Collaborative Testing Services, Inc.

Fasteners & Metals Testing Program

Summary Report # 89 - 1Q 2010

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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 web site.

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 Flag	Statistically Included/Excluded	ACTION REQUIRED
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside the drawn 95% ellipse but within a 99% ellipse that is calculated but not drawn. Labs flagged with an * do not typically receive a specific note regarding the flag. If this error is repeated in future rounds, however, a lab may need to stop and review its testing procedures. The initial data flag is not cause for alarm.
X	EXCLUDED	STOP - immediate review of data and/or testing procedure is required(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 is excluded. For Chemical Analyses see an expanation on our website.
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.

Interlaboratory Testing Program for Metals

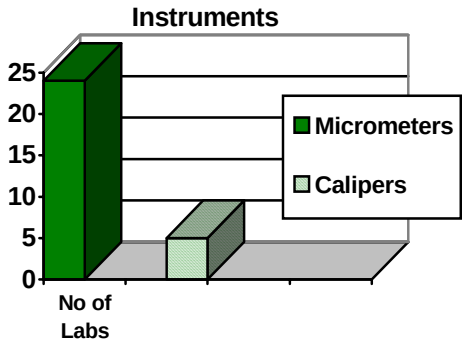
Analysis 101

Dimensional - OD of Plain Plug Gage - inch

In the 1st quarter of 2010, CTS conducted the Test #101("Round Dimensional"). For this test all participants received two samples I83 and I84 with nominal diameter 0.375 in. Each sample is an English size 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.

Analysis #101

29 participants from 31 that subscribed for this test reported their testing results.



In this test
24 participants used *Micrometers*.
5 participants used *Calipers*.
Testing results for both methods are presented in one table on the following page.

Analysis of the results

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

$$E_n = \frac{X_{lab} - X_{ref}}{\sqrt{U_{lab}^2 + U_{ref}^2}},$$

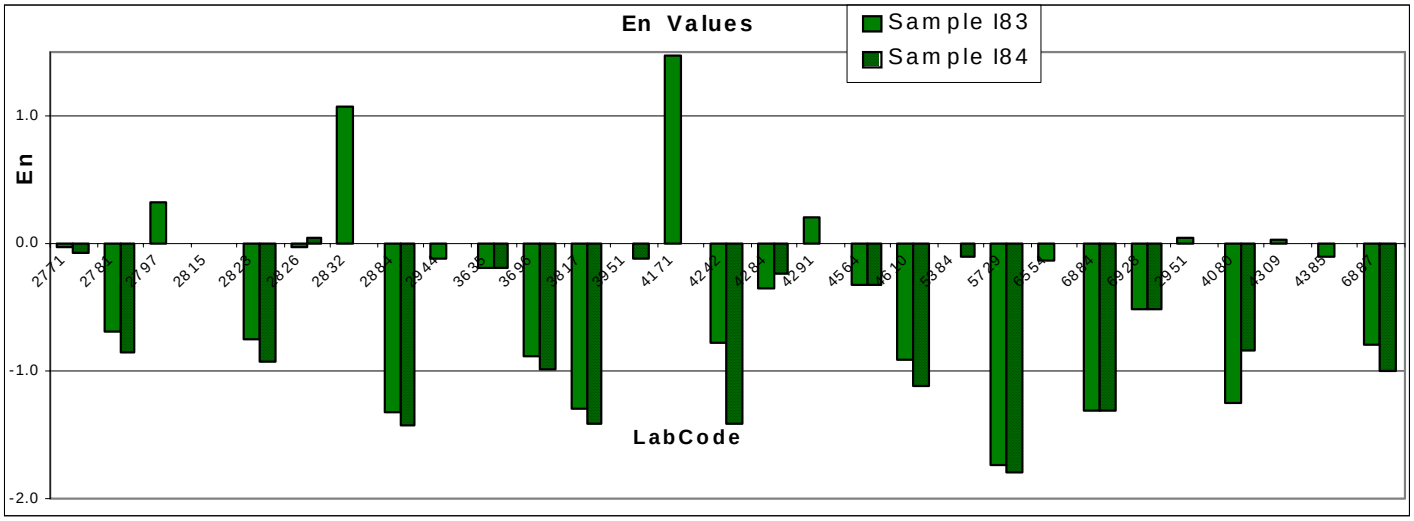
where now the assigned value X_{ref} is determined in a reference laboratory, U_{ref} is the expanded uncertainty of X_{ref}, and U_{lab} is the expanded uncertainty of a participant's result X_{lab}.
Absolute values of E_n less than 1.0 should be obtained for the measurements to be acceptable.
The following table and the graph represent the results reported by participants. All tests were conducted at room temperature (20-23?C or 68-77F).
X_{ref} and U_{ref} were determined by the gage pin manufacturer. The manufacturer is ISO 9001:2000 and ISO 9002 Certified company. All master gages used in checking the plug gages are calibrated with standards traceable to NIST.

Interlaboratory Testing Program for Metals

Analysis 101

Dimensional - OD of Plain Plug Gage - inch

	Sample I83						Sample I84					
LabCode	X_{lab}	U_{lab}	X_{ref}	U_{ref}	E_n	Flag	X_{lab}	U_{lab}	X_{ref}	U_{ref}	E_n	Flag
Micrometers												
2771	0.37484	0.00200	0.3749	0.00004	-0.030		0.37486	0.00200	0.3750	0.00004	-0.070	
2781	0.37469	0.00030	0.3749	0.00004	-0.694		0.37474	0.00030	0.3750	0.00004	-0.859	
2797	0.37500	0.00030	0.3749	0.00004	0.330		0.37500	0.00030	0.3750	0.00004	0.000	
2815	0.37490	0.00006	0.3749	0.00004	0.000		0.37500	0.00006	0.3750	0.00004	0.000	
2823	0.37482	0.00010	0.3749	0.00004	-0.743		0.37490	0.00010	0.3750	0.00004	-0.928	
2826	0.37489	0.00039	0.3749	0.00004	-0.028		0.37501	0.00039	0.3750	0.00004	0.037	
2832	0.37500	0.00008	0.3749	0.00004	1.078	X	0.37500	0.00008	0.3750	0.00004	0.000	
2884	0.37477	0.00009	0.3749	0.00004	-1.320	X	0.37486	0.00009	0.3750	0.00004	-1.421	X
2944	0.37488	0.00017	0.3749	0.00004	-0.117		0.37500	0.00017	0.3750	0.00004	0.000	
3635	0.37484	0.00030	0.3749	0.00004	-0.198		0.37494	0.00030	0.3750	0.00004	-0.198	
3696	0.37472	0.00020	0.3749	0.00004	-0.883		0.37480	0.00020	0.3750	0.00004	-0.981	
3817	0.37470	0.00015	0.3749	0.00004	-1.288	X	0.37478	0.00015	0.3750	0.00004	-1.417	X
3951	0.37490	0.00050	0.3749	0.00004	0.000		0.37494	0.00050	0.3750	0.00004	-0.120	
4171	0.37500	0.00005	0.3749	0.00004	1.473	X	0.37500	0.00005	0.3750	0.00004	0.000	
4242	0.37485	0.00005	0.3749	0.00004	-0.781		0.37491	0.00005	0.3750	0.00004	-1.406	X
4284	0.37472	0.00050	0.3749	0.00004	-0.359		0.37488	0.00050	0.3750	0.00004	-0.239	
4291	0.37500	0.00050	0.3749	0.00004	0.199		0.37500	0.00050	0.3750	0.00004	0.000	
4564	0.37480	0.00030	0.3749	0.00004	-0.330		0.37490	0.00030	0.3750	0.00004	-0.330	
4610	0.37481	0.00009	0.3749	0.00004	-0.909		0.37489	0.00009	0.3750	0.00004	-1.124	X
5384	0.37490	0.00100	0.3749	0.00004	0.000		0.37490	0.00100	0.3750	0.00004	-0.100	
5729	0.37475	0.00008	0.3749	0.00004	-1.733	X	0.37484	0.00008	0.3750	0.00004	-1.795	X
6554	0.37486	0.00030	0.3749	0.00004	-0.132		0.37500	0.00030	0.3750	0.00004	0.000	
6884	0.37480	0.00007	0.3749	0.00004	-1.310	X	0.37490	0.00007	0.3750	0.00004	-1.310	X
6928	0.37477	0.00025	0.3749	0.00004	-0.513		0.37487	0.00025	0.3750	0.00004	-0.513	
Calipers												
2951	0.37500	0.00260	0.3749	0.00004	0.038		0.37500	0.00260	0.3750	0.00004	0.000	
4080	0.37450	0.00032	0.3749	0.00004	-1.256	X	0.37473	0.00032	0.3750	0.00004	-0.833	
4309	0.37500	0.00300	0.3749	0.00004	0.033		0.37500	0.00300	0.3750	0.00004	0.000	
4385	0.37480	0.00100	0.3749	0.00004	-0.100		0.37500	0.00100	0.3750	0.00004	0.000	
6887	0.37450	0.00050	0.3749	0.00004	-0.797		0.37450	0.00050	0.3750	0.00004	-0.997	



Interlaboratory Testing Program for Metals

Analysis 105
Tensile Strength (Flat Aluminum) - ksi
ASTM B557

WebCode	Data Flag	Sample R83 Lab Mean	Sample R83 Diff. from Grand Mean	Sample R83 CPV	Sample R84 Lab Mean	Sample R84 Diff. from Grand Mean	Sample R84 CPV	Instr Code
2E8LNG	X	43.50	-6.36	-23.18	40.30	-8.60	-27.67	ZZ
3FE6B4		49.70	-0.16	-0.58	48.82	-0.08	-0.26	ZZ
3RVV9E		49.80	-0.06	-0.21	48.80	-0.10	-0.32	ZZ
3YCWGG		49.80	-0.06	-0.21	48.70	-0.20	-0.64	ZZ
4HJL7M		50.20	0.34	1.24	49.30	0.40	1.29	ZZ
6G3JMC		49.80	-0.06	-0.21	48.80	-0.10	-0.32	ZZ
6RAPRR		50.30	0.44	1.61	49.00	0.10	0.32	ZZ
7H7H77	X	47.90	-1.96	-7.14	46.50	-2.40	-7.72	ZZ
9WPU3Q		49.90	0.04	0.15	49.00	0.10	0.32	ZZ
ADLRD8		49.73	-0.13	-0.47	48.80	-0.10	-0.32	ZZ
D9FCDJ		50.50	0.64	2.34	49.10	0.20	0.64	ZZ
DBPEDC		49.84	-0.02	-0.06	48.84	-0.06	-0.21	ZZ
DLQVYK		49.91	0.05	0.18	49.04	0.14	0.44	ZZ
DMQNBM		49.60	-0.26	-0.94	48.80	-0.10	-0.32	ZZ
E2ECRB		49.98	0.12	0.43	48.84	-0.06	-0.21	ZZ
EX94ZQ	X	49.80	-0.06	-0.21	47.10	-1.80	-5.79	ZZ
GFU2YP		49.80	-0.06	-0.21	48.90	0.00	0.00	ZZ
HF3ML4		49.92	0.06	0.22	49.04	0.14	0.45	ZZ
JQBJMT	*	50.30	0.44	1.61	49.80	0.90	2.90	ZZ
M786FQ		49.90	0.04	0.15	49.20	0.30	0.97	ZZ
MHCLKT		49.70	-0.16	-0.58	48.80	-0.10	-0.32	ZZ
MNZ66V		49.50	-0.36	-1.31	49.10	0.20	0.64	ZZ
N6L4NT		49.70	-0.16	-0.58	48.90	0.00	0.00	ZZ
QTL2DV		49.80	-0.06	-0.21	48.90	0.00	0.00	ZZ
QUKANF		49.90	0.04	0.15	48.80	-0.10	-0.32	ZZ
TJMEZ3		49.60	-0.26	-0.94	49.10	0.20	0.64	ZZ
V9LGLR		49.69	-0.17	-0.61	48.53	-0.37	-1.20	ZZ
VPRRFQ		49.70	-0.16	-0.58	48.20	-0.70	-2.25	ZZ
W7VP2N		49.30	-0.56	-2.04	48.70	-0.20	-0.64	ZZ
WCVATW		49.70	-0.16	-0.58	48.80	-0.10	-0.32	ZZ
YKGYKG		50.20	0.34	1.24	49.20	0.30	0.97	ZZ
ZGV8QZ	*	49.60	-0.26	-0.94	48.10	-0.80	-2.57	ZZ
ZTWZJQ		50.40	0.54	1.97	49.10	0.20	0.64	ZZ

Summary Statistics

	Sample R83	Sample R84
Grand Means	49.859 ksi	48.900 ksi
Stnd Dev Btwn Labs	0.274 ksi	0.311 ksi

Statistics based on 30 of 33 reporting participants

Samples R83 , R84 **:** 14G 6061-T6, 16G 6061-T6

Interlaboratory Testing Program for Metals

Analysis 105
Tensile Strength (Flat Aluminum) - ksi
ASTM B557

Comments on assigned Data Flags for Test #105

2E8LNG (X) - Data for both samples are low.
7H7H77 (X) - Data for both samples are low.
EX94ZQ (X) - Low data for Sample R84.

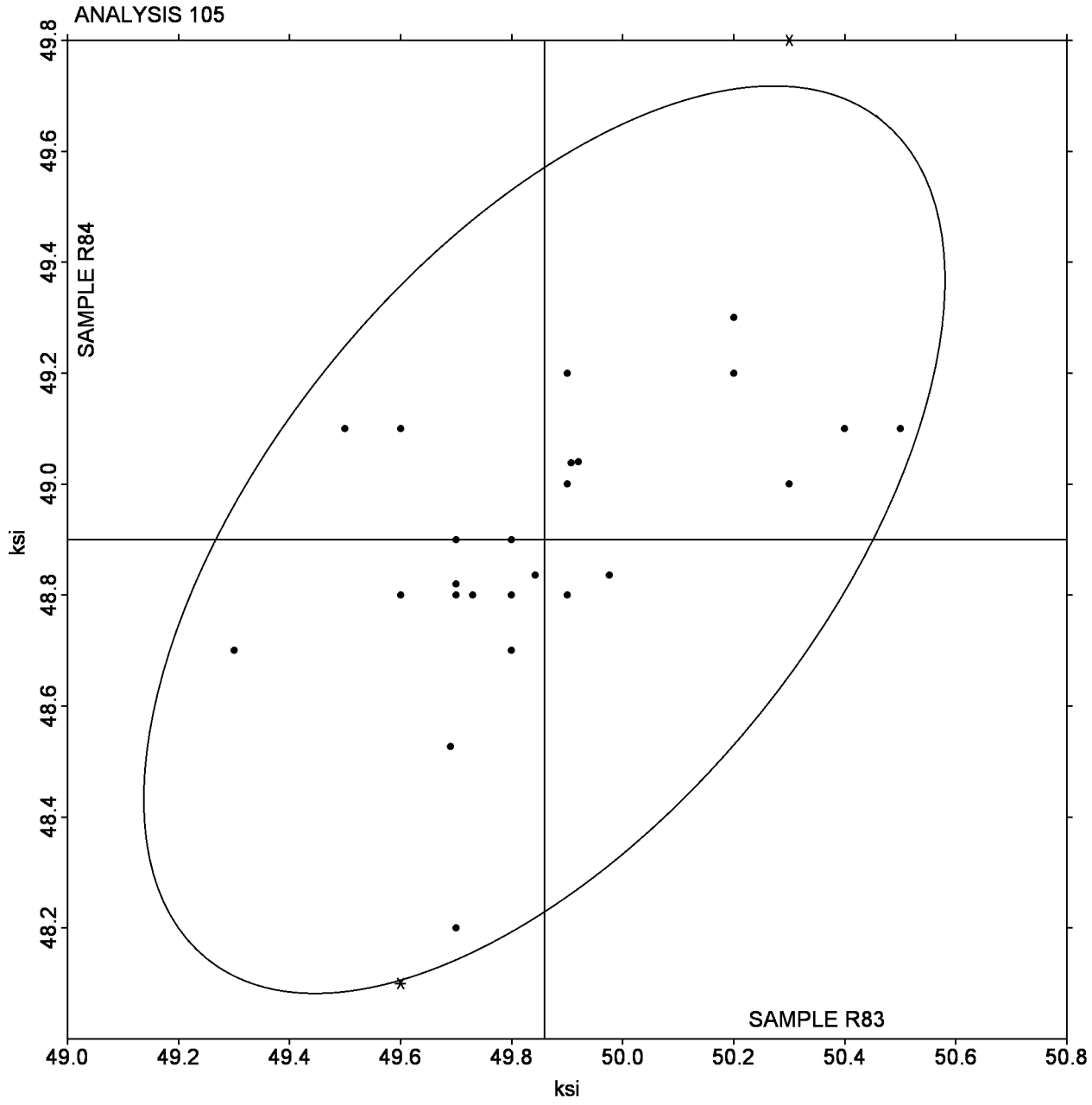
Interlaboratory Testing Program for Metals

Analysis 105

Tensile Strength (Flat Aluminum) - ksi

ASTM B557

SAMPLE R83 = 49.859 ksi SAMPLE R84 = 48.900 ksi



Interlaboratory Testing Program for Metals

Analysis 106
Yield Strength (Flat Aluminum) - ksi
ASTM B557

WebCode	Data Flag	Sample R83 Lab Mean	Sample R83 Diff. from Grand Mean	Sample R83 CPV	Sample R84 Lab Mean	Sample R84 Diff. from Grand Mean	Sample R84 CPV	Instr Code
2RZQEF		45.00	0.00	-0.01	43.20	0.11	0.32	ZZ
2X2DTM		45.22	0.21	0.57	43.17	0.08	0.23	ZZ
6D6RUU		45.50	0.50	1.34	43.80	0.71	2.07	ZZ
7DE8AY	X	45.20	0.20	0.53	40.70	-2.39	-6.98	ZZ
7PER28		45.30	0.30	0.80	43.60	0.51	1.48	ZZ
84KPV4	X	42.20	-2.80	-7.54	40.80	-2.29	-6.69	ZZ
8EU3HR		44.90	-0.10	-0.28	43.20	0.11	0.32	ZZ
9H7DU8		45.00	0.00	-0.01	43.10	0.01	0.02	ZZ
AK8RQC	X	46.70	1.70	4.56	44.80	1.71	4.99	ZZ
AM9P87		44.90	-0.10	-0.28	43.10	0.01	0.02	ZZ
C6T4ZU	*	45.20	0.20	0.53	42.50	-0.59	-1.73	ZZ
CGK7EL		45.30	0.30	0.80	43.10	0.01	0.02	ZZ
D2V9BH		44.60	-0.40	-1.09	43.00	-0.09	-0.27	ZZ
D6JHTC		45.14	0.14	0.37	43.18	0.08	0.24	ZZ
DY72T8		45.23	0.23	0.61	43.34	0.25	0.72	ZZ
H299MN		45.10	0.10	0.26	43.20	0.11	0.32	ZZ
HKH63Z	X	38.60	-6.40	-17.22	34.40	-8.69	-25.37	ZZ
HLRCB8	X	45.00	0.00	-0.01	41.90	-1.19	-3.48	ZZ
JYHYXZ		45.00	0.00	-0.01	42.90	-0.19	-0.56	ZZ
MDYUJR		45.50	0.50	1.34	43.10	0.01	0.02	ZZ
MWXPDJ		44.97	-0.03	-0.09	43.17	0.08	0.23	ZZ
NTFV7B		45.27	0.26	0.71	43.51	0.42	1.23	ZZ
NTREH2		45.50	0.50	1.34	43.50	0.41	1.19	ZZ
PGEWN3		44.90	-0.10	-0.28	43.00	-0.09	-0.27	ZZ
PGU7MV		44.90	-0.10	-0.28	42.50	-0.59	-1.73	ZZ
PP82HQ		44.78	-0.22	-0.60	42.90	-0.19	-0.56	ZZ
QW3K4R	*	44.00	-1.00	-2.70	42.50	-0.59	-1.73	ZZ
V9YLX6		45.10	0.10	0.26	42.70	-0.39	-1.14	ZZ
VJ46KK		45.00	0.00	-0.01	43.10	0.01	0.02	ZZ
X6EZ6E		45.20	0.20	0.53	43.70	0.61	1.77	ZZ
XJXJZN		44.90	-0.10	-0.28	43.00	-0.09	-0.27	ZZ
XWKMFM	*	43.90	-1.10	-2.97	42.60	-0.49	-1.44	ZZ
YEUE9N		44.80	-0.21	-0.56	42.90	-0.19	-0.55	ZZ

Summary Statistics

	Sample R83	Sample R84
Grand Means	45.004 ksi	43.090 ksi
Stnd Dev Btwn Labs	0.372 ksi	0.343 ksi

Statistics based on 28 of 33 reporting participants

Samples R83 , R84 : 14G 6061-T6, 16G 6061-T6

Interlaboratory Testing Program for Metals

Analysis 106
Yield Strength (Flat Aluminum) - ksi
ASTM B557

Comments on assigned Data Flags for Test #106

7DE8AY (X) - Low data for Sample R84.
84KPV4 (X) - Data for both samples are low.
AK8RQC (X) - Data for both samples are high.
HKH63Z (X) - Data for both samples are low.
HLRCB8 (X) - Low data for Sample R84.

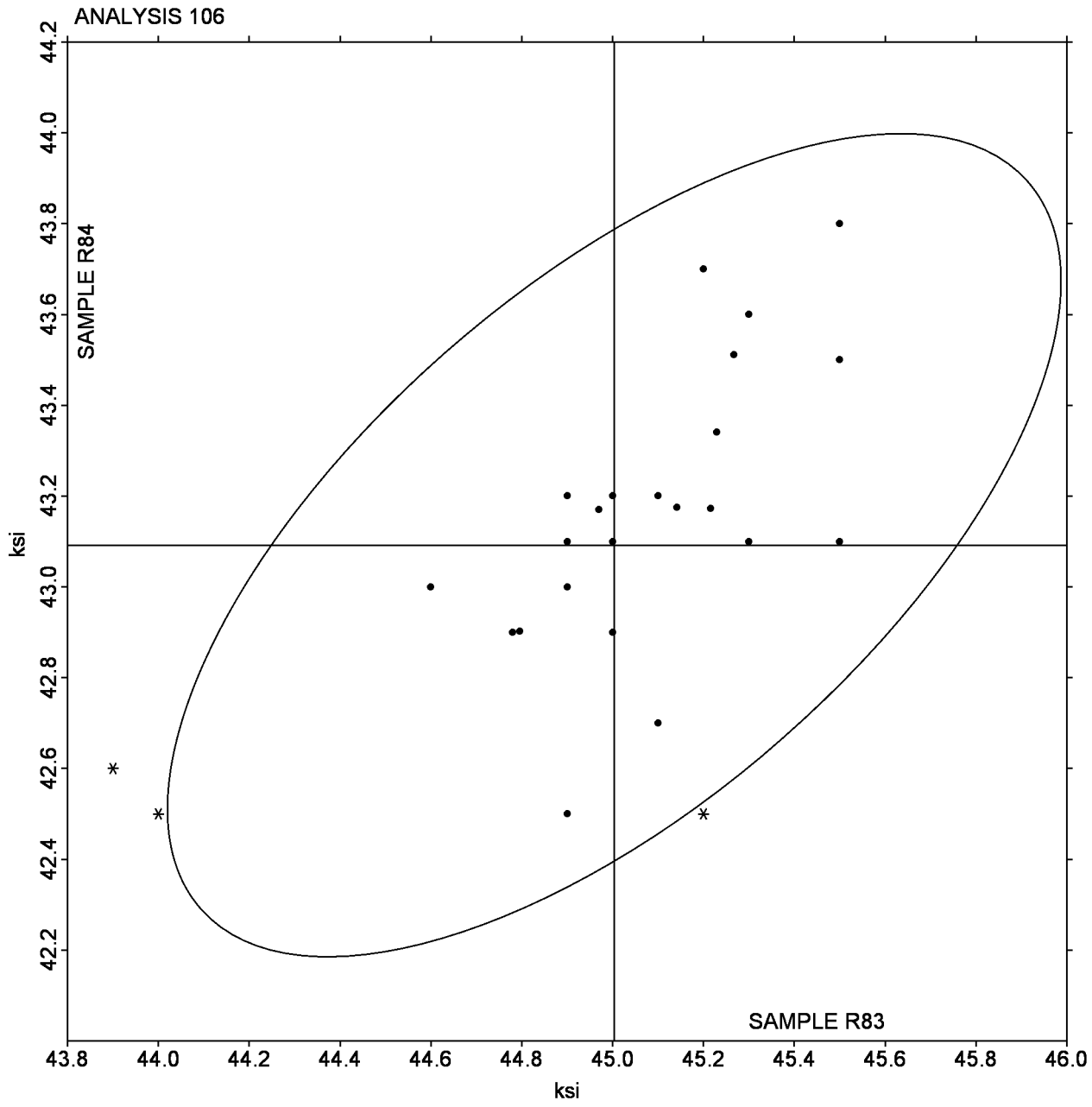
Interlaboratory Testing Program for Metals

Analysis 106

Yield Strength (Flat Aluminum) - ksi

ASTM B557

SAMPLE R83 = 45.004 ksi SAMPLE R84 = 43.090 ksi



Interlaboratory Testing Program for Metals

Analysis 107
Elongation (Flat Aluminum) - Percent
ASTM B557

WebCode	Data Flag	Sample R83 Lab Mean	Sample R83 Diff. from Grand Mean	Sample R83 CPV	Sample R84 Lab Mean	Sample R84 Diff. from Grand Mean	Sample R84 CPV	Instr Code
292Q6G		12.70	0.94	1.15	13.00	1.36	1.58	ZZ
4VWDX9		12.00	0.24	0.30	12.00	0.36	0.41	ZZ
6EW43E	X	10.50	-1.26	-1.54	7.50	-4.14	-4.81	ZZ
6TGGRF		13.40	1.64	2.01	12.70	1.06	1.23	ZZ
747VVG	X	13.00	1.24	1.52	11.00	-0.64	-0.75	ZZ
8H3D99		12.61	0.85	1.04	12.66	1.02	1.18	ZZ
994PF4		11.00	-0.76	-0.93	11.50	-0.14	-0.17	ZZ
9JDMWC		11.00	-0.76	-0.93	10.00	-1.64	-1.91	ZZ
ACDJJE		12.58	0.82	1.01	12.64	1.00	1.16	ZZ
AJVX76		9.80	-1.96	-2.40	10.00	-1.64	-1.91	ZZ
AKKW2P		10.40	-1.36	-1.66	10.50	-1.14	-1.33	ZZ
BVQEP6		11.40	-0.36	-0.44	11.40	-0.24	-0.28	ZZ
D6KVJJ		11.50	-0.26	-0.32	11.00	-0.64	-0.75	ZZ
EQ8BPR		12.50	0.74	0.91	11.50	-0.14	-0.17	ZZ
FF9HR6		11.51	-0.25	-0.30	12.03	0.39	0.45	ZZ
GFKFRU		12.00	0.24	0.30	10.80	-0.84	-0.98	ZZ
KY6JZ4		11.40	-0.36	-0.44	10.60	-1.04	-1.21	ZZ
LG8WCW		11.50	-0.26	-0.32	11.50	-0.14	-0.17	ZZ
LGHGQU		12.50	0.74	0.91	12.80	1.16	1.34	ZZ
MMMMRH		10.90	-0.86	-1.05	10.70	-0.94	-1.10	ZZ
MPFCLC		11.50	-0.26	-0.32	11.50	-0.14	-0.17	ZZ
NPFKBB		10.96	-0.80	-0.98	10.90	-0.74	-0.86	ZZ
PTTUT7		12.50	0.74	0.91	12.50	0.86	0.99	ZZ
QE6L7Z		11.40	-0.36	-0.44	11.40	-0.24	-0.28	ZZ
RD9YKD		12.50	0.74	0.91	12.00	0.36	0.41	ZZ
RHTA74		12.70	0.94	1.15	12.90	1.26	1.46	ZZ
TNKQGL		11.30	-0.46	-0.56	11.40	-0.24	-0.28	ZZ
UHCVPX		12.00	0.24	0.30	12.00	0.36	0.41	ZZ
V3XZX9		11.20	-0.56	-0.68	11.10	-0.54	-0.63	ZZ
VTBV43		11.40	-0.36	-0.44	11.80	0.16	0.18	ZZ
XH4RZQ		12.82	1.06	1.30	12.63	0.99	1.15	ZZ
XLD3QK		12.50	0.74	0.91	12.50	0.86	0.99	ZZ
YBTD76		11.00	-0.76	-0.93	11.00	-0.64	-0.75	ZZ

Summary Statistics

	Sample R83	Sample R84
Grand Means	11.757 Percent	11.640 Percent
Stnd Dev Btwn Labs	0.816 Percent	0.861 Percent

Statistics based on 31 of 33 reporting participants

Samples R83 , R84 : 14G 6061-T6, 16G 6061-T6

Interlaboratory Testing Program for Metals

Analysis 107
Elongation (Flat Aluminum) - Percent
ASTM B557

Comments on assigned Data Flags for Test #107

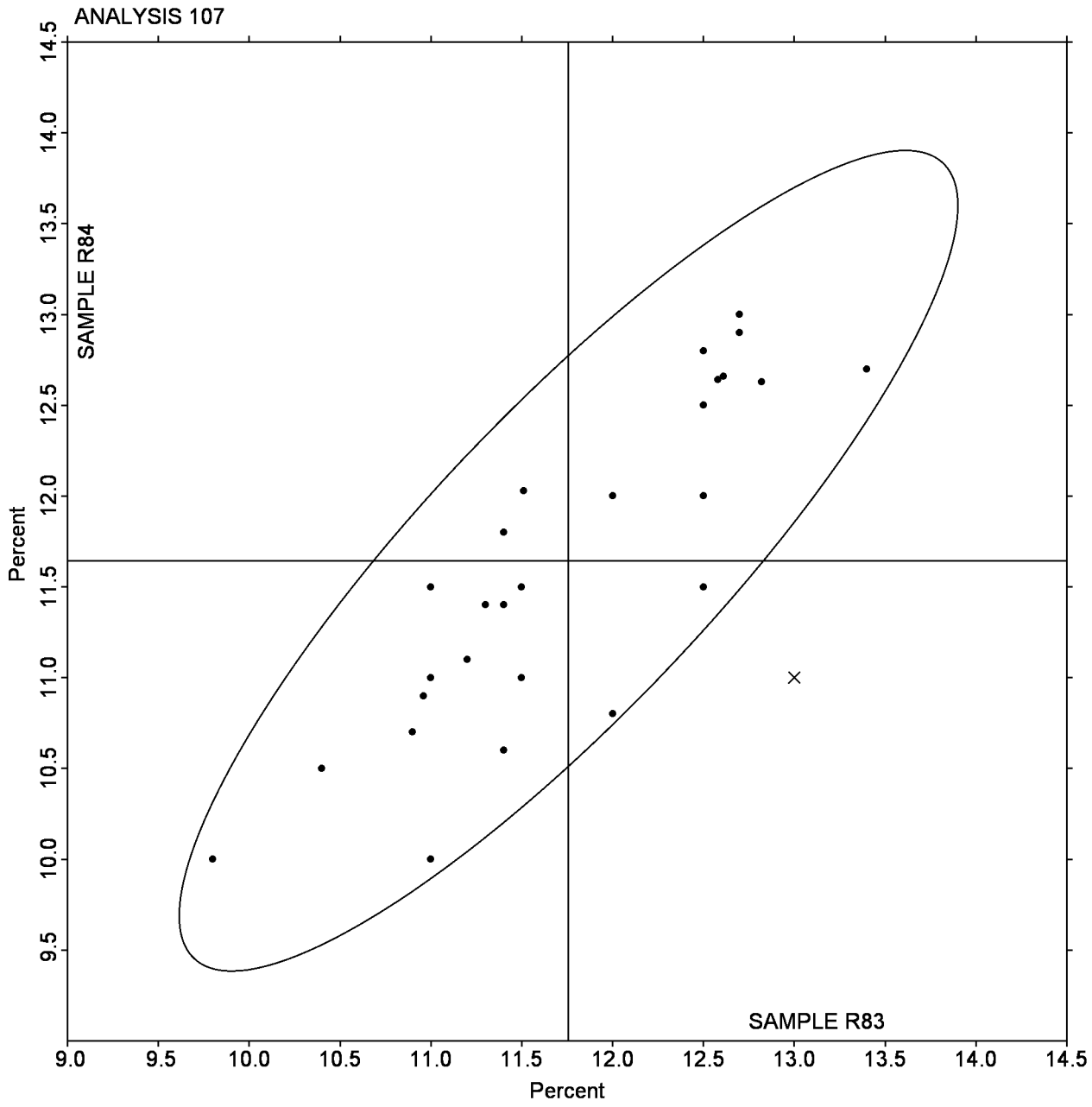
6EW43E (X) - Low data for Sample R84.

747VVG (X) - Inconsistent in testing between samples.

Interlaboratory Testing Program for Metals

Analysis 107
Elongation (Flat Aluminum) - Percent
ASTM B557

SAMPLE R83 = 11.757 Percent SAMPLE R84 = 11.640 Percent



Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi

ASTM E8

		Sample A83			Sample A84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2BPDD9		112.70	-0.02	-0.02	105.80	0.11	0.11	ZZ
2PTYER		113.70	0.98	0.95	106.10	0.41	0.41	ZZ
3LDTHX		113.90	1.18	1.15	107.10	1.41	1.42	ZZ
4E47UL		112.00	-0.72	-0.70	105.00	-0.69	-0.70	ZZ
7TBHX6	X	112.65	-0.07	-0.06	108.04	2.35	2.37	ZZ
7V3EWC		114.40	1.68	1.63	106.90	1.21	1.22	ZZ
88JG6A		113.00	0.28	0.27	106.00	0.31	0.31	ZZ
8DB6TU	*	113.85	1.13	1.10	108.15	2.46	2.48	ZZ
8TR3DM		112.80	0.08	0.08	105.70	0.01	0.01	ZZ
9FTLNJ		111.65	-1.07	-1.04	105.17	-0.53	-0.53	ZZ
A3AQCY		112.80	0.08	0.08	106.10	0.41	0.41	ZZ
AGB2UD		112.80	0.08	0.08	105.20	-0.49	-0.50	ZZ
B6UGZ4		112.90	0.18	0.18	105.40	-0.29	-0.30	ZZ
BHG8YR		112.30	-0.42	-0.41	104.80	-0.89	-0.90	ZZ
EE2RGG		111.40	-1.32	-1.28	105.10	-0.59	-0.60	ZZ
FMZ2RK		111.60	-1.12	-1.09	104.60	-1.09	-1.10	ZZ
HWWNVM		113.30	0.58	0.57	105.90	0.21	0.21	ZZ
J7F99D		114.40	1.68	1.63	106.80	1.11	1.12	ZZ
J9VUQY		112.40	-0.32	-0.31	106.80	1.11	1.12	ZZ
KRTDEY		110.57	-2.15	-2.08	104.09	-1.60	-1.62	ZZ
KUEVJD		112.90	0.18	0.18	105.70	0.01	0.01	ZZ
LTKW9Q		111.70	-1.02	-0.99	104.40	-1.29	-1.31	ZZ
M27CLE		112.40	-0.32	-0.31	105.40	-0.29	-0.30	ZZ
M2FARQ		111.60	-1.12	-1.09	104.40	-1.29	-1.31	ZZ
MWVAZX		113.00	0.28	0.27	106.00	0.31	0.31	ZZ
N4L9LN		113.00	0.28	0.27	106.00	0.31	0.31	ZZ
PGHTGR		112.00	-0.72	-0.70	104.70	-0.99	-1.00	ZZ
PV9FAR		111.20	-1.52	-1.47	104.40	-1.29	-1.31	ZZ
PZURDA		113.30	0.58	0.57	106.50	0.81	0.81	ZZ
Q6MQVQ		114.20	1.48	1.44	107.60	1.91	1.93	ZZ
QAW6DA		113.70	0.98	0.95	106.00	0.31	0.31	ZZ
QXJJMV	X	113.07	0.35	0.34	111.43	5.74	5.80	ZZ
ULUZN9		113.50	0.78	0.76	105.00	-0.69	-0.70	ZZ
V6Y6EA		111.71	-1.01	-0.98	104.76	-0.93	-0.94	ZZ
WXGXGH		114.78	2.07	2.01	107.26	1.56	1.58	ZZ
XQ78CN	X	11.75	-100.97	-98.09	11.17	-94.53	-95.45	ZZ
Z87ZYM		111.40	-1.32	-1.28	105.40	-0.29	-0.30	ZZ
ZEWALR	X	71.90	-40.82	-39.66	66.20	-39.49	-39.88	ZZ
ZM2F69	X	22.40	-90.32	-87.75	21.00	-84.69	-85.52	ZZ
ZZYFNX		112.26	-0.46	-0.44	105.05	-0.64	-0.65	ZZ

Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi

ASTM E8

Summary Statistics

	Sample A83	Sample A84
Grand Means	112.718 ksi	105.690 ksi
Stnd Dev Btwn Labs	1.029 ksi	0.990 ksi

Statistics based on 35 of 40 reporting participants

Samples A83 , A84 : AISI 1045, AISI 1045

Comments on assigned Data Flags for Test #110

7TBHX6 (X) - Inconsistent in testing between samples.
QXJJMV (X) - High data for Sample R84.
XQ78CN (X) - Extreme data. Data for both samples are very low.
ZEWALR (X) - Data for both samples are low.
ZM2F69 (X) - Data were reported as load values, instead of tensile strength.

