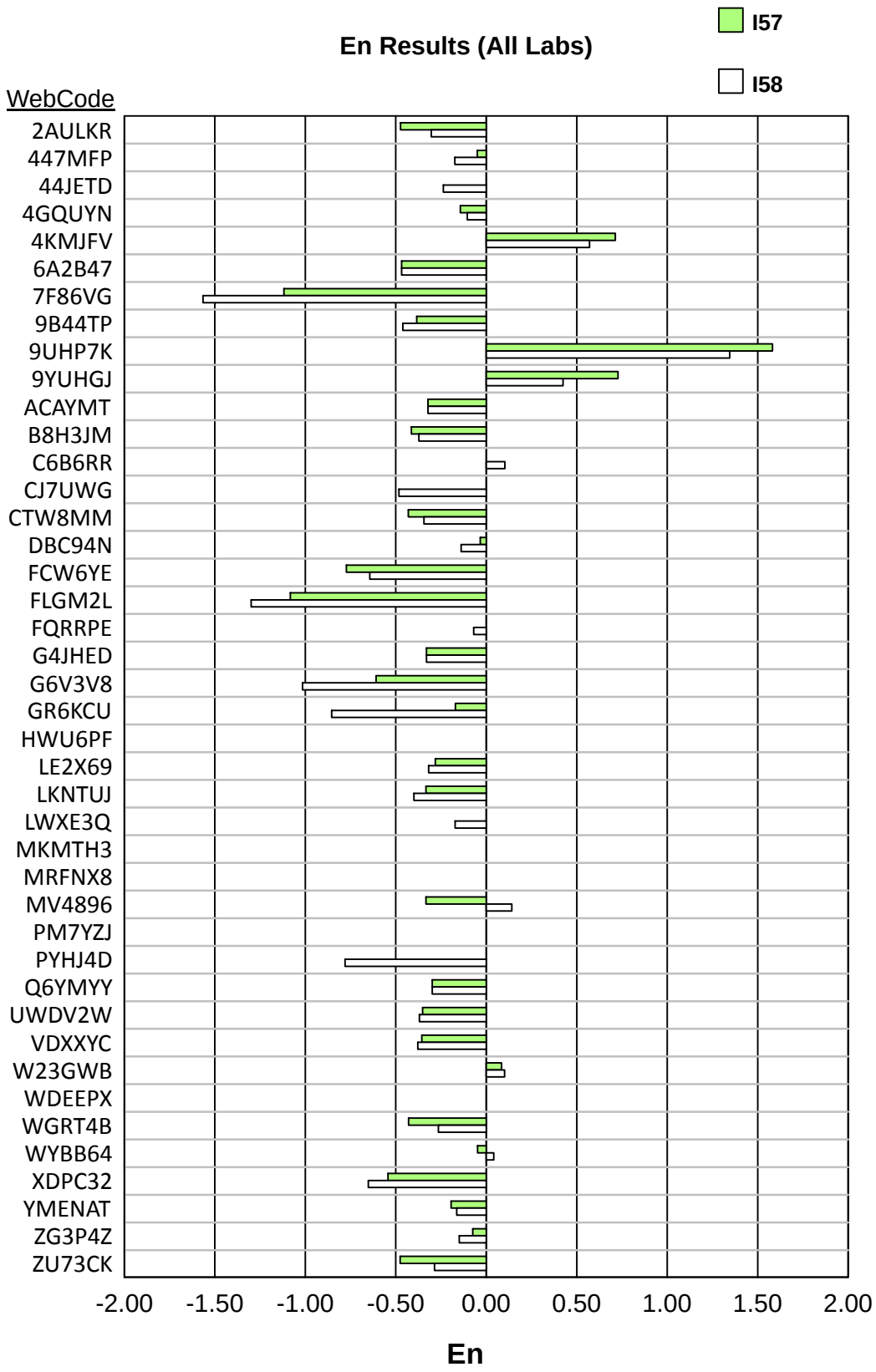
Comments on Assigned Data Flags for Test #101

7F86VG (X) - En value for both samples was low.

9UHP7K (X) - En value for both samples was high.

FLGM2L (X) - En value for both samples was low.

G6V3V8 (X) - En value for sample I58 was low.



Fasteners and Metals Interlaboratory Testing Program

Analysis 105

Tensile Strength: Lab-Machined Flat Aluminum
ASTM B557

Cycle 125
1st Qtr 2019

WebCode	Data Flag	Sample R57 Lab Mean	Sample R57 Diff. from Grand Mean	Sample R57 CPV	Sample R58 Lab Mean	Sample R58 Diff. from Grand Mean	Sample R58 CPV
4MD4CL		45.80	-0.05	-0.13	46.80	-0.22	-0.70
63H2LC		45.70	-0.15	-0.41	46.90	-0.12	-0.38
7KGHDF		45.90	0.05	0.15	47.20	0.18	0.58
7U6DDV	X	43.84	-2.01	-5.56	46.09	-0.93	-2.97
7YKACK		45.66	-0.19	-0.52	47.09	0.07	0.23
8MDL98		46.05	0.20	0.56	47.10	0.08	0.26
8NCMGJ	*	46.30	0.45	1.25	46.50	-0.52	-1.66
937C9A		45.78	-0.07	-0.19	47.17	0.15	0.49
9XF3YC		45.70	-0.15	-0.41	47.00	-0.02	-0.06
A29QQ3	*	45.80	-0.05	-0.13	47.80	0.78	2.50
A6QKTV		45.51	-0.33	-0.93	46.93	-0.08	-0.27
BFJN99		45.83	-0.02	-0.04	46.70	-0.32	-1.01
BYHR6H		45.85	0.00	0.01	46.93	-0.09	-0.28
BZE6PP		45.31	-0.54	-1.49	46.70	-0.32	-1.02
D6ZV9P		46.10	0.25	0.70	46.90	-0.12	-0.38
D9N8AG		45.69	-0.16	-0.44	46.85	-0.17	-0.55
EL7EKM		45.83	-0.02	-0.04	47.14	0.12	0.38
EP32Z4		45.22	-0.62	-1.73	46.52	-0.49	-1.58
ERVJAM		46.19	0.35	0.96	47.11	0.09	0.29
G3M6U7		46.50	0.65	1.81	47.60	0.58	1.86
G6V3V8		46.30	0.45	1.25	47.20	0.18	0.58
GD2D6C		46.10	0.25	0.70	47.30	0.28	0.90
J7YVVH		45.70	-0.15	-0.41	46.90	-0.12	-0.38
K389L2		46.69	0.84	2.33	47.62	0.60	1.92
MVRVPL		45.60	-0.25	-0.69	47.10	0.08	0.26
P3BGJ4	X	47.40	1.55	4.30	47.80	0.78	2.50
P6KZMC	X	46.70	0.85	2.36	45.30	-1.72	-5.50
RMKMCF		45.70	-0.15	-0.41	46.90	-0.12	-0.38
U99FCG	X	46.50	0.65	1.81	49.20	2.18	6.99
VK83GP		45.90	0.05	0.15	46.90	-0.12	-0.38
W3AZDJ		45.60	-0.25	-0.69	46.60	-0.42	-1.34
WFHNN2		45.60	-0.25	-0.69	46.80	-0.22	-0.70
WZ4HFN		46.00	0.15	0.42	47.00	-0.02	-0.06
Y3MC89		45.60	-0.25	-0.69	46.60	-0.42	-1.34
ZRHQBU	*	45.10	-0.75	-2.07	47.40	0.38	1.22
ZTTJ3M		46.50	0.65	1.81	47.31	0.29	0.94

Summary Statistics

	Sample R57		Sample R58	
Grand Means	45.85	ksi	47.02	ksi
Stnd Dev Btwn Labs	0.36	ksi	0.31	ksi

Samples R57, R58 : 16G 6061-T6 (A), 14G 6061-T6 (B)

Statistics based on 32 of 36 reporting participants

Comments on Assigned Data Flags for Test #105

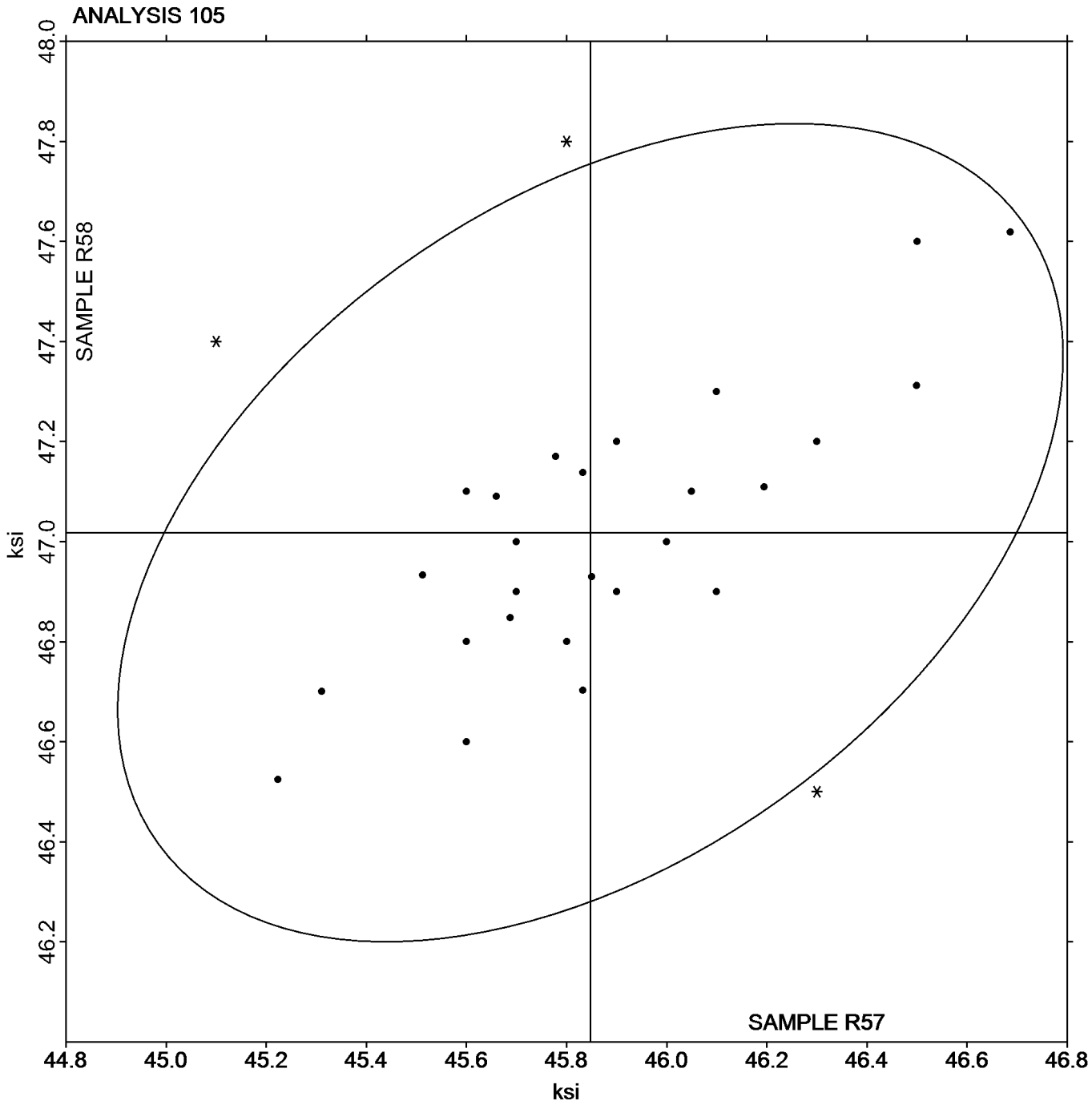
7U6DDV (X) - Data for both samples are low.

P3BGJ4 (X) - Data for sample R57 are high.

P6KZMC (X) - Data for sample R58 are low.

U99FCG (X) - Data for sample R58 are high.

SAMPLE R57	SAMPLE R58
45.85 ksi	47.02 ksi



		Sample R57			Sample R58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4MD4CL		40.90	0.38	0.67	42.60	0.06	0.12
63H2LC		40.40	-0.12	-0.20	42.50	-0.04	-0.08
7KGHDF		40.60	0.08	0.15	42.90	0.36	0.73
7U6DDV	*	38.77	-1.75	-3.04	41.59	-0.95	-1.91
7YKACK		40.34	-0.17	-0.30	42.88	0.34	0.68
8MDL98		40.90	0.38	0.67	42.80	0.26	0.53
8NCMGJ	*	39.90	-0.62	-1.07	41.10	-1.44	-2.90
937C9A		40.73	0.22	0.38	42.96	0.42	0.85
9XF3YC		40.53	0.01	0.03	42.65	0.11	0.22
A29QQ3	*	40.50	-0.02	-0.03	43.50	0.96	1.94
A6QKTV		39.96	-0.56	-0.97	42.35	-0.19	-0.39
BFJN99		40.18	-0.34	-0.59	42.06	-0.48	-0.96
BYHR6H		40.60	0.08	0.15	42.60	0.06	0.12
BZE6PP		40.18	-0.34	-0.59	42.36	-0.18	-0.36
D6ZV9P		40.70	0.18	0.32	42.70	0.16	0.33
D9N8AG		40.61	0.09	0.16	42.64	0.10	0.21
EL7EKM		40.76	0.24	0.42	42.93	0.39	0.79
EP32Z4		39.91	-0.61	-1.06	41.81	-0.73	-1.46
ERVJAM		40.83	0.31	0.54	42.74	0.20	0.41
G3M6U7		41.00	0.48	0.84	42.50	-0.04	-0.08
G6V3V8		41.20	0.68	1.19	42.70	0.16	0.33
GD2D6C		41.00	0.48	0.84	43.20	0.66	1.33
J7YVVH		40.50	-0.02	-0.03	42.30	-0.24	-0.48
K389L2	X	36.01	-4.51	-7.83	36.41	-6.13	-12.34
MVRVPL		40.40	-0.12	-0.20	42.40	-0.14	-0.28
P3BGJ4	*	42.10	1.58	2.75	43.20	0.66	1.33
P6KZMC	X	42.40	1.88	3.27	40.00	-2.54	-5.11
RMKMCF		40.40	-0.12	-0.20	42.50	-0.04	-0.08
U99FCG	X	412.30	371.78	646.16	44.90	2.36	4.75
VK83GP	X	40.50	-0.02	-0.03	44.50	1.96	3.95
W3AZDJ		39.50	-1.02	-1.77	41.80	-0.74	-1.49
WFHNN2		40.20	-0.32	-0.55	42.30	-0.24	-0.48
WZ4HFN		40.70	0.18	0.32	42.30	-0.24	-0.48
Y3MC89		40.50	-0.02	-0.03	42.30	-0.24	-0.48
ZRHQBU		40.40	-0.12	-0.20	43.00	0.46	0.93
ZTTJ3M		41.34	0.82	1.42	43.06	0.52	1.05

Summary Statistics

	Sample R57		Sample R58	
Grand Means	40.52	ksi	42.54	ksi
Stnd Dev Btwn Labs	0.58	ksi	0.50	ksi

Samples R57, R58 : 16G 6061-T6 (A), 14G 6061-T6 (B)

Statistics based on 32 of 36 reporting participants

Comments on Assigned Data Flags for Test #106

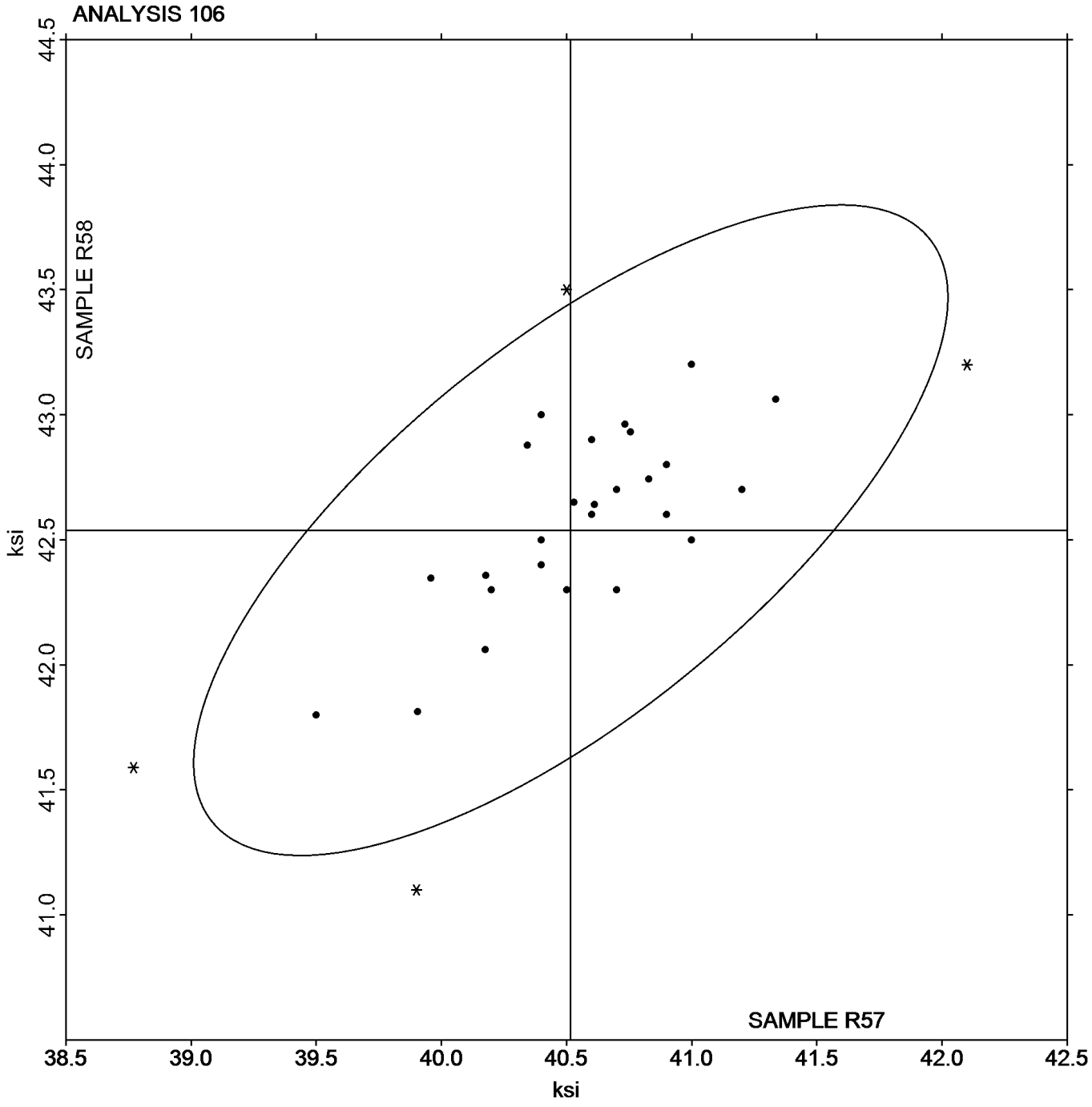
K389L2 (X) - Data for both samples are low.

P6KZMC (X) - Data for sample R57 are high and data for sample R58 are low.

U99FCG (X) - Data for both samples are high.

VK83GP (X) - Data for sample R58 are high.

SAMPLE R57	SAMPLE R58
40.52 ksi	42.54 ksi



Fasteners and Metals Interlaboratory Testing Program

Analysis 107

Elongation: Lab-Machined Flat Aluminum
ASTM B557

Cycle 125
1st Qtr 2019

		Sample R57			Sample R58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4MD4CL		10.67	-0.23	-0.33	10.62	-0.44	-0.41
63H2LC		11.00	0.10	0.15	10.50	-0.56	-0.53
7KGHDF		10.50	-0.40	-0.58	10.50	-0.56	-0.53
7U6DDV		11.45	0.55	0.80	12.95	1.89	1.79
7YKACK		10.68	-0.22	-0.32	10.23	-0.83	-0.78
8MDL98		11.65	0.75	1.09	11.95	0.89	0.84
8NCMGJ		10.70	-0.20	-0.29	10.20	-0.86	-0.81
937C9A		11.84	0.94	1.37	11.70	0.64	0.61
9XF3YC		10.64	-0.26	-0.38	11.35	0.29	0.28
A29QQ3		11.35	0.45	0.66	12.45	1.39	1.31
A6QKTV	X	13.40	2.50	3.63	11.90	0.84	0.80
BFJN99		11.40	0.50	0.73	11.70	0.64	0.61
BYHR6H		10.70	-0.20	-0.29	10.90	-0.16	-0.15
BZE6PP		12.30	1.40	2.03	12.80	1.74	1.64
D6ZV9P		10.40	-0.50	-0.72	11.40	0.34	0.32
D9N8AG		9.800	-1.10	-1.59	9.900	-1.16	-1.09
EL7EKM		10.75	-0.15	-0.21	10.84	-0.22	-0.20
EP32Z4		11.00	0.10	0.15	11.00	-0.06	-0.05
ERVJAM		11.50	0.60	0.87	12.20	1.14	1.08
G3M6U7		10.50	-0.40	-0.58	10.50	-0.56	-0.53
G6V3V8		10.80	-0.10	-0.14	12.20	1.14	1.08
GD2D6C		11.20	0.30	0.44	10.10	-0.96	-0.90
J7YVVH		10.70	-0.20	-0.29	10.20	-0.86	-0.81
K389L2		12.00	1.10	1.60	12.00	0.94	0.89
MVRVPL		10.00	-0.90	-1.30	10.50	-0.56	-0.53
P3BGJ4		11.40	0.50	0.73	11.10	0.04	0.04
P6KZMC		11.00	0.10	0.15	11.00	-0.06	-0.05
RMKMCF	*	11.20	0.30	0.44	13.30	2.24	2.12
U99FCG		12.00	1.10	1.60	12.00	0.94	0.89
VK83GP		10.30	-0.60	-0.87	9.000	-2.06	-1.94
W3AZDJ		10.00	-0.90	-1.30	11.00	-0.06	-0.05
WFHNN2		11.40	0.50	0.73	11.40	0.34	0.32
WZ4HFN		10.20	-0.70	-1.01	10.40	-0.66	-0.62
Y3MC89		11.20	0.30	0.44	10.90	-0.16	-0.15
ZRHQBU		10.10	-0.80	-1.16	9.100	-1.96	-1.85
ZTTJ3M	*	9.100	-1.80	-2.60	9.100	-1.96	-1.85

Summary Statistics

	Sample R57		Sample R58	
Grand Means	10.90	Percent	11.06	Percent
Stnd Dev Btwn Labs	0.69	Percent	1.06	Percent

Samples R57, R58 : 16G 6061-T6 (A), 14G 6061-T6 (B)

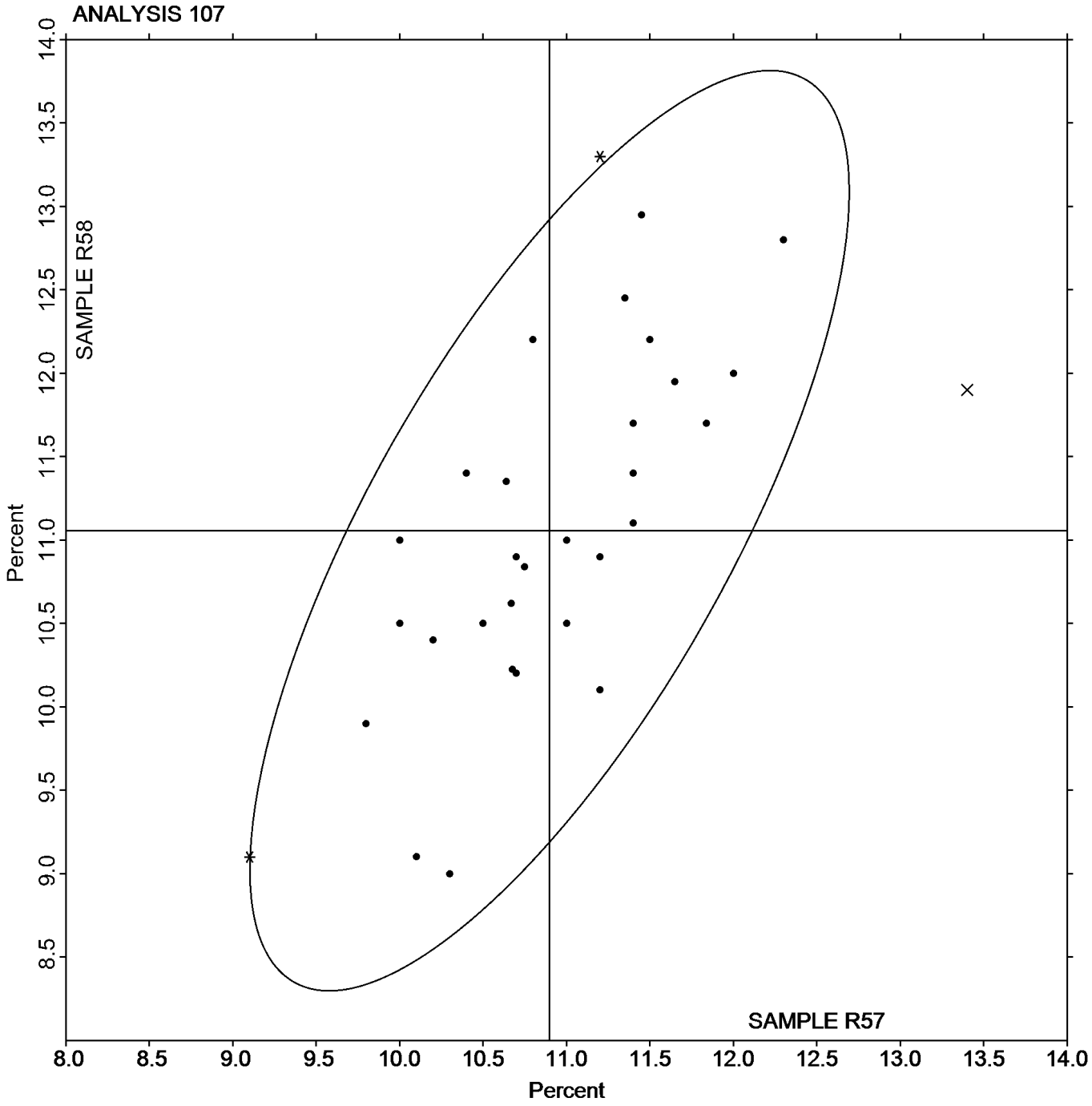
Statistics based on 35 of 36 reporting participants

Comments on Assigned Data Flags for Test #107

A6QKTV (X) - Data for sample R57 are high.

SAMPLE R57
10.90 Percent

SAMPLE R58
11.06 Percent



		Sample A57			Sample A58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28TMC9		71.40	-0.11	-0.12	72.10	-0.40	-0.38
2XPZFL		72.76	1.25	1.31	73.21	0.71	0.69
42FLA2		70.34	-1.17	-1.23	71.21	-1.28	-1.24
4BDKME		70.76	-0.75	-0.79	71.30	-1.20	-1.16
4VKUMC	*	71.50	-0.01	-0.01	70.50	-2.00	-1.93
6LX6TW		71.42	-0.09	-0.10	72.75	0.26	0.25
79N4AC		73.23	1.72	1.80	73.88	1.38	1.34
7U6DDV		71.20	-0.31	-0.33	72.15	-0.34	-0.33
84UEEQ		72.87	1.36	1.43	74.27	1.78	1.72
8FM9ZD		71.60	0.09	0.09	73.10	0.60	0.58
8FPVGR		71.07	-0.44	-0.46	72.53	0.03	0.03
9XF3YC		73.00	1.49	1.56	73.80	1.30	1.26
A83RK9		70.80	-0.71	-0.75	72.30	-0.20	-0.19
AH22UY		71.98	0.47	0.49	72.37	-0.13	-0.12
B8H3JM		70.05	-1.46	-1.53	70.78	-1.72	-1.66
BTXMFN		70.40	-1.11	-1.17	72.50	0.00	0.00
C6B6RR		73.06	1.54	1.62	74.06	1.56	1.51
CRGVYQ		72.65	1.14	1.20	73.40	0.90	0.87
FKMWXT		72.00	0.49	0.51	72.60	0.10	0.10
G94XCV		72.94	1.43	1.50	74.54	2.04	1.98
HHB23E		71.79	0.28	0.29	73.49	1.00	0.96
HVA2M3		70.97	-0.55	-0.57	71.68	-0.82	-0.79
KYCKW9		71.92	0.41	0.43	72.88	0.39	0.37
MK6H9V	*	69.91	-1.60	-1.68	72.81	0.31	0.30
PENRY7		70.78	-0.73	-0.77	71.65	-0.85	-0.82
Q47DRX		71.70	0.19	0.20	73.10	0.60	0.58
Q6YMYY		71.30	-0.21	-0.22	72.10	-0.40	-0.38
TG2LCA		71.00	-0.51	-0.54	72.50	0.00	0.00
TQA6MR		72.23	0.72	0.75	73.10	0.60	0.58
WYBB64		70.21	-1.30	-1.36	71.07	-1.43	-1.38
XCRXMV		70.10	-1.41	-1.48	70.90	-1.60	-1.54
XGLYWP		71.36	-0.15	-0.16	72.52	0.02	0.02
YKMPVU		70.90	-0.61	-0.64	71.20	-1.30	-1.25
ZQ8QGK		72.23	0.72	0.75	72.52	0.02	0.02

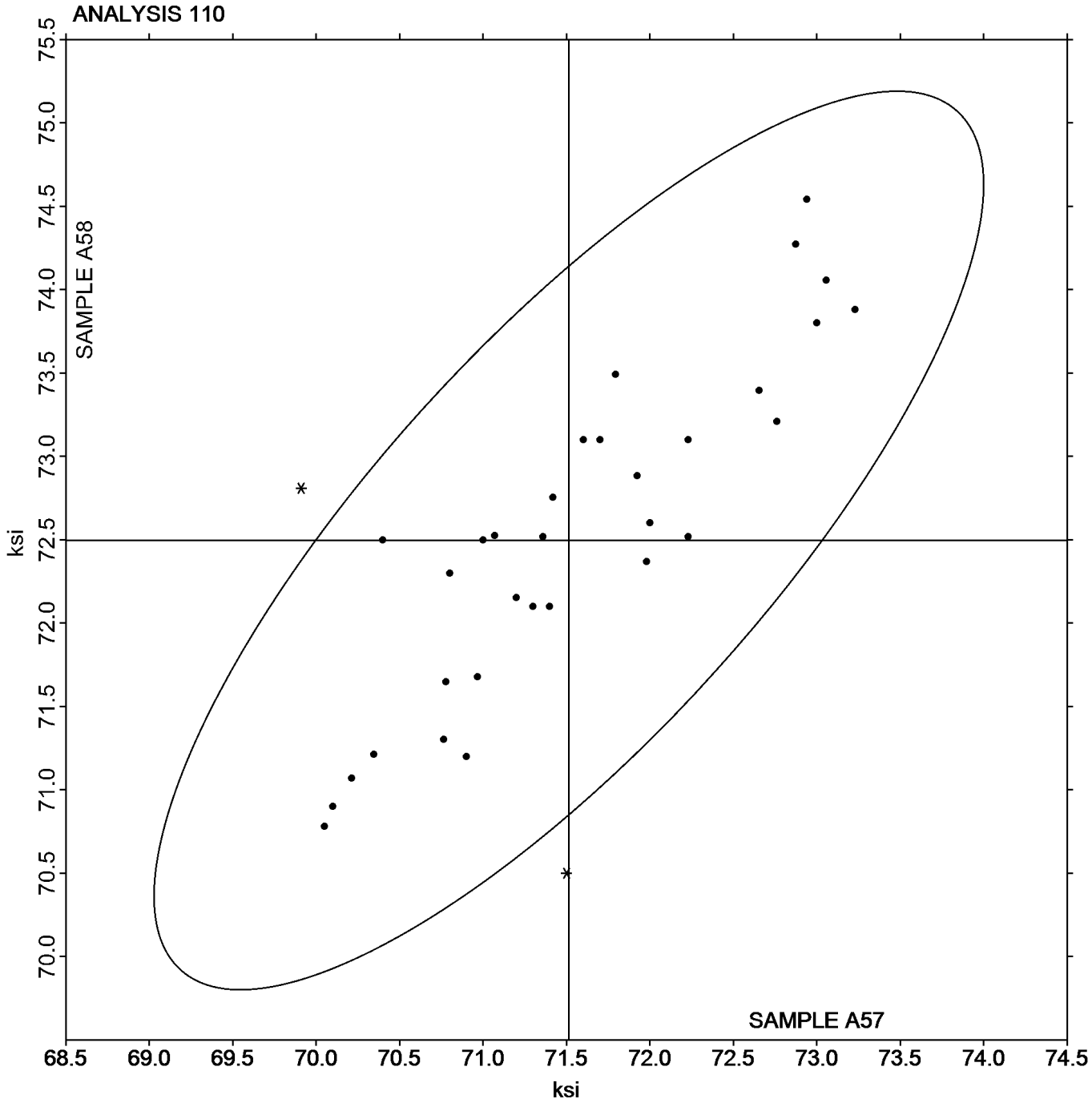
Summary Statistics

	Sample A57		Sample A58	
Grand Means	71.51	ksi	72.50	ksi
Stnd Dev Btwn Labs	0.95	ksi	1.03	ksi

Samples A57, A58 : AISI 1018 (L), AISI 1018 (S)

Statistics based on 34 of 34 reporting participants

SAMPLE A57	SAMPLE A58
71.51 ksi	72.50 ksi



Fasteners and Metals Interlaboratory Testing Program

Analysis 111

Yield Strength: Pre-Machined Round Steel
ASTM E8

		Sample A57			Sample A58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28TMC9		54.00	1.56	0.37	51.20	1.19	0.35
2XPZFL		53.36	0.92	0.22	49.76	-0.25	-0.07
42FLA2		50.33	-2.11	-0.50	46.99	-3.02	-0.88
4BDKME		47.14	-5.30	-1.25	46.76	-3.25	-0.94
4VKUMC		50.50	-1.94	-0.46	45.50	-4.51	-1.31
6LX6TW		48.80	-3.64	-0.86	48.64	-1.37	-0.40
79N4AC		50.23	-2.21	-0.52	47.98	-2.03	-0.59
7U6DDV		49.52	-2.92	-0.69	47.85	-2.17	-0.63
84UEEQ		50.62	-1.82	-0.43	48.77	-1.24	-0.36
8FM9ZD		56.50	4.06	0.95	57.40	7.39	2.15
8FPVGR		51.65	-0.79	-0.19	50.93	0.92	0.27
9XF3YC		52.92	0.47	0.11	49.03	-0.98	-0.29
A83RK9	M	No Data Reported			56.00	5.99	1.74
AH22UY		48.52	-3.92	-0.92	48.52	-1.49	-0.43
B8H3JM		47.15	-5.29	-1.24	46.41	-3.60	-1.05
BTXMFN		49.90	-2.54	-0.60	47.90	-2.11	-0.61
C6B6RR	*	60.49	8.05	1.89	50.97	0.95	0.28
CRGVYQ		50.12	-2.32	-0.54	46.99	-3.02	-0.88
FKMWXT		51.00	-1.44	-0.34	49.10	-0.91	-0.26
G94XCV		53.86	1.42	0.33	52.14	2.13	0.62
HHB23E		48.79	-3.65	-0.86	47.54	-2.47	-0.72
HVA2M3		55.07	2.63	0.62	48.92	-1.09	-0.32
KYCKW9		50.92	-1.52	-0.36	51.13	1.12	0.32
MK6H9V	*	52.07	-0.37	-0.09	55.84	5.83	1.70
PENRY7		61.35	8.91	2.09	58.60	8.59	2.50
Q47DRX		58.50	6.06	1.42	51.80	1.79	0.52
Q6YMYY		51.70	-0.74	-0.17	47.20	-2.81	-0.82
TG2LCA		51.50	-0.94	-0.22	49.70	-0.31	-0.09
TQA6MR		53.37	0.93	0.22	50.91	0.90	0.26
WYBB64		47.38	-5.06	-1.19	46.80	-3.21	-0.93
XCRXMV		60.60	8.16	1.92	57.40	7.39	2.15
XGLYWP		50.18	-2.26	-0.53	49.46	-0.55	-0.16
YKMPVU		49.10	-3.34	-0.78	46.80	-3.21	-0.93
ZQ8QGK	*	63.38	10.94	2.57	55.40	5.39	1.57

Summary Statistics

	Sample A57		Sample A58	
Grand Means	52.44	ksi	50.01	ksi
Stnd Dev Btwn Labs	4.26	ksi	3.44	ksi

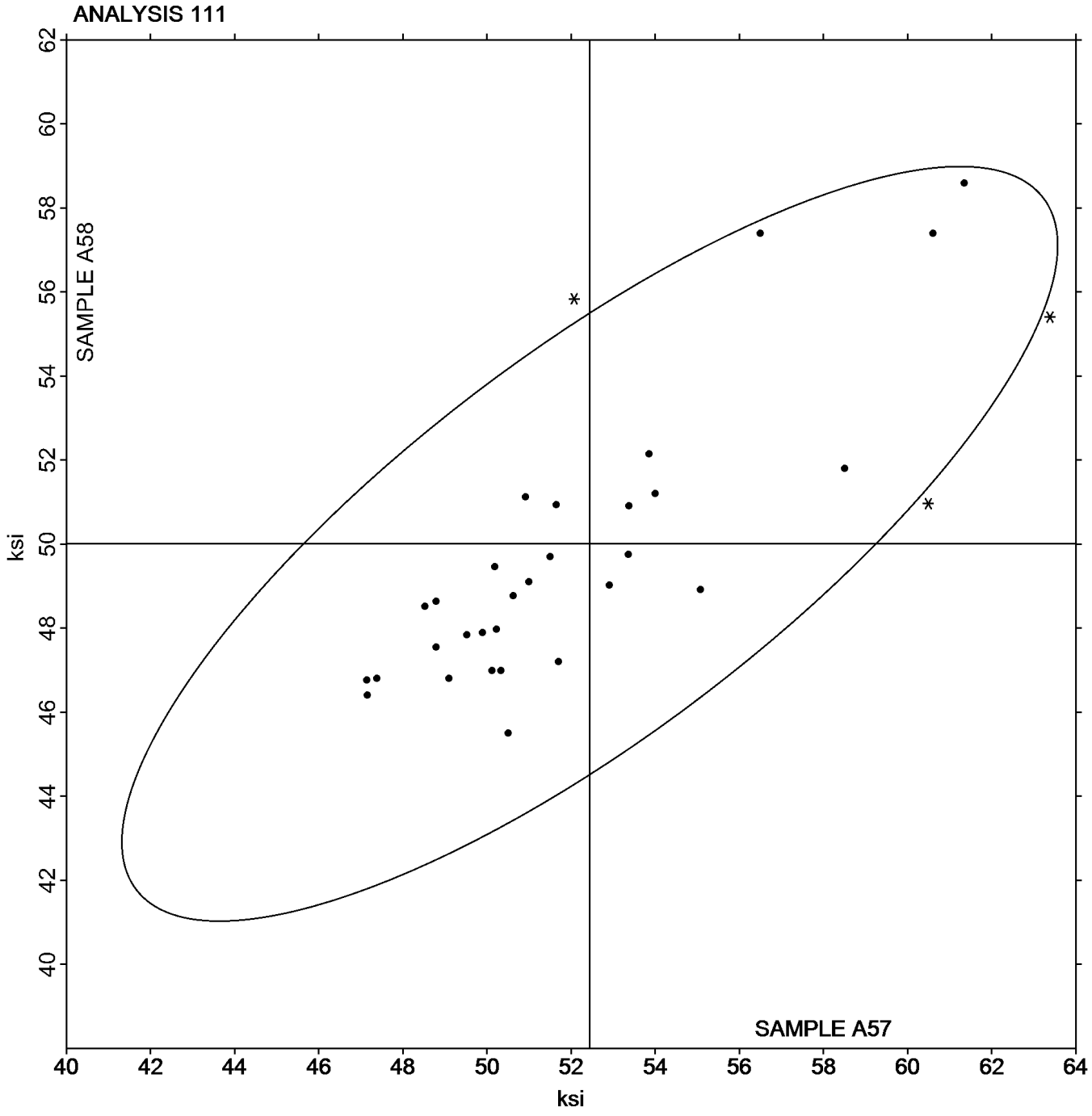
Samples A57, A58 : AISI 1018 (L), AISI 1018 (S)

Statistics based on 33 of 34 reporting participants

Comments on Assigned Data Flags for Test #111

A83RK9 (M) - Participant did not submit data for sample A57.

