

Fasteners & Metals Testing Program

Summary Report # 84 - 4th Q 2008

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Analysis

Analysis Name

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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 except Chemical Analyses). Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data are excluded. For Chemical Analyses see an expansion 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 115

Fastener Wedge Tensile (10 deg) - ksi

ASTM F606

WebCode	Data Flag	Sample X73			Sample X74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1DBB2Y		165.23	0.35	0.27	166.30	1.56	1.07	SA
1PEVP6		164.20	-0.69	-0.52	164.80	0.06	0.04	BA
1T6EKA		165.96	1.07	0.82	164.59	-0.15	-0.10	XX
25HJ9Y		164.60	-0.29	-0.22	166.23	1.49	1.02	SA
2AEU15		163.94	-0.94	-0.72	164.33	-0.41	-0.28	SA
2FTX7R		165.43	0.55	0.42	166.73	1.99	1.36	TO
3KJ8LG		165.67	0.78	0.60	164.07	-0.68	-0.46	TO
4CSVPF		161.86	-3.02	-2.30	161.28	-3.46	-2.37	SA
4K5YLG		165.93	1.05	0.80	165.47	0.72	0.50	TO
4RVW9Q		165.84	0.95	0.73	164.49	-0.25	-0.17	SA
5WZX7Y		165.73	0.85	0.65	166.17	1.42	0.97	BA
5Y6F6U	*	162.31	-2.58	-1.96	164.72	-0.03	-0.02	SH
6KJ7MG	X	170.32	5.44	4.14	172.02	7.27	4.98	FI
6VH1XR		165.93	1.05	0.80	164.47	-0.28	-0.19	SA
79CPPJ		162.23	-2.65	-2.02	162.50	-2.24	-1.54	TO
7AUT7G		163.97	-0.92	-0.70	164.47	-0.28	-0.19	BA
7KXDLP		165.40	0.51	0.39	166.90	2.16	1.48	TO
83DCE7		166.30	1.41	1.08	167.03	2.29	1.57	TO
88LVRU		165.97	1.08	0.82	164.63	-0.11	-0.08	TO
8YFV1T		164.47	-0.42	-0.32	164.67	-0.08	-0.05	TO
93D9D2		163.91	-0.98	-0.74	162.01	-2.73	-1.87	SH
9A26N3		165.53	0.65	0.49	164.67	-0.08	-0.05	SA
9DFEQ2		164.23	-0.65	-0.50	164.37	-0.38	-0.26	SA
A49BF3		164.33	-0.55	-0.42	163.87	-0.88	-0.60	TO
A6JYR7		164.53	-0.35	-0.27	164.40	-0.34	-0.23	BA
ABQJPE		167.10	2.21	1.68	166.24	1.49	1.02	TO
AHYLFQ	*	167.93	3.05	2.32	168.49	3.75	2.57	TO
BLSM3		164.00	-0.89	-0.67	163.00	-1.74	-1.19	XX
BNQ55R	X	163.10	-1.78	-1.36	159.41	-5.33	-3.65	SA
BZF76J		165.07	0.18	0.14	164.20	-0.54	-0.37	BT
CHZJ49		163.13	-1.75	-1.33	163.67	-1.08	-0.74	SA
D3KAUA	X	188.70	23.81	18.14	184.20	19.46	13.32	TO
DCBV2B		163.45	-1.44	-1.10	162.77	-1.98	-1.35	TO
DJLFEU		165.80	0.91	0.70	163.43	-1.31	-0.90	TO
DK91RC		166.10	1.21	0.93	166.27	1.52	1.04	TO
DNDM1W		164.00	-0.89	-0.67	165.27	0.52	0.36	UN
DNE8NB		163.67	-1.22	-0.93	163.33	-1.41	-0.96	TO
E459V8		165.25	0.36	0.28	165.63	0.89	0.61	FI
E7MDPW		164.83	-0.05	-0.04	166.60	1.86	1.27	SH
EPH46M		165.88	1.00	0.76	165.48	0.74	0.50	HT
EQMWR8	X	184.52	19.63	14.96	182.37	17.62	12.06	TO
FA97J4		164.13	-0.75	-0.57	165.03	0.29	0.20	TO
FZYMLH		165.92	1.04	0.79	163.99	-0.75	-0.51	FI
GDKAGE		167.20	2.31	1.76	167.00	2.26	1.55	SA
HLQLW6		165.59	0.71	0.54	166.02	1.28	0.87	TO

Interlaboratory Testing Program for Metals

Analysis 115

Fastener Wedge Tensile (10 deg) - ksi

ASTM F606

WebCode	Data Flag	Sample X73			Sample X74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
J83SB3		164.83	-0.05	-0.04	164.33	-0.42	-0.29	SH
JG7U9V		165.43	0.55	0.42	165.07	0.32	0.22	TO
KF2WYX		164.20	-0.69	-0.52	162.97	-1.78	-1.22	SA
LE3QYC		165.08	0.19	0.14	165.37	0.63	0.43	SA
LMZZB9	X	12.80	-152.09	-115.88	12.67	-152.08	-104.10	BA
M6P2Z4		164.23	-0.65	-0.50	165.57	0.82	0.56	TO
MEJLA4		164.02	-0.86	-0.66	165.14	0.39	0.27	UN
MQHCUB		164.70	-0.19	-0.14	163.77	-0.98	-0.67	XX
MS6FDQ		165.37	0.48	0.37	166.03	1.29	0.88	UN
NN7U6Z		164.47	-0.42	-0.32	165.93	1.19	0.81	MT
NSJ74L		164.73	-0.15	-0.12	165.33	0.59	0.40	TO
NYKLJH		164.99	0.10	0.08	165.20	0.46	0.32	SA
P8DGRW		164.90	0.01	0.01	164.83	0.09	0.06	SA
PJY2DK		164.31	-0.58	-0.44	162.91	-1.83	-1.25	GA
PWUACE		164.96	0.08	0.06	166.89	2.15	1.47	XX
Q1P15R		164.00	-0.89	-0.67	163.67	-1.08	-0.74	TO
QYVRTG		164.33	-0.55	-0.42	164.80	0.06	0.04	TO
RJZ2SD		166.82	1.93	1.47	166.89	2.14	1.47	SA
RMURMK		164.53	-0.35	-0.27	164.58	-0.16	-0.11	XX
S31NG9		162.57	-2.32	-1.77	161.53	-3.21	-2.20	SA
SLUDMB		164.52	-0.36	-0.28	162.98	-1.77	-1.21	SH
T3FBMV		165.30	0.41	0.32	166.07	1.32	0.91	TO
U8UZ8C		164.36	-0.52	-0.40	163.97	-0.77	-0.53	IN
U9NXEY		162.31	-2.58	-1.97	162.14	-2.60	-1.78	XX
UHS5UW		165.07	0.18	0.14	165.50	0.76	0.52	TO
UMKRJM		164.40	-0.49	-0.37	165.33	0.59	0.40	TO
UQ3U9A		167.87	2.99	2.27	167.74	3.00	2.05	BA
UTRX7V		162.40	-2.49	-1.89	161.23	-3.51	-2.40	SA
VR5FUH		165.83	0.95	0.72	165.63	0.89	0.61	TO
VSSZAF		161.60	-3.29	-2.50	162.00	-2.74	-1.88	XX
VVFUMU	X	167.91	3.03	2.31	170.47	5.73	3.92	UN
WAEZM5		165.60	0.71	0.54	164.87	0.12	0.08	IN
WN7LIS	*	168.70	3.81	2.91	166.97	2.22	1.52	TO
WSTBM3	X	13.70	-151.18	-115.19	13.38	-151.36	-103.61	SA
WVAVSK		164.27	-0.62	-0.47	164.93	0.19	0.13	SA
WVEQP7		165.68	0.79	0.60	165.12	0.38	0.26	BA
XEV9JD		164.84	-0.05	-0.03	165.05	0.30	0.21	SA
XPEJWM		165.50	0.61	0.47	164.50	-0.24	-0.17	TO
XPSDZF		165.33	0.45	0.34	163.97	-0.78	-0.53	TO
XZKHVN		165.12	0.23	0.18	164.39	-0.36	-0.24	SA
Y1813M		165.45	0.56	0.43	164.30	-0.45	-0.31	SA
YSKG8S		166.88	1.99	1.52	164.92	0.17	0.12	SA
YXT5ZU		165.10	0.21	0.16	163.90	-0.84	-0.58	TO
Z9HJEG		164.53	-0.35	-0.27	164.63	-0.11	-0.08	IN
ZK4Q92		163.01	-1.87	-1.43	162.90	-1.84	-1.26	RI

Interlaboratory Testing Program for Metals

Analysis 115

Fastener Wedge Tensile (10 deg) - ksi

ASTM F606

WebCode	Data Flag	Sample X73			Sample X74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
ZL8E6Q		165.68	0.79	0.60	164.99	0.25	0.17	BA

Summary Statistics

	Sample X73	Sample X74
Grand Means	164.885 ksi	164.740 ksi
Std Dev Btwn Labs	1.312 ksi	1.461 ksi
Statistics based on 84 of 91 reporting participants		

Samples X73 , X74 : Fastener size 3/8-16x2.25

Comments on assigned Data Flags for Test #115

- 6KJ7MG (X) - Data for both samples are high.
- BNQ55R (X) - Low data for Sample X74.
- D3KAUA (X) - Data for both samples are high.
- EQMWR8 (X) - Data for both samples are high.
- LMZZB9 (X) - Data were reported as load values, instead of tensile strength.
- VVFUMU (X) - High data for Sample X74.
- WSTBM3 (X) - Data were reported as load values, instead of tensile strength.

Interlaboratory Testing Program for Metals

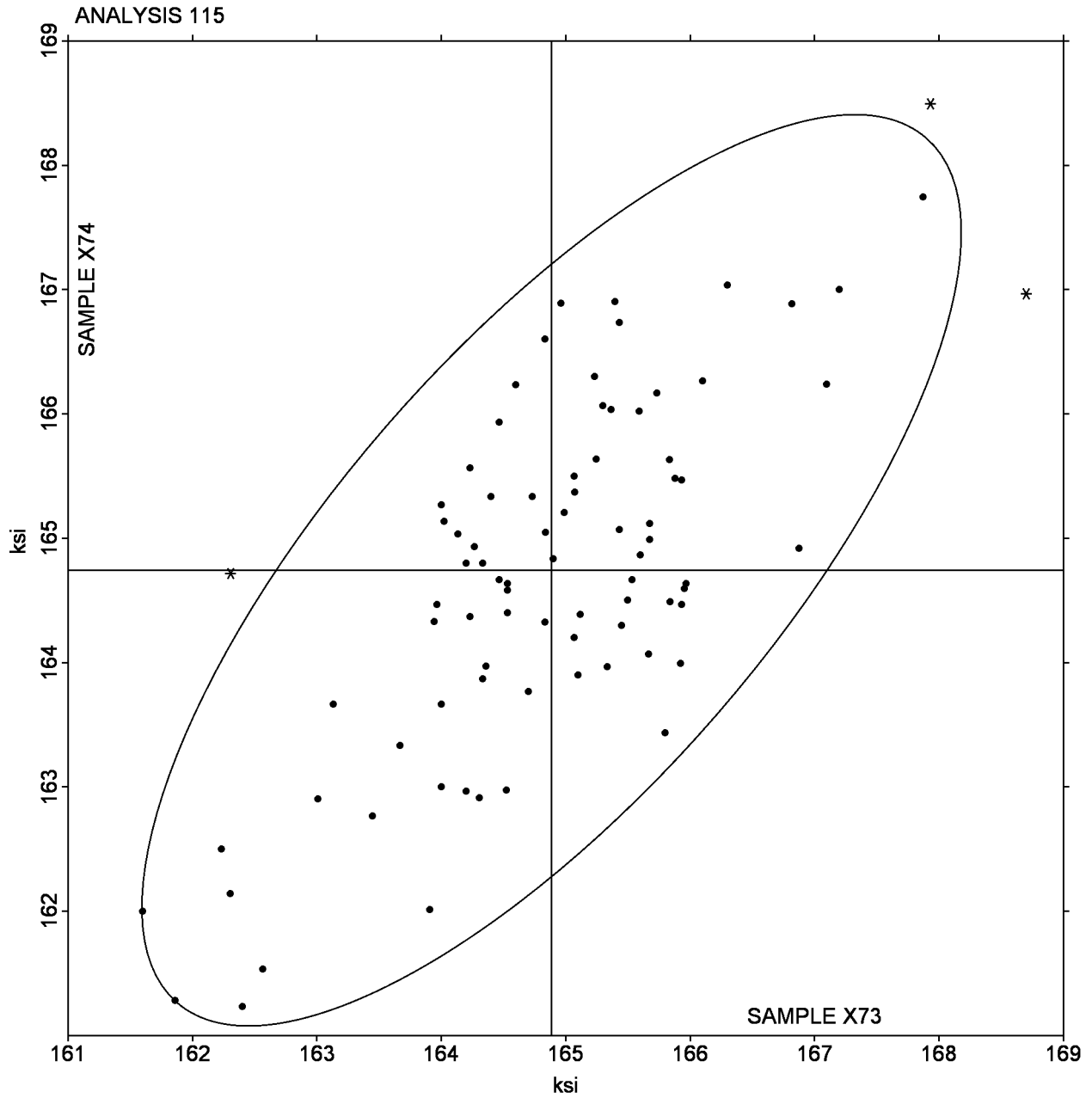
Analysis 115

Fastener Wedge Tensile (10 deg) - ksi

ASTM F606

SAMPLE X73 = 164.885 ksi

SAMPLE X74 = 164.740 ksi



Interlaboratory Testing Program for Metals

Analysis 116

Fastener Axial Tensile - ksi

ASTM F606

WebCode	Data Flag	Sample Q73			Sample Q74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1E1EDZ		163.30	-1.98	-1.39	163.30	-2.07	-1.59	SA
1GPPD1		165.10	-0.18	-0.13	165.73	0.37	0.28	IN
1NDL9C		166.96	1.68	1.18	167.96	2.59	1.99	XX
1YUGJA		165.61	0.33	0.23	166.79	1.43	1.09	XX
2U24RB		165.83	0.55	0.39	165.33	-0.03	-0.03	TO
2WEHME	X	186.06	20.78	14.61	185.85	20.48	15.71	XX
38AG2G		165.02	-0.26	-0.18	164.71	-0.66	-0.51	SA
3VTW8U		165.83	0.55	0.39	166.10	0.73	0.56	XX
4VSVRM		166.13	0.85	0.60	166.27	0.90	0.69	TO
55CGH5		164.67	-0.62	-0.43	164.20	-1.17	-0.90	UN
5Q9LT4		164.46	-0.82	-0.58	165.90	0.53	0.41	GA
6PGZ3B		161.97	-3.32	-2.33	163.93	-1.43	-1.10	XX
6R2X15		163.60	-1.68	-1.18	166.27	0.90	0.69	TO
729SHD		164.93	-0.35	-0.25	164.90	-0.47	-0.36	SA
72SPYK		166.87	1.58	1.11	167.00	1.63	1.25	TO
74QS98		166.80	1.52	1.07	167.13	1.77	1.35	TO
76W7HZ		165.58	0.29	0.21	166.83	1.46	1.12	XX
7RF46A		164.90	-0.38	-0.27	164.13	-1.23	-0.95	BA
7TN1AN		166.04	0.76	0.53	165.61	0.25	0.19	TO
8R5X1U		161.96	-3.32	-2.34	163.27	-2.10	-1.61	SH
99RU2D		165.33	0.05	0.03	165.10	-0.27	-0.21	TO
9QE5NG		163.53	-1.75	-1.23	165.00	-0.37	-0.28	TO
B39SNQ		165.96	0.68	0.48	166.37	1.01	0.77	HT
B5F9ML		166.50	1.22	0.85	165.30	-0.07	-0.05	SA
B5NPNK		166.67	1.38	0.97	164.57	-0.80	-0.61	SA
B62ZTR		166.45	1.17	0.82	166.32	0.96	0.73	BA
BR1FHT		165.81	0.52	0.37	165.55	0.18	0.14	SA
BR6WZD		164.47	-0.82	-0.57	165.30	-0.07	-0.05	TO
CGSCWF		165.12	-0.16	-0.11	163.17	-2.20	-1.69	SA
E34BL1		165.03	-0.25	-0.18	163.30	-2.07	-1.59	TO
EN3ZG8	X	182.43	17.15	12.06	188.17	22.80	17.48	TO
FERDBX		165.47	0.18	0.13	164.87	-0.50	-0.38	IN
FWJXK7	X	168.49	3.20	2.25	175.26	9.89	7.58	FI
FXMYT5		166.22	0.94	0.66	166.18	0.81	0.62	SH
G1D9WF		167.40	2.12	1.49	165.67	0.30	0.23	SA
G5WWQN		164.63	-0.66	-0.46	164.48	-0.89	-0.68	UN
G93ZE4		165.63	0.35	0.25	166.17	0.80	0.61	TO
GMD1AU		162.91	-2.37	-1.67	164.90	-0.46	-0.36	SH
GWZN4R		163.93	-1.35	-0.95	164.80	-0.57	-0.44	TO
GXAYUX		165.42	0.14	0.10	166.92	1.55	1.19	SH
H6AGKW		166.22	0.93	0.66	166.03	0.66	0.51	SH
HB9UKT		167.07	1.78	1.25	167.87	2.50	1.92	UN
J2VW4E		166.30	1.02	0.71	166.33	0.97	0.74	SA
J9R924		166.02	0.74	0.52	166.02	0.65	0.50	TO
JUM6VA	X	12.70	-152.58	-107.27	12.67	-152.70	-117.10	BA

Interlaboratory Testing Program for Metals

Analysis 116

Fastener Axial Tensile - ksi

ASTM F606

WebCode	Data Flag	Sample Q73			Sample Q74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
KZSRJ2		166.97	1.69	1.19	167.23	1.86	1.42	SA
L9AQGV		164.75	-0.54	-0.38	164.81	-0.56	-0.43	SA
LWNRX2		164.67	-0.62	-0.43	165.00	-0.37	-0.28	MT
MEFPMU	*	163.63	-1.65	-1.16	161.97	-3.40	-2.61	TO
NGY64C		163.73	-1.56	-1.09	164.64	-0.73	-0.56	WZ
PPLGQE	*	161.93	-3.35	-2.36	161.80	-3.57	-2.74	RI
PWBXGA	X	13.85	-151.44	-106.47	13.83	-151.54	-116.21	SA
PWNR4X		165.30	0.02	0.01	166.20	0.83	0.64	TO
Q29DGV		164.47	-0.81	-0.57	166.75	1.39	1.06	SA
QFVLKN		164.47	-0.82	-0.57	163.50	-1.87	-1.43	TO
QQYYGG		164.87	-0.42	-0.29	164.20	-1.17	-0.90	TO
REJ8TX	X	170.87	5.58	3.92	170.12	4.75	3.64	UN
RG134Y		164.95	-0.34	-0.24	164.95	-0.42	-0.32	TO
RYD9YW		164.69	-0.59	-0.42	166.72	1.35	1.04	SH
S6PUFY	X	164.90	-0.38	-0.27	161.73	-3.63	-2.79	SA
SBEVDJ		164.19	-1.09	-0.77	164.56	-0.80	-0.62	SA
TLX8XU		167.67	2.38	1.68	168.17	2.80	2.15	SH
TMSJW8		167.23	1.95	1.37	167.27	1.90	1.46	BA
TWXHFH		163.93	-1.35	-0.95	164.57	-0.80	-0.61	SA
U77EV6		164.63	-0.65	-0.46	166.30	0.93	0.71	SA
UDSEBH		163.40	-1.88	-1.32	164.53	-0.83	-0.64	TO
UEB5QX		165.74	0.45	0.32	165.35	-0.02	-0.02	SA
VBFLTJ		167.70	2.42	1.70	165.87	0.50	0.38	TO
VN55YH		164.80	-0.48	-0.34	166.43	1.07	0.82	TO
VRJXNA		162.60	-2.69	-1.89	164.55	-0.82	-0.63	IN
W77ZTX		167.35	2.07	1.46	166.04	0.67	0.52	TO
WKY1U8		167.11	1.82	1.28	166.66	1.29	0.99	SA
XKRG82		166.60	1.32	0.93	165.23	-0.13	-0.10	TO
Y64BUD		165.75	0.47	0.33	164.36	-1.00	-0.77	XX
YNR Y13		166.80	1.52	1.07	166.63	1.27	0.97	TO
YWRU9T	X	173.26	7.97	5.60	171.03	5.66	4.34	TO
Z1RJUS		164.65	-0.63	-0.45	164.23	-1.14	-0.87	SA
Z25ZBZ		164.77	-0.52	-0.36	165.63	0.27	0.20	BA
Z2LTQP	*	168.50	3.22	2.26	165.40	0.03	0.02	TO
ZBTW5D		165.57	0.29	0.20	165.38	0.02	0.01	SA
ZR1TB6		163.84	-1.45	-1.02	163.50	-1.87	-1.43	SA
ZX8TUV		167.13	1.85	1.30	164.73	-0.63	-0.49	DY
ZXY9JK		164.23	-1.05	-0.74	163.83	-1.53	-1.18	TO

Summary Statistics

	Sample Q73	Sample Q74
Grand Means	165.284 ksi	165.370 ksi
Std Dev Btwn Labs	1.422 ksi	1.304 ksi
Statistics based on 75 of 83 reporting participants		

Samples Q73 , Q74 : Fastener size 3/8-16x2.25

Analysis 116

Fastener Axial Tensile - ksi

ASTM F606

Comments on assigned Data Flags for Test #116

- 2WEHME (X) - Data for both samples are high.
- EN3ZG8 (X) - Data for both samples are high.
- FWJXK7 (X) - High data for Sample Q74.
- JUM6VA (X) - Data were reported as load values, instead of tensile strength.
- PWBXGA (X) - Data were reported as load values, instead of tensile strength.
- REJ8TX (X) - Data for both samples are high.
- S6PUFY (X) - Low data for Sample Q74.
- YWRU9T (X) - Data for both samples are high.

Interlaboratory Testing Program for Metals

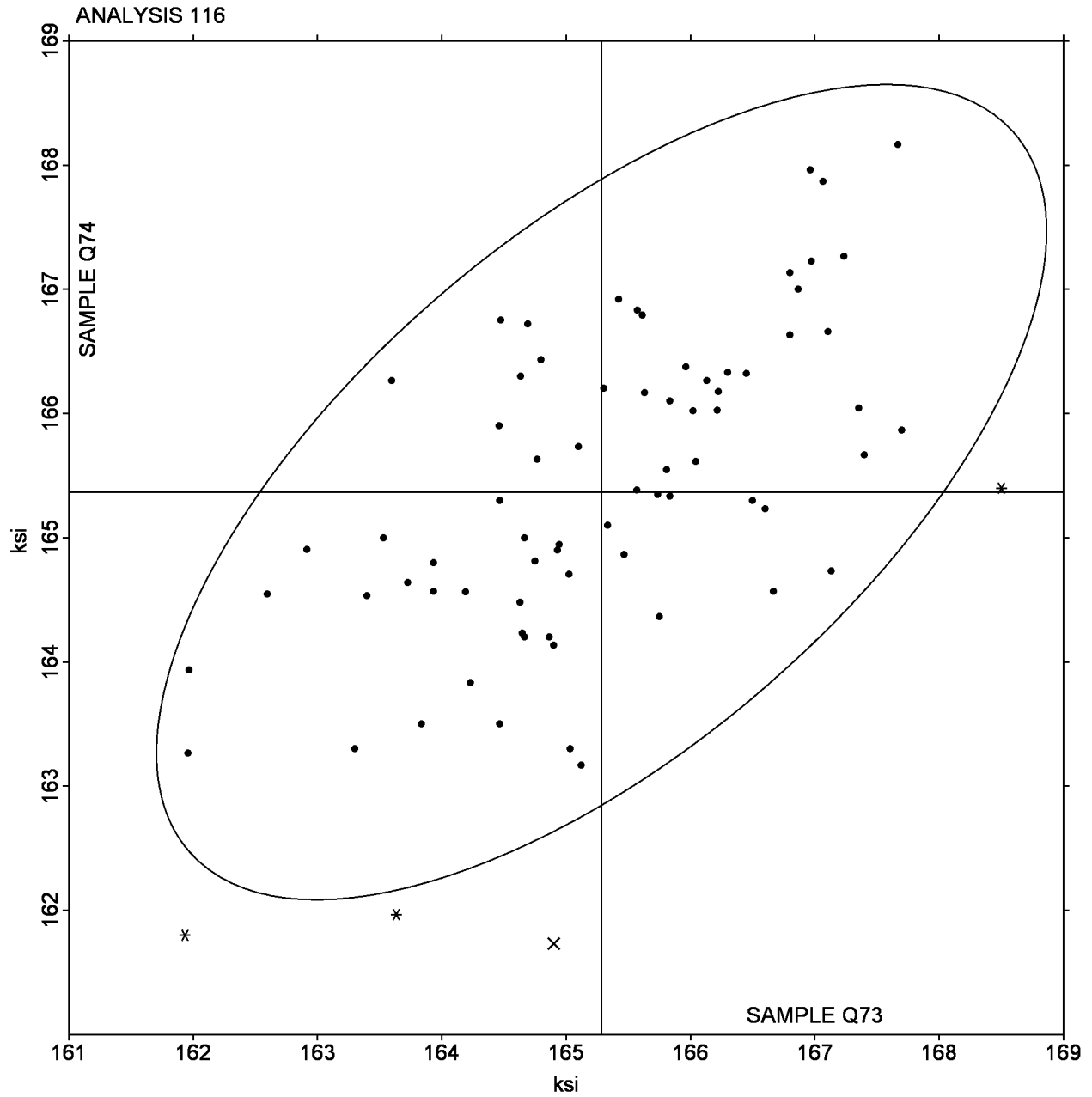
Analysis 116

Fastener Axial Tensile - ksi

ASTM F606

SAMPLE Q73 = 165.284 ksi

SAMPLE Q74 = 165.370 ksi



Interlaboratory Testing Program for Metals

Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - Rockwell Hardness Number

ASTM F606/F606M AND ASTM E18

WebCode	Data Flag	Sample G73			Sample G74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
12UWRJ		37.29	1.13	1.78	37.79	1.61	2.27	NA
17G8C9		35.44	-0.72	-1.12	36.19	0.02	0.03	BU
19DVNJ	*	37.79	1.63	2.55	37.78	1.60	2.26	WI
1C2VTE		36.08	-0.09	-0.13	35.73	-0.44	-0.62	UN
1JHJ8P		35.44	-0.72	-1.13	35.49	-0.69	-0.97	NA
237Z7B		37.18	1.01	1.59	37.19	1.02	1.44	AK
2EL9WE	*	36.26	0.10	0.16	35.29	-0.89	-1.25	LE
3BGRNL		35.83	-0.34	-0.53	35.76	-0.42	-0.59	EN
3MCKDF		36.25	0.09	0.14	36.11	-0.06	-0.09	NA
41TT16		36.43	0.27	0.43	36.31	0.13	0.19	BU
47EPSR	X	35.08	-1.08	-1.69	36.79	0.61	0.87	WI
4DVHGD		34.79	-1.37	-2.15	35.01	-1.17	-1.64	WI
4LLU43		36.04	-0.12	-0.18	35.45	-0.72	-1.02	CL
4P5SDX		36.00	-0.16	-0.25	35.88	-0.30	-0.42	SP
5A1T2K		35.39	-0.77	-1.20	36.26	0.09	0.13	BU
5K8UUC		36.93	0.76	1.20	37.22	1.05	1.47	WI
5R6NP7		36.49	0.33	0.52	36.43	0.25	0.35	BU
5UVSLK		36.76	0.60	0.94	36.63	0.45	0.64	NA
5YX32Z		35.33	-0.84	-1.31	35.00	-1.17	-1.65	WI
64834N		34.93	-1.23	-1.93	34.59	-1.59	-2.23	BU
6AS66D		35.88	-0.29	-0.45	35.93	-0.25	-0.35	XX
6K7TUK		35.75	-0.41	-0.64	36.46	0.29	0.41	WI
6PFMHJ		35.88	-0.29	-0.45	35.69	-0.49	-0.68	WI
76DA4E		35.65	-0.51	-0.80	35.88	-0.30	-0.42	MI
776SZ1		35.56	-0.60	-0.95	36.15	-0.02	-0.03	EM
7EBGYM		35.31	-0.85	-1.33	34.75	-1.42	-2.00	WI
85UAFV		36.66	0.50	0.79	36.49	0.31	0.44	WI
8L8HSL		35.19	-0.97	-1.52	34.88	-1.30	-1.83	WI
8T5CS5		36.14	-0.02	-0.04	35.91	-0.27	-0.38	WI
9HJ117		36.29	0.13	0.20	36.54	0.36	0.51	WI
A6KN5E		35.91	-0.25	-0.40	35.91	-0.27	-0.38	WI
AEMZ7A		36.29	0.13	0.20	36.27	0.10	0.13	BU
AJKPHF		36.11	-0.05	-0.08	35.83	-0.34	-0.48	FR
ALVDZ7		35.91	-0.25	-0.40	35.93	-0.25	-0.35	WO
BHU9XH		36.59	0.43	0.67	36.20	0.03	0.04	WI
BKA7Y7		35.11	-1.05	-1.65	35.36	-0.82	-1.15	UN
BSRSZY		35.44	-0.72	-1.13	35.69	-0.49	-0.68	MI
BTBBFQ		36.94	0.78	1.23	36.81	0.64	0.90	UN
BVHTF8		35.14	-1.02	-1.60	34.88	-1.29	-1.82	CL
C2PJVM		36.02	-0.14	-0.22	35.39	-0.78	-1.10	AN
C7RSTN		35.75	-0.41	-0.64	36.56	0.39	0.55	AV
C8KYBK		36.11	-0.05	-0.07	36.11	-0.06	-0.09	XX
CALNA1		36.06	-0.10	-0.15	36.19	0.01	0.02	WI
CFJQDM		36.78	0.61	0.96	36.67	0.50	0.70	UN
CKWUJB		36.63	0.47	0.74	36.63	0.45	0.64	BU

Interlaboratory Testing Program for Metals

Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - Rockwell Hardness Number

ASTM F606/F606M AND ASTM E18

WebCode	Data Flag	Sample G73			Sample G74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
CPYBXB	X	30.76	-5.40	-8.47	33.27	-2.90	-4.09	WI
CWCRCCL		36.93	0.76	1.20	37.03	0.85	1.20	UN
D3BZCZ		35.96	-0.20	-0.32	35.99	-0.18	-0.25	UN
D6MQ8N		35.91	-0.25	-0.40	35.71	-0.46	-0.65	WI
E331NQ		35.25	-0.91	-1.43	35.38	-0.79	-1.12	WI
EBCUYB		36.23	0.07	0.11	35.90	-0.27	-0.38	UN
ESBVVB		36.65	0.49	0.77	36.61	0.43	0.61	LE
ESCXWW	*	36.11	-0.05	-0.07	35.08	-1.09	-1.54	UN
FTQJX3		35.93	-0.23	-0.36	36.09	-0.09	-0.12	WI
FYFU9M		37.03	0.87	1.37	37.18	1.01	1.42	WI
GP98W5		36.04	-0.12	-0.18	36.26	0.09	0.13	WI
GRVN4M		36.47	0.31	0.48	36.25	0.08	0.11	XX
H4W2PH	X	35.13	-1.03	-1.61	34.09	-2.08	-2.93	WI
HA7K5X		36.22	0.06	0.09	36.01	-0.17	-0.24	WI
HR7P9D		36.46	0.30	0.47	36.53	0.36	0.50	WI
HRZV16		35.61	-0.55	-0.86	35.81	-0.37	-0.52	RS
J63YPS		36.18	0.02	0.03	36.39	0.21	0.30	IN
JADE68		35.64	-0.52	-0.82	35.34	-0.83	-1.17	WI
JBHQKH		36.35	0.19	0.30	35.87	-0.30	-0.43	MI
JDSVZS		36.61	0.45	0.71	37.22	1.05	1.47	WI
K8GM79		36.00	-0.16	-0.25	35.74	-0.43	-0.60	UN
KDZXYR		36.94	0.78	1.23	36.41	0.24	0.34	NA
KX759J		35.11	-1.05	-1.65	35.52	-0.65	-0.92	WI
LF4J6X		36.72	0.56	0.88	36.50	0.33	0.46	WI
LQTKTE		36.79	0.63	0.98	37.03	0.86	1.21	WI
LREJL4		35.53	-0.63	-0.99	35.51	-0.67	-0.94	WI
LV9W52		36.88	0.71	1.12	36.80	0.63	0.88	UN
LZX4E4	X	32.88	-3.29	-5.15	33.25	-2.92	-4.12	WI
N18LGJ		35.14	-1.02	-1.59	35.64	-0.54	-0.75	WI
N62QK8		36.38	0.21	0.34	36.43	0.25	0.35	XX
NSTEP1		37.09	0.93	1.46	36.74	0.56	0.79	AF
NTJ866		37.03	0.86	1.36	36.41	0.23	0.33	WI
NUU6BN		36.05	-0.11	-0.17	36.23	0.05	0.07	BU
P2VQMV	*	37.76	1.60	2.51	37.77	1.60	2.25	GR
P4BJ3X		36.98	0.82	1.29	37.04	0.86	1.22	TG
PKW32X		36.10	-0.06	-0.09	36.21	0.03	0.05	UN
PW22R6		37.06	0.90	1.41	37.06	0.88	1.24	WI
Q1XP3D		36.77	0.61	0.95	37.32	1.15	1.61	UN
Q8V137		35.84	-0.32	-0.50	36.03	-0.15	-0.21	WO
QEA5RG		35.80	-0.36	-0.56	35.93	-0.25	-0.35	UN
QLH8Z8		36.34	0.18	0.28	36.31	0.13	0.19	NA
QWMLD8		36.04	-0.12	-0.18	35.55	-0.62	-0.88	WI
R26HMA		36.74	0.58	0.91	36.94	0.76	1.08	UN
RG9YS4		35.72	-0.44	-0.69	35.83	-0.35	-0.49	WI
RX1LDW		36.17	0.01	0.01	35.51	-0.66	-0.93	MI

Interlaboratory Testing Program for Metals

Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - Rockwell Hardness Number
ASTM F606/F606M AND ASTM E18

WebCode	Data Flag	Sample G73			Sample G74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
SNEX3U		36.28	0.11	0.18	36.64	0.46	0.65	AK
T2DRD8		37.23	1.07	1.68	37.11	0.94	1.32	IN
TBAFFW		35.98	-0.19	-0.29	35.99	-0.19	-0.26	WI
TS5SBC		36.21	0.05	0.07	35.84	-0.34	-0.47	MI
TZVD6S		34.86	-1.30	-2.03	35.27	-0.90	-1.27	WO
TZZUFB		35.22	-0.94	-1.48	34.83	-1.34	-1.89	FT
U186VS		36.06	-0.10	-0.16	36.16	-0.01	-0.02	UN
UQTBGD		35.84	-0.32	-0.50	35.47	-0.70	-0.99	CL
UU356A		35.99	-0.17	-0.26	35.31	-0.87	-1.22	NA
VLTH1P		36.28	0.12	0.19	36.44	0.26	0.37	WI
VSCRDE		36.34	0.18	0.29	36.31	0.14	0.20	KF
W15TB9		35.63	-0.54	-0.84	35.71	-0.47	-0.66	NA
WHNL5E		37.10	0.94	1.47	37.64	1.46	2.06	UN
WRZDFH		36.66	0.50	0.78	36.38	0.20	0.28	WI
WWGWCC		36.93	0.77	1.21	36.95	0.78	1.09	XX
X1GDL5		35.71	-0.45	-0.70	36.22	0.05	0.06	WI
XNWU74		35.25	-0.91	-1.43	35.54	-0.64	-0.90	WI
XT6VED		36.13	-0.04	-0.06	36.36	0.18	0.26	UN
YB664G		34.59	-1.57	-2.47	34.78	-1.39	-1.96	XX
YF3XBP		36.11	-0.05	-0.07	36.45	0.27	0.39	UN
YLSKT5	*	36.01	-0.15	-0.23	37.08	0.90	1.27	MA
YWYJ56		36.92	0.76	1.19	36.81	0.64	0.90	UN
Z2X2SN	*	36.87	0.71	1.11	37.83	1.65	2.33	UN
Z6L8UX		36.32	0.16	0.25	36.88	0.70	0.99	NA
ZFA12N		36.61	0.45	0.71	36.78	0.61	0.86	NA
ZVJMCK		36.56	0.40	0.62	36.44	0.27	0.38	UN

Summary Statistics

	Sample G73		Sample G74	
Grand Means	36.160	HRC	36.170	HRC
Std Dev Btwn Labs	0.638	HRC	0.710	HRC
Statistics based on 112 of 116 reporting participants				

Samples G73 , G74 : Fastener size 1/2-20x2.5

Comments on assigned Data Flags for Test #125

47EPSR (X) - Inconsistent in testing between samples.

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

H4W2PH (X) - Data for Sample E74 are low and inconsistent within the determinations for both samples.

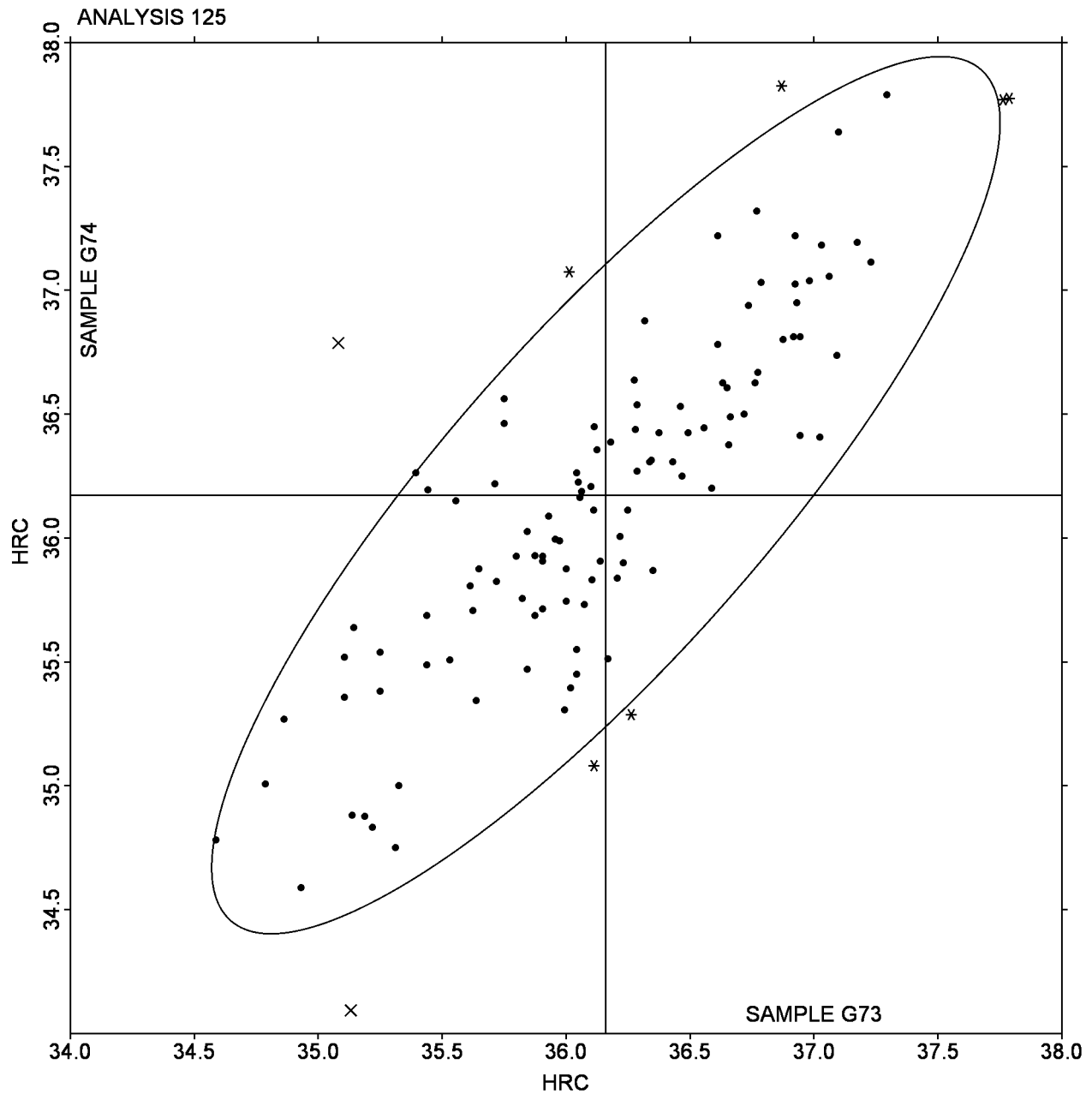
LZX4E4 (X) - Data for both samples are low.