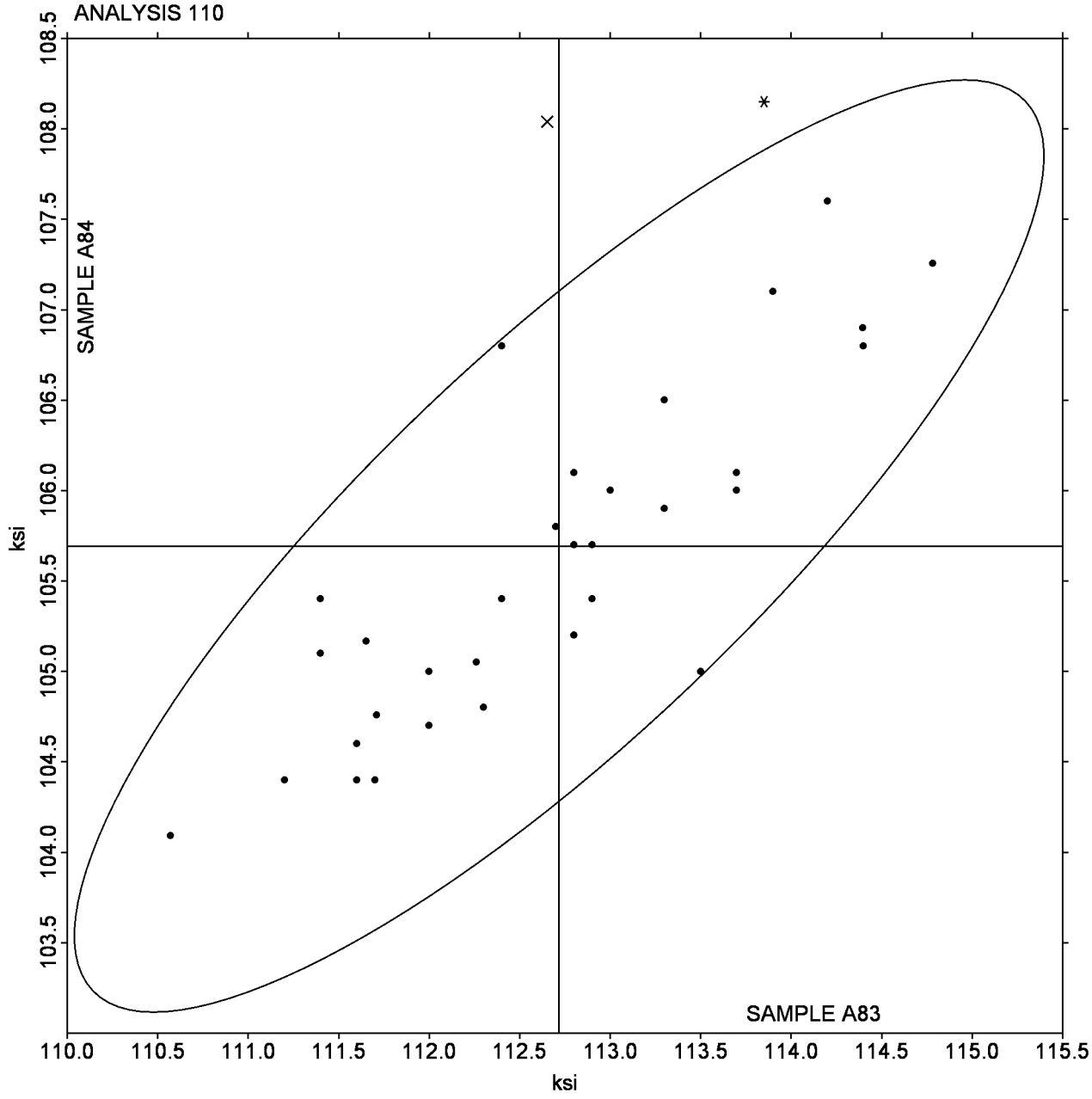
Interlaboratory Testing Program for Metals

Analysis 110

Tensile Strength (Pre-Machined Round Steel) - ksi

ASTM E8

SAMPLE A83 = 112.718 ksi SAMPLE A84 = 105.690 ksi



Interlaboratory Testing Program for Metals

Analysis 111
Yield Strength - ksi
ASTM E8

WebCode	Data Flag	Sample A83 Lab Mean	Sample A83 Diff. from Grand Mean	Sample A83 CPV	Sample A84 Lab Mean	Sample A84 Diff. from Grand Mean	Sample A84 CPV	Instr Code
32ECR9		67.20	0.34	0.12	65.30	0.62	0.21	ZZ
3CTMQX		65.80	-1.06	-0.37	62.00	-2.68	-0.91	ZZ
3T47TC		69.69	2.83	0.98	67.23	2.55	0.87	ZZ
3XEERF		69.80	2.94	1.02	66.10	1.42	0.48	ZZ
6GN2LR		72.60	5.74	1.99	67.80	3.12	1.06	ZZ
B23TPN		69.10	2.24	0.78	66.60	1.92	0.65	ZZ
C4A94K		65.10	-1.76	-0.61	63.30	-1.38	-0.47	ZZ
C8YGN8		63.82	-3.05	-1.06	60.34	-4.34	-1.48	ZZ
CMJEE2		67.22	0.36	0.12	65.62	0.94	0.32	ZZ
D2RN9M		68.00	1.14	0.40	64.80	0.12	0.04	ZZ
E8ZH4W		69.13	2.26	0.79	66.96	2.29	0.78	ZZ
F7AY4G		64.23	-2.63	-0.92	62.25	-2.43	-0.83	ZZ
FGN6WJ		70.10	3.24	1.13	69.50	4.82	1.64	ZZ
FLNBFV		68.10	1.24	0.43	67.30	2.62	0.89	ZZ
FVMLFK	*	63.03	-3.83	-1.33	65.18	0.50	0.17	ZZ
GTB2CG	X	12.90	-53.96	-18.76	12.60	-52.08	-17.74	ZZ
HE9GCY		70.00	3.14	1.09	68.50	3.82	1.30	ZZ
HEAGAP		65.00	-1.86	-0.65	65.90	1.22	0.42	ZZ
HQUEPU		68.10	1.24	0.43	66.00	1.32	0.45	ZZ
J8BAAF		68.10	1.24	0.43	65.80	1.12	0.38	ZZ
JNBUGX		68.70	1.84	0.64	67.00	2.32	0.79	ZZ
KBBVKJ		70.20	3.34	1.16	68.70	4.02	1.37	ZZ
KDCJG9		69.30	2.44	0.85	64.30	-0.38	-0.13	ZZ
KXFYDK		68.20	1.34	0.46	67.30	2.62	0.89	ZZ
L9YGL4		68.90	2.04	0.71	66.10	1.42	0.48	ZZ
LAN498		62.90	-3.96	-1.38	61.50	-3.18	-1.08	ZZ
LN64Y7	X	50.30	-16.56	-5.76	47.30	-17.38	-5.92	ZZ
MV9GDV	X	94.79	27.92	9.71	88.58	23.90	8.14	ZZ
N7XNFP		63.00	-3.86	-1.34	60.50	-4.18	-1.42	ZZ
N8E9RE		63.90	-2.96	-1.03	60.91	-3.77	-1.28	ZZ
PUC49X		64.60	-2.26	-0.79	62.00	-2.68	-0.91	ZZ
RJXQCU		66.80	-0.06	-0.02	65.27	0.59	0.20	ZZ
TWD7QX		65.02	-1.84	-0.64	61.03	-3.65	-1.24	ZZ
UQM3L2	X	101.80	34.94	12.15	60.60	-4.08	-1.39	ZZ
W6JX36	*	59.40	-7.46	-2.60	56.60	-8.08	-2.75	ZZ
YARWTP		64.20	-2.66	-0.93	62.30	-2.38	-0.81	ZZ
YHNGRG		64.70	-2.16	-0.75	62.50	-2.18	-0.74	ZZ
ZG3BQG		69.40	2.54	0.88	66.60	1.92	0.65	ZZ

Summary Statistics

	Sample A83	Sample A84
Grand Means	66.863 ksi	64.680 ksi
Stnd Dev Btwn Labs	2.876 ksi	2.935 ksi

Statistics based on 34 of 38 reporting participants

Interlaboratory Testing Program for Metals

Analysis 111
Yield Strength - ksi
ASTM E8

Samples A83 , A84 : AISI 1045, AISI 1045

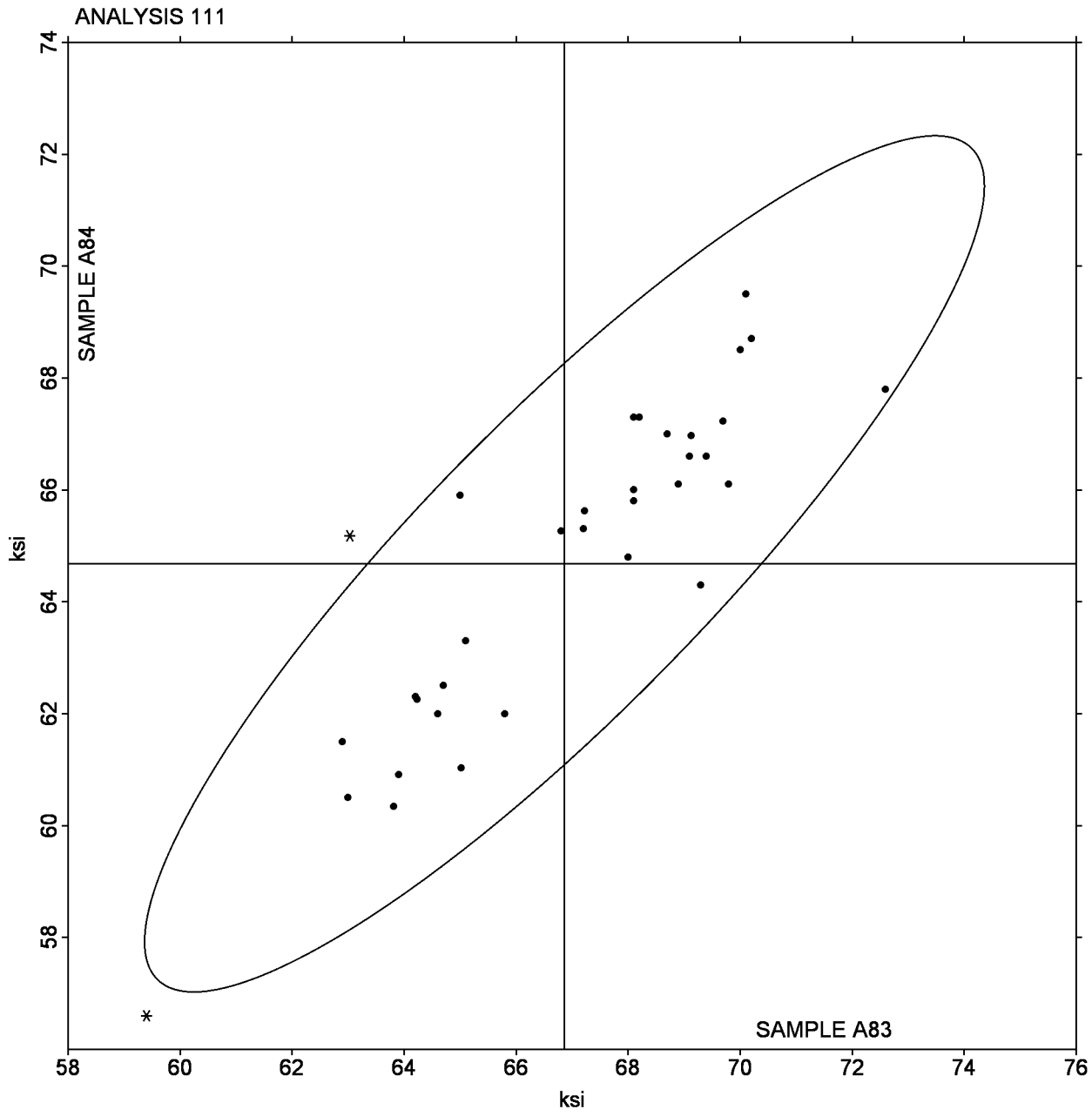
Comments on assigned Data Flags for Test #111

GTB2CG (X) - Data were reported as load values, instead of tensile strength.
LN64Y7 (X) - Data for both samples are low. Possible systematic error.
MV9GDV (X) - Data for both samples are high. Possible systematic error.
UQM3L2 (X) - High data for Sample A83.

Interlaboratory Testing Program for Metals

Analysis 111
Yield Strength - ksi
ASTM E8

SAMPLE A83 = 66.863 ksi SAMPLE A84 = 64.680 ksi



Interlaboratory Testing Program for Metals

Analysis 112

Elongation - Percent increase (in 4XD)

ASTM E8

		Sample A83			Sample A84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2VXH9K		19.90	0.24	0.39	21.40	0.01	0.02	ZZ
39XEZB		19.20	-0.46	-0.77	21.00	-0.39	-0.62	ZZ
73C3ZX		20.10	0.44	0.72	21.80	0.41	0.66	ZZ
7VCMAQ		19.40	-0.26	-0.43	20.40	-0.99	-1.58	ZZ
8229AP		19.50	-0.16	-0.27	21.50	0.11	0.18	ZZ
93FKHZ		19.00	-0.66	-1.10	21.00	-0.39	-0.62	ZZ
9AB3W6		19.60	-0.06	-0.10	21.00	-0.39	-0.62	ZZ
9D4F79		20.00	0.34	0.56	20.50	-0.89	-1.42	ZZ
9NXTUT		20.00	0.34	0.56	22.50	1.11	1.77	ZZ
AU33M8		20.40	0.74	1.22	21.90	0.51	0.82	ZZ
CKHDDH		19.92	0.26	0.43	21.60	0.21	0.34	ZZ
EEFZDK		20.40	0.74	1.22	22.60	1.21	1.93	ZZ
GJN4KC	*	21.00	1.34	2.22	21.00	-0.39	-0.62	ZZ
HBA7GY		19.90	0.24	0.39	20.80	-0.59	-0.94	ZZ
HKEPTT		20.60	0.94	1.55	21.00	-0.39	-0.62	ZZ
JC9LET		19.40	-0.26	-0.43	21.80	0.41	0.66	ZZ
K3BXMP		19.30	-0.36	-0.60	22.00	0.61	0.98	ZZ
K7MXHF		19.96	0.30	0.49	22.27	0.88	1.41	ZZ
KKPCWR		19.00	-0.66	-1.10	21.00	-0.39	-0.62	ZZ
M6BD9B		19.30	-0.36	-0.60	21.00	-0.39	-0.62	ZZ
M94RPZ		20.70	1.04	1.72	21.80	0.41	0.66	ZZ
PDXERR		18.20	-1.46	-2.42	20.30	-1.09	-1.74	ZZ
PLCNBZ		20.00	0.34	0.56	22.00	0.61	0.98	ZZ
Q7X4WD		19.10	-0.56	-0.93	20.80	-0.59	-0.94	ZZ
QQPP3B		20.00	0.34	0.56	21.50	0.11	0.18	ZZ
QRHUCN	X	11.00	-8.66	-14.35	11.00	-10.39	-16.57	ZZ
RRBLJA		19.30	-0.36	-0.60	22.50	1.11	1.77	ZZ
T9AB3K		18.70	-0.96	-1.59	21.10	-0.29	-0.46	ZZ
UUPU6Y		19.50	-0.16	-0.27	21.50	0.11	0.18	ZZ
UUVBZR		18.70	-0.96	-1.59	20.70	-0.69	-1.10	ZZ
VAQDFU		19.10	-0.56	-0.93	20.50	-0.89	-1.42	ZZ
VP7BZM		19.11	-0.55	-0.91	21.79	0.40	0.64	ZZ
VWALKF		19.90	0.24	0.39	22.00	0.61	0.98	ZZ
WNPL9U		20.00	0.34	0.56	22.00	0.61	0.98	ZZ
WQC3HP	X	15.00	-4.66	-7.72	24.00	2.61	4.17	ZZ
WVME63		19.50	-0.16	-0.27	20.50	-0.89	-1.42	ZZ
XNA8DB		20.00	0.34	0.56	21.60	0.21	0.34	ZZ
XZLBZU		19.50	-0.16	-0.27	21.20	-0.19	-0.30	ZZ
YUTJ6X		20.32	0.66	1.09	21.50	0.11	0.18	ZZ
ZGVMDX	X	0.38	-19.28	-31.93	0.42	-20.97	-33.44	ZZ

Interlaboratory Testing Program for Metals

Analysis 112
Elongation - Percent increase (in 4XD)
ASTM E8

Summary Statistics

	Sample A83	Sample A84
Grand Means	19.662 Percent	21.390 Percent
Stnd Dev Btwn Labs	0.604 Percent	0.627 Percent

Statistics based on 37 of 40 reporting participants

Samples A83 , A84 : AISI 1045, AISI 1045

Comments on assigned Data Flags for Test #112

QRHUCN (X) - Data for both samples are low.
WQC3HP (X) - Low data for Sample A83. High data for Sample A84.
ZGVMDX (X) - Data for both samples are low.

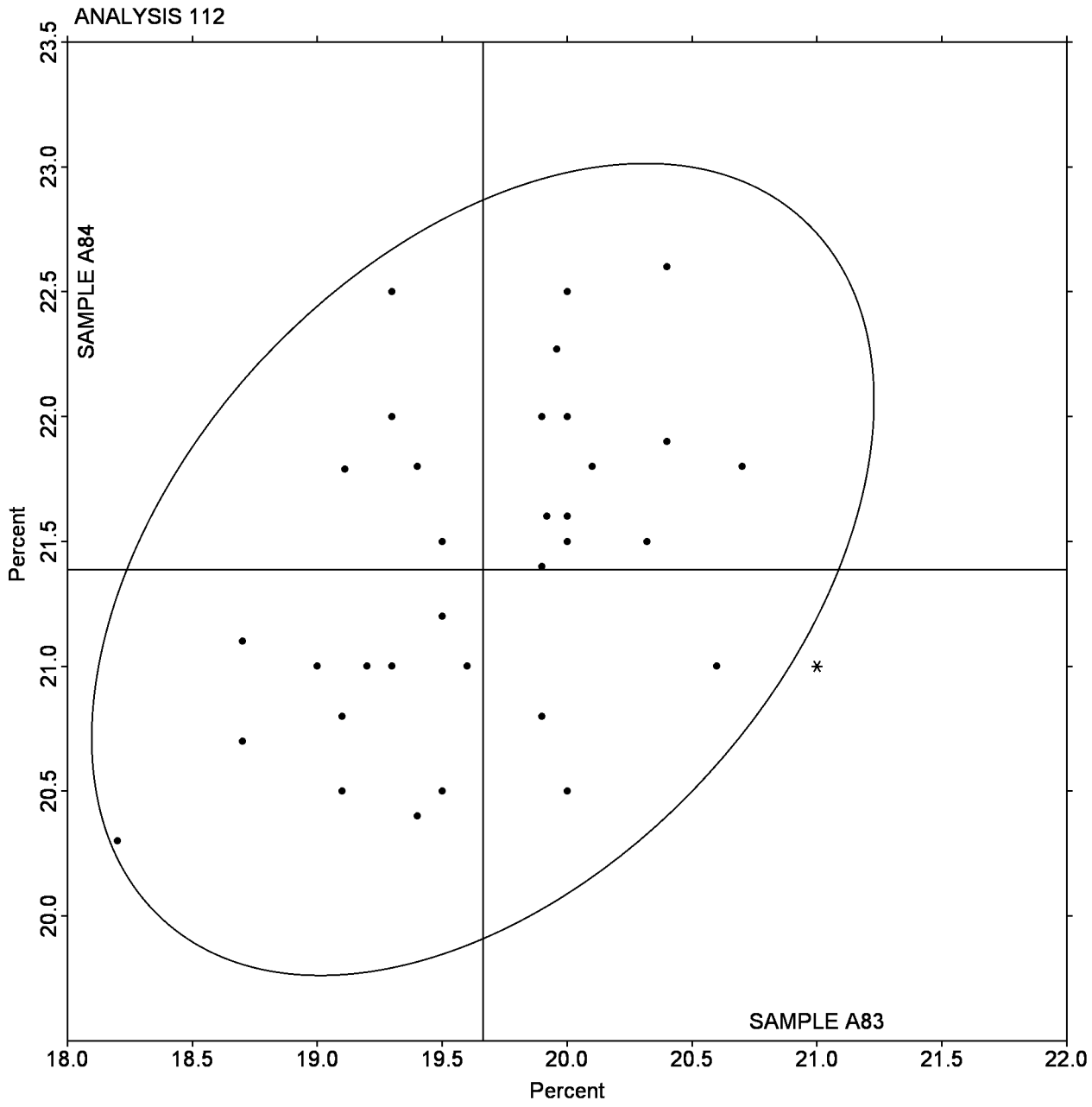
Interlaboratory Testing Program for Metals

Analysis 112

Elongation - Percent increase (in 4XD)

ASTM E8

SAMPLE A83 = 19.662 Percent SAMPLE A84 = 21.390 Percent



Interlaboratory Testing Program for Metals

Analysis 113
Reduction of Area - Percent
ASTM E8

WebCode	Data Flag	Sample A83 Lab Mean	Sample A83 Diff. from Grand Mean	Sample A83 CPV	Sample A84 Lab Mean	Sample A84 Diff. from Grand Mean	Sample A84 CPV	Instr Code
26DLRN		44.60	1.65	1.68	44.50	0.09	0.07	ZZ
2NWMDX		42.20	-0.75	-0.76	44.90	0.49	0.42	ZZ
6G89Z3		42.20	-0.75	-0.76	44.90	0.49	0.42	ZZ
6QWRMM		43.80	0.85	0.87	45.80	1.39	1.19	ZZ
72PC6K		43.00	0.05	0.06	44.00	-0.41	-0.35	ZZ
79AYA4		43.50	0.55	0.56	43.50	-0.91	-0.78	ZZ
8N43KF		42.10	-0.85	-0.86	44.90	0.49	0.42	ZZ
9C846D		43.90	0.95	0.97	43.40	-1.01	-0.87	ZZ
9EMQ9R		43.83	0.88	0.90	46.73	2.32	1.98	ZZ
A84CU9		42.00	-0.95	-0.96	45.16	0.75	0.64	ZZ
B79A6P		44.90	1.95	1.99	46.30	1.89	1.61	ZZ
CG3CPJ		43.20	0.25	0.26	44.74	0.33	0.28	ZZ
D44EXJ	X	0.38	-42.57	-43.25	0.38	-44.03	-37.67	ZZ
DQ6WCX		42.20	-0.75	-0.76	44.00	-0.41	-0.35	ZZ
DRH4EZ		40.90	-2.05	-2.08	45.00	0.59	0.50	ZZ
FE2Z8F		43.50	0.55	0.56	44.50	0.09	0.07	ZZ
FJQZGB		43.10	0.15	0.16	45.10	0.69	0.59	ZZ
FXVK3E		42.60	-0.35	-0.35	43.40	-1.01	-0.87	ZZ
FYEYWP		43.70	0.75	0.77	45.70	1.29	1.10	ZZ
GTTFDY		44.00	1.05	1.07	43.70	-0.71	-0.61	ZZ
HCTGJJ		41.10	-1.85	-1.87	43.90	-0.51	-0.44	ZZ
HXLUJL		43.60	0.65	0.67	43.90	-0.51	-0.44	ZZ
KA39PE		42.80	-0.15	-0.15	46.50	2.09	1.79	ZZ
KZP3AW		42.00	-0.95	-0.96	42.90	-1.51	-1.29	ZZ
L8YXEA		43.19	0.24	0.25	44.55	0.14	0.12	ZZ
LJK9JU		42.00	-0.95	-0.96	43.00	-1.41	-1.21	ZZ
LTZV2N		41.30	-1.65	-1.67	43.80	-0.61	-0.52	ZZ
MAZK86		44.00	1.05	1.07	44.00	-0.41	-0.35	ZZ
NGZW6M		44.00	1.05	1.07	43.00	-1.41	-1.21	ZZ
NJ268C		41.90	-1.05	-1.06	43.40	-1.01	-0.87	ZZ
QH4LHV		42.60	-0.35	-0.35	44.70	0.29	0.25	ZZ
QHFGPV	*	42.80	-0.15	-0.15	40.90	-3.51	-3.00	ZZ
QT2J2A		43.00	0.05	0.06	43.00	-1.41	-1.21	ZZ
RUFAYK		41.60	-1.35	-1.37	44.90	0.49	0.42	ZZ
TN9CBJ		43.60	0.65	0.67	46.00	1.59	1.36	ZZ
VDERJW	X	23.90	-19.05	-19.35	25.30	-19.11	-16.35	ZZ
VGYWMU		44.00	1.05	1.07	45.00	0.59	0.50	ZZ
XAMDQE		43.00	0.05	0.06	44.00	-0.41	-0.35	ZZ
XUTWVE		44.00	1.05	1.07	44.30	-0.11	-0.10	ZZ
YG97WH		42.20	-0.75	-0.76	45.70	1.29	1.10	ZZ

Interlaboratory Testing Program for Metals

Analysis 113
Reduction of Area - Percent
ASTM E8

Summary Statistics

	Sample A83	Sample A84
Grand Means	42.945 Percent	44.410 Percent
Stnd Dev Btwn Labs	0.984 Percent	1.169 Percent
		Statistics based on 38 of 40 reporting participants

Samples A83 , A84 : AISI 1045, AISI 1045

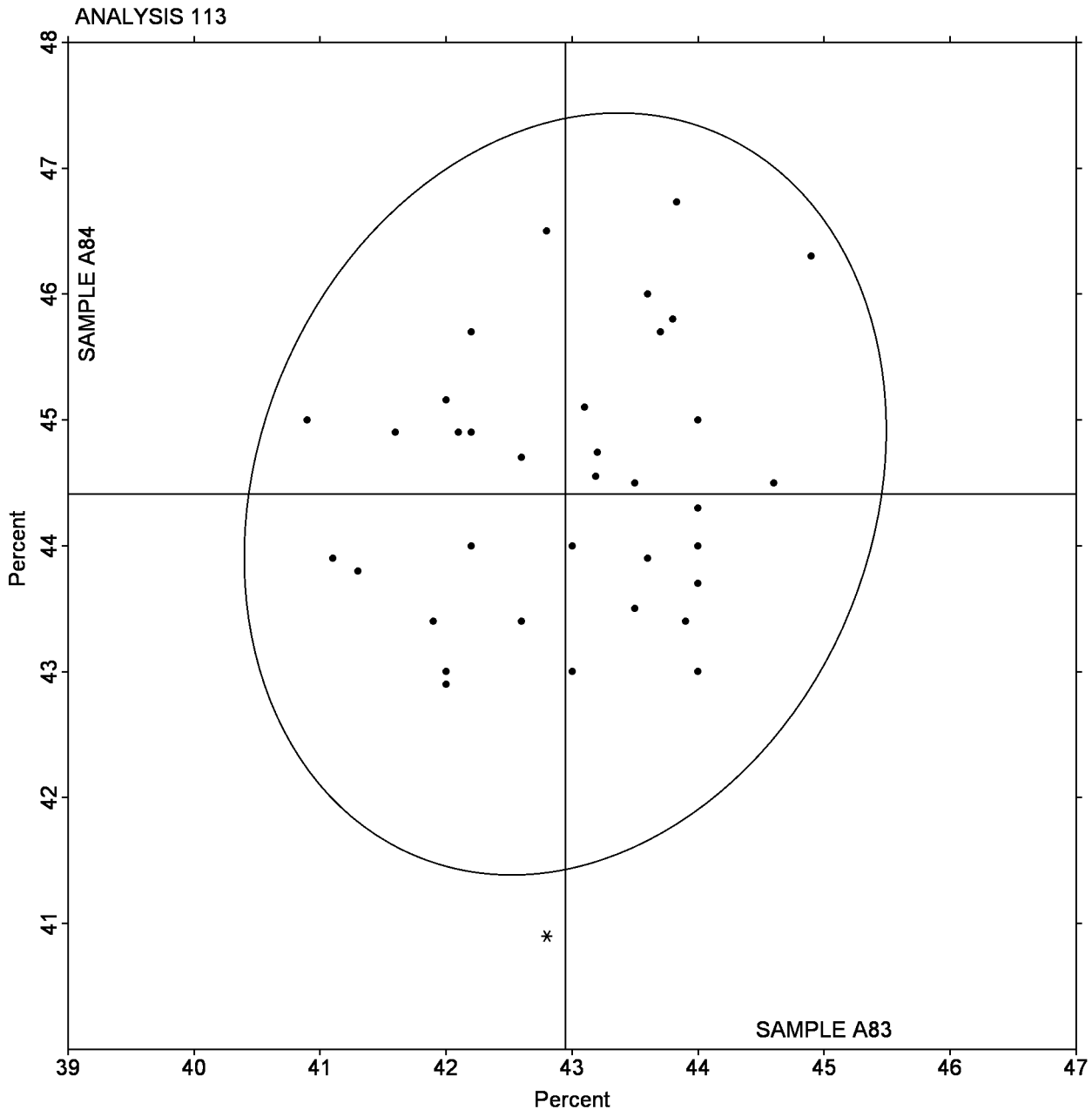
Comments on assigned Data Flags for Test #113

D44EXJ (X) - Data for both samples are low.
VDERJW (X) - Data for both samples are low.

Interlaboratory Testing Program for Metals

Analysis 113
Reduction of Area - Percent
ASTM E8

SAMPLE A83 = 42.945 Percent SAMPLE A84 = 44.410 Percent



Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

		Sample P83			Sample P84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2A4TBJ		114.00	1.91	1.71	107.90	1.85	1.62	ZZ
2AEXFF		112.00	-0.09	-0.08	106.00	-0.05	-0.04	ZZ
2C9QDZ		111.60	-0.49	-0.43	105.80	-0.25	-0.22	ZZ
3FJXC4		111.50	-0.59	-0.52	105.70	-0.35	-0.30	ZZ
3METRN		114.30	2.21	1.97	107.80	1.75	1.53	ZZ
3WLBF9		112.00	-0.09	-0.08	106.00	-0.05	-0.04	ZZ
4QCF3C		111.10	-0.99	-0.88	105.30	-0.75	-0.65	ZZ
6UAAMY		113.70	1.61	1.44	107.60	1.55	1.36	ZZ
6UQD9D		111.60	-0.49	-0.43	105.00	-1.05	-0.92	ZZ
6WZY2Q		111.20	-0.89	-0.79	106.30	0.25	0.22	ZZ
73B6RA		112.00	-0.09	-0.08	106.10	0.05	0.05	ZZ
8MKNAJ		111.50	-0.59	-0.52	105.00	-1.05	-0.92	ZZ
94YFF9	*	114.10	2.01	1.79	106.00	-0.05	-0.04	ZZ
9KXU88		112.00	-0.09	-0.08	106.40	0.35	0.31	ZZ
9WP3QN		113.30	1.21	1.08	108.50	2.45	2.15	ZZ
ACVKAM		113.14	1.06	0.94	105.86	-0.18	-0.16	ZZ
AUDLCP		114.30	2.21	1.97	108.10	2.05	1.80	ZZ
AZ4EKP		110.90	-1.19	-1.06	105.10	-0.95	-0.83	ZZ
B2LJXL		111.04	-1.04	-0.93	105.46	-0.59	-0.51	ZZ
B8URUH		113.13	1.04	0.93	106.75	0.70	0.61	ZZ
BXJRRG		112.70	0.61	0.54	107.20	1.15	1.01	ZZ
C3DX2Q	X	110.95	-1.13	-1.01	102.25	-3.79	-3.32	ZZ
CQRBHH		112.25	0.16	0.14	106.78	0.73	0.64	ZZ
CV66A9		113.40	1.31	1.17	106.40	0.35	0.31	ZZ
CXLAD7		111.70	-0.39	-0.34	104.90	-1.15	-1.00	ZZ
DF7QBQ		112.30	0.21	0.19	105.50	-0.55	-0.48	ZZ
F2ADYY		110.60	-1.49	-1.32	103.80	-2.25	-1.97	ZZ
F6YKM3		111.80	-0.29	-0.26	106.40	0.35	0.31	ZZ
FG6UUY		110.40	-1.69	-1.50	103.30	-2.75	-2.40	ZZ
GCA3N3		112.60	0.51	0.46	106.70	0.65	0.57	ZZ
GEYPWV		112.76	0.68	0.60	106.88	0.83	0.73	ZZ
GHFH2M		111.90	-0.19	-0.17	106.60	0.55	0.48	ZZ
GMNCPL		113.40	1.31	1.17	107.60	1.55	1.36	ZZ
GMWB6H		112.40	0.31	0.28	106.60	0.55	0.48	ZZ
GNKMQG		113.60	1.51	1.35	106.80	0.75	0.66	ZZ
GNP4Z2		113.00	0.91	0.81	107.00	0.95	0.83	ZZ
GNRQTM		110.70	-1.39	-1.24	106.40	0.35	0.31	ZZ
GREQAM		111.50	-0.59	-0.52	105.70	-0.35	-0.30	ZZ
GUUF7Q		111.60	-0.49	-0.43	106.60	0.55	0.48	ZZ
H62HC3		111.70	-0.39	-0.34	104.60	-1.45	-1.27	ZZ
JGYJWY		110.81	-1.28	-1.14	105.15	-0.89	-0.78	ZZ
JHETVQ		111.10	-0.99	-0.88	105.00	-1.05	-0.92	ZZ
JLRJ27		113.10	1.01	0.90	107.00	0.95	0.83	ZZ
JMG69P		112.90	0.81	0.72	106.10	0.05	0.05	ZZ
KM27WQ		111.15	-0.94	-0.83	104.64	-1.41	-1.23	ZZ

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample P83 Lab Mean	Sample P83 Diff. from Grand Mean	Sample P83 CPV	Sample P84 Lab Mean	Sample P84 Diff. from Grand Mean	Sample P84 CPV	Instr Code
KTPPGT		111.24	-0.84	-0.75	106.46	0.41	0.36	ZZ
L49XQZ		110.60	-1.49	-1.32	105.40	-0.65	-0.57	ZZ
LA2UVJ		112.03	-0.06	-0.05	105.20	-0.85	-0.74	ZZ
LVMYVA		111.30	-0.79	-0.70	104.80	-1.25	-1.09	ZZ
MAA7FM		110.70	-1.39	-1.24	105.50	-0.55	-0.48	ZZ
MMCRHX		111.50	-0.59	-0.52	105.10	-0.95	-0.83	ZZ
N8XHMB		109.27	-2.81	-2.51	103.80	-2.24	-1.96	ZZ
NCKMM6		112.25	0.17	0.15	106.71	0.66	0.58	ZZ
NVZRQU		113.80	1.71	1.53	107.50	1.45	1.27	ZZ
P6Y36A		112.55	0.46	0.41	107.04	0.99	0.87	ZZ
PPBENL		111.40	-0.69	-0.61	106.10	0.05	0.05	ZZ
PPFHBQ		111.40	-0.69	-0.61	105.90	-0.15	-0.13	ZZ
QNK9M8		110.15	-1.93	-1.72	105.19	-0.86	-0.75	ZZ
QYD9W4		111.70	-0.39	-0.34	104.90	-1.15	-1.00	ZZ
R2HAK8		114.40	2.31	2.06	108.10	2.05	1.80	ZZ
R8ZYNN		112.90	0.81	0.72	106.10	0.05	0.05	ZZ
RBLBV8		112.55	0.46	0.41	106.02	-0.02	-0.02	ZZ
RMWKFG		113.00	0.91	0.81	108.00	1.95	1.71	ZZ
TGF7U4		113.60	1.51	1.35	107.40	1.35	1.18	ZZ
TZYPJW		113.80	1.71	1.53	107.40	1.35	1.18	ZZ
U6A4HM		111.60	-0.49	-0.43	105.50	-0.55	-0.48	ZZ
UPABTJ		111.70	-0.39	-0.34	104.90	-1.15	-1.00	ZZ
VC9LDV		110.00	-2.09	-1.86	105.30	-0.75	-0.65	ZZ
VUVWNB		111.40	-0.69	-0.61	104.56	-1.49	-1.30	ZZ
WB6R4J		112.26	0.17	0.15	105.44	-0.60	-0.53	ZZ
WWU9L6		112.26	0.17	0.15	107.04	0.99	0.87	ZZ
X79T6C		111.90	-0.19	-0.17	105.50	-0.55	-0.48	ZZ
XDZ9EN		111.39	-0.70	-0.62	104.34	-1.71	-1.50	ZZ
YLYMZV		112.40	0.31	0.28	106.30	0.25	0.22	ZZ
YZMZRR		110.60	-1.49	-1.32	104.50	-1.55	-1.35	ZZ
ZJXPW8		110.80	-1.29	-1.15	104.10	-1.95	-1.70	ZZ
ZMJ8GD		112.90	0.81	0.72	108.20	2.15	1.88	ZZ
ZPUEL8		112.00	-0.09	-0.08	106.00	-0.05	-0.04	ZZ
ZX94HK		113.60	1.51	1.35	107.00	0.95	0.83	ZZ

Summary Statistics

	Sample P83	Sample P84
Grand Means	112.086 ksi	106.050 ksi
Stnd Dev Btwn Labs	1.122 ksi	1.143 ksi

Statistics based on 78 of 79 reporting participants

Samples P83 , P84 : AISI 1045, AISI 1045

Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

Comments on assigned Data Flags for Test #140

C3DX2Q (X) - Low data for Sample P84.