SAMPLE A57	SAMPLE A58
52.44 ksi	50.01 ksi



Fasteners and Metals Interlaboratory Testing Program

Analysis 112

Elongation: Pre-Machined Round Steel
ASTM E8

		Sample A57			Sample A58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28TMC9		31.20	-2.83	-1.28	32.90	-1.33	-0.92
2XPZFL		33.50	-0.53	-0.24	34.00	-0.23	-0.16
42FLA2		37.00	2.97	1.34	34.50	0.27	0.19
4BDKME		35.08	1.05	0.47	34.56	0.33	0.23
4VKUMC		36.00	1.97	0.89	36.00	1.77	1.22
6LX6TW		37.90	3.87	1.75	33.70	-0.53	-0.37
79N4AC	*	33.00	-1.03	-0.47	37.00	2.77	1.92
7U6DDV		30.90	-3.13	-1.42	33.35	-0.88	-0.61
84UEEQ		32.90	-1.13	-0.51	33.80	-0.43	-0.30
8FM9ZD		35.50	1.47	0.66	34.00	-0.23	-0.16
8FPVGR		32.40	-1.63	-0.74	34.22	-0.01	-0.01
9XF3YC		33.51	-0.52	-0.24	33.33	-0.90	-0.62
A83RK9		38.70	4.67	2.11	34.50	0.27	0.19
AH22UY		32.60	-1.43	-0.65	34.90	0.67	0.46
B8H3JM		34.65	0.62	0.28	35.04	0.81	0.56
BTXMFN		34.40	0.37	0.17	34.10	-0.13	-0.09
C6B6RR		33.80	-0.23	-0.10	32.85	-1.38	-0.95
CRGVYQ		33.44	-0.59	-0.27	32.61	-1.62	-1.12
FKMWXT		32.00	-2.03	-0.92	32.00	-2.23	-1.54
G94XCV		37.00	2.97	1.34	37.00	2.77	1.92
HHB23E		34.70	0.67	0.30	33.90	-0.33	-0.23
HVA2M3	X	22.60	-11.43	-5.17	21.80	-12.43	-8.60
KYCKW9		30.10	-3.93	-1.78	33.70	-0.53	-0.37
MK6H9V		34.00	-0.03	-0.01	34.90	0.67	0.46
PENRY7		34.70	0.67	0.30	35.70	1.47	1.02
Q47DRX		32.00	-2.03	-0.92	34.00	-0.23	-0.16
Q6YMYY		35.60	1.57	0.71	35.30	1.07	0.74
TG2LCA	*	39.00	4.97	2.25	38.00	3.77	2.61
TQA6MR		32.90	-1.13	-0.51	31.10	-3.13	-2.17
WYBB64		34.03	0.00	0.00	35.13	0.90	0.62
XCRXMV		32.90	-1.13	-0.51	32.50	-1.73	-1.20
XGLYWP		31.00	-3.03	-1.37	33.20	-1.03	-0.71
YKMPVU		34.70	0.67	0.30	34.30	0.07	0.05
ZQ8QGK		31.90	-2.13	-0.96	33.50	-0.73	-0.50

Summary Statistics

	Sample A57		Sample A58	
Grand Means	34.03	Percent	34.23	Percent
Stnd Dev Btwn Labs	2.21	Percent	1.45	Percent

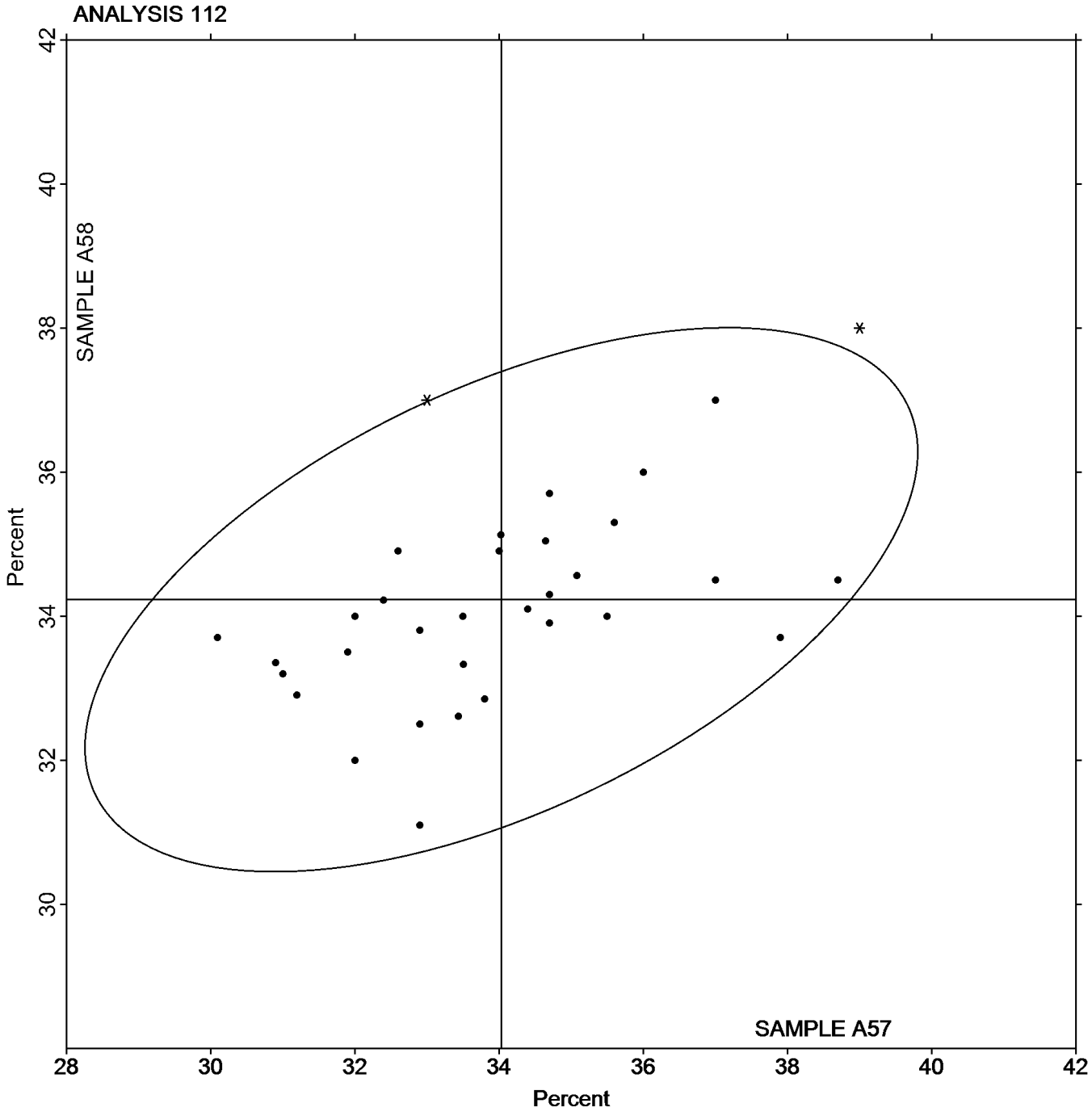
Samples A57, A58 : AISI 1018 (L), AISI 1018 (S)

Statistics based on 33 of 34 reporting participants

Comments on Assigned Data Flags for Test #112

HVA2M3 (X) - Data for both samples are low.

SAMPLE A57	SAMPLE A58
34.03 Percent	34.23 Percent



Fasteners and Metals Interlaboratory Testing Program

Analysis 113

Reduction of Area: Pre-Machined Round Steel
ASTM E8

		Sample A57			Sample A58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28TMC9		66.20	0.51	0.28	66.80	0.52	0.37
2XPZFL		65.80	0.11	0.06	67.10	0.82	0.58
42FLA2		67.00	1.31	0.73	68.00	1.72	1.21
4BDKME		65.89	0.20	0.11	66.23	-0.05	-0.04
4VKUMC		65.00	-0.69	-0.38	64.00	-2.28	-1.62
6LX6TW		67.90	2.21	1.22	67.20	0.92	0.65
79N4AC		67.00	1.31	0.73	67.00	0.72	0.51
7U6DDV		64.98	-0.71	-0.39	66.63	0.35	0.24
84UEEQ		62.56	-3.13	-1.73	63.02	-3.26	-2.31
8FM9ZD		66.90	1.21	0.67	65.80	-0.48	-0.34
8FPVGR		65.58	-0.10	-0.06	66.50	0.21	0.15
A83RK9		66.70	1.01	0.56	67.00	0.72	0.51
AH22UY	*	63.37	-2.32	-1.28	67.05	0.77	0.54
B8H3JM		66.60	0.91	0.50	67.32	1.04	0.73
BTXMFN		67.30	1.61	0.89	66.80	0.52	0.37
C6B6RR		64.00	-1.69	-0.93	64.00	-2.28	-1.62
CRGVYQ		66.44	0.75	0.42	67.32	1.04	0.73
FKMWXT	X	25.00	-40.69	-22.46	22.00	-44.28	-31.34
G94XCV		66.00	0.31	0.17	66.50	0.22	0.15
HHB23E		67.50	1.81	1.00	67.00	0.72	0.51
HVA2M3		61.20	-4.49	-2.48	64.30	-1.98	-1.40
KYCKW9		65.40	-0.29	-0.16	66.50	0.22	0.15
MK6H9V		67.80	2.11	1.17	68.40	2.12	1.50
PENRY7		65.00	-0.69	-0.38	67.00	0.72	0.51
Q47DRX		66.00	0.31	0.17	66.00	-0.28	-0.20
Q6YMYY		66.60	0.91	0.50	66.40	0.12	0.08
TG2LCA		67.00	1.31	0.73	67.00	0.72	0.51
TQA6MR		64.10	-1.59	-0.88	65.90	-0.38	-0.27
WYBB64		66.87	1.18	0.65	67.14	0.86	0.61
XCRXMV	X	34.40	-31.29	-17.27	33.60	-32.68	-23.13
XGLYWP	*	60.60	-5.09	-2.81	62.00	-4.28	-3.03
YKMPVU		67.50	1.81	1.00	66.10	-0.18	-0.13
ZQ8QGK		65.50	-0.19	-0.10	66.80	0.52	0.37

Summary Statistics

	Sample A57		Sample A58	
Grand Means	65.69	Percent	66.28	Percent
Stnd Dev Btwn Labs	1.81	Percent	1.41	Percent

Samples A57, A58 : AISI 1018 (L), AISI 1018 (S)

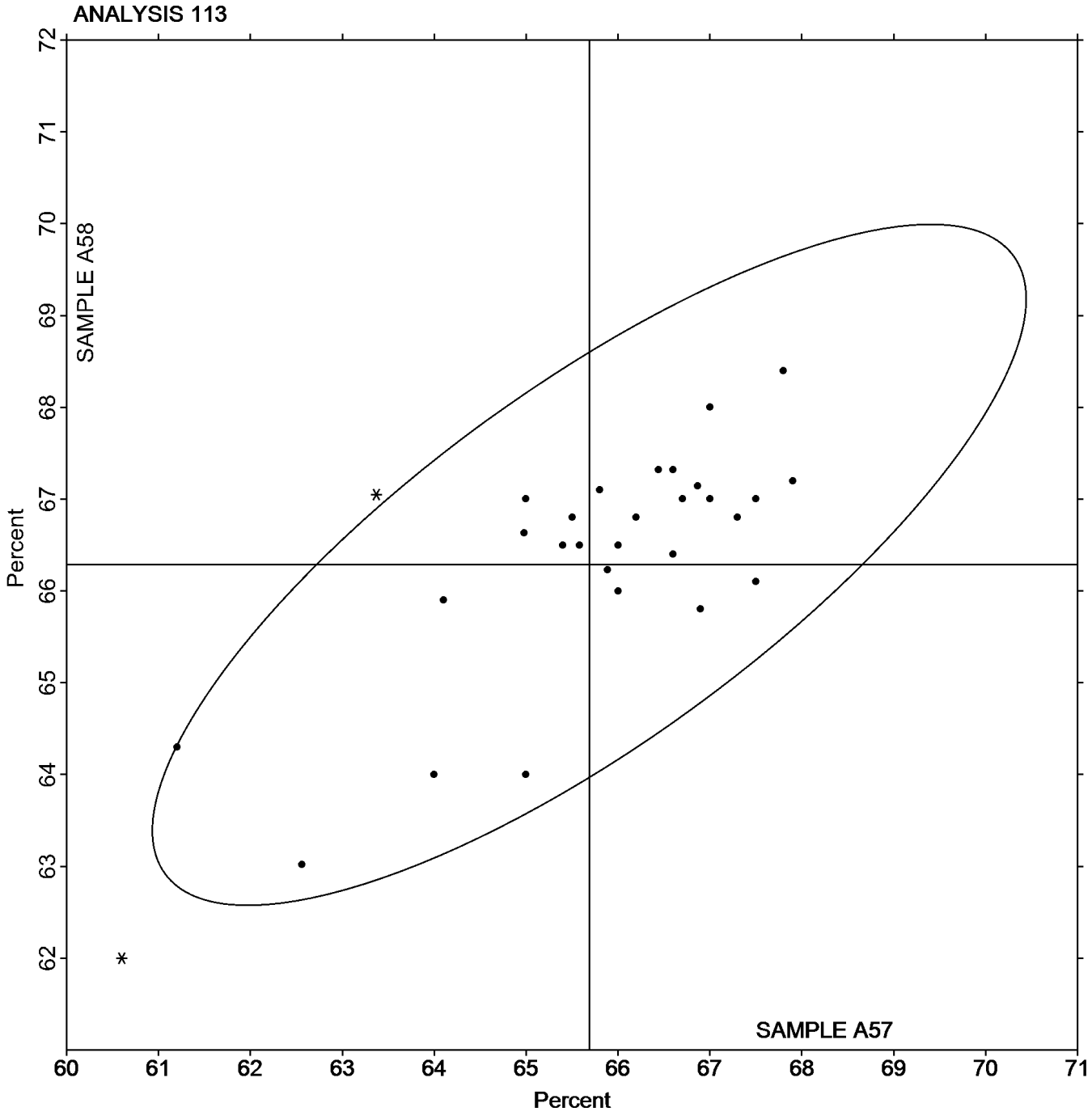
Statistics based on 31 of 33 reporting participants

Comments on Assigned Data Flags for Test #113

FKMWXT (X) - Data for both samples are extremely low.

XCRXMV (X) - Data for both samples are extremely low.

SAMPLE A57	SAMPLE A58
65.69 Percent	66.28 Percent



		Sample N57			Sample N58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2BBCQW		90.80	0.58	0.81	94.72	0.90	1.39
2XPZFL		89.48	-0.74	-1.02	93.52	-0.30	-0.46
3C4ZU7		89.84	-0.38	-0.52	93.34	-0.48	-0.73
3NWLXG		89.66	-0.56	-0.77	92.84	-0.98	-1.50
3P36MC		90.40	0.18	0.25	94.20	0.38	0.59
3UKRNG		90.16	-0.06	-0.08	94.08	0.26	0.40
447MFP		90.70	0.48	0.67	93.90	0.08	0.13
44JETD		90.03	-0.18	-0.25	93.49	-0.33	-0.51
4ZGK3N		89.56	-0.66	-0.91	92.84	-0.98	-1.50
6LX6TW		90.44	0.22	0.31	94.32	0.50	0.77
7UNZAR	X	88.75	-1.47	-2.03	93.70	-0.12	-0.18
8ETXAZ		90.86	0.64	0.89	94.44	0.62	0.96
8FM9ZD		91.46	1.24	1.72	94.82	1.00	1.54
8KYLUT		89.78	-0.44	-0.60	93.88	0.06	0.10
8LBT4U		91.26	1.04	1.45	95.00	1.18	1.82
937C9A		90.00	-0.22	-0.30	93.74	-0.08	-0.12
9U29FX		89.54	-0.68	-0.94	93.28	-0.54	-0.82
A6FPHP		90.80	0.58	0.81	94.10	0.28	0.44
AJVRZD		90.48	0.26	0.36	94.58	0.76	1.17
B4EAPN		89.82	-0.40	-0.55	93.68	-0.14	-0.21
CCTDFN		89.52	-0.70	-0.97	93.40	-0.42	-0.64
D3YU78		89.76	-0.46	-0.63	93.40	-0.42	-0.64
DVVMR6		91.40	1.18	1.64	94.48	0.66	1.02
DWQTZN		90.40	0.18	0.25	93.82	0.00	0.01
E6GDKA		90.50	0.28	0.39	93.70	-0.12	-0.18
FCW6YE		90.16	-0.06	-0.08	93.72	-0.10	-0.15
FJHRH4		90.42	0.20	0.28	94.00	0.18	0.28
G6V3V8	*	89.96	-0.26	-0.36	92.64	-1.18	-1.81
G94XCV	X	89.60	-0.62	-0.85	92.20	-1.62	-2.48
GA4XMG		90.14	-0.08	-0.11	93.22	-0.60	-0.92
GCP8P9		89.88	-0.34	-0.47	93.92	0.10	0.16
GVL8NE		90.70	0.48	0.67	93.82	0.00	0.01
HEBQD7		90.16	-0.06	-0.08	93.76	-0.06	-0.09
HEEDRY		90.83	0.62	0.86	94.58	0.77	1.18
HVKZA7		90.34	0.12	0.17	94.18	0.36	0.56
JE6U9Z		91.02	0.80	1.11	94.46	0.64	0.99
JFN6D7		89.82	-0.40	-0.55	93.18	-0.64	-0.98
L3NW9E		90.07	-0.15	-0.20	93.77	-0.05	-0.07
LY6RJR		91.70	1.48	2.06	94.90	1.08	1.66
MHBLQN		90.06	-0.16	-0.22	94.02	0.20	0.31
NKGDR3		90.54	0.32	0.45	94.32	0.50	0.77
PHQMQW		90.02	-0.20	-0.27	93.76	-0.06	-0.09
PNDGWU		89.68	-0.54	-0.74	93.06	-0.76	-1.16
PQ6EBT	X	91.82	1.60	2.22	92.96	-0.86	-1.32
PVX2W7		89.32	-0.90	-1.24	93.32	-0.50	-0.76
Q2WJJQ		89.00	-1.22	-1.69	93.00	-0.82	-1.25
Q47DRX	*	88.02	-2.20	-3.04	91.96	-1.86	-2.85

WebCode	Data Flag	Sample N57 Lab Mean	Sample N57 Diff. from Grand Mean	Sample N57 CPV	Sample N58 Lab Mean	Sample N58 Diff. from Grand Mean	Sample N58 CPV
RGTK4A		90.42	0.20	0.28	94.08	0.26	0.40
RLLM44		89.66	-0.56	-0.77	93.56	-0.26	-0.39
RYNPBX		90.72	0.50	0.70	94.24	0.43	0.65
U93MXE		90.62	0.40	0.56	94.36	0.54	0.84
U99FCG	*	92.00	1.78	2.47	95.00	1.18	1.82
UAJHYE		90.48	0.26	0.36	93.36	-0.46	-0.70
UCLJYC		91.24	1.02	1.42	95.18	1.36	2.10
UCQ43Z		89.42	-0.80	-1.10	92.96	-0.86	-1.32
UYJDZR		90.46	0.24	0.34	94.34	0.52	0.80
VK83GP	*	88.52	-1.70	-2.35	92.96	-0.86	-1.32
VQL6R7		90.04	-0.18	-0.24	93.80	-0.02	-0.03
W492LW		90.02	-0.20	-0.27	93.32	-0.50	-0.76
W86VD7		90.86	0.64	0.89	94.57	0.75	1.16
WGDRDN		90.40	0.18	0.25	93.60	-0.22	-0.33
X3NRZ9		89.58	-0.64	-0.88	93.28	-0.54	-0.82
X4FRZ6		89.44	-0.78	-1.08	93.50	-0.32	-0.49
XGLYWP		89.92	-0.30	-0.41	93.26	-0.56	-0.86
XKRA9T		90.76	0.54	0.75	93.88	0.06	0.10
YG724P		90.68	0.46	0.64	94.56	0.74	1.14
YQ7PX8		90.42	0.20	0.28	93.72	-0.10	-0.15
Z6A9EY		91.28	1.06	1.47	94.48	0.66	1.02
Z88PC2		88.86	-1.36	-1.88	92.72	-1.10	-1.68

Summary Statistics

	Sample N57		Sample N58	
Grand Means	90.22	HRB	93.82	HRB
Stnd Dev Btwn Labs	0.72	HRB	0.65	HRB

Samples N57, N58 : Brass, Steel

Statistics based on 66 of 69 reporting participants

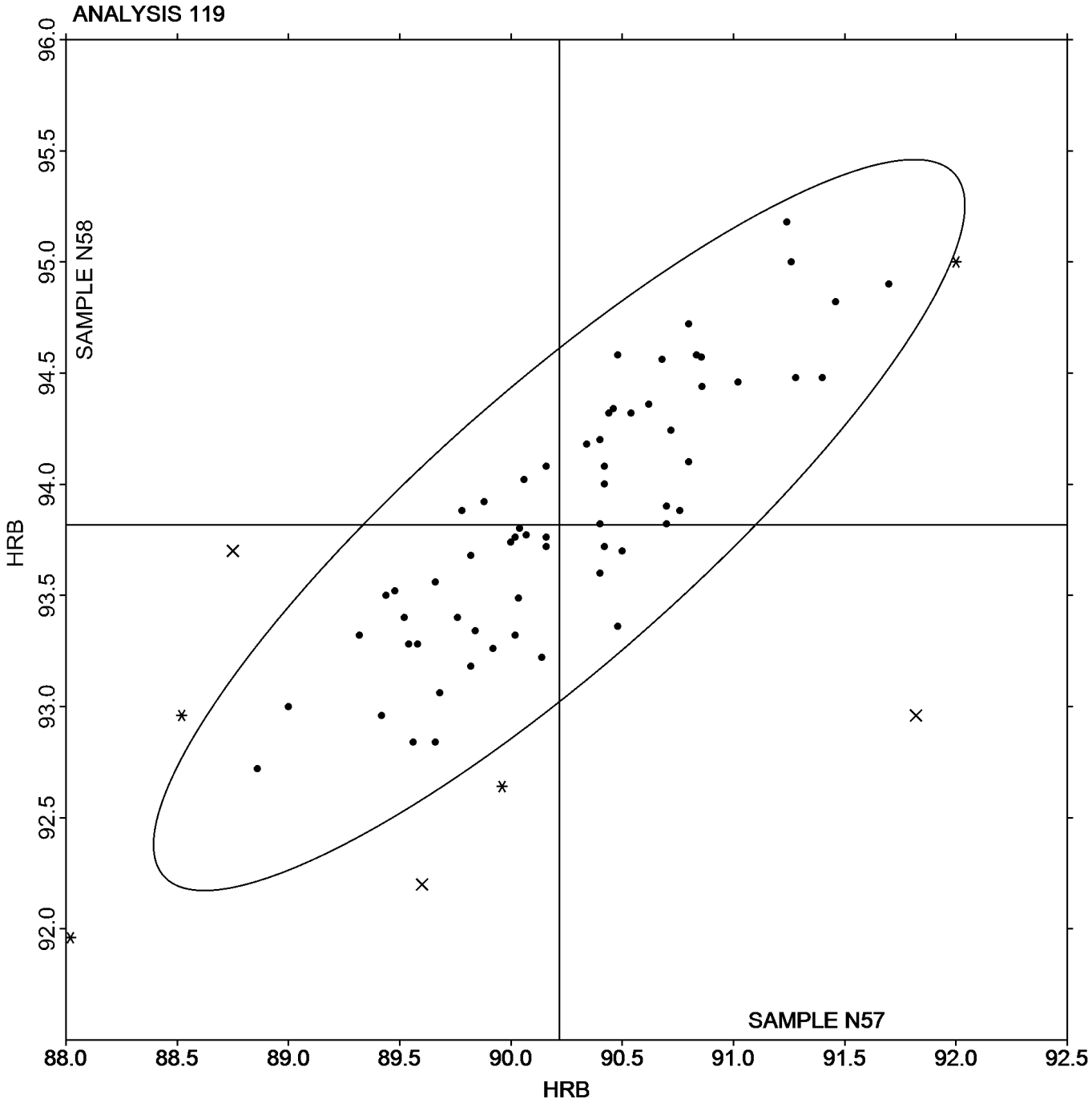
Comments on Assigned Data Flags for Test #119

7UNZAR (X) - Inconsistent in testing between samples.

G94XCV (X) - Inconsistent in testing between samples.

PQ6EBT (X) - Inconsistent in testing between samples.

SAMPLE N57	SAMPLE N58
90.22 HRB	93.82 HRB



		Sample S57			Sample S58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27FLKK		470.20	5.28	0.39	531.80	1.43	0.10
3C4ZU7		488.80	23.88	1.75	558.20	27.83	1.88
4KQ7VN		454.46	-10.46	-0.77	516.20	-14.17	-0.96
4U9D8D		458.60	-6.32	-0.46	511.20	-19.17	-1.29
4VKUMC		464.60	-0.32	-0.02	532.40	2.03	0.14
6HHMJT		471.20	6.28	0.46	531.00	0.63	0.04
6XBE39		491.40	26.48	1.94	550.60	20.23	1.37
7WDREN		452.60	-12.32	-0.90	529.40	-0.97	-0.07
7YKACK		468.60	3.68	0.27	532.20	1.83	0.12
8MM342		478.84	13.92	1.02	554.22	23.85	1.61
8NCMGJ		452.22	-12.70	-0.93	535.62	5.25	0.35
937C9A		455.80	-9.12	-0.67	505.00	-25.37	-1.71
9UFVFY		483.40	18.48	1.35	540.00	9.63	0.65
A29QQ3	*	453.60	-11.32	-0.83	494.80	-35.57	-2.40
A83RK9	X	520.00	55.08	4.04	452.20	-78.17	-5.28
AH22UY		452.42	-12.50	-0.92	532.20	1.83	0.12
AJDWE6		457.20	-7.72	-0.57	526.20	-4.17	-0.28
AP3GHL		461.44	-3.48	-0.26	530.00	-0.37	-0.03
BKNJMN		459.54	-5.38	-0.39	522.66	-7.71	-0.52
BPY4HV		483.80	18.88	1.38	543.20	12.83	0.87
CA3U6V		460.80	-4.12	-0.30	523.40	-6.97	-0.47
CNGJ3Q		461.60	-3.32	-0.24	527.40	-2.97	-0.20
CRGVYQ	X	528.00	63.08	4.62	465.00	-65.37	-4.41
CTW8MM		471.58	6.66	0.49	541.28	10.91	0.74
D6ZV9P		460.40	-4.52	-0.33	517.20	-13.17	-0.89
DDXKRF	X	398.20	-66.72	-4.89	532.20	1.83	0.12
DNE82F		451.66	-13.26	-0.97	527.74	-2.63	-0.18
E3BRUP		452.40	-12.52	-0.92	520.00	-10.37	-0.70
E62UZD		468.20	3.28	0.24	535.20	4.83	0.33
EDBHDB		457.40	-7.52	-0.55	507.40	-22.97	-1.55
EDVW9F		481.00	16.08	1.18	546.40	16.03	1.08
ERVJAM		442.20	-22.72	-1.67	513.80	-16.57	-1.12
F48G2R		483.00	18.08	1.33	527.00	-3.37	-0.23
FLJC94		459.60	-5.32	-0.39	534.80	4.43	0.30
FQRTJD		440.40	-24.52	-1.80	513.60	-16.77	-1.13
G3M6U7		468.40	3.48	0.26	526.60	-3.77	-0.25
G6V3V8		472.40	7.48	0.55	528.80	-1.57	-0.11
G94XCV		483.60	18.68	1.37	555.08	24.71	1.67
GANCGL		464.40	-0.52	-0.04	528.00	-2.37	-0.16
GR6KCU		455.20	-9.72	-0.71	517.40	-12.97	-0.88
GVL8NE		456.80	-8.12	-0.60	525.00	-5.37	-0.36
HVA2M3	*	500.00	35.08	2.57	560.80	30.43	2.05
HZRYHK		466.60	1.68	0.12	526.00	-4.37	-0.30
J4BFLB		454.69	-10.23	-0.75	521.79	-8.58	-0.58
JCZTCE		460.80	-4.12	-0.30	533.00	2.63	0.18
JXMUFA	X	425.40	-39.52	-2.90	540.80	10.43	0.70
KFGV4Y		491.00	26.08	1.91	537.40	7.03	0.47

		Sample S57			Sample S58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
KP4VDH		462.00	-2.92	-0.21	540.60	10.23	0.69
LFEHXH		462.20	-2.72	-0.20	518.60	-11.77	-0.79
M6CJK3		472.00	7.08	0.52	523.00	-7.37	-0.50
P2Q2F9		441.00	-23.92	-1.75	513.00	-17.37	-1.17
PKZYUX		461.20	-3.72	-0.27	542.40	12.03	0.81
PM7YZJ		473.40	8.48	0.62	525.40	-4.97	-0.34
Q47DRX		455.80	-9.12	-0.67	511.60	-18.77	-1.27
R2EQGL		473.60	8.68	0.64	530.80	0.43	0.03
RDRGA3		449.40	-15.52	-1.14	508.20	-22.17	-1.50
RMKMCF		466.20	1.28	0.09	531.00	0.63	0.04
T2KU7P		449.40	-15.52	-1.14	528.80	-1.57	-0.11
TY7UQB		454.98	-9.94	-0.73	513.16	-17.21	-1.16
U93MXE	*	495.02	30.10	2.21	572.42	42.05	2.84
UKGL2N		470.80	5.88	0.43	537.40	7.03	0.47
UPCAGV		486.60	21.68	1.59	565.40	35.03	2.36
VER2X8		466.24	1.32	0.10	533.40	3.03	0.20
VQNUYN		453.80	-11.12	-0.82	537.60	7.23	0.49
VRDHL6		443.60	-21.32	-1.56	528.00	-2.37	-0.16
VXK4CM		464.00	-0.92	-0.07	530.40	0.03	0.00
W86VD7		457.96	-6.96	-0.51	528.08	-2.29	-0.15
WDEEPX		472.30	7.38	0.54	536.44	6.07	0.41
X3NRZ9		484.80	19.88	1.46	529.20	-1.17	-0.08
X4FRZ6		473.64	8.72	0.64	532.00	1.63	0.11
X9TMRV		467.40	2.48	0.18	528.20	-2.17	-0.15
XGLYWP		454.70	-10.22	-0.75	520.74	-9.63	-0.65
XP2K6T		465.60	0.68	0.05	552.60	22.23	1.50
Y3MC89	*	488.50	23.58	1.73	570.08	39.71	2.68
YUEHCF		443.80	-21.12	-1.55	517.00	-13.37	-0.90
Z32XHV		459.20	-5.72	-0.42	515.80	-14.57	-0.98
ZFU3L8		445.20	-19.72	-1.45	526.00	-4.37	-0.30
ZU73CK		467.00	2.08	0.15	528.20	-2.17	-0.15

Summary Statistics

	Sample S57		Sample S58	
Grand Means	464.92	HK 500 gf	530.37	HK 500 gf
Stnd Dev Btwn Labs	13.64	HK 500 gf	14.82	HK 500 gf

Samples S57, S58 : Steel, Steel

Statistics based on 74 of 78 reporting participants

Comments on Assigned Data Flags for Test #121

A83RK9 (X) - Data appear to be transposed between samples.