Interlaboratory Testing Program for Metals

Analysis 125

Rockwell Hardness of Externally Threaded Fasteners - Rockwell Hardness Number ASTM F606/F606M AND ASTM E18

SAMPLE G73 = 36.160 HRC SAMPLe G74 = 36.170 HRC



Interlaboratory Testing Program for Metals

Analysis 126

Vickers Hardness of Externally Threaded Fasteners - Vickers Hardness Number
ASTM E92

WebCode	Data Flag	Sample V73			Sample V74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
22B6E7		362.92	-2.49	-0.26	371.05	-1.57	-0.20	LE
323HF1		378.50	13.09	1.36	388.44	15.82	2.03	XX
34CZL4		370.31	4.91	0.51	374.25	1.63	0.21	GN
4MT16N		369.63	4.22	0.44	375.13	2.51	0.32	WO
83YFFZ	*	341.00	-24.41	-2.53	359.50	-13.12	-1.69	LE
8BU672	*	355.75	-9.66	-1.00	356.31	-16.30	-2.10	XX
91HBRV		367.13	1.72	0.18	374.94	2.32	0.30	LE
9FS5BA		364.13	-1.28	-0.13	369.25	-3.37	-0.43	MI
9K97JH		375.44	10.03	1.04	377.69	5.07	0.65	LE
JX28R2		381.81	16.41	1.70	381.13	8.51	1.09	XX
LCYCQJ		369.44	4.03	0.42	372.91	0.29	0.04	WT
LR3QXF		363.25	-2.16	-0.22	372.75	0.13	0.02	CL
M36JM6		376.38	10.97	1.14	386.88	14.26	1.83	AK
M53WTC		362.00	-3.41	-0.35	372.63	0.01	0.00	LE
ME8LRG		366.19	0.78	0.08	372.38	-0.24	-0.03	XX
P26LKW		363.56	-1.84	-0.19	369.56	-3.05	-0.39	AK
S247FL		358.44	-6.97	-0.72	368.22	-4.40	-0.57	AR
THPQK1		348.16	-17.24	-1.79	360.70	-11.92	-1.53	FU
W5T6MR		373.13	7.72	0.80	376.94	4.32	0.56	WO
WSHMYR		364.31	-1.09	-0.11	371.31	-1.30	-0.17	SH
X3Z7WB		362.06	-3.34	-0.35	373.00	0.38	0.05	CL

Summary Statistics

	Sample V73		Sample V74	
Grand Means	365.406	HV	372.620	HV
Std Dev Btwn Labs	9.637	HV	7.775	HV
Statistics based on 21 of 21 reporting participants				

Samples V73 , V74 : Fastener size 1/2-20x2.5

Analysis Notes for Test #126

No "X" flags were assigned for this analysis.

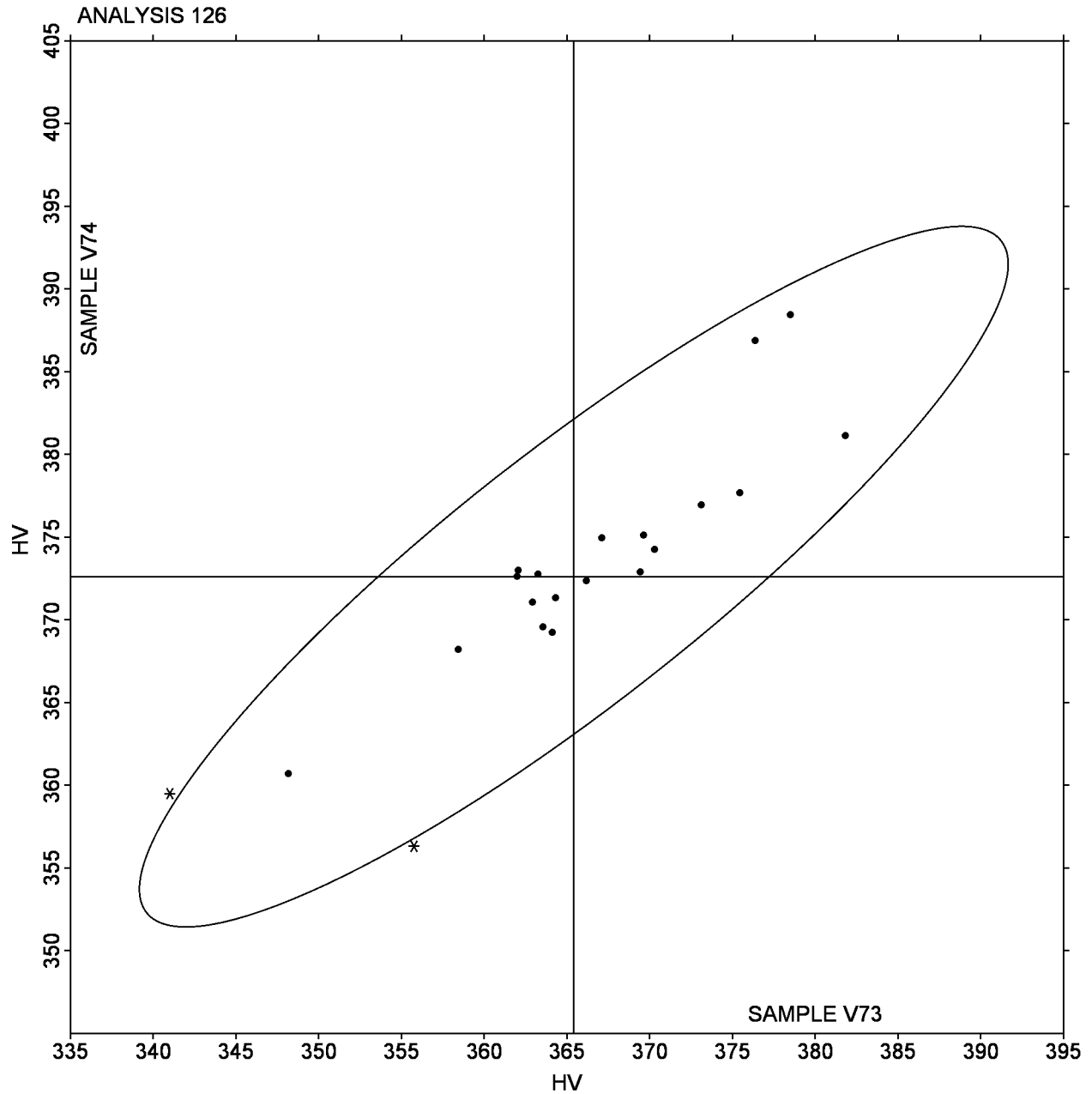
Interlaboratory Testing Program for Metals

Analysis 126

Vickers Hardness of Externally Threaded Fasteners - Vickers Hardness Number ASTM E92

SAMPLE V73 = 365.406 HV

SAMPLE V74 = 372.620 HV



Interlaboratory Testing Program for Metals

Analysis 127

Fastener Wedge Tensile (10 deg) Metric - MPa

ASTM F606M

WebCode	Data Flag	Sample B73			Sample B74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
12E22Q		1,152.93	0.15	0.01	1,148.17	-4.80	-0.56	ST
2V448Y		1,153.23	0.44	0.04	1,147.18	-5.79	-0.67	XX
3LTT5L		1,143.33	-9.45	-0.96	1,151.00	-1.97	-0.23	XX
4JDBAK	*	1,169.00	16.21	1.64	1,180.00	27.03	3.14	SA
594TBF		1,144.33	-8.45	-0.85	1,147.67	-5.30	-0.62	TO
5M2X11		1,158.33	5.55	0.56	1,159.00	6.03	0.70	WB
6F3QFX		1,162.00	9.21	0.93	1,160.33	7.37	0.86	TO
6TQ1V3		1,163.00	10.21	1.03	1,158.67	5.70	0.66	LO
72JZ3T		1,131.67	-21.12	-2.14	1,137.33	-15.63	-1.81	XX
88YJMC		1,142.67	-10.12	-1.02	1,157.00	4.03	0.47	SA
8JLYRN		1,155.50	2.71	0.27	1,146.40	-6.57	-0.76	SA
8W96SA		1,155.33	2.55	0.26	1,156.00	3.03	0.35	IN
965ZAE		1,158.00	5.21	0.53	1,145.00	-7.97	-0.92	MF
BUEMUP		1,144.67	-8.12	-0.82	1,143.33	-9.63	-1.12	HT
CLADBL		1,151.33	-1.45	-0.15	1,158.33	5.37	0.62	TO
FY4VN4		1,173.60	20.81	2.10	1,169.47	16.50	1.92	RO
G23496		1,148.64	-4.15	-0.42	1,155.42	2.46	0.29	UN
GT6S2A		1,170.00	17.21	1.74	1,154.33	1.37	0.16	SA
HUV7NZ		1,154.00	1.21	0.12	1,151.67	-1.30	-0.15	SA
JX1YRY		1,149.30	-3.49	-0.35	1,154.07	1.10	0.13	XX
PDUWNT		1,138.22	-14.56	-1.47	1,145.41	-7.55	-0.88	SH
SBEBSP		1,149.67	-3.12	-0.32	1,145.67	-7.30	-0.85	TO
SDG38V		1,158.67	5.88	0.59	1,154.33	1.37	0.16	UN
SL2XRC		1,151.00	-1.79	-0.18	1,150.33	-2.63	-0.31	TO
W9UJUV		1,141.67	-11.12	-1.12	1,150.00	-2.97	-0.34	SH
Y4TQMY		1,152.33	-0.45	-0.05	1,151.00	-1.97	-0.23	TO
ZEZZLV	X	1,283.75	130.97	13.24	1,269.17	116.21	13.49	TO

Summary Statistics

	Sample B73	Sample B74
Grand Means	1,152.785 MPa	1,152.970 MPa
Std Dev Btw Labs	9.890 MPa	8.615 MPa
Statistics based on 26 of 27 reporting participants		

Samples B73 , B74 : Fastener size M10 x 1.5 x 90

Comments on assigned Data Flags for Test #127

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

Interlaboratory Testing Program for Metals

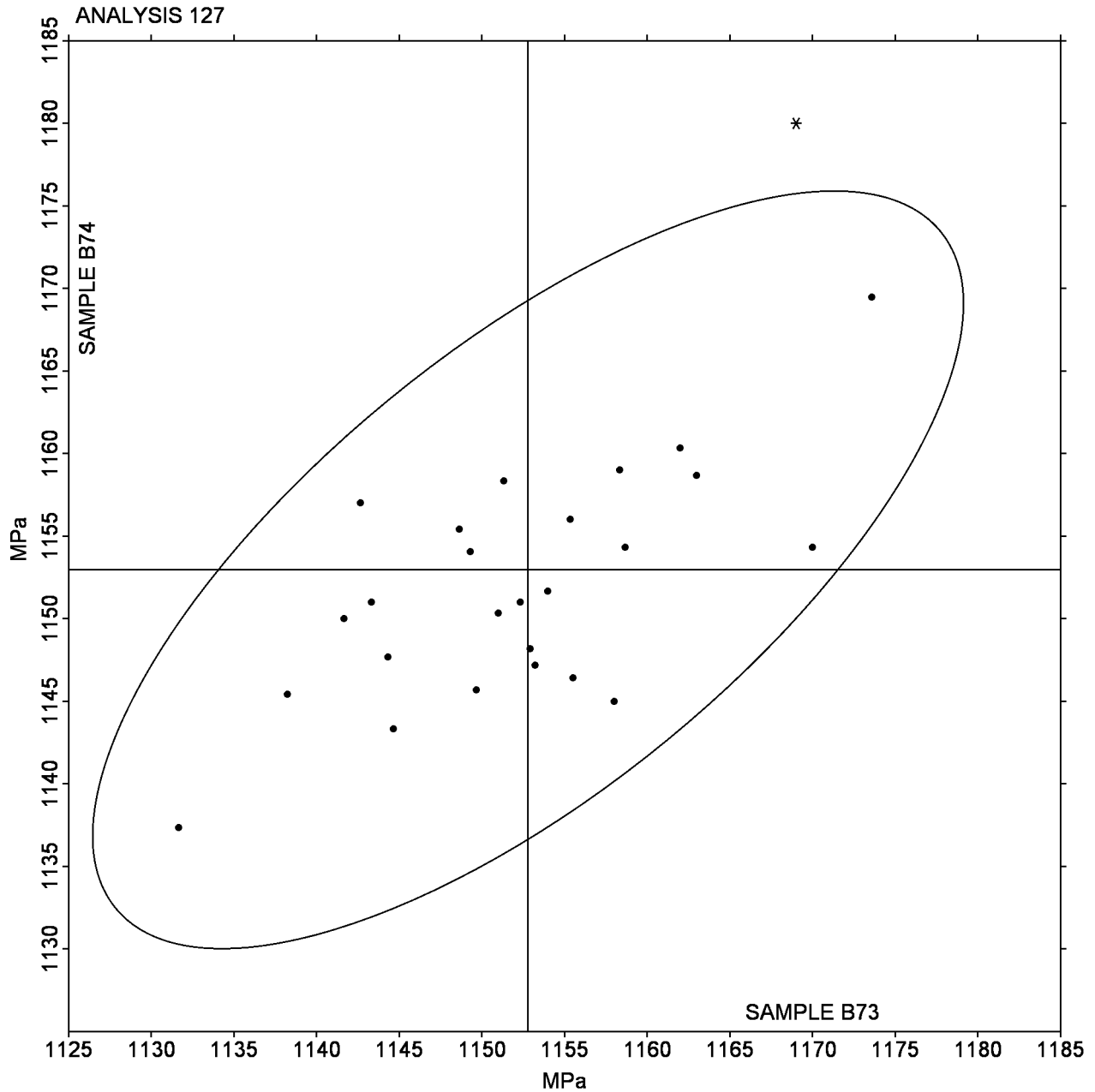
Analysis 127

Fastener Wedge Tensile (10 deg) Metric - MPa

ASTM F606M

SAMPLE B73 = 1,152.785 MPa

SAMPLE B74 = 1,152.970 MPa



Interlaboratory Testing Program for Metals

Analysis 128

Fastener Axial Tensile Metric - MPa

ASTM F606M

WebCode	Data Flag	Sample T73			Sample T74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
21LCSV		1,152.77	-1.93	-0.22	1,155.33	-2.29	-0.32	UN
2VHUS3		1,163.67	8.97	1.03	1,167.67	10.04	1.40	WB
31FHLU		1,164.67	9.97	1.15	1,163.33	5.71	0.80	TO
38DP3V	X	1,193.87	39.17	4.50	1,197.67	40.04	5.58	TO
3LJ55Z		1,169.00	14.30	1.64	1,167.00	9.38	1.31	XX
63YZMJ		1,158.67	3.97	0.46	1,156.00	-1.62	-0.23	TO
6KDFAJ		1,161.67	6.97	0.80	1,161.67	4.04	0.56	SA
6KUNK7		1,160.67	5.97	0.69	1,152.00	-5.62	-0.78	SA
6M45QD		1,166.07	11.37	1.31	1,153.40	-4.22	-0.59	ST
78Y97B		1,155.63	0.93	0.11	1,164.57	6.94	0.97	RO
BXR1N7		1,151.00	-3.70	-0.43	1,148.00	-9.62	-1.34	TO
FKVD42		1,159.00	4.30	0.49	1,153.00	-4.62	-0.64	IN
FT4FCN		1,159.67	4.97	0.57	1,171.00	13.38	1.86	TO
MWAKLA		1,141.67	-13.03	-1.50	1,150.67	-6.96	-0.97	TO
PENJ6Y		1,148.77	-5.93	-0.68	1,159.07	1.44	0.20	GA
RP74SD		1,147.67	-7.03	-0.81	1,154.00	-3.62	-0.50	TO
T91PNP		1,139.43	-15.27	-1.76	1,154.07	-3.56	-0.50	XX
UDSYXE		1,141.33	-13.37	-1.54	1,147.00	-10.62	-1.48	WO
WCHT73		1,156.33	1.63	0.19	1,148.67	-8.96	-1.25	SH
WKH853		1,158.95	4.25	0.49	1,168.43	10.80	1.51	XX
YRUNLJ		1,145.09	-9.61	-1.11	1,155.55	-2.07	-0.29	SH
Z4W2BL		1,147.00	-7.70	-0.89	1,159.67	2.04	0.28	LO

Summary Statistics

	Sample T73	Sample T74
Grand Means	1,154.700 MPa	1,157.620 MPa
Std Dev Btwn Labs	8.699 MPa	7.179 MPa
Statistics based on 21 of 22 reporting participants		

Samples T73 , T74 : Fastener size M10 x 1.5 x 90

Comments on assigned Data Flags for Test #128

38DP3V (X) - Data for both samples are high.

Interlaboratory Testing Program for Metals

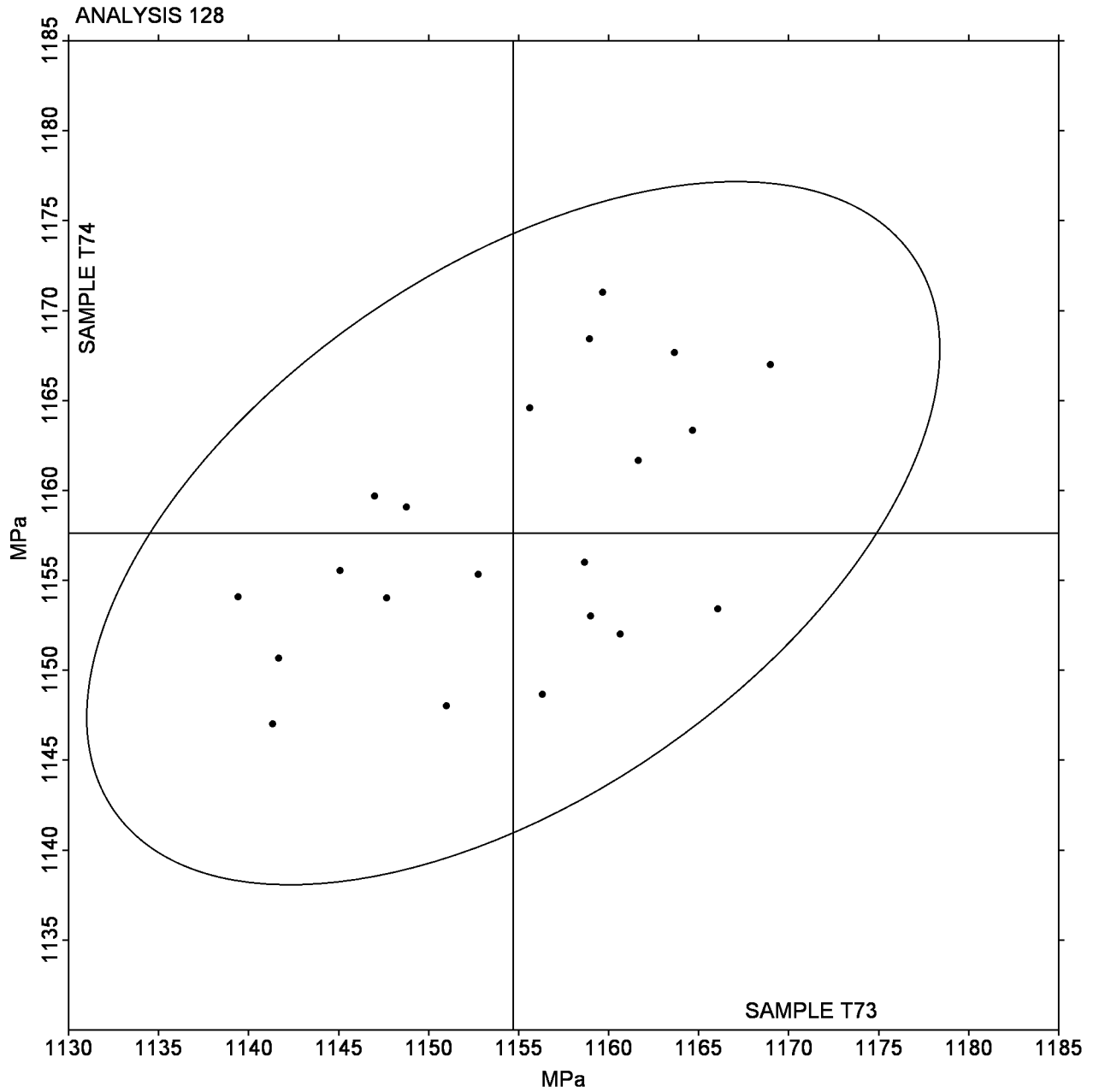
Analysis 128

Fastener Axial Tensile Metric - MPa

ASTM F606M

SAMPLE T73 = 1,154.700 MPa

SAMPLE T74 = 1,157.620 MPa



Interlaboratory Testing Program for Metals

Analysis 129

Fastener Double Shear - lb

NASM 1312-13

WebCode	Data Flag	Sample Z73			Sample Z74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
5A8LQM		21,426.67	-126.96	-0.28	21,426.67	-264.68	-0.57	TO
7ULUET		22,167.00	613.38	1.37	21,954.33	262.98	0.56	TO
93QSGT		21,886.67	333.04	0.74	21,666.67	-24.68	-0.05	XX
9MXUTC		21,585.67	32.04	0.07	21,882.67	191.32	0.41	TO
9W4F6S		21,000.00	-553.62	-1.23	21,066.67	-624.68	-1.34	RI
AQJ8GS		21,583.33	29.71	0.07	21,583.33	-108.02	-0.23	RI
D2UN89		21,142.33	-411.29	-0.92	21,271.00	-420.35	-0.90	XX
EDLZHS		21,343.67	-209.96	-0.47	21,744.67	53.32	0.11	TO
JJ37D1		21,800.00	246.38	0.55	22,370.00	678.65	1.46	SA
N841AB		21,736.69	183.07	0.41	21,553.25	-138.10	-0.30	WZ
RUN8Z9		20,627.67	-925.96	-2.06	20,852.00	-839.35	-1.80	XX
S4BELJ		21,293.67	-259.96	-0.58	21,656.67	-34.68	-0.07	SA
U1TSLX		21,411.67	-141.96	-0.32	21,536.33	-155.02	-0.33	XX
X4QW1K		22,301.00	747.38	1.67	22,583.67	892.32	1.91	AP
ZXYPM D		21,998.33	444.71	0.99	22,222.33	530.98	1.14	IN

Summary Statistics

	Sample Z73	Sample Z74
Grand Means	21,553.624 lb	21,691.350 lb
Std Dev Btwn Labs	448.855 lb	466.401 lb
Statistics based on 15 of 15 reporting participants		

Samples Z73 , Z74 : Fastener size 3/8-16x2.25

Analysis Notes for Test #129

No "X" flags were assigned for this analysis.

Interlaboratory Testing Program for Metals

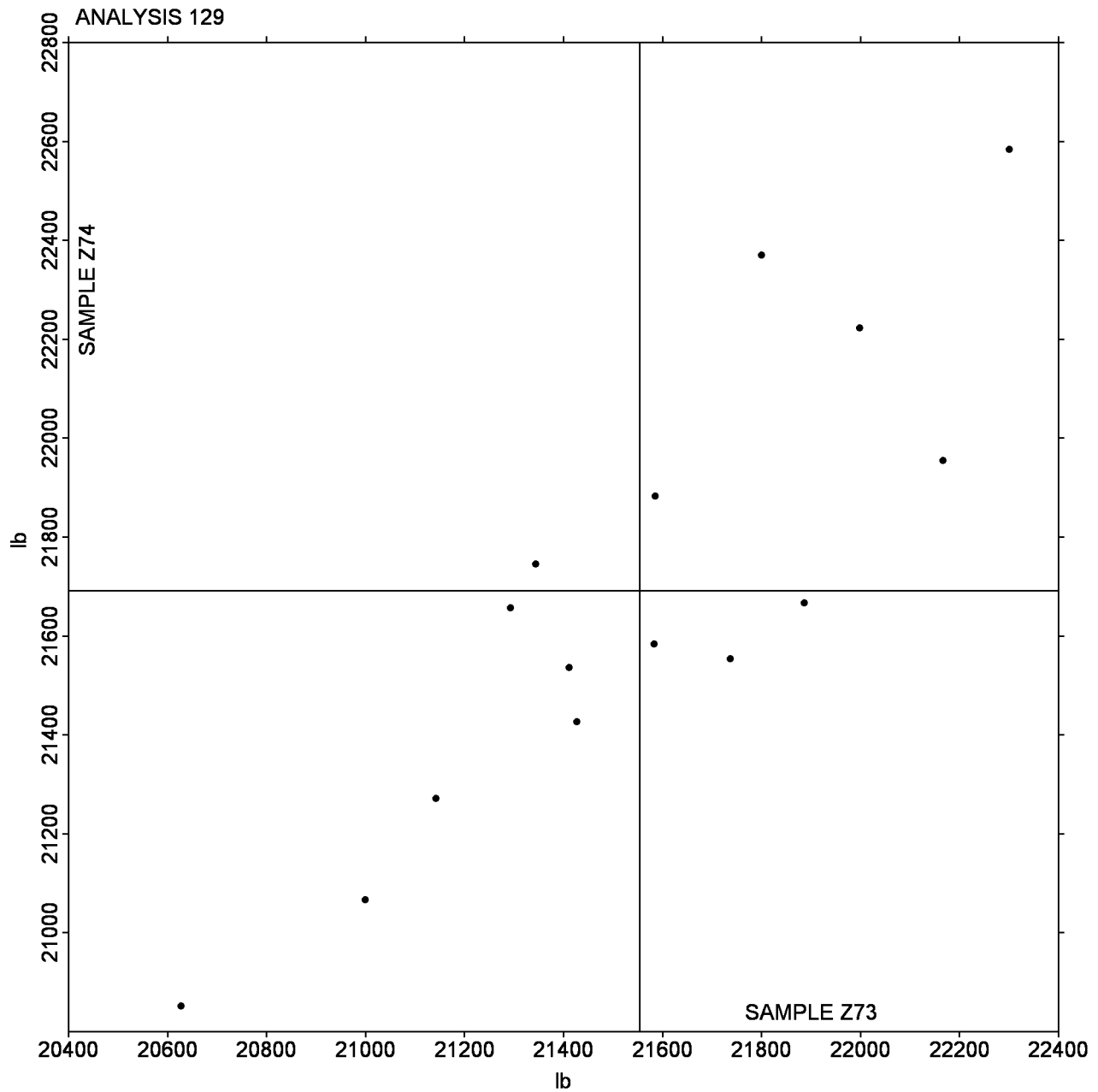
Analysis 129

Fastener Double Shear - lb

NASM 1312-13

SAMPLE Z73 = 21,553.624 lb

SAMPLE Z74 = 21,691.350 lb



Interlaboratory Testing Program for Metals

Analysis 130

Tensile Strength (Flat Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
19QAEK	X	36.90	-10.07	-12.43	44.81	-3.24	-3.39	ZZ
1JK6ZL		46.50	-0.46	-0.57	46.60	-1.45	-1.52	ZZ
1KXQRZ	*	49.15	2.19	2.70	50.48	2.42	2.54	ZZ
1MYTE1		46.90	-0.06	-0.08	48.30	0.25	0.26	ZZ
268MTM	*	44.70	-2.26	-2.80	45.20	-2.85	-2.99	ZZ
2AHYJE		47.06	0.10	0.12	47.97	-0.08	-0.09	ZZ
2BVYWV		47.10	0.14	0.17	48.00	-0.05	-0.06	ZZ
2DZ12D		46.70	-0.26	-0.32	48.18	0.13	0.13	ZZ
3CMJPZ		47.09	0.12	0.15	48.60	0.54	0.57	ZZ
3L5TMN		45.70	-1.26	-1.56	47.00	-1.05	-1.10	ZZ
3WN54S		48.30	1.34	1.65	49.10	1.05	1.10	ZZ
4153KK		47.50	0.54	0.66	48.70	0.65	0.68	ZZ
5M6G2B	X	41.99	-4.98	-6.14	49.17	1.12	1.17	ZZ
5WLHVZ		45.70	-1.26	-1.56	47.70	-0.35	-0.37	ZZ
6DEQ7A		46.78	-0.19	-0.23	48.20	0.14	0.15	ZZ
6M7G1P		48.59	1.63	2.01	49.41	1.36	1.42	ZZ
6RPVHH		46.90	-0.06	-0.08	48.20	0.15	0.15	ZZ
6UMCKR		46.40	-0.56	-0.70	47.40	-0.65	-0.68	ZZ
7VJLLD		46.90	-0.06	-0.08	48.00	-0.05	-0.06	ZZ
85U2AR		47.33	0.36	0.45	48.34	0.29	0.30	ZZ
8B7V8F	*	47.20	0.24	0.29	47.00	-1.05	-1.10	ZZ
8C6JPD		46.50	-0.46	-0.57	48.00	-0.05	-0.06	ZZ
8R2YB1		46.63	-0.34	-0.42	47.11	-0.95	-0.99	ZZ
952ZP2	X	44.40	-2.56	-3.17	46.00	-2.05	-2.15	ZZ
97UEAB		47.82	0.86	1.06	48.92	0.87	0.91	ZZ
9MHKYW		46.07	-0.90	-1.11	47.48	-0.57	-0.60	ZZ
9U1Q4X	*	44.70	-2.26	-2.80	45.30	-2.75	-2.88	ZZ
9UTN3A		46.70	-0.26	-0.33	48.10	0.05	0.05	ZZ
9W4KRG	X	48.70	1.74	2.14	51.10	3.05	3.19	ZZ
9ZRGLT		47.80	0.84	1.03	48.60	0.55	0.57	ZZ
A4QMXC		46.50	-0.46	-0.57	48.50	0.45	0.47	ZZ
AA5FMP		47.70	0.74	0.91	48.80	0.75	0.78	ZZ
AAH12S		47.70	0.74	0.91	48.90	0.85	0.89	ZZ
AMMMT8		47.60	0.64	0.79	48.82	0.77	0.80	ZZ
ASZ3RC		46.50	-0.46	-0.57	47.70	-0.35	-0.37	ZZ
B462TB		46.70	-0.26	-0.33	48.20	0.15	0.15	ZZ
BLNXV5		47.50	0.54	0.66	48.70	0.65	0.68	ZZ
BPUQ7X		47.80	0.84	1.03	49.00	0.95	0.99	ZZ
BYV8D6		46.00	-0.96	-1.19	47.60	-0.45	-0.48	ZZ
C7LYZF		47.70	0.74	0.91	48.80	0.75	0.78	ZZ
CJ2LB2		47.15	0.19	0.23	48.37	0.32	0.33	ZZ
CMUH7Y	X	47.80	0.84	1.03	46.70	-1.35	-1.42	ZZ
DXYF21	X	49.02	2.06	2.54	32.92	-15.13	-15.84	ZZ
E6EV6T		48.10	1.14	1.40	49.00	0.95	0.99	ZZ
E8ZB59		47.10	0.14	0.17	48.10	0.05	0.05	ZZ

Interlaboratory Testing Program for Metals

Analysis 130

Tensile Strength (Flat Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EEY35R		46.41	-0.55	-0.68	47.20	-0.86	-0.90	ZZ
ELSCZ4		46.56	-0.41	-0.50	48.01	-0.05	-0.05	ZZ
EMKUZY		46.71	-0.25	-0.31	48.29	0.23	0.24	ZZ
F1HQTA		46.90	-0.06	-0.08	47.90	-0.15	-0.16	ZZ
F9KQMQ		48.30	1.34	1.65	49.20	1.15	1.20	ZZ
FF8T1D		48.00	1.04	1.28	49.20	1.15	1.20	ZZ
FY2F2Q		46.19	-0.78	-0.96	47.31	-0.74	-0.78	ZZ
FZCSJ2		46.11	-0.85	-1.05	46.45	-1.60	-1.68	ZZ
GBEP1G		48.60	1.64	2.02	50.19	2.14	2.24	ZZ
GEJVG7		46.20	-0.76	-0.94	47.40	-0.65	-0.68	ZZ
GJH5TF		47.70	0.74	0.91	48.90	0.85	0.89	ZZ
GM145Q	X	48.30	1.33	1.65	39.31	-8.75	-9.16	ZZ
GNXPTN		47.50	0.54	0.67	48.93	0.87	0.91	ZZ
GPW8WV		46.80	-0.16	-0.20	48.20	0.15	0.15	ZZ
GU9GLE		47.17	0.21	0.25	47.76	-0.29	-0.31	ZZ
GWTDUC		48.30	1.34	1.65	48.90	0.85	0.89	ZZ
H2B4LL		46.93	-0.03	-0.04	48.15	0.10	0.10	ZZ
HGPTD7	*	46.30	-0.66	-0.82	46.00	-2.05	-2.15	ZZ
HXVWT7		47.10	0.14	0.17	48.10	0.05	0.05	ZZ
HYFDFZ		48.10	1.14	1.40	49.20	1.15	1.20	ZZ
JZNZGK		46.54	-0.42	-0.52	48.48	0.43	0.45	ZZ
K68BKT		47.50	0.54	0.66	48.60	0.55	0.57	ZZ
KQEN4N		47.20	0.24	0.29	48.10	0.05	0.05	ZZ
L31HV7		47.40	0.44	0.54	48.50	0.45	0.47	ZZ
L4ZG81		46.30	-0.66	-0.82	47.50	-0.55	-0.58	ZZ
L83LJ7		47.57	0.61	0.75	48.59	0.53	0.56	ZZ
M7NR8Z		47.20	0.23	0.28	49.34	1.29	1.35	ZZ
MF2FCC		47.10	0.14	0.17	48.40	0.35	0.36	ZZ
MGKB45		45.50	-1.46	-1.81	46.30	-1.75	-1.84	ZZ
MKKK6G		48.00	1.04	1.28	49.20	1.15	1.20	ZZ
MZQEFW		46.41	-0.55	-0.68	46.35	-1.70	-1.78	ZZ
NEKRKK		47.10	0.14	0.17	47.20	-0.85	-0.89	ZZ
P7LJKA		46.90	-0.06	-0.08	48.20	0.15	0.15	ZZ
PD6JY3		47.21	0.25	0.30	48.34	0.29	0.30	ZZ
PFYT7P		45.60	-1.36	-1.68	46.40	-1.65	-1.73	ZZ
PS6KB4		47.60	0.64	0.78	48.30	0.25	0.26	ZZ
PZGUL5		46.67	-0.29	-0.36	47.75	-0.31	-0.32	ZZ
QA967B	X	46.30	-0.66	-0.82	27.10	-20.95	-21.94	ZZ
QSP1PR		46.00	-0.96	-1.19	47.10	-0.95	-1.00	ZZ
QTAFGE	*	48.40	1.44	1.77	50.50	2.45	2.56	ZZ
QUS1DJ	*	46.80	-0.16	-0.20	49.30	1.25	1.30	ZZ
RKT1TH		47.41	0.45	0.55	48.63	0.58	0.60	ZZ
SLC7M1		45.25	-1.72	-2.12	45.76	-2.29	-2.40	ZZ
T1YA5N		46.41	-0.55	-0.68	48.56	0.51	0.53	ZZ
TCFYCT		47.50	0.54	0.66	48.50	0.45	0.47	ZZ

Interlaboratory Testing Program for Metals

Analysis 130

Tensile Strength (Flat Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
THXZZX		46.90	-0.06	-0.08	47.10	-0.95	-1.00	ZZ
TNCTKW	X	49.90	2.94	3.62	46.80	-1.25	-1.31	ZZ
U5P6YS		46.80	-0.16	-0.20	47.00	-1.05	-1.10	ZZ
U6BH55		45.73	-1.23	-1.52	47.40	-0.66	-0.69	ZZ
UNTDLL		47.53	0.56	0.70	48.91	0.85	0.89	ZZ
UQY4M9		46.10	-0.86	-1.07	47.60	-0.45	-0.48	ZZ
UVMRGE	X	43.10	-3.86	-4.77	45.60	-2.45	-2.57	ZZ
V4JRRD		47.00	0.04	0.04	48.40	0.35	0.36	ZZ
VEMYUJ		46.70	-0.26	-0.33	48.20	0.15	0.15	ZZ
WC8E3D		47.90	0.94	1.15	48.80	0.75	0.78	ZZ
WD7YAU		47.90	0.94	1.15	47.90	-0.15	-0.16	ZZ
WML8RF		46.35	-0.61	-0.75	47.59	-0.47	-0.49	ZZ
WPA1TK	X	46.20	-0.76	-0.94	45.30	-2.75	-2.88	ZZ
XCVFYQ		46.80	-0.16	-0.20	47.40	-0.65	-0.68	ZZ
XET5RH		46.12	-0.84	-1.04	47.28	-0.77	-0.81	ZZ
Y72TP3		46.80	-0.16	-0.20	47.80	-0.25	-0.27	ZZ
Y8MCA Y		47.30	0.34	0.41	48.40	0.35	0.36	ZZ
YFVAMQ		46.20	-0.76	-0.94	47.20	-0.85	-0.89	ZZ
YMH8AS		47.28	0.32	0.39	48.28	0.23	0.24	ZZ
YTV5LC		47.10	0.14	0.17	47.40	-0.65	-0.68	ZZ
ZFBU62		46.40	-0.56	-0.70	47.50	-0.55	-0.58	ZZ
ZHV4TT		47.24	0.27	0.34	48.14	0.08	0.09	ZZ
ZVBL7J		47.10	0.14	0.17	47.70	-0.35	-0.37	ZZ
ZZSL66		45.90	-1.06	-1.31	48.00	-0.05	-0.06	ZZ

Summary Statistics

	Sample F73	Sample F74
Grand Means	46.965 ksi	48.050 ksi
Std Dev Btwn Labs	0.810 ksi	0.955 ksi
Statistics based on 103 of 114 reporting participants		

Samples F73 , F74 : AISI 4130 steel

Analysis 130

Tensile Strength (Flat Steel) - ksi

ASTM E8

Comments on assigned Data Flags for Test #130

- 19QAEK (X) - Data for both samples are low.
5M6G2B (X) - Low data for Sample F73.
952ZP2 (X) - Low data for Sample F73.
9W4KRG (X) - High data for Sample F74.
CMUH7Y (X) - Inconsistent in testing between samples.
DXYF21 (X) - Low data for Sample F74.
GM145Q (X) - Low data for Sample F74.
QA967B (X) - Low data for Sample F74.
TNCTKW (X) - High data for Sample F73.
UVMRGE (X) - Low data for Sample F73.
WPA1TK (X) - Low data for Sample F74.