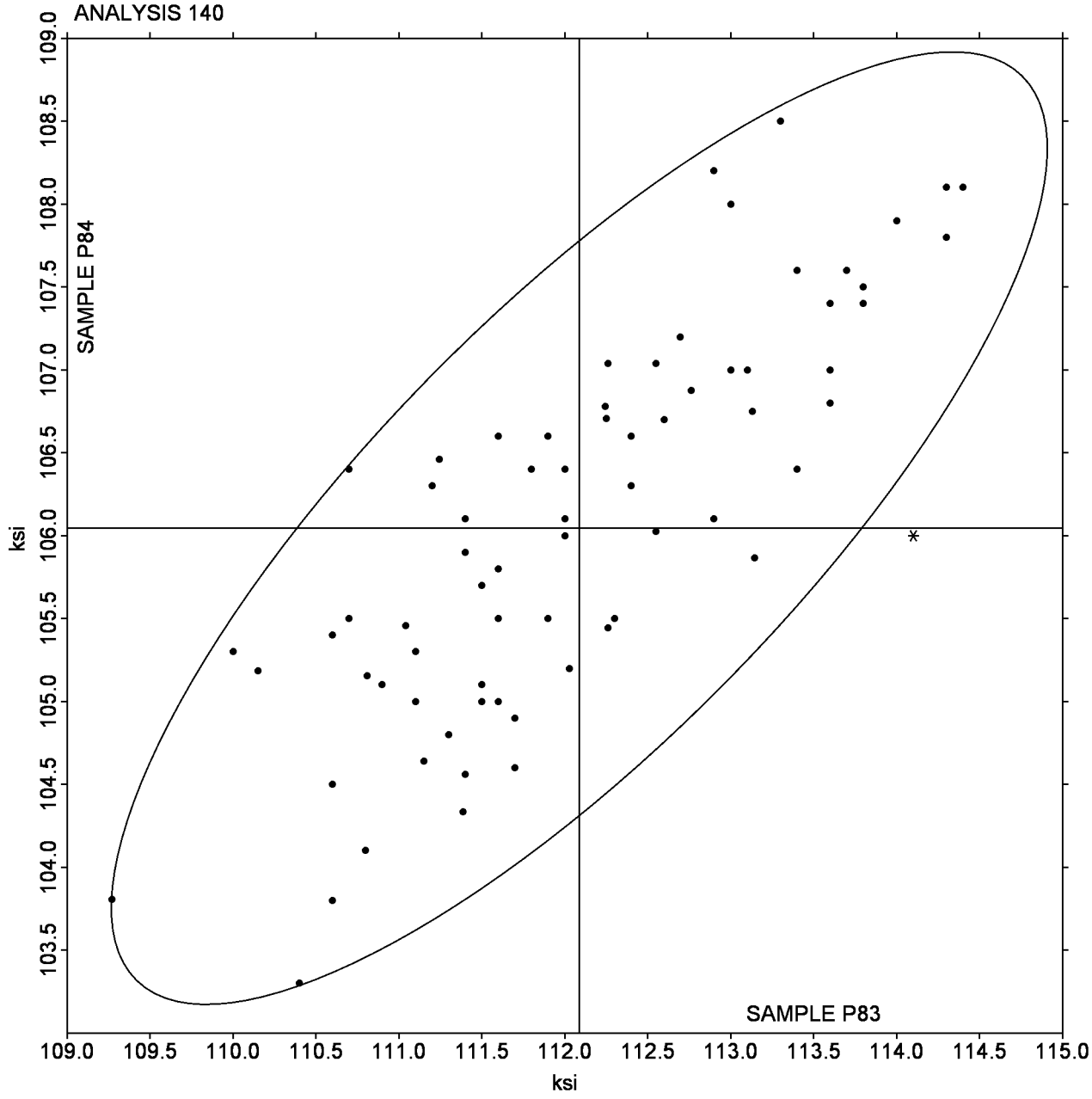
Interlaboratory Testing Program for Metals

Analysis 140

Tensile Strength (Lab-Machined Round Steel) - ksi

ASTM E8

SAMPLE P83 = 112.086 ksi SAMPLE P84 = 106.050 ksi



Interlaboratory Testing Program for Metals

Analysis 141
Yield Strength - ksi
ASTM E8

		Sample P83			Sample P84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
32J4YP		65.00	-0.54	-0.19	60.50	-2.66	-0.97	ZZ
33MKLZ		62.10	-3.44	-1.22	59.20	-3.96	-1.44	ZZ
34Q7EZ		62.50	-3.04	-1.08	61.60	-1.56	-0.57	ZZ
6PWPCJ		65.60	0.06	0.02	62.50	-0.66	-0.24	ZZ
6WWZGB		67.20	1.66	0.59	66.30	3.14	1.14	ZZ
7TYNLQ		63.21	-2.33	-0.83	60.03	-3.13	-1.14	ZZ
8EHNCP		69.00	3.46	1.23	65.20	2.04	0.74	ZZ
9G6KJT		62.80	-2.73	-0.97	60.19	-2.97	-1.08	ZZ
9L7JF6		63.53	-2.01	-0.71	65.27	2.10	0.77	ZZ
9ZFBWD		66.20	0.66	0.24	62.60	-0.56	-0.21	ZZ
AB9VEB		68.40	2.86	1.02	66.30	3.14	1.14	ZZ
ADPBDG		65.40	-0.14	-0.05	64.80	1.64	0.60	ZZ
AN9M2Z		64.30	-1.24	-0.44	62.40	-0.76	-0.28	ZZ
CB2WE4		64.50	-1.04	-0.37	64.90	1.74	0.63	ZZ
CF9EJJ		63.20	-2.34	-0.83	64.70	1.54	0.56	ZZ
D8RPAW		64.40	-1.14	-0.40	62.40	-0.76	-0.28	ZZ
DB9AWC		64.10	-1.44	-0.51	61.50	-1.66	-0.61	ZZ
DCT9MN	*	61.50	-4.04	-1.43	64.20	1.04	0.38	ZZ
DDEGF4		70.20	4.66	1.65	68.50	5.34	1.94	ZZ
EQU3YV		62.00	-3.54	-1.25	59.50	-3.66	-1.33	ZZ
FQQRWD		62.39	-3.15	-1.12	62.74	-0.42	-0.15	ZZ
GDJD7C		68.30	2.76	0.98	67.20	4.04	1.47	ZZ
GMVERT		66.60	1.06	0.38	63.70	0.54	0.20	ZZ
GN3WHW		62.40	-3.14	-1.11	59.80	-3.36	-1.22	ZZ
GPEFNZ		64.69	-0.85	-0.30	62.51	-0.65	-0.24	ZZ
H832YH		65.12	-0.41	-0.15	61.79	-1.38	-0.50	ZZ
HAYUFE		69.40	3.86	1.37	65.40	2.24	0.81	ZZ
HDL9JG		63.60	-1.94	-0.69	62.60	-0.56	-0.21	ZZ
J9GAXN	X	61.70	-3.84	-1.36	66.60	3.44	1.25	ZZ
JE6XPD		71.07	5.53	1.96	65.41	2.25	0.82	ZZ
JL823R		60.76	-4.77	-1.69	58.71	-4.45	-1.62	ZZ
JRF8QX		68.60	3.06	1.09	65.00	1.84	0.67	ZZ
KFWRZX		62.90	-2.64	-0.93	60.70	-2.46	-0.90	ZZ
KURRNH		64.20	-1.34	-0.47	61.30	-1.86	-0.68	ZZ
L673MM		69.30	3.76	1.33	67.60	4.44	1.61	ZZ
L84CUB		62.77	-2.76	-0.98	60.76	-2.41	-0.88	ZZ
MX7XE4		63.20	-2.34	-0.83	61.20	-1.96	-0.71	ZZ
N9698B		62.95	-2.59	-0.92	59.76	-3.41	-1.24	ZZ
NK6XRK		67.60	2.06	0.73	65.00	1.84	0.67	ZZ
NRZGUU		62.36	-3.18	-1.13	60.07	-3.09	-1.13	ZZ
NTQRAG		62.08	-3.46	-1.23	59.90	-3.26	-1.19	ZZ
P4FAXF		68.20	2.66	0.94	63.50	0.34	0.12	ZZ
PF6FPP		70.70	5.16	1.83	66.70	3.54	1.29	ZZ
PFPCC6		64.73	-0.81	-0.29	62.29	-0.87	-0.32	ZZ
PK374V	M				69.00	5.84	2.12	ZZ

Interlaboratory Testing Program for Metals

Analysis 141
Yield Strength - ksi
ASTM E8

WebCode	Data Flag	Sample Lab Mean	Sample Diff. from Grand Mean	Sample CPV	Sample P84 Lab Mean	Sample P84 Diff. from Grand Mean	Sample P84 CPV	Instr Code
PVMD6L		64.50	-1.04	-0.37	63.60	0.44	0.16	ZZ
Q64R6E		62.80	-2.74	-0.97	60.70	-2.46	-0.90	ZZ
Q9ZTCF		65.90	0.36	0.13	63.40	0.24	0.09	ZZ
QLYBVG		64.60	-0.94	-0.33	60.55	-2.61	-0.95	ZZ
QZQWG4		63.20	-2.34	-0.83	61.60	-1.56	-0.57	ZZ
R4UB8Z		66.75	1.21	0.43	60.83	-2.33	-0.85	ZZ
RCCNHJ		60.84	-4.69	-1.66	57.96	-5.21	-1.90	ZZ
RQ933K		63.20	-2.34	-0.83	61.50	-1.66	-0.61	ZZ
T74MLU		64.80	-0.73	-0.26	61.56	-1.60	-0.58	ZZ
T8JU8Q	*	68.60	3.06	1.09	60.90	-2.26	-0.82	ZZ
TK9BZN		70.20	4.66	1.65	66.00	2.84	1.03	ZZ
TVGVP4		68.84	3.30	1.17	66.31	3.15	1.15	ZZ
U7HJDK		70.90	5.36	1.90	65.90	2.74	1.00	ZZ
U8XW43		62.70	-2.84	-1.01	60.00	-3.16	-1.15	ZZ
UE889M		70.80	5.26	1.87	66.60	3.44	1.25	ZZ
UT3QGK		63.60	-1.94	-0.69	61.50	-1.66	-0.61	ZZ
UZGFAL		67.60	2.06	0.73	63.70	0.54	0.20	ZZ
VC73CY		67.80	2.26	0.80	65.60	2.44	0.89	ZZ
VKZFME		66.00	0.46	0.16	65.80	2.64	0.96	ZZ
W2UPHH		66.57	1.04	0.37	66.43	3.26	1.19	ZZ
WBPKVT		65.20	-0.34	-0.12	62.70	-0.46	-0.17	ZZ
WFBVBH		69.70	4.16	1.48	68.30	5.14	1.87	ZZ
WLYJ7M		64.80	-0.74	-0.26	60.10	-3.06	-1.12	ZZ
XPHMUY		69.30	3.76	1.33	67.50	4.34	1.58	ZZ
XUZMFK		67.00	1.46	0.52	63.00	-0.16	-0.06	ZZ
XV6NQG		63.10	-2.44	-0.86	59.30	-3.86	-1.41	ZZ
YTK9KZ		66.60	1.06	0.38	64.90	1.74	0.63	ZZ
YTZ4ZB		67.90	2.36	0.84	67.90	4.74	1.72	ZZ
Z89AZU		62.30	-3.24	-1.15	61.60	-1.56	-0.57	ZZ
Z8WCC9		69.00	3.46	1.23	69.00	5.84	2.12	ZZ

Summary Statistics

	Sample P83	Sample P84
Grand Means	65.536 ksi	63.160 ksi
Stnd Dev Btwn Labs	2.821 ksi	2.747 ksi

Statistics based on 73 of 75 reporting participants

Samples P83 , P84 : AISI 1045, AISI 1045

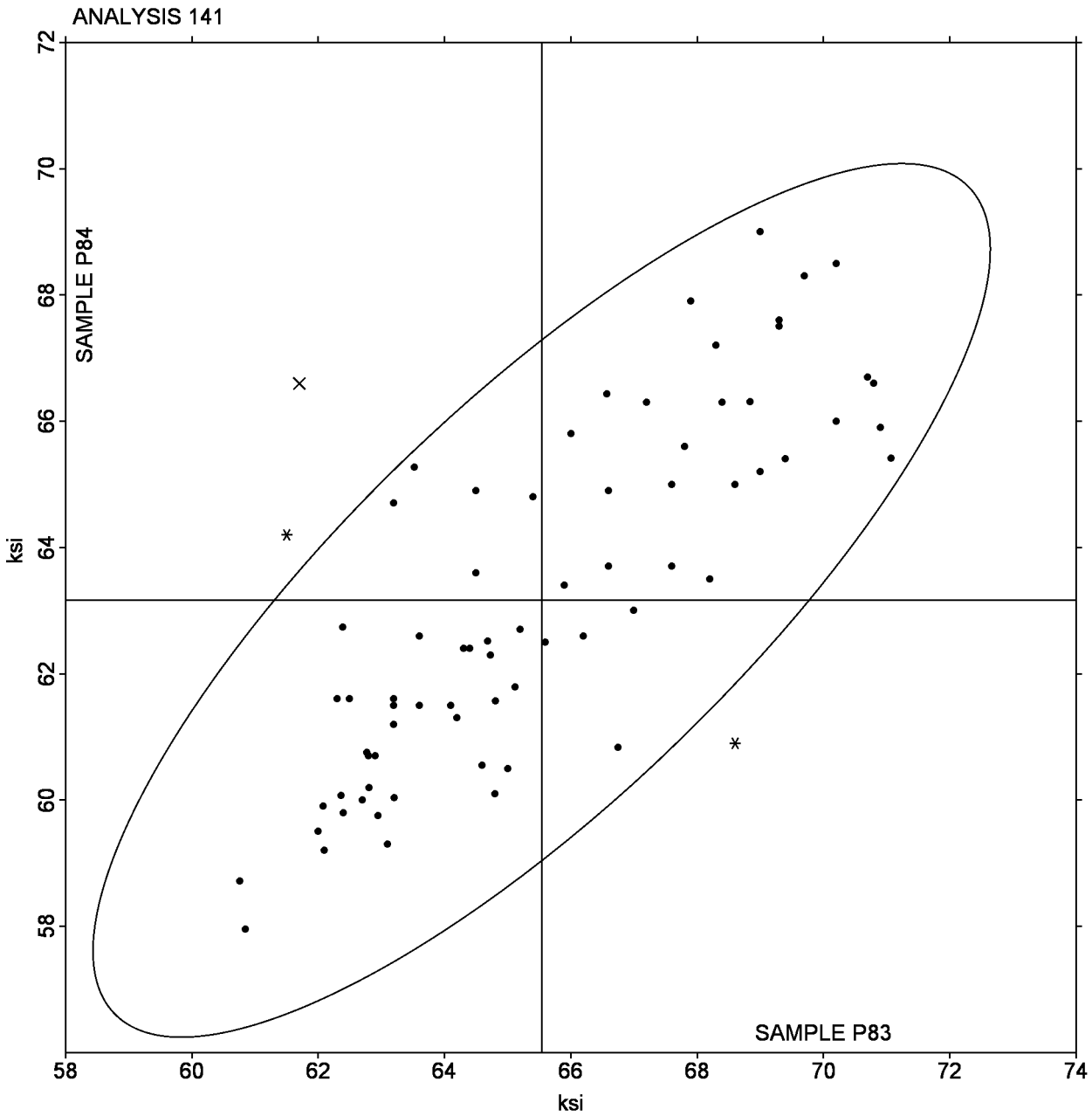
Comments on assigned Data Flags for Test #141

J9GAXN (X) - Inconsistent in testing between samples.
PK374V (M) - Laboratory did not submit data for Sample P83.

Interlaboratory Testing Program for Metals

Analysis 141
Yield Strength - ksi
ASTM E8

SAMPLE P83 = 65.536 ksi SAMPLE P84 = 63.160 ksi



Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

		Sample P83			Sample P84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
29JVFD		23.30	2.26	1.52	24.80	2.44	1.49	ZZ
2MJNXN		19.00	-2.04	-1.38	20.50	-1.86	-1.14	ZZ
2WR8HT		20.50	-0.54	-0.37	23.50	1.14	0.70	ZZ
3E8UEF		20.50	-0.54	-0.37	21.00	-1.36	-0.83	ZZ
3QLAR7		19.00	-2.04	-1.38	19.00	-3.36	-2.06	ZZ
3YBPUA		19.00	-2.04	-1.38	21.00	-1.36	-0.83	ZZ
49RQNC		19.40	-1.64	-1.11	20.30	-2.06	-1.26	ZZ
4FU4FT		18.80	-2.24	-1.51	20.80	-1.56	-0.95	ZZ
67YA3F		22.20	1.16	0.78	22.60	0.24	0.15	ZZ
6J784A		22.00	0.96	0.65	25.00	2.64	1.62	ZZ
6N82DC		22.20	1.16	0.78	23.60	1.24	0.76	ZZ
6R2A7K		24.20	3.16	2.13	25.40	3.04	1.86	ZZ
6XKKZZ	X	18.00	-3.04	-2.06	22.00	-0.36	-0.22	ZZ
78GEDQ	X	20.40	-0.64	-0.43	18.50	-3.86	-2.36	ZZ
8GPXQE		22.00	0.96	0.65	23.00	0.64	0.39	ZZ
9AXGG3		19.50	-1.54	-1.04	20.60	-1.76	-1.08	ZZ
9N6WTJ		21.25	0.21	0.14	22.25	-0.11	-0.07	ZZ
9YVVZM		23.70	2.66	1.80	24.50	2.14	1.31	ZZ
AV9WDK		20.10	-0.94	-0.64	21.80	-0.56	-0.34	ZZ
AZLQ7B		20.50	-0.54	-0.37	21.00	-1.36	-0.83	ZZ
BKMC8T		21.00	-0.04	-0.03	23.00	0.64	0.39	ZZ
D2L47M		21.80	0.76	0.51	23.00	0.64	0.39	ZZ
D383VP	*	24.00	2.96	2.00	27.00	4.64	2.84	ZZ
D3RRA4		21.00	-0.04	-0.03	22.40	0.04	0.03	ZZ
EEAF9W		19.00	-2.04	-1.38	20.00	-2.36	-1.44	ZZ
F78V9Z		21.50	0.46	0.31	23.00	0.64	0.39	ZZ
FHLUAM		22.00	0.96	0.65	22.00	-0.36	-0.22	ZZ
FUYBCR		20.50	-0.54	-0.37	22.20	-0.16	-0.10	ZZ
GG3JLE		20.30	-0.74	-0.50	21.50	-0.86	-0.53	ZZ
GGQH8T		20.00	-1.04	-0.70	21.00	-1.36	-0.83	ZZ
GHK8G2		21.00	-0.04	-0.03	22.00	-0.36	-0.22	ZZ
GQA6W9		23.70	2.66	1.80	25.00	2.64	1.62	ZZ
GRXQ4R		23.00	1.96	1.32	25.00	2.64	1.62	ZZ
J2DD2W	X	20.00	-1.04	-0.70	24.60	2.24	1.37	ZZ
JFJFQL		21.90	0.86	0.58	22.90	0.54	0.33	ZZ
JRF9MG		19.80	-1.24	-0.84	20.60	-1.76	-1.08	ZZ
K8J8T8		20.70	-0.34	-0.23	22.80	0.44	0.27	ZZ
KMRU29		21.50	0.46	0.31	23.00	0.64	0.39	ZZ
KZALGP		20.50	-0.54	-0.37	21.50	-0.86	-0.53	ZZ
L2GDMV		20.00	-1.04	-0.70	23.00	0.64	0.39	ZZ
L73LDF		20.40	-0.64	-0.43	22.00	-0.36	-0.22	ZZ
LNTYJE		21.40	0.36	0.24	22.00	-0.36	-0.22	ZZ
LTVGMM	*	24.70	3.66	2.47	25.03	2.67	1.64	ZZ
MCCP8T		20.00	-1.04	-0.70	22.50	0.14	0.09	ZZ
MR46RT		22.00	0.96	0.65	23.00	0.64	0.39	ZZ

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

WebCode	Data Flag	Sample P83 Lab Mean	Sample P83 Diff. from Grand Mean	Sample P83 CPV	Sample P84 Lab Mean	Sample P84 Diff. from Grand Mean	Sample P84 CPV	Instr Code
N3WPAQ		20.50	-0.54	-0.37	21.70	-0.66	-0.40	ZZ
NT2UJ9		23.15	2.11	1.42	24.25	1.89	1.16	ZZ
NXJ37L		22.00	0.96	0.65	24.00	1.64	1.00	ZZ
PAK996	*	20.50	-0.54	-0.37	19.50	-2.86	-1.75	ZZ
PCGKJQ		21.30	0.26	0.17	23.40	1.04	0.64	ZZ
PF4WQ9		21.00	-0.04	-0.03	24.00	1.64	1.00	ZZ
PKUH6N		22.00	0.96	0.65	24.00	1.64	1.00	ZZ
Q2HR3C	X	16.20	-4.84	-3.27	20.70	-1.66	-1.01	ZZ
Q7G8M9		21.00	-0.04	-0.03	22.00	-0.36	-0.22	ZZ
QL68CC		20.00	-1.04	-0.70	21.20	-1.16	-0.71	ZZ
QT47U9		18.90	-2.14	-1.45	22.00	-0.36	-0.22	ZZ
QX2RJQ		19.90	-1.14	-0.77	20.50	-1.86	-1.14	ZZ
RK3ABB		21.60	0.56	0.38	24.00	1.64	1.00	ZZ
RLYKC6		18.50	-2.54	-1.72	20.00	-2.36	-1.44	ZZ
U2TV8E		19.00	-2.04	-1.38	20.40	-1.96	-1.20	ZZ
UCEGJW		22.40	1.36	0.92	22.50	0.14	0.09	ZZ
UDNMR4		22.00	0.96	0.65	24.00	1.64	1.00	ZZ
UPWPDG		18.90	-2.14	-1.45	20.60	-1.76	-1.08	ZZ
UR7DNK		18.80	-2.24	-1.51	19.40	-2.96	-1.81	ZZ
V23PBY		20.00	-1.04	-0.70	21.00	-1.36	-0.83	ZZ
VQ3M3H		23.50	2.46	1.66	24.50	2.14	1.31	ZZ
W64KMT		21.80	0.76	0.51	22.20	-0.16	-0.10	ZZ
W9V3EZ		23.00	1.96	1.32	24.50	2.14	1.31	ZZ
WAT26Z		20.30	-0.74	-0.50	21.80	-0.56	-0.34	ZZ
WVD6RX		21.40	0.36	0.24	22.80	0.44	0.27	ZZ
WXCJ3G		20.00	-1.04	-0.70	21.00	-1.36	-0.83	ZZ
X8N42C		20.60	-0.44	-0.30	21.40	-0.96	-0.59	ZZ
XUBZG9		22.50	1.46	0.98	23.80	1.44	0.88	ZZ
XXFWCG		20.30	-0.74	-0.50	21.50	-0.86	-0.53	ZZ
YXDYNL	*	22.50	1.46	0.98	21.50	-0.86	-0.53	ZZ
Z4EQB9		19.10	-1.94	-1.31	20.80	-1.56	-0.95	ZZ
ZAANGK		20.80	-0.24	-0.16	21.80	-0.56	-0.34	ZZ
ZU8BEH	X	18.80	-2.24	-1.51	23.60	1.24	0.76	ZZ

Summary Statistics

	Sample P83	Sample P84
Grand Means	21.042 Percent	22.360 Percent
Stnd Dev Btwn Labs	1.480 Percent	1.634 Percent

Statistics based on 73 of 78 reporting participants

Samples P83 , P84 : AISI 1045, AISI 1045

Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

Comments on assigned Data Flags for Test #142

6XKKZZ (X) - Inconsistent in testing between samples.

78GEDQ (X) - Inconsistent in testing between samples.

J2DD2W (X) - Inconsistent in testing between samples. Sample P83 was 0.25" and Sample P84 was 0.5" as reported by lab.

Q2HR3C (X) - Low data for Sample P83.

ZU8BEH (X) - Inconsistent in testing between samples.

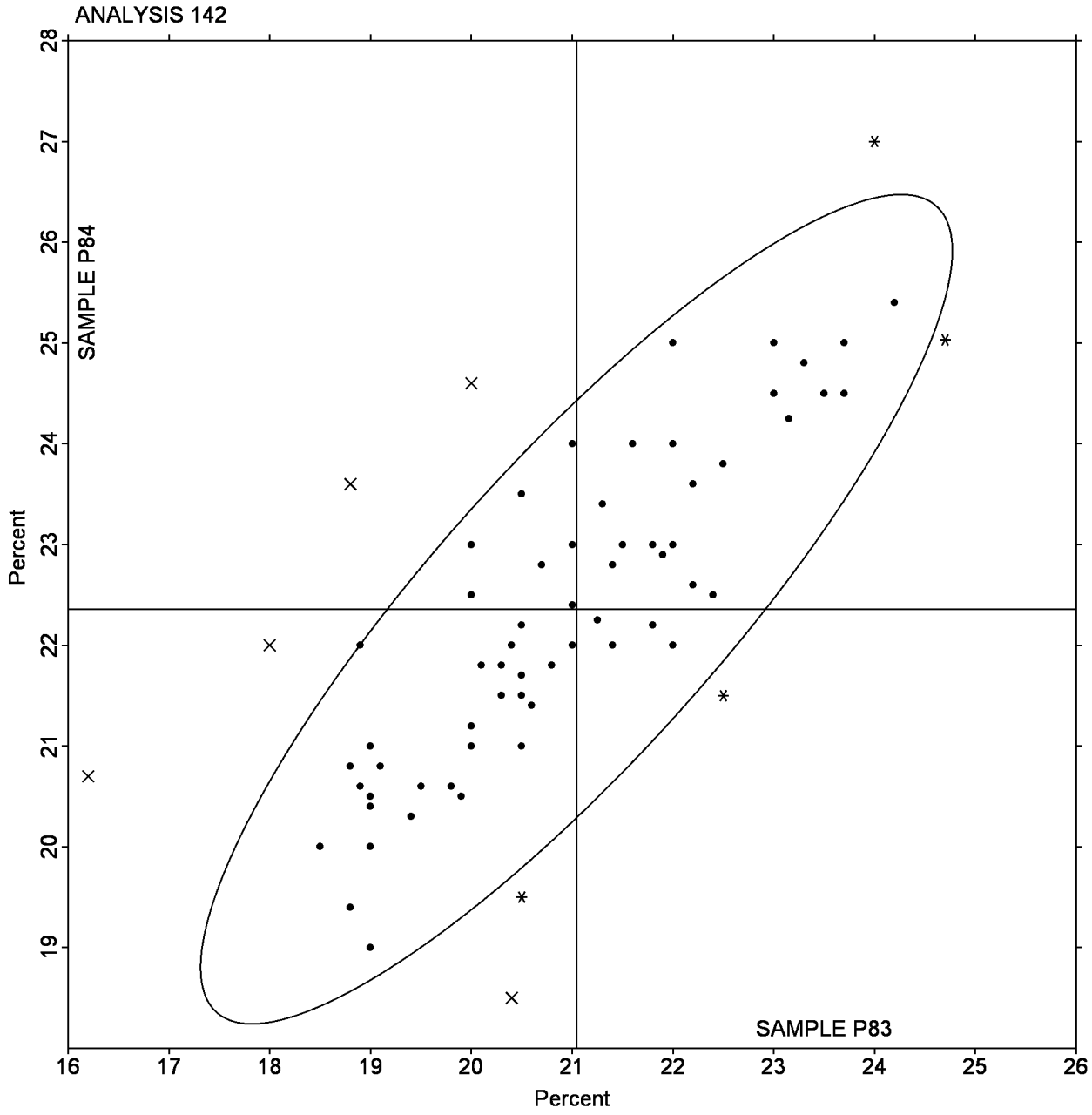
Interlaboratory Testing Program for Metals

Analysis 142

Elongation - Percent Increase (In 4XD)

ASTM E8

SAMPLE P83 = 21.042 Percent SAMPLE P84 = 22.360 Percent



Interlaboratory Testing Program for Metals

Analysis 143
Reduction of Area - Percent
ASTM E8

WebCode	Data Flag	Sample P83 Lab Mean	Sample P83 Diff. from Grand Mean	Sample P83 CPV	Sample P84 Lab Mean	Sample P84 Diff. from Grand Mean	Sample P84 CPV	Instr Code
2UARE8		43.90	0.63	0.57	43.40	-0.83	-0.65	ZZ
34GBPU		43.30	0.03	0.03	44.50	0.27	0.21	ZZ
3AHUBC		41.20	-2.07	-1.86	42.50	-1.73	-1.35	ZZ
3B9HHF		43.70	0.43	0.39	43.10	-1.13	-0.88	ZZ
3KUP4B	*	45.10	1.83	1.65	47.40	3.17	2.48	ZZ
3MXYCD		44.10	0.83	0.75	44.80	0.57	0.45	ZZ
3RBDXT		43.20	-0.07	-0.06	44.60	0.37	0.29	ZZ
4NMZNA		45.30	2.03	1.83	44.90	0.67	0.53	ZZ
4QGCUF		44.20	0.93	0.84	43.70	-0.53	-0.41	ZZ
6B4P9Y	X	47.10	3.83	3.44	45.80	1.57	1.23	ZZ
6LEG7R		44.00	0.73	0.66	46.00	1.77	1.39	ZZ
6YCEXR		43.38	0.11	0.10	42.88	-1.35	-1.05	ZZ
7L7VLH		44.10	0.83	0.75	43.90	-0.33	-0.25	ZZ
7LL7EU		45.00	1.73	1.56	47.00	2.77	2.17	ZZ
8674R8		43.90	0.63	0.57	45.30	1.07	0.84	ZZ
8CFL4Z		43.00	-0.27	-0.24	47.00	2.77	2.17	ZZ
8LCEL7		41.50	-1.77	-1.59	44.50	0.27	0.21	ZZ
8PN8GC		43.40	0.13	0.12	43.90	-0.33	-0.25	ZZ
8WVMH2		44.00	0.73	0.66	44.30	0.07	0.06	ZZ
96FGVG	*	40.40	-2.87	-2.58	41.00	-3.23	-2.52	ZZ
9KNHDP		43.00	-0.27	-0.24	42.00	-2.23	-1.74	ZZ
AL3PHX		43.70	0.43	0.39	43.70	-0.53	-0.41	ZZ
AMXURJ		43.80	0.53	0.48	43.80	-0.43	-0.33	ZZ
AQBPKA		44.00	0.73	0.66	45.00	0.77	0.61	ZZ
AZZBQU		43.60	0.33	0.30	45.00	0.77	0.61	ZZ
BB8QK6		42.90	-0.37	-0.33	43.70	-0.53	-0.41	ZZ
CBCALR		41.00	-2.27	-2.04	44.00	-0.23	-0.18	ZZ
CCQLFQ		43.40	0.13	0.12	44.60	0.37	0.29	ZZ
CCX4TP		44.20	0.93	0.84	42.90	-1.33	-1.04	ZZ
CJQ26X		42.00	-1.27	-1.14	43.50	-0.73	-0.57	ZZ
DQVPU4		41.00	-2.27	-2.04	43.70	-0.53	-0.41	ZZ
DYV94Y		44.20	0.93	0.84	47.40	3.17	2.48	ZZ
EJG7AG	X	33.90	-9.37	-8.42	29.10	-15.13	-11.82	ZZ
ERVV8G		43.60	0.33	0.30	44.90	0.67	0.53	ZZ
EW7636		43.00	-0.27	-0.24	45.00	0.77	0.61	ZZ
EZLJWR		42.30	-0.97	-0.87	42.00	-2.23	-1.74	ZZ
F3QMXR		42.60	-0.67	-0.60	44.50	0.27	0.21	ZZ
FDP8CD		42.60	-0.67	-0.60	46.40	2.17	1.70	ZZ
FLK2TK		43.50	0.23	0.21	41.90	-2.33	-1.82	ZZ
HBV7HA		43.60	0.33	0.30	44.70	0.47	0.37	ZZ
HCVMXD		44.80	1.53	1.38	43.70	-0.53	-0.41	ZZ
HHY3C8	X	44.00	0.73	0.66	49.10	4.87	3.81	ZZ
LEGRF9		42.00	-1.27	-1.14	44.10	-0.13	-0.10	ZZ
LJX3V9		44.00	0.73	0.66	44.00	-0.23	-0.18	ZZ
LMFWFU		41.70	-1.57	-1.41	42.40	-1.83	-1.43	ZZ

Interlaboratory Testing Program for Metals

Analysis 143
Reduction of Area - Percent
ASTM E8

WebCode	Data Flag	Sample P83 Lab Mean	Sample P83 Diff. from Grand Mean	Sample P83 CPV	Sample P84 Lab Mean	Sample P84 Diff. from Grand Mean	Sample P84 CPV	Instr Code
M9WUTG	X	43.10	-0.17	-0.15	39.80	-4.43	-3.46	ZZ
MBJ937		41.80	-1.47	-1.32	43.30	-0.93	-0.72	ZZ
MF8TTF	X	27.00	-16.27	-14.62	28.00	-16.23	-12.68	ZZ
MQWRBR		43.40	0.13	0.12	43.90	-0.33	-0.25	ZZ
N4GVQ2		44.60	1.33	1.20	42.30	-1.93	-1.51	ZZ
NELMT3		42.90	-0.37	-0.33	43.50	-0.73	-0.57	ZZ
NRFVQH		43.00	-0.27	-0.24	45.00	0.77	0.61	ZZ
NUJRBL		45.00	1.73	1.56	45.00	0.77	0.61	ZZ
NUT9BL		44.30	1.03	0.93	43.80	-0.43	-0.33	ZZ
Q37HXP		42.50	-0.77	-0.69	44.20	-0.03	-0.02	ZZ
QBK9HV		43.00	-0.27	-0.24	44.00	-0.23	-0.18	ZZ
QNBZ77		42.50	-0.77	-0.69	44.30	0.07	0.06	ZZ
QW7628		43.00	-0.27	-0.24	43.50	-0.73	-0.57	ZZ
QYFVPQ		43.50	0.23	0.21	43.20	-1.03	-0.80	ZZ
T6FZK8		44.00	0.73	0.66	44.60	0.37	0.29	ZZ
T94XF9		43.70	0.43	0.39	45.40	1.17	0.92	ZZ
TCM24K		43.00	-0.27	-0.24	46.00	1.77	1.39	ZZ
TPG2JG		42.20	-1.07	-0.96	44.90	0.67	0.53	ZZ
TV6W3M		43.00	-0.27	-0.24	43.00	-1.23	-0.96	ZZ
U2D3NQ		41.50	-1.77	-1.59	42.60	-1.63	-1.27	ZZ
U6TY2M		44.00	0.73	0.66	44.00	-0.23	-0.18	ZZ
UKRG8J		43.20	-0.07	-0.06	46.40	2.17	1.70	ZZ
VDBPLL		42.80	-0.47	-0.42	44.30	0.07	0.06	ZZ
VPMKRP		40.70	-2.57	-2.31	42.50	-1.73	-1.35	ZZ
WC7M7N		45.50	2.23	2.01	45.20	0.97	0.76	ZZ
WEM36U		43.60	0.33	0.30	44.30	0.07	0.06	ZZ
WTQ4Q2		43.50	0.23	0.21	45.00	0.77	0.61	ZZ
Y4JLGA		43.60	0.33	0.30	44.80	0.57	0.45	ZZ
YHHRCP		43.50	0.23	0.21	44.50	0.27	0.21	ZZ
YK3NQH		41.80	-1.47	-1.32	44.14	-0.09	-0.07	ZZ
YMDWBG		44.10	0.83	0.75	45.00	0.77	0.61	ZZ
ZY37J8		45.00	1.73	1.56	44.00	-0.23	-0.18	ZZ

Summary Statistics

	Sample P83	Sample P84
Grand Means	43.269 Percent	44.230 Percent
Stnd Dev Btwn Labs	1.112 Percent	1.279 Percent

Statistics based on 72 of 77 reporting participants

Samples P83 , P84 : AISI 1045, AISI 1045

Interlaboratory Testing Program for Metals

Analysis 143
Reduction of Area - Percent
ASTM E8

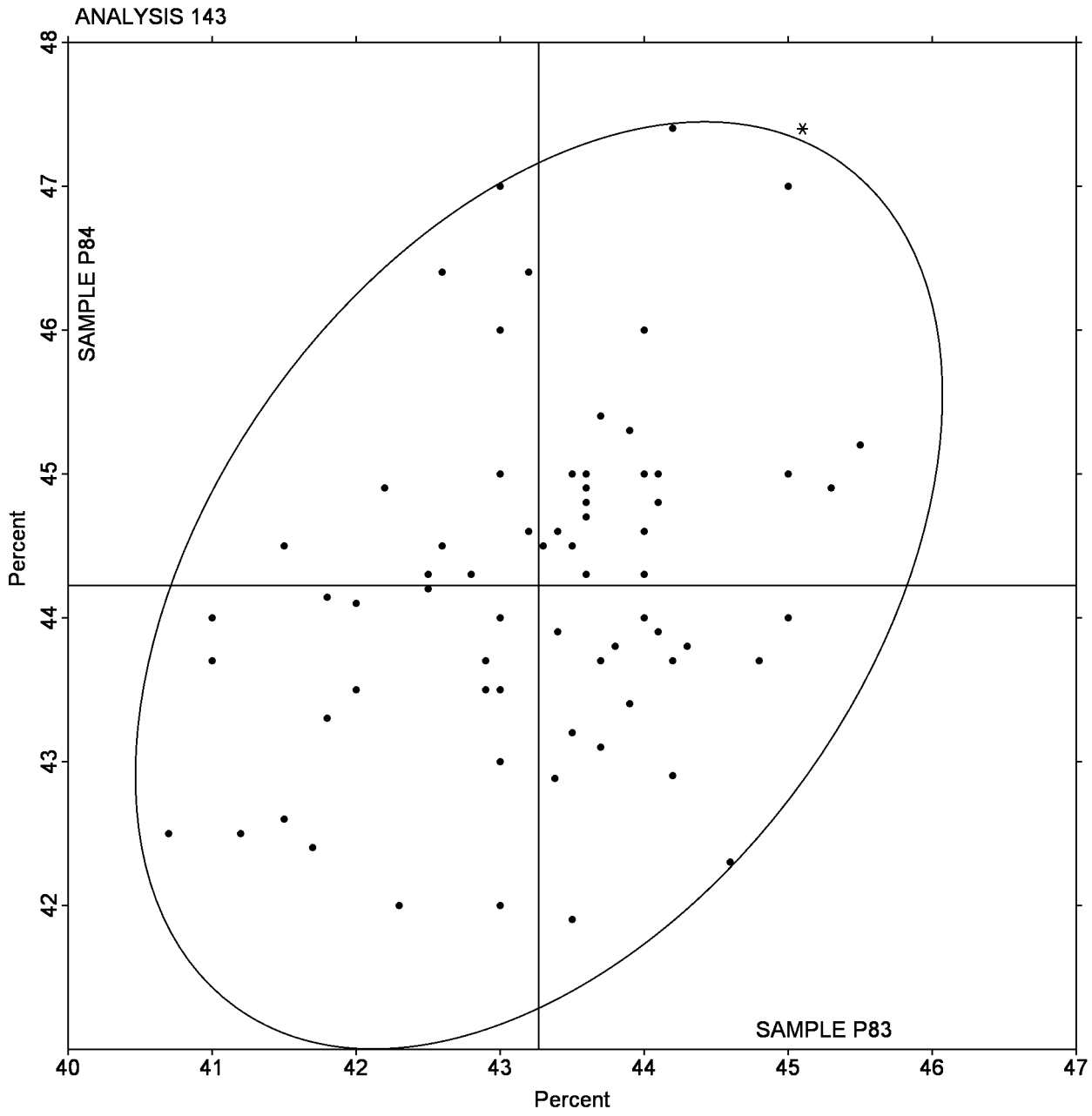
Comments on assigned Data Flags for Test #143

6B4P9Y (X) - High data for Sample P83.
EJG7AG (X) - Data for both samples are low.
HHY3C8 (X) - High data for Sample P84.
M9WUTG (X) - Low data for Sample P84.
MF8TTF (X) - Data for both samples are low.

