

Fasteners & Metals Interlaboratory Testing Program

Summary Report Cycle 150, 2nd Qtr 2025

[About the Metals Program](#) [About CTS](#) [Key to Tables and Graphs](#)

Analysis	Test Group
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Impact Tests	
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1003	Charpy V-Notch (-30 degrees)
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Tensile Tests	
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1131	Tensile Strength: Lab-Machined Flat Steel
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1132	Yield Strength: Lab-Machined Flat Steel
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1133	Elongation: Lab-Machined Flat Steel
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1134	r-Value: Lab-Machined Flat Steel
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1135	n-Value: Lab-Machined Flat Steel
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Fasteners	
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1201	Fastener Wedge Tensile (10 degree)
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1202	Fastener Axial Tensile
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1203	Fastener Wedge Tensile (10 degree) - Metric
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1204	Fastener Axial Tensile - Metric
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1210	Rockwell Hardness: Externally Threaded Fasteners
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1211	Vickers Hardness: Externally Threaded Fasteners
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1220	Fastener Double Shear
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Hardness / Metallography Tests	
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1301	Rockwell Hardness: C & B Scales
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1303	Rockwell Hardness: C Scale
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1311	Vickers Hardness 10 kgf
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1351	Rockwell Superficial Hardness (30N Scale)
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1401	Total Case Depth
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1402	Effective Case Depth
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1411	Grain Size (Stainless Steel)
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Chemical Analyses	
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1500 - 1509	Chemical Analysis: Nickel-based Alloy
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1540 - 1549	Chemical Analysis: Aluminum Alloy
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1640 - 1653	Chemical Analysis: Corrosion Resistant Steel
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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 except Chemical Analyses). Results fall outside the 99% ellipse. See the specific note following the data for more information on why the data are excluded. For Chemical Analyses see an 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 1003
Charpy V-Notch (-30 degrees)
ASTM E23

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample U09			Sample U10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2WXXQC		19.43	-3.19	-1.50	18.98	-3.75	-1.54
2YZV6K		22.62	0.00	0.00	22.62	-0.11	-0.05
38UD29		19.12	-3.50	-1.64	19.01	-3.72	-1.53
4AXGG2		24.45	1.83	0.86	23.77	1.04	0.43
4J7Q8F		25.31	2.69	1.26	24.40	1.67	0.69
6Z76ZE		18.98	-3.64	-1.71	18.98	-3.75	-1.54
7CF678		24.62	2.00	0.94	25.59	2.85	1.17
7GR9W9		23.59	0.97	0.46	24.21	1.48	0.61
9646J7		20.67	-1.95	-0.92	22.33	-0.40	-0.16
AUGG4X		19.79	-2.83	-1.33	19.89	-2.84	-1.17
AZRMMB		22.66	0.04	0.02	20.41	-2.32	-0.95
BJEKE2		24.37	1.75	0.82	23.73	1.00	0.41
DDKDYP		22.73	0.11	0.05	23.00	0.27	0.11
DZECBM		21.66	-0.96	-0.45	23.15	0.41	0.17
FVEM6Y		24.00	1.38	0.65	26.67	3.93	1.61
G398QR		25.56	2.94	1.38	27.54	4.80	1.97
GJVUN4		22.60	-0.02	-0.01	24.40	1.67	0.69
GQGGAU		24.00	1.38	0.65	23.00	0.27	0.11
JGN8DV		22.33	-0.29	-0.13	22.33	-0.40	-0.16
KLYCT3	*	18.53	-4.09	-1.92	22.15	-0.59	-0.24
LJKC4L	*	24.74	2.12	1.00	29.04	6.31	2.59
LKDABR		21.89	-0.73	-0.34	21.90	-0.83	-0.34
LKDCU6		25.21	2.59	1.22	23.83	1.10	0.45
N864FK		26.21	3.59	1.69	23.05	0.31	0.13
NP3HWX		23.33	0.71	0.34	24.33	1.60	0.66
PTHC9P		25.67	3.05	1.43	23.67	0.93	0.38
PWK9YJ		20.58	-2.04	-0.96	21.27	-1.47	-0.60
T2WMRQ		21.90	-0.72	-0.34	22.40	-0.33	-0.14
TNC8PR		20.53	-2.09	-0.98	18.98	-3.75	-1.54
UEJZJ8		22.33	-0.29	-0.13	20.67	-2.07	-0.85
W6JMAH		22.60	-0.02	-0.01	21.24	-1.49	-0.61
ZNAN4B		21.78	-0.83	-0.39	20.93	-1.80	-0.74

Summary Statistics

	Sample U09		Sample U10	
Grand Means	22.62	Joules	22.73	Joules
Std Dev Btrwn Labs	2.13	Joules	2.44	Joules

Samples U09, U10 : AISI 4340, AISI 4340

Statistics based on 32 of 32 reporting participants



Analysis 1003

Charpy V-Notch (-30 degrees)

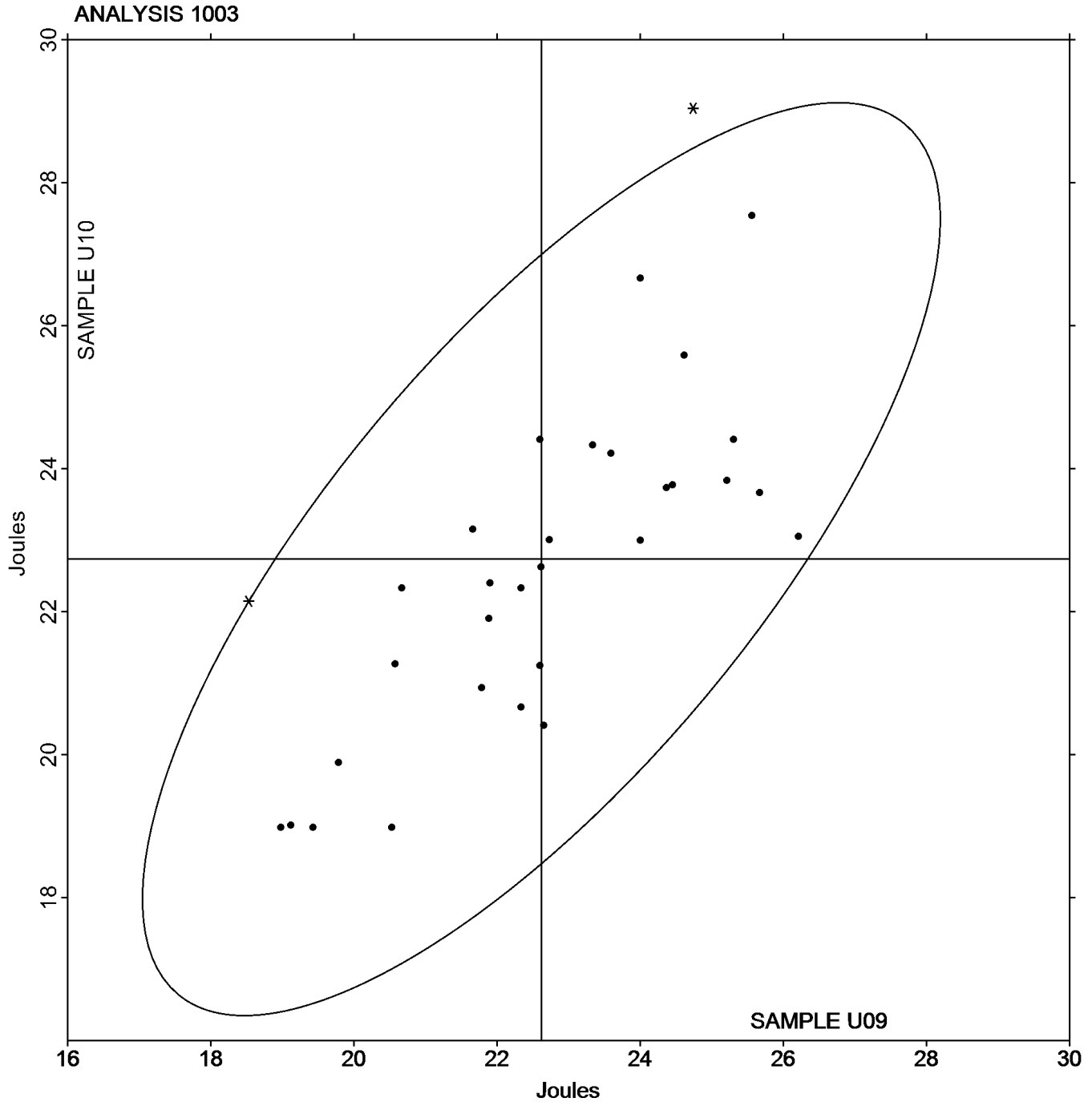
ASTM E23

SAMPLE U09

SAMPLE U10

22.62 Joules

22.73 Joules





Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28XDTA		46.85	0.90	0.90	44.92	0.68	1.07
29R4W3		45.90	-0.05	-0.05	44.40	0.16	0.25
2G2TA2		47.09	1.14	1.14	45.01	0.77	1.21
2JAQ4H		45.70	-0.25	-0.25	44.30	0.06	0.10
2Y8Q2D		45.89	-0.06	-0.06	44.44	0.20	0.32
334RL8		45.79	-0.16	-0.16	43.44	-0.80	-1.26
38UD29		46.43	0.48	0.48	44.12	-0.12	-0.18
3MM2FD		46.60	0.65	0.65	44.10	-0.14	-0.22
444DGH		46.11	0.16	0.16	44.55	0.31	0.49
4AXGG2		46.30	0.35	0.35	44.50	0.26	0.41
4RVLZ4		45.80	-0.15	-0.15	44.99	0.75	1.18
4VXPP6		46.90	0.95	0.95	43.80	-0.44	-0.69
6B8TTC		45.69	-0.26	-0.26	43.80	-0.44	-0.69
6CYVD7		46.70	0.75	0.75	44.57	0.33	0.52
6DRUKD		46.00	0.05	0.05	43.60	-0.64	-1.00
6R9KQ7		46.70	0.75	0.75	44.63	0.40	0.62
6Z76ZE		46.33	0.37	0.37	44.24	0.00	0.00
783FQ4	*	43.70	-2.25	-2.25	44.50	0.26	0.41
786CV9		45.20	-0.75	-0.75	44.20	-0.04	-0.06
78Y3Y2		45.25	-0.70	-0.70	43.25	-0.99	-1.55
7CEC9Y		45.70	-0.25	-0.25	43.50	-0.74	-1.16
7CF678		44.38	-1.57	-1.57	43.66	-0.58	-0.91
7EZAHB		46.00	0.05	0.05	43.60	-0.64	-1.00
7H2BNY		46.70	0.75	0.75	44.20	-0.04	-0.06
7TH7EY	*	46.60	0.65	0.65	43.10	-1.14	-1.79
86TW28		45.40	-0.55	-0.55	44.90	0.66	1.04
89REUT		47.70	1.75	1.75	45.00	0.76	1.20
8PUUD8		46.70	0.75	0.75	44.40	0.16	0.25
98DZ96		45.18	-0.77	-0.77	44.14	-0.10	-0.16
9D3LE7		43.98	-1.97	-1.97	44.26	0.02	0.03
9NFPFA		45.10	-0.85	-0.85	42.80	-1.44	-2.26
A44MUA		46.40	0.45	0.45	44.30	0.06	0.10
A6WK2G		47.86	1.91	1.91	45.51	1.27	2.00
AQMF8B	*	43.45	-2.50	-2.50	43.50	-0.74	-1.16
AUGG4X		45.18	-0.77	-0.77	44.19	-0.05	-0.08
AVYEEA		45.98	0.03	0.03	45.11	0.87	1.36
B7QHXU		45.70	-0.25	-0.25	43.40	-0.84	-1.32
BAQUUU	X	31.10	-14.85	-14.85	25.60	-18.64	-29.27
BH9VK6		46.30	0.35	0.35	44.40	0.16	0.25
BHJ2CZ		46.69	0.74	0.74	44.63	0.39	0.61
BKVG7Z		46.63	0.68	0.68	44.53	0.29	0.45
BTKC2A		46.41	0.46	0.46	44.45	0.21	0.33
C437W4		46.30	0.35	0.35	44.20	-0.04	-0.06
CJD3Z3		45.70	-0.25	-0.25	44.30	0.06	0.10
CQW786		45.60	-0.35	-0.35	43.50	-0.74	-1.16
CRRULU	*	43.51	-2.44	-2.44	43.13	-1.11	-1.74
CYPGGZ		45.00	-0.95	-0.95	44.20	-0.04	-0.06



Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
D36DEP		47.99	2.04	2.04	44.88	0.64	1.01
D377CX		46.56	0.61	0.61	44.73	0.49	0.77
D8WRW6		46.40	0.45	0.45	44.40	0.16	0.25
DDJB JT		45.51	-0.44	-0.44	43.15	-1.09	-1.71
DDKDYP		45.80	-0.15	-0.15	44.20	-0.04	-0.06
DDZL2Y		45.00	-0.95	-0.95	44.20	-0.04	-0.06
DEUC6R		45.90	-0.05	-0.05	44.48	0.24	0.37
DFCE3T		46.00	0.05	0.05	43.60	-0.64	-1.00
DTGK7Y	*	45.69	-0.26	-0.26	45.69	1.45	2.28
EGH7HM		46.30	0.35	0.35	44.40	0.16	0.25
EMNV88	X	40.81	-5.14	-5.14	41.93	-2.31	-3.63
F3DCL4		46.50	0.55	0.55	43.40	-0.84	-1.32
FHAFFU		45.40	-0.55	-0.55	44.20	-0.04	-0.06
GBNYZP		45.56	-0.39	-0.39	44.95	0.71	1.11
GPPKGU		47.02	1.07	1.07	44.32	0.09	0.13
H9XXWM		47.10	1.15	1.15	44.20	-0.04	-0.06
HK9GAN	*	43.30	-2.65	-2.65	43.20	-1.04	-1.63
HLZFHV		44.95	-1.00	-1.00	44.00	-0.24	-0.38
J4VR6L		46.70	0.75	0.75	44.40	0.16	0.25
J7FLZ2		46.70	0.75	0.75	44.90	0.66	1.04
JJD9MQ		44.31	-1.64	-1.64	43.86	-0.38	-0.59
JWVGJ4K		47.37	1.42	1.42	44.11	-0.13	-0.20
KC79GT		44.26	-1.69	-1.69	43.62	-0.62	-0.98
KJ8KDP	X	46.70	0.75	0.75	41.40	-2.84	-4.46
KM3EBQ		45.03	-0.92	-0.92	44.66	0.42	0.66
KM7W9P		46.70	0.75	0.75	44.50	0.26	0.41
KU3RBU		45.20	-0.75	-0.75	43.20	-1.04	-1.63
KX8D6L		47.24	1.29	1.29	45.32	1.08	1.70
L3DDYN	X	48.10	2.15	2.15	46.90	2.66	4.18
L3TJCT		45.50	-0.45	-0.45	43.30	-0.94	-1.47
LL8ZFL		45.93	-0.02	-0.02	43.98	-0.26	-0.41
LP88XX		46.97	1.02	1.02	45.19	0.95	1.50
MCZQBT		45.40	-0.55	-0.55	43.80	-0.44	-0.69
N864FK		45.85	-0.10	-0.10	44.15	-0.09	-0.14
NP3HWX		45.30	-0.65	-0.65	44.40	0.16	0.25
NXFH7F		47.11	1.16	1.16	44.88	0.64	1.01
P26JGT		46.00	0.05	0.05	44.43	0.20	0.31
PCQL3U	X	37.90	-8.05	-8.05	39.30	-4.94	-7.76
PEZGYK		45.42	-0.53	-0.53	44.64	0.40	0.63
PREXBU		45.89	-0.06	-0.06	43.52	-0.71	-1.12
QA4AUG		46.90	0.95	0.95	45.40	1.16	1.82
QHVP HK		46.67	0.72	0.72	44.41	0.17	0.27
R2L7FM		46.50	0.55	0.55	43.93	-0.31	-0.48
R9ZYKQ		45.21	-0.74	-0.74	43.06	-1.18	-1.85
RNDFHK	*	47.97	2.01	2.01	45.69	1.45	2.28
RRBXNZ		46.41	0.46	0.46	44.09	-0.15	-0.23
TEM7KB		47.40	1.45	1.45	44.45	0.21	0.33



Fasteners and Metals Interlaboratory Testing Program

Analysis 1131

Tensile Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
TG8DLJ		44.00	-1.95	-1.95	44.10	-0.14	-0.22
THNAEJ	*	44.40	-1.55	-1.55	45.00	0.76	1.20
TTJKHJ		44.00	-1.95	-1.95	43.30	-0.94	-1.47
TUF64X		47.51	1.56	1.56	45.29	1.05	1.65
TVD7FG		46.50	0.55	0.55	43.80	-0.44	-0.69
TWH3EQ	X	48.60	2.65	2.65	46.60	2.36	3.71
TZ6FL9		47.00	1.05	1.05	44.00	-0.24	-0.37
UG7KNB	X	41.70	-4.25	-4.25	40.80	-3.44	-5.40
UQBR4B		45.80	-0.15	-0.15	44.90	0.66	1.04
UUEE7F		45.00	-0.95	-0.95	44.10	-0.14	-0.22
UXHAPH		44.47	-1.48	-1.48	44.06	-0.18	-0.28
VETCRV		47.36	1.41	1.41	45.25	1.01	1.58
VJAQMG		46.00	0.05	0.05	43.40	-0.84	-1.32
VNMF3K		45.70	-0.25	-0.25	43.30	-0.94	-1.47
W3HJJF		45.30	-0.66	-0.66	44.15	-0.09	-0.14
WC4PBT		46.27	0.32	0.32	44.53	0.29	0.45
WM7R7B		45.86	-0.09	-0.09	45.37	1.13	1.77
WZVV9F		46.10	0.15	0.15	43.40	-0.84	-1.32
X8A2F8		47.40	1.45	1.45	45.30	1.06	1.67
X8BV3J		46.71	0.76	0.76	44.39	0.15	0.24
Z9EBKA		46.10	0.15	0.15	44.10	-0.14	-0.22
ZKT8PD		45.20	-0.75	-0.75	44.10	-0.14	-0.22
ZWP6X7	X	47.70	1.75	1.75	47.00	2.76	4.34

Summary Statistics

	Sample F09		Sample F10	
Grand Means	45.95	ksi	44.24	ksi
Std Dev Btwn Labs	1.00	ksi	0.64	ksi

Samples F09, F10 : AISI 1008 - 14G, AISI 1008 - 16G

Statistics based on 109 of 117 reporting participants

Comments on Assigned Data Flags for Test #1131

- BAQUUU (X) - Extreme data.
- EMNV88 (X) - Data for both samples are low.
- KJ8KDP (X) - Data for sample F10 are low.
- L3DDYN (X) - Data for sample F10 are high.
- PCQL3U (X) - Data for both samples are low.
- TWH3EQ (X) - Data for sample F10 are high.
- UG7KNB (X) - Data for both samples are low.
- ZWP6X7 (X) - Data for sample F10 are high.

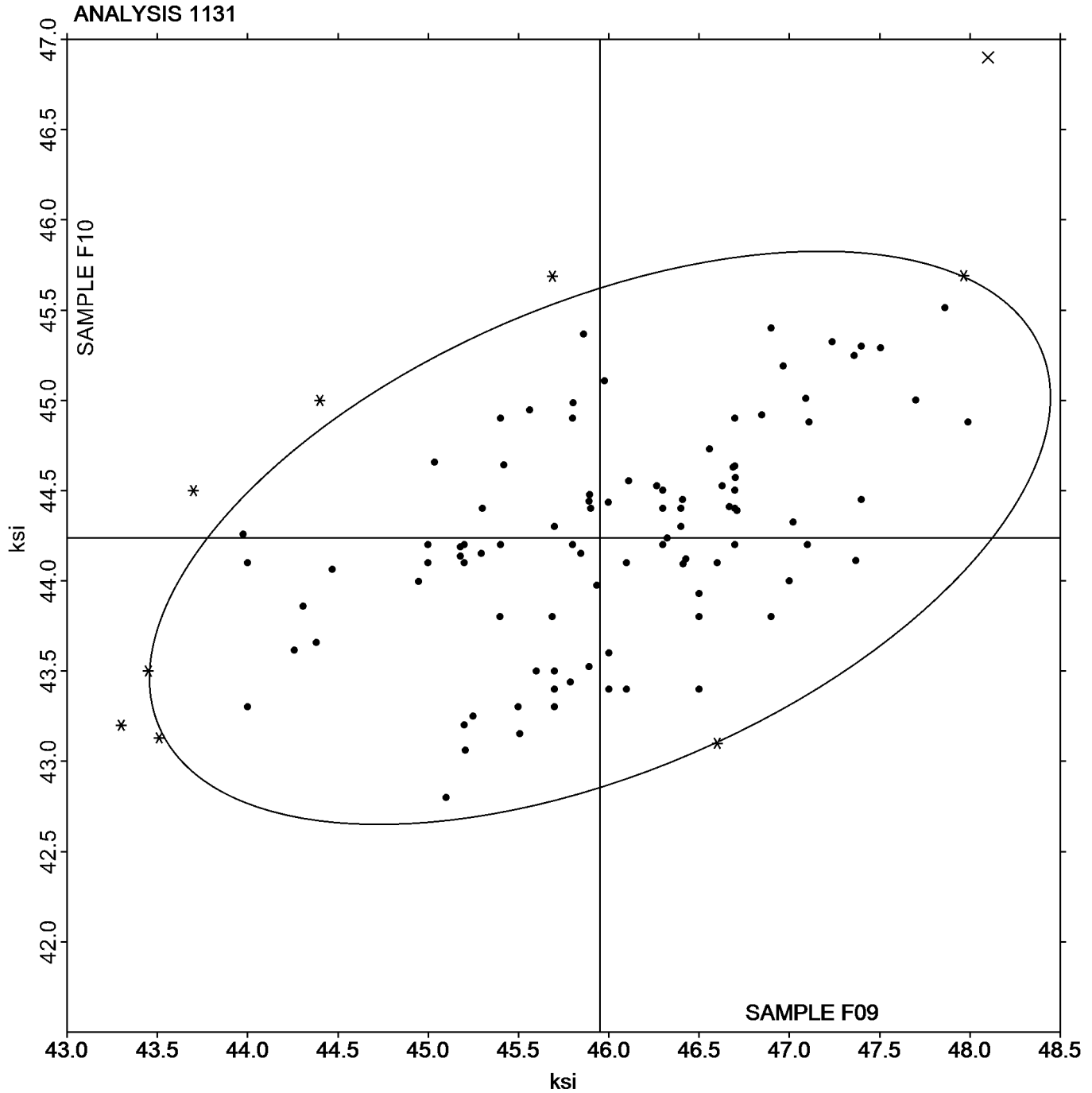


SAMPLE F09

45.95 ksi

SAMPLE F10

44.24 ksi





Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28XDTA		27.21	0.25	0.18	23.22	-0.22	-0.18
29R4W3		26.50	-0.46	-0.33	22.70	-0.74	-0.62
2JQA4H		24.60	-2.36	-1.71	21.70	-1.74	-1.45
2Y8Q2D		25.93	-1.03	-0.74	22.23	-1.21	-1.00
334RL8		26.25	-0.71	-0.51	21.89	-1.55	-1.29
38UD29		27.09	0.13	0.10	23.08	-0.36	-0.30
3MM2FD		26.20	-0.76	-0.55	22.20	-1.24	-1.03
444DGH		28.81	1.85	1.34	25.26	1.82	1.51
4AXGG2		28.10	1.14	0.83	24.20	0.76	0.63
4RVLZ4		25.53	-1.43	-1.04	23.03	-0.41	-0.34
4VXPP6		27.30	0.34	0.25	23.30	-0.14	-0.12
6B8TTC		27.27	0.31	0.22	23.79	0.35	0.29
6CYVD7		27.34	0.38	0.28	23.08	-0.36	-0.30
6DRUKD		26.20	-0.76	-0.55	21.90	-1.54	-1.28
6R9KQ7		27.25	0.29	0.21	23.03	-0.41	-0.34
6Z76ZE		26.61	-0.35	-0.25	22.38	-1.06	-0.88
783FQ4		26.40	-0.56	-0.41	24.40	0.96	0.80
786CV9		25.80	-1.16	-0.84	23.10	-0.34	-0.28
78Y3Y2		27.00	0.04	0.03	23.65	0.21	0.17
7CEC9Y		29.50	2.54	1.84	26.20	2.76	2.30
7CF678		26.25	-0.71	-0.51	24.51	1.07	0.89
7EZAHB		27.20	0.24	0.17	22.90	-0.54	-0.45
7H2BNY		28.20	1.24	0.90	23.70	0.26	0.22
7TH7EY		29.80	2.84	2.06	24.60	1.16	0.97
86TW28		25.70	-1.26	-0.91	23.80	0.36	0.30
89REUT		27.80	0.84	0.61	23.10	-0.34	-0.28
8PUUD8		28.40	1.44	1.04	23.40	-0.04	-0.03
98DZ96		26.09	-0.87	-0.63	23.38	-0.06	-0.05
9D3LE7	*	24.47	-2.49	-1.81	24.50	1.06	0.88
9NFPFA		26.40	-0.56	-0.41	22.10	-1.34	-1.12
A44MUA		27.00	0.04	0.03	22.80	-0.64	-0.53
A6WK2G		27.90	0.94	0.68	23.33	-0.11	-0.09
AQMF8B		23.71	-3.25	-2.36	21.73	-1.71	-1.42
AUGG4X		25.99	-0.97	-0.71	23.00	-0.44	-0.37
AVYEEA		26.69	-0.27	-0.20	23.64	0.20	0.17
B7QH XU		30.00	3.04	2.21	25.20	1.76	1.46
BH9VK6		26.20	-0.76	-0.55	22.40	-1.04	-0.87
BHJ2CZ		27.33	0.37	0.27	23.15	-0.29	-0.24
BKVG7Z		27.34	0.38	0.28	23.06	-0.38	-0.32
BTKC2A		27.32	0.36	0.26	22.98	-0.46	-0.38
C437W4		29.20	2.24	1.63	25.50	2.06	1.71
CJD3Z3		29.35	2.39	1.73	24.33	0.89	0.74
CQW786		27.00	0.04	0.03	22.30	-1.14	-0.95
CRRULU		25.67	-1.29	-0.94	23.10	-0.34	-0.28
CYPGGZ		28.10	1.14	0.83	22.00	-1.44	-1.20
D36DEP		28.54	1.58	1.15	24.32	0.88	0.73
D377CX		26.66	-0.30	-0.22	22.29	-1.15	-0.96



Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
D8WRW6		26.90	-0.06	-0.04	23.00	-0.44	-0.37
DDJBJT		28.86	1.90	1.37	24.42	0.98	0.82
DDKDYP		25.80	-1.16	-0.84	21.90	-1.54	-1.28
DDZL2Y		26.60	-0.36	-0.26	24.40	0.96	0.80
DEUC6R		26.25	-0.71	-0.52	24.04	0.60	0.50
DFCE3T		27.50	0.54	0.39	24.40	0.96	0.80
DTGK7Y	*	25.82	-1.14	-0.83	25.24	1.80	1.50
EGH7HM		27.90	0.94	0.68	24.10	0.66	0.55
EMNV88	X	26.99	0.03	0.02	27.54	4.10	3.41
F3DCL4		28.30	1.34	0.97	26.00	2.56	2.13
FHAFFU		25.90	-1.06	-0.77	22.80	-0.64	-0.53
GBNYZP		26.28	-0.68	-0.50	23.26	-0.18	-0.15
GPPKGU		27.08	0.12	0.09	23.28	-0.16	-0.13
H9XXWM		28.30	1.34	0.97	22.40	-1.04	-0.87
HK9GAN		23.70	-3.26	-2.36	22.20	-1.24	-1.03
HLZFHV		26.45	-0.51	-0.37	21.17	-2.27	-1.89
J4VR6L		29.90	2.94	2.13	25.10	1.66	1.38
J7FLZ2		26.40	-0.56	-0.41	23.20	-0.24	-0.20
JJD9MQ		24.24	-2.72	-1.98	22.26	-1.18	-0.98
JWVGJ4K		28.82	1.86	1.35	24.65	1.21	1.01
KC79GT	*	26.69	-0.27	-0.20	26.03	2.59	2.16
KJ8KDP		27.00	0.04	0.03	22.10	-1.34	-1.12
KM3EBQ		25.41	-1.55	-1.12	23.45	0.01	0.01
KM7W9P		27.50	0.54	0.39	23.00	-0.44	-0.37
KU3RBU		25.00	-1.96	-1.42	22.90	-0.54	-0.45
KX8D6L		27.19	0.23	0.17	22.96	-0.48	-0.40
L3DDYN	*	29.30	2.34	1.70	26.70	3.26	2.71
L3TJCT		26.60	-0.36	-0.26	22.20	-1.24	-1.03
LL8ZFL		26.50	-0.46	-0.33	22.37	-1.08	-0.90
LP88XX		26.70	-0.26	-0.19	23.10	-0.34	-0.28
MCZQBT		26.83	-0.13	-0.09	23.50	0.06	0.05
N864FK		26.40	-0.56	-0.41	22.92	-0.52	-0.44
NP3HWX		25.40	-1.56	-1.13	22.10	-1.34	-1.12
P26JGT		26.52	-0.44	-0.32	23.08	-0.36	-0.30
PCQL3U	X	18.30	-8.66	-6.28	17.20	-6.24	-5.19
PEZGYK		25.18	-1.78	-1.29	21.75	-1.69	-1.41
PREXBU		26.72	-0.24	-0.17	22.17	-1.27	-1.06
QA4AUG		27.80	0.84	0.61	23.60	0.16	0.13
QHVPKH		27.88	0.92	0.67	24.01	0.57	0.47
R2L7FM		28.36	1.40	1.02	26.29	2.85	2.37
R9ZYKQ		25.00	-1.96	-1.42	22.00	-1.44	-1.20
RNDFHK		28.67	1.71	1.24	24.30	0.86	0.71
RRBXNZ		28.57	1.61	1.17	24.51	1.07	0.89
TEM7KB		28.42	1.46	1.06	22.85	-0.59	-0.49
TG8DLJ		25.30	-1.66	-1.20	24.10	0.66	0.55
THNAEJ	*	24.50	-2.46	-1.78	24.10	0.66	0.55
TTJKHJ		25.20	-1.76	-1.28	22.60	-0.84	-0.70



Fasteners and Metals Interlaboratory Testing Program

Analysis 1132

Yield Strength: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
TUF64X		27.41	0.45	0.32	22.93	-0.51	-0.43
TVD7FG		26.90	-0.06	-0.04	24.10	0.66	0.55
TWH3EQ		28.80	1.84	1.33	25.90	2.46	2.05
TZ6FL9	*	30.00	3.04	2.21	27.00	3.56	2.96
UG7KNB		24.60	-2.36	-1.71	23.30	-0.14	-0.12
UQBR4B		29.60	2.64	1.92	26.00	2.56	2.13
UUEE7F		25.40	-1.56	-1.13	22.30	-1.14	-0.95
UXHAPH		25.57	-1.39	-1.01	23.45	0.01	0.01
VETCRV		27.22	0.26	0.19	22.86	-0.58	-0.48
VJAQMG		27.10	0.14	0.10	23.00	-0.44	-0.37
VNMF3K		26.60	-0.36	-0.26	22.20	-1.24	-1.03
W3HJJF		25.45	-1.51	-1.09	22.21	-1.24	-1.03
WC4PBT		26.54	-0.42	-0.30	22.77	-0.67	-0.56
WM7R7B		26.01	-0.95	-0.69	23.91	0.47	0.39
WZVV9F		27.60	0.64	0.46	23.00	-0.44	-0.37
X8A2F8		27.70	0.74	0.54	22.30	-1.14	-0.95
X8BV3J		27.21	0.25	0.18	23.06	-0.38	-0.32
Z9EBKA		27.90	0.94	0.68	24.60	1.16	0.97
ZKT8PD		27.00	0.04	0.03	24.50	1.06	0.88
ZWP6X7		28.10	1.14	0.83	24.00	0.56	0.47

Summary Statistics

	Sample F09		Sample F10	
Grand Means	26.96	ksi	23.44	ksi
Std Dev Btwn Labs	1.38	ksi	1.20	ksi

Samples F09, F10 : AISI 1008 - 14G, AISI 1008 - 16G

Statistics based on 112 of 114 reporting participants

Comments on Assigned Data Flags for Test #1132

EMNV88 (X) - Data for sample F10 are high.

