Collaborative Testing Services, Inc.

Fasteners & Metals Interlaboratory Testing Program

Summary Report Cycle 144, 4th Qtr 2023

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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, hemp, 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 100 countries, currently participate in the CTS programs.
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Key for Fasteners & Metals Program Web Summary Report

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

Lab Mean - The average of the test results obtained by the participant.

Grand Mean - The average of the LAB MEANS for all included participants. Laboratories flagged with an X or an M (see DATA FLAG column) are excluded from the GRAND MEAN.

Between-Lab Standard Deviation - An indication of the precision of measurement between the laboratories. The greater the spread of the LAB MEANS about the GRAND MEAN, the larger the BETWEEN-LAB STANDARD DEVIATION (and vice versa).

Comparative Performance Value (CPV) - An indication of how well a laboratory's results agree with the other participants. The CPV is a ratio indicating the number of standard deviations from the GRAND MEAN. CPV = (LAB MEAN - GRAND MEAN)/ BETWEEN-LAB STANDARD DEVIATION. The closer a laboratory's COMPARATIVE PERFORMANCE VALUE is to zero, the more consistent its results are with the other participants' data (and vice versa).

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

Data Flag - DATA FLAGS are assigned based on the simultaneous analysis of both samples tested. Refer to the following chart for an explanation of each symbol:

Data Flags

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

Graph - For each laboratory, the Lab Mean for the second sample (y-axis) is plotted against the Lab Mean for the first sample (x-axis) with each point representing a laboratory. The horizontal and vertical cross-hairs are the Grand Means for each sample. When 20 or more laboratories are included in the statistics, an ellipse is also drawn so that 95% of the time a randomly selected laboratory will be included inside the ellipse. Plotted data flags are explained above. Labs not receiving a data flag appear as points on the plot.

Fasteners and Metals Interlaboratory Testing Program

Analysis 1004

Charpy V-Notch (Room Temperature)
ASTM E23

		Sample U95			Sample U96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22NBFU		54.02	4.45	1.04	52.19	0.43	0.12
3HMYUY		53.33	3.76	0.88	48.36	-3.41	-0.95
66FLYJ		46.00	-3.57	-0.83	48.00	-3.76	-1.05
7D4UWF		56.00	6.43	1.50	54.00	2.24	0.63
7TDFMW		50.67	1.10	0.26	49.00	-2.76	-0.77
9GDPUN		53.78	4.21	0.98	56.49	4.73	1.32
9KU9L6		52.40	2.83	0.66	51.12	-0.64	-0.18
AH3H3C		43.33	-6.23	-1.45	44.67	-7.10	-1.99
BMU4BQ		47.80	-1.77	-0.41	55.57	3.80	1.07
CL9Y7X		48.67	-0.90	-0.21	47.33	-4.43	-1.24
EVG4GE		50.57	1.00	0.23	55.53	3.77	1.06
G4J8F9	*	39.90	-9.67	-2.25	55.80	4.04	1.13
HNF8X4		47.54	-2.03	-0.47	46.38	-5.38	-1.51
L2HTWY		52.33	2.77	0.64	55.00	3.24	0.91
M6VTVC		49.10	-0.47	-0.11	47.86	-3.90	-1.09
MYJUAK	X	70.03	20.47	4.76	65.80	14.04	3.93
T27LLN		52.67	3.10	0.72	53.00	1.24	0.35
TBBT2N		52.59	3.03	0.70	54.96	3.20	0.90
THYBJ7		50.67	1.10	0.26	50.33	-1.43	-0.40
U7WD9C		41.33	-8.23	-1.92	50.33	-1.43	-0.40
X86HMC		44.92	-4.65	-1.08	51.95	0.19	0.05
X92XXN		53.97	4.40	1.02	56.27	4.50	1.26
YQDYA2		51.77	2.21	0.51	51.10	-0.67	-0.19
ZKMZE7		46.67	-2.90	-0.67	55.33	3.57	1.00

Summary Statistics

	Sample U95		Sample U96	
Grand Means	49.57	Joule	51.76	Joule
Stnd Dev Btwn Labs	4.30	Joule	3.57	Joule

Samples U95, U96 : AISI 4340, AISI 4340

Statistics based on 23 of 24 reporting participants

Comments on Assigned Data Flags for Test #1004

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

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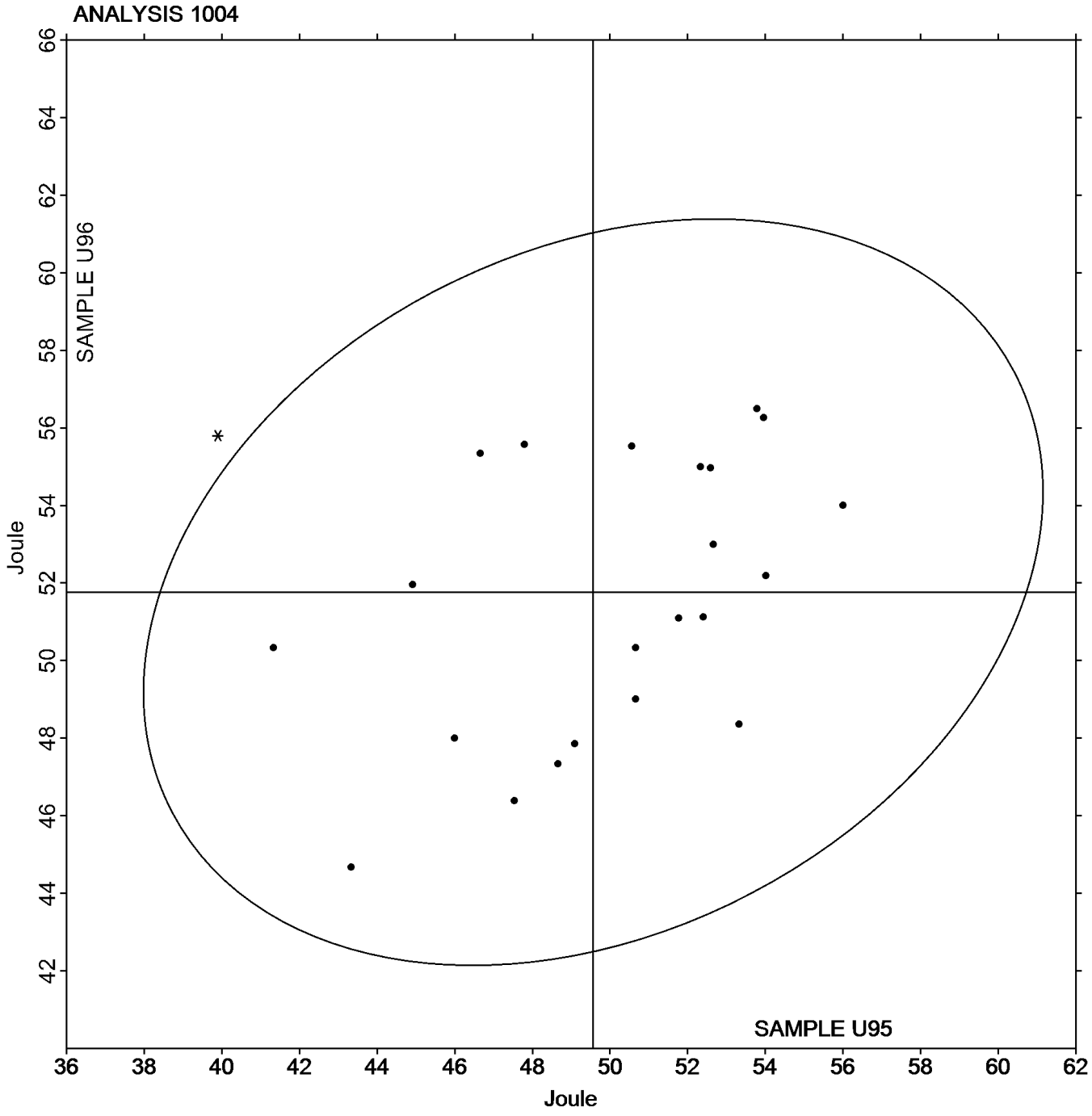
SAMPLE U95	SAMPLE U96
49.57 Joule	51.76 Joule



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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22NBFU		78.15	-0.23	-0.25	69.69	-1.71	-1.59
2KWK8E		79.89	1.51	1.65	73.03	1.63	1.52
2Q62PF		78.70	0.32	0.35	72.50	1.10	1.03
2UZTVR	M	No Data Reported			72.80	1.40	1.31
2XHZBE		77.56	-0.82	-0.89	69.16	-2.24	-2.09
32332K		77.44	-0.94	-1.03	71.76	0.36	0.33
38LAH4		77.90	-0.48	-0.52	72.40	1.00	0.93
3JXRXD		77.89	-0.49	-0.54	71.21	-0.19	-0.17
3NVCYC		79.00	0.62	0.68	72.05	0.65	0.60
3P4BAK		77.10	-1.28	-1.40	70.30	-1.10	-1.03
3QX2FY		78.47	0.09	0.10	70.92	-0.48	-0.45
4XF3YA		78.73	0.35	0.39	71.18	-0.22	-0.21
6R4EZX		79.59	1.21	1.32	73.18	1.78	1.66
73EDZY	X	77.00	-1.38	-1.50	73.10	1.70	1.59
796PVV		78.18	-0.20	-0.22	70.92	-0.48	-0.45
7BGDKL		78.67	0.29	0.32	72.84	1.44	1.34
7DWY38		77.00	-1.38	-1.50	70.30	-1.10	-1.03
7NZVFB		78.61	0.23	0.26	71.79	0.39	0.37
7YFYC9		79.10	0.72	0.79	71.50	0.10	0.09
7ZEXVG		78.90	0.52	0.57	72.60	1.20	1.12
84WGFC		79.35	0.97	1.06	72.65	1.25	1.17
8RFPUM		79.47	1.09	1.19	71.74	0.33	0.31
8VVBB9		76.13	-2.25	-2.45	69.44	-1.96	-1.83
9AE36A		79.00	0.62	0.68	71.50	0.10	0.09
9B86KX		77.57	-0.81	-0.88	71.20	-0.20	-0.19
9GDPUN		78.32	-0.06	-0.06	71.07	-0.33	-0.31
A3NCTY		78.63	0.26	0.28	70.72	-0.68	-0.64
AH3H3C	X	78.70	0.32	0.35	69.20	-2.20	-2.06
AKRVKV		78.54	0.16	0.18	71.31	-0.09	-0.08
B2VRGY		77.83	-0.55	-0.60	71.21	-0.19	-0.18
B77TNN		79.77	1.39	1.52	73.53	2.13	1.99
BGLKAD		78.70	0.32	0.35	71.80	0.40	0.37
BMQJL3		79.55	1.17	1.28	71.52	0.12	0.11
BWJUXJ		76.71	-1.67	-1.82	69.12	-2.28	-2.13
BZ2UBD		79.67	1.30	1.42	72.60	1.19	1.12
C8F3CF	X	86.00	7.62	8.33	70.10	-1.30	-1.21
CFDQA7		78.70	0.32	0.35	71.40	0.00	0.00
CHEVMR	*	80.65	2.27	2.48	74.05	2.64	2.47
CK3CYK		78.68	0.30	0.33	71.35	-0.05	-0.05
CTFJEN	M	79.20	0.82	0.90	No Data Reported		
CVZ9Y2		78.60	0.22	0.24	71.70	0.30	0.28
DQNKZP		78.74	0.36	0.40	72.04	0.64	0.60
EG9CMT		78.77	0.39	0.43	72.39	0.99	0.92
EQ4GPV		78.20	-0.18	-0.19	71.30	-0.10	-0.09
EVJNDU		79.95	1.57	1.71	72.68	1.28	1.20
EZQJQ3		79.20	0.82	0.90	71.20	-0.20	-0.19
FFGPUP		78.35	-0.03	-0.03	71.14	-0.26	-0.24

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 144
4th Qtr 2023

		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
FMX727		78.40	0.02	0.02	71.50	0.10	0.09
FQXHX7		78.85	0.47	0.52	70.60	-0.80	-0.75
FYPXKP		77.50	-0.88	-0.96	71.50	0.10	0.09
G42Z97		78.10	-0.28	-0.30	70.80	-0.60	-0.56
G6VYBB		78.39	0.02	0.02	72.20	0.80	0.75
GA3GGQ		77.20	-1.18	-1.29	70.80	-0.60	-0.56
GURMCV		79.50	1.12	1.23	72.50	1.10	1.03
H7MHPG		78.10	-0.28	-0.30	71.70	0.30	0.28
HC6UHN	X	78.50	0.12	0.13	74.50	3.10	2.89
HK4BEN		78.30	-0.08	-0.08	71.90	0.50	0.47
J3ZZ8W	X	80.58	2.21	2.41	51.29	-20.12	-18.79
J8A9MF		78.09	-0.29	-0.31	70.26	-1.14	-1.06
JHQALL		77.32	-1.06	-1.16	71.08	-0.32	-0.30
JWAQXX		79.00	0.62	0.68	72.70	1.30	1.21
JY2PCW		78.47	0.09	0.10	71.77	0.36	0.34
JZ94J3		78.40	0.02	0.02	71.40	0.00	0.00
K4TBKB		77.00	-1.38	-1.50	69.50	-1.90	-1.78
KL64ZX	X	85.51	7.14	7.80	66.27	-5.13	-4.79
KLB3RM		78.00	-0.38	-0.41	70.00	-1.40	-1.31
KNV4MA		79.30	0.92	1.01	71.60	0.20	0.19
KXNCAL		77.33	-1.05	-1.15	70.58	-0.82	-0.77
KYZ3HP		77.80	-0.58	-0.63	70.50	-0.90	-0.84
LGPWCY		78.70	0.32	0.35	72.00	0.60	0.56
LWMUNV		79.19	0.81	0.89	72.08	0.68	0.64
LWYKME		77.44	-0.94	-1.02	71.55	0.15	0.14
M43W8H		78.86	0.48	0.52	70.14	-1.26	-1.18
M8EUQX		78.10	-0.28	-0.30	71.50	0.10	0.09
MUCC46	X	73.90	-4.48	-4.89	65.30	-6.10	-5.70
MWWDXQ		77.30	-1.08	-1.18	70.20	-1.20	-1.12
MYJUAK	X	70.00	-8.38	-9.15	60.00	-11.40	-10.65
MZGBEU		78.90	0.52	0.57	70.92	-0.48	-0.45
N7JL4Z		78.50	0.12	0.13	71.80	0.40	0.37
NEDUPQ		78.48	0.11	0.12	71.02	-0.38	-0.35
NFRFYT		78.00	-0.38	-0.41	71.20	-0.20	-0.19
PJ4JMA	X	75.40	-2.98	-3.25	71.00	-0.40	-0.37
PP8JVQ	*	79.40	1.02	1.12	74.00	2.60	2.43
PTP2QF	*	77.70	-0.68	-0.74	69.02	-2.38	-2.22
PUHMMD		78.35	-0.03	-0.03	71.35	-0.05	-0.05
PW9NQF		76.40	-1.98	-2.16	70.10	-1.30	-1.21
PWUFN8	*	79.26	0.88	0.96	70.27	-1.14	-1.06
PX3GHT	X	80.80	2.42	2.65	75.60	4.20	3.92
PYGYP6		77.50	-0.88	-0.96	70.60	-0.80	-0.75
QE6RRH		78.26	-0.11	-0.12	70.16	-1.25	-1.16
QHQDLQ		79.12	0.74	0.81	71.11	-0.29	-0.27
QL8K2D		78.49	0.11	0.12	71.85	0.45	0.42
R2TQMB		79.33	0.95	1.04	73.35	1.95	1.82
RBMTWZ		78.92	0.54	0.59	71.84	0.44	0.41

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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
RCB8FH		78.90	0.52	0.57	72.00	0.60	0.56
RCEPLU		76.70	-1.68	-1.83	70.30	-1.10	-1.03
T4233R		77.16	-1.22	-1.33	70.78	-0.62	-0.58
T4WVLH		78.75	0.38	0.41	72.49	1.09	1.01
T6QLRW		79.00	0.63	0.68	71.74	0.34	0.31
T9VA98		78.10	-0.28	-0.30	72.10	0.70	0.65
TBFYTK		79.19	0.81	0.89	70.92	-0.48	-0.45
TEGC7C		76.80	-1.58	-1.72	70.20	-1.20	-1.12
THYBJ7		77.19	-1.19	-1.30	70.76	-0.64	-0.59
TPZQ9E		79.10	0.72	0.79	73.30	1.90	1.77
TXVJPK		79.92	1.55	1.69	71.46	0.06	0.06
TZFKK8		78.10	-0.28	-0.30	71.40	0.00	0.00
U7WD9C	X	75.70	-2.68	-2.92	66.80	-4.60	-4.30
UXQDXP	X	74.91	-3.46	-3.78	68.92	-2.48	-2.31
UXREQ3		78.51	0.14	0.15	71.15	-0.25	-0.24
VE8YVK		77.00	-1.38	-1.50	71.00	-0.40	-0.37
VFN4JB		78.00	-0.38	-0.41	71.00	-0.40	-0.37
VRZCHW		78.70	0.32	0.35	70.30	-1.10	-1.03
W9LEFB	*	78.20	-0.18	-0.19	69.30	-2.10	-1.96
WDA7D7		77.07	-1.31	-1.43	70.63	-0.77	-0.72
WGUTD7		79.04	0.66	0.72	72.32	0.92	0.86
WMGN9J		78.90	0.52	0.57	72.52	1.12	1.04
WZA3E8		79.90	1.52	1.66	73.60	2.20	2.05
XGU7HE		79.48	1.10	1.20	72.76	1.36	1.27
XJYYBR		79.21	0.83	0.90	72.08	0.68	0.64
XNAVU8	*	76.44	-1.94	-2.12	71.07	-0.33	-0.31
XQRFGM		78.65	0.27	0.30	72.20	0.80	0.75
XRA8P8	*	76.10	-2.28	-2.49	69.30	-2.10	-1.96
XVM8NK		76.90	-1.48	-1.61	70.40	-1.00	-0.93
XXD9RM		78.90	0.52	0.57	71.90	0.50	0.47
YR8PFF		77.70	-0.68	-0.74	70.00	-1.40	-1.31
YURQA3		79.46	1.08	1.18	72.97	1.57	1.47
ZN2XB8	X	76.39	-1.99	-2.17	72.35	0.94	0.88
ZRK296	X	77.27	-1.11	-1.21	35.75	-35.65	-33.29

Summary Statistics

	Sample F95		Sample F96	
Grand Means	78.38	ksi	71.40	ksi
Stnd Dev Btwn Labs	0.92	ksi	1.07	ksi

Samples F95, F96 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 112 of 128 reporting participants

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Comments on Assigned Data Flags for Test #1131

2UZTVR (M) - Participant did not submit data for sample F95.

73EDZY (X) - Inconsistent in testing between samples.

AH3H3C (X) - Inconsistent in testing between samples.

C8F3CF (X) - Data for sample F95 are high.

CTFJEN (M) - Participant did not submit data for sample F96.

HC6UHN (X) - Data for sample F96 are high.

J3ZZ8W (X) - Data for sample F96 are low.

KL64ZX (X) - Data for sample F95 are high and data for sample F96 are low.

MUCC46 (X) - Data for both samples are low.

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

PJ4JMA (X) - Data for sample F95 are low.

PX3GHT (X) - Data for sample F96 are high.

U7WD9C (X) - Data for both samples are low.

UXQDXP (X) - Data for sample F95 are low.

ZN2XB8 (X) - Inconsistent in testing between samples.

ZRK296 (X) - Data for sample F96 are extreme.

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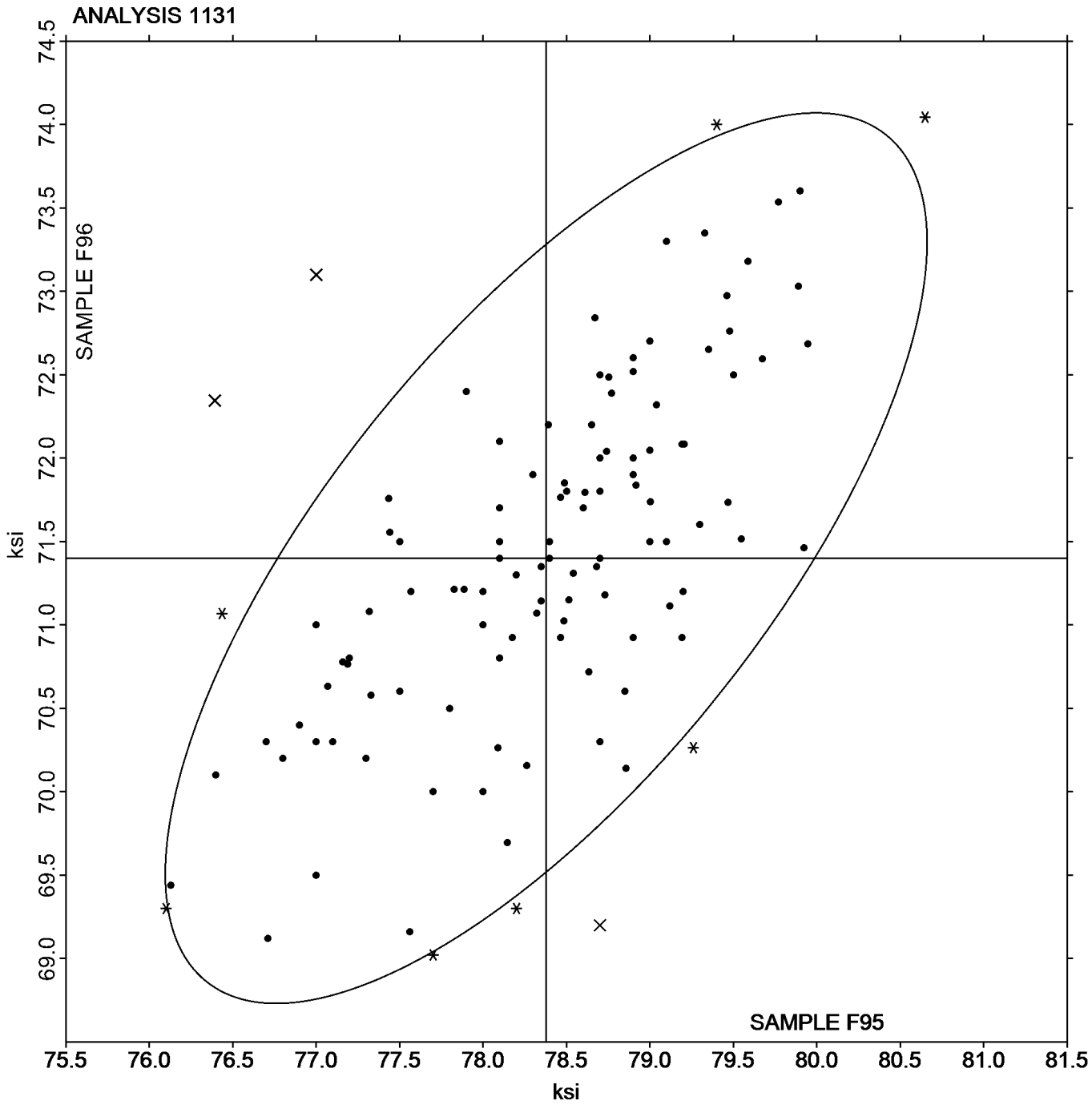
SAMPLE F95	SAMPLE F96
78.38 ksi	71.40 ksi



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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22NBFU		59.36	1.03	0.67	53.91	-0.98	-0.75
2KWK8E	*	62.38	4.05	2.65	58.48	3.59	2.77
2Q62PF		59.10	0.77	0.50	56.10	1.21	0.93
2UZTVR	M	No Data Reported			56.00	1.11	0.85
2XHZBE		59.00	0.67	0.44	55.00	0.11	0.08
32332K		58.52	0.19	0.12	55.83	0.93	0.72
38LAH4		60.10	1.77	1.16	57.60	2.71	2.08
3JXRXD		57.73	-0.61	-0.40	53.45	-1.44	-1.11
3NVCYC		60.09	1.76	1.15	55.74	0.84	0.65
3P4BAK		56.90	-1.43	-0.94	54.10	-0.79	-0.61
3QX2FY		57.73	-0.61	-0.40	53.52	-1.37	-1.06
4XF3YA		59.70	1.37	0.90	54.92	0.02	0.02
6R4EZX	X	59.00	0.67	0.44	59.47	4.58	3.53
73EDZY	*	60.30	1.97	1.29	58.30	3.41	2.62
796PVV	X	52.94	-5.39	-3.52	53.37	-1.52	-1.17
7BGDKL		59.16	0.83	0.54	56.82	1.93	1.48
7DWY38		55.20	-3.13	-2.05	53.30	-1.59	-1.22
7NZVFB		58.02	-0.32	-0.21	54.39	-0.50	-0.39
7YFYC9		59.00	0.67	0.44	55.00	0.11	0.08
7ZEXVG		58.20	-0.13	-0.09	54.60	-0.29	-0.22
84WGFC		60.38	2.05	1.34	55.78	0.89	0.69
8RFPUM		56.85	-1.48	-0.97	52.79	-2.10	-1.62
8VVBB9		58.11	-0.22	-0.14	53.10	-1.79	-1.38
9AE36A		59.00	0.67	0.44	55.00	0.11	0.08
9B86KX		59.81	1.48	0.97	56.37	1.47	1.13
9GDPUN		59.90	1.57	1.03	54.97	0.08	0.06
A3NCTY		59.12	0.79	0.51	55.51	0.62	0.48
AH3H3C		57.80	-0.53	-0.35	52.60	-2.29	-1.76
AKRVKV		56.32	-2.01	-1.31	54.33	-0.56	-0.43
B2VRGY		57.87	-0.46	-0.30	54.34	-0.55	-0.42
B77TNN		58.31	-0.03	-0.02	54.97	0.08	0.06
BGLKAD		59.90	1.57	1.02	55.30	0.41	0.31
BMQJL3		59.59	1.25	0.82	56.30	1.41	1.09
BWJUXJ		59.85	1.52	0.99	54.39	-0.50	-0.39
BZ2UBD		60.43	2.10	1.37	56.36	1.47	1.13
C8F3CF	X	62.40	4.07	2.66	53.00	-1.89	-1.46
CFDQA7	X	59.00	0.67	0.44	48.00	-6.89	-5.30
CHEVMR		60.80	2.47	1.61	57.42	2.53	1.94
CK3CYK		59.26	0.93	0.61	54.15	-0.74	-0.57
CTFJEN	M	57.90	-0.43	-0.28	No Data Reported		
CVZ9Y2		59.90	1.57	1.02	54.60	-0.29	-0.22
DQNKZP		59.18	0.85	0.55	55.03	0.14	0.11
EG9CMT	X	74.93	16.60	10.84	55.45	0.56	0.43
EQ4GPV		58.40	0.07	0.04	55.10	0.21	0.16
EVJNDU		60.92	2.59	1.69	57.12	2.23	1.72
EZQJQ3		59.60	1.27	0.83	53.40	-1.49	-1.15
FFGPUP		56.97	-1.36	-0.89	55.20	0.31	0.24

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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
FMX727		58.70	0.37	0.24	56.50	1.61	1.24
FQXHX7		60.10	1.77	1.16	53.75	-1.14	-0.88
FYPXKP	X	54.00	-4.33	-2.83	55.00	0.11	0.08
G42Z97		57.60	-0.73	-0.48	54.90	0.01	0.01
G6VYBB		58.33	0.00	0.00	55.97	1.08	0.83
GA3GGQ		57.70	-0.63	-0.41	54.40	-0.49	-0.38
GURMCV		55.00	-3.33	-2.18	53.50	-1.39	-1.07
H7MHPG		58.30	-0.03	-0.02	54.60	-0.29	-0.22
HC6UHN	*	59.60	1.27	0.83	58.20	3.31	2.55
HK4BEN		59.50	1.17	0.76	55.30	0.41	0.31
J3ZZ8W	X	59.12	0.79	0.51	38.73	-16.17	-12.44
J8A9MF		59.82	1.49	0.97	53.50	-1.39	-1.07
JHQALL		59.44	1.11	0.72	55.30	0.41	0.31
JWAQXX		59.30	0.97	0.63	56.60	1.71	1.32
JY2PCW		56.99	-1.35	-0.88	54.06	-0.83	-0.64
JZ94J3		60.00	1.67	1.09	55.10	0.21	0.16
K4TBKB		56.80	-1.53	-1.00	53.70	-1.19	-0.92
KL64ZX	X	64.63	6.30	4.11	50.92	-3.97	-3.05
KLB3RM		56.00	-2.33	-1.52	53.40	-1.49	-1.15
KNV4MA		58.00	-0.33	-0.22	54.60	-0.29	-0.22
KXNCAL	*	55.24	-3.09	-2.02	55.26	0.37	0.28
KYZ3HP		56.90	-1.43	-0.94	54.40	-0.49	-0.38
LGPWCY		59.60	1.27	0.83	55.90	1.01	0.78
LWMUNV		56.71	-1.62	-1.06	51.92	-2.97	-2.28
LWYKME		59.22	0.89	0.58	54.58	-0.31	-0.24
M43W8H		58.32	-0.01	-0.01	53.91	-0.98	-0.75
M8EUQX		58.10	-0.23	-0.15	53.60	-1.29	-0.99
MUCC46	X	54.90	-3.43	-2.24	49.40	-5.49	-4.23
MWWDXQ		57.60	-0.73	-0.48	54.50	-0.39	-0.30
MYJUAK	X	48.00	-10.33	-6.75	44.00	-10.89	-8.38
MZGBEU		57.29	-1.04	-0.68	53.95	-0.94	-0.72
N7JL4Z		59.10	0.77	0.50	54.20	-0.69	-0.53
NEDUPQ		55.80	-2.53	-1.65	53.11	-1.78	-1.37
NFRFYT		58.50	0.17	0.11	55.60	0.71	0.55
PJ4JMA		55.70	-2.63	-1.72	53.90	-0.99	-0.76
PP8JVQ	X	56.40	-1.93	-1.26	57.60	2.71	2.08
PTP2QF		55.90	-2.43	-1.59	53.52	-1.37	-1.06
PUHMMD		58.50	0.17	0.11	54.70	-0.19	-0.15
PW9NQF		56.10	-2.23	-1.46	54.70	-0.19	-0.15
PX3GHT		58.70	0.37	0.24	56.70	1.81	1.39
PYGYP6		56.00	-2.33	-1.52	52.40	-2.49	-1.92
QE6RRH	X	60.99	2.66	1.74	53.03	-1.86	-1.43
QHQDLQ		57.62	-0.71	-0.46	54.10	-0.79	-0.61
QL8K2D		60.37	2.04	1.33	54.53	-0.36	-0.28
RBMTWZ		57.96	-0.37	-0.24	54.07	-0.82	-0.63
RCB8FH		59.40	1.07	0.70	55.40	0.51	0.39
RCEPLU		56.60	-1.73	-1.13	54.90	0.01	0.01

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 144
4th Qtr 2023

		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
T4233R		59.03	0.70	0.46	56.13	1.24	0.95
T4WVLH		60.03	1.70	1.11	56.47	1.58	1.22
T6QLRW		59.63	1.29	0.85	56.97	2.08	1.60
T9VA98		58.90	0.57	0.37	56.00	1.11	0.85
TBFYTK		58.45	0.12	0.08	54.24	-0.65	-0.50
TEGC7C		57.50	-0.83	-0.54	55.60	0.71	0.55
THYBJ7	X	58.46	0.13	0.09	59.79	4.90	3.77
TPZQ9E		55.50	-2.83	-1.85	54.80	-0.09	-0.07
TXVJPK		59.54	1.21	0.79	55.34	0.45	0.34
TZFKK8		58.20	-0.13	-0.09	54.40	-0.49	-0.38
U7WD9C	M	No Data Reported			50.20	-4.69	-3.61
UXQDXP		55.87	-2.46	-1.61	53.40	-1.49	-1.14
UXREQ3		59.76	1.42	0.93	54.81	-0.08	-0.06
VE8YVK		55.00	-3.33	-2.18	53.00	-1.89	-1.46
VFN4JB		59.00	0.67	0.44	54.80	-0.09	-0.07
VRZCHW		57.70	-0.63	-0.41	53.90	-0.99	-0.76
W9LEFB		58.10	-0.23	-0.15	53.90	-0.99	-0.76
WDA7D7		56.21	-2.12	-1.39	53.84	-1.05	-0.81
WMGN9J		57.87	-0.46	-0.30	55.40	0.51	0.40
WZA3E8		57.80	-0.53	-0.35	56.10	1.21	0.93
XJYYBR		60.13	1.80	1.18	56.96	2.07	1.59
XNAVU8		59.61	1.28	0.84	55.99	1.09	0.84
XQRFGM		58.60	0.27	0.18	55.75	0.86	0.66
XRA8P8		56.10	-2.23	-1.46	52.90	-1.99	-1.53
XVM8NK		55.70	-2.63	-1.72	54.20	-0.69	-0.53
XXD9RM		57.30	-1.03	-0.67	55.50	0.61	0.47
YR8PFF		58.10	-0.23	-0.15	54.70	-0.19	-0.15
YURQA3	X	55.84	-2.50	-1.63	57.14	2.25	1.73
ZN2XB8	X	55.61	-2.72	-1.78	57.71	2.82	2.17
ZRK296	X	54.45	-3.88	-2.54	27.61	-27.28	-20.99

Summary Statistics

	Sample F95		Sample F96	
Grand Means	58.33	ksi	54.89	ksi
Stnd Dev Btwn Labs	1.53	ksi	1.30	ksi

Samples F95, F96 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 105 of 124 reporting participants

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Comments on Assigned Data Flags for Test #1132

2UZTVR (M) - Participant did not submit data for sample F95.

6R4EZX (X) - Data for sample F96 are high.

796PVV (X) - Data for sample F95 are low.

C8F3CF (X) - Inconsistent in testing between samples.

CFDQA7 (X) - Data for sample F96 are low.

CTFJEN (M) - Participant did not submit data for sample F96.

EG9CMT (X) - Data for sample F95 are high.

FYPXKP (X) - Data for sample F95 are low.

J3ZZ8W (X) - Data for sample F96 are low.

KL64ZX (X) - Data for sample F95 are high and data for sample F96 are low.

MUCC46 (X) - Data for sample F96 are low.

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

PP8JVQ (X) - Inconsistent in testing between samples.

QE6RRH (X) - Inconsistent in testing between samples.

THYBJ7 (X) - Data for sample F96 are high.

U7WD9C (M) - Participant did not submit data for sample F95.

YURQA3 (X) - Inconsistent in testing between samples.

ZN2XB8 (X) - Inconsistent in testing between samples.

ZRK296 (X) - Data for sample F96 are extreme.

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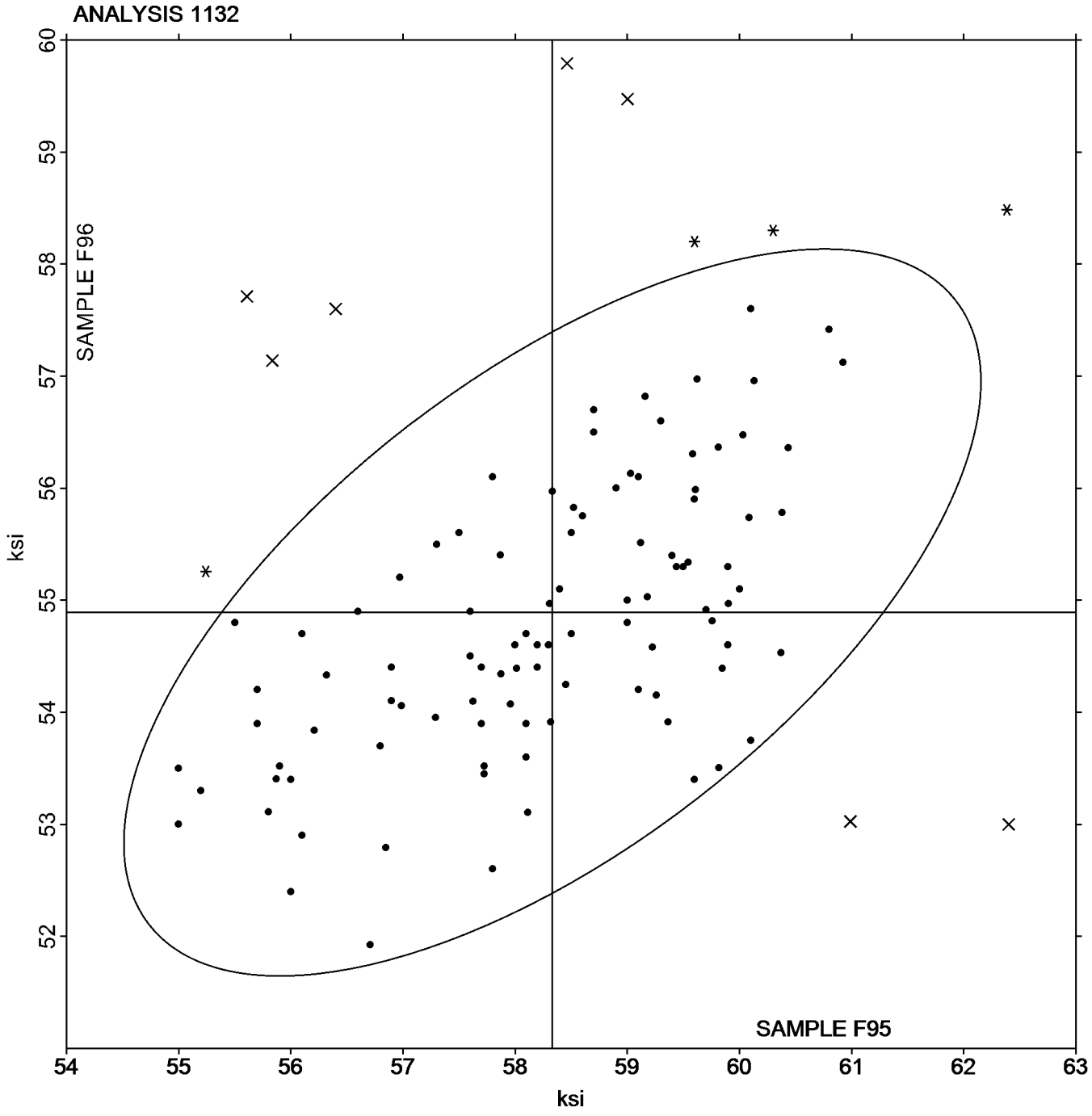
SAMPLE F95	SAMPLE F96
58.33 ksi	54.89 ksi



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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22NBFU		28.51	0.89	0.51	27.45	2.45	1.33
2KWK8E		26.57	-1.05	-0.59	23.05	-1.95	-1.06
2Q62PF		25.30	-2.32	-1.31	23.50	-1.50	-0.81
2UZTVR	M	No Data Reported			20.20	-4.80	-2.60
2XHZBE		28.80	1.18	0.67	25.70	0.70	0.38
32332K		28.50	0.88	0.50	25.60	0.60	0.33
38LAH4		24.50	-3.12	-1.76	23.00	-2.00	-1.08
3JXRXD		25.80	-1.82	-1.03	22.90	-2.10	-1.14
3NVCYC		27.50	-0.12	-0.07	25.50	0.50	0.27
3P4BAK		26.10	-1.52	-0.86	23.70	-1.30	-0.70
3QX2FY		28.20	0.58	0.33	25.00	0.00	0.00
4XF3YA		26.50	-1.12	-0.63	25.00	0.00	0.00
6R4EZX		27.60	-0.02	-0.01	24.40	-0.60	-0.32
73EDZY	*	23.90	-3.72	-2.10	20.20	-4.80	-2.60
796PVV		28.50	0.88	0.50	25.20	0.20	0.11
7BGDKL		28.13	0.51	0.29	23.50	-1.50	-0.81
7DWY38		27.50	-0.12	-0.07	26.00	1.00	0.54
7NZVFB		25.50	-2.12	-1.20	23.00	-2.00	-1.08
7YFYC9	X	23.60	-4.02	-2.27	24.00	-1.00	-0.54
7ZEXVG		26.50	-1.12	-0.63	24.00	-1.00	-0.54
84WGFC		27.90	0.28	0.16	26.00	1.00	0.54
8RFPUM		29.00	1.38	0.78	28.00	3.00	1.63
8VVBB9		30.00	2.38	1.35	26.00	1.00	0.54
9AE36A		26.00	-1.62	-0.91	22.00	-3.00	-1.63
9B86KX	X	19.70	-7.92	-4.48	20.20	-4.80	-2.60
9GDPUN		28.50	0.88	0.50	27.90	2.90	1.57
A3NCTY		28.35	0.73	0.41	25.45	0.45	0.25
AH3H3C		31.00	3.38	1.91	29.40	4.40	2.39
AKRVKV		31.40	3.78	2.14	28.18	3.18	1.73
B2VRGY		27.90	0.28	0.16	25.50	0.50	0.27
B77TNN		26.00	-1.62	-0.91	23.00	-2.00	-1.08
BGLKAD		27.60	-0.02	-0.01	26.10	1.10	0.60
BMQJL3		27.30	-0.32	-0.18	24.60	-0.40	-0.22
BWJUXJ		30.32	2.70	1.53	28.21	3.21	1.74
BZ2UBD		27.85	0.23	0.13	23.50	-1.50	-0.81
C8F3CF		29.20	1.58	0.90	27.00	2.00	1.09
CFDQA7		25.00	-2.62	-1.48	24.00	-1.00	-0.54
CHEVMR		27.00	-0.62	-0.35	25.00	0.00	0.00
CK3CYK		25.13	-2.49	-1.41	24.83	-0.17	-0.09
CTFJEN	M	27.00	-0.62	-0.35	No Data Reported		
CVZ9Y2		28.70	1.08	0.61	24.90	-0.10	-0.05
DQNKZP	X	15.33	-12.29	-6.95	12.38	-12.62	-6.84
EG9CMT		27.90	0.28	0.16	24.20	-0.80	-0.43
EQ4GPV		26.30	-1.32	-0.74	24.00	-1.00	-0.54
EVJNDU		27.00	-0.62	-0.35	27.00	2.00	1.09
EZQJQ3		27.30	-0.32	-0.18	25.10	0.10	0.06
FFGPUP		26.10	-1.52	-0.86	23.70	-1.30	-0.70