Interlaboratory Testing Program for Metals

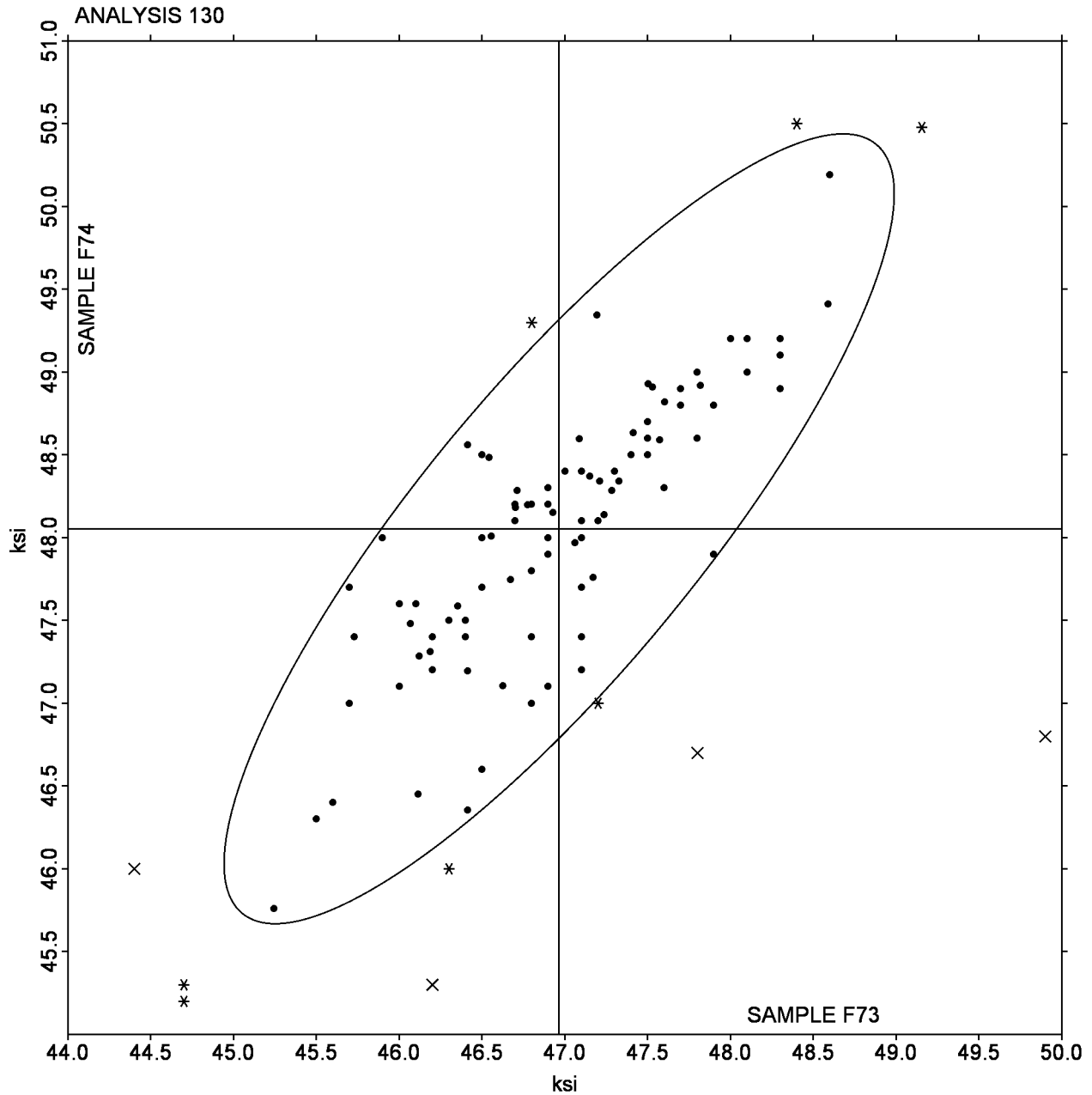
Analysis 130

Tensile Strength (Flat Steel) - ksi

ASTM E8

SAMPLE F73 = 46.965 ksi

SAMPLE F74 = 48.050 ksi



Interlaboratory Testing Program for Metals

Analysis 131

Yield Strength (Flat Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
11W5LJ		26.73	-0.04	-0.04	29.62	0.02	0.02	ZZ
1EWR2N		27.60	0.84	0.88	30.90	1.30	1.28	ZZ
23KP74	X	29.30	2.53	2.66	23.64	-5.96	-5.86	ZZ
25M28N		27.50	0.74	0.77	30.10	0.50	0.49	ZZ
2MXS8D		27.50	0.74	0.77	31.10	1.50	1.48	ZZ
2S5YJK		26.00	-0.76	-0.80	28.20	-1.40	-1.38	ZZ
32G74L		27.10	0.34	0.35	30.20	0.60	0.59	ZZ
38MGD5	X	23.20	-3.56	-3.74	26.20	-3.40	-3.35	ZZ
3F2XFZ		26.72	-0.04	-0.05	29.07	-0.53	-0.52	ZZ
3KXQJH		25.80	-0.96	-1.01	28.70	-0.90	-0.89	ZZ
3MR39P		28.40	1.64	1.72	31.40	1.80	1.77	ZZ
422LM2		27.10	0.34	0.35	30.10	0.50	0.49	ZZ
4MW29F		26.70	-0.06	-0.07	30.30	0.70	0.69	ZZ
4WVBJ5		28.20	1.44	1.51	31.30	1.70	1.67	ZZ
51NGF2	X	26.40	-0.36	-0.38	26.90	-2.70	-2.66	ZZ
51YG9B		26.54	-0.22	-0.23	29.01	-0.59	-0.58	ZZ
559P8F		25.70	-1.06	-1.11	28.00	-1.60	-1.58	ZZ
5B6DSU	X	32.20	5.44	5.70	17.55	-12.05	-11.86	ZZ
67PRMU		27.59	0.82	0.86	29.92	0.32	0.32	ZZ
687DCU		27.80	1.04	1.09	30.30	0.70	0.69	ZZ
6C7B88		26.51	-0.25	-0.26	28.83	-0.77	-0.75	ZZ
6LM3SE		26.52	-0.24	-0.26	29.32	-0.28	-0.28	ZZ
6W4MC9		26.09	-0.67	-0.70	29.30	-0.30	-0.30	ZZ
76RG7N		28.50	1.74	1.82	30.70	1.10	1.08	ZZ
77Q5NL		27.06	0.30	0.31	30.01	0.41	0.40	ZZ
7B5E66		27.30	0.54	0.56	30.00	0.40	0.39	ZZ
7Z1QF3		26.60	-0.16	-0.17	29.40	-0.20	-0.20	ZZ
7ZEVDM		27.70	0.94	0.98	30.40	0.80	0.79	ZZ
81EAAB		26.72	-0.05	-0.05	29.78	0.18	0.17	ZZ
8EUMBJ		27.40	0.64	0.67	30.50	0.90	0.89	ZZ
8RN31K	X	30.30	3.54	3.71	30.40	0.80	0.79	ZZ
8V4AMY		26.20	-0.56	-0.59	29.60	0.00	0.00	ZZ
9C213F		26.50	-0.26	-0.28	29.80	0.20	0.20	ZZ
9HH83X		26.99	0.23	0.24	29.51	-0.10	-0.09	ZZ
9TUQEQ		26.57	-0.19	-0.20	29.70	0.10	0.10	ZZ
9WVPSN		26.30	-0.46	-0.49	29.50	-0.10	-0.10	ZZ
9YHACY		27.30	0.54	0.56	30.40	0.80	0.79	ZZ
AAPNXJ		25.85	-0.92	-0.96	28.94	-0.67	-0.65	ZZ
AHP3NR		26.00	-0.76	-0.80	28.70	-0.90	-0.89	ZZ
AQ6M4H	X	3.60	-23.16	-24.29	29.70	0.10	0.10	ZZ
AU4Z3F	X	30.15	3.39	3.55	32.40	2.80	2.76	ZZ
B4J9TT		27.00	0.24	0.25	31.20	1.60	1.57	ZZ
C2WRPE		26.55	-0.21	-0.22	28.23	-1.38	-1.35	ZZ
CARJVD		24.70	-2.06	-2.16	27.30	-2.30	-2.26	ZZ
CC5FNX		24.80	-1.96	-2.06	28.30	-1.30	-1.28	ZZ

Interlaboratory Testing Program for Metals

Analysis 131

Yield Strength (Flat Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
CG7LYP		26.40	-0.36	-0.38	28.90	-0.70	-0.69	ZZ
CPPMZT		25.00	-1.76	-1.85	29.00	-0.60	-0.59	ZZ
CU6U1A		25.50	-1.26	-1.32	27.60	-2.00	-1.97	ZZ
CZP4ZW		27.50	0.74	0.77	31.20	1.60	1.57	ZZ
D2QCAQ		26.60	-0.17	-0.17	30.29	0.69	0.68	ZZ
DE98FA	X	29.79	3.03	3.17	31.50	1.90	1.87	ZZ
DGK6S3	*	24.60	-2.16	-2.27	28.50	-1.10	-1.08	ZZ
DH6YD9		26.40	-0.36	-0.38	28.70	-0.90	-0.89	ZZ
DYV91B		28.60	1.84	1.93	31.40	1.80	1.77	ZZ
E3AH3P		25.20	-1.56	-1.64	28.70	-0.90	-0.89	ZZ
EEWB73		27.10	0.34	0.35	30.20	0.60	0.59	ZZ
EHK8VE		27.40	0.64	0.67	29.90	0.30	0.29	ZZ
EKK5WN		26.52	-0.24	-0.26	29.79	0.19	0.19	ZZ
EUUG81	X	12.15	-14.61	-15.32	29.95	0.35	0.34	ZZ
EYYDED		27.31	0.55	0.57	30.17	0.57	0.56	ZZ
F1TDD3	*	25.00	-1.76	-1.85	27.00	-2.60	-2.56	ZZ
FRMXZW		26.00	-0.76	-0.80	28.30	-1.30	-1.28	ZZ
FXENNF		27.06	0.30	0.31	30.63	1.03	1.01	ZZ
G1SVAR		27.06	0.30	0.32	30.10	0.50	0.49	ZZ
GEN3W8	X	31.10	4.34	4.55	30.40	0.80	0.79	ZZ
GFCJ29		26.09	-0.67	-0.70	30.17	0.57	0.56	ZZ
GL6YQ4		27.00	0.24	0.25	29.70	0.10	0.10	ZZ
GM246N		26.24	-0.52	-0.55	29.00	-0.60	-0.59	ZZ
HXR3R7		25.60	-1.16	-1.22	28.30	-1.30	-1.28	ZZ
J5DE46		27.15	0.39	0.41	30.76	1.16	1.14	ZZ
JCRZ8Y		25.10	-1.66	-1.74	27.90	-1.70	-1.67	ZZ
JRJBDT		26.61	-0.15	-0.16	29.82	0.22	0.22	ZZ
JT1CLE		26.30	-0.46	-0.49	29.50	-0.10	-0.10	ZZ
KE2J5K	*	28.08	1.32	1.38	29.46	-0.14	-0.14	ZZ
KZP3Y3		26.20	-0.56	-0.59	29.10	-0.50	-0.49	ZZ
LUCKEE		27.10	0.34	0.35	29.40	-0.20	-0.20	ZZ
LUS7V4	X	22.30	-4.46	-4.68	25.10	-4.50	-4.43	ZZ
M1ZKFD		27.90	1.14	1.19	30.10	0.50	0.49	ZZ
MX4AN5		26.40	-0.37	-0.38	29.30	-0.30	-0.30	ZZ
MZTG6G		26.90	0.14	0.14	29.90	0.30	0.29	ZZ
NLRSWS		26.63	-0.13	-0.14	29.59	-0.01	-0.01	ZZ
P39HLD		27.50	0.74	0.77	30.50	0.90	0.89	ZZ
P73NZQ		27.08	0.32	0.33	30.14	0.54	0.53	ZZ
PE17CS		28.00	1.24	1.30	31.00	1.40	1.38	ZZ
PJG34X		26.60	-0.16	-0.17	30.00	0.40	0.39	ZZ
PT43MY		26.40	-0.36	-0.38	29.10	-0.50	-0.49	ZZ
Q6DARX	X	24.40	-2.36	-2.48	30.00	0.40	0.39	ZZ
Q8T5R3		28.30	1.54	1.61	30.60	1.00	0.98	ZZ
QD4M5T	*	27.30	0.53	0.56	28.41	-1.19	-1.17	ZZ
QFFZ27		26.90	0.14	0.14	30.40	0.80	0.79	ZZ

Interlaboratory Testing Program for Metals

Analysis 131

Yield Strength (Flat Steel) - ksi

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
R2L23N		26.90	0.14	0.15	29.63	0.03	0.03	ZZ
R4SJ2J	X	30.00	3.24	3.39	27.00	-2.60	-2.56	ZZ
SQC5QL		24.74	-2.02	-2.12	27.41	-2.19	-2.15	ZZ
SX271W		26.70	-0.06	-0.07	28.80	-0.80	-0.79	ZZ
U6VL7M		26.21	-0.55	-0.58	29.12	-0.48	-0.47	ZZ
UC9JED	X	43.90	17.14	17.97	44.20	14.60	14.37	ZZ
UM37J2		25.90	-0.86	-0.91	28.90	-0.70	-0.69	ZZ
UM94DK	X	19.80	-6.96	-7.30	30.80	1.20	1.18	ZZ
V2L3ZX		25.70	-1.06	-1.11	28.60	-1.00	-0.98	ZZ
V72RZU	X	27.50	0.74	0.77	28.40	-1.20	-1.18	ZZ
VGB5CU		27.50	0.74	0.77	30.00	0.40	0.39	XX
VKRUD6		26.90	0.14	0.14	29.30	-0.30	-0.30	ZZ
WFHQG4		28.00	1.24	1.30	29.50	-0.10	-0.10	ZZ
WN1Y51		27.56	0.80	0.84	30.33	0.73	0.72	ZZ
XAYS5Z		27.80	1.04	1.09	29.70	0.10	0.10	ZZ
XGUK1A		27.13	0.37	0.38	28.59	-1.01	-0.99	ZZ
XP7PRT		26.20	-0.56	-0.59	28.50	-1.10	-1.08	ZZ
Y9WN4Q		25.80	-0.96	-1.01	28.70	-0.90	-0.89	ZZ
YR8CJN	X	29.30	2.54	2.66	27.20	-2.40	-2.36	ZZ
YWQXW4		28.25	1.49	1.56	31.46	1.86	1.83	ZZ
Z19XG3		28.99	2.23	2.34	31.46	1.86	1.83	ZZ
ZCCFKX		28.30	1.54	1.61	31.30	1.70	1.67	ZZ
ZHSGY8		27.80	1.04	1.09	31.40	1.80	1.77	ZZ
ZKWH3M		24.90	-1.86	-1.95	28.40	-1.20	-1.18	ZZ

Summary Statistics

	Sample F73	Sample F74
Grand Means	26.763 ksi	29.600 ksi
Std Dev Btwn Labs	0.954 ksi	1.016 ksi
Statistics based on 97 of 114 reporting participants		

Samples F73 , F74 : AISI 4130 steel

Analysis 131

Yield Strength (Flat Steel) - ksi

ASTM E8

Comments on assigned Data Flags for Test #131

- 23KP74 (X) - Inconsistent in testing between samples, data for Sample F74 are low.
- 38MGD5 (X) - Data for both samples are low. Possible systematic error.
- 51NGF2 (X) - Inconsistent in testing between samples.
- 5B6DSU (X) - High data for Sample F73. Low data for Sample F74.
- 8RN31K (X) - Inconsistent in testing between samples, data for Sample F73 are high.
- AQ6M4H (X) - Extreme data for Sample F73.
- AU4Z3F (X) - Inconsistent in testing between samples, data for Sample F73 are high.
- DE98FA (X) - Inconsistent in testing between samples, data for Sample F73 are high.
- EUUG81 (X) - Inconsistent in testing between samples, data for Sample F73 are low.
- GEN3W8 (X) - Inconsistent in testing between samples, data for Sample F73 are high.
- LUS7V4 (X) - Data for both samples are low. Possible systematic error.
- Q6DARX (X) - Inconsistent in testing between samples.
- R4SJ2J (X) - Inconsistent in testing between samples, data for Sample F73 are high.
- UC9JED (X) - Data for both samples are high.
- UM94DK (X) - Inconsistent in testing between samples, data for Sample F73 are low.
- V72RZU (X) - Inconsistent in testing between samples.
- YR8CJN (X) - Inconsistent in testing between samples.

Interlaboratory Testing Program for Metals

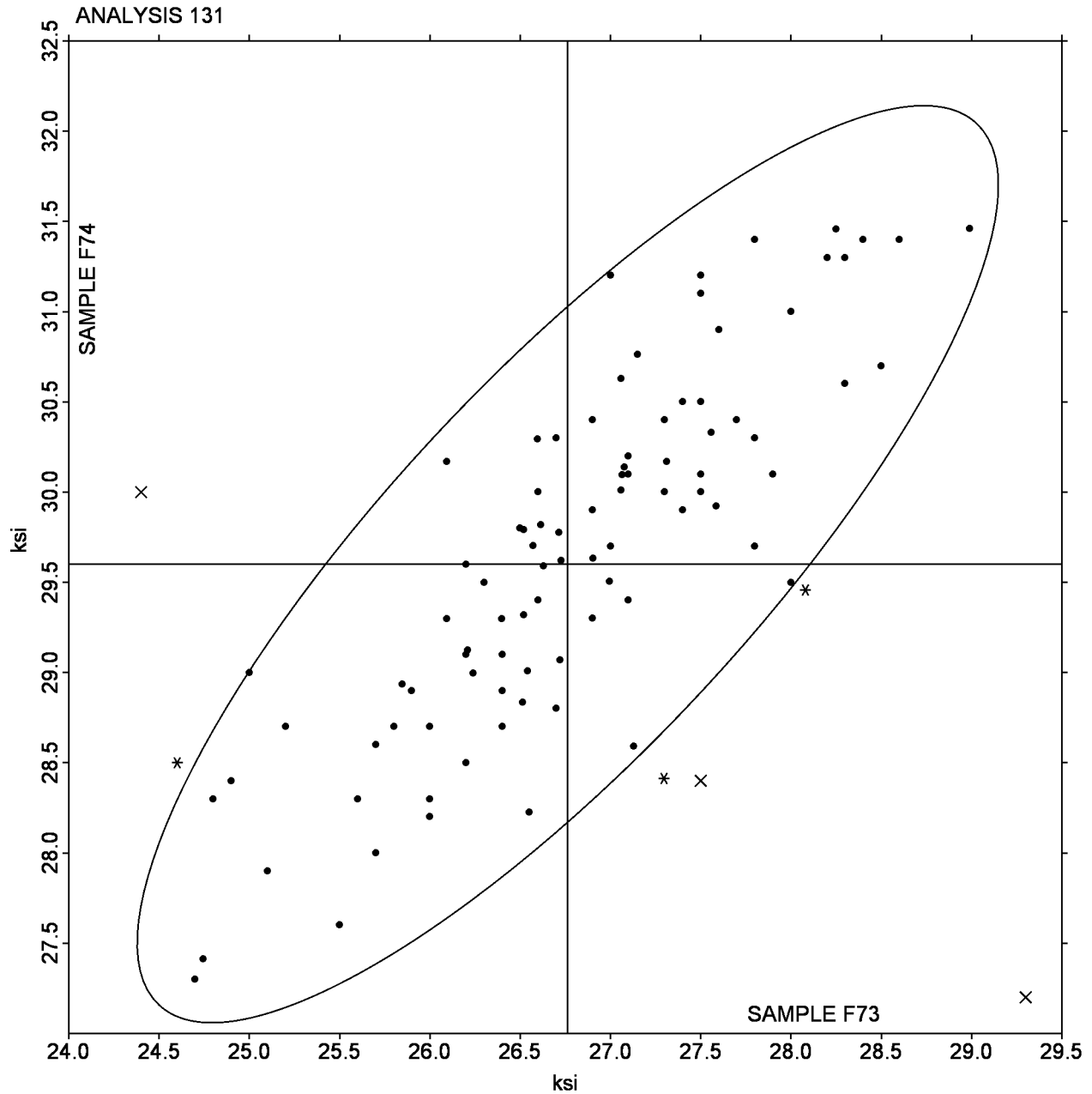
Analysis 131

Yield Strength (Flat Steel) - ksi

ASTM E8

SAMPLE F73 = 26.763 ksi

SAMPLE F74 = 29.600 ksi



Interlaboratory Testing Program for Metals

Analysis 132

Elongation (Flat Steel) - Percent Increase

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
15TPQ3		45.90	3.79	1.65	43.00	2.29	0.99	ZZ
1H6PNH		43.50	1.39	0.60	42.80	2.09	0.90	ZZ
1L5ZT5		41.00	-1.11	-0.48	39.00	-1.71	-0.74	ZZ
1SYVV3		44.00	1.89	0.82	43.00	2.29	0.99	ZZ
1W9SZX		42.00	-0.11	-0.05	42.50	1.79	0.77	ZZ
24YCEN		39.60	-2.51	-1.09	38.60	-2.11	-0.91	ZZ
2G6LEK		42.00	-0.11	-0.05	42.00	1.29	0.56	ZZ
2GZ43L		43.80	1.69	0.73	41.80	1.09	0.47	ZZ
2LT1E6		46.00	3.89	1.69	45.00	4.29	1.85	ZZ
2SL3ZJ	X	34.60	-7.51	-3.27	39.20	-1.51	-0.65	ZZ
3CANTM		44.00	1.89	0.82	44.00	3.29	1.42	ZZ
3QRM9U		41.40	-0.71	-0.31	40.80	0.09	0.04	ZZ
41KM3X	X	52.95	10.84	4.72	51.10	10.39	4.49	ZZ
425Q5A	X	45.00	2.89	1.26	38.00	-2.71	-1.17	ZZ
44UU3N	X	45.00	2.89	1.26	48.00	7.29	3.15	ZZ
46BX7F		45.50	3.39	1.47	43.00	2.29	0.99	ZZ
4B8C3J		43.70	1.59	0.69	41.60	0.89	0.38	ZZ
4LX4MV		41.50	-0.61	-0.27	40.70	-0.01	0.00	ZZ
4MD524		40.50	-1.61	-0.70	39.00	-1.71	-0.74	ZZ
58BXMJ		40.20	-1.91	-0.83	39.40	-1.31	-0.57	ZZ
5D4EBR		41.80	-0.31	-0.14	40.00	-0.71	-0.31	ZZ
5GSXB2		40.00	-2.11	-0.92	39.00	-1.71	-0.74	ZZ
5W5E9J		40.50	-1.61	-0.70	39.10	-1.61	-0.70	ZZ
5WN6J3		44.60	2.49	1.08	44.50	3.79	1.64	ZZ
5ZKGZ3		41.00	-1.11	-0.48	39.50	-1.21	-0.52	ZZ
7CKRXP	*	44.08	1.97	0.86	39.11	-1.60	-0.69	ZZ
7L1P5Z	X	35.00	-7.11	-3.09	39.00	-1.71	-0.74	ZZ
7PSCVC		40.00	-2.11	-0.92	37.00	-3.71	-1.60	ZZ
81NB9J	*	42.00	-0.11	-0.05	44.00	3.29	1.42	ZZ
8B8ETS		43.00	0.89	0.39	43.50	2.79	1.21	ZZ
8H8THZ		37.79	-4.32	-1.88	37.32	-3.39	-1.47	ZZ
8K3YBQ		43.60	1.49	0.65	40.60	-0.11	-0.05	ZZ
8U6K9Y		41.60	-0.51	-0.22	39.30	-1.41	-0.61	ZZ
9HC1EJ		41.20	-0.91	-0.40	40.30	-0.41	-0.18	ZZ
9SLHAB		41.00	-1.11	-0.48	40.00	-0.71	-0.31	ZZ
9WLLGQ		43.50	1.39	0.60	43.50	2.79	1.21	ZZ
BFKM7L		41.90	-0.21	-0.09	38.50	-2.21	-0.96	ZZ
BRYQFR	*	46.14	4.03	1.75	41.01	0.30	0.13	ZZ
BUZUZB		44.50	2.39	1.04	42.60	1.89	0.82	ZZ
BW3VMG		42.00	-0.11	-0.05	41.00	0.29	0.12	ZZ
D1USNR		43.40	1.29	0.56	41.60	0.89	0.38	ZZ
D4NCW7	*	46.00	3.89	1.69	47.00	6.29	2.72	ZZ
DU259T		40.00	-2.11	-0.92	39.00	-1.71	-0.74	ZZ
DV3ACM		43.20	1.09	0.47	41.20	0.49	0.21	ZZ
DY93JY		42.00	-0.11	-0.05	40.60	-0.11	-0.05	ZZ

Interlaboratory Testing Program for Metals

Analysis 132

Elongation (Flat Steel) - Percent Increase

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
EBLQTP		42.40	0.29	0.13	40.50	-0.21	-0.09	ZZ
EF84WR		42.05	-0.06	-0.03	40.45	-0.26	-0.11	ZZ
EGV9WH		41.00	-1.11	-0.48	40.00	-0.71	-0.31	ZZ
EJF74S		44.85	2.74	1.19	44.15	3.44	1.49	ZZ
FRJ167		39.90	-2.21	-0.96	38.90	-1.81	-0.78	ZZ
FTNK19		38.00	-4.11	-1.79	36.70	-4.01	-1.73	ZZ
G3R41V		39.40	-2.71	-1.18	37.80	-2.91	-1.26	ZZ
G6FKLP		39.40	-2.71	-1.18	38.40	-2.31	-1.00	ZZ
GCKENX		44.10	1.99	0.87	43.90	3.19	1.38	ZZ
GDUBV8		39.90	-2.21	-0.96	38.80	-1.91	-0.83	ZZ
GLZFHM		43.00	0.89	0.39	39.00	-1.71	-0.74	ZZ
GRWVCM		40.00	-2.11	-0.92	40.00	-0.71	-0.31	ZZ
H1ZHR5		41.90	-0.21	-0.09	40.40	-0.31	-0.13	ZZ
H1ZKLN		42.50	0.39	0.17	39.40	-1.31	-0.57	ZZ
HHNHBA		39.70	-2.41	-1.05	39.50	-1.21	-0.52	ZZ
J6D6QU		42.00	-0.11	-0.05	40.80	0.09	0.04	ZZ
J6DR77		42.00	-0.11	-0.05	41.00	0.29	0.12	ZZ
JATZB6		43.00	0.89	0.39	40.00	-0.71	-0.31	ZZ
JBVX58		43.10	0.99	0.43	41.00	0.29	0.12	ZZ
JH7Q7K		38.90	-3.21	-1.40	39.40	-1.31	-0.57	ZZ
JHH6UY		40.00	-2.11	-0.92	36.90	-3.81	-1.65	ZZ
JJ5VNE	*	36.00	-6.11	-2.66	35.50	-5.21	-2.25	ZZ
JXHCEZ		44.20	2.09	0.91	43.60	2.89	1.25	ZZ
KURRR6		44.00	1.89	0.82	41.00	0.29	0.12	ZZ
LRLMNA		41.60	-0.51	-0.22	39.80	-0.91	-0.39	ZZ
LU9EPZ		41.20	-0.91	-0.40	39.00	-1.71	-0.74	ZZ
LW8CWY		43.05	0.94	0.41	40.94	0.23	0.10	ZZ
MBQECE		37.80	-4.31	-1.88	37.90	-2.81	-1.22	ZZ
MDEHZK		39.00	-3.11	-1.35	37.00	-3.71	-1.60	ZZ
MP57KN		47.00	4.89	2.13	44.00	3.29	1.42	ZZ
N3VMHE		43.30	1.19	0.52	44.50	3.79	1.64	ZZ
NC1KEV		45.40	3.29	1.43	43.90	3.19	1.38	ZZ
NERANP		42.90	0.79	0.34	43.20	2.49	1.08	ZZ
NW8DC8		41.50	-0.61	-0.27	40.00	-0.71	-0.31	ZZ
P64ZKR		37.00	-5.11	-2.22	37.00	-3.71	-1.60	ZZ
PYLXV5		41.00	-1.11	-0.48	40.30	-0.41	-0.18	ZZ
QQYZDQ		40.10	-2.01	-0.88	38.50	-2.21	-0.96	ZZ
QSP6W2		41.80	-0.31	-0.14	42.60	1.89	0.82	ZZ
R2H1ZW	X	48.40	6.29	2.74	52.80	12.09	5.23	ZZ
R66LQ5	*	47.90	5.79	2.52	45.40	4.69	2.03	ZZ
RGM5UG		45.50	3.39	1.47	43.00	2.29	0.99	ZZ
RW49N9		43.20	1.09	0.47	43.00	2.29	0.99	ZZ
RXQ5SP		39.40	-2.71	-1.18	36.60	-4.11	-1.78	ZZ
S6VJVP		43.50	1.39	0.60	41.10	0.39	0.17	ZZ
SKFUPM		39.20	-2.91	-1.27	37.00	-3.71	-1.60	ZZ

Interlaboratory Testing Program for Metals

Analysis 132

Elongation (Flat Steel) - Percent Increase

ASTM E8

WebCode	Data Flag	Sample F73			Sample F74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
SV2GVP		41.30	-0.81	-0.35	40.10	-0.61	-0.26	ZZ
TA8JTF		41.30	-0.81	-0.35	40.20	-0.51	-0.22	ZZ
TAV3NT		44.70	2.59	1.13	43.80	3.09	1.34	ZZ
TGS5ET		41.50	-0.61	-0.27	40.70	-0.01	0.00	ZZ
THLNJ1		41.00	-1.11	-0.48	39.00	-1.71	-0.74	ZZ
U696MQ		40.80	-1.31	-0.57	37.50	-3.21	-1.39	ZZ
UFDNF7		42.00	-0.11	-0.05	41.90	1.19	0.51	ZZ
VKRQXW		42.00	-0.11	-0.05	41.00	0.29	0.12	ZZ
WB9RMH		42.20	0.09	0.04	40.30	-0.41	-0.18	ZZ
WKA1EU		41.00	-1.11	-0.48	39.50	-1.21	-0.52	ZZ
WY8DQB		38.90	-3.21	-1.40	37.60	-3.11	-1.34	ZZ
X2KC7H		43.92	1.81	0.79	41.15	0.44	0.19	ZZ
X48728		45.60	3.49	1.52	43.20	2.49	1.08	ZZ
X8FB8D		44.00	1.89	0.82	42.50	1.79	0.77	ZZ
XKQKSS		41.00	-1.11	-0.48	40.10	-0.61	-0.26	ZZ
XVE4SJ		47.60	5.49	2.39	45.00	4.29	1.85	ZZ
YFCGN1		42.30	0.19	0.08	39.80	-0.91	-0.39	ZZ
YG1ZEQ		42.20	0.09	0.04	40.30	-0.41	-0.18	ZZ
YPSAYB	*	41.20	-0.91	-0.40	43.10	2.39	1.03	ZZ
Z2SBBC		38.40	-3.71	-1.62	37.10	-3.61	-1.56	ZZ
Z9GCUV		40.50	-1.61	-0.70	40.00	-0.71	-0.31	ZZ
ZGKH8T		43.07	0.96	0.42	43.18	2.47	1.07	ZZ
ZTETQN		43.00	0.89	0.39	39.00	-1.71	-0.74	ZZ
ZTTAD1		46.50	4.39	1.91	43.50	2.79	1.21	ZZ

Summary Statistics

	Sample F73		Sample F74	
Grand Means	42.112	Percent	40.710	Percent
Std Dev Btwn Labs	2.298	Percent	2.313	Percent
Statistics based on 108 of 114 reporting participants				

Samples F73 , F74 : AISI 4130 steel

Comments on assigned Data Flags for Test #132

- 2SL3ZJ (X) - Inconsistent in testing between samples, data for Sample F73 are low.
 41KM3X (X) - Data for both samples are high. Possible systematic error.
 425Q5A (X) - Inconsistent in testing between samples.
 44UU3N (X) - Inconsistent in testing between samples, data for Sample F74 are high.
 7L1P5Z (X) - Inconsistent in testing between samples, data for Sample F73 are low.
 R2H1ZW (X) - Inconsistent in testing between samples, data for Sample F74 are high.

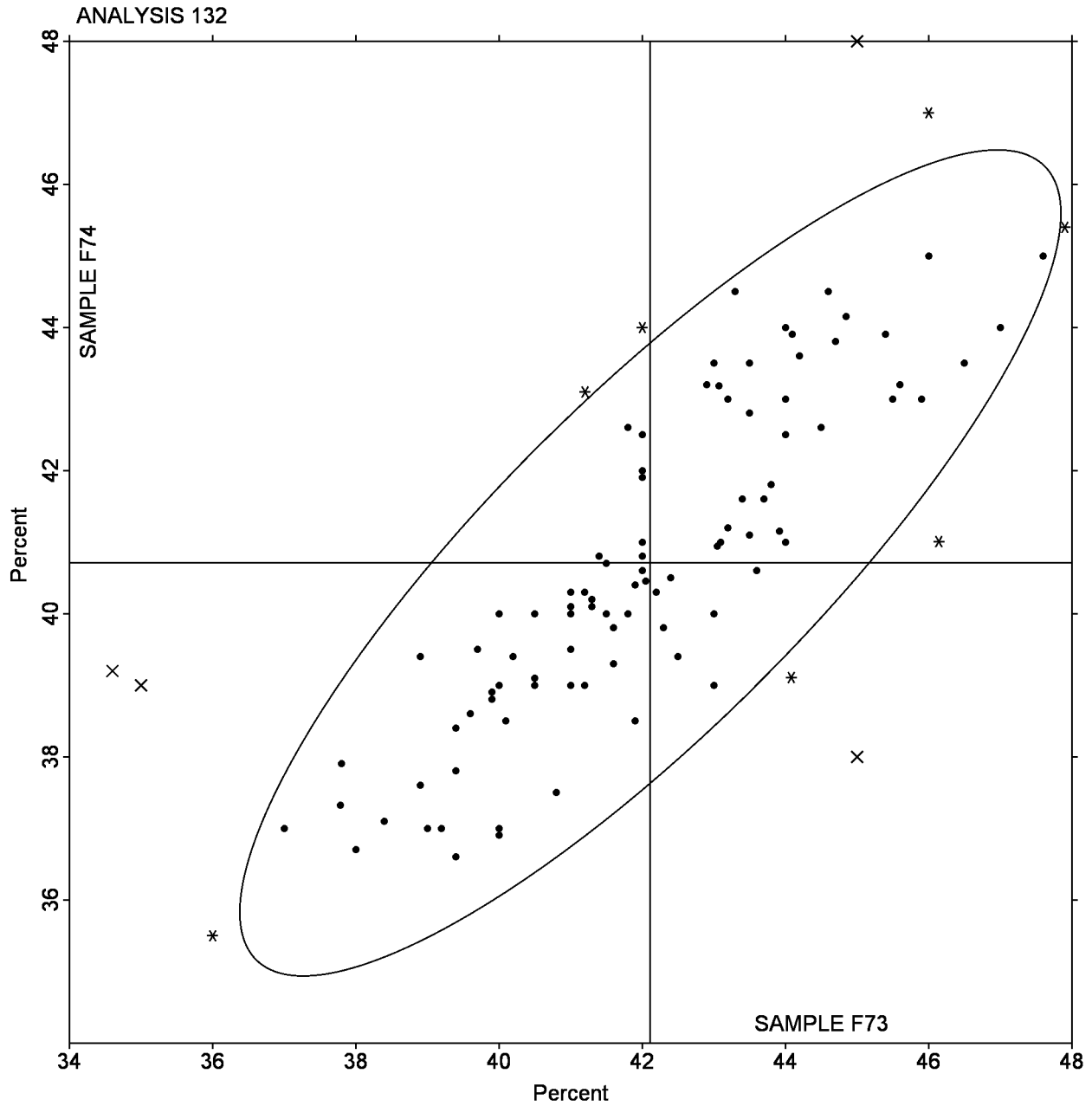
Interlaboratory Testing Program for Metals

Analysis 132

Elongation (Flat Steel) - Percent Increase

ASTM E8

SAMPLE F73 = 42.112 Percent SAMPLe F74 = 40.710 Percent



Interlaboratory Testing Program for Metals

Analysis 120

Rockwell Hardness (C Scale) - Rockwell Hardness Number

ASTM E18

WebCode	Data Flag	Sample E73			Sample E74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1E4XCB		48.74	0.16	0.47	50.70	0.23	0.81	LE
27VUPW		48.64	0.06	0.18	50.52	0.05	0.17	WI
2PHSVC		48.60	0.02	0.07	50.40	-0.07	-0.26	MI
2W6WDB	X	48.64	0.06	0.18	48.98	-1.49	-5.29	WI
3KPHT9	*	47.70	-0.88	-2.50	49.68	-0.79	-2.81	BU
3MGF5M		48.68	0.10	0.29	50.48	0.01	0.03	XX
46V4PE		49.32	0.74	2.12	51.04	0.57	2.01	MI
4UJT4F		48.42	-0.16	-0.45	50.40	-0.07	-0.26	WI
4VYMXH		48.24	-0.34	-0.96	50.20	-0.27	-0.96	XX
5J2YG9		48.12	-0.46	-1.30	50.22	-0.25	-0.89	WI
5YCPCM		48.10	-0.48	-1.36	50.00	-0.47	-1.67	WI
6GRW9L		47.98	-0.60	-1.70	50.14	-0.33	-1.18	WI
6NTKQA	*	47.60	-0.98	-2.78	50.00	-0.47	-1.67	WI
7A9K6A	X	48.86	0.28	0.81	50.10	-0.37	-1.32	WI
7TK5GA	X	49.70	1.12	3.20	48.20	-2.27	-8.06	WI
8U2EFH		48.00	-0.58	-1.64	50.00	-0.47	-1.67	WI
91W74W		48.54	-0.04	-0.10	50.36	-0.11	-0.40	WI
9747KZ		48.50	-0.08	-0.22	50.12	-0.35	-1.25	LE
9BBT4A		48.80	0.22	0.64	50.64	0.17	0.60	NA
9QP5JX		49.06	0.48	1.38	50.82	0.35	1.23	NA
9RAFMS		48.90	0.32	0.92	50.72	0.25	0.88	EM
9YU9U1		48.88	0.30	0.86	50.90	0.43	1.52	IN
AGV879		48.76	0.18	0.52	50.62	0.15	0.52	EM
BP6TYX		48.88	0.30	0.86	50.72	0.25	0.88	WI
BVM17W		49.00	0.42	1.21	50.76	0.29	1.02	WI
CBEMA8		48.60	0.02	0.07	50.36	-0.11	-0.40	AK
CDAETT		48.42	-0.16	-0.45	50.42	-0.05	-0.18	UN
CQ9K9S		48.74	0.16	0.47	50.42	-0.05	-0.18	WI
DG2RSN		48.52	-0.06	-0.16	50.26	-0.21	-0.75	MI
DMTF81		48.48	-0.10	-0.28	50.36	-0.11	-0.40	NA
DU9EW6	X	49.26	0.68	1.95	51.62	1.15	4.07	EM
EJ6K4D		48.40	-0.18	-0.50	50.42	-0.05	-0.18	WI
EVTK92		48.20	-0.38	-1.07	50.20	-0.27	-0.96	MI
GADFCV		48.56	-0.02	-0.05	50.40	-0.07	-0.26	WI
GMU795		48.70	0.12	0.35	50.74	0.27	0.95	WI
GMUK47	X	48.50	-0.08	-0.22	49.80	-0.67	-2.38	CL
GXS4P		47.98	-0.60	-1.70	50.26	-0.21	-0.75	LE
H62SQ5	X	79.00	30.42	86.71	81.00	30.53	108.28	WI
H6MSZW		48.44	-0.14	-0.39	50.64	0.17	0.60	XX
HGHHAX		49.10	0.52	1.49	50.72	0.25	0.88	WO
J15Z2N		48.74	0.16	0.47	50.64	0.17	0.60	MA
J9MCDF	X	49.12	0.54	1.55	50.18	-0.29	-1.04	EM
JBQ63Y		48.70	0.12	0.35	50.70	0.23	0.81	IN
JTCM6S		48.02	-0.56	-1.59	50.06	-0.41	-1.46	MI
K2QCVC		48.42	-0.16	-0.45	50.22	-0.25	-0.89	FI