PCQL3U (X) - Data for both samples are low.



Analysis 1132

Yield Strength: Lab-Machined Flat Steel

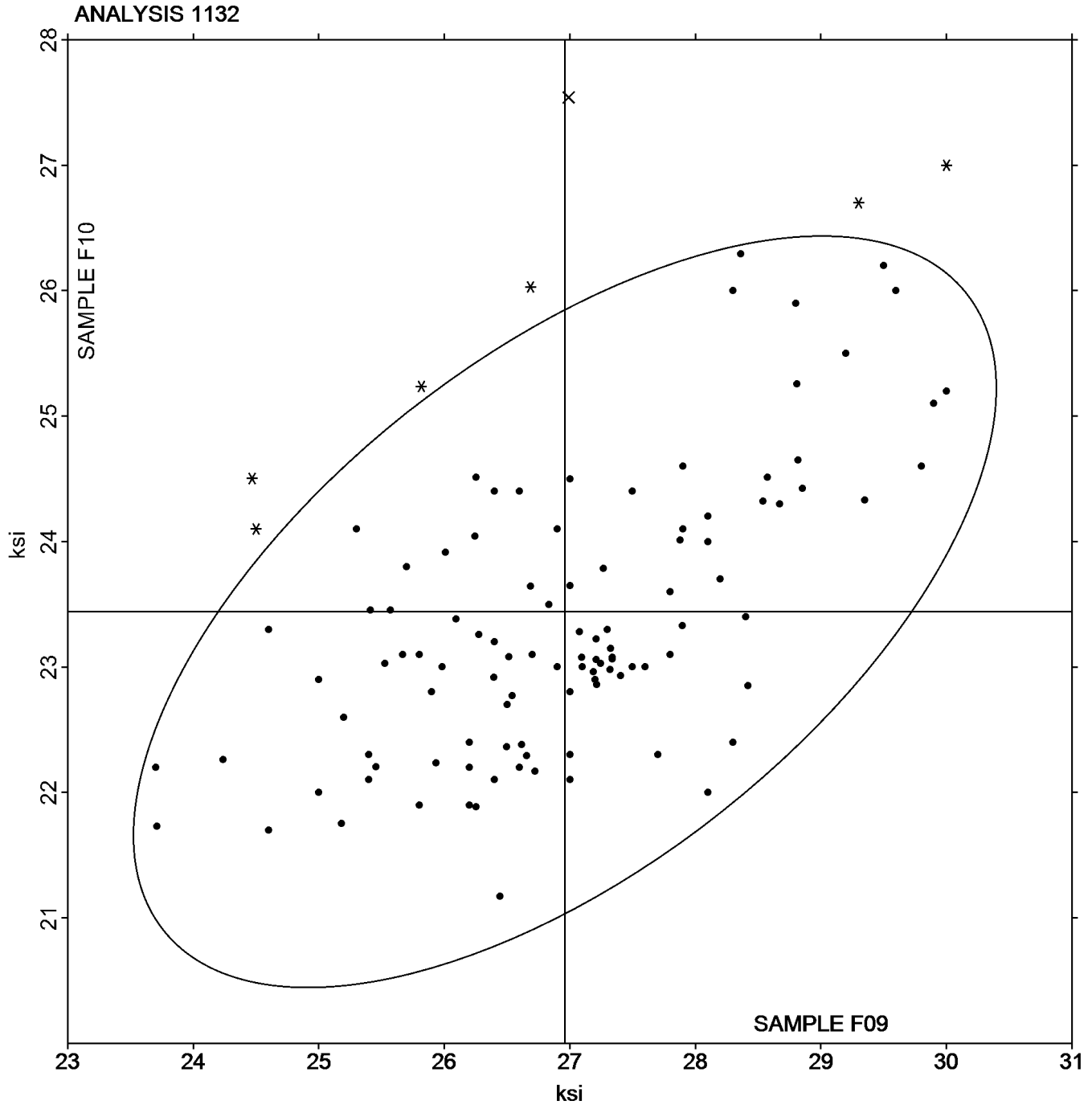
ASTM E8

SAMPLE F09

SAMPLE F10

26.96 ksi

23.44 ksi





Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28XDTA		40.90	-2.53	-0.92	43.20	-2.43	-0.89
29R4W3		43.50	0.07	0.03	45.50	-0.13	-0.05
2G2TA2	X	42.50	-0.93	-0.34	50.00	4.37	1.59
2JQA4H		41.50	-1.93	-0.70	43.00	-2.63	-0.96
2Y8Q2D		42.40	-1.03	-0.37	44.30	-1.33	-0.49
334RL8		44.50	1.07	0.39	46.80	1.17	0.42
38UD29		44.60	1.17	0.43	46.50	0.87	0.32
3MM2FD		40.70	-2.73	-0.99	42.30	-3.33	-1.21
444DGH		45.45	2.02	0.73	48.44	2.81	1.02
4AXGG2		46.00	2.57	0.93	47.00	1.37	0.50
4RVLZ4		45.73	2.30	0.84	48.00	2.37	0.86
4VXPP6		41.00	-2.43	-0.88	42.90	-2.73	-1.00
6B8TTC		41.40	-2.03	-0.74	43.60	-2.03	-0.74
6CYVD7		42.80	-0.63	-0.23	45.70	0.07	0.02
6DRUKD		41.10	-2.33	-0.85	43.20	-2.43	-0.89
6R9KQ7		42.79	-0.64	-0.23	45.80	0.17	0.06
6Z76ZE		42.00	-1.43	-0.52	45.70	0.07	0.02
783FQ4		40.00	-3.43	-1.25	41.50	-4.13	-1.51
786CV9		48.50	5.07	1.84	49.00	3.37	1.23
78Y3Y2	X	44.00	0.57	0.21	41.90	-3.73	-1.36
7CEC9Y		37.50	-5.93	-2.15	40.60	-5.03	-1.83
7CF678	*	50.90	7.47	2.71	52.90	7.27	2.65
7EZAHB		44.70	1.27	0.46	47.80	2.17	0.79
7H2BNY		42.00	-1.43	-0.52	43.80	-1.83	-0.67
7TH7EY		39.40	-4.03	-1.46	39.80	-5.83	-2.13
86TW28		42.70	-0.73	-0.27	44.80	-0.83	-0.30
89REUT		40.20	-3.23	-1.17	44.20	-1.43	-0.52
8PUUD8		43.00	-0.43	-0.16	45.70	0.07	0.02
98DZ96		44.70	1.27	0.46	46.50	0.87	0.32
9D3LE7	X	45.33	1.90	0.69	42.90	-2.73	-1.00
9NFPFA		44.10	0.67	0.24	47.70	2.07	0.75
A44MUA	*	42.40	-1.03	-0.37	41.40	-4.23	-1.54
A6WK2G		44.84	1.41	0.51	47.31	1.68	0.61
AUGG4X		45.11	1.68	0.61	45.69	0.06	0.02
AVYEEA		46.00	2.57	0.93	46.00	0.37	0.13
B7QHXU	X	36.40	-7.03	-2.55	43.50	-2.13	-0.78
BH9VK6		41.20	-2.23	-0.81	43.40	-2.23	-0.81
BHJ2CZ		43.00	-0.43	-0.16	45.60	-0.03	-0.01
BKVG7Z		42.70	-0.73	-0.27	45.80	0.17	0.06
BTKC2A		41.38	-2.05	-0.74	43.24	-2.39	-0.87
C437W4		40.40	-3.03	-1.10	43.20	-2.43	-0.89
CJD3Z3		39.21	-4.22	-1.53	41.77	-3.86	-1.41
CQW786		43.20	-0.23	-0.08	45.20	-0.43	-0.16
CRRULU		48.76	5.33	1.94	49.96	4.33	1.58
CYPGGZ		44.60	1.17	0.43	46.20	0.57	0.21
D36DEP		48.15	4.72	1.72	50.83	5.20	1.89
D377CX		44.00	0.57	0.21	45.80	0.17	0.06



Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
D8WRW6		45.30	1.87	0.68	47.90	2.27	0.83
DDJBJT	*	37.40	-6.03	-2.19	42.40	-3.23	-1.18
DDKDYP		45.00	1.57	0.57	46.00	0.37	0.13
DDZL2Y		44.80	1.37	0.50	46.40	0.77	0.28
DEUC6R		40.84	-2.59	-0.94	42.65	-2.98	-1.09
DFCE3T		40.10	-3.33	-1.21	42.30	-3.33	-1.21
DTGK7Y		45.00	1.57	0.57	45.50	-0.13	-0.05
EGH7HM		42.70	-0.73	-0.27	46.00	0.37	0.13
EMNV88		44.00	0.57	0.21	47.20	1.57	0.57
F3DCL4		42.00	-1.43	-0.52	45.90	0.27	0.10
FHAFFU		44.20	0.77	0.28	45.90	0.27	0.10
GBNYZP	*	45.70	2.27	0.83	44.60	-1.03	-0.38
GPPKGU		41.60	-1.83	-0.66	44.50	-1.13	-0.41
H9XXWM		41.80	-1.63	-0.59	41.80	-3.83	-1.40
HK9GAN		47.30	3.87	1.41	49.00	3.37	1.23
HLZFHV	*	48.30	4.87	1.77	52.50	6.87	2.50
J4VR6L		40.60	-2.83	-1.03	41.50	-4.13	-1.51
J7FLZ2		45.00	1.57	0.57	48.00	2.37	0.86
JJD9MQ		42.90	-0.53	-0.19	44.20	-1.43	-0.52
JWGJ4K	X	42.50	-0.93	-0.34	50.00	4.37	1.59
KC79GT	X	35.50	-7.93	-2.88	29.20	-16.43	-5.99
KJ8KDP		43.50	0.07	0.03	45.50	-0.13	-0.05
KM3EBQ		45.20	1.77	0.64	47.40	1.77	0.64
KM7W9P		44.60	1.17	0.43	46.70	1.07	0.39
KU3RBU		41.20	-2.23	-0.81	43.30	-2.33	-0.85
KX8D6L		43.40	-0.03	-0.01	45.40	-0.23	-0.09
L3DDYN		42.80	-0.63	-0.23	45.60	-0.03	-0.01
L3TJCT		47.20	3.77	1.37	50.80	5.17	1.88
LL8ZFL		44.40	0.97	0.35	48.50	2.87	1.04
LP88XX		41.30	-2.13	-0.77	43.60	-2.03	-0.74
MCZQBT		41.20	-2.23	-0.81	43.30	-2.33	-0.85
N864FK		46.10	2.67	0.97	47.78	2.15	0.78
NP3HWX		43.20	-0.23	-0.08	45.60	-0.03	-0.01
NXFH7F		45.00	1.57	0.57	45.00	-0.63	-0.23
P26JGT		44.90	1.47	0.53	47.60	1.97	0.72
PCQL3U		45.80	2.37	0.86	47.40	1.77	0.64
PEZGYK		43.63	0.20	0.07	45.48	-0.15	-0.06
PREXBU	X	41.00	-2.43	-0.88	51.00	5.37	1.96
QA4AUG		44.30	0.87	0.32	47.70	2.07	0.75
QHVPBK		38.00	-5.43	-1.97	42.00	-3.63	-1.32
R2L7FM		41.53	-1.90	-0.69	46.22	0.59	0.21
R9ZYKQ		43.80	0.37	0.13	46.70	1.07	0.39
RNDFHK		42.90	-0.53	-0.19	47.81	2.18	0.79
RRBXNZ		44.00	0.57	0.21	47.00	1.37	0.50
TEM7KB		47.45	4.02	1.46	50.45	4.82	1.75
TG8DLJ		43.80	0.37	0.13	44.30	-1.33	-0.49
THNAEJ		47.20	3.77	1.37	48.10	2.47	0.90



Fasteners and Metals Interlaboratory Testing Program

Analysis 1133

Elongation: Lab-Machined Flat Steel
ASTM E8

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
TTJKHJ		46.80	3.37	1.22	50.70	5.07	1.85
TUF64X		43.41	-0.02	-0.01	47.28	1.64	0.60
TVD7FG		40.90	-2.53	-0.92	43.10	-2.53	-0.92
TWH3EQ		36.80	-6.63	-2.41	38.90	-6.73	-2.45
TZ6FL9		38.20	-5.23	-1.90	40.90	-4.73	-1.72
UG7KNB	X	37.50	-5.93	-2.15	37.10	-8.53	-3.11
UQBR4B	*	35.70	-7.73	-2.81	39.30	-6.33	-2.31
UUEE7F		41.60	-1.83	-0.66	43.40	-2.23	-0.81
UXHAPH		43.20	-0.23	-0.08	43.90	-1.73	-0.63
VETCRV		44.53	1.10	0.40	46.88	1.24	0.45
VJAQMG		47.00	3.57	1.30	46.90	1.27	0.46
VNMF3K		46.70	3.27	1.19	48.80	3.17	1.15
W3HJJF		43.30	-0.13	-0.05	45.10	-0.53	-0.19
WC4PBT		41.00	-2.43	-0.88	43.20	-2.43	-0.89
WM7R7B		48.60	5.17	1.88	50.00	4.37	1.59
WZVV9F		45.00	1.57	0.57	48.00	2.37	0.86
X8A2F8		44.00	0.57	0.21	47.00	1.37	0.50
X8BV3J		46.35	2.92	1.06	48.85	3.22	1.17
Z9EBKA		41.90	-1.53	-0.56	44.30	-1.33	-0.49
ZKT8PD		45.00	1.57	0.57	46.20	0.57	0.21
ZWP6X7		47.00	3.57	1.30	49.00	3.37	1.23

Summary Statistics

	Sample F09		Sample F10	
Grand Means	43.43	Percent	45.63	Percent
Std Dev Btwn Labs	2.75	Percent	2.74	Percent

Samples F09, F10 : AISI 1008 - 14G, AISI 1008 - 16G

Statistics based on 107 of 115 reporting participants

Comments on Assigned Data Flags for Test #1133

2G2TA2 (X) - Inconsistent in testing between samples.

78Y3Y2 (X) - Inconsistent in testing between samples.

9D3LE7 (X) - Inconsistent in testing between samples.

B7QHXU (X) - Inconsistent in testing between samples.

JWGJ4K (X) - Inconsistent in testing between samples.

KC79GT (X) - Data for both samples are low. Possible Systematic Error.

PREXBU (X) - Inconsistent in testing between samples.

UG7KNB (X) - Data for sample F10 are low.



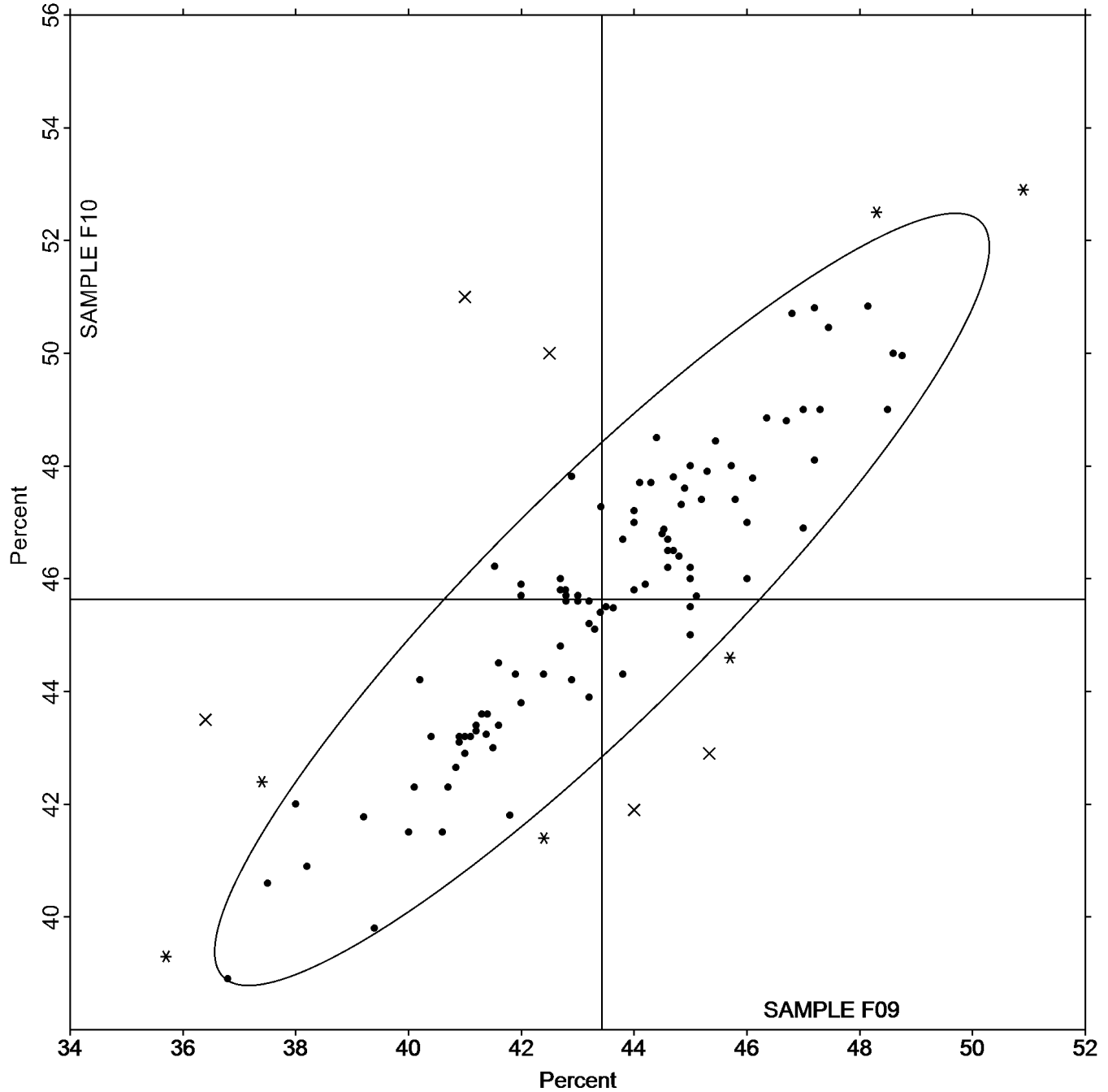
SAMPLE F09

43.43 Percent

SAMPLE F10

45.63 Percent

ANALYSIS 1133





Fasteners and Metals Interlaboratory Testing Program

Analysis 1134

r-Value: Lab-Machined Flat Steel
ASTM E517

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28XDTA		1.400	-0.201	-1.74	1.400	-0.142	-1.24
334RL8		1.670	0.069	0.60	1.670	0.128	1.11
38UD29		1.480	-0.121	-1.05	1.400	-0.142	-1.24
444DGH		1.540	-0.061	-0.53	1.570	0.028	0.24
4AXGG2		1.308	-0.293	-2.54	1.315	-0.227	-1.98
4RVLZ4		1.452	-0.149	-1.29	1.419	-0.124	-1.07
6B8TTC		1.640	0.039	0.34	1.570	0.028	0.24
6CYVD7		1.600	-0.001	-0.01	1.530	-0.012	-0.11
6DRUKD		1.678	0.077	0.67	1.588	0.046	0.40
6R9KQ7		1.581	-0.020	-0.17	1.530	-0.012	-0.11
6Z76ZE		1.640	0.039	0.34	1.550	0.008	0.07
86TW28	M	No Data Reported			1.650	0.108	0.94
AUGG4X		1.456	-0.145	-1.26	1.439	-0.103	-0.90
BHJ2CZ		1.620	0.019	0.17	1.560	0.018	0.15
BKVG7Z		1.620	0.019	0.17	1.540	-0.002	-0.02
D377CX		1.580	-0.021	-0.18	1.530	-0.012	-0.11
D8WRW6		1.585	-0.016	-0.14	1.507	-0.035	-0.31
DDZL2Y		1.780	0.179	1.55	1.800	0.258	2.24
EGH7HM		1.600	-0.001	-0.01	1.510	-0.032	-0.28
EMNV88	X	3.560	1.959	16.97	3.080	1.538	13.37
FHAFFU		1.623	0.022	0.19	1.529	-0.013	-0.12
GPPKGU		1.620	0.019	0.17	1.440	-0.102	-0.89
J4VR6L	X	0.5000	-1.101	-9.53	0.5000	-1.042	-9.06
JJD9MQ		1.424	-0.177	-1.53	1.490	-0.052	-0.45
KM3EBQ		1.570	-0.031	-0.27	1.490	-0.052	-0.45
KM7W9P		1.460	-0.141	-1.22	1.290	-0.252	-2.19
KX8D6L	*	1.489	-0.112	-0.97	1.693	0.151	1.31
L3DDYN		1.720	0.119	1.03	1.680	0.138	1.20
LL8ZFL		1.640	0.039	0.34	1.530	-0.012	-0.11
N864FK		1.723	0.122	1.06	1.688	0.146	1.27
P26JGT		1.600	-0.001	-0.01	1.700	0.158	1.37
QA4AUG		1.600	-0.001	-0.01	1.500	-0.042	-0.37
RNDFHK		1.540	-0.061	-0.53	1.400	-0.142	-1.24
THNAEJ	*	1.860	0.259	2.24	1.630	0.088	0.76
VJAQMG		1.683	0.082	0.71	1.661	0.119	1.03
WC4PBT		1.670	0.069	0.60	1.520	-0.022	-0.19
WZVV9F		1.691	0.090	0.78	1.545	0.003	0.02
X8BV3J		1.696	0.095	0.82	1.558	0.016	0.14
ZKT8PD		1.790	0.189	1.64	1.750	0.208	1.81

Summary Statistics

	Sample F09	Sample F10
Grand Means	1.601	1.542
Std Dev Btwn Labs	0.115	0.115

Samples F09, F10 : AISI 1008 - 14G, AISI 1008 - 16G

Statistics based on 36 of 39 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1134

r-Value: Lab-Machined Flat Steel
ASTM E517

Cycle 150

2nd Qtr
2025

Comments on Assigned Data Flags for Test #1134

86TW28 (M) - Participant did not submit data for sample F09.

EMNV88 (X) - Extreme data.

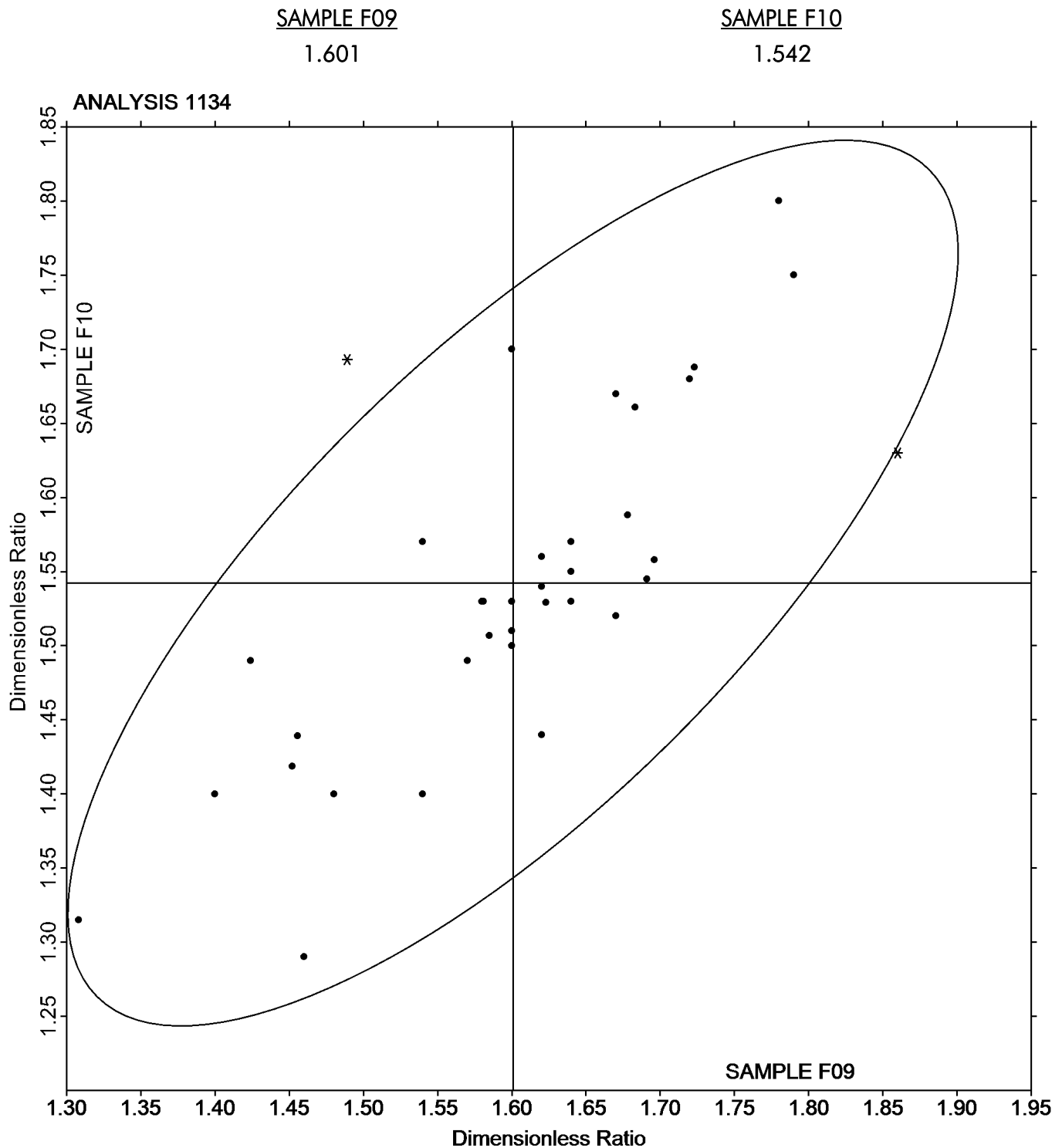
J4VR6L (X) - Extreme data.