Interlaboratory Testing Program for Metals

Analysis 143
Reduction of Area - Percent
ASTM E8

SAMPLE P83 = 43.269 Percent SAMPLE P84 = 44.230 Percent



Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - Rockwell Hardness Number

ASTM E18

		Sample N83			Sample N84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
27CJM6		87.80	-0.32	-0.52	93.44	0.36	0.59	FU
34KY2T		89.50	1.38	2.24	93.98	0.90	1.48	UN
44XTA7		88.14	0.02	0.03	92.74	-0.34	-0.56	WI
48PBZD		88.04	-0.08	-0.13	92.78	-0.30	-0.49	CL
4G7HF9	X	85.08	-3.04	-4.95	93.76	0.68	1.12	NA
4JL8BR		88.56	0.44	0.71	93.76	0.68	1.12	WI
4PKZRL		87.56	-0.56	-0.91	92.36	-0.72	-1.18	NA
6JBNDU		87.56	-0.56	-0.91	93.28	0.20	0.33	WI
6YPMFL	*	89.60	1.48	2.41	94.86	1.79	2.94	XX
74QK26		87.86	-0.26	-0.43	92.06	-1.02	-1.67	NA
7TEGHK		88.60	0.48	0.78	93.20	0.12	0.20	WI
7YJHE8		88.06	-0.06	-0.10	92.68	-0.40	-0.66	CL
7ZWK6M		88.04	-0.08	-0.13	93.28	0.20	0.33	AN
8BP74Q		88.04	-0.08	-0.13	93.14	0.06	0.10	WI
8NRWFH		88.22	0.10	0.16	93.22	0.14	0.23	WI
97XBV6		88.52	0.40	0.65	93.64	0.56	0.92	WI
99FFEM		88.30	0.18	0.30	93.24	0.16	0.26	WI
9HUYN4		87.60	-0.52	-0.85	92.96	-0.12	-0.19	UN
9NMYHR		89.08	0.96	1.56	94.02	0.94	1.55	CL
9P6X3U		88.22	0.10	0.16	93.36	0.28	0.46	WI
9RYWN2		87.30	-0.82	-1.34	92.16	-0.92	-1.51	WI
9UFVLB		87.86	-0.26	-0.43	92.70	-0.38	-0.62	UN
9VRJ2F	X	87.08	-1.04	-1.70	91.02	-2.06	-3.39	XX
9ZZYEK		88.36	0.24	0.39	93.62	0.54	0.89	XX
AD9UK9	X	86.20	-1.92	-3.13	90.20	-2.88	-4.73	EM
ADYCTA		88.24	0.12	0.19	93.36	0.28	0.46	XX
ANYWHG		88.30	0.18	0.29	92.78	-0.30	-0.49	IN
BXX9JN		87.66	-0.46	-0.75	92.44	-0.64	-1.05	WI
C2RYCM		88.52	0.40	0.65	93.62	0.54	0.89	WI
CECGTH		88.80	0.68	1.11	93.86	0.78	1.29	NA
CQADAE		87.62	-0.50	-0.82	93.24	0.16	0.27	WI
D6N4BX		88.02	-0.10	-0.16	92.86	-0.22	-0.36	LE
EJUXQC		88.28	0.16	0.26	93.04	-0.04	-0.06	CL
EPMKD8		87.64	-0.48	-0.78	92.62	-0.46	-0.75	WI
EWPTKZ		87.60	-0.52	-0.85	92.32	-0.76	-1.25	WI
EXJJNT		86.78	-1.34	-2.18	92.04	-1.04	-1.71	WI
FCQ4BC		87.98	-0.14	-0.23	92.40	-0.68	-1.12	MA
FTKMHY		87.92	-0.20	-0.33	93.08	0.00	0.00	WI
GD6N6L		87.32	-0.80	-1.30	92.56	-0.52	-0.85	BU
GVR6HV		87.02	-1.10	-1.79	92.40	-0.68	-1.12	WI
H3T6LB		87.92	-0.20	-0.33	92.84	-0.24	-0.39	NA
HETTVB		88.40	0.28	0.45	92.42	-0.66	-1.08	WI
HLFLDP	X	73.80	-14.32	-23.32	75.32	-17.76	-29.21	WI
HM3B83		87.00	-1.12	-1.83	92.00	-1.08	-1.77	NA
J46F7X		88.00	-0.12	-0.20	92.90	-0.18	-0.29	XX

Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - Rockwell Hardness Number

ASTM E18

WebCode	Data Flag	Sample N83 Lab Mean	Sample N83 Diff. from Grand Mean	Sample N83 CPV	Sample N84 Lab Mean	Sample N84 Diff. from Grand Mean	Sample N84 CPV	Instr Code
JQJVUH		88.00	-0.12	-0.20	93.00	-0.08	-0.13	WI
KHMXH9		89.02	0.90	1.46	93.92	0.84	1.38	UN
KTBHNQ		88.11	-0.01	-0.02	93.19	0.11	0.19	UN
KZBWDY		88.64	0.52	0.84	93.28	0.20	0.33	WI
LXWG3C		88.92	0.80	1.30	93.64	0.56	0.92	UN
M6VM48		88.66	0.54	0.88	93.30	0.22	0.36	BU
MY6GPB		87.54	-0.58	-0.95	92.28	-0.80	-1.31	WI
N8U46T		88.14	0.02	0.03	92.92	-0.16	-0.26	CL
NMWYY9		89.02	0.90	1.46	94.50	1.42	2.34	BU
PL82EL		88.00	-0.12	-0.20	92.80	-0.28	-0.46	WI
RN2L2V		88.36	0.24	0.39	93.82	0.74	1.22	WI
TMBPCF		87.62	-0.50	-0.82	93.06	-0.02	-0.03	WI
UAGTML		88.66	0.54	0.88	93.82	0.74	1.22	WI
UC8Y7X		88.42	0.30	0.49	92.92	-0.16	-0.26	NA
UK4NZV		88.02	-0.10	-0.16	92.88	-0.20	-0.33	AK
W4LM2V	*	87.90	-0.22	-0.36	93.90	0.82	1.35	FU
WQWQYX		89.01	0.88	1.44	93.27	0.19	0.31	CL
WVZUDK		88.02	-0.10	-0.16	93.02	-0.06	-0.10	MI
X36TXZ	*	86.50	-1.62	-2.64	91.90	-1.18	-1.94	WI
X3P83A		87.56	-0.56	-0.91	92.22	-0.86	-1.41	WI
X7N78G		89.10	0.98	1.59	93.70	0.62	1.02	AV
XLTNZL		89.00	0.88	1.43	94.00	0.92	1.52	WI
XY7PTY		88.22	0.10	0.16	93.14	0.06	0.10	LE
Y2FART		87.68	-0.44	-0.72	92.36	-0.72	-1.18	MI
YCPN9Z		87.52	-0.60	-0.98	92.86	-0.22	-0.36	MI
YEGMNY		87.78	-0.34	-0.56	93.28	0.20	0.33	IN
YQ6D4Q	*	89.10	0.98	1.59	93.00	-0.08	-0.13	WI
Z24TKK		88.65	0.52	0.85	93.46	0.38	0.63	UN
ZVRVTE		87.48	-0.64	-1.04	92.78	-0.30	-0.49	CL

Summary Statistics

	Sample N83	Sample N84
Grand Means	88.121 HRB	93.080 HRB
Stnd Dev Btwn Labs	0.614 HRB	0.608 HRB
		Statistics based on 70 of 74 reporting participants

Samples N83 , N84 **:** brass, steel

Comments on assigned Data Flags for Test #119

4G7HF9 (X) - Low data for Sample N83.

9VRJ2F (X) - Low data for Sample N84.

AD9UK9 (X) - Data for both samples are low and inconsistent within the determinations for both samples.

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

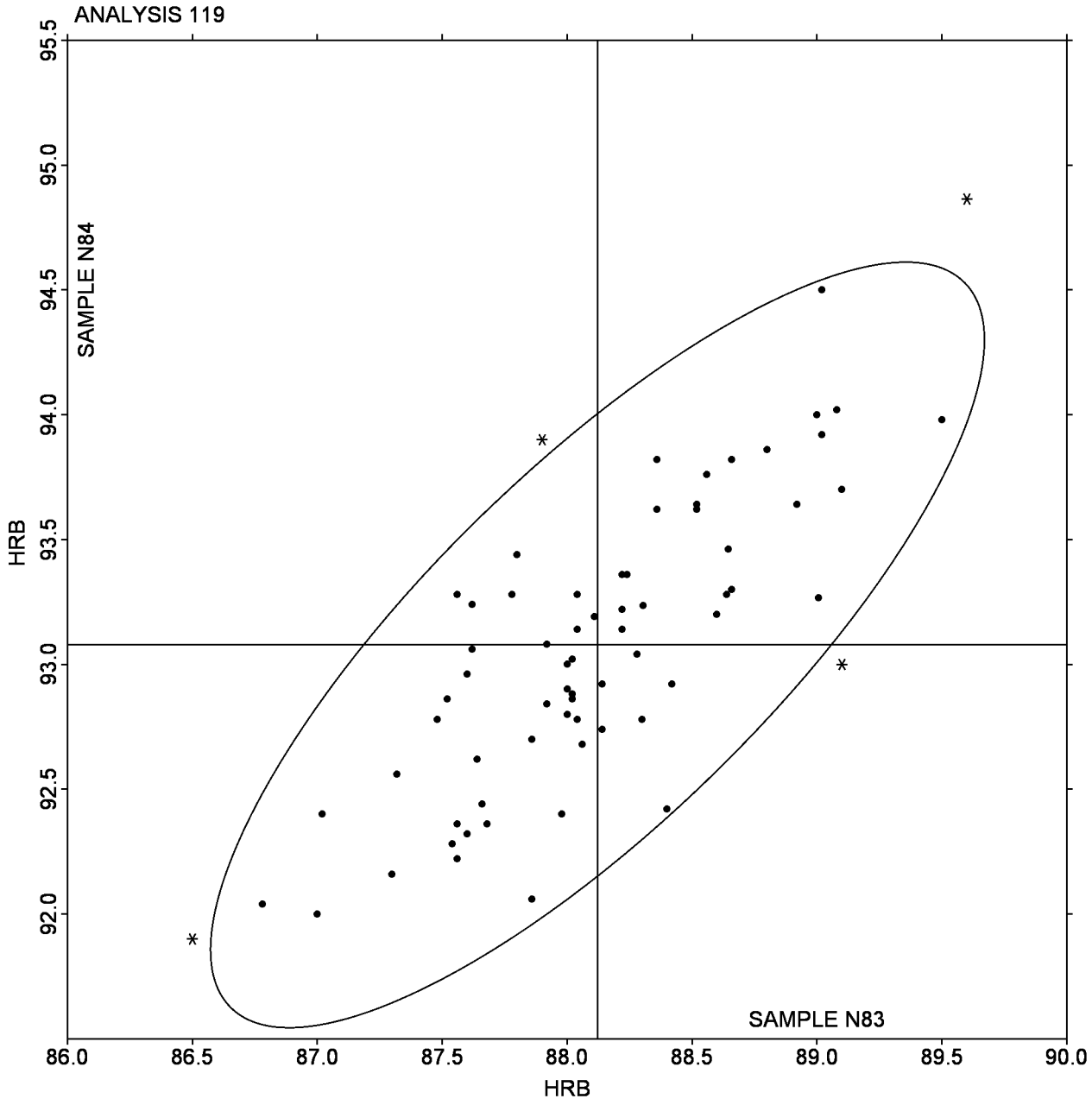
Interlaboratory Testing Program for Metals

Analysis 119

Rockwell Hardness (B Scale) - Rockwell Hardness Number

ASTM E18

SAMPLE N83 = 88.121 HRB SAMPLE N84 = 93.080 HRB



Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

		Sample S83			Sample S84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2J3FMG		497.6	15.0	1.31	555.4	10.6	0.70	LE
2T7PXM		508.8	26.2	2.28	573.8	29.0	1.92	XX
2ZC2KZ		490.6	8.0	0.70	550.0	5.2	0.34	SH
39LJ9H		470.0	-12.6	-1.09	552.4	7.6	0.50	WT
3JG6B2		485.6	3.0	0.27	549.2	4.4	0.29	LE
3QMM3F		461.4	-21.2	-1.84	534.8	-10.0	-0.66	LE
3WALDA		490.4	7.8	0.68	542.6	-2.2	-0.15	BU
42M2UK		490.6	8.0	0.70	540.8	-4.0	-0.27	FU
42QMLK		478.2	-4.4	-0.38	542.8	-2.0	-0.13	WT
46Y72Y		479.2	-3.4	-0.29	527.4	-17.4	-1.15	AN
4DQK66		456.4	-26.2	-2.28	520.2	-24.6	-1.63	WT
63CRHA		472.2	-10.4	-0.90	536.3	-8.5	-0.56	FU
6AYKWU		489.2	6.6	0.58	563.2	18.4	1.22	ST
6V7KNT		482.8	0.2	0.02	547.2	2.4	0.16	CL
6X8VYA		496.0	13.5	1.17	559.2	14.3	0.95	BU
6XTBJ7	*	484.4	1.8	0.16	514.4	-30.4	-2.01	BU
8D9JAL		488.0	5.4	0.47	555.6	10.8	0.71	XX
8HRWBT		491.0	8.4	0.74	569.0	24.2	1.60	CL
8XNAPN		467.4	-15.2	-1.32	538.8	-6.0	-0.40	WT
8YFQPJ		481.9	-0.7	-0.06	547.1	2.3	0.15	XX
923MZB		490.6	8.0	0.70	571.4	26.6	1.76	LE
9PXT4J		494.4	11.8	1.03	556.4	11.6	0.77	BU
9QQQBR		487.0	4.4	0.39	560.4	15.6	1.03	AN
9WUVX6		475.0	-7.6	-0.66	536.0	-8.8	-0.58	WT
A2DZ2X		480.6	-2.0	-0.17	546.2	1.4	0.09	WT
A73DPE		471.6	-11.0	-0.95	526.2	-18.6	-1.23	LE
A97DJJ		471.4	-11.2	-0.97	536.0	-8.8	-0.58	BU
ABXCXH		476.0	-6.6	-0.57	555.6	10.8	0.71	CM
AL6BBJ		484.0	1.4	0.13	558.0	13.2	0.87	LE
APX2ZA		477.8	-4.8	-0.41	526.4	-18.4	-1.22	MI
BG4PLD		495.2	12.6	1.10	540.2	-4.6	-0.31	LE
BP9CZM	*	450.6	-32.0	-2.78	525.2	-19.6	-1.30	LI
C2TVVJ		489.9	7.3	0.64	559.9	15.1	1.00	AT
C9L8JK		488.2	5.6	0.49	543.2	-1.6	-0.11	LE
DRQE2Q		485.2	2.6	0.23	557.8	13.0	0.86	SH
EV72EV		488.0	5.4	0.47	548.0	3.2	0.21	LE
EVAHP3		491.2	8.6	0.75	554.4	9.6	0.63	LE
FBEDEF		484.8	2.2	0.20	562.4	17.6	1.16	WT
FEJC67		468.6	-14.0	-1.21	521.2	-23.6	-1.56	BU
FHXQDR		471.6	-11.0	-0.95	523.4	-21.4	-1.42	WT
G4J42U		477.6	-5.0	-0.43	550.8	6.0	0.40	LE
G4ZKU2	*	454.0	-28.6	-2.48	508.8	-36.0	-2.38	ST
G6VEVL		499.7	17.1	1.49	571.7	26.9	1.78	BU
G8JT9N		492.7	10.2	0.88	538.9	-5.9	-0.39	MI
GARW6K		492.5	9.9	0.86	563.5	18.7	1.23	LE

Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

WebCode	Data Flag	Sample S83 Lab Mean	Sample S83 Diff. from Grand Mean	Sample S83 CPV	Sample S84 Lab Mean	Sample S84 Diff. from Grand Mean	Sample S84 CPV	Instr Code
GRTUMV		487.6	5.0	0.44	560.0	15.2	1.00	BU
HCEGKU		458.4	-24.1	-2.10	513.3	-31.5	-2.09	LE
HDX87Z		510.2	27.6	2.41	565.4	20.6	1.36	BU
HG7AF4		476.6	-6.0	-0.52	546.0	1.2	0.08	LE
HP7XTT	*	511.2	28.6	2.49	567.4	22.6	1.49	WT
JF38U4		476.8	-5.8	-0.50	533.5	-11.3	-0.75	CL
JKV9YC		474.7	-7.9	-0.68	531.3	-13.6	-0.90	LE
JVBYPG		490.0	7.4	0.65	560.4	15.6	1.03	AN
K77M3V		477.6	-5.0	-0.43	552.4	7.6	0.50	WT
KEKDL2		486.0	3.4	0.30	562.8	18.0	1.19	WT
KTAG97		483.8	1.2	0.11	543.6	-1.2	-0.08	BU
L3MZVU		494.8	12.2	1.07	531.0	-13.8	-0.91	WT
LD4PPT		481.2	-1.4	-0.12	548.6	3.8	0.25	WT
LHDXXC		474.4	-8.2	-0.71	558.0	13.2	0.87	ST
LLFUPR		477.7	-4.9	-0.42	539.5	-5.3	-0.35	CL
LQBPJC		488.1	5.6	0.49	553.0	8.2	0.54	LE
LWZ7ZH		485.4	2.8	0.25	534.2	-10.6	-0.70	CL
M3EH3B		463.6	-19.0	-1.65	519.4	-25.4	-1.68	WT
MN2V9K		474.6	-8.0	-0.69	540.6	-4.2	-0.28	SH
MQNLBN		475.2	-7.4	-0.64	540.6	-4.2	-0.28	BU
N7CGWZ		492.7	10.1	0.88	530.5	-14.3	-0.94	BU
PLCWYX		471.0	-11.6	-1.00	537.2	-7.6	-0.50	WI
Q6U3FE		496.2	13.6	1.19	554.0	9.2	0.61	LE
QAXHNJ		482.8	0.2	0.02	546.0	1.2	0.08	AT
QDTE4W	X	550.0	67.4	5.87	500.0	-44.8	-2.97	ST
QTAQYW		478.7	-3.8	-0.33	531.9	-12.9	-0.85	MI
QYFDRL		477.5	-5.1	-0.44	539.8	-5.0	-0.33	BU
R7BECQ		474.6	-8.0	-0.69	539.0	-5.8	-0.39	MI
RL6YUZ		478.6	-4.0	-0.34	527.8	-17.0	-1.13	CM
RQ4E63		491.0	8.4	0.74	562.4	17.6	1.16	AK
RX8KK6		480.1	-2.4	-0.21	544.3	-0.5	-0.03	BU
RZ7FZ2		498.4	15.8	1.38	560.4	15.6	1.03	WT
T2UCVZ		478.8	-3.8	-0.33	549.6	4.8	0.32	BU
T8Z4TP		475.0	-7.6	-0.66	548.4	3.6	0.24	XX
TFD8WH		487.2	4.6	0.40	544.2	-0.6	-0.04	LE
TG7ZXF		486.8	4.2	0.37	541.0	-3.8	-0.25	LE
TYZRNF		482.8	0.3	0.03	545.8	1.0	0.06	WI
U779XL		477.4	-5.2	-0.45	525.6	-19.2	-1.27	BU
UAUGWZ		473.5	-9.1	-0.79	529.5	-15.3	-1.01	BU
UBCDNF		492.4	9.8	0.86	554.4	9.6	0.63	BU
UXB43K	*	484.8	2.2	0.20	514.0	-30.8	-2.04	FU
V96YHQ		495.4	12.8	1.11	537.7	-7.1	-0.47	BU
VMLA43		492.6	10.0	0.87	567.8	23.0	1.52	FU
WVVZCK		495.4	12.8	1.12	570.8	26.0	1.72	LE
WZR68V		464.8	-17.8	-1.54	522.4	-22.4	-1.48	BU

Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

WebCode	Data Flag	Sample S83 Lab Mean	Sample S83 Diff. from Grand Mean	Sample S83 CPV	Sample S84 Lab Mean	Sample S84 Diff. from Grand Mean	Sample S84 CPV	Instr Code
XHLT27	X	482.5	-0.1	0.00	584.7	39.9	2.64	LE
XYPYYZ		468.0	-14.6	-1.27	525.8	-19.0	-1.26	BU
YBJ92A		477.6	-5.0	-0.43	554.6	9.8	0.65	CL
YHQXET		490.8	8.2	0.72	549.8	5.0	0.33	BU
YV84X9		484.6	2.0	0.18	550.2	5.4	0.36	ST
ZJPFAH	X	457.4	-25.2	-2.19	563.2	18.4	1.22	LE

Summary Statistics

	Sample S83	Sample S84
Grand Means	482.55 HK 500 gf	544.80 HK 500 gf
Stnd Dev Btwn Labs	11.49 HK 500 gf	15.11 HK 500 gf

Statistics based on 93 of 96 reporting participants

Samples S83 , S84 **:** steel, steel

Comments on assigned Data Flags for Test #121

QDTE4W (X) - Data appear to be transposed between samples.
XHLT27 (X) - Inconsistent in testing between samples.
ZJPFAH (X) - Inconsistent in testing between samples.

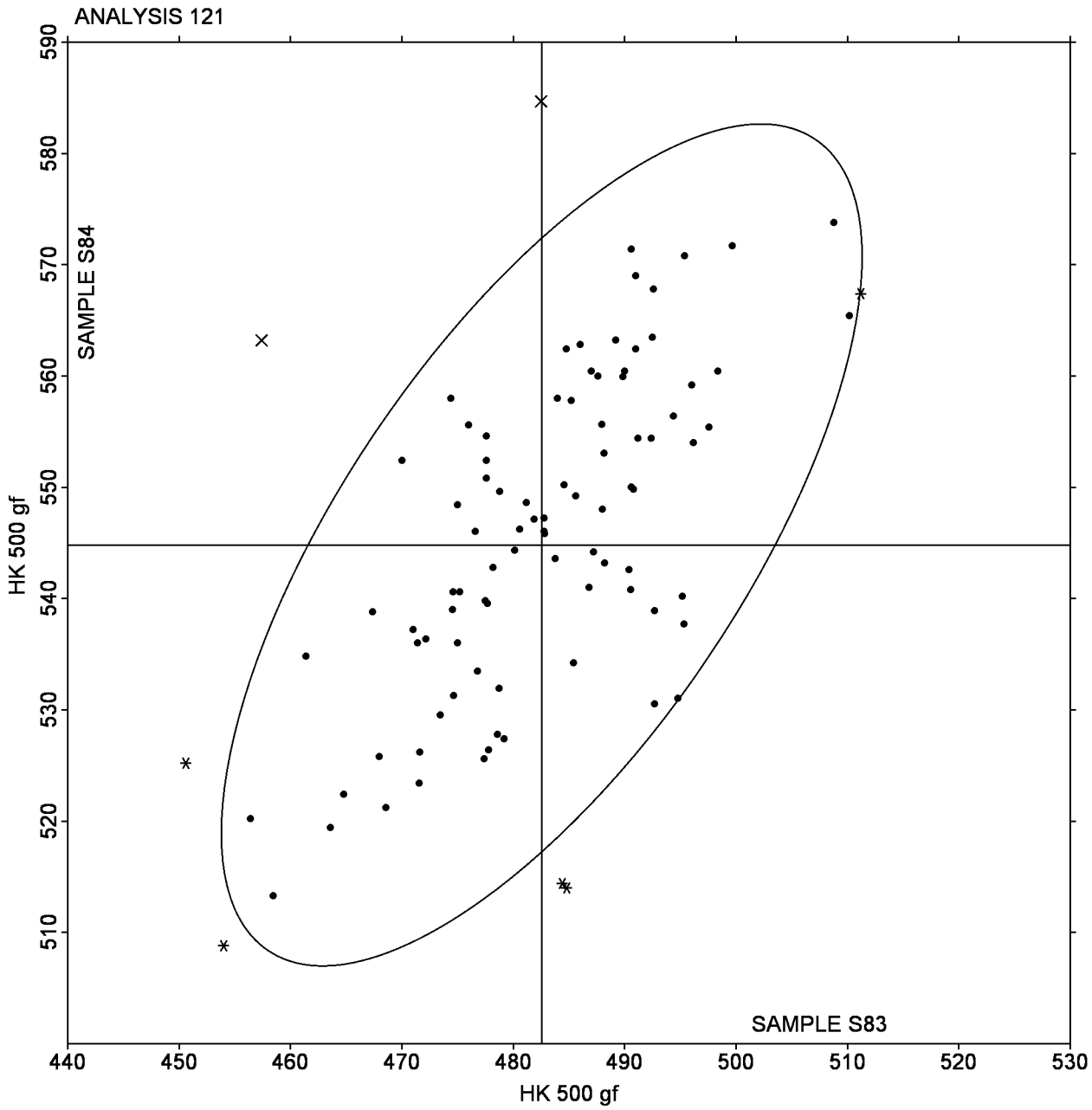
Interlaboratory Testing Program for Metals

Analysis 121

Microhardness - Knoop Hardness Number (500 gf)

ASTM E384

SAMPLE S83 = 482.55 HK 500 gf SAMPLE S84 = 544.80 HK 500 gf



Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)

ASTM E384

		Sample S83			Sample S84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
4WHCMC		489.4	-2.8	-0.18	544.4	-12.4	-0.62	WT
629WCD		497.0	4.8	0.31	570.8	14.0	0.71	XX
69DQEL		491.4	-0.8	-0.05	543.0	-13.8	-0.69	CM
6KFC6Q		478.2	-14.1	-0.91	556.8	0.0	0.00	BU
6LMGWU		468.8	-23.4	-1.51	554.8	-2.0	-0.10	LI
6MCR82		493.2	1.0	0.06	563.0	6.2	0.31	LE
7638WB		504.8	12.6	0.81	585.6	28.8	1.45	LE
7PDDQX		503.8	11.6	0.75	560.6	3.8	0.19	AN
7VXE8G		502.2	10.0	0.64	582.4	25.6	1.29	XX
8CPQVQ		484.0	-8.2	-0.53	551.6	-5.2	-0.26	BU
8EK6YM		494.6	2.3	0.15	559.0	2.2	0.11	XX
8FJBGF		471.0	-21.2	-1.37	537.2	-19.6	-0.99	LE
9TK7B2		516.8	24.6	1.58	563.4	6.6	0.33	LE
C4WRYY		498.2	6.0	0.38	569.4	12.6	0.63	LE
CGGZZQ		493.6	1.4	0.09	540.4	-16.4	-0.83	CL
CRVCYG		499.4	7.2	0.46	567.0	10.2	0.51	BU
DKZZRX	*	453.8	-38.4	-2.48	494.6	-62.2	-3.13	LE
ENR9CC		485.5	-6.8	-0.44	547.7	-9.1	-0.46	XX
EP762W		461.4	-30.9	-1.99	515.8	-40.9	-2.06	LE
EZ9QEW		496.2	4.0	0.26	564.6	7.8	0.39	BU
F48NZA	M				538.0	-18.8	-0.95	WT
F79AJ6		477.2	-15.0	-0.97	534.6	-22.2	-1.12	BU
F8JWEX	X	562.6	70.4	4.54	539.8	-17.0	-0.86	FU
GKMAZB		480.8	-11.4	-0.74	575.2	18.4	0.93	WT
H4T9MQ		493.8	1.6	0.10	555.2	-1.6	-0.08	BU
H8RLBF		497.6	5.3	0.34	553.0	-3.8	-0.19	LE
HN76JE		504.1	11.9	0.77	557.9	1.1	0.06	WT
HRCMTG		490.4	-1.8	-0.12	561.0	4.2	0.21	AN
JFWV8T	*	533.2	41.0	2.64	593.4	36.6	1.84	WT
JH9H6Y		495.4	3.2	0.20	562.6	5.8	0.29	LE
JYWP6D		492.4	0.2	0.01	554.0	-2.8	-0.14	LE
K6ABZ2		502.8	10.6	0.68	570.6	13.8	0.70	WT
K9KCXZ		476.2	-16.0	-1.03	550.8	-6.0	-0.30	WT
KAU27X		485.5	-6.7	-0.43	554.5	-2.3	-0.11	MI
KBQ2W3		467.4	-24.8	-1.60	529.8	-27.0	-1.36	WI
LFNR4E		504.4	12.2	0.78	564.8	8.0	0.40	AN
LKZM7V		510.4	18.2	1.17	570.4	13.6	0.69	BU
LLLYBV		510.4	18.2	1.17	581.0	24.2	1.22	LE
M9BJU9		476.0	-16.2	-1.05	548.6	-8.2	-0.41	WT
MD9Z9N		490.9	-1.4	-0.09	545.0	-11.8	-0.59	BU
MLBZ8H	*	515.6	23.4	1.51	551.6	-5.2	-0.26	LE
N2HBNP		483.2	-9.0	-0.58	549.3	-7.5	-0.38	CL
N7HFPM		505.2	13.0	0.84	568.0	11.2	0.56	BU
NGG2YU		500.4	8.2	0.53	575.0	18.2	0.92	LE
P4THTV		517.2	25.0	1.61	571.4	14.6	0.74	LE

Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)

ASTM E384

WebCode	Data Flag	Sample S83 Lab Mean	Sample S83 Diff. from Grand Mean	Sample S83 CPV	Sample S84 Lab Mean	Sample S84 Diff. from Grand Mean	Sample S84 CPV	Instr Code
Q2TVEP		496.2	4.0	0.26	565.2	8.4	0.42	WT
Q43TZK		505.6	13.4	0.86	557.4	0.6	0.03	BU
QJ6H2R		474.2	-18.0	-1.16	544.0	-12.8	-0.64	LE
QQXUPR		488.8	-3.4	-0.22	539.4	-17.4	-0.88	MI
QRUJDZ	*	454.8	-37.4	-2.41	501.2	-55.6	-2.80	BU
RU6VTW		505.4	13.2	0.85	550.0	-6.8	-0.34	FU
T3N89A		478.1	-14.1	-0.91	535.4	-21.4	-1.08	LE
TGBR3W		518.6	26.4	1.70	571.4	14.6	0.74	LE
TY8E6E		485.4	-6.8	-0.44	543.4	-13.4	-0.67	WT
TZBJVB		489.4	-2.8	-0.18	552.2	-4.6	-0.23	LE
UGM92P	*	514.0	21.8	1.40	607.6	50.8	2.56	LE
UKJAAX		482.8	-9.4	-0.61	551.6	-5.2	-0.26	BU
UKM73M		498.2	6.0	0.38	586.4	29.6	1.49	ST
VHPP3D		481.5	-10.8	-0.69	543.9	-12.9	-0.65	WI
VJMY93		497.6	5.4	0.35	567.0	10.2	0.51	FU
VK862J		489.1	-3.2	-0.20	561.4	4.6	0.23	FU
VKTPWH		510.8	18.6	1.20	602.0	45.2	2.28	WT
WBARA6		494.2	2.0	0.13	574.6	17.8	0.90	CL
XAB49K		470.0	-22.2	-1.43	538.8	-18.0	-0.91	ST
YVHH4W		486.0	-6.3	-0.40	552.2	-4.6	-0.23	LE
ZHX96X		491.4	-0.8	-0.05	560.4	3.6	0.18	CL
ZQPPM2	X	541.8	49.5	3.19	583.7	26.9	1.35	BU
ZZYQ7M		489.5	-2.7	-0.17	535.9	-20.8	-1.05	MI

Summary Statistics

	Sample S83	Sample S84
Grand Means	492.24 HK 200 gf	556.80 HK 200 gf
Stnd Dev Btwn Labs	15.51 HK 200 gf	19.86 HK 200 gf

Statistics based on 65 of 68 reporting participants

Samples S83 , S84 **:** steel, steel

Comments on assigned Data Flags for Test #122

F48NZA (M) - Laboratory did not submit data for Sample S83.

F8JWEX (X) - High data for Sample S83 and inconsistent within the determinations for both samples.

ZQPPM2 (X) - High data for Sample S83.

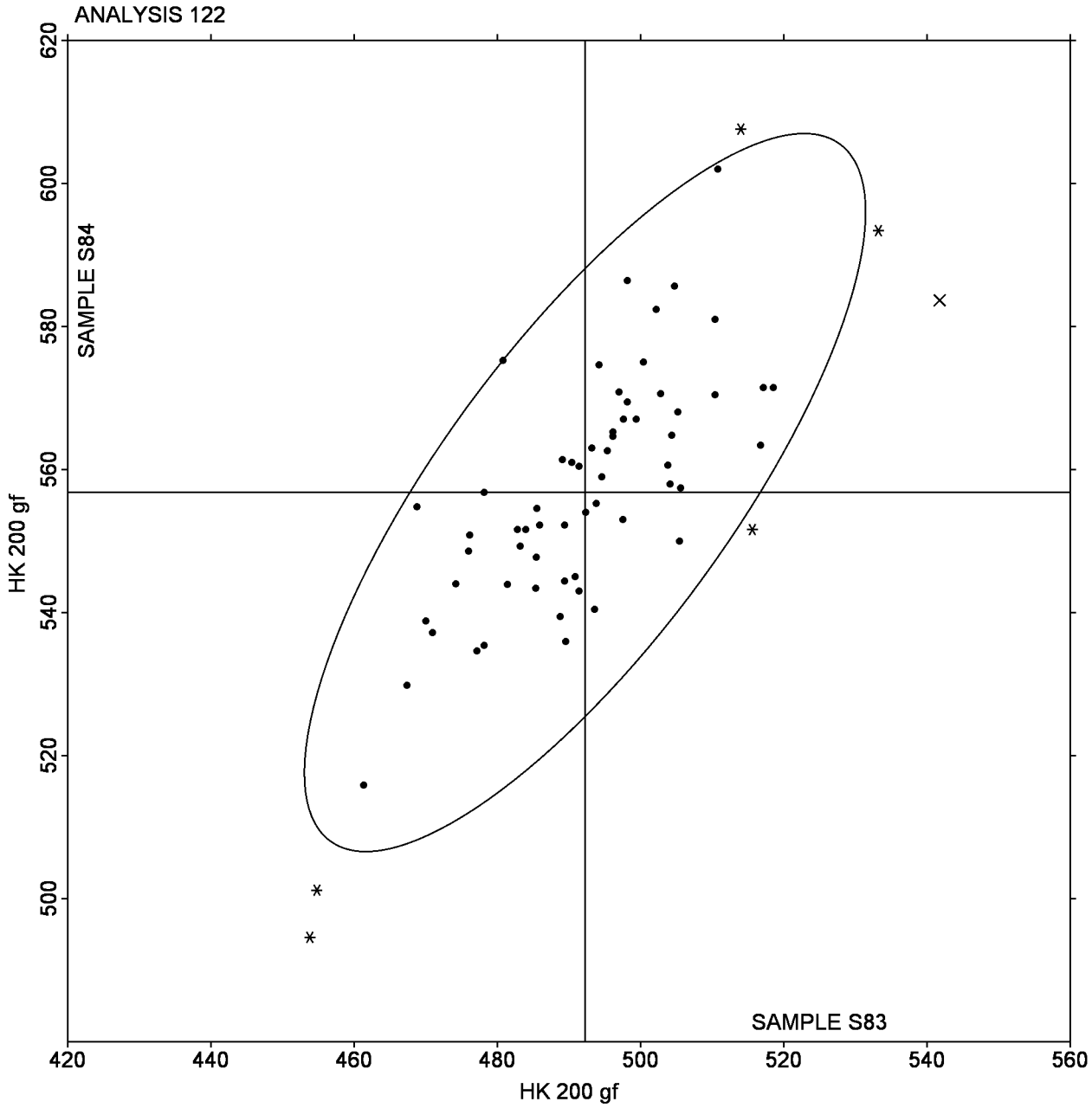
Interlaboratory Testing Program for Metals

Analysis 122

Microhardness - Knoop Hardness Number (200 gf)

ASTM E384

SAMPLE S83 = 492.24 HK 200 gf SAMPLE S84 = 556.80 HK 200 gf



Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

		Sample S83			Sample S84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2RWHPE		467.1	2.5	0.22	531.4	-0.8	-0.05	FU
478VAW		478.7	14.1	1.24	558.9	26.7	1.75	BU
4A6W6U		469.0	4.4	0.38	539.5	7.3	0.48	CL
4CDRB3	*	435.0	-29.7	-2.62	511.0	-21.2	-1.40	BU
4MFRWH		467.4	2.7	0.24	527.4	-4.8	-0.32	LE
4WRNY4		464.6	-0.1	-0.01	534.0	1.8	0.12	LE
4Z72BF		452.4	-12.3	-1.08	513.6	-18.6	-1.22	LE
636VLQ		448.2	-16.5	-1.45	516.2	-16.0	-1.05	WT
726TBL		455.4	-9.3	-0.82	527.4	-4.8	-0.32	BU
74GUHK		436.8	-27.9	-2.46	502.8	-29.4	-1.93	BU
7MJKVM		468.2	3.5	0.31	532.2	0.0	0.00	AK
7YKNMA		464.4	-0.2	-0.02	521.6	-10.6	-0.70	XX
8AWHC9	*	474.0	9.3	0.82	519.2	-13.0	-0.86	WT
8EMYFL		464.8	0.1	0.01	532.4	0.2	0.01	BU
8FEXUJ		471.0	6.3	0.56	559.2	27.0	1.77	CM
8NCN8U		465.0	0.3	0.03	536.4	4.2	0.27	CL
8X3YX3		478.0	13.3	1.18	539.8	7.6	0.50	BU
99YPR9		451.2	-13.5	-1.19	521.4	-10.8	-0.71	WT
9AMZJN		472.9	8.2	0.72	541.1	8.9	0.58	WT
9FGRC6		442.4	-22.3	-1.96	505.6	-26.6	-1.75	BU
9FUP3H		453.2	-11.5	-1.01	530.2	-2.0	-0.13	FU
9LXMJ9		461.2	-3.5	-0.31	524.4	-7.8	-0.51	CM
AMU8JR		467.6	2.9	0.26	538.4	6.2	0.41	FU
AMWQKP		465.6	0.9	0.08	520.5	-11.8	-0.77	LE
ANE87N		454.4	-10.3	-0.91	537.0	4.8	0.31	LI
ARPUB8		466.4	1.7	0.15	546.8	14.6	0.96	LE
B8A9MD		454.0	-10.7	-0.94	502.8	-29.4	-1.93	BU
BCAE8N		468.2	3.5	0.31	537.6	5.4	0.35	AK
BD7VRC		455.6	-9.1	-0.80	532.8	0.6	0.04	BU
C2QLVC		458.4	-6.3	-0.55	527.8	-4.4	-0.29	FU
C3ACGH		468.2	3.5	0.31	525.2	-7.0	-0.46	MA
CJ7MEZ		470.3	5.6	0.50	554.7	22.5	1.48	WT
CMR6Y7		460.4	-4.3	-0.38	529.0	-3.2	-0.21	LE
CN4VWN		460.8	-3.9	-0.34	535.0	2.8	0.18	WT
CPD28J		465.6	0.9	0.08	512.0	-20.2	-1.33	AW
CXP82E		443.6	-21.1	-1.86	503.2	-29.0	-1.91	CM
D7ZGU7		450.6	-14.1	-1.24	521.8	-10.4	-0.69	SH
DAUN8H		456.0	-8.7	-0.76	525.6	-6.6	-0.44	AK
DHYCHC	M				509.8	-22.4	-1.47	WT
DN2LN4	X	432.4	-32.3	-2.85	523.8	-8.4	-0.55	LE
DUFQNP		462.3	-2.4	-0.21	541.5	9.3	0.61	MA
DUGA4E		476.8	12.1	1.07	543.2	11.0	0.72	LE
DVCVKW		470.0	5.3	0.47	541.6	9.4	0.62	LE
EH4LJR		446.7	-18.0	-1.59	512.3	-19.9	-1.31	WT
ENWLUU		469.4	4.7	0.42	533.8	1.6	0.10	BU

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

WebCode	Data Flag	Sample S83 Lab Mean	Sample S83 Diff. from Grand Mean	Sample S83 CPV	Sample S84 Lab Mean	Sample S84 Diff. from Grand Mean	Sample S84 CPV	Instr Code
ERLBMT		471.2	6.5	0.58	530.6	-1.6	-0.11	AK
F9XVJ3		465.0	0.3	0.03	536.6	4.4	0.29	XX
FBJVJJ		452.8	-11.9	-1.05	515.4	-16.8	-1.11	BU
FJ9K3Z		458.1	-6.5	-0.58	512.7	-19.5	-1.28	LE
FZRMC9		468.0	3.3	0.29	535.8	3.6	0.24	AN
G22UAW		444.2	-20.4	-1.80	500.0	-32.2	-2.12	BU
GBY9XU		483.0	18.3	1.62	568.4	36.2	2.38	LE
GDR4PH		469.4	4.7	0.42	526.2	-6.0	-0.40	BU
GPDUVD		460.2	-4.4	-0.39	530.1	-2.2	-0.14	LE
GRJ8JU		473.3	8.6	0.76	546.8	14.6	0.96	BU
GTX64W		463.6	-1.1	-0.09	539.6	7.4	0.49	FU
HJ22AT		489.6	24.9	2.20	548.6	16.4	1.08	CL
J3LGKM		473.6	8.9	0.79	548.0	15.8	1.04	LE
JGN4VP		461.5	-3.1	-0.28	547.2	15.0	0.98	MI
JJB6XL		459.2	-5.5	-0.48	527.4	-4.8	-0.32	CL
JPMKTM		485.2	20.6	1.81	545.9	13.7	0.90	LE
KGAQF7		480.7	16.0	1.41	553.2	20.9	1.38	MA
KMCZLY		460.8	-3.9	-0.34	511.4	-20.8	-1.37	MI
KWBV34	*	494.2	29.5	2.61	567.2	35.0	2.30	WZ
LKTEW3		471.6	6.9	0.61	526.4	-5.8	-0.38	LE
MEU7LM		454.8	-9.9	-0.87	513.0	-19.2	-1.26	BU
MG8NVJ		454.2	-10.5	-0.92	530.0	-2.2	-0.15	XX
MVPFN8		476.1	11.4	1.01	529.6	-2.6	-0.17	BU
NEDHRY		470.2	5.5	0.49	540.4	8.2	0.54	WT
NH4U9P		467.8	3.1	0.28	538.0	5.8	0.38	MI
NKAJ7R		470.8	6.1	0.54	530.6	-1.6	-0.11	SH
NNKR7W		459.8	-4.9	-0.43	513.8	-18.4	-1.21	BU
NU4GNZ		484.4	19.7	1.74	540.8	8.6	0.56	XX
NVF3CF	X	448.8	-15.9	-1.40	543.8	11.6	0.76	SH
P3E468		463.6	-1.1	-0.09	528.2	-4.0	-0.26	CL
PBRZ8T		473.7	9.0	0.79	540.1	7.9	0.52	MI
PFHWJ7		468.8	4.1	0.36	538.0	5.8	0.38	BU
Q2RLA7		488.2	23.5	2.08	557.4	25.2	1.66	WT
Q7BXQ3	X	507.6	42.9	3.79	589.2	57.0	3.75	BU
Q9K37B		474.3	9.6	0.85	546.1	13.9	0.91	BU
R8CKB6		466.4	1.7	0.15	544.6	12.4	0.81	WZ
RE46VJ		446.9	-17.8	-1.57	510.8	-21.5	-1.41	LE
RGQFJK		461.6	-3.1	-0.27	519.2	-13.0	-0.86	BU
TKV2JJ		476.8	12.1	1.07	554.6	22.4	1.47	BU
TMLTMR		463.8	-0.9	-0.08	524.2	-8.0	-0.53	WT
TR4VZ6		468.2	3.5	0.31	546.4	14.2	0.93	FU
U9C7FN		460.2	-4.5	-0.39	540.2	8.0	0.52	LE
UHUPRT		467.6	2.9	0.26	547.8	15.6	1.02	MI
V62K28		473.8	9.1	0.81	532.8	0.6	0.04	CL
VDCW7R		448.2	-16.5	-1.45	513.6	-18.6	-1.22	LE

Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

WebCode	Data Flag	Sample S83 Lab Mean	Sample S83 Diff. from Grand Mean	Sample S83 CPV	Sample S84 Lab Mean	Sample S84 Diff. from Grand Mean	Sample S84 CPV	Instr Code
VGTD2H		474.0	9.3	0.82	551.8	19.6	1.29	WT
VPZAT3		468.4	3.7	0.33	531.9	-0.3	-0.02	MI
VT8B7L		477.6	12.9	1.14	557.4	25.2	1.66	LE
VWREUY		470.4	5.7	0.50	532.9	0.7	0.05	EM
W7ZDRK		452.4	-12.3	-1.08	522.0	-10.2	-0.67	ST
WYVU6Z		451.2	-13.5	-1.19	510.0	-22.2	-1.46	CL
XAN48A		467.6	2.9	0.26	539.6	7.4	0.49	CL
XKJDGC		450.2	-14.4	-1.27	524.6	-7.6	-0.50	FU
XRFG3Z	*	485.2	20.5	1.81	573.4	41.2	2.71	LE
XRKVHV		454.2	-10.5	-0.92	517.2	-15.0	-0.99	LE
YZFZDW		457.2	-7.5	-0.66	528.0	-4.2	-0.28	ST
Z3623B		454.2	-10.5	-0.92	516.7	-15.5	-1.02	BU
Z73XYC		460.8	-3.9	-0.34	524.2	-8.0	-0.53	BU
Z97V2R		481.4	16.7	1.48	539.4	7.2	0.47	WI
ZMHFDR		464.5	-0.2	-0.02	540.4	8.2	0.54	LE
ZMYTEA		472.5	7.8	0.69	543.1	10.9	0.72	SH
ZNXQ83		462.0	-2.7	-0.24	520.2	-12.0	-0.79	LE

Summary Statistics

	Sample S83	Sample S84
Grand Means	464.67 HV 500 gf	532.20 HV 500 gf
Stnd Dev Btwn Labs	11.34 HV 500 gf	15.21 HV 500 gf

Statistics based on 103 of 107 reporting participants

Samples S83 , S84 **:** steel, steel

Comments on assigned Data Flags for Test #123

DHYCHC (M) - Laboratory did not submit data for Sample S83.