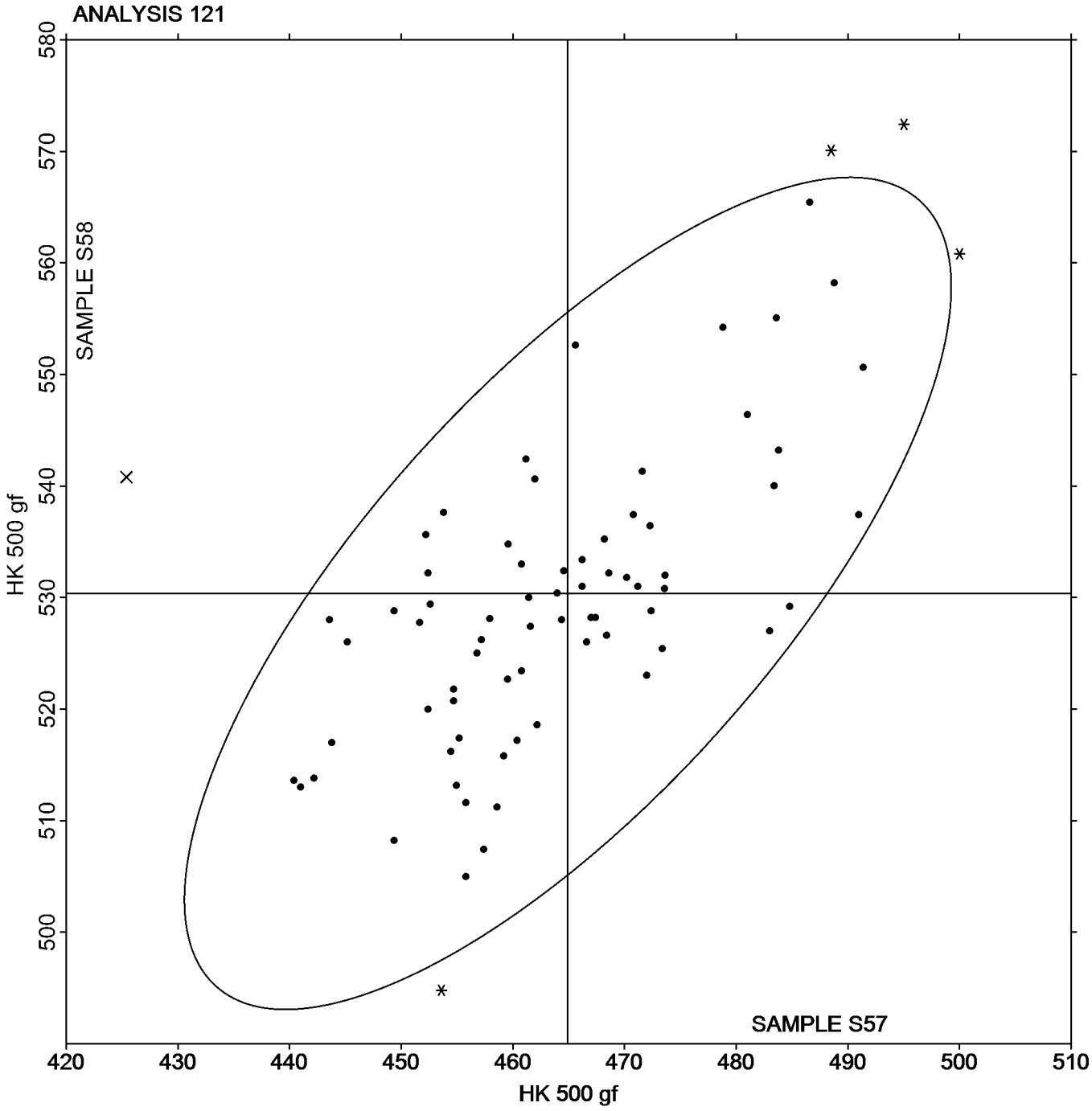
CRGVYQ (X) - Data appear to be transposed between samples.

DDXKRF (X) - Data for sample S57 are low.

JXMUFA (X) - Data for sample S57 are low.

SAMPLE S57
464.92 HK 500 gf

SAMPLE S58
530.37 HK 500 gf



		Sample S57			Sample S58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27FLKK		486.40	9.63	0.58	548.00	1.50	0.08
4VKUMC		468.20	-8.57	-0.52	543.40	-3.10	-0.17
6XBE39		501.60	24.83	1.49	575.60	29.10	1.56
7WDREN		480.00	3.23	0.19	544.20	-2.30	-0.12
7YKACK		470.60	-6.17	-0.37	533.20	-13.30	-0.71
8MM342		480.78	4.01	0.24	547.70	1.20	0.06
937C9A		457.00	-19.77	-1.19	506.40	-40.10	-2.15
9UFVFY		492.60	15.83	0.95	553.60	7.10	0.38
A29QQ3	X	472.40	-4.37	-0.26	497.60	-48.90	-2.62
A83RK9	X	515.80	39.03	2.35	453.00	-93.50	-5.02
AH22UY		455.52	-21.25	-1.28	530.00	-16.50	-0.89
AP3GHL		459.76	-17.01	-1.02	537.16	-9.34	-0.50
BPY4HV	*	510.40	33.63	2.02	561.60	15.10	0.81
CA3U6V		461.80	-14.97	-0.90	523.20	-23.30	-1.25
CNGJ3Q		480.80	4.03	0.24	551.00	4.50	0.24
CRGVYQ	X	657.00	180.23	10.84	559.40	12.90	0.69
CTW8MM		501.08	24.31	1.46	559.10	12.60	0.68
D6ZV9P		461.60	-15.17	-0.91	543.00	-3.50	-0.19
EDVW9F		500.60	23.83	1.43	564.20	17.70	0.95
ERVJAM		463.40	-13.37	-0.80	526.20	-20.30	-1.09
F48G2R		472.00	-4.77	-0.29	547.20	0.70	0.04
FLJC94		486.20	9.43	0.57	565.20	18.70	1.00
G3M6U7		474.40	-2.37	-0.14	550.20	3.70	0.20
G6V3V8		482.20	5.43	0.33	553.60	7.10	0.38
G94XCV	*	498.18	21.41	1.29	594.16	47.66	2.56
GANCGL		477.40	0.63	0.04	540.00	-6.50	-0.35
GVL8NE		458.60	-18.17	-1.09	522.60	-23.90	-1.28
HVA2M3		509.20	32.43	1.95	570.60	24.10	1.29
J4BFLB		467.55	-9.22	-0.55	530.68	-15.82	-0.85
JXMUFA		457.60	-19.17	-1.15	520.20	-26.30	-1.41
KP4VDH		461.08	-15.69	-0.94	533.74	-12.76	-0.68
LFEHXH		491.00	14.23	0.86	554.60	8.10	0.43
PM7YZJ		479.40	2.63	0.16	554.60	8.10	0.43
R2EQGL		486.20	9.43	0.57	557.60	11.10	0.60
RDRGA3		448.80	-27.97	-1.68	508.40	-38.10	-2.04
T2KU7P		459.60	-17.17	-1.03	534.80	-11.70	-0.63
TY7UQB		473.16	-3.61	-0.22	536.48	-10.02	-0.54
U93MXE	X	543.50	66.73	4.01	602.36	55.86	3.00
UKGL2N		485.40	8.63	0.52	561.00	14.50	0.78
UPCAGV		514.00	37.23	2.24	590.20	43.70	2.35
VQNUYN		473.40	-3.37	-0.20	537.60	-8.90	-0.48
VXK4CM		485.00	8.23	0.49	549.20	2.70	0.15
W86VD7		463.66	-13.11	-0.79	537.14	-9.36	-0.50
WDEEPX		484.56	7.79	0.47	554.68	8.18	0.44
X4FRZ6		473.04	-3.73	-0.22	537.24	-9.26	-0.50
XGLYWP		455.30	-21.47	-1.29	524.74	-21.76	-1.17
XP2K6T	*	466.00	-10.77	-0.65	561.20	14.70	0.79

WebCode	Data Flag	Sample S57 Lab Mean	Sample S57 Diff. from Grand Mean	Sample S57 CPV	Sample S58 Lab Mean	Sample S58 Diff. from Grand Mean	Sample S58 CPV
Y3MC89		501.22	24.45	1.47	579.40	32.90	1.77
YUEHCF		464.00	-12.77	-0.77	548.40	1.90	0.10
ZFU3L8		460.20	-16.57	-1.00	538.80	-7.70	-0.41
ZU73CK		467.80	-8.97	-0.54	543.60	-2.90	-0.16

Summary Statistics

	Sample S57		Sample S58	
Grand Means	476.77	HK 200 gf	546.50	HK 200 gf
Stnd Dev Btwn Labs	16.63	HK 200 gf	18.63	HK 200 gf

Samples S57, S58 : Steel, Steel

Statistics based on 47 of 51 reporting participants

Comments on Assigned Data Flags for Test #122

A29QQ3 (X) - Inconsistent in testing between samples.

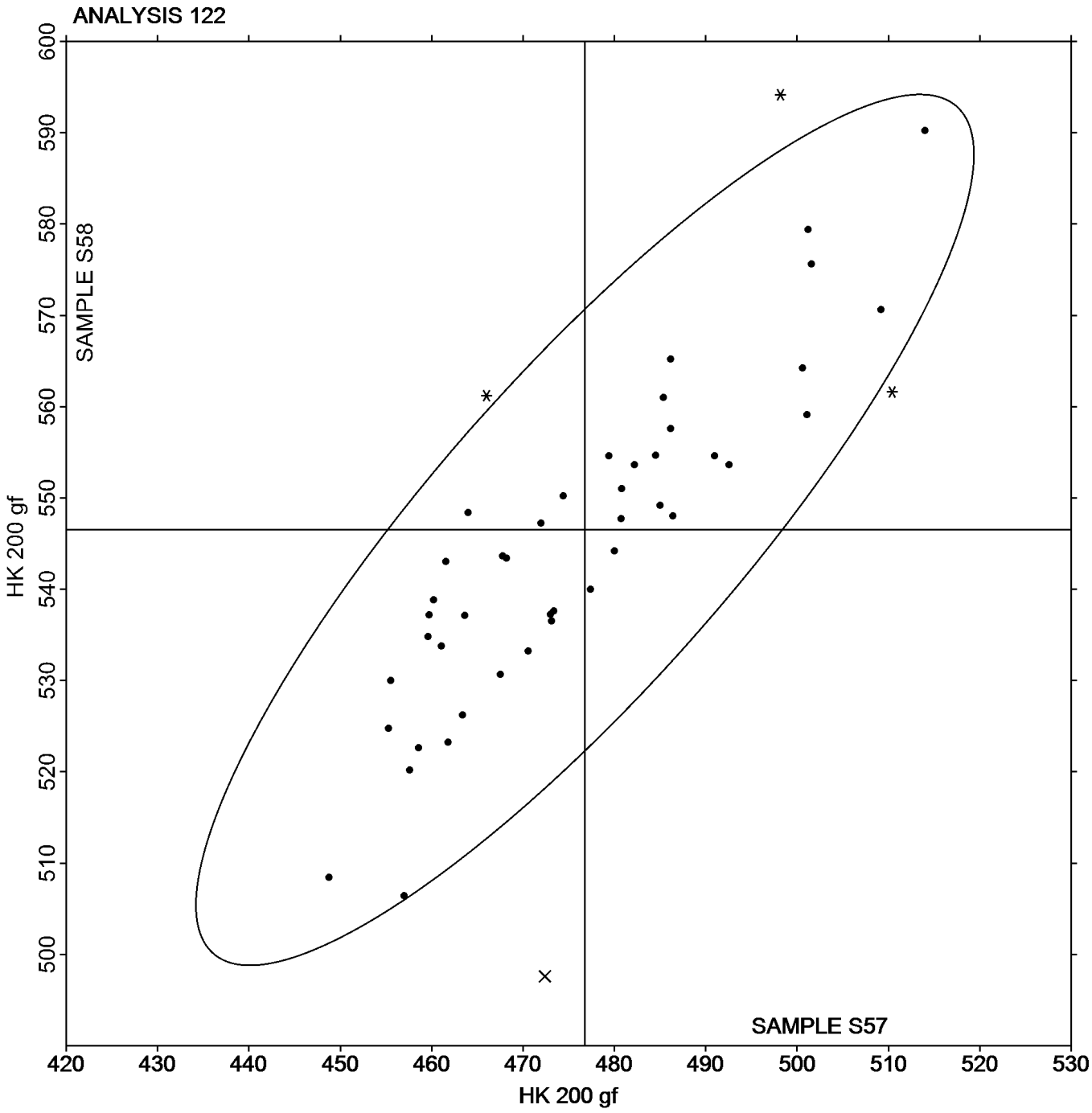
A83RK9 (X) - Data for sample S58 are low.

CRGVYQ (X) - Data for sample S57 are high. Inconsistent within the determinations of both samples.

U93MXE (X) - Data for both samples are high. Possible Systematic Error.

SAMPLE S57
476.77 HK 200 gf

SAMPLE S58
546.50 HK 200 gf



		Sample S57			Sample S58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22J9TN		441.20	-4.85	-0.41	512.40	-2.94	-0.26
2AULKR		440.20	-5.85	-0.50	511.20	-4.14	-0.37
2C42DX		450.20	4.15	0.35	526.20	10.86	0.98
33AYAM		461.55	15.50	1.31	532.72	17.39	1.57
3UKRNG		441.00	-5.05	-0.43	509.00	-6.34	-0.57
447MFP		434.60	-11.45	-0.97	501.20	-14.14	-1.27
44JETD		467.56	21.51	1.82	542.84	27.50	2.48
4BDKME		442.08	-3.97	-0.34	518.82	3.48	0.31
4KQ7VN		421.78	-24.27	-2.06	499.38	-15.96	-1.44
4VKUMC		436.80	-9.25	-0.78	505.20	-10.14	-0.91
4WH9ZW		439.60	-6.45	-0.55	514.20	-1.14	-0.10
6A2B47		440.78	-5.27	-0.45	501.86	-13.48	-1.21
6XBE39		473.20	27.15	2.30	528.40	13.06	1.18
79M2QZ	*	442.60	-3.45	-0.29	534.60	19.26	1.74
7DJRUQ		468.40	22.35	1.89	529.40	14.06	1.27
7ECGGR		455.40	9.35	0.79	513.20	-2.14	-0.19
7VMQER		444.52	-1.53	-0.13	511.92	-3.42	-0.31
7WDREN		446.80	0.75	0.06	521.00	5.66	0.51
7WGETG		467.80	21.75	1.84	525.40	10.06	0.91
7YKACK		449.60	3.55	0.30	519.20	3.86	0.35
8FM9ZD		442.80	-3.25	-0.28	513.20	-2.14	-0.19
8FPVGR		450.00	3.95	0.33	516.20	0.86	0.08
8MM342		454.46	8.41	0.71	530.40	15.06	1.36
8NCMGJ		441.40	-4.65	-0.39	515.00	-0.34	-0.03
8TBRGJ		445.40	-0.65	-0.06	511.60	-3.74	-0.34
8ULPV2		453.80	7.75	0.66	526.40	11.06	1.00
937C9A		432.00	-14.05	-1.19	493.20	-22.14	-1.99
9UFVFY		467.00	20.95	1.77	524.60	9.26	0.83
9UHP7K		465.80	19.75	1.67	517.80	2.46	0.22
A29QQ3		433.20	-12.85	-1.09	501.20	-14.14	-1.27
A83RK9	X	497.20	51.15	4.33	432.40	-82.94	-7.47
ACAYMT		455.66	9.61	0.81	526.34	11.00	0.99
AP3GHL		440.32	-5.73	-0.49	506.34	-9.00	-0.81
BPY4HV		463.60	17.55	1.49	524.00	8.66	0.78
BY6JDM		432.40	-13.65	-1.16	498.60	-16.74	-1.51
C6B6RR		458.60	12.55	1.06	521.80	6.46	0.58
CA3U6V		442.80	-3.25	-0.28	512.80	-2.54	-0.23
CBUC8B		430.20	-15.85	-1.34	501.00	-14.34	-1.29
CNGJ3Q		446.80	0.75	0.06	509.40	-5.94	-0.53
CQ7ALP		461.00	14.95	1.27	514.80	-0.54	-0.05
CRD6XA		442.15	-3.90	-0.33	518.54	3.20	0.29
CRGVYQ	X	483.20	37.15	3.15	424.40	-90.94	-8.19
D6ZV9P		435.20	-10.85	-0.92	521.80	6.46	0.58
D9N8AG		447.76	1.71	0.14	518.54	3.20	0.29
DDCVLD		461.00	14.95	1.27	521.20	5.86	0.53
DDXKRF		439.40	-6.65	-0.56	514.00	-1.34	-0.12
E62UZD		445.20	-0.85	-0.07	517.20	1.86	0.17

		Sample S57			Sample S58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
EDBHDB		438.80	-7.25	-0.61	497.80	-17.54	-1.58
EDVW9F		462.80	16.75	1.42	541.40	26.06	2.35
ERVJAM		427.20	-18.85	-1.60	501.60	-13.74	-1.24
F48G2R		432.80	-13.25	-1.12	509.80	-5.54	-0.50
F9MHJM		452.20	6.15	0.52	524.40	9.06	0.82
FLJC94		446.20	0.15	0.01	513.20	-2.14	-0.19
FQRTJD		434.00	-12.05	-1.02	504.20	-11.14	-1.00
G3M6U7		438.60	-7.45	-0.63	496.80	-18.54	-1.67
G4JHED		455.74	9.69	0.82	507.10	-8.24	-0.74
G6V3V8		449.80	3.75	0.32	509.00	-6.34	-0.57
G7PNRJ		463.80	17.75	1.50	529.60	14.26	1.29
G94XCV		449.08	3.03	0.26	520.30	4.96	0.45
GANCGL		449.00	2.95	0.25	529.20	13.86	1.25
GGJG6V		465.10	19.05	1.61	523.98	8.64	0.78
GVL8NE		440.60	-5.45	-0.46	509.20	-6.14	-0.55
GZFX3D		448.96	2.91	0.25	507.02	-8.32	-0.75
H4E2VQ		442.54	-3.51	-0.30	518.62	3.28	0.30
HHB23E		450.40	4.35	0.37	520.40	5.06	0.46
HVA2M3		464.00	17.95	1.52	532.80	17.46	1.57
HWU6PF		439.40	-6.65	-0.56	513.40	-1.94	-0.17
HZRYHK		460.00	13.95	1.18	532.00	16.66	1.50
J4BFLB		432.26	-13.79	-1.17	501.38	-13.96	-1.26
JXMUFA	X	497.80	51.75	4.38	450.40	-64.94	-5.85
KP4VDH		441.86	-4.19	-0.35	505.30	-10.04	-0.90
LE2X69		468.28	22.23	1.88	526.36	11.02	0.99
LFEHXH		454.00	7.95	0.67	516.60	1.26	0.11
M6CJK3		449.20	3.15	0.27	517.40	2.06	0.19
MMGEDE		457.40	11.35	0.96	530.80	15.46	1.39
P2Q2F9		433.20	-12.85	-1.09	499.40	-15.94	-1.44
PHQMQW		446.46	0.41	0.03	530.52	15.18	1.37
PM7YZJ		452.60	6.55	0.55	525.60	10.26	0.92
Q47DRX		441.00	-5.05	-0.43	495.60	-19.74	-1.78
QBWA3D		443.60	-2.45	-0.21	512.40	-2.94	-0.26
R2EQGL		446.80	0.75	0.06	506.40	-8.94	-0.81
RC2NNE		448.80	2.75	0.23	519.60	4.26	0.38
RDRGA3		424.80	-21.25	-1.80	495.20	-20.14	-1.81
RMEUG9		437.00	-9.05	-0.77	523.40	8.06	0.73
RMKMCF		443.00	-3.05	-0.26	519.20	3.86	0.35
RY6NNV	X	467.20	21.15	1.79	567.40	52.06	4.69
RYNPBX		443.20	-2.85	-0.24	503.40	-11.94	-1.08
T2KU7P		439.00	-7.05	-0.60	511.60	-3.74	-0.34
TEVBAE		440.80	-5.25	-0.44	508.90	-6.44	-0.58
UKGL2N		446.00	-0.05	0.00	518.00	2.66	0.24
UPCAGV		464.00	17.95	1.52	526.00	10.66	0.96
UUMTV9		428.68	-17.37	-1.47	505.80	-9.54	-0.86
VER2X8		440.76	-5.29	-0.45	500.84	-14.50	-1.31
VETN36		451.20	5.15	0.44	515.20	-0.14	-0.01

		Sample S57			Sample S58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
VQL6R7	*	436.60	-9.45	-0.80	528.60	13.26	1.20
VQNUYN		435.20	-10.85	-0.92	517.00	1.66	0.15
VRDHL6		430.80	-15.25	-1.29	506.80	-8.54	-0.77
VXK4CM		435.80	-10.25	-0.87	505.80	-9.54	-0.86
W3AZDJ		465.40	19.35	1.64	523.40	8.06	0.73
W86VD7		438.70	-7.35	-0.62	504.48	-10.86	-0.98
WC38FX		424.64	-21.41	-1.81	504.38	-10.96	-0.99
WE9ZKB		448.74	2.69	0.23	521.58	6.24	0.56
X3NRZ9		462.10	16.05	1.36	526.25	10.91	0.98
X9TMRV		434.40	-11.65	-0.99	502.60	-12.74	-1.15
XCRXMV		430.40	-15.65	-1.33	501.60	-13.74	-1.24
XGLYWP		430.60	-15.45	-1.31	500.74	-14.60	-1.32
XP2K6T		436.20	-9.85	-0.83	511.20	-4.14	-0.37
Y3MC89		464.88	18.83	1.59	541.54	26.20	2.36
YMENAT		447.80	1.75	0.15	526.20	10.86	0.98
YUEHCF		424.60	-21.45	-1.82	510.00	-5.34	-0.48
ZFU3L8		436.00	-10.05	-0.85	519.20	3.86	0.35
ZU73CK		452.00	5.95	0.50	514.00	-1.34	-0.12

Summary Statistics

	Sample S57		Sample S58	
Grand Means	446.05	HV 500 gf	515.34	HV 500 gf
Stnd Dev Btwn Labs	11.81	HV 500 gf	11.10	HV 500 gf

Samples S57, S58 : Steel, Steel

Statistics based on 108 of 112 reporting participants

Comments on Assigned Data Flags for Test #123

A83RK9 (X) - Data appear to be transposed between samples.

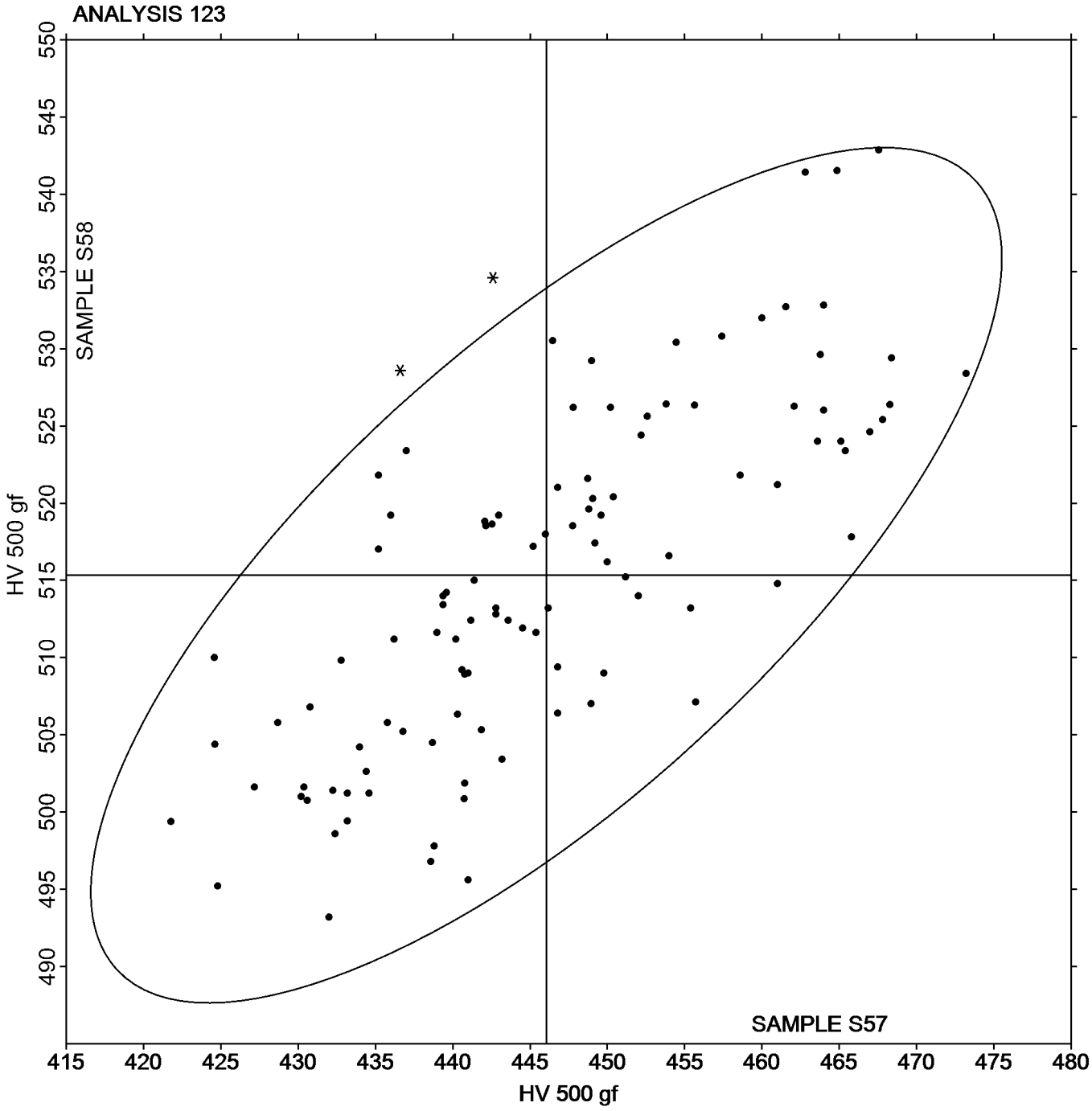
CRGVYQ (X) - Data for sample S57 are high and data for sample S58 are low. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

JXMUFA (X) - Data for sample S57 are high and data for sample S58 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample S58.

RY6NNV (X) - Data for sample S58 are high. Inconsistent within the determinations of sample S58.

SAMPLE S57
446.05 HV 500 gf

SAMPLE S58
515.34 HV 500 gf



		Sample D57			Sample D58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2XPZFL		352.00	-10.82	-1.39	408.40	-17.11	-1.72
32Y4JN		370.80	7.98	1.02	436.20	10.69	1.07
36ER2Z		359.80	-3.02	-0.39	422.40	-3.11	-0.31
3P36MC		364.50	1.68	0.22	424.20	-1.31	-0.13
4A79YC		353.60	-9.22	-1.18	419.80	-5.71	-0.57
4BDKME		354.40	-8.42	-1.08	407.40	-18.11	-1.82
4E2Z6N		363.00	0.18	0.02	429.00	3.49	0.35
4U9D8D		372.60	9.78	1.25	431.40	5.89	0.59
6PQCL7		376.20	13.38	1.72	449.20	23.69	2.38
7U6DDV		363.40	0.58	0.07	420.00	-5.51	-0.55
7VMQER		373.00	10.18	1.31	428.40	2.89	0.29
7YKACK		365.40	2.58	0.33	444.00	18.49	1.86
8FM9ZD		364.40	1.58	0.20	421.80	-3.71	-0.37
8VRBAZ		368.00	5.18	0.66	432.00	6.49	0.65
9UFVFY		353.20	-9.62	-1.23	415.20	-10.31	-1.04
AGJ6AL		348.80	-14.02	-1.80	411.60	-13.91	-1.40
BFJN99	X	309.60	-53.22	-6.82	363.00	-62.51	-6.28
BTXMFN		375.00	12.18	1.56	429.00	3.49	0.35
CA3U6V		375.00	12.18	1.56	444.00	18.49	1.86
CNGJ3Q		366.00	3.18	0.41	431.40	5.89	0.59
DDXKRF		366.24	3.42	0.44	429.30	3.79	0.38
DPAUDJ		362.20	-0.62	-0.08	440.40	14.89	1.49
DVVMR6		362.20	-0.62	-0.08	426.60	1.09	0.11
DWQTZN		363.00	0.18	0.02	429.00	3.49	0.35
E2Z76N	*	344.40	-18.42	-2.36	396.00	-29.51	-2.96
E7BYFM		364.60	1.78	0.23	424.80	-0.71	-0.07
EDVW9F		364.20	1.38	0.18	426.60	1.09	0.11
EMXEJJ		358.40	-4.42	-0.57	414.40	-11.11	-1.12
ERVJAM		363.00	0.18	0.02	429.00	3.49	0.35
F9MHJM		354.60	-8.22	-1.05	432.20	6.69	0.67
FQRTJD	*	380.20	17.38	2.23	429.00	3.49	0.35
G3M6U7		365.80	2.98	0.38	429.40	3.89	0.39
G6V3V8	*	350.80	-12.02	-1.54	400.40	-25.11	-2.52
G94XCV		376.20	13.38	1.72	434.40	8.89	0.89
GA4XMG		363.20	0.38	0.05	423.60	-1.91	-0.19
HHB23E		367.60	4.78	0.61	422.40	-3.11	-0.31
HZRYHK		365.40	2.58	0.33	425.80	0.29	0.03
J4BFLB		363.80	0.98	0.13	424.80	-0.71	-0.07
JYRL8W		363.00	0.18	0.02	415.00	-10.51	-1.06
KP4VDH		354.20	-8.62	-1.11	409.40	-16.11	-1.62
L84L7B		366.78	3.96	0.51	429.50	3.99	0.40
LFEHXH		362.12	-0.70	-0.09	421.10	-4.41	-0.44
LYN3NX		362.74	-0.08	-0.01	425.04	-0.47	-0.05
MCVUUX	*	363.00	0.18	0.02	444.00	18.49	1.86
MM6HFF		352.00	-10.82	-1.39	415.00	-10.51	-1.06
MVRVPL		363.00	0.18	0.02	426.20	0.69	0.07
NJ6MC7		371.80	8.98	1.15	432.80	7.29	0.73

		Sample D57			Sample D58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
NKGDR3		359.00	-3.82	-0.49	416.80	-8.71	-0.87
PAR3KU		361.80	-1.02	-0.13	423.60	-1.91	-0.19
PCLRYA		368.20	5.38	0.69	432.40	6.89	0.69
PPKRKX		363.00	0.18	0.02	429.00	3.49	0.35
PQ6EBT		362.20	-0.62	-0.08	423.00	-2.51	-0.25
PZ47MZ		360.18	-2.64	-0.34	426.02	0.51	0.05
Q3BPD9		364.00	1.18	0.15	422.80	-2.71	-0.27
Q43QD6		363.00	0.18	0.02	439.60	14.09	1.41
Q47DRX		360.80	-2.02	-0.26	418.40	-7.11	-0.71
R9CLAD		354.60	-8.22	-1.05	414.20	-11.31	-1.14
RBKYB7		364.00	1.18	0.15	430.40	4.89	0.49
RMC8YU		358.60	-4.22	-0.54	428.00	2.49	0.25
RYNPBX		369.40	6.58	0.84	429.40	3.89	0.39
T2KU7P		354.60	-8.22	-1.05	421.60	-3.91	-0.39
TG2LCA		375.00	12.18	1.56	444.00	18.49	1.86
TRGEPX		364.00	1.18	0.15	425.00	-0.51	-0.05
UAJHYE		366.20	3.38	0.43	420.40	-5.11	-0.51
UKJ9H2		363.00	0.18	0.02	429.00	3.49	0.35
UXGDDR		359.20	-3.62	-0.46	418.00	-7.51	-0.75
UYWLT8	X	415.00	52.18	6.69	363.00	-62.51	-6.28
VXK4CM		356.40	-6.42	-0.82	432.00	6.49	0.65
X3NRZ9	*	343.00	-19.82	-2.54	414.00	-11.51	-1.16
X7N3V9		358.40	-4.42	-0.57	422.60	-2.91	-0.29
XP2K6T		370.80	7.98	1.02	423.00	-2.51	-0.25
XYTLEW	*	341.00	-21.82	-2.80	415.00	-10.51	-1.06
YMENAT		361.40	-1.42	-0.18	423.80	-1.71	-0.17
Z6A9EY		375.00	12.18	1.56	444.00	18.49	1.86
ZHEBU2		373.00	10.18	1.31	435.00	9.49	0.95
ZJ29Q7	X	110.04	-252.78	-32.41	112.76	-312.75	-31.41
ZU73CK		365.40	2.58	0.33	425.40	-0.11	-0.01

Summary Statistics

	Sample D57		Sample D58	
Grand Means	362.82	HBW	425.51	HBW
Stnd Dev Btwn Labs	7.80	HBW	9.96	HBW

Samples D57, D58 : Steel, Steel

Statistics based on 74 of 77 reporting participants

Samples D57, D58 are hardness test blocks made from steel. The blocks are heat treated to hardness levels specified by CTS.

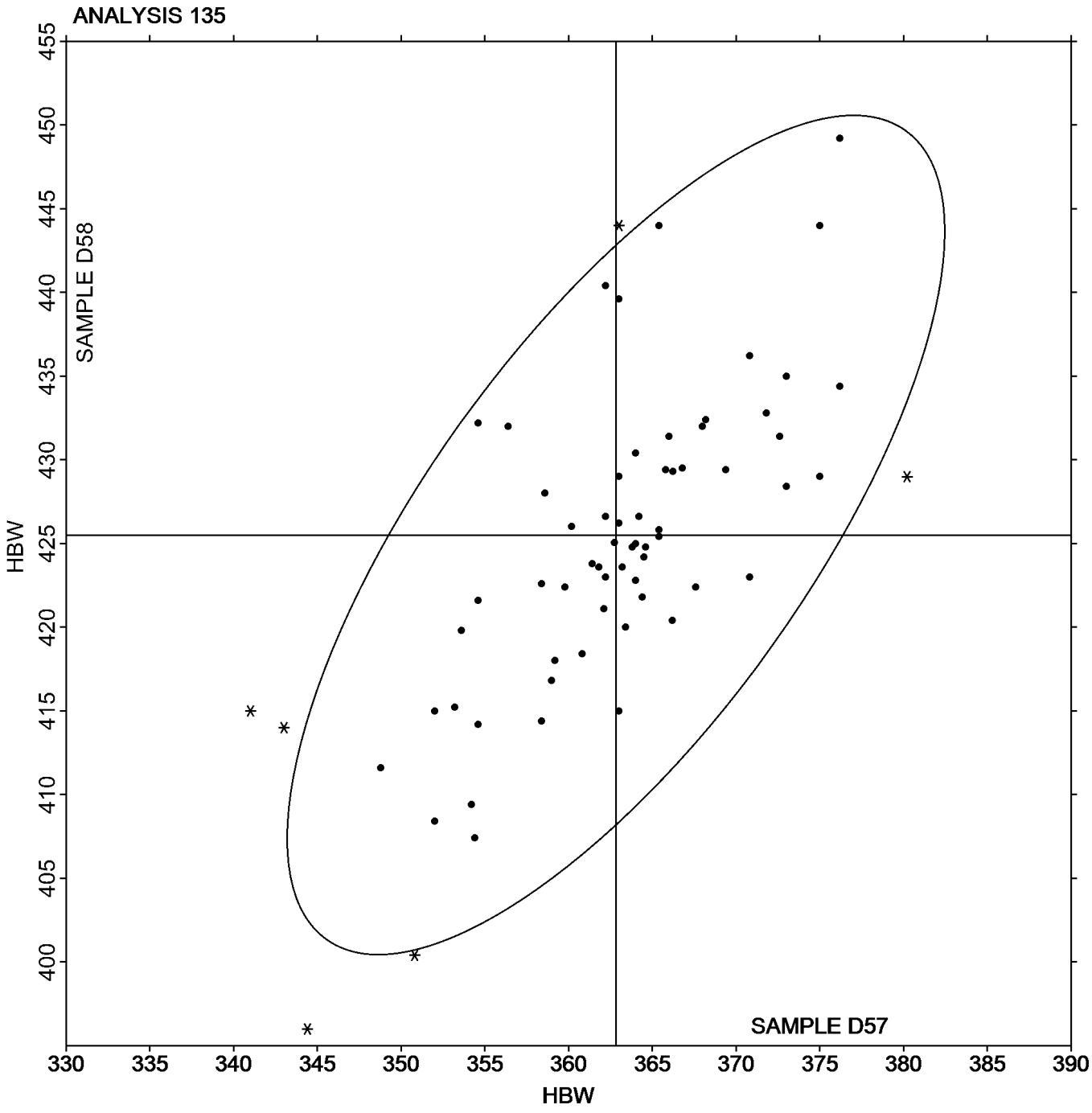
Comments on Assigned Data Flags for Test #135

BFJN99 (X) - Data for both samples are low. Inconsistent within the determinations of sample D57.

UYWLT8 (X) - Data appear to be transposed between samples.

ZJ29Q7 (X) - Extreme data.