Analysis 1134

r-Value: Lab-Machined Flat Steel

ASTM E517





Fasteners and Metals Interlaboratory Testing Program

Analysis 1135

n-Value: Lab-Machined Flat Steel
ASTM E646

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28XDTA		0.2160	-0.0062	-0.85	0.2270	-0.0053	-0.56
334RL8		0.2250	0.0028	0.38	0.2360	0.0037	0.39
38UD29		0.2210	-0.0012	-0.16	0.2310	-0.0013	-0.14
444DGH	X	0.1900	-0.0322	-4.39	0.2200	-0.0123	-1.29
4AXGG2		0.2240	0.0018	0.24	0.2350	0.0027	0.28
4RVLZ4		0.2270	0.0048	0.65	0.2285	-0.0038	-0.40
4VXPP6		0.2240	0.0018	0.24	0.2390	0.0067	0.70
6B8TTC		0.2200	-0.0022	-0.30	0.2400	0.0077	0.81
6CYVD7		0.2150	-0.0072	-0.98	0.2220	-0.0103	-1.08
6DRUKD		0.2220	-0.0002	-0.03	0.2410	0.0087	0.91
6R9KQ7		0.2120	-0.0102	-1.39	0.2220	-0.0103	-1.08
6Z76ZE		0.2270	0.0048	0.65	0.2240	-0.0083	-0.87
786CV9		0.2270	0.0048	0.65	0.2370	0.0047	0.49
7H2BNY		0.2160	-0.0062	-0.85	0.2260	-0.0063	-0.66
86TW28		0.2230	0.0008	0.11	0.2250	-0.0073	-0.77
89REUT		0.2190	-0.0032	-0.44	0.2200	-0.0123	-1.29
8PUUD8		0.2220	-0.0002	-0.03	0.2410	0.0087	0.91
9D3LE7		0.2295	0.0073	0.99	0.2323	0.0000	0.00
AUGG4X		0.2266	0.0044	0.60	0.2274	-0.0049	-0.52
BHJ2CZ		0.2130	-0.0092	-1.26	0.2250	-0.0073	-0.77
BKVG7Z		0.2150	-0.0072	-0.98	0.2230	-0.0093	-0.98
C437W4		0.2170	-0.0052	-0.71	0.2300	-0.0023	-0.24
CQW786		0.2241	0.0019	0.26	0.2462	0.0139	1.46
D377CX		0.2200	-0.0022	-0.30	0.2300	-0.0023	-0.24
D8WRW6		0.2190	-0.0032	-0.44	0.2280	-0.0043	-0.45
DDZL2Y		0.2250	0.0028	0.38	0.2220	-0.0103	-1.08
EGH7HM		0.2180	-0.0042	-0.57	0.2310	-0.0013	-0.14
EMNV88	*	0.2400	0.0178	2.43	0.2600	0.0277	2.91
F3DCL4		0.2100	-0.0122	-1.67	0.2200	-0.0123	-1.29
FHAFFU		0.2250	0.0028	0.38	0.2320	-0.0003	-0.03
GBNYZP		0.2230	0.0008	0.11	0.2290	-0.0033	-0.35
GPPKGU		0.2190	-0.0032	-0.44	0.2310	-0.0013	-0.14
HLZFHV		0.2182	-0.0040	-0.55	0.2248	-0.0075	-0.79
J4VR6L	X	0.5000	0.2778	37.89	0.5000	0.2677	28.13
JJD9MQ		0.2290	0.0068	0.93	0.2290	-0.0033	-0.35
KM3EBQ		0.2350	0.0128	1.74	0.2380	0.0057	0.60
KM7W9P		0.2250	0.0028	0.38	0.2360	0.0037	0.39
KX8D6L		0.2220	-0.0002	-0.03	0.2390	0.0067	0.70
L3DDYN		0.2200	-0.0022	-0.30	0.2270	-0.0053	-0.56
LL8ZFL		0.2360	0.0138	1.88	0.2550	0.0227	2.38
MCZQBT		0.2290	0.0068	0.93	0.2450	0.0127	1.33
N864FK		0.2210	-0.0012	-0.16	0.2280	-0.0043	-0.45
P26JGT		0.2200	-0.0022	-0.30	0.2200	-0.0123	-1.29
QA4AUG		0.2230	0.0008	0.11	0.2320	-0.0003	-0.03
QHVP HK		0.2167	-0.0055	-0.75	0.2277	-0.0046	-0.49
R2L7FM		0.2179	-0.0043	-0.59	0.2364	0.0041	0.43
RNDFHK		0.2110	-0.0112	-1.53	0.2320	-0.0003	-0.03



Fasteners and Metals Interlaboratory Testing Program

Analysis 1135

n-Value: Lab-Machined Flat Steel
ASTM E646

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample F09			Sample F10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
THNAEJ	*	0.2410	0.0188	2.56	0.2470	0.0147	1.54
TTJKHJ		0.2270	0.0048	0.65	0.2350	0.0027	0.28
TVD7FG		0.2270	0.0048	0.65	0.2410	0.0087	0.91
TZ6FL9	*	0.2020	-0.0202	-2.76	0.2130	-0.0193	-2.03
VJAQMG		0.2300	0.0078	1.06	0.2450	0.0127	1.33
W3HJJF		0.2250	0.0028	0.38	0.2380	0.0057	0.60
WC4PBT	*	0.2380	0.0158	2.15	0.2570	0.0247	2.59
WZVV9F		0.2170	-0.0052	-0.71	0.2310	-0.0013	-0.14
X8BV3J		0.2191	-0.0031	-0.42	0.2273	-0.0050	-0.53
Z9EBKA		0.2138	-0.0084	-1.15	0.2207	-0.0116	-1.22
ZKT8PD		0.2180	-0.0042	-0.57	0.2240	-0.0083	-0.87
ZWP6X7		0.2200	-0.0022	-0.30	0.2320	-0.0003	-0.03

Summary Statistics

	<u>Sample F09</u>	<u>Sample F10</u>
Grand Means	0.2222	0.2323
Std Dev Btwn Labs	0.0073	0.0095

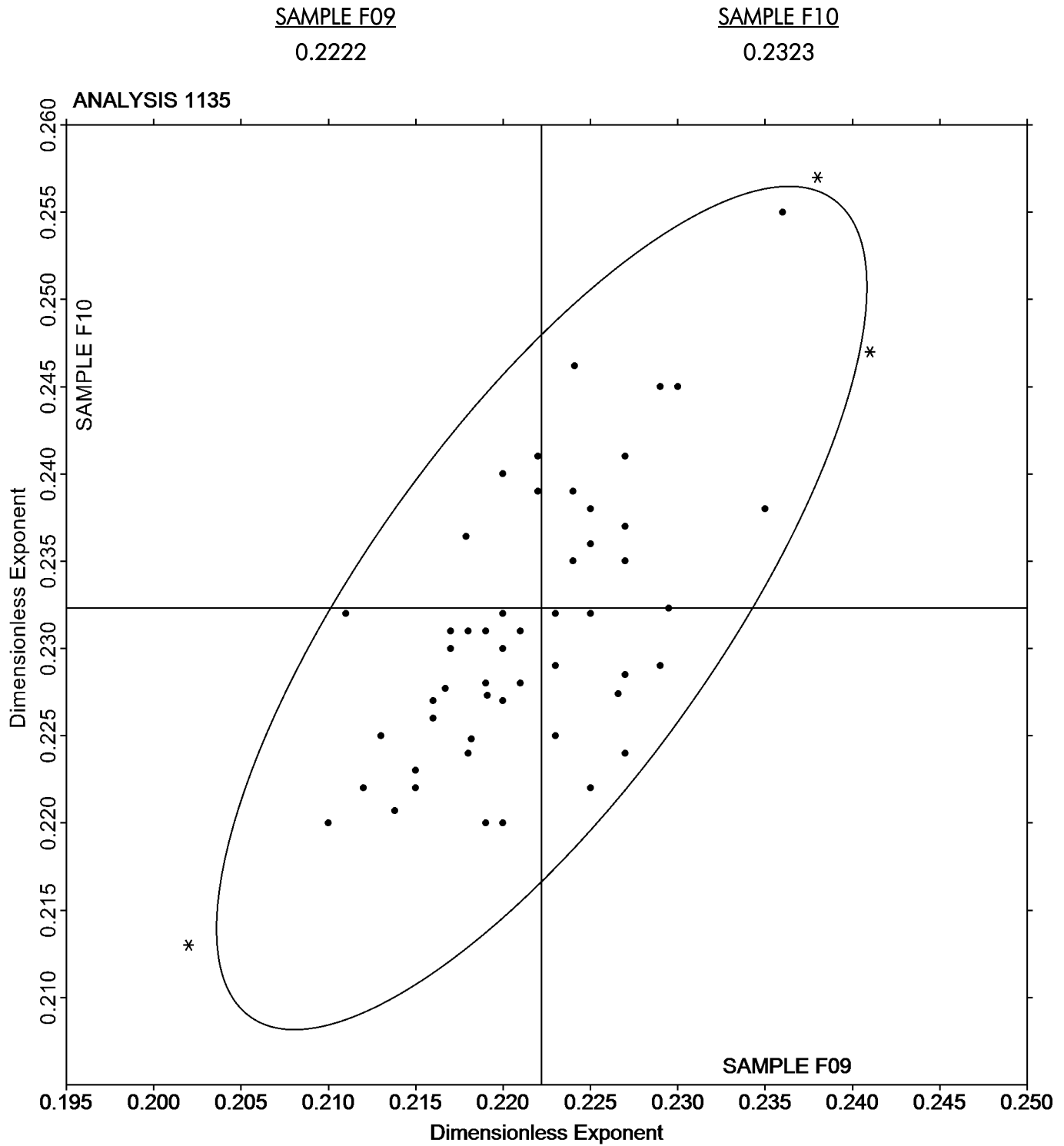
Samples F09, F10 : AISI 1008 - 14G, AISI 1008 - 16G

Statistics based on 57 of 59 reporting participants

Comments on Assigned Data Flags for Test #1135

444DGH (X) - Data for sample F09 are low.

J4VR6L (X) - Extreme data.





Fasteners and Metals Interlaboratory Testing Program

Analysis 1201

Fastener Wedge Tensile (10 degree)
ASTM F606

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample X09			Sample X10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2JUDNL	*	142.33	6.01	3.01	139.10	5.06	2.55
2WXXQC		133.03	-3.29	-1.64	130.40	-3.64	-1.83
3NHNU3		137.96	1.64	0.82	136.26	2.22	1.12
6E736Y		134.37	-1.95	-0.98	132.50	-1.54	-0.78
6FF8G3		137.00	0.68	0.34	133.23	-0.81	-0.41
6FYVZH	X	146.20	9.88	4.94	143.10	9.06	4.56
7EP6DY		136.65	0.32	0.16	135.14	1.10	0.55
7ZZGQE		136.00	-0.32	-0.16	134.00	-0.04	-0.02
876L76		135.17	-1.15	-0.58	132.67	-1.37	-0.69
87J6ZA		134.43	-1.89	-0.94	130.83	-3.21	-1.62
8W2CYF		136.87	0.55	0.28	133.69	-0.35	-0.18
9646J7		135.09	-1.23	-0.61	132.22	-1.82	-0.92
9DXBC8		137.61	1.29	0.64	135.75	1.71	0.86
9WEANW		135.53	-0.79	-0.39	131.23	-2.81	-1.41
AGXPM4		136.07	-0.25	-0.13	133.03	-1.01	-0.51
AMNYX3		135.57	-0.75	-0.38	133.53	-0.51	-0.26
AT6TGC		133.87	-2.45	-1.23	133.77	-0.27	-0.14
DH2JVY		136.60	0.28	0.14	134.90	0.86	0.43
F4TLKW	*	142.00	5.68	2.84	139.67	5.63	2.83
FCK2AZ		137.04	0.72	0.36	134.27	0.23	0.11
FRGCX7		136.13	-0.19	-0.09	132.27	-1.77	-0.89
FZN8M6		133.27	-3.05	-1.53	133.27	-0.77	-0.39
G398QR		139.43	3.11	1.56	137.77	3.73	1.88
GEZX8P	*	141.69	5.37	2.69	138.10	4.06	2.04
HT3M3P		137.00	0.68	0.34	134.33	0.29	0.15
J997EL		136.70	0.38	0.19	135.10	1.06	0.53
JDNQ8T	X	145.16	8.83	4.42	144.03	9.99	5.03
JJCCCU	X	138.67	2.35	1.17	140.73	6.69	3.37
KLYCT3		136.67	0.35	0.17	135.00	0.96	0.48
KQ48H4		136.20	-0.12	-0.06	132.73	-1.31	-0.66
L8UF7U		136.93	0.61	0.31	133.43	-0.61	-0.31
M3B67V		137.64	1.32	0.66	135.29	1.25	0.63
MGTTJY		136.40	0.08	0.04	134.03	-0.01	0.00
PD6YXJ		137.00	0.68	0.34	134.73	0.69	0.35
PHECFG		136.00	-0.32	-0.16	136.33	2.29	1.15
PWCC3Q		134.47	-1.85	-0.93	131.20	-2.84	-1.43
QLV2EK		137.30	0.98	0.49	134.47	0.43	0.21
RM7Z9U		134.46	-1.86	-0.93	133.16	-0.88	-0.44
RYJ6FP		137.00	0.68	0.34	133.67	-0.37	-0.19
RZ7TRP		136.00	-0.32	-0.16	133.78	-0.26	-0.13
TDCG4J		135.67	-0.65	-0.33	134.00	-0.04	-0.02
TMZD6K		137.25	0.93	0.46	135.11	1.07	0.54
TRQMBC		137.67	1.35	0.67	135.47	1.43	0.72
UHXXTF		135.20	-1.12	-0.56	133.33	-0.71	-0.36
VHX7HE		136.13	-0.19	-0.10	131.34	-2.71	-1.36
VKKQNH		136.37	0.05	0.02	134.20	0.16	0.08
VWV6LB		133.97	-2.35	-1.18	133.13	-0.91	-0.46



Fasteners and Metals Interlaboratory Testing Program

Analysis 1201

Fastener Wedge Tensile (10 degree)
ASTM F606

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample X09			Sample X10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
W6JMAH		135.66	-0.66	-0.33	133.21	-0.83	-0.42
WBBR3L		136.99	0.67	0.33	136.65	2.61	1.32
WFBUGM		132.00	-4.32	-2.16	131.33	-2.71	-1.36
WJLTNM	X	131.44	-4.88	-2.44	135.13	1.09	0.55
XRZ8WA		134.79	-1.53	-0.76	133.89	-0.15	-0.07
YFZYQD		135.63	-0.69	-0.35	132.95	-1.09	-0.55
Z6TL3G		135.23	-1.09	-0.54	132.60	-1.44	-0.73

Summary Statistics

	Sample X09		Sample X10	
Grand Means	136.32	ksi	134.04	ksi
Std Dev Btwn Labs	2.00	ksi	1.98	ksi

Samples X09, X10 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 50 of 54 reporting participants

Comments on Assigned Data Flags for Test #1201

- 6FYVZH (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.
- JDNQ8T (X) - Data for both samples are high. Possible Systematic Error.
- JJCCCU (X) - Data for sample X10 are high.
- WJLTNM (X) - Inconsistent in testing between samples.

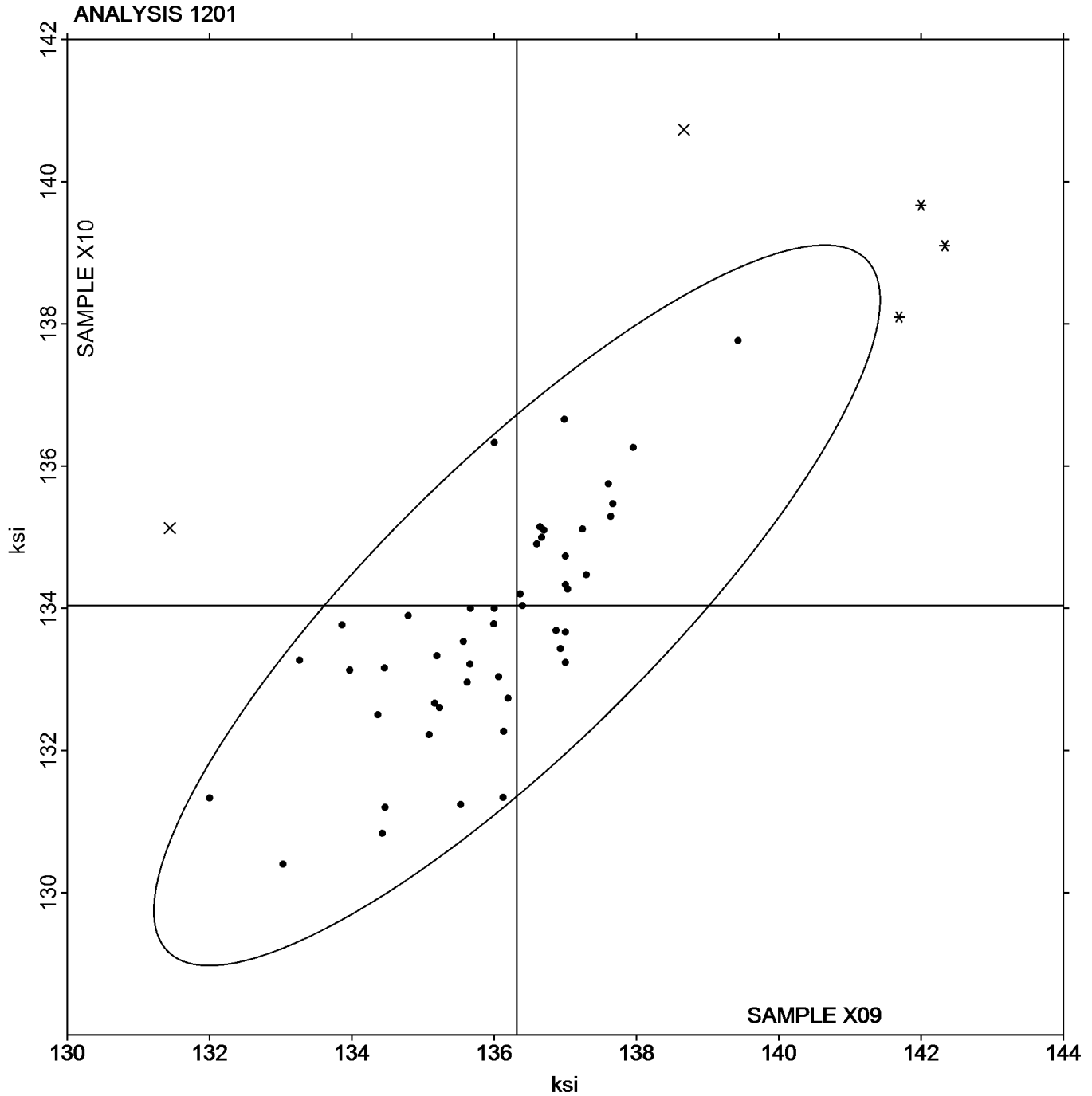


SAMPLE X09

136.32 ksi

SAMPLE X10

134.04 ksi





Fasteners and Metals Interlaboratory Testing Program
Analysis 1202
Fastener Axial Tensile
ASTM F606

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample Q09			Sample Q10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
267KRY		137.01	0.02	0.01	135.51	1.36	0.82
2JUDNL		140.50	3.50	2.23	137.13	2.98	1.80
2WXXQC		136.57	-0.43	-0.27	132.73	-1.42	-0.86
4M2YX4		137.30	0.30	0.19	136.42	2.27	1.37
62VNRE		135.03	-1.96	-1.25	132.87	-1.29	-0.78
6E736Y		135.07	-1.93	-1.23	132.30	-1.85	-1.12
6FF8G3		137.00	0.00	0.00	134.07	-0.09	-0.05
6FYVZH	X	147.63	10.64	6.76	145.77	11.61	7.01
6RRJRB		136.38	-0.61	-0.39	133.29	-0.87	-0.52
7EP6DY		138.11	1.11	0.71	135.01	0.86	0.52
7ZZGQE		135.87	-1.13	-0.72	133.23	-0.92	-0.56
876L76		136.00	-1.00	-0.63	132.60	-1.55	-0.94
87J6ZA		135.90	-1.10	-0.70	132.17	-1.99	-1.20
8W2CYF		135.40	-1.60	-1.02	133.20	-0.95	-0.58
94FHDX		135.07	-1.93	-1.23	132.00	-2.15	-1.30
9MNNHY	X	381.41	244.41	155.42	377.45	243.30	146.89
9TBR92		134.48	-2.52	-1.60	131.76	-2.39	-1.44
9WEANW	X	129.23	-7.76	-4.94	126.33	-7.82	-4.72
AT6TGC		136.30	-0.70	-0.44	132.63	-1.52	-0.92
AUMTP9	X	147.17	10.17	6.47	141.29	7.14	4.31
AVAEB6		136.42	-0.58	-0.37	132.64	-1.51	-0.91
C84ANQ		137.13	0.14	0.09	134.33	0.18	0.11
DDKDYP	X	146.67	9.67	6.15	143.00	8.85	5.34
DH2JVY		138.13	1.14	0.72	135.33	1.18	0.71
E6RAN2		135.97	-1.03	-0.66	132.52	-1.63	-0.98
F4TLKW	X	143.67	6.67	4.24	140.00	5.85	3.53
FCK2AZ		137.00	0.01	0.00	133.43	-0.73	-0.44
FRGCX7		133.47	-3.53	-2.25	130.80	-3.35	-2.03
G3DNNQ		136.77	-0.22	-0.14	133.76	-0.39	-0.24
GEZX8P		140.44	3.45	2.19	138.23	4.07	2.46
GWJPAV		138.16	1.16	0.74	133.80	-0.35	-0.21
H7QMXX		136.77	-0.23	-0.14	133.50	-0.66	-0.40
HT3M3P		136.67	-0.33	-0.21	133.33	-0.82	-0.50
J997EL		137.67	0.67	0.43	134.70	0.55	0.33
JDNQ8T	X	143.52	6.53	4.15	139.87	5.71	3.45
JK2WTY		136.87	-0.13	-0.08	133.87	-0.29	-0.17
KLYCT3		136.67	-0.33	-0.21	135.00	0.85	0.51
KQ48H4		136.00	-1.00	-0.64	133.21	-0.95	-0.57
L8UF7U		137.93	0.94	0.60	133.13	-1.02	-0.62
LWPNGZ		138.69	1.69	1.08	137.48	3.33	2.01
M3B67V	*	141.05	4.05	2.58	137.53	3.38	2.04
MGTTJY		135.83	-1.16	-0.74	134.33	0.18	0.11
PD6YXJ		137.97	0.97	0.62	135.23	1.08	0.65
PHECFG		137.00	0.00	0.00	135.33	1.18	0.71
PVEA7U		137.84	0.84	0.54	133.59	-0.56	-0.34
PWCC3Q	X	133.73	-3.26	-2.08	136.17	2.01	1.22
Q4BBFL		138.08	1.08	0.69	135.11	0.96	0.58



Fasteners and Metals Interlaboratory Testing Program
Analysis 1202
Fastener Axial Tensile
ASTM F606

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample Q09			Sample Q10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
Q4FRDJ		138.04	1.04	0.66	135.03	0.87	0.53
QH9DMT		135.94	-1.06	-0.67	133.84	-0.31	-0.19
QLV2EK		136.43	-0.56	-0.36	135.43	1.28	0.77
RYJ6FP		137.60	0.60	0.38	134.53	0.38	0.23
T88KFD		138.15	1.15	0.73	136.01	1.86	1.12
VFCABM	X	151.54	14.55	9.25	147.75	13.60	8.21
VHX7HE	X	133.21	-3.79	-2.41	133.34	-0.82	-0.49
VWV6LB		135.66	-1.34	-0.85	133.46	-0.69	-0.42
VWWZAM		136.07	-0.93	-0.59	133.19	-0.97	-0.58
W6JMAH		136.60	-0.40	-0.26	133.40	-0.76	-0.46
XRZ8WA		136.86	-0.14	-0.09	134.49	0.34	0.20
Y89GC4		138.90	1.90	1.21	136.27	2.11	1.28
YW6BFG	*	141.05	4.05	2.57	137.13	2.97	1.79
Z6TL3G		135.07	-1.93	-1.23	131.93	-2.22	-1.34
ZT6EAM	X	155.83	18.84	11.98	153.67	19.51	11.78

Summary Statistics

	Sample Q09		Sample Q10	
Grand Means	137.00	ksi	134.15	ksi
Std Dev Btwn Labs	1.57	ksi	1.66	ksi

Samples Q09, Q10 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 51 of 62 reporting participants

Comments on Assigned Data Flags for Test #1202

- 6FYVZH (X) - Data for both samples are high. Possible Systematic Error.
- 9MNNHY (X) - Extreme data.
- 9WEANW (X) - Data for both samples are low. Possible Systematic Error.
- AUMTP9 (X) - Data for both samples are high. Possible Systematic Error.
- DDKDYP (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample Q09.
- F4TLKW (X) - Data for both samples are high. Possible Systematic Error.
- JDNQ8T (X) - Data for both samples are high. Possible Systematic Error.
- PWCC3Q (X) - Inconsistent in testing between samples.
- VFCABM (X) - Data for both samples are high. Possible Systematic Error.
- VHX7HE (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample Q09.
- ZT6EAM (X) - Data for both samples are high. Possible Systematic Error.

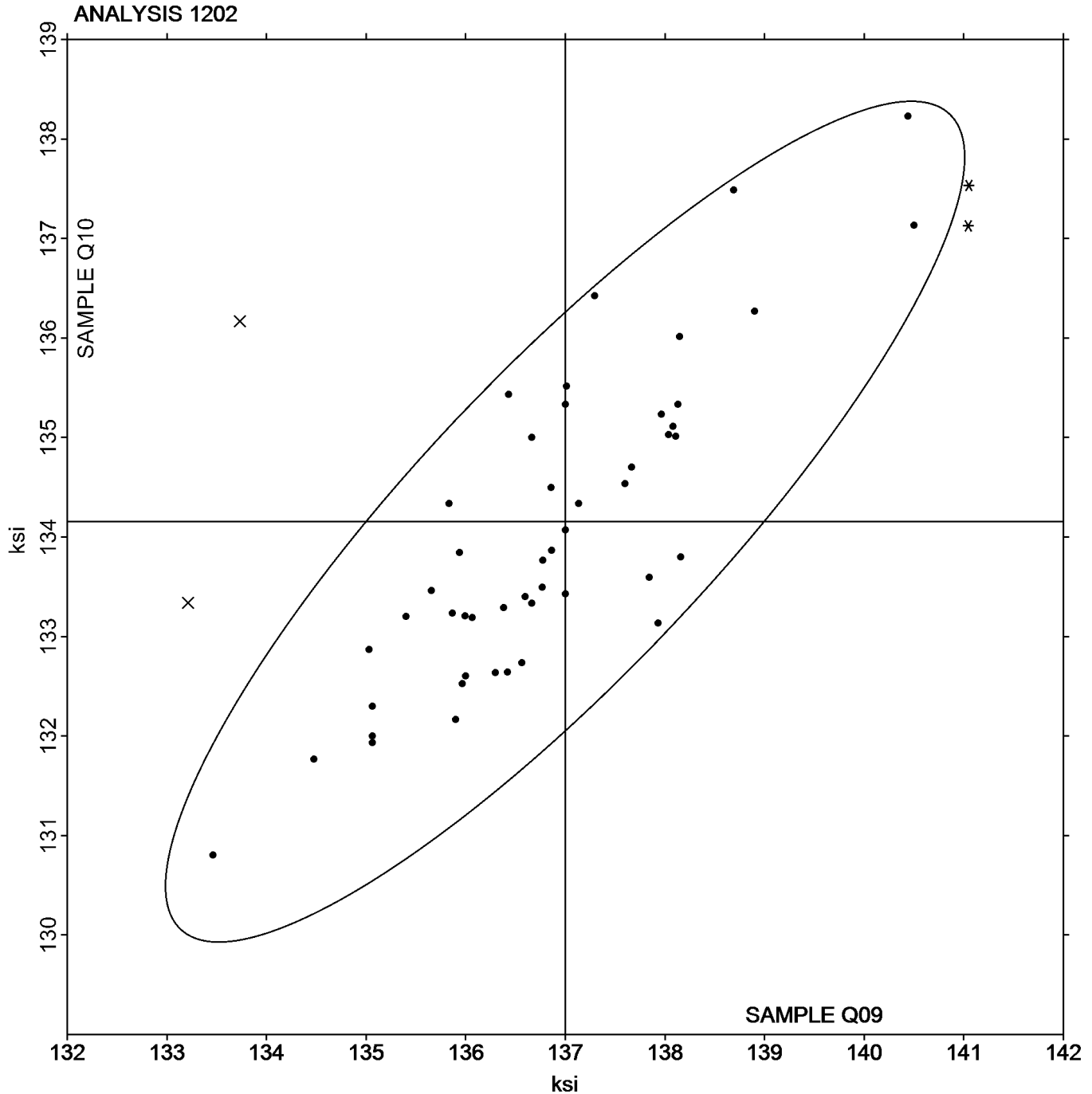


SAMPLE Q09

137.00 ksi

SAMPLE Q10

134.15 ksi





Fasteners and Metals Interlaboratory Testing Program

Analysis 1203

Fastener Wedge Tensile (10 degree) - Metric
ASTM F606M

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample B09			Sample B10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2G3K9A		1,108	5	0.61	1,133	4	0.30
32JA9K		1,102	-1	-0.18	1,119	-10	-0.80
6HP2G9		1,102	-2	-0.27	1,129	0	0.02
876L76		1,103	-1	-0.08	1,129	0	0.00
87J6ZA		1,086	-18	-2.33	1,113	-16	-1.26
9LU24A	X	1,132	28	3.75	1,108	-21	-1.63
AB9AYW	X	64,542	63,438	8,351.81	65,586	64,457	4,956.99
ARWPV2		1,102	-2	-0.27	1,128	-1	-0.09
AVAEB6		1,103	-1	-0.08	1,120	-9	-0.68
DN4VRW		1,103	0	-0.05	1,119	-10	-0.80
DWV3Y	*	1,115	11	1.48	1,171	42	3.22
ETQQ4Z		1,102	-1	-0.18	1,127	-2	-0.19
EVJX8X		1,109	5	0.65	1,133	4	0.30
FWWMCV		1,098	-6	-0.75	1,126	-3	-0.26
G6DYEY		1,120	16	2.12	1,148	19	1.47
L6MDZP		1,109	5	0.64	1,117	-12	-0.93
PD6YXJ		1,108	4	0.56	1,138	9	0.65
PFN66T		1,088	-15	-2.03	1,118	-11	-0.88
TPNH4J		1,107	3	0.39	1,130	1	0.07
TTM8VQ		1,100	-4	-0.49	1,122	-7	-0.55
VHX7HE	X	986.33	-117	-15.46	1,112	-17	-1.32
W26XZ7		1,105	1	0.17	1,126	-3	-0.21
YABB6F		1,105	1	0.12	1,137	8	0.63

Summary Statistics

	Sample B09		Sample B10	
Grand Means	1,104	MPa	1,129	MPa
Std Dev Btwn Labs	8	MPa	13	MPa

Samples B09, B10 : M-10x1.5x70, M-10x1.5x80

Statistics based on 20 of 23 reporting participants

Comments on Assigned Data Flags for Test #1203

9LU24A (X) - Data for sample B09 are high.

AB9AYW (X) - Extreme data.

VHX7HE (X) - Data for sample B09 are low. Inconsistent within the determinations of both samples.