DN2LN4 (X) - Low data for Sample S83.

NVF3CF (X) - Inconsistent in testing between samples.

Q7BXQ3 (X) - Data for both samples are high. Possible systematic error.

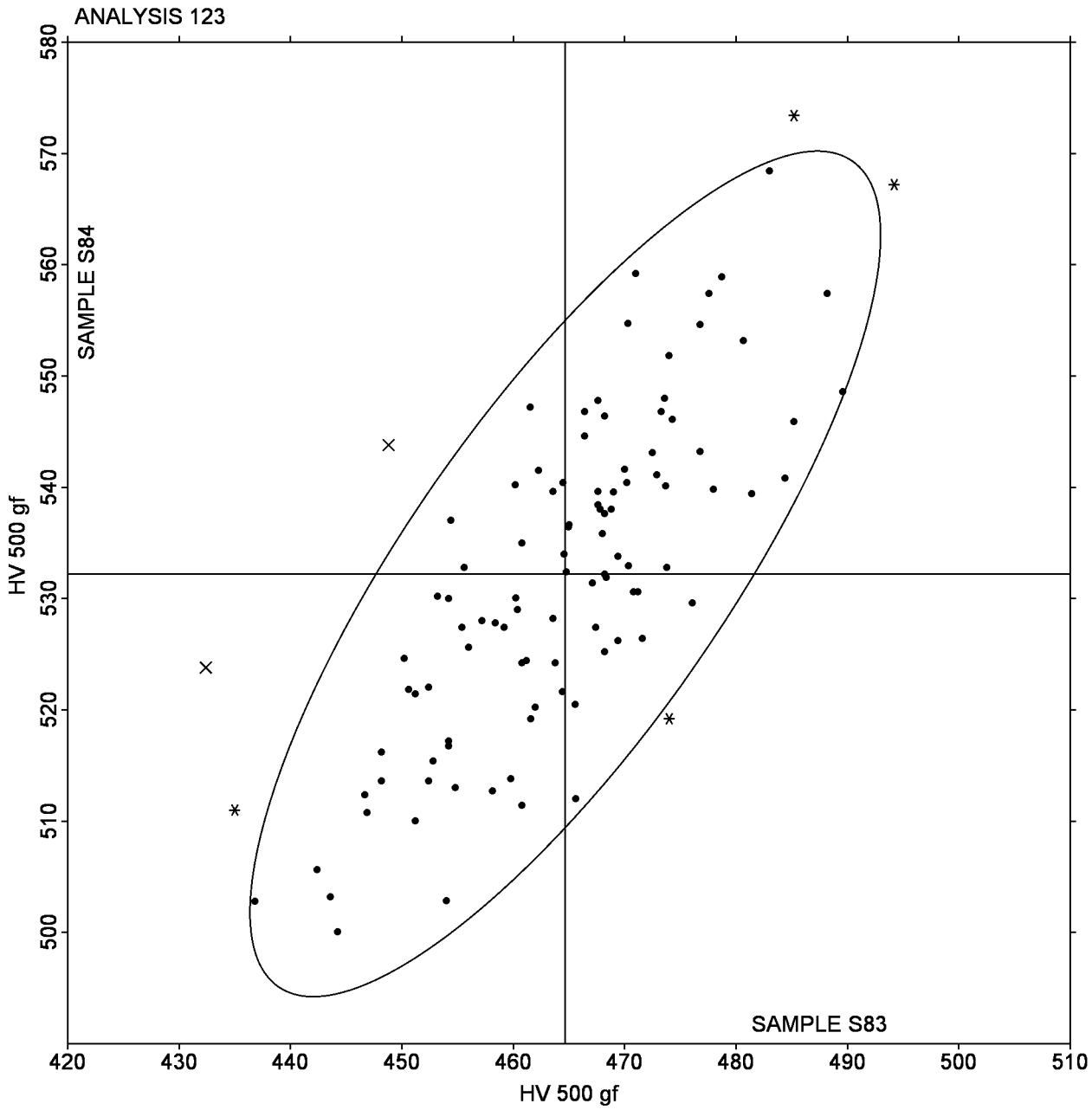
Interlaboratory Testing Program for Metals

Analysis 123

Microhardness - Vickers Hardness Number (500 gf)

ASTM E384

SAMPLE S83 = 464.67 HV 500 gf SAMPLE S84 = 532.20 HV 500 gf



Interlaboratory Testing Program for Metals

Analysis 135
Brinell Hardness - HBW
ASTM E10

		Sample D83			Sample D84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2QH4FX		352.0	6.4	0.99	412.2	16.1	1.81	TI
2VGXKL		352.0	6.4	0.99	409.4	13.3	1.49	XX
34B2H2		345.4	-0.2	-0.03	388.0	-8.1	-0.92	RI
3UHL3R		348.8	3.2	0.50	400.8	4.7	0.52	TI
48JLKM		341.0	-4.6	-0.71	388.0	-8.1	-0.92	DE
4UBUNF	*	363.0	17.4	2.70	415.0	18.9	2.13	KI
69NJ6U		356.6	11.0	1.71	398.6	2.5	0.28	ER
6CVXU9	X	3.3	-342.3	-53.08	3.1	-393.0	-44.31	DE
6HZ4NB		341.0	-4.6	-0.71	401.0	4.9	0.55	PI
7CHW96		345.0	-0.6	-0.09	409.0	12.9	1.45	KI
7CLG7L		341.0	-4.6	-0.71	385.4	-10.7	-1.21	DE
9FJ2BM		341.0	-4.6	-0.71	395.8	-0.3	-0.04	WI
9RADLU		342.0	-3.6	-0.56	393.2	-2.9	-0.33	DE
9U2WH7		332.6	-13.0	-2.02	384.6	-11.5	-1.30	NA
9X2MXT		351.4	5.8	0.90	400.2	4.1	0.46	AL
9ZKNTY		352.0	6.4	0.99	388.0	-8.1	-0.92	LS
A72MMR		346.6	1.0	0.15	398.0	1.9	0.21	DE
B3MAEH		333.4	-12.2	-1.89	379.6	-16.5	-1.87	ST
BED4K6		341.0	-4.6	-0.71	388.0	-8.1	-0.92	DE
BNME4G		340.8	-4.8	-0.74	391.6	-4.5	-0.51	WI
BUL826		345.8	0.2	0.03	399.4	3.3	0.37	TI
BUR6JF		344.6	-1.0	-0.16	398.0	1.9	0.21	DE
BWVAZV		352.0	6.4	0.99	401.0	4.9	0.55	WI
C3DUNU		338.0	-7.6	-1.18	385.6	-10.5	-1.19	RI
C3GECX		338.2	-7.4	-1.15	388.8	-7.3	-0.83	SU
C7WCY8	X	269.0	-76.6	-11.88	415.0	18.9	2.13	TI
CZCXVR		354.2	8.6	1.33	395.8	-0.3	-0.04	WI
DG2M68		341.0	-4.6	-0.71	388.0	-8.1	-0.92	TI
DKV8QX		343.0	-2.6	-0.40	398.0	1.9	0.21	TI
EFDE2G		345.0	-0.6	-0.09	388.0	-8.1	-0.92	XX
EP2BZW		349.8	4.2	0.65	405.8	9.7	1.09	NS
FUA7ZD		354.0	8.4	1.30	402.8	6.7	0.75	KI
G2E4TN		352.4	6.8	1.05	402.0	5.9	0.66	AV
G4Y3TR		352.0	6.4	0.99	415.0	18.9	2.13	TI
GTC6PF	*	363.0	17.4	2.70	415.0	18.9	2.13	KI
GV6W4K		341.0	-4.6	-0.71	388.0	-8.1	-0.92	RI
JH8QTK		340.2	-5.4	-0.84	388.4	-7.7	-0.87	LS
JJ2JQ4		347.0	1.4	0.22	404.0	7.9	0.89	ST
JKXURY	*	347.6	2.0	0.31	416.0	19.9	2.24	EM
K3Q2KA		341.0	-4.6	-0.71	392.4	-3.7	-0.42	TI
K9KVRN		355.0	9.4	1.46	393.0	-3.1	-0.35	AM
KRADKW		341.0	-4.6	-0.71	406.6	10.5	1.18	NA
N2BQKN		344.6	-1.0	-0.16	397.8	1.7	0.19	TO
NC9UBN		345.8	0.2	0.03	392.8	-3.3	-0.38	RI
NGUCD8		341.0	-4.6	-0.71	401.0	4.9	0.55	DE

Interlaboratory Testing Program for Metals

Analysis 135
Brinell Hardness - HBW
ASTM E10

WebCode	Data Flag	Sample D83 Lab Mean	Sample D83 Diff. from Grand Mean	Sample D83 CPV	Sample D84 Lab Mean	Sample D84 Diff. from Grand Mean	Sample D84 CPV	Instr Code
NXC6A3		344.0	-1.6	-0.25	401.0	4.9	0.55	DE
PEA6QB		348.3	2.7	0.42	397.3	1.1	0.13	EM
PXNL9V		339.0	-6.6	-1.02	385.2	-10.9	-1.23	TI
R477DZ		346.8	1.2	0.19	398.8	2.7	0.30	DE
R7UNJR		341.0	-4.6	-0.71	388.0	-8.1	-0.92	XX
RFVT22		349.7	4.1	0.64	401.5	5.3	0.60	MA
TDMHM4		344.2	-1.4	-0.22	392.4	-3.7	-0.42	DE
U8DY2P		341.0	-4.6	-0.71	388.8	-7.3	-0.83	RI
UK3FUM		337.0	-8.6	-1.33	388.0	-8.1	-0.92	ST
UKYDA4		353.6	8.0	1.24	391.2	-4.9	-0.56	DE
UUHX3E		352.0	6.4	0.99	401.0	4.9	0.55	WI
W996R9	X	394.2	48.6	7.54	350.0	-46.1	-5.20	NA
WKUU2J		341.6	-4.0	-0.62	389.0	-7.1	-0.81	ST
X99WLD	X	341.0	-4.6	-0.71	415.0	18.9	2.13	TI
XY6RN6		341.0	-4.6	-0.71	388.8	-7.3	-0.83	SA
ZDX38T		341.0	-4.6	-0.71	388.0	-8.1	-0.92	DE
ZQN3UF		341.0	-4.6	-0.71	388.0	-8.1	-0.92	AM

Summary Statistics

	Sample D83	Sample D84
Grand Means	345.60 HBW	396.10 HBW
Stnd Dev Btwn Labs	6.45 HBW	8.87 HBW

Statistics based on 58 of 62 reporting participants

Samples D83 , D84 : steel, steel

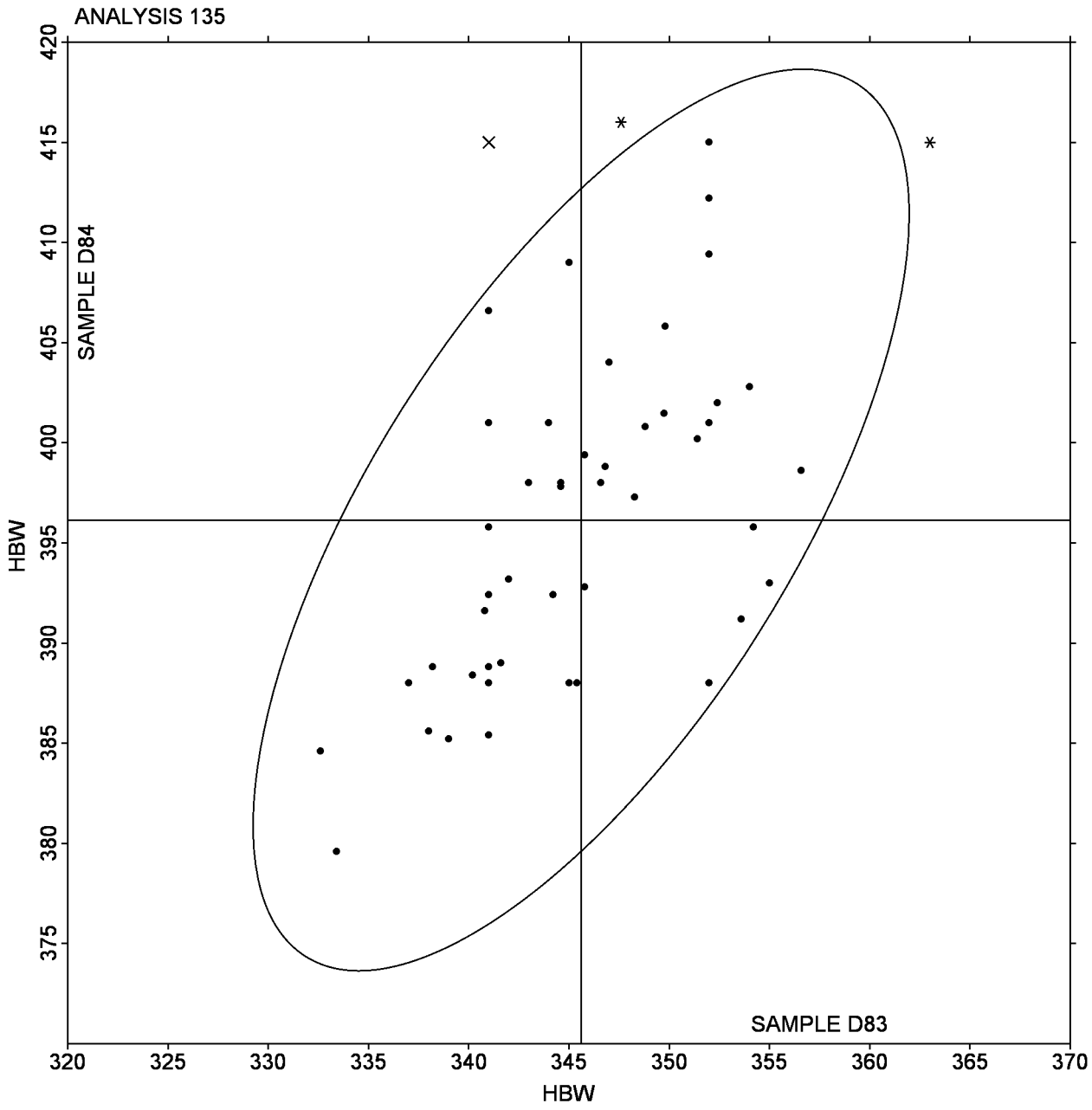
Comments on assigned Data Flags for Test #135

6CVXU9 (X) - Data were reported in mm instead of HBW.
C7WCY8 (X) - Low data for Sample D83.
W996R9 (X) - Data appear to be transposed between samples.
X99WLD (X) - Inconsistent in testing between samples.

Interlaboratory Testing Program for Metals

Analysis 135
Brinell Hardness - HBW
ASTM E10

SAMPLE D83 = 345.60 HBW SAMPLE D84 = 396.10 HBW



Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent

CARBON (C)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2ED8T4	*	0.329	0.011	1.05	0.438	0.029	2.30	OE
2HPL2C		0.315	-0.003	-0.26	0.391	-0.018	-1.38	OE
2LHXGT		0.318	0.000	0.02	0.416	0.008	0.63	OE
2U6GMF		0.300	-0.018	-1.75	0.398	-0.010	-0.78	CI
2XK9A3		0.341	0.023	2.15	0.427	0.019	1.49	OE
3CFVYG		0.327	0.009	0.88	0.427	0.019	1.49	OE
3L88HP		0.314	-0.004	-0.42	0.390	-0.019	-1.46	OE
42EUA4		0.312	-0.006	-0.57	0.394	-0.014	-1.13	OE
4A4KKP		0.319	0.001	0.08	0.409	0.001	0.09	CI
4GAB2M		0.319	0.001	0.07	0.404	-0.005	-0.37	OE
67MAJR	X	0.201	-0.117	-11.16	0.247	-0.162	-12.68	OE
686FWC		0.302	-0.016	-1.56	0.402	-0.007	-0.52	OE
6TTA4W	*	0.344	0.026	2.45	0.443	0.035	2.72	OE
73KJFQ		0.316	-0.002	-0.17	0.423	0.015	1.15	OE
7U2QUE		0.309	-0.009	-0.83	0.404	-0.004	-0.30	XX
7ZGZP6	X	0.330	0.012	1.16	0.462	0.054	4.21	OE
8B93AJ		0.313	-0.005	-0.51	0.396	-0.012	-0.97	OE
8FQDJM		0.331	0.013	1.23	0.421	0.013	1.02	OE
8GD4EY		0.307	-0.011	-1.05	0.408	-0.001	-0.05	CO
8XU9DX		0.327	0.009	0.88	0.428	0.020	1.57	OE
8ZZRDF		0.322	0.004	0.34	0.416	0.007	0.58	CI
9HGBUH		0.324	0.006	0.53	0.415	0.007	0.52	OE
9QYN7N	X	0.351	0.033	3.10	0.454	0.046	3.58	OE
9ZR83H		0.305	-0.013	-1.24	0.408	-0.001	-0.05	OE
A28V3L		0.303	-0.015	-1.46	0.388	-0.020	-1.57	OE
APPQV8		0.319	0.001	0.09	0.409	0.001	0.05	OE
AVGKX6		0.337	0.019	1.83	0.397	-0.012	-0.91	OE
AY7PR3		0.317	-0.001	-0.10	0.408	0.000	-0.03	OE
B4AWRD		0.344	0.026	2.43	0.409	0.000	0.03	GD
B7XFRN		0.317	-0.001	-0.10	0.405	-0.004	-0.29	OE
BBG3Q8		0.343	0.025	2.34	0.437	0.029	2.27	GD
BNMX3L		0.300	-0.018	-1.69	0.418	0.010	0.76	CO
BQ4XUD	X	0.344	0.026	2.49	0.398	-0.010	-0.78	OE
BWT2RG		0.317	-0.001	-0.07	0.399	-0.010	-0.76	OE
CTDPTQ		0.342	0.024	2.30	0.439	0.030	2.38	OE
CVMPXX		0.330	0.012	1.13	0.413	0.005	0.39	OE
CWVHWL		0.315	-0.003	-0.26	0.407	-0.001	-0.10	CI
DG9H88		0.313	-0.005	-0.51	0.404	-0.004	-0.34	CO
ERNRBR		0.328	0.010	0.97	0.417	0.008	0.65	OE
EW3CGQ		0.317	-0.001	-0.13	0.410	0.002	0.13	OE
EYUCR9	X	0.348	0.030	2.84	0.454	0.046	3.58	OE
F4LYZM	*	0.288	-0.030	-2.83	0.387	-0.022	-1.70	CI
FGD62P		0.327	0.009	0.88	0.433	0.025	1.96	OE
G26F29		0.324	0.006	0.56	0.402	-0.007	-0.52	OE
GCZPBB		0.317	-0.001	-0.09	0.408	0.000	0.01	OE

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent

CARBON (C)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
GD82RE		0.324	0.006	0.53	0.408	0.000	-0.03	CI
GELCQR		0.338	0.020	1.92	0.421	0.013	1.02	DR
GMTEPX		0.326	0.008	0.75	0.411	0.003	0.21	OE
HRL4TH		0.316	-0.002	-0.17	0.405	-0.004	-0.29	CI
J389FT		0.342	0.024	2.30	0.428	0.020	1.57	OE
JN3UEV	*	0.292	-0.026	-2.45	0.393	-0.015	-1.20	IR
KHPL6P		0.327	0.009	0.82	0.413	0.005	0.39	OE
KMAFK4		0.324	0.006	0.59	0.384	-0.025	-1.93	OE
KT7NMQ		0.315	-0.003	-0.29	0.400	-0.008	-0.65	OE
KZH3YF		0.313	-0.005	-0.48	0.406	-0.002	-0.16	OE
L32LBX		0.325	0.007	0.63	0.415	0.007	0.55	OE
LGTB3V		0.314	-0.004	-0.36	0.417	0.008	0.65	CI
LU33LA		0.320	0.002	0.15	0.395	-0.014	-1.07	XX
M33NN9		0.310	-0.008	-0.77	0.390	-0.018	-1.44	CO
MBVW9Y		0.312	-0.006	-0.61	0.408	0.000	-0.03	OE
MUCCXR		0.320	0.002	0.18	0.396	-0.012	-0.94	OE
MXUR9K	X	0.282	-0.036	-3.40	0.395	-0.013	-1.02	CO
MY2KWL		0.320	0.002	0.18	0.400	-0.008	-0.65	GD
N24QVE		0.317	-0.001	-0.13	0.440	0.032	2.48	OE
N33Y7W		0.316	-0.002	-0.23	0.405	-0.003	-0.23	CI
N66WGP		0.321	0.003	0.31	0.401	-0.007	-0.55	OE
NAX289		0.313	-0.005	-0.48	0.409	0.001	0.08	OE
NKHDCL		0.317	-0.001	-0.10	0.411	0.003	0.23	OE
P762YK		0.322	0.004	0.38	0.407	-0.001	-0.11	OE
P8LHKJ		0.331	0.013	1.20	0.393	-0.015	-1.18	OE
PQP2Z9		0.312	-0.006	-0.58	0.400	-0.008	-0.65	OE
PZAKXY		0.313	-0.005	-0.48	0.388	-0.020	-1.59	OE
Q7XVZM		0.323	0.005	0.50	0.424	0.016	1.23	CI
QEURRB		0.326	0.008	0.72	0.423	0.015	1.15	OE
QGQYXV		0.313	-0.005	-0.48	0.403	-0.005	-0.42	DR
QLRDYX		0.320	0.002	0.18	0.400	-0.008	-0.65	OE
QNB6UF		0.302	-0.016	-1.50	0.396	-0.012	-0.94	CI
RBPCYY		0.320	0.002	0.21	0.407	-0.001	-0.08	OE
RKU3DP		0.316	-0.002	-0.17	0.401	-0.007	-0.55	OE
T8KB8Z		0.320	0.002	0.21	0.428	0.019	1.52	DR
TKJP2X		0.323	0.005	0.48	0.404	-0.004	-0.30	DR
TMNCNP		0.317	-0.001	-0.13	0.406	-0.003	-0.21	OE
TVDA6W		0.319	0.001	0.09	0.414	0.006	0.44	OE
UQDLNM		0.315	-0.003	-0.29	0.403	-0.005	-0.39	OE
UZ7LWK		0.330	0.012	1.13	0.417	0.008	0.65	CI
V6X6EW		0.316	-0.002	-0.17	0.417	0.009	0.71	CI
VB9439		0.327	0.009	0.88	0.409	0.000	0.03	OE
VEQHHF		0.297	-0.021	-2.00	0.377	-0.031	-2.43	OE
VK9V9N		0.319	0.001	0.09	0.405	-0.003	-0.26	OE
VXHD9G		0.310	-0.008	-0.77	0.402	-0.006	-0.50	OE

Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent

CARBON (C)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
WBXXXP		0.313	-0.005	-0.45	0.408	0.000	-0.03	OE
WH9JHD		0.311	-0.007	-0.70	0.403	-0.005	-0.38	OE
WXBRYU		0.325	0.007	0.66	0.415	0.006	0.50	IR
XBPLGX		0.310	-0.008	-0.77	0.390	-0.018	-1.44	GD
XCQZLJ		0.318	0.000	0.04	0.415	0.006	0.49	OE
XN64X9		0.312	-0.006	-0.58	0.393	-0.015	-1.20	CO
XV8BJ4		0.323	0.005	0.50	0.405	-0.003	-0.26	CI
XXHWLC		0.307	-0.011	-1.08	0.400	-0.008	-0.65	IR
XZYLF9		0.326	0.008	0.78	0.424	0.015	1.20	OE
Y4TZ3V		0.323	0.005	0.50	0.414	0.006	0.44	OE
Y9A3QE		0.310	-0.008	-0.77	0.400	-0.008	-0.65	OE
YCVB88		0.307	-0.011	-1.05	0.406	-0.002	-0.18	CI
YDGLE9		0.328	0.010	0.91	0.417	0.009	0.67	OE
ZV74F3		0.295	-0.023	-2.16	0.387	-0.022	-1.70	CO

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.3181 Percent	0.4080 Percent
Stnd Dev Btwn Labs	0.0105 Percent	0.0128 Percent

Statistics based on 92 of 104 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #170

67MAJR (X) - Data for both samples are low.
7ZGZP6 (X) - High data for Sample L84.
9QYN7N (X) - Data for both samples are high.
BQ4XUD (X) - Inconsistent within the determinations for Sample L84.
EYUCR9 (X) - Data for both samples are high.
MXUR9K (X) - Low data for Sample L83.

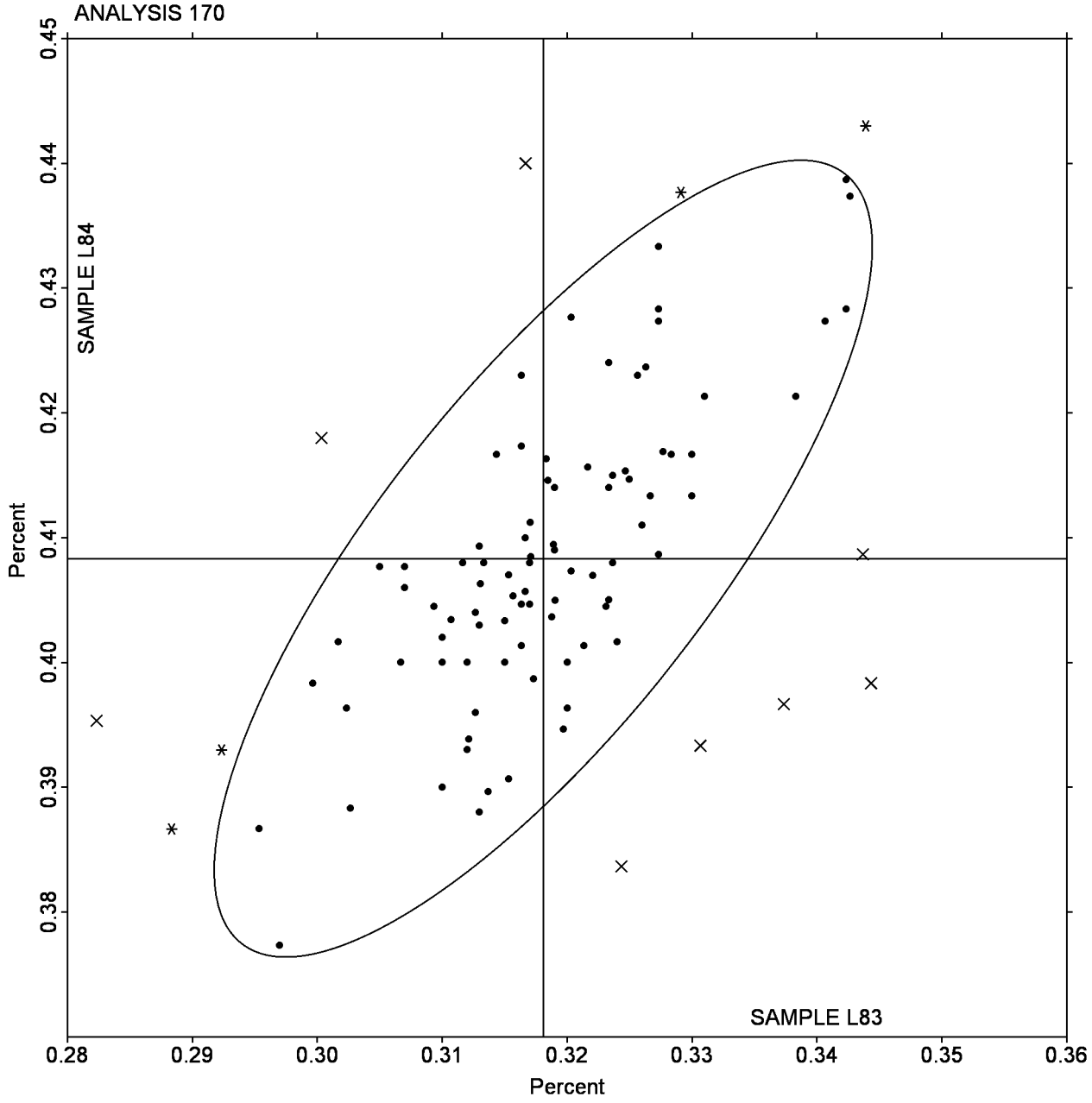
Interlaboratory Testing Program for Metals

Analysis 170

Chemical Analysis Element #1 - Carbon & Low Alloy Steel - Percent

CARBON (C)

SAMPLE L83 = 0.3181 Percent SAMPLE L84 = 0.4080 Percent



Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
26GBLV		0.706	0.000	-0.02	0.669	0.004	0.42	OE
2AUQ26		0.692	-0.015	-1.72	0.648	-0.018	-1.85	OE
2FV3KH		0.709	0.002	0.27	0.663	-0.002	-0.17	OE
2KEXZU	X	0.636	-0.070	-8.13	0.604	-0.061	-6.41	OE
2W7TRU		0.708	0.001	0.14	0.669	0.004	0.38	OE
2WUTBE		0.711	0.005	0.52	0.670	0.005	0.49	OE
3B9JEZ	*	0.687	-0.019	-2.24	0.656	-0.009	-0.98	IC
3KGGF3		0.704	-0.002	-0.25	0.667	0.002	0.24	OE
3L7CTD		0.717	0.010	1.18	0.687	0.022	2.28	DC
48NY44	*	0.729	0.023	2.61	0.685	0.020	2.07	OE
4B2RZ9		0.717	0.010	1.18	0.670	0.005	0.52	OE
4V6PZH		0.701	-0.005	-0.60	0.663	-0.002	-0.25	OE
6U88NN	*	0.700	-0.006	-0.75	0.642	-0.023	-2.43	OE
6XG3VX		0.725	0.019	2.18	0.679	0.014	1.47	OE
7BBHWK		0.704	-0.002	-0.25	0.673	0.008	0.80	IC
7BRMCX		0.704	-0.003	-0.33	0.661	-0.004	-0.46	OE
7LXD97		0.708	0.002	0.18	0.667	0.002	0.17	OE
7R3WDG		0.703	-0.003	-0.37	0.650	-0.015	-1.59	OE
7W9YCK		0.707	0.000	0.02	0.667	0.002	0.17	OE
7Z7TKL		0.705	-0.001	-0.12	0.664	-0.001	-0.09	OE
8DERHZ		0.718	0.012	1.33	0.672	0.007	0.77	OE
8Q7LBM		0.714	0.007	0.83	0.671	0.006	0.66	DR
8RJBEY		0.704	-0.002	-0.29	0.666	0.001	0.06	OE
8UGHDW		0.707	0.001	0.06	0.670	0.005	0.52	OE
93BXNL		0.702	-0.005	-0.56	0.664	-0.001	-0.11	OE
993LKX		0.712	0.006	0.68	0.665	0.000	-0.01	DR
9CQUJE		0.721	0.015	1.72	0.642	-0.023	-2.43	GD
AX7PHC		0.710	0.004	0.41	0.670	0.005	0.52	OE
B7FERU	*	0.706	0.000	-0.06	0.683	0.018	1.86	OE
B7KTMF		0.707	0.000	0.05	0.664	-0.001	-0.15	OE
BBEVHU		0.707	0.001	0.06	0.659	-0.006	-0.68	OE
BFN79N		0.704	-0.003	-0.31	0.664	-0.001	-0.11	OE
BG97VK		0.700	-0.006	-0.70	0.657	-0.008	-0.88	XX
CFTLMP		0.704	-0.002	-0.29	0.665	0.000	-0.04	OE
CU9U9E		0.698	-0.008	-0.98	0.650	-0.015	-1.59	OE
CX2ZHA		0.709	0.003	0.33	0.654	-0.011	-1.20	OE
CZLYMR		0.707	0.000	0.02	0.655	-0.010	-1.10	OE
D3RJDD		0.707	0.001	0.06	0.660	-0.005	-0.53	DR
D8VTWZ		0.707	0.000	0.02	0.667	0.002	0.17	OE
DEK3RH		0.708	0.001	0.14	0.660	-0.005	-0.50	OE
DEW7P4		0.687	-0.019	-2.26	0.644	-0.021	-2.22	OE
DLCNCW		0.710	0.004	0.41	0.667	0.002	0.17	OE
DMBVLG	X	0.733	0.027	3.11	0.700	0.035	3.69	GD
DU7Z66	X	0.729	0.023	2.65	0.699	0.034	3.62	GD
DY267J		0.705	-0.001	-0.13	0.664	-0.001	-0.08	OE

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
E7DRBK		0.709	0.002	0.25	0.670	0.005	0.56	OE
EFGY3D		0.703	-0.003	-0.40	0.663	-0.002	-0.18	OE
EGTKRE		0.706	-0.001	-0.11	0.667	0.002	0.18	OE
ERYP9G		0.709	0.003	0.29	0.667	0.002	0.20	XR
ETQFXA		0.698	-0.008	-0.98	0.656	-0.009	-0.92	OE
F8HKM7		0.718	0.012	1.33	0.681	0.016	1.65	DR
FQ4NNB		0.711	0.005	0.52	0.673	0.008	0.84	OE
FR4TAY	*	0.726	0.020	2.26	0.674	0.009	0.98	OE
FT4YAX		0.693	-0.013	-1.53	0.650	-0.015	-1.59	OE
FZMM4M		0.706	0.000	-0.06	0.677	0.012	1.26	WD
G8PRJ6		0.703	-0.003	-0.40	0.665	0.000	-0.01	OE
GBM2VR	*	0.727	0.020	2.34	0.673	0.008	0.84	DR
GRQHVY		0.710	0.004	0.41	0.663	-0.002	-0.18	OE
H3J2DV		0.710	0.003	0.37	0.665	0.000	-0.04	OE
H6ZNGP		0.710	0.004	0.41	0.670	0.005	0.52	OE
HE3GNQ		0.722	0.016	1.84	0.680	0.015	1.61	OE
HYR4KT		0.690	-0.017	-1.93	0.642	-0.023	-2.40	OE
JYK2YK		0.705	-0.002	-0.21	0.666	0.001	0.06	OE
K6NEDA		0.700	-0.006	-0.71	0.659	-0.006	-0.64	OE
LAEJJP		0.710	0.004	0.41	0.667	0.002	0.17	OE
LDMFYD		0.702	-0.004	-0.48	0.661	-0.004	-0.43	OE
LY4UHF		0.696	-0.011	-1.27	0.655	-0.010	-1.08	OE
LYKYUY		0.723	0.017	1.95	0.675	0.010	1.08	OE
M4EEZX		0.717	0.011	1.22	0.671	0.006	0.59	OE
MERHY4		0.708	0.002	0.21	0.665	0.000	-0.04	OE
MTRD7G		0.698	-0.008	-0.98	0.671	0.006	0.59	OE
NNW3KW	*	0.703	-0.004	-0.42	0.677	0.012	1.27	IC
NR4AG9		0.707	0.001	0.10	0.666	0.001	0.06	OE
NU8HRR		0.710	0.004	0.45	0.671	0.006	0.66	DR
NUBZYH		0.705	-0.002	-0.18	0.659	-0.006	-0.66	OE
NUKD6T		0.693	-0.013	-1.51	0.657	-0.008	-0.89	OE
NW6EZE		0.700	-0.006	-0.71	0.664	-0.001	-0.11	OE
PB8CQK		0.690	-0.017	-1.92	0.655	-0.010	-1.10	OE
PPKRFM		0.697	-0.010	-1.14	0.655	-0.010	-1.06	OE
QH44H6		0.712	0.006	0.68	0.673	0.008	0.87	OE
QJG79K		0.711	0.005	0.52	0.667	0.002	0.24	OE
RWVTPF		0.694	-0.013	-1.49	0.656	-0.009	-0.96	OE
RZYJXG		0.707	0.000	0.02	0.667	0.002	0.17	GD
T6YU8M		0.708	0.002	0.18	0.668	0.003	0.31	IC
U93JDM		0.716	0.010	1.14	0.683	0.018	1.89	OE
UEMHWU		0.714	0.007	0.83	0.657	-0.008	-0.82	OE
UM38JV		0.706	0.000	-0.02	0.660	-0.005	-0.53	OE
VGXAU8		0.715	0.009	1.03	0.677	0.012	1.26	OE
VWFZYG		0.700	-0.007	-0.79	0.655	-0.010	-1.10	OE
VZXK8K		0.708	0.002	0.21	0.664	-0.001	-0.08	OE

Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
W9ALXX		0.712	0.006	0.64	0.670	0.005	0.49	OE
WGYTFJ		0.710	0.004	0.41	0.663	-0.002	-0.18	OE
X7CKBT		0.700	-0.007	-0.79	0.654	-0.011	-1.20	OE
XELLG9		0.703	-0.004	-0.44	0.669	0.004	0.42	IC
XMEWTP		0.714	0.008	0.91	0.677	0.012	1.30	OE
XNFJLB	*	0.683	-0.024	-2.76	0.647	-0.018	-1.94	OE
XPE7KT		0.702	-0.004	-0.52	0.670	0.005	0.56	OE
XXGH9G		0.708	0.001	0.14	0.672	0.007	0.77	OE
Y68GEP		0.694	-0.012	-1.45	0.645	-0.020	-2.08	OE
YR4P8C		0.703	-0.003	-0.37	0.661	-0.004	-0.43	OE
ZLMVEJ	X	0.737	0.031	3.58	0.690	0.025	2.60	OE
ZRKEWA		0.714	0.008	0.91	0.677	0.012	1.30	OE
ZRZPHV		0.717	0.010	1.18	0.677	0.012	1.23	DR

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.7065 Percent	0.6650 Percent
Stnd Dev Btwn Labs	0.0086 Percent	0.0095 Percent

Statistics based on 98 of 103 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #171

2KEXZU (X) - Data for both samples are low. Inconsistent within the determinations for Sample L83.