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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
FMX727		25.70	-1.92	-1.08	23.30	-1.70	-0.92
FQXHX7		24.00	-3.62	-2.05	21.80	-3.20	-1.73
FYPXKP		27.00	-0.62	-0.35	24.00	-1.00	-0.54
G42Z97	*	32.00	4.38	2.48	28.50	3.50	1.90
G6VYBB		26.20	-1.42	-0.80	23.50	-1.50	-0.81
GA3GGQ		28.10	0.48	0.27	26.00	1.00	0.54
GURMCV		30.00	2.38	1.35	26.00	1.00	0.54
H7MHPG		26.40	-1.22	-0.69	22.90	-2.10	-1.14
HC6UHN		25.50	-2.12	-1.20	21.50	-3.50	-1.90
HK4BEN		25.50	-2.12	-1.20	24.50	-0.50	-0.27
J3ZZ8W	X	15.82	-11.80	-6.67	12.91	-12.09	-6.55
J8A9MF		27.17	-0.45	-0.25	22.25	-2.75	-1.49
JHQALL		26.47	-1.15	-0.65	23.18	-1.82	-0.99
JWAQXX		25.20	-2.42	-1.37	22.30	-2.70	-1.46
JY2PCW		27.80	0.18	0.10	26.30	1.30	0.71
JZ94J3		25.00	-2.62	-1.48	22.00	-3.00	-1.63
K4TBKB		28.60	0.98	0.56	26.00	1.00	0.54
KL64ZX		30.00	2.38	1.35	26.80	1.80	0.98
KLB3RM		27.70	0.08	0.05	25.90	0.90	0.49
KNV4MA		26.50	-1.12	-0.63	24.20	-0.80	-0.43
KXNCAL		26.79	-0.83	-0.47	24.72	-0.28	-0.15
KYZ3HP		26.10	-1.52	-0.86	23.80	-1.20	-0.65
LGPWCY		26.90	-0.72	-0.41	25.00	0.00	0.00
LWMUNV	X	35.40	7.78	4.40	30.20	5.20	2.82
LWYKME		28.45	0.83	0.47	24.76	-0.24	-0.13
M43W8H		28.10	0.48	0.27	25.90	0.90	0.49
M8EUQX		27.00	-0.62	-0.35	25.00	0.00	0.00
MUCC46		30.10	2.48	1.40	26.50	1.50	0.81
MWWDXQ		30.90	3.28	1.86	28.10	3.10	1.68
MYJUAK		29.90	2.28	1.29	25.90	0.90	0.49
MZGBEU		25.50	-2.12	-1.20	22.00	-3.00	-1.63
N7JL4Z		29.10	1.48	0.84	27.10	2.10	1.14
NEDUPQ	*	29.80	2.18	1.24	24.30	-0.70	-0.38
NFRFYT		30.00	2.38	1.35	25.80	0.80	0.44
PJ4JMA		28.00	0.38	0.22	26.00	1.00	0.54
PP8JVQ		28.60	0.98	0.56	27.30	2.30	1.25
PTP2QF		25.80	-1.82	-1.03	22.65	-2.35	-1.27
PUHMMD	X	33.02	5.40	3.06	26.57	1.57	0.85
PW9NQF		25.00	-2.62	-1.48	24.40	-0.60	-0.32
PX3GHT		29.90	2.28	1.29	28.10	3.10	1.68
PYGYP6		27.90	0.28	0.16	25.10	0.10	0.06
QE6RRH		30.20	2.58	1.46	29.10	4.10	2.22
QHQDLQ		28.00	0.38	0.22	26.70	1.70	0.92
QL8K2D		30.00	2.38	1.35	25.00	0.00	0.00
R2TQMB		27.50	-0.12	-0.07	25.00	0.00	0.00
RBMTWZ		27.30	-0.32	-0.18	25.00	0.00	0.00
RCB8FH		26.60	-1.02	-0.58	23.70	-1.30	-0.70

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 144
4th Qtr 2023

		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
RCEPLU		28.20	0.58	0.33	27.40	2.40	1.30
T4233R	X	15.04	-12.58	-7.12	10.60	-14.40	-7.81
T4WVLH		24.63	-2.99	-1.69	22.26	-2.74	-1.49
T6QLRW		29.00	1.38	0.78	26.00	1.00	0.54
T9VA98		27.20	-0.42	-0.24	24.00	-1.00	-0.54
TBFYTK	X	13.50	-14.12	-7.99	12.50	-12.50	-6.78
TEGC7C	X	21.00	-6.62	-3.74	23.50	-1.50	-0.81
THYBJ7	X	21.50	-6.12	-3.46	18.90	-6.10	-3.31
TPZQ9E		25.20	-2.42	-1.37	21.30	-3.70	-2.00
TXVJPK		28.80	1.18	0.67	24.30	-0.70	-0.38
TZFKK8		30.00	2.38	1.35	28.00	3.00	1.63
U7WD9C		28.60	0.98	0.56	25.60	0.60	0.33
UXQDXP		28.70	1.08	0.61	24.10	-0.90	-0.49
UXREQ3		27.00	-0.62	-0.35	25.00	0.00	0.00
VE8YVK		29.00	1.38	0.78	25.30	0.30	0.16
VFN4JB		25.50	-2.12	-1.20	24.00	-1.00	-0.54
VRZCHW	X	30.50	2.88	1.63	23.20	-1.80	-0.97
W9LEFB	X	27.30	-0.32	-0.18	29.40	4.40	2.39
WDA7D7		28.60	0.98	0.56	25.37	0.37	0.20
WGUTD7	X	30.00	2.38	1.35	20.00	-5.00	-2.71
WMGN9J		28.78	1.16	0.66	26.14	1.14	0.62
WZA3E8		27.00	-0.62	-0.35	25.50	0.50	0.27
XGU7HE		26.41	-1.21	-0.68	24.03	-0.97	-0.52
XJYYBR		27.00	-0.62	-0.35	25.00	0.00	0.00
XNAVU8		26.00	-1.62	-0.91	24.00	-1.00	-0.54
XQRFGM	X	21.60	-6.02	-3.40	20.65	-4.35	-2.36
XRA8P8		31.70	4.08	2.31	27.60	2.60	1.41
XVM8NK		24.50	-3.12	-1.76	21.50	-3.50	-1.90
XXD9RM		28.40	0.78	0.44	25.80	0.80	0.44
YR8PFF		28.30	0.68	0.39	25.40	0.40	0.22
YURQA3		29.70	2.08	1.18	27.30	2.30	1.25
ZN2XB8	X	31.20	3.58	2.03	22.90	-2.10	-1.14
ZRK296		28.67	1.05	0.60	26.67	1.67	0.91

Summary Statistics

	Sample F95		Sample F96	
Grand Means	27.62	Percent	25.00	Percent
Stnd Dev Btwn Labs	1.77	Percent	1.84	Percent

Samples F95, F96 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 110 of 127 reporting participants

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Comments on Assigned Data Flags for Test #1133

2UZTVR (M) - Participant did not submit data for sample F95.

7YFYC9 (X) - Inconsistent in testing between samples.

9B86KX (X) - Data for sample F95 are low.

CTFJEN (M) - Participant did not submit data for sample F96.

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

J3ZZ8W (X) - Data for both samples are low. Possible Systematic Error.

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

PUHMMD (X) - Data for sample F95 are high.

T4233R (X) - Data for both samples are low. Possible Systematic Error.

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

TEGC7C (X) - Data for sample F95 are low.

THYBJ7 (X) - Data for both samples are low. Possible Systematic Error.

VRZCHW (X) - Inconsistent in testing between samples.

W9LEFB (X) - Inconsistent in testing between samples.

WGUTD7 (X) - Inconsistent in testing between samples.

XQRFGM (X) - Data for sample F95 are low.

ZN2XB8 (X) - Inconsistent in testing between samples.

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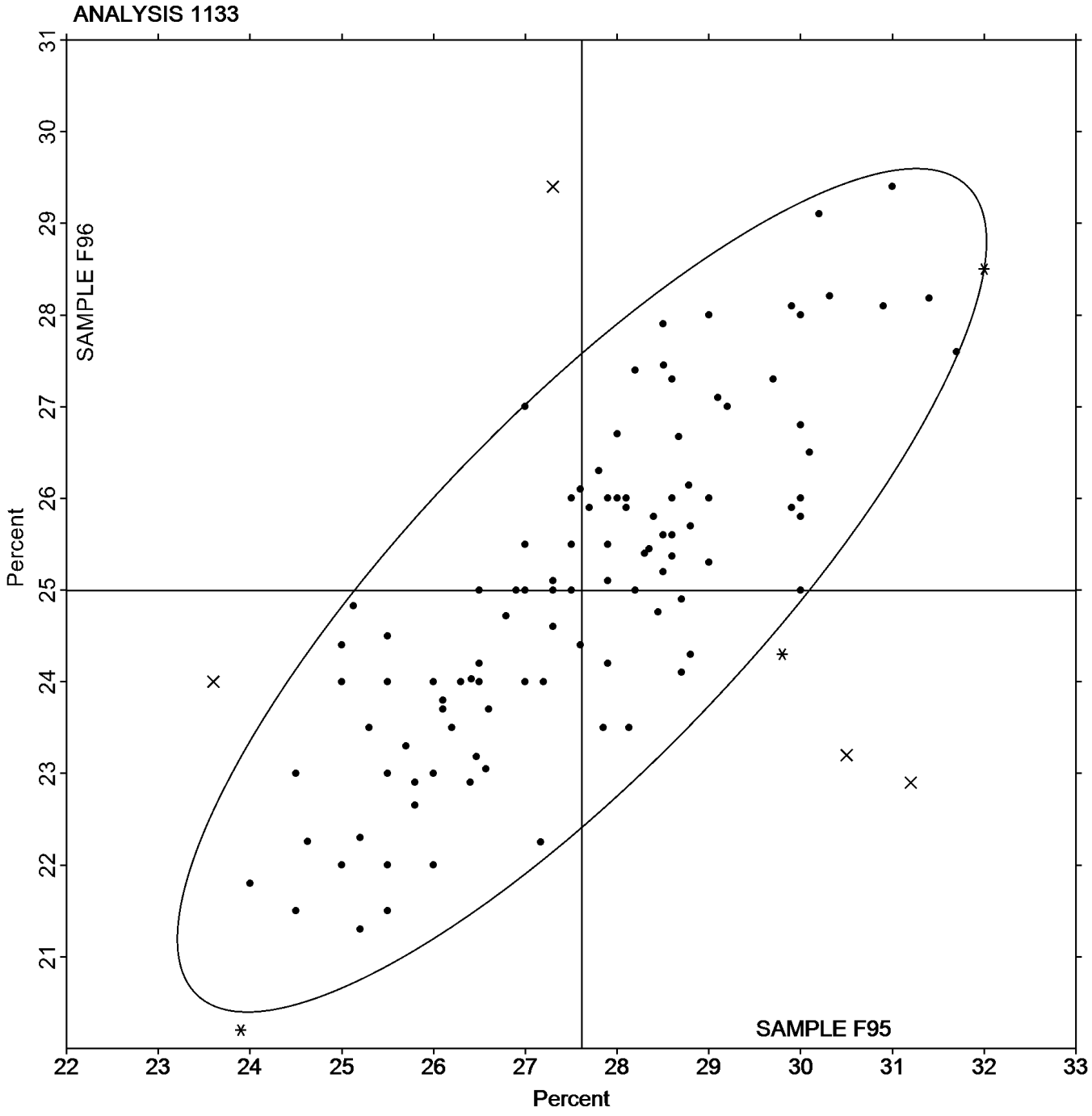
SAMPLE F95	SAMPLE F96
27.62 Percent	25.00 Percent



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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22NBFU		0.6930	-0.0541	-0.62	0.6990	0.0501	0.77
38LAH4	*	0.5000	-0.2471	-2.83	0.5000	-0.1489	-2.28
3JXRXD		0.7600	0.0129	0.15	0.6700	0.0211	0.32
796PVV		0.7500	0.0029	0.03	0.6300	-0.0189	-0.29
7BGDKL		0.7300	-0.0171	-0.20	0.6300	-0.0189	-0.29
7DWY38		0.7800	0.0329	0.38	0.6800	0.0311	0.48
9GDPUN		0.7700	0.0229	0.26	0.6600	0.0111	0.17
AH3H3C		0.8800	0.1329	1.52	0.7400	0.0911	1.40
B2VRGY		0.7480	0.0009	0.01	0.6380	-0.0109	-0.17
B77TNN		0.7400	-0.0071	-0.08	0.6400	-0.0089	-0.14
BGLKAD		0.8900	0.1429	1.64	0.6800	0.0311	0.48
BWJUXJ	*	0.5590	-0.1881	-2.16	0.7430	0.0941	1.44
DQNKZP		0.7100	-0.0371	-0.43	0.6110	-0.0379	-0.58
EG9CMT		0.8800	0.1329	1.52	0.6400	-0.0089	-0.14
EVJNDU		0.7300	-0.0171	-0.20	0.6100	-0.0389	-0.60
EZQJQ3		0.6810	-0.0661	-0.76	0.5620	-0.0869	-1.33
FFGPUP		0.7270	-0.0201	-0.23	0.5900	-0.0589	-0.90
FYPXKP		0.6400	-0.1071	-1.23	0.6500	0.0011	0.02
GURMCV		0.6900	-0.0571	-0.65	0.5200	-0.1289	-1.97
J3ZZ8W		0.8300	0.0829	0.95	0.7500	0.1011	1.55
J8A9MF		0.7400	-0.0071	-0.08	0.6300	-0.0189	-0.29
JY2PCW		0.7560	0.0089	0.10	0.6500	0.0011	0.02
JZ94J3		0.7750	0.0279	0.32	0.5690	-0.0799	-1.22
LWMUNV	X	0.4700	-0.2771	-3.18	0.4100	-0.2389	-3.66
MYJUAK		0.6700	-0.0771	-0.88	0.6900	0.0411	0.63
MZGBEU		0.7550	0.0079	0.09	0.6350	-0.0139	-0.21
N7JL4Z		0.9400	0.1929	2.21	0.7000	0.0511	0.78
PP8JVQ		0.7620	0.0149	0.17	0.6240	-0.0249	-0.38
QE6RRH		0.7400	-0.0071	-0.08	0.6100	-0.0389	-0.60
QHQDLQ		0.6900	-0.0571	-0.65	0.6300	-0.0189	-0.29
RCB8FH		0.8240	0.0769	0.88	0.6100	-0.0389	-0.60
TBFYTK		0.7000	-0.0471	-0.54	0.6600	0.0111	0.17
UXQDXP		0.8400	0.0929	1.07	0.7900	0.1411	2.16
VRZCHW		0.8240	0.0769	0.88	0.6210	-0.0279	-0.43
W9LEFB		0.6940	-0.0531	-0.61	0.6490	0.0001	0.00
ZN2XB8		0.7500	0.0029	0.03	0.8000	0.1511	2.31

Summary Statistics

	Sample F95	Sample F96
Grand Means	0.7471	0.6489
Stnd Dev Btwn Labs	0.0872	0.0653

Samples F95, F96 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 35 of 36 reporting participants

Comments on Assigned Data Flags for Test #1134

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

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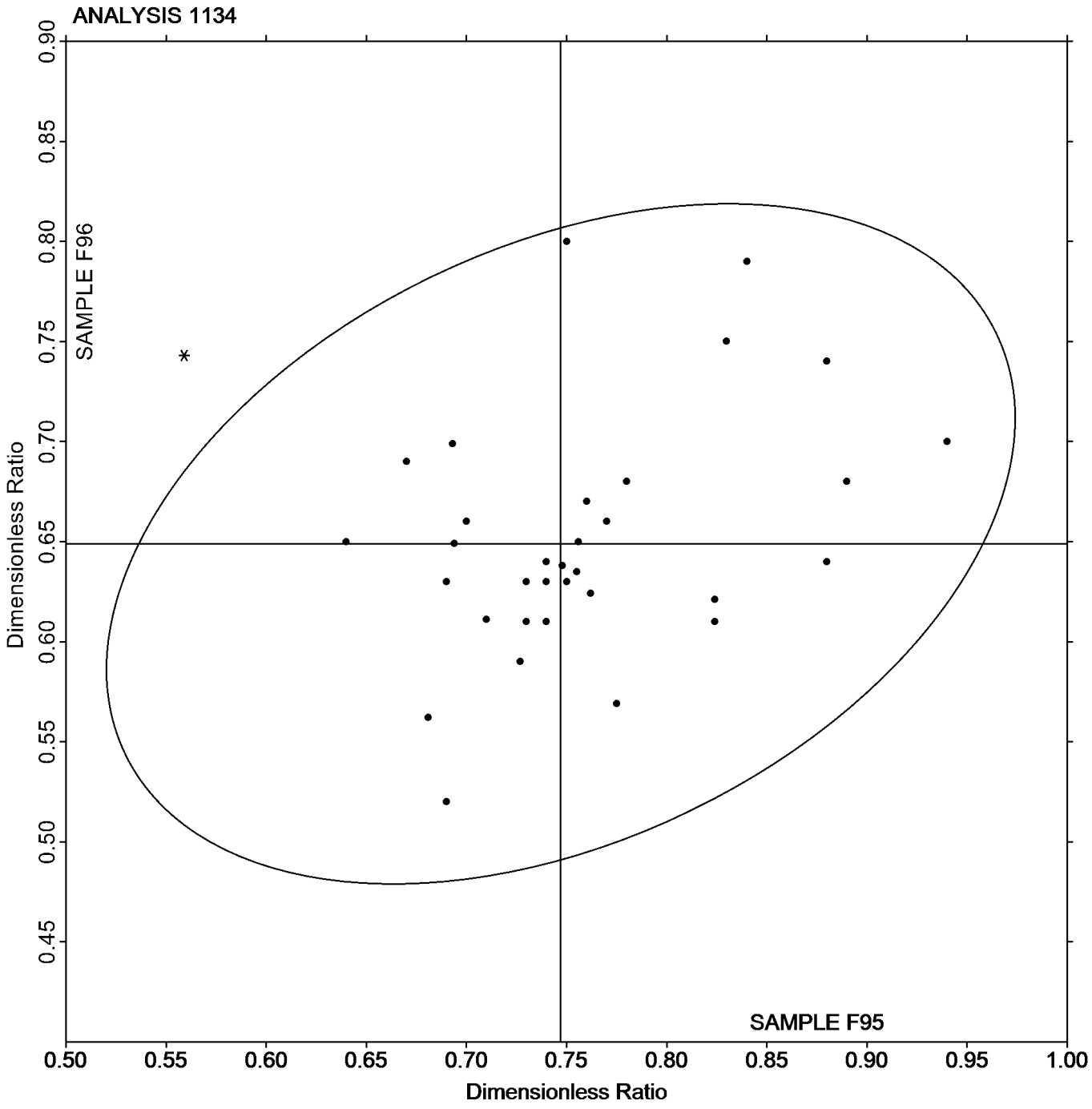
SAMPLE F95	SAMPLE F96
0.7471	0.6489



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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22NBFU		0.1550	-0.0101	-0.69	0.1270	0.0030	0.39
2Q62PF		0.1530	-0.0121	-0.82	0.1160	-0.0080	-1.03
2UZTVR	M	No Data Reported			0.1110	-0.0130	-1.67
38LAH4	X	0.5000	0.3349	22.68	0.5000	0.3760	48.43
3JXRXD		0.1500	-0.0151	-1.02	0.1200	-0.0040	-0.51
3P4BAK		0.1600	-0.0051	-0.35	0.1300	0.0060	0.78
3QX2FY		0.1800	0.0149	1.01	0.1260	0.0020	0.26
6R4EZX		0.1744	0.0093	0.63	0.1232	-0.0008	-0.10
796PVV	*	0.2020	0.0369	2.50	0.1370	0.0130	1.68
7BGDKL		0.1760	0.0109	0.74	0.1100	-0.0140	-1.80
7DWY38		0.1610	-0.0041	-0.28	0.1220	-0.0020	-0.25
7YFYC9		0.1700	0.0049	0.33	0.1300	0.0060	0.78
84WGFC		0.1690	0.0039	0.26	0.1250	0.0010	0.13
9GDPUN		0.2000	0.0349	2.36	0.1330	0.0090	1.16
AH3H3C		0.1610	-0.0041	-0.28	0.1390	0.0150	1.94
B2VRGY		0.1920	0.0269	1.82	0.1240	0.0000	0.00
B77TNN		0.1600	-0.0051	-0.35	0.1200	-0.0040	-0.51
BGLKAD		0.1530	-0.0121	-0.82	0.1250	0.0010	0.13
BWJUXJ	X	0.0720	-0.0931	-6.31	0.1060	-0.0180	-2.32
CTFJEN	M	0.1465	-0.0186	-1.26	No Data Reported		
CVZ9Y2		0.1890	0.0239	1.62	0.1240	0.0000	0.00
DQNKZP		0.1490	-0.0161	-1.09	0.1160	-0.0080	-1.03
EG9CMT		0.1690	0.0039	0.26	0.1350	0.0110	1.42
EQ4GPV		0.1650	-0.0001	-0.01	0.1260	0.0020	0.26
EVJNDU		0.1700	0.0049	0.33	0.1320	0.0080	1.03
EZQJQ3		0.1500	-0.0151	-1.02	0.1240	0.0000	0.00
FFGPUP	*	0.1550	-0.0101	-0.69	0.1420	0.0180	2.32
FMX727		0.1480	-0.0171	-1.16	0.1090	-0.0150	-1.93
FYPXKP	X	0.2400	0.0749	5.07	0.1200	-0.0040	-0.51
GURMCV	X	0.0300	-0.1351	-9.15	0.1400	0.0160	2.06
H7MHPG		0.1690	0.0039	0.26	0.1270	0.0030	0.39
J3ZZ8W		0.1520	-0.0131	-0.89	0.1210	-0.0030	-0.38
J8A9MF	*	0.2000	0.0349	2.36	0.1200	-0.0040	-0.51
JWAQXX		0.1680	0.0029	0.19	0.1200	-0.0040	-0.51
JY2PCW		0.1580	-0.0071	-0.48	0.1270	0.0030	0.39
JZ94J3		0.1550	-0.0101	-0.69	0.1200	-0.0040	-0.51
KNV4MA		0.1360	-0.0291	-1.97	0.1150	-0.0090	-1.16
KXNCAL		0.1670	0.0019	0.13	0.1270	0.0030	0.39
LWMUNV	X	0.2040	0.0389	2.63	0.1560	0.0320	4.12
MYJUAK	X	0.3400	0.1749	11.85	0.3000	0.1760	22.67
MZGBEU		0.1600	-0.0051	-0.35	0.1200	-0.0040	-0.51
N7JL4Z		0.1540	-0.0111	-0.75	0.1260	0.0020	0.26
NEDUPQ	*	0.1448	-0.0203	-1.38	0.1028	-0.0212	-2.73
PJ4JMA		0.1588	-0.0063	-0.43	0.1202	-0.0038	-0.49
PP8JVQ		0.1560	-0.0091	-0.62	0.1200	-0.0040	-0.51
QE6RRH		0.1630	-0.0021	-0.14	0.1300	0.0060	0.78
QHQDLQ		0.1500	-0.0151	-1.02	0.1200	-0.0040	-0.51

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		Sample F95			Sample F96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
RCB8FH		0.1910	0.0259	1.75	0.1270	0.0030	0.39
T4WVLH		0.1502	-0.0149	-1.01	0.1235	-0.0005	-0.06
T9VA98		0.1710	0.0059	0.40	0.1280	0.0040	0.52
TBFYTK		0.1600	-0.0051	-0.35	0.1200	-0.0040	-0.51
UXQDXP		0.1680	0.0029	0.19	0.1340	0.0100	1.29
VE8YVK		0.1770	0.0119	0.80	0.1270	0.0030	0.39
VRZCHW		0.1740	0.0089	0.60	0.1280	0.0040	0.52
W9LEFB		0.1710	0.0059	0.40	0.1250	0.0010	0.13
XXD9RM		0.1710	0.0059	0.40	0.1270	0.0030	0.39
YR8PFF		0.1540	-0.0111	-0.75	0.1240	0.0000	0.00
ZN2XB8	*	0.1660	0.0009	0.06	0.1040	-0.0200	-2.57

Summary Statistics

	Sample F95	Sample F96
Grand Means	0.1651	0.1240
Stnd Dev Btwn Labs	0.0148	0.0078

Samples F95, F96 : AISI 4130 - 12G, AISI 4130 - 14G

Statistics based on 50 of 58 reporting participants

Comments on Assigned Data Flags for Test #1135

2UZTVR (M) - Participant did not submit data for sample F95.

38LAH4 (X) - Extreme data.

BWJUXJ (X) - Data for sample F95 are low.

CTFJEN (M) - Participant did not submit data for sample F96.

FYPXKP (X) - Data for sample F95 are high.

GURMCV (X) - Data for sample F95 are low.

LWMUNV (X) - Data for sample F96 are high.

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

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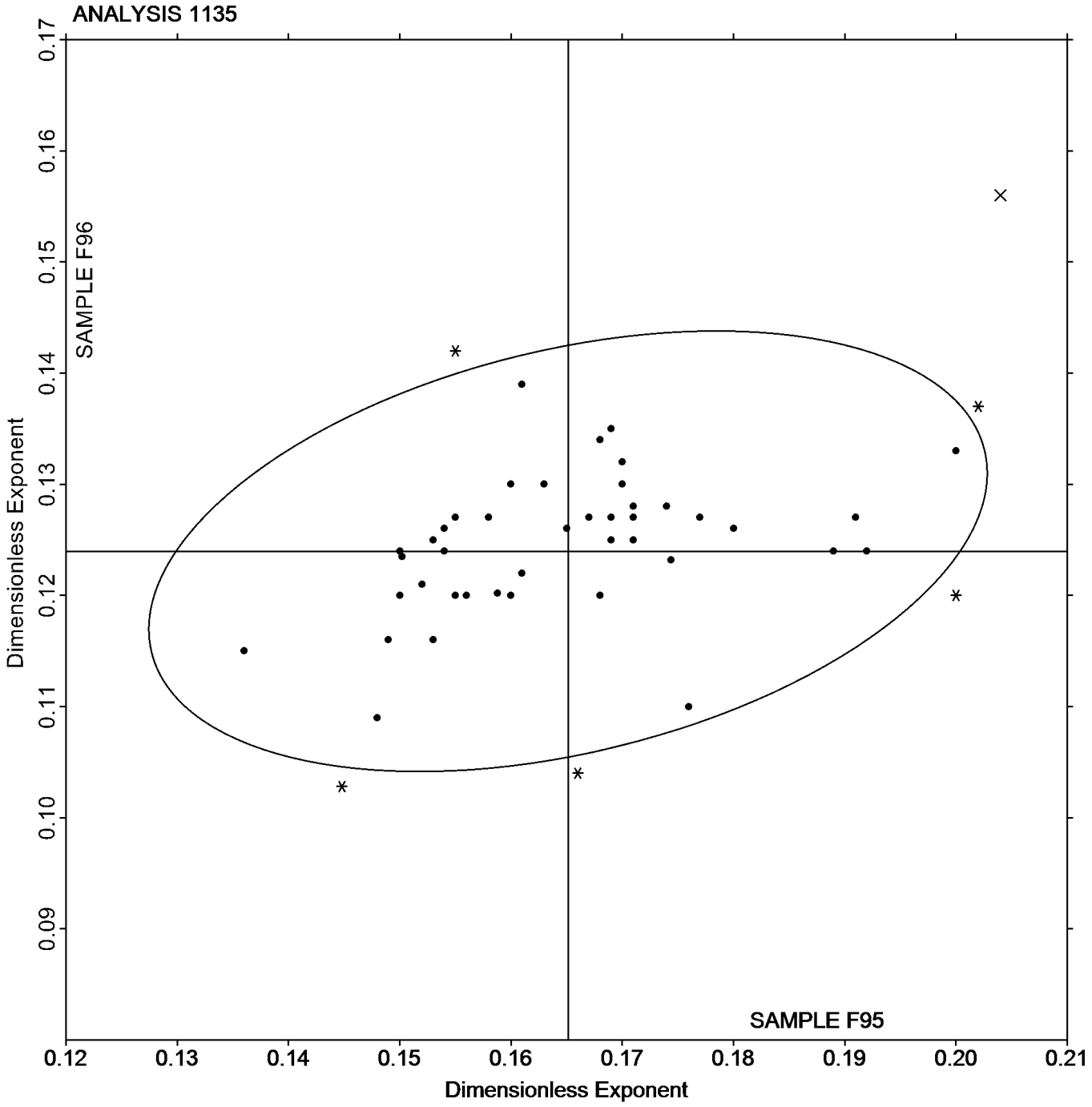
SAMPLE F95	SAMPLE F96
0.1651	0.1240



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		Sample X95			Sample X96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
24T2FH	X	89.63	-48.06	-20.63	98.57	-44.61	-29.57
3DWBPT		135.83	-1.86	-0.80	145.30	2.12	1.41
3LRDQ6		139.46	1.77	0.76	143.01	-0.17	-0.11
3XGDH8	X	10.82	-126.88	-54.47	11.08	-132.10	-87.55
4KAMFY		141.63	3.94	1.69	142.27	-0.91	-0.60
6JWEMQ	*	141.60	3.91	1.68	147.06	3.88	2.57
6X93RE		138.15	0.46	0.20	143.97	0.79	0.52
768WCX		135.67	-2.03	-0.87	143.67	0.49	0.32
78CP4B		139.01	1.32	0.57	141.77	-1.41	-0.94
7DZEF9		135.37	-2.33	-1.00	144.13	0.96	0.63
7TDFMW		135.50	-2.19	-0.94	142.50	-0.68	-0.45
7WVXHM		139.39	1.70	0.73	142.58	-0.60	-0.40
889GEN		136.00	-1.69	-0.73	144.33	1.16	0.77
8TBAGM		136.93	-0.77	-0.33	143.67	0.49	0.32
8UKHLZ	*	138.95	1.25	0.54	147.21	4.04	2.68
9J6M9M		138.05	0.35	0.15	146.43	3.25	2.15
AXZRPH	X	152.18	14.49	6.22	153.89	10.71	7.10
BHEHFX		141.90	4.21	1.81	144.43	1.26	0.83
BHZAB4		139.57	1.88	0.81	143.32	0.14	0.09
BMU4BQ		139.41	1.72	0.74	142.48	-0.69	-0.46
BR2LG7		136.83	-0.86	-0.37	142.27	-0.91	-0.60
BZ2UBD		134.69	-3.00	-1.29	141.65	-1.53	-1.01
CAMD9J		135.77	-1.93	-0.83	144.03	0.86	0.57
CL9Y7X		138.75	1.06	0.45	146.59	3.41	2.26
E8N8NU		135.01	-2.68	-1.15	144.65	1.47	0.97
EVG4GE		134.57	-3.13	-1.34	140.63	-2.54	-1.69
EX4KT8		134.15	-3.54	-1.52	142.78	-0.40	-0.26
FHM8TL		140.80	3.11	1.33	141.77	-1.41	-0.94
FJE78J		135.33	-2.36	-1.01	141.87	-1.31	-0.87
FUGGBZ		139.07	1.37	0.59	141.97	-1.21	-0.80
G42Z97		136.73	-0.96	-0.41	141.73	-1.44	-0.96
GMXGJU		136.70	-0.99	-0.43	141.80	-1.38	-0.91
GURVXZ		135.97	-1.73	-0.74	141.67	-1.51	-1.00
HBVP6Z		135.59	-2.11	-0.90	143.20	0.02	0.01
KMJKH7		134.83	-2.86	-1.23	142.03	-1.14	-0.76
L2HTWY		135.74	-1.95	-0.84	142.94	-0.24	-0.16
MVMDP4		138.92	1.23	0.53	144.95	1.77	1.17
N73R26	X	73.45	-64.25	-27.58	77.22	-65.96	-43.72
NQ8724		140.63	2.94	1.26	143.03	-0.14	-0.10
PYKE37		134.73	-2.96	-1.27	142.23	-0.94	-0.63
Q92PP3	X	140.01	2.32	0.99	149.29	6.12	4.05
R6XAV6		136.10	-1.59	-0.68	144.37	1.19	0.79
RPMRKW		136.67	-1.03	-0.44	143.33	0.16	0.10
RQENAQ		134.63	-3.06	-1.31	141.00	-2.18	-1.44
TFAVHB		142.33	4.64	1.99	144.33	1.16	0.77
TKLT2Q		136.52	-1.18	-0.50	142.21	-0.97	-0.64
TLZ9JY		136.87	-0.82	-0.35	143.52	0.34	0.23

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WebCode	Data Flag	Sample X95 Lab Mean	Sample X95 Diff. from Grand Mean	Sample X95 CPV	Sample X96 Lab Mean	Sample X96 Diff. from Grand Mean	Sample X96 CPV
UF9L2Y		139.33	1.64	0.70	140.57	-2.61	-1.73
WVDMWC		137.67	-0.03	-0.01	142.33	-0.84	-0.56
WVWFMN		136.77	-0.92	-0.40	141.63	-1.55	-1.03
WX6LBA		136.67	-1.03	-0.44	143.33	0.16	0.10
WYWNQX		140.47	2.77	1.19	143.90	0.72	0.48
X3NAYC		140.23	2.54	1.09	144.32	1.14	0.76
X4PZE8		140.30	2.61	1.12	142.87	-0.31	-0.21
X92XXN		139.97	2.28	0.98	141.45	-1.73	-1.14
XCHHK4		141.33	3.64	1.56	143.57	0.39	0.26
XL6JZD		140.80	3.11	1.33	143.40	0.22	0.15
XTHEUL		134.59	-3.11	-1.33	142.68	-0.50	-0.33
YQDYA2		137.00	-0.69	-0.30	142.87	-0.31	-0.21

Summary Statistics

	Sample X95		Sample X96	
Grand Means	137.69	ksi	143.18	ksi
Stnd Dev Btwn Labs	2.33	ksi	1.51	ksi

Samples X95, X96 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 54 of 59 reporting participants

Comments on Assigned Data Flags for Test #1201

24T2FH (X) - Extreme data.

3XGDH8 (X) - Extreme data.

AXZRPH (X) - Data for both samples are high. Inconsistent within the determinations of sample X96.

N73R26 (X) - Extreme data.

Q92PP3 (X) - Data for sample X96 are high.

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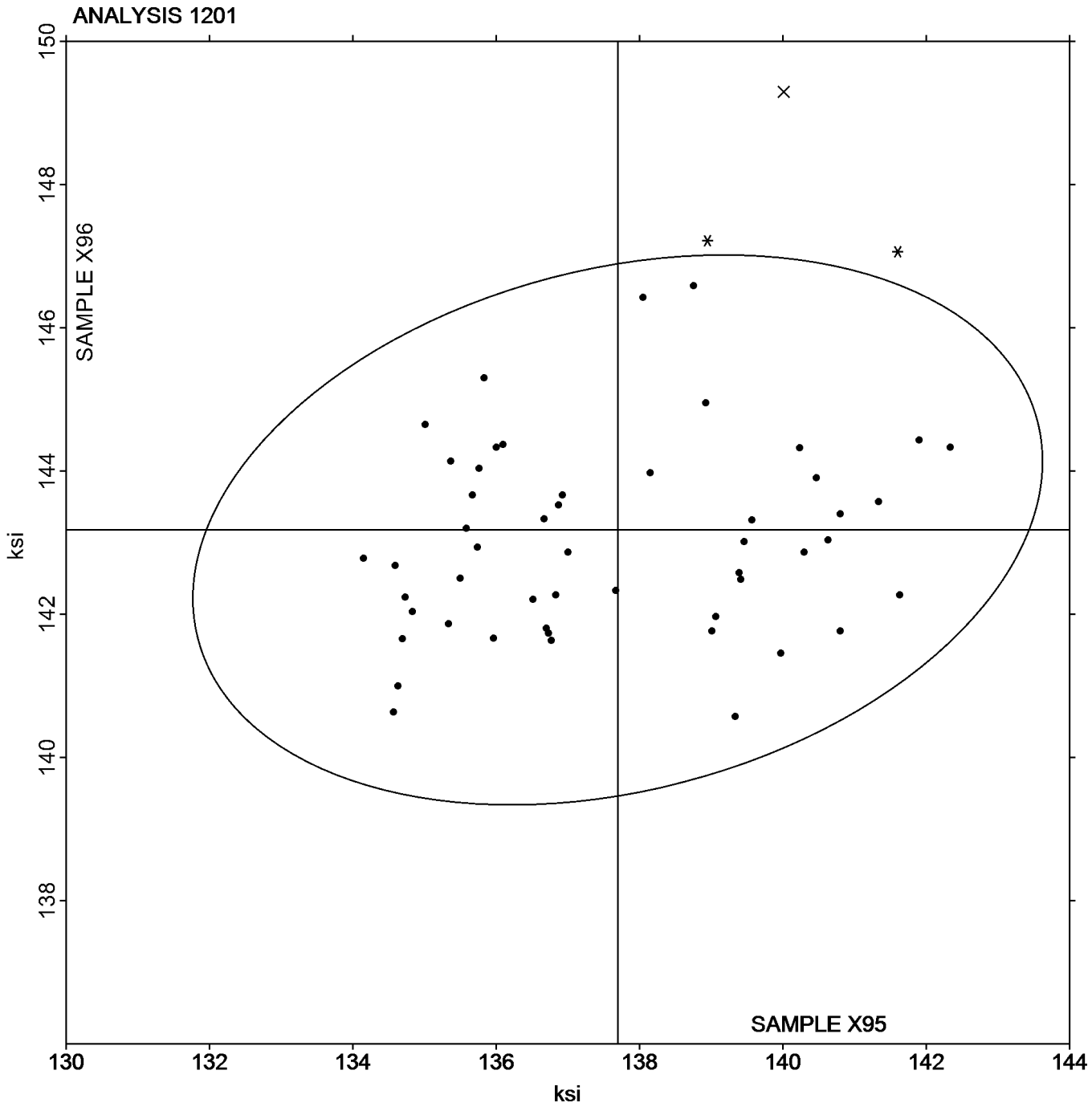
SAMPLE X95	SAMPLE X96
137.69 ksi	143.18 ksi



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		Sample Q95			Sample Q96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
24T2FH	X	93.43	-42.57	-31.40	100.87	-42.34	-32.00
2BRH3G		135.35	-0.66	-0.48	143.59	0.39	0.29
3LRDQ6		135.71	-0.29	-0.22	141.85	-1.35	-1.02
4T4UZQ		136.48	0.48	0.35	143.97	0.76	0.57
6X93RE		138.83	2.82	2.08	143.97	0.77	0.58
768WCX		136.67	0.66	0.49	143.67	0.46	0.35
78CP4B		135.47	-0.54	-0.40	141.39	-1.81	-1.37
7DWY38		134.77	-1.24	-0.91	142.40	-0.80	-0.61
7DZEF9		135.77	-0.24	-0.18	143.37	0.16	0.12
7HYQJL		135.17	-0.84	-0.62	142.83	-0.37	-0.28
7JQM9E		134.77	-1.23	-0.91	141.52	-1.68	-1.27
7TDFMW		134.67	-1.34	-0.99	143.53	0.33	0.25
7TG44B		137.91	1.90	1.40	143.95	0.75	0.56
7WVXHM		135.56	-0.44	-0.33	144.14	0.93	0.71
8TBAGM		135.56	-0.44	-0.33	144.47	1.26	0.95
8UKHLZ	*	138.08	2.07	1.53	146.49	3.28	2.48
9J6M9M	X	134.03	-1.97	-1.46	137.83	-5.37	-4.06
AXZRPH	X	147.68	11.68	8.61	155.12	11.92	9.01
BHEHFX	X	143.10	7.09	5.23	150.60	7.40	5.59
BHZAB4		135.70	-0.30	-0.22	142.08	-1.12	-0.85
BMU4BQ		134.69	-1.31	-0.97	141.10	-2.10	-1.59
BQVY99		135.31	-0.70	-0.51	140.71	-2.49	-1.88
BZ2UBD		133.56	-2.44	-1.80	142.17	-1.04	-0.79
CAMD9J		137.00	0.99	0.73	143.33	0.13	0.10
CL9Y7X		137.69	1.68	1.24	145.81	2.61	1.97
E8N8NU		136.77	0.77	0.57	145.42	2.21	1.67
EEMG8F	X	151.43	15.42	11.38	169.43	26.23	19.82
EVG4GE		135.53	-0.47	-0.35	142.53	-0.67	-0.51
EX4KT8		133.70	-2.31	-1.70	142.40	-0.81	-0.61
FHM8TL		133.60	-2.41	-1.77	143.73	0.53	0.40
FTKAVU		133.67	-2.33	-1.72	141.87	-1.33	-1.01
FUGGBZ		134.70	-1.31	-0.96	141.37	-1.84	-1.39
GCV9TW		135.24	-0.76	-0.56	142.67	-0.54	-0.41
GTYW7G		134.68	-1.33	-0.98	144.56	1.35	1.02
GURMCV		136.33	0.33	0.24	143.67	0.46	0.35
GURVXZ		137.20	1.19	0.88	143.40	0.20	0.15
HBVP6Z		135.96	-0.05	-0.03	144.76	1.56	1.18
HUTYBC		136.73	0.73	0.54	145.86	2.65	2.00
HZRFVP		138.07	2.06	1.52	143.03	-0.17	-0.13
K2D36V		136.76	0.75	0.56	142.04	-1.16	-0.88
KLB3RM		135.83	-0.17	-0.13	144.37	1.16	0.88
N3JQ7H	X	142.77	6.76	4.99	157.07	13.86	10.48
NHWVJD		136.37	0.36	0.27	145.53	2.33	1.76
NQ8724		135.27	-0.74	-0.55	144.10	0.90	0.68
PYKE37		133.40	-2.61	-1.92	141.53	-1.67	-1.26
Q92PP3	X	139.24	3.23	2.38	148.71	5.51	4.16
QBKQJN	*	139.53	3.53	2.60	144.00	0.80	0.60

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WebCode	Data Flag	Sample Q95 Lab Mean	Sample Q95 Diff. from Grand Mean	Sample Q95 CPV	Sample Q96 Lab Mean	Sample Q96 Diff. from Grand Mean	Sample Q96 CPV
RF2HJH		135.77	-0.24	-0.18	143.13	-0.07	-0.05
RTZB3D		136.45	0.45	0.33	142.71	-0.50	-0.38
TLZ9JY		136.51	0.50	0.37	144.10	0.89	0.67
TZH287	X	105.20	-30.81	-22.72	110.31	-32.90	-24.87
UF9L2Y	X	135.50	-0.51	-0.37	129.07	-14.14	-10.69
VDX3EM		135.90	-0.11	-0.08	143.10	-0.10	-0.08
VZBVEZ		136.23	0.23	0.17	142.17	-1.03	-0.78
WVDMWC		136.33	0.33	0.24	144.33	1.13	0.85
WVWFMN	*	138.51	2.51	1.85	141.80	-1.40	-1.06
WX6LBA		135.67	-0.34	-0.25	142.20	-1.00	-0.76
WYWNQX		135.47	-0.54	-0.40	142.80	-0.40	-0.31
X4PZE8		137.70	1.69	1.25	141.33	-1.87	-1.41
X92XXN		137.23	1.22	0.90	143.05	-0.16	-0.12
XCHHK4		136.04	0.03	0.02	142.94	-0.26	-0.20
XKQUYL		137.67	1.66	1.22	143.00	-0.20	-0.15
XL6JZD		135.80	-0.21	-0.15	144.73	1.53	1.16
ZLDGZE		135.00	-1.01	-0.74	141.67	-1.54	-1.16

Summary Statistics

	Sample Q95		Sample Q96	
Grand Means	136.01	ksi	143.20	ksi
Stnd Dev Btwn Labs	1.36	ksi	1.32	ksi

Samples Q95, Q96 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 55 of 64 reporting participants

Comments on Assigned Data Flags for Test #1202

24T2FH (X) - Extreme data.