SAMPLE D57	SAMPLE D58
362.82 HBW	425.51 HBW



		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2MHYMU		72.23	-0.20	-0.25	72.08	-0.67	-0.60
2Q4CVX		72.10	-0.33	-0.41	74.00	1.25	1.14
2U7FGR	X	75.96	3.52	4.37	76.37	3.62	3.29
2VYXAY		72.80	0.37	0.45	74.00	1.25	1.14
2XPZFL		73.36	0.93	1.15	74.55	1.80	1.63
4A79YC		72.95	0.52	0.65	72.37	-0.37	-0.34
4KPRBV		72.08	-0.35	-0.43	73.24	0.50	0.45
4U9D8D		73.38	0.94	1.17	72.91	0.16	0.14
6LX6TW		73.54	1.11	1.37	75.01	2.26	2.05
7KGHDF		71.80	-0.63	-0.79	71.40	-1.35	-1.23
7U6DDV		72.12	-0.32	-0.39	71.66	-1.09	-0.99
7WGETG		72.70	0.27	0.33	74.00	1.25	1.14
7YKACK		73.31	0.88	1.09	74.24	1.49	1.35
82GNBN		73.44	1.01	1.25	72.57	-0.18	-0.17
8JEBD8	*	72.38	-0.05	-0.07	70.14	-2.61	-2.37
8ULPV2		73.30	0.87	1.07	74.00	1.25	1.14
9XF3YC		73.20	0.77	0.95	72.80	0.05	0.05
A3M2VM		72.20	-0.23	-0.29	72.60	-0.15	-0.14
A6QKTV		74.05	1.61	2.00	74.95	2.20	2.00
ADDX32		72.70	0.27	0.33	74.00	1.25	1.14
AGJ6AL		72.14	-0.29	-0.36	71.70	-1.05	-0.95
AKDUVT		72.77	0.33	0.41	74.09	1.34	1.21
AKNWGR		72.61	0.17	0.21	73.64	0.89	0.81
AP3GHL		73.42	0.98	1.22	72.59	-0.16	-0.15
BMVCQH		73.03	0.59	0.74	74.09	1.34	1.21
CA3U6V		72.50	0.07	0.08	73.00	0.25	0.23
CCTDFN		72.20	-0.23	-0.29	73.30	0.55	0.50
D23AA8		72.88	0.45	0.55	71.97	-0.78	-0.71
D6ZV9P		71.20	-1.23	-1.53	71.60	-1.15	-1.04
DM63MR		73.20	0.77	0.95	74.50	1.75	1.59
DVVMR6	*	70.30	-2.13	-2.65	71.70	-1.05	-0.95
DWQTZN		70.80	-1.63	-2.03	72.50	-0.25	-0.23
E2Z76N		72.80	0.37	0.45	73.40	0.65	0.59
E3BRUP		71.50	-0.93	-1.16	72.50	-0.25	-0.23
E7BYFM		71.70	-0.73	-0.91	72.70	-0.05	-0.04
EMXEJJ		73.00	0.57	0.70	72.50	-0.25	-0.23
ERVJAM		71.63	-0.80	-0.99	73.07	0.32	0.29
F9MHJM		72.08	-0.35	-0.44	72.64	-0.11	-0.10
FQRTJD		71.36	-1.07	-1.33	71.50	-1.25	-1.13
G3M6U7		71.80	-0.63	-0.79	71.70	-1.05	-0.95
GA4XMG		73.10	0.67	0.83	72.37	-0.37	-0.34
GRHB4L		73.35	0.92	1.14	73.14	0.39	0.36
HM9DDJ		72.50	0.07	0.08	73.50	0.75	0.68
HZRYHK	*	70.60	-1.83	-2.27	73.10	0.35	0.32
J4BFLB		71.30	-1.13	-1.41	70.30	-2.45	-2.22
JDMZ8Q		72.82	0.39	0.48	73.37	0.62	0.56
JE6U9Z		73.39	0.96	1.19	71.88	-0.87	-0.79

		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
JYRL8W		73.00	0.57	0.70	72.20	-0.55	-0.50
KP4VDH		72.60	0.17	0.21	73.30	0.55	0.50
L3NW9E	X	71.94	-0.49	-0.61	76.15	3.40	3.08
L6EYE3		73.97	1.54	1.91	73.24	0.50	0.45
LWXE3Q		74.10	1.67	2.07	73.20	0.45	0.41
LY4RR6		71.65	-0.78	-0.97	72.23	-0.52	-0.47
MVRVPL		72.20	-0.23	-0.29	73.60	0.85	0.77
MZAWHX		72.89	0.46	0.57	73.84	1.09	0.99
NRVCQL		72.75	0.32	0.39	73.71	0.96	0.88
P9FK6V		71.40	-1.03	-1.28	70.30	-2.45	-2.22
PL8XR8		72.10	-0.33	-0.41	73.20	0.45	0.41
PQ6EBT		71.50	-0.93	-1.16	71.20	-1.55	-1.41
Q3BPD9		71.50	-0.93	-1.16	72.10	-0.65	-0.59
RGTK4A		72.70	0.27	0.33	73.90	1.15	1.04
RK2GGD		71.34	-1.09	-1.36	72.56	-0.19	-0.17
RY6NNV		70.53	-1.90	-2.36	70.81	-1.94	-1.76
RYNPBX		72.65	0.22	0.27	71.23	-1.52	-1.38
TLW9F6		72.90	0.47	0.58	73.60	0.85	0.77
TRGEPX		72.95	0.52	0.65	72.95	0.21	0.19
U8AF44		72.60	0.17	0.21	73.40	0.65	0.59
UAJHYE		72.84	0.41	0.50	73.99	1.24	1.13
UKJ9H2		71.02	-1.41	-1.75	70.56	-2.19	-1.99
UPCAGV		72.70	0.27	0.33	71.80	-0.95	-0.86
UYWLT8	X	68.90	-3.53	-4.38	69.80	-2.95	-2.68
VADNJD		72.14	-0.30	-0.37	72.77	0.02	0.02
VFEXNK		71.94	-0.49	-0.61	70.92	-1.83	-1.66
VU6JL2		73.30	0.87	1.07	72.70	-0.05	-0.04
X4ZLL2		72.50	0.07	0.08	72.80	0.05	0.05
XGLYWP		72.52	0.09	0.11	71.36	-1.39	-1.26
XYTLEW	X	68.03	-4.41	-5.47	72.87	0.12	0.11
YBWNFY		72.50	0.07	0.08	73.30	0.55	0.50
Z27F79		72.60	0.17	0.21	73.55	0.80	0.73
Z32XHV		72.20	-0.23	-0.29	71.90	-0.85	-0.77
ZHEBU2		72.40	-0.03	-0.04	71.80	-0.95	-0.86
ZJ29Q7		72.25	-0.19	-0.23	73.11	0.36	0.33
ZU73CK		72.40	-0.03	-0.04	73.20	0.45	0.41

Summary Statistics

	Sample P57		Sample P58	
Grand Means	72.43	ksi	72.75	ksi
Stnd Dev Btwn Labs	0.81	ksi	1.10	ksi

Samples P57, P58 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 79 of 83 reporting participants

Comments on Assigned Data Flags for Test #140

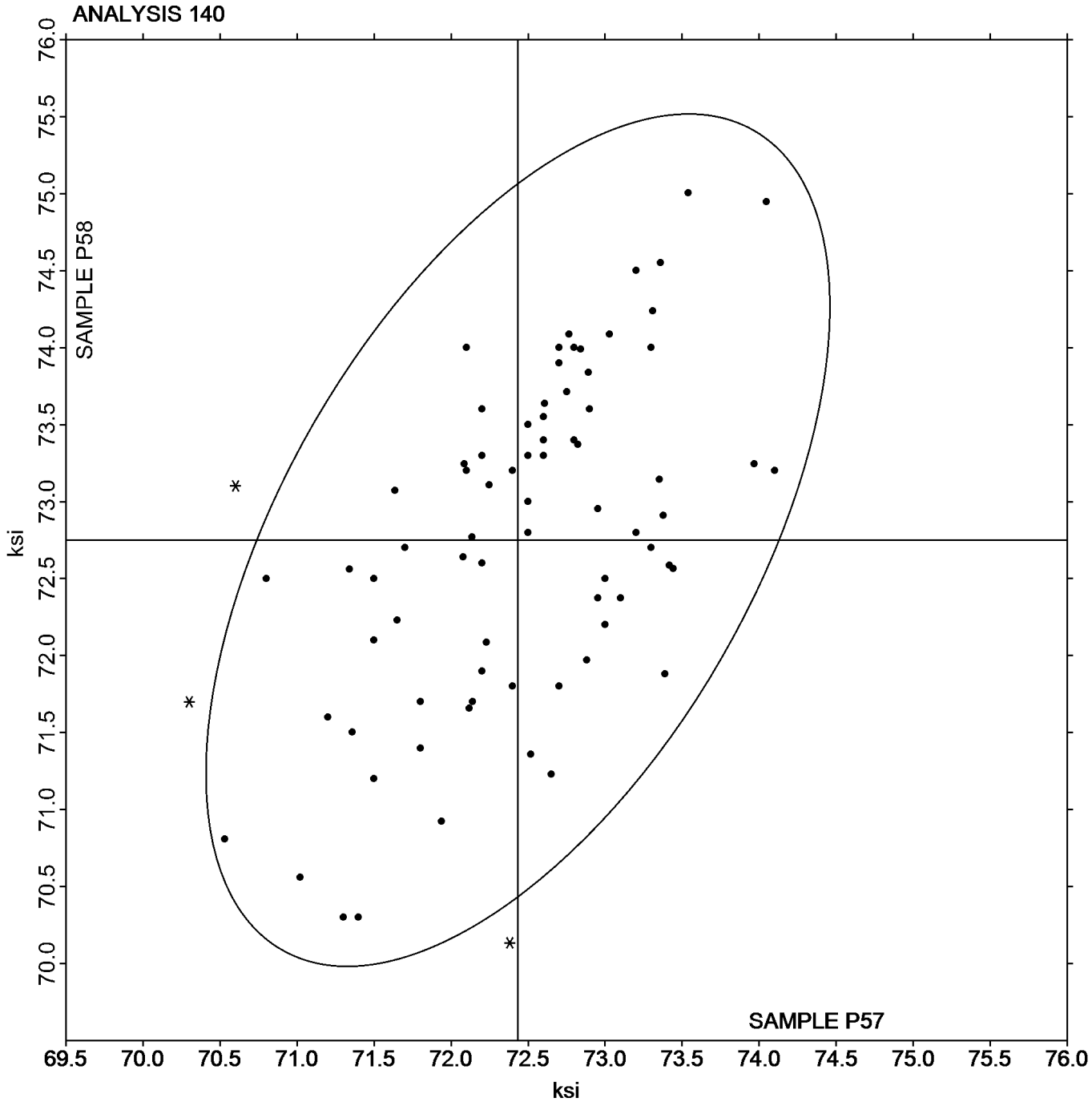
2U7FGR (X) - Data for both samples are high.

L3NW9E (X) - Data for sample P58 are high.

UYWLT8 (X) - Data for sample P57 are low.

XYTLEW (X) - Data for sample P57 are low.

SAMPLE P57	SAMPLE P58
72.43 ksi	72.75 ksi



		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2MHYMU		50.04	-0.15	-0.04	52.21	-0.05	-0.02
2Q4CVX	*	54.80	4.61	1.29	49.90	-2.37	-0.78
2U7FGR		49.50	-0.69	-0.19	50.75	-1.52	-0.50
2VYXAY		50.50	0.31	0.09	52.70	0.43	0.14
2XPZFL		51.61	1.42	0.40	56.76	4.49	1.48
4A79YC		48.73	-1.45	-0.41	51.34	-0.92	-0.30
4KPRBV		46.62	-3.57	-1.00	49.37	-2.90	-0.95
4U9D8D		49.72	-0.47	-0.13	52.39	0.12	0.04
6LX6TW		50.34	0.15	0.04	53.75	1.48	0.49
7KGHDF		53.20	3.01	0.84	56.70	4.43	1.46
7U6DDV		47.72	-2.47	-0.69	50.46	-1.81	-0.59
7WGETG		52.30	2.11	0.59	50.30	-1.97	-0.65
7YKACK		51.18	0.99	0.28	52.63	0.36	0.12
82GNBN		48.36	-1.83	-0.51	51.11	-1.16	-0.38
8JEBD8		45.87	-4.32	-1.21	47.72	-4.55	-1.49
8ULPV2	*	58.90	8.71	2.44	54.70	2.43	0.80
9XF3YC		51.47	1.29	0.36	54.01	1.74	0.57
A3M2VM		54.70	4.51	1.26	55.30	3.03	1.00
A6QKTV		44.90	-5.28	-1.48	45.74	-6.53	-2.15
ADDX32		52.10	1.91	0.54	57.70	5.43	1.79
AGJ6AL	M	47.72	-2.47	-0.69	No Data Reported		
AKDUVT		51.17	0.98	0.28	52.77	0.50	0.16
AKNWGR		52.20	2.01	0.56	53.94	1.67	0.55
AP3GHL		47.72	-2.46	-0.69	49.98	-2.29	-0.75
BMVCQH		55.22	5.03	1.41	57.65	5.38	1.77
CA3U6V		47.70	-2.49	-0.70	49.80	-2.47	-0.81
CCTDFN		51.40	1.21	0.34	53.00	0.73	0.24
D23AA8		49.74	-0.45	-0.12	51.07	-1.20	-0.39
D6ZV9P	X	67.00	16.81	4.70	49.20	-3.07	-1.01
DM63MR		45.70	-4.49	-1.25	51.70	-0.57	-0.19
DVVMR6		50.60	0.41	0.12	52.10	-0.17	-0.06
DWQTZN	X	53.80	3.61	1.01	62.00	9.73	3.20
E2Z76N		48.70	-1.49	-0.42	52.00	-0.27	-0.09
E3BRUP		52.00	1.81	0.51	49.50	-2.77	-0.91
E7BYFM		45.90	-4.29	-1.20	48.50	-3.77	-1.24
EMXEJJ		46.60	-3.59	-1.00	49.70	-2.57	-0.84
ERVJAM		47.66	-2.53	-0.71	50.13	-2.14	-0.70
F9MHJM		49.06	-1.12	-0.31	51.44	-0.83	-0.27
FQRTJD		47.86	-2.32	-0.65	50.62	-1.65	-0.54
G3M6U7		57.40	7.21	2.02	59.70	7.43	2.44
GA4XMG		48.73	-1.45	-0.41	51.92	-0.34	-0.11
GRHB4L		52.90	2.71	0.76	54.51	2.24	0.74
HM9DDJ	*	52.40	2.21	0.62	48.60	-3.67	-1.21
HZRYHK		46.44	-3.74	-1.05	52.14	-0.13	-0.04
J4BFLB		46.50	-3.69	-1.03	48.10	-4.17	-1.37
JDMZ8Q		50.17	-0.01	0.00	50.36	-1.91	-0.63
JE6U9Z		49.40	-0.79	-0.22	52.87	0.60	0.20

		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
JYRL8W	*	59.80	9.61	2.69	60.90	8.63	2.84
KP4VDH		48.10	-2.09	-0.58	50.40	-1.87	-0.61
L3NW9E		47.57	-2.61	-0.73	53.23	0.96	0.32
L6EYE3		53.66	3.48	0.97	52.79	0.53	0.17
LWXE3Q	*	56.80	6.61	1.85	52.20	-0.07	-0.02
LY4RR6	X	56.28	6.09	1.70	62.51	10.24	3.37
MVRVPL		52.20	2.01	0.56	55.90	3.63	1.19
MZAWHX		52.67	2.49	0.70	54.09	1.82	0.60
NRVCQL		48.83	-1.35	-0.38	50.84	-1.43	-0.47
P9FK6V		52.90	2.71	0.76	53.40	1.13	0.37
PL8XR8		54.90	4.71	1.32	56.10	3.83	1.26
PQ6EBT		50.90	0.71	0.20	53.30	1.03	0.34
Q3BPD9		54.80	4.61	1.29	56.10	3.83	1.26
RGTK4A		49.10	-1.09	-0.30	52.80	0.53	0.17
RK2GGD		48.34	-1.85	-0.52	51.99	-0.28	-0.09
RY6NNV		46.44	-3.75	-1.05	48.75	-3.52	-1.16
RYNPBX		50.95	0.77	0.21	54.88	2.61	0.86
TLW9F6		54.90	4.71	1.32	57.40	5.13	1.69
TRGEPX		47.57	-2.61	-0.73	49.89	-2.37	-0.78
U8AF44		54.00	3.81	1.07	58.30	6.03	1.98
UAJHYE		48.42	-1.77	-0.49	51.46	-0.81	-0.27
UKJ9H2		48.60	-1.59	-0.44	55.07	2.80	0.92
UPCAGV		47.00	-3.19	-0.89	48.60	-3.67	-1.21
UYWLT8	*	39.00	-11.19	-3.13	44.40	-7.87	-2.59
VADNJD		47.86	-2.33	-0.65	50.76	-1.51	-0.50
VFEXNK		47.72	-2.47	-0.69	48.59	-3.68	-1.21
VU6JL2		57.10	6.91	1.93	54.60	2.33	0.77
X4ZLL2		47.40	-2.79	-0.78	52.30	0.03	0.01
XGLYWP		48.44	-1.74	-0.49	50.33	-1.94	-0.64
XYTLEW	*	44.40	-5.78	-1.62	52.59	0.32	0.10
YBWNFY		54.10	3.91	1.09	56.00	3.73	1.23
Z27F79		49.78	-0.41	-0.11	50.20	-2.07	-0.68
Z32XHV		50.20	0.01	0.00	50.40	-1.87	-0.61
ZHEBU2		46.60	-3.59	-1.00	49.70	-2.57	-0.84
ZJ29Q7		47.70	-2.49	-0.70	51.03	-1.24	-0.41

Summary Statistics

	Sample P57		Sample P58	
Grand Means	50.19	ksi	52.27	ksi
Stnd Dev Btwn Labs	3.58	ksi	3.04	ksi

Samples P57, P58 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 78 of 82 reporting participants

Comments on Assigned Data Flags for Test #141

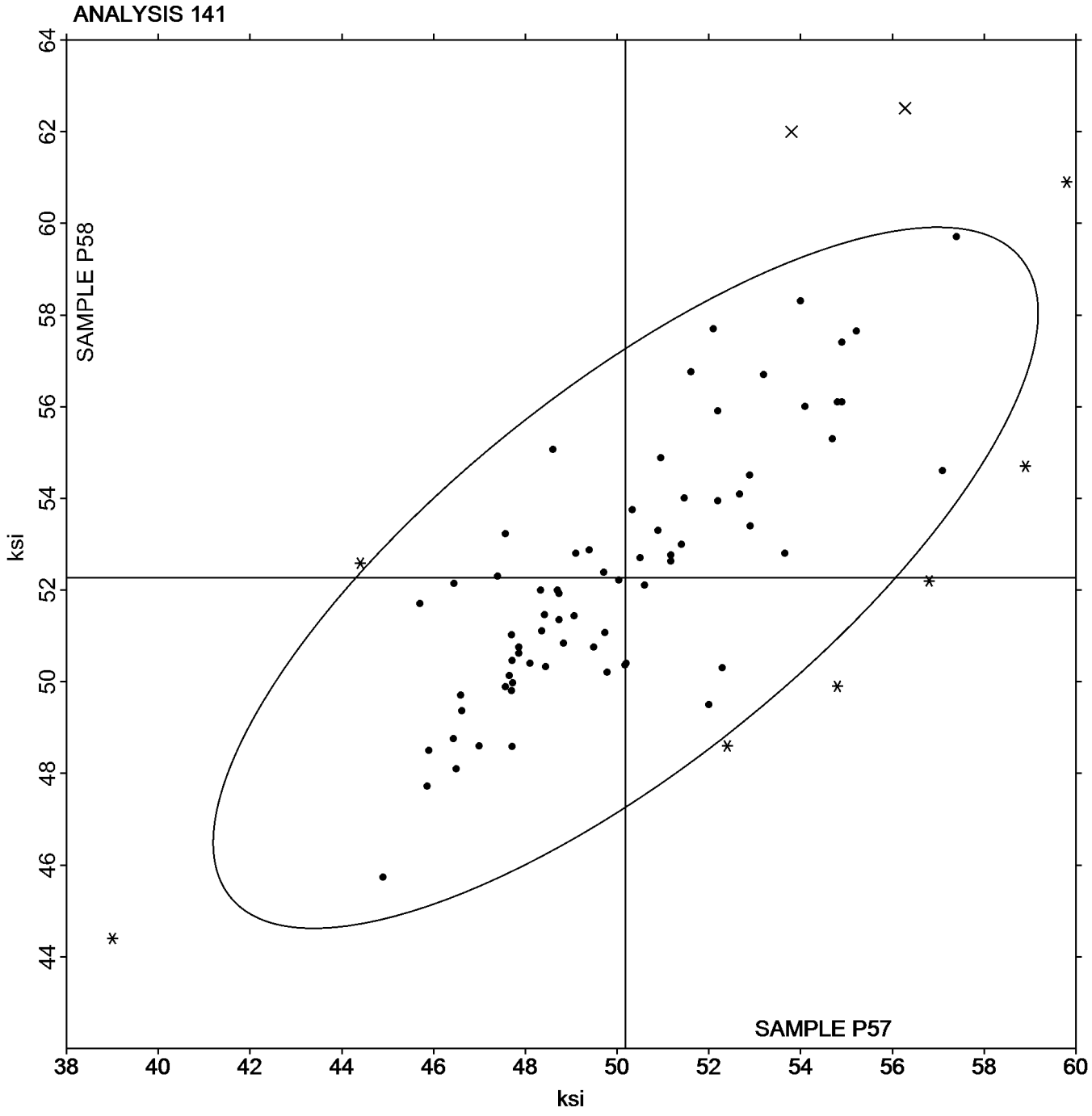
AGJ6AL (M) - Participant did not submit data for sample P58.

D6ZV9P (X) - Data for sample P57 are high.

DWQTZN (X) - Data for sample P58 are high.

LY4RR6 (X) - Data for sample P58 are high.

SAMPLE P57	SAMPLE P58
50.19 ksi	52.27 ksi



		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2MHYMU		36.30	1.83	0.92	36.50	2.56	1.23
2Q4CVX	X	34.80	0.33	0.16	30.40	-3.54	-1.70
2U7FGR		32.29	-2.18	-1.11	31.50	-2.44	-1.17
2VYXAY		31.00	-3.47	-1.76	31.00	-2.94	-1.41
2XPZFL		32.00	-2.47	-1.25	31.00	-2.94	-1.41
4A79YC		31.00	-3.47	-1.76	30.80	-3.14	-1.51
4KPRBV		35.98	1.51	0.76	35.02	1.08	0.52
4U9D8D		32.37	-2.10	-1.07	31.83	-2.11	-1.01
6LX6TW		34.70	0.23	0.11	35.70	1.76	0.85
7KGHDF		33.00	-1.47	-0.75	33.50	-0.44	-0.21
7U6DDV		34.00	-0.47	-0.24	34.02	0.08	0.04
7WGETG		35.00	0.53	0.27	35.00	1.06	0.51
7YKACK		34.90	0.43	0.22	34.00	0.06	0.03
82GNBN		37.00	2.53	1.28	38.00	4.06	1.95
8JEBD8	*	33.25	-1.22	-0.62	35.25	1.31	0.63
8ULPV2		32.50	-1.97	-1.00	32.20	-1.74	-0.84
9XF3YC		32.87	-1.60	-0.81	33.89	-0.05	-0.02
A3M2VM		33.00	-1.47	-0.75	32.50	-1.44	-0.69
A6QKTV		36.40	1.93	0.97	36.00	2.06	0.99
ADDX32		33.40	-1.07	-0.54	32.30	-1.64	-0.79
AGJ6AL	M	32.10	-2.37	-1.20	No Data Reported		
AKDUVT		34.10	-0.37	-0.19	33.50	-0.44	-0.21
AKNWGR		35.00	0.53	0.27	33.40	-0.54	-0.26
AP3GHL		32.90	-1.57	-0.80	32.40	-1.54	-0.74
BMVCQH		35.90	1.43	0.72	33.40	-0.54	-0.26
CA3U6V		34.00	-0.47	-0.24	33.00	-0.94	-0.45
CCTDFN		33.20	-1.27	-0.65	31.00	-2.94	-1.41
D23AA8		33.40	-1.07	-0.54	33.00	-0.94	-0.45
D6ZV9P		36.90	2.43	1.23	35.70	1.76	0.85
DM63MR		34.50	0.03	0.01	32.20	-1.74	-0.84
DVVMR6		38.10	3.63	1.84	38.60	4.66	2.24
DWQTZN		36.00	1.53	0.77	35.70	1.76	0.85
E2Z76N		34.90	0.43	0.22	34.50	0.56	0.27
E3BRUP		35.70	1.23	0.62	35.00	1.06	0.51
E7BYFM		35.00	0.53	0.27	35.00	1.06	0.51
EMXEJJ		34.00	-0.47	-0.24	34.00	0.06	0.03
ERVJAM		36.00	1.53	0.77	35.50	1.56	0.75
F9MHJM		37.75	3.28	1.66	36.25	2.31	1.11
FQRTJD		36.40	1.93	0.97	35.70	1.76	0.85
G3M6U7		34.00	-0.47	-0.24	31.50	-2.44	-1.17
GA4XMG		30.00	-4.47	-2.27	30.00	-3.94	-1.89
GRHB4L		35.20	0.73	0.37	35.10	1.16	0.56
HM9DDJ		32.50	-1.97	-1.00	32.20	-1.74	-0.84
HZRYHK		36.75	2.28	1.15	34.25	0.31	0.15
J4BFLB		35.80	1.33	0.67	34.30	0.36	0.17
JDMZ8Q		32.30	-2.17	-1.10	31.10	-2.84	-1.36
JE6U9Z		35.70	1.23	0.62	33.60	-0.34	-0.16

Fasteners and Metals Interlaboratory Testing Program

Analysis 142

Elongation: Lab-Machined Round Steel
ASTM E8

		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
JYRL8W		33.40	-1.07	-0.54	33.50	-0.44	-0.21
KP4VDH		38.80	4.33	2.19	38.40	4.46	2.14
L3NW9E		32.00	-2.47	-1.25	32.00	-1.94	-0.93
L6EYE3	X	28.00	-6.47	-3.28	32.00	-1.94	-0.93
LWXE3Q		32.20	-2.27	-1.15	30.40	-3.54	-1.70
LY4RR6		34.20	-0.27	-0.14	34.30	0.36	0.17
MVRVPL		32.00	-2.47	-1.25	31.00	-2.94	-1.41
MZAWHX		37.00	2.53	1.28	36.00	2.06	0.99
NRVCQL		32.40	-2.07	-1.05	31.70	-2.24	-1.08
P9FK6V		38.30	3.83	1.94	36.90	2.96	1.42
PL8XR8		33.00	-1.47	-0.75	33.00	-0.94	-0.45
PQ6EBT		36.20	1.73	0.87	36.10	2.16	1.04
Q3BPD9		35.00	0.53	0.27	34.00	0.06	0.03
RGTK4A		34.30	-0.17	-0.09	33.30	-0.64	-0.31
RK2GGD		32.50	-1.97	-1.00	32.50	-1.44	-0.69
RY6NNV		34.00	-0.47	-0.24	35.00	1.06	0.51
RYNPBX		33.70	-0.77	-0.39	33.90	-0.04	-0.02
TLW9F6		33.10	-1.37	-0.70	32.40	-1.54	-0.74
TRGEPX		36.00	1.53	0.77	37.00	3.06	1.47
U8AF44		32.70	-1.77	-0.90	32.20	-1.74	-0.84
UAJHYE		35.00	0.53	0.27	34.60	0.66	0.32
UKJ9H2		35.50	1.03	0.52	37.00	3.06	1.47
UPCAGV		38.20	3.73	1.89	38.00	4.06	1.95
UYWLT8		37.50	3.03	1.53	35.30	1.36	0.65
VADNJD		34.00	-0.47	-0.24	32.00	-1.94	-0.93
VFEXNK		37.50	3.03	1.53	38.00	4.06	1.95
VU6JL2		32.30	-2.17	-1.10	33.20	-0.74	-0.36
X4ZLL2		35.00	0.53	0.27	35.70	1.76	0.85
XGLYWP		33.10	-1.37	-0.70	32.80	-1.14	-0.55
XYTLEW		30.80	-3.67	-1.86	30.10	-3.84	-1.84
YBWNFY		32.80	-1.67	-0.85	32.20	-1.74	-0.84
Z27F79		36.00	1.53	0.77	35.00	1.06	0.51
Z32XHV		36.50	2.03	1.03	35.50	1.56	0.75
ZHEBU2		37.10	2.63	1.33	36.40	2.46	1.18
ZJ29Q7		33.40	-1.07	-0.54	32.80	-1.14	-0.55
ZU73CK		35.50	1.03	0.52	33.00	-0.94	-0.45

Summary Statistics

	Sample P57		Sample P58	
Grand Means	34.47	Percent	33.94	Percent
Stnd Dev Btwn Labs	1.97	Percent	2.08	Percent

Samples P57, P58 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 80 of 83 reporting participants

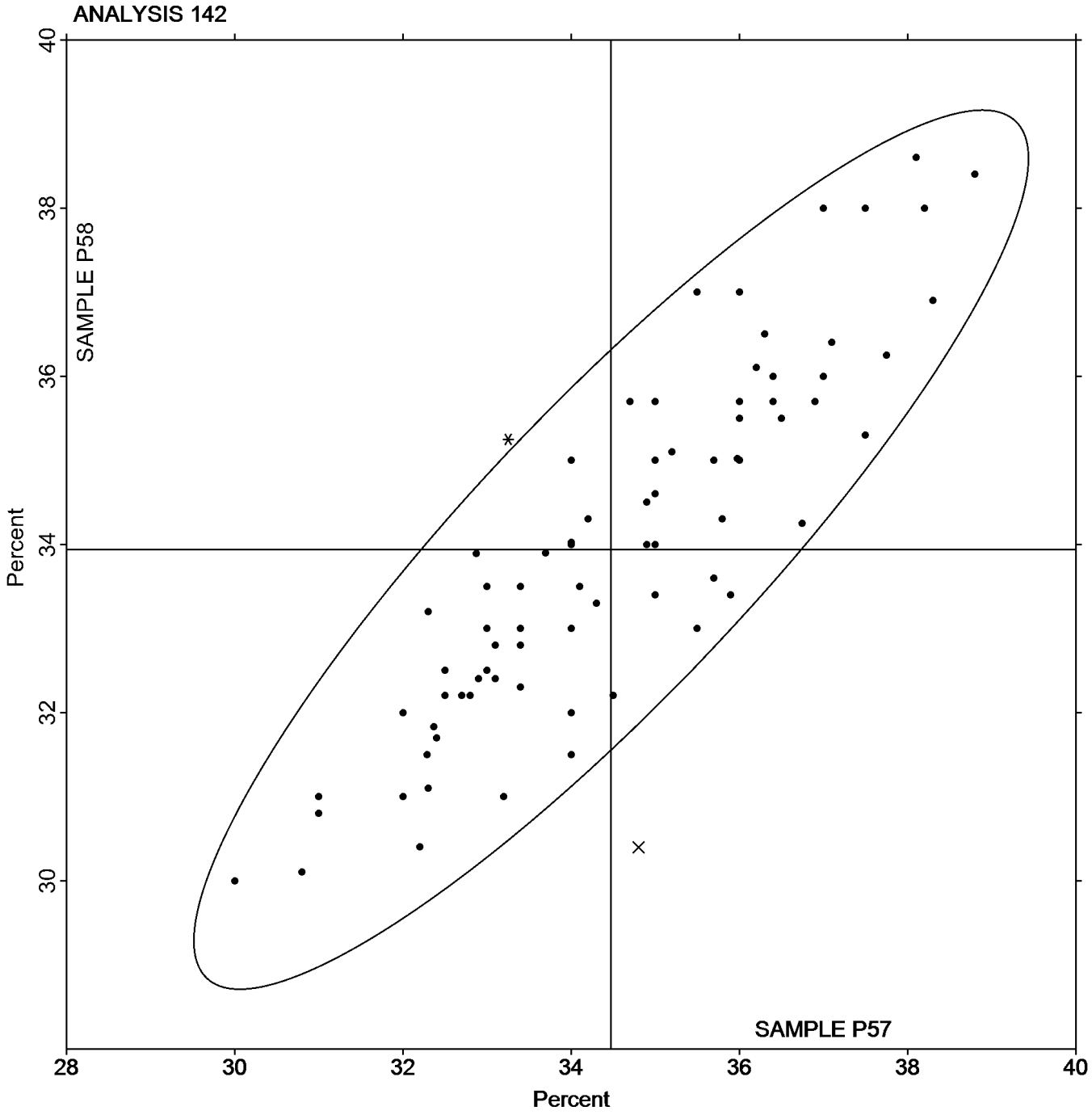
Comments on Assigned Data Flags for Test #142

2Q4CVX (X) - Inconsistent in testing between samples.

AGJ6AL (M) - Participant did not submit data for sample P58.

L6EYE3 (X) - Data for sample P57 are low.

SAMPLE P57	SAMPLE P58
34.47 Percent	33.94 Percent



		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2MHYMU	*	69.00	2.43	2.33	65.00	-0.63	-0.74
2Q4CVX		65.28	-1.29	-1.24	63.95	-1.68	-1.96
2U7FGR		64.95	-1.62	-1.56	66.36	0.73	0.85
2VYXAY		67.20	0.63	0.61	65.80	0.17	0.20
2XPZFL		67.80	1.23	1.18	66.10	0.47	0.55
4A79YC		66.60	0.03	0.03	65.70	0.07	0.08
4KPRBV	X	66.33	-0.24	-0.23	62.54	-3.09	-3.61
4U9D8D		65.89	-0.68	-0.65	65.29	-0.35	-0.40
6LX6TW	X	61.47	-5.10	-4.90	66.32	0.69	0.80
7KGHDF	X	72.00	5.43	5.22	71.10	5.47	6.38
7U6DDV		66.48	-0.09	-0.09	65.62	-0.01	-0.01
7WGETG		67.50	0.93	0.89	66.20	0.57	0.66
7YKACK		65.90	-0.67	-0.64	64.50	-1.13	-1.32
82GNBN		66.00	-0.57	-0.55	65.00	-0.63	-0.74
8JEBD8	X	62.05	-4.52	-4.34	66.17	0.54	0.63
8ULPV2		66.40	-0.17	-0.16	65.50	-0.13	-0.15
A3M2VM		67.40	0.83	0.80	65.80	0.17	0.20
A6QKTV		67.73	1.16	1.11	66.36	0.73	0.85
ADDX32		67.50	0.93	0.89	65.20	-0.43	-0.50
AKDUVT		66.20	-0.37	-0.36	65.00	-0.63	-0.74
AKNWGR		66.10	-0.47	-0.45	65.90	0.27	0.31
AP3GHL		66.40	-0.17	-0.16	64.80	-0.83	-0.97
BMVCQH		66.90	0.33	0.32	66.00	0.37	0.43
CA3U6V	*	67.00	0.43	0.41	68.00	2.37	2.76
CCTDFN	X	68.50	1.93	1.85	62.70	-2.93	-3.42
D23AA8		64.64	-1.93	-1.86	65.75	0.12	0.14
D6ZV9P		67.00	0.43	0.41	66.20	0.57	0.66
DM63MR		67.00	0.43	0.41	65.00	-0.63	-0.74
DVVMR6		68.30	1.73	1.66	66.90	1.27	1.48
DWQTZN		66.80	0.23	0.22	64.60	-1.03	-1.20
E2Z76N		67.20	0.63	0.61	65.30	-0.33	-0.39
E3BRUP		67.40	0.83	0.80	66.80	1.17	1.36
E7BYFM		67.00	0.43	0.41	65.00	-0.63	-0.74
EMXEJJ		67.00	0.43	0.41	66.00	0.37	0.43
ERVJAM		66.50	-0.07	-0.07	66.20	0.57	0.66
F9MHJM		66.59	0.02	0.02	65.19	-0.44	-0.52
FQRTJD		66.30	-0.27	-0.26	64.90	-0.73	-0.85
G3M6U7		68.10	1.53	1.47	67.40	1.77	2.06
GA4XMG		65.00	-1.57	-1.51	65.00	-0.63	-0.74
GRHB4L		66.80	0.23	0.22	67.00	1.37	1.60
HM9DDJ		66.00	-0.57	-0.55	66.20	0.57	0.66
HZRYHK		68.42	1.85	1.78	65.43	-0.20	-0.24
J4BFLB		68.13	1.56	1.50	67.12	1.49	1.74
JDMZ8Q		67.00	0.43	0.41	64.00	-1.63	-1.90
JE6U9Z		65.43	-1.14	-1.10	64.48	-1.15	-1.34
JYRL8W		65.60	-0.97	-0.93	65.70	0.07	0.08
KP4VDH		65.80	-0.77	-0.74	64.00	-1.63	-1.90

Fasteners and Metals Interlaboratory Testing Program

Analysis 143

Reduction of Area: Lab-Machined Round Steel
ASTM E8

Cycle 125
1st Qtr 2019

		Sample P57			Sample P58		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
L3NW9E		68.00	1.43	1.37	67.00	1.37	1.60
L6EYE3		65.37	-1.20	-1.15	65.05	-0.58	-0.68
LWXE3Q		65.80	-0.77	-0.74	65.30	-0.33	-0.39
LY4RR6		66.70	0.13	0.12	65.60	-0.03	-0.04
MVRVPL		64.90	-1.67	-1.61	65.00	-0.63	-0.74
MZAWHX	X	63.00	-3.57	-3.43	63.00	-2.63	-3.07
NRVCQL	*	63.60	-2.97	-2.85	65.00	-0.63	-0.74
PL8XR8		67.00	0.43	0.41	65.40	-0.23	-0.27
PQ6EBT		67.90	1.33	1.28	66.70	1.07	1.25
Q3BPD9		66.40	-0.17	-0.16	64.80	-0.83	-0.97
RGTK4A		65.40	-1.17	-1.12	65.00	-0.63	-0.74
RK2GGD		65.60	-0.97	-0.93	64.80	-0.83	-0.97
RY6NNV		67.00	0.43	0.41	66.00	0.37	0.43
RYNPBX		65.60	-0.97	-0.93	66.10	0.47	0.55
TLW9F6		67.30	0.73	0.70	65.00	-0.63	-0.74
TRGEPX		68.00	1.43	1.37	67.00	1.37	1.60
U8AF44		66.80	0.23	0.22	65.90	0.27	0.31
UAJHYE		67.00	0.43	0.41	65.00	-0.63	-0.74
UKJ9H2		67.10	0.53	0.51	66.50	0.87	1.01
UPCAGV		66.90	0.33	0.32	66.60	0.97	1.13
UYWLT8		67.20	0.63	0.61	65.50	-0.13	-0.15
VADNJD		66.00	-0.57	-0.55	66.00	0.37	0.43
VFEXNK		67.00	0.43	0.41	66.00	0.37	0.43
VU6JL2		65.20	-1.37	-1.32	66.40	0.77	0.90
X4ZLL2		65.10	-1.47	-1.41	63.80	-1.83	-2.14
XGLYWP	X	63.00	-3.57	-3.43	66.00	0.37	0.43
XYTLEW		67.48	0.91	0.87	65.41	-0.22	-0.26
YBWNFY		64.50	-2.07	-1.99	65.20	-0.43	-0.50
Z27F79		66.00	-0.57	-0.55	66.00	0.37	0.43
Z32XHV		66.20	-0.37	-0.36	66.50	0.87	1.01
ZJ29Q7	X	65.70	-0.87	-0.84	61.40	-4.23	-4.94
ZU73CK		67.20	0.63	0.61	65.10	-0.53	-0.62

Summary Statistics

	Sample P57		Sample P58	
Grand Means	66.57	Percent	65.63	Percent
Stnd Dev Btwn Labs	1.04	Percent	0.86	Percent

Samples P57, P58 : AISI 1018 (E), AISI 1018 (F)

Statistics based on 71 of 79 reporting participants

Comments on Assigned Data Flags for Test #143

4KPRBV (X) - Data for sample P58 are low.