DMBVLG (X) - Data for both samples are high. Possible systematic error.

DU7Z66 (X) - High data for Sample L84.

ZLMVEJ (X) - High data for Sample L83.

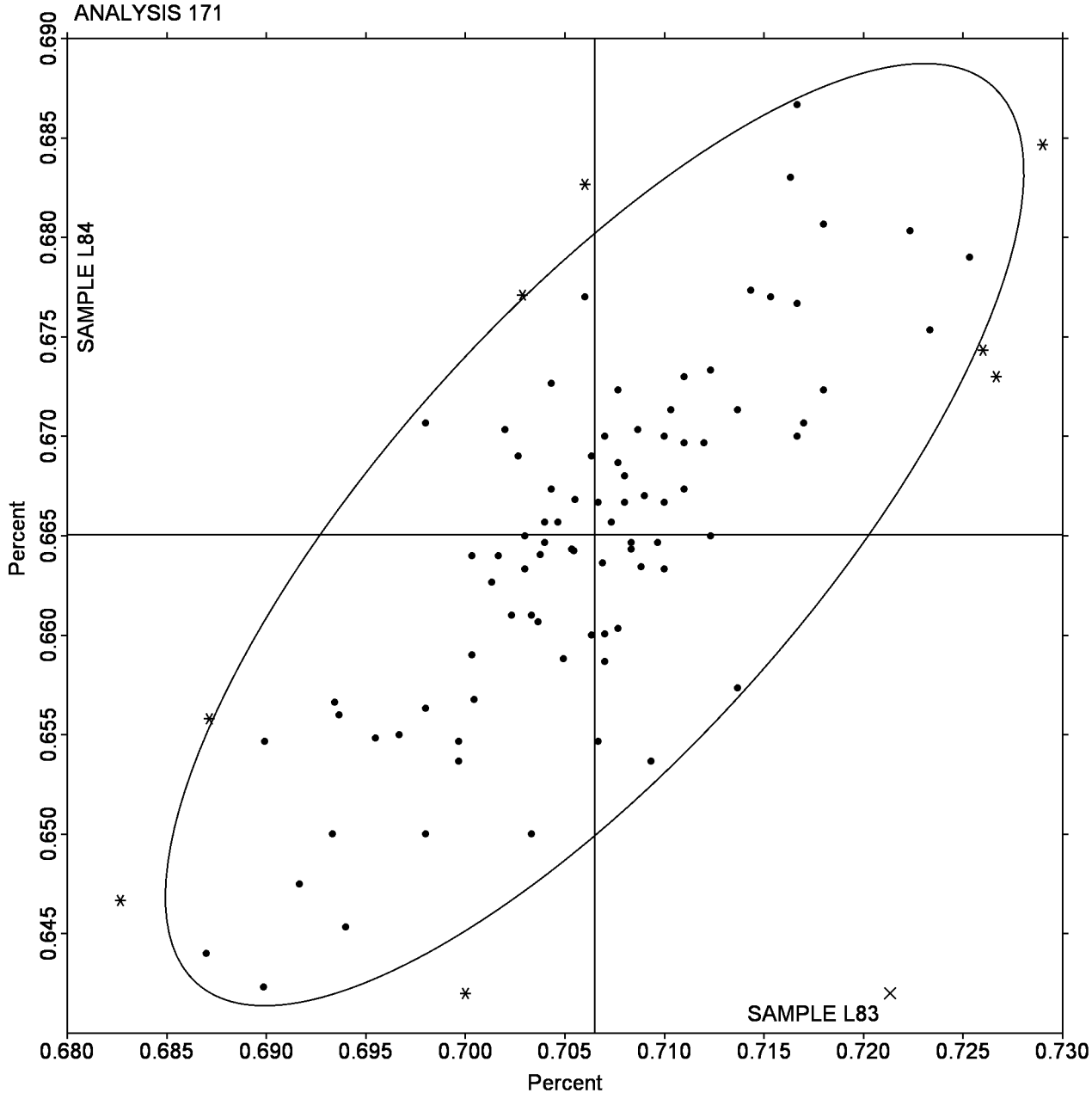
Interlaboratory Testing Program for Metals

Analysis 171

Chemical Analysis Element #2 - Carbon & Low Alloy Steel - Percent

MANGANESE (Mn)

SAMPLE L83 = 0.7065 Percent SAMPLE L84 = 0.6650 Percent



Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2AG4PX		0.0085	0.0003	0.39	0.0112	0.0009	0.98	OE
2VGDRK		0.0092	0.0010	1.24	0.0124	0.0022	2.33	OE
2XNHJM		0.0076	-0.0006	-0.73	0.0093	-0.0010	-1.04	OE
44VA9A	*	0.0073	-0.0008	-1.02	0.0080	-0.0022	-2.39	DC
4EXG2N		0.0089	0.0007	0.86	0.0118	0.0015	1.63	OE
4K3AAD		0.0075	-0.0007	-0.85	0.0100	-0.0003	-0.30	OE
6283J8		0.0074	-0.0008	-0.97	0.0092	-0.0011	-1.13	OE
6D3B6U		0.0085	0.0003	0.39	0.0113	0.0010	1.08	OE
6K8YFN		0.0073	-0.0008	-1.02	0.0097	-0.0006	-0.62	OE
6MQXJ7	X	0.0109	0.0028	3.33	0.0133	0.0030	3.22	OE
6MUPB2		0.0090	0.0008	0.99	0.0103	0.0001	0.09	OE
79BK3P		0.0076	-0.0006	-0.69	0.0094	-0.0008	-0.87	XX
7GCX8X		0.0079	-0.0003	-0.33	0.0105	0.0003	0.31	OE
7ZG3GA		0.0078	-0.0004	-0.45	0.0099	-0.0003	-0.37	OE
82WAFF		0.0080	-0.0002	-0.21	0.0090	-0.0012	-1.33	OE
9472ET		0.0086	0.0004	0.51	0.0103	0.0001	0.09	OE
97B3DZ		0.0090	0.0008	0.99	0.0110	0.0008	0.81	GD
9GXNMA		0.0093	0.0011	1.36	0.0100	-0.0002	-0.23	GD
9MHADM		0.0080	-0.0002	-0.25	0.0107	0.0005	0.49	OE
9T3LPD		0.0060	-0.0022	-2.62	0.0097	-0.0006	-0.62	IC
ABVGLE		0.0092	0.0011	1.28	0.0104	0.0001	0.13	OE
ACTNZC		0.0080	-0.0002	-0.25	0.0100	-0.0002	-0.26	OE
AR2UTA		0.0067	-0.0015	-1.82	0.0090	-0.0012	-1.33	OE
ATZV3L		0.0082	0.0000	-0.01	0.0113	0.0011	1.16	OE
AV2ZJL		0.0082	0.0000	0.03	0.0099	-0.0003	-0.37	OE
B6XH4V		0.0083	0.0001	0.15	0.0103	0.0001	0.06	OE
BKFDQW		0.0083	0.0002	0.19	0.0107	0.0004	0.45	OE
BUGTAW		0.0072	-0.0010	-1.18	0.0087	-0.0015	-1.61	DR
C8VMRZ		0.0080	-0.0002	-0.25	0.0085	-0.0017	-1.83	OE
CDF8LA		0.0071	-0.0011	-1.34	0.0091	-0.0011	-1.19	OE
CRNPZW		0.0085	0.0004	0.43	0.0102	0.0000	-0.05	OE
CVLGRE		0.0084	0.0002	0.23	0.0105	0.0003	0.31	OE
CW98MQ		0.0081	-0.0001	-0.13	0.0098	-0.0004	-0.47	OE
D94KVN	*	0.0103	0.0022	2.60	0.0110	0.0008	0.81	WD
DDTAWE		0.0077	-0.0005	-0.61	0.0098	-0.0004	-0.47	OE
DGGFQW		0.0090	0.0008	0.99	0.0117	0.0014	1.52	OE
DLVQXR		0.0091	0.0010	1.16	0.0110	0.0008	0.81	OE
DVY7VQ		0.0079	-0.0002	-0.29	0.0100	-0.0002	-0.26	OE
EACYUG	X	0.0127	0.0045	5.42	0.0147	0.0044	4.72	OE
EJ4XMT		0.0094	0.0012	1.48	0.0110	0.0008	0.81	DR
FMTD9M		0.0080	-0.0002	-0.21	0.0097	-0.0006	-0.62	OE
G4PFN6		0.0075	-0.0006	-0.77	0.0105	0.0003	0.31	OE
G7VW6A		0.0079	-0.0003	-0.33	0.0102	-0.0001	-0.08	OE
GE4DT9		0.0090	0.0008	0.99	0.0110	0.0008	0.81	OE
GMG746		0.0100	0.0018	2.20	0.0113	0.0011	1.16	OE

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
GNHYFJ	*	0.0106	0.0024	2.91	0.0128	0.0025	2.71	OE
H2PD4N		0.0080	-0.0002	-0.21	0.0100	-0.0002	-0.26	OE
HLYLNZ		0.0080	-0.0002	-0.21	0.0110	0.0008	0.81	OE
HPG2YR		0.0086	0.0005	0.55	0.0105	0.0002	0.24	OE
HTCJTR		0.0079	-0.0002	-0.29	0.0106	0.0004	0.41	OE
J4KPRJ		0.0074	-0.0008	-0.94	0.0101	-0.0002	-0.19	OE
J6RE3P		0.0073	-0.0009	-1.06	0.0093	-0.0009	-0.97	OE
JB69J9		0.0090	0.0008	0.99	0.0110	0.0008	0.81	OE
JL7Z78		0.0087	0.0005	0.59	0.0100	-0.0002	-0.26	OE
JNCLRC		0.0095	0.0013	1.56	0.0125	0.0023	2.41	OE
K8JAKA		0.0096	0.0014	1.68	0.0110	0.0008	0.81	DR
KAM64D		0.0070	-0.0012	-1.42	0.0090	-0.0012	-1.33	OE
KB8UHR		0.0070	-0.0012	-1.42	0.0090	-0.0012	-1.33	OE
KH72GZ		0.0083	0.0002	0.19	0.0111	0.0009	0.91	OE
L4N6YN		0.0090	0.0008	0.99	0.0110	0.0008	0.81	OE
L7LCRG	X	0.0080	-0.0002	-0.21	0.1040	0.0938	100.00	OE
LGWEKM		0.0080	-0.0002	-0.21	0.0100	-0.0002	-0.26	OE
MW39DT		0.0070	-0.0012	-1.42	0.0093	-0.0009	-0.97	IC
MWC4MZ		0.0090	0.0008	0.99	0.0100	-0.0002	-0.26	GD
NECHRL		0.0079	-0.0003	-0.33	0.0101	-0.0002	-0.19	OE
NL8KUW		0.0075	-0.0007	-0.81	0.0104	0.0002	0.17	DR
NLHPK2		0.0080	-0.0002	-0.25	0.0101	-0.0002	-0.19	OE
NM6YA3		0.0082	0.0000	-0.01	0.0105	0.0003	0.27	OE
NVDFLG		0.0085	0.0004	0.43	0.0109	0.0007	0.70	OE
P26KFN		0.0085	0.0003	0.39	0.0096	-0.0006	-0.69	OE
P9MCQH		0.0084	0.0003	0.31	0.0109	0.0007	0.73	OE
PFLGEX		0.0073	-0.0008	-1.02	0.0087	-0.0016	-1.68	OE
PNFYZF		0.0072	-0.0010	-1.22	0.0093	-0.0009	-0.97	EC
Q9NYZ2		0.0078	-0.0003	-0.41	0.0105	0.0003	0.31	OE
QJYXKP		0.0080	-0.0002	-0.25	0.0108	0.0006	0.59	OE
R2AAAT	*	0.0060	-0.0022	-2.62	0.0093	-0.0009	-1.01	IC
R6U4CY		0.0083	0.0002	0.19	0.0103	0.0001	0.09	OE
RAT2W4		0.0076	-0.0006	-0.73	0.0105	0.0003	0.31	OE
RGWQ34		0.0087	0.0005	0.59	0.0097	-0.0005	-0.55	OE
RKPK8X		0.0078	-0.0004	-0.49	0.0105	0.0003	0.27	DR
RMTBGY		0.0083	0.0001	0.15	0.0110	0.0007	0.77	OE
RVZ8UQ		0.0075	-0.0006	-0.77	0.0103	0.0000	0.02	OE
T2EFNZ		0.0077	-0.0005	-0.61	0.0102	0.0000	-0.05	DR
TP9DKW		0.0080	-0.0002	-0.25	0.0100	-0.0002	-0.26	OE
UQTP4L	X	0.0080	-0.0002	-0.21	0.0200	0.0098	10.40	DR
URP27F		0.0080	-0.0002	-0.21	0.0093	-0.0009	-0.97	OE
UZR26B		0.0079	-0.0002	-0.29	0.0103	0.0001	0.09	OE
V7F99F		0.0087	0.0005	0.59	0.0110	0.0008	0.81	OE
V9NHPJ		0.0077	-0.0005	-0.61	0.0100	-0.0002	-0.26	OE
VB2ZCN		0.0068	-0.0014	-1.66	0.0086	-0.0016	-1.75	OE

Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
VH8LHK		0.0082	0.0001	0.07	0.0094	-0.0008	-0.90	OE
VXFM6U		0.0086	0.0005	0.55	0.0105	0.0003	0.31	IC
WG78DY		0.0070	-0.0012	-1.42	0.0080	-0.0022	-2.39	GD
WHX8BA	*	0.0106	0.0024	2.89	0.0127	0.0025	2.62	OE
WJG38G		0.0079	-0.0002	-0.29	0.0093	-0.0009	-0.97	OE
XQ2EY4		0.0082	0.0000	-0.01	0.0108	0.0006	0.63	OE
YYTANY		0.0080	-0.0002	-0.25	0.0100	-0.0002	-0.26	OE
ZEJY8E		0.0085	0.0003	0.35	0.0112	0.0010	1.02	OE

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.00818 Percent	0.01020 Percent
Stnd Dev Btwn Labs	0.00083 Percent	0.00094 Percent

Statistics based on 93 of 98 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #172

6MQXJ7 (X) - Data for both samples are high. Possible systematic error.

EACYUG (X) - Data for both samples are high and inconsistent within the determinations for both samples.

L7LCRG (X) - It appears that the data for Sample L84 were off by a factor of 10.

UQTP4L (X) - High data for Sample L84.

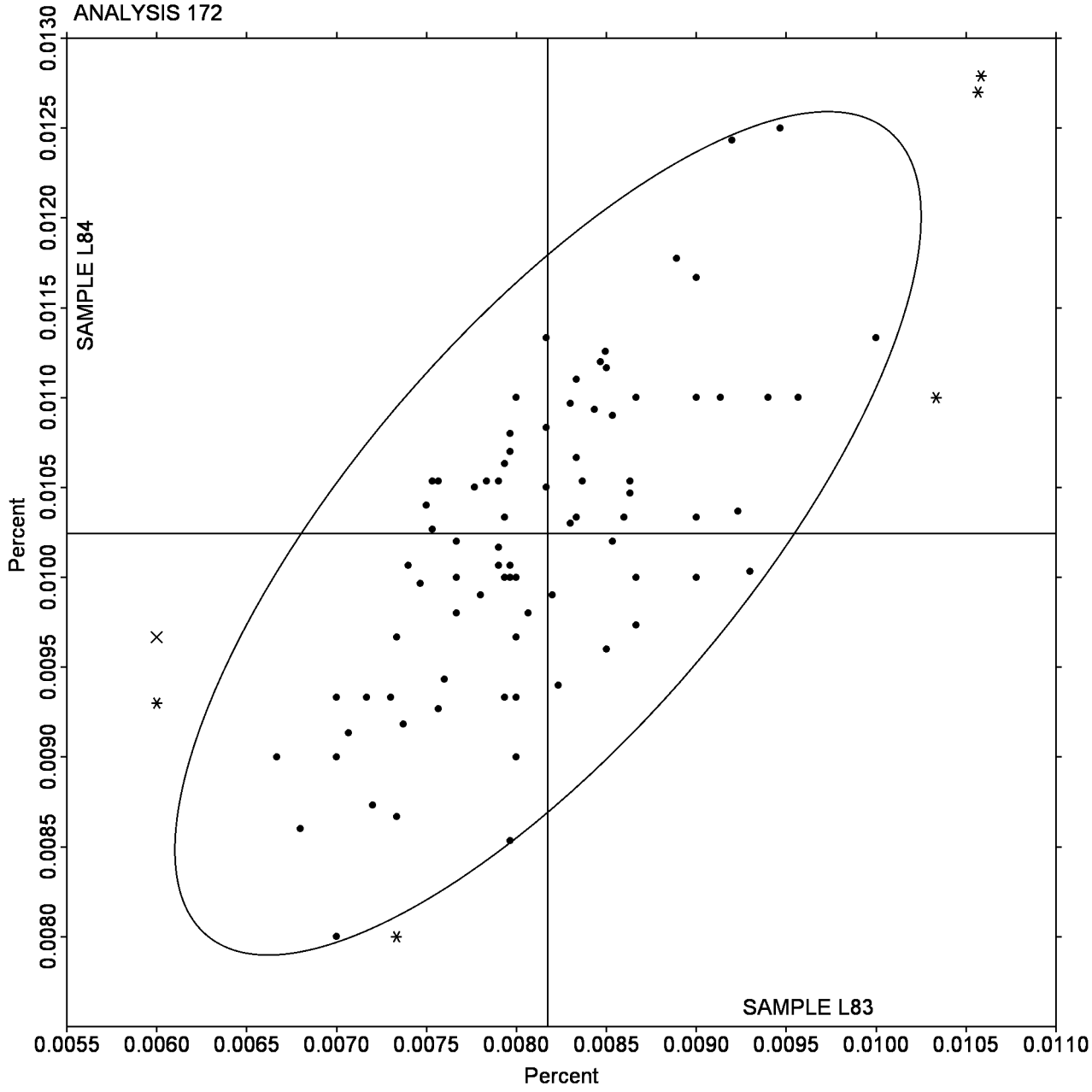
Interlaboratory Testing Program for Metals

Analysis 172

Chemical Analysis Element #3 - Carbon & Low Alloy Steel - Percent

PHOSPHORUS(P)

SAMPLE L83 = 0.00818 Percent SAMPLE L84 = 0.01020 Percent



Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
26KHU9		0.0267	0.0008	0.50	0.0068	0.0008	0.89	OE
299H9P		0.0293	0.0035	2.07	0.0037	-0.0024	-2.72	OE
2DC7ZC		0.0257	-0.0002	-0.12	0.0067	0.0006	0.70	CI
38NJHD		0.0250	-0.0009	-0.52	0.0060	-0.0001	-0.07	CI
3RLBWH		0.0247	-0.0012	-0.72	0.0069	0.0008	0.96	OE
3TNALC		0.0267	0.0008	0.48	0.0047	-0.0014	-1.61	OE
43PK9L		0.0263	0.0005	0.28	0.0077	0.0016	1.85	OE
43V9YJ		0.0293	0.0035	2.07	0.0060	-0.0001	-0.07	OE
44GU49		0.0237	-0.0022	-1.31	0.0060	-0.0001	-0.07	OE
693YEB		0.0264	0.0005	0.32	0.0049	-0.0011	-1.30	CI
74QCBJ		0.0243	-0.0015	-0.91	0.0047	-0.0014	-1.57	OE
7CWWUN		0.0243	-0.0015	-0.91	0.0060	-0.0001	-0.07	OE
7KNGR9	X	0.0267	0.0008	0.48	0.0127	0.0066	7.61	OE
7NM88L		0.0262	0.0004	0.22	0.0060	-0.0001	-0.07	DR
7XLTKK		0.0270	0.0011	0.68	0.0050	-0.0011	-1.23	OE
7Z6PB7	M	0.0304	0.0046	2.73				OE
8MNVYJ		0.0258	0.0000	-0.02	0.0065	0.0005	0.54	OE
94DXGT	X	0.0060	-0.0199	-11.87	0.0230	0.0169	19.53	OE
94QHWG		0.0276	0.0017	1.04	0.0067	0.0006	0.70	OE
9BXZNV		0.0241	-0.0017	-1.03	0.0052	-0.0008	-0.96	OE
9HGYHB		0.0229	-0.0030	-1.77	0.0051	-0.0009	-1.07	OE
9LUG8Z		0.0221	-0.0038	-2.25	0.0061	0.0000	0.00	OE
9QLX9R		0.0251	-0.0008	-0.46	0.0053	-0.0008	-0.92	CI
9WCKNC		0.0257	-0.0002	-0.12	0.0073	0.0013	1.46	OE
A2KHEW	X	0.0258	-0.0001	-0.06	0.0095	0.0034	3.92	OE
A8W6QE		0.0258	-0.0001	-0.06	0.0058	-0.0002	-0.26	OE
ABJQNV	X	0.0233	-0.0025	-1.51	0.0020	-0.0041	-4.68	CO
AFT2EP		0.0266	0.0008	0.46	0.0053	-0.0008	-0.89	OE
AW6ZXZ		0.0273	0.0015	0.88	0.0063	0.0003	0.31	OE
AYPF4F		0.0277	0.0018	1.08	0.0053	-0.0007	-0.84	OE
B88RZE		0.0270	0.0011	0.68	0.0050	-0.0011	-1.23	OE
BJV73V		0.0277	0.0019	1.12	0.0080	0.0020	2.27	OE
BNH6W4		0.0260	0.0001	0.06	0.0056	-0.0005	-0.53	OE
BY8YCK	*	0.0256	-0.0002	-0.14	0.0038	-0.0023	-2.65	OE
C8TCRW		0.0271	0.0013	0.76	0.0067	0.0006	0.70	OE
CBVD8L		0.0255	-0.0004	-0.22	0.0060	-0.0001	-0.11	CI
CD9277		0.0253	-0.0005	-0.32	0.0061	0.0001	0.08	OE
CMA7NG		0.0266	0.0007	0.44	0.0062	0.0002	0.20	CI
CXGB6H		0.0267	0.0008	0.48	0.0052	-0.0008	-0.96	CI
DBDMET	*	0.0220	-0.0039	-2.33	0.0065	0.0004	0.50	OE
DKEXYX		0.0254	-0.0005	-0.30	0.0060	-0.0001	-0.07	OE
EB82RQ		0.0270	0.0011	0.68	0.0070	0.0009	1.08	OE
EC7CF7		0.0256	-0.0002	-0.14	0.0057	-0.0004	-0.46	CI
EDKNCQ		0.0250	-0.0009	-0.52	0.0067	0.0006	0.70	OE
EMGCVE		0.0263	0.0005	0.28	0.0060	-0.0001	-0.07	CI

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
ER8R39		0.0227	-0.0032	-1.91	0.0063	0.0003	0.31	OE
ETHUQT		0.0236	-0.0023	-1.37	0.0071	0.0010	1.16	OE
EUYTAW		0.0260	0.0001	0.08	0.0067	0.0006	0.70	OE
FCGTDZ		0.0257	-0.0002	-0.12	0.0060	-0.0001	-0.11	OE
FELJE9		0.0233	-0.0025	-1.51	0.0055	-0.0006	-0.69	OE
FUGJZM		0.0262	0.0003	0.20	0.0067	0.0007	0.77	OE
G4VHVB		0.0275	0.0016	0.97	0.0078	0.0018	2.04	OE
GHP9K8		0.0254	-0.0005	-0.28	0.0062	0.0001	0.12	OE
GLQ9K6	X	0.0244	-0.0015	-0.89	0.0029	-0.0032	-3.65	XX
GTL8ZT		0.0269	0.0011	0.64	0.0058	-0.0003	-0.34	OE
GZKPFP		0.0249	-0.0009	-0.56	0.0051	-0.0009	-1.07	CI
H4QKXK		0.0273	0.0014	0.86	0.0061	0.0001	0.08	OE
HAW74H		0.0262	0.0004	0.22	0.0069	0.0009	0.99	OE
HBCDPC		0.0253	-0.0005	-0.32	0.0060	0.0000	-0.03	OE
HJ8W6R		0.0270	0.0011	0.68	0.0073	0.0013	1.46	OE
J7GJ7M	X	0.0220	-0.0038	-2.29	0.0031	-0.0029	-3.38	CO
JFJD8L		0.0245	-0.0014	-0.81	0.0060	-0.0001	-0.07	CI
JJ42VE		0.0270	0.0011	0.68	0.0050	-0.0011	-1.23	OE
JZEAYU		0.0246	-0.0013	-0.78	0.0066	0.0005	0.62	OE
KKXV7A		0.0248	-0.0011	-0.64	0.0061	0.0001	0.08	XX
LCPVTY	*	0.0247	-0.0012	-0.72	0.0080	0.0019	2.23	CO
LX98YA		0.0290	0.0031	1.87	0.0067	0.0006	0.70	CO
M2QPUY		0.0263	0.0005	0.28	0.0068	0.0008	0.89	OE
MTWRWP		0.0267	0.0008	0.48	0.0060	-0.0001	-0.07	OE
MV2DBN		0.0246	-0.0012	-0.74	0.0054	-0.0007	-0.77	OE
MXRK2R		0.0260	0.0001	0.06	0.0056	-0.0004	-0.50	OE
NHQ72W	*	0.0308	0.0049	2.95	0.0066	0.0005	0.58	XX
NJ7MD3		0.0242	-0.0017	-1.01	0.0043	-0.0018	-2.07	OE
PM982T		0.0273	0.0014	0.86	0.0062	0.0001	0.12	GD
QM3WPG		0.0241	-0.0018	-1.05	0.0052	-0.0009	-0.99	IR
QTV8ED		0.0281	0.0022	1.34	0.0059	-0.0002	-0.23	OE
QV6YF2		0.0240	-0.0019	-1.11	0.0053	-0.0007	-0.84	OE
QZLRJT		0.0242	-0.0017	-1.01	0.0057	-0.0003	-0.38	DR
R4P9QF		0.0275	0.0016	0.98	0.0066	0.0005	0.58	DR
RC9AMW		0.0260	0.0001	0.08	0.0055	-0.0005	-0.61	IR
RDW8PC		0.0261	0.0002	0.14	0.0057	-0.0004	-0.42	OE
RTPUZA	X	0.0207	-0.0052	-3.11	0.0077	0.0016	1.85	CI
RUUMEG		0.0270	0.0011	0.68	0.0055	-0.0006	-0.69	GD
TKMBYD	*	0.0220	-0.0038	-2.29	0.0047	-0.0013	-1.53	CO
UVEA4A		0.0280	0.0022	1.30	0.0061	0.0000	0.04	OE
V3W2TE	*	0.0261	0.0002	0.12	0.0085	0.0025	2.85	OE
W843BM		0.0255	-0.0003	-0.20	0.0050	-0.0011	-1.26	CI
WHG7AT		0.0250	-0.0009	-0.52	0.0059	-0.0001	-0.15	CI
WWF8ZL		0.0255	-0.0004	-0.24	0.0062	0.0002	0.20	OE
WWYUNX		0.0280	0.0021	1.28	0.0060	-0.0001	-0.07	CO

Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
XW2ZRC		0.0227	-0.0032	-1.91	0.0050	-0.0011	-1.23	OE
Y6PB4Q		0.0276	0.0017	1.04	0.0078	0.0018	2.04	DR
YBYY7D	X	0.0240	-0.0019	-1.11	0.0094	0.0034	3.89	OE
YQWJWW	X	0.0091	-0.0167	-10.00	0.0046	-0.0015	-1.69	OE
YUJGUK	X	0.0200	-0.0059	-3.50	0.0040	-0.0021	-2.38	GD
YVTXRY		0.0255	-0.0003	-0.20	0.0061	0.0000	0.00	CI
Z9TME4		0.0253	-0.0005	-0.32	0.0069	0.0008	0.96	OE
ZB84TV		0.0274	0.0016	0.94	0.0054	-0.0007	-0.76	OE
ZR6HJV		0.0298	0.0040	2.37	0.0065	0.0004	0.47	OE
ZVDK77		0.0261	0.0002	0.14	0.0063	0.0002	0.27	OE

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.02586 Percent	0.00610 Percent
Stnd Dev Btwn Labs	0.00167 Percent	0.00087 Percent

Statistics based on 88 of 100 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #173

7KNGR9 (X) - High data for Sample L84.
7Z6PB7 (M) - Laboratory did not submit data for Sample L84.
94DXGT (X) - Data appear to be transposed between samples.
A2KHEW (X) - High data for Sample L83.
ABJQNV (X) - Low data for Sample L84.
GLQ9K6 (X) - Low data for Sample L84.
J7GJ7M (X) - Low data for Sample L84.
RTPUZA (X) - Low data for Sample L83.
YBYY7D (X) - High data for Sample L84.
YQWJWW (X) - Low data for Sample L83.
YUJGUK (X) - Low data for Sample L83.

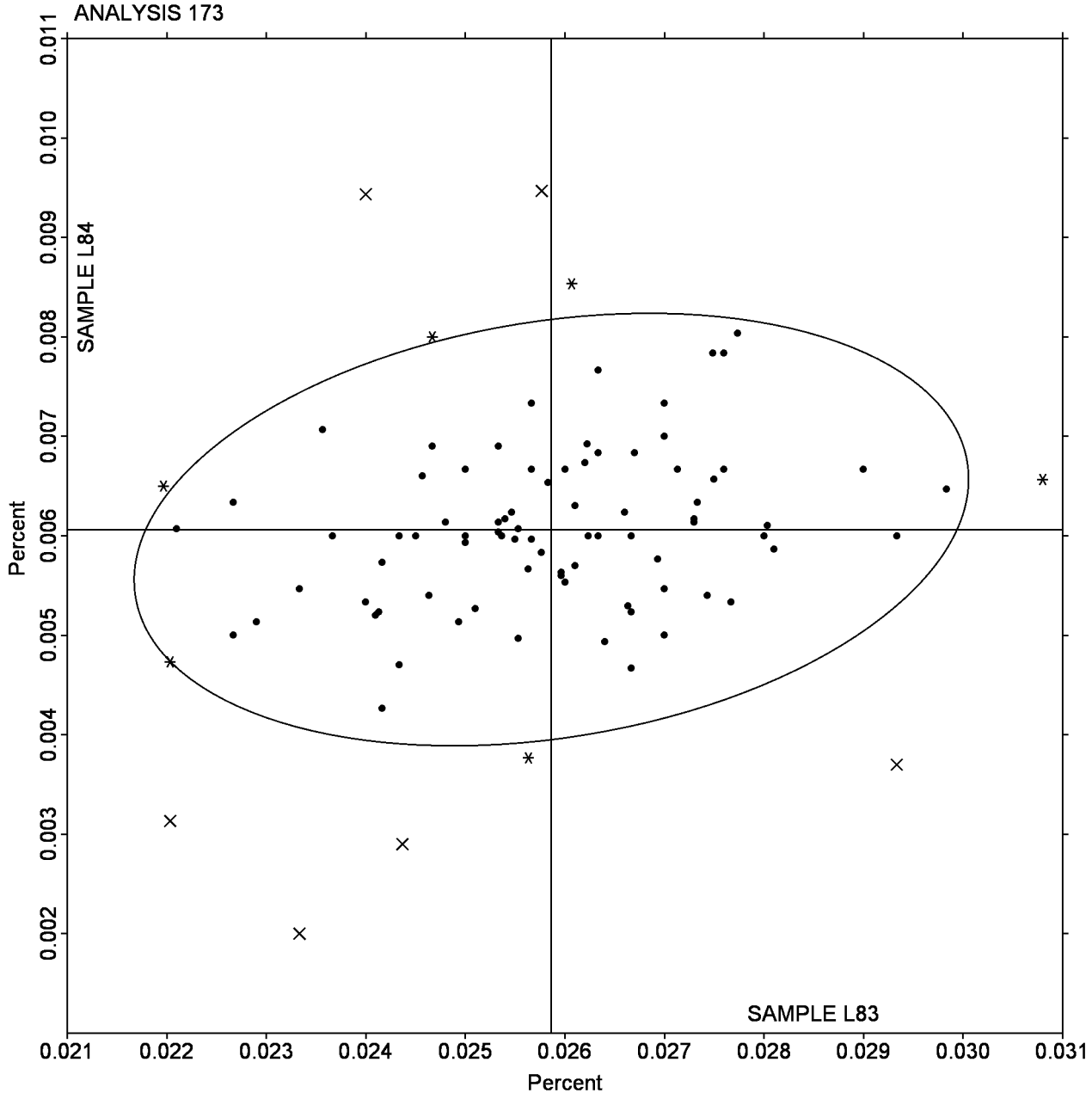
Interlaboratory Testing Program for Metals

Analysis 173

Chemical Analysis Element #4 - Carbon & Low Alloy Steel - Percent

SULFUR (S)

SAMPLE L83 = 0.02586 Percent SAMPLE L84 = 0.00610 Percent



Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2JE3XQ		0.225	-0.006	-1.29	0.195	-0.004	-0.71	OE
2PP8RQ		0.237	0.005	1.09	0.207	0.008	1.47	OE
3PEYVH		0.233	0.002	0.40	0.200	0.001	0.25	OE
46AMYE		0.227	-0.004	-0.90	0.188	-0.011	-2.14	OE
49LL38		0.235	0.004	0.75	0.201	0.002	0.44	OE
626BGK		0.233	0.001	0.27	0.201	0.002	0.44	IC
63M6U2		0.231	-0.001	-0.15	0.202	0.003	0.57	OE
67ERQ9	X	0.191	-0.040	-8.25	0.163	-0.036	-7.04	OE
6CD8Z9	X	0.207	-0.025	-5.09	0.174	-0.025	-4.78	OE
6E23VN		0.237	0.006	1.23	0.203	0.004	0.70	OE
6F4C8D		0.241	0.010	1.98	0.210	0.011	2.12	GD
6L43Y4		0.232	0.000	0.05	0.197	-0.002	-0.41	OE
6MBFF6		0.230	-0.001	-0.28	0.200	0.001	0.18	OE
6QD62Y		0.230	-0.002	-0.35	0.191	-0.008	-1.56	OE
6ZMXMA		0.230	-0.001	-0.28	0.198	-0.001	-0.27	OE
7236LF		0.228	-0.004	-0.76	0.189	-0.010	-1.88	OE
74T8NN		0.227	-0.004	-0.83	0.196	-0.003	-0.53	OE
7AFYXC		0.234	0.003	0.61	0.200	0.001	0.18	OE
7M7RH7		0.229	-0.002	-0.49	0.197	-0.002	-0.33	OE
7QADJP		0.225	-0.006	-1.24	0.194	-0.005	-1.04	OE
7ZGF9N		0.231	0.000	0.00	0.203	0.004	0.81	XX
84CWKU		0.225	-0.006	-1.24	0.195	-0.004	-0.85	OE
8FQUPX		0.227	-0.004	-0.90	0.197	-0.002	-0.46	OE
8GBAVE	X	0.254	0.023	4.66	0.223	0.024	4.69	OE
8GD3HF		0.238	0.006	1.30	0.205	0.006	1.21	OE
8MXP7D	X	0.247	0.015	3.15	0.217	0.018	3.41	OE
8PMDMZ		0.236	0.005	0.95	0.203	0.004	0.76	OE
9Q9L8L		0.232	0.001	0.13	0.198	-0.001	-0.27	OE
9QWQYZ		0.231	0.000	-0.04	0.197	-0.002	-0.40	OE
A2VXF6		0.230	-0.001	-0.28	0.196	-0.003	-0.53	OE
A3MY3V		0.228	-0.003	-0.69	0.195	-0.004	-0.72	OE
ACC9M2		0.225	-0.006	-1.31	0.191	-0.008	-1.56	OE
AT7QKC		0.230	-0.001	-0.28	0.197	-0.002	-0.46	OE
BL997F		0.240	0.008	1.71	0.205	0.006	1.15	OE
CC4MTC		0.233	0.002	0.34	0.199	0.000	-0.01	OE
CN79JH	*	0.241	0.010	2.05	0.200	0.001	0.25	XR
D3KBLL		0.230	-0.001	-0.21	0.199	0.000	0.05	OE
D3RPH2		0.226	-0.005	-1.04	0.194	-0.005	-0.98	OE
DDYNUE		0.236	0.005	1.02	0.206	0.007	1.41	DR
DNQ38C		0.232	0.001	0.20	0.199	0.000	0.05	OE
DVTY6Q	*	0.220	-0.012	-2.41	0.187	-0.012	-2.40	OE
EBCH2B		0.230	-0.002	-0.35	0.196	-0.003	-0.53	OE
EQXL3Q		0.232	0.001	0.16	0.197	-0.002	-0.42	OE
EVV4BR		0.231	-0.001	-0.15	0.200	0.001	0.12	OE
EXWBB6		0.224	-0.007	-1.47	0.199	0.000	-0.04	IC

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
FFJRNR		0.229	-0.003	-0.56	0.196	-0.003	-0.59	OE
FK6V6U	*	0.243	0.012	2.39	0.213	0.014	2.63	OE
H3LN7H		0.237	0.005	1.09	0.200	0.001	0.18	OE
H9TYZN		0.224	-0.007	-1.52	0.192	-0.007	-1.36	DR
HFNFDT	X	0.213	-0.018	-3.72	0.180	-0.019	-3.69	OE
HMMMD3		0.231	0.000	-0.08	0.204	0.005	0.96	OE
HPY4MZ		0.232	0.001	0.13	0.205	0.006	1.08	GD
J32A9T		0.229	-0.002	-0.42	0.205	0.006	1.08	OE
JWFY4U		0.229	-0.002	-0.49	0.197	-0.002	-0.40	OE
K2EDZA		0.237	0.005	1.09	0.201	0.002	0.31	DR
K2JUAU		0.230	-0.001	-0.28	0.203	0.004	0.83	IC
K2LDBR		0.224	-0.007	-1.46	0.195	-0.004	-0.75	IC
KF39QN		0.228	-0.003	-0.64	0.196	-0.004	-0.69	OE
LHTBCL		0.239	0.008	1.57	0.208	0.009	1.79	OE
LYB744		0.233	0.001	0.31	0.200	0.001	0.20	OE
MBU68X		0.227	-0.004	-0.83	0.203	0.004	0.70	OE
MH4ZWE	X	0.186	-0.045	-9.28	0.169	-0.030	-5.88	WD
MKNGYC		0.226	-0.006	-1.18	0.200	0.001	0.12	OE
MT4DNJ		0.239	0.007	1.50	0.202	0.003	0.57	DR
MTMK66		0.230	-0.001	-0.28	0.197	-0.002	-0.33	OE
MVV7YG		0.236	0.005	0.95	0.205	0.006	1.08	OE
MZXVXG		0.230	-0.001	-0.28	0.197	-0.002	-0.33	OE
NKLDH7		0.237	0.006	1.16	0.203	0.004	0.76	OE
NNYNDW		0.230	-0.001	-0.21	0.203	0.004	0.83	OE
PB4RPN		0.230	-0.001	-0.28	0.197	-0.002	-0.46	DC
PX2CTK		0.229	-0.003	-0.56	0.199	0.000	-0.08	OE
Q9FKZK		0.229	-0.002	-0.49	0.197	-0.002	-0.46	OE
QHT26X		0.238	0.007	1.36	0.203	0.004	0.76	OE
QU732R	X	0.216	-0.015	-3.17	0.198	-0.001	-0.11	OE
R7F9AA	*	0.218	-0.014	-2.82	0.187	-0.012	-2.27	OE
REZ3V8		0.228	-0.003	-0.65	0.199	0.000	-0.05	OE
RLWW29		0.238	0.007	1.34	0.211	0.012	2.30	OE
TEUWUX	X	0.218	-0.013	-2.69	0.181	-0.018	-3.43	OE
TVRMKT		0.231	0.000	-0.08	0.201	0.002	0.44	OE
TW284G		0.227	-0.004	-0.90	0.196	-0.003	-0.66	OE
U9L9P2		0.236	0.005	0.95	0.204	0.005	1.02	OE
UC3PXK		0.233	0.002	0.42	0.197	-0.002	-0.36	OE
UELQT8		0.229	-0.003	-0.56	0.197	-0.002	-0.40	OE
VBYELN		0.242	0.011	2.26	0.205	0.006	1.21	GD
VCT9ZK		0.237	0.006	1.26	0.194	-0.005	-1.02	OE
VNGYDB		0.231	0.000	-0.08	0.200	0.001	0.25	OE
W233KC		0.233	0.002	0.40	0.200	0.001	0.18	OE
W3PCY2		0.230	-0.001	-0.21	0.191	-0.008	-1.62	OE
W4AVJZ		0.230	-0.001	-0.28	0.195	-0.004	-0.72	OE
WDRLVQ		0.226	-0.005	-1.11	0.195	-0.004	-0.78	OE

Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
WV9ZVM	X	0.231	0.000	-0.01	0.182	-0.017	-3.36	DR
Y27DLG		0.234	0.003	0.61	0.207	0.008	1.47	OE
Y2PZ9Q		0.236	0.004	0.85	0.198	-0.001	-0.17	DR
Y6TCJ4		0.231	0.000	-0.08	0.196	-0.003	-0.53	OE
Y7P77U		0.230	-0.001	-0.21	0.198	-0.001	-0.14	DR
YK2RDT	*	0.225	-0.006	-1.30	0.186	-0.013	-2.54	OE
YNQX7B		0.234	0.002	0.47	0.201	0.002	0.44	OE
YR6NC7		0.234	0.002	0.47	0.200	0.001	0.18	GR
YXWXL4		0.237	0.006	1.23	0.202	0.003	0.63	OE
ZGLGBV	X	0.202	-0.029	-6.05	0.160	-0.039	-7.49	OE

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.2314 Percent	0.1990 Percent
Stnd Dev Btwn Labs	0.0049 Percent	0.0052 Percent

Statistics based on 89 of 100 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #174

67ERQ9 (X) - Data for both samples are low. Possible systematic error.
6CD8Z9 (X) - Data for both samples are low. Possible systematic error.
8GBAVE (X) - Data for both samples are high. Possible systematic error.
8MXP7D (X) - Data for both samples are high. Possible systematic error.
HFNFDT (X) - Data for both samples are low. Possible systematic error.
MH4ZWE (X) - Data for both samples are low.
QU732R (X) - Low data for Sample L83.
TEUWUX (X) - Low data for Sample L84.
WV9ZVM (X) - Low data for Sample L84 and inconsistent within the determinations for both samples.
ZGLGBV (X) - Data for both samples are low. Inconsistent within the determinations for Sample L83.