9J6M9M (X) - Data for sample Q96 are low.

AXZRPH (X) - Data for both samples are high. Inconsistent within the determinations of sample Q96.

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

EEMG8F (X) - Data for both samples are high. Inconsistent within the determinations of sample Q95.

N3JQ7H (X) - Data for both samples are high. Inconsistent within the determinations of sample Q96.

Q92PP3 (X) - Data for sample Q96 are high.

TZH287 (X) - Data for both samples are low.

UF9L2Y (X) - Data for sample Q96 are low.

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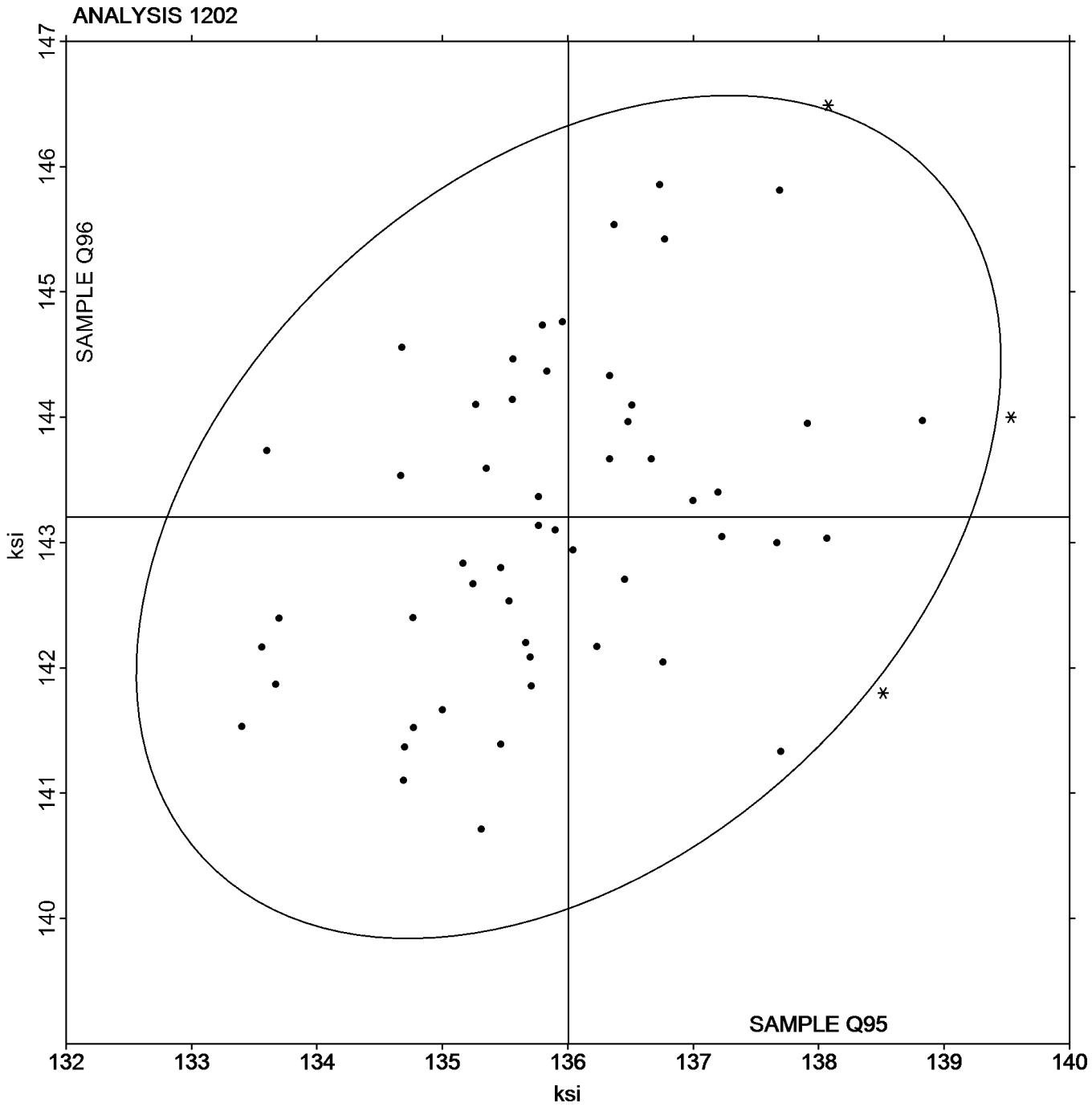
SAMPLE Q95	SAMPLE Q96
136.01 ksi	143.20 ksi



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1203

Fastener Wedge Tensile (10 degree) - Metric
ASTM F606M

		Sample B95			Sample B96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
268BTP		1,146	7	0.51	1,134	-4	-0.31
2X2UXA		1,151	12	0.85	1,145	7	0.51
3LNT2G		1,157	18	1.29	1,147	9	0.68
3LRDQ6		1,151	12	0.90	1,139	1	0.05
6X93RE		1,133	-6	-0.46	1,150	11	0.87
7D4WLJ		1,146	7	0.51	1,145	6	0.48
BD4LWH		1,132	-7	-0.53	1,152	14	1.04
DBB99W		1,150	11	0.81	1,133	-5	-0.39
DU6AX8		1,137	-2	-0.17	1,155	16	1.25
EC4FCU		1,119	-20	-1.44	1,115	-24	-1.82
EJKXLV		1,149	10	0.70	1,125	-13	-1.00
F6VQEK		1,133	-6	-0.46	1,126	-13	-0.98
FHM8TL		1,155	16	1.16	1,158	20	1.50
FMY4C2		1,119	-20	-1.46	1,128	-11	-0.82
G9B8YB		1,145	6	0.42	1,153	14	1.09
GURVXZ		1,128	-11	-0.78	1,151	13	0.99
HVMHLQ		1,133	-6	-0.41	1,139	1	0.07
JWD6BY		1,133	-6	-0.41	1,118	-21	-1.59
KCZ27L		1,128	-11	-0.80	1,135	-3	-0.24
KE7MKL		1,157	18	1.29	1,147	9	0.66
Q7E7N6		1,136	-3	-0.22	1,136	-3	-0.19
U74DKD		1,128	-11	-0.83	1,130	-8	-0.64
UF9L2Y		1,116	-23	-1.66	1,146	7	0.56
UFB7XE		1,127	-12	-0.89	1,135	-4	-0.28
ULTR96		1,154	15	1.06	1,145	6	0.47
WEQ367		1,143	4	0.31	1,138	0	-0.02
XN8GB7		1,145	6	0.42	1,146	8	0.61
YTJPAP		1,168	29	2.10	1,143	5	0.35
ZBWNUD	*	1,114	-25	-1.81	1,101	-38	-2.90

Summary Statistics

	Sample B95		Sample B96	
Grand Means	1,139	MPa	1,138	MPa
Stnd Dev Btwn Labs	14	MPa	13	MPa

Samples B95, B96 : M-10x1.5x70, M-10x1.5x70

Statistics based on 29 of 29 reporting participants

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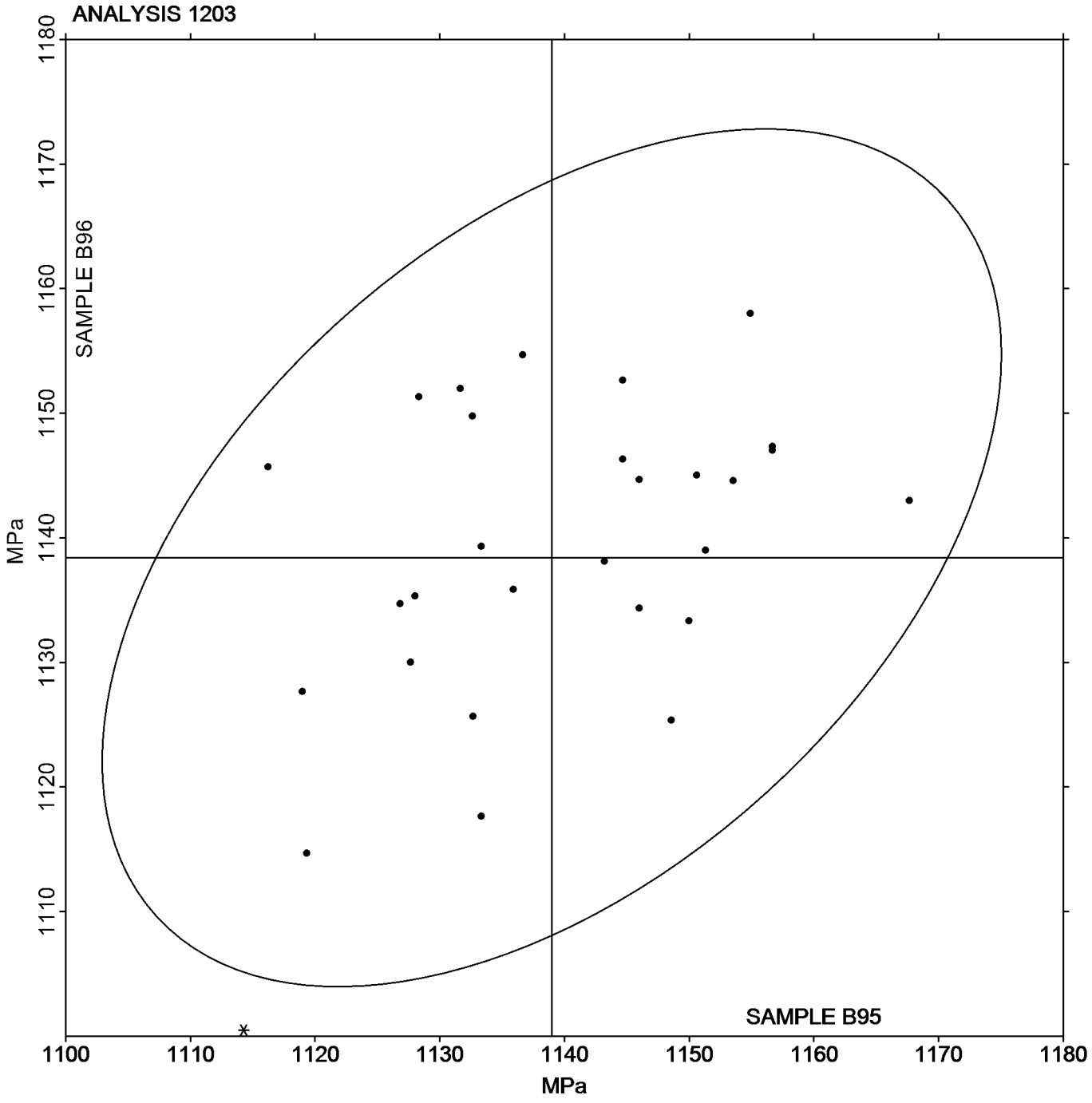
SAMPLE B95	SAMPLE B96
1,139 MPa	1,138 MPa



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		Sample T95			Sample T96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
24T2FH	X	862.00	-279	-17.57	835.67	-309	-20.59
3LRDQ6		1,151	9	0.59	1,150	5	0.32
4GC736		1,132	-10	-0.60	1,137	-8	-0.52
6X93RE		1,144	3	0.19	1,152	7	0.48
AXZRPH	X	1,266	125	7.87	1,292	147	9.78
BD4LWH		1,151	10	0.61	1,157	12	0.79
DBB99W		1,140	-1	-0.08	1,137	-8	-0.55
DU6AX8		1,138	-3	-0.21	1,150	5	0.36
EC4FCU		1,139	-3	-0.16	1,125	-20	-1.30
EFGFXY		1,166	24	1.53	1,162	17	1.12
EJKXLV		1,131	-10	-0.65	1,140	-5	-0.31
EMYURW		1,155	14	0.88	1,158	13	0.85
G8FZ7W		1,148	7	0.42	1,153	8	0.54
GURVXZ		1,147	6	0.36	1,148	3	0.19
HVMHLQ	*	1,093	-49	-3.06	1,097	-48	-3.21
JWD6BY		1,132	-10	-0.60	1,144	-1	-0.06
KLB3RM		1,138	-3	-0.19	1,152	7	0.47
KP4KCR	X	1,082	-60	-3.75	1,132	-13	-0.86
P2ZZKR		1,124	-17	-1.06	1,128	-17	-1.13
Q7E7N6		1,140	-2	-0.11	1,148	3	0.22
Q7ZKCH		1,139	-3	-0.16	1,146	1	0.07
ULTR96		1,153	11	0.71	1,158	13	0.85
XFUF4J		1,167	25	1.59	1,157	12	0.82
Z9PFJ8	X	1,273	131	8.26	1,108	-37	-2.46

Summary Statistics

	Sample T95		Sample T96	
Grand Means	1,141	MPa	1,145	MPa
Stnd Dev Btwn Labs	16	MPa	15	MPa

Samples T95, T96 : M-10x1.5x70, M-10x1.5x70

Statistics based on 20 of 24 reporting participants

Comments on Assigned Data Flags for Test #1204

24T2FH (X) - Data for both samples are low. Possible Systematic Error.

AXZRPH (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample T96.

KP4KCR (X) - Data for sample T95 are low. Inconsistent within the determinations of sample T95.

Z9PFJ8 (X) - Data for sample T95 are high. Inconsistent within the determinations of sample T95.

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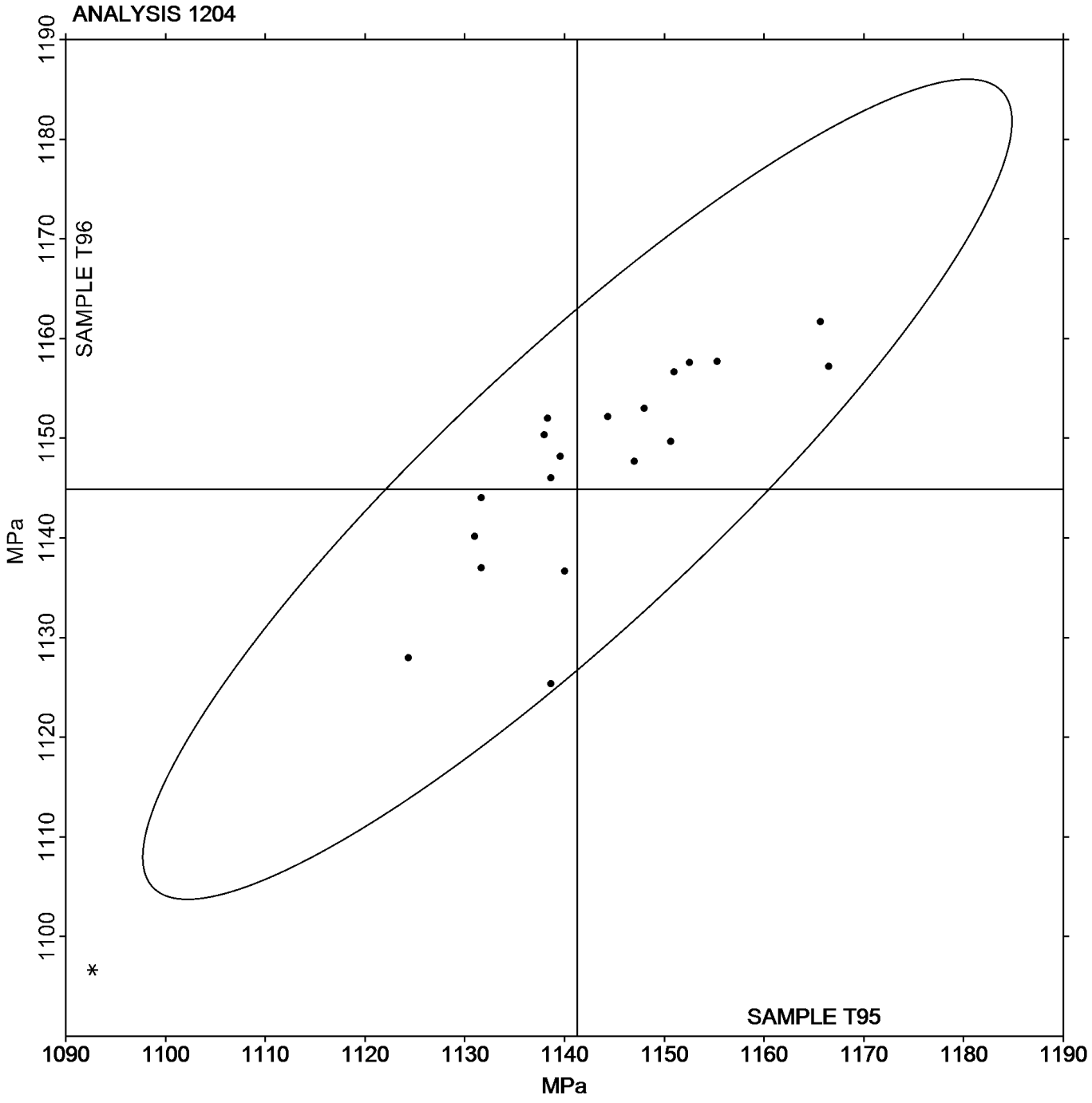
SAMPLE T95	SAMPLE T96
1,141 MPa	1,145 MPa



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		Sample G95			Sample G96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
24T2FH	*	37.61	1.41	2.43	37.71	1.31	2.78
2BRH3G		36.76	0.56	0.96	36.19	-0.21	-0.45
3DWBPT		36.48	0.28	0.48	36.47	0.07	0.14
3LNT2G		37.04	0.84	1.45	36.85	0.45	0.95
3LRDQ6	X	31.78	-4.42	-7.58	30.56	-5.84	-12.38
4GC736		36.17	-0.03	-0.05	36.21	-0.19	-0.40
4T4UZQ		36.56	0.36	0.61	36.30	-0.10	-0.21
768WCX	X	30.09	-6.11	-10.49	29.91	-6.49	-13.76
78CP4B		35.82	-0.38	-0.65	35.84	-0.56	-1.18
7TDFMW		36.09	-0.11	-0.19	35.98	-0.42	-0.89
7TG44B	*	35.91	-0.29	-0.49	37.11	0.71	1.51
7WVXHM		36.61	0.41	0.70	37.23	0.83	1.76
8UKHLZ		36.30	0.10	0.17	36.50	0.10	0.21
922D2V		35.70	-0.50	-0.86	36.53	0.13	0.28
9J29VL		36.09	-0.11	-0.18	36.22	-0.18	-0.39
AK93RX	*	37.88	1.68	2.88	37.55	1.15	2.44
BHEHFX	X	33.75	-2.45	-4.20	34.02	-2.38	-5.05
BMU4BQ		36.22	0.02	0.03	35.91	-0.49	-1.05
CAMD9J		36.19	-0.01	-0.01	36.77	0.37	0.78
CL9Y7X		36.07	-0.13	-0.22	36.27	-0.13	-0.28
CMLDT7		36.46	0.26	0.45	36.61	0.21	0.43
DU6AX8		36.43	0.23	0.39	36.30	-0.10	-0.21
E8N8NU		36.11	-0.09	-0.15	36.09	-0.31	-0.66
EC4FCU		36.19	-0.01	-0.02	36.10	-0.30	-0.64
EJKXLV		37.66	1.46	2.50	37.24	0.84	1.79
EVG4GE		35.94	-0.26	-0.45	36.78	0.38	0.81
F6VQEK	X	34.45	-1.75	-3.01	34.42	-1.98	-4.20
FHM8TL		36.13	-0.07	-0.12	35.91	-0.49	-1.04
FMY4C2		35.69	-0.51	-0.88	36.59	0.19	0.41
FUDZ29		36.10	-0.10	-0.17	36.88	0.48	1.02
FUGGBZ		35.30	-0.90	-1.54	36.04	-0.36	-0.76
G9B8YB		35.97	-0.23	-0.39	35.92	-0.48	-1.01
GMXGJU		36.00	-0.20	-0.34	36.34	-0.06	-0.13
GTYW7G		36.27	0.07	0.12	36.53	0.13	0.28
GURVXZ		36.18	-0.02	-0.04	36.64	0.24	0.50
HUTYBC		35.82	-0.38	-0.65	35.73	-0.68	-1.43
HVMHLQ		36.36	0.16	0.28	36.36	-0.04	-0.08
KCZ27L		35.60	-0.60	-1.03	36.29	-0.11	-0.24
L8HCWA		37.02	0.82	1.41	36.91	0.51	1.07
LCDYTH		35.19	-1.01	-1.74	35.88	-0.53	-1.12
LWYKME		36.02	-0.18	-0.31	36.33	-0.08	-0.16
MV76YN		36.06	-0.14	-0.24	35.94	-0.46	-0.98
N3JQ7H		36.56	0.36	0.62	36.88	0.47	1.00
N4YWJM		36.34	0.14	0.25	36.45	0.05	0.10
NCQBNT		35.50	-0.70	-1.20	36.37	-0.03	-0.07
NQ8724		36.43	0.23	0.39	36.46	0.06	0.12
PYKE37		36.59	0.39	0.68	36.86	0.46	0.96

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		Sample G95			Sample G96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
Q7E7N6		35.73	-0.47	-0.81	36.31	-0.09	-0.20
Q7ZKCH	X	37.88	1.68	2.89	38.99	2.59	5.48
Q92PP3		36.19	-0.01	-0.01	36.68	0.27	0.58
QBKQJN	X	35.89	-0.31	-0.52	34.66	-1.74	-3.70
RF2HJH		36.85	0.65	1.12	36.76	0.36	0.77
T4WVLH		35.81	-0.39	-0.68	36.53	0.12	0.26
UF9L2Y		36.61	0.41	0.70	36.18	-0.22	-0.47
UFB7XE		36.18	-0.02	-0.03	36.31	-0.09	-0.20
UGGKAL	X	34.63	-1.57	-2.70	34.69	-1.71	-3.63
VJ4MMD		35.54	-0.66	-1.14	36.29	-0.11	-0.23
WVDMWC		35.31	-0.89	-1.52	35.91	-0.49	-1.05
XCHHK4		35.16	-1.04	-1.78	35.70	-0.70	-1.49
XKQUYL		35.75	-0.45	-0.77	36.13	-0.28	-0.59
XL6JZD		36.96	0.76	1.30	36.56	0.16	0.34
XLJUQ6		36.73	0.53	0.90	36.67	0.27	0.57
YQDYA2		36.11	-0.09	-0.15	35.61	-0.79	-1.69
ZKMZE7	*	35.05	-1.15	-1.97	35.20	-1.20	-2.55

Summary Statistics

	Sample G95		Sample G96	
Grand Means	36.20	HRC	36.40	HRC
Stnd Dev Btwn Labs	0.58	HRC	0.47	HRC

Samples G95, G96 : 1/2-20 x 2 1/4, 1/2-20 x 2 1/2

Statistics based on 57 of 64 reporting participants

Comments on Assigned Data Flags for Test #1210

3LRDQ6 (X) - Data for both samples are low. Inconsistent within the determinations of sample G96.

768WCX (X) - Data for both samples are low. Inconsistent within the determinations of both samples.

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

F6VQEK (X) - Data for both samples are low. Inconsistent within the determinations of sample G96.

Q7ZKCH (X) - Data for both samples are high.

QBKQJN (X) - Data for sample G96 are low.

UGGKAL (X) - Data for sample G96 are low.

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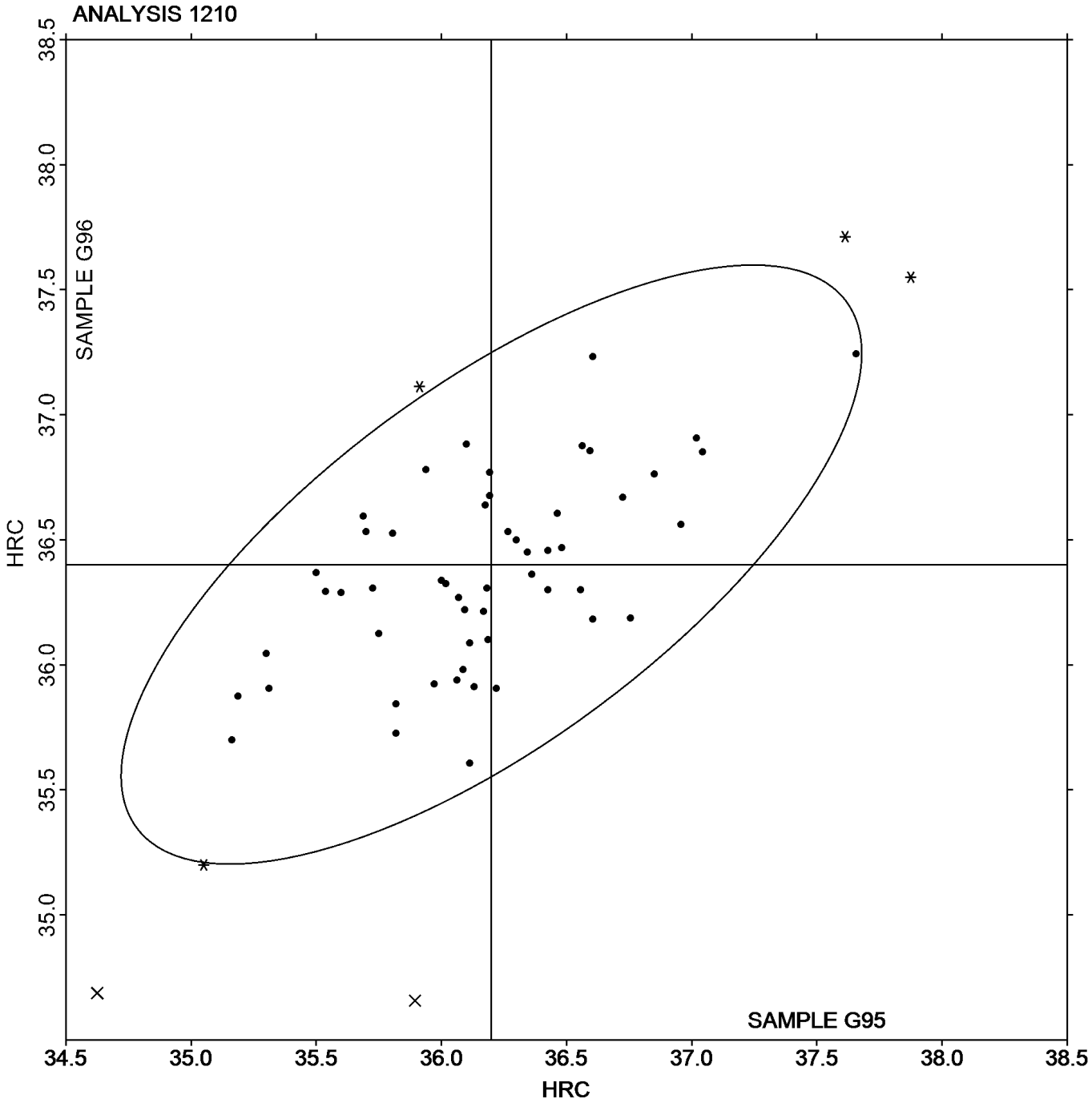
SAMPLE G95	SAMPLE G96
36.20 HRC	36.40 HRC



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1211

Vickers Hardness: Externally Threaded Fasteners
ASTM E92

		Sample V95			Sample V96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2BRH3G		365.00	7.92	0.97	369.88	9.68	1.40
2X2UXA		345.31	-11.77	-1.45	354.75	-5.44	-0.79
7D4WLJ		354.31	-2.77	-0.34	356.25	-3.94	-0.57
7TDFMW		358.69	1.61	0.20	357.81	-2.38	-0.35
8UKHLZ		355.04	-2.04	-0.25	357.48	-2.71	-0.39
9J29VL		367.25	10.17	1.25	368.56	8.37	1.21
BMU4BQ		361.23	4.15	0.51	361.24	1.05	0.15
CC3YQ4		358.78	1.70	0.21	357.59	-2.60	-0.38
CL9Y7X		356.06	-1.02	-0.13	358.31	-1.88	-0.27
DBB99W		351.94	-5.14	-0.63	349.94	-10.26	-1.49
DU6AX8		355.20	-1.88	-0.23	364.03	3.83	0.56
EC4FCU		343.98	-13.11	-1.61	355.66	-4.54	-0.66
EJKXLV		358.69	1.61	0.20	359.19	-1.01	-0.15
FTKAVU		359.13	2.04	0.25	370.50	10.31	1.49
HBVP6Z		352.31	-4.78	-0.59	363.14	2.95	0.43
HUTYBC		360.31	3.23	0.40	361.44	1.24	0.18
JWD6BY		363.75	6.67	0.82	374.38	14.18	2.06
LCDYTH		363.44	6.36	0.78	358.81	-1.38	-0.20
LWYKME		344.25	-12.83	-1.58	345.83	-14.37	-2.08
P2ZZKR		360.34	3.26	0.40	360.86	0.67	0.10
Q7E7N6		373.49	16.41	2.02	363.33	3.13	0.45
QBKQJN		365.88	8.79	1.08	363.88	3.68	0.53
RQENAQ		358.89	1.81	0.22	365.31	5.11	0.74
T4WVLH		335.63	-21.45	-2.64	345.08	-15.11	-2.19
U74DKD		358.25	1.17	0.14	363.13	2.93	0.42
XVT8X2		357.00	-0.08	-0.01	358.69	-1.51	-0.22

Summary Statistics

	Sample V95		Sample V96	
Grand Means	357.08	HV	360.19	HV
Stnd Dev Btwn Labs	8.13	HV	6.90	HV

Samples V95, V96 : 1/2-20 x 2 1/4, 1/2-20 x 2 1/2

Statistics based on 26 of 26 reporting participants

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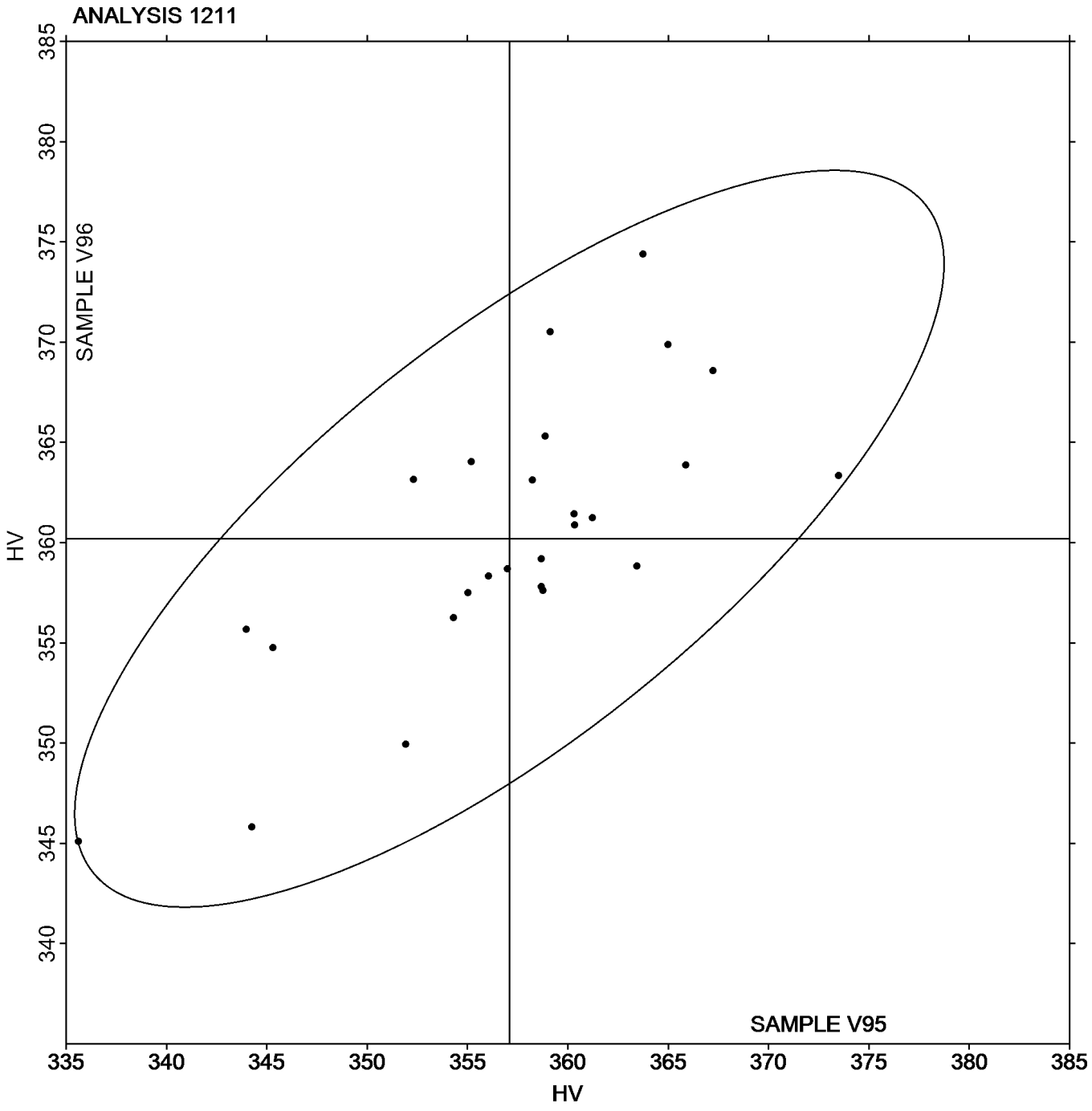
SAMPLE V95	SAMPLE V96
357.08 HV	360.19 HV



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WebCode	Data Flag	Sample Z95 Lab Mean	Sample Z95 Diff. from Grand Mean	Sample Z95 CPV	Sample Z96 Lab Mean	Sample Z96 Diff. from Grand Mean	Sample Z96 CPV
24T2FH		18,052	4	0.01	19,012	-39	-0.10
4T4UZQ		18,768	721	1.62	19,699	649	1.60
7DZEF9		17,647	-401	-0.90	19,227	176	0.43
7TDFMW		18,368	321	0.72	18,682	-369	-0.91
7TG44B		17,408	-640	-1.44	18,812	-238	-0.59
7WVXHM		18,493	445	1.00	19,370	320	0.79
G6B463		18,510	462	1.04	19,483	433	1.07
GTYW7G		18,720	672	1.51	19,887	836	2.07
KCZ27L		18,410	362	0.81	19,290	239	0.59
MVMDP4		17,600	-448	-1.00	18,633	-417	-1.03
NQ8724		17,949	-99	-0.22	18,804	-247	-0.61
QBKQJN		18,035	-12	-0.03	19,063	13	0.03
RF2HJH		17,808	-240	-0.54	18,767	-284	-0.70
TH2R86		17,713	-334	-0.75	18,482	-569	-1.41
XKQUYL		17,436	-612	-1.37	18,793	-258	-0.64
XL6JZD		17,846	-202	-0.45	18,807	-244	-0.60

Summary Statistics

	Sample Z95		Sample Z96	
Grand Means	18,048	lb	19,051	lb
Stnd Dev Btwn Labs	446	lb	405	lb

Samples Z95, Z96 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 16 of 16 reporting participants

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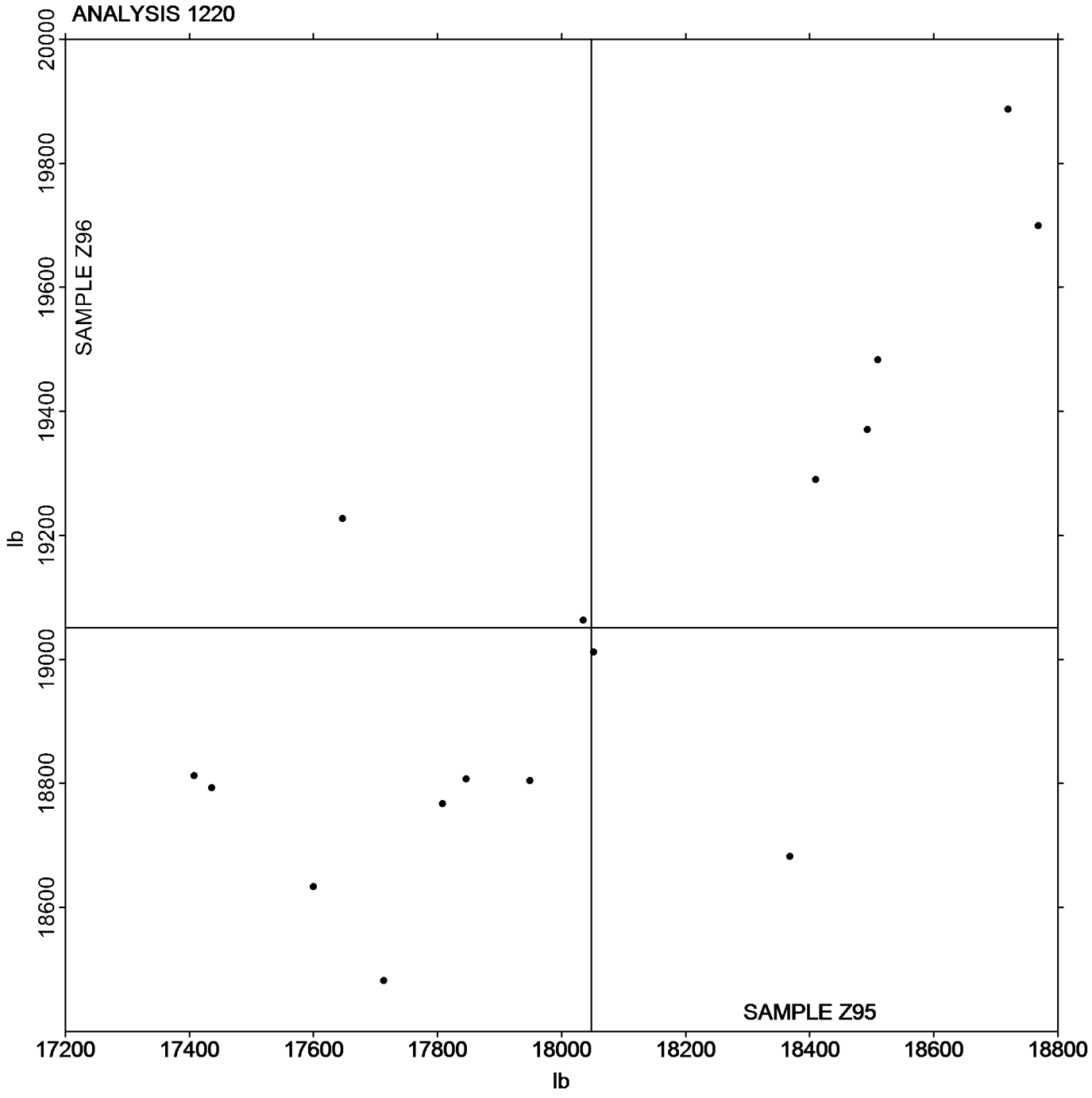
SAMPLE Z95
18,048 lb