Analysis 1203

Fastener Wedge Tensile (10 degree) - Metric ASTM F606M

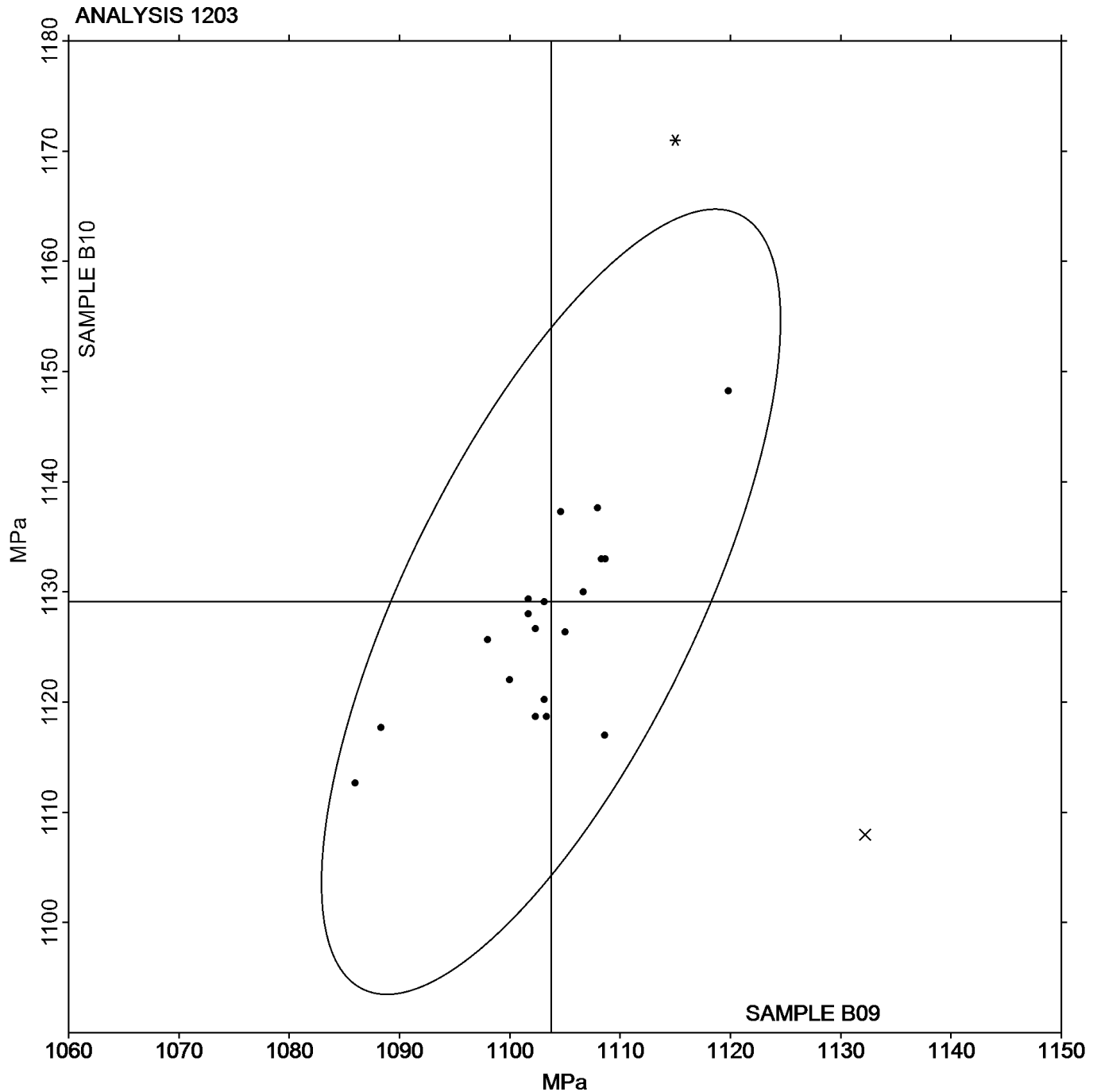
**2nd Qtr
2025**

SAMPLE B09

1,104 MPa

SAMPLE B10

1,129 MPa





Fasteners and Metals Interlaboratory Testing Program

Analysis 1204

Fastener Axial Tensile - Metric
ASTM F606M

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample T09			Sample T10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2G3K9A		1,110	5	0.50	1,137	5	0.45
73QGB6		1,097	-9	-1.01	1,118	-14	-1.35
79QZ79		1,117	11	1.24	1,132	0	0.00
876L76		1,106	0	0.00	1,130	-3	-0.24
87J6ZA		1,095	-11	-1.19	1,119	-14	-1.29
BHMM7U		1,104	-2	-0.23	1,135	3	0.26
DDKDYP		1,117	11	1.24	1,135	3	0.29
EQQHW6		1,111	6	0.61	1,135	3	0.29
FWWMCV		1,106	1	0.06	1,126	-6	-0.59
G6DYEY		1,120	14	1.57	1,157	25	2.32
H3NUEZ		1,116	11	1.17	1,133	1	0.10
HUCYEH		1,091	-15	-1.63	1,128	-4	-0.37
L6MDZP		1,100	-6	-0.62	1,127	-5	-0.50
TPNH4J		1,107	1	0.10	1,133	1	0.10
TTM8VQ		1,095	-10	-1.15	1,125	-8	-0.72
VHX7HE		1,095	-10	-1.15	1,123	-9	-0.88
XQHBDH		1,110	5	0.50	1,155	23	2.15

Summary Statistics

	Sample T09		Sample T10	
Grand Means	1,106	MPa	1,132	MPa
Std Dev Btwn Labs	9	MPa	11	MPa

Samples T09, T10 : M-10x1.5x70, M-10x1.5x80

Statistics based on 17 of 17 reporting participants



Analysis 1204

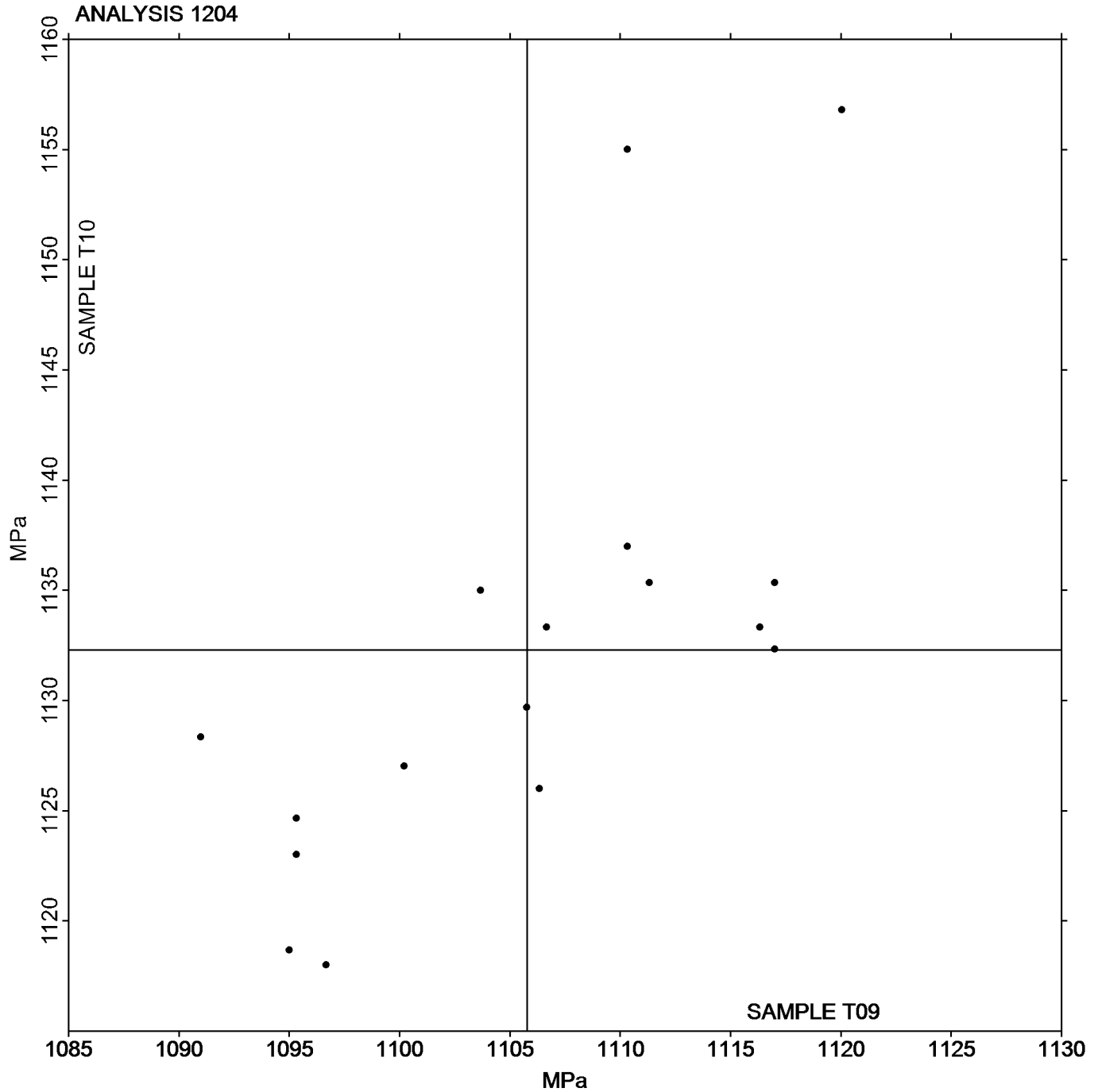
Fastener Axial Tensile - Metric
ASTM F606M

SAMPLE T09

SAMPLE T10

1,106 MPa

1,132 MPa





Fasteners and Metals Interlaboratory Testing Program

Analysis 1210

Rockwell Hardness: Externally Threaded Fasteners
ASTM F606/F606M AND ASTM E18

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample G09			Sample G10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2WXXQC		36.38	-0.67	-1.38	36.25	-0.37	-0.70
32JA9K	X	36.76	-0.28	-0.58	34.43	-2.18	-4.20
3U8UX6		37.68	0.63	1.30	36.53	-0.08	-0.16
4AXGG2		37.24	0.19	0.40	36.91	0.30	0.57
4TB2D6		37.67	0.62	1.29	37.56	0.94	1.81
62VNRE		36.58	-0.46	-0.96	36.62	0.00	0.00
6FF8G3		36.15	-0.90	-1.85	35.98	-0.64	-1.23
6FYVZH		37.62	0.57	1.18	36.91	0.30	0.57
7EP6DY		36.88	-0.16	-0.34	36.78	0.16	0.31
876L76		37.23	0.18	0.37	36.91	0.29	0.56
87J6ZA		36.65	-0.40	-0.82	36.02	-0.60	-1.15
8W2CYF		37.39	0.34	0.71	36.97	0.35	0.68
94FHDx		37.04	-0.01	-0.02	36.60	-0.02	-0.03
9WEANW		37.03	-0.02	-0.04	36.29	-0.32	-0.62
AMNYX3		37.26	0.21	0.44	36.55	-0.07	-0.13
AUMTP9		36.16	-0.88	-1.82	35.31	-1.31	-2.52
BGRYR6		37.32	0.27	0.56	36.67	0.05	0.10
C84ANQ		36.92	-0.13	-0.26	37.04	0.43	0.82
DH2JVY		37.54	0.50	1.03	36.45	-0.17	-0.32
E4YARQ		37.38	0.33	0.68	36.64	0.03	0.05
F4TLKW		37.41	0.36	0.75	37.38	0.77	1.47
G398QR		37.28	0.23	0.47	36.48	-0.14	-0.27
G3DNNQ		37.11	0.07	0.14	36.13	-0.48	-0.93
G6DYEY		37.21	0.17	0.35	36.94	0.32	0.62
GH4PJW		38.06	1.01	2.09	37.47	0.85	1.64
H7LCVZ	X	37.11	0.07	0.14	38.26	1.64	3.16
H7QMXX		36.72	-0.33	-0.67	36.41	-0.20	-0.39
HJBFX6		37.48	0.43	0.89	37.78	1.17	2.24
HUCYEY		37.37	0.32	0.67	36.84	0.23	0.44
J997EL		36.51	-0.53	-1.10	36.01	-0.61	-1.17
L6MDZP		37.33	0.28	0.58	36.91	0.29	0.56
PD6YXJ		37.01	-0.04	-0.08	36.93	0.32	0.61
PFN66T		36.73	-0.31	-0.65	35.55	-1.07	-2.05
PHECFG		36.68	-0.36	-0.75	36.76	0.15	0.28
PVEA7U		37.78	0.73	1.51	36.81	0.19	0.37
QFNCVR		37.11	0.06	0.13	36.48	-0.13	-0.26
QHVP HK		37.30	0.25	0.53	37.01	0.39	0.75
QLV2EK		37.26	0.21	0.44	36.77	0.15	0.29
RM7Z9U		37.08	0.04	0.08	37.15	0.54	1.03
RZ7TRP		37.29	0.24	0.50	36.40	-0.22	-0.42
T88KFD		36.97	-0.08	-0.16	37.09	0.47	0.91
TRQMBC		37.26	0.22	0.45	36.98	0.36	0.69
VFCABM	*	35.69	-1.36	-2.80	36.05	-0.57	-1.09
VHX7HE	X	39.06	2.02	4.16	38.36	1.74	3.35
VWV6LB		37.21	0.17	0.35	36.84	0.22	0.43
W26XZ7		37.02	-0.03	-0.05	36.01	-0.61	-1.17
X7FD2H	*	35.71	-1.34	-2.76	35.62	-1.00	-1.92



Fasteners and Metals Interlaboratory Testing Program

Analysis 1210

Rockwell Hardness: Externally Threaded Fasteners
ASTM F606/F606M AND ASTM E18

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample G09			Sample G10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
XCZF6E		36.43	-0.62	-1.28	36.39	-0.23	-0.44
XRZ8WA		37.28	0.24	0.49	36.49	-0.12	-0.24
YABB6F		36.79	-0.25	-0.52	35.89	-0.73	-1.40
YXYU7		36.67	-0.38	-0.78	36.34	-0.27	-0.52
ZGQKW9		37.04	0.00	0.00	36.61	-0.01	-0.02
ZT6EAM		37.50	0.45	0.94	37.63	1.01	1.94
ZWP6X7		36.95	-0.10	-0.20	36.33	-0.29	-0.56

Summary Statistics

	Sample G09		Sample G10	
Grand Means	37.05	HRC	36.62	HRC
Std Dev Btwn Labs	0.48	HRC	0.52	HRC

Samples G09, G10 : 1/2-20 x 2 1/4, 1/2-20 x 2 1/2

Statistics based on 51 of 54 reporting participants

Comments on Assigned Data Flags for Test #1210

32JA9K (X) - Data for sample G10 are low.

H7LCVZ (X) - Data for sample G10 are high.

VHX7HE (X) - Data for both samples are high. Inconsistent within the determinations of both samples.



Analysis 1210

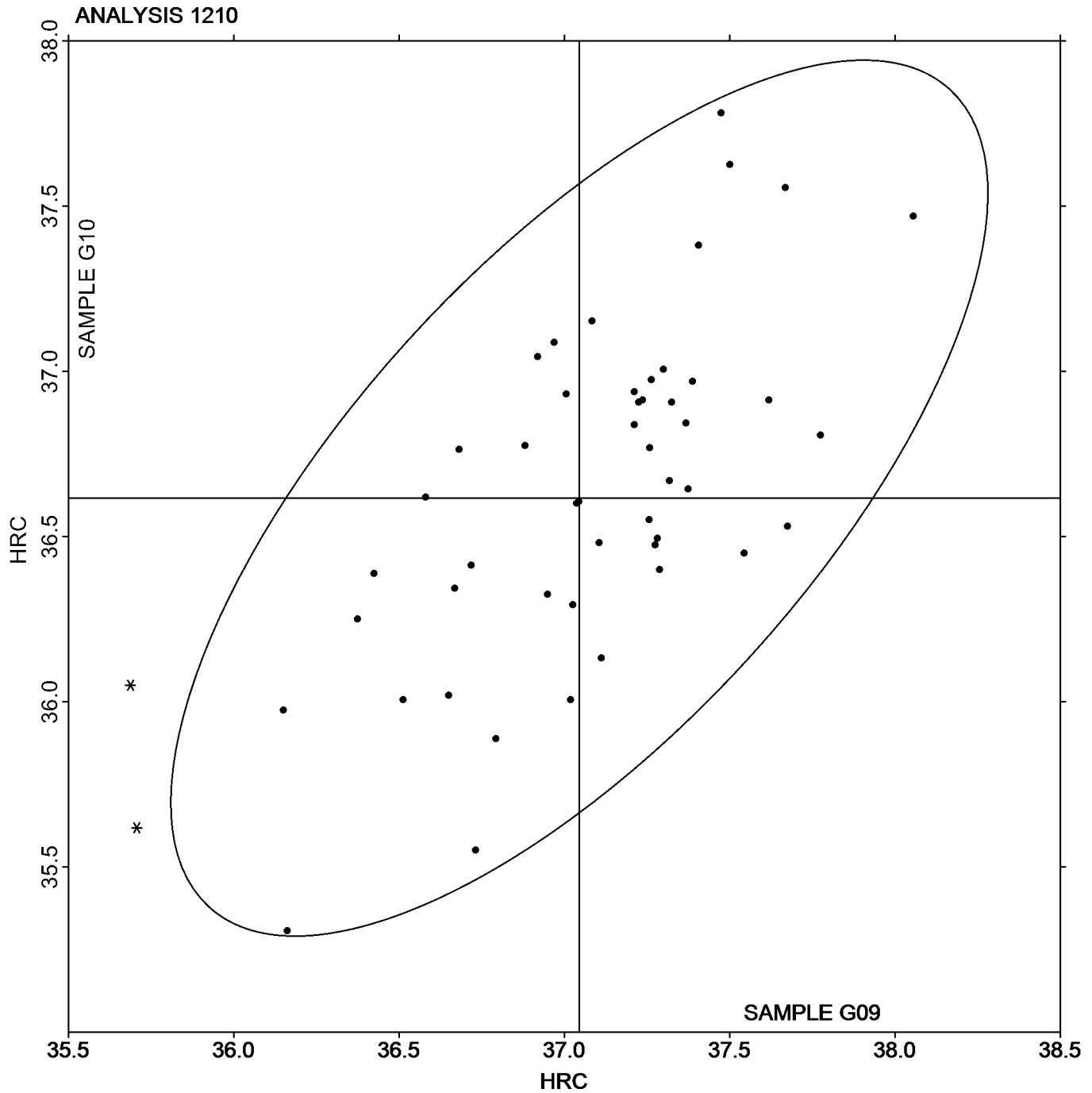
Rockwell Hardness: Externally Threaded Fasteners
ASTM F606/F606M AND ASTM E18

SAMPLE G09

SAMPLE G10

37.05 HRC

36.62 HRC





Fasteners and Metals Interlaboratory Testing Program

Analysis 1211

Vickers Hardness: Externally Threaded Fasteners
ASTM E92

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample V09			Sample V10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2G3K9A		368.06	-1.33	-0.33	368.06	-0.57	-0.08
3U8UX6		376.05	6.65	1.63	382.89	14.26	2.11
6FF8G3		370.06	0.67	0.16	366.81	-1.82	-0.27
9LU24A		367.00	-2.40	-0.59	365.31	-3.32	-0.49
ARWPV2		372.13	2.73	0.67	381.81	13.18	1.95
DN4VRW		367.31	-2.08	-0.51	365.81	-2.82	-0.42
EVJX8X	*	374.69	5.29	1.30	363.13	-5.51	-0.82
G6DYEY		365.66	-3.74	-0.92	365.91	-2.72	-0.40
HT3M3P		367.88	-1.52	-0.37	364.44	-4.20	-0.62
HUCYEH		376.14	6.74	1.65	376.15	7.52	1.11
L6MDZP		365.63	-3.77	-0.92	365.50	-3.13	-0.46
LMH3YY		372.21	2.82	0.69	368.49	-0.14	-0.02
PVEA7U		372.02	2.62	0.64	373.25	4.62	0.68
QHVPKH		364.65	-4.75	-1.16	361.43	-7.21	-1.07
T88KFD		369.81	0.42	0.10	370.88	2.24	0.33
TPNH4J		359.69	-9.71	-2.38	358.31	-10.32	-1.53
TTM8VQ		371.42	2.02	0.50	375.43	6.80	1.01
VUNRYG		372.08	2.68	0.66	374.42	5.79	0.86
WGZ3MH		368.13	-1.27	-0.31	362.63	-6.01	-0.89
YXYU7		367.31	-2.08	-0.51	362.00	-6.63	-0.98

Summary Statistics

	Sample V09		Sample V10	
Grand Means	369.40	HV	368.63	HV
Std Dev Btwn Labs	4.08	HV	6.75	HV

Samples V09, V10 : 1/2-20 x 2 1/4, 1/2-20 x 2 1/2

Statistics based on 20 of 20 reporting participants

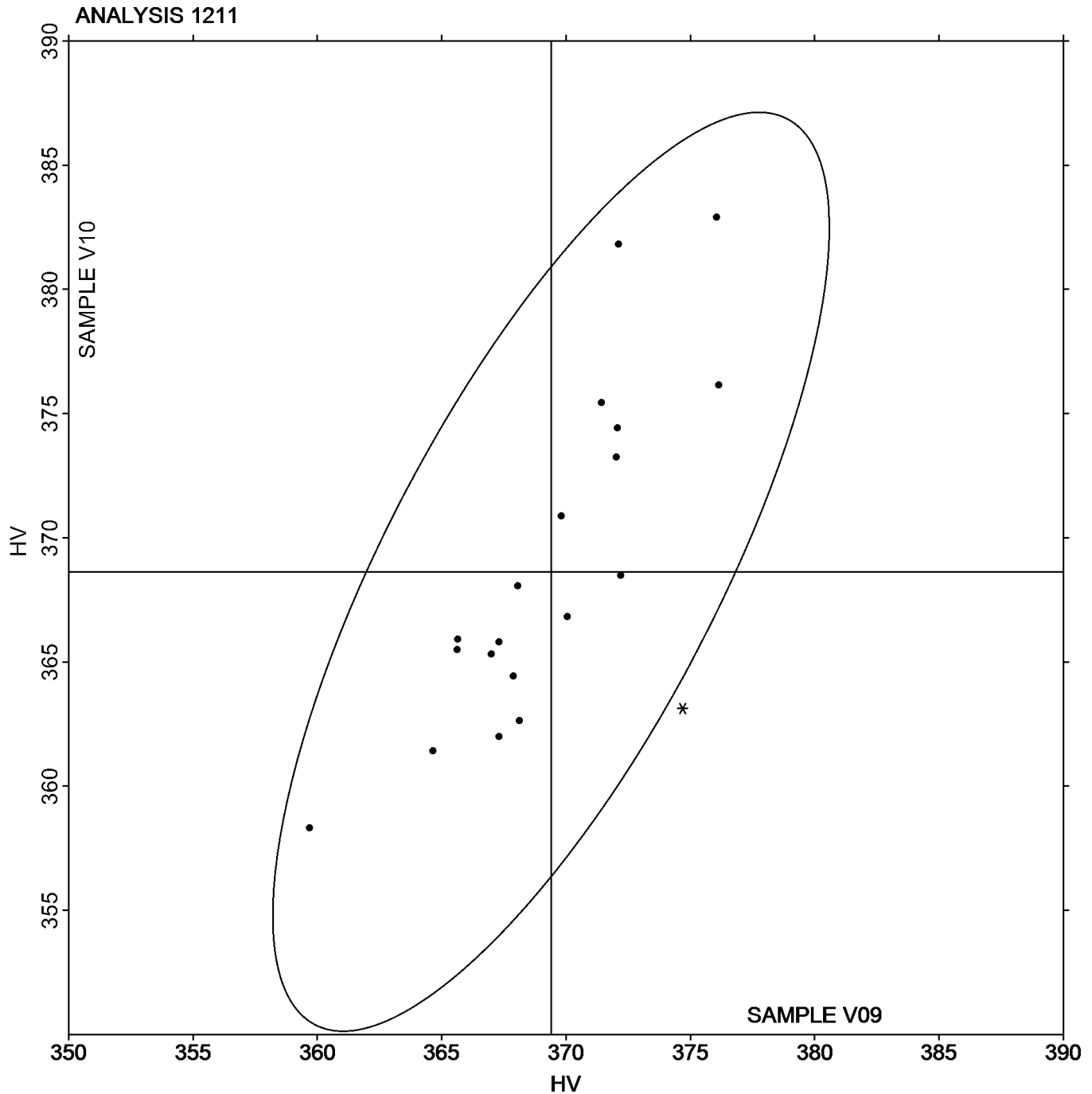


SAMPLE V09

369.40 HV

SAMPLE V10

368.63 HV





Fasteners and Metals Interlaboratory Testing Program
Analysis 1220
Fastener Double Shear
NASM 1312-13

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample Z09			Sample Z10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
6FF8G3		17,844	134	0.33	17,767	232	0.56
6FYVZH		16,943	-767	-1.92	16,674	-862	-2.07
7VPHJF		17,789	78	0.20	17,542	6	0.02
94FHDX		17,256	-454	-1.13	17,291	-245	-0.59
AUMTP9		17,995	285	0.71	18,112	576	1.39
DH2JVY		18,131	421	1.05	18,130	595	1.43
EQQHW6		17,552	-158	-0.40	17,257	-279	-0.67
F4TLKW		17,944	234	0.59	17,367	-168	-0.40
G3DNNQ		18,433	723	1.81	17,940	405	0.97
QLV2EK		17,638	-72	-0.18	17,563	28	0.07
T88KFD		17,276	-434	-1.08	17,000	-535	-1.29
VFCABM		18,034	324	0.81	17,969	433	1.04
VKKQNH		17,167	-544	-1.36	17,200	-335	-0.81
VWV6LB		17,527	-183	-0.46	17,212	-324	-0.78
W26XZ7		18,079	369	0.92	17,948	413	1.00
W2PLCA		17,488	-222	-0.56	17,361	-175	-0.42
YXYU7		17,975	265	0.66	17,767	232	0.56

Summary Statistics

	Sample Z09		Sample Z10	
Grand Means	17,710	1b	17,535	1b
Stnd Dev Btwn Labs	400	1b	415	1b

Samples Z09, Z10 : 3/8-16 x 2 1/4, 3/8-16 x 2 1/2

Statistics based on 17 of 17 reporting participants



Analysis 1220

2nd Qtr
2025

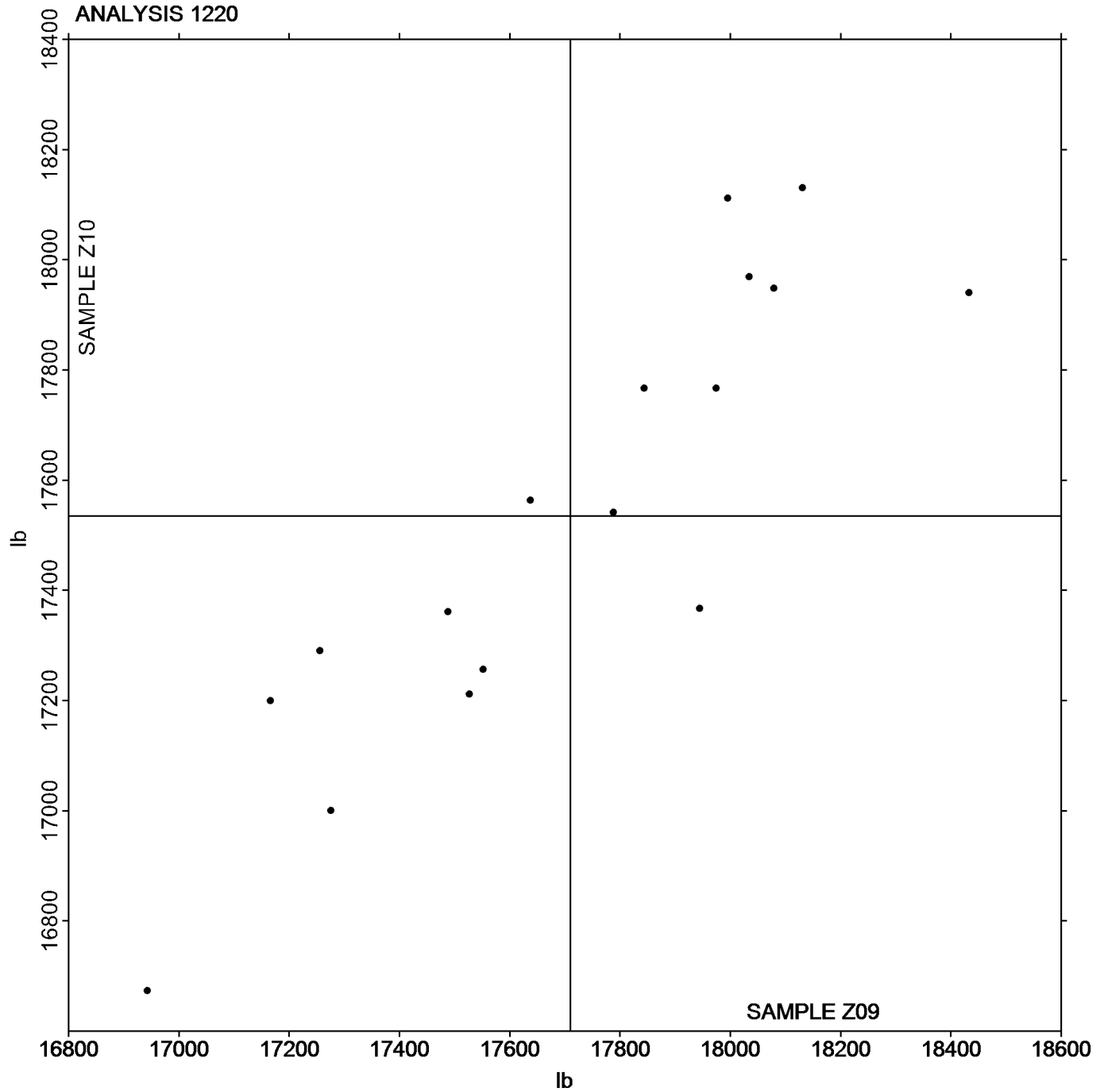
Fastener Double Shear
NASM 1312-13

SAMPLE Z09

SAMPLE Z10

17,710 lb

17,535 lb





Fasteners and Metals Interlaboratory Testing Program
Analysis 1301
Rockwell Hardness: C & B Scales
ASTM E18