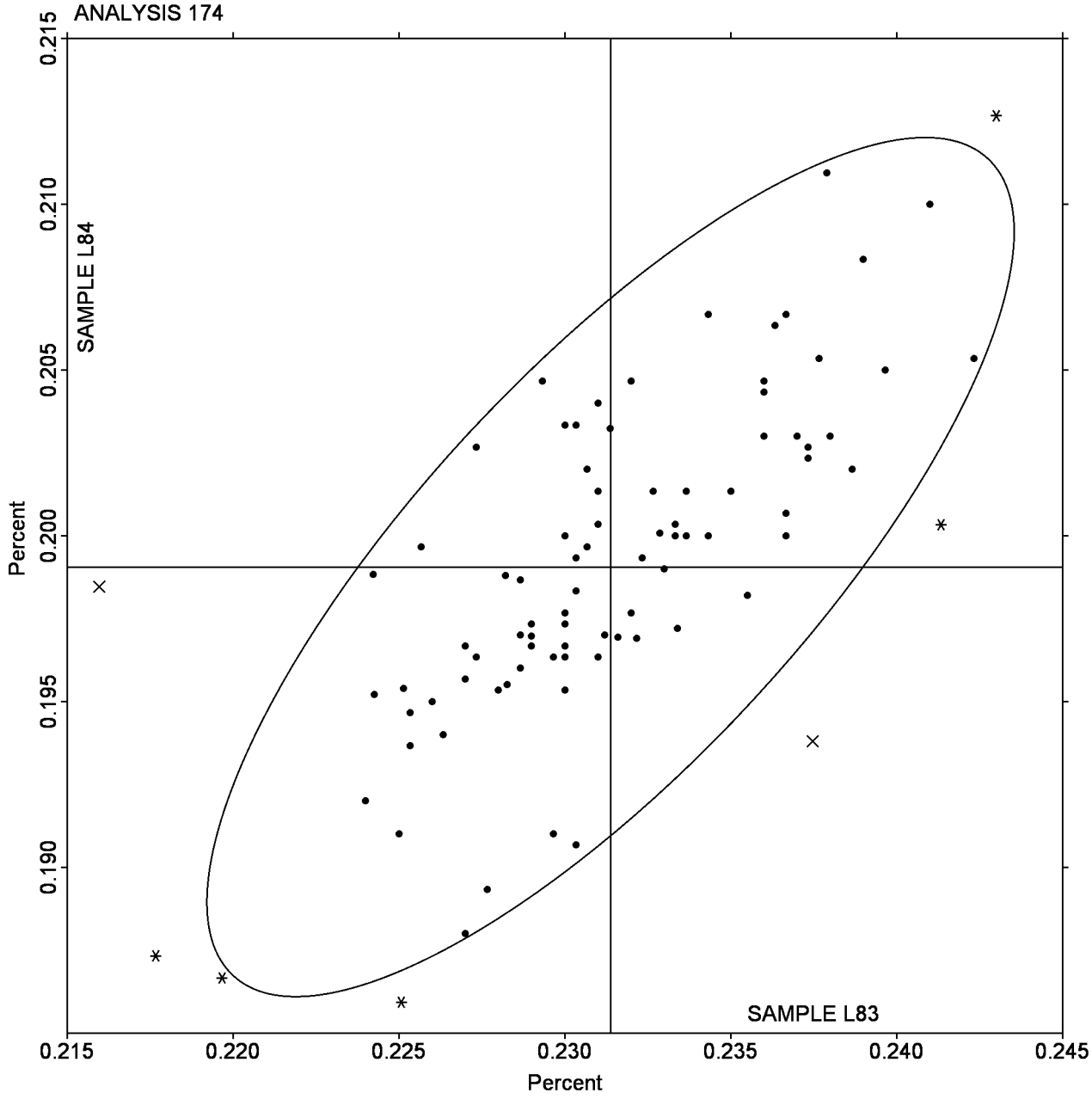
Interlaboratory Testing Program for Metals

Analysis 174

Chemical Analysis Element #5 - Carbon & Low Alloy Steel - Percent

SILICON (Si)

SAMPLE L83 = 0.2314 Percent SAMPLE L84 = 0.1990 Percent



Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
23Z46K		0.220	0.008	1.56	0.020	0.000	-0.24	OE
267G78		0.209	-0.003	-0.52	0.021	0.000	0.16	OE
2C6YL4		0.211	-0.001	-0.25	0.019	-0.001	-0.89	OE
2DWP8J		0.204	-0.008	-1.55	0.020	0.000	-0.24	OE
2EEK4D		0.211	-0.001	-0.19	0.020	0.000	-0.07	OE
2FLV22		0.208	-0.004	-0.71	0.021	0.001	0.78	OE
2RR73J		0.214	0.002	0.46	0.019	-0.001	-0.99	OE
3A4ZCP		0.223	0.011	2.08	0.021	0.000	0.37	OE
3BF246	X	0.229	0.017	3.31	0.023	0.003	2.01	OE
3KGUB6		0.218	0.006	1.17	0.019	-0.001	-0.92	OE
3NWLVR		0.220	0.008	1.62	0.019	-0.001	-0.99	OE
3VEBRY		0.213	0.001	0.26	0.020	-0.001	-0.49	OE
4FA8DD		0.223	0.011	2.08	0.022	0.001	0.88	GD
6MT2EM		0.212	0.000	0.07	0.019	-0.001	-0.99	DR
6R6GUL		0.216	0.004	0.73	0.020	0.000	0.01	OE
7R7DMN		0.212	0.000	0.08	0.023	0.003	1.99	XX
872FT2	M	0.214	0.002	0.39				OE
89Z8AD		0.214	0.002	0.46	0.018	-0.003	-1.99	OE
8PRRET		0.210	-0.002	-0.32	0.020	-0.001	-0.54	OE
8YBHH7		0.211	-0.001	-0.12	0.021	0.001	0.38	OE
9CNDVF	*	0.208	-0.004	-0.77	0.024	0.004	2.76	OE
9PJAJL	X	0.230	0.018	3.44	0.021	0.001	0.51	OE
9UBF8B		0.207	-0.005	-0.98	0.020	-0.001	-0.44	IC
9UV9YL	X	0.190	-0.022	-4.20	0.034	0.014	10.52	DR
9WBV4Z		0.210	-0.002	-0.38	0.020	0.000	-0.24	OE
ATJJKF		0.213	0.001	0.20	0.020	0.000	-0.24	OE
B42722		0.210	-0.002	-0.45	0.020	0.000	-0.24	OE
BLBPTR		0.217	0.005	0.91	0.020	0.000	-0.24	DC
BNC2XT		0.211	-0.001	-0.25	0.021	0.001	0.51	OE
BPJDDU		0.211	-0.001	-0.19	0.019	-0.001	-0.79	OE
BRBEKH		0.213	0.001	0.26	0.020	0.000	-0.17	XR
BY3AHV		0.215	0.003	0.65	0.021	0.001	0.51	OE
BZBK2R		0.216	0.004	0.78	0.019	-0.001	-1.02	OE
DCLPE7		0.216	0.004	0.85	0.021	0.001	0.51	OE
DDNRQN		0.218	0.006	1.11	0.021	0.000	0.18	OE
DMM82F	X	0.209	-0.003	-0.58	0.026	0.005	4.01	DR
DQEHMZ		0.213	0.001	0.26	0.019	-0.001	-0.77	OE
ECTMP2		0.211	-0.001	-0.25	0.022	0.002	1.26	OE
F8F2L9		0.213	0.001	0.20	0.020	0.000	-0.02	OE
FG9BZP		0.212	0.000	0.07	0.021	0.000	0.33	OE
FMKMGQ		0.209	-0.003	-0.51	0.020	0.000	-0.37	DR
G6VVVV		0.213	0.001	0.24	0.021	0.001	0.56	OE
GGJ8YT	X	0.223	0.011	2.21	0.028	0.008	5.76	OE
GKWJGB		0.213	0.001	0.20	0.021	0.001	0.43	OE
GLZY4M		0.215	0.003	0.65	0.021	0.001	0.63	IC

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
GZBHWA		0.210	-0.002	-0.38	0.020	0.000	-0.24	OE
GZTPPJ		0.214	0.002	0.46	0.020	-0.001	-0.49	OE
HECKR2		0.209	-0.003	-0.64	0.020	0.000	-0.24	OE
HNQLYH		0.209	-0.003	-0.51	0.020	0.000	-0.04	OE
HXWLEB		0.217	0.005	0.98	0.019	-0.002	-1.24	OE
J32G9C		0.211	-0.001	-0.19	0.020	-0.001	-0.42	OE
JBK7EX	*	0.197	-0.015	-2.84	0.021	0.001	0.76	OE
JEAC8V		0.212	0.000	-0.06	0.020	0.000	-0.24	OE
JMH9F3		0.206	-0.006	-1.22	0.021	0.001	0.51	OE
JWQAKF		0.216	0.004	0.74	0.019	-0.001	-0.77	OE
K48APJ		0.214	0.002	0.39	0.021	0.001	0.51	OE
KL6HHN		0.202	-0.010	-1.93	0.022	0.002	1.28	OE
KVALP8		0.220	0.008	1.53	0.020	0.000	-0.29	OE
LG94NK		0.201	-0.011	-2.18	0.020	0.000	-0.19	OE
LH4QZN	X	0.229	0.017	3.24	0.024	0.003	2.51	OE
LKVT9C		0.215	0.003	0.59	0.023	0.003	2.01	OE
LQ6HVX	X	0.230	0.018	3.50	0.023	0.002	1.76	GD
LW2JMV		0.215	0.003	0.52	0.022	0.001	1.06	GD
M8UZGJ		0.223	0.011	2.14	0.019	-0.001	-0.69	OE
N4H8LD		0.207	-0.005	-0.90	0.020	-0.001	-0.49	WD
NBD46V		0.208	-0.004	-0.84	0.023	0.003	2.11	DR
NEW2YQ		0.214	0.002	0.39	0.022	0.002	1.26	IC
NL7V9M		0.211	-0.001	-0.12	0.020	0.000	-0.24	OE
PDHKCH		0.216	0.004	0.72	0.023	0.003	1.96	DR
PGPVJY		0.212	0.000	0.01	0.020	0.000	0.01	IC
PHB8PX		0.201	-0.011	-2.07	0.020	-0.001	-0.39	OE
PRDQVL		0.214	0.002	0.33	0.018	-0.002	-1.74	OE
PWZG3N		0.213	0.001	0.13	0.020	0.000	-0.12	OE
Q8D8QK	*	0.202	-0.010	-2.00	0.018	-0.003	-1.94	OE
QMBQUA	X	0.217	0.005	0.91	0.013	-0.007	-5.50	OE
R2VVZB		0.212	0.000	0.01	0.020	0.000	0.01	OE
RQWZ8M	X	0.211	-0.001	-0.12	0.210	0.190	142.41	OE
RR6E6F		0.211	-0.001	-0.12	0.020	0.000	-0.24	OE
T8HXVZ		0.212	0.000	-0.06	0.022	0.002	1.26	OE
TXP2B6		0.213	0.001	0.26	0.018	-0.002	-1.74	OE
U33WYE	*	0.217	0.005	0.98	0.016	-0.004	-2.90	OE
U6P8V6		0.221	0.009	1.69	0.019	-0.001	-0.72	OE
UMQCP3		0.208	-0.004	-0.80	0.021	0.001	0.41	OE
VG3Y9Z		0.210	-0.002	-0.32	0.022	0.002	1.56	OE
W2VUQZ	X	0.217	0.005	0.98	0.207	0.187	140.41	OE
W43TCE		0.212	0.000	0.07	0.019	-0.001	-0.74	OE
WA7WZR		0.200	-0.012	-2.24	0.022	0.001	0.91	DR
WZZXG6		0.207	-0.005	-0.97	0.021	0.001	0.51	OE
XE7TXJ		0.213	0.001	0.29	0.020	0.000	0.11	OE
XEA9B6		0.208	-0.004	-0.77	0.019	-0.001	-0.99	OE

Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
YK9NFD	*	0.211	-0.001	-0.10	0.024	0.003	2.51	IC
YKRKL7		0.210	-0.002	-0.38	0.019	-0.001	-0.99	OE
YLYYRC		0.210	-0.002	-0.38	0.020	0.000	-0.24	OE
YNRBY6		0.201	-0.011	-2.07	0.020	0.000	-0.24	OE
Z9DCFQ		0.217	0.005	0.98	0.020	0.000	-0.24	OE
ZC9UAQ	X	0.213	0.001	0.20	0.199	0.179	134.40	OE
ZX7VHD		0.219	0.007	1.37	0.021	0.001	0.76	OE

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.2120 Percent	0.0200 Percent
Stnd Dev Btwn Labs	0.0051 Percent	0.0013 Percent

Statistics based on 85 of 97 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #175

3BF246 (X) - High data for Sample L83.
872FT2 (M) - Laboratory did not submit data for Sample L84.
9PJAJL (X) - High data for Sample L83.
9UV9YL (X) - Low data for Sample L83. High data for Sample L84.
DMM82F (X) - High data for Sample L84.
GGJ8YT (X) - High data for Sample L84.
LH4QZN (X) - High data for Sample L83.
LQ6HVX (X) - High data for Sample L83.
QMBQUA (X) - Low data for Sample L84.
RQWZ8M (X) - It appears that the data for Sample L84 were off by a factor of 10.
W2VUQZ (X) - It appears that the data for Sample L84 were off by a factor of 10.
ZC9UAQ (X) - It appears that the data for Sample L84 were off by a factor of 10.

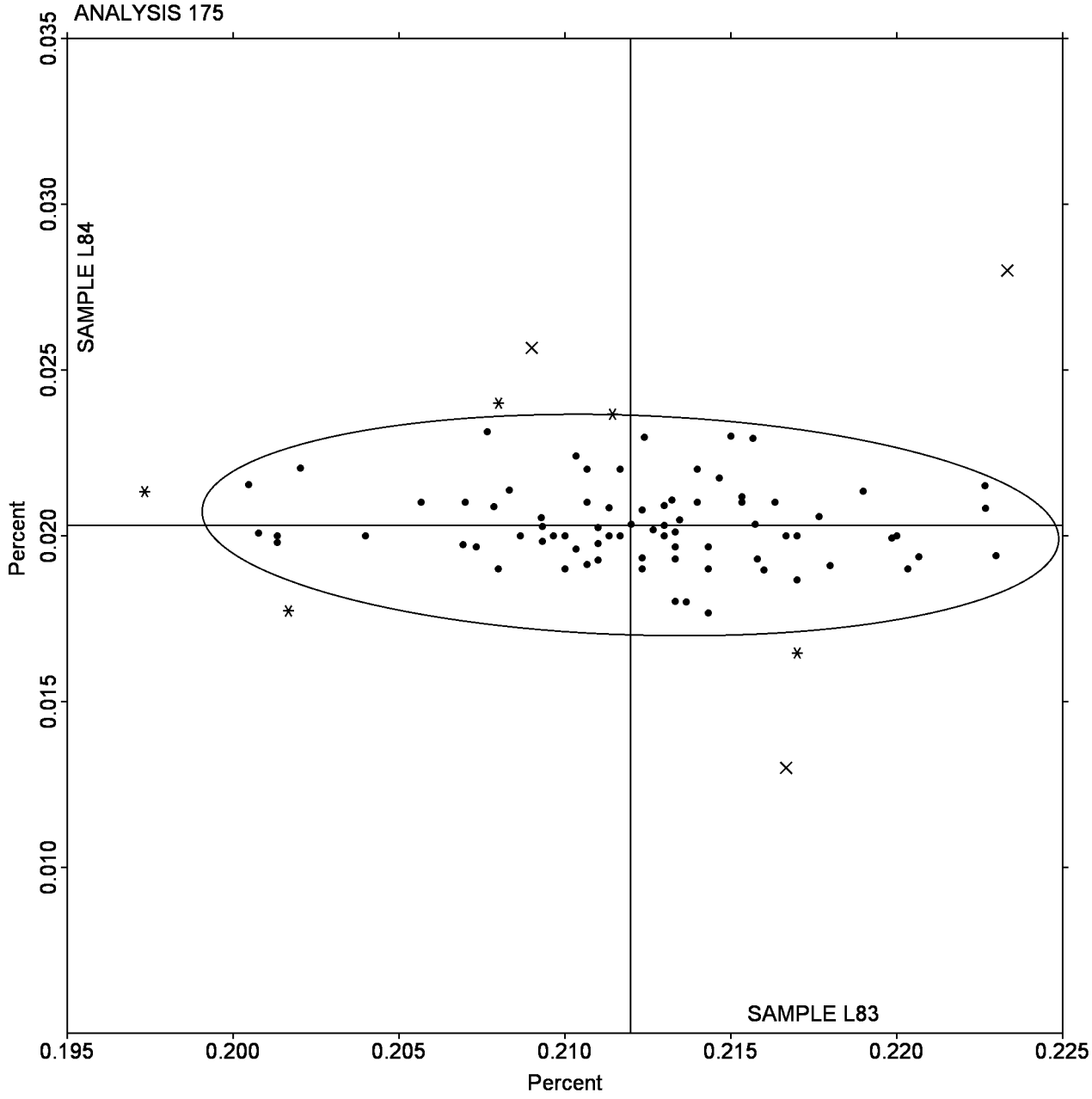
Interlaboratory Testing Program for Metals

Analysis 175

Chemical Analysis Element #6 - Carbon & Low Alloy Steel - Percent

COPPER (Cu)

SAMPLE L83 = 0.2120 Percent SAMPLE L84 = 0.0200 Percent



Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2GV3XP	X	0.050	-0.021	-8.23	0.010	-0.018	-8.50	OE
2M3MV8	X	0.106	0.035	14.13	0.039	0.011	5.35	OE
386MYD	M				0.028	0.000	0.18	OE
44JFWV	X	0.079	0.008	3.22	0.030	0.002	0.93	OE
4L9X76		0.069	-0.002	-0.61	0.027	-0.001	-0.47	OE
4VRYER		0.069	-0.001	-0.51	0.031	0.003	1.52	OE
64Y3UP		0.070	-0.001	-0.24	0.027	0.000	-0.15	OE
67X2YW	X	0.061	-0.009	-3.70	0.027	-0.001	-0.31	OE
6CAAKQ		0.070	-0.001	-0.24	0.027	-0.001	-0.29	OE
6EYM7P		0.070	0.000	-0.11	0.029	0.001	0.66	DR
7C6DCE	*	0.064	-0.007	-2.77	0.023	-0.004	-2.07	OE
7DEDFM		0.070	-0.001	-0.38	0.026	-0.002	-0.90	OE
7FVRMN	X	0.062	-0.009	-3.57	0.020	-0.007	-3.60	IC
87HRB8		0.071	0.000	0.16	0.026	-0.002	-0.96	OE
887EEU		0.070	-0.001	-0.27	0.027	-0.001	-0.31	OE
88FE6W	*	0.074	0.004	1.49	0.026	-0.002	-0.79	OE
ADCM8N		0.071	0.001	0.29	0.026	-0.001	-0.60	OE
ARFHYF		0.071	0.000	0.08	0.028	0.000	-0.03	OE
BU8N4D		0.070	0.000	-0.11	0.028	0.000	0.16	OE
C8PWGP	*	0.073	0.003	1.09	0.033	0.006	2.75	DC
CDA3Z6		0.070	0.000	-0.11	0.028	0.000	0.18	OE
CGUXRP		0.070	-0.001	-0.28	0.027	-0.001	-0.43	OE
CMTLYH		0.071	0.000	0.13	0.027	0.000	-0.08	XX
CP3KKC	*	0.075	0.004	1.75	0.033	0.005	2.58	OE
CYF7A9	*	0.070	0.000	-0.11	0.032	0.004	2.10	OE
D6PBTQ		0.069	-0.002	-0.64	0.029	0.001	0.66	OE
DFTGQY		0.070	0.000	-0.11	0.028	0.000	-0.02	OE
DNUNRL		0.073	0.002	0.78	0.029	0.001	0.46	OE
E4BMT7		0.068	-0.002	-0.91	0.026	-0.002	-0.79	OE
EFPLUT		0.066	-0.004	-1.71	0.024	-0.004	-1.88	OE
F6RTX7		0.067	-0.003	-1.31	0.025	-0.003	-1.27	OE
FA6DA9		0.068	-0.003	-1.17	0.027	-0.001	-0.31	OE
FAJZFE	X	0.081	0.010	4.02	0.038	0.010	4.83	OE
FNJMR4		0.076	0.005	2.15	0.029	0.001	0.66	GD
FPEERG		0.070	0.000	-0.18	0.029	0.001	0.42	OE
G82KVJ		0.073	0.002	0.82	0.029	0.001	0.48	OE
G8R923	X	0.080	0.009	3.76	0.030	0.002	0.99	DR
GBB9FW		0.070	0.000	-0.19	0.024	-0.003	-1.54	OE
GHHRT3		0.069	-0.002	-0.64	0.028	0.000	0.06	OE
GP2V9W		0.070	-0.001	-0.24	0.027	-0.001	-0.31	OE
HUXBJB		0.066	-0.005	-1.84	0.024	-0.004	-1.75	OE
HYWENP	X	0.081	0.010	4.15	0.039	0.012	5.64	OE
JLDNNR	X	0.070	0.000	-0.11	0.040	0.013	6.12	OE
KC2UYH		0.071	0.001	0.29	0.026	-0.001	-0.63	OE
KJKJHK		0.068	-0.002	-0.99	0.025	-0.003	-1.41	OE

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
L8MXX8		0.070	-0.001	-0.24	0.029	0.001	0.50	DR
LJCY8M		0.071	0.000	0.16	0.029	0.001	0.66	OE
LTGAAX		0.069	-0.002	-0.64	0.027	-0.001	-0.31	OE
LUW84H		0.069	-0.001	-0.51	0.026	-0.001	-0.64	OE
LWKMFK		0.072	0.001	0.56	0.029	0.001	0.46	IC
MB9G3W		0.071	0.000	0.04	0.026	-0.002	-0.77	IC
MC9EKH	X	0.095	0.025	9.87	0.055	0.027	13.02	OE
MGNTD6		0.070	-0.001	-0.32	0.027	-0.001	-0.31	OE
MJ9XLM		0.069	-0.002	-0.60	0.028	0.000	0.19	OE
MJT6XH		0.073	0.002	0.96	0.028	0.000	0.13	OE
NKDUBB		0.070	-0.001	-0.24	0.027	-0.001	-0.32	OE
P7J3WK		0.070	-0.001	-0.24	0.028	0.000	0.18	OE
PJGNRA		0.070	0.000	-0.10	0.028	0.001	0.29	OE
PRLC34		0.069	-0.002	-0.64	0.026	-0.002	-0.79	OE
PTA3WF		0.068	-0.003	-1.23	0.024	-0.004	-1.83	OE
Q9EUXX		0.068	-0.003	-1.04	0.026	-0.002	-0.76	IC
QFDFZJ		0.072	0.001	0.56	0.025	-0.003	-1.27	OE
QJMPGM		0.067	-0.003	-1.31	0.025	-0.003	-1.43	OE
RBDQNP		0.075	0.005	1.89	0.031	0.003	1.46	OE
RH744Q		0.070	-0.001	-0.24	0.030	0.002	1.14	OE
RN987H		0.070	0.000	-0.11	0.028	0.000	0.18	OE
RNPVEJ		0.070	-0.001	-0.24	0.030	0.002	1.14	OE
RZHYCR		0.074	0.003	1.36	0.027	-0.001	-0.31	OE
TAMTCH		0.068	-0.003	-1.13	0.025	-0.002	-1.08	IC
TBHMBD		0.067	-0.004	-1.57	0.024	-0.004	-1.82	DR
TMC29N		0.073	0.003	1.09	0.027	0.000	-0.16	GD
TTXK9C		0.069	-0.001	-0.51	0.029	0.001	0.66	OE
UAJABK		0.075	0.005	1.89	0.028	0.000	0.18	IC
UDJLTD		0.070	0.000	-0.11	0.026	-0.002	-0.79	OE
UJ98RR		0.069	-0.002	-0.77	0.027	-0.001	-0.24	OE
UJRZU3	*	0.072	0.002	0.64	0.033	0.005	2.39	OE
UPQQJ7		0.074	0.004	1.49	0.031	0.003	1.46	OE
UTUHPD	X	0.060	-0.011	-4.19	0.027	-0.001	-0.32	OE
V2MY7V	X	0.080	0.009	3.72	0.031	0.003	1.57	OE
VNH7YH		0.070	0.000	-0.16	0.028	0.001	0.34	OE
W3DJH7		0.075	0.005	1.89	0.028	0.000	0.00	OE
WM7ZWT		0.071	0.000	0.16	0.027	-0.001	-0.31	OE
WNE6B2		0.068	-0.003	-1.17	0.029	0.001	0.61	OE
WU4HCP		0.073	0.003	1.09	0.030	0.002	1.14	OE
X8CLKJ		0.074	0.003	1.18	0.028	0.000	0.03	GD
XCDJKC		0.075	0.005	1.85	0.031	0.003	1.60	OE
XFHXH3		0.071	0.001	0.29	0.029	0.001	0.66	WD
XMJ8JG		0.074	0.003	1.36	0.027	-0.001	-0.31	OE
XQHBA9	*	0.077	0.006	2.55	0.031	0.003	1.51	DR
Y4PGAE		0.068	-0.002	-0.91	0.027	-0.001	-0.31	OE

Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
YFWFKR		0.072	0.001	0.56	0.028	0.000	0.18	DR
YTC8RF		0.069	-0.001	-0.51	0.028	0.000	0.18	OE
Z9PNUN		0.067	-0.004	-1.44	0.026	-0.002	-0.79	OE
ZABTQZ		0.072	0.002	0.65	0.029	0.001	0.51	OE
ZKRAKU		0.070	-0.001	-0.24	0.029	0.002	0.88	XR
ZUWJQJ		0.073	0.002	0.96	0.029	0.001	0.66	OE
ZXVQCG		0.070	-0.001	-0.28	0.027	-0.001	-0.47	OE

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.0706 Percent	0.0280 Percent
Stnd Dev Btwn Labs	0.0025 Percent	0.0021 Percent

Statistics based on 84 of 97 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #176

2GV3XP (X) - Data for both samples are low.
2M3MV8 (X) - Data for both samples are high.
386MYD (M) - Laboratory did not submit data for Sample L83.
44JFWV (X) - High data for Sample L83.
67X2YW (X) - Low data for Sample L83.
7FVRMN (X) - Data for both samples are low.
FAJZFE (X) - Data for both samples are high.
G8R923 (X) - High data for Sample L83.
HYWENP (X) - Data for both samples are high.
JLDNNR (X) - High data for Sample L84.
MC9EKH (X) - Data for both samples are high.
UTUHPD (X) - Low data for Sample L83.
V2MY7V (X) - High data for Sample L83.

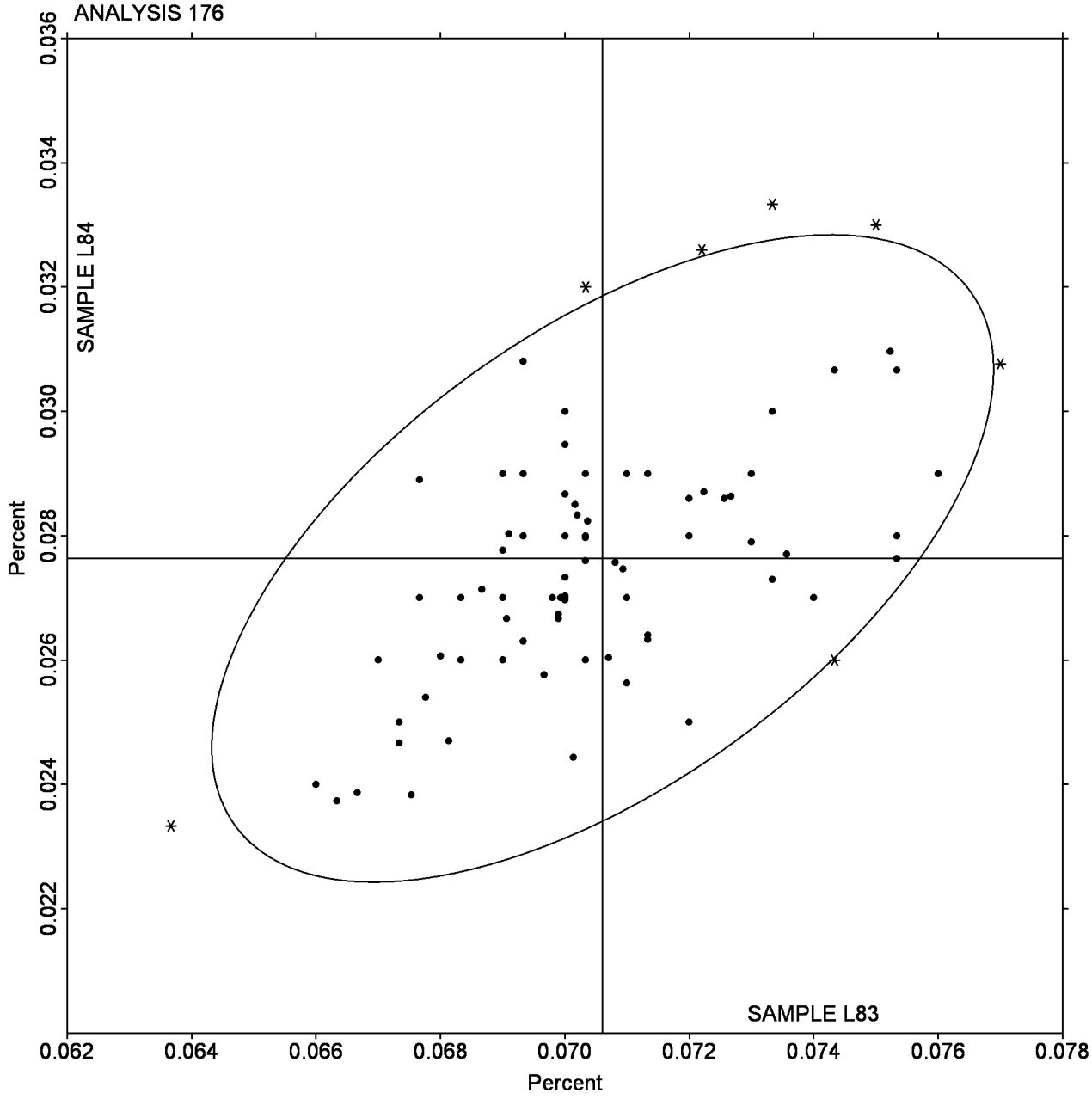
Interlaboratory Testing Program for Metals

Analysis 176

Chemical Analysis Element #7 - Carbon & Low Alloy Steel - Percent

NICKEL (Ni)

SAMPLE L83 = 0.0706 Percent SAMPLE L84 = 0.0280 Percent



Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

		Sample L83			Sample L84			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Instr Code
2469HP		0.118	0.001	0.38	0.059	0.002	0.94	OE
2ENJ3M		0.117	0.000	0.10	0.058	0.001	0.47	OE
2LU4LQ		0.112	-0.005	-1.30	0.053	-0.004	-1.75	OE
37QEGC		0.114	-0.002	-0.65	0.057	0.000	0.15	OE
38KZCN		0.120	0.003	0.93	0.060	0.003	1.58	OE
3PJCQ4		0.117	0.000	0.00	0.056	0.000	-0.17	OE
46RLA6	X	0.131	0.014	3.92	0.070	0.013	6.25	OE
48AQFF		0.116	-0.001	-0.18	0.058	0.001	0.63	OE
4MYN3B		0.112	-0.004	-1.18	0.054	-0.003	-1.21	OE
6AYLTD		0.115	-0.002	-0.46	0.058	0.002	0.79	OE
6KJUNA		0.112	-0.005	-1.30	0.057	0.000	-0.01	OE
6ZBQHC		0.120	0.004	1.03	0.058	0.001	0.63	OE
72ZDJU		0.111	-0.006	-1.58	0.056	-0.001	-0.32	OE
7H8AAT		0.116	0.000	-0.10	0.054	-0.003	-1.21	DR
7MANCV		0.115	-0.002	-0.56	0.058	0.001	0.63	OE
7MXNUT		0.124	0.007	2.07	0.055	-0.002	-0.85	OE
7WF2ER		0.118	0.001	0.28	0.057	0.001	0.31	OE
7YGCN8		0.117	0.001	0.15	0.059	0.002	1.02	OE
82GQX4		0.116	-0.001	-0.28	0.055	-0.002	-1.02	OE
89674N		0.110	-0.006	-1.77	0.053	-0.004	-1.75	OE
8EUHN4	X	0.085	-0.032	-8.85	0.053	-0.003	-1.59	OE
8J2HR2		0.118	0.001	0.38	0.058	0.001	0.52	OE
8U247M		0.118	0.002	0.47	0.059	0.003	1.26	DR
8XNGAP		0.116	-0.001	-0.28	0.057	0.001	0.31	OE
A87AH4		0.115	-0.002	-0.56	0.055	-0.001	-0.64	OE
AC32QF		0.112	-0.005	-1.39	0.052	-0.005	-2.38	OE
AMHV4U	X	0.115	-0.002	-0.46	0.063	0.006	3.00	OE
BPJQ7B		0.116	-0.001	-0.28	0.056	-0.001	-0.32	OE
BT8QMD		0.122	0.005	1.49	0.057	0.000	0.15	OE
BVGUD9		0.115	-0.001	-0.37	0.059	0.003	1.26	OE
BVWZQC		0.123	0.007	1.87	0.060	0.003	1.58	OE
C7FUV7		0.110	-0.006	-1.77	0.054	-0.003	-1.27	OE
C7QTGA		0.120	0.003	0.93	0.060	0.003	1.58	OE
DJYVN3		0.116	-0.001	-0.28	0.054	-0.003	-1.32	GD
DR29DR		0.112	-0.004	-1.21	0.054	-0.002	-1.12	DR
E28NFW		0.114	-0.003	-0.74	0.053	-0.003	-1.59	OE
E6BBLL		0.120	0.004	1.03	0.061	0.004	1.89	OE
EQHQPC		0.125	0.009	2.43	0.060	0.004	1.74	DR
EYJYKK		0.118	0.001	0.28	0.057	0.000	0.15	OE
F4E8BC		0.112	-0.005	-1.39	0.054	-0.003	-1.27	OE
F7JPKE		0.115	-0.002	-0.46	0.054	-0.003	-1.27	OE
GLCHZZ		0.118	0.001	0.38	0.059	0.002	0.94	OE
GMM3L3		0.120	0.003	0.93	0.060	0.003	1.58	OE
GTGGQH		0.121	0.004	1.12	0.060	0.003	1.58	OE
GWD49X		0.114	-0.002	-0.62	0.054	-0.002	-1.07	OE

Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
H4FDEQ		0.110	-0.006	-1.77	0.053	-0.003	-1.59	OE
HY2GNZ		0.117	0.000	0.00	0.057	0.000	-0.01	OE
JWCTRL		0.115	-0.001	-0.37	0.055	-0.001	-0.64	OE
KPP3PH		0.119	0.002	0.65	0.058	0.001	0.63	OE
KPQBT4		0.118	0.002	0.47	0.058	0.001	0.47	IC
KW8ETW		0.119	0.002	0.65	0.059	0.003	1.26	GD
KXGVRC		0.119	0.002	0.65	0.056	-0.001	-0.24	OE
L9GU7P		0.118	0.001	0.38	0.055	-0.002	-0.80	OE
LAJYBW		0.121	0.004	1.21	0.055	-0.001	-0.67	DR
LKPMEF		0.117	0.000	0.00	0.057	0.000	-0.01	DC
M3N2RD		0.118	0.001	0.38	0.058	0.001	0.47	WD
ME2T48		0.116	0.000	-0.09	0.054	-0.002	-1.12	OE
MMUEGE		0.119	0.002	0.56	0.058	0.001	0.63	OE
MQCVC6		0.116	0.000	-0.09	0.058	0.001	0.63	DR
N849XK		0.113	-0.003	-0.98	0.056	-0.001	-0.50	OE
NDNEHJ		0.124	0.008	2.15	0.060	0.003	1.42	DR
NPUDL6		0.118	0.001	0.38	0.054	-0.003	-1.43	OE
NVKHQG		0.119	0.002	0.56	0.058	0.001	0.45	OE
P7VE86		0.121	0.004	1.21	0.055	-0.001	-0.64	OE
QDWBWL		0.119	0.003	0.71	0.059	0.002	1.10	OE
QVQYGB		0.116	-0.001	-0.18	0.057	0.000	-0.09	OE
RB7TR7		0.116	0.000	-0.09	0.057	0.000	-0.01	OE
RHBG3Z		0.115	-0.002	-0.46	0.055	-0.002	-0.80	OE
RK9VAH		0.120	0.003	0.93	0.058	0.001	0.47	OE
RR8URE		0.119	0.003	0.75	0.058	0.001	0.63	IC
RT8XL4		0.112	-0.005	-1.32	0.055	-0.002	-0.99	OE
TMTENZ		0.117	0.001	0.15	0.056	-0.001	-0.32	XX
TYFYW6		0.115	-0.002	-0.44	0.057	0.000	0.04	OE
U6GNLN		0.125	0.008	2.24	0.061	0.004	2.05	GD
U74TQV	*	0.124	0.008	2.15	0.058	0.001	0.47	OE
UC9NQA		0.114	-0.003	-0.74	0.056	-0.001	-0.32	OE
UPU8UD		0.115	-0.001	-0.37	0.057	0.000	-0.02	OE
UW98YN		0.117	0.000	-0.04	0.056	0.000	-0.12	IC
V4VNRX		0.120	0.003	0.84	0.056	-0.001	-0.32	XR
V6L9BP		0.114	-0.002	-0.65	0.055	-0.002	-0.96	OE
V7BRX9		0.115	-0.002	-0.56	0.057	0.000	-0.01	OE
VKNETL	*	0.109	-0.007	-2.03	0.056	0.000	-0.21	OE
VTNJBV		0.119	0.002	0.57	0.056	0.000	-0.17	OE
VVZZ2F		0.112	-0.005	-1.30	0.054	-0.002	-1.07	IC
VWRBEE		0.110	-0.007	-1.86	0.060	0.003	1.58	OE
WM27VT		0.118	0.002	0.47	0.057	0.000	0.15	OE
X2LUVJ		0.120	0.004	1.03	0.059	0.002	1.10	OE
XAMWK4		0.110	-0.006	-1.77	0.056	-0.001	-0.48	OE
XBJNT9		0.114	-0.002	-0.65	0.057	0.001	0.31	OE
XQG668		0.123	0.006	1.77	0.061	0.005	2.21	OE

Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
XV3RHT		0.114	-0.003	-0.74	0.057	0.000	-0.01	OE
YJJTUB		0.114	-0.003	-0.74	0.055	-0.001	-0.64	OE
YJW7ZE		0.116	-0.001	-0.18	0.056	-0.001	-0.32	OE
YKWDXR		0.119	0.002	0.62	0.058	0.002	0.79	OE
YPQ9TY		0.118	0.001	0.38	0.055	-0.002	-0.80	IC
YXL6PM		0.109	-0.007	-2.05	0.052	-0.004	-2.07	OE
YZP7DE		0.114	-0.003	-0.74	0.056	0.000	-0.17	OE
ZZWWM2		0.120	0.004	1.03	0.057	0.001	0.31	OE

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.1167 Percent	0.0570 Percent
Stnd Dev Btwn Labs	0.0036 Percent	0.0021 Percent

Statistics based on 93 of 98 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #177

46RLA6 (X) - Data for both samples are high.
8EUHN4 (X) - Low data for Sample L83.
AMHV4U (X) - High data for Sample L84.