Interlaboratory Testing Program for Metals

Analysis 120

Rockwell Hardness (C Scale) - Rockwell Hardness Number

ASTM E18

WebCode	Data Flag	Sample E73			Sample E74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
K52A2N		48.52	-0.06	-0.16	50.44	-0.03	-0.11	CL
KB319C		48.52	-0.06	-0.16	50.28	-0.19	-0.68	BU
KDLBN4		48.40	-0.18	-0.50	50.46	-0.01	-0.04	CL
KNKUSL		48.82	0.24	0.69	50.62	0.15	0.52	WI
KSPQ4F		48.70	0.13	0.36	50.46	-0.01	-0.03	WI
KXM1JD	X	48.86	0.28	0.81	50.14	-0.33	-1.18	UN
L9EBM5		48.56	-0.02	-0.05	50.58	0.11	0.38	WI
LDESZD		48.76	0.18	0.52	50.66	0.19	0.67	WI
LTN2NF		48.74	0.16	0.47	50.86	0.39	1.38	WI
LXNQMG		48.42	-0.16	-0.45	50.38	-0.09	-0.33	WI
MTS72M		48.16	-0.42	-1.19	50.40	-0.07	-0.26	WO
N965BZ		49.22	0.64	1.83	51.00	0.53	1.87	NA
NGCN2D		48.82	0.24	0.69	50.50	0.03	0.10	XX
NH6HJT		48.62	0.04	0.12	50.36	-0.11	-0.40	UN
P9R1VE		48.96	0.38	1.09	50.78	0.31	1.09	AN
PARQY2		48.96	0.38	1.09	50.80	0.33	1.16	WI
PCY992		48.40	-0.18	-0.50	50.62	0.15	0.52	WI
PX8483		48.68	0.10	0.29	50.62	0.15	0.52	WI
QP97MY		49.24	0.66	1.89	51.16	0.69	2.44	WI
RBV993		49.22	0.64	1.83	51.00	0.53	1.87	NA
RDV2S9		48.74	0.16	0.47	50.62	0.15	0.52	FU
RQ827V		48.18	-0.40	-1.13	50.14	-0.33	-1.18	WI
RSA2ZZ	*	48.84	0.26	0.75	50.24	-0.23	-0.82	BU
S6HTAY		48.44	-0.14	-0.39	50.20	-0.27	-0.96	NA
SJHE5G		49.00	0.42	1.21	50.86	0.39	1.38	FU
SN1WFS		48.90	0.32	0.92	50.44	-0.03	-0.11	FU
TPTG1W		48.50	-0.08	-0.22	50.30	-0.17	-0.61	WI
TWL2RJ		48.24	-0.34	-0.96	50.46	-0.01	-0.04	CL
U32WCE		48.76	0.18	0.52	50.64	0.17	0.60	UN
V2EY2L		48.34	-0.24	-0.67	50.38	-0.09	-0.33	WI
VB33WS		48.84	0.26	0.75	50.40	-0.07	-0.26	WI
W7V86N		48.58	0.00	0.01	50.58	0.11	0.38	WI
WB29A6		48.14	-0.44	-1.24	50.30	-0.17	-0.61	NA
XFP3B6		48.80	0.22	0.64	50.62	0.15	0.52	WI
Y5QZSP	*	48.42	-0.16	-0.45	49.98	-0.49	-1.75	UN
YHQ15R		48.12	-0.46	-1.30	50.06	-0.41	-1.46	BU
YV42X3		48.36	-0.22	-0.62	50.30	-0.17	-0.61	NA
YYN2ZQ		48.84	0.26	0.75	50.64	0.17	0.60	BU

Summary Statistics

	Sample E73		Sample E74	
Grand Means	48.577	HRC	50.470	HRC
Std Dev Btwn Labs	0.351	HRC	0.282	HRC

Statistics based on 75 of 83 reporting participants

Samples E73 , E74 : steel (use C scale)

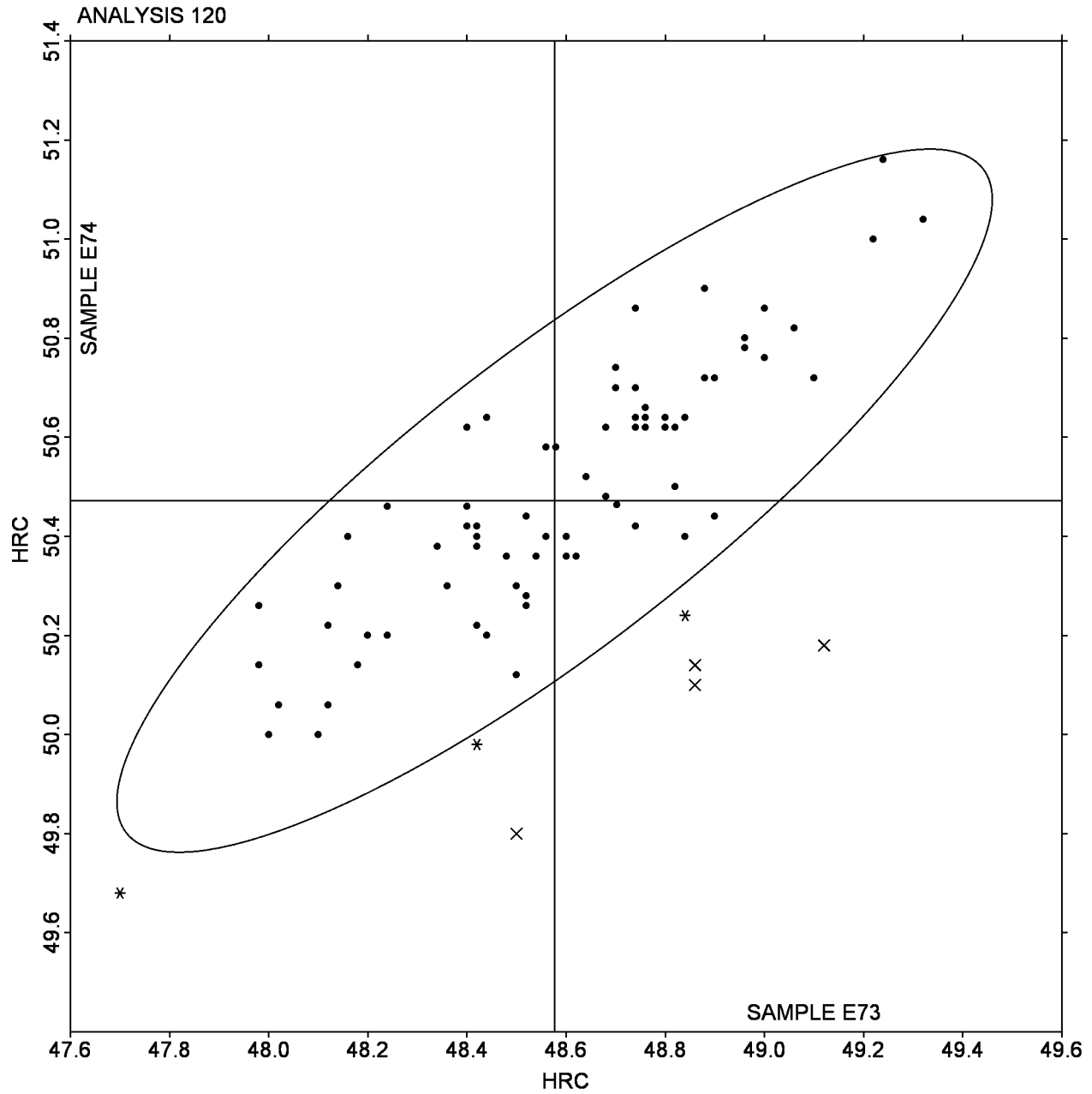
Interlaboratory Testing Program for Metals
Analysis 120
Rockwell Hardness (C Scale) - Rockwell Hardness Number
ASTM E18

Comments on assigned Data Flags for Test #120

- 2W6WDB (X) - Data for Sample E74 are low and inconsistent within the determinations for Sample E74.
- 7A9K6A (X) - Inconsistent in testing between samples and inconsistent within the determinations for Sample E74.
- 7TK5GA (X) - High data for Sample E73. Low data for Sample E74.
- DU9EW6 (X) - High data for Sample E74.
- GMUK47 (X) - Inconsistent in testing between samples.
- H62SQ5 (X) - Extreme data.
- J9MCDF (X) - Inconsistent in testing between samples.
- KXM1JD (X) - Inconsistent in testing between samples.

Interlaboratory Testing Program for Metals
Analysis 120
Rockwell Hardness (C Scale) - Rockwell Hardness Number
ASTM E18

SAMPLE E73 = 48.577 HRC SAMPLE E74 = 50.470 HRC



Interlaboratory Testing Program for Metals

Analysis 136

Rockwell Superficial Hardness (30N Scale)

ASTM E18

WebCode	Data Flag	Sample E73			Sample E74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1HMER4		67.04	-0.77	-1.29	68.94	-0.37	-0.70	NA
1WK13J		67.46	-0.35	-0.59	69.26	-0.05	-0.10	XX
2QVFG8		67.88	0.07	0.12	68.84	-0.47	-0.89	WI
2XEVD7		67.42	-0.39	-0.66	68.92	-0.39	-0.74	XX
4BF83V		68.62	0.81	1.36	69.96	0.65	1.22	BU
4G9KDS		67.60	-0.21	-0.35	69.06	-0.25	-0.47	NA
54DDPU		67.94	0.13	0.22	69.38	0.07	0.13	UN
71BFLL		68.00	0.19	0.32	69.00	-0.31	-0.59	WI
7YVM6J		67.70	-0.11	-0.19	69.28	-0.03	-0.06	WI
84SGZJ		68.04	0.23	0.38	69.40	0.09	0.17	WI
9P1JZM		66.38	-1.43	-2.40	68.04	-1.27	-2.40	LE
B7ACZK		68.04	0.23	0.38	69.62	0.31	0.58	UN
BRAQ1C		67.56	-0.25	-0.42	69.30	-0.01	-0.02	WI
BSHWYL		68.46	0.65	1.09	69.62	0.31	0.58	WI
CARWHF		68.24	0.43	0.72	69.44	0.13	0.24	MI
CCVKZR	X	67.08	-0.73	-1.23	69.92	0.61	1.15	NA
DQT85A		67.76	-0.05	-0.09	68.72	-0.59	-1.12	LE
DUBA9A		67.62	-0.19	-0.32	69.26	-0.05	-0.10	BU
DX67EN		68.60	0.79	1.32	70.04	0.73	1.37	XX
DYZK5V		67.50	-0.31	-0.52	69.28	-0.03	-0.06	UN
EALNMS		68.24	0.43	0.72	69.88	0.57	1.07	WI
EL1BEZ		67.20	-0.61	-1.03	68.56	-0.75	-1.42	WI
FGAJFQ		68.14	0.33	0.55	69.98	0.67	1.26	WI
G9DFBY		68.72	0.91	1.53	69.80	0.49	0.92	WI
KKKHVL		68.60	0.79	1.32	69.92	0.61	1.15	WI
L85YXA		67.36	-0.45	-0.76	68.92	-0.39	-0.74	WI
L93Q7G		67.50	-0.31	-0.52	69.20	-0.11	-0.21	WI
LB59TA		67.94	0.13	0.22	69.08	-0.23	-0.44	WI
MUC6RC		66.60	-1.21	-2.03	68.60	-0.71	-1.34	XX
NJNBXA		66.82	-0.99	-1.66	68.06	-1.25	-2.36	CL
NQT48T		67.24	-0.57	-0.96	68.82	-0.49	-0.93	LE
P3BAJY	X	66.50	-1.31	-2.20	67.50	-1.81	-3.42	WI
PCFCTW		67.44	-0.37	-0.62	69.36	0.05	0.09	UN
RTFY9C		68.94	1.13	1.90	69.92	0.61	1.15	AN
TPYBWJ		67.80	-0.01	-0.02	69.52	0.21	0.39	LE
VL8JG		68.10	0.29	0.49	69.36	0.05	0.09	CL
VME9R7		67.22	-0.59	-0.99	68.86	-0.45	-0.85	NA
VMLKV6		67.40	-0.41	-0.69	69.22	-0.09	-0.17	WI
VN857P	*	69.08	1.27	2.13	70.82	1.51	2.84	WI
VVQGQV		67.52	-0.29	-0.49	69.24	-0.07	-0.13	WI
W3H5H6		68.74	0.93	1.56	70.20	0.89	1.68	UN
XFCJYS		67.52	-0.29	-0.49	69.52	0.21	0.39	WI
XWXC5K		67.50	-0.31	-0.52	69.04	-0.27	-0.51	WI
YBXKVE		68.36	0.55	0.92	69.52	0.21	0.39	WI
YM2TIX		68.06	0.25	0.42	69.54	0.23	0.43	NA

Interlaboratory Testing Program for Metals

Analysis 136

Rockwell Superficial Hardness (30N Scale)

ASTM E18

WebCode	Data Flag	Sample E73			Sample E74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YQ7F1U		67.62	-0.19	-0.32	69.08	-0.23	-0.44	FT
ZR9D53		67.98	0.17	0.28	69.64	0.33	0.62	MI

Summary Statistics

	Sample E73		Sample E74	
Grand Means	67.811	HR30N	69.310	HR30N
Std Dev Btwn Labs	0.596	HR30N	0.530	HR30N

Statistics based on 45 of 47 reporting participants

Samples E73 , E74 are hardness test blocks made from steel. The blocks are heat treated to hardness levels specified by CTS.

Comments on assigned Data Flags for Test #136

CCVKZR (X) - Inconsistent in testing between samples.

P3BAJY (X) - Inconsistent in testing between samples, data for Sample F74 are low.

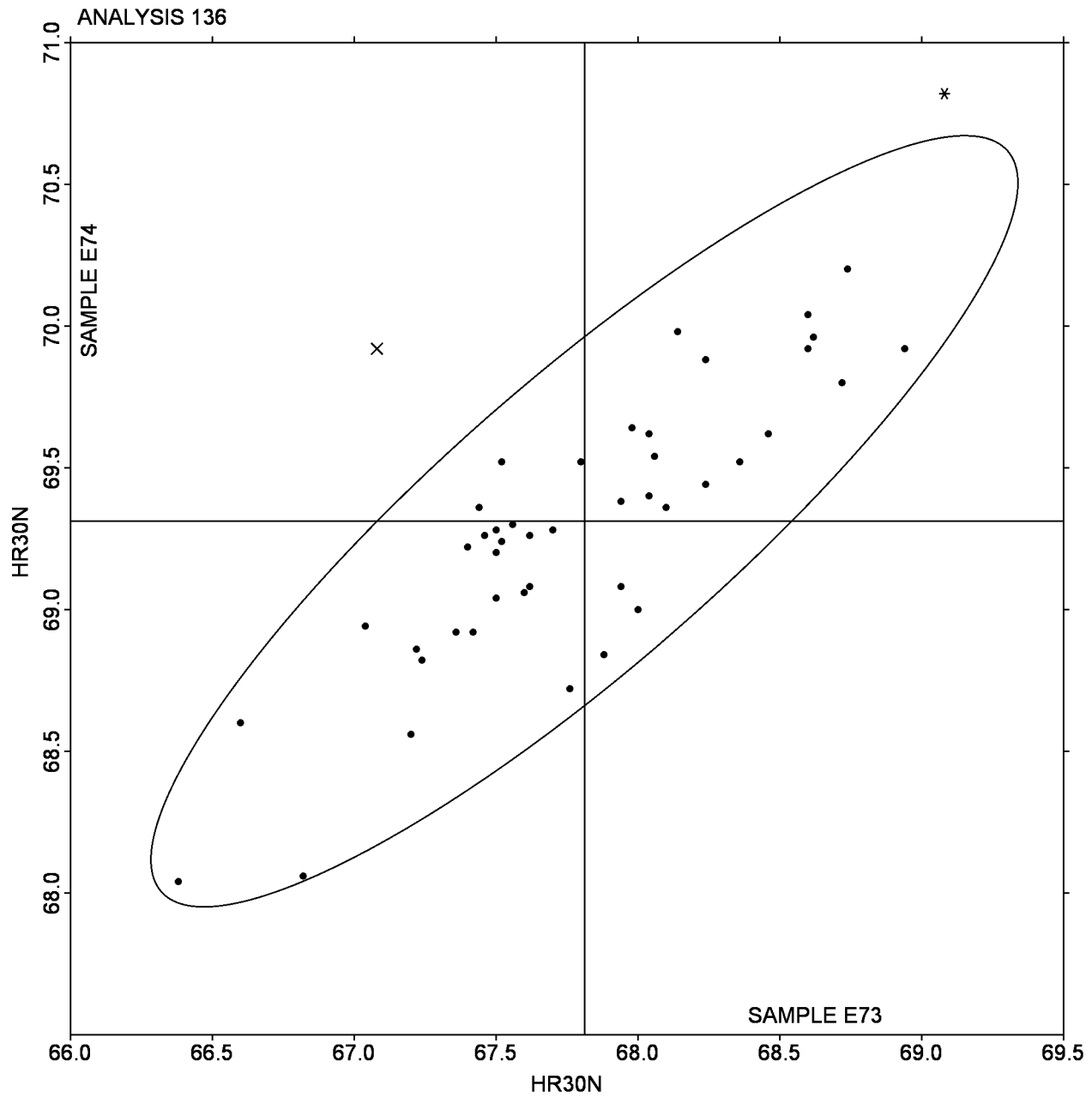
Interlaboratory Testing Program for Metals

Analysis 136

Rockwell Superficial Hardness (30N Scale)

ASTM E18

SAMPLE E73 = 67.811 HR30N SAMPLE E74 = 69.310 HR30N



Interlaboratory Testing Program for Metals

Analysis 145

Total Case Depth
SAE J423, SAE J78

WebCode	Data Flag	Sample C73			Sample C74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1NB526		0.01	0.00	-0.09	0.03	0.00	0.44	OL
1V8R3D		0.01	0.00	-0.85	0.03	0.00	-0.23	XX
2H1R2Z		0.02	0.00	0.17	0.03	0.00	0.59	OL
2WZ9K6		0.01	0.00	-0.08	0.03	0.00	0.24	OS
4EARZE		0.01	0.00	-0.04	0.02	-0.01	-0.98	LI
4MQWPD		0.02	0.00	0.77	0.03	0.01	0.85	XX
7A3DPH		0.01	0.00	-0.85	0.03	0.00	-0.32	FU
8YAA1J		0.01	0.00	-1.11	0.02	0.00	-0.58	NP
93WL53		0.02	0.00	0.58	0.03	0.01	0.83	XX
9NSH72		0.01	0.00	-0.11	0.03	0.00	0.71	XX
A824WL		0.02	0.00	0.35	0.03	0.00	0.02	ZA
AB4HTG		0.01	-0.01	-1.66	0.02	-0.01	-1.35	LC
AMGEDF		0.01	0.00	-0.58	0.02	-0.01	-0.83	BU
AR85JL		0.01	0.00	-0.20	0.03	0.00	-0.26	ZA
B42B8T		0.01	0.00	-0.79	0.03	0.00	-0.48	BR
B5TDYQ		0.02	0.00	1.29	0.03	0.01	0.89	XX
BXL46R	X	0.06	0.05	12.98	0.04	0.01	1.70	WT
BXTJUI		0.02	0.01	1.43	0.04	0.01	2.04	XX
D8PBFE		0.01	0.00	-0.20	0.03	0.00	-0.23	WT
DJ9TNL		0.01	0.00	-0.62	0.02	-0.01	-1.29	ZA
G7TFAT		0.02	0.01	2.13	0.04	0.01	1.54	LC
GH2QJL		0.01	0.00	-0.09	0.03	0.00	-0.07	OL
GTSVWA	X	0.01	0.00	-0.83	0.06	0.03	4.49	BU
HPEP7R		0.02	0.00	1.04	0.04	0.01	1.26	WT
HX6TWZ		0.02	0.00	1.35	0.04	0.01	1.66	XX
K4CC11		0.02	0.00	0.24	0.03	0.00	0.28	OL
KMK767		0.02	0.00	0.38	0.03	0.00	0.45	BR
L3A4Z9		0.02	0.00	0.49	0.03	0.01	1.01	NI
LWLSLE		0.02	0.00	0.08	0.03	0.00	0.09	RE
PBW3NK		0.02	0.00	0.56	0.02	0.00	-0.54	NI
SLKDRS		0.01	0.00	-0.90	0.02	-0.01	-1.35	BU
T5MLJL		0.01	0.00	-0.49	0.03	0.00	-0.28	RE
TGZTGK	*	0.01	0.00	-1.07	0.01	-0.01	-2.21	LI
ULD8Q3		0.01	0.00	-0.85	0.02	0.00	-0.76	NI
UMNSEL		0.02	0.00	0.78	0.03	0.00	0.15	WI
UVL3UB		0.01	-0.01	-1.79	0.02	-0.01	-1.81	NI
VCBJ1Z		0.02	0.00	0.81	0.03	0.00	0.75	LC
VSQPNK		0.01	0.00	-0.54	0.03	0.00	0.11	LE
VYN4TJ		0.01	0.00	-0.32	0.02	0.00	-0.67	OL
WQGY3T	*	0.02	0.01	2.62	0.04	0.01	1.67	CL
Y1YRK2	X	0.03	0.01	3.87	0.03	0.00	0.47	WT
YYLREL		0.01	-0.01	-1.86	0.02	-0.01	-1.33	OL

Analysis 145

Total Case Depth
SAE J423, SAE J78

Summary Statistics		
	Sample C73	Sample C74
Grand Means	0.015 inch	0.030 inch
Stnd Dev Btwn Labs	0.004 inch	0.006 inch
Statistics based on 39 of 42 reporting participants		

Samples C73 , C74 : AISI 8620

Comments on assigned Data Flags for Test #145

BXL46R (X) - High data for Sample C73.

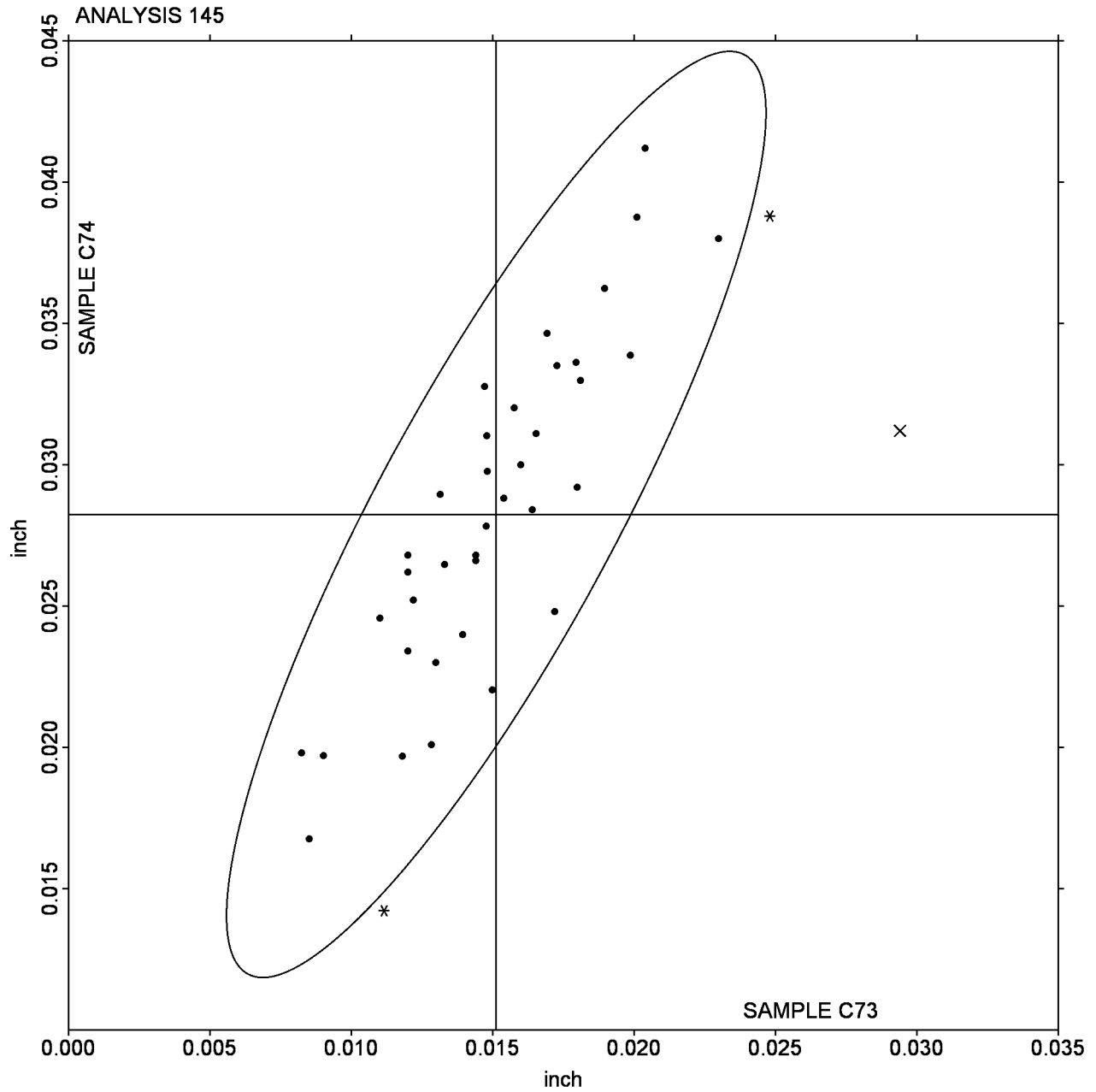
GTSVWA (X) - High data for Sample C74.

Y1YRK2 (X) - High data for Sample C73.

Analysis 145

Total Case Depth
SAE J423, SAE J78

SAMPLE C73 = 0.015 inch SAMPLE C74 = 0.030 inch



Interlaboratory Testing Program for Metals

Analysis 146

Effective Case Depth

SAE J423, SAE J78

WebCode	Data Flag	Sample C73			Sample C74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
12ZKDC	X	0.01	0.00	-0.21	0.02	-0.01	-6.18	LI
15L5MK		0.01	0.00	-1.08	0.03	0.00	-1.22	LE
29BFYQ		0.01	0.00	-2.06	0.03	0.00	-1.57	BU
2N886U	X	0.02	0.00	3.77	0.03	0.00	0.19	BU
3713G4		0.01	0.00	0.45	0.03	0.00	0.76	LE
3KZYP4		0.01	0.00	-0.44	0.03	0.00	0.30	WT
4PNAFS		0.01	0.00	-0.85	0.03	0.00	-1.33	XX
5BJEFU		0.01	0.00	0.85	0.03	0.00	0.42	WT
5SAQ37		0.01	0.00	-0.12	0.03	0.00	-1.22	LE
5T477U		0.01	0.00	-0.30	0.03	0.00	0.71	LE
753GBL		0.01	0.00	-0.12	0.03	0.00	-0.40	WT
7SALSS		0.01	0.00	0.53	0.03	0.00	0.77	LE
81XT2G	*	0.01	0.00	1.18	0.03	0.00	-1.22	FU
83LS87		0.01	0.00	0.85	0.03	0.00	0.07	MI
8VXB6H		0.02	0.00	1.50	0.03	0.00	2.53	BU
8ZFDC1	X	0.02	0.00	2.79	0.03	0.01	3.81	BU
9DFYMH		0.01	0.00	0.00	0.03	0.00	0.81	LC
A7DZXD		0.01	0.00	-1.42	0.03	0.00	-1.10	CL
AQBW8G		0.01	0.00	-0.63	0.03	0.00	-0.89	WT
AV1GYQ		0.01	0.00	0.20	0.03	0.00	-0.87	BU
BNSZZJ		0.01	0.00	0.45	0.03	0.00	-0.25	SH
E9MAP7		0.01	0.00	-0.77	0.03	0.00	-0.16	WT
EBYGD3		0.01	0.00	0.77	0.03	0.00	1.59	XX
FEQHL2		0.01	0.00	0.53	0.03	0.00	1.47	BU
HFP6TH		0.01	0.00	-1.14	0.03	0.00	-0.17	MI
HW7RTZ	*	0.02	0.00	3.19	0.03	0.00	1.96	BU
JWFX9H		0.01	0.00	-0.61	0.03	0.00	-1.45	BU
JYC7TX		0.01	0.00	0.13	0.03	0.00	0.90	LE
JYUS97		0.01	0.00	-1.08	0.03	0.00	-0.12	LE
K3F2VE		0.01	0.00	-0.08	0.03	0.00	0.49	XX
KJQ8AA	X	0.01	0.00	-0.80	0.02	-0.01	-3.44	LE
M3PTT8		0.01	0.00	-0.61	0.03	0.00	0.19	XX
M4A4DF		0.01	0.00	-1.25	0.03	0.00	-1.22	WT
M9FHNQ		0.02	0.00	2.23	0.03	0.00	0.90	XX
MENRME		0.02	0.00	1.66	0.03	0.00	1.27	XX
NU1RFQ		0.01	0.00	0.83	0.03	0.00	0.71	CL
QFH3U4		0.01	0.00	-0.19	0.03	0.00	-1.50	NA
SA7LR6		0.01	0.00	0.53	0.03	0.00	0.42	LE
SDVV5D		0.01	0.00	-0.41	0.03	0.00	-1.05	BU
SKZJNF		0.01	0.00	-0.28	0.03	0.00	0.66	WT
TEXD5T		0.01	0.00	-0.19	0.03	0.00	0.21	MA
TZKX3X		0.01	0.00	-0.28	0.03	0.00	-0.51	WT
TZSDXL		0.01	0.00	0.69	0.03	0.00	1.12	LE
UCU3FQ		0.01	0.00	0.54	0.03	0.00	-0.44	WT
URP5MR		0.01	0.00	-1.47	0.03	0.00	-0.30	SH

Interlaboratory Testing Program for Metals

Analysis 146

Effective Case Depth

SAE J423, SAE J78

WebCode	Data Flag	Sample C73			Sample C74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
VGENB6		0.01	0.00	0.69	0.03	0.00	-0.05	WT
WS3AGZ		0.01	0.00	-0.38	0.03	0.00	0.39	WZ
WYREEZ		0.01	0.00	-0.44	0.03	0.00	-0.16	MI
Y6ZHSB		0.01	0.00	-1.34	0.03	0.00	-1.57	CM
YKDZ1V		0.01	0.00	0.06	0.03	0.00	0.02	WT
YM7M29		0.01	0.00	-0.93	0.03	0.00	-0.87	WT
ZWEQWZ		0.01	0.00	0.64	0.03	0.00	0.99	XX

Summary Statistics

	Sample C73	Sample C74
Grand Means	0.013 inch	0.030 inch
Std Dev Btwn Labs	0.001 inch	0.002 inch
Statistics based on 48 of 52 reporting participants		

Samples C73 , C74 : AISI 8620

Comments on assigned Data Flags for Test #146

12ZKDC (X) - Low data for Sample C74.

2N886U (X) - Data for Sample C73 are high and inconsistent within the determinations for Sample C73.

8ZFDC1 (X) - Data for both samples are high.

KJQ8AA (X) - Data for Sample C74 are low and inconsistent within the determinations for Sample C74.

Interlaboratory Testing Program for Metals

Analysis 160

Chemical Analysis Element #1: Copper-based Alloy - Percent
COPPER (Cu)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1FGZ85		88.18	-0.23	-0.60	87.59	-0.15	-0.42	IC
1L6E6V		88.93	0.53	1.39	88.27	0.53	1.41	XX
1SADDT	*	89.60	1.20	3.15	88.80	1.06	2.85	OE
1VWH89		88.36	-0.04	-0.11	87.71	-0.03	-0.08	OE
2RY9PZ		88.19	-0.22	-0.57	87.53	-0.21	-0.57	BD
44X241	*	87.37	-1.04	-2.73	86.60	-1.14	-3.07	XX
6JPJ8Q	X	87.32	-1.08	-2.84	87.55	-0.19	-0.52	EL
8ZD622		88.41	0.01	0.03	87.68	-0.06	-0.17	BD
9DASTQ		87.88	-0.52	-1.37	87.22	-0.52	-1.39	OE
B9PTE5		88.33	-0.07	-0.19	87.83	0.09	0.25	OE
BAAFQ8		88.47	0.06	0.17	87.67	-0.07	-0.20	OE
D33EZK	X	87.34	-1.06	-2.80	88.39	0.65	1.74	WC
DG4K7N		88.11	-0.30	-0.78	87.62	-0.12	-0.32	WC
EC6TUJ		88.44	0.04	0.10	87.73	-0.01	-0.04	DR
EK1Y9C		88.58	0.18	0.46	87.74	0.00	0.00	XX
ERCLST		88.40	0.00	-0.01	87.67	-0.07	-0.20	OE
F3R29R		88.80	0.40	1.04	88.16	0.42	1.13	OE
FUWDJ9		88.18	-0.22	-0.58	87.43	-0.31	-0.85	OE
L54EZ8		89.00	0.60	1.57	88.30	0.56	1.50	OE
NS5BT7		88.38	-0.03	-0.07	87.72	-0.02	-0.05	WD
PAL72S		88.44	0.04	0.10	87.89	0.15	0.41	OE
S6K1EW		88.34	-0.07	-0.18	87.75	0.01	0.02	YR
SDSEV8		88.24	-0.17	-0.44	87.66	-0.08	-0.22	XX
SWL5SM		88.37	-0.03	-0.09	87.66	-0.08	-0.21	OE
T4GKY6		88.30	-0.10	-0.27	87.77	0.03	0.07	OE
THVZTP		88.43	0.02	0.06	87.69	-0.06	-0.15	BD
U2LYLM		88.42	0.02	0.05	87.77	0.03	0.09	BD
UUQWNG		88.80	0.40	1.05	88.15	0.41	1.09	OE
V5M6QW		88.26	-0.15	-0.39	87.84	0.10	0.26	ED
Z1XKCY		88.32	-0.08	-0.22	87.61	-0.13	-0.34	WD
ZLWGL5		88.10	-0.30	-0.80	87.40	-0.34	-0.92	OE
ZVDTAH		88.48	0.08	0.21	87.78	0.04	0.11	GR

Summary Statistics

	Sample K73		Sample K74	
Grand Means	88.404	Percent	87.740	Percent
Std Dev Btwn Labs	0.380	Percent	0.372	Percent
Statistics based on 30 of 32 reporting participants				

Samples K73 , K74 : CDA 623, two different heats

Comments on assigned Data Flags for Test #160

6JPJ8Q (X) - Data for Sample C73 are low and inconsistent within the determinations for Sample C73.

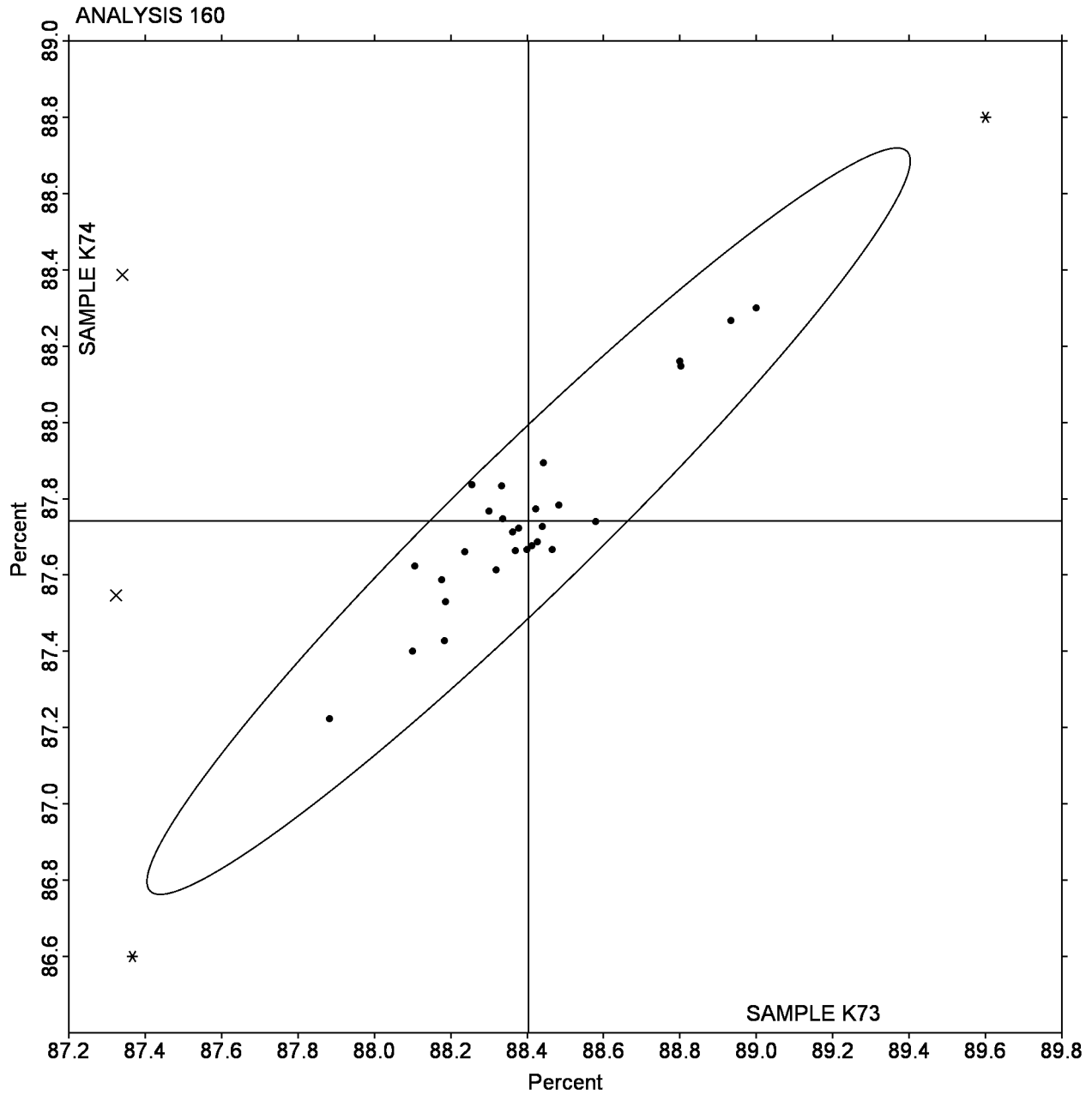
D33EZK (X) - Low data for Sample K73.