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
22UG3H		55.50	0.57	1.30	60.38	0.52	1.22
24CV7H	X	53.14	-1.79	-4.03	59.66	-0.20	-0.46
266UEP		54.73	-0.20	-0.45	60.03	0.17	0.40
267KRY		55.00	0.07	0.17	60.00	0.14	0.33
28XDTA		55.52	0.59	1.34	60.46	0.60	1.40
2J7CGA		54.64	-0.29	-0.64	59.66	-0.20	-0.46
334RL8		54.64	-0.29	-0.64	59.08	-0.78	-1.81
33UCVJ	*	54.18	-0.75	-1.68	59.86	0.00	0.01
38WWEB	X	54.10	-0.83	-1.86	60.08	0.22	0.52
3Y2WZJ		54.90	-0.03	-0.06	59.82	-0.04	-0.08
42JMJ3		55.45	0.53	1.19	60.42	0.56	1.31
4AXGG2		54.40	-0.53	-1.18	59.80	-0.06	-0.13
4RT27A		55.36	0.43	0.98	60.04	0.18	0.43
6GBPH4		55.18	0.25	0.57	59.78	-0.08	-0.18
6V83LD		54.80	-0.13	-0.28	59.84	-0.02	-0.04
783FQ4		55.62	0.69	1.57	59.92	0.06	0.15
78Y3Y2		54.60	-0.33	-0.73	59.54	-0.32	-0.74
79Q3WC	M	No Data Reported			59.48	-0.38	-0.88
7CF678		54.22	-0.71	-1.59	59.48	-0.38	-0.88
7PKEV3		55.03	0.11	0.25	59.70	-0.16	-0.37
7TJYD7	*	54.34	-0.59	-1.32	58.82	-1.04	-2.41
876L76		54.76	-0.17	-0.37	59.82	-0.04	-0.08
87J6ZA		55.29	0.37	0.83	60.17	0.31	0.73
89REUT		55.55	0.62	1.41	60.69	0.83	1.94
8DL3YE		54.60	-0.33	-0.73	59.48	-0.38	-0.88
8K3MVY		54.96	0.03	0.08	59.86	0.00	0.01
8ZBLXB		54.32	-0.61	-1.36	59.72	-0.14	-0.32
94FHDX		54.40	-0.53	-1.18	58.94	-0.92	-2.13
9646J7		54.81	-0.11	-0.26	59.84	-0.02	-0.04
9F3XRX	X	53.55	-1.38	-3.10	59.58	-0.28	-0.65
9TBR92		54.78	-0.15	-0.33	60.10	0.24	0.57
A7F8TC		54.60	-0.33	-0.73	59.60	-0.26	-0.60
AQMF8B		54.08	-0.85	-1.91	59.22	-0.64	-1.48
AUGG4X		54.82	-0.11	-0.24	59.82	-0.04	-0.08
AVYEEA		54.68	-0.25	-0.55	59.65	-0.20	-0.48
BCBNNA		55.72	0.79	1.79	60.18	0.32	0.75
BJEKE2		55.70	0.77	1.75	60.92	1.06	2.47
BK97CY		55.12	0.19	0.44	60.20	0.34	0.80
C3B9NW		54.46	-0.47	-1.05	59.68	-0.18	-0.41
C6YXTA		54.02	-0.91	-2.04	59.30	-0.56	-1.29
C83QNU	*	54.23	-0.69	-1.56	59.90	0.04	0.10
CPGYVW		55.74	0.81	1.84	60.56	0.70	1.64
CQW786		55.04	0.11	0.26	60.06	0.20	0.47
CRRULU		54.88	-0.05	-0.10	60.04	0.18	0.43
D377CX		55.30	0.37	0.85	60.28	0.42	0.99
DDKDYP	X	52.00	-2.93	-6.60	57.20	-2.66	-6.18
DDZL2Y		55.00	0.07	0.17	60.40	0.54	1.27



Fasteners and Metals Interlaboratory Testing Program
Analysis 1301
Rockwell Hardness: C & B Scales
ASTM E18

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
DYH2DY	X	51.82	-3.11	-7.00	57.98	-1.88	-4.37
EWA682		54.66	-0.27	-0.60	59.30	-0.56	-1.29
EWRT2T9		55.28	0.35	0.80	60.20	0.34	0.80
EYXH9R		55.14	0.21	0.48	59.70	-0.16	-0.36
F23F67	X	53.30	-1.63	-3.66	59.46	-0.40	-0.92
F3DCL4		54.10	-0.83	-1.86	59.10	-0.76	-1.76
F7URVV		55.44	0.51	1.16	60.08	0.22	0.52
FBDHQ7	X	55.88	0.95	2.15	61.59	1.73	4.03
FDEPNP		55.15	0.23	0.52	59.99	0.14	0.32
FHAFFU		54.64	-0.29	-0.64	59.50	-0.36	-0.83
FRGCX7		54.64	-0.29	-0.64	59.14	-0.72	-1.67
FVEM6Y		55.38	0.45	1.03	60.28	0.42	0.99
FYC9QB		54.42	-0.51	-1.14	59.68	-0.18	-0.41
G4ZDZQ		55.17	0.24	0.54	60.39	0.53	1.23
GJVUN4	*	53.86	-1.07	-2.40	59.34	-0.52	-1.20
GK8AH4		55.02	0.09	0.21	59.90	0.04	0.10
GPPKGU		55.56	0.63	1.43	60.52	0.66	1.54
GQGGAU		54.26	-0.67	-1.50	59.30	-0.56	-1.29
GWJPAV		55.46	0.53	1.21	60.14	0.28	0.66
HK9GAN		55.58	0.65	1.48	60.50	0.64	1.50
HNBDDX		55.52	0.59	1.34	60.06	0.20	0.47
J2P6RH		54.50	-0.43	-0.96	59.60	-0.26	-0.60
JDNQ8T	X	53.02	-1.91	-4.30	58.60	-1.26	-2.92
JGN8DV		55.62	0.69	1.57	60.50	0.64	1.50
JJCCCU	X	53.18	-1.75	-3.93	58.54	-1.32	-3.06
KCNFKP		55.04	0.11	0.26	59.66	-0.20	-0.46
KEAZPT		55.46	0.53	1.21	60.40	0.54	1.27
KU3JE4		54.82	-0.11	-0.24	60.14	0.28	0.66
KU3RBU	*	54.44	-0.49	-1.09	60.20	0.34	0.80
KXHB6W		54.56	-0.37	-0.82	60.00	0.14	0.33
LGBELX		54.64	-0.29	-0.64	59.80	-0.06	-0.13
LKDABR		54.70	-0.23	-0.51	59.08	-0.78	-1.81
LWPNGZ		55.18	0.25	0.57	60.16	0.31	0.72
MCVEPH		55.22	0.29	0.66	59.98	0.12	0.29
MCZQBT		54.82	-0.11	-0.24	59.84	-0.02	-0.04
MDMEMT	X	53.46	-1.47	-3.30	59.58	-0.28	-0.64
MGTTJY		55.06	0.13	0.30	59.52	-0.34	-0.78
MN9JWE		54.80	-0.13	-0.28	60.12	0.26	0.61
MQZDXN		54.90	-0.03	-0.06	59.50	-0.36	-0.83
N864FK	*	56.04	1.11	2.51	60.92	1.06	2.47
NMBQGL		55.00	0.07	0.17	60.00	0.14	0.33
NTY9WH		55.12	0.19	0.44	60.24	0.38	0.89
PEZGYK		54.34	-0.59	-1.32	59.24	-0.62	-1.43
PFRL3R		54.91	-0.02	-0.04	59.56	-0.29	-0.68
PHECFG		55.04	0.11	0.26	60.14	0.28	0.66
PNNBAV	X	53.48	-1.45	-3.26	59.38	-0.48	-1.11
PREXBU		55.00	0.07	0.17	59.60	-0.26	-0.60



Fasteners and Metals Interlaboratory Testing Program
Analysis 1301
Rockwell Hardness: C & B Scales
ASTM E18

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
PV2BHD		55.48	0.55	1.25	60.39	0.54	1.25
QHVP HK		54.86	-0.07	-0.15	59.54	-0.32	-0.74
QRGXWF		54.74	-0.19	-0.42	59.58	-0.28	-0.64
RGFVCJ		55.02	0.09	0.21	59.66	-0.20	-0.46
RYJ6FP		55.48	0.55	1.25	60.52	0.66	1.54
TDCG4J		54.18	-0.75	-1.68	59.54	-0.32	-0.74
TMZD6K		54.22	-0.71	-1.59	59.26	-0.60	-1.39
TNNXKP		54.94	0.01	0.03	59.48	-0.38	-0.88
TTM8VQ		54.92	-0.01	-0.01	59.84	-0.02	-0.04
TW8WJA		55.30	0.37	0.85	60.30	0.44	1.03
TWH3EQ		55.16	0.23	0.53	59.88	0.02	0.06
UMFPMQ		55.42	0.49	1.12	60.50	0.64	1.50
UQTKXT		55.10	0.17	0.39	60.00	0.14	0.33
VEGQ9L		55.08	0.15	0.35	59.96	0.10	0.24
VG4CVH	X	52.42	-2.51	-5.65	58.28	-1.58	-3.67
VKKQNH		54.88	-0.05	-0.10	59.68	-0.18	-0.41
W26XZ7		54.84	-0.09	-0.19	59.90	0.04	0.10
W6JMAH		55.10	0.17	0.39	59.48	-0.38	-0.88
W9M4WD		54.82	-0.11	-0.24	59.62	-0.24	-0.55
WBBR3L		54.18	-0.75	-1.68	59.32	-0.54	-1.25
WHT8QP	X	52.06	-2.87	-6.46	58.63	-1.23	-2.86
WJLTNM	X	52.68	-2.25	-5.06	59.84	-0.02	-0.04
WLB96A		55.62	0.69	1.57	60.48	0.62	1.45
WZVV9F		55.16	0.23	0.53	59.70	-0.16	-0.36
X8A2F8		54.90	-0.03	-0.06	60.01	0.15	0.36
X93YND	X	54.00	-0.93	-2.09	59.96	0.10	0.24
XCYN77		54.34	-0.59	-1.32	59.58	-0.28	-0.64
XCZF6E	X	52.78	-2.15	-4.84	59.62	-0.24	-0.55
XMZTEL		54.54	-0.39	-0.87	59.34	-0.52	-1.20
XRZ8WA		54.62	-0.31	-0.69	59.24	-0.62	-1.43
XT9CGL	M	No Data Reported			59.04	-0.82	-1.90
YARFMD		54.87	-0.05	-0.12	60.02	0.16	0.38
YFBXQM		55.10	0.17	0.39	59.51	-0.35	-0.81
YFZYQD		55.10	0.17	0.39	59.54	-0.32	-0.74
YMH6P6		54.70	-0.22	-0.50	59.26	-0.60	-1.39
YW6BFG		55.64	0.71	1.61	60.64	0.78	1.82
Z6TL3G		54.84	-0.09	-0.19	59.60	-0.26	-0.60
ZWP6X7		54.94	0.01	0.03	59.96	0.10	0.24
ZY7UXA		54.84	-0.09	-0.19	59.76	-0.10	-0.22

Summary Statistics

Grand Means	Sample E09		Sample E10	
	54.93	HRC	59.86	HRC
Stnd Dev Btwn Labs	0.44	HRC	0.43	HRC

Samples E09, E10 : Steel, Steel

Statistics based on 115 of 133 reporting participants

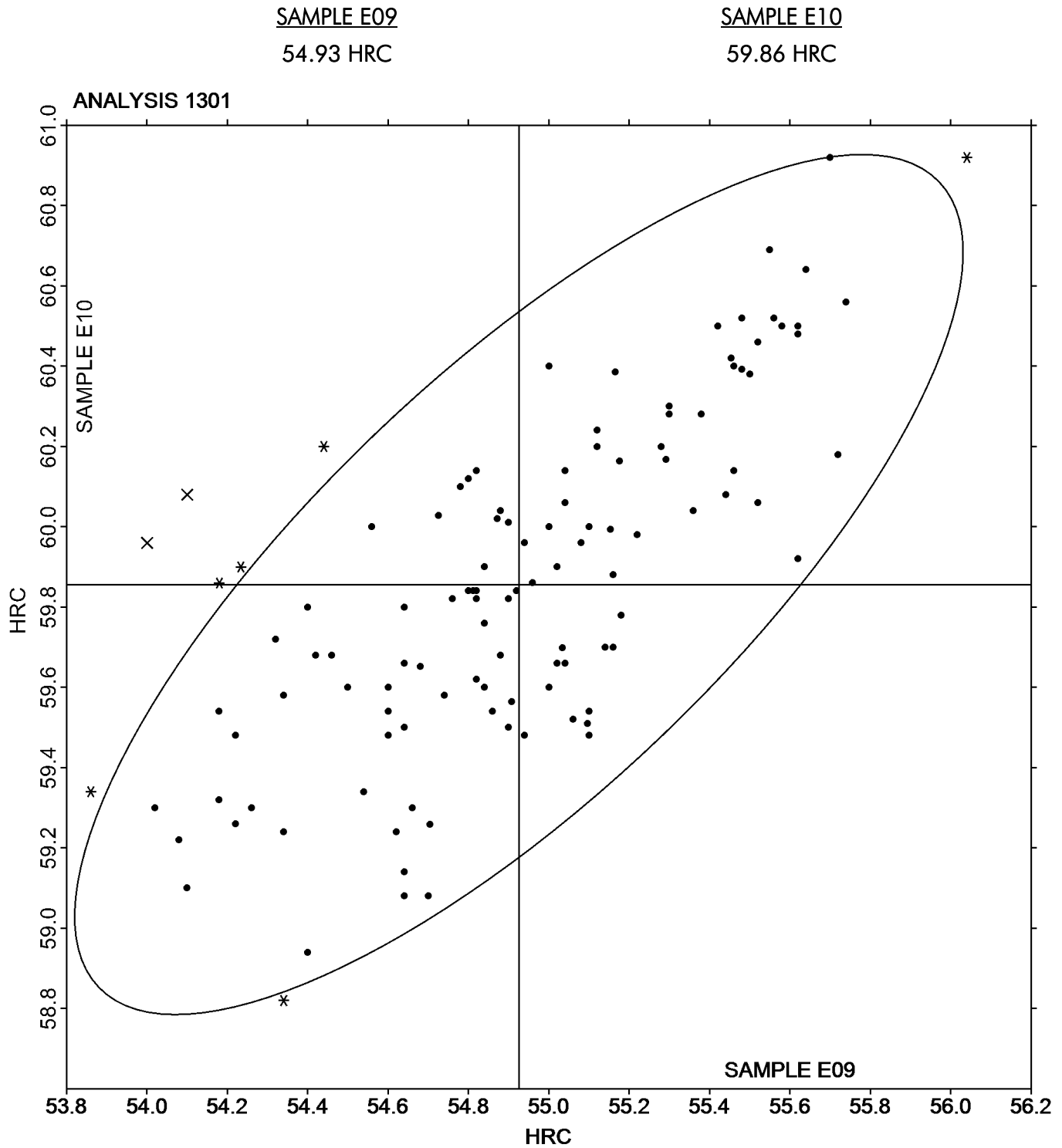


Fasteners and Metals Interlaboratory Testing Program
Analysis 1301
Rockwell Hardness: C & B Scales
ASTM E18

Cycle 150
2nd Qtr
2025

Comments on Assigned Data Flags for Test #1301

- 24CV7H (X) - Data for sample E09 are low.
- 38WWEB (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample E09.
- 79Q3WC (M) - Participant did not submit data for sample E09.
- 9F3XRX (X) - Data for sample E09 are low. Inconsistent within the determinations of sample E09.
- DDKDYP (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample E09.
- DYH2DY (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- F23F67 (X) - Data for sample E09 are low. Inconsistent within the determinations of sample E09.
- FBDHQ7 (X) - Data for sample E10 are high. Inconsistent within the determinations of sample E10.
- JDNQ8T (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample E09.
- JJCCCU (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample E09.
- MDMEMT (X) - Data for sample E09 are low.
- PNNBAV (X) - Data for sample E09 are low. Inconsistent within the determinations of sample E09.
- VG4CVH (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- WHT8QP (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- WJLTNM (X) - Data for sample E09 are low. Inconsistent within the determinations of both samples.
- X93YND (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- XCZF6E (X) - Data for sample E09 are low. Inconsistent within the determinations of sample E09.
- XT9CGL (M) - Participant did not submit data for sample E09.





Fasteners and Metals Interlaboratory Testing Program
Analysis 1303
Rockwell Hardness: C Scale
ASTM E18

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
23LEBN		54.46	-0.32	-0.69	59.80	0.01	0.02
28WLU2		54.78	0.00	0.01	59.74	-0.05	-0.14
2WXXQC		54.60	-0.18	-0.39	59.48	-0.31	-0.79
2XC8ZC		54.54	-0.24	-0.52	59.52	-0.27	-0.69
2YZV6K		55.20	0.42	0.92	60.28	0.49	1.23
3LH9R7		54.86	0.08	0.18	60.18	0.39	0.98
444DGH		55.32	0.54	1.19	60.20	0.41	1.03
4DWRD2		54.62	-0.16	-0.34	59.94	0.15	0.37
6Z76ZE		54.86	0.08	0.18	60.04	0.25	0.62
7CF678		54.86	0.08	0.18	59.82	0.03	0.07
876L76		54.56	-0.22	-0.47	59.30	-0.49	-1.25
8W2CYF		55.30	0.52	1.15	60.04	0.25	0.62
93HA6E		54.48	-0.30	-0.65	59.42	-0.37	-0.95
AGXPM4		54.68	-0.10	-0.21	59.46	-0.33	-0.84
AKXXUY		54.20	-0.58	-1.26	59.00	-0.79	-2.01
AT6TGC		55.04	0.26	0.58	60.42	0.63	1.59
AVAEB6		55.15	0.37	0.81	60.24	0.44	1.12
BCXU9A		54.92	0.14	0.31	59.76	-0.03	-0.08
BH9TUZ		55.00	0.22	0.49	59.60	-0.19	-0.49
CYPGGZ		54.70	-0.08	-0.17	59.96	0.17	0.42
D8FENZ		53.80	-0.98	-2.14	59.46	-0.33	-0.84
D96Y44		53.86	-0.92	-2.01	59.08	-0.71	-1.81
DWV3Y		55.02	0.24	0.53	59.72	-0.07	-0.19
EN6RVZ		55.32	0.54	1.19	60.14	0.35	0.88
F4TLKW		54.26	-0.52	-1.13	59.60	-0.19	-0.49
FE8MWV		54.20	-0.58	-1.26	59.42	-0.37	-0.95
G398QR		55.44	0.66	1.45	60.02	0.23	0.57
G6Y9UU	*	55.20	0.42	0.93	60.74	0.95	2.40
H3NUEZ		54.80	0.02	0.05	60.00	0.21	0.52
H7LCVZ		54.62	-0.16	-0.34	59.98	0.19	0.47
H7QTUY		54.82	0.04	0.10	59.66	-0.13	-0.34
HCCL7X		55.80	1.02	2.24	60.44	0.65	1.64
JU9H7T		55.08	0.30	0.67	60.08	0.29	0.72
K6LDCH		54.74	-0.04	-0.08	59.68	-0.11	-0.29
KC79GT	*	55.22	0.45	0.98	59.39	-0.40	-1.02
KLYCT3	*	56.00	1.22	2.68	61.00	1.21	3.05
L2ZL4L		54.18	-0.60	-1.31	59.72	-0.07	-0.19
L3TJCT		54.62	-0.16	-0.34	60.06	0.27	0.67
L8UF7U		55.30	0.52	1.15	60.20	0.41	1.03
LE8LRY		54.70	-0.08	-0.17	59.50	-0.29	-0.74
LJKC4L		55.27	0.50	1.09	60.07	0.28	0.71
LQZ676		54.54	-0.24	-0.52	59.78	-0.01	-0.03
LYVZAU		54.44	-0.34	-0.74	59.64	-0.15	-0.39
M6Z6QK		54.04	-0.74	-1.61	58.82	-0.97	-2.46
N29PHW		55.00	0.22	0.49	60.00	0.21	0.52
N374YM		54.88	0.10	0.23	59.90	0.11	0.27
NWLR3L		54.72	-0.06	-0.12	59.88	0.09	0.22



Fasteners and Metals Interlaboratory Testing Program
Analysis 1303
Rockwell Hardness: C Scale
ASTM E18

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
PBHERE		54.82	0.04	0.10	59.56	-0.23	-0.59
PTHC9P		55.66	0.88	1.94	60.48	0.69	1.74
PV2BHD		54.98	0.20	0.44	60.05	0.26	0.65
Q4BBFL		54.92	0.14	0.31	59.26	-0.53	-1.35
QVX97D		54.20	-0.58	-1.26	59.80	0.01	0.02
R7Y4RF		55.18	0.40	0.88	59.82	0.03	0.07
T2WMRQ		54.68	-0.10	-0.21	59.82	0.03	0.07
TB3FWR		54.20	-0.58	-1.26	59.22	-0.57	-1.45
U6GURE		54.88	0.10	0.23	59.66	-0.13	-0.34
UEJZJ8		54.76	-0.02	-0.04	59.46	-0.33	-0.84
UHGMAA	X	53.20	-1.58	-3.45	58.80	-0.99	-2.51
UTKR9H		54.94	0.16	0.36	59.80	0.01	0.02
VD2EKP		55.06	0.28	0.62	59.80	0.01	0.02
VHX7HE		54.06	-0.72	-1.57	59.18	-0.61	-1.55
W7E6BJ		53.90	-0.88	-1.92	59.22	-0.57	-1.45
WJ9CFF		54.53	-0.25	-0.54	59.81	0.01	0.04
WM7R7B		54.44	-0.34	-0.74	59.72	-0.07	-0.19
X7FD2H		54.80	0.02	0.05	59.78	-0.01	-0.03
YXYU7	X	54.46	-0.32	-0.69	54.44	-5.35	-13.55
ZD7DTF		54.92	0.14	0.31	59.78	-0.01	-0.03
ZNAN4B		55.36	0.58	1.28	60.22	0.43	1.08
ZPX9JF		53.98	-0.80	-1.74	59.58	-0.21	-0.54
ZY9B6F		54.52	-0.26	-0.56	59.76	-0.03	-0.08

Summary Statistics

	Sample E09		Sample E10	
Grand Means	54.78	HRC	59.79	HRC
Stnd Dev Btwn Labs	0.46	HRC	0.40	HRC

Samples E09, E10 : Steel, Steel

Statistics based on 68 of 70 reporting participants

Comments on Assigned Data Flags for Test #1303

UHGMAA (X) - Data for sample E09 are low. Inconsistent within the determinations of sample E10.

YXYU7 (X) - Data for sample E10 are low.

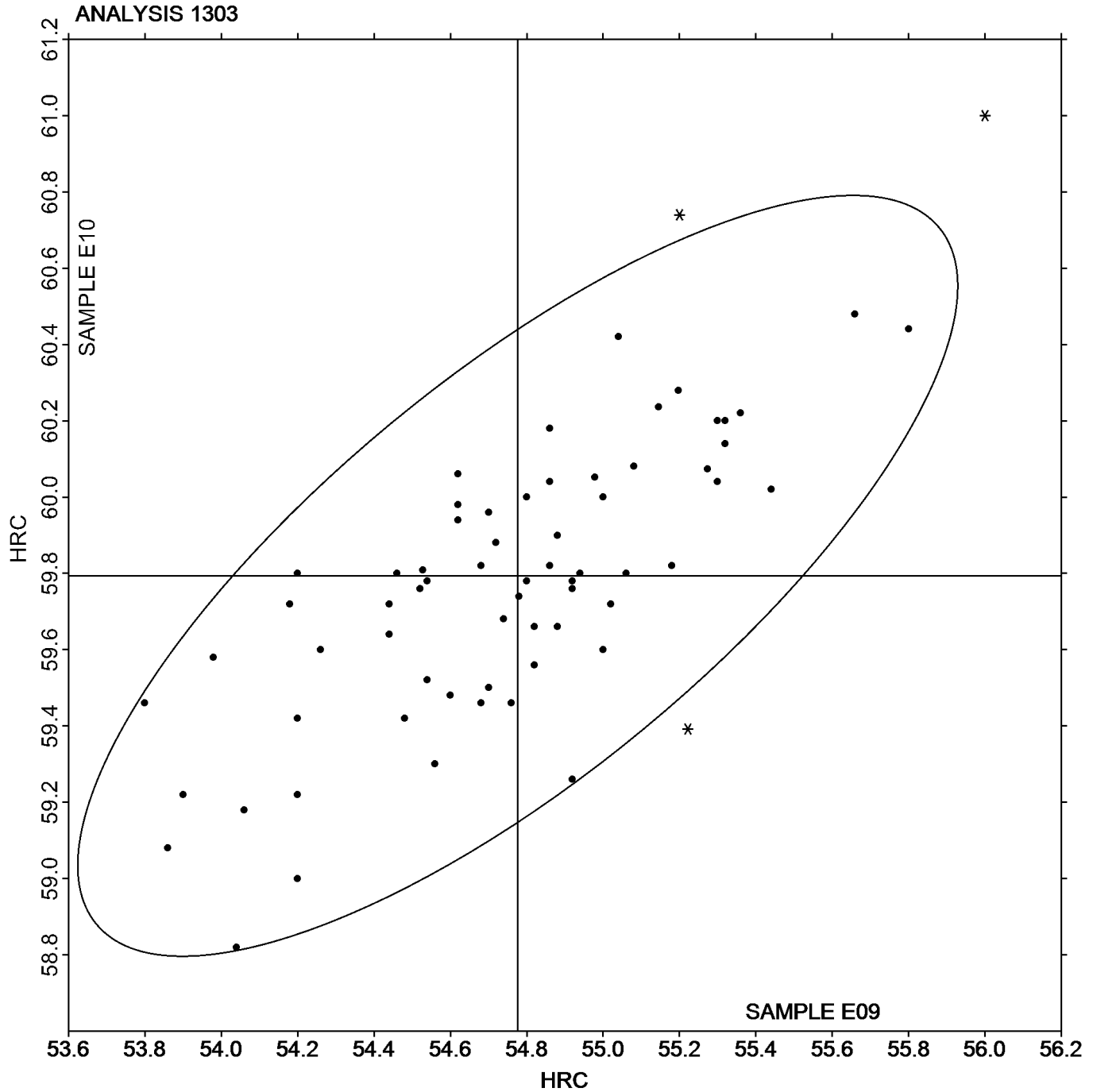


SAMPLE E09

54.78 HRC

SAMPLE E10

59.79 HRC





Fasteners and Metals Interlaboratory Testing Program

Analysis 1311

Vickers Hardness 10 kgf
ASTM E92, ISO 6507-1

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
3LH9R7		602.20	-3.17	-0.30	708.80	-1.48	-0.15
42JJM3		589.80	-15.57	-1.49	695.80	-14.48	-1.49
6V83LD		611.44	6.07	0.58	713.12	2.84	0.29
72QKGZ		620.80	15.43	1.48	719.40	9.12	0.94
79QZ79		593.25	-12.12	-1.16	714.08	3.80	0.39
7GR9W9		612.64	7.27	0.70	712.64	2.36	0.24
8DL3YE		602.60	-2.77	-0.27	704.80	-5.48	-0.56
AQMF8B		606.58	1.21	0.12	720.18	9.90	1.02
BH9TUZ		597.00	-8.37	-0.80	694.60	-15.68	-1.61
BJEKE2		607.82	2.45	0.23	725.00	14.72	1.51
CQW786		602.00	-3.37	-0.32	705.00	-5.28	-0.54
DDKDYP	X	597.80	-7.57	-0.73	667.46	-42.82	-4.41
F7URVV		604.20	-1.17	-0.11	705.00	-5.28	-0.54
FLAP63		607.00	1.63	0.16	702.60	-7.68	-0.79
GWJPAV		609.80	4.43	0.42	714.80	4.52	0.46
H9XXWM		608.80	3.43	0.33	726.80	16.52	1.70
HT3M3P		593.20	-12.17	-1.17	706.80	-3.48	-0.36
LAVQTG		604.20	-1.17	-0.11	719.80	9.52	0.98
LKDCU6	*	638.00	32.63	3.13	731.60	21.32	2.19
LKE38E		614.82	9.45	0.91	729.88	19.60	2.02
NMBQGL		601.60	-3.77	-0.36	698.80	-11.48	-1.18
NP3HWX		612.02	6.65	0.64	711.50	1.22	0.13
PQ7NHX		614.18	8.81	0.84	713.62	3.34	0.34
PTHC9P		605.00	-0.37	-0.04	712.00	1.72	0.18
PV2BHD		594.80	-10.57	-1.01	701.00	-9.28	-0.95
RYJ6FP	*	577.20	-28.17	-2.70	697.20	-13.08	-1.35
TWH3EQ		610.90	5.53	0.53	712.60	2.32	0.24
UHXXTF		614.00	8.63	0.83	718.00	7.72	0.79
VHX7HE		596.90	-8.48	-0.81	704.21	-6.08	-0.63
WC4PBT		603.60	-1.77	-0.17	708.60	-1.68	-0.17
WZVV9F		609.94	4.57	0.44	703.92	-6.36	-0.65
X7ZRVM		603.84	-1.53	-0.15	705.77	-4.51	-0.46
YARFMD		609.40	4.03	0.39	702.60	-7.68	-0.79
ZNAN4B		597.80	-7.57	-0.73	698.80	-11.48	-1.18

Summary Statistics

	Sample E09		Sample E10	
Grand Means	605.37	HV 10	710.28	HV 10
Std Dev Btwn Labs	10.43	HV 10	9.72	HV 10

Samples E09, E10 : Steel, Steel

Statistics based on 33 of 34 reporting participants

Comments on Assigned Data Flags for Test #1311

DDKDYP (X) - Data for sample E10 are low. Inconsistent within the determinations of both samples.