6LX6TW (X) - Data for sample P57 are low.

7KGHDF (X) - Data for both samples are high.

8JEBD8 (X) - Data for sample P57 are low.

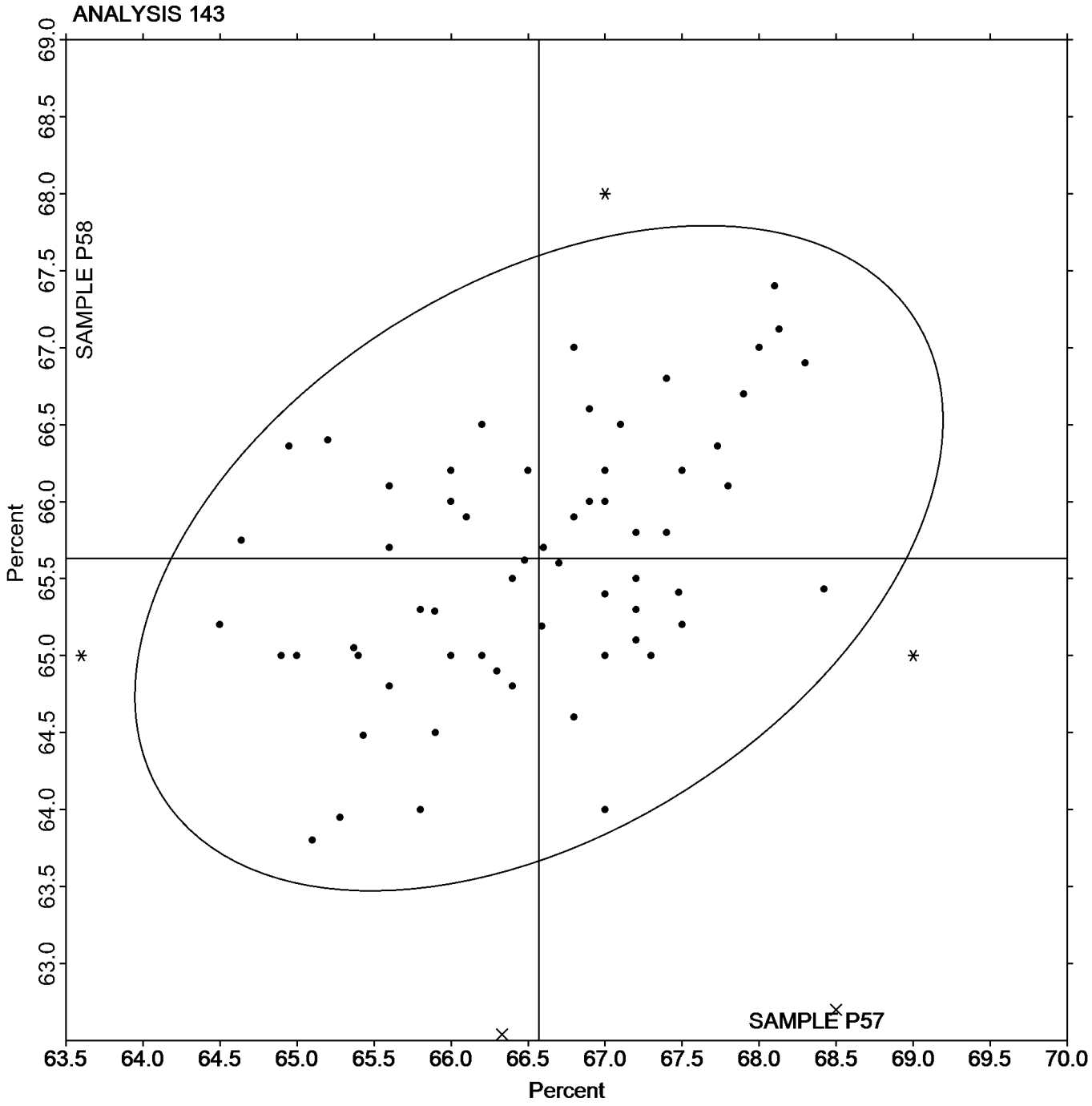
CCTDFN (X) - Data for sample P58 are low.

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

XGLYWP (X) - Data for sample P57 are low.

ZJ29Q7 (X) - Data for sample P58 are low.

SAMPLE P57	SAMPLE P58
66.57 Percent	65.63 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.4144	-0.0007	-0.08	0.3953	0.0023	0.31	OE
27WARZ		0.4187	0.0036	0.42	0.4027	0.0096	1.29	CI
2BBCQW		0.4110	-0.0041	-0.48	0.3963	0.0033	0.44	CI
2EZKM6		0.4171	0.0020	0.24	0.3981	0.0051	0.68	OE
2MHYMU		0.4183	0.0033	0.38	0.3977	0.0046	0.62	DR
2Q6BNK		0.4162	0.0011	0.13	0.3951	0.0021	0.28	OE
2U7FGR		0.4034	-0.0117	-1.37	0.3811	-0.0119	-1.60	OE
32Y4JN		0.4197	0.0046	0.54	0.4020	0.0090	1.21	OE
4A79YC		0.4163	0.0013	0.15	0.3923	-0.0007	-0.10	CI
4KPRBV		0.4233	0.0083	0.97	0.3927	-0.0004	-0.05	OE
4U9D8D		0.4130	-0.0021	-0.24	0.3883	-0.0047	-0.63	OE
4WH9ZW		0.4050	-0.0101	-1.18	0.3893	-0.0037	-0.50	OE
6LX6TW		0.4161	0.0010	0.12	0.3907	-0.0023	-0.32	XX
6NMJ3T		0.4120	-0.0031	-0.36	0.3916	-0.0015	-0.20	OE
79M2QZ		0.4167	0.0016	0.19	0.4013	0.0083	1.12	CI
7DJRUQ		0.4167	0.0016	0.19	0.3960	0.0030	0.40	OE
7U6DDV		0.4200	0.0049	0.58	0.3893	-0.0037	-0.50	OE
7YKACK		0.4207	0.0056	0.65	0.4010	0.0080	1.07	CI
8DW8UP		0.4107	-0.0044	-0.52	0.3907	-0.0024	-0.32	OE
8FM9ZD		0.4233	0.0083	0.97	0.3927	-0.0004	-0.05	OE
8FPVGR		0.4159	0.0008	0.10	0.3944	0.0014	0.18	OE
8GD3BH		0.4196	0.0046	0.53	0.3953	0.0022	0.30	OE
8KYLUT	X	0.4600	0.0449	5.26	0.4500	0.0570	7.66	GD
8LBT4U		0.4340	0.0189	2.22	0.3990	0.0060	0.80	OE
8NCMGJ		0.4183	0.0033	0.38	0.4013	0.0083	1.12	GD
99J4QN		0.4179	0.0029	0.33	0.3892	-0.0038	-0.51	OE
9TX46U		0.4067	-0.0084	-0.99	0.3900	-0.0030	-0.41	OE
A2JGDZ	X	0.4260	0.0109	1.28	0.4360	0.0430	5.78	CO
A83RK9		0.4113	-0.0037	-0.44	0.3917	-0.0014	-0.19	OE
AH22UY		0.4283	0.0133	1.55	0.4037	0.0106	1.43	OE
AP3GHL		0.4317	0.0166	1.94	0.4097	0.0167	2.25	OE
AYNKPK	*	0.4400	0.0249	2.92	0.4063	0.0133	1.79	OE
B8H3JM		0.4237	0.0086	1.01	0.3960	0.0030	0.40	DR
BLFKLK		0.4147	-0.0004	-0.05	0.3969	0.0038	0.51	OE
BMVCQH		0.4110	-0.0041	-0.48	0.3940	0.0010	0.13	CI
CFZZQE	X	0.3741	-0.0410	-4.80	0.3537	-0.0394	-5.30	OE
CULEUD		0.4203	0.0052	0.61	0.3946	0.0016	0.21	OE
EJJXAE		0.4150	-0.0001	-0.01	0.3983	0.0053	0.71	CI
ELHCFQ		0.4077	-0.0074	-0.87	0.3933	0.0003	0.04	OE
EMXEJJ		0.4010	-0.0141	-1.65	0.3830	-0.0100	-1.35	GD
EQ32HG		0.4063	-0.0087	-1.02	0.3930	0.0000	-0.01	CI
ERVJAM		0.4293	0.0143	1.67	0.4039	0.0109	1.47	OE
F48G2R		0.3943	-0.0207	-2.43	0.3733	-0.0197	-2.65	OE
FQRTJD		0.4207	0.0056	0.65	0.3933	0.0003	0.04	OE
GAPDZY		0.4078	-0.0073	-0.86	0.3936	0.0005	0.07	OE
GRHB4L		0.4070	-0.0081	-0.95	0.3877	-0.0054	-0.72	OE
GVL8NE		0.4045	-0.0106	-1.24	0.3819	-0.0111	-1.50	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
H4E2VQ		0.4233	0.0083	0.97	0.4033	0.0103	1.38	OE
H7HKDD		0.4197	0.0046	0.54	0.4003	0.0073	0.98	CI
HHB23E		0.4093	-0.0057	-0.67	0.3807	-0.0124	-1.67	OE
HWU6PF		0.4155	0.0004	0.05	0.3894	-0.0036	-0.49	OE
JL69VM		0.4073	-0.0077	-0.91	0.3907	-0.0024	-0.32	CI
JU4M9A		0.4083	-0.0067	-0.79	0.3963	0.0033	0.44	OE
JYYG7B	*	0.4388	0.0238	2.78	0.4057	0.0127	1.71	CI
K8MMH9		0.4216	0.0065	0.76	0.3966	0.0035	0.48	OE
KFGV4Y		0.4170	0.0019	0.22	0.3910	-0.0020	-0.28	OE
KVPYVK		0.4187	0.0036	0.42	0.3963	0.0033	0.44	OE
KXGYC4		0.4000	-0.0151	-1.77	0.3820	-0.0110	-1.49	OE
L6EYE3		0.4120	-0.0031	-0.36	0.3840	-0.0090	-1.22	OE
LE4KK2		0.4082	-0.0069	-0.81	0.3828	-0.0102	-1.38	OE
LGNPZB		0.4288	0.0137	1.61	0.4054	0.0123	1.66	AE
LHHF46		0.4200	0.0049	0.58	0.3867	-0.0064	-0.86	CI
MAXRFT		0.4178	0.0027	0.31	0.3905	-0.0025	-0.34	OE
MHBLQN		0.4190	0.0039	0.46	0.3933	0.0003	0.04	OE
MK6H9V		0.4187	0.0036	0.42	0.3903	-0.0027	-0.36	OE
MKMTH3		0.4067	-0.0084	-0.99	0.3857	-0.0074	-0.99	GD
MMGEDE		0.4127	-0.0024	-0.28	0.3930	0.0000	-0.01	OE
MZAWHX		0.4000	-0.0151	-1.77	0.3730	-0.0200	-2.70	OE
NNFTY6		0.4060	-0.0091	-1.06	0.3860	-0.0070	-0.95	CI
PWQQJ9		0.4063	-0.0087	-1.02	0.3920	-0.0010	-0.14	CO
PXL7H7		0.4150	-0.0001	-0.01	0.3903	-0.0027	-0.36	OE
PYHJ4D		0.3977	-0.0174	-2.04	0.3777	-0.0154	-2.07	GD
Q2WJJQ		0.4177	0.0026	0.30	0.3923	-0.0007	-0.10	OE
Q43QD6		0.4247	0.0096	1.12	0.3993	0.0063	0.85	OE
Q47DRX		0.4087	-0.0064	-0.75	0.3863	-0.0067	-0.90	OE
Q9V2X3		0.4000	-0.0151	-1.77	0.3800	-0.0130	-1.76	CI
QBWA3D		0.4133	-0.0017	-0.20	0.3910	-0.0020	-0.28	OE
QJJUM7		0.4023	-0.0127	-1.49	0.3783	-0.0147	-1.98	DR
RC2NNE		0.4100	-0.0051	-0.60	0.3913	-0.0017	-0.23	OE
RE24TV		0.4111	-0.0040	-0.47	0.3909	-0.0021	-0.28	CI
RGTK4A		0.4140	-0.0011	-0.13	0.3967	0.0036	0.49	OE
RLXU3K		0.4073	-0.0077	-0.91	0.3877	-0.0054	-0.72	GD
RMC8YU		0.4207	0.0056	0.65	0.4007	0.0076	1.03	OE
RN2PLN		0.4085	-0.0066	-0.78	0.3859	-0.0071	-0.96	OE
RY6NNV		0.4163	0.0013	0.15	0.3940	0.0010	0.13	OE
RYNPBX		0.4143	-0.0007	-0.09	0.3943	0.0013	0.17	XX
TQA6MR		0.4263	0.0113	1.32	0.3960	0.0030	0.40	OE
TRGEPX		0.4142	-0.0008	-0.10	0.3830	-0.0100	-1.35	OE
UCJMJM		0.4040	-0.0111	-1.30	0.3855	-0.0075	-1.02	OE
UD2PE2		0.4153	0.0003	0.03	0.3937	0.0006	0.08	OE
UXGDDR		0.4143	-0.0007	-0.09	0.3933	0.0003	0.04	OE
VNFWWN		0.4178	0.0027	0.32	0.3905	-0.0025	-0.34	OE
VYRHKN		0.4233	0.0083	0.97	0.4073	0.0143	1.92	XX
WGDRDN		0.4313	0.0163	1.90	0.4063	0.0133	1.79	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 170

Carbon & Low Alloy Steel, Element #1
CARBON (C)

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
XHHBPJ		0.4200	0.0049	0.58	0.4047	0.0116	1.56	OE
XHJCGW		0.4163	0.0013	0.15	0.3970	0.0040	0.53	CO
XK9B48		0.4100	-0.0051	-0.60	0.3903	-0.0027	-0.36	CO
Y2TNND		0.4117	-0.0034	-0.40	0.3953	0.0022	0.30	OE
YMENAT		0.4187	0.0036	0.43	0.4005	0.0075	1.00	OE
Z6A9EY		0.4129	-0.0022	-0.26	0.3965	0.0035	0.47	OE
ZQ8QGK		0.4250	0.0099	1.16	0.3987	0.0056	0.76	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.4151	Percent	0.3930	Percent
Stnd Dev Btwn Labs	0.0085	Percent	0.0074	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 98 of 101 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	CI	Combustion / IR
CO	Combustion	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #170

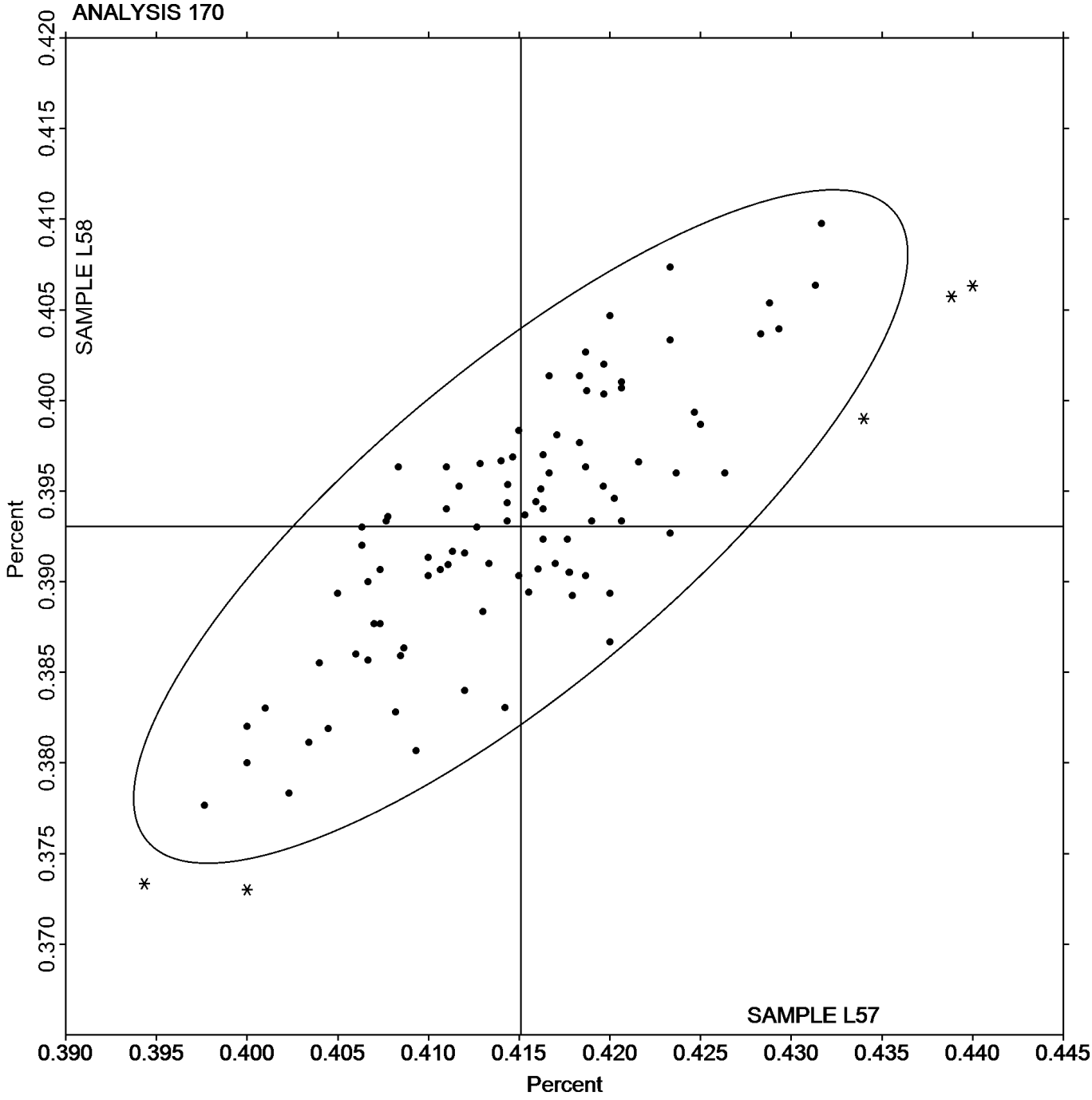
8KYLUT (X) - Data for both samples are high. Possible Systematic Error.

A2JGDZ (X) - Data for sample L58 are high.

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

SAMPLE L57
0.4151 Percent

SAMPLE L58
0.3930 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.7170	-0.0127	-1.09	0.6813	-0.0060	-0.56	OE
27WARZ		0.7357	0.0060	0.51	0.6900	0.0027	0.25	OE
2BBCQW		0.7259	-0.0038	-0.33	0.6853	-0.0020	-0.19	OE
2EZKM6		0.7263	-0.0034	-0.29	0.6768	-0.0105	-0.99	OE
2MHYMU		0.7147	-0.0150	-1.29	0.6797	-0.0076	-0.72	DR
2Q6BNK		0.7267	-0.0030	-0.26	0.6821	-0.0052	-0.49	OE
2U7FGR		0.7298	0.0002	0.01	0.6811	-0.0062	-0.59	OE
32Y4JN		0.7343	0.0047	0.40	0.6893	0.0020	0.19	OE
4A79YC		0.7357	0.0060	0.51	0.6890	0.0017	0.16	OE
4KPRBV		0.7463	0.0167	1.43	0.7030	0.0157	1.48	OE
4U9D8D		0.7313	0.0017	0.14	0.6863	-0.0010	-0.09	OE
4WH9ZW		0.7260	-0.0037	-0.32	0.6847	-0.0026	-0.25	IC
6LX6TW	*	0.7370	0.0073	0.63	0.6713	-0.0160	-1.51	XX
6NMJ3T		0.7324	0.0028	0.24	0.6901	0.0028	0.26	OE
79M2QZ		0.7263	-0.0033	-0.29	0.6847	-0.0026	-0.25	OE
7DJRUQ		0.7227	-0.0070	-0.60	0.6783	-0.0090	-0.85	OE
7U6DDV		0.7300	0.0003	0.03	0.6853	-0.0020	-0.19	OE
7YKACK		0.7223	-0.0073	-0.63	0.6783	-0.0090	-0.85	IC
8DW8UP		0.7327	0.0030	0.26	0.6927	0.0054	0.50	OE
8FM9ZD		0.7270	-0.0027	-0.23	0.6883	0.0010	0.10	OE
8FPVGR		0.7233	-0.0064	-0.55	0.6874	0.0001	0.01	OE
8GD3BH		0.7143	-0.0154	-1.32	0.6717	-0.0156	-1.47	OE
8KYLUT		0.7367	0.0070	0.60	0.6900	0.0027	0.25	GD
8LBT4U		0.7127	-0.0170	-1.46	0.6743	-0.0130	-1.22	OE
8NCMGJ		0.7293	-0.0003	-0.03	0.6787	-0.0086	-0.81	GD
99J4QN		0.7325	0.0028	0.24	0.6855	-0.0018	-0.17	OE
9JA7FA		0.7308	0.0011	0.09	0.6812	-0.0061	-0.57	OE
9TX46U		0.7467	0.0170	1.46	0.7000	0.0127	1.20	OE
A2JGDZ		0.7267	-0.0030	-0.26	0.6877	0.0004	0.03	GD
A83RK9		0.7267	-0.0030	-0.26	0.6900	0.0027	0.25	OE
AFR9LR		0.7340	0.0043	0.37	0.6870	-0.0003	-0.03	XX
AH22UY		0.7297	0.0000	0.00	0.6900	0.0027	0.25	OE
AP3GHL		0.7131	-0.0166	-1.42	0.6775	-0.0099	-0.93	OE
AYNKPK		0.7200	-0.0097	-0.83	0.6860	-0.0013	-0.12	OE
B8H3JM		0.7370	0.0073	0.63	0.6963	0.0090	0.85	DR
BLFKLK		0.7367	0.0070	0.60	0.7033	0.0160	1.51	OE
BMVCQH		0.7330	0.0033	0.28	0.6907	0.0034	0.32	WD
CFZZQE		0.7236	-0.0061	-0.52	0.6780	-0.0094	-0.88	OE
CHAXBM	*	0.7630	0.0333	2.86	0.7160	0.0287	2.70	XX
CULEUD		0.7162	-0.0134	-1.15	0.6737	-0.0136	-1.28	OE
EELC76	*	0.6954	-0.0343	-2.95	0.6613	-0.0260	-2.45	IC
EJJXAE		0.7303	0.0007	0.06	0.6903	0.0030	0.28	OE
ELHCFQ		0.7170	-0.0127	-1.09	0.6777	-0.0096	-0.91	OE
EMXEJJ		0.7400	0.0103	0.89	0.6973	0.0100	0.94	GD
EQ32HG		0.7403	0.0107	0.91	0.6940	0.0067	0.63	IC
ERVJAM		0.7317	0.0021	0.18	0.6874	0.0001	0.01	OE
F48G2R		0.7053	-0.0243	-2.09	0.6663	-0.0210	-1.98	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
FQRTJD		0.7053	-0.0243	-2.09	0.6620	-0.0253	-2.38	OE
GAPDZY		0.7172	-0.0125	-1.07	0.6776	-0.0097	-0.92	OE
GRHB4L	*	0.7393	0.0097	0.83	0.6860	-0.0013	-0.12	OE
GVL8NE	*	0.7624	0.0327	2.81	0.7170	0.0297	2.80	OE
H4E2VQ	*	0.7500	0.0203	1.74	0.7133	0.0260	2.45	OE
H7HKDD		0.7500	0.0203	1.74	0.7030	0.0157	1.48	OE
HEW7MG		0.7500	0.0203	1.74	0.7120	0.0247	2.33	XX
HHB23E		0.7283	-0.0013	-0.12	0.6867	-0.0006	-0.06	OE
HWU6PF		0.7256	-0.0041	-0.35	0.6833	-0.0041	-0.38	OE
JAFB6B		0.7300	0.0003	0.03	0.6857	-0.0016	-0.16	XX
JL69VM		0.7355	0.0058	0.50	0.6909	0.0036	0.34	IC
JU4M9A	X	0.7623	0.0327	2.80	0.7413	0.0540	5.09	OE
JYYG7B		0.7357	0.0060	0.51	0.6873	0.0000	0.00	OE
K8MMH9		0.7331	0.0034	0.29	0.6899	0.0026	0.24	OE
KFGV4Y		0.7283	-0.0013	-0.12	0.6833	-0.0040	-0.37	OE
KVPYVK		0.7373	0.0077	0.66	0.6940	0.0067	0.63	OE
KXGYC4		0.7343	0.0047	0.40	0.6927	0.0054	0.50	OE
L6EYE3		0.7360	0.0063	0.54	0.6917	0.0044	0.41	OE
LE4KK2		0.7274	-0.0023	-0.20	0.6833	-0.0040	-0.38	OE
LGNPZB		0.7342	0.0045	0.39	0.6891	0.0018	0.17	AE
LHHF46		0.7177	-0.0120	-1.03	0.6823	-0.0050	-0.47	OE
MAXRFT		0.7286	-0.0011	-0.10	0.6882	0.0009	0.08	OE
MHBLQN		0.7153	-0.0143	-1.23	0.6760	-0.0113	-1.07	OE
MK6H9V		0.7320	0.0023	0.20	0.6893	0.0020	0.19	OE
MKMTH3	*	0.7383	0.0087	0.74	0.6777	-0.0096	-0.91	GD
MMGEDE		0.7210	-0.0087	-0.75	0.6790	-0.0083	-0.78	OE
MZAWHX		0.7200	-0.0097	-0.83	0.6800	-0.0073	-0.69	OE
NNFTY6		0.7353	0.0057	0.48	0.6943	0.0070	0.66	OE
PWQQJ9		0.7337	0.0040	0.34	0.6807	-0.0066	-0.63	OE
PXL7H7		0.7157	-0.0140	-1.20	0.6710	-0.0163	-1.54	OE
PYHJ4D		0.7273	-0.0023	-0.20	0.6870	-0.0003	-0.03	GD
Q2WJJQ		0.7090	-0.0207	-1.78	0.6717	-0.0156	-1.47	OE
Q43QD6		0.7247	-0.0050	-0.43	0.6790	-0.0083	-0.78	OE
Q47DRX		0.7317	0.0020	0.17	0.6897	0.0024	0.22	OE
Q9V2X3	X	0.9050	0.1753	15.05	0.8553	0.1680	15.83	IC
QBWA3D		0.7230	-0.0067	-0.57	0.6813	-0.0060	-0.56	OE
QEGYLQ		0.7200	-0.0097	-0.83	0.6700	-0.0173	-1.63	XX
QJJUM7		0.7357	0.0060	0.51	0.6907	0.0034	0.32	DR
RC2NNE		0.7293	-0.0003	-0.03	0.6890	0.0017	0.16	OE
RE24TV		0.7283	-0.0013	-0.12	0.6882	0.0009	0.09	OE
RGTK4A		0.7337	0.0040	0.34	0.6963	0.0090	0.85	OE
RLXU3K		0.7600	0.0303	2.60	0.7137	0.0264	2.48	GD
RMC8YU		0.7297	0.0000	0.00	0.6877	0.0004	0.03	OE
RN2PLN		0.7235	-0.0061	-0.53	0.6783	-0.0090	-0.85	OE
RY6NNV		0.7277	-0.0020	-0.17	0.6890	0.0017	0.16	OE
RYNPBX		0.7367	0.0070	0.60	0.6970	0.0097	0.91	XX
TQA6MR		0.7277	-0.0020	-0.17	0.6897	0.0024	0.22	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 171

Carbon & Low Alloy Steel, Element #2
MANGANESE (Mn)

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
TRGEPX		0.7490	0.0193	1.66	0.7018	0.0145	1.37	OE
UCJMJM		0.7100	-0.0197	-1.69	0.6700	-0.0173	-1.63	OE
UD2PE2		0.7257	-0.0040	-0.34	0.6863	-0.0010	-0.09	OE
UXGDDR		0.7300	0.0003	0.03	0.6887	0.0014	0.13	OE
VNFWWN		0.7315	0.0019	0.16	0.6844	-0.0029	-0.28	OE
VYRHKN		0.7153	-0.0143	-1.23	0.6823	-0.0050	-0.47	OE
WGDRDN		0.7583	0.0287	2.46	0.7127	0.0254	2.39	OE
XHHBPJ		0.7420	0.0123	1.06	0.6973	0.0100	0.94	OE
XK9B48		0.7387	0.0090	0.77	0.6930	0.0057	0.54	OE
Y2TNND		0.7300	0.0004	0.03	0.6912	0.0039	0.37	OE
YMENAT		0.7239	-0.0058	-0.50	0.6806	-0.0067	-0.63	OE
Z6A9EY		0.7286	-0.0011	-0.09	0.6938	0.0065	0.61	OE
ZQ8QGK		0.7383	0.0087	0.74	0.6977	0.0104	0.98	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.7297	Percent	0.6873	Percent
Stnd Dev Btwn Labs	0.0117	Percent	0.0106	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 103 of 107 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

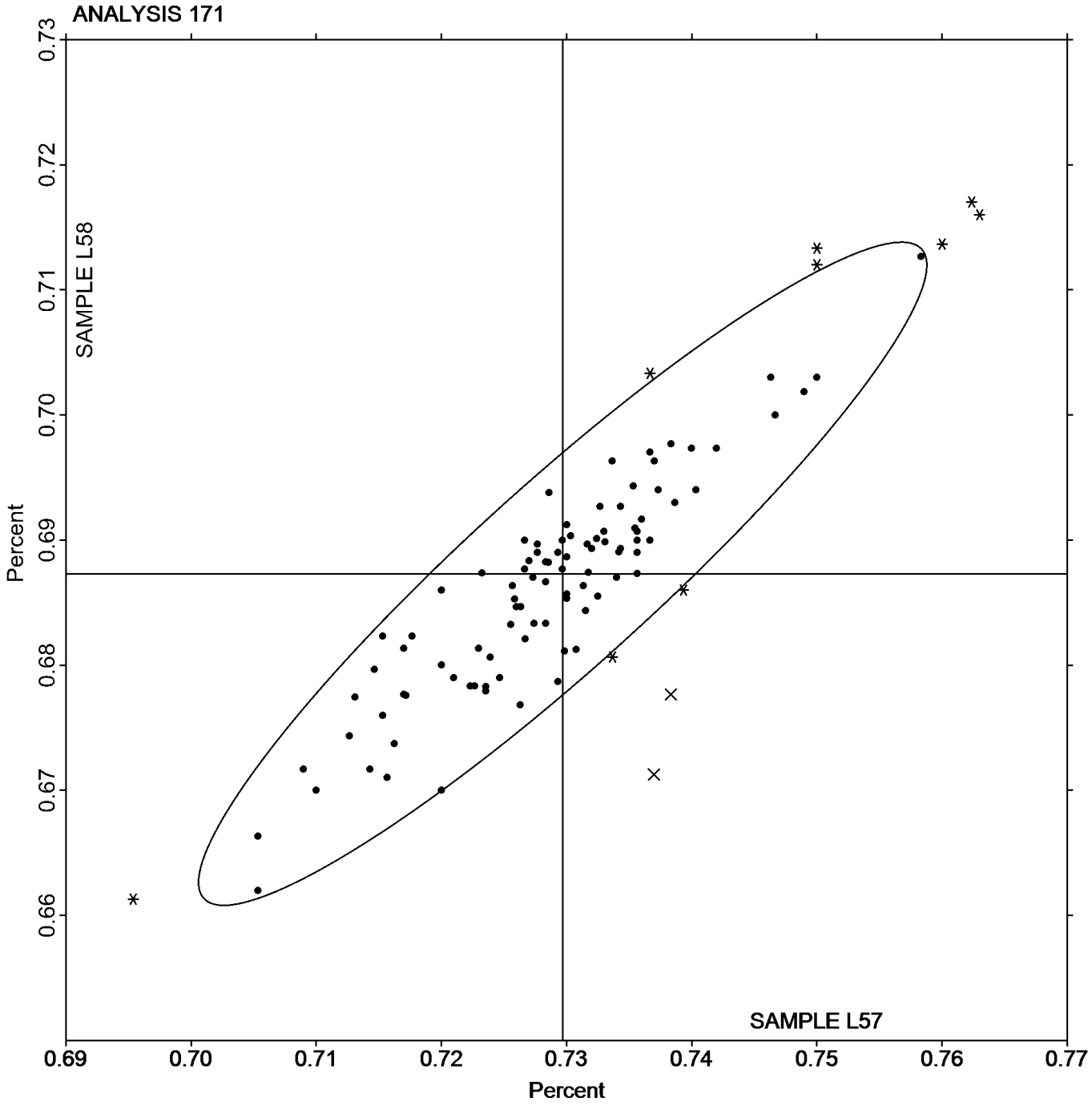
Comments on Assigned Data Flags for Test #171

JU4M9A (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L58.

Q9V2X3 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L58.