SAMPLE Z96
19,051 lb



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		Sample E95			Sample E96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
24T2FH		54.12	-0.36	-0.46	58.06	-0.85	-1.09
26KZW2		54.00	-0.48	-0.62	58.08	-0.83	-1.07
298G9V		55.64	1.16	1.51	59.76	0.85	1.09
32332K		52.74	-1.74	-2.25	57.51	-1.41	-1.81
32GLLG		55.32	0.84	1.09	59.90	0.99	1.27
37U7T3		54.20	-0.28	-0.36	58.34	-0.57	-0.73
3MHTRZ		54.08	-0.40	-0.52	58.10	-0.81	-1.04
3TP7YY		55.24	0.76	0.99	60.20	1.29	1.66
3XERJ7		54.94	0.46	0.60	59.32	0.41	0.53
3XGDH8		54.50	0.02	0.03	59.62	0.71	0.91
4ZY4VG		54.88	0.40	0.52	59.28	0.37	0.47
6BDK2T		55.66	1.18	1.53	59.26	0.35	0.45
768WCX		52.78	-1.70	-2.20	57.24	-1.67	-2.15
78G6GC		54.14	-0.34	-0.44	58.42	-0.49	-0.63
7AJUVE		54.90	0.42	0.55	59.20	0.29	0.37
7BCX9L		55.34	0.86	1.12	59.80	0.89	1.14
7FNVR2		55.50	1.02	1.32	59.42	0.51	0.65
8MZ9AX		54.04	-0.44	-0.57	59.30	0.39	0.50
9J29VL		53.90	-0.58	-0.75	58.02	-0.89	-1.15
9JXPNB		54.08	-0.40	-0.52	58.56	-0.35	-0.45
A3NCTY		54.58	0.10	0.13	59.56	0.65	0.83
A6H3YD		53.09	-1.39	-1.80	58.03	-0.89	-1.14
ACVZHQ		55.54	1.06	1.38	59.90	0.99	1.27
AEHTHY		53.32	-1.16	-1.50	57.56	-1.35	-1.74
AFWWEC		54.92	0.44	0.57	59.28	0.37	0.47
AP3YGN		53.86	-0.62	-0.80	58.24	-0.67	-0.86
B9QUJB		53.94	-0.54	-0.70	58.98	0.07	0.09
BMU4BQ		55.40	0.92	1.19	59.82	0.91	1.17
BY4QDW		53.88	-0.60	-0.77	58.10	-0.81	-1.04
C8F3CF		54.38	-0.10	-0.13	58.96	0.05	0.06
CCNLDT		54.30	-0.18	-0.23	59.44	0.53	0.68
CFLCBR	*	54.70	0.22	0.29	57.80	-1.11	-1.43
CHTCRR		54.94	0.46	0.60	59.20	0.29	0.37
CK2JYR		55.46	0.98	1.27	59.96	1.05	1.35
CWC8TA		53.98	-0.50	-0.64	58.68	-0.23	-0.30
D3XK83		54.94	0.46	0.60	59.00	0.09	0.11
DNXLK7		55.20	0.72	0.94	59.78	0.87	1.12
EC4FCU	*	53.36	-1.12	-1.45	59.04	0.13	0.17
EG9CMT		53.70	-0.78	-1.01	58.30	-0.61	-0.79
EVG4GE		53.42	-1.06	-1.37	57.72	-1.19	-1.53
EXWPYZ		55.32	0.84	1.09	59.88	0.97	1.25
EXZ6CZ		54.78	0.30	0.39	59.62	0.71	0.91
F8H9W6		55.22	0.74	0.96	59.54	0.63	0.81
FMDG3J		54.26	-0.22	-0.28	58.70	-0.21	-0.27
G4J8F9		54.57	0.09	0.12	59.63	0.72	0.92
G744WL		55.42	0.94	1.22	59.48	0.57	0.73
GURMCV		55.40	0.92	1.19	59.72	0.81	1.04

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1303

Rockwell Hardness: C Scale
ASTM E18

Cycle 144
4th Qtr 2023

WebCode	Data Flag	Sample E95 Lab Mean	Sample E95 Diff. from Grand Mean	Sample E95 CPV	Sample E96 Lab Mean	Sample E96 Diff. from Grand Mean	Sample E96 CPV
J3HAYC		54.66	0.18	0.24	59.06	0.15	0.19
JY2PCW		53.92	-0.56	-0.72	58.32	-0.59	-0.76
KCH7AT		54.38	-0.10	-0.13	59.05	0.14	0.18
KRVG2L		54.10	-0.38	-0.49	58.00	-0.91	-1.17
LE7VGC	*	54.14	-0.34	-0.44	59.70	0.79	1.01
LWNMNN		55.68	1.20	1.56	59.38	0.47	0.60
LYN9MK		54.70	0.22	0.29	59.40	0.49	0.63
M6VTVC		53.56	-0.92	-1.19	57.80	-1.11	-1.43
MCTRXK		53.38	-1.10	-1.42	57.40	-1.51	-1.94
N4YMYH		53.94	-0.54	-0.70	59.18	0.27	0.35
NAHZP4		53.76	-0.72	-0.93	58.06	-0.85	-1.09
NEACHF		53.90	-0.58	-0.75	57.50	-1.41	-1.82
NFRFYT		54.78	0.30	0.39	59.14	0.23	0.29
NZRN6B		55.60	1.12	1.45	60.00	1.09	1.40
PBC8BT		55.28	0.80	1.04	59.60	0.69	0.89
PERPJX		53.66	-0.82	-1.06	57.78	-1.13	-1.46
PMMHZ4		54.08	-0.40	-0.52	58.89	-0.02	-0.02
R6FAN9		53.88	-0.60	-0.77	57.88	-1.03	-1.33
RQENAQ		54.78	0.30	0.39	59.24	0.33	0.42
TBBT2N		54.73	0.25	0.33	58.42	-0.49	-0.63
THYBJ7		53.22	-1.26	-1.63	58.39	-0.53	-0.68
TKLT2Q		54.80	0.32	0.42	59.34	0.43	0.55
TPVBVD		54.23	-0.25	-0.32	58.23	-0.68	-0.87
U2BE4W		54.96	0.48	0.62	59.46	0.55	0.71
UF9L2Y		55.06	0.58	0.75	59.48	0.57	0.73
WCG7LM		55.36	0.88	1.14	59.82	0.91	1.17
WKPPUK		53.70	-0.78	-1.01	58.20	-0.71	-0.91
WMGN9J		55.62	1.14	1.48	59.86	0.95	1.22
WVUUQ8		53.82	-0.66	-0.85	58.10	-0.81	-1.04
WX6LBA		56.00	1.52	1.97	60.00	1.09	1.40
X86HMC	X	59.78	5.30	6.87	59.68	0.77	0.99
XTHEUL		54.40	-0.08	-0.10	58.92	0.01	0.01
XXVDBL		55.06	0.58	0.75	59.60	0.69	0.89
YQDYA2		54.20	-0.28	-0.36	58.20	-0.71	-0.91
YTJPAP		55.58	1.10	1.43	59.92	1.01	1.30
YTZP7Y		54.42	-0.06	-0.07	58.88	-0.03	-0.04
Z9PFJ8		54.12	-0.36	-0.46	59.02	0.11	0.14
ZLF3VU		52.80	-1.68	-2.17	58.00	-0.91	-1.17

Summary Statistics

	Sample E95		Sample E96	
Grand Means	54.48	HRC	58.91	HRC
Stnd Dev Btwn Labs	0.77	HRC	0.78	HRC

Samples E95, E96 : Steel, Steel

Statistics based on 84 of 85 reporting participants

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Comments on Assigned Data Flags for Test #1303

X86HMC (X) - Data for sample E95 are high.

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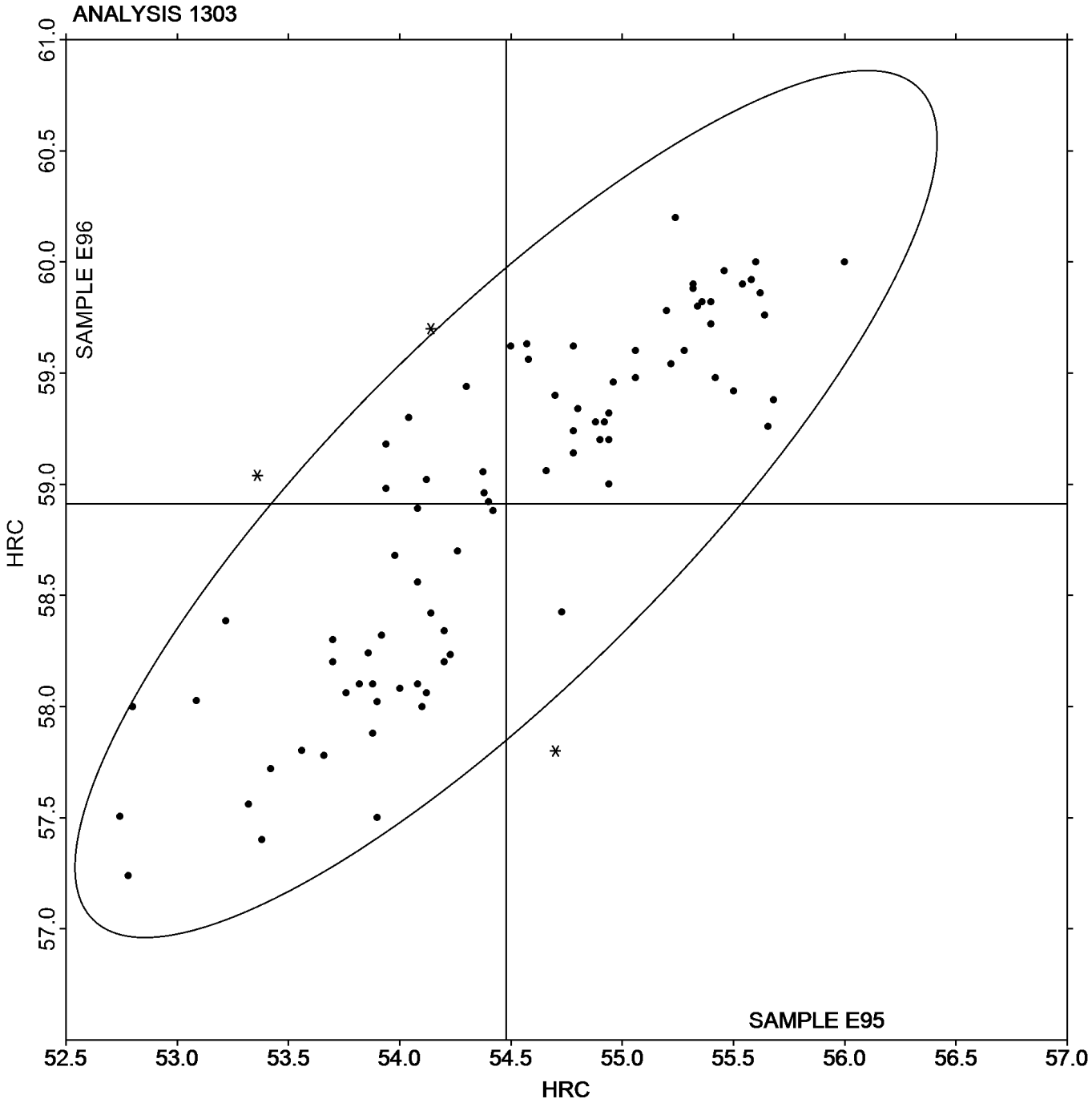
SAMPLE E95	SAMPLE E96
54.48 HRC	58.91 HRC



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		Sample E95			Sample E96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
37U7T3		583.00	-22.53	-1.21	661.20	-37.41	-1.56
4ANRT6		607.14	1.61	0.09	689.94	-8.67	-0.36
4ZY4VG		589.40	-16.13	-0.87	679.00	-19.61	-0.82
6JWEMQ		641.00	35.47	1.91	744.60	45.99	1.92
796PVV		614.60	9.07	0.49	695.60	-3.01	-0.13
7RKWBX		588.60	-16.93	-0.91	669.00	-29.61	-1.24
7TDFMW		615.80	10.27	0.55	709.40	10.79	0.45
83Z26Z		615.80	10.27	0.55	699.20	0.59	0.02
889GEN		617.80	12.27	0.66	717.00	18.39	0.77
9J6M9M		609.00	3.47	0.19	689.80	-8.81	-0.37
BMQJL3		639.74	34.21	1.84	740.78	42.17	1.76
BMU4BQ		597.24	-8.29	-0.45	676.14	-22.47	-0.94
BQVY99		605.88	0.35	0.02	692.40	-6.21	-0.26
CCNLDT		632.40	26.87	1.45	733.20	34.59	1.45
CKKLME		617.20	11.67	0.63	717.00	18.39	0.77
CWC8TA		575.60	-29.93	-1.61	656.40	-42.21	-1.77
DGGWXR	*	653.80	48.27	2.60	744.60	45.99	1.92
DPQLBP		597.20	-8.33	-0.45	693.80	-4.81	-0.20
EEKVBZ	*	621.82	16.29	0.88	745.40	46.79	1.96
FMDG3J		594.80	-10.73	-0.58	682.20	-16.41	-0.69
G4J8F9		596.40	-9.13	-0.49	681.60	-17.01	-0.71
H8F9VW		595.20	-10.33	-0.56	683.20	-15.41	-0.64
JQ2C62		600.20	-5.33	-0.29	699.40	0.79	0.03
JW9ZJ4		585.62	-19.91	-1.07	681.86	-16.75	-0.70
KLB3RM		573.80	-31.73	-1.71	662.40	-36.21	-1.51
KRVG2L		571.60	-33.93	-1.83	674.40	-24.21	-1.01
NG46DX		604.50	-1.03	-0.06	700.14	1.53	0.06
PX3GHT		604.70	-0.83	-0.04	706.36	7.75	0.32
Q7E7N6		617.90	12.37	0.67	702.68	4.07	0.17
TA3JBC		604.80	-0.73	-0.04	700.00	1.39	0.06
TXVJPK		627.98	22.45	1.21	726.58	27.97	1.17
WYWNQX		605.20	-0.33	-0.02	704.18	5.57	0.23
X86HMC		586.80	-18.73	-1.01	671.60	-27.01	-1.13
XMXA7R		597.80	-7.73	-0.42	692.20	-6.41	-0.27
XN8GB7		606.20	0.67	0.04	707.60	8.99	0.38
XRA8P8		605.20	-0.33	-0.02	696.80	-1.81	-0.08
ZLF3VU	*	602.80	-2.73	-0.15	721.00	22.39	0.94

Summary Statistics

	Sample E95		Sample E96	
Grand Means	605.53	HV 10	698.61	HV 10
Stnd Dev Btwn Labs	18.56	HV 10	23.91	HV 10

Samples E95, E96 : Steel, Steel

Statistics based on 37 of 37 reporting participants

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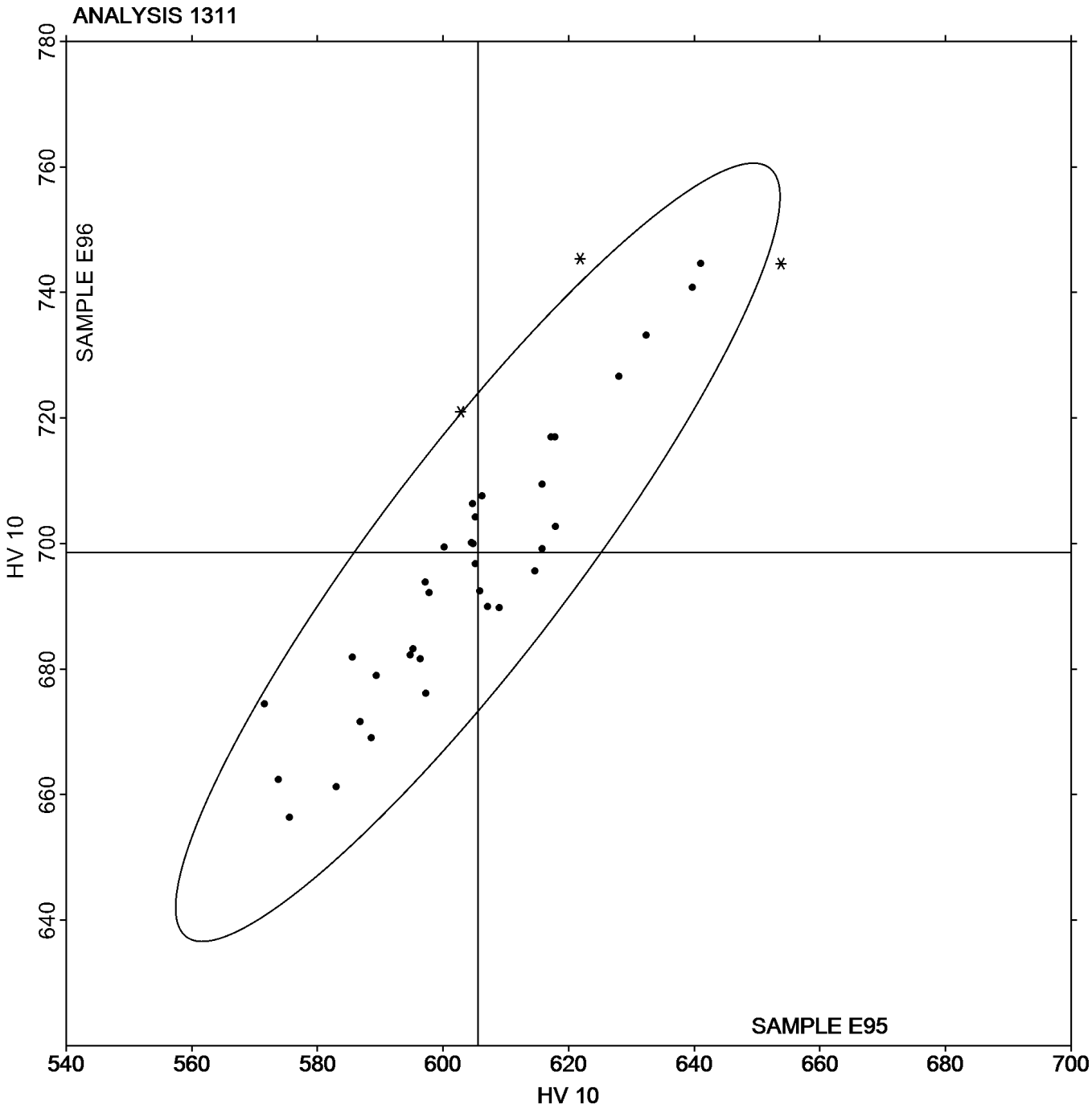
SAMPLE E95	SAMPLE E96
605.53 HV 10	698.61 HV 10



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		Sample E95			Sample E96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
37U7T3		73.30	0.99	1.19	77.24	1.07	1.32
3LNT2G		71.78	-0.53	-0.63	75.38	-0.79	-0.97
3LRDQ6	X	68.38	-3.93	-4.71	73.86	-2.31	-2.85
4XE32U		72.02	-0.29	-0.34	75.56	-0.61	-0.75
66FLYJ		72.52	0.21	0.26	75.20	-0.97	-1.20
68YTZR		72.36	0.05	0.06	75.92	-0.25	-0.31
7D4UWF		73.40	1.09	1.31	77.50	1.33	1.64
7RKWBX		73.35	1.04	1.25	77.09	0.92	1.14
7YFYC9	X	76.54	4.23	5.08	72.00	-4.17	-5.14
889GEN		73.54	1.23	1.48	76.42	0.25	0.31
9J29VL		73.04	0.73	0.88	75.98	-0.19	-0.23
9J6M9M		71.94	-0.37	-0.44	75.88	-0.29	-0.36
C2QKZP		73.44	1.13	1.36	77.30	1.13	1.40
CAMD9J		72.00	-0.31	-0.37	76.00	-0.17	-0.21
CK2JYR		72.46	0.15	0.18	75.96	-0.21	-0.26
CUAAK3		72.00	-0.31	-0.37	76.00	-0.17	-0.21
CVZ9Y2		71.90	-0.41	-0.49	75.88	-0.29	-0.36
DGGWXR		72.66	0.35	0.42	76.60	0.43	0.53
DNVZNQ		72.32	0.01	0.02	76.30	0.13	0.16
EEMG8F		72.78	0.47	0.57	76.82	0.65	0.80
FMDG3J		72.78	0.47	0.57	76.58	0.41	0.51
FMY4C2	*	71.76	-0.55	-0.66	77.12	0.95	1.17
FMY8XP	*	70.34	-1.97	-2.36	75.82	-0.35	-0.43
GURVXZ		72.30	-0.01	-0.01	75.62	-0.55	-0.68
HVMHLQ		72.10	-0.21	-0.25	76.28	0.11	0.14
HX6YKW		71.76	-0.55	-0.66	76.14	-0.03	-0.04
JKJUXL		73.26	0.95	1.15	76.80	0.63	0.78
JUN2DL		71.02	-1.29	-1.54	74.94	-1.23	-1.52
KCZ27L		72.34	0.03	0.04	76.12	-0.05	-0.06
KMJKH7	X	76.06	3.75	4.51	72.94	-3.23	-3.98
L2HTWY		71.82	-0.49	-0.58	75.28	-0.89	-1.10
LWNMNN		72.66	0.36	0.43	77.07	0.90	1.11
N73R26		72.80	0.49	0.59	76.78	0.61	0.75
N8YYUH	*	70.28	-2.03	-2.43	75.20	-0.97	-1.20
NCQBNT	*	71.56	-0.75	-0.90	74.32	-1.85	-2.28
NQ8724	X	69.52	-2.79	-3.35	75.32	-0.85	-1.05
NR3QN4		71.82	-0.49	-0.58	75.00	-1.17	-1.44
PWUFN8		71.33	-0.98	-1.17	74.81	-1.36	-1.68
PYGYP6		72.18	-0.13	-0.15	76.90	0.73	0.90
PYKE37		74.20	1.89	2.27	77.16	0.99	1.22
QE6RRH		71.40	-0.91	-1.09	75.98	-0.19	-0.23
QFXHXW		72.40	0.09	0.11	76.04	-0.13	-0.16
RF2HJH		73.28	0.97	1.17	76.96	0.79	0.98
RTZB3D		72.98	0.67	0.81	76.98	0.81	1.00
RZ3HM9		71.30	-1.01	-1.21	75.32	-0.85	-1.05
TFAVHB		71.80	-0.51	-0.61	75.40	-0.77	-0.95
TPVBVD		72.83	0.52	0.62	77.21	1.04	1.29

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WebCode	Data Flag	Sample E95 Lab Mean	Sample E95 Diff. from Grand Mean	Sample E95 CPV	Sample E96 Lab Mean	Sample E96 Diff. from Grand Mean	Sample E96 CPV
TZH287		73.56	1.25	1.51	77.60	1.43	1.77
UFB7XE		72.50	0.19	0.23	76.60	0.43	0.53
XYC8BV		72.00	-0.31	-0.37	76.02	-0.15	-0.18
Z9PFJ8		71.22	-1.09	-1.30	74.86	-1.31	-1.61

Summary Statistics

	Sample E95		Sample E96	
Grand Means	72.31	HR30N	76.17	HR30N
Stnd Dev Btwn Labs	0.83	HR30N	0.81	HR30N

Samples E95, E96 : Steel, Steel

Statistics based on 47 of 51 reporting participants

Comments on Assigned Data Flags for Test #1351

3LRDQ6 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample E95.

7YFYC9 (X) - Data for sample E95 are high and data for sample E96 are low. Inconsistent in testing between samples.

KMJKH7 (X) - Data appear to be transposed between samples.

NQ8724 (X) - Data for sample E95 are low. Inconsistent within the determinations of sample E95.

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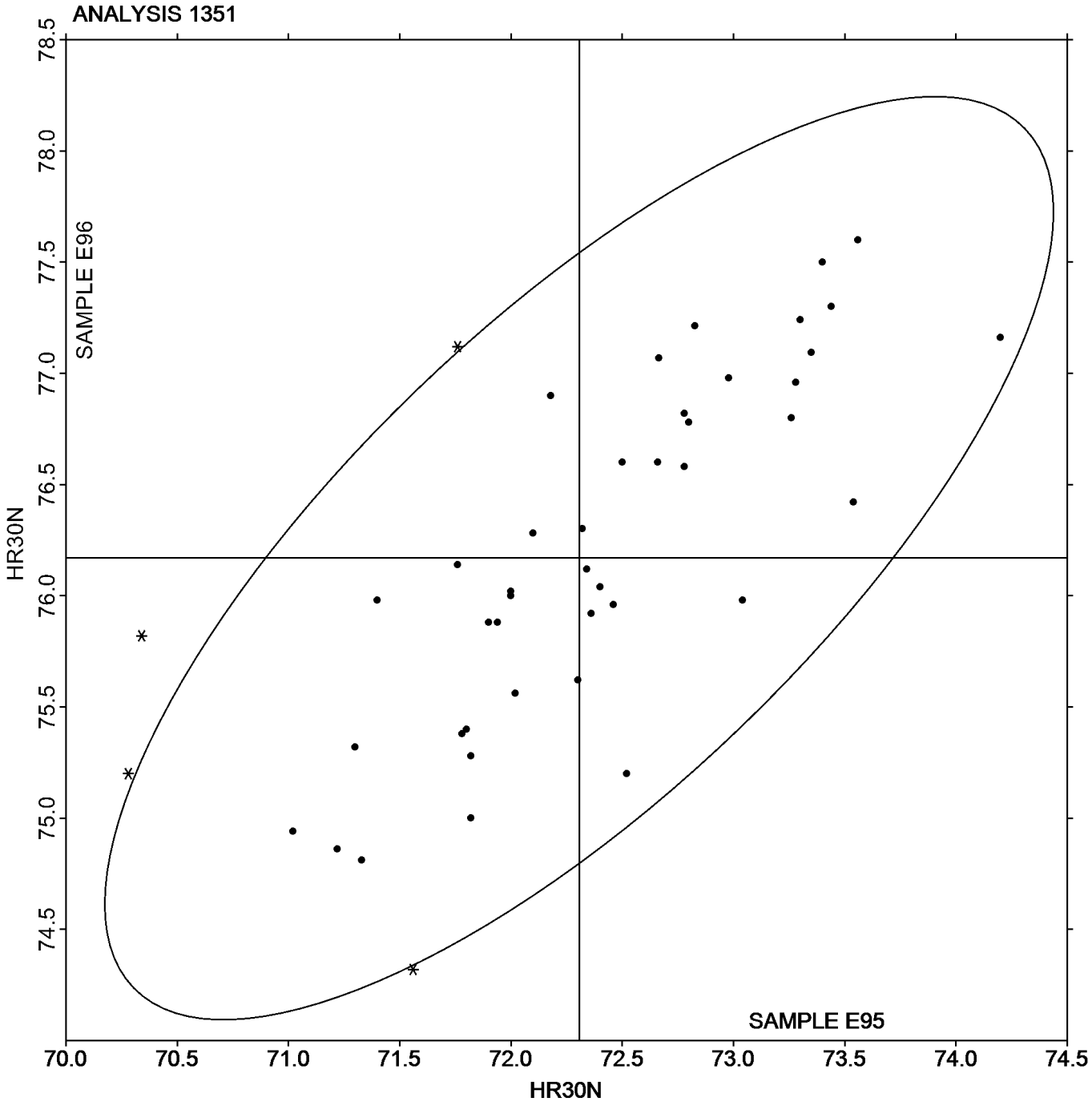
SAMPLE E95	SAMPLE E96
72.31 HR30N	76.17 HR30N



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		Sample C95			Sample C96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
4ANRT6		0.0308	0.0029	0.65	0.0336	0.0017	0.39
4T4UZQ		0.0268	-0.0011	-0.25	0.0320	0.0001	0.02
7DZEF9		0.0312	0.0033	0.74	0.0366	0.0047	1.09
98PZWZ		0.0201	-0.0078	-1.75	0.0248	-0.0071	-1.64
9J29VL		0.0304	0.0025	0.56	0.0348	0.0029	0.66
AH3H3C		0.0286	0.0007	0.16	0.0320	0.0001	0.02
AQDQHT		0.0323	0.0044	0.99	0.0358	0.0039	0.90
B9QUJB		0.0224	-0.0055	-1.23	0.0280	-0.0039	-0.91
BD4LWH		0.0241	-0.0038	-0.86	0.0294	-0.0026	-0.59
BMU4BQ	X	0.0447	0.0168	3.78	0.0293	-0.0026	-0.61
C2QKZP		0.0312	0.0033	0.74	0.0356	0.0037	0.85
CK2JYR		0.0300	0.0021	0.47	0.0350	0.0031	0.71
CVV386		0.0315	0.0036	0.81	0.0321	0.0002	0.04
CVZ9Y2	X	0.0209	-0.0070	-1.57	0.0175	-0.0145	-3.35
CWC8TA	*	0.0250	-0.0029	-0.65	0.0250	-0.0069	-1.60
EC4FCU		0.0258	-0.0021	-0.46	0.0311	-0.0008	-0.18
EJKXLV		0.0334	0.0055	1.23	0.0364	0.0044	1.03
FDM6HQ		0.0209	-0.0070	-1.57	0.0249	-0.0071	-1.63
FHM8TL		0.0286	0.0007	0.16	0.0312	-0.0007	-0.17
GURVXZ		0.0328	0.0049	1.10	0.0376	0.0057	1.31
H8F9VW		0.0243	-0.0036	-0.80	0.0287	-0.0032	-0.74
HWDZ7X		0.0244	-0.0035	-0.78	0.0251	-0.0069	-1.59
JKJUXL		0.0250	-0.0029	-0.65	0.0304	-0.0015	-0.35
K4NW8A	*	0.0387	0.0108	2.44	0.0434	0.0115	2.66
KLB3RM		0.0319	0.0040	0.89	0.0347	0.0028	0.64
LYN9MK		0.0298	0.0019	0.42	0.0327	0.0008	0.18
NR3QN4		0.0290	0.0011	0.25	0.0358	0.0039	0.91
QE6RRH		0.0288	0.0009	0.20	0.0332	0.0013	0.30
QFXHXW		0.0238	-0.0041	-0.92	0.0302	-0.0017	-0.40
RZ3HM9		0.0272	-0.0007	-0.16	0.0313	-0.0006	-0.15
T4WVLH		0.0265	-0.0014	-0.31	0.0308	-0.0011	-0.26
TEZZN7		0.0284	0.0005	0.12	0.0336	0.0017	0.40
TPVBVD		0.0330	0.0051	1.15	0.0378	0.0059	1.36
UF9L2Y		0.0270	-0.0009	-0.21	0.0321	0.0001	0.03
UFB7XE		0.0264	-0.0015	-0.34	0.0295	-0.0024	-0.56
UKF48D		0.0197	-0.0082	-1.83	0.0243	-0.0076	-1.77
UVGJXH		0.0326	0.0047	1.05	0.0347	0.0028	0.65
VFG499	M	0.0239	-0.0040	-0.90	No Data Reported		
W9LEFB		0.0334	0.0055	1.24	0.0342	0.0023	0.52
WVWFMN		0.0268	-0.0011	-0.25	0.0304	-0.0015	-0.35
WYWNQX		0.0259	-0.0020	-0.45	0.0299	-0.0021	-0.48
XN8GB7	X	0.0372	0.0093	2.08	0.0452	0.0133	3.08
Z9PFJ8		0.0251	-0.0028	-0.62	0.0299	-0.0020	-0.47
ZHW229		0.0171	-0.0108	-2.43	0.0232	-0.0087	-2.02
ZKMZE7		0.0331	0.0052	1.17	0.0373	0.0054	1.24

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Summary Statistics

	Sample C95		Sample C96	
Grand Means	0.0279	inches	0.0319	inches
Stnd Dev Btwn Labs	0.0044	inches	0.0043	inches

Samples C95, C96 : Steel, Steel

Statistics based on 41 of 45 reporting participants

Comments on Assigned Data Flags for Test #1401

BMU4BQ (X) - Data for sample C95 are high. Inconsistent within the determinations of sample C96.

CVZ9Y2 (X) - Data for sample C96 are low. Inconsistent within the determinations of sample C96.

VFG499 (M) - Participant did not submit data for sample C96.

XN8GB7 (X) - Data for sample C96 are high.

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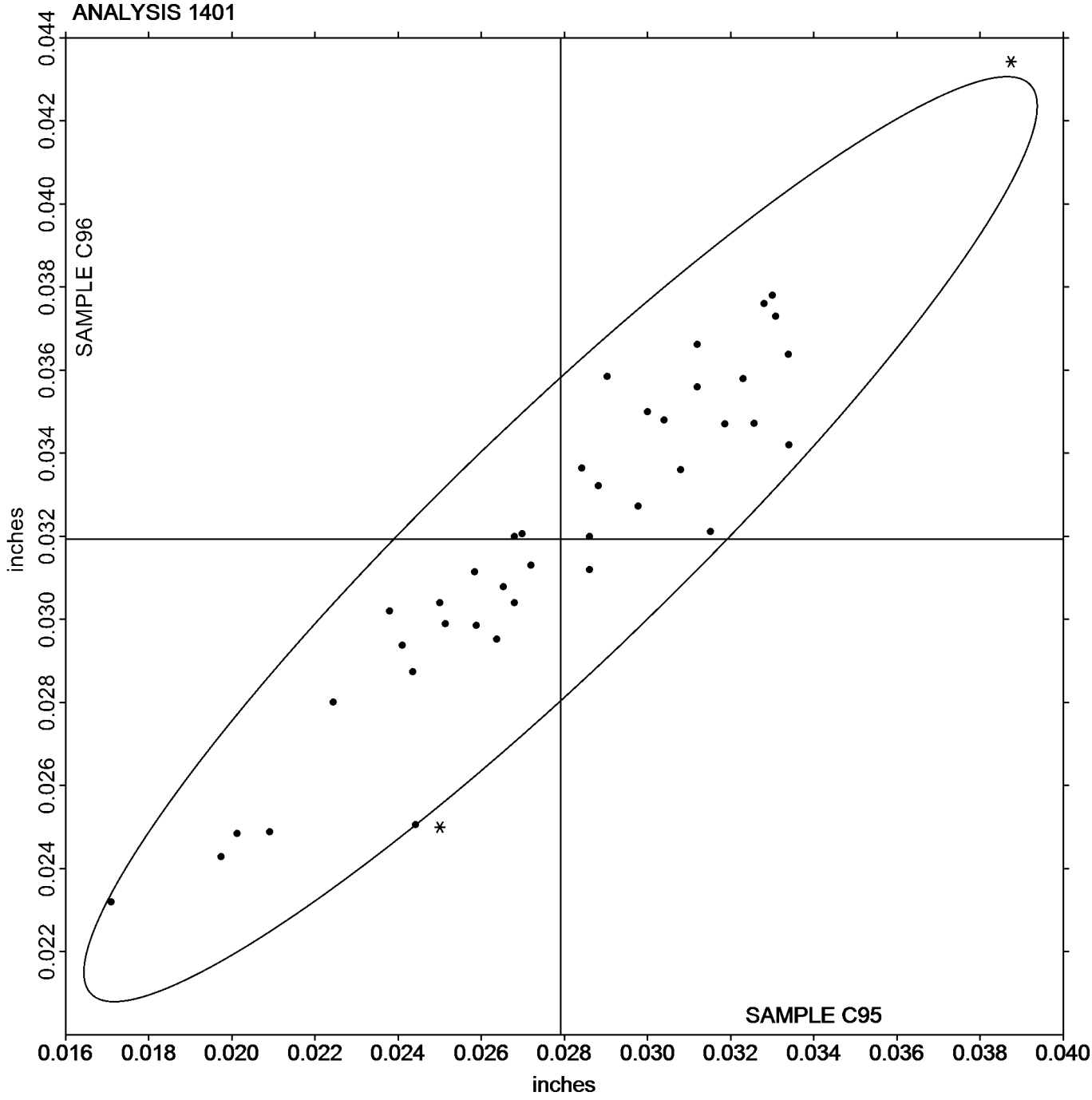
SAMPLE C95	SAMPLE C96
0.0279 inches	0.0319 inches



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		Sample C95			Sample C96		
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3DWBPT	*	0.0286	0.0019	1.13	0.0352	0.0048	2.91
4ANRT6	*	0.0294	0.0027	1.60	0.0290	-0.0014	-0.87
4T4UZQ	*	0.0230	-0.0037	-2.17	0.0306	0.0002	0.11
66FLYJ		0.0257	-0.0009	-0.55	0.0291	-0.0014	-0.83
7DZEF9		0.0274	0.0007	0.43	0.0286	-0.0018	-1.11
7TDFMW		0.0240	-0.0027	-1.58	0.0294	-0.0010	-0.62
88BYPF		0.0262	-0.0005	-0.27	0.0297	-0.0007	-0.45
8TBAGM		0.0257	-0.0010	-0.59	0.0287	-0.0018	-1.08
8UKHLZ		0.0257	-0.0010	-0.59	0.0270	-0.0034	-2.08
98PZWZ		0.0274	0.0007	0.40	0.0293	-0.0012	-0.71
9J29VL		0.0244	-0.0023	-1.34	0.0300	-0.0005	-0.28
9NV3TM		0.0257	-0.0010	-0.59	0.0301	-0.0004	-0.22
AH3H3C		0.0276	0.0009	0.54	0.0312	0.0008	0.47
AK93RX		0.0274	0.0007	0.43	0.0288	-0.0016	-0.99
AQDQHT		0.0273	0.0006	0.35	0.0314	0.0010	0.62
AXZRPH		0.0275	0.0008	0.47	0.0324	0.0020	1.23
B9QUJB		0.0250	-0.0017	-0.99	0.0304	0.0000	-0.01
BD4LWH		0.0261	-0.0005	-0.32	0.0298	-0.0006	-0.35
BGMMR6		0.0289	0.0022	1.31	0.0310	0.0006	0.34
BHZAB4		0.0267	0.0000	0.02	0.0314	0.0009	0.57
BMU4BQ	X	0.0430	0.0163	9.61	0.0277	-0.0027	-1.65
C2QKZP		0.0240	-0.0027	-1.57	0.0290	-0.0014	-0.86
CK2JYR		0.0270	0.0003	0.19	0.0316	0.0012	0.72
CUAAK3		0.0290	0.0023	1.37	0.0296	-0.0008	-0.50
CVZ9Y2		0.0251	-0.0016	-0.94	0.0312	0.0008	0.49
CWC8TA		0.0280	0.0013	0.78	0.0324	0.0020	1.21
EC4FCU		0.0275	0.0009	0.51	0.0317	0.0012	0.76
EJKXLV		0.0287	0.0020	1.19	0.0327	0.0023	1.39
FDM6HQ		0.0273	0.0007	0.40	0.0303	-0.0001	-0.04
FHM8TL		0.0256	-0.0011	-0.63	0.0282	-0.0022	-1.36
GURVXZ		0.0268	0.0001	0.07	0.0316	0.0012	0.72
H8F9VW		0.0252	-0.0015	-0.86	0.0296	-0.0009	-0.53
J8A9MF		0.0306	0.0040	2.33	0.0336	0.0032	1.95
JKJUXL		0.0254	-0.0013	-0.75	0.0304	0.0000	-0.01
K2D36V		0.0294	0.0028	1.63	0.0331	0.0027	1.66
K4NW8A		0.0275	0.0008	0.50	0.0304	-0.0001	-0.04
KLB3RM		0.0280	0.0013	0.78	0.0310	0.0006	0.35
L2HTWY		0.0261	-0.0006	-0.33	0.0299	-0.0005	-0.31
L8HCWA		0.0294	0.0027	1.60	0.0336	0.0032	1.94
LYN9MK		0.0274	0.0007	0.43	0.0302	-0.0002	-0.14
NR3QN4		0.0287	0.0020	1.17	0.0333	0.0029	1.76
Q92PP3		0.0254	-0.0013	-0.77	0.0271	-0.0033	-2.03
QE6RRH		0.0280	0.0013	0.75	0.0294	-0.0010	-0.59
QFXHXW		0.0234	-0.0033	-1.93	0.0298	-0.0006	-0.38
R6XAV6		0.0268	0.0001	0.06	0.0315	0.0011	0.66
RZ3HM9		0.0261	-0.0005	-0.32	0.0305	0.0001	0.07
T4WVLH		0.0265	-0.0002	-0.13	0.0296	-0.0008	-0.50

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WebCode	Data Flag	Sample C95 Lab Mean	Sample C95 Diff. from Grand Mean	Sample C95 CPV	Sample C96 Lab Mean	Sample C96 Diff. from Grand Mean	Sample C96 CPV
TEZZN7		0.0252	-0.0015	-0.86	0.0313	0.0009	0.54
TH2R86		0.0258	-0.0009	-0.52	0.0302	-0.0002	-0.14
TPVBVD		0.0262	-0.0005	-0.28	0.0304	0.0000	-0.01
UF9L2Y		0.0239	-0.0028	-1.65	0.0294	-0.0011	-0.65
UFB7XE		0.0269	0.0003	0.15	0.0308	0.0004	0.26
UKF48D		0.0273	0.0007	0.39	0.0318	0.0014	0.86
UVGJXH		0.0278	0.0011	0.66	0.0318	0.0014	0.84
VFG499		0.0249	-0.0018	-1.05	0.0274	-0.0030	-1.84
VZBVEZ		0.0265	-0.0002	-0.13	0.0291	-0.0014	-0.83
W9LEFB		0.0302	0.0035	2.07	0.0318	0.0014	0.84
WVWFMN		0.0266	-0.0001	-0.05	0.0294	-0.0010	-0.62
WYWNQX		0.0256	-0.0011	-0.63	0.0292	-0.0012	-0.75
XN8GB7		0.0273	0.0006	0.37	0.0303	-0.0001	-0.06
YYND26	X	0.00276	-0.0239	-14.08	0.00315	-0.0273	-16.64
ZHW229	X	0.0187	-0.0079	-4.67	0.0244	-0.0060	-3.67
ZKMZE7		0.0238	-0.0029	-1.71	0.0280	-0.0024	-1.46

Summary Statistics

	Sample C95		Sample C96	
Grand Means	0.0267	inches	0.0304	inches
Stnd Dev Btwn Labs	0.0017	inches	0.0016	inches

Samples C95, C96 : Steel, Steel

Statistics based on 60 of 63 reporting participants

Comments on Assigned Data Flags for Test #1402

BMU4BQ (X) - Data for sample C95 are high.