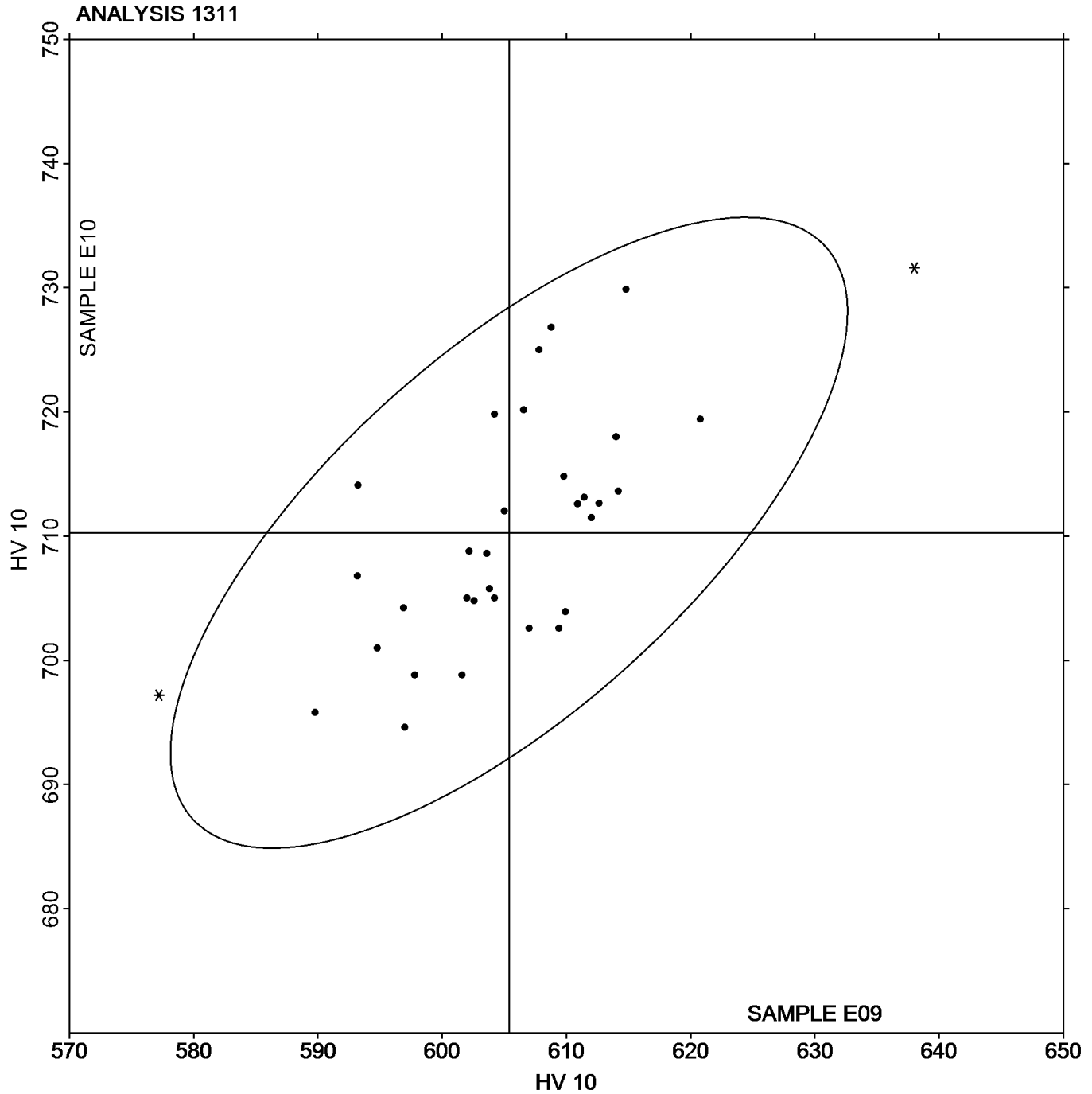


Analysis 1311

Vickers Hardness 10 kgf
ASTM E92, ISO 6507-1

SAMPLE E09
605.37 HV 10

SAMPLE E10
710.28 HV 10





Fasteners and Metals Interlaboratory Testing Program
Analysis 1351
Rockwell Superficial Hardness (30N Scale)
ASTM E18

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
28WLU2		72.06	-0.63	-0.92	76.40	-0.57	-0.80
2J7CGA		72.64	-0.05	-0.07	76.64	-0.33	-0.47
334RL8		72.81	0.12	0.18	77.86	0.88	1.24
3U8UX6		73.04	0.35	0.52	77.02	0.05	0.07
42JJM3		73.24	0.55	0.80	77.55	0.58	0.81
4DWRD2	*	71.61	-1.08	-1.58	77.37	0.39	0.55
78Y3Y2		72.32	-0.37	-0.54	76.54	-0.43	-0.61
7CF678		72.64	-0.05	-0.07	76.96	-0.01	-0.02
87J6ZA		72.44	-0.25	-0.36	77.29	0.31	0.44
94FHDx	X	56.80	-15.89	-23.28	72.46	-4.51	-6.34
9646J7		73.74	1.05	1.54	78.50	1.53	2.14
9MNNHY		73.44	0.75	1.10	77.66	0.69	0.96
9WEANW		72.50	-0.19	-0.28	76.02	-0.95	-1.34
AB9AYW		72.66	-0.03	-0.04	75.78	-1.19	-1.68
AGXPM4		71.72	-0.97	-1.42	75.82	-1.15	-1.62
BH9TUZ		73.00	0.31	0.46	77.02	0.05	0.07
BK97CY		73.10	0.41	0.60	77.50	0.53	0.74
C3B9NW	*	72.66	-0.03	-0.04	75.72	-1.25	-1.76
CQW786		73.04	0.35	0.52	77.08	0.11	0.15
DH2JVY		71.50	-1.19	-1.74	76.30	-0.67	-0.95
F3DCL4		72.54	-0.15	-0.22	76.82	-0.15	-0.22
F7URVV		73.12	0.43	0.63	77.16	0.19	0.26
FVEM6Y		72.80	0.11	0.16	77.50	0.53	0.74
G7TYXN		72.90	0.21	0.31	76.86	-0.11	-0.16
GWJPAV		73.36	0.67	0.98	77.20	0.23	0.32
H3NUEZ		71.80	-0.89	-1.30	76.00	-0.97	-1.37
HTNB9Q		71.66	-1.03	-1.51	76.36	-0.61	-0.86
HUCYEH		72.00	-0.69	-1.01	76.20	-0.77	-1.09
J2P6RH		72.38	-0.31	-0.45	76.58	-0.39	-0.55
J997EL		73.00	0.31	0.46	76.80	-0.17	-0.24
K6LDCH		72.38	-0.31	-0.45	76.96	-0.01	-0.02
KU3RBU		72.24	-0.45	-0.66	77.32	0.35	0.49
L3RREK		72.66	-0.03	-0.04	77.98	1.01	1.41
L8UF7U		72.76	0.07	0.11	76.72	-0.25	-0.36
NMBQGL		73.40	0.71	1.04	78.00	1.03	1.44
PFN66T		73.30	0.61	0.90	77.64	0.67	0.94
PV2BHD		72.88	0.19	0.28	77.11	0.14	0.19
QH9DMT		72.24	-0.45	-0.66	76.62	-0.35	-0.50
RGFVCJ		73.72	1.03	1.51	77.40	0.43	0.60
TDTFGG		73.38	0.69	1.01	77.56	0.59	0.82
TMZD6K		73.22	0.53	0.78	77.34	0.37	0.51
UMFPMQ		71.88	-0.81	-1.18	76.68	-0.29	-0.41
UUEE7F		73.78	1.09	1.60	78.26	1.29	1.81
VG4CVH	*	70.78	-1.91	-2.80	74.98	-1.99	-2.80
VHX7HE	X	71.50	-1.19	-1.74	74.26	-2.71	-3.81
VXN3UG		73.58	0.89	1.31	77.50	0.53	0.74
W26XZ7		72.96	0.27	0.40	77.76	0.79	1.10



Fasteners and Metals Interlaboratory Testing Program
Analysis 1351
Rockwell Superficial Hardness (30N Scale)
ASTM E18

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample E09			Sample E10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
WHT8QP		71.50	-1.18	-1.73	76.58	-0.40	-0.55
X7FD2H		73.66	0.97	1.42	77.16	0.19	0.26
XCZF6E		72.54	-0.15	-0.22	76.32	-0.65	-0.92
XQP7AC		72.58	-0.11	-0.16	76.98	0.01	0.01
YABB6F		73.22	0.53	0.78	77.42	0.45	0.63
YFZYQD	X	71.04	-1.65	-2.41	78.32	1.35	1.89
YW6BFG		73.60	0.91	1.34	77.82	0.85	1.19
YXYU7		71.80	-0.89	-1.30	76.00	-0.97	-1.37

Summary Statistics

	Sample E09		Sample E10	
Grand Means	72.69	HR30N	76.97	HR30N
Std Dev Bwn Labs	0.68	HR30N	0.71	HR30N

Samples E09, E10 : Steel, Steel

Statistics based on 52 of 55 reporting participants

Comments on Assigned Data Flags for Test #1351

- 94FHDX (X) - Data for sample E09 are extreme. Data for sample E10 are low. Inconsistent within the determinations of both samples.
- VHX7HE (X) - Data for sample E10 are low. Inconsistent within the determinations of sample E10.
- YFZYQD (X) - Inconsistent in testing between samples.

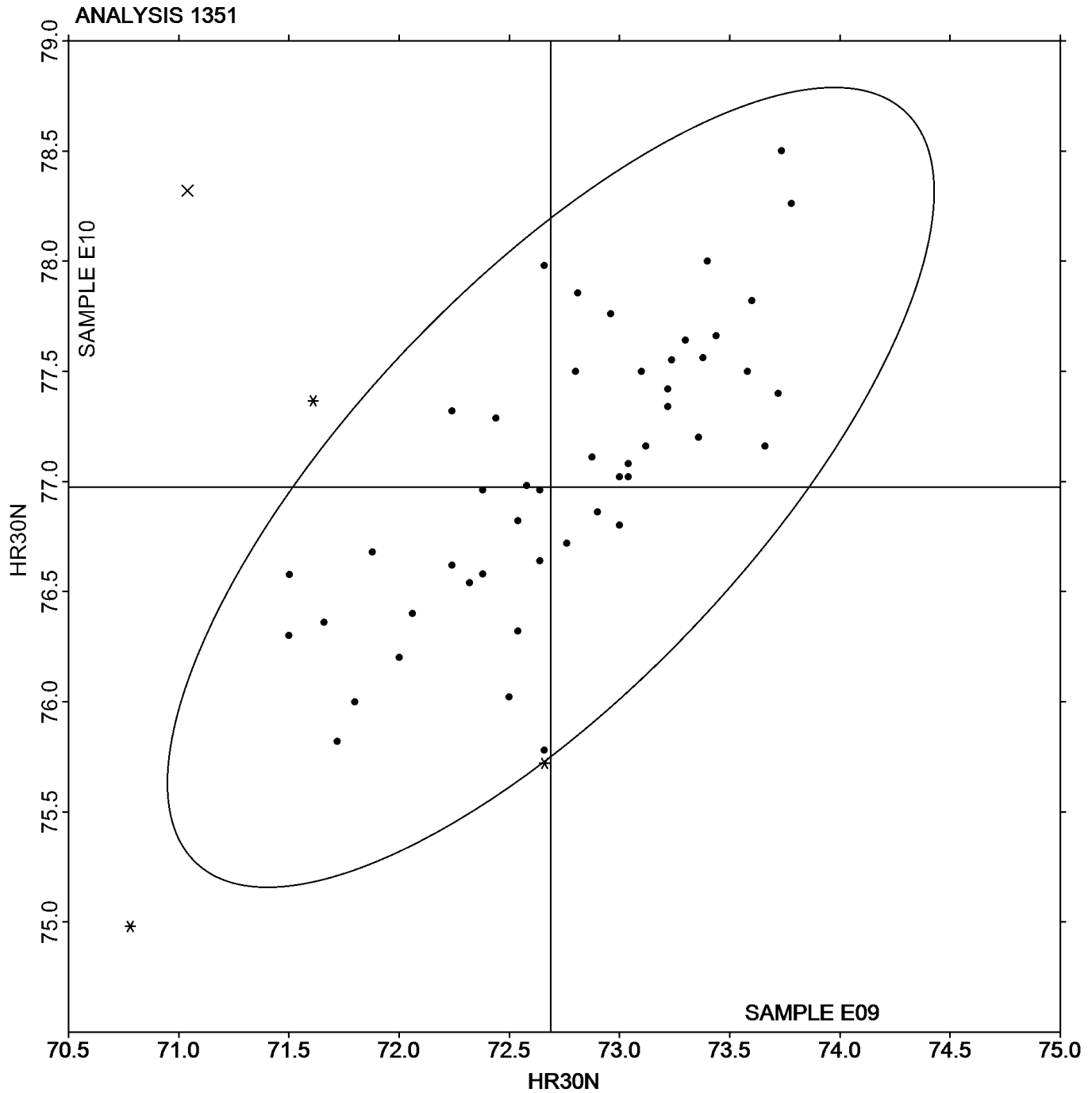


SAMPLE E09

72.69 HR30N

SAMPLE E10

76.97 HR30N





Fasteners and Metals Interlaboratory Testing Program
Analysis 1401
Total Case Depth
SAE J423, SAE J78

Cycle 150
2nd Qtr
2025

WebCode	Data Flag	Sample C09			Sample C10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
266UEP		0.0308	0.0062	1.42	0.0394	0.0129	2.21
334RL8		0.0195	-0.0051	-1.16	0.0242	-0.0023	-0.39
3EDG9B		0.0237	-0.0009	-0.21	0.0211	-0.0054	-0.92
3VXE8G		0.0213	-0.0033	-0.76	0.0254	-0.0011	-0.18
6V83LD		0.0166	-0.0080	-1.82	0.0226	-0.0039	-0.67
876L76		0.0248	0.0002	0.05	0.0288	0.0023	0.39
87J6ZA		0.0256	0.0010	0.23	0.0290	0.0025	0.43
AB9AYW		0.0247	0.0001	0.02	0.0212	-0.0053	-0.91
AVAEB6		0.0328	0.0082	1.87	0.0312	0.0047	0.81
BH9TUZ		0.0220	-0.0026	-0.59	0.0158	-0.0107	-1.83
BHMM7U		0.0213	-0.0032	-0.74	0.0254	-0.0011	-0.20
BJEKE2		0.0187	-0.0059	-1.35	0.0226	-0.0039	-0.66
BK97CY		0.0295	0.0050	1.13	0.0330	0.0065	1.11
C3B9NW		0.0234	-0.0012	-0.27	0.0254	-0.0011	-0.18
C42DYV		0.0261	0.0015	0.34	0.0260	-0.0005	-0.08
CQW786		0.0236	-0.0010	-0.22	0.0240	-0.0025	-0.43
DDKDYP		0.0288	0.0042	0.96	0.0267	0.0002	0.03
DZECBM		0.0214	-0.0032	-0.73	0.0318	0.0053	0.91
GQGGAU		0.0216	-0.0030	-0.69	0.0231	-0.0034	-0.58
HUCYEH		0.0212	-0.0034	-0.77	0.0277	0.0012	0.21
J788YM		0.0256	0.0011	0.24	0.0297	0.0032	0.55
K6LDCH		0.0249	0.0003	0.07	0.0251	-0.0014	-0.24
L3UC9F		0.0310	0.0064	1.46	0.0341	0.0076	1.30
L6MDZP		0.0285	0.0039	0.89	0.0318	0.0053	0.91
PD6YXJ		0.0316	0.0070	1.60	0.0374	0.0109	1.87
PWCC3Q		0.0234	-0.0012	-0.27	0.0204	-0.0061	-1.05
QHVPKH		0.0268	0.0022	0.50	0.0303	0.0038	0.65
RGFVCJ		0.0210	-0.0036	-0.82	0.0236	-0.0029	-0.50
RYJ6FP		0.0225	-0.0021	-0.47	0.0199	-0.0066	-1.13
UEJZJ8		0.0274	0.0028	0.64	0.0324	0.0059	1.01
UQTKXT		0.0345	0.0099	2.25	0.0370	0.0105	1.80
VG4CVH		0.0188	-0.0058	-1.32	0.0267	0.0002	0.03
W9M4WD		0.0248	0.0002	0.05	0.0188	-0.0077	-1.32
WBBR3L		0.0256	0.0010	0.23	0.0306	0.0041	0.70
WJLTNM		0.0154	-0.0092	-2.09	0.0164	-0.0101	-1.73
WLB96A		0.0201	-0.0045	-1.02	0.0165	-0.0100	-1.72
WZVV9F	M	0.0193	-0.0052	-1.19	No Data Reported		
X7FD2H		0.0257	0.0012	0.27	0.0252	-0.0013	-0.22
XQP7AC		0.0302	0.0056	1.28	0.0339	0.0074	1.27
YFBXQM		0.0228	-0.0017	-0.40	0.0231	-0.0034	-0.59
ZKRFR6		0.0254	0.0008	0.19	0.0226	-0.0039	-0.67



Fasteners and Metals Interlaboratory Testing Program
Analysis 1401
Total Case Depth
SAE J423, SAE J78

Cycle 150
2nd Qtr
2025

Summary Statistics

	<u>Sample C09</u>	<u>Sample C10</u>
Grand Means	0.0246 inches	0.0265 inches
Stnd Dev Btwn Labs	0.0044 inches	0.0058 inches

Samples C09, C10 : Steel, Steel

Statistics based on 40 of 41 reporting participants

Comments on Assigned Data Flags for Test #1401

WZVV9F (M) - Participant did not submit data for sample C10.



Analysis 1401

2nd Qtr
2025

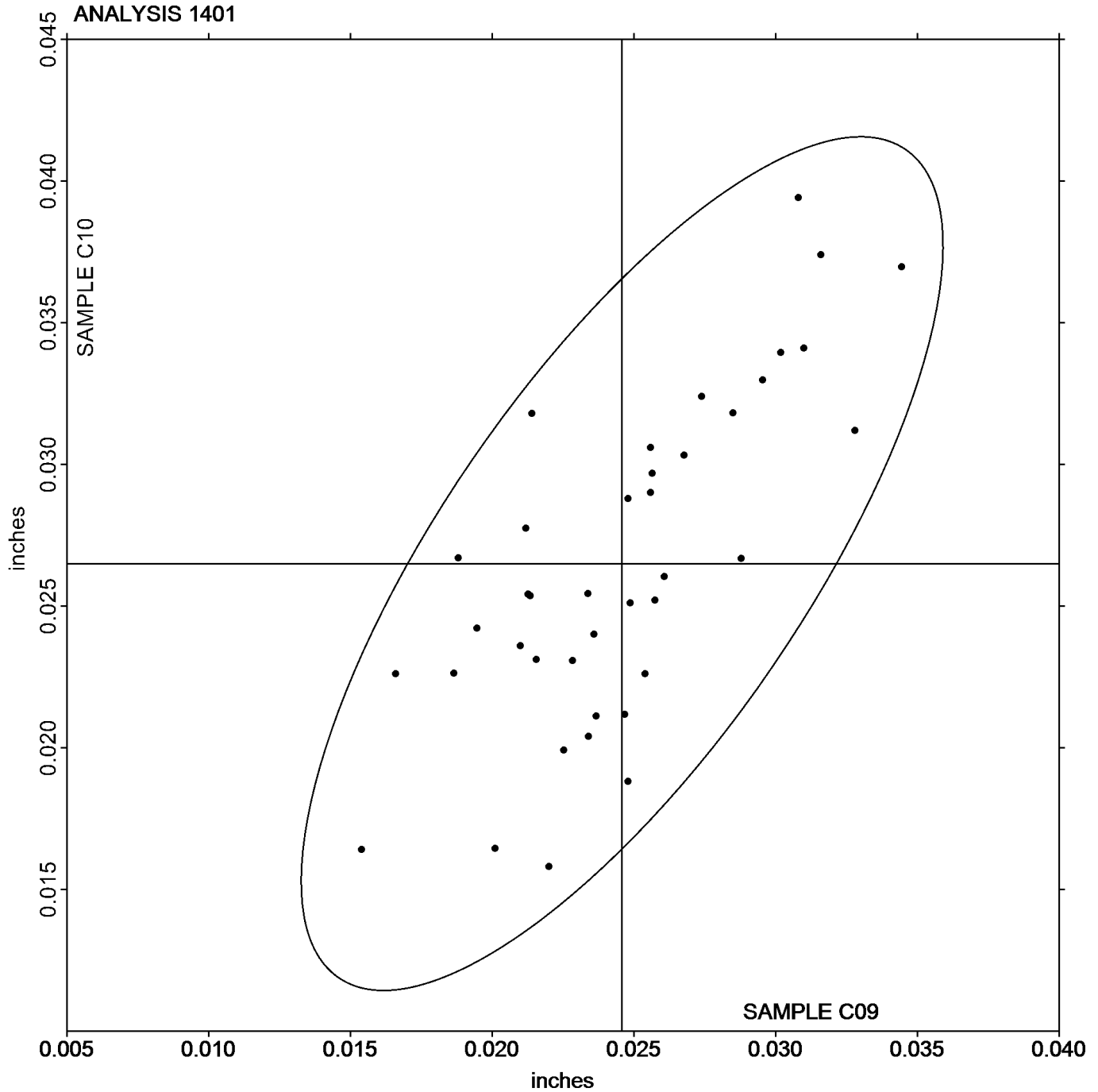
Total Case Depth
SAE J423, SAE J78

SAMPLE C09

0.0246 inches

SAMPLE C10

0.0265 inches





Fasteners and Metals Interlaboratory Testing Program

Analysis 1402

Effective Case Depth
SAE J423, SAE J78

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample C09			Sample C10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
266UEP		0.0184	-0.0038	-2.18	0.0212	-0.0041	-1.20
334RL8		0.0191	-0.0030	-1.75	0.0229	-0.0024	-0.70
3EDG9B		0.0236	0.0014	0.84	0.0204	-0.0049	-1.44
3VXE8G		0.0216	-0.0005	-0.32	0.0265	0.0012	0.34
444DGH		0.0232	0.0010	0.58	0.0274	0.0021	0.61
4Q2XLE		0.0217	-0.0004	-0.24	0.0296	0.0043	1.26
6FF8G3		0.0196	-0.0026	-1.48	0.0272	0.0019	0.55
6V83LD		0.0232	0.0010	0.61	0.0286	0.0033	0.96
7CF678	X	0.0279	0.0057	3.32	0.0220	-0.0033	-0.97
876L76		0.0230	0.0009	0.50	0.0269	0.0015	0.45
87J6ZA		0.0220	-0.0002	-0.09	0.0254	0.0001	0.02
9646J7		0.0208	-0.0014	-0.81	0.0291	0.0038	1.10
AB9AYW		0.0244	0.0023	1.31	0.0207	-0.0046	-1.36
BH9TUZ	*	0.0264	0.0042	2.46	0.0216	-0.0037	-1.09
BHMM7U		0.0227	0.0005	0.30	0.0280	0.0027	0.79
BJEKE2		0.0213	-0.0009	-0.51	0.0256	0.0003	0.09
BK97CY		0.0224	0.0002	0.14	0.0256	0.0003	0.08
C3B9NW		0.0222	0.0001	0.04	0.0236	-0.0017	-0.49
C42DYV		0.0233	0.0012	0.68	0.0249	-0.0004	-0.11
C9E6C4		0.0233	0.0012	0.68	0.0288	0.0035	1.02
CQW786	X	0.0331	0.0109	6.32	0.0333	0.0079	2.32
DDKDYP		0.0226	0.0004	0.26	0.0206	-0.0047	-1.38
DPENG6		0.0236	0.0014	0.84	0.0296	0.0043	1.25
DZECBM		0.0220	-0.0002	-0.09	0.0258	0.0005	0.14
E6RAN2		0.0228	0.0006	0.37	0.0290	0.0037	1.07
F4TLKW		0.0182	-0.0040	-2.29	0.0240	-0.0013	-0.38
FCK2AZ		0.0229	0.0007	0.40	0.0249	-0.0004	-0.11
GQGGAU		0.0228	0.0006	0.37	0.0264	0.0011	0.32
HUCYEH		0.0206	-0.0016	-0.93	0.0268	0.0015	0.43
J788YM		0.0228	0.0006	0.37	0.0256	0.0003	0.08
JDNQ8T		0.0208	-0.0014	-0.79	0.0287	0.0034	1.00
K6LDCH		0.0231	0.0010	0.57	0.0242	-0.0011	-0.33
K7GVDJ		0.0216	-0.0006	-0.32	0.0264	0.0011	0.32
L3UC9F		0.0236	0.0014	0.84	0.0286	0.0033	0.96
L6MDZP		0.0254	0.0033	1.89	0.0266	0.0012	0.36
LQZ676		0.0216	-0.0006	-0.32	0.0252	-0.0001	-0.03
M3B67V		0.0205	-0.0017	-0.96	0.0273	0.0020	0.59
N374YM		0.0237	0.0016	0.92	0.0315	0.0061	1.80
NUR76N		0.0230	0.0008	0.49	0.0282	0.0029	0.84
PD6YXJ		0.0230	0.0008	0.49	0.0288	0.0035	1.02
PWCC3Q		0.0228	0.0006	0.37	0.0194	-0.0059	-1.73
QH9DMT		0.0232	0.0010	0.61	0.0292	0.0039	1.14
QHVPKH		0.0230	0.0009	0.52	0.0264	0.0011	0.33
RGFVCJ		0.0198	-0.0024	-1.36	0.0232	-0.0021	-0.62
RYJ6FP		0.0222	0.0000	0.03	0.0198	-0.0055	-1.61
TRQMBC		0.0208	-0.0014	-0.79	0.0266	0.0013	0.38
UEJZJ8		0.0238	0.0016	0.95	0.0298	0.0045	1.31



Fasteners and Metals Interlaboratory Testing Program

Analysis 1402

Effective Case Depth
SAE J423, SAE J78

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample C09			Sample C10		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
UMFPMQ		0.0216	-0.0006	-0.32	0.0244	-0.0009	-0.27
UQTKXT		0.0241	0.0020	1.13	0.0248	-0.0005	-0.14
VG4CVH	*	0.0177	-0.0045	-2.58	0.0275	0.0022	0.65
W2PLCA		0.0236	0.0014	0.84	0.0282	0.0029	0.84
W9M4WD	*	0.0208	-0.0014	-0.79	0.0162	-0.0091	-2.67
WBBR3L		0.0208	-0.0014	-0.79	0.0242	-0.0011	-0.33
WLB96A		0.0212	-0.0010	-0.56	0.0174	-0.0079	-2.32
X7FD2H		0.0211	-0.0010	-0.58	0.0220	-0.0033	-0.98
XQP7AC		0.0250	0.0029	1.67	0.0259	0.0006	0.17
YFBXQM		0.0210	-0.0011	-0.66	0.0213	-0.0041	-1.19
ZKRFR6		0.0212	-0.0010	-0.55	0.0192	-0.0061	-1.79

Summary Statistics

		Sample C09		Sample C10	
Grand Means		0.0222	inches	0.0253	inches
Std Dev Btwn Labs		0.0017	inches	0.0034	inches

Samples C09, C10 : Steel, Steel

Statistics based on 56 of 58 reporting participants

Comments on Assigned Data Flags for Test #1402

7CF678 (X) - Data for sample C09 are high.

CQW786 (X) - Data for sample C09 are high.