Interlaboratory Testing Program for Metals

Analysis 160

Chemical Analysis Element #1: Copper-based Alloy - Percent COPPER (Cu)

SAMPLE K73 = 88.404 Percent SAMPLe K74 = 87.740 Percent



Interlaboratory Testing Program for Metals

Analysis 161

Chemical Analysis Element #2: Copper-based Alloy - Percent
IRON (Fe)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23BGMN		2.137	-0.001	-0.01	2.303	0.008	0.10	OE
3LR6FC		2.068	-0.070	-1.04	2.233	-0.062	-0.81	OE
3SNZ88		2.108	-0.029	-0.44	2.274	-0.021	-0.28	WD
4911BU	*	2.173	0.036	0.54	2.410	0.114	1.49	WD
5H7PS8	X	0.923	-1.214	-18.19	0.850	-1.446	-18.79	AA
5ZL5M6		2.044	-0.093	-1.39	2.206	-0.090	-1.16	OE
7MRPLS		2.157	0.019	0.29	2.323	0.028	0.36	OE
9JRCGA		2.163	0.026	0.39	2.300	0.004	0.06	OE
AAFZZW		2.147	0.009	0.14	2.300	0.004	0.06	OE
AFHAN5		2.213	0.076	1.14	2.410	0.114	1.49	OE
CC5QU2		2.133	-0.004	-0.06	2.293	-0.002	-0.03	OE
F1M9UK		2.195	0.058	0.86	2.371	0.076	0.99	IC
F789UK	*	1.950	-0.187	-2.81	2.097	-0.199	-2.59	GD
FRD9SP		2.173	0.036	0.54	2.280	-0.016	-0.20	OE
HBDXYS		2.118	-0.019	-0.28	2.286	-0.010	-0.12	IC
HNMZP1		2.197	0.059	0.89	2.347	0.051	0.66	XX
MFDTLU		2.183	0.046	0.69	2.320	0.024	0.32	OE
MXSXJ1		2.141	0.003	0.05	2.297	0.001	0.02	XR
PD9LXG		2.091	-0.047	-0.70	2.191	-0.105	-1.36	IC
Q9F2FF		2.153	0.016	0.24	2.320	0.024	0.32	OE
QKVT18		2.078	-0.059	-0.89	2.230	-0.066	-0.86	DR
QRQYG3		2.180	0.043	0.64	2.350	0.054	0.71	XX
RKG261	X	1.825	-0.312	-4.67	1.968	-0.328	-4.26	IC
S7Y468		2.210	0.073	1.09	2.387	0.092	1.19	OE
SU71H3		2.060	-0.077	-1.16	2.190	-0.106	-1.37	IC
UMLPFM		2.050	-0.087	-1.31	2.210	-0.086	-1.11	IC
VG46WY		2.047	-0.091	-1.36	2.204	-0.092	-1.19	OE
VPZ9L3		2.230	0.093	1.39	2.390	0.094	1.23	OE
WW86HL		2.128	-0.010	-0.14	2.267	-0.029	-0.38	IC
WWX9Q3		2.107	-0.031	-0.46	2.273	-0.022	-0.29	GD
X622VW		2.151	0.013	0.20	2.312	0.016	0.21	OE
X8VEHC		2.205	0.067	1.01	2.341	0.046	0.59	OE
XKT4MS		2.280	0.143	2.14	2.463	0.168	2.18	DR
ZF3P5W	X	1.963	-0.174	-2.61	2.020	-0.276	-3.58	IC
ZMD3CV		2.125	-0.013	-0.19	2.279	-0.017	-0.22	WD

Summary Statistics

	Sample K73		Sample K74	
Grand Means	2.1373	Percent	2.2960	Percent
Std Dev Btwn Labs	0.0667	Percent	0.0769	Percent

Statistics based on 32 of 35 reporting participants

Samples K73 , K74 : CDA 623, two different heats

Interlaboratory Testing Program for Metals

Analysis 161

**Chemical Analysis Element #2: Copper-based Alloy - Percent
IRON (Fe)**

Comments on assigned Data Flags for Test #161

5H7PS8 (X) - Extreme data.

RKG261 (X) - Data for both samples are low.

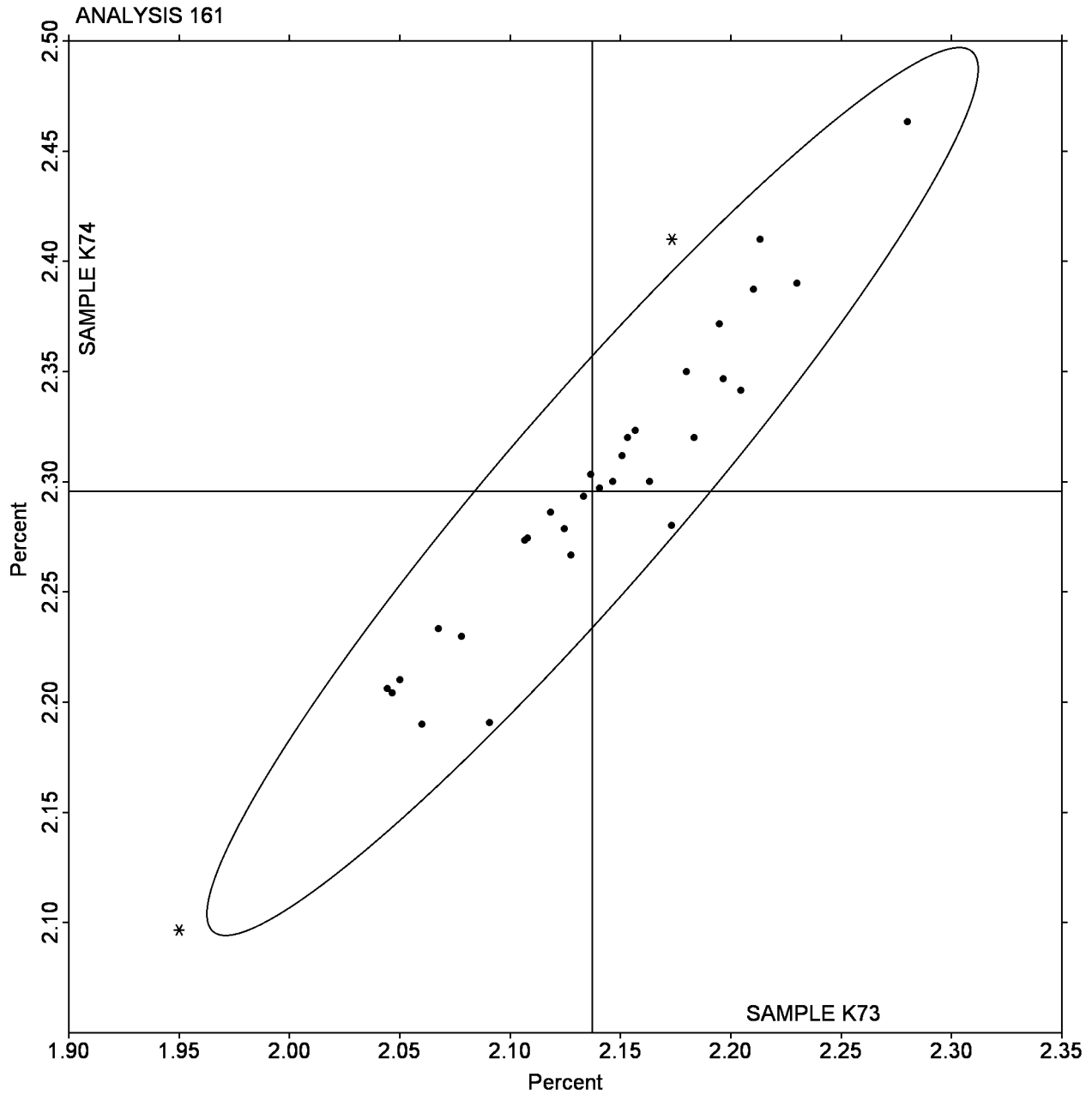
ZF3P5W (X) - Low data for Sample K73.

Interlaboratory Testing Program for Metals

Analysis 161

Chemical Analysis Element #2: Copper-based Alloy - Percent IRON (Fe)

SAMPLE K73 = 2.1373 Percent SAMPLE K74 = 2.2960 Percent



Interlaboratory Testing Program for Metals

Analysis 162

Chemical Analysis Element #3: Copper-based Alloy - Percent
ALUMINUM (Al)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3B5CGX		9.150	0.154	0.38	9.113	0.109	0.27	GD
4GK924		9.293	0.298	0.72	9.370	0.366	0.92	OE
5DKN5C		9.133	0.137	0.33	9.199	0.195	0.49	IC
5QEKZ4		8.857	-0.139	-0.34	8.810	-0.194	-0.49	OE
718NCW		9.077	0.081	0.20	9.143	0.139	0.35	OE
7AGMES		7.983	-1.013	-2.47	8.010	-0.995	-2.50	IC
7VZ4BJ		8.793	-0.202	-0.49	8.843	-0.161	-0.40	DR
7ZJ283		9.173	0.177	0.43	9.213	0.209	0.52	IC
9U33JK		9.241	0.245	0.60	9.191	0.187	0.47	WD
ANJ9RF		8.974	-0.022	-0.05	8.904	-0.100	-0.25	IC
BRL7KX		9.148	0.153	0.37	9.111	0.107	0.27	OE
C8KJUM		9.446	0.451	1.10	9.422	0.418	1.05	GD
CL1R8K		9.297	0.301	0.73	9.284	0.280	0.70	WD
EX1QZG		8.153	-0.842	-2.05	8.177	-0.827	-2.08	IC
F6RQVK		9.167	0.171	0.42	9.201	0.197	0.50	OE
HJJK15	*	9.230	0.234	0.57	9.090	0.086	0.22	XR
MAR37T		8.950	-0.046	-0.11	8.733	-0.271	-0.68	OE
MH1YTR		9.190	0.194	0.47	9.193	0.189	0.48	OE
MWUNL6	*	7.673	-1.322	-3.22	7.733	-1.271	-3.19	OE
MYUM5B		9.100	0.104	0.25	9.110	0.106	0.27	OE
N87KAN		9.273	0.277	0.67	9.234	0.230	0.58	WD
NF46X6		8.703	-0.292	-0.71	8.763	-0.241	-0.61	IC
Q8DCWR		8.663	-0.332	-0.81	8.750	-0.254	-0.64	IC
QFWH58		9.152	0.156	0.38	9.182	0.178	0.45	DR
RN4SEK	X	11.183	2.188	5.33	10.077	1.073	2.69	AA
S9EWWZ		9.130	0.134	0.33	9.100	0.096	0.24	XX
SS5ZVC		8.873	-0.122	-0.30	8.847	-0.157	-0.40	OE
TN6HYQ		9.073	0.078	0.19	9.070	0.066	0.17	XX
UJFLRZ		8.573	-0.422	-1.03	8.633	-0.371	-0.93	OE
UTSTSK		9.215	0.220	0.53	9.218	0.214	0.54	OE
VRKTAK		9.357	0.361	0.88	9.390	0.386	0.97	OE
WHJY6M		9.103	0.108	0.26	9.137	0.133	0.33	OE
WJU34A		9.153	0.158	0.38	9.143	0.139	0.35	OE
X78JK1		9.517	0.521	1.27	9.547	0.543	1.36	OE

Summary Statistics

	Sample K73		Sample K74	
Grand Means	8.9958	Percent	9.0040	Percent
Std Dev Btwn Labs	0.4105	Percent	0.3980	Percent
Statistics based on 32 of 34 reporting participants				

Samples K73 , K74 : CDA 623, two different heats

Comments on assigned Data Flags for Test #162

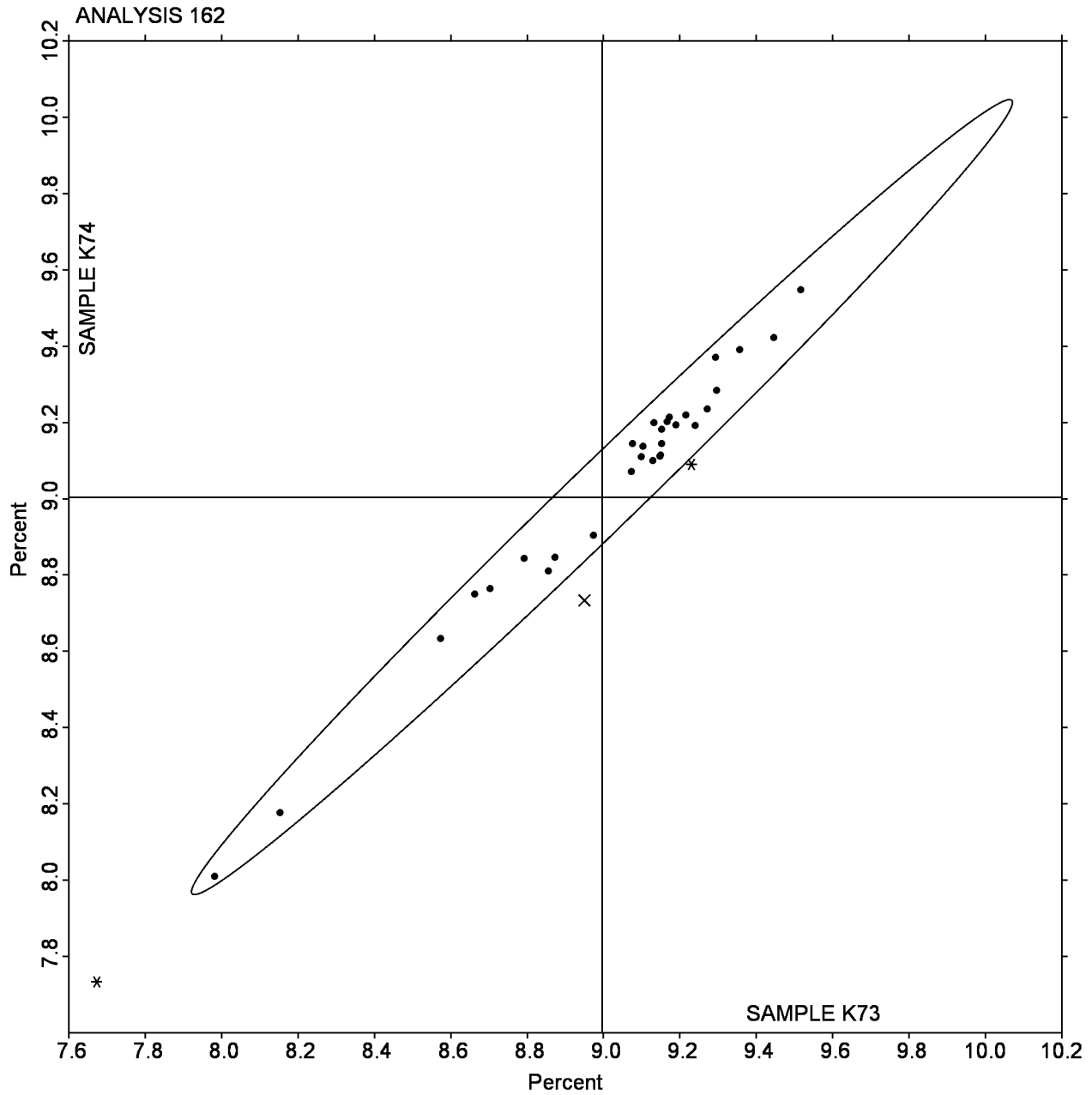
RN4SEK (X) - Data for both samples are high.

Interlaboratory Testing Program for Metals

Analysis 162

Chemical Analysis Element #3: Copper-based Alloy - Percent ALUMINUM (Al)

SAMPLE K73 = 8.9958 Percent SAMPLE K74 = 9.0040 Percent



Interlaboratory Testing Program for Metals

Analysis 163

Chemical Analysis Element #4: Copper-based Alloy - Percent
Manganese (Mn)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2SB2J2		0.175	0.006	0.61	0.210	0.004	0.39	OE
4D9U8L		0.167	-0.002	-0.22	0.207	0.002	0.15	IC
4X3RJ6		0.167	-0.002	-0.22	0.200	-0.005	-0.43	OE
54G13K		0.168	-0.001	-0.09	0.210	0.005	0.45	DR
6197F2		0.188	0.018	1.84	0.224	0.019	1.65	OE
642S86	X	0.120	-0.049	-4.90	0.120	-0.085	-7.48	AA
841EZE		0.162	-0.008	-0.75	0.200	-0.006	-0.49	XR
AV5VSP		0.173	0.004	0.38	0.205	0.000	0.01	OE
BCS1YG		0.165	-0.004	-0.42	0.201	-0.005	-0.40	WD
BGQB6N	X	0.207	0.037	3.71	0.207	0.002	0.17	IC
BNC73L		0.162	-0.008	-0.75	0.199	-0.006	-0.52	WD
DVMQQB		0.173	0.004	0.41	0.218	0.013	1.15	IC
FVS4MH		0.175	0.006	0.61	0.210	0.005	0.45	OE
FYPNKT		0.191	0.022	2.17	0.230	0.025	2.17	OE
GB9HDX		0.174	0.004	0.44	0.203	-0.002	-0.17	IC
GT3DBH		0.166	-0.003	-0.32	0.200	-0.006	-0.49	GD
J6R7Y8		0.180	0.011	1.05	0.219	0.014	1.21	OE
KEF2TX	*	0.147	-0.022	-2.18	0.176	-0.029	-2.57	OE
NLB96T		0.160	-0.009	-0.92	0.197	-0.009	-0.75	IC
NPCEW9		0.160	-0.009	-0.92	0.198	-0.008	-0.67	DR
PJVTN1		0.176	0.007	0.67	0.208	0.003	0.24	XX
PQXN23		0.168	-0.001	-0.14	0.201	-0.004	-0.39	IC
QLLRZJ		0.168	-0.001	-0.12	0.205	0.000	-0.02	WD
R53BW7		0.162	-0.008	-0.75	0.198	-0.008	-0.67	OE
RDBFSP		0.173	0.004	0.41	0.207	0.001	0.12	OE
T61J4N		0.170	0.001	0.06	0.205	-0.001	-0.05	IC
TDN75L		0.160	-0.009	-0.92	0.203	-0.002	-0.17	OE
V7P6LM		0.180	0.011	1.07	0.210	0.005	0.42	XX
WN44W2		0.183	0.014	1.37	0.227	0.021	1.88	GD
WXENKX		0.157	-0.013	-1.25	0.193	-0.012	-1.05	IC
X75ZGG		0.147	-0.022	-2.18	0.179	-0.026	-2.30	OE
XGE3EH		0.171	0.002	0.18	0.213	0.008	0.68	OE
XT3YW8		0.167	-0.002	-0.19	0.203	-0.003	-0.23	OE
XY8W3V	X	0.190	0.021	2.05	0.262	0.057	4.98	OE
YZZ6KL		0.180	0.011	1.07	0.210	0.005	0.42	OE

Summary Statistics

	Sample K73		Sample K74	
Grand Means	0.1692	Percent	0.2050	Percent
Std Dev Btwn Labs	0.0100	Percent	0.0114	Percent

Statistics based on 32 of 35 reporting participants

Samples K73 , K74 : CDA 623, two different heats

Interlaboratory Testing Program for Metals

Analysis 163

**Chemical Analysis Element #4: Copper-based Alloy - Percent
Manganese (Mn)**

Comments on assigned Data Flags for Test #163

642S86 (X) - Data for both samples are low.

BGQB6N (X) - High data for Sample K73.

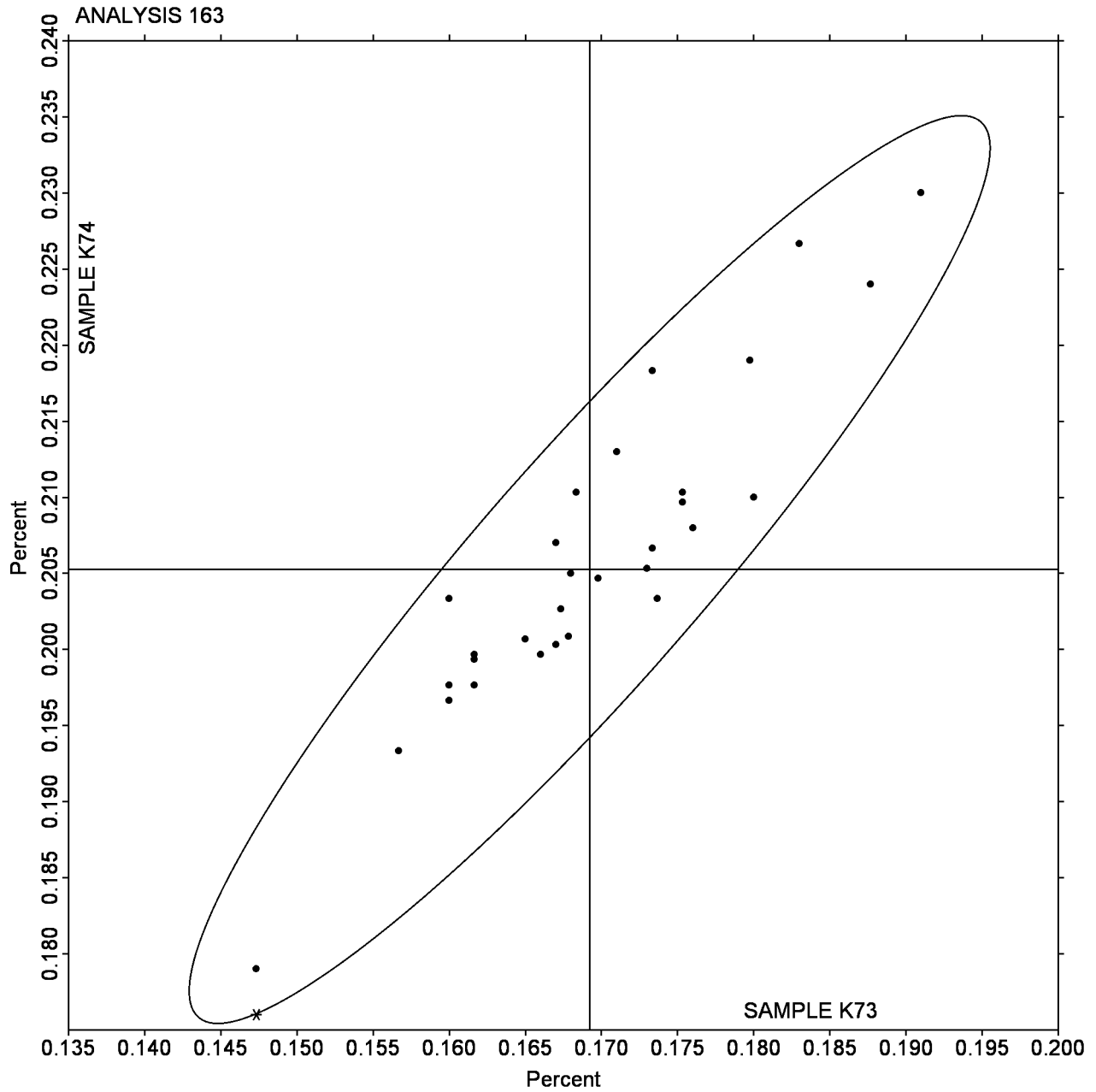
XY8W3V (X) - High data for Sample K74.

Interlaboratory Testing Program for Metals

Analysis 163

Chemical Analysis Element #4: Copper-based Alloy - Percent Manganese (Mn)

SAMPLE K73 = 0.1692 Percent SAMPLe K74 = 0.2050 Percent



Interlaboratory Testing Program for Metals

Analysis 164

Chemical Analysis Element #5: Copper-based Alloy - Percent
ZINC (Zn)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
17RBML		0.0080	-0.0028	-0.68	0.0137	-0.0004	-0.10	DC
8A769C		0.0030	-0.0078	-1.87	0.0060	-0.0081	-1.86	OE
8WJSNJ		0.0195	0.0087	2.08	0.0229	0.0088	2.03	OE
96B8G5		0.0177	0.0068	1.63	0.0203	0.0063	1.44	OE
9L8XQJ		0.0097	-0.0012	-0.28	0.0130	-0.0011	-0.25	WD
AAH4UD		0.0096	-0.0012	-0.29	0.0137	-0.0004	-0.10	OE
B1B951		0.0100	-0.0008	-0.20	0.0133	-0.0008	-0.17	OE
C9T9WJ		0.0191	0.0083	1.98	0.0218	0.0078	1.78	DR
CGJ3GN		0.0128	0.0020	0.47	0.0173	0.0032	0.74	OE
CGNECD		0.0190	0.0082	1.95	0.0230	0.0089	2.05	XX
FBQSFV	X	0.0800	0.0692	16.52	0.0800	0.0659	15.17	AA
FBYDQ1		0.0087	-0.0021	-0.51	0.0122	-0.0019	-0.43	IC
FL3RMP		0.0116	0.0008	0.19	0.0149	0.0009	0.20	OE
JQV5C5		0.0091	-0.0018	-0.42	0.0127	-0.0014	-0.31	IC
K1VK1E		0.0068	-0.0040	-0.96	0.0102	-0.0039	-0.89	IC
KVUAVX	M				0.0030	-0.0111	-2.55	XX
M1U8GW		0.0080	-0.0028	-0.68	0.0120	-0.0021	-0.48	OE
N8MFM2		0.0084	-0.0024	-0.58	0.0125	-0.0016	-0.37	IC
NVHN9L		0.0090	-0.0018	-0.43	0.0129	-0.0012	-0.28	DR
QFYMPE		0.0122	0.0013	0.32	0.0155	0.0014	0.32	OE
R3BVSZ		0.0083	-0.0026	-0.61	0.0112	-0.0029	-0.66	IC
RMFH2N		0.0150	0.0042	1.00	0.0158	0.0017	0.39	IC
U52T4Z		0.0123	0.0015	0.36	0.0150	0.0009	0.21	DR
UG1V64		0.0083	-0.0025	-0.60	0.0120	-0.0021	-0.48	IC
Y151UF		0.0083	-0.0025	-0.60	0.0096	-0.0045	-1.02	OE
YPXUGU		0.0098	-0.0010	-0.25	0.0136	-0.0005	-0.10	OE
Z2GALY	*	0.0064	-0.0045	-1.07	0.0058	-0.0083	-1.91	GD
ZG55Q9		0.0110	0.0002	0.04	0.0152	0.0011	0.26	OE

Summary Statistics

	Sample K73	Sample K74
Grand Means	0.01083 Percent	0.01410 Percent
Std Dev Btwn Labs	0.00419 Percent	0.00435 Percent

Statistics based on 26 of 28 reporting participants

Samples K73 , K74 : CDA 630, two different heats

Comments on assigned Data Flags for Test #164

FBQSFV (X) - Extreme data.

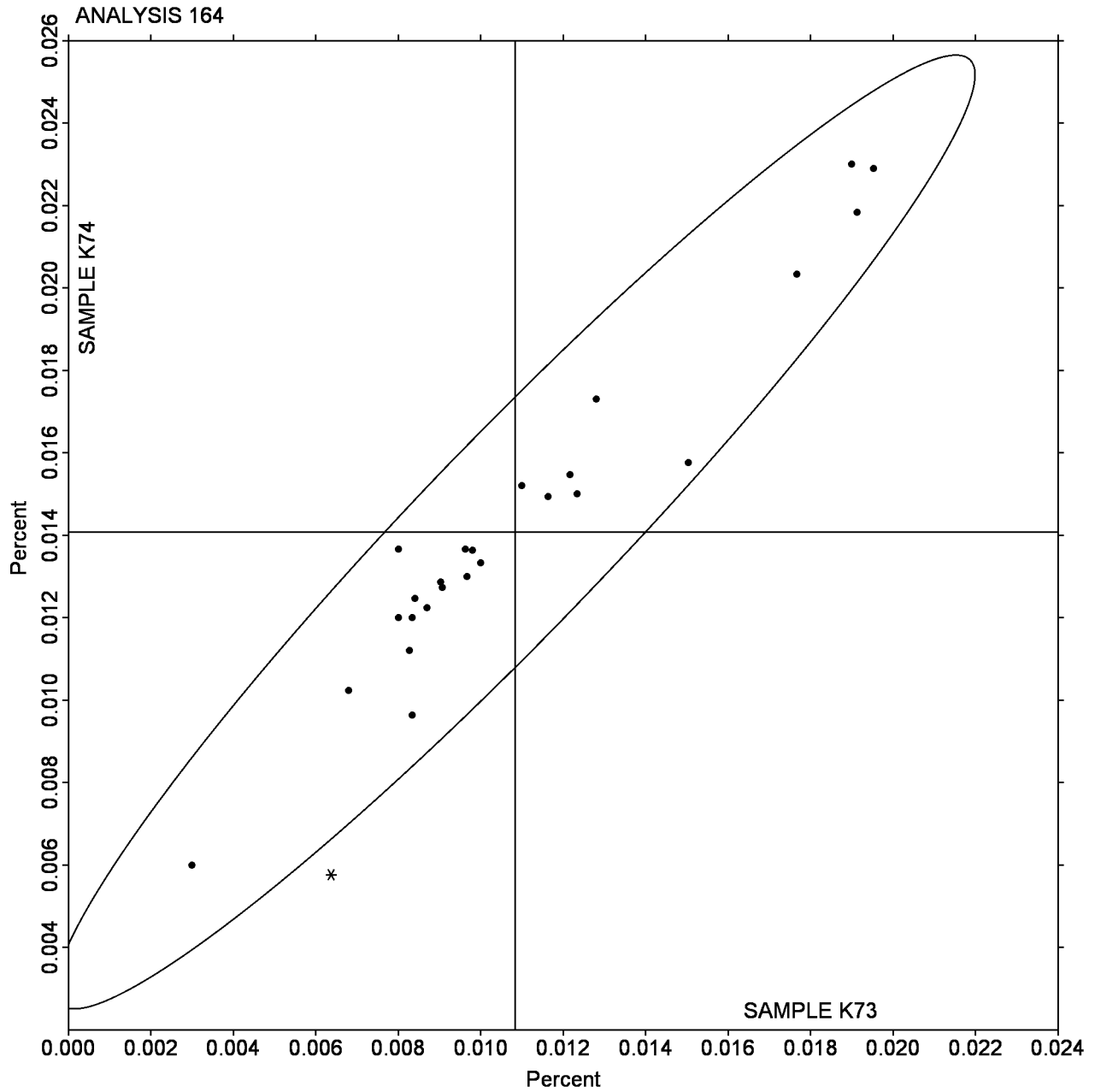
KVUAVX (M) - Laboratory did not submit data for Sample K73.

Interlaboratory Testing Program for Metals

Analysis 164

Chemical Analysis Element #5: Copper-based Alloy - Percent ZINC (Zn)

SAMPLE K73 = 0.01083 Percent SAMPLe K74 = 0.01410 Percent



Interlaboratory Testing Program for Metals

Analysis 165

Chemical Analysis Element #6: Copper-based Alloy - Percent
NICKEL (Ni)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
28154C		0.083	0.004	0.47	0.543	-0.014	-0.29	IC
2JJR6L		0.078	-0.001	-0.15	0.570	0.012	0.25	OE
2LCPUE		0.086	0.007	0.75	0.582	0.024	0.50	IC
2W8LP7		0.067	-0.012	-1.32	0.567	0.009	0.18	OE
2WALY2		0.080	0.001	0.12	0.574	0.017	0.34	OE
3U1M3U		0.081	0.002	0.21	0.489	-0.068	-1.39	OE
46EQEJ		0.082	0.003	0.28	0.561	0.004	0.07	IC
4GE53T		0.086	0.007	0.80	0.605	0.047	0.96	IC
678B4L		0.065	-0.014	-1.58	0.521	-0.036	-0.74	OE
8JTS8P	X	0.005	-0.074	-8.09	0.566	0.008	0.16	GD
9HGUFJ		0.079	0.000	0.03	0.557	-0.001	-0.02	IC
D2ZWMZ		0.095	0.016	1.74	0.493	-0.065	-1.33	OE
D9FGNR		0.089	0.010	1.05	0.532	-0.026	-0.52	OE
ERBTSZ		0.080	0.001	0.10	0.603	0.046	0.93	IC
FY8KWT		0.078	-0.001	-0.12	0.610	0.053	1.07	DR
GH3VHE	*	0.100	0.021	2.25	0.441	-0.117	-2.39	OE
GL93EE		0.081	0.002	0.25	0.561	0.004	0.07	WD
HUEQVS	X	0.120	0.041	4.47	0.223	-0.334	-6.82	AA
JXW257		0.066	-0.013	-1.42	0.485	-0.073	-1.48	OE
M985JT		0.071	-0.008	-0.85	0.548	-0.009	-0.19	IC
MWD4LM		0.076	-0.003	-0.34	0.560	0.002	0.05	WD
PWN5SZ		0.083	0.004	0.47	0.558	0.001	0.01	IC
Q6G1TZ		0.074	-0.005	-0.55	0.496	-0.062	-1.26	IC
QZP3LG		0.076	-0.003	-0.34	0.574	0.016	0.33	OE
RNT9XQ	*	0.070	-0.009	-0.99	0.700	0.142	2.90	XX
S7HQWE		0.076	-0.003	-0.34	0.573	0.015	0.31	OE
TJGBX5		0.087	0.008	0.87	0.499	-0.059	-1.20	GD
VCUZEM		0.082	0.003	0.36	0.520	-0.038	-0.77	OE
W9LXLG	*	0.096	0.017	1.89	0.633	0.076	1.54	OE
XMBQBN		0.076	-0.003	-0.34	0.592	0.035	0.71	XR
Y68BRD		0.080	0.001	0.10	0.563	0.006	0.12	OE
YK238X		0.075	-0.004	-0.45	0.566	0.009	0.18	DR
YR62RK		0.057	-0.022	-2.45	0.580	0.022	0.46	OE
YSW9PS		0.069	-0.010	-1.10	0.596	0.038	0.78	XX
Z6QTQS		0.085	0.006	0.61	0.549	-0.009	-0.18	WD

Summary Statistics

	Sample K73		Sample K74	
Grand Means	0.0791	Percent	0.5580	Percent
Std Dev Btwn Labs	0.0092	Percent	0.0490	Percent

Statistics based on 33 of 35 reporting participants

Samples K73 , K74 : CDA 623, two different heats

Interlaboratory Testing Program for Metals**Analysis 165****Chemical Analysis Element #6: Copper-based Alloy - Percent
NICKEL (Ni)**

Comments on assigned Data Flags for Test #165

8JTS8P (X) - Low data for Sample K73.

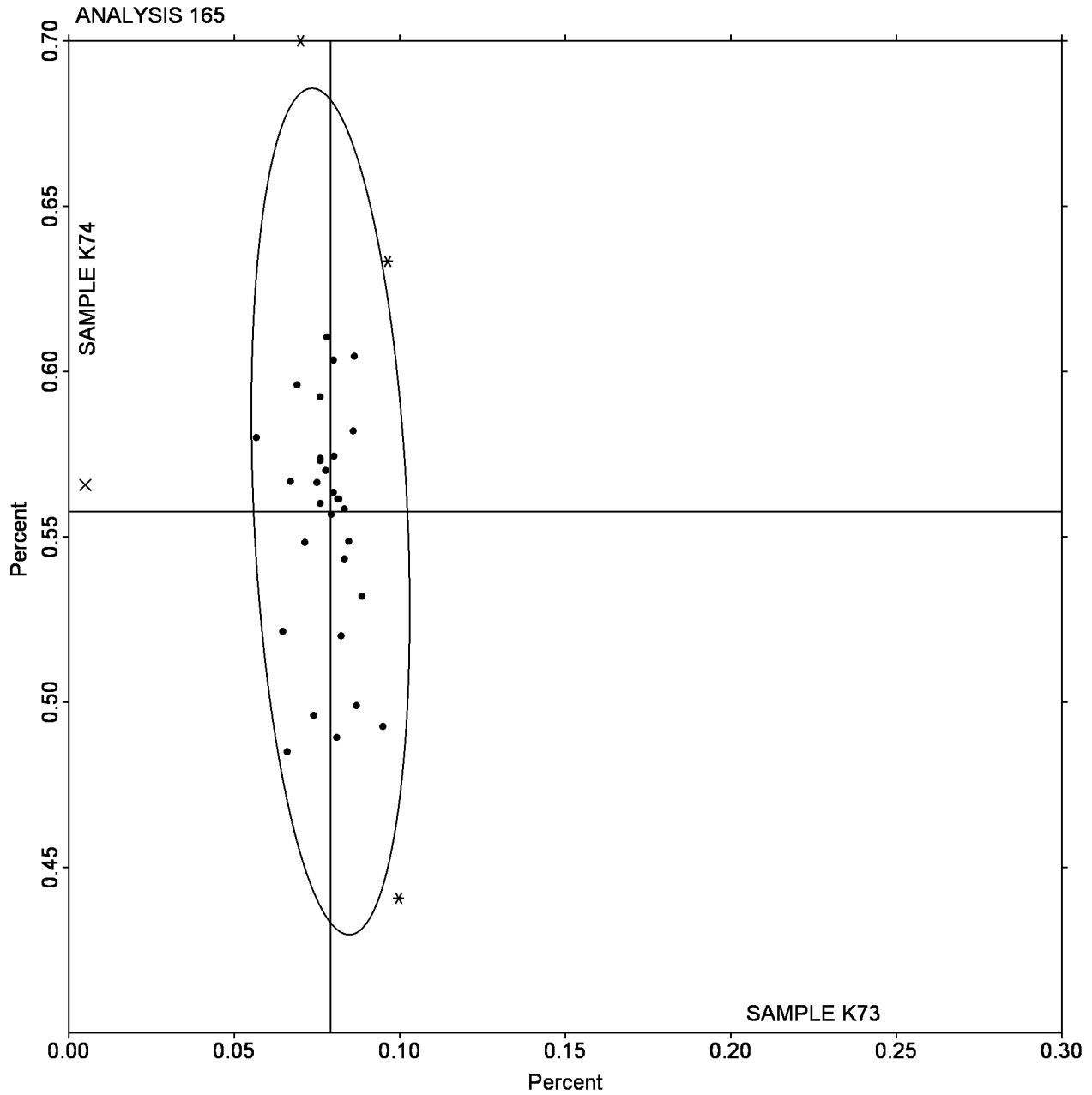
HUEQVS (X) - Data for Sample K73 are high. Data for sample K74 are low. Inconsistent within the determinations for both samples.