SAMPLE L57
0.7297 Percent

SAMPLE L58
0.6873 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.0149	0.0005	0.46	0.0174	0.0008	0.71	OE
27WARZ		0.0156	0.0012	1.19	0.0176	0.0011	0.91	OE
2BBCQW		0.0145	0.0001	0.06	0.0166	0.0001	0.10	OE
2EZKM6	X	0.0164	0.0020	1.89	0.0199	0.0034	2.88	OE
2MHYMU		0.0160	0.0016	1.54	0.0180	0.0015	1.26	DR
2Q6BNK		0.0148	0.0004	0.39	0.0172	0.0006	0.54	OE
2U7FGR		0.0158	0.0014	1.35	0.0192	0.0027	2.31	OE
32Y4JN	X	0.0212	0.0068	6.47	0.0239	0.0074	6.30	OE
4A79YC		0.0150	0.0006	0.55	0.0170	0.0005	0.43	OE
4KPRBV		0.0140	-0.0004	-0.37	0.0163	-0.0002	-0.17	OE
4U9D8D		0.0133	-0.0011	-1.00	0.0157	-0.0009	-0.74	OE
4WH9ZW	*	0.0130	-0.0014	-1.32	0.0170	0.0005	0.40	IC
6LX6TW		0.0149	0.0005	0.52	0.0174	0.0009	0.74	XX
6NMJ3T		0.0147	0.0003	0.33	0.0168	0.0003	0.23	OE
79M2QZ		0.0137	-0.0007	-0.69	0.0167	0.0001	0.12	OE
7DJRUQ		0.0137	-0.0007	-0.69	0.0153	-0.0012	-1.02	OE
7U6DDV		0.0148	0.0004	0.39	0.0169	0.0003	0.29	OE
7YKACK		0.0140	-0.0004	-0.37	0.0160	-0.0005	-0.45	IC
8DW8UP		0.0147	0.0003	0.27	0.0167	0.0001	0.12	OE
8FM9ZD		0.0151	0.0007	0.65	0.0168	0.0003	0.23	OE
8FPVGR		0.0149	0.0005	0.46	0.0165	0.0000	-0.03	OE
8GD3BH		0.0134	-0.0010	-0.97	0.0154	-0.0012	-1.00	OE
8KYLUT	X	0.0153	0.0009	0.90	0.0200	0.0035	2.97	GD
8LBT4U		0.0163	0.0019	1.86	0.0187	0.0021	1.83	OE
8NCMGJ	*	0.0170	0.0026	2.49	0.0190	0.0025	2.11	GD
99J4QN		0.0142	-0.0002	-0.21	0.0160	-0.0005	-0.43	OE
9JA7FA		0.0128	-0.0016	-1.49	0.0152	-0.0013	-1.14	OE
9TX46U		0.0133	-0.0011	-1.00	0.0167	0.0001	0.12	OE
A2JGDZ	X	0.0155	0.0011	1.03	0.0208	0.0042	3.62	GD
AFR9LR		0.0150	0.0006	0.55	0.0167	0.0002	0.17	XX
AH22UY		0.0157	0.0013	1.28	0.0187	0.0021	1.83	OE
AP3GHL		0.0140	-0.0004	-0.40	0.0161	-0.0004	-0.35	OE
AYNKPK		0.0150	0.0006	0.59	0.0174	0.0008	0.71	OE
B8H3JM		0.0127	-0.0017	-1.64	0.0150	-0.0015	-1.31	DR
BLFKLK		0.0140	-0.0004	-0.37	0.0163	-0.0002	-0.17	OE
BMVCQH		0.0147	0.0003	0.27	0.0165	0.0000	-0.03	WD
CFZZQE	X	0.0106	-0.0038	-3.66	0.0130	-0.0035	-2.99	OE
CHAXBM		0.0140	-0.0004	-0.37	0.0160	-0.0005	-0.45	XX
CULEUD		0.0137	-0.0007	-0.65	0.0154	-0.0011	-0.94	OE
EJJXAE		0.0138	-0.0006	-0.56	0.0158	-0.0008	-0.65	OE
ELHCFQ		0.0143	-0.0001	-0.05	0.0163	-0.0002	-0.17	OE
EMXEJJ		0.0150	0.0006	0.59	0.0173	0.0008	0.69	GD
EQ32HG		0.0136	-0.0008	-0.75	0.0161	-0.0004	-0.34	IC
ERVJAM		0.0144	0.0000	0.01	0.0170	0.0005	0.40	OE
F48G2R	*	0.0174	0.0030	2.84	0.0196	0.0031	2.65	OE
FQRTJD		0.0151	0.0007	0.71	0.0172	0.0007	0.57	OE
GAPDZY		0.0143	-0.0001	-0.05	0.0163	-0.0003	-0.23	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
GVL8NE		0.0130	-0.0014	-1.29	0.0159	-0.0006	-0.51	OE
H4E2VQ		0.0160	0.0016	1.54	0.0182	0.0017	1.43	OE
H7HKDD		0.0141	-0.0003	-0.30	0.0166	0.0000	0.03	OE
HEW7MG		0.0150	0.0006	0.59	0.0170	0.0005	0.40	XX
HHB23E		0.0147	0.0003	0.30	0.0169	0.0003	0.29	OE
HWU6PF		0.0149	0.0005	0.51	0.0167	0.0002	0.14	OE
JAFB6B		0.0153	0.0009	0.90	0.0183	0.0018	1.54	XX
JL69VM		0.0128	-0.0016	-1.51	0.0148	-0.0018	-1.51	IC
K8MMH9		0.0138	-0.0006	-0.54	0.0161	-0.0004	-0.36	OE
KFGV4Y		0.0147	0.0003	0.27	0.0167	0.0001	0.12	OE
KVPYVK	X	0.0177	0.0033	3.19	0.0213	0.0048	4.08	OE
KXGYC4		0.0129	-0.0015	-1.39	0.0151	-0.0014	-1.20	OE
L6EYE3		0.0123	-0.0021	-1.96	0.0145	-0.0020	-1.74	OE
LE4KK2		0.0156	0.0012	1.13	0.0166	0.0001	0.08	OE
LGNPZB		0.0154	0.0010	0.97	0.0176	0.0011	0.94	AE
LHHF46		0.0143	-0.0001	-0.05	0.0153	-0.0012	-1.02	OE
MAXRFT		0.0137	-0.0007	-0.62	0.0157	-0.0008	-0.68	OE
MHBLQN		0.0140	-0.0004	-0.37	0.0163	-0.0002	-0.17	OE
MK6H9V		0.0146	0.0002	0.20	0.0163	-0.0003	-0.23	OE
MKMTH3		0.0147	0.0003	0.27	0.0173	0.0008	0.69	GD
MMGEDE		0.0129	-0.0015	-1.42	0.0150	-0.0015	-1.31	OE
MZAWHX		0.0140	-0.0004	-0.37	0.0150	-0.0015	-1.31	OE
NNFTY6		0.0147	0.0003	0.27	0.0166	0.0001	0.09	OE
PWQQJ9		0.0140	-0.0004	-0.37	0.0160	-0.0005	-0.45	OE
PXL7H7		0.0136	-0.0008	-0.72	0.0156	-0.0009	-0.80	OE
PYHJ4D		0.0143	-0.0001	-0.05	0.0173	0.0008	0.69	GD
Q43QD6		0.0137	-0.0007	-0.69	0.0160	-0.0005	-0.45	OE
Q47DRX		0.0147	0.0003	0.33	0.0173	0.0007	0.63	OE
Q9V2X3		0.0144	0.0000	0.01	0.0166	0.0001	0.06	IC
QBWA3D	*	0.0111	-0.0033	-3.10	0.0130	-0.0035	-2.99	OE
QEGYLQ		0.0130	-0.0014	-1.32	0.0147	-0.0019	-1.59	XX
QJJUM7	X	0.0160	0.0016	1.51	0.0231	0.0066	5.65	DR
RC2NNE		0.0127	-0.0017	-1.64	0.0150	-0.0015	-1.31	OE
RE24TV		0.0134	-0.0010	-0.91	0.0153	-0.0013	-1.08	OE
RGTK4A		0.0167	0.0023	2.24	0.0197	0.0031	2.68	OE
RLXU3K		0.0150	0.0006	0.59	0.0163	-0.0002	-0.17	GD
RMC8YU		0.0155	0.0011	1.06	0.0182	0.0017	1.43	OE
RN2PLN		0.0147	0.0003	0.33	0.0165	0.0000	-0.03	OE
RY6NNV		0.0144	0.0000	0.01	0.0164	-0.0001	-0.08	OE
RYNPBX		0.0134	-0.0010	-0.91	0.0158	-0.0007	-0.63	XX
TQA6MR		0.0135	-0.0009	-0.85	0.0157	-0.0009	-0.74	OE
TRGEPX		0.0134	-0.0010	-0.91	0.0144	-0.0022	-1.85	OE
UCJMJM		0.0150	0.0006	0.59	0.0180	0.0015	1.26	OE
UD2PE2		0.0140	-0.0004	-0.37	0.0160	-0.0005	-0.45	OE
UXGDDR		0.0148	0.0004	0.39	0.0168	0.0003	0.23	OE
VNFWWN		0.0148	0.0004	0.39	0.0168	0.0003	0.23	OE
VYRHKN		0.0153	0.0009	0.87	0.0178	0.0013	1.11	OE

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
WGDRDN		0.0133	-0.0011	-1.00	0.0153	-0.0012	-1.02	OE
XHHBPJ		0.0133	-0.0011	-1.00	0.0157	-0.0009	-0.74	OE
XK9B48		0.0164	0.0020	1.92	0.0179	0.0014	1.20	OE
Y2TNND		0.0140	-0.0004	-0.37	0.0160	-0.0005	-0.43	OE
YMENAT		0.0154	0.0010	0.95	0.0171	0.0006	0.52	OE
Z6A9EY		0.0140	-0.0004	-0.40	0.0160	-0.0005	-0.43	OE
ZQ8QGK		0.0145	0.0001	0.08	0.0166	0.0001	0.06	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.0144	Percent	0.0165	Percent
Stnd Dev Btwn Labs	0.0010	Percent	0.0012	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 93 of 101 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #172

2EZKM6 (X) - Data for sample L58 are high.

32Y4JN (X) - Data for both samples are high. Possible Systematic Error.

8KYLUT (X) - Data for sample L58 are high.

A2JGDZ (X) - Data for sample L58 are high.

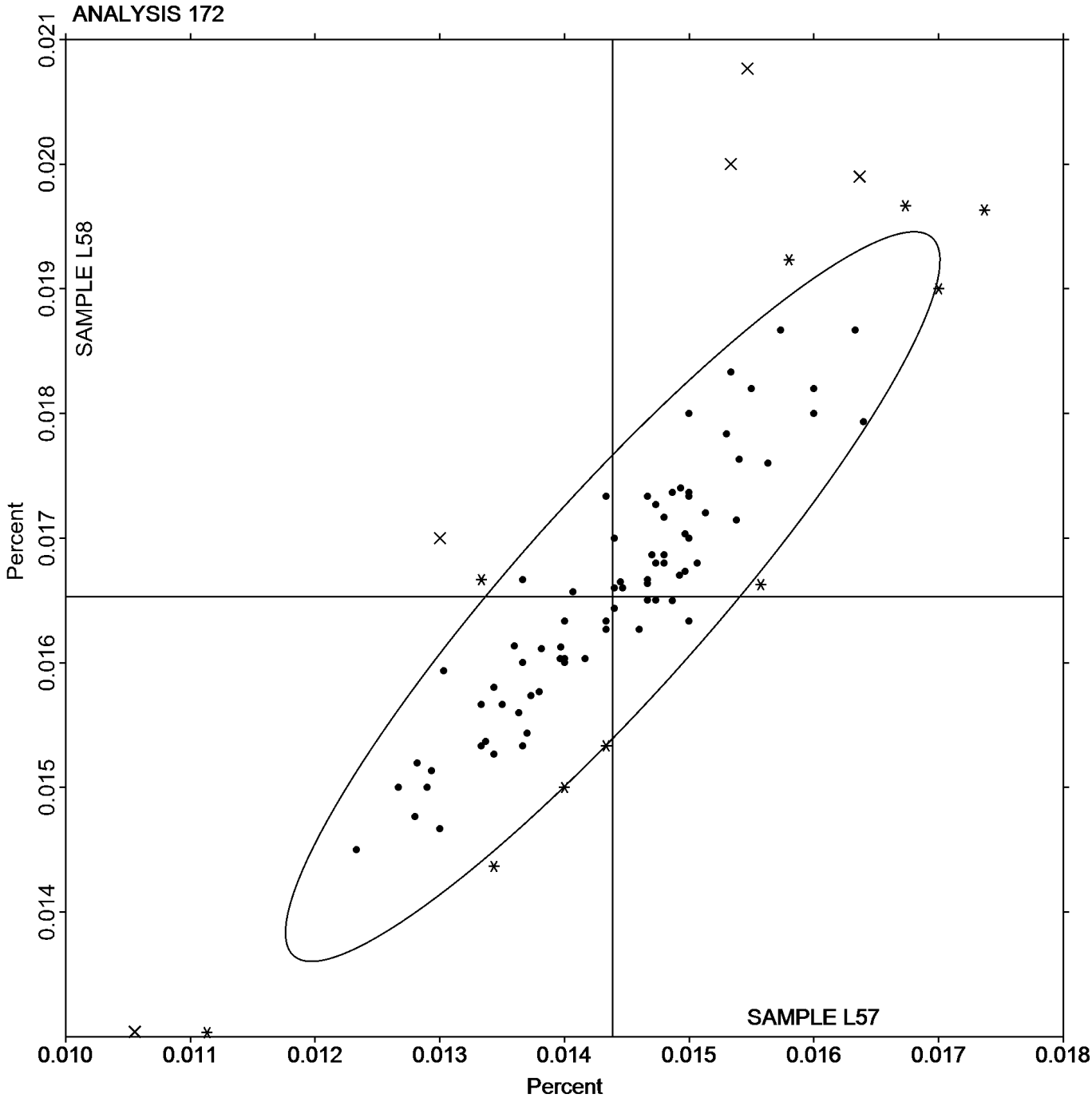
CFZZQE (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample L58.

KVPYVK (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L57.

QJJUM7 (X) - Data for sample L58 are high. Inconsistent within the determinations of both samples.

SAMPLE L57
0.0144 Percent

SAMPLE L58
0.0165 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.00500	-0.00031	-0.32	0.00953	0.00068	0.83	OE
27WARZ		0.00700	0.00169	1.76	0.0100	0.00114	1.41	OE
2MHYMU		0.00500	-0.00031	-0.32	0.00800	-0.00086	-1.06	DR
2Q6BNK		0.00500	-0.00031	-0.32	0.00900	0.00014	0.18	OE
2U7FGR		0.00550	0.00019	0.20	0.00947	0.00061	0.75	OE
32Y4JN	X	0.00217	-0.00314	-3.27	0.00610	-0.00276	-3.40	OE
4A79YC		0.00453	-0.00078	-0.81	0.00827	-0.00059	-0.73	OE
4KPRBV		0.00400	-0.00131	-1.36	0.00867	-0.00019	-0.24	OE
4U9D8D		0.00533	0.00002	0.03	0.00833	-0.00052	-0.65	OE
4WH9ZW		0.00400	-0.00131	-1.36	0.00790	-0.00096	-1.18	IC
6LX6TW		0.00517	-0.00014	-0.15	0.00813	-0.00072	-0.89	XX
6NMJ3T		0.00473	-0.00058	-0.60	0.00857	-0.00029	-0.36	OE
79M2QZ		0.00493	-0.00038	-0.39	0.00880	-0.00006	-0.07	OE
7DJRUQ		0.00700	0.00169	1.76	0.0110	0.00214	2.64	OE
7U6DDV		0.00590	0.00059	0.62	0.00917	0.00031	0.38	OE
7YKACK		0.00433	-0.00098	-1.02	0.00800	-0.00086	-1.06	CI
8DW8UP		0.00480	-0.00051	-0.53	0.00837	-0.00049	-0.60	OE
8FPVGR		0.00639	0.00108	1.12	0.0104	0.00151	1.86	OE
8KYLUT	X	0.0140	0.00869	9.05	0.0180	0.00914	11.26	GD
8LBT4U		0.00500	-0.00031	-0.32	0.00800	-0.00086	-1.06	OE
99J4QN		0.00527	-0.00004	-0.04	0.00840	-0.00046	-0.56	OE
9JA7FA		0.00602	0.00071	0.74	0.00929	0.00043	0.53	OE
9TX46U		0.00600	0.00069	0.72	0.00900	0.00014	0.18	OE
AH22UY		0.00467	-0.00064	-0.67	0.00850	-0.00036	-0.44	OE
AP3GHL		0.00559	0.00028	0.29	0.00916	0.00030	0.37	OE
BMVCQH		0.00563	0.00032	0.34	0.00950	0.00064	0.79	IC
CFZZQE		0.00373	-0.00158	-1.64	0.00717	-0.00169	-2.08	OE
EELC76	X	0.00957	0.00426	4.43	0.0240	0.01518	18.69	IC
ELHCFQ		0.00667	0.00136	1.41	0.00833	-0.00052	-0.65	OE
EQ32HG		0.00523	-0.00008	-0.08	0.00900	0.00014	0.18	CI
ERVJAM		0.00483	-0.00048	-0.50	0.00883	-0.00002	-0.03	OE
F48G2R	X	0.0123	0.00702	7.32	0.0161	0.00721	8.88	OE
FQRTJD		0.00507	-0.00024	-0.25	0.00877	-0.00009	-0.11	OE
GAPDZY		0.00660	0.00129	1.34	0.00833	-0.00052	-0.65	OE
GRHB4L		0.00420	-0.00111	-1.16	0.00823	-0.00062	-0.77	OE
GVL8NE	X	0.00287	-0.00244	-2.54	0.00363	-0.00522	-6.43	OE
H4E2VQ		0.00533	0.00002	0.03	0.00900	0.00014	0.18	OE
HHB23E		0.00463	-0.00068	-0.70	0.00853	-0.00032	-0.40	OE
HWU6PF		0.00598	0.00067	0.70	0.00969	0.00083	1.02	OE
JL69VM		0.00720	0.00189	1.97	0.0110	0.00211	2.60	IC
KFGV4Y	*	0.00800	0.00269	2.80	0.0100	0.00114	1.41	OE
KVPYVK		0.00457	-0.00074	-0.77	0.00787	-0.00099	-1.22	OE
KXGYC4		0.00497	-0.00034	-0.36	0.00920	0.00034	0.42	OE
LE4KK2		0.00553	0.00022	0.23	0.00896	0.00010	0.12	OE
LGNPZB		0.00450	-0.00081	-0.84	0.00863	-0.00022	-0.28	AE
LHHF46		0.00433	-0.00098	-1.02	0.00800	-0.00086	-1.06	CI
MK6H9V		0.00443	-0.00088	-0.91	0.00823	-0.00062	-0.77	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
MKMTH3	X	0.0103	0.00502	5.23	0.0117	0.00281	3.46	GD
MZAWHX	X	0.0150	0.00969	10.09	0.0170	0.00814	10.03	OE
NNFTY6		0.00493	-0.00038	-0.39	0.00873	-0.00012	-0.15	OE
PWQQJ9		0.00600	0.00069	0.72	0.0100	0.00114	1.41	OE
Q43QD6		0.00463	-0.00068	-0.70	0.00827	-0.00059	-0.73	OE
Q9V2X3		0.00567	0.00036	0.37	0.00953	0.00068	0.83	IC
QJJUM7		0.00707	0.00176	1.83	0.00913	0.00028	0.34	DR
RC2NNE		0.00403	-0.00128	-1.33	0.00830	-0.00056	-0.69	OE
RE24TV		0.00473	-0.00058	-0.60	0.00843	-0.00042	-0.52	OE
RGTK4A		0.00577	0.00046	0.48	0.00933	0.00048	0.59	OE
RLXU3K		0.00633	0.00102	1.07	0.00833	-0.00052	-0.65	GD
RMC8YU	X	0.00150	-0.00381	-3.97	0.00570	-0.00316	-3.89	OE
RN2PLN		0.00610	0.00079	0.82	0.00930	0.00044	0.54	OE
RY6NNV		0.00560	0.00029	0.30	0.00917	0.00031	0.38	OE
RYNPBX		0.00397	-0.00134	-1.40	0.00730	-0.00156	-1.92	XX
TQA6MR		0.00427	-0.00104	-1.09	0.00800	-0.00086	-1.06	OE
UCJMJM	X	0.00925	0.00394	4.10	0.0125	0.00364	4.49	OE
UD2PE2		0.00490	-0.00041	-0.43	0.00863	-0.00022	-0.28	OE
UXGDDR		0.00520	-0.00011	-0.11	0.00960	0.00074	0.91	OE
VYRHKN		0.00560	0.00029	0.30	0.00907	0.00021	0.26	OE
WGDRDN		0.00500	-0.00031	-0.32	0.00900	0.00014	0.18	OE
XK9B48		0.00787	0.00256	2.66	0.0110	0.00218	2.68	OE
YMENAT		0.00534	0.00003	0.03	0.00921	0.00035	0.43	OE
Z6A9EY		0.00403	-0.00128	-1.33	0.00777	-0.00109	-1.34	OE
ZQ8QGK		0.00483	-0.00048	-0.50	0.00873	-0.00012	-0.15	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.00531	Percent	0.00886	Percent
Stnd Dev Btwn Labs	0.00096	Percent	0.00081	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 63 of 72 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	CI	Combustion / IR
DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #173

32Y4JN (X) - Data for both samples are low.

8KYLUT (X) - Data for both samples are high.

EELC76 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

F48G2R (X) - Data for both samples are high.

GVL8NE (X) - Data for sample L58 are low. Inconsistent within the determinations of both samples.

MKMTH3 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

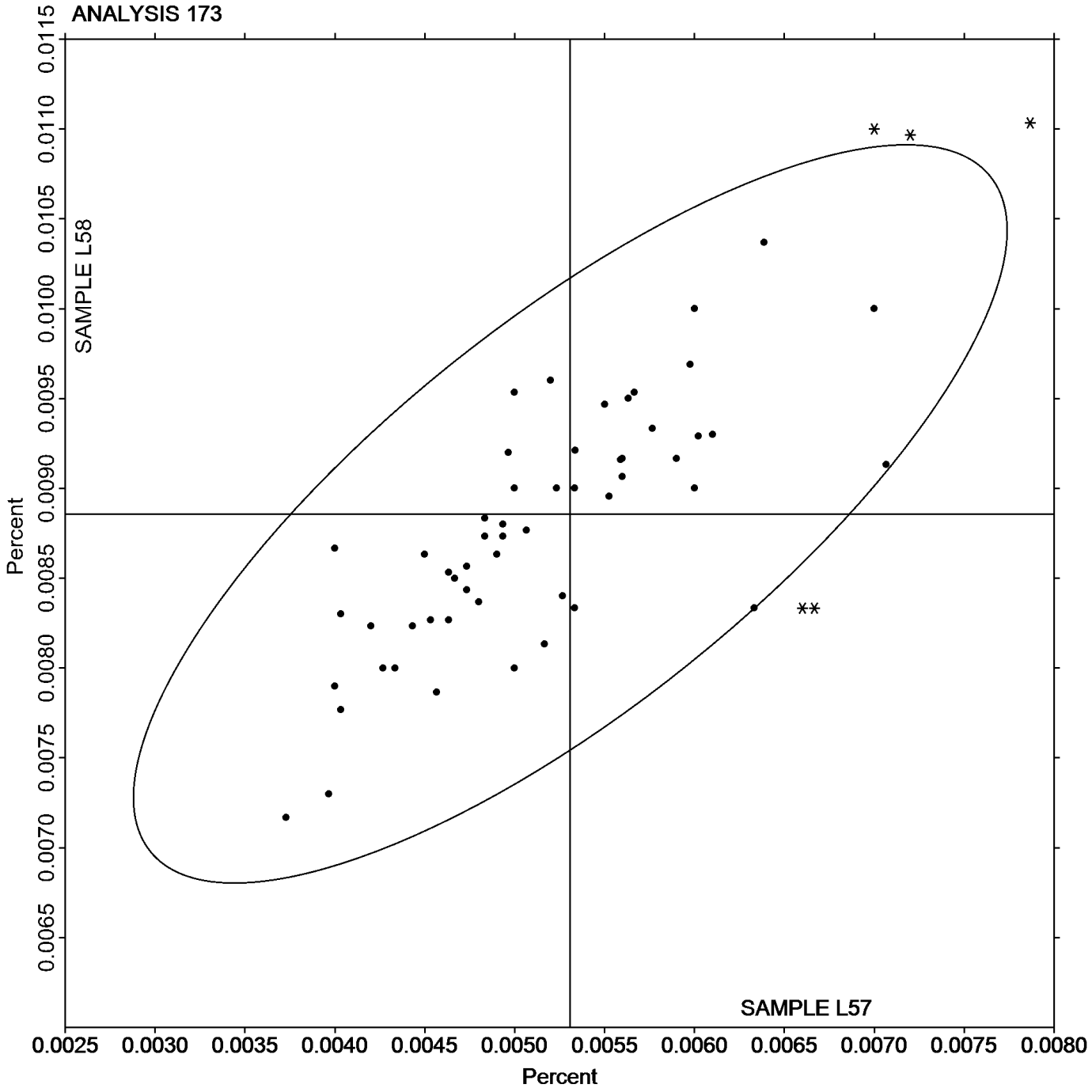
MZAWHX (X) - Data for both samples are high.

RMC8YU (X) - Data for both samples are low.

UCJMJM (X) - Data for both samples are high. Inconsistent within the determinations of sample L58.

SAMPLE L57
0.00531 Percent

SAMPLE L58
0.00886 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.2465	-0.0108	-2.16	0.2652	-0.0105	-1.89	OE
27WARZ		0.2647	0.0074	1.47	0.2817	0.0060	1.09	OE
2BBCQW		0.2548	-0.0025	-0.49	0.2734	-0.0022	-0.41	OE
2EZKM6		0.2534	-0.0039	-0.77	0.2716	-0.0040	-0.73	OE
2MHYMU		0.2583	0.0010	0.21	0.2763	0.0007	0.12	DR
2Q6BNK		0.2558	-0.0015	-0.31	0.2772	0.0015	0.27	OE
2U7FGR		0.2580	0.0007	0.13	0.2810	0.0054	0.97	OE
32Y4JN		0.2550	-0.0023	-0.46	0.2723	-0.0033	-0.60	OE
4A79YC		0.2610	0.0037	0.74	0.2823	0.0067	1.21	OE
4KPRBV		0.2583	0.0010	0.21	0.2790	0.0033	0.61	OE
4U9D8D		0.2577	0.0004	0.07	0.2790	0.0033	0.61	OE
4WH9ZW		0.2607	0.0034	0.67	0.2800	0.0043	0.79	IC
6LX6TW		0.2540	-0.0033	-0.66	0.2678	-0.0079	-1.43	XX
6NMJ3T		0.2660	0.0087	1.74	0.2879	0.0123	2.22	OE
79M2QZ		0.2620	0.0047	0.94	0.2803	0.0047	0.85	OE
7DJRUQ		0.2557	-0.0016	-0.33	0.2723	-0.0033	-0.60	OE
7U6DDV		0.2603	0.0030	0.61	0.2793	0.0037	0.67	OE
7YKACK	X	0.2773	0.0200	4.00	0.3037	0.0280	5.07	IC
8DW8UP		0.2553	-0.0020	-0.39	0.2750	-0.0007	-0.12	OE
8FM9ZD		0.2623	0.0050	1.01	0.2840	0.0083	1.51	OE
8FPVGR	*	0.2475	-0.0098	-1.97	0.2782	0.0026	0.47	OE
8GD3BH		0.2603	0.0030	0.59	0.2797	0.0040	0.73	OE
8KYLUT		0.2600	0.0027	0.54	0.2800	0.0043	0.79	GD
8LBT4U		0.2527	-0.0046	-0.93	0.2733	-0.0023	-0.42	OE
8NCMGJ		0.2600	0.0027	0.54	0.2730	-0.0027	-0.48	GD
99J4QN		0.2603	0.0030	0.60	0.2782	0.0025	0.45	OE
9JA7FA		0.2563	-0.0010	-0.21	0.2721	-0.0035	-0.64	OE
9TX46U	*	0.2600	0.0027	0.54	0.2700	-0.0057	-1.02	OE
A2JGDZ		0.2613	0.0040	0.81	0.2807	0.0050	0.91	GD
A83RK9	*	0.2500	-0.0073	-1.46	0.2767	0.0010	0.18	OE
AFR9LR		0.2517	-0.0056	-1.13	0.2670	-0.0087	-1.57	XX
AH22UY		0.2633	0.0060	1.21	0.2823	0.0067	1.21	OE
AP3GHL		0.2513	-0.0060	-1.20	0.2726	-0.0030	-0.55	OE
AYNKPK		0.2653	0.0080	1.61	0.2797	0.0040	0.73	OE
B8H3JM		0.2573	0.0000	0.01	0.2737	-0.0020	-0.36	DR
BLFKLK	*	0.2500	-0.0073	-1.46	0.2767	0.0010	0.18	OE
BMVCQH		0.2588	0.0015	0.30	0.2765	0.0008	0.15	WD
CFZZQE	X	0.2395	-0.0178	-3.55	0.2537	-0.0220	-3.98	OE
CHAXBM		0.2560	-0.0013	-0.26	0.2770	0.0013	0.24	XX
CULEUD		0.2609	0.0036	0.72	0.2799	0.0042	0.77	OE
EJJXAE		0.2610	0.0037	0.74	0.2780	0.0023	0.42	OE
ELHCFQ		0.2550	-0.0023	-0.46	0.2750	-0.0007	-0.12	OE
EMXEJJ	X	0.2737	0.0164	3.27	0.2893	0.0137	2.48	GD
EQ32HG		0.2493	-0.0080	-1.59	0.2657	-0.0100	-1.81	IC
ERVJAM		0.2554	-0.0019	-0.37	0.2768	0.0012	0.21	OE
F48G2R		0.2590	0.0017	0.34	0.2783	0.0027	0.49	OE
FQRTJD		0.2597	0.0024	0.47	0.2780	0.0023	0.42	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
GAPDZY		0.2552	-0.0021	-0.41	0.2750	-0.0006	-0.11	OE
GRHB4L	*	0.2670	0.0097	1.94	0.2810	0.0053	0.97	OE
GVL8NE	*	0.2702	0.0129	2.58	0.2770	0.0013	0.24	OE
H4E2VQ		0.2600	0.0027	0.54	0.2800	0.0043	0.79	OE
H7HKDD		0.2533	-0.0040	-0.79	0.2730	-0.0027	-0.48	OE
HEW7MG		0.2620	0.0047	0.94	0.2817	0.0060	1.09	XX
HHB23E		0.2570	-0.0003	-0.06	0.2763	0.0007	0.12	OE
HWU6PF		0.2584	0.0011	0.22	0.2757	0.0000	0.01	OE
JAFB6B		0.2587	0.0014	0.27	0.2757	0.0000	0.00	XX
JL69VM	X	0.2545	-0.0028	-0.57	0.2819	0.0063	1.14	IC
JU4M9A	X	0.2210	-0.0363	-7.25	0.2527	-0.0230	-4.16	OE
JYYG7B		0.2617	0.0044	0.87	0.2813	0.0057	1.03	OE
K8MMH9		0.2598	0.0025	0.50	0.2773	0.0017	0.30	OE
KFGV4Y		0.2500	-0.0073	-1.46	0.2670	-0.0087	-1.57	OE
KVPYVK		0.2530	-0.0043	-0.86	0.2710	-0.0047	-0.84	OE
KXGYC4		0.2570	-0.0003	-0.06	0.2753	-0.0003	-0.06	OE
L6EYE3		0.2670	0.0097	1.94	0.2830	0.0073	1.33	OE
LE4KK2		0.2566	-0.0007	-0.15	0.2747	-0.0010	-0.18	OE
LGNPZB		0.2627	0.0054	1.08	0.2815	0.0059	1.06	AE
LHHF46	*	0.2513	-0.0060	-1.19	0.2793	0.0037	0.67	OE
MAXRFT		0.2559	-0.0014	-0.29	0.2731	-0.0026	-0.47	OE
MHBLQN		0.2517	-0.0056	-1.13	0.2713	-0.0043	-0.78	OE
MK6H9V		0.2590	0.0017	0.34	0.2760	0.0003	0.06	OE
MKMTH3		0.2507	-0.0066	-1.32	0.2657	-0.0100	-1.81	GD
MMGEDE	X	0.2747	0.0174	3.47	0.2933	0.0177	3.20	OE
MZAWHX		0.2480	-0.0093	-1.86	0.2650	-0.0107	-1.93	OE
NNFTY6		0.2593	0.0020	0.41	0.2787	0.0030	0.55	OE
PWQQJ9		0.2570	-0.0003	-0.06	0.2777	0.0020	0.36	OE
PXL7H7		0.2620	0.0047	0.94	0.2810	0.0053	0.97	OE
PYHJ4D		0.2490	-0.0083	-1.66	0.2643	-0.0113	-2.05	GD
Q2WJJQ	*	0.2720	0.0147	2.94	0.2903	0.0147	2.66	OE
Q43QD6		0.2487	-0.0086	-1.72	0.2640	-0.0117	-2.11	OE
Q47DRX		0.2630	0.0057	1.14	0.2800	0.0043	0.79	OE
Q9V2X3		0.2530	-0.0043	-0.86	0.2697	-0.0060	-1.08	IC
QBWA3D		0.2550	-0.0023	-0.46	0.2703	-0.0053	-0.96	OE
QEGYLQ		0.2463	-0.0110	-2.19	0.2610	-0.0147	-2.65	XX
QJJUM7		0.2570	-0.0003	-0.06	0.2747	-0.0010	-0.18	DR
RC2NNE		0.2573	0.0000	0.01	0.2740	-0.0017	-0.30	OE
RE24TV		0.2470	-0.0103	-2.06	0.2690	-0.0067	-1.20	WD
RGTK4A		0.2600	0.0027	0.54	0.2787	0.0030	0.55	OE
RLXU3K		0.2560	-0.0013	-0.26	0.2720	-0.0037	-0.66	GD
RMC8YU		0.2537	-0.0036	-0.73	0.2707	-0.0050	-0.90	OE
RN2PLN		0.2585	0.0012	0.25	0.2788	0.0032	0.58	OE
RY6NNV		0.2440	-0.0133	-2.66	0.2623	-0.0133	-2.41	OE
RYNPBX		0.2540	-0.0033	-0.66	0.2757	0.0000	0.00	XX
TQA6MR		0.2540	-0.0033	-0.66	0.2740	-0.0017	-0.30	OE
TRGEPX		0.2618	0.0045	0.89	0.2821	0.0064	1.16	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 174

Carbon & Low Alloy Steel, Element #5
SILICON (Si)

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
UCJMJM		0.2665	0.0092	1.84	0.2820	0.0063	1.15	OE
UD2PE2		0.2563	-0.0010	-0.19	0.2767	0.0010	0.18	OE
UXGDDR		0.2580	0.0007	0.14	0.2770	0.0013	0.24	OE
VNFWWN		0.2559	-0.0014	-0.29	0.2711	-0.0045	-0.82	OE
VYRHKN		0.2590	0.0017	0.34	0.2780	0.0023	0.42	OE
WGDRDN		0.2620	0.0047	0.94	0.2813	0.0057	1.03	OE
XHHBPJ		0.2607	0.0034	0.67	0.2787	0.0030	0.55	OE
XK9B48		0.2577	0.0004	0.07	0.2787	0.0030	0.55	OE
Y2TNND		0.2537	-0.0036	-0.73	0.2728	-0.0029	-0.52	OE
YMENAT		0.2546	-0.0027	-0.53	0.2752	-0.0005	-0.08	OE
Z6A9EY		0.2592	0.0019	0.37	0.2738	-0.0019	-0.34	OE
ZQ8QGK		0.2547	-0.0026	-0.53	0.2733	-0.0023	-0.42	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.2573	Percent	0.2757	Percent
Stnd Dev Btwn Labs	0.0050	Percent	0.0055	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 94 of 106 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #174

7YKACK (X) - Data for both samples are high. Possible Systematic Error.

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

EMXEJJ (X) - Data for sample L57 are high.