Analysis 1402

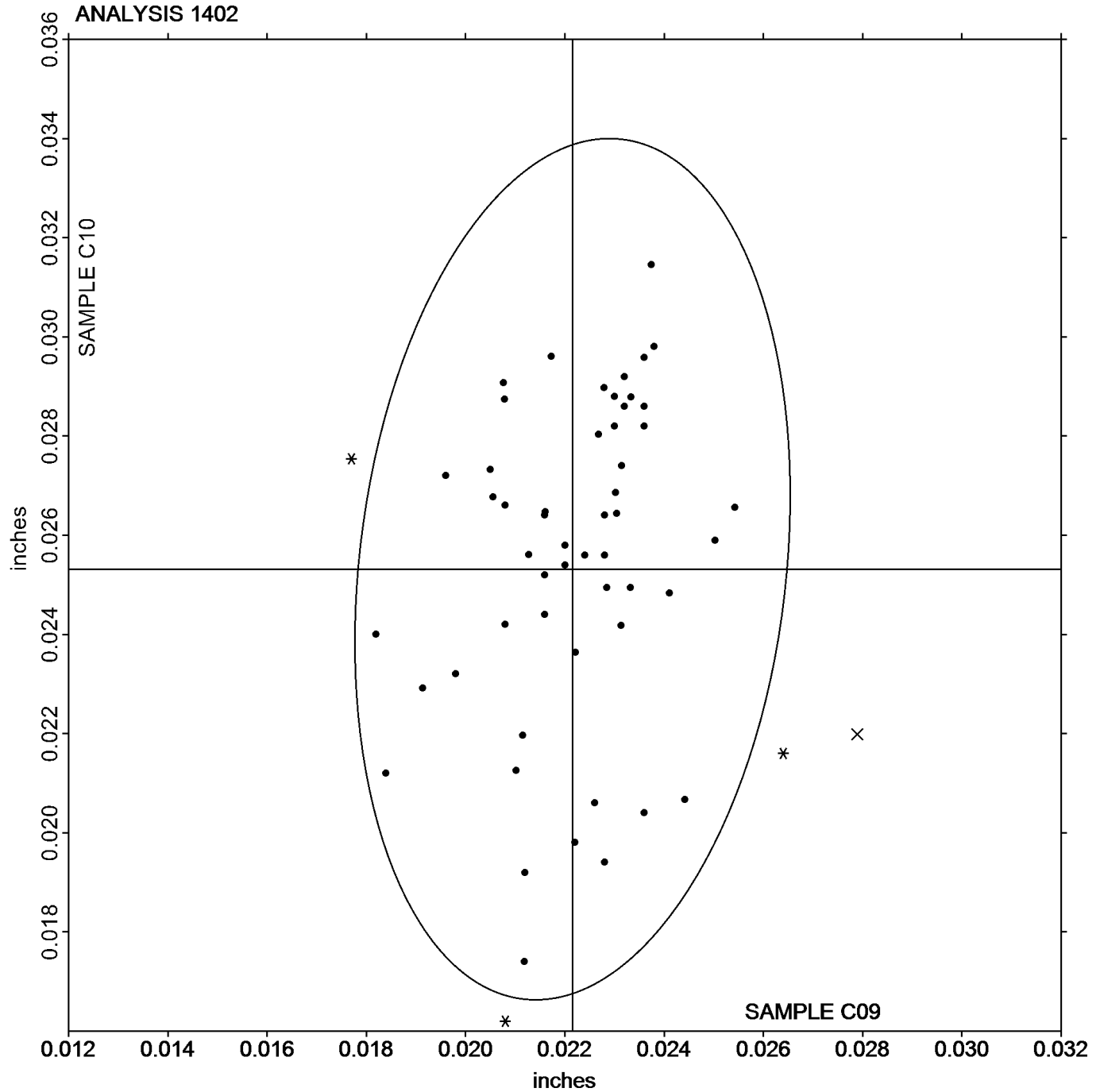
Effective Case Depth
SAE J423, SAE J78

SAMPLE C09

0.0222 inches

SAMPLE C10

0.0253 inches





Fasteners and Metals Interlaboratory Testing Program

Analysis 1411

Grain Size (Stainless Steel)
ASTM E112, ASTM E1382

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample Y09			Sample Y10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
22UG3H		5.70	-0.16	-0.22	9.10	-0.41	-0.38	Comparison Method
42JJM3		5.34	-0.52	-0.71	11.78	2.27	2.06	Automatic Image Analysis
6FYVZH		4.90	-0.96	-1.32	9.20	-0.31	-0.29	Comparison Method
6V83LD		4.90	-0.96	-1.32	8.80	-0.71	-0.65	Comparison Method
7FA9ND		5.92	0.06	0.08	10.08	0.57	0.51	Abrams Three-Circle
7G6QQE		6.20	0.34	0.46	9.20	-0.31	-0.29	Heyn Linear Intercept
7VPHJF		5.26	-0.60	-0.82	9.80	0.29	0.26	N/A
93HA6E		6.86	1.00	1.37	8.92	-0.59	-0.54	Automatic Image Analysis
9646J7	M	4.00	-1.86	-2.55	No Data Reported			Comparison Method
9MNNHY	*	5.00	-0.86	-1.18	6.60	-2.91	-2.65	Comparison Method
AUMTP9		6.20	0.34	0.46	7.80	-1.71	-1.56	Comparison Method
BJEKE2		5.46	-0.40	-0.55	9.94	0.43	0.39	General Intercept
BK97CY		5.70	-0.16	-0.22	8.50	-1.01	-0.92	Heyn Linear Intercept
BLNFE8		5.86	0.00	0.00	9.48	-0.03	-0.03	Automatic Image Analysis
CQW786		6.80	0.94	1.29	9.70	0.19	0.17	Comparison Method
DXAL7T		5.52	-0.34	-0.47	9.03	-0.49	-0.44	Automatic Image Analysis
EMNV88		5.86	0.00	0.00	8.34	-1.17	-1.07	Abrams Three-Circle
EN6RVZ		4.50	-1.36	-1.87	9.00	-0.51	-0.47	Comparison Method
F4TLKW		6.60	0.74	1.01	11.80	2.29	2.08	N/A
FBDHQ7		7.41	1.55	2.12	9.61	0.10	0.09	Planimetric (Jeffries)
FE8MWV		5.50	-0.36	-0.50	9.90	0.39	0.35	Comparison Method
FEA4JU		6.20	0.34	0.46	10.10	0.59	0.53	Comparison Method
FVEM6Y		6.10	0.24	0.33	9.80	0.29	0.26	Comparison Method
G6Y9UU		6.20	0.34	0.46	9.50	-0.01	-0.01	Comparison Method
GPPKGU		5.70	-0.16	-0.22	8.80	-0.71	-0.65	Comparison Method
HNBDXX		5.54	-0.32	-0.44	10.06	0.55	0.50	Abrams Three-Circle
JJCCCU		6.90	1.04	1.42	9.50	-0.01	-0.01	Comparison Method
JRK663		5.92	0.06	0.08	9.64	0.13	0.11	N/A
KEAZPT		6.49	0.63	0.86	10.16	0.64	0.58	Automatic Image Analysis
KM2MCJ	*	6.00	0.14	0.19	12.30	2.79	2.54	Comparison Method
LAVQTG		5.20	-0.66	-0.91	8.80	-0.71	-0.65	Comparison Method
MCZQBT		5.70	-0.16	-0.22	10.40	0.89	0.81	General Intercept
NUR76N		5.10	-0.76	-1.04	10.80	1.29	1.17	Comparison Method
NV8DLY		5.90	0.04	0.05	10.74	1.23	1.12	General Intercept
PEZGYK		6.12	0.26	0.35	9.79	0.27	0.25	Heyn Linear Intercept
PKKQWV		5.60	-0.26	-0.36	10.70	1.19	1.08	Comparison Method
PREXBU		6.00	0.14	0.19	11.20	1.69	1.53	Comparison Method
PTD27Q		5.62	-0.24	-0.33	10.28	0.77	0.70	Abrams Three-Circle
PTHC9P		6.80	0.94	1.29	9.20	-0.31	-0.29	N/A
PUR9N2	*	4.60	-1.26	-1.73	6.90	-2.61	-2.38	Comparison Method
PWK9YJ		5.00	-0.86	-1.18	8.00	-1.51	-1.38	Comparison Method
QLV2EK		4.80	-1.06	-1.46	9.10	-0.41	-0.38	Comparison Method
QRGXWF		5.80	-0.06	-0.08	7.80	-1.71	-1.56	Comparison Method
TWH3EQ		5.77	-0.09	-0.13	9.58	0.06	0.06	Abrams Three-Circle
UEJZJ8		6.80	0.94	1.29	9.80	0.29	0.26	Comparison Method
UHGMAA		6.70	0.84	1.15	9.90	0.39	0.35	Comparison Method
VAPEDQ		5.30	-0.56	-0.77	8.30	-1.21	-1.11	Comparison Method



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1411

2nd Qtr
2025

Grain Size (Stainless Steel)
ASTM E112, ASTM E1382

WebCode	Data Flag	Sample Y09			Sample Y10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
VFCABM	*	7.20	1.34	1.84	7.80	-1.71	-1.56	Comparison Method
VWV6LB		6.80	0.94	1.29	8.80	-0.71	-0.65	Comparison Method
W6QH7B		7.30	1.44	1.97	10.20	0.69	0.62	Comparison Method
WKERWT		6.28	0.42	0.57	10.50	0.99	0.90	Abrams Three-Circle
WLB96A		5.80	-0.06	-0.08	9.00	-0.51	-0.47	Comparison Method
XT9CGL		6.70	0.84	1.15	9.20	-0.31	-0.29	Comparison Method
YR6BQK		4.80	-1.06	-1.46	10.70	1.19	1.08	Comparison Method
Z6TL3G		5.70	-0.16	-0.22	9.60	0.09	0.08	General Intercept
Z8FAEH		6.00	0.14	0.19	9.90	0.39	0.35	Comparison Method
ZNAN4B		4.30	-1.56	-2.14	9.40	-0.11	-0.10	Comparison Method

Summary Statistics

		Sample Y09		Sample Y10	
Grand Means		5.861	ASTM Grain Size	9.515	ASTM Grain Size
Std Dev Btwn Labs		0.729	ASTM Grain Size	1.098	ASTM Grain Size

Samples Y09, Y10 : AISI 304, AISI 303

Statistics based on 56 of 57 reporting participants

Comments on Assigned Data Flags for Test #1411

9646J7 (M) - Participant did not submit data for sample Y10.



Analysis 1411

2nd Qtr
2025

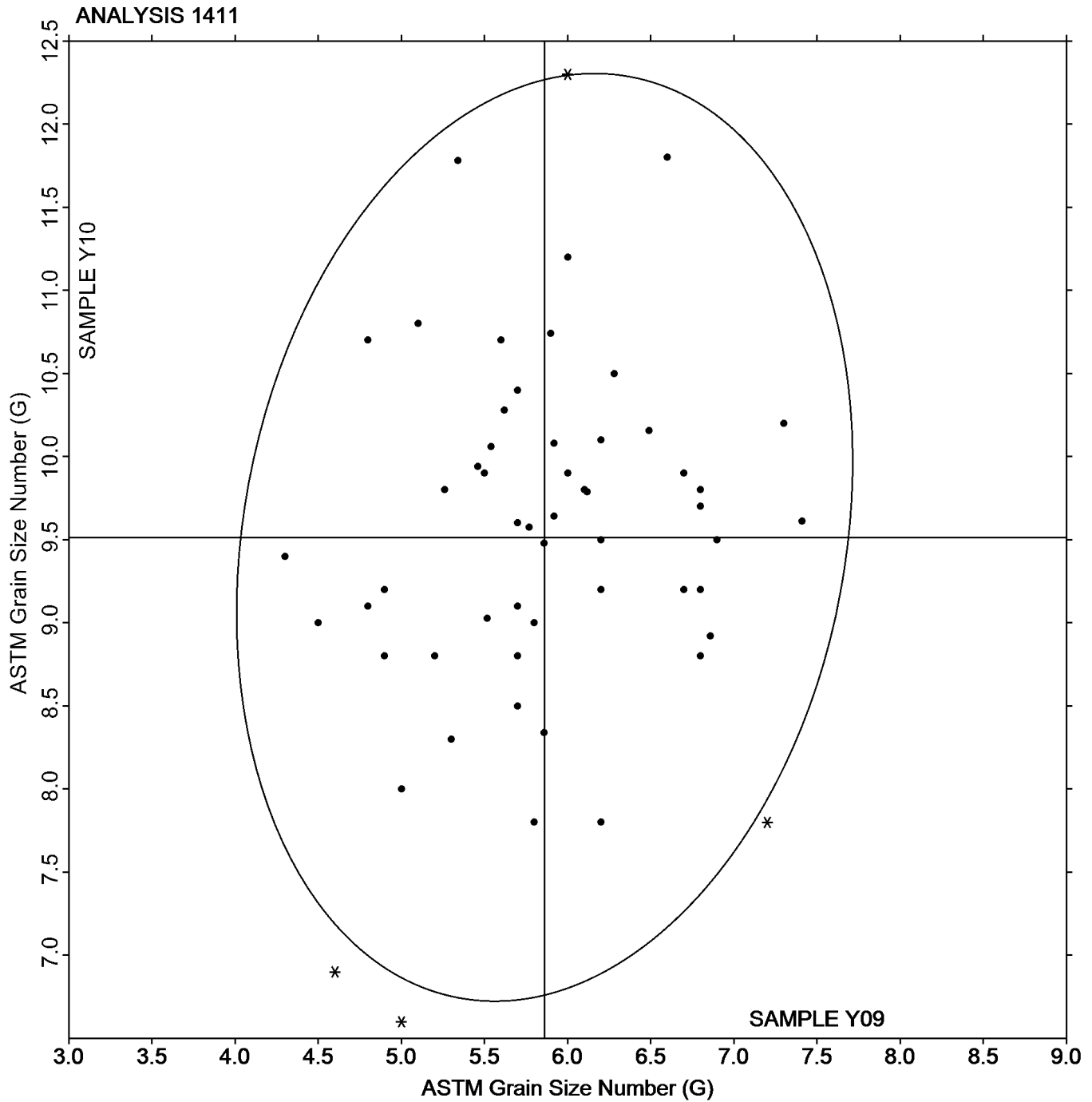
Grain Size (Stainless Steel)
ASTM E112, ASTM E1382

SAMPLE Y09

SAMPLE Y10

5.861 ASTM Grain Size Number (G)

9.515 ASTM Grain Size Number (G)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1500

Nickel-based Alloy, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		22.43	0.16	0.58	22.52	0.19	0.73	IC
2WXXQC		22.08	-0.19	-0.71	22.12	-0.21	-0.81	OE
66H9QG	X	22.65	0.38	1.43	23.01	0.68	2.62	WD
783FQ4		22.40	0.13	0.48	22.57	0.24	0.92	IC
7CF678		22.41	0.14	0.51	22.42	0.09	0.35	OE
8W2CYF		22.55	0.28	1.04	22.54	0.22	0.83	OE
94FHDX		22.21	-0.06	-0.23	22.22	-0.11	-0.42	OE
B2EHVB	*	22.29	0.01	0.05	22.50	0.17	0.67	IC
BCXU9A		22.35	0.08	0.29	22.35	0.03	0.10	OE
BJEKE2		22.37	0.10	0.36	22.48	0.15	0.57	OE
BTKC2A		21.66	-0.61	-2.31	21.79	-0.54	-2.07	OE
EBUN2P		22.23	-0.05	-0.18	22.28	-0.05	-0.20	WD
EMNV88		22.27	-0.01	-0.03	22.30	-0.03	-0.11	GD
FRGCX7		22.48	0.20	0.76	22.59	0.26	0.99	OE
FVEM6Y		22.37	0.10	0.36	22.38	0.06	0.21	XR
G398QR	*	21.49	-0.79	-2.96	21.54	-0.78	-3.01	OE
HBEHA3		22.27	-0.01	-0.03	22.33	0.00	0.00	WD
HK9GAN		22.28	0.01	0.02	22.34	0.01	0.03	XR
KLYCT3		22.17	-0.10	-0.39	22.20	-0.13	-0.49	OE
MCZQBT		22.10	-0.17	-0.65	22.15	-0.18	-0.69	WD
MQZDXN	*	21.78	-0.49	-1.84	22.27	-0.06	-0.24	GD
QVX97D		22.40	0.13	0.48	22.38	0.05	0.19	OE
RYJ6FP		22.46	0.19	0.71	22.52	0.19	0.72	IC
T7T6ZQ		22.44	0.16	0.61	22.49	0.16	0.60	WD
TBZV3W		22.15	-0.12	-0.46	22.36	0.04	0.14	WD
TTKL2W		21.71	-0.56	-2.10	21.76	-0.57	-2.18	WD
U9DCXT		22.38	0.10	0.39	22.37	0.04	0.15	OE
VFBEMB		22.52	0.25	0.94	22.51	0.19	0.71	WD
W6JMAH		22.69	0.41	1.55	22.67	0.35	1.33	OE
WC4MKN		22.45	0.18	0.66	22.49	0.16	0.61	WD
WHT8QP		22.09	-0.18	-0.69	22.11	-0.22	-0.85	ED
ZT6EAM	X	21.12	-1.16	-4.35	21.41	-0.91	-3.51	IC
ZVJ77G		22.52	0.25	0.93	22.58	0.26	0.98	WD

Summary Statistics

Sample J09				Sample J10	
Grand Means	22.27	Percent		22.33	Percent
Std Dev Btwn Labs	0.27	Percent		0.26	Percent

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 30 of 33 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)	XR	X-Ray Fluorescence - ED or WD not specified



Comments on Assigned Data Flags for Test #1500

66H9QG (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J09.

ZT6EAM (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample J10.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1500

Nickel-based Alloy, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 150

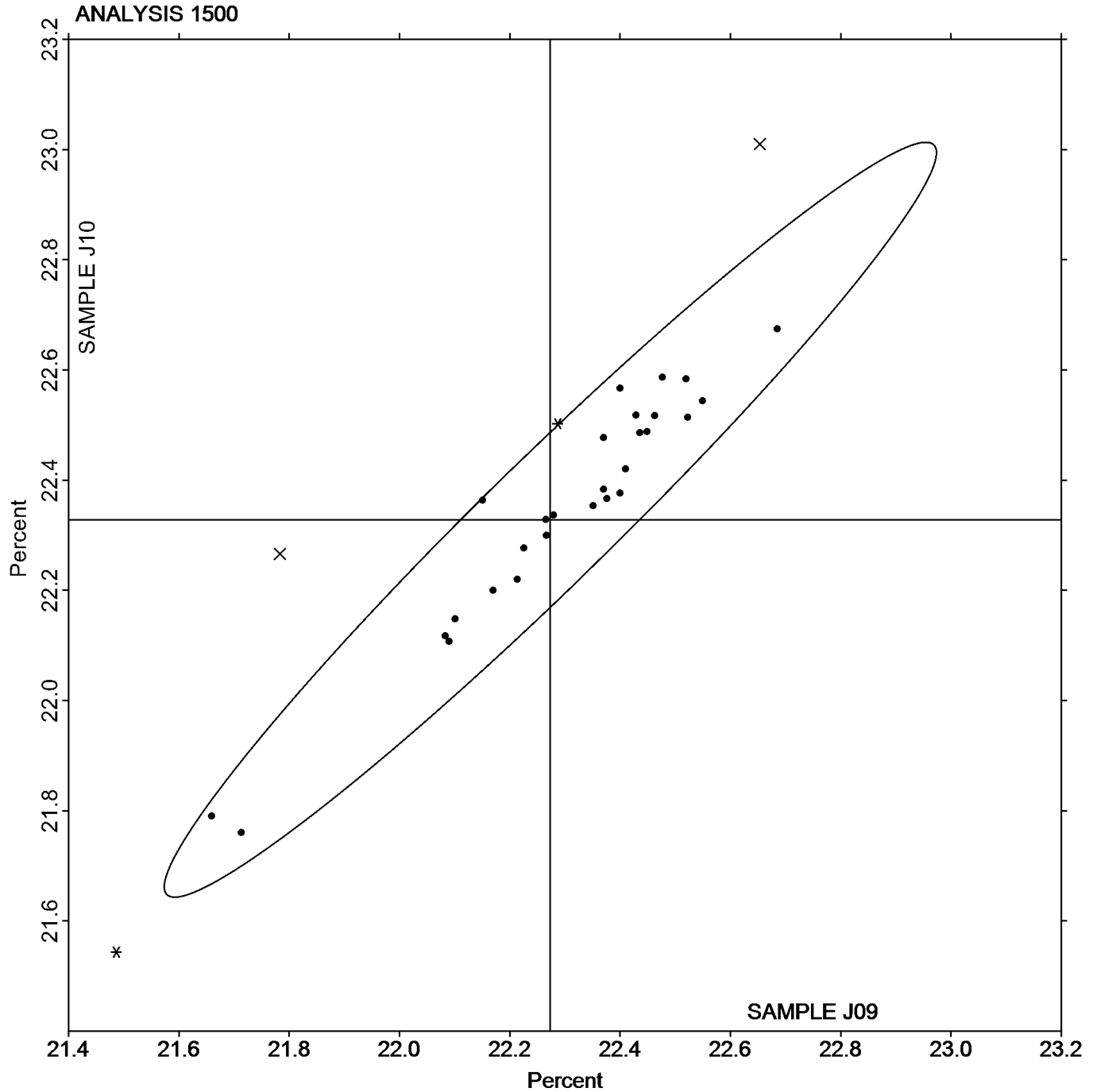
2nd Qtr
2025

SAMPLE J09

22.27 Percent

SAMPLE J10

22.33 Percent



**Fasteners and Metals Interlaboratory Testing Program****Cycle 150****Analysis 1501****2nd Qtr****Nickel-based Alloy, MANGANESE (Mn)****2025****MANGANESE (Mn)**

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		0.0412	-0.0073	-0.77	0.1024	-0.0041	-0.48	IC
2WXXQC		0.0500	0.0015	0.15	0.0897	-0.0168	-1.94	OE
49EQYG		0.0441	-0.0044	-0.47	0.1055	-0.0010	-0.12	IC
66H9QG		0.0523	0.0038	0.40	0.1160	0.0095	1.10	OE
783FQ4		0.0463	-0.0022	-0.23	0.1063	-0.0002	-0.02	IC
7CF678		0.0479	-0.0006	-0.07	0.1030	-0.0035	-0.40	OE
8W2CYF		0.0479	-0.0006	-0.07	0.1027	-0.0038	-0.44	OE
94FHDX		0.0467	-0.0019	-0.20	0.1083	0.0018	0.21	OE
B2EHVB		0.0456	-0.0029	-0.31	0.1060	-0.0005	-0.06	IC
BCXU9A		0.0509	0.0024	0.25	0.1024	-0.0041	-0.47	OE
BJEKE2		0.0460	-0.0025	-0.27	0.1097	0.0032	0.37	OE
BTKC2A		0.0700	0.0215	2.26	0.1100	0.0035	0.40	OE
EBUN2P		0.0416	-0.0069	-0.73	0.1039	-0.0026	-0.30	WD
EMNV88		0.0337	-0.0148	-1.56	0.0943	-0.0122	-1.40	GD
FRGCX7		0.0519	0.0033	0.35	0.1087	0.0022	0.25	OE
FVEM6Y		0.0500	0.0015	0.15	0.1100	0.0035	0.40	XR
G398QR		0.0500	0.0015	0.15	0.1100	0.0035	0.40	OE
HBEHA3		0.0507	0.0021	0.22	0.1067	0.0002	0.02	WD
HK9GAN		0.0530	0.0044	0.47	0.1103	0.0038	0.44	XR
KLYCT3		0.0488	0.0003	0.03	0.1070	0.0005	0.06	OE
MCZQBT		0.0447	-0.0039	-0.41	0.1040	-0.0025	-0.29	WD
MQZDXN		0.0515	0.0030	0.31	0.1248	0.0183	2.11	GD
QVX97D		0.0500	0.0015	0.15	0.1100	0.0035	0.40	OE
RYJ6FP		0.0480	-0.0005	-0.05	0.1113	0.0048	0.56	IC
T7T6ZQ		0.0505	0.0020	0.21	0.1129	0.0064	0.74	WD
TBZV3W		0.0407	-0.0079	-0.83	0.0980	-0.0085	-0.98	WD
TTKL2W		0.0669	0.0184	1.93	0.1258	0.0193	2.22	WD
U9DCXT		0.0611	0.0126	1.32	0.1073	0.0008	0.10	OE
VFBEMB		0.0503	0.0017	0.18	0.1085	0.0020	0.23	WD
W6JMAH	*	0.0207	-0.0278	-2.93	0.0847	-0.0218	-2.51	OE
WC4MKN		0.0418	-0.0067	-0.71	0.1019	-0.0046	-0.53	WD
WHT8QP	X	0.1373	0.0888	9.34	0.2040	0.0975	11.24	ED
ZT6EAM		0.0370	-0.0115	-1.21	0.0923	-0.0142	-1.64	IC
ZVJ77G		0.0700	0.0215	2.26	0.1200	0.0135	1.56	WD

Summary Statistics

Sample J09			Sample J10		
Grand Means	0.0485	Percent	0.1065	Percent	
Std Dev Btwn Labs	0.0095	Percent	0.0087	Percent	

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 33 of 34 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1501

Nickel-based Alloy, MANGANESE (Mn)
MANGANESE (Mn)

Cycle 150

2nd Qtr
2025

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)	XR	X-Ray Fluorescence - ED or WD not specified

Comments on Assigned Data Flags for Test #1501

WHT8QP (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample J10.



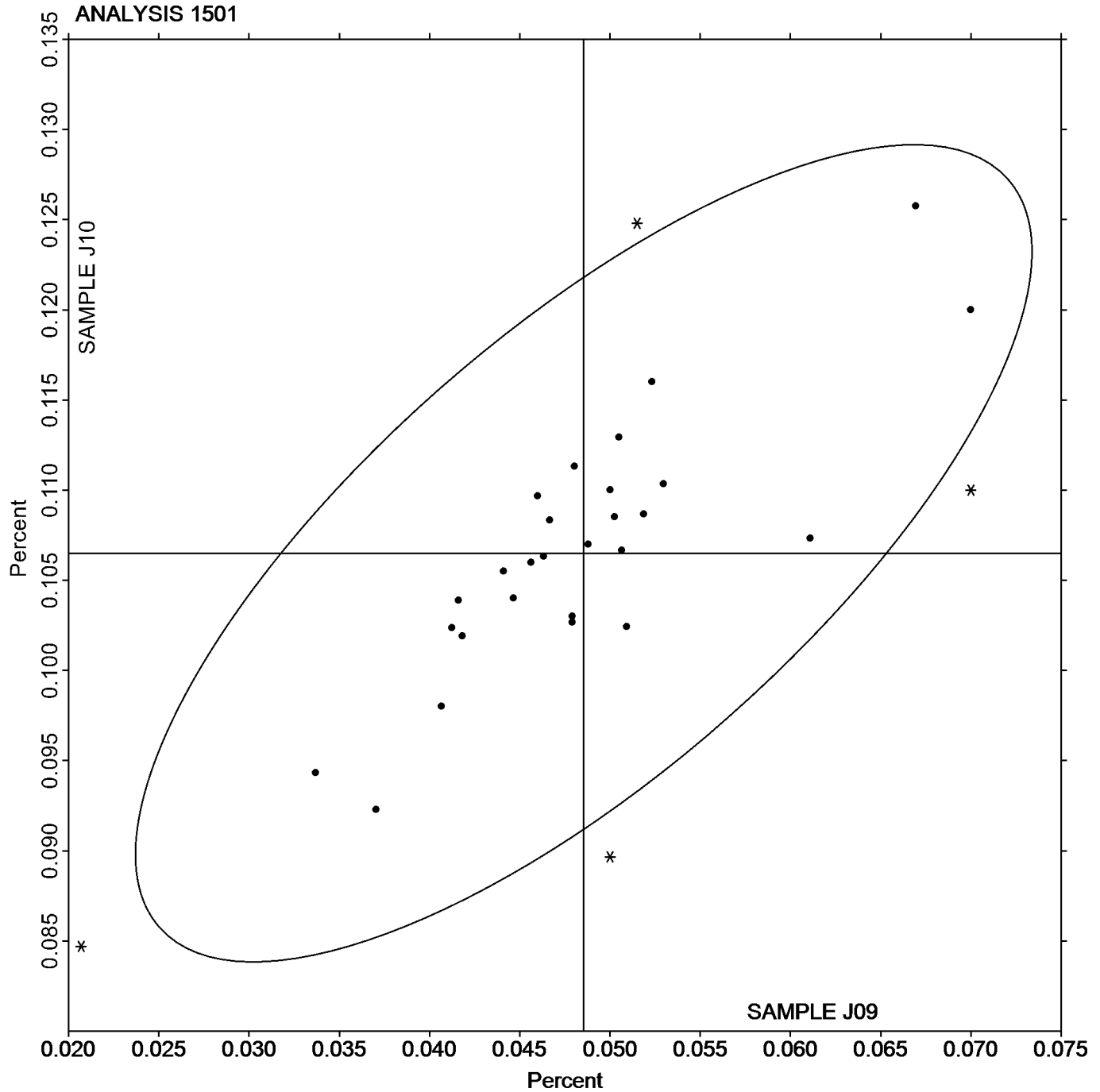
Analysis 1501

Nickel-based Alloy, MANGANESE (Mn)

MANGANESE (Mn)

SAMPLE J09
0.0485 Percent

SAMPLE J10
0.1065 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1502

Nickel-based Alloy, IRON (Fe)
IRON (Fe)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		3.770	0.000	0.00	3.416	-0.031	-0.22	IC
49EQYG		3.703	-0.067	-0.44	3.385	-0.062	-0.45	IC
66H9QG	*	3.700	-0.070	-0.46	3.510	0.063	0.46	OE
783FQ4		3.953	0.184	1.20	3.607	0.160	1.15	IC
7CF678		3.773	0.003	0.02	3.506	0.059	0.43	OE
8W2CYF		3.750	-0.020	-0.13	3.433	-0.014	-0.10	OE
94FHDX		3.933	0.163	1.07	3.654	0.207	1.50	OE
B2EHVB		3.685	-0.084	-0.55	3.367	-0.080	-0.58	IC
BCXU9A		3.738	-0.032	-0.21	3.440	-0.007	-0.05	OE
BJEKE2		3.750	-0.020	-0.13	3.447	0.000	0.00	OE
BTKC2A		3.980	0.210	1.38	3.544	0.097	0.70	OE
EBUN2P		3.730	-0.039	-0.26	3.404	-0.043	-0.31	WD
EMNV88		3.720	-0.050	-0.33	3.390	-0.057	-0.41	GD
FRGCX7		3.743	-0.026	-0.17	3.337	-0.110	-0.80	OE
FVEM6Y		3.790	0.020	0.13	3.470	0.023	0.17	XR
G398QR	*	4.207	0.437	2.87	3.887	0.440	3.18	OE
HBEHA3		3.806	0.036	0.24	3.484	0.037	0.27	WD
HK9GAN		3.707	-0.063	-0.41	3.380	-0.067	-0.48	XR
KLYCT3		3.746	-0.024	-0.16	3.452	0.005	0.04	OE
MCZQBT		3.866	0.097	0.63	3.516	0.069	0.50	WD
MQZDXN		4.108	0.338	2.22	3.738	0.291	2.10	GD
QVX97D		3.860	0.090	0.59	3.453	0.006	0.05	OE
RYJ6FP	*	3.719	-0.051	-0.33	3.099	-0.348	-2.51	IC
T7T6ZQ		3.673	-0.097	-0.63	3.349	-0.098	-0.71	WD
TBZV3W		3.736	-0.034	-0.22	3.416	-0.031	-0.22	WD
TTKL2W		3.497	-0.273	-1.79	3.197	-0.250	-1.80	WD
U9DCXT		3.710	-0.060	-0.39	3.353	-0.094	-0.67	OE
VFBEMB		3.774	0.004	0.03	3.433	-0.014	-0.10	XX
W6JMAH		3.627	-0.143	-0.94	3.362	-0.084	-0.61	OE
WC4MKN		3.802	0.032	0.21	3.478	0.031	0.22	WD
WHT8QP		3.692	-0.078	-0.51	3.363	-0.084	-0.60	ED
ZT6EAM		3.390	-0.380	-2.49	3.147	-0.300	-2.17	IC
ZVJ77G		3.710	-0.060	-0.39	3.380	-0.067	-0.48	WD