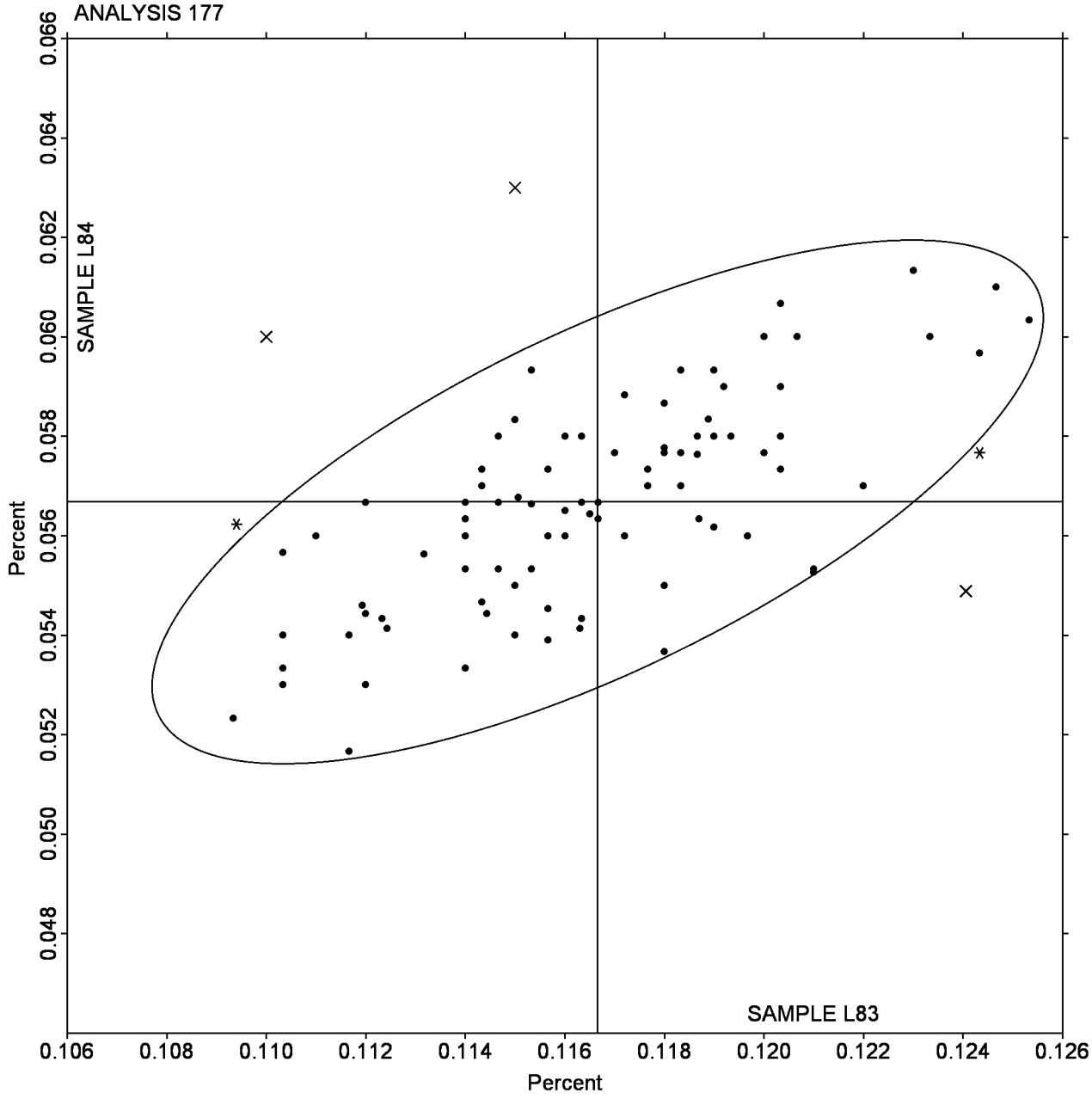
Interlaboratory Testing Program for Metals

Analysis 177

Chemical Analysis Element #8 - Carbon & Low Alloy Steel - Percent

CHROMIUM (Cr)

SAMPLE L83 = 0.1167 Percent SAMPLE L84 = 0.0570 Percent



Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
22XZA3		0.0150	-0.0008	-0.52	0.0167	-0.0001	-0.11	OE
292Y28		0.0142	-0.0016	-1.07	0.0148	-0.0020	-1.55	OE
2BZCEJ		0.0140	-0.0018	-1.18	0.0150	-0.0018	-1.37	OE
2FDVQL		0.0128	-0.0029	-1.96	0.0139	-0.0029	-2.23	OE
2GPDKY		0.0163	0.0006	0.37	0.0163	-0.0005	-0.36	OE
2T4RPY		0.0160	0.0002	0.14	0.0170	0.0002	0.14	OE
2U3ZZG		0.0149	-0.0009	-0.61	0.0159	-0.0009	-0.66	OE
2YXNUH		0.0150	-0.0008	-0.52	0.0160	-0.0008	-0.61	OE
3DA4CX		0.0155	-0.0003	-0.19	0.0168	0.0000	0.02	OE
3M3TZ9	*	0.0200	0.0042	2.80	0.0200	0.0032	2.42	OE
3PGEHG		0.0150	-0.0008	-0.52	0.0163	-0.0005	-0.36	GD
427TYN		0.0173	0.0016	1.03	0.0190	0.0022	1.66	OE
49ZQX7		0.0156	-0.0001	-0.10	0.0166	-0.0002	-0.13	IC
4APZRF		0.0188	0.0030	2.01	0.0198	0.0030	2.26	DR
4D9Z7A		0.0153	-0.0005	-0.32	0.0170	0.0002	0.14	OE
4XWZLW		0.0140	-0.0018	-1.18	0.0150	-0.0018	-1.37	OE
68Y66J		0.0160	0.0002	0.14	0.0180	0.0012	0.90	IC
6DJ9LN		0.0170	0.0012	0.79	0.0170	0.0002	0.17	OE
6GZN98		0.0155	-0.0003	-0.19	0.0170	0.0002	0.17	OE
7BDYJV		0.0142	-0.0015	-1.03	0.0160	-0.0008	-0.61	OE
7Y2XRJ		0.0168	0.0010	0.65	0.0174	0.0006	0.45	OE
89NVZU	X	0.0160	0.0002	0.14	0.0110	-0.0058	-4.40	OE
8F38V2		0.0162	0.0005	0.30	0.0177	0.0009	0.67	OE
9DHHDN		0.0157	0.0000	-0.03	0.0169	0.0001	0.07	OE
9KX766		0.0177	0.0019	1.25	0.0173	0.0005	0.40	OE
9M2UKF		0.0140	-0.0018	-1.18	0.0160	-0.0008	-0.61	OE
A3WYRA		0.0160	0.0002	0.14	0.0173	0.0005	0.40	OE
A4XR6A		0.0170	0.0012	0.81	0.0173	0.0005	0.40	OE
AHGE9F		0.0146	-0.0012	-0.79	0.0158	-0.0010	-0.74	OE
AKTPLH		0.0162	0.0004	0.26	0.0168	0.0000	-0.01	XR
BF7YEF		0.0148	-0.0009	-0.63	0.0159	-0.0009	-0.69	OE
BG73Z4		0.0160	0.0002	0.14	0.0167	-0.0001	-0.11	OE
BTK22Q		0.0167	0.0009	0.59	0.0180	0.0012	0.90	OE
D42R8K		0.0146	-0.0012	-0.81	0.0165	-0.0003	-0.24	IC
D4REFH	X	0.0103	-0.0054	-3.62	0.0115	-0.0053	-4.02	OE
DE9QHY		0.0143	-0.0014	-0.96	0.0153	-0.0015	-1.12	OE
DEZLCF		0.0150	-0.0008	-0.52	0.0160	-0.0008	-0.61	OE
DFZJYK		0.0144	-0.0014	-0.92	0.0161	-0.0007	-0.56	OE
DHQ7RQ	X	0.0102	-0.0056	-3.73	0.0118	-0.0050	-3.77	DR
E2FQ36		0.0147	-0.0011	-0.74	0.0163	-0.0005	-0.36	IC
E8NQ7E		0.0134	-0.0023	-1.56	0.0152	-0.0016	-1.20	OE
F4EZJQ		0.0128	-0.0030	-2.00	0.0140	-0.0028	-2.15	OE
FBN97E		0.0154	-0.0003	-0.23	0.0170	0.0002	0.14	OE
FHKFYD		0.0167	0.0009	0.59	0.0171	0.0003	0.24	IC
FNATZ2		0.0145	-0.0013	-0.87	0.0161	-0.0007	-0.54	GD

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
FQZJAG	X	0.0073	-0.0085	-5.66	0.0097	-0.0071	-5.36	OE
FWZ9ZK		0.0157	-0.0001	-0.08	0.0163	-0.0005	-0.36	OE
H6PJPL		0.0159	0.0001	0.08	0.0163	-0.0005	-0.39	OE
H8DY3M		0.0166	0.0008	0.54	0.0163	-0.0005	-0.39	IC
HVMNQF		0.0148	-0.0010	-0.65	0.0160	-0.0008	-0.61	OE
J6G2UE		0.0173	0.0015	1.01	0.0187	0.0019	1.46	DR
JC4JTA		0.0153	-0.0004	-0.30	0.0170	0.0002	0.14	DR
JGFPAF		0.0180	0.0022	1.47	0.0190	0.0022	1.66	WD
K39444		0.0162	0.0004	0.26	0.0160	-0.0008	-0.61	OE
KAD69J		0.0146	-0.0011	-0.76	0.0160	-0.0008	-0.64	OE
KL239G	X	0.0133	-0.0024	-1.63	0.0167	-0.0001	-0.11	DC
KQTFK6		0.0159	0.0001	0.07	0.0169	0.0001	0.04	OE
KRF3ZL	*	0.0136	-0.0022	-1.47	0.0139	-0.0029	-2.18	DR
L669TV		0.0159	0.0001	0.08	0.0168	0.0000	-0.01	OE
LHERRN		0.0156	-0.0001	-0.10	0.0185	0.0017	1.31	OE
LMCBX9		0.0170	0.0012	0.81	0.0190	0.0022	1.66	OE
M9D3V6		0.0183	0.0026	1.69	0.0183	0.0015	1.15	OE
MCNZLU		0.0190	0.0032	2.14	0.0200	0.0032	2.42	OE
MK8JK7		0.0163	0.0006	0.37	0.0162	-0.0006	-0.49	XX
N46W2K		0.0160	0.0002	0.12	0.0168	0.0000	0.02	OE
N7PW4L		0.0170	0.0012	0.81	0.0180	0.0012	0.90	OE
ND8ECM	X	0.0120	-0.0038	-2.51	0.0119	-0.0049	-3.70	OE
NHF8ET		0.0142	-0.0015	-1.03	0.0152	-0.0016	-1.20	OE
PMNPZR	*	0.0200	0.0042	2.80	0.0200	0.0032	2.42	OE
PUPT3J		0.0153	-0.0005	-0.32	0.0173	0.0005	0.35	OE
Q8JAYQ		0.0172	0.0015	0.96	0.0179	0.0011	0.80	OE
QFVEX3		0.0167	0.0009	0.59	0.0166	-0.0002	-0.18	DR
QNPMHT		0.0180	0.0022	1.47	0.0180	0.0012	0.90	OE
RCPFZE		0.0150	-0.0008	-0.52	0.0157	-0.0011	-0.87	OE
RXB4LF		0.0155	-0.0003	-0.19	0.0169	0.0001	0.07	OE
RYBHLK		0.0153	-0.0005	-0.32	0.0164	-0.0004	-0.29	OE
T9D8VA		0.0140	-0.0018	-1.18	0.0150	-0.0018	-1.37	OE
TAGLN3	X	0.0213	0.0056	3.69	0.0220	0.0052	3.96	OE
U26RCJ		0.0157	-0.0001	-0.08	0.0165	-0.0003	-0.21	OE
UD4B8R		0.0147	-0.0011	-0.72	0.0160	-0.0008	-0.59	OE
URMLTU		0.0180	0.0022	1.47	0.0190	0.0022	1.66	OE
UVZY6W		0.0156	-0.0001	-0.10	0.0169	0.0001	0.09	OE
UXN6YE		0.0130	-0.0028	-1.85	0.0150	-0.0018	-1.37	OE
UYK48R	X	0.0100	-0.0058	-3.84	0.0133	-0.0035	-2.63	OE
VDU8FK		0.0162	0.0004	0.28	0.0173	0.0005	0.40	GD
VQKKB9	X	0.0047	-0.0111	-7.36	0.0049	-0.0119	-9.00	OE
W9ZECH		0.0147	-0.0011	-0.72	0.0158	-0.0010	-0.74	OE
WA736F		0.0153	-0.0005	-0.34	0.0165	-0.0003	-0.26	OE
WFW96B		0.0145	-0.0013	-0.85	0.0162	-0.0006	-0.44	IC
WKD2GU		0.0150	-0.0008	-0.52	0.0157	-0.0011	-0.87	DR

Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
WMHU98		0.0160	0.0003	0.17	0.0173	0.0005	0.37	0E
YHRRWZ		0.0155	-0.0002	-0.17	0.0170	0.0002	0.12	0E
YLNLLN		0.0170	0.0012	0.81	0.0180	0.0012	0.90	0E
YM7C9F		0.0153	-0.0004	-0.30	0.0177	0.0009	0.65	0E
YQNKGZ		0.0162	0.0004	0.27	0.0169	0.0000	0.03	0E
YRJ9R9	X	0.0197	0.0039	2.58	0.0212	0.0044	3.33	0E
ZBL4ED		0.0156	-0.0002	-0.14	0.0169	0.0001	0.09	0E
ZBP7EP	*	0.0200	0.0042	2.80	0.0200	0.0032	2.42	0E
ZK283Y		0.0160	0.0002	0.14	0.0170	0.0002	0.14	0E

Summary Statistics

	Sample L83	Sample L84
Grand Means	0.01578 Percent	0.01680 Percent
Stnd Dev Btwn Labs	0.00151 Percent	0.00132 Percent

Statistics based on 88 of 99 reporting participants

Samples L83 , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #178

89NVZU (X) - Low data for Sample L84.
D4REFH (X) - Data for both samples are low.
DHQ7RQ (X) - Data for both samples are low.
FQZJAG (X) - Data for both samples are low.
KL239G (X) - Inconsistent within the determinations for both samples.
ND8ECM (X) - Low data for Sample L84.
TAGLN3 (X) - Data for both samples are high.
UYK48R (X) - Low data for Sample L83. Inconsistent within the determinations for Sample L84.
VQKKB9 (X) - Data for both samples are low.
YRJ9R9 (X) - High data for Sample L84.

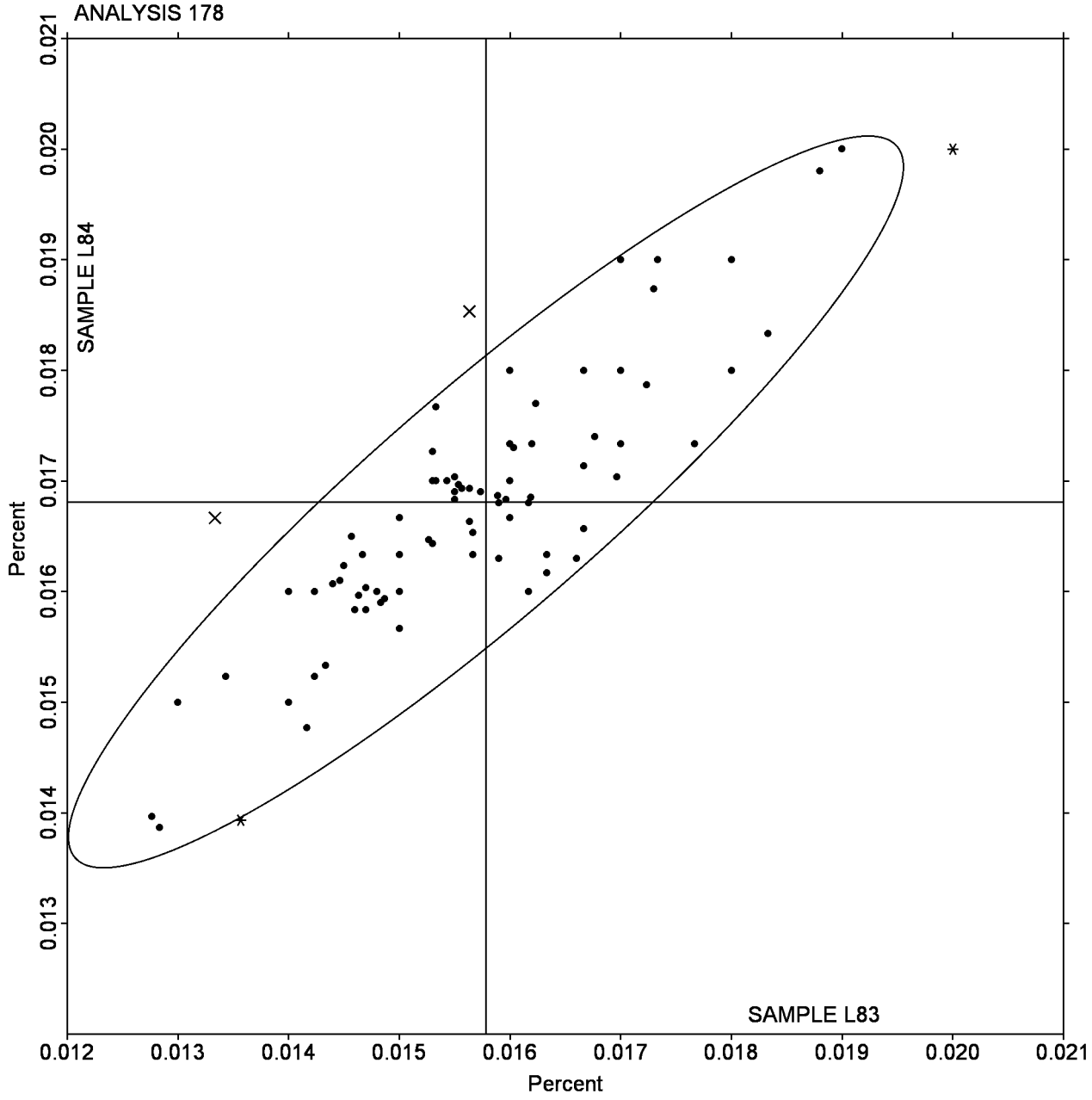
Interlaboratory Testing Program for Metals

Analysis 178

Chemical Analysis Element #9 - Carbon & Low Alloy Steel - Percent

MOLYBDENUM (Mo)

SAMPLE L83 = 0.01578 Percent SAMPLE L84 = 0.01680 Percent



Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
226KER		0.0016	-0.0005	-0.57	0.0289	0.0004	0.24	XX
229CMU		0.0019	-0.0002	-0.25	0.0282	-0.0003	-0.18	OE
2CB9HB		0.0017	-0.0004	-0.41	0.0301	0.0015	0.98	OE
2J79TW		0.0011	-0.0010	-1.03	0.0269	-0.0017	-1.05	OE
2VB7AC		0.0027	0.0006	0.59	0.0290	0.0005	0.30	OE
3HKUA7		0.0026	0.0005	0.49	0.0271	-0.0014	-0.88	IC
3JXE2G	M				0.0223	-0.0062	-3.93	OE
3PLTD3		0.0017	-0.0004	-0.43	0.0297	0.0012	0.75	IC
3XQZFV		0.0026	0.0005	0.53	0.0287	0.0002	0.11	OE
3ZQWF7		0.0016	-0.0005	-0.57	0.0291	0.0005	0.35	OE
46D664		0.0030	0.0009	0.95	0.0317	0.0031	2.00	OE
47AY6E	X	0.0010	-0.0011	-1.17	0.0173	-0.0112	-7.10	OE
497DXD	X	0.0010	-0.0011	-1.17	0.0340	0.0055	3.48	GD
4A6GYE		0.0034	0.0013	1.37	0.0293	0.0008	0.49	OE
4JWLGF	M				0.0246	-0.0039	-2.47	OE
6DMTGG		0.0018	-0.0003	-0.29	0.0314	0.0028	1.81	OE
6NJ4M3		0.0024	0.0003	0.31	0.0307	0.0022	1.40	OE
6TNUUC		0.0020	-0.0001	-0.11	0.0278	-0.0007	-0.44	OE
6XAKHY		0.0011	-0.0010	-1.06	0.0253	-0.0032	-2.02	OE
7EYFLU		0.0031	0.0010	1.05	0.0293	0.0008	0.52	OE
7GXEP2	M				0.0265	-0.0020	-1.28	OE
7WA2QH		0.0020	-0.0001	-0.15	0.0280	-0.0005	-0.31	OE
88MKQD		0.0040	0.0019	2.01	0.0297	0.0011	0.73	OE
982U7R	M				0.0250	-0.0035	-2.24	OE
9RWL26		0.0020	-0.0001	-0.15	0.0281	-0.0004	-0.25	OE
9XLETJ		0.0020	-0.0001	-0.11	0.0250	-0.0035	-2.24	DR
AJGFHR		0.0013	-0.0008	-0.82	0.0288	0.0002	0.16	OE
AN67EN		0.0023	0.0002	0.21	0.0280	-0.0005	-0.31	IC
BFT7XJ		0.0010	-0.0011	-1.17	0.0270	-0.0015	-0.97	OE
BPKP7Q		0.0018	-0.0003	-0.36	0.0306	0.0021	1.34	OE
C8B6VZ		0.0020	-0.0001	-0.11	0.0270	-0.0016	-0.99	OE
CLVCUR		0.0023	0.0002	0.21	0.0278	-0.0007	-0.46	DR
DRGEQW	X	0.0021	0.0000	-0.04	0.0158	-0.0127	-8.08	OE
DYPTQK		0.0019	-0.0002	-0.18	0.0301	0.0016	1.00	IC
E3VP4Z		0.0023	0.0002	0.21	0.0291	0.0006	0.37	OE
ECZMZF		0.0020	-0.0001	-0.15	0.0273	-0.0012	-0.78	OE
ELHD72	*	0.0047	0.0026	2.71	0.0270	-0.0015	-0.97	OE
EPRXWN		0.0020	-0.0001	-0.11	0.0297	0.0011	0.73	OE
EZ6F3L		0.0005	-0.0016	-1.73	0.0286	0.0001	0.05	OE
F82KG9		0.0010	-0.0011	-1.17	0.0263	-0.0022	-1.39	OE
GKNLXK	X	0.0059	0.0038	4.02	0.0094	-0.0192	-12.16	OE
H7TFHB		0.0029	0.0008	0.84	0.0285	-0.0001	-0.03	XR
HGR89M		0.0015	-0.0006	-0.60	0.0293	0.0008	0.49	OE
HNVABU	X	0.0006	-0.0015	-1.63	0.0212	-0.0074	-4.67	OE
HV6QCA	*	0.0000	-0.0021	-2.23	0.0257	-0.0029	-1.81	OE

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

WebCode	Data Flag	Sample L83 Lab Mean	Sample L83 Diff. from Grand Mean	Sample L83 CPV	Sample L84 Lab Mean	Sample L84 Diff. from Grand Mean	Sample L84 CPV	Instr Code
JDWHUF		0.0020	-0.0001	-0.11	0.0293	0.0008	0.52	OE
JL83J6		0.0011	-0.0010	-1.03	0.0262	-0.0023	-1.47	OE
JQ8KFJ		0.0010	-0.0011	-1.17	0.0290	0.0005	0.30	OE
K6K94R		0.0010	-0.0011	-1.17	0.0250	-0.0035	-2.24	OE
K8XNUR		0.0014	-0.0007	-0.78	0.0291	0.0005	0.35	OE
KJBY9A		0.0012	-0.0009	-0.92	0.0305	0.0020	1.26	OE
KKGKKN		0.0017	-0.0004	-0.43	0.0273	-0.0012	-0.75	OE
LCKUTL	M				0.0262	-0.0024	-1.50	OE
LUBYH7		0.0004	-0.0017	-1.84	0.0271	-0.0015	-0.92	OE
M2UARF	M				0.0237	-0.0049	-3.08	XX
MEJU7N	M				0.0283	-0.0003	-0.16	OE
NBAMVP		0.0026	0.0005	0.56	0.0294	0.0009	0.56	OE
NYEJD4		0.0026	0.0005	0.49	0.0279	-0.0006	-0.39	OE
NYJX9P		0.0022	0.0001	0.07	0.0287	0.0002	0.13	OE
P3CFHN		0.0033	0.0012	1.30	0.0303	0.0018	1.15	OE
PCEMC3	*	0.0030	0.0009	0.95	0.0243	-0.0042	-2.66	OE
PCZ4QH	M				0.0265	-0.0021	-1.30	OE
PQG4GG		0.0010	-0.0011	-1.17	0.0270	-0.0015	-0.97	OE
QCW323	*	0.0045	0.0024	2.53	0.0287	0.0002	0.13	DR
QURHF8		0.0020	-0.0001	-0.15	0.0271	-0.0014	-0.88	DR
R2NVLF		0.0029	0.0008	0.84	0.0276	-0.0010	-0.61	IC
RARMLY		0.0019	-0.0002	-0.18	0.0277	-0.0009	-0.54	OE
RQVBNX		0.0010	-0.0011	-1.17	0.0280	-0.0005	-0.33	OE
RYCWWU		0.0020	-0.0001	-0.15	0.0287	0.0001	0.09	OE
TG44JC		0.0030	0.0009	0.95	0.0283	-0.0002	-0.12	OE
UZW46L		0.0015	-0.0006	-0.64	0.0307	0.0021	1.36	GD
V6RYTR		0.0010	-0.0011	-1.17	0.0300	0.0015	0.94	OE
V73FQK		0.0025	0.0004	0.42	0.0283	-0.0002	-0.12	OE
VJCJ8U		0.0030	0.0009	0.95	0.0287	0.0001	0.09	OE
VM822U		0.0028	0.0007	0.77	0.0294	0.0009	0.58	OE
VU4M9G		0.0010	-0.0011	-1.17	0.0300	0.0015	0.94	OE
VVYQZ9		0.0011	-0.0010	-1.03	0.0278	-0.0007	-0.44	OE
W7DQ33	X	0.0190	0.0169	17.88	0.0190	-0.0095	-6.05	WD
WCYBWN	M				0.0300	0.0015	0.94	OE
WD9MML		0.0021	0.0000	-0.04	0.0285	0.0000	0.01	DR
WJZ32L		0.0020	-0.0001	-0.11	0.0303	0.0018	1.15	OE
WTE8X4		0.0040	0.0019	2.01	0.0300	0.0015	0.94	DC
XGD4U9		0.0032	0.0011	1.19	0.0301	0.0015	0.98	DR
XK384T		0.0018	-0.0003	-0.28	0.0258	-0.0027	-1.70	OE
XYB737		0.0017	-0.0004	-0.39	0.0319	0.0034	2.17	OE
YPEL6J		0.0015	-0.0006	-0.68	0.0280	-0.0005	-0.33	OE
YQ8E6G	M				0.0311	0.0026	1.66	GD
YVQZ42	*	0.0047	0.0026	2.78	0.0289	0.0004	0.26	OE
ZXR97Q	M				0.0273	-0.0012	-0.78	DR

Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

Summary Statistics

	Sample	Sample L84
Grand Means	0.00210 Percent	0.02850 Percent
Stnd Dev Btwn Labs	0.00095 Percent	0.00157 Percent

Statistics based on 71 of 89 reporting participants

Samples , L84 : AISI 1030, AISI 1040

Comments on assigned Data Flags for Test #179

3JXE2G (M) - Low data for Sample L84. Laboratory did not submit data for Sample L83.
47AY6E (X) - Low data for Sample L84. Inconsistent within the determinations for Sample L84.
497DXD (X) - High data for Sample L84.
4JWLGF (M) - Laboratory did not submit data for Sample L83.
7GXEP2 (M) - Laboratory did not submit data for Sample L83.
982U7R (M) - Laboratory did not submit data for Sample L83.
DRGEQW (X) - Low data for Sample L84.
GKNLXK (X) - High data for Sample L83. Low data for Sample L84.
HNVABU (X) - Low data for Sample L84.
LCKUTL (M) - Laboratory did not submit data for Sample L83.
M2UARF (M) - Low data for Sample L84. Laboratory did not submit data for Sample L83.
MEJU7N (M) - Laboratory did not submit data for Sample L83.
PCZ4QH (M) - Laboratory did not submit data for Sample L83.
W7DQ33 (X) - High data for Sample L83. Low data for Sample L84.
WCYBWN (M) - Laboratory did not submit data for Sample L83.
YQ8E6G (M) - Laboratory did not submit data for Sample L83.
ZXR97Q (M) - Laboratory did not submit data for Sample L83.

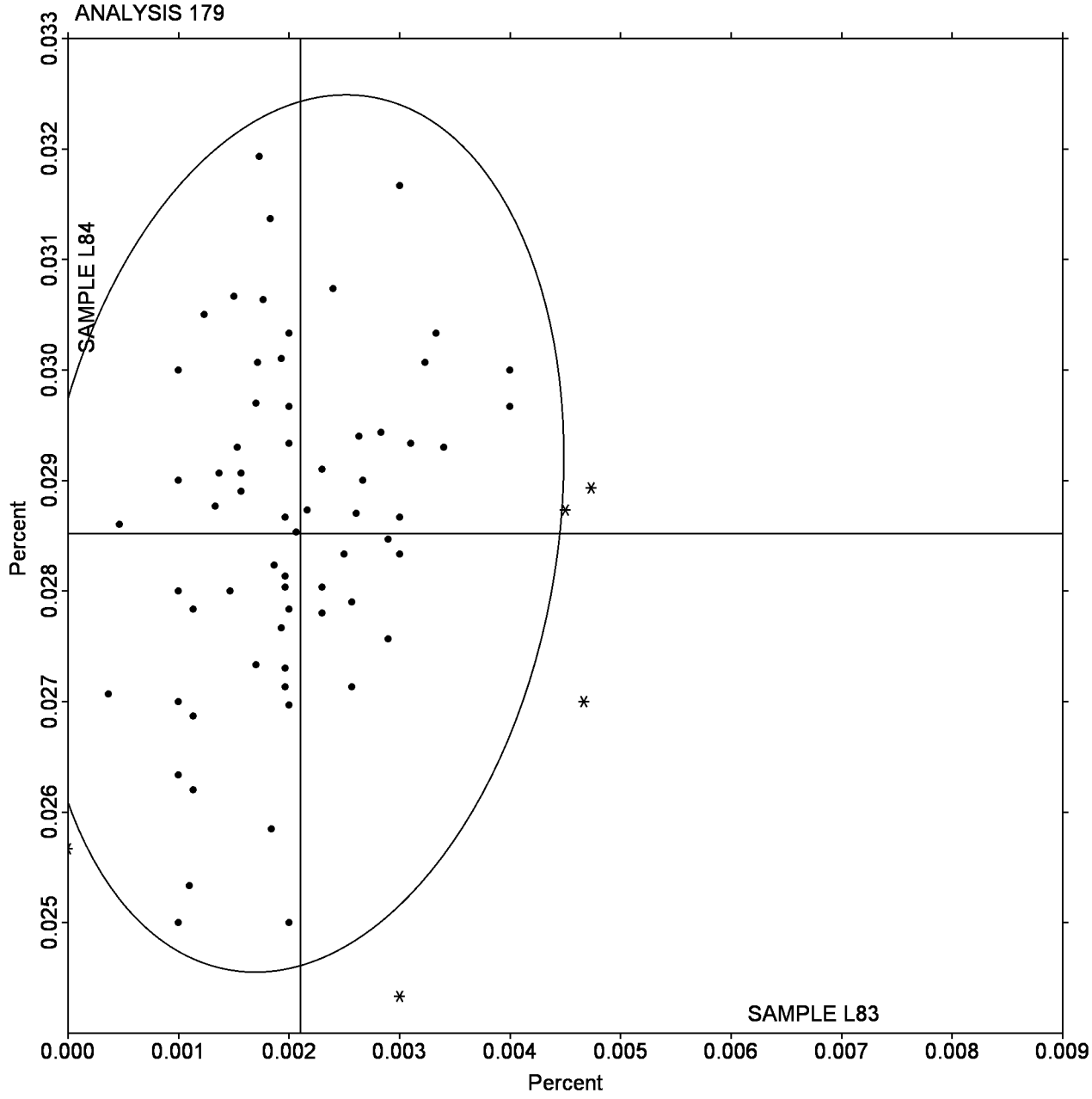
Interlaboratory Testing Program for Metals

Analysis 179

Chemical Analysis Element #10 - Carbon & Low Alloy Steel - Percent

ALUMINUM (Al)

SAMPLE = 0.00210 Percent SAMPLE L84 = 0.02850 Percent



Instrument and Method Code List - Report# 89

Instrument information as provided by laboratories

Analysis	Analysis Name

105 Tensile Strength: Lab-Machined Flat Aluminum

Instrument code and description

ZZ	Instruments No Longer Tracked

110 Tensile Strength: Pre-Machined Round Steel

Instrument code and description

ZZ	Instruments No Longer Tracked

119 Rockwell Hardness: B Scale

Instrument code and description

AK	Akashi
AN	Antonik
AV	Avery
BU	Buehler
CL	Clark
EM	EMCO
FU	Future-Tech
IN	Indentec
LE	Leco
MA	Matsuzawa
MI	Mitutoyo
NA	New Age Industries
UN	United Testing Systems
WI	Wilson / Instron Instruments
XX	Instrument manufacturer not specified by lab

121 Microhardness: Knoop Indenters (500 gf)

Instrument code and description

AK	Akashi
AN	Antonik
AT	ATS
BU	Buehler, Ltd.
CL	Clark
CM	Clemex
FU	Future-Tech
LE	Leco
LI	Leitz
MI	Mitutoyo
SH	Shimadzu
ST	Struers
WI	Wilson-Wolpert/Instron
WT	Wilson-Wolpert-Tukon
XX	Instrument manufacturer not specified by lab

122 Microhardness: Knoop Indenters (200 gf)

Instrument code and description

122 Microhardness: Knoop Indenters (200 gf)

Instrument code and description

AN	Antonik
BU	Buehler, Ltd.
CL	Clark
CM	Clemex
FU	Future-Tech
LE	Leco
LI	Leitz
MI	Mitutoyo
ST	Struers
WI	Wilson-Wolpert/Instron
WT	Wilson-Wolpert-Tukon
XX	Instrument manufacturer not specified by lab

123 Microhardness: Vickers Indenters (500 gf)

Instrument code and description

AK	Akashi
AN	Antonik
AW	ACCO Wilson
BU	Buehler, Ltd.
CL	Clark
CM	Clemex
EM	EMCO TEST M1C-100
FU	Future-Tech
LE	Leco
LI	Leitz
MA	Matsuzawa
MI	Mitutoyo
SH	Shimadzu
ST	Struers
WI	Wilson-Wolpert/Instron
WT	Wilson-Wolpert-Tukon
WZ	Zwick
XX	Instrument manufacturer not specified by lab

135 Brinell Hardness

Instrument code and description

AL	Amsler
AM	Ametek
AV	Avery
DE	Detroit Testing
EM	EMCO
ER	Ernst
KI	King Tester
LS	Louis Small
MA	Matsuzawa
NA	New Age Industries
NS	Nakai Seiki Works
PI	Pittsburgh
RI	Riehle
SA	Satec HVL 60
ST	Steel City
SU	Sun-tec
TI	Tinius Olsen
TO	Togoshi Seiki Co.
WI	Wilson / Instron Instruments
XX	Instrument manufacturer not specified by lab

140 Tensile Strength: Lab-Machined Round Steel

Instrument code and description

ZZ	Instruments No Longer Tracked

170 Carbon & Low Alloy Steel, Element #1

Method code and description

CI	Combustion/IR
CO	Combustion
DR	Direct Reading Optical Emission Spectrometr
GD	Glow Discharge Spectroscopy
IR	IR (Absorption/Detection)
OE	Optical Emission Spectrometry
XX	Method not specified by lab