YYND26 (X) - Data for both samples are low.

ZHW229 (X) - Data for both samples are low.

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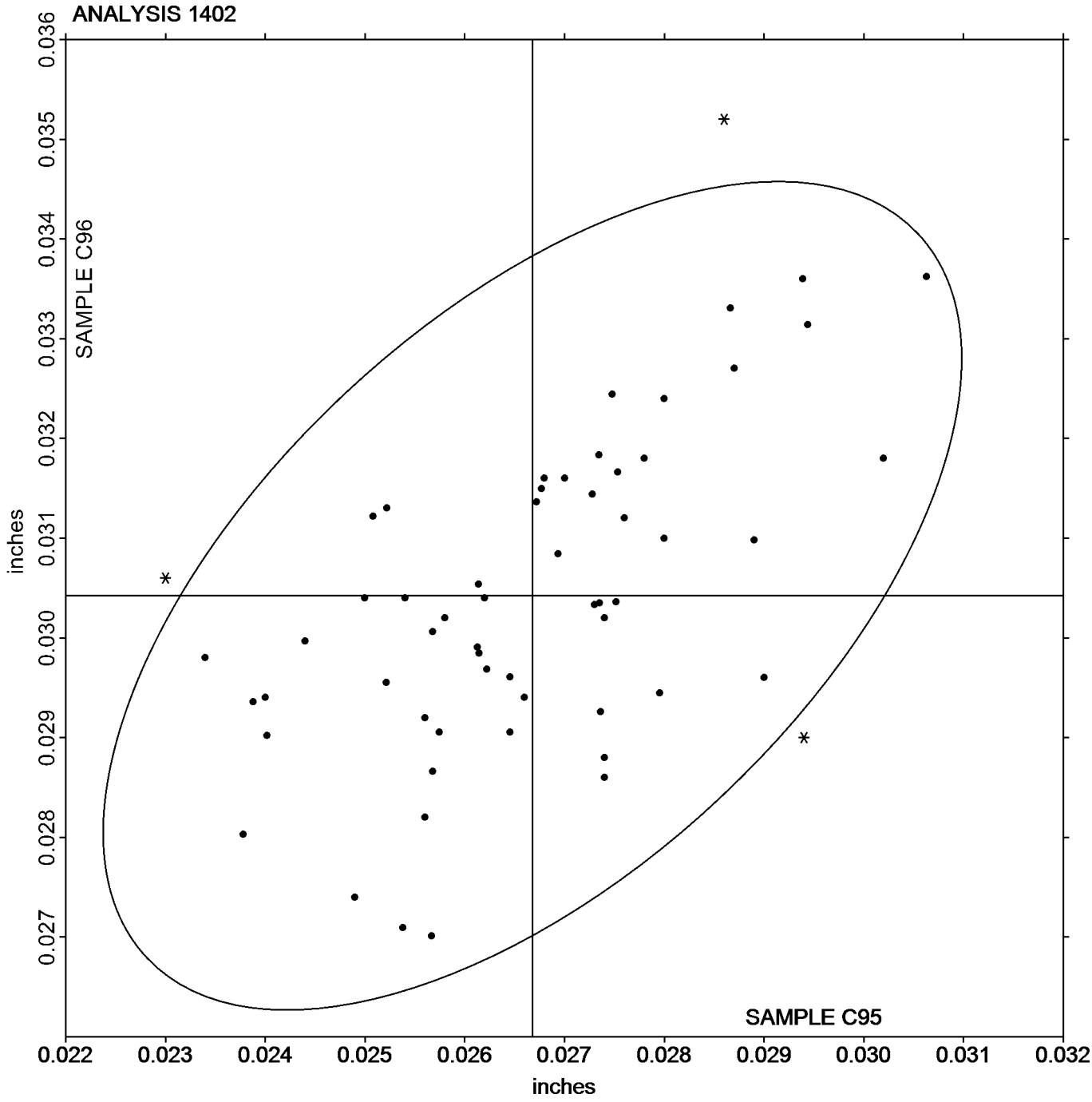
SAMPLE C95
0.0267 inches

SAMPLE C96
0.0304 inches



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		Sample J95			Sample J96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2CZPAG		7.40	-0.53	-0.94	8.90	-0.39	-0.54	Comparison Method
3HMYUY		7.50	-0.43	-0.76	8.00	-1.29	-1.80	Comparison Method
4EJLQ7		8.00	0.07	0.13	10.20	0.91	1.28	General Intercept
4JYUE6		8.00	0.07	0.13	9.20	-0.09	-0.12	Comparison Method
4T4UZQ		7.50	-0.43	-0.76	8.90	-0.39	-0.54	Comparison Method
66FLYJ		7.00	-0.93	-1.65	8.50	-0.79	-1.10	Comparison Method
78G6GC		7.70	-0.23	-0.40	8.70	-0.59	-0.82	N/A
7BCX9L		8.14	0.21	0.38	10.48	1.19	1.67	Abrams Three-Circle
7WVXHM		8.10	0.17	0.31	9.10	-0.19	-0.26	Comparison Method
8VVBB9		7.70	-0.23	-0.40	9.40	0.11	0.16	Comparison Method
A7AYN8		8.40	0.47	0.84	10.30	1.01	1.42	Comparison Method
CVZ9Y2		8.70	0.77	1.37	9.70	0.41	0.58	N/A
EEMG8F		7.50	-0.43	-0.76	7.90	-1.39	-1.94	Comparison Method
EVG4GE		6.90	-1.03	-1.82	7.60	-1.69	-2.36	Comparison Method
GTYW7G		8.50	0.57	1.02	9.70	0.41	0.58	N/A
GWLF8E		7.60	-0.33	-0.58	8.00	-1.29	-1.80	Comparison Method
HPVHWW		8.20	0.27	0.48	9.40	0.11	0.16	Comparison Method
HX6YKW		8.30	0.37	0.66	9.30	0.01	0.02	Comparison Method
JT4C2R	X	7.91	-0.02	-0.03	15.90	6.61	9.26	General Intercept
K4TBKB		6.70	-1.23	-2.18	9.00	-0.29	-0.40	Comparison Method
KLB3RM		8.90	0.97	1.73	10.80	1.51	2.12	N/A
KRVG2L		8.00	0.07	0.13	9.00	-0.29	-0.40	Comparison Method
L99KWC		8.10	0.17	0.31	9.20	-0.09	-0.12	Comparison Method
LE7VGC		8.00	0.07	0.13	8.90	-0.39	-0.54	N/A
MYJUAK	X	3.00	-4.93	-8.75	4.00	-5.29	-7.40	Comparison Method
NQ8724		7.20	-0.73	-1.29	9.80	0.51	0.72	Comparison Method
PYGYP6		7.60	-0.33	-0.58	9.90	0.61	0.86	N/A
QBKQJN		8.80	0.87	1.55	9.40	0.11	0.16	Comparison Method
RQENAQ		8.60	0.67	1.19	9.70	0.41	0.58	Automatic Image Analysis
T2B2YP		8.89	0.96	1.71	9.81	0.52	0.73	General Intercept
TPVBVD		8.20	0.27	0.48	9.10	-0.19	-0.26	Comparison Method
TZH287		8.00	0.07	0.13	8.60	-0.69	-0.96	Comparison Method
UJM8JK		7.60	-0.33	-0.58	10.30	1.01	1.42	Comparison Method
UKF48D		7.60	-0.33	-0.58	9.30	0.01	0.02	Comparison Method
UXREQ3		7.50	-0.43	-0.76	9.70	0.41	0.58	Comparison Method
XKQUYL		9.00	1.07	1.91	9.50	0.21	0.30	N/A
XL6JZD		7.30	-0.63	-1.11	9.40	0.11	0.16	Comparison Method
XRA8P8		8.10	0.17	0.31	9.82	0.53	0.75	General Intercept
YTZP7Y		8.00	0.07	0.13	9.40	0.11	0.16	Comparison Method
Z9PFJ8	X	7.30	-0.63	-1.11	5.54	-3.75	-5.24	Comparison Method
ZHW229		8.00	0.07	0.13	9.00	-0.29	-0.40	Comparison Method

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Summary Statistics

	Sample J95		Sample J96	
Grand Means	7.927	ASTM Grain Size	9.287	ASTM Grain Size
Stnd Dev Btwn Labs	0.563	ASTM Grain Size	0.714	ASTM Grain Size

Samples J95, J96 : Inco 625, Inco 625

Statistics based on 38 of 41 reporting participants

Comments on Assigned Data Flags for Test #1412

JT4C2R (X) - Data for sample J96 are high.

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

Z9PFJ8 (X) - Data for sample J96 are low.

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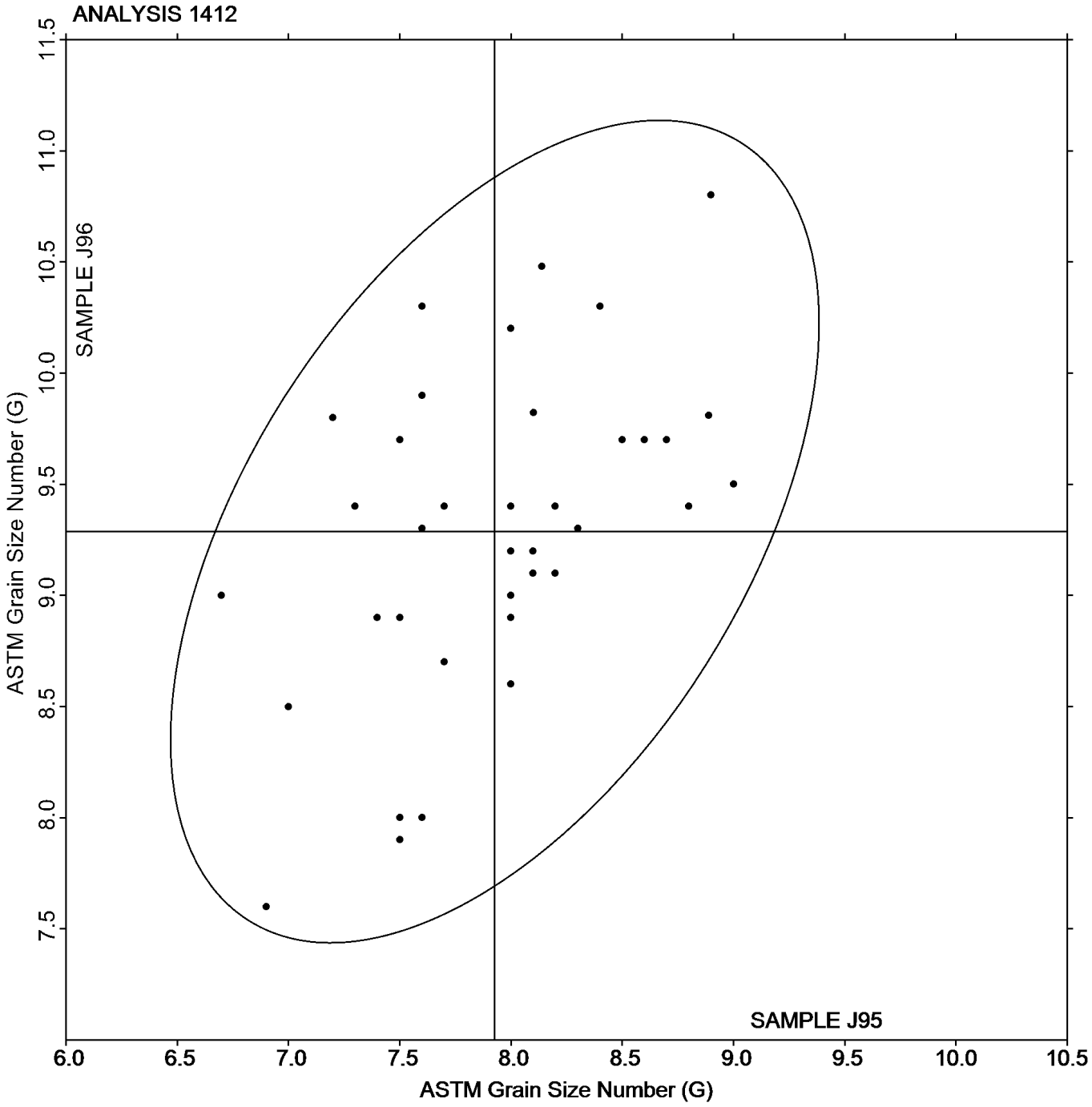
SAMPLE J95
7.927 ASTM Grain Size Number (G)

SAMPLE J96
9.287 ASTM Grain Size Number (G)



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.0450	-0.0009	-0.37	0.0451	-0.0004	-0.17	OE
2RFRZ6		0.0495	0.0037	1.49	0.0491	0.0036	1.42	GD
32332K		0.0464	0.0005	0.20	0.0471	0.0016	0.63	OE
34QFK3		0.0469	0.0010	0.42	0.0478	0.0023	0.89	OE
3B6EZY	X	0.0593	0.0135	5.47	0.0580	0.0125	4.89	OE
3Z9CV6		0.0493	0.0035	1.41	0.0510	0.0055	2.15	OE
4ANRT6		0.0433	-0.0025	-1.03	0.0420	-0.0035	-1.37	OE
4CBBU3		0.0447	-0.0012	-0.48	0.0461	0.0006	0.22	CO
4GC736		0.0429	-0.0030	-1.21	0.0436	-0.0019	-0.75	OE
6XBW8D		0.0467	0.0008	0.32	0.0467	0.0012	0.46	CI
768WCX		0.0469	0.0011	0.43	0.0459	0.0004	0.17	OE
7BCX9L		0.0486	0.0027	1.09	0.0477	0.0022	0.88	CO
7D4UWF		0.0455	-0.0003	-0.14	0.0452	-0.0003	-0.13	CO
93TAQP		0.0447	-0.0012	-0.49	0.0447	-0.0008	-0.32	CI
9CY4YV		0.0417	-0.0042	-1.71	0.0413	-0.0042	-1.63	IR
9J6M9M		0.0447	-0.0012	-0.48	0.0429	-0.0026	-1.01	CO
9JXPNB		0.0442	-0.0017	-0.70	0.0458	0.0003	0.13	OE
A3NCTY		0.0441	-0.0018	-0.74	0.0433	-0.0022	-0.87	OE
BD4LWH		0.0479	0.0021	0.84	0.0470	0.0015	0.58	OE
BHEHFX	X	0.0340	-0.0119	-4.83	0.0343	-0.0112	-4.36	OE
BMU4BQ		0.0480	0.0021	0.86	0.0482	0.0027	1.06	OE
D3XK83		0.0458	-0.0001	-0.04	0.0455	0.0000	-0.01	OE
DHW2LG		0.0487	0.0029	1.16	0.0452	-0.0003	-0.11	CI
EVG4GE		0.0450	-0.0009	-0.36	0.0447	-0.0008	-0.32	OE
G6XK8Q		0.0468	0.0010	0.39	0.0458	0.0003	0.12	CO
GPXRDA		0.0490	0.0031	1.26	0.0487	0.0032	1.24	CI
GT2EDT		0.0497	0.0038	1.54	0.0460	0.0005	0.20	OE
GUMGKZ		0.0461	0.0002	0.09	0.0443	-0.0012	-0.47	CI
GURVXZ		0.0460	0.0002	0.06	0.0464	0.0009	0.37	OE
H8F9VW		0.0463	0.0005	0.19	0.0460	0.0005	0.20	OE
HVKXPA		0.0465	0.0006	0.25	0.0461	0.0006	0.25	CI
JWD6BY	*	0.0390	-0.0069	-2.80	0.0393	-0.0062	-2.41	OE
KXNCAL		0.0499	0.0040	1.63	0.0511	0.0056	2.18	OE
L99KWC	X	0.0330	-0.0129	-5.24	0.0250	-0.0205	-8.01	OE
LHJMHD		0.0478	0.0020	0.80	0.0469	0.0014	0.54	CI
MUCC46		0.0465	0.0006	0.24	0.0448	-0.0007	-0.27	OE
N7JNT4		0.0458	-0.0001	-0.03	0.0445	-0.0010	-0.39	XX
NF7UFA		0.0467	0.0008	0.32	0.0467	0.0012	0.46	XX
P8AFTF		0.0443	-0.0015	-0.63	0.0460	0.0005	0.20	OE
PYDGJU	X	0.0597	0.0138	5.61	0.0553	0.0098	3.85	GD
PZAYGN	*	0.0397	-0.0062	-2.53	0.0385	-0.0070	-2.73	OE
RCB8FH	X	0.0553	0.0095	3.85	0.0423	-0.0032	-1.24	OE
RF2HJH		0.0479	0.0020	0.81	0.0467	0.0012	0.48	OE
TBFYTK		0.0440	-0.0019	-0.78	0.0433	-0.0022	-0.84	CI
TH2R86		0.0440	-0.0019	-0.76	0.0427	-0.0028	-1.11	OE
UM8UKK		0.0423	-0.0035	-1.44	0.0420	-0.0035	-1.37	OE
WX6LBA		0.0457	-0.0002	-0.07	0.0460	0.0005	0.20	OE

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WebCode	Data Flag	Sample M95 Lab Mean	Sample M95 Diff. from Grand Mean	Sample M95 CPV	Sample M96 Lab Mean	Sample M96 Diff. from Grand Mean	Sample M96 CPV	Method
WYWNQX		0.0475	0.0016	0.66	0.0470	0.0015	0.60	OE
X92XXN		0.0495	0.0037	1.49	0.0495	0.0040	1.58	OE
XQYDZZ		0.0447	-0.0012	-0.49	0.0447	-0.0008	-0.32	CI
YQDYA2		0.0463	0.0005	0.19	0.0460	0.0005	0.20	OE
ZHW229		0.0438	-0.0021	-0.86	0.0435	-0.0020	-0.78	GD
ZLF3VU	X	0.0310	-0.0149	-6.06	0.0301	-0.0154	-6.01	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.0459	Percent	0.0455	Percent
Stnd Dev Btwn Labs	0.0025	Percent	0.0026	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 47 of 53 reporting participants

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
GD	Spectrometry - Glow Discharge (GDS)	IR	IR (Absorption / Detection)
OE	Spectrometry - Optical Emission (OES)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1640

3B6EZY (X) - Data for both samples are high. Possible Systematic Error.

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

L99KWC (X) - Data for both samples are low. Possible Systematic Error.

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

RCB8FH (X) - Data for sample M95 are high. Inconsistent within the determinations of sample M95.

ZLF3VU (X) - Data for both samples are low. Possible Systematic Error.

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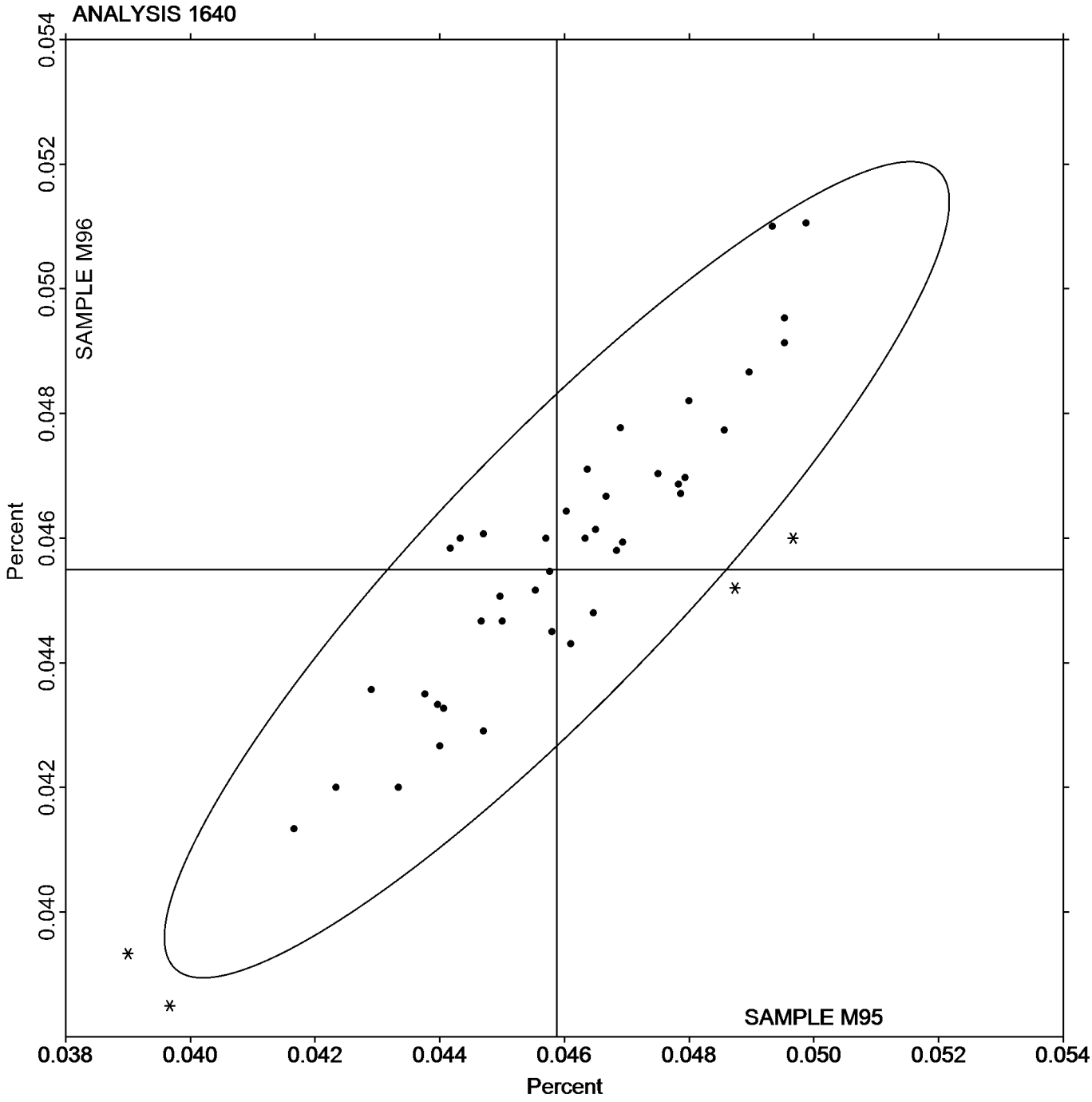
SAMPLE M95
0.0459 Percent

SAMPLE M96
0.0455 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		1.810	0.014	0.35	1.831	0.009	0.23	WD
2RFRZ6		1.803	0.007	0.19	1.817	-0.006	-0.15	GD
32332K		1.800	0.004	0.12	1.830	0.008	0.20	OE
34QFK3		1.815	0.019	0.48	1.836	0.014	0.37	OE
3B6EZY		1.834	0.038	0.98	1.846	0.023	0.62	OE
3Z9CV6		1.773	-0.023	-0.58	1.807	-0.016	-0.42	OE
4ANRT6		1.764	-0.032	-0.82	1.802	-0.020	-0.54	OE
4GC736		1.800	0.004	0.11	1.827	0.004	0.12	OE
6XBW8D		1.798	0.002	0.06	1.825	0.003	0.08	WD
768WCX		1.797	0.001	0.02	1.817	-0.006	-0.15	OE
7D4UWF		1.810	0.014	0.37	1.837	0.014	0.38	XR
93TAQP		1.795	-0.001	-0.03	1.814	-0.008	-0.21	XR
9CY4YV		1.807	0.011	0.29	1.818	-0.004	-0.12	IC
9J6M9M		1.811	0.015	0.38	1.836	0.013	0.36	OE
9JXPNB		1.800	0.004	0.11	1.840	0.018	0.47	OE
A3NCTY		1.800	0.004	0.11	1.820	-0.002	-0.06	OE
BD4LWH		1.790	-0.006	-0.15	1.810	-0.012	-0.33	OE
BHEHFX		1.817	0.021	0.54	1.843	0.021	0.56	OE
BMU4BQ		1.805	0.009	0.25	1.844	0.021	0.57	OE
D3XK83		1.853	0.057	1.49	1.894	0.072	1.92	OE
DHW2LG		1.816	0.020	0.53	1.837	0.015	0.39	WD
EVG4GE		1.758	-0.038	-0.98	1.815	-0.007	-0.20	OE
G6XK8Q		1.850	0.054	1.41	1.878	0.056	1.49	DR
GPXRDA		1.802	0.006	0.17	1.819	-0.003	-0.09	OE
GT2EDT	X	1.720	-0.076	-1.97	1.716	-0.106	-2.85	OE
GUMGKZ		1.824	0.028	0.73	1.848	0.025	0.67	WD
GURVXZ		1.797	0.001	0.02	1.823	0.001	0.03	OE
H8F9VW		1.795	-0.001	-0.01	1.848	0.026	0.70	OE
HVKXPA		1.778	-0.018	-0.46	1.809	-0.013	-0.35	WD
JWD6BY		1.810	0.014	0.37	1.840	0.018	0.47	OE
KXNCAL		1.783	-0.013	-0.32	1.828	0.006	0.16	OE
L99KWC		1.871	0.075	1.95	1.880	0.057	1.53	OE
LHJMHD		1.817	0.021	0.54	1.825	0.003	0.08	IC
MUCC46	*	1.680	-0.116	-3.00	1.703	-0.119	-3.19	OE
N7JNT4		1.803	0.007	0.19	1.823	0.001	0.02	XX
NF7UFA		1.783	-0.013	-0.32	1.800	-0.022	-0.60	OE
P8AFTF		1.729	-0.067	-1.72	1.759	-0.063	-1.69	OE
PYDGJU		1.800	0.004	0.11	1.827	0.004	0.12	GD
PZAYGN		1.796	0.000	0.00	1.819	-0.004	-0.10	WD
RCB8FH		1.756	-0.040	-1.02	1.785	-0.037	-0.99	OE
RF2HJH		1.766	-0.030	-0.78	1.783	-0.039	-1.04	OE
TBFYTK		1.792	-0.004	-0.09	1.813	-0.009	-0.25	WD
TH2R86		1.847	0.051	1.31	1.867	0.044	1.19	OE
UM8UKK		1.807	0.011	0.29	1.834	0.012	0.32	OE
WX6LBA		1.770	-0.026	-0.67	1.797	-0.025	-0.68	OE
WYWNQX		1.790	-0.006	-0.14	1.816	-0.006	-0.17	OE
X92XXN	*	1.690	-0.106	-2.73	1.732	-0.090	-2.41	OE

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1641

Corrosion Resistant Steel, MANGANESE (Mn)

MANGANESE (Mn)

		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
XQYDZZ		1.828	0.032	0.82	1.850	0.028	0.74	XR
YQDYA2		1.813	0.017	0.45	1.843	0.021	0.56	OE
ZHW229	*	1.691	-0.105	-2.72	1.718	-0.105	-2.80	GD
ZLF3VU		1.868	0.072	1.86	1.904	0.081	2.18	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	1.796	Percent	1.822	Percent
Stnd Dev Btwn Labs	0.039	Percent	0.037	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 50 of 51 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1641

GT2EDT (X) - Data for sample M96 are low.

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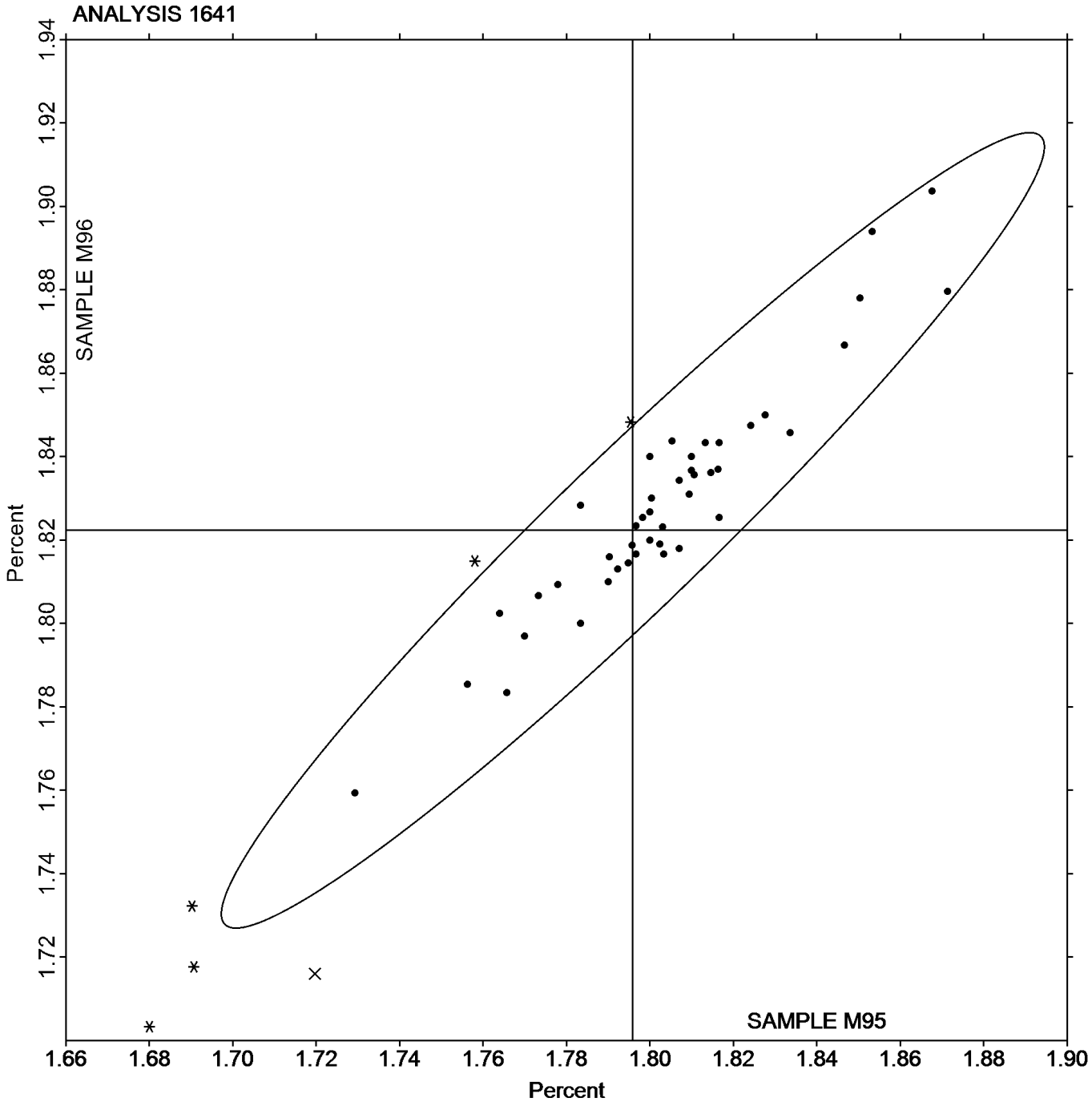
SAMPLE M95	SAMPLE M96
1.796 Percent	1.822 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.0194	-0.0005	-0.26	0.0236	-0.0006	-0.31	WD
2RFRZ6	*	0.0242	0.0042	2.08	0.0294	0.0052	2.79	GD
32332K		0.0177	-0.0022	-1.09	0.0225	-0.0016	-0.88	OE
34QFK3		0.0184	-0.0015	-0.75	0.0233	-0.0009	-0.49	OE
3B6EZY		0.0204	0.0004	0.21	0.0253	0.0011	0.61	OE
3Z9CV6		0.0200	0.0000	0.02	0.0250	0.0008	0.44	OE
4ANRT6	*	0.0210	0.0010	0.51	0.0217	-0.0025	-1.35	OE
4GC736		0.0236	0.0037	1.80	0.0274	0.0032	1.73	OE
6XBW8D		0.0200	0.0000	0.02	0.0240	-0.0002	-0.09	WD
768WCX		0.0159	-0.0041	-1.99	0.0200	-0.0042	-2.24	OE
7D4UWF		0.0203	0.0004	0.18	0.0250	0.0008	0.44	XR
93TAQP		0.0205	0.0005	0.26	0.0247	0.0005	0.27	XR
9CY4YV		0.0207	0.0007	0.34	0.0230	-0.0012	-0.63	IC
9J6M9M		0.0216	0.0017	0.82	0.0257	0.0015	0.82	OE
9JXPNB		0.0204	0.0004	0.20	0.0241	-0.0001	-0.06	OE
A3NCTY		0.0200	0.0000	0.02	0.0241	-0.0001	-0.04	OE
BD4LWH		0.0179	-0.0021	-1.03	0.0217	-0.0025	-1.33	OE
BHEHFX	*	0.0138	-0.0061	-3.01	0.0196	-0.0046	-2.47	OE
BMU4BQ		0.0210	0.0011	0.52	0.0251	0.0009	0.50	OE
D3XK83		0.0190	-0.0010	-0.49	0.0259	0.0017	0.93	OE
DHW2LG		0.0190	-0.0010	-0.47	0.0223	-0.0018	-0.99	WD
EVG4GE	X	0.0277	0.0077	3.78	0.0313	0.0072	3.85	OE
G6XK8Q		0.0231	0.0031	1.54	0.0259	0.0017	0.91	DR
GPXRDA		0.0204	0.0004	0.21	0.0249	0.0007	0.39	OE
GT2EDT		0.0217	0.0017	0.83	0.0243	0.0002	0.09	OE
GUMGKZ		0.0206	0.0006	0.31	0.0242	0.0000	0.02	WD
GURVXZ		0.0227	0.0027	1.32	0.0256	0.0015	0.79	OE
H8F9VW		0.0209	0.0009	0.44	0.0248	0.0006	0.32	OE
HVKXPA		0.0196	-0.0004	-0.20	0.0239	-0.0003	-0.15	WD
JWD6BY		0.0177	-0.0023	-1.13	0.0230	-0.0012	-0.63	OE
KXNCAL	*	0.0154	-0.0045	-2.23	0.0189	-0.0053	-2.85	OE
L99KWC	X	0.0263	0.0064	3.12	0.0267	0.0025	1.34	OE
LHJMHD		0.0173	-0.0026	-1.29	0.0246	0.0004	0.21	IC
MUCC46		0.0217	0.0018	0.87	0.0257	0.0016	0.84	XX
N7JNT4		0.0213	0.0014	0.67	0.0253	0.0012	0.62	XX
NF7UFA		0.0200	0.0000	0.02	0.0233	-0.0008	-0.45	OE
P8AFTF		0.0170	-0.0030	-1.45	0.0247	0.0005	0.27	OE
PYDGJU		0.0210	0.0010	0.51	0.0253	0.0012	0.62	GD
PZAYGN		0.0196	-0.0004	-0.20	0.0236	-0.0006	-0.31	WD
RCB8FH		0.0200	0.0000	0.02	0.0233	-0.0008	-0.45	OE
RF2HJH		0.0200	0.0001	0.02	0.0230	-0.0011	-0.62	OE
TBFYTK		0.0197	-0.0003	-0.15	0.0240	-0.0002	-0.09	WD
TH2R86		0.0203	0.0004	0.18	0.0243	0.0002	0.09	OE
UM8UKK		0.0203	0.0004	0.18	0.0253	0.0012	0.62	OE
WX6LBA		0.0223	0.0023	1.14	0.0264	0.0022	1.20	OE
WYWNQX		0.0215	0.0016	0.77	0.0254	0.0012	0.66	OE
X92XXN		0.0224	0.0025	1.21	0.0259	0.0018	0.95	OE

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1642

Corrosion Resistant Steel, PHOSPHORUS (P)

PHOSPHORUS (P)

WebCode	Data Flag	Sample M95 Lab Mean	Sample M95 Diff. from Grand Mean	Sample M95 CPV	Sample M96 Lab Mean	Sample M96 Diff. from Grand Mean	Sample M96 CPV	Method
XQYDZZ		0.0180	-0.0020	-0.96	0.0223	-0.0018	-0.99	XR
YQDYA2		0.0177	-0.0023	-1.13	0.0233	-0.0008	-0.45	OE
ZHW229		0.0204	0.0004	0.21	0.0246	0.0005	0.25	GD
ZLF3VU		0.0208	0.0008	0.41	0.0251	0.0009	0.48	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.0200	Percent	0.0242	Percent
Stnd Dev Btwn Labs	0.0020	Percent	0.0019	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 49 of 51 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1642

EVG4GE (X) - Data for both samples are high. Possible Systematic Error.

L99KWC (X) - Data for sample M95 are high.

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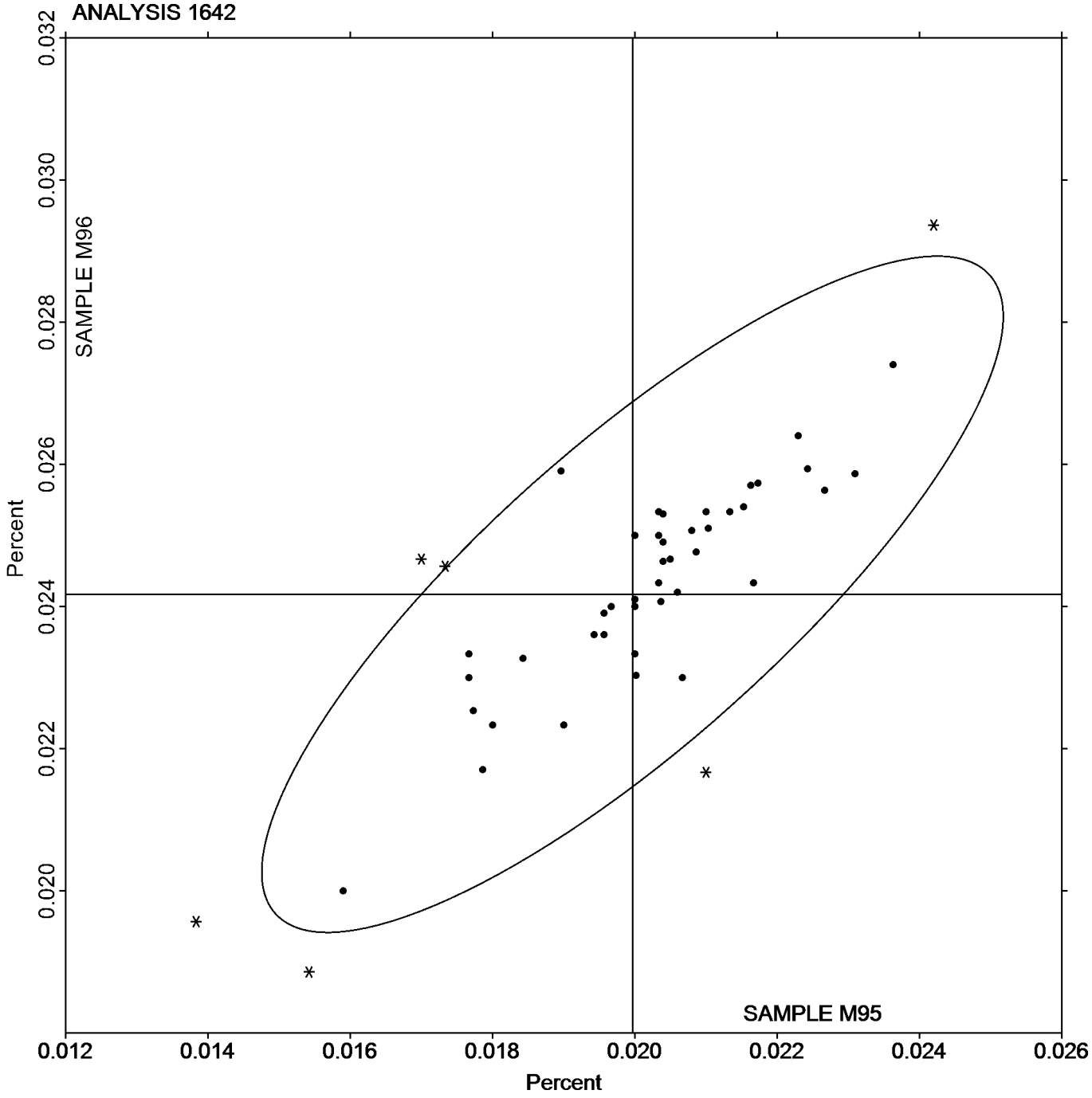
SAMPLE M95	SAMPLE M96
0.0200 Percent	0.0242 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.000533	-0.00064	-0.87	0.000733	-0.00057	-0.73	OE
32332K		0.00219	0.00102	1.40	0.00213	0.00083	1.07	OE
34QFK3		0.00103	-0.00014	-0.19	0.00140	0.00010	0.13	OE
3B6EZY	X	0.00507	0.00390	5.34	0.00537	0.00407	5.24	OE
3Z9CV6		0.00167	0.00050	0.68	0.00167	0.00037	0.47	OE
4ANRT6	X	0.00367	0.00250	3.42	0.00333	0.00203	2.62	OE
4CBBU3		0.000358	-0.00081	-1.11	0.000275	-0.00102	-1.32	CO
4GC736	X	0.00607	0.00490	6.71	0.00637	0.00507	6.53	OE
6XBW8D		0.000343	-0.00083	-1.13	0.000460	-0.00084	-1.08	CI
768WCX		0.00273	0.00156	2.14	0.00277	0.00147	1.89	OE
7BCX9L		0.000424	-0.00074	-1.02	0.000435	-0.00086	-1.11	CO
7D4UWF		0.000433	-0.00074	-1.01	0.000467	-0.00083	-1.07	CO
93TAQP		0.000400	-0.00077	-1.05	0.000300	-0.00100	-1.29	CI
9CY4YV		0.000300	-0.00087	-1.19	0.000300	-0.00100	-1.29	CI
9JXPNB		0.00137	0.00020	0.27	0.00127	-0.00003	-0.04	OE
A3NCTY		0.00127	0.00010	0.13	0.00163	0.00033	0.43	OE
BMU4BQ		0.00100	-0.00017	-0.23	0.00107	-0.00023	-0.30	OE
D3XK83	X	0.00480	0.00363	4.97	0.00480	0.00350	4.51	OE
DHW2LG		0.000933	-0.00024	-0.32	0.000967	-0.00033	-0.43	CI
EVG4GE		0.00100	-0.00017	-0.23	0.00100	-0.00030	-0.38	OE
GPXRDA		0.000833	-0.00034	-0.46	0.000933	-0.00037	-0.47	CI
GUMGKZ		0.000740	-0.00043	-0.59	0.000785	-0.00051	-0.66	CI
GURVXZ	X	0.00697	0.00580	7.94	0.00670	0.00540	6.96	OE
H8F9VW		0.00100	-0.00017	-0.23	0.00100	-0.00030	-0.38	OE
HVKXPA		0.000400	-0.00077	-1.05	0.000500	-0.00080	-1.03	CI
JWD6BY		0.00100	-0.00017	-0.23	0.00167	0.00037	0.47	OE
KXNCAL		0.00185	0.00068	0.94	0.00203	0.00073	0.94	OE
L99KWC	X	0.00333	0.00216	2.96	0.00433	0.00303	3.91	OE
LHJMHD		0.000567	-0.00060	-0.82	0.000633	-0.00067	-0.86	CI
MUCC46		0.00180	0.00063	0.86	0.00207	0.00077	0.99	XX
N7JNT4		0.00100	-0.00017	-0.23	0.00127	-0.00003	-0.04	XX
NF7UFA		0.000933	-0.00024	-0.32	0.00107	-0.00023	-0.30	XX
P8AFTF	*	0.00337	0.00220	3.01	0.00347	0.00217	2.79	OE
PYDGJU	X	0.00567	0.00450	6.16	0.00500	0.00370	4.77	GD
RCB8FH		0.00260	0.00143	1.96	0.00300	0.00170	2.19	OE
RF2HJH		0.00158	0.00041	0.56	0.00141	0.00011	0.14	OE
TBFYTK		0.00119	0.00002	0.03	0.00119	-0.00011	-0.14	CI
TH2R86		0.00100	-0.00017	-0.23	0.00133	0.00003	0.04	OE
UM8UKK		0.00133	0.00016	0.23	0.00200	0.00070	0.90	OE
WX6LBA		0.00110	-0.00007	-0.09	0.00140	0.00010	0.13	OE
X92XXN		0.00220	0.00103	1.41	0.00213	0.00083	1.07	OE
XQYDZZ		0.000400	-0.00077	-1.05	0.000300	-0.00100	-1.29	CI
YQDYA2		0.00100	-0.00017	-0.23	0.00133	0.00003	0.04	OE
ZLF3VU		0.00137	0.00020	0.27	0.00167	0.00037	0.47	OE

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Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.00117	Percent	0.00130	Percent
Stnd Dev Btwn Labs	0.00073	Percent	0.00078	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 37 of 44 reporting participants

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
GD	Spectrometry - Glow Discharge (GDS)	OE	Spectrometry - Optical Emission (OES)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1643

3B6EZY (X) - Data for both samples are high. Possible Systematic Error.