Interlaboratory Testing Program for Metals

Analysis 165

Chemical Analysis Element #6: Copper-based Alloy - Percent NICKEL (Ni)

SAMPLE K73 = 0.0791 Percent SAMPLe K74 = 0.5580 Percent



Interlaboratory Testing Program for Metals

Analysis 166

Chemical Analysis Element #7: Copper-based Alloy - Percent
SILICON (Si)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2S4J8T		0.0129	-0.0051	-0.61	0.0277	-0.0035	-0.34	DR
2ZYQPM	*	0.0010	-0.0170	-2.03	0.0250	-0.0062	-0.60	XX
4ZKMSB		0.0200	0.0020	0.24	0.0326	0.0014	0.13	IC
527Y88		0.0055	-0.0124	-1.49	0.0078	-0.0234	-2.26	IC
6G4L38		0.0223	0.0044	0.52	0.0363	0.0051	0.49	OE
6JTW4F		0.0191	0.0011	0.13	0.0338	0.0026	0.25	IC
7USBSQ		0.0319	0.0139	1.66	0.0420	0.0108	1.04	IC
92A67Z	X	0.1973	0.1794	21.48	0.0332	0.0020	0.19	OE
C4BBF1		0.0170	-0.0010	-0.12	0.0322	0.0010	0.10	OE
CASBV7		0.0120	-0.0060	-0.72	0.0230	-0.0082	-0.79	OE
CDTYLV		0.0172	-0.0007	-0.09	0.0332	0.0020	0.19	DR
CM6CLY		0.0200	0.0020	0.24	0.0300	-0.0012	-0.12	OE
CWV48R		0.0243	0.0063	0.75	0.0371	0.0059	0.56	OE
DG7DBW		0.0058	-0.0122	-1.46	0.0091	-0.0221	-2.13	DR
DHRJ9T		0.0300	0.0120	1.44	0.0383	0.0071	0.69	OE
DRTHH7		0.0193	0.0014	0.16	0.0363	0.0051	0.49	DC
DSWLB4		0.0200	0.0020	0.24	0.0300	-0.0012	-0.12	XX
EPRDMJ		0.0253	0.0073	0.87	0.0367	0.0055	0.53	OE
GK1Y4M		0.0228	0.0048	0.57	0.0375	0.0063	0.61	OE
GLM538		0.0112	-0.0068	-0.82	0.0231	-0.0081	-0.78	IC
JU9CR9		0.0117	-0.0063	-0.76	0.0357	0.0045	0.43	OE
KPLZJ7		0.0162	-0.0017	-0.21	0.0303	-0.0009	-0.08	OE
KVG38B		0.0160	-0.0020	-0.24	0.0287	-0.0025	-0.24	OE
LAES93		0.0198	0.0019	0.22	0.0355	0.0043	0.41	IC
LCRMZ7		0.0193	0.0014	0.16	0.0363	0.0051	0.49	DR
MMPCYU		0.0240	0.0060	0.72	0.0370	0.0058	0.56	OE
MU2SLR	*	0.0005	-0.0175	-2.09	0.0005	-0.0307	-2.96	OE
MX4BMA		0.0143	-0.0036	-0.44	0.0312	0.0000	0.00	GD
NDGQ3J		0.0170	-0.0010	-0.12	0.0310	-0.0002	-0.02	OE
V4VZN2	*	0.0430	0.0250	3.00	0.0590	0.0278	2.68	IC
VVTLZJ		0.0200	0.0020	0.24	0.0300	-0.0012	-0.12	IC
XMDFDU		0.0191	0.0011	0.13	0.0358	0.0046	0.44	OE
Y4FVLP		0.0184	0.0005	0.05	0.0371	0.0059	0.57	OE
YKEAZZ		0.0163	-0.0016	-0.20	0.0300	-0.0012	-0.11	GD

Summary Statistics

	Sample K73		Sample K74	
Grand Means	0.01798	Percent	0.03120	Percent
Std Dev Btwn Labs	0.00835	Percent	0.01037	Percent
Statistics based on 33 of 34 reporting participants				

Samples K73 , K74 : CDA 623, two different heats

Comments on assigned Data Flags for Test #166

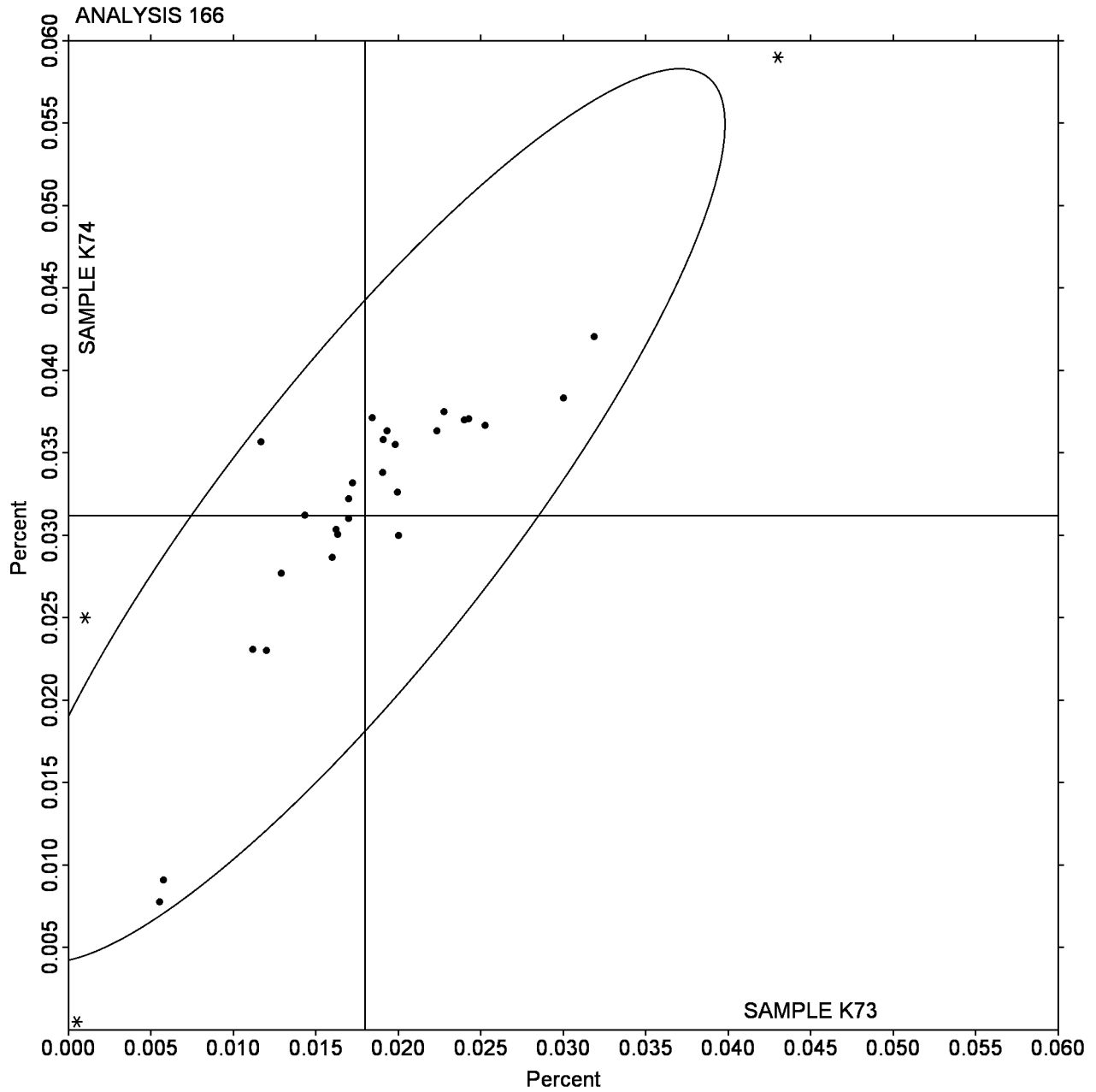
92A67Z (X) - It appears that the data for Sample K73 were off by a factor of 10.

Interlaboratory Testing Program for Metals

Analysis 166

Chemical Analysis Element #7: Copper-based Alloy - Percent SILICON (Si)

SAMPLE K73 = 0.01798 Percent SAMPLe K74 = 0.03120 Percent



Interlaboratory Testing Program for Metals

Analysis 167

Chemical Analysis Element #8: Copper-based Alloy - Percent
TIN (Sn)

WebCode	Data Flag	Sample K73			Sample K74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1M13DM		0.0211	0.0007	0.19	0.0134	0.0024	0.73	IC
32P8B6	X	0.0015	-0.0189	-4.87	0.0010	-0.0100	-3.10	DR
3EZMSH		0.0240	0.0036	0.93	0.0130	0.0020	0.62	DC
3QLXN9		0.0212	0.0008	0.21	0.0125	0.0015	0.46	OE
6HLCM7	*	0.0283	0.0079	2.05	0.0148	0.0038	1.17	OE
6J9K68		0.0261	0.0057	1.48	0.0164	0.0054	1.66	OE
6MRC8F		0.0203	-0.0001	-0.01	0.0086	-0.0024	-0.76	OE
7FB6YR		0.0167	-0.0037	-0.96	0.0094	-0.0016	-0.51	GD
7Z6GSA		0.0197	-0.0007	-0.19	0.0093	-0.0017	-0.52	OE
81M9Q5		0.0173	-0.0031	-0.79	0.0107	-0.0003	-0.11	OE
BBYFLC		0.0200	-0.0004	-0.10	0.0110	0.0000	0.00	XX
C4V2Q2		0.0147	-0.0057	-1.46	0.0070	-0.0040	-1.25	IC
CEF5FA		0.0173	-0.0031	-0.79	0.0087	-0.0023	-0.72	IC
EKS2RJ		0.0190	-0.0014	-0.35	0.0114	0.0004	0.13	OE
EQQTDH		0.0260	0.0056	1.45	0.0177	0.0067	2.08	GD
EVAL4P		0.0189	-0.0015	-0.37	0.0078	-0.0032	-1.00	OE
FC4TDG		0.0152	-0.0052	-1.34	0.0076	-0.0034	-1.06	IC
FC6X9X		0.0200	-0.0004	-0.10	0.0100	-0.0010	-0.31	IC
GQTZ8P	X	0.0200	-0.0004	-0.10	0.0257	0.0147	4.55	OE
JM6LUK	X	0.0381	0.0177	4.55	0.0304	0.0194	6.02	OE
KZHUXG		0.0177	-0.0027	-0.70	0.0087	-0.0023	-0.73	OE
MRTPHL		0.0151	-0.0053	-1.35	0.0072	-0.0038	-1.18	DR
MUVCTN		0.0200	-0.0004	-0.10	0.0100	-0.0010	-0.31	OE
NH872K		0.0177	-0.0027	-0.70	0.0083	-0.0027	-0.83	OE
QCFSLM		0.0232	0.0028	0.72	0.0114	0.0004	0.13	IC
S6WG6X		0.0104	-0.0100	-2.57	0.0103	-0.0007	-0.22	OE
SCSKU3		0.0240	0.0036	0.93	0.0150	0.0040	1.24	OE
SGPGLP		0.0180	-0.0024	-0.62	0.0090	-0.0020	-0.63	IC
T2NDDM		0.0200	-0.0004	-0.10	0.0100	-0.0010	-0.31	XX
T6GUKX	*	0.0302	0.0098	2.53	0.0195	0.0085	2.65	OE
VJEM7W		0.0187	-0.0017	-0.44	0.0100	-0.0010	-0.31	DR
WGH5BV		0.0203	-0.0001	-0.01	0.0100	-0.0010	-0.31	OE

Summary Statistics

	Sample K73		Sample K74	
Grand Means	0.02039	Percent	0.01100	Percent
Std Dev Btwn Labs	0.00388	Percent	0.00322	Percent
Statistics based on 28 of 32 reporting participants				

Samples K73 , K74 : CDA 623, two different heats

Comments on assigned Data Flags for Test #167

32P8B6 (X) - Data for both samples are low.

GQTZ8P (X) - High data for Sample K74.

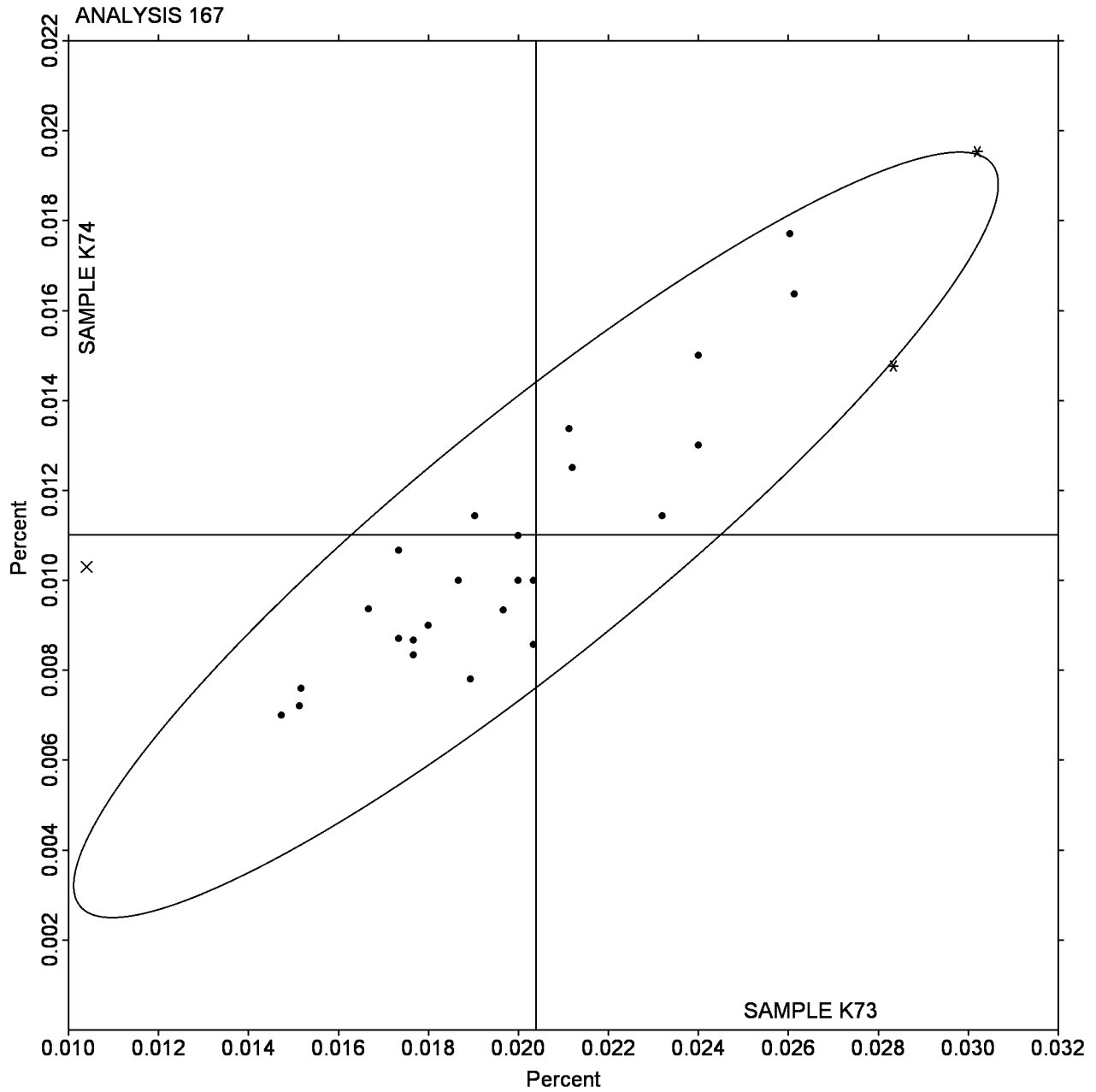
JM6LUK (X) - Data for both samples are high.

Interlaboratory Testing Program for Metals

Analysis 167

Chemical Analysis Element #8: Copper-based Alloy - Percent TIN (Sn)

SAMPLE K73 = 0.02039 Percent SAMPLe K74 = 0.01100 Percent



Interlaboratory Testing Program for Metals

Analysis 180

Chemical Analysis Element #1 - Corrosion Resistant Steel - Percent
CARBON (C)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1QAJ4X	*	0.060	-0.007	-1.92	0.050	-0.001	-0.40	OE
2528NC	*	0.077	0.009	2.47	0.057	0.006	2.43	OE
2PEQYH		0.066	-0.001	-0.33	0.051	0.000	-0.02	OE
3U9FDZ		0.060	-0.007	-1.92	0.045	-0.006	-2.42	OE
3UL8QH		0.070	0.002	0.64	0.051	0.000	-0.02	OE
45KNDS		0.065	-0.003	-0.68	0.051	0.000	-0.02	OE
56MHFB		0.066	-0.001	-0.33	0.051	0.000	-0.02	OE
5BMSSA		0.066	-0.001	-0.23	0.052	0.001	0.24	GD
5UHV8L		0.067	-0.001	-0.15	0.052	0.001	0.23	CO
5ULMWM		0.066	-0.001	-0.33	0.050	-0.001	-0.40	CI
71QHAE		0.068	0.001	0.20	0.051	0.000	-0.02	CI
742UB8		0.068	0.000	0.11	0.051	0.000	-0.02	CI
743JUZ	*	0.062	-0.006	-1.48	0.044	-0.007	-2.62	CI
9BNNDV		0.068	0.001	0.29	0.051	0.000	0.11	OE
9YAZZ8		0.070	0.003	0.73	0.052	0.001	0.23	OE
AR6LE2		0.069	0.002	0.47	0.051	0.000	-0.02	GD
B6DT56		0.060	-0.007	-1.92	0.050	-0.001	-0.53	OE
BE7PXE		0.069	0.001	0.38	0.054	0.003	1.12	DR
CFNK99		0.065	-0.003	-0.68	0.052	0.001	0.48	OE
CPV3WY		0.071	0.003	0.91	0.053	0.002	0.61	OE
DJQ7PP		0.069	0.002	0.58	0.052	0.001	0.43	OE
EFX8TH	*	0.067	0.000	0.02	0.047	-0.004	-1.61	OE
EVEV7P		0.066	-0.001	-0.24	0.051	0.000	-0.02	OE
F3982X		0.070	0.003	0.73	0.052	0.001	0.48	GD
FHDXCV		0.066	-0.001	-0.33	0.048	-0.003	-1.16	IR
FTJEDK		0.067	-0.001	-0.15	0.051	0.000	0.11	CI
G3EFYG	X	0.079	0.012	3.12	0.064	0.013	4.78	GD
GL4H4R		0.071	0.003	0.91	0.053	0.002	0.61	CI
H287TU	X	0.061	-0.006	-1.65	0.041	-0.010	-3.96	OE
HR9ENR		0.064	-0.003	-0.77	0.051	-0.001	-0.21	OE
J5U47T		0.074	0.007	1.88	0.054	0.003	1.12	OE
JFWD54		0.067	-0.001	-0.15	0.049	-0.002	-0.82	CI
JQCQ1E		0.064	-0.003	-0.77	0.050	-0.001	-0.40	CO
JSXN4B	X	0.053	-0.014	-3.77	0.039	-0.012	-4.70	OE
JZRZ1Z		0.071	0.004	1.00	0.055	0.004	1.62	OE
L12WM1		0.069	0.002	0.47	0.053	0.002	0.86	CI
LHCGX5		0.069	0.002	0.47	0.052	0.001	0.48	CI
MQV2WN	X	0.063	-0.004	-1.04	0.057	0.006	2.13	OE
MTV9Z2		0.067	0.000	-0.06	0.050	-0.001	-0.27	CI
NMMTXX	*	0.057	-0.010	-2.63	0.045	-0.006	-2.30	OE
PNJHTQ		0.070	0.003	0.73	0.050	-0.001	-0.40	XX
PNZ2SD		0.066	-0.001	-0.34	0.049	-0.002	-0.74	CI
QUM5MX	*	0.078	0.010	2.76	0.056	0.005	2.00	CI
R2UQ5E		0.069	0.001	0.38	0.050	-0.001	-0.53	OE
RASABG		0.066	-0.001	-0.33	0.051	0.000	-0.15	CI

Interlaboratory Testing Program for Metals

Analysis 180

Chemical Analysis Element #1 - Corrosion Resistant Steel - Percent
CARBON (C)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
RDKMQZ		0.066	-0.001	-0.39	0.049	-0.002	-0.69	GD
RGAVA2		0.076	0.008	2.23	0.050	-0.001	-0.27	GD
RR1PYB		0.066	-0.002	-0.42	0.050	-0.001	-0.41	CO
SBFD9D		0.067	0.000	0.02	0.051	0.000	-0.15	CO
TCF2SA		0.066	-0.002	-0.42	0.049	-0.002	-0.60	IR
TD36XJ	X	0.051	-0.016	-4.31	0.039	-0.012	-4.48	OE
U7BFXC		0.061	-0.006	-1.65	0.045	-0.006	-2.32	DR
UW7XXP		0.073	0.005	1.44	0.053	0.002	0.86	DR
VE7JKN		0.069	0.002	0.47	0.055	0.004	1.50	CI
VJ9S4Y		0.069	0.002	0.47	0.056	0.005	1.75	CO
VNYGAP		0.066	-0.002	-0.42	0.052	0.001	0.36	CO
VZKV4E	X	0.050	-0.017	-4.57	0.034	-0.017	-6.35	OE
WL2XRG		0.072	0.005	1.26	0.053	0.002	0.86	CO
WXL7M3		0.061	-0.006	-1.65	0.049	-0.002	-0.65	OE
XDW7BQ		0.067	0.000	-0.02	0.053	0.002	0.64	CI
XZ3W7D		0.068	0.001	0.20	0.050	-0.001	-0.50	GD
Y6WFU1		0.069	0.002	0.47	0.052	0.001	0.36	CO
Y88KUS		0.067	0.000	-0.06	0.052	0.001	0.36	OE
YG5WW4		0.067	0.000	0.02	0.052	0.001	0.36	OE
Z1YNRW	X	0.065	-0.003	-0.68	0.043	-0.008	-3.05	GD
ZDHRWM		0.068	0.001	0.29	0.052	0.001	0.23	OE

Summary Statistics

	Sample M73		Sample M74	
Grand Means	0.0672	Percent	0.0510	Percent
Std Dev Btwn Labs	0.0038	Percent	0.0026	Percent
Statistics based on 58 of 66 reporting participants				

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #180

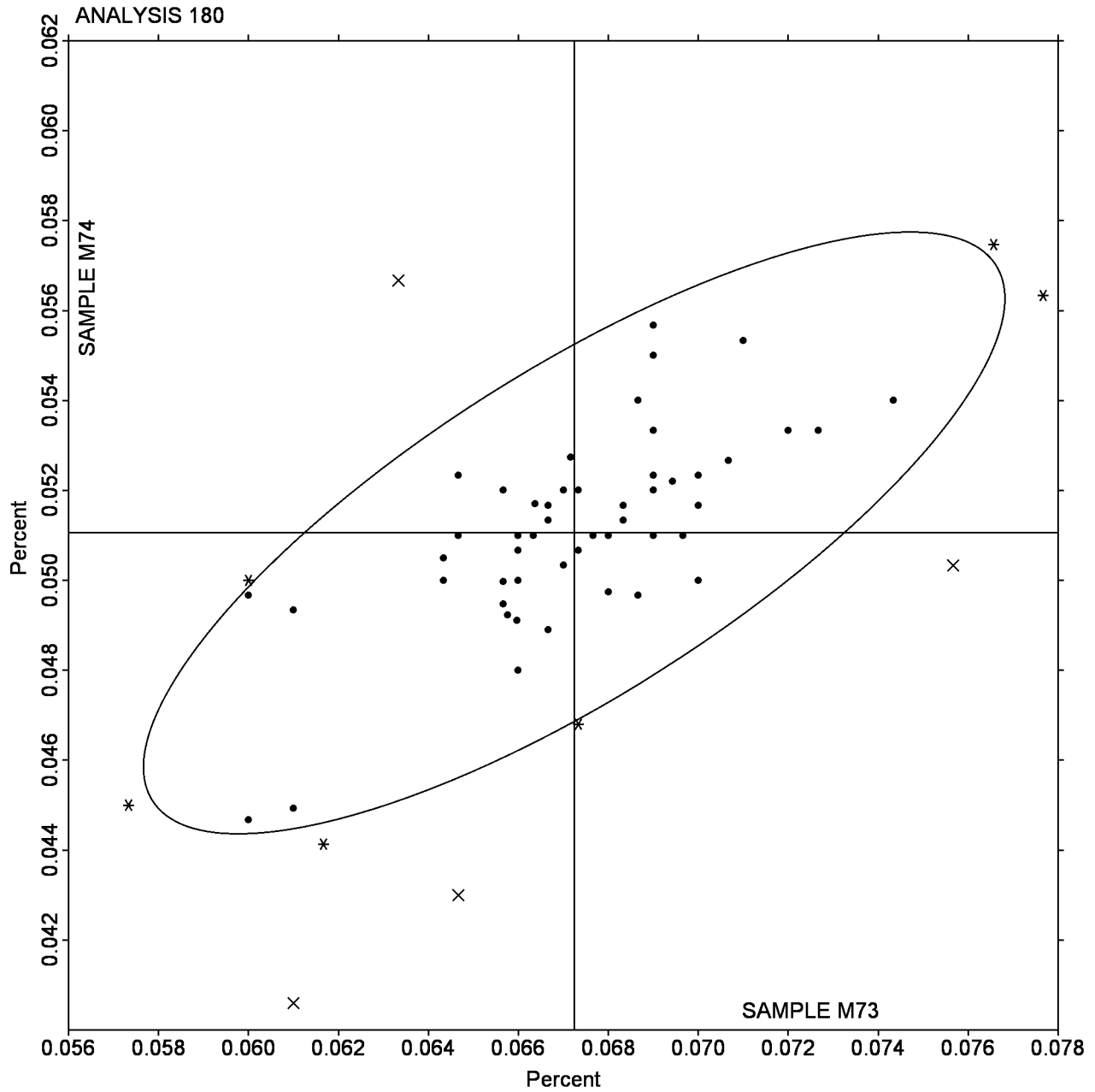
G3EFYG (X) - Data for both samples are high.
H287TU (X) - Low data for Sample M74.
JSXN4B (X) - Data for both samples are low.
MQV2WN (X) - Inconsistent within the determinations for both samples.
TD36XJ (X) - Data for both samples are low.
VZKV4E (X) - Data for both samples are low.
Z1YNRW (X) - Low data for Sample M74.

Interlaboratory Testing Program for Metals

Analysis 180

Chemical Analysis Element #1 - Corrosion Resistant Steel - Percent CARBON (C)

SAMPLE M73 = 0.0672 Percent SAMPLe M74 = 0.0510 Percent



Interlaboratory Testing Program for Metals

Analysis 181

Chemical Analysis Element #2 - Corrosion Resistant Steel - Percent
MANGANESE (Mn)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
18KF6F		1.483	-0.015	-0.67	1.790	-0.029	-0.77	XR
1RTSN4		1.490	-0.009	-0.38	1.817	-0.002	-0.06	OE
1V3JKB		1.516	0.017	0.73	1.828	0.010	0.26	OE
4GQGDY		1.514	0.015	0.66	1.821	0.002	0.06	OE
4KC1L3	*	1.564	0.066	2.84	1.893	0.075	1.99	WD
4R7AGD		1.504	0.005	0.23	1.833	0.014	0.37	OE
5HDD7B		1.500	0.001	0.05	1.817	-0.002	-0.06	XR
5VVAXT		1.463	-0.035	-1.54	1.770	-0.049	-1.30	GD
64A7US		1.496	-0.003	-0.13	1.823	0.005	0.12	OE
7QFGZZ		1.523	0.025	1.07	1.887	0.068	1.81	OE
86Z4P4	X	1.422	-0.076	-3.31	1.675	-0.144	-3.84	GD
87L1QN		1.503	0.005	0.20	1.837	0.018	0.48	OE
8SBWKU	*	1.462	-0.036	-1.58	1.834	0.015	0.41	OE
A9CZGC	X	2.047	0.548	23.75	2.213	0.395	10.55	OE
AXGV6R		1.483	-0.015	-0.67	1.793	-0.025	-0.68	OE
B6ACKS		1.505	0.006	0.27	1.819	0.000	0.00	OE
C514AC	*	1.562	0.063	2.73	1.895	0.077	2.05	DR
CBPA2Y		1.507	0.008	0.34	1.890	0.071	1.90	GD
DA9AKW		1.461	-0.038	-1.65	1.784	-0.035	-0.93	OE
DN7EAH		1.493	-0.005	-0.23	1.837	0.018	0.48	GD
DUTYMP		1.510	0.011	0.49	1.777	-0.042	-1.13	OE
E454WD		1.453	-0.045	-1.97	1.740	-0.079	-2.11	OE
E56ZM9		1.497	-0.002	-0.09	1.803	-0.015	-0.41	GD
ELE6VU		1.478	-0.021	-0.91	1.797	-0.022	-0.59	OE
EQTANN		1.492	-0.007	-0.29	1.810	-0.009	-0.23	IC
F7ELBA		1.454	-0.045	-1.95	1.759	-0.060	-1.60	OE
GKX8YT	X	1.235	-0.264	-11.43	1.947	0.128	3.43	GD
HBN4QM		1.487	-0.012	-0.52	1.840	0.021	0.57	OE
HC8CTG		1.515	0.017	0.72	1.802	-0.017	-0.46	DR
JVS42S		1.488	-0.011	-0.48	1.811	-0.008	-0.21	WD
KK9NNW		1.510	0.011	0.49	1.863	0.045	1.19	OE
KTL15L		1.464	-0.035	-1.52	1.794	-0.024	-0.65	DR
LSNA7Z		1.480	-0.019	-0.81	1.783	-0.035	-0.95	OE
LT9LU1		1.487	-0.012	-0.52	1.827	0.008	0.22	IC
M2X6HB	*	1.503	0.005	0.20	1.890	0.071	1.90	DR
M4H4L7	X	1.513	0.015	0.63	1.987	0.168	4.49	OE
M7D623		1.483	-0.015	-0.67	1.747	-0.072	-1.93	IC
MCBSEZ		1.517	0.018	0.78	1.826	0.008	0.20	OE
MWIFYKE		1.490	-0.009	-0.39	1.805	-0.014	-0.37	WD
NWBJPG		1.499	0.000	0.00	1.818	0.000	-0.01	OE
PCMC4X		1.513	0.014	0.60	1.823	0.004	0.10	OE
PQRS24		1.508	0.009	0.40	1.772	-0.047	-1.25	GD
Q69FPY		1.494	-0.004	-0.19	1.814	-0.004	-0.12	WD
QM63HR		1.487	-0.012	-0.52	1.790	-0.029	-0.77	OE
QZHBCV		1.510	0.011	0.47	1.800	-0.019	-0.51	OE

Interlaboratory Testing Program for Metals

Analysis 181

Chemical Analysis Element #2 - Corrosion Resistant Steel - Percent
MANGANESE (Mn)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
R5859S		1.515	0.017	0.72	1.839	0.021	0.55	XR
RAG3NL		1.467	-0.032	-1.38	1.763	-0.055	-1.48	DR
SGVV4J		1.507	0.008	0.34	1.843	0.025	0.66	OE
SNC4GU		1.490	-0.009	-0.38	1.848	0.030	0.79	OE
SRU1YJ		1.507	0.008	0.34	1.863	0.045	1.19	OE
TQMZVQ		1.481	-0.018	-0.78	1.798	-0.020	-0.55	GD
TW61A2		1.507	0.008	0.36	1.805	-0.014	-0.38	OE
TY84JR		1.545	0.047	2.02	1.880	0.061	1.63	OE
UHVRCB		1.496	-0.002	-0.10	1.820	0.001	0.03	WD
V8CAPC		1.507	0.008	0.34	1.824	0.006	0.15	OE
VG2MV4		1.553	0.055	2.37	1.879	0.060	1.61	OE
VM8S72	X	1.503	0.005	0.20	2.080	0.261	6.98	OE
VWS4CF		1.475	-0.024	-1.04	1.752	-0.067	-1.79	OE
W9RZTL		1.500	0.001	0.05	1.790	-0.029	-0.77	DR
X3C8ST		1.502	0.004	0.16	1.835	0.016	0.43	WD
XTAT4M	X	1.413	-0.085	-3.70	1.710	-0.109	-2.91	OE
Y3FNPB		1.498	0.000	-0.02	1.800	-0.018	-0.49	DR
YHZ5XF		1.507	0.008	0.34	1.810	-0.009	-0.23	OE
Z8M5N6		1.499	0.001	0.03	1.852	0.033	0.88	OE
ZSJ9RD		1.523	0.025	1.07	1.847	0.028	0.75	XX

Summary Statistics

	Sample M73		Sample M74	
Grand Means	1.4987	Percent	1.8190	Percent
Std Dev Btwn Labs	0.0231	Percent	0.0374	Percent
Statistics based on 59 of 65 reporting participants				

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #181

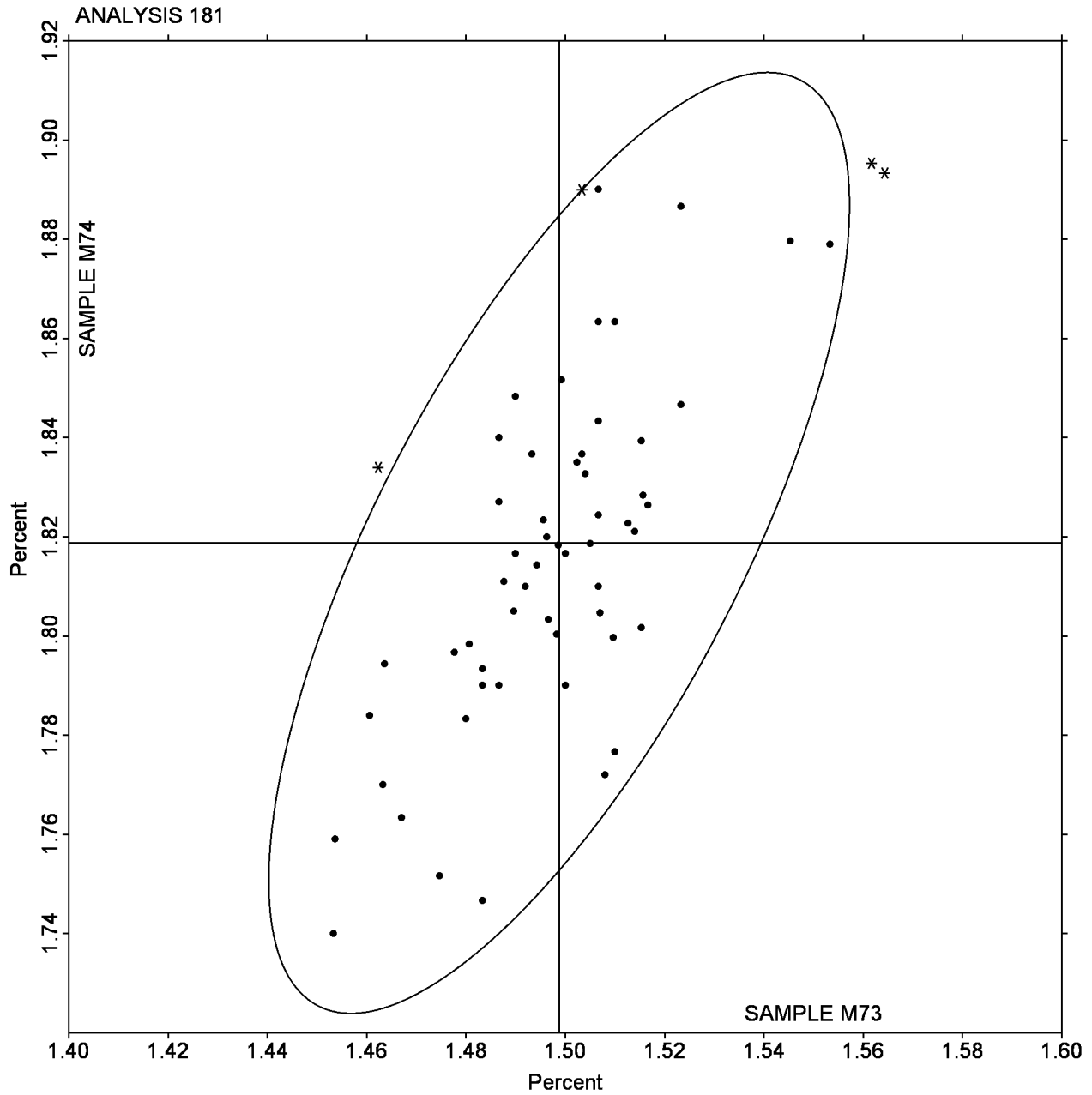
- 86Z4P4 (X) - Data for both samples are low.
A9CZGC (X) - Data for both samples are high.
GKX8YT (X) - Low data for Sample M73. High data for Sample M74.
M4H4L7 (X) - High data for Sample M74.
VM8S72 (X) - High data for Sample M74.
XTAT4M (X) - Data for both samples are low.