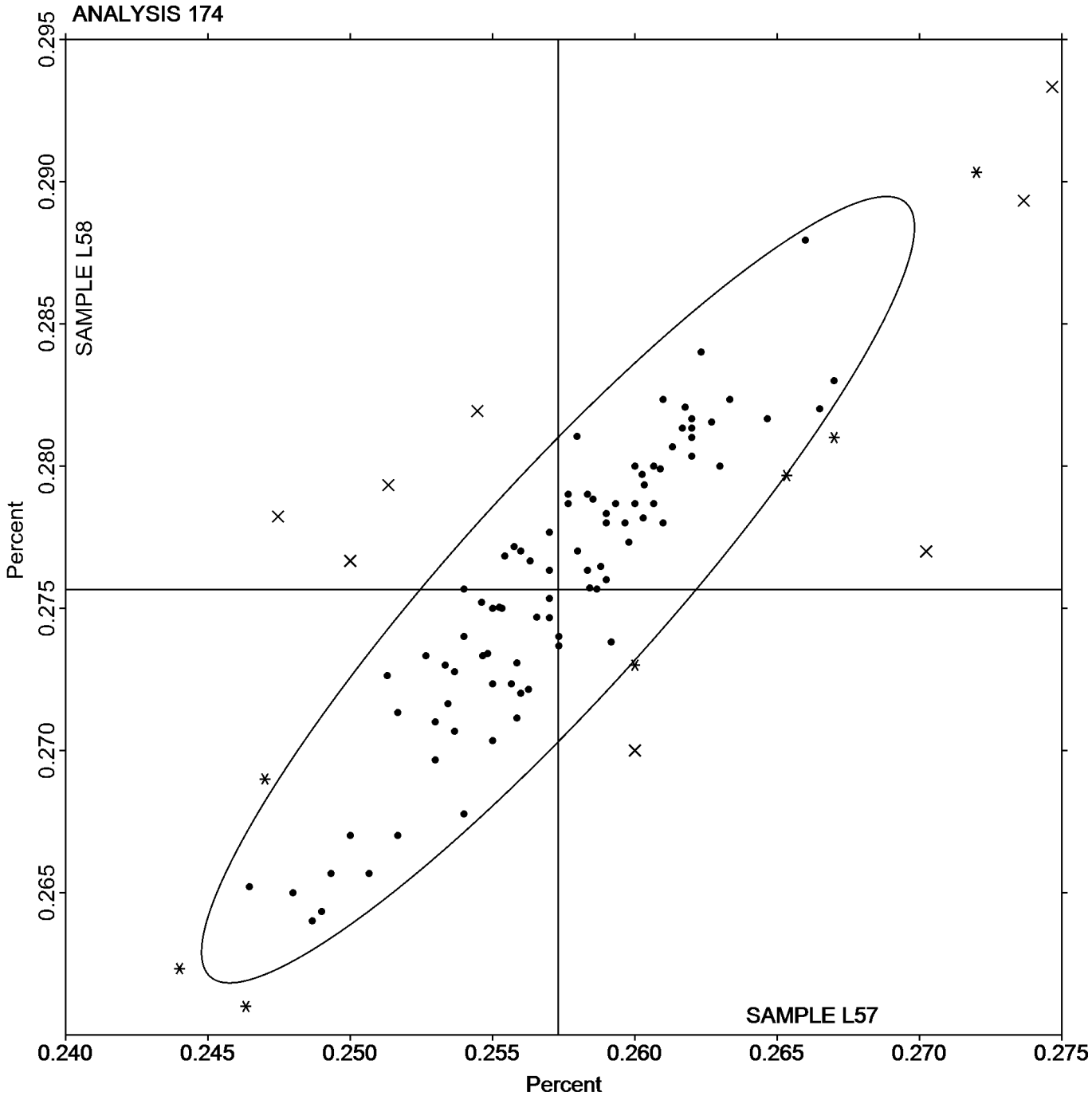
JL69VM (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L58.

JU4M9A (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample L58.

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

SAMPLE L57
0.2573 Percent

SAMPLE L58
0.2757 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.2653	0.0081	1.38	0.2149	0.0090	1.78	OE
27WARZ		0.2537	-0.0035	-0.59	0.2023	-0.0035	-0.69	OE
2BBCQW		0.2552	-0.0020	-0.33	0.2049	-0.0010	-0.19	OE
2EZKM6		0.2520	-0.0051	-0.88	0.2006	-0.0053	-1.03	OE
2MHYMU		0.2617	0.0045	0.77	0.2127	0.0068	1.34	DR
2Q6BNK		0.2565	-0.0006	-0.11	0.2046	-0.0013	-0.25	OE
2U7FGR		0.2603	0.0031	0.53	0.2068	0.0009	0.18	OE
32Y4JN		0.2557	-0.0015	-0.25	0.2077	0.0018	0.36	OE
4A79YC		0.2603	0.0032	0.54	0.2097	0.0038	0.75	OE
4KPRBV		0.2633	0.0062	1.05	0.2113	0.0055	1.08	OE
4U9D8D		0.2550	-0.0021	-0.37	0.2033	-0.0025	-0.50	OE
4WH9ZW		0.2500	-0.0071	-1.22	0.1986	-0.0073	-1.43	IC
6LX6TW		0.2582	0.0011	0.18	0.2012	-0.0047	-0.92	XX
6NMJ3T		0.2551	-0.0021	-0.35	0.2063	0.0005	0.09	OE
79M2QZ		0.2590	0.0019	0.32	0.2060	0.0001	0.03	OE
7DJRUQ		0.2503	-0.0068	-1.16	0.2030	-0.0029	-0.56	OE
7U6DDV		0.2550	-0.0021	-0.37	0.2017	-0.0042	-0.82	OE
7YKACK	X	0.2357	-0.0215	-3.66	0.1883	-0.0175	-3.45	IC
8DW8UP		0.2540	-0.0031	-0.54	0.2037	-0.0022	-0.43	OE
8FM9ZD		0.2616	0.0044	0.75	0.2073	0.0015	0.29	OE
8FPVGR		0.2497	-0.0075	-1.28	0.2009	-0.0049	-0.97	OE
8GD3BH		0.2584	0.0012	0.21	0.2057	-0.0002	-0.03	OE
8KYLUT		0.2567	-0.0005	-0.08	0.2100	0.0041	0.82	GD
8LBT4U		0.2657	0.0085	1.45	0.2123	0.0065	1.28	OE
8NCMGJ	X	0.2567	-0.0005	-0.08	0.2730	0.0671	13.22	GD
99J4QN		0.2596	0.0024	0.41	0.2056	-0.0002	-0.04	OE
9JA7FA		0.2600	0.0028	0.48	0.2060	0.0002	0.03	OE
9TX46U		0.2567	-0.0005	-0.08	0.2100	0.0041	0.82	OE
A2JGDZ		0.2537	-0.0035	-0.59	0.2053	-0.0005	-0.10	GD
A83RK9		0.2550	-0.0021	-0.37	0.2043	-0.0015	-0.30	OE
AH22UY		0.2520	-0.0051	-0.88	0.2047	-0.0012	-0.23	OE
AP3GHL		0.2511	-0.0060	-1.02	0.1999	-0.0060	-1.18	OE
AYNKPK		0.2577	0.0005	0.09	0.2057	-0.0002	-0.04	OE
B8H3JM	X	0.2627	0.0055	0.94	0.2740	0.0681	13.41	DR
BLFKLK		0.2477	-0.0095	-1.61	0.2040	-0.0019	-0.37	OE
BMVCQH		0.2591	0.0020	0.33	0.2034	-0.0024	-0.48	WD
CFZZQE		0.2635	0.0064	1.08	0.2152	0.0093	1.83	XX
CULEUD		0.2595	0.0023	0.40	0.2063	0.0004	0.08	OE
EELC76	X	0.2664	0.0093	1.58	0.2203	0.0144	2.84	IC
EJJXAE		0.2585	0.0013	0.23	0.2053	-0.0005	-0.10	OE
ELHCFQ		0.2540	-0.0031	-0.54	0.2093	0.0035	0.68	OE
EMXEJJ		0.2417	-0.0155	-2.64	0.1963	-0.0095	-1.87	GD
EQ32HG		0.2507	-0.0065	-1.10	0.1997	-0.0062	-1.22	IC
ERVJAM		0.2641	0.0070	1.19	0.2131	0.0072	1.43	OE
F48G2R		0.2650	0.0079	1.34	0.2130	0.0071	1.41	OE
FQRTJD		0.2650	0.0079	1.34	0.2107	0.0048	0.95	OE
GAPDZY		0.2540	-0.0031	-0.53	0.2095	0.0037	0.72	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
GRHB4L		0.2517	-0.0055	-0.93	0.1987	-0.0072	-1.42	OE
GVL8NE		0.2660	0.0089	1.51	0.2084	0.0026	0.51	OE
H4E2VQ		0.2567	-0.0005	-0.08	0.2033	-0.0025	-0.50	OE
H7HKDD		0.2440	-0.0131	-2.24	0.1960	-0.0099	-1.94	OE
HHB23E		0.2553	-0.0018	-0.31	0.2047	-0.0012	-0.23	OE
HWU6PF		0.2536	-0.0036	-0.61	0.2006	-0.0053	-1.04	OE
JL69VM	*	0.2664	0.0093	1.58	0.2076	0.0017	0.34	IC
JYYG7B		0.2503	-0.0068	-1.16	0.1937	-0.0122	-2.40	OE
K8MMH9		0.2565	-0.0007	-0.11	0.2056	-0.0002	-0.05	OE
KFGV4Y	*	0.2740	0.0169	2.87	0.2170	0.0111	2.19	OE
KVPYVK		0.2680	0.0109	1.85	0.2183	0.0125	2.46	OE
KXGYC4		0.2543	-0.0028	-0.48	0.2030	-0.0029	-0.56	OE
L6EYE3		0.2497	-0.0075	-1.27	0.1997	-0.0062	-1.22	OE
LE4KK2		0.2580	0.0009	0.15	0.2069	0.0011	0.21	OE
LGNPZB		0.2640	0.0068	1.16	0.2111	0.0053	1.04	AE
LHHF46		0.2537	-0.0035	-0.59	0.2047	-0.0012	-0.23	OE
MAXRFT		0.2621	0.0050	0.84	0.2070	0.0011	0.23	OE
MHBLQN		0.2600	0.0029	0.49	0.2063	0.0005	0.09	OE
MK6H9V		0.2613	0.0042	0.71	0.2083	0.0025	0.49	OE
MKMTH3		0.2587	0.0015	0.26	0.2090	0.0031	0.62	GD
MMGEDE	*	0.2743	0.0172	2.93	0.2197	0.0138	2.72	OE
MZAWHX		0.2570	-0.0001	-0.02	0.2050	-0.0009	-0.17	OE
NNFTY6		0.2590	0.0019	0.32	0.2066	0.0007	0.14	OE
PWQQJ9		0.2587	0.0015	0.26	0.2080	0.0021	0.42	OE
PXL7H7		0.2570	-0.0001	-0.02	0.2050	-0.0009	-0.17	OE
PYHJ4D		0.2697	0.0125	2.13	0.2120	0.0061	1.21	GD
Q2WJJQ		0.2677	0.0105	1.79	0.2160	0.0101	2.00	OE
Q43QD6		0.2507	-0.0065	-1.10	0.2010	-0.0049	-0.96	OE
Q47DRX		0.2640	0.0069	1.17	0.2103	0.0045	0.88	OE
Q9V2X3		0.2567	-0.0005	-0.08	0.2047	-0.0012	-0.23	IC
QBWA3D		0.2487	-0.0085	-1.44	0.1980	-0.0079	-1.55	OE
QJJUM7	X	0.2757	0.0185	3.16	0.2067	0.0008	0.16	DR
RC2NNE		0.2520	-0.0051	-0.88	0.2027	-0.0032	-0.63	OE
RE24TV		0.2554	-0.0018	-0.30	0.2073	0.0014	0.28	OE
RGTK4A		0.2503	-0.0068	-1.16	0.2010	-0.0049	-0.96	OE
RLXU3K		0.2523	-0.0048	-0.82	0.2040	-0.0019	-0.37	GD
RMC8YU		0.2587	0.0015	0.26	0.2073	0.0015	0.29	OE
RN2PLN		0.2585	0.0014	0.23	0.2042	-0.0017	-0.33	OE
RY6NNV		0.2480	-0.0091	-1.56	0.1977	-0.0082	-1.61	OE
RYNPBX		0.2600	0.0029	0.49	0.2077	0.0018	0.36	XX
TQA6MR		0.2570	-0.0001	-0.02	0.2073	0.0015	0.29	OE
TRGEPX		0.2545	-0.0027	-0.46	0.2001	-0.0058	-1.13	OE
UCJMJM		0.2625	0.0054	0.91	0.2150	0.0091	1.80	OE
UD2PE2		0.2543	-0.0028	-0.48	0.2047	-0.0012	-0.23	OE
UXGDDR		0.2583	0.0012	0.20	0.2080	0.0021	0.42	OE
VNFWWN		0.2567	-0.0004	-0.07	0.2041	-0.0017	-0.34	OE
VYRHKN		0.2580	0.0009	0.15	0.2127	0.0068	1.34	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 175

Carbon & Low Alloy Steel, Element #6
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
WGDRDN		0.2513	-0.0058	-0.99	0.2003	-0.0055	-1.09	OE
XHHBPJ		0.2573	0.0002	0.03	0.2057	-0.0002	-0.04	OE
XK9B48		0.2500	-0.0071	-1.22	0.2010	-0.0049	-0.96	OE
Y2TNND		0.2590	0.0018	0.31	0.2075	0.0016	0.32	OE
YMENAT		0.2563	-0.0008	-0.14	0.2056	-0.0003	-0.06	OE
Z6A9EY		0.2525	-0.0046	-0.79	0.1968	-0.0091	-1.78	OE
ZQ8QGK		0.2543	-0.0028	-0.48	0.2027	-0.0032	-0.63	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.2571	Percent	0.2059	Percent
Stnd Dev Btwn Labs	0.0059	Percent	0.0051	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 96 of 101 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #175

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

8NCMGJ (X) - Data for sample L58 are high.

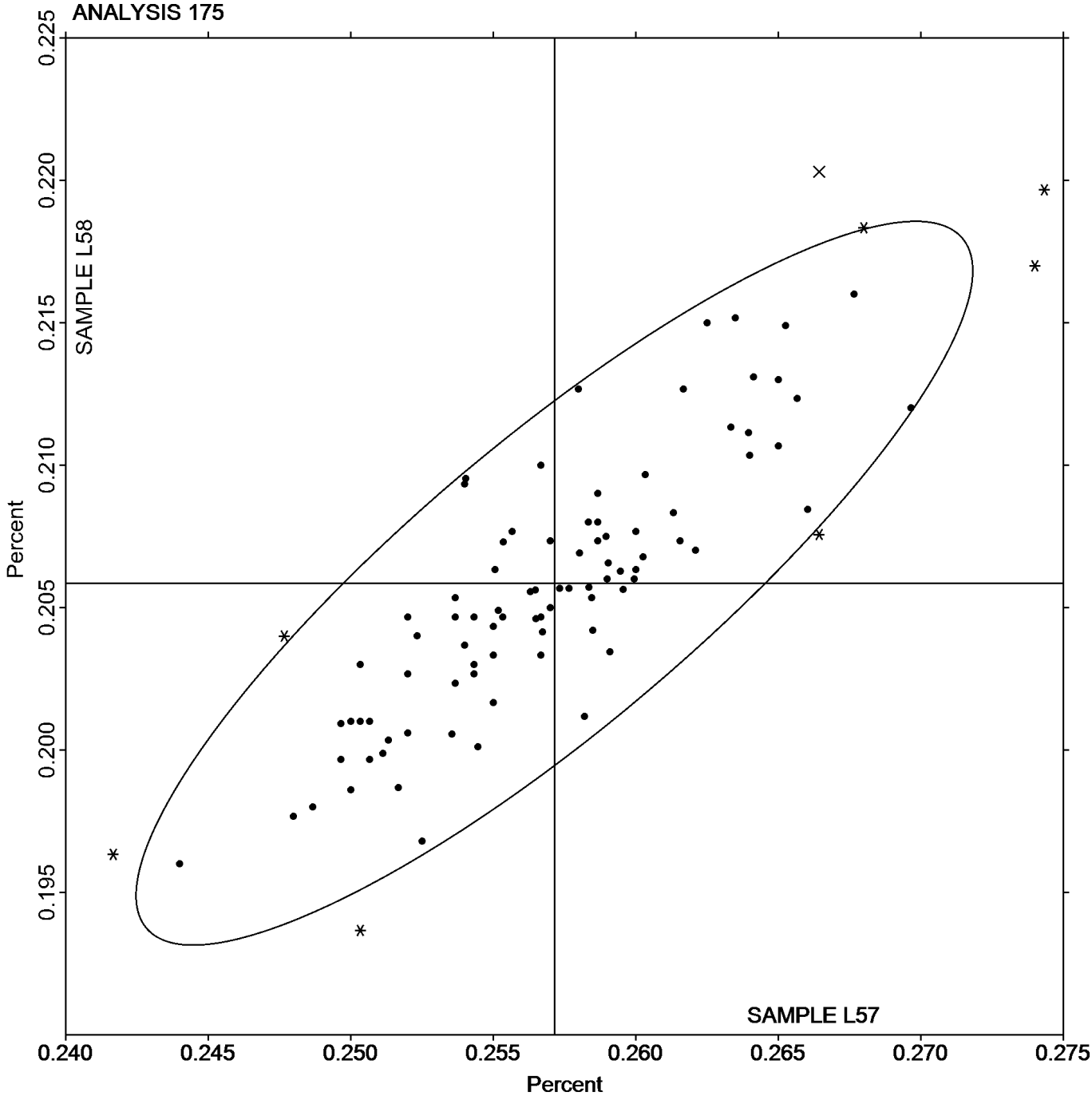
B8H3JM (X) - Data for sample L58 are high.

EELC76 (X) - Data for sample L58 are high. Inconsistent within the determinations of both samples.

QJJUM7 (X) - Data for sample L57 are high. Inconsistent within the determinations of sample L57.

SAMPLE L57
0.2571 Percent

SAMPLE L58
0.2059 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		1.779	-0.046	-1.43	1.708	-0.041	-1.40	OE
27WARZ		1.823	-0.002	-0.05	1.747	-0.002	-0.06	OE
2BBCQW		1.849	0.024	0.75	1.753	0.005	0.17	OE
2EZKM6	X	1.887	0.062	1.95	1.855	0.106	3.69	OE
2MHYMU		1.868	0.043	1.34	1.789	0.041	1.41	DR
2Q6BNK		1.831	0.006	0.17	1.761	0.013	0.44	OE
2U7FGR	*	1.831	0.006	0.19	1.790	0.041	1.42	OE
32Y4JN		1.840	0.015	0.47	1.763	0.015	0.51	OE
4A79YC		1.827	0.002	0.05	1.753	0.005	0.17	OE
4KPRBV		1.869	0.044	1.39	1.790	0.041	1.42	OE
4U9D8D		1.824	-0.001	-0.04	1.749	0.000	0.01	OE
4WH9ZW		1.797	-0.028	-0.89	1.707	-0.042	-1.45	IC
6LX6TW	X	1.959	0.134	4.21	1.860	0.111	3.85	XX
6NMJ3T		1.840	0.015	0.46	1.768	0.020	0.69	OE
79M2QZ		1.787	-0.038	-1.20	1.715	-0.033	-1.15	OE
7DJRUQ		1.858	0.033	1.05	1.799	0.051	1.76	OE
7U6DDV		1.832	0.007	0.23	1.755	0.007	0.24	OE
7YKACK		1.780	-0.045	-1.41	1.690	-0.059	-2.02	IC
8DW8UP		1.857	0.032	1.00	1.794	0.045	1.57	OE
8FM9ZD		1.856	0.031	0.97	1.775	0.026	0.92	OE
8FPVGR		1.830	0.005	0.17	1.739	-0.009	-0.33	OE
8KYLUT		1.830	0.005	0.16	1.777	0.028	0.97	GD
8LBT4U		1.877	0.052	1.62	1.792	0.043	1.49	OE
8NCMGJ		1.760	-0.065	-2.04	1.693	-0.055	-1.91	GD
99J4QN		1.843	0.018	0.56	1.761	0.013	0.44	OE
9JA7FA		1.846	0.021	0.65	1.786	0.038	1.32	OE
9TX46U		1.830	0.005	0.16	1.740	-0.009	-0.29	OE
A2JGDZ		1.827	0.002	0.05	1.760	0.011	0.40	GD
A83RK9		1.850	0.025	0.78	1.763	0.015	0.51	OE
AH22UY		1.853	0.028	0.89	1.770	0.021	0.74	OE
AP3GHL		1.857	0.033	1.02	1.784	0.036	1.23	XX
AYNKPK		1.839	0.014	0.43	1.763	0.015	0.51	OE
BLFKLK		1.907	0.082	2.56	1.800	0.051	1.78	OE
BMVCQH		1.827	0.002	0.07	1.759	0.010	0.35	WD
CFZZQE		1.762	-0.063	-1.96	1.697	-0.051	-1.77	OE
EELC76	X	1.707	-0.118	-3.70	1.600	-0.149	-5.15	IC
EJJXAE	*	1.746	-0.079	-2.46	1.666	-0.083	-2.86	OE
ELHCFQ		1.793	-0.032	-1.00	1.735	-0.014	-0.47	OE
EMXEJJ		1.807	-0.018	-0.57	1.720	-0.029	-0.99	GD
EQ32HG		1.837	0.012	0.38	1.768	0.019	0.66	IC
ERVJAM		1.826	0.001	0.03	1.756	0.008	0.27	OE
F48G2R	*	1.740	-0.085	-2.66	1.677	-0.072	-2.49	OE
FQRTJD		1.850	0.025	0.78	1.769	0.020	0.71	OE
GAPDZY		1.793	-0.032	-0.99	1.735	-0.013	-0.46	OE
GRHB4L		1.783	-0.042	-1.31	1.720	-0.029	-0.99	OE
GVL8NE	*	1.804	-0.021	-0.65	1.702	-0.047	-1.62	OE
H4E2VQ		1.840	0.015	0.47	1.760	0.011	0.40	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
H7HKDD		1.764	-0.061	-1.90	1.684	-0.065	-2.24	OE
HHB23E		1.825	0.000	0.01	1.744	-0.005	-0.17	OE
HWU6PF		1.856	0.031	0.96	1.772	0.024	0.83	OE
JL69VM		1.809	-0.016	-0.49	1.736	-0.012	-0.43	IC
JYYG7B	X	1.847	0.022	0.69	1.856	0.108	3.73	OE
K8MMH9		1.824	-0.001	-0.02	1.742	-0.007	-0.23	OE
KFGV4Y	*	1.817	-0.008	-0.26	1.793	0.045	1.55	OE
KVPYVK		1.880	0.055	1.73	1.777	0.028	0.97	OE
KXGYC4		1.780	-0.045	-1.40	1.726	-0.023	-0.79	OE
L6EYE3		1.879	0.054	1.70	1.789	0.041	1.41	OE
LE4KK2		1.819	-0.006	-0.19	1.736	-0.012	-0.42	OE
LGNPZB		1.842	0.017	0.53	1.773	0.024	0.84	AA
LHHF46		1.838	0.013	0.42	1.762	0.013	0.47	OE
MAXRFT		1.845	0.020	0.63	1.774	0.025	0.87	OE
MHBLQN		1.848	0.023	0.72	1.750	0.001	0.04	OE
MK6H9V		1.829	0.004	0.14	1.750	0.001	0.05	OE
MKMTH3		1.797	-0.028	-0.89	1.723	-0.025	-0.87	GD
MMGEDE		1.818	-0.007	-0.23	1.731	-0.017	-0.59	OE
MZAWHX	X	1.760	-0.065	-2.04	1.640	-0.109	-3.76	OE
NNFTY6		1.871	0.046	1.45	1.791	0.043	1.48	OE
PXL7H7		1.760	-0.065	-2.03	1.700	-0.049	-1.68	OE
PYHJ4D		1.800	-0.025	-0.78	1.730	-0.019	-0.64	GD
Q2WJJQ		1.790	-0.035	-1.10	1.720	-0.029	-0.99	OE
Q43QD6	X	1.889	0.064	2.02	1.839	0.091	3.14	OE
Q47DRX		1.818	-0.007	-0.23	1.746	-0.002	-0.08	OE
Q9V2X3		1.853	0.028	0.89	1.767	0.018	0.63	IC
QBWA3D		1.807	-0.018	-0.57	1.743	-0.005	-0.18	OE
QJJUM7		1.790	-0.035	-1.10	1.743	-0.005	-0.18	DR
RC2NNE		1.847	0.022	0.68	1.780	0.031	1.09	OE
RE24TV		1.835	0.010	0.32	1.752	0.003	0.12	OE
RGTK4A		1.830	0.005	0.16	1.740	-0.009	-0.29	OE
RLXU3K		1.873	0.048	1.52	1.790	0.041	1.44	GD
RMC8YU		1.827	0.002	0.05	1.747	-0.002	-0.06	OE
RN2PLN		1.824	-0.001	-0.05	1.742	-0.006	-0.21	OE
RY6NNV		1.830	0.005	0.17	1.763	0.014	0.50	OE
RYNPBX		1.775	-0.050	-1.56	1.710	-0.039	-1.34	XX
TQA6MR		1.854	0.029	0.91	1.768	0.019	0.67	OE
TRGEPX		1.790	-0.035	-1.08	1.721	-0.027	-0.94	OE
UCJMJM		1.835	0.010	0.31	1.760	0.011	0.40	OE
UD2PE2	X	1.901	0.076	2.38	1.856	0.107	3.72	OE
UXGDDR		1.825	0.000	0.00	1.765	0.017	0.58	OE
VNFWWN		1.836	0.011	0.36	1.743	-0.005	-0.18	OE
VYRHKN		1.815	-0.010	-0.31	1.744	-0.005	-0.16	OE
WGDRDN		1.840	0.015	0.47	1.753	0.005	0.17	OE
XHHBPJ		1.815	-0.010	-0.31	1.742	-0.006	-0.21	OE
XK9B48		1.835	0.010	0.31	1.740	-0.009	-0.29	OE
Y2TNND		1.827	0.002	0.05	1.753	0.004	0.15	OE

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
YMENAT		1.811	-0.014	-0.44	1.733	-0.015	-0.53	OE
Z6A9EY		1.824	-0.001	-0.02	1.757	0.009	0.30	OE
ZQ8QGK		1.830	0.005	0.17	1.744	-0.005	-0.16	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	1.825	Percent	1.749	Percent
Stnd Dev Btwn Labs	0.032	Percent	0.029	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 88 of 97 reporting participants

Key to Method Codes Reported by Participants

AA	Spectrometry - Atomic Absorption (AAS)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #176

2EZKM6 (X) - Data for sample L58 are high.

6LX6TW (X) - Data for both samples are high. Possible Systematic Error.

EELC76 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

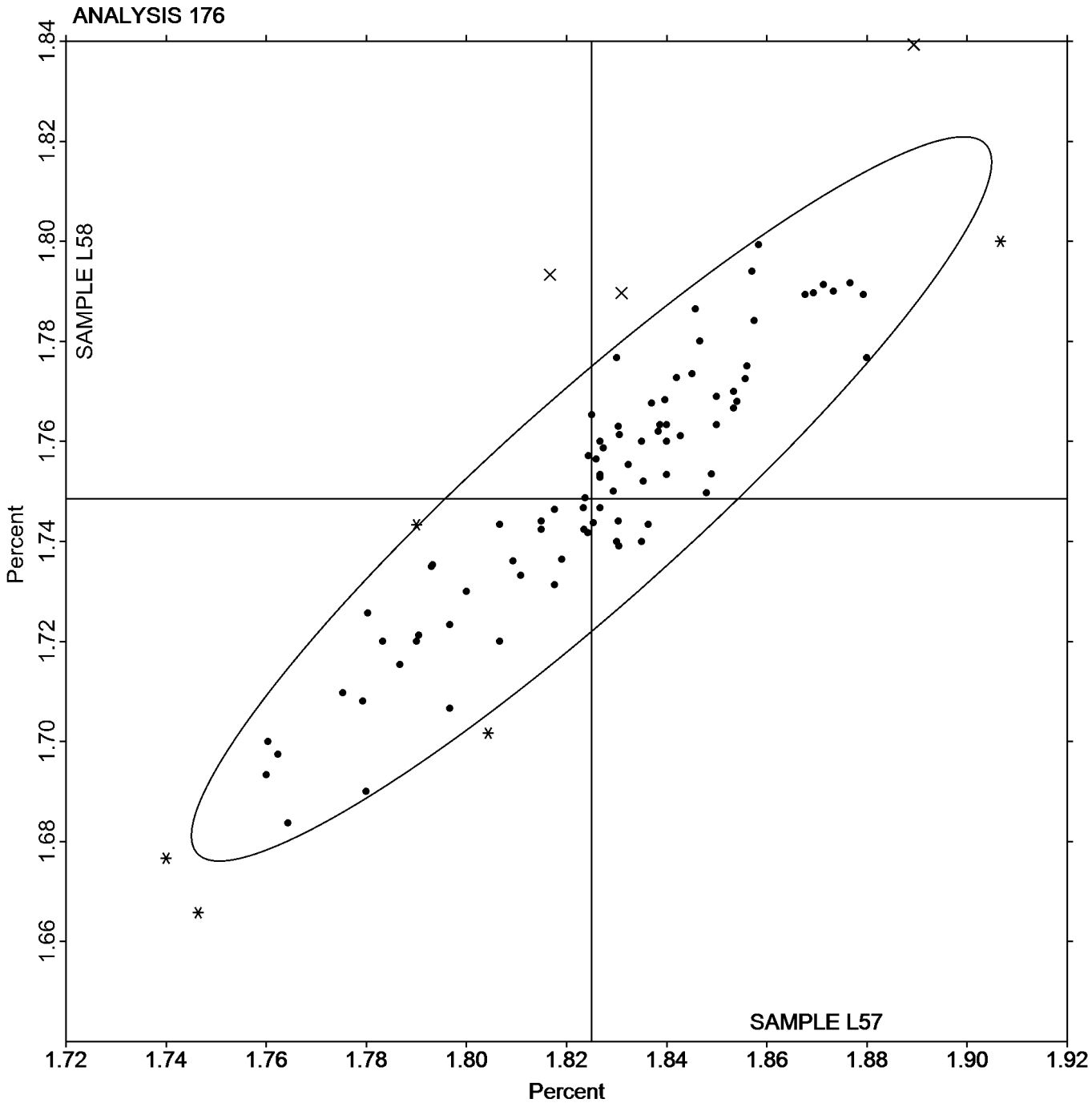
JYYG7B (X) - Data for sample L58 are high. Inconsistent within the determinations of both samples.

MZAWHX (X) - Data for sample L58 are low.

Q43QD6 (X) - Data for sample L58 are high.

UD2PE2 (X) - Data for sample L58 are high.

SAMPLE L57	SAMPLE L58
1.825 Percent	1.749 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.8133	-0.0163	-1.18	0.7823	-0.0112	-0.90	OE
27WARZ		0.8470	0.0173	1.25	0.8087	0.0151	1.22	OE
2BBCQW		0.8001	-0.0295	-2.13	0.7736	-0.0200	-1.61	OE
2EZKM6		0.8139	-0.0157	-1.14	0.7781	-0.0154	-1.25	OE
2MHYMU		0.8257	-0.0040	-0.29	0.7917	-0.0019	-0.15	DR
2Q6BNK		0.8306	0.0009	0.06	0.7953	0.0018	0.14	OE
2U7FGR		0.8264	-0.0033	-0.24	0.7908	-0.0028	-0.22	OE
32Y4JN		0.8383	0.0087	0.63	0.7927	-0.0009	-0.07	OE
4A79YC		0.8360	0.0063	0.46	0.7973	0.0038	0.31	OE
4KPRBV		0.8373	0.0077	0.55	0.8027	0.0091	0.74	OE
4U9D8D		0.8327	0.0030	0.22	0.7970	0.0035	0.28	OE
4WH9ZW		0.8263	-0.0033	-0.24	0.7883	-0.0052	-0.42	IC
6LX6TW		0.8332	0.0035	0.25	0.8045	0.0110	0.89	XX
6NMJ3T		0.8361	0.0064	0.46	0.8002	0.0067	0.54	OE
79M2QZ		0.8277	-0.0020	-0.15	0.7937	0.0001	0.01	OE
7DJRUQ		0.8330	0.0033	0.24	0.7960	0.0025	0.20	OE
7U6DDV		0.8547	0.0250	1.80	0.8063	0.0128	1.03	OE
7YKACK		0.8013	-0.0283	-2.05	0.7680	-0.0255	-2.06	IC
8DW8UP		0.8327	0.0030	0.22	0.7980	0.0045	0.36	OE
8FM9ZD		0.8242	-0.0055	-0.40	0.7840	-0.0095	-0.77	OE
8FPVGR		0.8159	-0.0137	-0.99	0.7808	-0.0128	-1.03	OE
8GD3BH		0.8290	-0.0007	-0.05	0.7938	0.0003	0.02	OE
8KYLUT	*	0.8700	0.0403	2.91	0.8233	0.0298	2.40	GD
8LBT4U		0.8250	-0.0047	-0.34	0.7903	-0.0032	-0.26	OE
8NCMGJ		0.8317	0.0020	0.14	0.7993	0.0058	0.47	GD
99J4QN		0.8399	0.0102	0.74	0.7996	0.0060	0.49	OE
9JA7FA		0.8338	0.0041	0.30	0.7895	-0.0041	-0.33	OE
9TX46U		0.8300	0.0003	0.02	0.7867	-0.0069	-0.56	OE
A2JGDZ		0.8243	-0.0053	-0.39	0.7957	0.0021	0.17	GD
A83RK9		0.8200	-0.0097	-0.70	0.7900	-0.0035	-0.29	OE
AH22UY		0.8427	0.0130	0.94	0.8020	0.0085	0.68	OE
AP3GHL		0.8273	-0.0024	-0.17	0.7932	-0.0004	-0.03	OE
AYNKPK		0.8260	-0.0037	-0.27	0.7920	-0.0015	-0.12	OE
B8H3JM		0.8337	0.0040	0.29	0.8007	0.0071	0.57	DR
BLFKLK		0.8263	-0.0033	-0.24	0.7970	0.0035	0.28	OE
BMVCQH		0.8340	0.0043	0.31	0.7970	0.0035	0.28	WD
CFZZQE		0.8145	-0.0152	-1.10	0.7785	-0.0150	-1.21	XX
CULEUD		0.8312	0.0015	0.11	0.7956	0.0020	0.16	OE
EELC76	*	0.8134	-0.0163	-1.18	0.7914	-0.0021	-0.17	IC
EJJXAE		0.8210	-0.0086	-0.62	0.7840	-0.0095	-0.77	OE
ELHCFQ		0.8107	-0.0190	-1.37	0.7763	-0.0172	-1.39	OE
EMXEJJ		0.8003	-0.0293	-2.12	0.7653	-0.0282	-2.28	GD
EQ32HG		0.8420	0.0123	0.89	0.8033	0.0098	0.79	IC
ERVJAM		0.8310	0.0014	0.10	0.7991	0.0055	0.45	OE
F48G2R		0.8323	0.0027	0.19	0.7983	0.0048	0.39	OE
FQRTJD		0.8143	-0.0153	-1.11	0.7750	-0.0185	-1.50	OE
GAPDZY		0.8105	-0.0192	-1.39	0.7763	-0.0173	-1.39	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
GRHB4L		0.8337	0.0040	0.29	0.7973	0.0038	0.31	OE
GVL8NE		0.8019	-0.0277	-2.00	0.7741	-0.0194	-1.57	OE
H4E2VQ		0.8567	0.0270	1.95	0.8200	0.0265	2.13	OE
H7HKDD		0.8223	-0.0073	-0.53	0.7873	-0.0062	-0.50	OE
HHB23E		0.8140	-0.0157	-1.13	0.7780	-0.0155	-1.25	OE
HWU6PF		0.8424	0.0127	0.92	0.7997	0.0061	0.49	OE
JL69VM		0.8505	0.0208	1.50	0.8129	0.0194	1.56	IC
JYYG7B	X	0.8450	0.0153	1.11	0.8300	0.0365	2.94	OE
K8MMH9		0.8335	0.0038	0.27	0.7966	0.0031	0.25	OE
KFGV4Y		0.8373	0.0077	0.55	0.7890	-0.0045	-0.37	OE
KVPYVK		0.8137	-0.0160	-1.16	0.7887	-0.0049	-0.39	OE
KXGYC4		0.8247	-0.0050	-0.36	0.7917	-0.0019	-0.15	OE
L6EYE3		0.8450	0.0153	1.11	0.8017	0.0081	0.65	OE
LE4KK2		0.8455	0.0159	1.15	0.8071	0.0136	1.10	OE
LGNPZB		0.8438	0.0141	1.02	0.8032	0.0097	0.78	AE
LHHF46		0.8263	-0.0033	-0.24	0.7917	-0.0019	-0.15	OE
MAXRFT		0.8322	0.0026	0.18	0.7963	0.0028	0.22	OE
MHBLQN		0.8163	-0.0133	-0.96	0.7820	-0.0115	-0.93	OE
MK6H9V		0.8250	-0.0047	-0.34	0.7860	-0.0075	-0.61	OE
MKMTH3		0.8270	-0.0027	-0.19	0.7887	-0.0049	-0.39	GD
MMGEDE		0.8420	0.0123	0.89	0.8057	0.0121	0.98	OE
MZAWHX		0.8000	-0.0297	-2.14	0.7700	-0.0235	-1.90	OE
NNFTY6		0.8213	-0.0083	-0.60	0.7840	-0.0095	-0.77	OE
PWQQJ9		0.8363	0.0067	0.48	0.8010	0.0075	0.60	OE
PXL7H7		0.8557	0.0260	1.88	0.8210	0.0275	2.21	OE
PYHJ4D	*	0.8523	0.0227	1.64	0.8237	0.0301	2.43	GD
Q2WJJQ		0.8467	0.0170	1.23	0.8087	0.0151	1.22	OE
Q43QD6		0.8393	0.0097	0.70	0.8013	0.0078	0.63	OE
Q47DRX		0.8343	0.0047	0.34	0.8010	0.0075	0.60	OE
Q9V2X3	*	0.8543	0.0247	1.78	0.8010	0.0075	0.60	IC
QBWA3D		0.8107	-0.0190	-1.37	0.7813	-0.0122	-0.99	OE
QJJUM7		0.8307	0.0010	0.07	0.7923	-0.0012	-0.10	DR
RC2NNE		0.8243	-0.0053	-0.39	0.7883	-0.0052	-0.42	OE
RE24TV		0.8322	0.0025	0.18	0.7993	0.0058	0.47	OE
RGTK4A		0.8340	0.0043	0.31	0.7913	-0.0022	-0.18	OE
RLXU3K		0.8600	0.0303	2.19	0.8270	0.0335	2.70	GD
RMC8YU		0.8497	0.0200	1.44	0.8137	0.0201	1.62	OE
RN2PLN		0.8232	-0.0065	-0.47	0.7803	-0.0133	-1.07	OE
RY6NNV	X	0.7570	-0.0727	-5.25	0.7247	-0.0689	-5.56	OE
RYNPBX		0.8353	0.0057	0.41	0.7993	0.0058	0.47	XX
TQA6MR		0.8333	0.0037	0.26	0.7870	-0.0065	-0.53	OE
TRGEPX		0.8218	-0.0078	-0.57	0.7828	-0.0107	-0.86	OE
UCJMJM		0.8100	-0.0197	-1.42	0.7700	-0.0235	-1.90	OE
UD2PE2		0.8387	0.0090	0.65	0.8047	0.0111	0.90	OE
UXGDDR		0.8313	0.0017	0.12	0.7970	0.0035	0.28	OE
VNFWWN		0.8343	0.0046	0.33	0.7848	-0.0088	-0.71	OE
VYRHKN		0.8460	0.0163	1.18	0.8057	0.0121	0.98	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 177