4ANRT6 (X) - Data for sample M95 are high. Inconsistent within the determinations of both samples.

4GC736 (X) - Data for both samples are high. Possible Systematic Error.

D3XK83 (X) - Data for both samples are high. Possible Systematic Error.

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

L99KWC (X) - Data for both samples are high. Possible Systematic Error.

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

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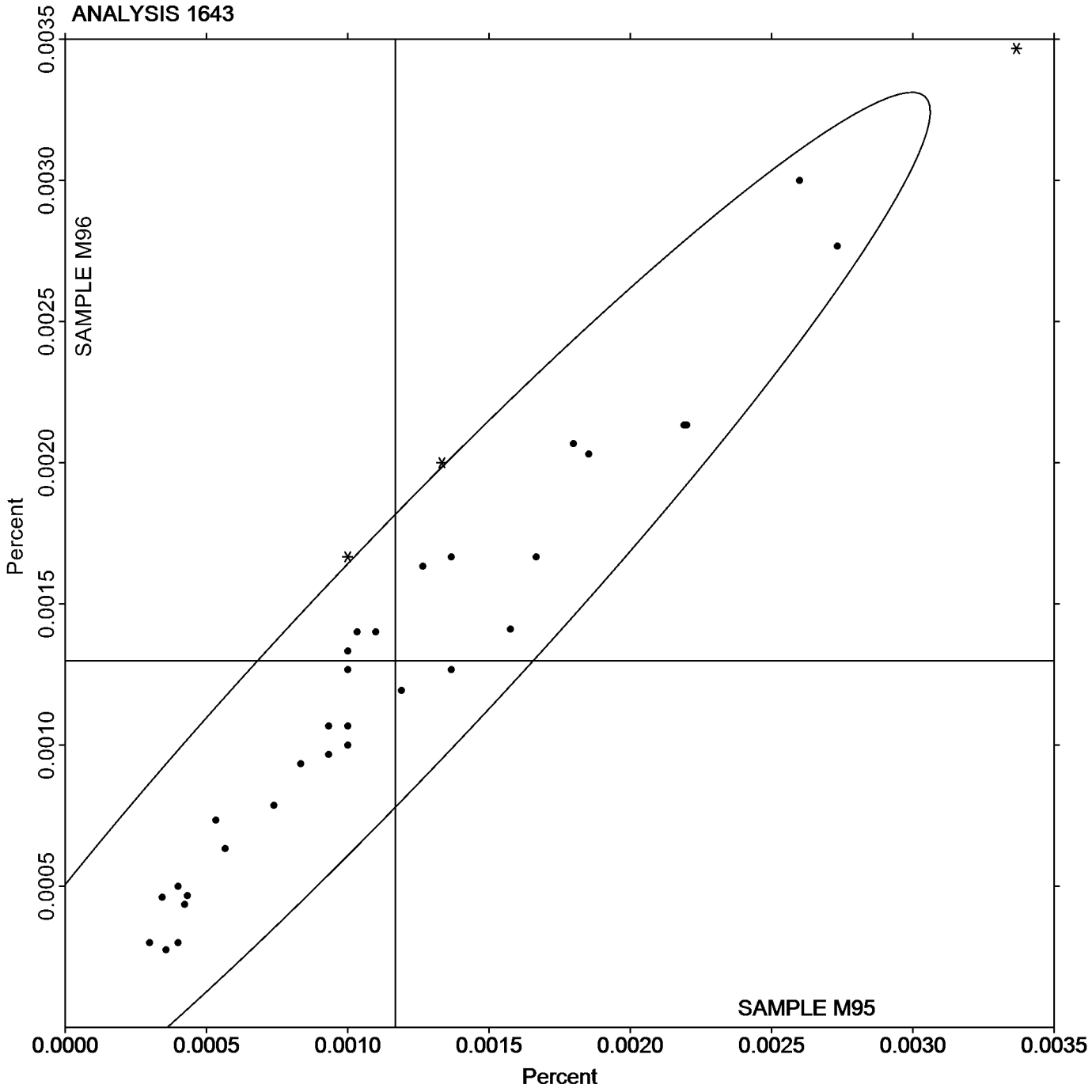
SAMPLE M95	SAMPLE M96
0.00117 Percent	0.00130 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.3914	-0.0034	-0.32	0.3736	-0.0025	-0.25	WD
2RFRZ6		0.4037	0.0088	0.82	0.3893	0.0132	1.32	GD
32332K	X	0.4522	0.0573	5.38	0.4335	0.0573	5.75	OE
34QFK3		0.4018	0.0069	0.65	0.3858	0.0096	0.97	OE
3B6EZY		0.4010	0.0061	0.57	0.3760	-0.0001	-0.01	OE
3Z9CV6		0.3967	0.0018	0.17	0.3780	0.0019	0.19	OE
4ANRT6		0.3833	-0.0115	-1.08	0.3713	-0.0048	-0.48	OE
4GC736	*	0.3607	-0.0342	-3.21	0.3453	-0.0308	-3.09	OE
6XBW8D		0.3917	-0.0032	-0.30	0.3720	-0.0041	-0.42	WD
768WCX	X	0.4693	0.0745	6.99	0.3650	-0.0111	-1.12	OE
7D4UWF		0.3933	-0.0015	-0.14	0.3700	-0.0061	-0.62	XR
93TAQP		0.3813	-0.0135	-1.27	0.3640	-0.0121	-1.22	XR
9CY4YV		0.3877	-0.0072	-0.68	0.3673	-0.0088	-0.88	IC
9J6M9M		0.4063	0.0115	1.08	0.3823	0.0062	0.62	OE
9JXPNB		0.3950	0.0001	0.01	0.3733	-0.0028	-0.28	OE
A3NCTY		0.3883	-0.0065	-0.61	0.3713	-0.0048	-0.48	OE
BD4LWH		0.4030	0.0081	0.76	0.3773	0.0012	0.12	OE
BHEHFX		0.4000	0.0051	0.48	0.3867	0.0105	1.06	XX
BMU4BQ		0.3904	-0.0045	-0.42	0.3716	-0.0046	-0.46	OE
D3XK83		0.3761	-0.0188	-1.76	0.3583	-0.0178	-1.79	OE
DHW2LG		0.3990	0.0041	0.39	0.3790	0.0029	0.29	WD
EVG4GE		0.3870	-0.0079	-0.74	0.3730	-0.0031	-0.31	OE
G6XK8Q		0.3997	0.0048	0.45	0.3793	0.0032	0.32	DR
GPXRDA		0.4023	0.0075	0.70	0.3827	0.0065	0.65	OE
GT2EDT		0.3983	0.0035	0.32	0.3760	-0.0001	-0.01	OE
GUMGKZ		0.3850	-0.0099	-0.93	0.3690	-0.0071	-0.72	WD
GURVXZ		0.4017	0.0068	0.64	0.3797	0.0035	0.35	OE
H8F9VW		0.3910	-0.0039	-0.36	0.3770	0.0009	0.09	OE
HVKXPA		0.3987	0.0038	0.36	0.3793	0.0032	0.32	WD
JWD6BY	X	0.3553	-0.0395	-3.71	0.3437	-0.0325	-3.26	OE
KXNCAL		0.4045	0.0096	0.90	0.3872	0.0111	1.11	OE
L99KWC	X	0.4067	0.0118	1.11	0.4080	0.0319	3.20	OE
LHJMHD		0.3949	0.0001	0.01	0.3728	-0.0033	-0.33	IC
MUCC46		0.4137	0.0188	1.76	0.3920	0.0159	1.59	XX
N7JNT4	X	0.4330	0.0381	3.58	0.4157	0.0395	3.97	XX
NF7UFA		0.4100	0.0151	1.42	0.3900	0.0139	1.39	OE
P8AFTF		0.3957	0.0008	0.07	0.3860	0.0099	0.99	OE
PYDGJU		0.3967	0.0018	0.17	0.3837	0.0075	0.76	XX
PZAYGN		0.3684	-0.0265	-2.49	0.3513	-0.0249	-2.49	WD
RCB8FH		0.4083	0.0135	1.26	0.3817	0.0055	0.55	OE
RF2HJH		0.4163	0.0214	2.01	0.4002	0.0241	2.41	OE
TBFYTK		0.3867	-0.0082	-0.77	0.3733	-0.0028	-0.28	WD
TH2R86		0.3950	0.0001	0.01	0.3763	0.0002	0.02	OE
UM8UKK		0.3870	-0.0079	-0.74	0.3680	-0.0081	-0.82	OE
WX6LBA		0.4060	0.0111	1.04	0.3880	0.0119	1.19	OE
WYWNQX		0.3923	-0.0025	-0.24	0.3720	-0.0041	-0.42	OE
X92XXN		0.3949	0.0000	0.00	0.3773	0.0012	0.12	OE

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WebCode	Data Flag	Sample M95 Lab Mean	Sample M95 Diff. from Grand Mean	Sample M95 CPV	Sample M96 Lab Mean	Sample M96 Diff. from Grand Mean	Sample M96 CPV	Method
XQYDZZ		0.3857	-0.0092	-0.86	0.3670	-0.0091	-0.92	XR
YQDYA2		0.3967	0.0018	0.17	0.3767	0.0005	0.05	OE
ZHW229		0.3998	0.0049	0.46	0.3756	-0.0006	-0.06	GD
ZLF3VU		0.3977	0.0028	0.26	0.3747	-0.0015	-0.15	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.3949	Percent	0.3761	Percent
Stnd Dev Btwn Labs	0.0107	Percent	0.0100	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 46 of 51 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1644

32332K (X) - Data for both samples are high. Possible Systematic Error.

768WCX (X) - Data for sample M95 are high. Inconsistent within the determinations of sample M95.

JWD6BY (X) - Data for both samples are low. Possible Systematic Error.

L99KWC (X) - Data for sample M96 are high.

N7JNT4 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample M95.

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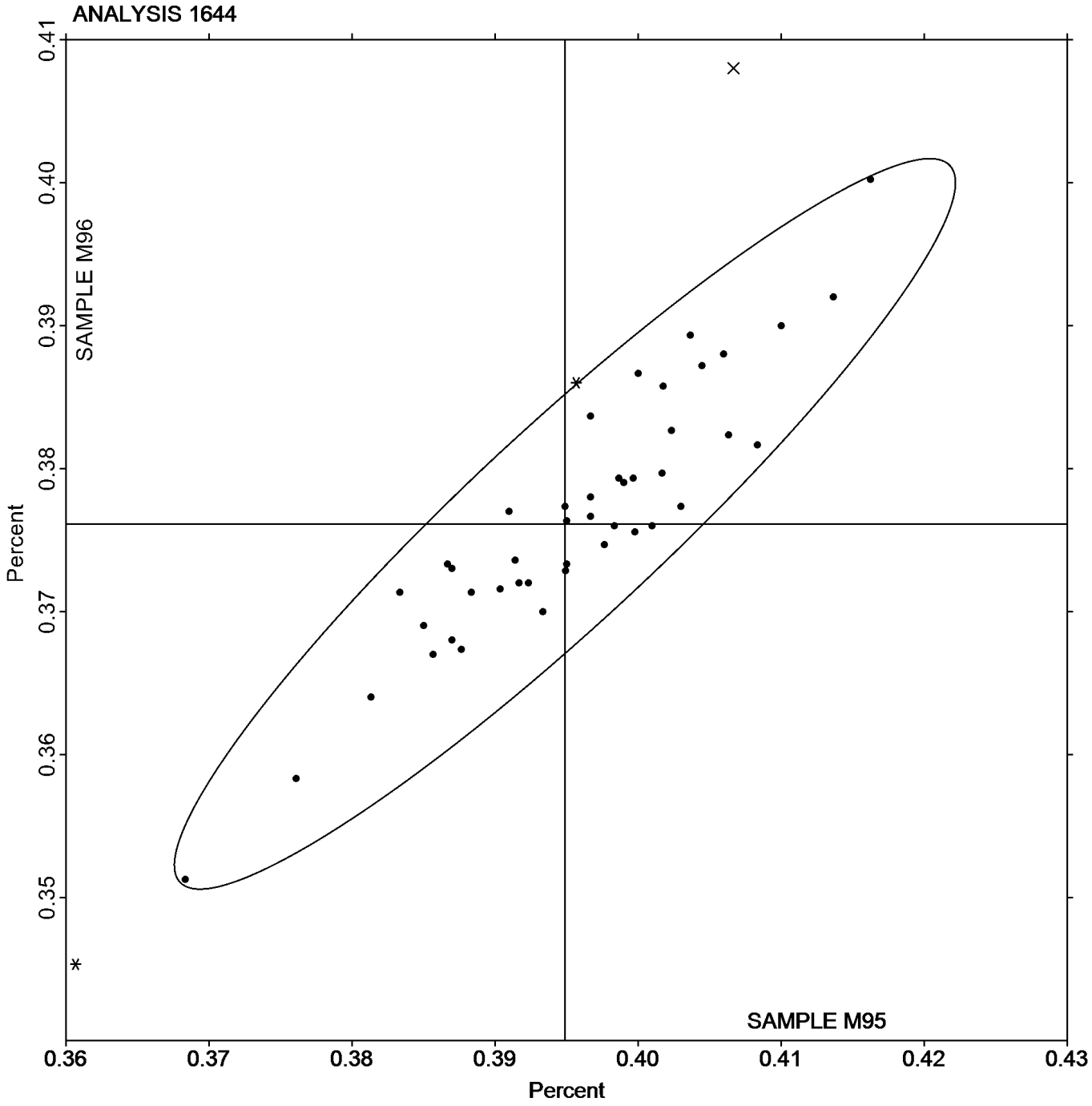
SAMPLE M95	SAMPLE M96
0.3949 Percent	0.3761 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.1166	0.0000	-0.01	0.1217	-0.0013	-0.29	WD
2RFRZ6		0.1163	-0.0003	-0.07	0.1257	0.0027	0.60	GD
32332K	X	0.1061	-0.0105	-2.87	0.1177	-0.0053	-1.19	OE
34QFK3		0.1183	0.0017	0.45	0.1224	-0.0006	-0.13	OE
3B6EZY		0.1172	0.0006	0.15	0.1235	0.0005	0.11	OE
3Z9CV6		0.1110	-0.0056	-1.53	0.1180	-0.0050	-1.12	OE
4ANRT6	X	0.1273	0.0107	2.93	0.1293	0.0063	1.42	OE
6XBW8D		0.1150	-0.0016	-0.44	0.1207	-0.0023	-0.52	WD
768WCX		0.1157	-0.0009	-0.25	0.1220	-0.0010	-0.22	OE
7D4UWF		0.1200	0.0034	0.93	0.1300	0.0070	1.57	XR
93TAQP		0.1173	0.0007	0.20	0.1230	0.0000	0.00	XR
9CY4YV		0.1153	-0.0013	-0.35	0.1210	-0.0020	-0.44	IC
9J6M9M		0.1143	-0.0023	-0.62	0.1200	-0.0030	-0.67	OE
9JXPNB		0.1123	-0.0043	-1.16	0.1177	-0.0053	-1.19	OE
A3NCTY		0.1117	-0.0049	-1.35	0.1153	-0.0077	-1.71	OE
BD4LWH		0.1133	-0.0033	-0.89	0.1193	-0.0037	-0.82	OE
BHEHFX		0.1117	-0.0049	-1.35	0.1183	-0.0047	-1.04	OE
BMU4BQ		0.1117	-0.0049	-1.34	0.1170	-0.0060	-1.33	OE
D3XK83		0.1250	0.0084	2.29	0.1317	0.0087	1.94	OE
DHW2LG		0.1113	-0.0053	-1.44	0.1180	-0.0050	-1.12	WD
EVG4GE	X	0.1110	-0.0056	-1.53	0.1213	-0.0017	-0.37	OE
G6XK8Q		0.1180	0.0014	0.38	0.1237	0.0007	0.15	DR
GPXRDA		0.1173	0.0007	0.20	0.1220	-0.0010	-0.22	OE
GT2EDT		0.1230	0.0064	1.75	0.1330	0.0100	2.24	OE
GUMGKZ		0.1190	0.0024	0.65	0.1260	0.0030	0.67	WD
GURVXZ	X	0.1017	-0.0149	-4.07	0.1057	-0.0173	-3.87	OE
H8F9VW		0.1163	-0.0003	-0.07	0.1233	0.0003	0.08	OE
HVKXPA		0.1197	0.0031	0.84	0.1267	0.0037	0.82	IC
JWD6BY		0.1133	-0.0033	-0.89	0.1187	-0.0043	-0.97	OE
KXNCAL		0.1132	-0.0034	-0.93	0.1208	-0.0022	-0.49	OE
LHJMHD		0.1132	-0.0034	-0.92	0.1190	-0.0040	-0.89	IC
MUCC46		0.1200	0.0034	0.93	0.1247	0.0017	0.37	XX
N7JNT4		0.1175	0.0009	0.24	0.1231	0.0001	0.01	XX
NF7UFA	*	0.1200	0.0034	0.93	0.1200	-0.0030	-0.67	OE
P8AFTF		0.1183	0.0017	0.47	0.1243	0.0013	0.30	OE
PYDGJU	*	0.1277	0.0111	3.02	0.1363	0.0133	2.98	GD
PZAYGN		0.1136	-0.0030	-0.82	0.1192	-0.0038	-0.84	WD
RCB8FH		0.1120	-0.0046	-1.25	0.1180	-0.0050	-1.12	OE
TBFYTK		0.1190	0.0024	0.65	0.1250	0.0020	0.45	WD
UM8UKK		0.1180	0.0014	0.38	0.1243	0.0013	0.30	OE
WX6LBA		0.1200	0.0034	0.93	0.1270	0.0040	0.90	OE
WYWNQX		0.1173	0.0007	0.20	0.1233	0.0003	0.08	OE
X92XXN		0.1157	-0.0009	-0.24	0.1221	-0.0009	-0.19	OE
XQYDZZ		0.1160	-0.0006	-0.16	0.1220	-0.0010	-0.22	XR
YQDYA2		0.1200	0.0034	0.93	0.1300	0.0070	1.57	OE
ZHW229		0.1173	0.0007	0.19	0.1237	0.0007	0.17	GD
ZLF3VU		0.1177	0.0011	0.29	0.1240	0.0010	0.23	OE

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Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.1166	Percent	0.1230	Percent
Stnd Dev Btwn Labs	0.0037	Percent	0.0045	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 42 of 47 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1645

32332K (X) - Data for sample M95 are low. Inconsistent within the determinations of sample M96.

4ANRT6 (X) - Data for sample M95 are high.

EVG4GE (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample M95.

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

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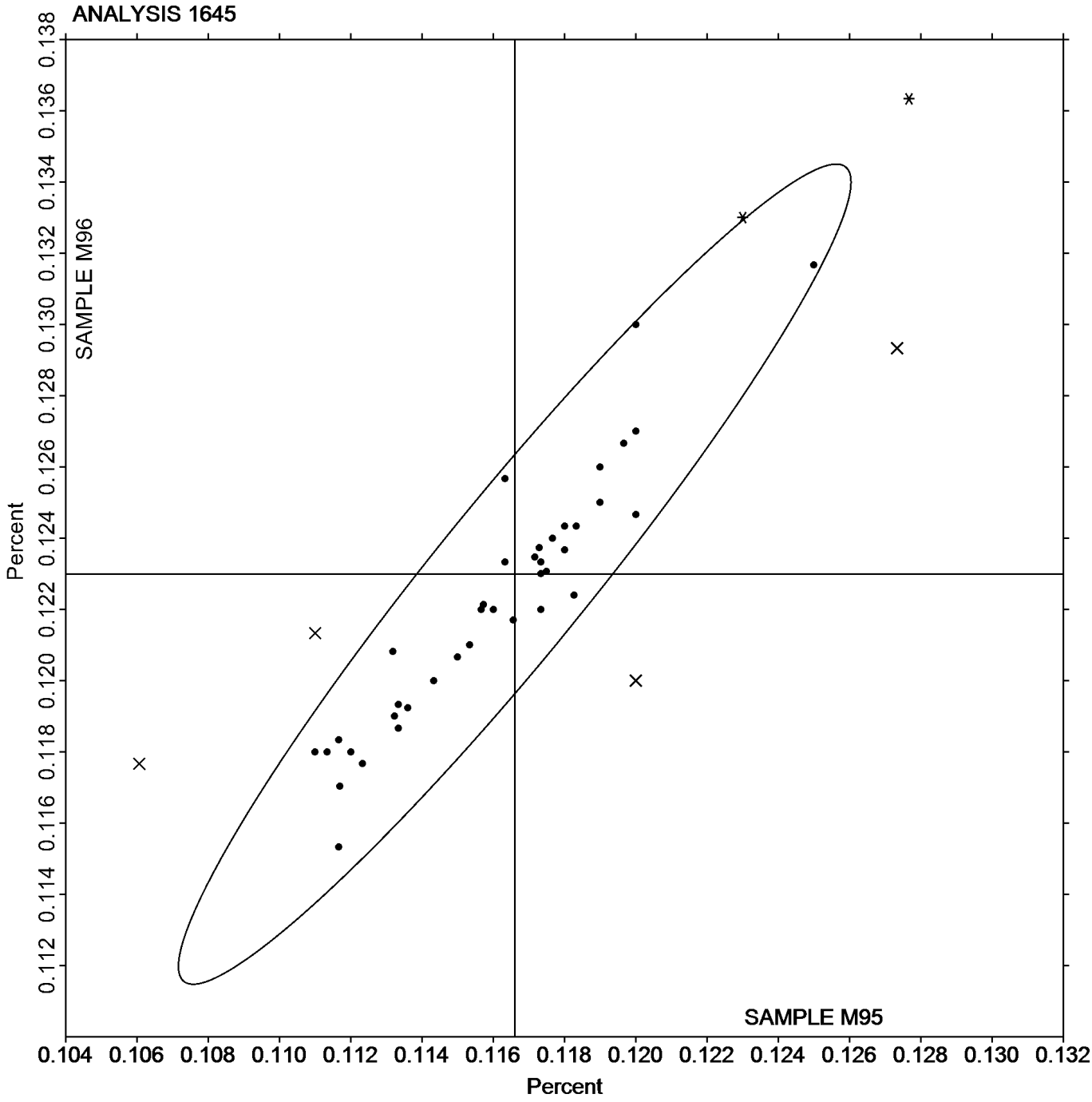
SAMPLE M95
0.1166 Percent

SAMPLE M96
0.1230 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		8.979	-0.055	-0.59	9.007	-0.041	-0.42	WD
2RFRZ6		9.053	0.019	0.20	9.223	0.176	1.82	GD
32332K	X	8.844	-0.191	-2.03	8.669	-0.379	-3.93	OE
34QFK3		9.022	-0.012	-0.13	9.002	-0.046	-0.48	OE
3B6EZY		9.128	0.094	1.00	9.144	0.096	1.00	OE
3Z9CV6		9.060	0.026	0.27	9.093	0.046	0.47	OE
484TNM		9.021	-0.013	-0.14	9.117	0.070	0.72	WC
4ANRT6		9.067	0.032	0.34	9.250	0.202	2.10	OE
4GC736		8.893	-0.141	-1.50	8.917	-0.131	-1.36	OE
6XBW8D		8.982	-0.052	-0.56	8.989	-0.059	-0.61	WD
768WCX		8.953	-0.081	-0.86	8.970	-0.078	-0.81	OE
7D4UWF		8.963	-0.071	-0.76	9.000	-0.048	-0.49	XR
93TAQP		8.977	-0.057	-0.61	9.005	-0.042	-0.44	XR
9CY4YV		9.053	0.019	0.20	9.043	-0.004	-0.05	IC
9J6M9M		9.074	0.039	0.42	9.019	-0.028	-0.29	OE
9JXPNB		8.840	-0.194	-2.07	8.913	-0.134	-1.39	OE
A3NCTY		8.953	-0.081	-0.86	8.977	-0.071	-0.74	OE
BD4LWH		9.017	-0.018	-0.19	9.040	-0.008	-0.08	OE
BHEHFX		8.943	-0.091	-0.97	8.977	-0.071	-0.74	OE
BMU4BQ		8.966	-0.068	-0.73	9.013	-0.035	-0.36	OE
D3XK83		9.063	0.029	0.31	9.102	0.055	0.57	OE
DHW2LG		9.046	0.012	0.12	9.071	0.023	0.24	WD
EVG4GE	*	9.307	0.272	2.90	9.300	0.252	2.62	OE
G6XK8Q		8.945	-0.089	-0.95	8.974	-0.074	-0.76	XR
GPXRDA		9.045	0.011	0.11	9.013	-0.035	-0.36	OE
GT2EDT		9.186	0.152	1.61	9.072	0.024	0.25	OE
GUMGKZ		9.027	-0.007	-0.08	9.046	-0.002	-0.02	WD
GURVXZ		8.990	-0.044	-0.47	9.033	-0.014	-0.15	OE
H8F9VW		9.130	0.096	1.02	9.007	-0.041	-0.43	OE
HVKXPA		9.012	-0.022	-0.23	9.027	-0.021	-0.22	WD
JWD6BY		9.003	-0.031	-0.33	9.140	0.092	0.96	OE
KXNCAL		9.114	0.080	0.85	9.202	0.155	1.60	OE
L99KWC		9.164	0.129	1.38	9.223	0.176	1.82	OE
LHJMHD		9.109	0.074	0.79	9.041	-0.007	-0.07	IC
MUCC46		9.230	0.196	2.08	9.193	0.146	1.51	XX
N7JNT4		8.972	-0.062	-0.66	8.991	-0.056	-0.58	XX
NF7UFA		9.137	0.102	1.09	9.117	0.069	0.72	OE
P8AFTF		9.211	0.177	1.88	9.151	0.103	1.07	OE
PYDGJU		9.060	0.026	0.27	9.093	0.046	0.47	GD
PZAYGN		9.023	-0.011	-0.12	9.014	-0.034	-0.35	WD
RCB8FH		9.090	0.055	0.59	8.993	-0.055	-0.57	OE
RF2HJH		9.029	-0.006	-0.06	8.954	-0.093	-0.97	OE
TBFYTK		8.975	-0.059	-0.63	8.996	-0.052	-0.54	WD
TH2R86		8.983	-0.051	-0.54	8.943	-0.104	-1.08	OE
UM8UKK		9.044	0.010	0.11	9.060	0.012	0.12	OE
WX6LBA		9.009	-0.025	-0.27	9.047	-0.001	-0.01	OE
WYWNQX		9.058	0.024	0.25	9.081	0.034	0.35	OE

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1646

Corrosion Resistant Steel, NICKEL (Ni)
NICKEL (Ni)

		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
X92XXN		9.052	0.017	0.19	9.016	-0.032	-0.33	OE
XQYDZZ		8.919	-0.115	-1.22	8.943	-0.104	-1.08	XR
YQDYA2		9.060	0.026	0.27	9.077	0.029	0.30	OE
ZHW229	X	8.696	-0.339	-3.60	8.704	-0.344	-3.57	GD
ZLF3VU	*	8.779	-0.255	-2.72	8.765	-0.283	-2.93	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	9.034	Percent	9.048	Percent
Stnd Dev Btwn Labs	0.094	Percent	0.096	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 50 of 52 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WC	Wet Chemistry
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1646

32332K (X) - Data for sample M96 are low.

ZHW229 (X) - Data for both samples are low. Possible Systematic Error.

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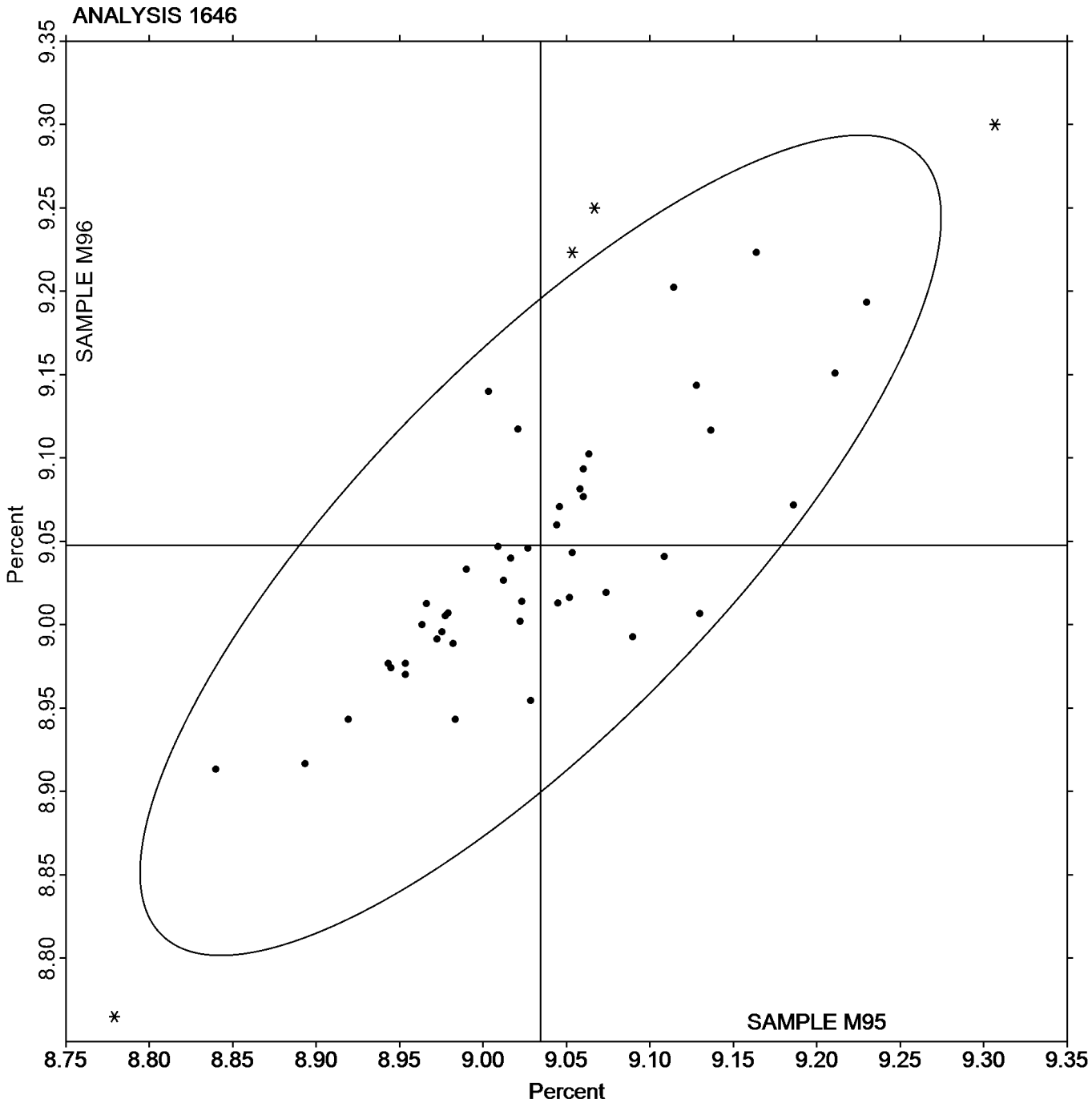
SAMPLE M95	SAMPLE M96
9.034 Percent	9.048 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		17.21	0.03	0.27	17.16	0.00	-0.03	WD
2RFRZ6		17.20	0.02	0.20	17.17	0.01	0.05	GD
32332K		17.19	0.01	0.08	17.11	-0.05	-0.46	OE
34QFK3		17.10	-0.08	-0.70	17.09	-0.07	-0.64	OE
3B6EZY		17.24	0.06	0.53	17.28	0.12	1.07	OE
3Z9CV6		17.34	0.17	1.45	17.35	0.19	1.65	OE
484TNM		17.12	-0.06	-0.49	17.19	0.03	0.25	WC
4ANRT6		17.27	0.09	0.81	17.11	-0.05	-0.43	OE
4GC736		17.38	0.20	1.77	17.39	0.23	2.04	OE
6XBW8D		17.22	0.04	0.37	17.20	0.04	0.34	WD
768WCX	*	17.25	0.07	0.63	17.38	0.22	1.92	OE
7D4UWF		17.16	-0.02	-0.16	17.15	-0.01	-0.07	XR
93TAQP		17.24	0.06	0.54	17.22	0.05	0.49	XR
9CY4YV		17.15	-0.02	-0.21	17.13	-0.03	-0.25	IC
9J6M9M	*	16.85	-0.33	-2.87	16.87	-0.29	-2.60	OE
9JXPNB		17.15	-0.03	-0.27	17.14	-0.02	-0.19	OE
A3NCTY		17.18	0.00	0.02	17.15	-0.01	-0.13	OE
BD4LWH		17.22	0.04	0.34	17.23	0.07	0.61	OE
BHEHFX		17.35	0.17	1.51	17.29	0.13	1.12	OE
BMU4BQ		17.28	0.10	0.92	17.25	0.08	0.75	OE
D3XK83		17.19	0.01	0.06	17.13	-0.03	-0.27	OE
DHW2LG		17.27	0.10	0.84	17.25	0.09	0.81	WD
EVG4GE	*	16.85	-0.33	-2.90	16.87	-0.29	-2.57	OE
G6XK8Q		17.29	0.12	1.01	17.20	0.04	0.31	XR
GPXRDA		17.18	0.00	0.02	17.12	-0.04	-0.37	OE
GT2EDT		17.06	-0.12	-1.02	17.08	-0.08	-0.71	OE
GUMGKZ		17.17	-0.01	-0.08	17.15	-0.01	-0.09	WD
GURVXZ		17.12	-0.06	-0.51	17.10	-0.06	-0.55	OE
H8F9VW		17.15	-0.03	-0.27	17.20	0.04	0.37	OE
HVKXPA		17.20	0.02	0.20	17.22	0.06	0.49	WD
JWD6BY		17.31	0.13	1.13	17.18	0.02	0.13	OE
KXNCAL		17.30	0.12	1.05	17.20	0.03	0.30	OE
L99KWC		17.32	0.14	1.24	17.32	0.15	1.38	OE
LHJMHD		17.29	0.11	0.96	17.12	-0.04	-0.38	IC
MUCC46		17.03	-0.15	-1.32	17.01	-0.15	-1.32	XX
N7JNT4		17.13	-0.05	-0.42	17.12	-0.04	-0.35	XX
NF7UFA		17.14	-0.04	-0.36	17.16	0.00	-0.01	OE
P8AFTF		17.14	-0.04	-0.33	17.05	-0.11	-1.00	OE
PYDGJU		17.30	0.12	1.07	17.37	0.21	1.83	GD
PZAYGN		17.21	0.03	0.29	17.18	0.02	0.21	WD
RCB8FH		17.04	-0.13	-1.18	17.10	-0.06	-0.55	OE
RF2HJH		17.18	0.00	0.02	17.13	-0.03	-0.25	OE
TBFYTK		17.19	0.01	0.11	17.19	0.03	0.25	WD
TH2R86		17.15	-0.03	-0.24	17.16	0.00	0.02	OE
UM8UKK		17.28	0.10	0.89	17.32	0.16	1.41	OE
WX6LBA		16.99	-0.19	-1.65	16.92	-0.24	-2.16	OE
WYWNQX		17.22	0.04	0.34	17.20	0.04	0.31	OE

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1647

Corrosion Resistant Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
X92XXN		17.00	-0.18	-1.55	17.01	-0.16	-1.39	OE
XQYDZZ		17.24	0.06	0.56	17.24	0.07	0.66	XR
YQDYA2		17.16	-0.02	-0.18	17.16	0.00	-0.04	OE
ZHW229		16.97	-0.21	-1.82	17.00	-0.16	-1.44	GD
ZLF3VU		17.10	-0.08	-0.71	17.11	-0.05	-0.49	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	17.18	Percent	17.16	Percent
Stnd Dev Btwn Labs	0.11	Percent	0.11	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 52 of 52 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WC	Wet Chemistry
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

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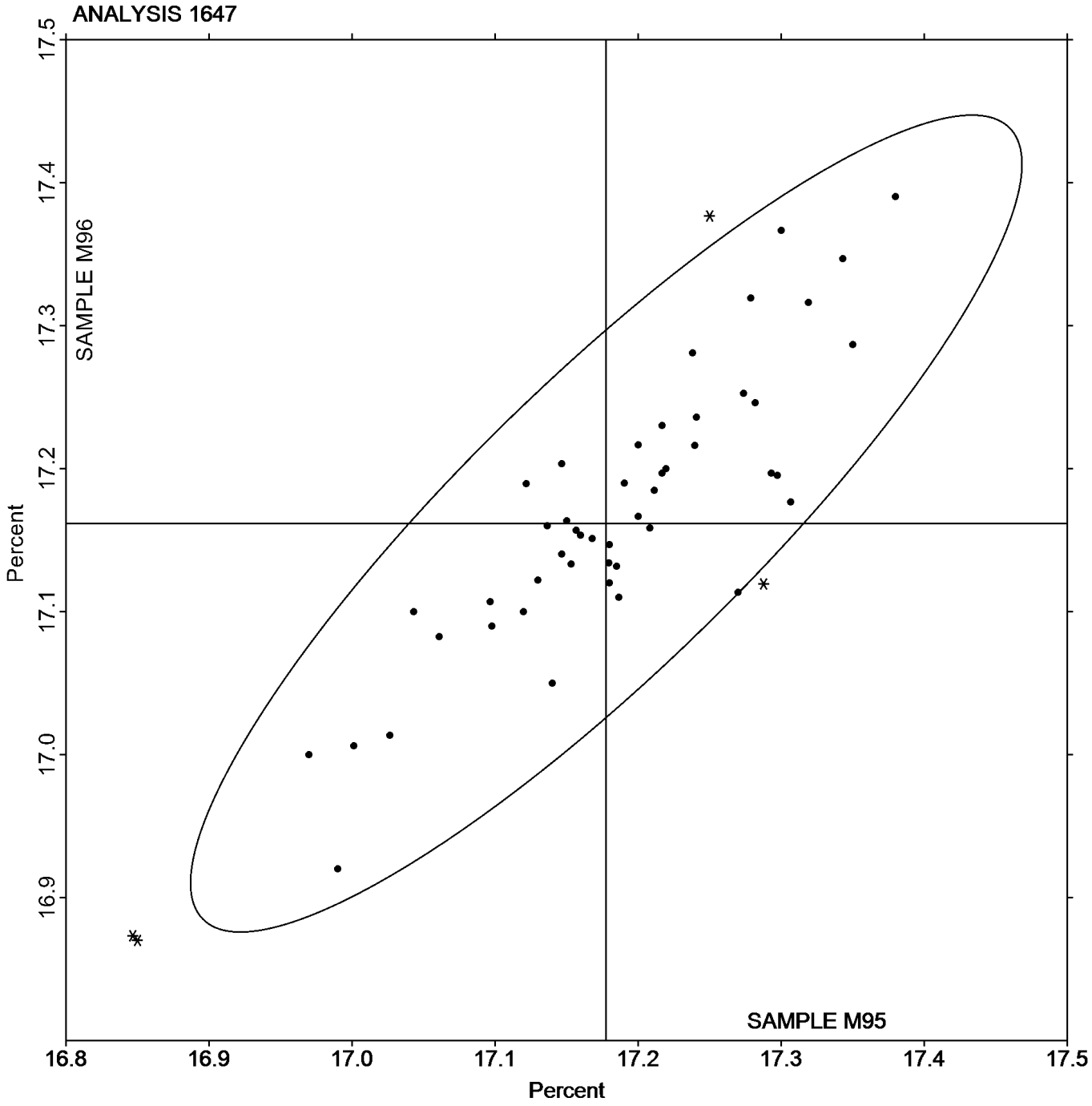
SAMPLE M95
17.18 Percent

SAMPLE M96
17.16 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.0441	0.0015	0.30	0.2754	0.0016	0.25	WD
2RFRZ6		0.0456	0.0030	0.59	0.2833	0.0096	1.46	GD
32332K		0.0458	0.0033	0.64	0.2710	-0.0027	-0.42	OE
34QFK3		0.0447	0.0021	0.42	0.2758	0.0021	0.32	OE
3B6EZY		0.0448	0.0022	0.43	0.2853	0.0116	1.77	OE
3Z9CV6	*	0.0440	0.0015	0.29	0.2917	0.0179	2.74	OE
4ANRT6		0.0490	0.0065	1.26	0.2640	-0.0097	-1.49	OE
4GC736		0.0417	-0.0008	-0.16	0.2655	-0.0082	-1.26	OE
6XBW8D		0.0410	-0.0015	-0.30	0.2720	-0.0017	-0.27	WD
768WCX		0.0318	-0.0107	-2.09	0.2683	-0.0054	-0.83	IC
7D4UWF		0.0400	-0.0025	-0.49	0.2700	-0.0037	-0.57	XR
93TAQP		0.0417	-0.0009	-0.17	0.2767	0.0029	0.45	XR
9CY4YV	X	0.0860	0.0435	8.47	0.1750	-0.0987	-15.07	IC
9J6M9M		0.0413	-0.0012	-0.23	0.2747	0.0009	0.14	OE
9JXPNB		0.0441	0.0015	0.30	0.2657	-0.0081	-1.23	OE
A3NCTY	X	0.0399	-0.0026	-0.51	0.3070	0.0333	5.08	OE
BD4LWH		0.0430	0.0005	0.09	0.2620	-0.0117	-1.79	OE
BHEHFX		0.0397	-0.0029	-0.56	0.2703	-0.0034	-0.52	OE
BMU4BQ		0.0437	0.0011	0.22	0.2800	0.0063	0.96	OE
D3XK83		0.0446	0.0021	0.41	0.2844	0.0107	1.63	OE
DHW2LG		0.0447	0.0021	0.42	0.2810	0.0073	1.11	WD
EVG4GE		0.0530	0.0105	2.04	0.2680	-0.0057	-0.88	OE
G6XK8Q		0.0435	0.0009	0.18	0.2713	-0.0024	-0.37	DR
GPXRDA		0.0404	-0.0021	-0.42	0.2718	-0.0020	-0.30	OE
GT2EDT	*	0.0283	-0.0142	-2.77	0.2783	0.0046	0.70	OE
GUMGKZ		0.0397	-0.0028	-0.55	0.2790	0.0053	0.80	WD
GURVXZ		0.0451	0.0026	0.50	0.2743	0.0006	0.09	OE
H8F9VW		0.0470	0.0045	0.87	0.2770	0.0033	0.50	OE
HVKXPA		0.0400	-0.0025	-0.49	0.2740	0.0003	0.04	WD
JWD6BY		0.0333	-0.0092	-1.79	0.2673	-0.0064	-0.98	OE
KXNCAL		0.0502	0.0077	1.50	0.2635	-0.0103	-1.57	OE
LHJMHD		0.0352	-0.0073	-1.43	0.2648	-0.0090	-1.37	IC
MUCC46		0.0423	-0.0003	-0.05	0.2760	0.0023	0.34	XX
N7JNT4		0.0432	0.0006	0.12	0.2764	0.0026	0.40	XX
NF7UFA		0.0450	0.0025	0.48	0.2800	0.0063	0.95	OE
P8AFTF		0.0450	0.0025	0.48	0.2680	-0.0057	-0.88	OE
PYDGJU		0.0467	0.0041	0.80	0.2690	-0.0047	-0.72	GD
PZAYGN		0.0434	0.0009	0.17	0.2662	-0.0075	-1.15	WD
RCB8FH		0.0343	-0.0082	-1.60	0.2790	0.0053	0.80	OE
TBFYTK		0.0420	-0.0005	-0.10	0.2773	0.0036	0.55	WD
UM8UKK		0.0367	-0.0059	-1.14	0.2653	-0.0084	-1.28	OE
WX6LBA		0.0454	0.0029	0.56	0.2720	-0.0017	-0.27	OE
WYWNQX	X	0.0760	0.0335	6.52	0.2777	0.0039	0.60	OE
X92XXN		0.0335	-0.0090	-1.76	0.2737	-0.0001	-0.01	OE
XQYDZZ		0.0450	0.0025	0.48	0.2790	0.0053	0.80	XR
YQDYA2		0.0420	-0.0005	-0.10	0.2767	0.0029	0.45	OE
ZHW229		0.0443	0.0017	0.34	0.2732	-0.0006	-0.09	GD

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Fasteners and Metals Interlaboratory Testing Program

Analysis 1648

Corrosion Resistant Steel, MOLYBDENUM (Mo)

MOLYBDENUM (Mo)

		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
ZLF3VU		0.0547	0.0121	2.36	0.2803	0.0066	1.01	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.0425	Percent	0.2737	Percent
Stnd Dev Btwn Labs	0.0051	Percent	0.0066	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 45 of 48 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1648

9CY4YV (X) - Data for sample M95 are high and data for sample M96 are low. Inconsistent within the determinations of sample M96.