Interlaboratory Testing Program for Metals

Analysis 181

Chemical Analysis Element #2 - Corrosion Resistant Steel - Percent MANGANESE (Mn)

SAMPLE M73 = 1.4987 Percent SAMPLe M74 = 1.8190 Percent



Interlaboratory Testing Program for Metals

Analysis 182

Chemical Analysis Element #3 - Corrosion Resistant Steel - Percent
PHOSPHORUS (P)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1DQY89		0.0437	0.0027	0.91	0.0283	-0.0007	-0.38	OE
2XHZ9P	X	0.0355	-0.0055	-1.86	0.0349	0.0059	3.40	DR
2YUDB9		0.0410	-0.0001	-0.03	0.0289	-0.0001	-0.05	GD
47WDR3	*	0.0453	0.0043	1.45	0.0333	0.0044	2.52	OE
4FFC7G		0.0435	0.0025	0.84	0.0293	0.0003	0.18	OE
4UVH83		0.0400	-0.0011	-0.36	0.0277	-0.0013	-0.72	WD
58HE7A		0.0437	0.0026	0.89	0.0300	0.0010	0.60	XR
5W2BGM		0.0404	-0.0006	-0.22	0.0284	-0.0006	-0.32	GD
6BS3X7	*	0.0336	-0.0074	-2.51	0.0270	-0.0019	-1.10	IC
6MJ23Q		0.0407	-0.0004	-0.13	0.0287	-0.0003	-0.17	DR
6TVCGD		0.0408	-0.0002	-0.07	0.0287	-0.0002	-0.13	OE
7D415N		0.0423	0.0013	0.44	0.0304	0.0014	0.81	OE
7XPDJY		0.0377	-0.0034	-1.14	0.0279	-0.0011	-0.63	DR
87FREJ		0.0395	-0.0016	-0.53	0.0269	-0.0021	-1.20	GD
8A4RK7		0.0447	0.0036	1.22	0.0323	0.0034	1.94	OE
8MZ59Q	*	0.0326	-0.0085	-2.86	0.0237	-0.0053	-3.02	OE
9PGUT1		0.0424	0.0014	0.47	0.0308	0.0019	1.08	GD
9U8K8R		0.0420	0.0010	0.34	0.0292	0.0003	0.16	WD
A1YSJ1		0.0401	-0.0009	-0.32	0.0282	-0.0008	-0.43	OE
AKTTNZ		0.0370	-0.0040	-1.37	0.0293	0.0004	0.22	OE
BTVN49	X	0.0803	0.0393	13.28	0.1167	0.0877	50.46	OE
CD2KNZ		0.0399	-0.0011	-0.37	0.0274	-0.0015	-0.87	GD
CU4184		0.0397	-0.0014	-0.46	0.0310	0.0020	1.18	OE
CZTRFL		0.0402	-0.0008	-0.28	0.0280	-0.0010	-0.57	OE
D2HPR7		0.0417	0.0006	0.21	0.0303	0.0014	0.79	OE
DY11AL		0.0420	0.0010	0.32	0.0287	-0.0003	-0.17	DR
E15SZD	X	0.0697	0.0286	9.67	0.0500	0.0210	12.11	OE
EJPK9P		0.0433	0.0023	0.77	0.0297	0.0007	0.43	OE
G444AS		0.0467	0.0057	1.92	0.0304	0.0014	0.83	OE
JTBRJH		0.0430	0.0020	0.66	0.0303	0.0014	0.79	OE
K7XPW5		0.0391	-0.0019	-0.64	0.0280	-0.0009	-0.53	GD
KRP8NR	X	0.0309	-0.0101	-3.43	0.0269	-0.0021	-1.18	OE
KWERW2	X	0.0520	0.0110	3.70	0.0341	0.0051	2.94	IC
KZBE1W		0.0400	-0.0010	-0.35	0.0270	-0.0020	-1.12	XR
LK4F9H	X	0.0243	-0.0167	-5.65	0.0163	-0.0126	-7.26	OE
MHXTGH		0.0419	0.0009	0.30	0.0302	0.0012	0.70	OE
MM91HM		0.0405	-0.0005	-0.18	0.0290	0.0000	0.03	OE
MZ7678		0.0441	0.0031	1.03	0.0283	-0.0007	-0.40	GD
NK14QP		0.0413	0.0003	0.10	0.0300	0.0010	0.60	XX
NPXNU8		0.0465	0.0055	1.84	0.0320	0.0031	1.77	OE
NQBHQV		0.0408	-0.0002	-0.08	0.0281	-0.0009	-0.49	OE
P24SYW		0.0433	0.0023	0.77	0.0283	-0.0006	-0.36	OE
PRECDL		0.0410	0.0000	0.00	0.0275	-0.0015	-0.86	WD
Q835AB		0.0424	0.0014	0.47	0.0295	0.0005	0.31	OE
RDMVTY		0.0387	-0.0024	-0.80	0.0267	-0.0023	-1.32	IC

Interlaboratory Testing Program for Metals

Analysis 182

Chemical Analysis Element #3 - Corrosion Resistant Steel - Percent
PHOSPHORUS (P)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
RLATCF		0.0461	0.0050	1.70	0.0296	0.0006	0.35	OE
SZK97M		0.0440	0.0030	1.00	0.0297	0.0007	0.41	IC
T5814H		0.0348	-0.0062	-2.10	0.0253	-0.0036	-2.08	OE
TMPW3N		0.0393	-0.0017	-0.58	0.0260	-0.0030	-1.70	DR
UH4W9V	X	0.0510	0.0100	3.36	0.0300	0.0010	0.60	OE
USYR1B		0.0393	-0.0017	-0.58	0.0287	-0.0003	-0.17	OE
V23BPQ		0.0400	-0.0010	-0.35	0.0297	0.0007	0.41	OE
W12N2L		0.0440	0.0030	1.00	0.0310	0.0020	1.18	OE
XPKXBQ		0.0418	0.0008	0.26	0.0299	0.0009	0.54	OE
XWVQML		0.0374	-0.0036	-1.22	0.0284	-0.0006	-0.32	GD
Y8BS33	*	0.0361	-0.0049	-1.66	0.0297	0.0007	0.43	OE
YSRKAZ		0.0397	-0.0014	-0.46	0.0279	-0.0011	-0.63	OE
YW6X2Y		0.0430	0.0020	0.66	0.0303	0.0014	0.79	DR
ZKW5FJ		0.0400	-0.0010	-0.35	0.0277	-0.0013	-0.74	XR
ZMR4ZW		0.0423	0.0013	0.44	0.0313	0.0024	1.37	OE

Summary Statistics

	Sample M73		Sample M74	
Grand Means	0.04104	Percent	0.02900	Percent
Std Dev Btwn Labs	0.00296	Percent	0.00174	Percent

Statistics based on 53 of 60 reporting participants

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #182

2XHZ9P (X) - High data for Sample M74.

BTVN49 (X) - Extreme data.

E15SZD (X) - Data for both samples are high, and inconsistent within the determinations for both samples.

KRP8NR (X) - Data for Sample M73 are low and inconsistent within the determinations for Sample M74.

KWERW2 (X) - Data for both samples are high, and inconsistent within the determinations for Sample M73.

LK4F9H (X) - Data for both samples are low.

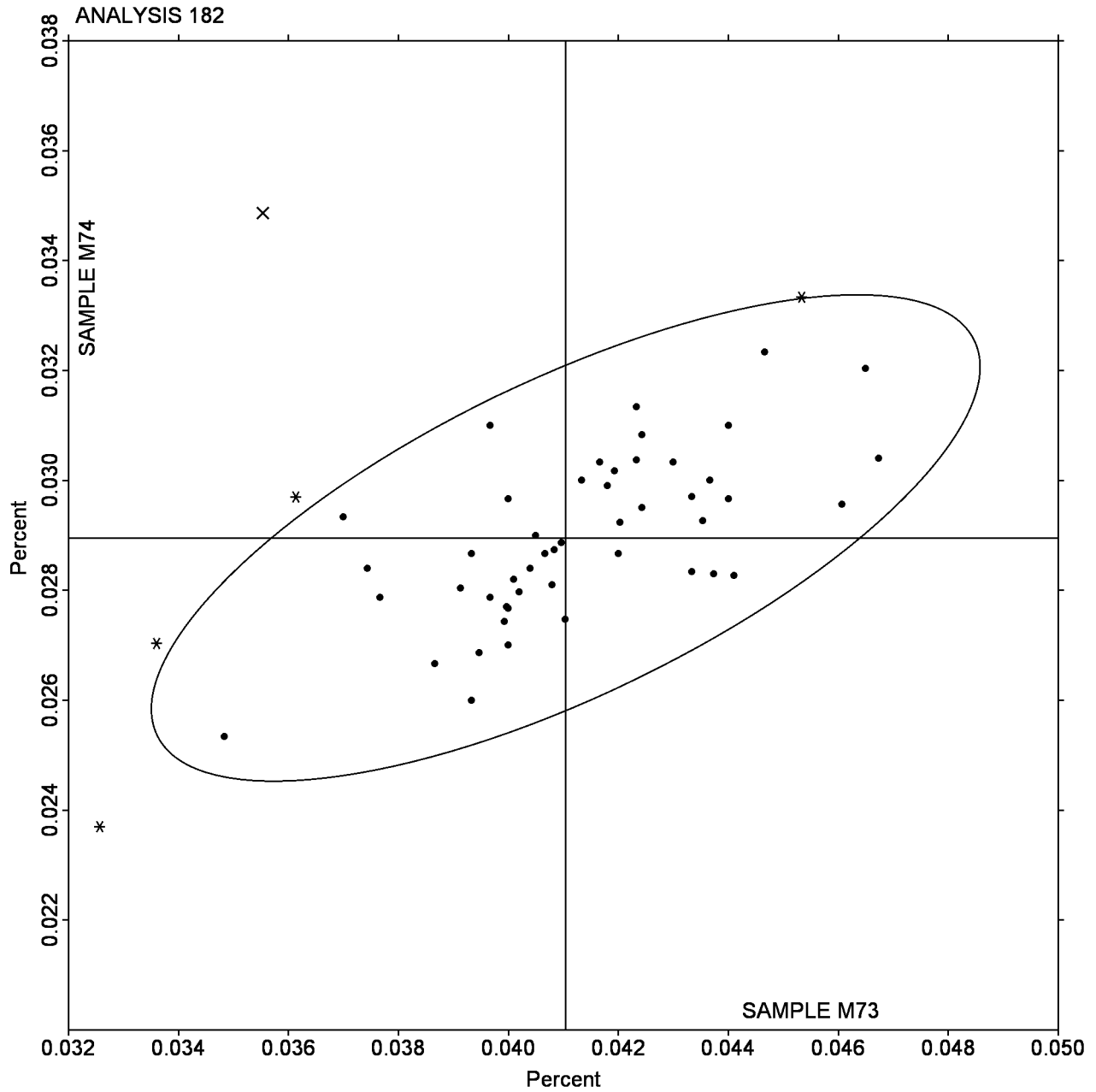
UH4W9V (X) - High data for Sample M73.

Interlaboratory Testing Program for Metals

Analysis 182

Chemical Analysis Element #3 - Corrosion Resistant Steel - Percent PHOSPHORUS (P)

SAMPLE M73 = 0.04104 Percent SAMPLe M74 = 0.02900 Percent



Interlaboratory Testing Program for Metals

Analysis 183

Chemical Analysis Element #4 - Corrosion Resistant Steel - Percent
COBALT(Co)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1BDVYV		0.061	0.001	0.22	0.120	0.000	-0.03	DR
295BU2		0.075	0.015	2.61	0.112	-0.008	-1.40	WD
2BTEJT		0.060	0.000	0.05	0.110	-0.010	-1.75	OE
2G1SCK		0.073	0.013	2.26	0.122	0.002	0.38	OE
2R2TSK		0.060	0.000	0.05	0.113	-0.007	-1.28	OE
3W7X23		0.060	0.001	0.11	0.121	0.001	0.14	WD
4G8CWZ		0.059	-0.001	-0.13	0.122	0.002	0.44	OE
4JGV9V		0.056	-0.004	-0.71	0.119	-0.001	-0.15	DR
52GRJW		0.059	-0.001	-0.18	0.118	-0.002	-0.39	OE
5UL41S		0.054	-0.006	-1.06	0.123	0.003	0.56	DR
654435		0.063	0.003	0.57	0.122	0.002	0.38	GD
6GQDER		0.062	0.002	0.34	0.117	-0.003	-0.45	GD
6WE7J6	*	0.076	0.016	2.84	0.128	0.008	1.51	OE
75FP58		0.059	-0.001	-0.13	0.110	-0.010	-1.75	DR
772X4H		0.060	0.000	0.05	0.120	0.000	0.08	OE
7L7FE9		0.060	0.000	0.05	0.110	-0.010	-1.75	OE
969K6A		0.059	-0.001	-0.13	0.119	-0.001	-0.15	OE
AF9B89		0.063	0.003	0.51	0.119	-0.001	-0.15	OE
AL92YD		0.057	-0.002	-0.39	0.120	0.000	0.03	GD
APMQCQ		0.064	0.004	0.78	0.124	0.004	0.74	OE
BBLV69		0.055	-0.005	-0.88	0.117	-0.003	-0.45	IC
BMC9GJ		0.068	0.008	1.39	0.124	0.004	0.80	GD
C18D58		0.059	-0.001	-0.13	0.122	0.002	0.32	OE
C9LPSF	X	0.067	0.007	1.21	0.140	0.020	3.58	OE
CEMTZR		0.057	-0.003	-0.48	0.120	0.000	0.03	OE
CSX27P		0.061	0.001	0.22	0.123	0.003	0.62	OE
F6KGNU		0.052	-0.008	-1.41	0.117	-0.003	-0.45	WD
FXRZXZ	*	0.069	0.010	1.68	0.136	0.016	2.93	OE
G5GV5U	*	0.071	0.011	1.91	0.134	0.014	2.57	OE
GGNBWW		0.058	-0.002	-0.36	0.127	0.007	1.27	IC
HEJ5WW		0.067	0.008	1.33	0.118	-0.002	-0.27	GD
HQQV4S		0.059	-0.001	-0.18	0.110	-0.010	-1.75	OE
J5ZYBC		0.050	-0.010	-1.70	0.120	0.000	0.03	OE
J6J54U		0.060	0.000	-0.01	0.119	-0.001	-0.09	OE
K44HXS		0.060	0.000	0.05	0.120	0.000	0.03	XX
KEBSLH		0.057	-0.003	-0.53	0.117	-0.003	-0.51	IR
L5YJFP		0.054	-0.006	-1.00	0.125	0.005	0.91	OE
LETYMU		0.061	0.001	0.22	0.125	0.005	0.91	XR
LR2AKQ		0.053	-0.007	-1.23	0.124	0.004	0.80	GD
MG2TA1		0.060	0.000	-0.01	0.124	0.004	0.74	WD
N2ANYW		0.058	-0.001	-0.24	0.123	0.003	0.56	OE
PFDCU7		0.056	-0.004	-0.65	0.114	-0.006	-0.98	DR
PRKPAF		0.048	-0.012	-2.13	0.112	-0.008	-1.47	DR
R4PF8N		0.058	-0.002	-0.36	0.124	0.004	0.80	IC
RM2J17		0.052	-0.007	-1.28	0.110	-0.010	-1.81	OE

Interlaboratory Testing Program for Metals

Analysis 183

Chemical Analysis Element #4 - Corrosion Resistant Steel - Percent
COBALT(Co)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
TETBJP		0.056	-0.004	-0.71	0.116	-0.004	-0.63	OE
TRUU8A		0.055	-0.005	-0.88	0.116	-0.004	-0.69	OE
U6ZE8M		0.060	0.000	0.05	0.120	0.000	0.03	XR
V3RSWD		0.061	0.001	0.22	0.118	-0.002	-0.33	OE
V5GDL5		0.058	-0.002	-0.30	0.121	0.001	0.20	WD
V6T9VM		0.056	-0.003	-0.59	0.115	-0.005	-0.92	XR
V7H7S2		0.057	-0.003	-0.52	0.110	-0.010	-1.69	OE
VM2H1B		0.062	0.002	0.34	0.121	0.001	0.26	OE
VU2M1C		0.060	0.000	0.05	0.120	0.000	0.03	OE
VVW46V		0.066	0.006	1.10	0.114	-0.006	-1.04	DR
XLGNAL		0.062	0.002	0.34	0.126	0.006	1.15	OE
YXR4NP		0.056	-0.004	-0.65	0.123	0.003	0.56	IC
ZLEMW6	*	0.077	0.017	3.02	0.127	0.007	1.27	GD
ZPH63X		0.055	-0.004	-0.77	0.119	-0.001	-0.09	OE

Summary Statistics

	Sample M73		Sample M74	
Grand Means	0.0597	Percent	0.1200	Percent
Std Dev Btwn Labs	0.0057	Percent	0.0056	Percent
Statistics based on 57 of 59 reporting participants				

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #183

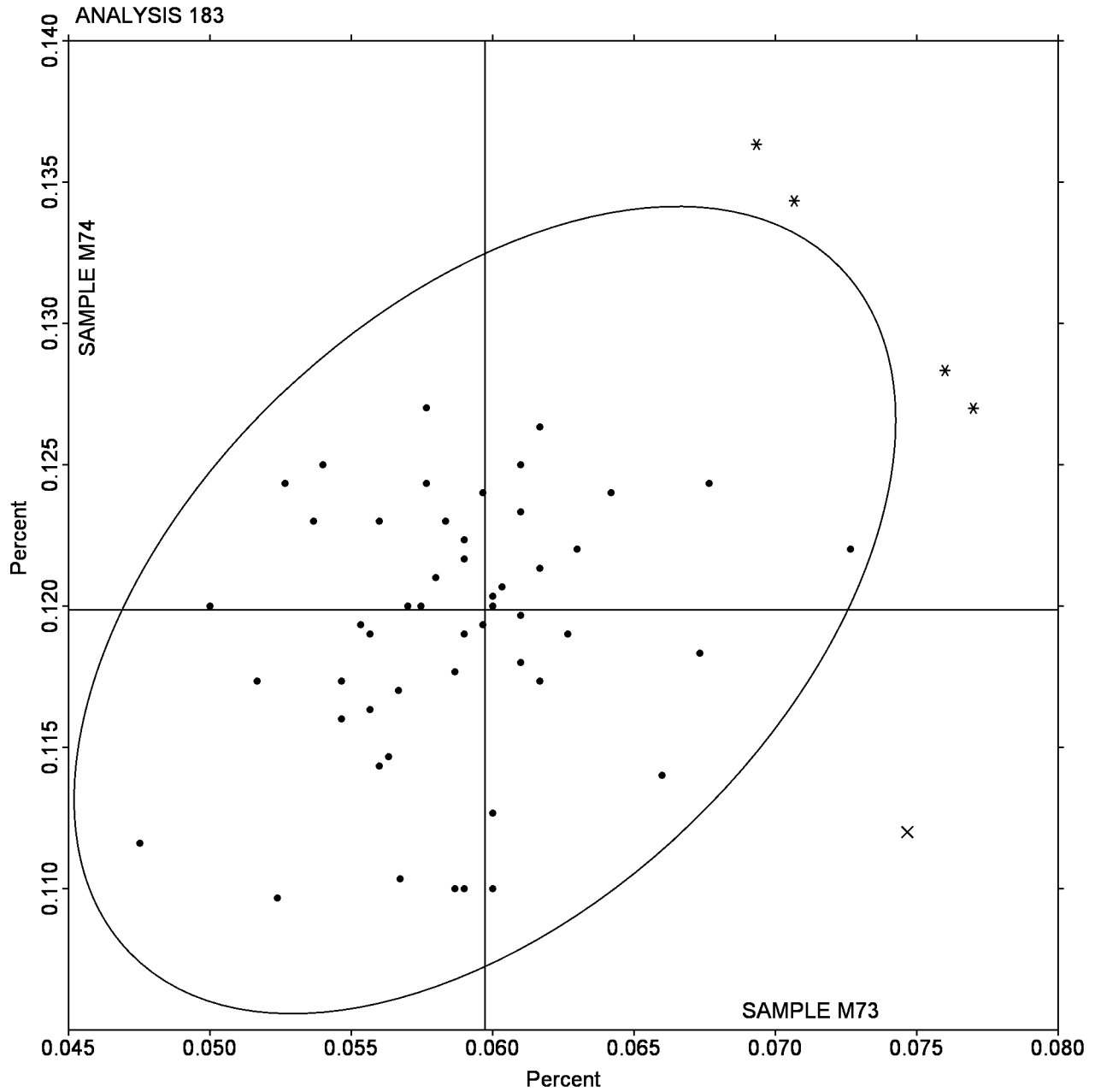
C9LPSF (X) - High data for Sample M74.

Interlaboratory Testing Program for Metals

Analysis 183

Chemical Analysis Element #4 - Corrosion Resistant Steel - Percent COBALT(Co)

SAMPLE M73 = 0.0597 Percent SAMPLe M74 = 0.1200 Percent



Interlaboratory Testing Program for Metals

Analysis 184

Chemical Analysis Element #5 - Corrosion Resistant Steel - Percent
SILICON (Si)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
18K3Q9		0.640	0.020	1.09	0.295	0.007	0.57	OE
191UQU		0.603	-0.018	-0.98	0.310	0.022	1.75	OE
27STL5	*	0.598	-0.023	-1.25	0.317	0.029	2.31	GD
2BGJA7		0.611	-0.009	-0.50	0.271	-0.017	-1.34	WD
2KC3QM		0.630	0.010	0.54	0.273	-0.015	-1.18	DR
3U3TDS	X	0.555	-0.065	-3.60	0.284	-0.004	-0.29	DR
41YQF5		0.633	0.013	0.72	0.286	-0.002	-0.16	OE
422P2H		0.609	-0.011	-0.63	0.294	0.006	0.46	OE
4N5RHD		0.620	0.000	0.00	0.283	-0.005	-0.42	XR
5ZK9ZW		0.640	0.019	1.07	0.295	0.007	0.57	OE
7C2YWX		0.632	0.012	0.67	0.291	0.003	0.24	OE
7Q2TY7		0.602	-0.018	-1.01	0.271	-0.017	-1.36	XR
7UL592		0.630	0.010	0.54	0.277	-0.011	-0.91	OE
7WN9CC		0.615	-0.005	-0.28	0.288	0.000	0.00	IC
8MYVXD		0.630	0.009	0.52	0.306	0.018	1.42	OE
916SE6		0.584	-0.036	-2.01	0.277	-0.011	-0.91	GD
9QUVT7	X	0.543	-0.077	-4.27	0.263	-0.025	-1.98	DR
9XFDE1		0.619	-0.001	-0.05	0.287	-0.001	-0.10	OE
AH5HXL		0.658	0.038	2.09	0.297	0.009	0.71	OE
C7J9FR		0.650	0.030	1.66	0.301	0.013	1.08	OE
CVXC3R		0.624	0.003	0.19	0.296	0.008	0.67	OR
CZWP4X		0.589	-0.032	-1.75	0.276	-0.012	-0.93	GD
DJ51H6		0.623	0.002	0.13	0.293	0.005	0.38	OE
E9T9DM		0.638	0.018	1.00	0.302	0.014	1.13	OE
EJYBK5		0.633	0.013	0.72	0.292	0.004	0.33	OE
F2WSH4		0.633	0.013	0.70	0.288	0.000	0.00	OE
FJWNX2		0.587	-0.034	-1.86	0.297	0.009	0.70	OE
G8FWS9	X	0.546	-0.075	-4.14	0.290	0.002	0.19	IC
HJVKHW	*	0.675	0.055	3.05	0.291	0.003	0.27	OE
JCANQ4		0.628	0.007	0.41	0.299	0.011	0.89	IC
KF1HNS	X	0.644	0.024	1.31	0.345	0.057	4.59	OE
KJ99ZX	*	0.597	-0.024	-1.31	0.312	0.024	1.96	OE
KUHZCF		0.619	-0.002	-0.09	0.314	0.026	2.07	OE
LGQD7P		0.631	0.010	0.57	0.280	-0.008	-0.67	GD
LP37L8		0.600	-0.020	-1.13	0.277	-0.011	-0.88	OE
LQ83JS		0.612	-0.009	-0.48	0.286	-0.002	-0.13	OE
LXNQB8		0.641	0.020	1.13	0.283	-0.005	-0.40	OE
M7LDUY		0.628	0.008	0.43	0.285	-0.003	-0.21	OE
N9V88T		0.613	-0.008	-0.42	0.299	0.011	0.86	GD
NHFHE9		0.606	-0.014	-0.79	0.277	-0.011	-0.91	OE
Q3LQ66		0.631	0.010	0.57	0.291	0.003	0.27	GD
QUQPM9		0.619	-0.002	-0.09	0.283	-0.005	-0.40	DR
R65W8E		0.612	-0.009	-0.48	0.289	0.001	0.06	OE
RNGAAB	*	0.607	-0.014	-0.76	0.255	-0.033	-2.65	WD
S4YVZC		0.583	-0.037	-2.05	0.266	-0.022	-1.76	DR

Interlaboratory Testing Program for Metals

Analysis 184

Chemical Analysis Element #5 - Corrosion Resistant Steel - Percent
SILICON (Si)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
SDKVNR		0.617	-0.004	-0.20	0.290	0.002	0.16	OE
SMMCMH		0.628	0.008	0.43	0.303	0.015	1.24	OE
TDA3ZE		0.590	-0.030	-1.68	0.273	-0.015	-1.23	OE
TFW86Y		0.590	-0.030	-1.68	0.280	-0.008	-0.64	OE
UHHFWY		0.633	0.013	0.72	0.291	0.003	0.27	OE
UHR8A3		0.620	-0.001	-0.04	0.283	-0.005	-0.42	DR
UJWKGK		0.614	-0.006	-0.33	0.283	-0.005	-0.42	OE
UQASTM		0.623	0.003	0.17	0.273	-0.015	-1.18	OE
UUEWYG		0.640	0.019	1.07	0.303	0.015	1.21	OE
W42JBH		0.626	0.005	0.30	0.297	0.009	0.75	OE
WPQCNJ		0.623	0.003	0.17	0.280	-0.008	-0.64	XR
WXCGBZ		0.607	-0.014	-0.76	0.270	-0.018	-1.44	GD
WYCAGF		0.620	0.000	-0.02	0.290	0.002	0.16	XX
XNAB88		0.626	0.005	0.30	0.290	0.002	0.19	WD
YMXZ6X		0.633	0.013	0.72	0.290	0.002	0.16	OE
YVTFUM	X	0.937	0.316	17.53	0.518	0.230	18.46	OE
ZCLP2L		0.638	0.018	1.00	0.293	0.005	0.38	WD
ZCSUUT		0.625	0.005	0.26	0.265	-0.023	-1.84	GD
ZL9LTX		0.620	0.000	-0.02	0.287	-0.001	-0.10	DR
ZY29XX		0.615	-0.005	-0.29	0.288	0.000	0.00	OE

Summary Statistics

	Sample M73		Sample M74	
Grand Means	0.6203	Percent	0.2880	Percent
Std Dev Btwn Labs	0.0180	Percent	0.0124	Percent
Statistics based on 60 of 65 reporting participants				

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #184

3U3TDS (X) - Low data for Sample M73.

9QUVT7 (X) - Data for Sample M73 are low and inconsistent within the determinations for Sample M73.

G8FWS9 (X) - Low data for Sample M73.

KF1HNS (X) - High data for Sample M74.

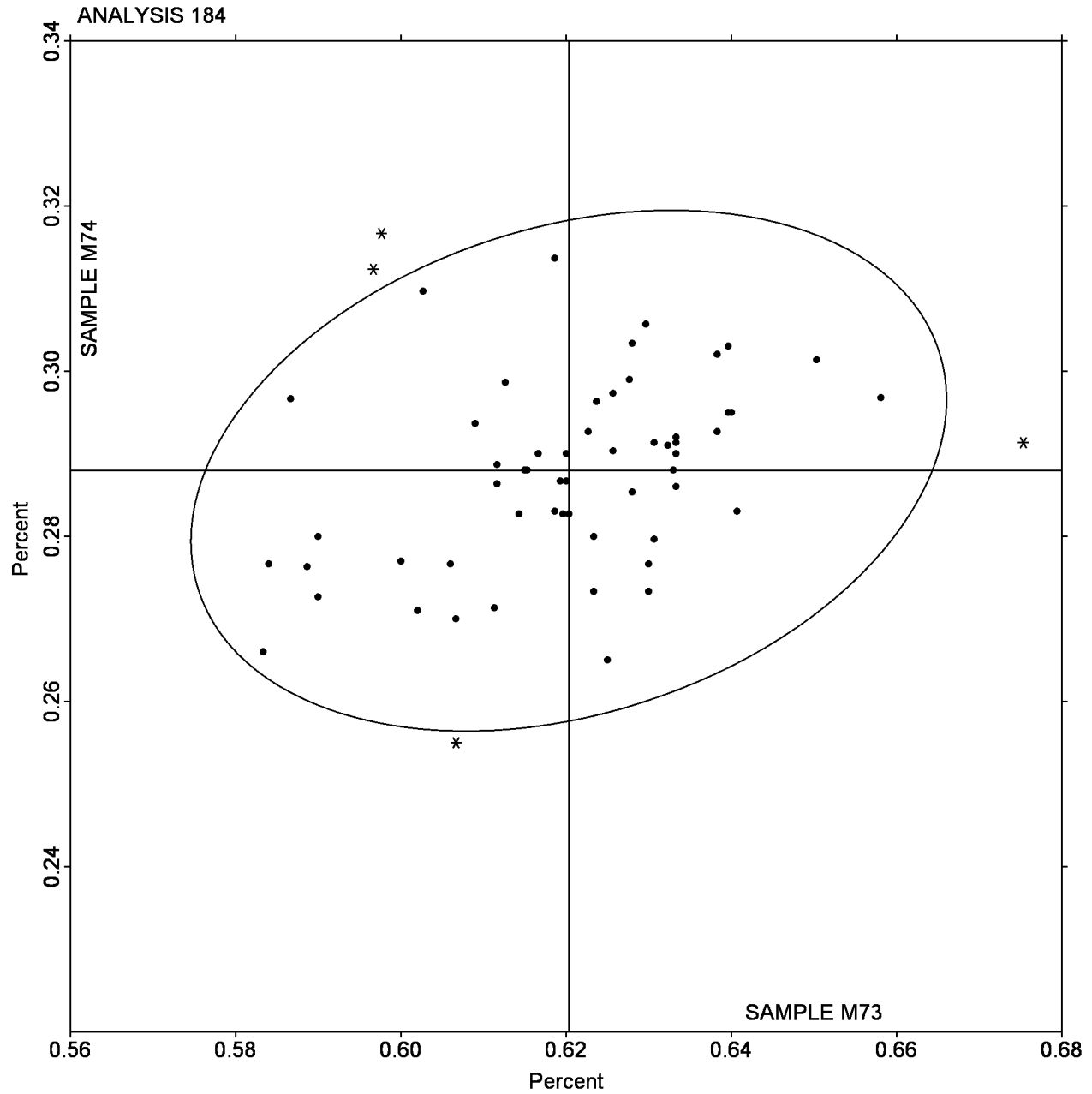
YVTFUM (X) - Data for both samples are high, and inconsistent within the determinations for both samples.

Interlaboratory Testing Program for Metals

Analysis 184

Chemical Analysis Element #5 - Corrosion Resistant Steel - Percent SILICON (Si)

SAMPLE M73 = 0.6203 Percent SAMPLe M74 = 0.2880 Percent



Interlaboratory Testing Program for Metals

Analysis 185

Chemical Analysis Element #6 - Corrosion Resistant Steel - Percent
COPPER (Cu)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
11QHQS		0.528	0.007	0.47	0.355	-0.008	-0.88	OE
1L539M		0.523	0.002	0.13	0.368	0.005	0.57	OE
1MB5PZ	X	0.584	0.064	4.02	0.410	0.047	5.05	WD
2VSX2E		0.527	0.007	0.43	0.363	0.000	-0.01	XR
3DV8WX	*	0.482	-0.039	-2.44	0.359	-0.004	-0.44	OE
4KZPB4		0.532	0.011	0.72	0.359	-0.004	-0.41	GD
51X62D		0.511	-0.010	-0.63	0.361	-0.002	-0.19	OE
5M3X2Z		0.518	-0.003	-0.16	0.361	-0.002	-0.19	OE
61WSRL		0.536	0.016	0.99	0.361	-0.002	-0.19	IC
7DCAL8		0.520	-0.001	-0.04	0.367	0.004	0.39	OE
8PLEYB		0.530	0.009	0.59	0.369	0.006	0.68	WD
8V1SFN	*	0.562	0.041	2.59	0.375	0.012	1.33	DR
8XLRJJ	X	0.600	0.079	5.01	0.408	0.045	4.83	OE
9D6PDJ		0.523	0.003	0.17	0.370	0.007	0.75	OE
9EPBL1		0.531	0.010	0.64	0.372	0.009	0.93	GD
AKSKHV		0.513	-0.008	-0.50	0.363	0.000	-0.01	GD
B5634N		0.504	-0.017	-1.07	0.358	-0.005	-0.59	OE
BF9PE3		0.510	-0.011	-0.69	0.361	-0.002	-0.19	IC
CGWRMN		0.525	0.004	0.28	0.356	-0.007	-0.80	OE
CR13XB	*	0.548	0.028	1.75	0.387	0.024	2.59	DR
D6EQZ7	*	0.500	-0.021	-1.30	0.372	0.009	1.00	OE
DMY5L5	X	0.513	-0.007	-0.46	0.126	-0.237	-25.66	OE
DWHPZP		0.540	0.019	1.23	0.368	0.005	0.50	OE
E5EMKW		0.507	-0.014	-0.88	0.352	-0.011	-1.24	OE
EAYG1V	X	0.571	0.050	3.16	0.353	-0.010	-1.13	OE
EMKVNQ		0.518	-0.002	-0.14	0.354	-0.009	-1.02	WD
ENU5BE		0.500	-0.021	-1.30	0.353	-0.010	-1.06	XX
F9AJSN		0.550	0.029	1.84	0.381	0.018	1.94	OE
FSEK5S		0.517	-0.004	-0.23	0.359	-0.004	-0.44	WD
G9DEDQ	*	0.553	0.033	2.07	0.386	0.023	2.52	OE
H3UMRX	*	0.483	-0.037	-2.35	0.360	-0.003	-0.33	DR
H74B1D		0.522	0.001	0.09	0.361	-0.002	-0.26	GD
H7N6LA		0.531	0.010	0.64	0.363	0.000	-0.04	GD
HD9CPW		0.529	0.008	0.53	0.358	-0.005	-0.59	OE
HGWQCH		0.539	0.018	1.14	0.378	0.015	1.65	OE
HM7GZR		0.507	-0.014	-0.88	0.347	-0.016	-1.74	OE
JFLZSK		0.504	-0.016	-1.03	0.353	-0.010	-1.13	DR
JRW1W1		0.518	-0.003	-0.18	0.362	-0.001	-0.08	IC
KBAKJT		0.524	0.003	0.22	0.365	0.002	0.17	XR
L7S9UX		0.520	-0.001	-0.06	0.363	0.000	0.03	OE
LTYZRH		0.514	-0.007	-0.42	0.359	-0.004	-0.44	OE
M3WWSY		0.511	-0.010	-0.61	0.356	-0.007	-0.80	WD
N5BD43		0.540	0.019	1.23	0.380	0.017	1.83	OE
NFDNQ5		0.556	0.035	2.21	0.352	-0.011	-1.20	OE
P19C86		0.530	0.009	0.59	0.380	0.017	1.83	OE

Interlaboratory Testing Program for Metals

Analysis 185

Chemical Analysis Element #6 - Corrosion Resistant Steel - Percent
COPPER (Cu)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
PBT2KR	X	0.662	0.142	8.95	0.443	0.080	8.63	GD
PKZKJV		0.536	0.015	0.95	0.362	-0.001	-0.12	OE
PM7D78		0.509	-0.011	-0.71	0.366	0.003	0.32	OE
Q8AQDG		0.540	0.020	1.25	0.376	0.013	1.44	OE
QWUQ46		0.504	-0.017	-1.07	0.350	-0.013	-1.45	OE
RM9FXQ		0.518	-0.002	-0.14	0.356	-0.007	-0.73	GD
RWJVS5		0.526	0.005	0.34	0.369	0.006	0.64	DR
T2S5L5		0.507	-0.013	-0.84	0.358	-0.005	-0.51	DR
TBZTP3		0.525	0.004	0.27	0.353	-0.010	-1.11	OE
UH6XPT		0.512	-0.009	-0.56	0.357	-0.006	-0.62	IC
UY69EK		0.520	-0.001	-0.04	0.370	0.007	0.75	XR
VZ1JBD		0.518	-0.003	-0.16	0.365	0.002	0.17	WD
VZKJ6G		0.506	-0.015	-0.92	0.362	-0.001	-0.08	OE
W2VK7M		0.517	-0.004	-0.25	0.357	-0.006	-0.66	OE
W3CG2D		0.492	-0.029	-1.83	0.348	-0.015	-1.67	OE
XCSYPJ		0.530	0.009	0.57	0.355	-0.008	-0.88	OE
Y5SWZA		0.518	-0.003	-0.18	0.356	-0.007	-0.77	GD
ZB316V		0.519	-0.002	-0.10	0.359	-0.004	-0.41	DR
ZBCAKV		0.484	-0.037	-2.31	0.371	0.008	0.82	OE

Summary Statistics

	Sample M73	Sample M74
Grand Means	0.5206 Percent	0.3630 Percent
Std Dev Btwn Labs	0.0158 Percent	0.0092 Percent
Statistics based on 57 of 64 reporting participants		

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #185

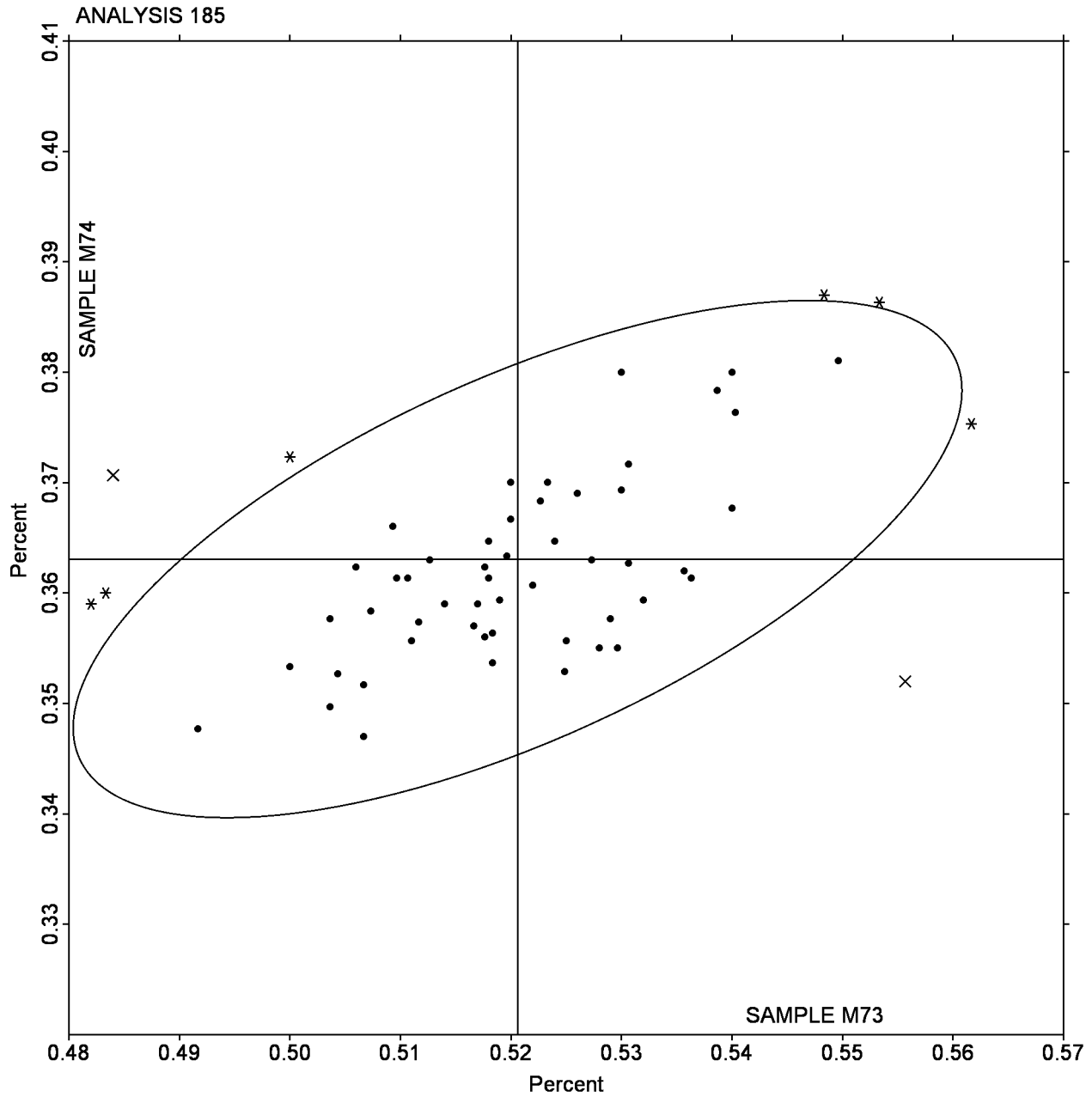
- 1MB5PZ (X) - Data for both samples are high and inconsistent within the determinations for Sample M73.
 8XLRJJ (X) - Data for both samples are high.
 DMY5L5 (X) - Low data for Sample M74. Possibly data for Coblat were reported instead of Copper for Sample M74.
 EAYG1V (X) - High data for Sample M73.
 PBT2KR (X) - Data for both samples are high.