Carbon & Low Alloy Steel, Element #8
CHROMIUM (Cr)

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
WGDRDN		0.7973	-0.0323	-2.34	0.7687	-0.0249	-2.01	OE
XHHBPJ		0.8277	-0.0020	-0.15	0.7933	-0.0002	-0.02	OE
XK9B48		0.8373	0.0077	0.55	0.8007	0.0071	0.57	OE
Y2TNND		0.8282	-0.0015	-0.11	0.7946	0.0010	0.08	OE
YMENAT		0.8203	-0.0094	-0.68	0.7838	-0.0097	-0.78	OE
Z6A9EY		0.8281	-0.0016	-0.11	0.7908	-0.0027	-0.22	OE
ZQ8QGK		0.8330	0.0033	0.24	0.7997	0.0061	0.49	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.8297	Percent	0.7935	Percent
Stnd Dev Btwn Labs	0.0138	Percent	0.0124	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 98 of 101 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

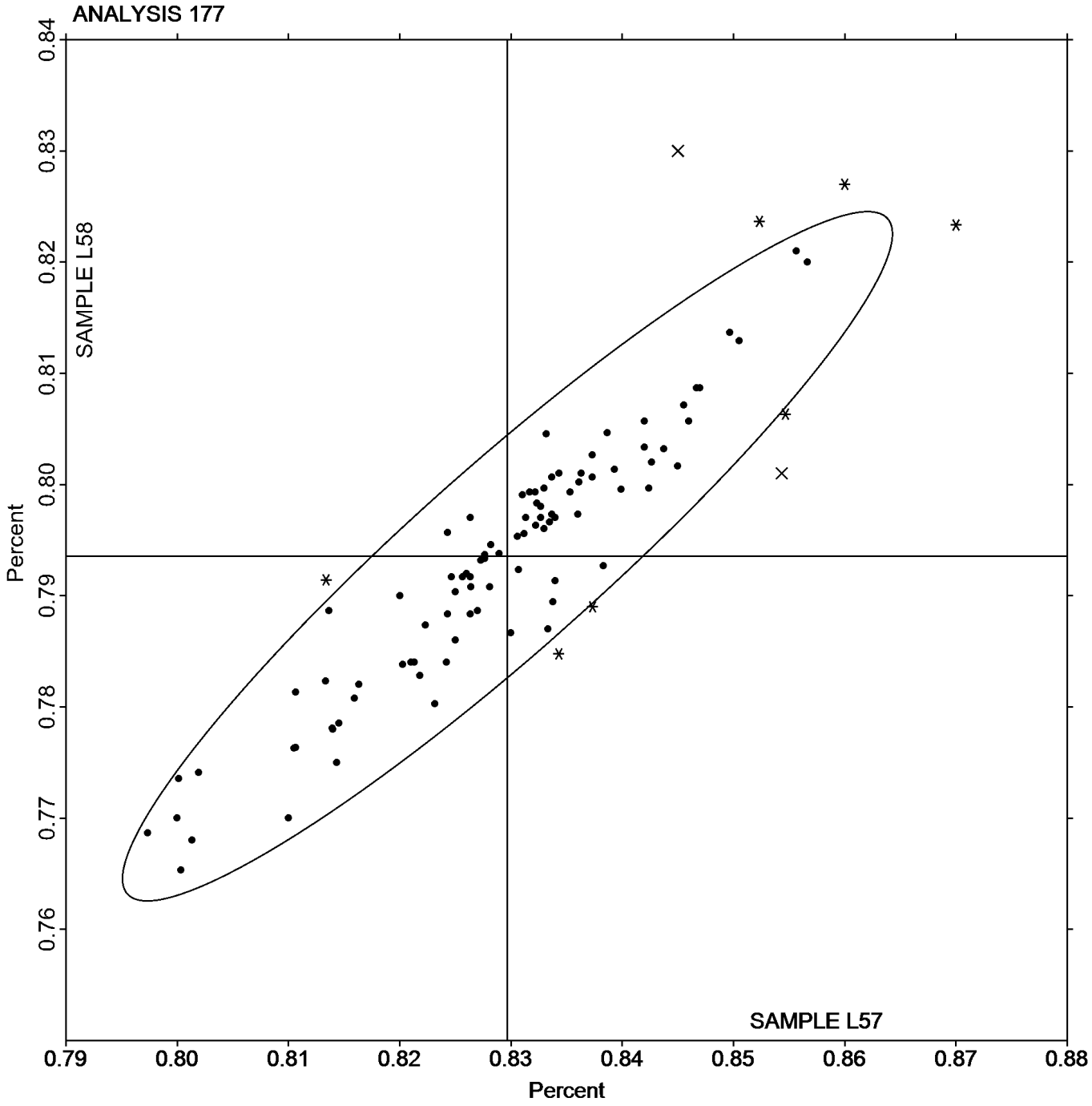
Comments on Assigned Data Flags for Test #177

JYYG7B (X) - Data for sample L58 are high. Inconsistent within the determinations of both samples.

RY6NNV (X) - Data for both samples are low. Possible Systematic Error.

SAMPLE L57
0.8297 Percent

SAMPLE L58
0.7935 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.0185	0.0000	0.00	0.2065	-0.0092	-1.47	OE
27WARZ		0.0180	-0.0005	-0.28	0.2143	-0.0014	-0.22	OE
2BBCQW	M	No Data Reported			0.2129	-0.0028	-0.44	OE
2EZKM6	X	0.0257	0.0072	4.04	0.2173	0.0016	0.25	OE
2MHYMU		0.0220	0.0035	1.96	0.2210	0.0053	0.84	DR
2Q6BNK		0.0190	0.0005	0.28	0.2161	0.0004	0.07	OE
2U7FGR		0.0196	0.0011	0.59	0.2126	-0.0031	-0.49	OE
32Y4JN		0.0191	0.0006	0.33	0.2147	-0.0010	-0.16	OE
4A79YC		0.0218	0.0033	1.83	0.2263	0.0106	1.69	OE
4KPRBV		0.0190	0.0005	0.28	0.2157	0.0000	0.00	OE
4U9D8D		0.0157	-0.0028	-1.59	0.2120	-0.0037	-0.59	OE
4WH9ZW		0.0183	-0.0002	-0.13	0.2150	-0.0007	-0.11	IC
6LX6TW		0.0189	0.0004	0.20	0.2105	-0.0052	-0.82	XX
6NMJ3T		0.0179	-0.0006	-0.36	0.2152	-0.0005	-0.07	OE
79M2QZ		0.0213	0.0028	1.58	0.2123	-0.0034	-0.53	OE
7DJRUQ		0.0190	0.0005	0.28	0.2143	-0.0014	-0.22	OE
7U6DDV	X	0.0123	-0.0062	-3.45	0.2417	0.0260	4.13	OE
7YKACK		0.0210	0.0025	1.40	0.2217	0.0060	0.95	IC
8DW8UP		0.0188	0.0003	0.17	0.2217	0.0060	0.95	OE
8FM9ZD		0.0180	-0.0005	-0.28	0.2263	0.0106	1.69	OE
8FPVGR	X	0.0250	0.0065	3.66	0.2022	-0.0135	-2.14	OE
8GD3BH		0.0192	0.0007	0.41	0.2227	0.0070	1.12	OE
8KYLUT		0.0163	-0.0022	-1.21	0.2300	0.0143	2.27	GD
8LBT4U		0.0220	0.0035	1.96	0.2170	0.0013	0.21	OE
8NCMGJ	M	No Data Reported			0.2120	-0.0037	-0.59	GD
99J4QN		0.0186	0.0001	0.05	0.2123	-0.0034	-0.54	WD
9JA7FA		0.0186	0.0001	0.05	0.2174	0.0017	0.28	OE
A2JGDZ		0.0185	0.0000	0.00	0.2170	0.0013	0.21	GD
AFR9LR		0.0188	0.0003	0.15	0.2077	-0.0080	-1.28	XX
AH22UY		0.0187	0.0002	0.13	0.2210	0.0053	0.84	OE
AP3GHL		0.0190	0.0005	0.26	0.2148	-0.0009	-0.14	OE
AYNKPK		0.0170	-0.0015	-0.84	0.2193	0.0036	0.58	OE
B8H3JM		0.0180	-0.0005	-0.28	0.2130	-0.0027	-0.43	DR
BLFKLK		0.0200	0.0015	0.84	0.2200	0.0043	0.68	OE
BMVCQH		0.0183	-0.0002	-0.11	0.2175	0.0018	0.29	WD
CFZZQE		0.0181	-0.0004	-0.21	0.2026	-0.0131	-2.08	XX
CHAXBM		0.0188	0.0003	0.15	0.2203	0.0046	0.74	XX
CULEUD		0.0193	0.0008	0.46	0.2224	0.0067	1.07	OE
EELC76	X	0.0439	0.0254	14.20	0.2539	0.0382	6.07	IC
EJJXAE		0.0174	-0.0011	-0.60	0.2135	-0.0022	-0.35	OE
ELHCFQ		0.0180	-0.0005	-0.28	0.2073	-0.0084	-1.33	OE
EMXEJJ		0.0187	0.0002	0.09	0.2257	0.0100	1.59	GD
EQ32HG		0.0191	0.0006	0.35	0.2120	-0.0037	-0.59	IC
ERVJAM		0.0187	0.0002	0.09	0.2173	0.0016	0.25	OE
F48G2R	X	0.0263	0.0078	4.34	0.2220	0.0063	1.00	OE
FQRTJD		0.0178	-0.0007	-0.38	0.2170	0.0013	0.21	OE
GAPDZY		0.0181	-0.0004	-0.21	0.2074	-0.0083	-1.32	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
GRHB4L	X	0.0282	0.0097	5.41	0.2123	-0.0034	-0.53	OE
GVL8NE	*	0.0199	0.0014	0.78	0.2316	0.0159	2.52	OE
H4E2VQ		0.0210	0.0025	1.40	0.2200	0.0043	0.68	OE
H7HKDD	*	0.0210	0.0025	1.40	0.2343	0.0186	2.96	OE
HEW7MG	X	0.0300	0.0115	6.43	0.2277	0.0120	1.90	XX
HHB23E	X	0.0110	-0.0075	-4.22	0.2177	0.0020	0.31	OE
HWU6PF		0.0232	0.0047	2.63	0.2173	0.0016	0.26	OE
JAFB6B		0.0190	0.0005	0.28	0.2183	0.0026	0.42	XX
JL69VM		0.0181	-0.0004	-0.21	0.2096	-0.0061	-0.96	IC
JYYG7B	X	0.0287	0.0102	5.69	0.1920	-0.0237	-3.77	OE
K8MMH9		0.0188	0.0003	0.18	0.2205	0.0048	0.76	OE
KFGV4Y		0.0193	0.0008	0.46	0.2143	-0.0014	-0.22	OE
KVPYVK		0.0175	-0.0010	-0.58	0.2117	-0.0040	-0.64	OE
KXGYC4		0.0180	-0.0005	-0.28	0.2050	-0.0107	-1.70	OE
L6EYE3		0.0192	0.0007	0.39	0.2143	-0.0014	-0.22	OE
LE4KK2		0.0191	0.0006	0.32	0.2182	0.0025	0.40	OE
LGNPZB		0.0180	-0.0005	-0.30	0.2160	0.0003	0.04	AE
LHHF46		0.0167	-0.0018	-1.03	0.2047	-0.0110	-1.75	OE
MAXRFT		0.0202	0.0017	0.95	0.2150	-0.0007	-0.12	OE
MHBLQN		0.0180	-0.0005	-0.28	0.2197	0.0040	0.63	OE
MK6H9V		0.0160	-0.0025	-1.40	0.2167	0.0010	0.15	OE
MKMTH3		0.0167	-0.0018	-1.03	0.2173	0.0016	0.26	GD
MMGEDE		0.0145	-0.0040	-2.22	0.2087	-0.0070	-1.12	OE
MZAWHX	X	0.0120	-0.0065	-3.64	0.2060	-0.0097	-1.54	OE
NNFTY6		0.0160	-0.0025	-1.40	0.2160	0.0003	0.05	OE
PWQQJ9		0.0193	0.0008	0.46	0.2127	-0.0030	-0.48	OE
PXL7H7		0.0177	-0.0008	-0.47	0.2140	-0.0017	-0.27	OE
PYHJ4D		0.0203	0.0018	1.02	0.2267	0.0110	1.74	GD
Q2WJJQ		0.0183	-0.0002	-0.13	0.2100	-0.0057	-0.90	OE
Q43QD6	*	0.0137	-0.0048	-2.71	0.2150	-0.0007	-0.11	OE
Q9V2X3		0.0180	-0.0005	-0.28	0.2254	0.0097	1.54	IC
QBWA3D		0.0196	0.0011	0.59	0.2090	-0.0067	-1.06	OE
QEGYLQ		0.0173	-0.0012	-0.65	0.2090	-0.0067	-1.06	XX
QJJUM7		0.0203	0.0018	1.00	0.2150	-0.0007	-0.11	DR
RC2NNE		0.0187	0.0002	0.09	0.2150	-0.0007	-0.11	OE
RE24TV		0.0182	-0.0003	-0.19	0.2207	0.0050	0.79	OE
RGTK4A		0.0168	-0.0017	-0.93	0.2123	-0.0034	-0.53	OE
RLXU3K		0.0180	-0.0005	-0.28	0.2137	-0.0020	-0.32	GD
RMC8YU		0.0194	0.0009	0.52	0.2027	-0.0130	-2.07	OE
RN2PLN		0.0168	-0.0017	-0.93	0.2129	-0.0028	-0.45	OE
RY6NNV		0.0156	-0.0029	-1.62	0.2037	-0.0120	-1.91	OE
RYNPBX		0.0192	0.0007	0.41	0.2104	-0.0053	-0.84	XX
TQA6MR		0.0187	0.0002	0.09	0.2203	0.0046	0.74	OE
TRGEPX		0.0145	-0.0040	-2.22	0.2046	-0.0111	-1.76	OE
UCJMJM		0.0180	-0.0005	-0.28	0.2205	0.0048	0.76	OE
UD2PE2	*	0.0130	-0.0055	-3.08	0.2123	-0.0034	-0.53	OE
UXGDDR		0.0200	0.0015	0.84	0.2163	0.0006	0.10	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 178

Carbon & Low Alloy Steel, Element #9
COPPER (Cu)

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
VNFWWN		0.0232	0.0047	2.63	0.2132	-0.0025	-0.40	OE
VYRHKN		0.0174	-0.0011	-0.60	0.2133	-0.0024	-0.37	OE
WGDRDN		0.0170	-0.0015	-0.84	0.2163	0.0006	0.10	OE
XHHBPJ		0.0164	-0.0021	-1.18	0.2097	-0.0060	-0.96	OE
XK9B48		0.0206	0.0021	1.15	0.2277	0.0120	1.90	OE
Y2TNND		0.0193	0.0008	0.45	0.2153	-0.0004	-0.07	OE
YMENAT		0.0194	0.0009	0.48	0.2182	0.0025	0.39	OE
Z6A9EY		0.0184	-0.0001	-0.04	0.2111	-0.0046	-0.72	OE
ZQ8QGK		0.0177	-0.0008	-0.45	0.2203	0.0046	0.74	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.0185	Percent	0.2157	Percent
Stnd Dev Btwn Labs	0.0018	Percent	0.0063	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 91 of 103 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	DR	Spectrometry - Direct Reading OE (DROES)
GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #178

2BBCQW (M) - Participant did not submit data for sample L57.

2EZKM6 (X) - Data for sample L57 are high.

7U6DDV (X) - Data for sample L57 are low and data for sample L58 are high.

8FPVGR (X) - Data for sample L57 are high.

8NCMGJ (M) - Participant did not submit data for sample L57.

EELC76 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

F48G2R (X) - Data for sample L57 are high.

GRHB4L (X) - Data for sample L57 are high. Inconsistent within the determinations of sample L57.

HEW7MG (X) - Data for sample L57 are high.

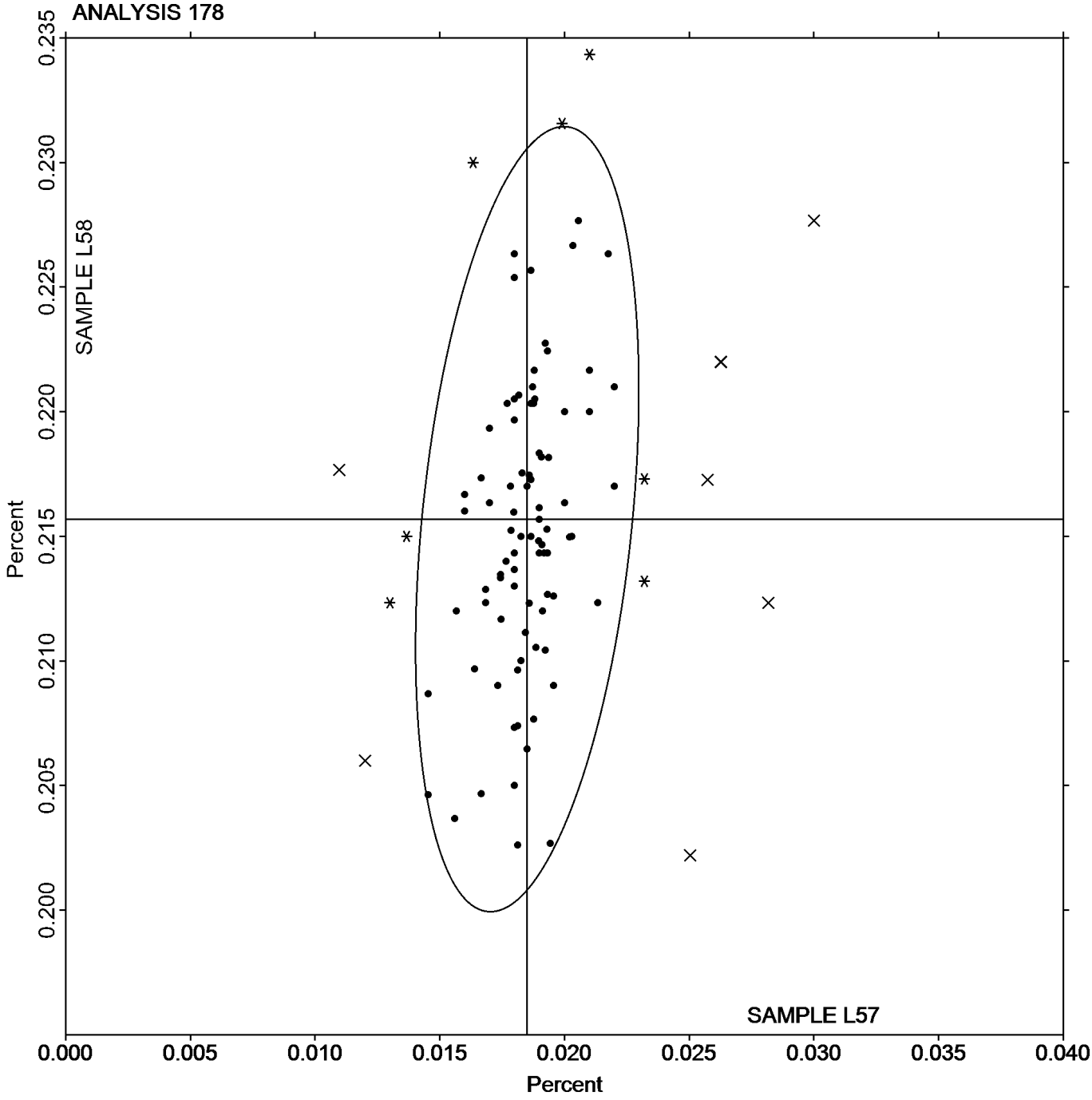
HHB23E (X) - Data for sample L57 are low.

JYYG7B (X) - Data for sample L57 are high and data for sample L58 are low. Inconsistent within the determinations of sample L57.

MZAWHX (X) - Data for sample L57 are low.

SAMPLE L57
0.0185 Percent

SAMPLE L58
0.2157 Percent



		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
23XXUF		0.0299	-0.0002	-0.13	0.0268	-0.0004	-0.26	OE
27WARZ		0.0300	-0.0001	-0.05	0.0270	-0.0002	-0.12	OE
2BBCQW		0.0332	0.0031	1.64	0.0302	0.0030	1.74	OE
2EZKM6		0.0315	0.0014	0.75	0.0270	-0.0002	-0.14	OE
2MHYMU		0.0310	0.0009	0.48	0.0290	0.0018	1.05	DR
2Q6BNK		0.0301	0.0000	0.00	0.0272	0.0000	-0.02	OE
2U7FGR		0.0291	-0.0010	-0.55	0.0258	-0.0014	-0.82	OE
32Y4JN		0.0327	0.0026	1.39	0.0293	0.0021	1.21	OE
4A79YC		0.0316	0.0015	0.80	0.0280	0.0008	0.45	OE
4KPRBV		0.0323	0.0022	1.19	0.0297	0.0025	1.44	OE
4U9D8D		0.0297	-0.0004	-0.23	0.0273	0.0001	0.08	OE
4WH9ZW		0.0280	-0.0021	-1.11	0.0258	-0.0014	-0.84	IC
6LX6TW	*	0.0289	-0.0012	-0.66	0.0285	0.0013	0.78	XX
6NMJ3T		0.0312	0.0011	0.59	0.0284	0.0012	0.68	OE
79M2QZ		0.0287	-0.0014	-0.77	0.0270	-0.0002	-0.12	OE
7DJRUQ		0.0300	-0.0001	-0.05	0.0273	0.0001	0.08	OE
7U6DDV		0.0340	0.0039	2.08	0.0313	0.0041	2.41	OE
7YKACK	X	0.0267	-0.0034	-1.84	0.0223	-0.0049	-2.85	IC
8DW8UP	*	0.0353	0.0052	2.78	0.0317	0.0045	2.63	OE
8FM9ZD		0.0302	0.0001	0.04	0.0278	0.0006	0.33	OE
8FPVGR		0.0264	-0.0037	-1.98	0.0244	-0.0028	-1.62	OE
8GD3BH		0.0270	-0.0031	-1.66	0.0245	-0.0027	-1.56	OE
8KYLUT		0.0320	0.0019	1.02	0.0290	0.0018	1.05	GD
8LBT4U		0.0280	-0.0021	-1.12	0.0250	-0.0022	-1.29	OE
8NCMGJ		0.0280	-0.0021	-1.12	0.0250	-0.0022	-1.29	GD
99J4QN		0.0301	0.0000	0.00	0.0275	0.0003	0.19	OE
9JA7FA		0.0297	-0.0004	-0.22	0.0263	-0.0009	-0.52	OE
9TX46U		0.0310	0.0009	0.48	0.0283	0.0011	0.66	OE
A2JGDZ		0.0305	0.0004	0.20	0.0275	0.0003	0.15	GD
AFR9LR		0.0304	0.0003	0.14	0.0271	-0.0001	-0.06	XX
AH22UY		0.0320	0.0019	1.00	0.0287	0.0015	0.85	OE
AP3GHL		0.0313	0.0012	0.66	0.0294	0.0022	1.28	OE
AYNKPK		0.0277	-0.0024	-1.30	0.0250	-0.0022	-1.29	OE
B8H3JM		0.0307	0.0006	0.30	0.0273	0.0001	0.08	DR
BLFKLK		0.0307	0.0006	0.30	0.0290	0.0018	1.05	OE
BMVCQH		0.0291	-0.0010	-0.54	0.0260	-0.0012	-0.70	IC
CFZZQE		0.0280	-0.0021	-1.10	0.0260	-0.0012	-0.72	OE
CHAXBM		0.0340	0.0039	2.08	0.0310	0.0038	2.22	XX
CULEUD		0.0272	-0.0029	-1.57	0.0245	-0.0027	-1.58	OE
EELC76	X	0.2249	0.1948	104.15	0.5374	0.5102	298.20	IC
EJJXAE		0.0294	-0.0007	-0.39	0.0262	-0.0010	-0.59	OE
ELHCFQ		0.0283	-0.0018	-0.94	0.0267	-0.0005	-0.31	OE
EMXEJJ		0.0300	-0.0001	-0.05	0.0267	-0.0005	-0.31	GD
EQ32HG		0.0308	0.0007	0.37	0.0271	-0.0001	-0.08	IC
ERVJAM		0.0286	-0.0015	-0.82	0.0263	-0.0009	-0.51	OE
F48G2R		0.0314	0.0013	0.71	0.0281	0.0009	0.52	OE
FQRTJD		0.0290	-0.0011	-0.57	0.0261	-0.0011	-0.63	OE

		Sample L57			Sample L58			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
GAPDZY		0.0283	-0.0018	-0.94	0.0269	-0.0003	-0.16	OE
GRHB4L		0.0276	-0.0025	-1.32	0.0251	-0.0021	-1.25	OE
GVL8NE		0.0314	0.0013	0.68	0.0267	-0.0005	-0.28	OE
H4E2VQ		0.0322	0.0021	1.14	0.0291	0.0019	1.11	OE
H7HKDD		0.0314	0.0013	0.71	0.0282	0.0010	0.56	OE
HEW7MG		0.0313	0.0012	0.66	0.0290	0.0018	1.05	XX
HHB23E		0.0298	-0.0003	-0.16	0.0272	0.0000	0.00	OE
HWU6PF		0.0298	-0.0003	-0.18	0.0274	0.0001	0.09	OE
JAFB6B		0.0333	0.0032	1.73	0.0287	0.0015	0.85	XX
JL69VM		0.0284	-0.0017	-0.91	0.0244	-0.0028	-1.62	IC
K8MMH9		0.0291	-0.0010	-0.53	0.0259	-0.0013	-0.77	OE
KFGV4Y		0.0310	0.0009	0.48	0.0277	0.0005	0.27	OE
KVPYVK		0.0306	0.0005	0.25	0.0277	0.0005	0.31	OE
KXGYC4		0.0301	0.0000	0.02	0.0277	0.0005	0.29	OE
L6EYE3	*	0.0356	0.0055	2.96	0.0318	0.0046	2.69	OE
LE4KK2		0.0298	-0.0003	-0.14	0.0272	0.0000	-0.02	OE
LGNPZB		0.0316	0.0015	0.78	0.0283	0.0011	0.66	XX
LHHF46		0.0280	-0.0021	-1.12	0.0267	-0.0005	-0.31	OE
MAXRFT		0.0288	-0.0013	-0.70	0.0263	-0.0009	-0.55	OE
MHBLQN		0.0292	-0.0009	-0.46	0.0262	-0.0010	-0.57	OE
MK6H9V		0.0295	-0.0006	-0.34	0.0265	-0.0007	-0.39	OE
MKMTH3		0.0290	-0.0011	-0.59	0.0260	-0.0012	-0.70	GD
MZAWHX		0.0300	-0.0001	-0.05	0.0280	0.0008	0.47	OE
NNFTY6		0.0290	-0.0011	-0.61	0.0264	-0.0008	-0.47	OE
PWQQJ9		0.0300	-0.0001	-0.05	0.0280	0.0008	0.47	OE
PXL7H7		0.0281	-0.0020	-1.07	0.0255	-0.0017	-1.00	OE
PYHJ4D		0.0300	-0.0001	-0.05	0.0277	0.0005	0.27	GD
Q2WJJQ		0.0312	0.0011	0.57	0.0281	0.0009	0.54	OE
Q43QD6		0.0283	-0.0018	-0.94	0.0250	-0.0022	-1.29	OE
Q9V2X3		0.0281	-0.0020	-1.05	0.0247	-0.0025	-1.46	XX
QBWA3D		0.0338	0.0037	1.98	0.0307	0.0035	2.04	OE
QEGYLQ		0.0277	-0.0024	-1.30	0.0243	-0.0029	-1.68	XX
QJJUM7		0.0333	0.0032	1.73	0.0297	0.0025	1.44	DR
RC2NNE		0.0327	0.0026	1.37	0.0290	0.0018	1.05	OE
RE24TV		0.0287	-0.0014	-0.77	0.0253	-0.0019	-1.09	OE
RGTK4A		0.0273	-0.0028	-1.50	0.0240	-0.0032	-1.87	OE
RLXU3K		0.0293	-0.0008	-0.41	0.0263	-0.0009	-0.51	GD
RMC8YU	X	0.0313	0.0012	0.66	0.0262	-0.0010	-0.61	OE
RN2PLN		0.0292	-0.0009	-0.50	0.0264	-0.0008	-0.49	OE
RY6NNV		0.0287	-0.0014	-0.75	0.0257	-0.0015	-0.86	OE
RYNPBX		0.0304	0.0003	0.14	0.0274	0.0002	0.13	XX
TQA6MR		0.0281	-0.0020	-1.09	0.0254	-0.0018	-1.05	OE
TRGEPX		0.0329	0.0028	1.48	0.0295	0.0023	1.32	OE
UCJMJM		0.0315	0.0014	0.75	0.0285	0.0013	0.76	OE
UD2PE2		0.0297	-0.0004	-0.23	0.0270	-0.0002	-0.12	OE
UXGDDR		0.0304	0.0003	0.18	0.0271	-0.0001	-0.04	OE
VNFWWN		0.0302	0.0001	0.05	0.0274	0.0002	0.09	OE

Fasteners and Metals Interlaboratory Testing Program

Analysis 179

Carbon & Low Alloy Steel, Element #10
ALUMINUM (Al)

Cycle 125
1st Qtr 2019

WebCode	Data Flag	Sample L57 Lab Mean	Sample L57 Diff. from Grand Mean	Sample L57 CPV	Sample L58 Lab Mean	Sample L58 Diff. from Grand Mean	Sample L58 CPV	Method
VYRHKN		0.0314	0.0013	0.69	0.0280	0.0008	0.47	OE
WGDRDN		0.0274	-0.0027	-1.44	0.0247	-0.0025	-1.46	OE
XK9B48		0.0279	-0.0022	-1.19	0.0251	-0.0021	-1.23	OE
Y2TNND		0.0302	0.0001	0.05	0.0272	0.0000	-0.02	OE
YMENAT	X	0.0350	0.0049	2.63	0.0335	0.0063	3.67	OE
Z6A9EY		0.0292	-0.0009	-0.48	0.0264	-0.0008	-0.49	OE
ZQ8QGK		0.0297	-0.0004	-0.23	0.0273	0.0001	0.08	OE

Summary Statistics

	Sample L57		Sample L58	
Grand Means	0.0301	Percent	0.0272	Percent
Stnd Dev Btwn Labs	0.0019	Percent	0.0017	Percent

Samples L57, L58 : AISI 4340, AISI 4340H

Statistics based on 96 of 101 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #179

7YKACK (X) - Data for sample L58 are low.

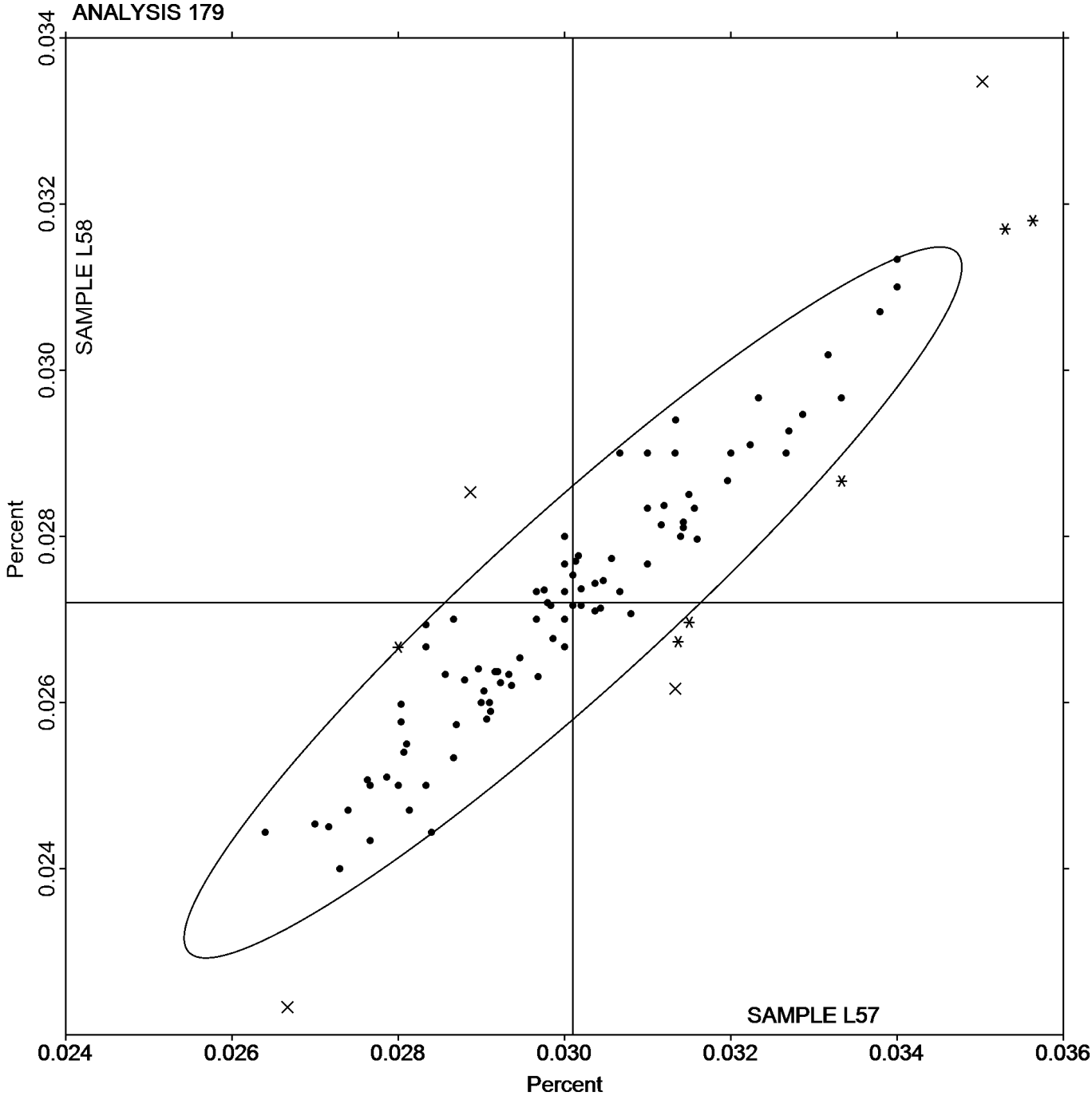
EELC76 (X) - Extreme data.

RMC8YU (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L57.

YMENAT (X) - Data for sample L58 are high. Inconsistent within the determinations of both samples.

SAMPLE L57
0.0301 Percent

SAMPLE L58
0.0272 Percent



-End of Report-