A3NCTY (X) - Data for sample M96 are high.

WYWNQX (X) - Data for sample M95 are high.

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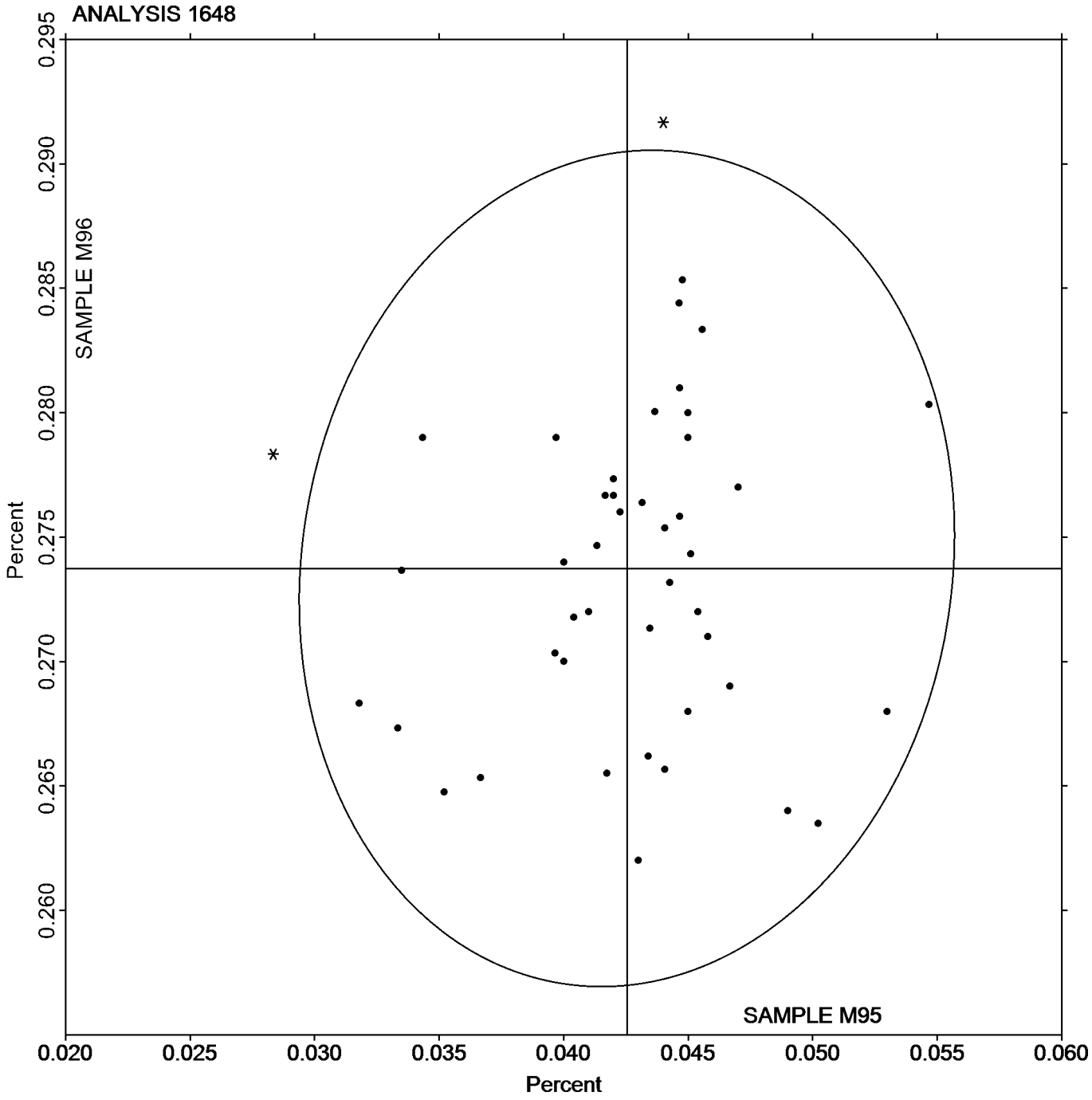
SAMPLE M95	SAMPLE M96
0.0425 Percent	0.2737 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.0785	-0.0053	-0.57	0.2581	0.0000	0.00	WD
2RFRZ6		0.0860	0.0023	0.24	0.2560	-0.0021	-0.23	GD
32332K		0.0803	-0.0034	-0.37	0.2592	0.0011	0.12	OE
34QFK3		0.0949	0.0111	1.21	0.2613	0.0031	0.34	OE
3B6EZY		0.0861	0.0024	0.26	0.2700	0.0119	1.27	OE
3Z9CV6		0.0827	-0.0011	-0.12	0.2497	-0.0085	-0.90	OE
4ANRT6		0.1003	0.0166	1.80	0.2620	0.0039	0.41	OE
4GC736		0.0810	-0.0027	-0.30	0.2503	-0.0078	-0.83	OE
6XBW8D		0.0770	-0.0067	-0.73	0.2543	-0.0038	-0.40	WD
768WCX		0.1047	0.0209	2.27	0.2817	0.0235	2.51	OE
7D4UWF		0.0600	-0.0237	-2.57	0.2500	-0.0081	-0.87	XR
93TAQP		0.0850	0.0013	0.14	0.2533	-0.0048	-0.51	XR
9CY4YV		0.0713	-0.0124	-1.34	0.2383	-0.0198	-2.11	IC
9J6M9M		0.0978	0.0141	1.52	0.2567	-0.0015	-0.16	OE
9JXPNB		0.0849	0.0012	0.13	0.2550	-0.0031	-0.33	OE
A3NCTY		0.0815	-0.0022	-0.24	0.2520	-0.0061	-0.65	OE
BD4LWH		0.0784	-0.0053	-0.58	0.2480	-0.0101	-1.08	OE
BHEHFX		0.0850	0.0013	0.14	0.2650	0.0069	0.73	OE
BMU4BQ		0.0761	-0.0076	-0.83	0.2616	0.0035	0.37	OE
D3XK83		0.0793	-0.0044	-0.48	0.2550	-0.0031	-0.33	OE
DHW2LG		0.0837	-0.0001	-0.01	0.2613	0.0032	0.34	WD
EVG4GE		0.0837	-0.0001	-0.01	0.2630	0.0049	0.52	OE
G6XK8Q		0.0983	0.0145	1.57	0.2713	0.0132	1.41	DR
GPXRDA		0.0830	-0.0007	-0.08	0.2513	-0.0068	-0.72	OE
GT2EDT		0.0800	-0.0037	-0.41	0.2490	-0.0091	-0.97	OE
GUMGKZ		0.0756	-0.0081	-0.88	0.2540	-0.0041	-0.44	WD
GURVXZ		0.0880	0.0043	0.46	0.2803	0.0222	2.37	OE
H8F9VW		0.0643	-0.0194	-2.10	0.2553	-0.0028	-0.30	OE
HVKXPA		0.0810	-0.0027	-0.30	0.2583	0.0002	0.02	WD
JWD6BY		0.0850	0.0013	0.14	0.2650	0.0069	0.73	OE
KXNCAL		0.0836	-0.0002	-0.02	0.2536	-0.0046	-0.49	OE
LHJMHD		0.0743	-0.0094	-1.02	0.2550	-0.0031	-0.33	IC
MUCC46		0.0908	0.0071	0.77	0.2550	-0.0031	-0.33	XX
N7JNT4		0.0839	0.0001	0.01	0.2580	-0.0001	-0.01	XX
NF7UFA		0.0970	0.0133	1.44	0.2700	0.0119	1.27	OE
P8AFTF		0.0960	0.0123	1.33	0.2637	0.0055	0.59	OE
PYDGJU		0.0700	-0.0137	-1.49	0.2417	-0.0165	-1.76	GD
PZAYGN		0.0767	-0.0070	-0.76	0.2516	-0.0066	-0.70	WD
RCB8FH		0.0783	-0.0054	-0.59	0.2493	-0.0088	-0.94	OE
TBFYTK		0.0840	0.0003	0.03	0.2597	0.0015	0.16	WD
UM8UKK		0.0810	-0.0027	-0.30	0.2423	-0.0158	-1.69	OE
WX6LBA		0.0830	-0.0007	-0.08	0.2720	0.0139	1.48	OE
WYWNQX		0.0790	-0.0047	-0.51	0.2577	-0.0005	-0.05	OE
X92XXN		0.0880	0.0043	0.47	0.2673	0.0092	0.98	OE
XQYDZZ		0.0870	0.0033	0.35	0.2580	-0.0001	-0.01	XR
YQDYA2		0.0833	-0.0004	-0.04	0.2500	-0.0081	-0.87	OE
ZHW229		0.0832	-0.0006	-0.06	0.2593	0.0012	0.13	GD

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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
ZLF3VU		0.1070	0.0233	2.52	0.2793	0.0212	2.26	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.0837	Percent	0.2581	Percent
Stnd Dev Btwn Labs	0.0092	Percent	0.0094	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 48 of 48 reporting participants

Key to Method Codes Reported by Participants

DR	Spectrometry - Direct Reading OE (DROES)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

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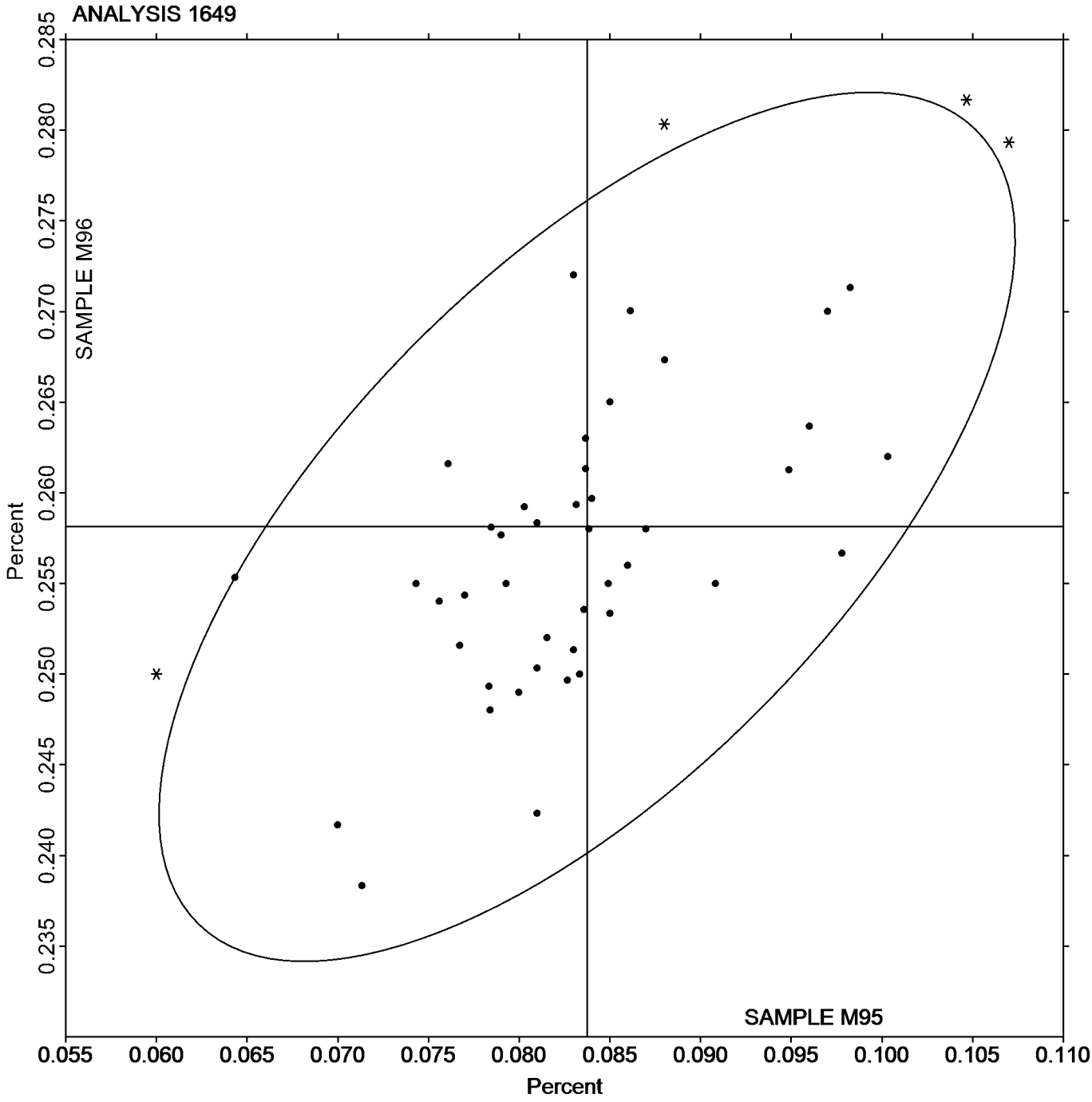
SAMPLE M95
0.0837 Percent

SAMPLE M96
0.2581 Percent



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1650

Corrosion Resistant Steel, NITROGEN (N)

NITROGEN (N)

Cycle 144
4th Qtr 2023

		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.0245	-0.0003	-0.06	0.0280	-0.0012	-0.32	OE
34QFK3		0.0205	-0.0043	-0.98	0.0253	-0.0039	-1.01	OE
3B6EZY	X	0.0291	0.0044	1.00	0.0888	0.0596	15.35	OE
3Z9CV6		0.0236	-0.0011	-0.26	0.0288	-0.0004	-0.11	CI
4ANRT6		0.0337	0.0089	2.05	0.0373	0.0081	2.10	OE
4CBBU3		0.0182	-0.0065	-1.51	0.0236	-0.0056	-1.44	XX
6XBW8D		0.0237	-0.0011	-0.25	0.0290	-0.0002	-0.05	XX
768WCX	X	0.0279	0.0031	0.72	0.0415	0.0123	3.16	OE
7BCX9L		0.0234	-0.0014	-0.32	0.0286	-0.0006	-0.16	CI
7D4UWF		0.0210	-0.0038	-0.87	0.0259	-0.0033	-0.86	CO
93TAQP		0.0203	-0.0044	-1.01	0.0243	-0.0049	-1.25	CI
9CY4YV		0.0303	0.0056	1.28	0.0348	0.0056	1.44	CO
9J6M9M		0.0221	-0.0026	-0.61	0.0278	-0.0014	-0.35	OE
9JXPNB		0.0270	0.0022	0.51	0.0302	0.0010	0.25	OE
A3NCTY		0.0238	-0.0010	-0.22	0.0265	-0.0027	-0.69	OE
BMU4BQ		0.0213	-0.0034	-0.78	0.0250	-0.0042	-1.08	CI
D3XK83		0.0226	-0.0021	-0.48	0.0274	-0.0018	-0.45	OE
DHW2LG		0.0233	-0.0014	-0.33	0.0288	-0.0004	-0.09	CO
GPXRDA		0.0215	-0.0033	-0.75	0.0276	-0.0016	-0.40	CO
GUMGKZ		0.0239	-0.0009	-0.20	0.0271	-0.0021	-0.54	CO
GURVXZ		0.0290	0.0043	0.99	0.0327	0.0035	0.90	OE
HVKXPA		0.0227	-0.0020	-0.46	0.0286	-0.0006	-0.16	CO
JWD6BY		0.0317	0.0069	1.59	0.0373	0.0081	2.10	OE
KXNCAL		0.0318	0.0070	1.62	0.0343	0.0051	1.31	OE
LHJMHD		0.0252	0.0005	0.11	0.0251	-0.0041	-1.05	XX
N7JNT4		0.0222	-0.0025	-0.58	0.0274	-0.0018	-0.45	XX
NF7UFA		0.0230	-0.0017	-0.40	0.0280	-0.0012	-0.31	XX
P8AFTF		0.0177	-0.0071	-1.63	0.0283	-0.0009	-0.22	OE
RCB8FH	*	0.0316	0.0069	1.59	0.0310	0.0018	0.47	OE
TBFYTK		0.0227	-0.0020	-0.47	0.0280	-0.0012	-0.32	CO
WX6LBA		0.0299	0.0052	1.19	0.0360	0.0068	1.75	OE
WYWNQX		0.0278	0.0031	0.70	0.0315	0.0023	0.60	OE
X92XXN	X	0.00157	-0.0232	-5.33	0.00977	-0.0194	-5.00	OE
XQYDZZ		0.0203	-0.0044	-1.01	0.0243	-0.0049	-1.25	CI
YQDYA2	X	0.1267	0.1019	23.46	0.1233	0.0941	24.25	OE
ZLF3VU		0.0316	0.0068	1.57	0.0357	0.0065	1.67	OE

Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.0247	Percent	0.0292	Percent
Stnd Dev Btwn Labs	0.0043	Percent	0.0039	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 32 of 36 reporting participants

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Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
OE	Spectrometry - Optical Emission (OES)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1650

3B6EZY (X) - Data for sample M96 are high. Inconsistent within the determinations of sample M96.

768WCX (X) - Data for sample M96 are high. Inconsistent within the determinations of sample M96.

X92XXN (X) - Data for both samples are low. Possible Systematic Error.

YQDYA2 (X) - Extreme data.

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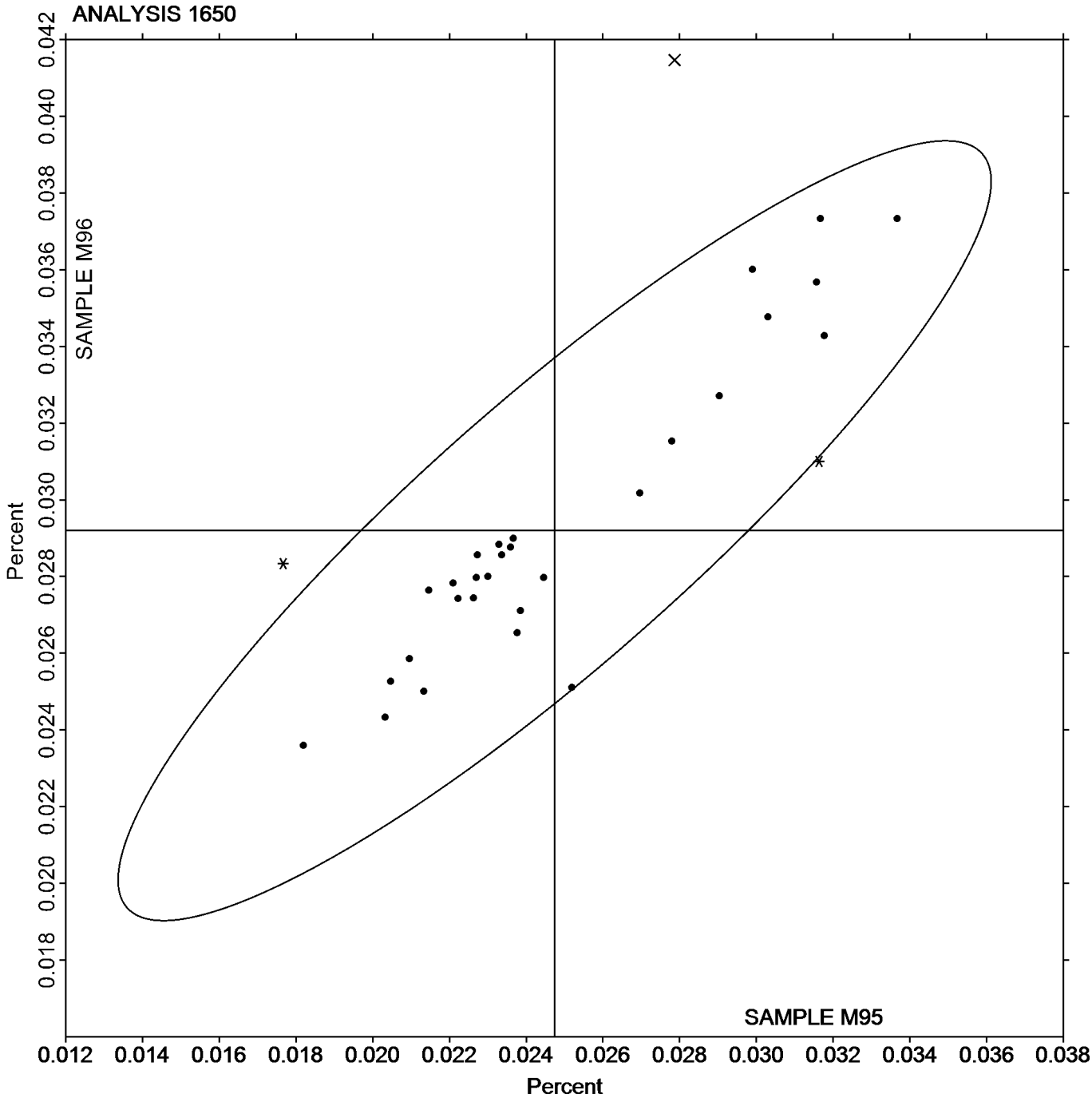
SAMPLE M95
0.0247 Percent

SAMPLE M96
0.0292 Percent



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		Sample M95			Sample M96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
2MMKUQ		0.4833	-0.0335	-1.62	0.4727	-0.0307	-1.57	WD
2RFRZ6		0.5337	0.0168	0.81	0.5240	0.0207	1.06	GD
32332K	X	0.6182	0.1014	4.90	0.6096	0.1063	5.45	OE
34QFK3		0.5207	0.0039	0.19	0.4970	-0.0063	-0.32	OE
3B6EZY		0.5357	0.0189	0.91	0.5128	0.0095	0.49	OE
3Z9CV6		0.5293	0.0125	0.60	0.5213	0.0180	0.92	OE
4ANRT6		0.4697	-0.0472	-2.28	0.4630	-0.0403	-2.07	OE
6XBW8D		0.4913	-0.0255	-1.23	0.4770	-0.0263	-1.35	WD
768WCX		0.5103	-0.0065	-0.31	0.4990	-0.0043	-0.22	OE
7D4UWF		0.5000	-0.0168	-0.81	0.4900	-0.0133	-0.68	XR
93TAQP		0.5323	0.0155	0.75	0.5210	0.0177	0.91	XR
9J6M9M		0.5377	0.0208	1.01	0.5240	0.0207	1.06	OE
9JXPNB		0.5197	0.0028	0.14	0.5047	0.0013	0.07	OE
A3NCTY		0.4887	-0.0282	-1.36	0.4713	-0.0320	-1.64	OE
BD4LWH		0.5167	-0.0002	-0.01	0.4887	-0.0147	-0.75	OE
BHEHFX		0.5233	0.0065	0.31	0.5133	0.0100	0.51	OE
BMU4BQ		0.4821	-0.0348	-1.68	0.4824	-0.0210	-1.07	OE
D3XK83		0.4882	-0.0286	-1.38	0.4821	-0.0213	-1.09	OE
DHW2LG		0.5280	0.0112	0.54	0.5193	0.0160	0.82	WD
EVG4GE		0.5560	0.0392	1.89	0.5490	0.0457	2.34	OE
GPXRDA		0.5133	-0.0035	-0.17	0.4993	-0.0040	-0.20	OE
GT2EDT		0.5320	0.0152	0.73	0.5000	-0.0033	-0.17	OE
GUMGKZ		0.5080	-0.0088	-0.43	0.5010	-0.0023	-0.12	WD
GURVXZ		0.5150	-0.0018	-0.09	0.4987	-0.0047	-0.24	OE
H8F9VW		0.5137	-0.0032	-0.15	0.5127	0.0093	0.48	OE
HVKXPA		0.5140	-0.0028	-0.14	0.5007	-0.0027	-0.14	WD
JWD6BY		0.5160	-0.0008	-0.04	0.4907	-0.0127	-0.65	OE
KXNCAL		0.5127	-0.0041	-0.20	0.4879	-0.0154	-0.79	OE
LHJMHD		0.5417	0.0249	1.20	0.5133	0.0100	0.51	IC
N7JNT4		0.5010	-0.0159	-0.77	0.4893	-0.0140	-0.72	XX
NF7UFA		0.5533	0.0365	1.76	0.5267	0.0233	1.20	OE
P8AFTF		0.4923	-0.0245	-1.18	0.5010	-0.0023	-0.12	OE
PYDGJU		0.5160	-0.0008	-0.04	0.5167	0.0133	0.68	GD
PZAYGN		0.5094	-0.0074	-0.36	0.4985	-0.0049	-0.25	WD
RCB8FH		0.5040	-0.0128	-0.62	0.4800	-0.0233	-1.20	OE
TBFYTK		0.5033	-0.0135	-0.65	0.4927	-0.0107	-0.55	WD
UM8UKK		0.5163	-0.0005	-0.02	0.5017	-0.0017	-0.08	OE
WX6LBA		0.5550	0.0382	1.84	0.5470	0.0437	2.24	OE
WYWNQX		0.4970	-0.0198	-0.96	0.4877	-0.0157	-0.80	OE
X92XXN		0.5375	0.0207	1.00	0.5209	0.0176	0.90	OE
XQYDZZ		0.5107	-0.0062	-0.30	0.5010	-0.0023	-0.12	XR
YQDYA2		0.5367	0.0198	0.96	0.5233	0.0200	1.03	OE
ZHW229		0.5254	0.0085	0.41	0.5014	-0.0019	-0.10	GD
ZLF3VU		0.5530	0.0362	1.75	0.5380	0.0347	1.78	OE

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Summary Statistics

	Sample M95		Sample M96	
Grand Means	0.5168	Percent	0.5033	Percent
Stnd Dev Btwn Labs	0.0207	Percent	0.0195	Percent

Samples M95, M96 : AISI 347, AISI 347

Statistics based on 43 of 44 reporting participants

Key to Method Codes Reported by Participants

GD	Spectrometry - Glow Discharge (GDS)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XR	X-Ray Fluorescence - ED or WD not specified	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1654

32332K (X) - Data for both samples are high. Possible Systematic Error.

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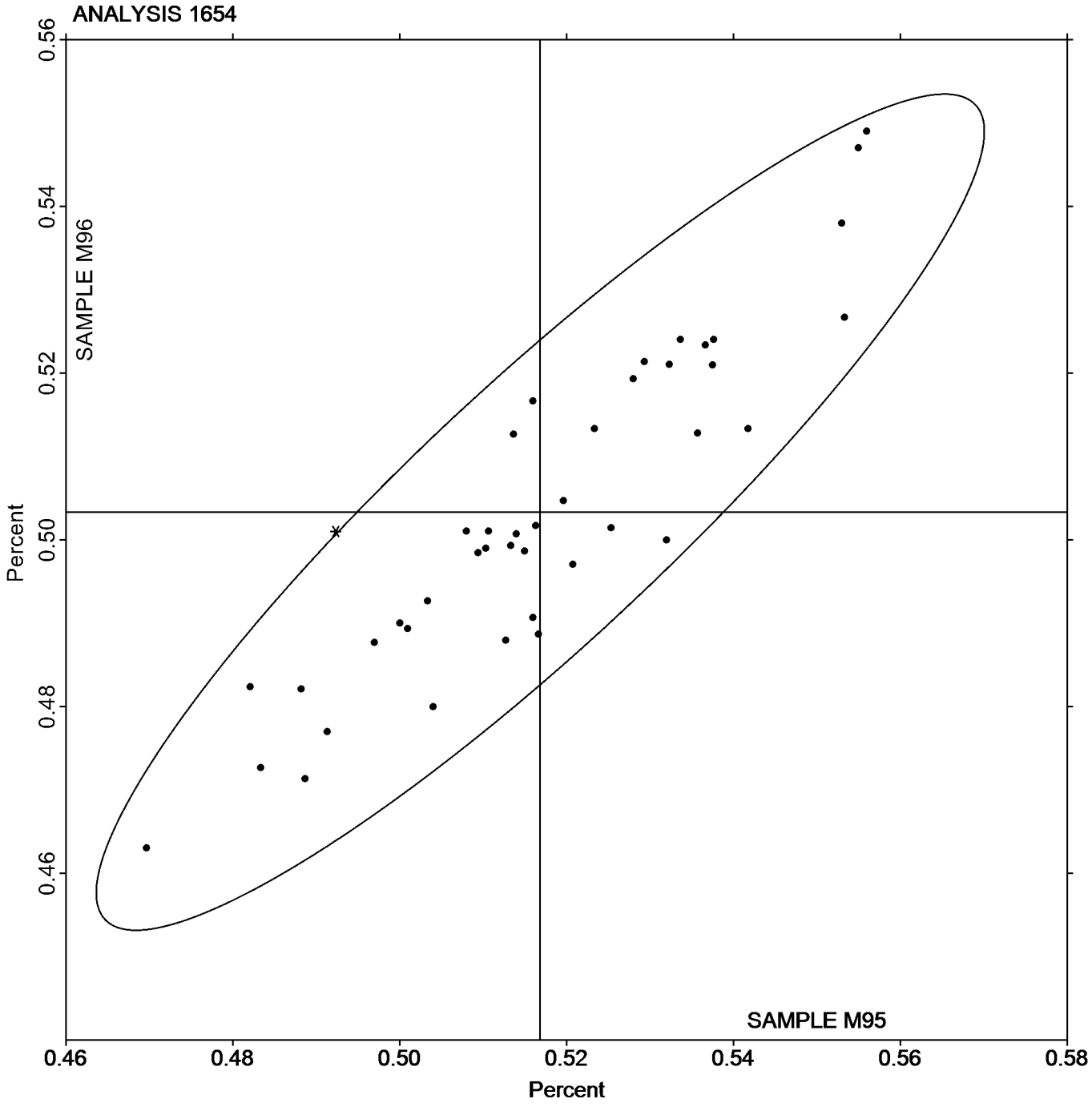
SAMPLE M95	SAMPLE M96
0.5168 Percent	0.5033 Percent



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1700

Copper-based Alloy, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample K95 Lab Mean	Sample K95 Diff. from Grand Mean	Sample K95 CPV	Sample K96 Lab Mean	Sample K96 Diff. from Grand Mean	Sample K96 CPV	Method
2RFRZ6		60.45	-0.14	-0.20	60.62	0.64	0.72	EL
66FLYJ		59.02	-1.58	-2.19	58.43	-1.54	-1.71	OE
7PWF3B		60.84	0.24	0.33	60.00	0.02	0.03	IC
9J6M9M		60.24	-0.35	-0.49	59.44	-0.53	-0.59	OE
A3NCTY		60.13	-0.46	-0.65	59.27	-0.71	-0.78	OE
AH3H3C		60.00	-0.60	-0.83	59.03	-0.94	-1.04	OE
BMU4BQ		60.79	0.19	0.26	59.93	-0.05	-0.05	GR
HK4BEN		61.53	0.94	1.30	61.00	1.03	1.15	BD
JWD6BY		60.40	-0.20	-0.27	59.43	-0.54	-0.60	OE
JX3QNH		62.06	1.47	2.04	62.30	2.33	2.59	WD
R6XAV6		61.36	0.76	1.06	60.58	0.61	0.67	BD
UM8UKK		60.30	-0.30	-0.42	59.40	-0.58	-0.64	OE
X92XXN		60.63	0.04	0.05	59.85	-0.12	-0.13	XR
Y83AW4		60.21	-0.39	-0.54	59.62	-0.35	-0.39	GD
YQDYA2		59.97	-0.63	-0.88	59.80	-0.17	-0.19	OE
YTZP7Y		61.39	0.79	1.10	60.90	0.93	1.04	ED
ZLF3VU		60.83	0.23	0.32	59.92	-0.05	-0.06	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	60.60	Percent	59.97	Percent
Stnd Dev Btwn Labs	0.72	Percent	0.90	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 17 of 17 reporting participants

Key to Method Codes Reported by Participants

BD	By Difference	ED	X-Ray Fluorescence - Energy Dispersive (EDX)
EL	Electrochemistry	GD	Spectrometry - Glow Discharge (GDS)
GR	Gravimetry	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XR	X-Ray Fluorescence - ED or WD not specified		

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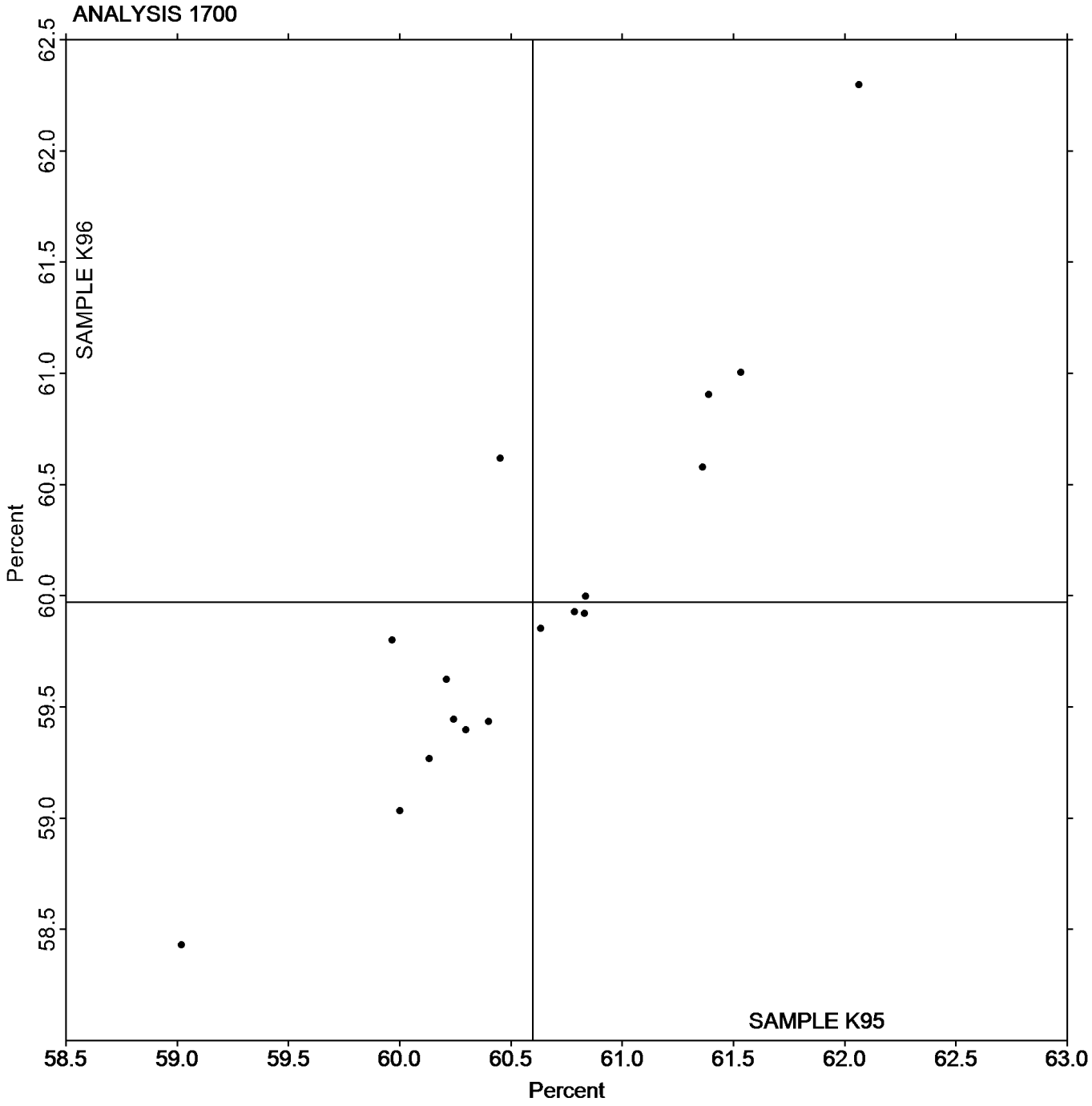
SAMPLE K95
60.60 Percent

SAMPLE K96
59.97 Percent



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1701

Copper-based Alloy, TIN (Sn)
TIN (Sn)

Cycle 144
4th Qtr 2023

		Sample K95			Sample K96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
4XE32U		0.5813	-0.1262	-2.41	0.5800	-0.0132	-0.92	OE
66FLYJ		0.7200	0.0125	0.24	0.5940	0.0008	0.06	OE
7PWF3B		0.7080	0.0005	0.01	0.5847	-0.0085	-0.59	IC
9J6M9M		0.7260	0.0185	0.35	0.5887	-0.0045	-0.31	OE
A3NCTY		0.7117	0.0042	0.08	0.5800	-0.0132	-0.92	OE
AH3H3C		0.7143	0.0068	0.13	0.5923	-0.0008	-0.06	OE
BMU4BQ		0.7337	0.0262	0.50	0.6040	0.0108	0.75	IC
HK4BEN		0.7363	0.0288	0.55	0.6070	0.0138	0.96	IC
JWD6BY		0.7350	0.0275	0.52	0.6023	0.0092	0.64	OE
JX3QNH	X	0.8126	0.1051	2.00	0.7983	0.2052	14.26	WD
R6XAV6		0.7027	-0.0048	-0.09	0.5750	-0.0182	-1.26	GD
UM8UKK		0.7293	0.0218	0.42	0.6050	0.0118	0.82	OE
WYWNQX		0.7557	0.0482	0.92	0.6043	0.0112	0.78	IC
X92XXN		0.7631	0.0556	1.06	0.6253	0.0322	2.24	OE
Y83AW4		0.7237	0.0162	0.31	0.5970	0.0038	0.27	GD
YQDYA2		0.5800	-0.1275	-2.43	0.5767	-0.0165	-1.15	OE
YTZP7Y	X	0.1303	-0.5772	-11.00	0.1470	-0.4462	-31.01	ED
ZLF3VU		0.6990	-0.0085	-0.16	0.5743	-0.0188	-1.31	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	0.7075	Percent	0.5932	Percent
Stnd Dev Btwn Labs	0.0524	Percent	0.0144	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 16 of 18 reporting participants

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)		

Comments on Assigned Data Flags for Test #1701

JX3QNH (X) - Data for sample K96 are high. Inconsistent within the determinations of both samples.