Interlaboratory Testing Program for Metals

Analysis 185

Chemical Analysis Element #6 - Corrosion Resistant Steel - Percent COPPER (Cu)

SAMPLE M73 = 0.5206 Percent SAMPLe M74 = 0.3630 Percent



Interlaboratory Testing Program for Metals

Analysis 186

Chemical Analysis Element #7 - Corrosion Resistant Steel - Percent

NICKEL (Ni)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1YNX3Y		8.067	0.005	0.07	8.210	-0.088	-1.16	OE
2D3T9G		8.123	0.061	0.93	8.303	0.005	0.07	OE
327J8J		8.079	0.017	0.26	8.357	0.059	0.77	OE
3ESWHV		7.986	-0.076	-1.15	8.192	-0.106	-1.39	DR
3S5181		8.072	0.010	0.15	8.388	0.090	1.18	OE
3SSF5M5		8.099	0.037	0.56	8.255	-0.043	-0.57	OE
3TMX23	X	8.303	0.241	3.66	8.007	-0.291	-3.83	GD
6756WP		8.172	0.110	1.66	8.359	0.061	0.81	DR
8FH47K		8.060	-0.002	-0.03	8.350	0.052	0.68	OE
9AN6Y1		8.020	-0.042	-0.64	8.280	-0.018	-0.24	GD
9CM439		7.988	-0.074	-1.12	8.209	-0.089	-1.17	WD
9SCML5		8.079	0.017	0.26	8.331	0.033	0.44	GD
A2LDSS		7.980	-0.082	-1.25	8.130	-0.168	-2.21	OE
ACBXSK		8.163	0.101	1.54	8.320	0.022	0.29	OE
APJX6P		8.067	0.005	0.07	8.383	0.085	1.12	OE
CG3NG7		8.042	-0.020	-0.31	8.314	0.016	0.21	OE
EJUUFE		7.977	-0.085	-1.30	8.223	-0.075	-0.98	XX
EURX9P		8.123	0.061	0.93	8.400	0.102	1.34	OE
FF8MDM	X	8.260	0.198	3.00	8.313	0.015	0.20	OE
FQ54G3	X	7.850	-0.212	-3.22	8.249	-0.049	-0.64	WD
GC3UVD		8.060	-0.002	-0.03	8.310	0.012	0.16	DR
GJ8JKY		8.027	-0.035	-0.54	8.347	0.049	0.64	OE
GM96BM		8.123	0.061	0.93	8.307	0.009	0.11	ED
GNNBPQS		8.110	0.048	0.73	8.403	0.105	1.38	OE
H9LR3Z		8.020	-0.042	-0.64	8.207	-0.091	-1.20	OE
JDH3KS		8.108	0.046	0.70	8.396	0.098	1.29	OE
JJM4EU		8.047	-0.015	-0.23	8.253	-0.045	-0.59	XR
JUKTG9		8.055	-0.007	-0.11	8.315	0.017	0.22	OE
JXC5VT		8.024	-0.038	-0.57	8.296	-0.002	-0.02	OE
K2EDZE		8.112	0.050	0.76	8.342	0.044	0.58	OE
KRA8RM		8.090	0.028	0.42	8.413	0.115	1.51	GD
L283M2	X	8.335	0.273	4.15	8.417	0.119	1.56	DR
LK2CA7		8.074	0.012	0.18	8.231	-0.067	-0.89	GD
LPULH7		8.040	-0.022	-0.34	8.243	-0.055	-0.72	OE
M1Z1PA		7.953	-0.109	-1.65	8.190	-0.108	-1.42	IC
M4LCFN		8.077	0.015	0.22	8.262	-0.036	-0.48	GD
MBT5LW		8.036	-0.026	-0.40	8.271	-0.027	-0.36	WC
N7TL6K		8.034	-0.028	-0.43	8.223	-0.075	-0.99	OE
NRM1ED		8.040	-0.022	-0.34	8.347	0.049	0.64	OE
QNY45E		8.069	0.007	0.10	8.292	-0.006	-0.08	WD
QVRKC5	X	8.077	0.015	0.22	8.069	-0.229	-3.01	GD
QX7Q9N		8.140	0.078	1.18	8.323	0.025	0.33	OE
QZMUFX	X	8.140	0.078	1.18	8.597	0.299	3.92	IC
RJBC5P		8.097	0.035	0.52	8.303	0.005	0.07	WD
RMF4FA		8.103	0.041	0.63	8.287	-0.011	-0.15	XR

Interlaboratory Testing Program for Metals

Analysis 186

Chemical Analysis Element #7 - Corrosion Resistant Steel - Percent
NICKEL (Ni)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
RUPW3E	*	7.860	-0.202	-3.07	8.146	-0.152	-2.00	OE
RZ4KBH		8.041	-0.021	-0.32	8.260	-0.038	-0.50	WD
RZ77XG		8.077	0.015	0.22	8.193	-0.105	-1.38	OE
S6UUDY		8.061	-0.001	-0.01	8.289	-0.009	-0.12	IC
SCDU3Y		8.023	-0.039	-0.59	8.340	0.042	0.55	OE
T36QDE		8.006	-0.056	-0.85	8.315	0.017	0.22	WD
T3RNWC		7.950	-0.112	-1.70	8.240	-0.058	-0.76	OE
TDUVXL	*	8.150	0.088	1.33	8.490	0.192	2.52	OE
TLYZDQ		8.138	0.076	1.16	8.324	0.026	0.35	OE
TXL14Q	*	8.234	0.172	2.61	8.379	0.081	1.06	IC
TXP44M		8.097	0.035	0.52	8.283	-0.015	-0.19	OE
TYQSRQ		8.039	-0.023	-0.35	8.340	0.042	0.55	OE
UPAAFJ		8.073	0.011	0.17	8.283	-0.015	-0.19	XR
WHVN9K		7.987	-0.075	-1.15	8.295	-0.003	-0.04	GD
WQ4X2X		8.153	0.091	1.38	8.433	0.135	1.78	OE
WQDZDZ		8.105	0.043	0.65	8.446	0.148	1.95	OE
WTTD4Z		8.073	0.011	0.17	8.239	-0.059	-0.78	DR
X3A26L		8.133	0.071	1.07	8.324	0.026	0.34	OE
XALWYP		8.029	-0.033	-0.50	8.249	-0.049	-0.65	WD
YD57RX		7.898	-0.164	-2.49	8.150	-0.148	-1.95	OE
YMYA1L	X	7.710	-0.352	-5.34	8.250	-0.048	-0.63	OE

Summary Statistics

	Sample M73		Sample M74	
Grand Means	8.0621	Percent	8.2980	Percent
Std Dev Btwn Labs	0.0659	Percent	0.0761	Percent
Statistics based on 59 of 66 reporting participants				

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #186

3TMX23 (X) - High data for Sample M73. Low data for Sample M74.

FF8MDM (X) - High data for Sample M73.

FQ54G3 (X) - Low data for Sample M73.

L283M2 (X) - High data for Sample M73.

QVRKC5 (X) - Low data for Sample M74.

QZMUFX (X) - High data for Sample M74.

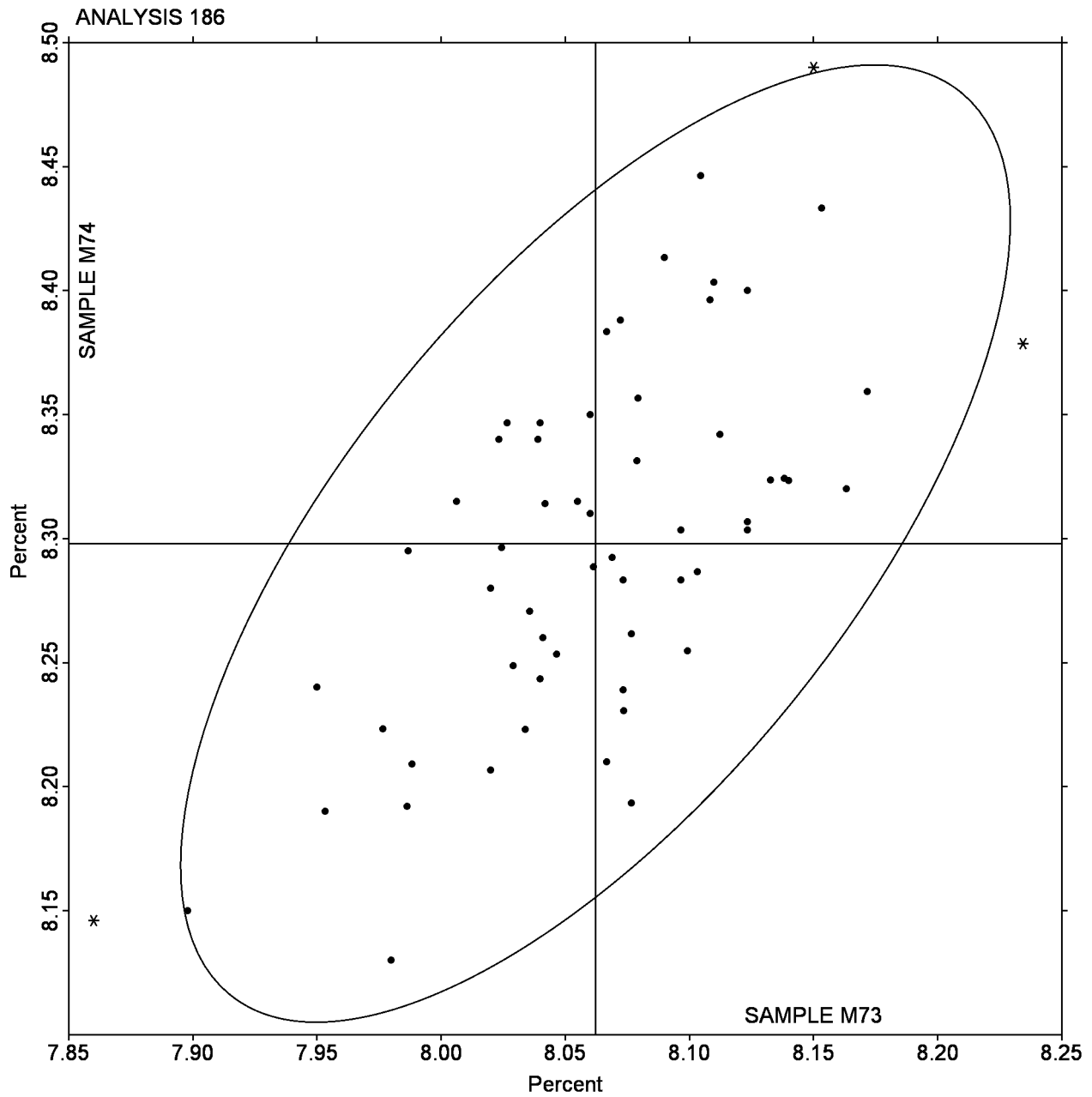
YMYA1L (X) - Low data for Sample M73.

Interlaboratory Testing Program for Metals

Analysis 186

Chemical Analysis Element #7 - Corrosion Resistant Steel - Percent NICKEL (Ni)

SAMPLE M73 = 8.0621 Percent SAMPLe M74 = 8.2980 Percent



Interlaboratory Testing Program for Metals

Analysis 187

Chemical Analysis Element #8 - Corrosion Resistant Steel - Percent
CHROMIUM (Cr)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
16PNZ5		17.92	0.01	0.08	18.31	0.05	0.39	OE
2F4BCW		17.89	-0.02	-0.17	18.25	-0.01	-0.05	DR
2FZLRD		17.97	0.06	0.51	18.34	0.08	0.62	OE
2RULUB		18.00	0.09	0.73	18.36	0.10	0.80	OE
3EUTS4	X	18.43	0.52	4.28	18.43	0.17	1.35	GD
3GPVZY		17.94	0.03	0.27	18.22	-0.04	-0.28	XR
45QH9E		17.81	-0.10	-0.85	18.17	-0.09	-0.73	WD
4GTD7N		17.95	0.04	0.35	18.12	-0.14	-1.06	OE
4KTKED		18.05	0.14	1.14	18.31	0.05	0.39	OE
57PGZR		17.85	-0.06	-0.50	18.24	-0.02	-0.13	OE
5986WP		17.85	-0.06	-0.47	18.09	-0.17	-1.30	OE
5TVXR8		17.89	-0.02	-0.14	18.22	-0.04	-0.34	XR
5U9RPM		17.79	-0.12	-0.99	18.12	-0.14	-1.11	OE
6124SP		17.73	-0.18	-1.45	18.14	-0.12	-0.93	GD
6EVH8W		18.14	0.23	1.88	18.34	0.08	0.60	ED
6MRV8J		17.71	-0.20	-1.67	18.14	-0.12	-0.91	IC
6R43Q4		17.83	-0.08	-0.63	18.10	-0.16	-1.24	GD
73WZ8A		17.90	-0.01	-0.06	18.27	0.01	0.10	OE
7J5XH2		17.77	-0.14	-1.15	18.29	0.03	0.21	GD
843D3N		17.94	0.03	0.24	18.25	-0.01	-0.05	OE
8SUJ1B	X	17.25	-0.66	-5.39	18.21	-0.05	-0.36	OE
9CHBQZ		17.87	-0.04	-0.31	18.24	-0.02	-0.15	DR
9LCQXX		17.79	-0.12	-0.96	18.19	-0.07	-0.57	TI
B6RTB2		17.95	0.04	0.32	18.11	-0.15	-1.14	GD
BH7X4A		18.20	0.29	2.40	18.27	0.01	0.10	DR
DPPJ6N		17.90	-0.01	-0.09	18.34	0.08	0.60	OE
E3AVV4		17.81	-0.10	-0.83	18.26	0.00	0.00	OE
E6S5PM		17.82	-0.09	-0.77	18.21	-0.05	-0.36	OE
EEZZHD		17.94	0.03	0.21	18.39	0.13	1.01	XX
EGNYQT		17.77	-0.14	-1.15	18.21	-0.05	-0.41	OE
F5KQ9Z		17.94	0.03	0.24	18.18	-0.08	-0.60	GD
F5MYCX		17.87	-0.04	-0.31	18.08	-0.18	-1.37	WD
FRGUST		17.97	0.06	0.46	18.23	-0.03	-0.21	OE
GCGVPM		17.73	-0.18	-1.48	18.13	-0.13	-1.04	OE
GZX55B		18.10	0.19	1.58	18.39	0.13	0.99	OE
H82YXW		18.00	0.09	0.70	18.40	0.14	1.06	OE
H92LGP		18.03	0.12	0.95	18.49	0.23	1.79	OE
J4RTUF		18.06	0.15	1.22	18.12	-0.14	-1.06	OE
JBFEPU		17.93	0.02	0.13	18.28	0.02	0.13	XR
JDL5QH		18.08	0.16	1.35	18.48	0.22	1.69	OE
KHBTNN		18.11	0.20	1.66	18.48	0.22	1.68	WD
KPNAB9		17.89	-0.02	-0.17	18.28	0.02	0.18	DR
L1ENDX		17.94	0.02	0.20	18.30	0.04	0.34	OE
L7AAQJ	*	18.24	0.33	2.72	18.62	0.36	2.77	OE
L7Y166		17.99	0.08	0.65	18.42	0.16	1.24	OE

Interlaboratory Testing Program for Metals

Analysis 187

Chemical Analysis Element #8 - Corrosion Resistant Steel - Percent
CHROMIUM (Cr)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
LH9YPW	X	17.49	-0.42	-3.47	17.85	-0.41	-3.16	WD
M6M2Q8		17.81	-0.10	-0.80	18.23	-0.03	-0.26	OE
MM2VZZ		17.78	-0.13	-1.04	18.11	-0.15	-1.19	OE
MNBMLV		17.85	-0.06	-0.50	18.23	-0.03	-0.21	OE
P4GA7U		17.75	-0.16	-1.32	18.09	-0.17	-1.32	OE
Q2YYH8		18.02	0.11	0.89	18.46	0.20	1.58	OE
RNPQY4		18.17	0.26	2.12	18.15	-0.11	-0.84	DR
SQHUGH		17.89	-0.02	-0.20	18.33	0.07	0.54	OE
T2CUXX		18.08	0.17	1.41	18.35	0.09	0.70	GD
U55TND	*	18.28	0.37	3.00	18.62	0.36	2.77	OE
VFAYJN		17.85	-0.06	-0.53	18.08	-0.18	-1.37	IC
WHRCA2		17.94	0.03	0.24	18.28	0.02	0.18	OE
WMZ5AM		17.80	-0.11	-0.94	18.19	-0.07	-0.54	WC
XF3XXD		17.96	0.05	0.38	18.29	0.03	0.21	OE
XJCXC4	X	18.31	0.40	3.25	18.35	0.09	0.68	OE
Y3PBPS	X	18.50	0.59	4.83	18.74	0.48	3.76	OE
Z4VQGC		17.82	-0.09	-0.72	18.16	-0.10	-0.80	OE
Z8EKJ5		17.79	-0.12	-1.02	18.08	-0.18	-1.37	GD
ZAAK18		17.79	-0.13	-1.03	18.13	-0.13	-0.97	WD
ZTAUDL		17.89	-0.02	-0.14	18.22	-0.04	-0.28	WD
ZTUD54		17.92	0.01	0.10	18.23	-0.03	-0.26	WD

Summary Statistics

	Sample M73		Sample M74	
Grand Means	17.911	Percent	18.260	Percent
Std Dev Btwn Labs	0.122	Percent	0.129	Percent
Statistics based on 58 of 66 reporting participants				

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #187

3EUTS4 (X) - High data for Sample M73.

8SUJ1B (X) - Low data for Sample M73.

LH9YPW (X) - Data for both samples are low. Possible systematic error.

XJCXC4 (X) - High data for Sample M73.

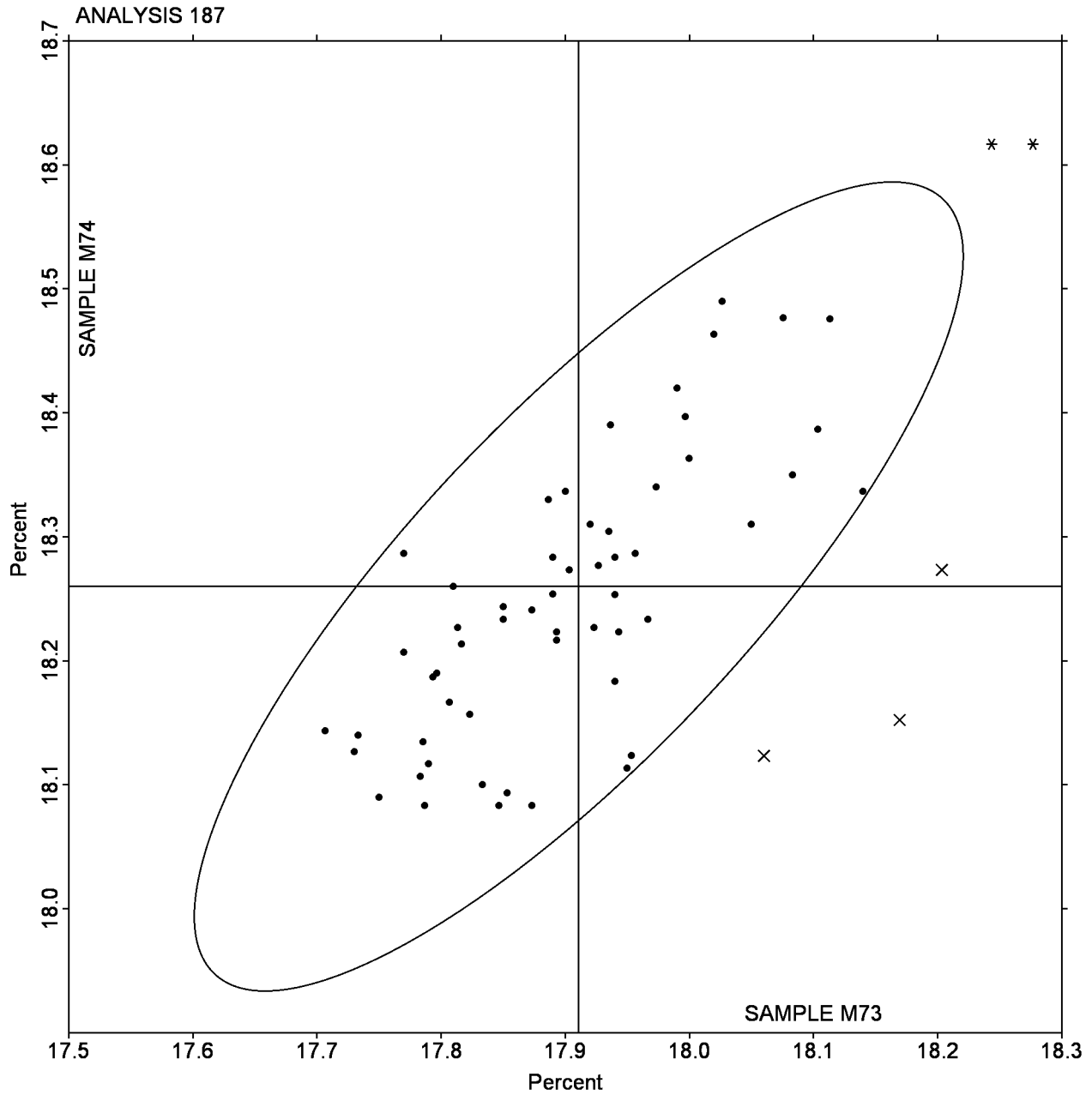
Y3PBPS (X) - Data for both samples are high. Possible systematic error.

Interlaboratory Testing Program for Metals

Analysis 187

Chemical Analysis Element #8 - Corrosion Resistant Steel - Percent CHROMIUM (Cr)

SAMPLE M73 = 17.911 Percent SAMPLe M74 = 18.260 Percent



Interlaboratory Testing Program for Metals

Analysis 188

Chemical Analysis Element #9 - Corrosion Resistant Steel - Percent

MOLYBDENUM (Mo)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
1AKD6G		0.119	-0.001	-0.11	0.295	-0.001	-0.07	OE
1HQNYM		0.122	0.002	0.18	0.297	0.001	0.09	WD
1MEKC4		0.106	-0.014	-1.38	0.264	-0.032	-2.43	OE
1P6DW9		0.128	0.008	0.82	0.296	0.000	0.01	OE
2MG4VZ		0.098	-0.022	-2.12	0.288	-0.008	-0.61	OE
2MKNV9		0.129	0.009	0.86	0.321	0.025	1.93	OE
2W7Q2W		0.117	-0.003	-0.28	0.289	-0.007	-0.53	OE
59AFSE	X	0.239	0.119	11.60	0.362	0.066	5.12	OE
5YQRTP	X	0.160	0.040	3.90	0.340	0.044	3.42	OE
76PTJL	*	0.145	0.025	2.41	0.332	0.036	2.78	OE
8CZ4UQ		0.134	0.014	1.37	0.305	0.010	0.75	OE
8N7375		0.110	-0.010	-0.95	0.297	0.001	0.09	OE
92XDQ4		0.127	0.007	0.66	0.300	0.004	0.34	XR
9BJ5CL	*	0.105	-0.015	-1.41	0.261	-0.035	-2.68	OE
AMD927	*	0.090	-0.030	-2.90	0.282	-0.014	-1.07	OE
AQVJVQ		0.114	-0.006	-0.57	0.302	0.007	0.52	OE
AXJ47Y		0.131	0.011	1.08	0.304	0.009	0.68	GD
BPM4F3		0.126	0.006	0.63	0.288	-0.008	-0.58	GD
CXX7DU		0.119	-0.001	-0.08	0.291	-0.005	-0.35	IC
CZ8J5R		0.114	-0.006	-0.53	0.292	-0.003	-0.25	OE
DFRYKU		0.118	-0.002	-0.21	0.298	0.002	0.16	WD
DKLSPV		0.106	-0.014	-1.34	0.265	-0.031	-2.35	DR
DVT71L		0.123	0.003	0.31	0.305	0.009	0.73	OE
EH6D8S		0.137	0.017	1.67	0.299	0.004	0.29	OE
EJ1VPP		0.098	-0.022	-2.12	0.316	0.020	1.57	GD
ENT8YS		0.121	0.001	0.08	0.286	-0.010	-0.76	OE
G13KCQ		0.118	-0.002	-0.15	0.292	-0.004	-0.27	GD
GALZF1		0.118	-0.002	-0.15	0.297	0.002	0.14	OE
GUFVE8		0.131	0.011	1.12	0.290	-0.006	-0.43	IC
H1C2MV		0.120	0.000	0.05	0.296	0.001	0.06	GD
HG123Z		0.124	0.004	0.37	0.294	-0.001	-0.09	OE
JGBSEZ		0.118	-0.002	-0.21	0.294	-0.001	-0.09	WD
JZC71Q		0.125	0.005	0.53	0.306	0.010	0.81	OE
K6W2U7		0.123	0.003	0.34	0.303	0.008	0.60	OE
KA4687		0.119	-0.001	-0.08	0.297	0.001	0.11	OE
KFUXGG		0.117	-0.003	-0.24	0.295	-0.001	-0.04	XR
KGHY76		0.138	0.018	1.80	0.306	0.011	0.83	GD
KVSJ3G		0.106	-0.014	-1.38	0.280	-0.016	-1.22	DR
L9ETVV		0.127	0.007	0.70	0.311	0.015	1.19	OE
LS5WV9		0.125	0.005	0.47	0.294	-0.002	-0.14	OE
N34GN6		0.114	-0.006	-0.57	0.300	0.004	0.32	OE
NHQ5FQ		0.118	-0.002	-0.18	0.297	0.001	0.09	XR
NNTZLS	*	0.118	-0.002	-0.15	0.327	0.031	2.40	WD
P6STEW		0.134	0.014	1.34	0.304	0.008	0.65	OE
PDS5QJ		0.120	0.000	0.05	0.298	0.002	0.19	GD

Interlaboratory Testing Program for Metals

Analysis 188

Chemical Analysis Element #9 - Corrosion Resistant Steel - Percent
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
Q8GFQP		0.108	-0.012	-1.12	0.291	-0.005	-0.38	OE
QCJP9Z		0.140	0.020	1.96	0.300	0.004	0.34	OE
RB9X42		0.112	-0.008	-0.76	0.285	-0.011	-0.84	GD
SFJ1JC		0.122	0.002	0.21	0.318	0.022	1.70	OE
TPRVAP		0.118	-0.002	-0.21	0.301	0.006	0.45	IC
U13XNZ		0.115	-0.005	-0.44	0.308	0.012	0.93	DR
U1PZEJ		0.123	0.003	0.27	0.276	-0.020	-1.53	OE
UF2HVQ		0.131	0.011	1.08	0.298	0.002	0.19	WD
VG88GH	X	0.170	0.050	4.87	0.353	0.058	4.45	DR
VLAJXW		0.120	0.000	0.02	0.290	-0.006	-0.43	XX
VMVL9Z		0.106	-0.014	-1.37	0.296	0.000	0.02	OE
VSTU56		0.124	0.004	0.44	0.299	0.003	0.24	OE
VW28HC		0.117	-0.003	-0.28	0.295	-0.001	-0.04	WD
WJW2VX		0.112	-0.008	-0.73	0.283	-0.013	-0.99	DR
Y68H4S		0.124	0.004	0.40	0.283	-0.012	-0.94	OE
ZGZJTM		0.106	-0.014	-1.34	0.289	-0.007	-0.53	DR

Summary Statistics

	Sample M73	Sample M74
Grand Means	0.1198 Percent	0.2960 Percent
Std Dev Btwn Labs	0.0103 Percent	0.0130 Percent
Statistics based on 57 of 61 reporting participants		

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #188

59AFSE (X) - Data for both samples are high.

5YQRTP (X) - Data for both samples are high.

VG88GH (X) - Data for both samples are high.

Interlaboratory Testing Program for Metals

Analysis 189

Chemical Analysis Element #10 - Corrosion Resistant Steel - Percent
NITROGEN(N)

WebCode	Data Flag	Sample M73			Sample M74			Instr Code
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
4WVCGD		0.0468	-0.0012	-0.91	0.0778	-0.0006	-0.25	CO
5MFLWL		0.0490	0.0010	0.72	0.0823	0.0039	1.52	OE
5SWH1U	X	0.0757	0.0277	20.20	0.0463	-0.0321	-12.39	IG
9BF48S		0.0480	0.0000	-0.01	0.0793	0.0009	0.36	XX
9MK537		0.0467	-0.0013	-0.93	0.0790	0.0006	0.23	OE
9V2EQ8		0.0498	0.0018	1.31	0.0777	-0.0007	-0.29	CO
A87UDV		0.0497	0.0017	1.21	0.0823	0.0039	1.52	XX
BQ9AHF	X	0.0640	0.0160	11.68	0.0750	-0.0034	-1.32	OE
D6H9YH		0.0477	-0.0003	-0.25	0.0763	-0.0021	-0.80	CI
DQZ6Q8		0.0517	0.0037	2.67	0.0837	0.0053	2.03	IR
G6LPK1		0.0470	-0.0010	-0.76	0.0780	-0.0004	-0.16	OE
HDY5MU	*	0.0457	-0.0023	-1.71	0.0713	-0.0071	-2.74	OE
HSSPWC		0.0490	0.0010	0.72	0.0795	0.0011	0.42	CO
K1JCUZ		0.0460	-0.0020	-1.49	0.0751	-0.0033	-1.27	CI
L4HWR3	X	0.0550	0.0070	5.11	0.0845	0.0061	2.35	OE
LS7C51		0.0485	0.0005	0.36	0.0800	0.0016	0.61	CO
ME8Q6Y		0.0480	0.0000	-0.01	0.0780	-0.0004	-0.16	CO
MRBCR2	X	0.0353	-0.0127	-9.31	0.0559	-0.0225	-8.69	CO
MXLHML		0.0471	-0.0009	-0.64	0.0777	-0.0007	-0.26	CO
NXPY7D		0.0477	-0.0003	-0.25	0.0760	-0.0024	-0.93	OE
P4AAWT		0.0483	0.0003	0.19	0.0777	-0.0007	-0.28	CO
P5J3K5		0.0494	0.0014	1.00	0.0795	0.0011	0.43	CO
Q5MV4Y		0.0473	-0.0007	-0.52	0.0787	0.0003	0.10	CO
QB6HXY		0.0474	-0.0006	-0.45	0.0787	0.0003	0.10	CI
V2UCAG		0.0477	-0.0003	-0.23	0.0770	-0.0014	-0.53	CT
X6KDJ8	X	0.0895	0.0415	30.33	0.0830	0.0046	1.76	GD
X8ZQMV	X	0.0483	0.0003	0.21	0.0613	-0.0171	-6.60	OE
ZV2KNB		0.0480	0.0000	-0.01	0.0793	0.0009	0.36	CO

Summary Statistics

	Sample M73		Sample M74	
Grand Means	0.04801	Percent	0.07840	Percent
Stnd Dev Btwn Labs	0.00137	Percent	0.00259	Percent
Statistics based on 22 of 28 reporting participants				

Samples M73 , M74 : AISI 302, AISI 304

Comments on assigned Data Flags for Test #189

5SWH1U (X) - High data for Sample M73. Low data for Sample M74.

BQ9AHF (X) - High data for Sample M73.

L4HWR3 (X) - High data for Sample M73.

MRBCR2 (X) - Data for both samples are low and inconsistent within the determinations for both samples.

X6KDJ8 (X) - Data for Sample M73 are high, and inconsistent within the determinations for both samples.

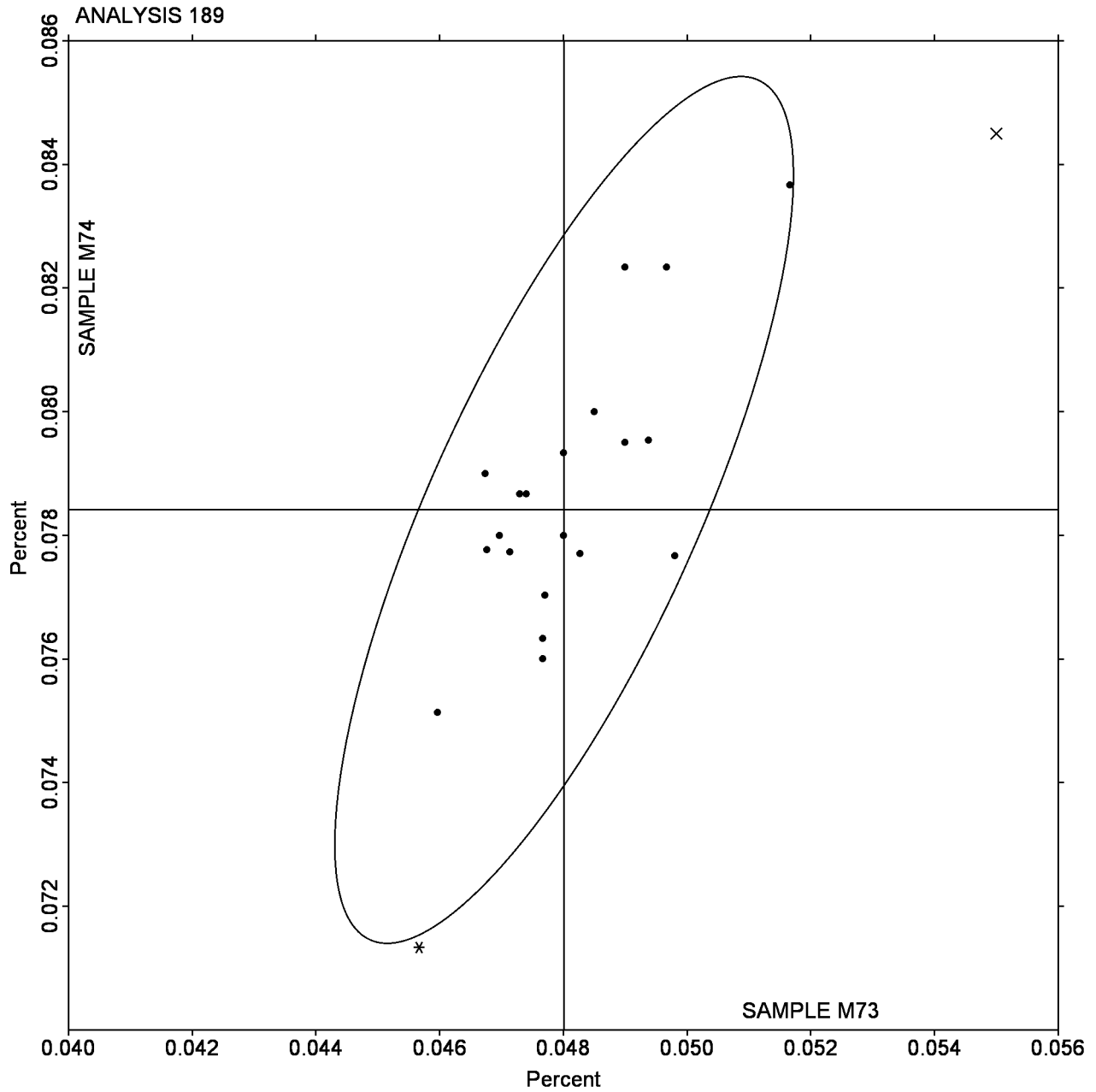
X8ZQMV (X) - Low data for Sample M74.

Interlaboratory Testing Program for Metals

Analysis 189

Chemical Analysis Element #10 - Corrosion Resistant Steel - Percent NITROGEN(N)

SAMPLE M73 = 0.04801 Percent SAMPLe M74 = 0.07840 Percent



Instrument and Method Code List - Report# 84

Instrument information as provided by laboratories

Analysis Analysis Name

115 **Fastener Wedge Tensile (10 degree)**

Instrument code and description

BA	Baldwin
BT	B.T.T. Corporation
FI	Fuel Instruments & Engineers
GA	Galdabini
HT	Hung Ta Instrument
IN	Instron
MT	MTS / Sintech
RI	Riehle Test System
SA	Satec
SH	Shimadzu
TO	Tinius Olsen
UN	United Testing Systems
XX	Instrument manufacturer not specified by lab

116 **Fastener Axial Tensile**

Instrument code and description

BA	Baldwin
DY	Dynamic Testing Systems
FI	Fuel Instruments & Engineers
GA	Galdabini
HT	Hung Ta Instrument
IN	Instron
MT	MTS / Sintech
RI	Riehle Test System
SA	Satec
SH	Shimadzu
TO	Tinius Olsen
UN	United Testing Systems
WZ	Zwick
XX	Instrument manufacturer not specified by lab

120 **Rockwell Hardness: C Scale**

Instrument code and description

AK	Akashi
AN	Antonik
BU	Buehler
CL	Clark
EM	EMCO
FI	FIE
FU	Future-Tech
IN	Indentec
LE	Leco
MA	Matsuzawa
MI	Mitutoyo
NA	New Age Industries
UN	United Testing Systems
WI	Wilson / Instron Instruments
WO	Wolpert Tester

120 **Rockwell Hardness: C Scale**

Instrument code and description

XX Instrument manufacturer not specified by lab

125 **Rockwell Hardness: Externally Threaded Fasteners**

Instrument code and description

AF AFFRI
AK Akashi
AN Antonik
AV Avery
BU Buehler
CL Clark
EM EMCO
EN Enco
FR Frank Well
FT Future-Tech
GR Greenslade & Co.
IN Indentec
KF Karl Frank GmbH
LE Leco
MA Matsuzawa
MI Mitutoyo
NA New Age Industries
RS Reicherter/C.Stiefelmayer Briro
SP Service Physical Tester
TG Time Group
UN United Testing Systems
WI Wilson / Instron Instruments
WO Wolpert Tester
XX Instrument manufacturer not specified by lab

126 **Vickers Hardness: Externally Threaded Fasteners**

Instrument code and description

AK Akashi
AR Vickers Armstrongs hardness tester
CL Clark
FU Future-Tech
GN Albert Gnehm
LE Leco
MI Mitutoyo
SH Shimadzu
WO Wolpert Tester
WT Wilson-Tukon
XX Instrument manufacturer not specified by lab

127 **Fastener Wedge Tensile (10 degree) - Metric**

Instrument code and description

HT Hung Ta Instrument
IN Instron
LO Losenhausen
MF MFL Systeme
RO Roell & Korthaus
SA Satec
SH Shimadzu
ST Schenck-Trebel
TO Tinius Olsen

127 **Fastener Wedge Tensile (10 degree) - Metric**

Instrument code and description

UN United Testing Systems
WB Walter + Bai
XX Instrument manufacturer not specified by lab

128 **Fastener Axial Tensile - Metric**

Instrument code and description

GA Galdabini
IN Instron
LO Losenhausen
RO Roell & Korthaus
SA Satec
SH Shimadzu
ST Schenck-Trebel
TO Tinius Olsen
UN United Testing Systems
WB Walter + Bai
WO Wolpert
XX Instrument manufacturer not specified by lab

129 **Fastener Double Shear**

Instrument code and description

AP Applied Test System
IN Instron
RI Riehle Test System
SA Satec
TO Tinius Olsen
WZ Zwick
XX Instrument manufacturer not specified by lab

130 **Tensile Strength: Lab-Machined Flat Steel**

Instrument code and description

ZZ Instruments No Longer Tracked

136 **Rockwell Superficial Hardness (30N Scale)**

Instrument code and description

AN Antonik
BU Buehler
CL Clark
FT Future-Tech
LE Leco
MI Mitutoyo
NA New Age Industries
UN United Testing Systems
WI Wilson / Instron Instruments
XX Instrument manufacturer not specified by lab

160 **Copper-based Alloy, Element #1**

Method code and description

BD By Difference
DR Direct Reading Optical Emission Spectrometr
ED X-ray Fluorescence, Energy Dispersive
EL Electrochemistry
GR Gravimetric

160 **Copper-based Alloy, Element #1**

Method code and description

IC	ICP Spectrometry
OE	Optical Emission Spectrometry
WC	Wet Chemistry (not specified)
WD	X-ray Fluorescence, Wavelength Dispersive
XX	Method not specified by lab

180 **Corrosion Resistant Steel, Element #1**

Method code and description

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