YTZP7Y (X) - Extreme data.

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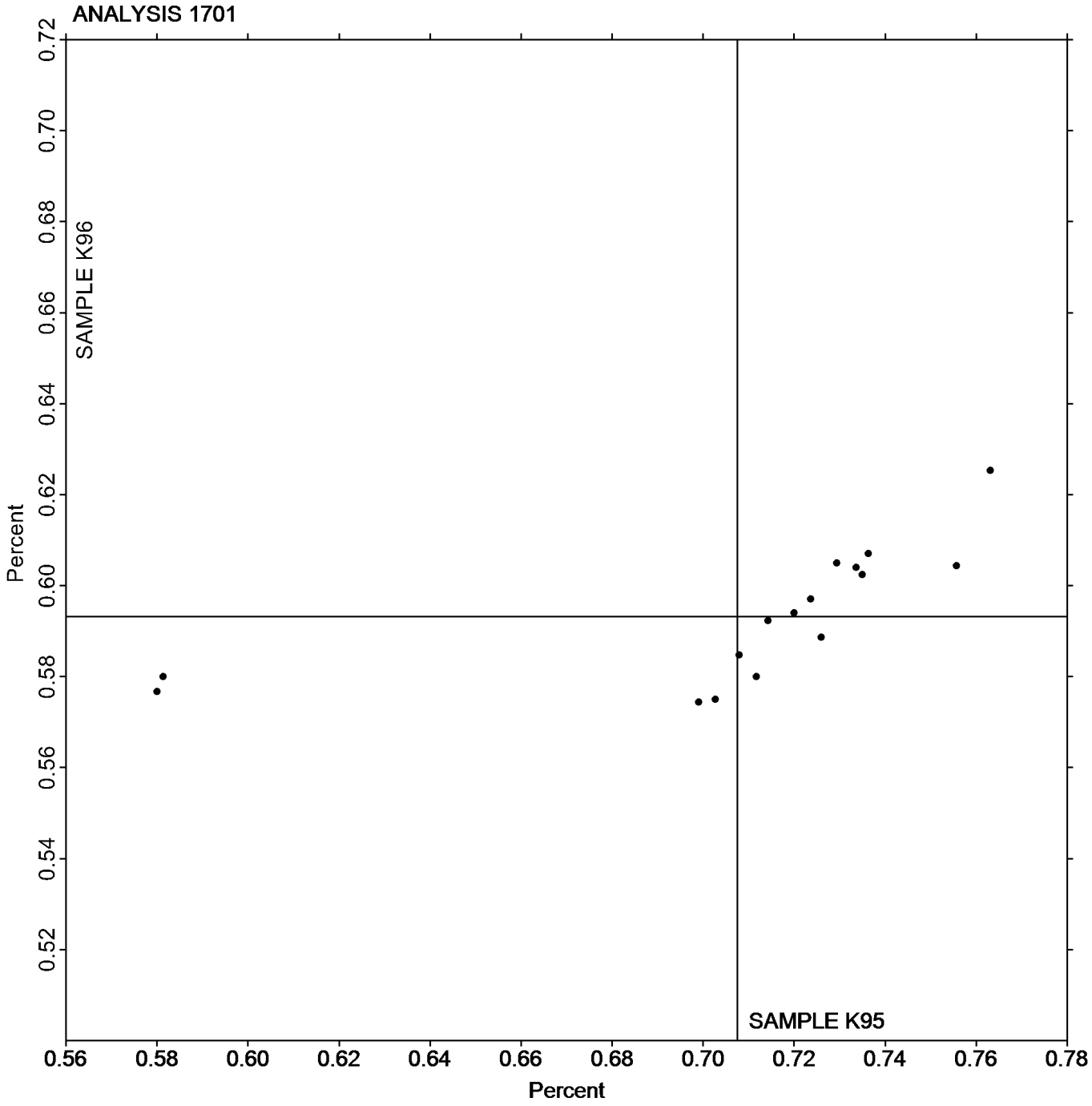
SAMPLE K95	SAMPLE K96
0.7075 Percent	0.5932 Percent



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1702

Copper-based Alloy, LEAD (Pb)
LEAD (Pb)

Cycle 144
4th Qtr 2023

		Sample K95			Sample K96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
4XE32U		1.513	-0.298	-1.00	1.500	-0.164	-0.57	OE
66FLYJ	*	2.633	0.821	2.76	2.457	0.793	2.79	OE
7PWF3B		1.682	-0.129	-0.43	1.480	-0.184	-0.64	IC
9J6M9M		1.827	0.015	0.05	1.684	0.020	0.07	OE
A3NCTY		2.180	0.368	1.24	1.990	0.326	1.15	OE
AH3H3C		2.093	0.282	0.95	1.943	0.280	0.98	OE
BMU4BQ		1.883	0.071	0.24	1.682	0.018	0.06	IC
HK4BEN		1.683	-0.128	-0.43	1.470	-0.194	-0.68	IC
JWD6BY		1.780	-0.032	-0.11	1.620	-0.044	-0.15	OE
JX3QNH		1.529	-0.283	-0.95	1.419	-0.245	-0.86	WD
R6XAV6		1.681	-0.131	-0.44	1.470	-0.194	-0.68	GD
UM8UKK		1.735	-0.076	-0.26	1.597	-0.066	-0.23	OE
WYWNQX		1.787	-0.025	-0.08	1.560	-0.104	-0.36	IC
X92XXN		2.035	0.223	0.75	1.870	0.206	0.72	OE
Y83AW4		1.640	-0.172	-0.58	1.460	-0.204	-0.72	GD
YQDYA2		1.720	-0.092	-0.31	1.750	0.086	0.30	OE
YTZP7Y		1.280	-0.532	-1.79	1.178	-0.485	-1.70	ED
ZLF3VU		1.927	0.115	0.39	1.813	0.150	0.53	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	1.812	Percent	1.664	Percent
Stnd Dev Btwn Labs	0.298	Percent	0.285	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 18 of 18 reporting participants

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)		

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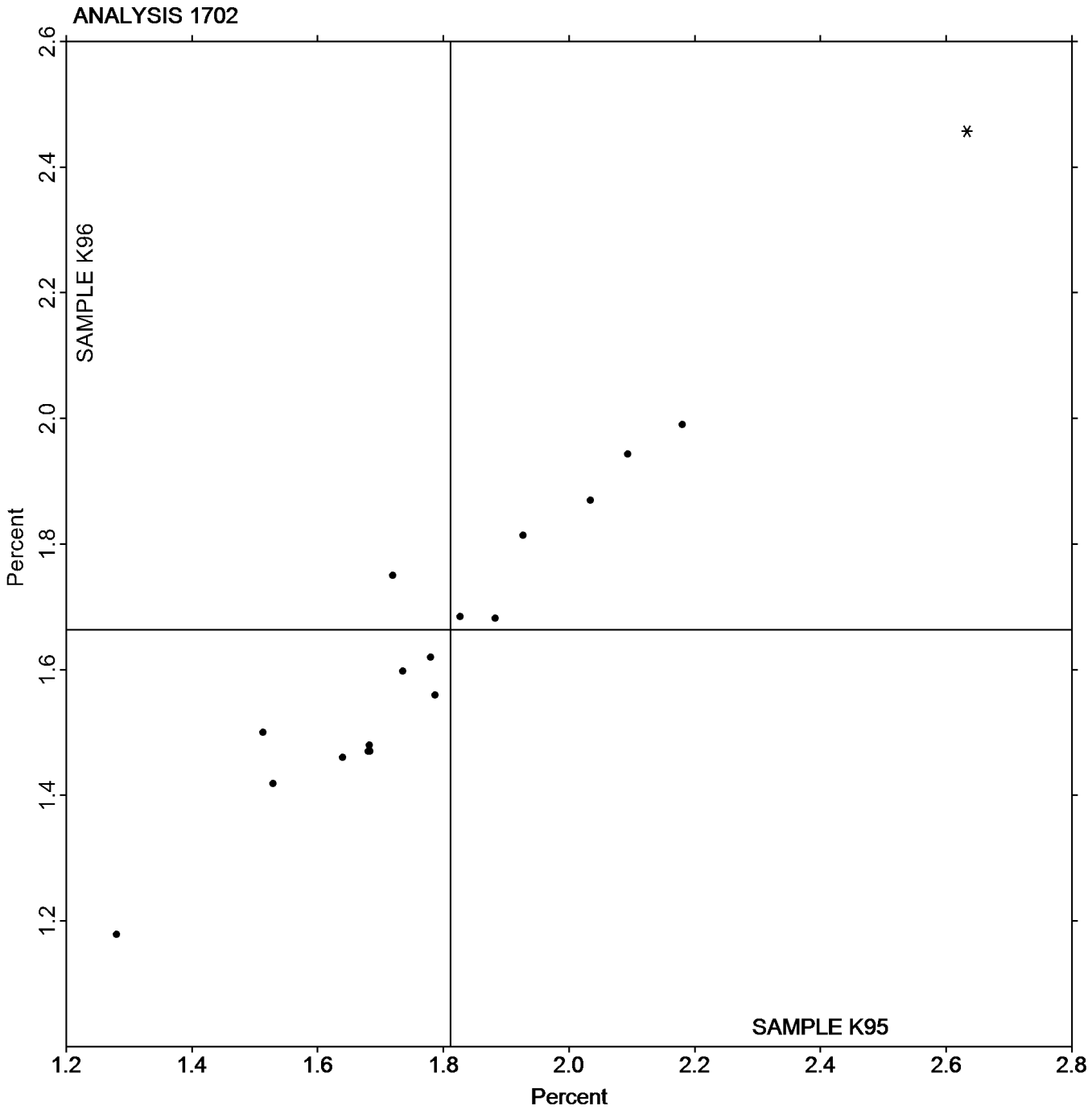
SAMPLE K95
1.812 Percent

SAMPLE K96
1.664 Percent



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1703

Copper-based Alloy, ZINC (Zn)
ZINC (Zn)

		Sample K95			Sample K96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
4XE32U		38.21	1.32	2.05	37.85	0.17	0.23	OE
66FLYJ		37.59	0.70	1.09	38.44	0.77	1.02	OE
7PWF3B		36.68	-0.21	-0.33	37.81	0.13	0.18	IC
9J6M9M		37.14	0.25	0.38	38.18	0.51	0.68	OE
A3NCTY		36.89	0.00	0.00	38.08	0.41	0.54	OE
AH3H3C		37.12	0.23	0.36	38.29	0.62	0.83	OE
BMU4BQ		36.58	-0.32	-0.49	37.60	-0.08	-0.10	IC
HK4BEN		35.93	-0.96	-1.49	36.77	-0.91	-1.21	IC
JWD6BY		36.97	0.08	0.13	38.19	0.52	0.69	OE
JX3QNH	*	35.48	-1.42	-2.20	35.35	-2.33	-3.10	WD
R6XAV6		36.24	-0.65	-1.01	37.32	-0.36	-0.47	GD
UM8UKK		37.16	0.27	0.42	38.26	0.59	0.79	OE
WYWNQX		36.59	-0.30	-0.47	37.75	0.08	0.10	IC
X92XXN		36.86	-0.04	-0.06	37.89	0.21	0.28	OE
Y83AW4		37.40	0.51	0.79	38.23	0.56	0.75	GD
YQDYA2		37.65	0.76	1.18	37.73	0.05	0.07	OE
YTZP7Y		37.07	0.18	0.27	36.80	-0.87	-1.16	ED
ZLF3VU		36.50	-0.39	-0.61	37.60	-0.07	-0.10	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	36.89	Percent	37.67	Percent
Stnd Dev Btwn Labs	0.64	Percent	0.75	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 18 of 18 reporting participants

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)		

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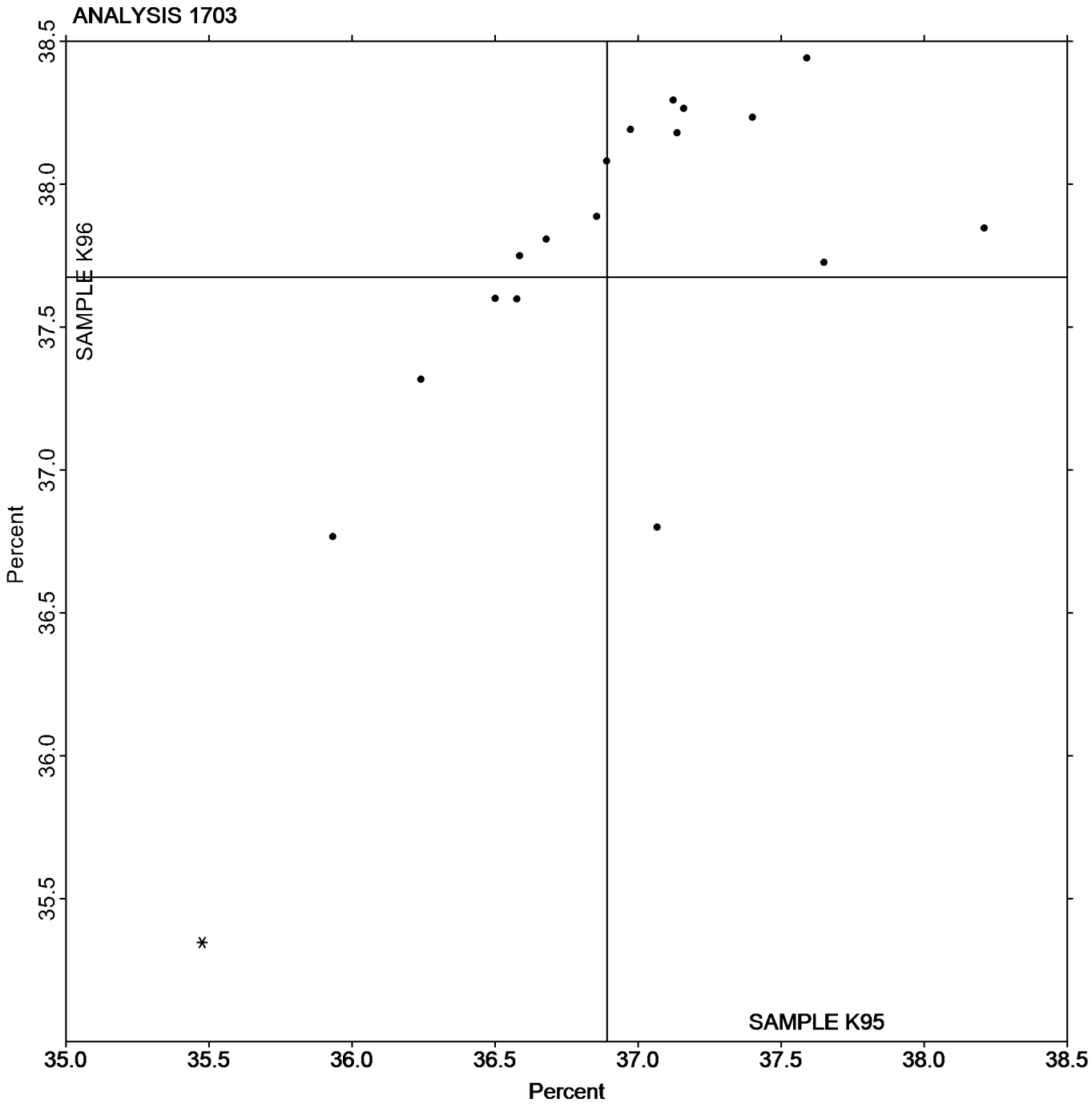
SAMPLE K95
36.89 Percent

SAMPLE K96
37.67 Percent



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WebCode	Data Flag	Sample K95 Lab Mean	Sample K95 Diff. from Grand Mean	Sample K95 CPV	Sample K96 Lab Mean	Sample K96 Diff. from Grand Mean	Sample K96 CPV	Method
4XE32U		0.0337	0.0065	0.77	0.0327	0.0004	0.07	OE
66FLYJ		0.0210	-0.0062	-0.73	0.0276	-0.0046	-0.72	OE
7PWF3B	M	No Data Reported			0.0312	-0.0010	-0.15	IC
9J6M9M		0.0254	-0.0018	-0.21	0.0302	-0.0021	-0.32	OE
A3NCTY		0.0222	-0.0050	-0.59	0.0287	-0.0035	-0.55	OE
AH3H3C		0.0250	-0.0022	-0.26	0.0320	-0.0002	-0.04	OE
BMU4BQ		0.0241	-0.0031	-0.37	0.0314	-0.0009	-0.13	IC
HK4BEN		0.0307	0.0035	0.42	0.0337	0.0014	0.22	IC
JWD6BY		0.0243	-0.0028	-0.34	0.0327	0.0004	0.07	OE
JX3QNH		0.0373	0.0102	1.21	0.0380	0.0058	0.90	WD
UM8UKK		0.0307	0.0035	0.42	0.0397	0.0074	1.15	OE
X92XXN		0.0249	-0.0022	-0.26	0.0322	0.0000	-0.01	OE
Y83AW4		0.0110	-0.0162	-1.92	0.0213	-0.0109	-1.68	GD
YQDYA2		0.0483	0.0212	2.52	0.0483	0.0161	2.49	OE
YTZP7Y		0.0242	-0.0029	-0.35	0.0234	-0.0089	-1.37	ED
ZLF3VU		0.0245	-0.0027	-0.32	0.0317	-0.0005	-0.08	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	0.0272	Percent	0.0322	Percent
Stnd Dev Btwn Labs	0.0084	Percent	0.0065	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 15 of 16 reporting participants

Key to Method Codes Reported by Participants

ED X-Ray Fluorescence - Energy Dispersive (EDX)
GD Spectrometry - Glow Discharge (GDS)
IC Spectrometry - Inductively Coupled Plasma (ICP)
OE Spectrometry - Optical Emission (OES)
WD X-Ray Fluorescence - Wavelength Dispersive (WDX)

Comments on Assigned Data Flags for Test #1704

7PWF3B (M) - Participant did not submit data for sample K95.

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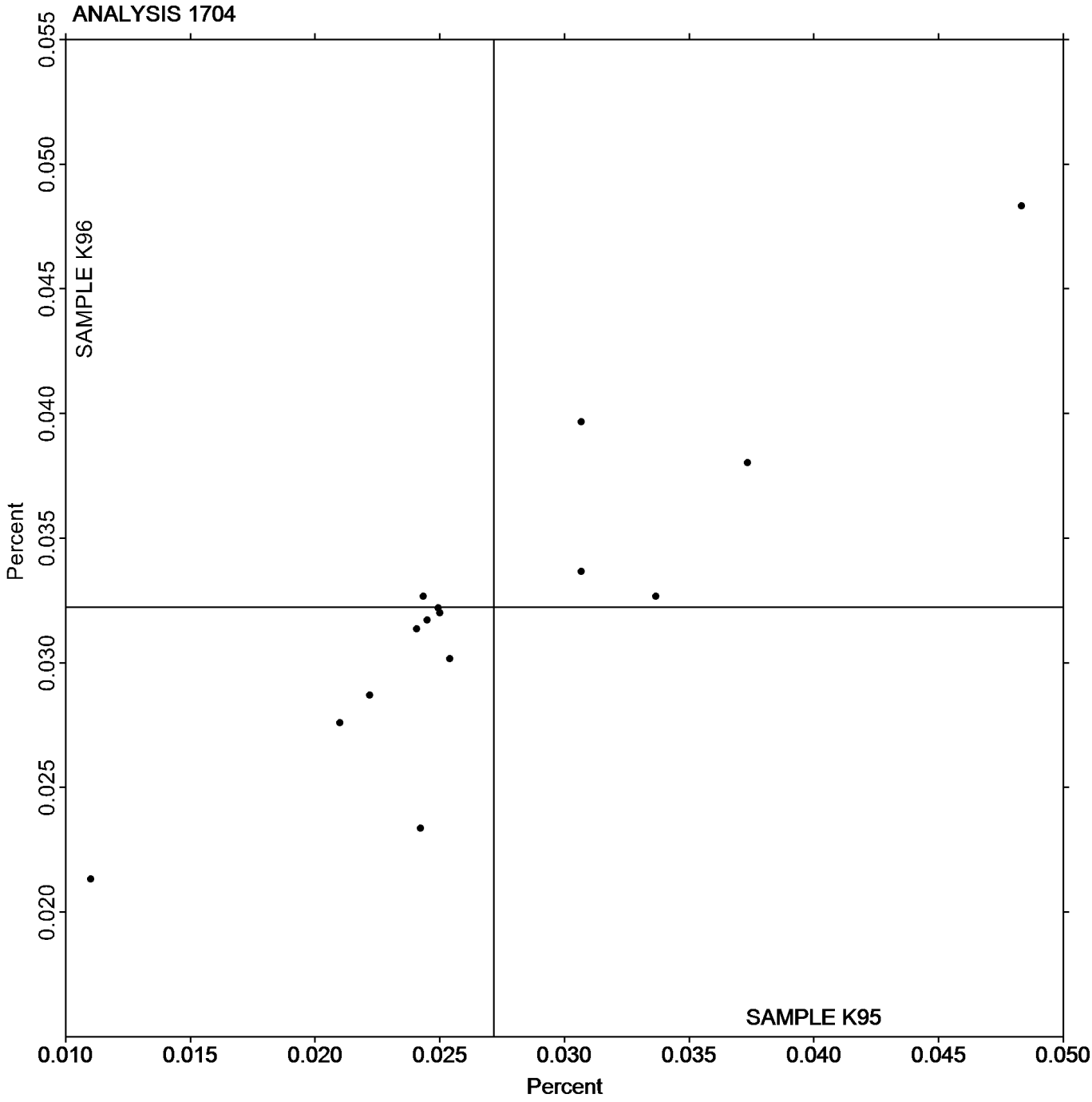
SAMPLE K95
0.0272 Percent

SAMPLE K96
0.0322 Percent



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Fasteners and Metals Interlaboratory Testing Program
Analysis 1705
Copper-based Alloy, NICKEL (Ni)
NICKEL (Ni)

		Sample K95			Sample K96			
WebCode	Data Flag	Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	Method
4XE32U		0.00900	0.00357	1.29	0.00867	-0.0080	-1.54	OE
66FLYJ		0.00230	-0.00313	-1.13	0.0152	-0.0015	-0.28	OE
A3NCTY		0.00623	0.00080	0.29	0.0207	0.0040	0.78	OE
AH3H3C		0.00497	-0.00046	-0.17	0.0194	0.0027	0.52	OE
BMU4BQ		0.00293	-0.00250	-0.90	0.0170	0.0003	0.06	IC
HK4BEN		0.00300	-0.00243	-0.88	0.0191	0.0024	0.47	IC
JWD6BY		0.00600	0.00057	0.21	0.0247	0.0080	1.55	OE
JX3QNH		0.00700	0.00157	0.57	0.00693	-0.0097	-1.88	WD
UM8UKK	X	0.00900	0.00357	1.29	0.0570	0.0403	7.80	OE
WYWNQX		0.00283	-0.00260	-0.94	0.0177	0.0010	0.20	IC
X92XXN		0.00593	0.00050	0.18	0.0223	0.0057	1.09	OE
Y83AW4		0.00400	-0.00143	-0.52	0.0140	-0.0027	-0.51	GD
YQDYA2		0.0120	0.00657	2.38	0.0120	-0.0047	-0.90	OE
YTZP7Y	X	0.0293	0.02390	8.65	0.0291	0.0124	2.40	ED
ZLF3VU		0.00440	-0.00103	-0.37	0.0189	0.0023	0.44	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	0.00543	Percent	0.0167	Percent
Stnd Dev Btwn Labs	0.00276	Percent	0.0052	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 13 of 15 reporting participants

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)		

Comments on Assigned Data Flags for Test #1705

UM8UKK (X) - Data for Sample K96 are high.

YTZP7Y (X) - Inconsistent within the determinations of sample K95.

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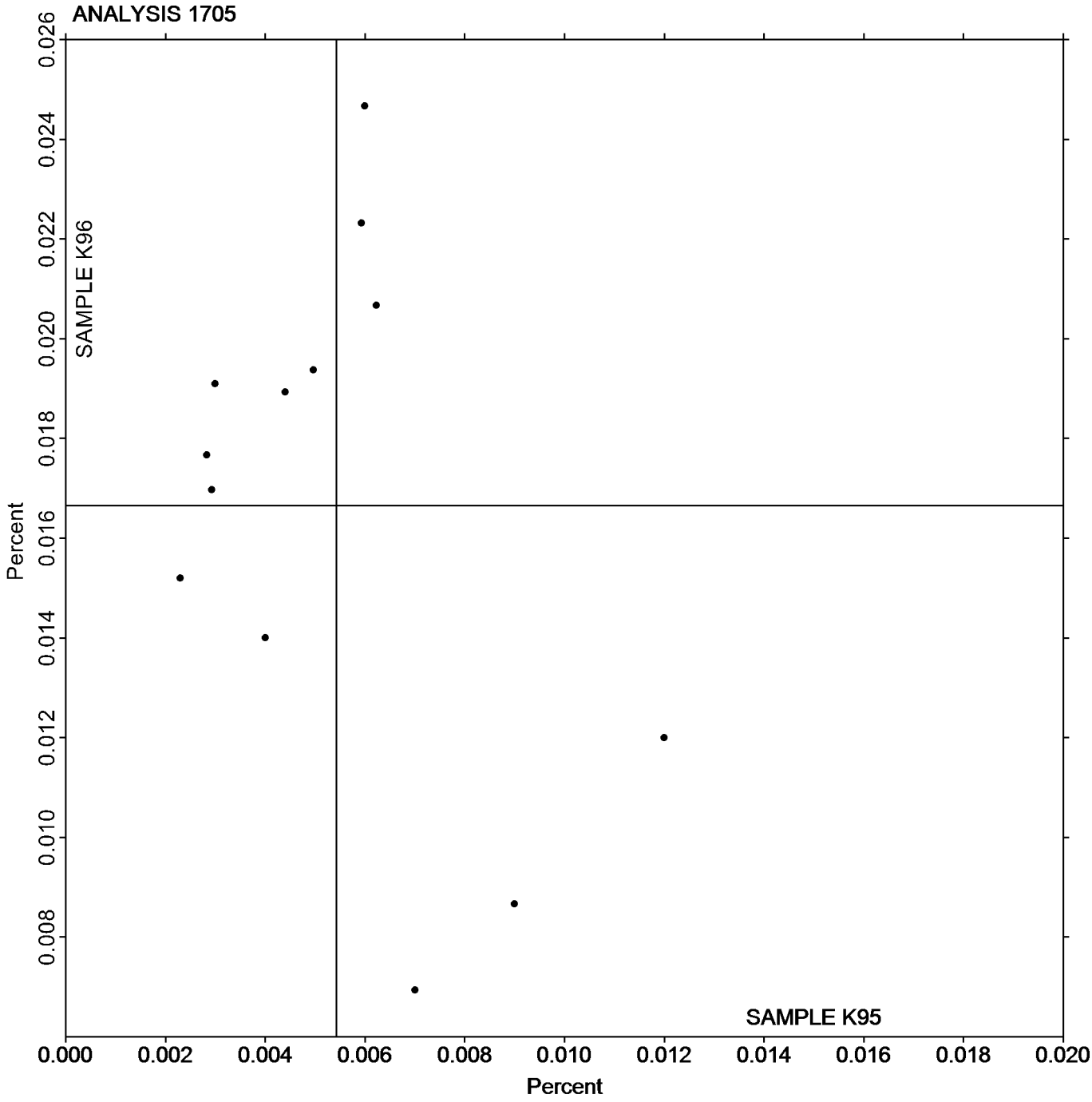
SAMPLE K95
0.00543 Percent

SAMPLE K96
0.0167 Percent



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1706

Copper-based Alloy, SULFUR (S)
SULFUR (S)

WebCode	Data Flag	Sample K95 Lab Mean	Sample K95 Diff. from Grand Mean	Sample K95 CPV	Sample K96 Lab Mean	Sample K96 Diff. from Grand Mean	Sample K96 CPV	Method
4XE32U		0.00733	0.00446	1.83	0.00733	0.00390	1.55	OE
66FLYJ		0.00360	0.00073	0.30	0.00620	0.00277	1.10	OE
A3NCTY		0.00317	0.00029	0.12	0.00323	-0.00020	-0.08	OE
AH3H3C		0.00183	-0.00104	-0.43	0.00230	-0.00113	-0.45	OE
JWD6BY		0.00600	0.00313	1.28	0.00633	0.00290	1.15	OE
JX3QNH	X	0.0183	0.01539	6.32	0.0188	0.01533	6.10	WD
UM8UKK	M	No Data Reported			0.00100	-0.00243	-0.97	OE
X92XXN		0.000837	-0.00204	-0.84	0.00125	-0.00219	-0.87	OE
Y83AW4		0.00100	-0.00187	-0.77	0.00167	-0.00177	-0.70	GD
YQDYA2		0.00200	-0.00087	-0.36	0.00200	-0.00143	-0.57	OE
ZLF3VU		0.000100	-0.00277	-1.14	0.000600	-0.00283	-1.13	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	0.00287	Percent	0.00343	Percent
Stnd Dev Btwn Labs	0.00244	Percent	0.00251	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 9 of 11 reporting participants

Key to Method Codes Reported by Participants

GD Spectrometry - Glow Discharge (GDS)
OE Spectrometry - Optical Emission (OES)
WD X-Ray Fluorescence - Wavelength Dispersive (WDX)

Comments on Assigned Data Flags for Test #1706

JX3QNH (X) - Inconsistent within the determinations of both samples.

UM8UKK (M) - Participant did not submit data for sample K95.

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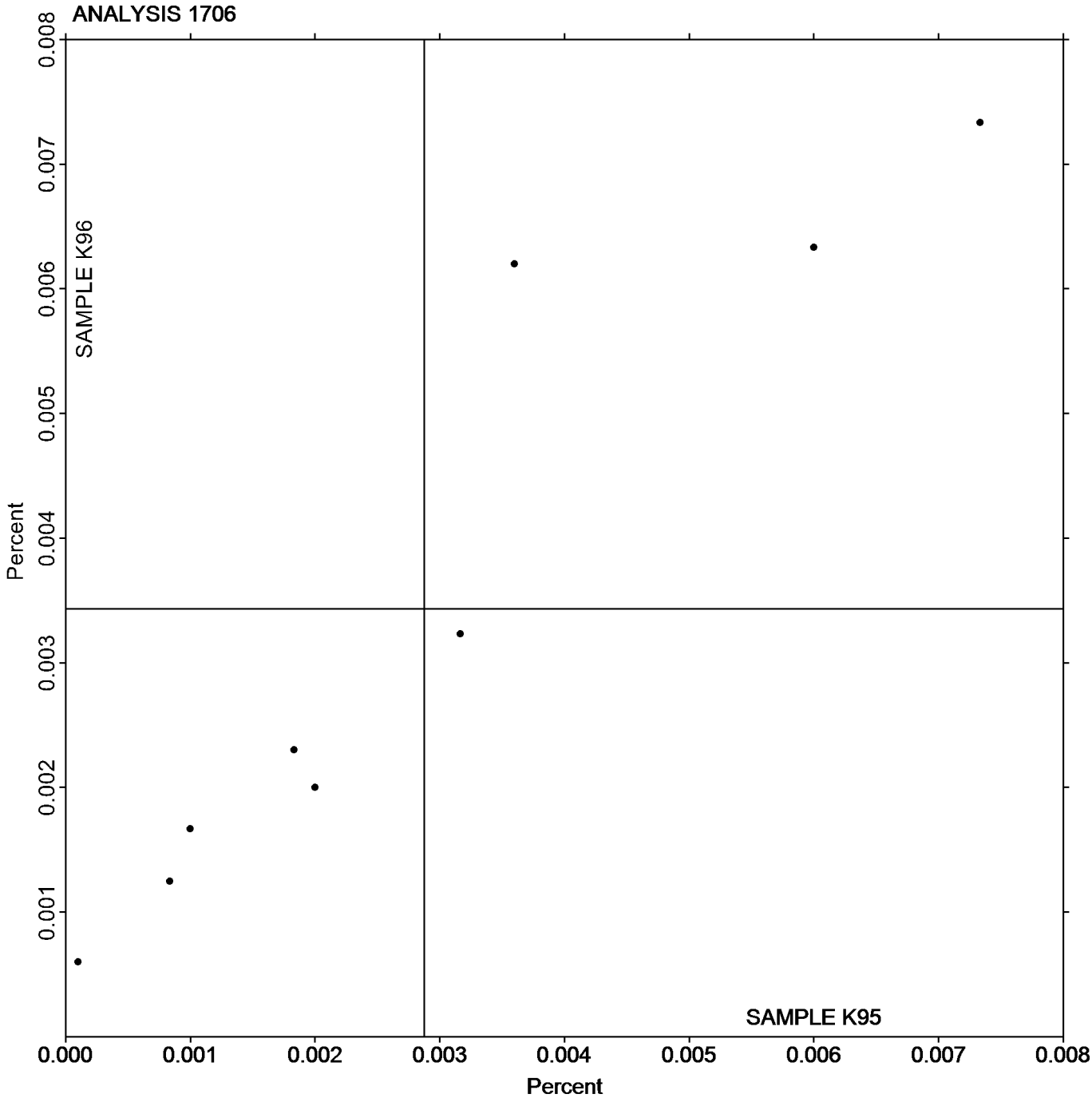
SAMPLE K95
0.00287 Percent

SAMPLE K96
0.00343 Percent



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Fasteners and Metals Interlaboratory Testing Program

Analysis 1707

Copper-based Alloy, PHOSPHORUS (P)
PHOSPHORUS (P)

Cycle 144
4th Qtr 2023

WebCode	Data Flag	Sample K95 Lab Mean	Sample K95 Diff. from Grand Mean	Sample K95 CPV	Sample K96 Lab Mean	Sample K96 Diff. from Grand Mean	Sample K96 CPV	Method
4XE32U		0.0300	0.02118	1.83	0.0300	0.0017	0.31	OE
66FLYJ		0.000100	-0.00872	-0.75	0.0289	0.0006	0.11	OE
9J6M9M		0.00180	-0.00702	-0.61	0.0314	0.0031	0.57	OE
A3NCTY		0.00470	-0.00412	-0.36	0.0353	0.0070	1.26	OE
BMU4BQ		0.00213	-0.00669	-0.58	0.0275	-0.0008	-0.15	IC
HK4BEN		0.000567	-0.00825	-0.71	0.0294	0.0011	0.21	IC
JWD6BY		0.00700	-0.00182	-0.16	0.0363	0.0080	1.45	OE
JX3QNH		0.0218	0.01301	1.13	0.0224	-0.0059	-1.06	WD
UM8UKK		0.00200	-0.00682	-0.59	0.0247	-0.0036	-0.65	OE
WYWNQX	M	No Data Reported			0.0295	0.0012	0.22	IC
X92XXN		0.000010	-0.00881	-0.76	0.0294	0.0011	0.21	OE
Y83AW4	M	No Data Reported			0.0347	0.0064	1.15	GD
YQDYA2		0.0313	0.02251	1.95	0.0310	0.0027	0.49	OE
YTZP7Y		0.0131	0.00425	0.37	0.0149	-0.0134	-2.42	ED
ZLF3VU		0.000100	-0.00872	-0.75	0.0265	-0.0018	-0.33	OE

Summary Statistics

	Sample K95		Sample K96	
Grand Means	0.00882	Percent	0.0283	Percent
Stnd Dev Btwn Labs	0.01155	Percent	0.0055	Percent

Samples K95, K96 : CDA 485, CDA 485

Statistics based on 13 of 15 reporting participants

Key to Method Codes Reported by Participants

ED X-Ray Fluorescence - Energy Dispersive (EDX)
GD Spectrometry - Glow Discharge (GDS)
IC Spectrometry - Inductively Coupled Plasma (ICP)
OE Spectrometry - Optical Emission (OES)
WD X-Ray Fluorescence - Wavelength Dispersive (WDX)

Comments on Assigned Data Flags for Test #1707

WYWNQX (M) - Participant did not submit data for sample K95.

Y83AW4 (M) - Participant did not submit data for sample K95.

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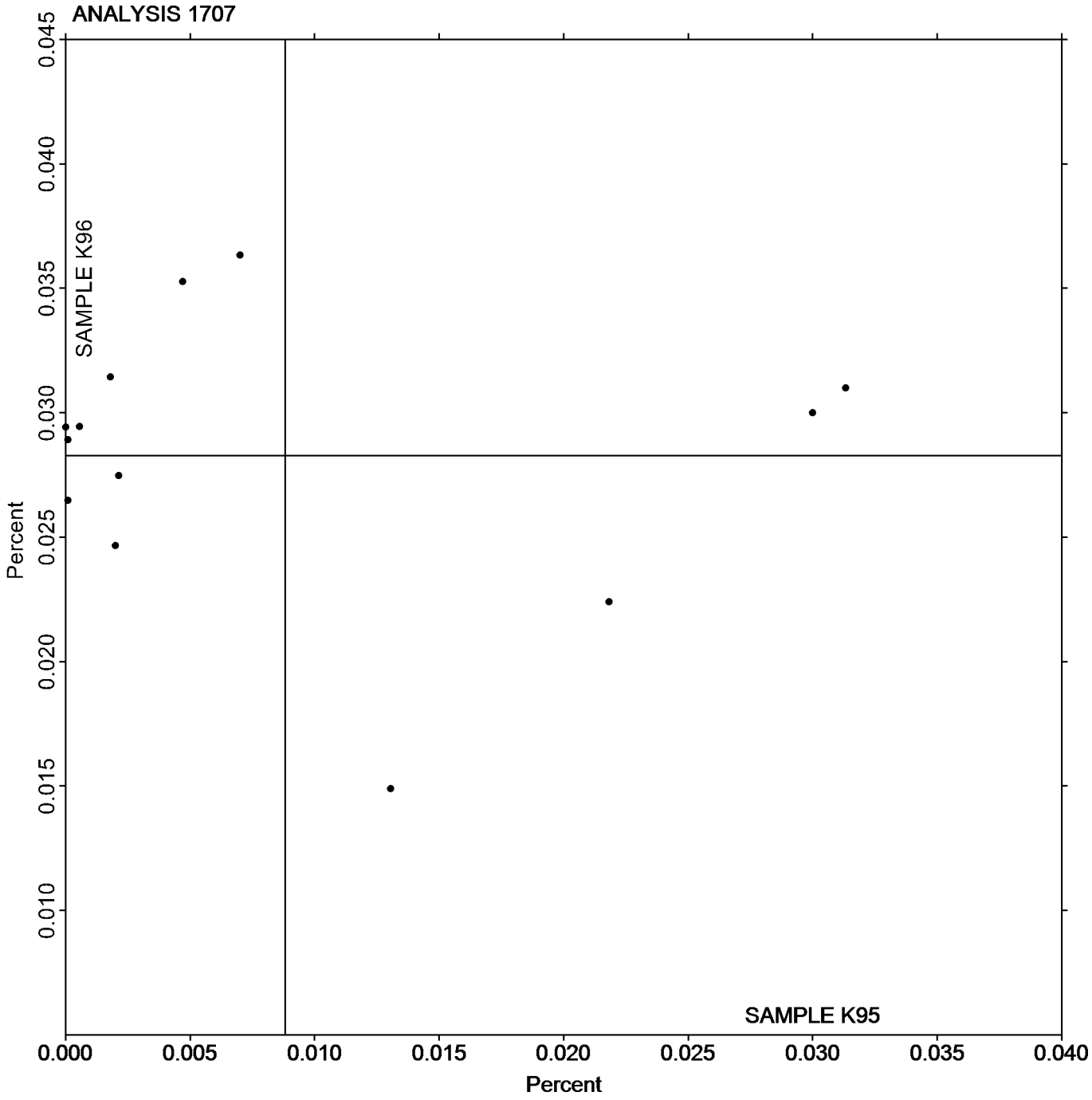
SAMPLE K95
0.00882 Percent

SAMPLE K96
0.0283 Percent



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-End of Report-

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