Summary Statistics

	Sample J09		Sample J10	
Grand Means	3.770	Percent	3.447	Percent
Std Dev Btwn Labs	0.152	Percent	0.139	Percent

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 32 of 33 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1502

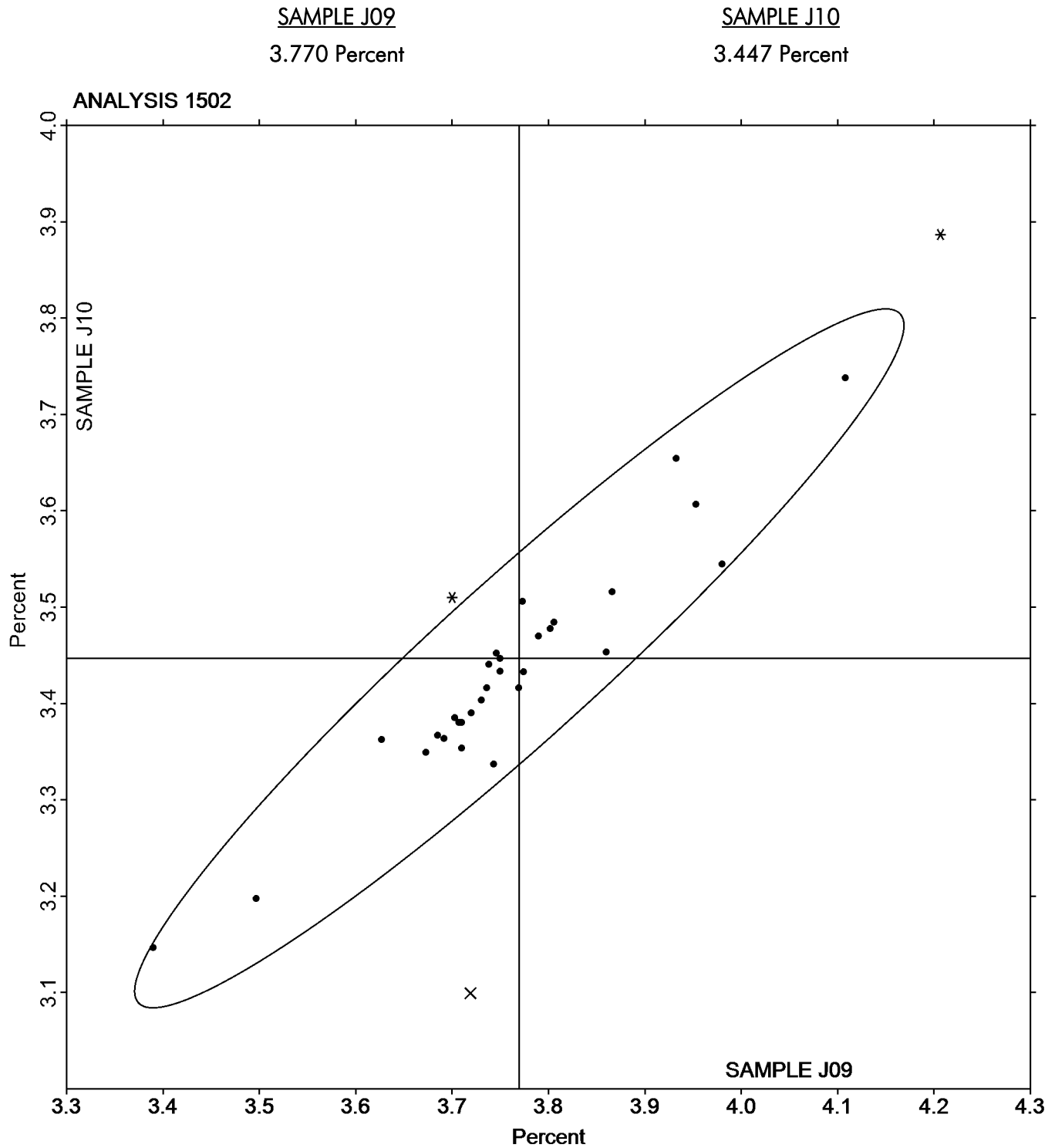
Nickel-based Alloy, IRON (Fe)
IRON (Fe)

Cycle 150

2nd Qtr
2025

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)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		





Fasteners and Metals Interlaboratory Testing Program

Analysis 1503

Nickel-based Alloy, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		8.757	-0.107	-0.89	8.813	-0.120	-0.94	IC
2WXXQC	X	9.407	0.542	4.50	9.457	0.523	4.11	OE
66H9QG		8.847	-0.018	-0.15	8.853	-0.080	-0.63	WD
783FQ4		8.740	-0.124	-1.03	8.843	-0.090	-0.71	IC
7CF678		8.787	-0.077	-0.64	8.835	-0.098	-0.77	OE
8W2CYF		8.790	-0.074	-0.62	8.857	-0.077	-0.60	OE
94FHDX		8.904	0.040	0.33	8.918	-0.016	-0.12	OE
B2EHVB		9.050	0.185	1.54	9.128	0.195	1.53	IC
BCXU9A		8.752	-0.112	-0.93	8.853	-0.081	-0.63	OE
BJEKE2		8.773	-0.091	-0.75	8.827	-0.107	-0.84	OE
BTKC2A		9.130	0.266	2.20	9.200	0.267	2.10	OE
EBUN2P		8.729	-0.136	-1.12	8.795	-0.138	-1.08	WD
EMNV88		9.167	0.302	2.51	9.253	0.320	2.51	GD
FRGCX7	X	8.750	-0.114	-0.95	8.687	-0.247	-1.94	OE
FVEM6Y		8.863	-0.001	-0.01	8.940	0.007	0.05	XR
G398QR	X	10.63	1.769	14.67	10.76	1.823	14.32	OE
HBEHA3		8.829	-0.036	-0.29	8.901	-0.033	-0.26	WD
HK9GAN		8.863	-0.002	-0.01	8.938	0.005	0.04	XR
KLYCT3		8.954	0.090	0.74	9.023	0.090	0.71	OE
MCZQBT		8.668	-0.196	-1.63	8.733	-0.200	-1.57	WD
MQZDXN	X	9.355	0.491	4.07	8.960	0.027	0.21	GD
QVX97D		8.887	0.022	0.19	8.980	0.047	0.37	OE
RYJ6FP		8.831	-0.033	-0.28	8.946	0.012	0.10	IC
T7T6ZQ		8.871	0.007	0.06	8.941	0.008	0.06	WD
TBZV3W		8.810	-0.054	-0.45	8.876	-0.057	-0.45	XX
TTKL2W		8.973	0.109	0.90	9.063	0.130	1.02	WD
U9DCXT		8.833	-0.031	-0.26	8.850	-0.083	-0.65	OE
VFBEMB		8.825	-0.040	-0.33	8.892	-0.042	-0.33	WD
W6JMAH		8.754	-0.111	-0.92	8.800	-0.133	-1.05	OE
WC4MKN		8.837	-0.027	-0.23	8.909	-0.024	-0.19	XX
WHT8QP		8.932	0.068	0.56	9.054	0.120	0.95	ED
ZVJ77G		9.043	0.179	1.49	9.110	0.177	1.39	WD

Summary Statistics

Sample J09			Sample J10		
Grand Means	8.864	Percent	8.933	Percent	
Std Dev Btwn Labs	0.121	Percent	0.127	Percent	

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 28 of 32 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)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		



Comments on Assigned Data Flags for Test #1503

2WXXQC (X) - Data for both samples are high. Possible Systematic Error.

FRGCX7 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample J09.

G398QR (X) - Data for both samples are high. Possible Systematic Error.

MQZDXN (X) - Data for sample J09 are high.



Analysis 1503

Nickel-based Alloy, MOLYBDENUM (Mo)

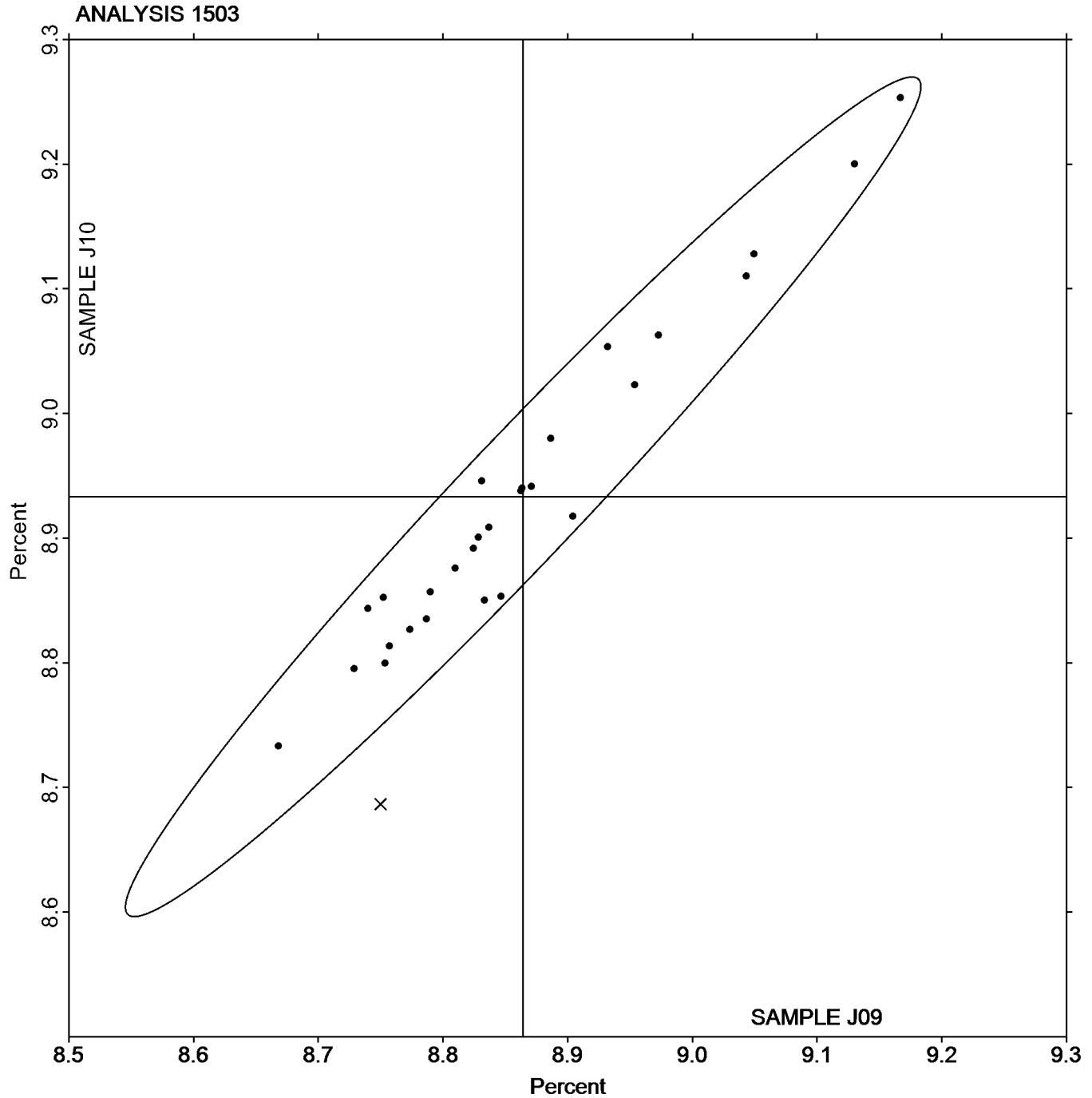
MOLYBDENUM (Mo)

SAMPLE J09

SAMPLE J10

8.864 Percent

8.933 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1504

Nickel-based Alloy, ALUMINUM (Al)
ALUMINUM (Al)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		0.1776	-0.0089	-0.95	0.1659	-0.0106	-0.98	IC
49EQYG		0.1880	0.0015	0.16	0.1795	0.0030	0.28	IC
66H9QG	*	0.1740	-0.0125	-1.34	0.1950	0.0185	1.71	OE
783FQ4		0.1820	-0.0045	-0.48	0.1743	-0.0022	-0.20	IC
7CF678		0.1820	-0.0045	-0.48	0.1700	-0.0065	-0.60	OE
8W2CYF		0.1880	0.0015	0.16	0.1773	0.0008	0.08	OE
94FHDX		0.1947	0.0082	0.87	0.1827	0.0061	0.57	OE
B2EHVB		0.1910	0.0045	0.48	0.1830	0.0065	0.60	AA
BCXU9A		0.1854	-0.0011	-0.12	0.1747	-0.0018	-0.17	OE
BJEKE2		0.1900	0.0035	0.37	0.1813	0.0048	0.45	OE
BTKC2A		0.2000	0.0135	1.44	0.1970	0.0205	1.90	OE
EBUN2P		0.1811	-0.0054	-0.58	0.1714	-0.0051	-0.47	WD
EMNV88		0.1870	0.0005	0.05	0.1780	0.0015	0.14	GD
FRGCX7		0.1880	0.0015	0.16	0.1767	0.0001	0.01	OE
FVEM6Y		0.1667	-0.0198	-2.12	0.1500	-0.0265	-2.45	XR
G398QR		0.2100	0.0235	2.51	0.2000	0.0235	2.17	OE
HBEHA3		0.1940	0.0075	0.80	0.1830	0.0065	0.60	WD
HK9GAN		0.1857	-0.0008	-0.09	0.1730	-0.0035	-0.33	OE
KLYCT3		0.1920	0.0055	0.59	0.1820	0.0055	0.51	OE
MQZDXN		0.1920	0.0055	0.59	0.1795	0.0030	0.28	GD
QVX97D		0.1800	-0.0065	-0.69	0.1700	-0.0065	-0.60	OE
RYJ6FP		0.1870	0.0005	0.05	0.1810	0.0045	0.41	IC
T7T6ZQ		0.1891	0.0026	0.28	0.1786	0.0021	0.20	IC
TBZV3W		0.1864	-0.0001	-0.01	0.1770	0.0005	0.04	OE
TTKL2W		0.1694	-0.0171	-1.83	0.1627	-0.0138	-1.28	WD
U9DCXT	*	0.1857	-0.0008	-0.09	0.1867	0.0101	0.94	OE
VFBEMB		0.1780	-0.0085	-0.91	0.1663	-0.0102	-0.95	OE
W6JMAH		0.1825	-0.0040	-0.43	0.1747	-0.0018	-0.17	OE
WC4MKN		0.1756	-0.0109	-1.16	0.1614	-0.0152	-1.40	OE
WHT8QP		0.2053	0.0188	2.01	0.1997	0.0231	2.14	ED
ZVJ77G		0.1800	-0.0065	-0.69	0.1683	-0.0082	-0.76	WD

Summary Statistics

Sample J09			Sample J10		
Grand Means	0.1865	Percent	0.1765	Percent	
Std Dev Btwn Labs	0.0094	Percent	0.0108	Percent	

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 29 of 31 reporting participants

Key to Method Codes Reported by Participants

AA	Spectrometry - Atomic Absorption (AAS)	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)
XR	X-Ray Fluorescence - ED or WD not specified		



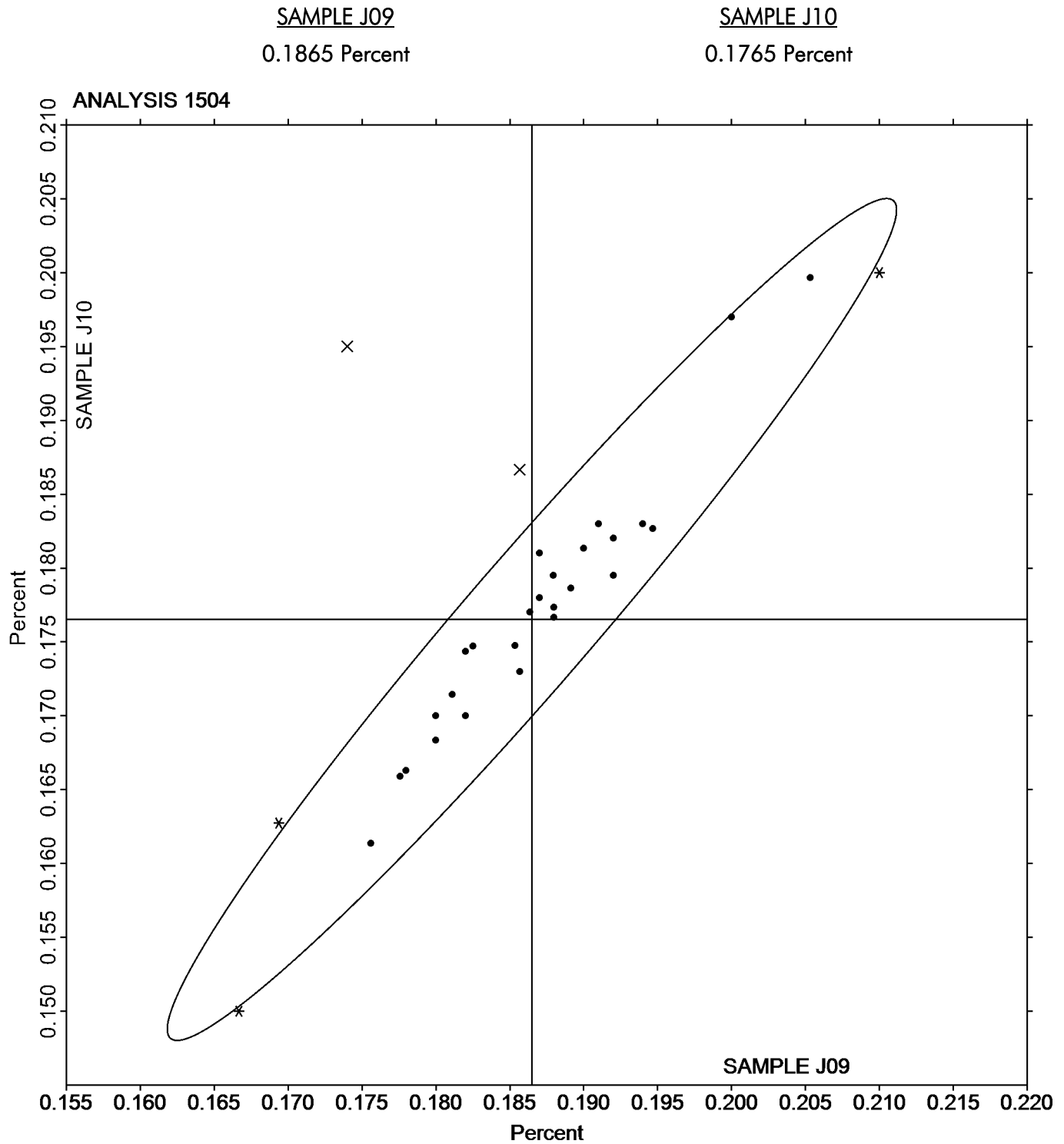
Fasteners and Metals Interlaboratory Testing Program

Analysis 1504

Nickel-based Alloy, ALUMINUM (Al)
ALUMINUM (Al)

Cycle 150

2nd Qtr
2025





Fasteners and Metals Interlaboratory Testing Program

Analysis 1505

Nickel-based Alloy, SILICON (Si)
SILICON (Si)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		0.0481	-0.0252	-1.59	0.0677	-0.0279	-1.98	IC
2WXXQC	X	0.0380	-0.0352	-2.23	0.0440	-0.0516	-3.66	OE
49EQYG		0.0769	0.0036	0.23	0.1018	0.0063	0.44	IC
66H9QG	X	0.1500	0.0768	4.86	0.1530	0.0574	4.08	OE
783FQ4	*	0.1177	0.0444	2.81	0.1373	0.0418	2.96	IC
7CF678		0.0690	-0.0042	-0.27	0.1030	0.0074	0.53	OE
8W2CYF		0.0686	-0.0047	-0.29	0.0885	-0.0070	-0.50	OE
94FHDX		0.0683	-0.0049	-0.31	0.0963	0.0008	0.05	OE
B2EHVB		0.0697	-0.0036	-0.23	0.0933	-0.0023	-0.16	XX
BCXU9A		0.0763	0.0031	0.19	0.1003	0.0048	0.34	OE
BJEKE2		0.0640	-0.0092	-0.58	0.0903	-0.0052	-0.37	OE
BTKC2A		0.0980	0.0248	1.57	0.1090	0.0134	0.95	OE
EBUN2P		0.0727	-0.0006	-0.04	0.0907	-0.0049	-0.35	WD
EMNV88		0.0687	-0.0046	-0.29	0.0910	-0.0046	-0.33	GD
FRGCX7		0.0940	0.0208	1.31	0.1133	0.0178	1.26	OE
FVEM6Y		0.0700	-0.0032	-0.20	0.1000	0.0044	0.31	XX
G398QR	X	0.1600	0.0868	5.49	0.1800	0.0844	5.99	OE
HBEHA3		0.0837	0.0104	0.66	0.1043	0.0088	0.62	WD
HK9GAN		0.0693	-0.0039	-0.25	0.0910	-0.0046	-0.33	OE
KLYCT3		0.0483	-0.0249	-1.58	0.0760	-0.0196	-1.39	OE
MCZQBT		0.0717	-0.0016	-0.10	0.1047	0.0091	0.65	WD
MQZDXN		0.0495	-0.0237	-1.50	0.0735	-0.0221	-1.57	GD
QVX97D		0.0743	0.0011	0.07	0.0940	-0.0016	-0.11	OE
RYJ6FP		0.0697	-0.0036	-0.23	0.0917	-0.0039	-0.28	IC
T7T6ZQ		0.0720	-0.0012	-0.08	0.0943	-0.0012	-0.09	WD
TBZV3W		0.0613	-0.0119	-0.75	0.0849	-0.0107	-0.76	OE
TTKL2W		0.0688	-0.0045	-0.28	0.0812	-0.0144	-1.02	WD
U9DCXT		0.0718	-0.0014	-0.09	0.0949	-0.0006	-0.05	OE
VFBEMB		0.0685	-0.0047	-0.30	0.0919	-0.0037	-0.26	WD
W6JMAH		0.0711	-0.0021	-0.13	0.0903	-0.0053	-0.37	OE
WC4MKN		0.0609	-0.0123	-0.78	0.0840	-0.0116	-0.82	WD
WHT8QP	*	0.0810	0.0078	0.49	0.0810	-0.0146	-1.04	ED
ZT6EAM		0.1140	0.0408	2.58	0.1247	0.0291	2.06	IC
ZVJ77G		0.0800	0.0068	0.43	0.1033	0.0078	0.55	WD

Summary Statistics

Sample J09			Sample J10		
Grand Means	0.0732	Percent	0.0956	Percent	
Std Dev Btwn Labs	0.0158	Percent	0.0141	Percent	

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 30 of 34 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1505

Nickel-based Alloy, SILICON (Si)
SILICON (Si)

Cycle 150

2nd Qtr
2025

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)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1505

2WXXQC (X) - Data for sample J10 are low.

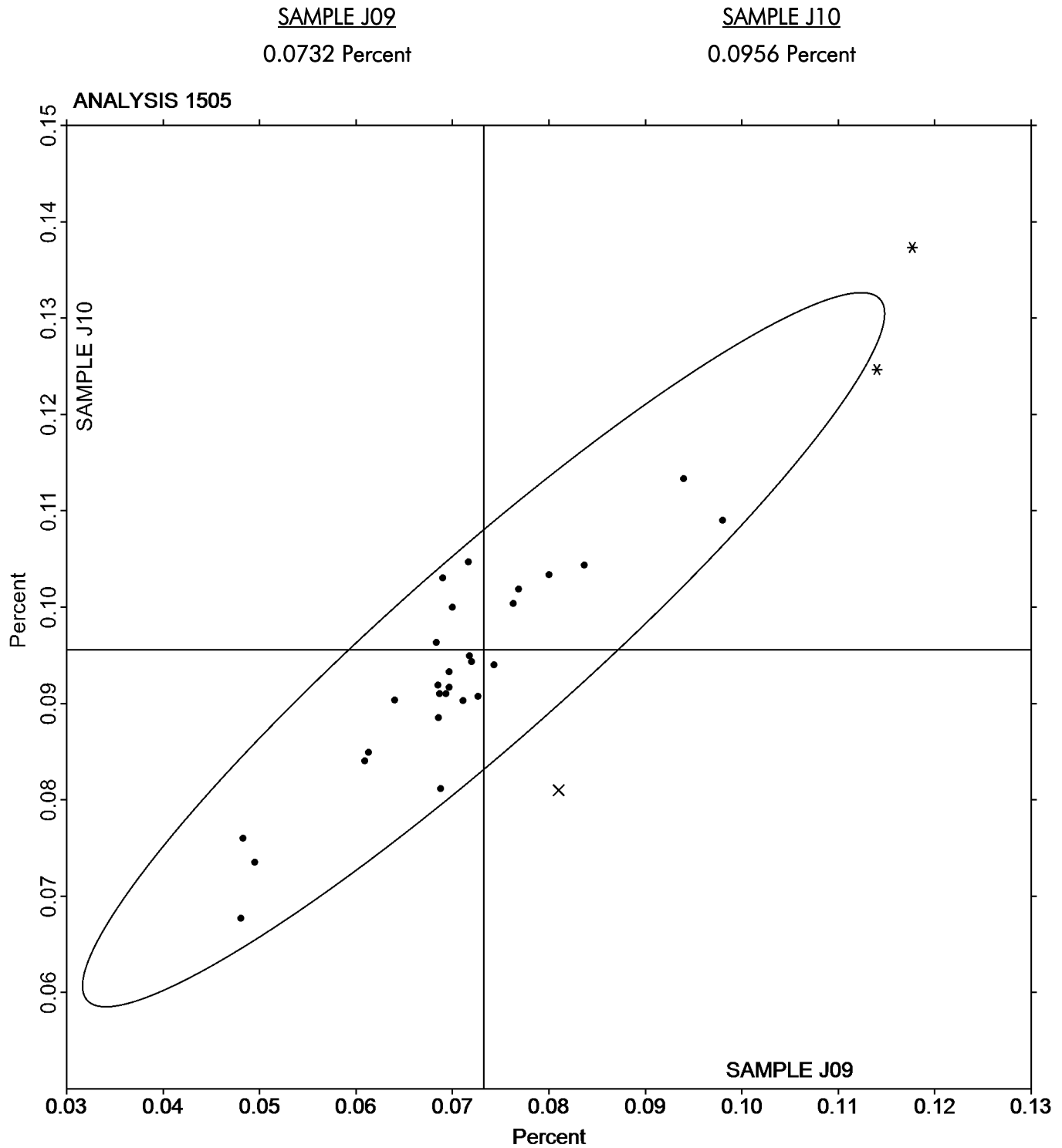
66H9QG (X) - Data for both samples are high. Possible Systematic Error.

G398QR (X) - Data for both samples are high. Possible Systematic Error.



Analysis 1505

Nickel-based Alloy, SILICON (Si)
SILICON (Si)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1506

Nickel-based Alloy, NIOBIUM (Nb)
NIOBIUM (Nb)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		3.562	0.011	0.21	3.533	-0.007	-0.15	IC
66H9QG		3.547	-0.004	-0.09	3.580	0.040	0.86	WD
783FQ4		3.543	-0.008	-0.16	3.533	-0.006	-0.14	IC
7CF678		3.556	0.005	0.10	3.539	-0.001	-0.02	OE
8W2CYF		3.520	-0.031	-0.63	3.533	-0.006	-0.14	OE
94FHDY		3.612	0.061	1.24	3.583	0.043	0.92	OE
B2EHVB		3.530	-0.021	-0.43	3.526	-0.014	-0.29	IC
BCXU9A		3.540	-0.011	-0.22	3.541	0.001	0.02	OE
BJEKE2		3.518	-0.033	-0.68	3.531	-0.008	-0.18	OE
BTKE2A		3.510	-0.041	-0.83	3.560	0.020	0.43	OE
EBUN2P		3.537	-0.014	-0.28	3.515	-0.025	-0.53	WD
EMNV88		3.653	0.102	2.07	3.663	0.124	2.64	GD
FRGCX7		3.593	0.042	0.86	3.553	0.014	0.29	XX
FVEM6Y		3.593	0.042	0.86	3.570	0.030	0.65	XR
G398QR		3.487	-0.064	-1.30	3.487	-0.053	-1.13	OE
HBEHA3		3.603	0.052	1.06	3.577	0.037	0.79	WD
HK9GAN		3.569	0.018	0.37	3.545	0.005	0.11	XR
KLYCT3		3.563	0.012	0.24	3.558	0.018	0.39	OE
MCZQBT		3.475	-0.076	-1.55	3.432	-0.108	-2.30	WD
MQZDXN	X	3.310	-0.241	-4.89	3.340	-0.200	-4.26	GD
QVX97D		3.550	-0.001	-0.02	3.537	-0.003	-0.07	OE
RYJ6FP		3.542	-0.009	-0.19	3.533	-0.006	-0.14	IC
T7T6ZQ		3.555	0.004	0.09	3.539	-0.001	-0.01	WD
TBZV3W		3.542	-0.009	-0.19	3.506	-0.033	-0.71	WD
TTKL2W		3.491	-0.060	-1.21	3.486	-0.054	-1.14	WD
U9DCXT	X	3.800	0.249	5.05	3.587	0.047	1.00	OE
VFBEMB		3.556	0.005	0.09	3.535	-0.004	-0.09	WD
W6JMAH		3.593	0.042	0.85	3.571	0.031	0.67	OE
WC4MKN		3.578	0.027	0.55	3.558	0.018	0.39	WD
WHT8QP	*	3.418	-0.133	-2.70	3.420	-0.119	-2.55	ED
ZVJ77G		3.643	0.092	1.87	3.607	0.067	1.43	WD

Summary Statistics

Sample J09				Sample J10	
Grand Means	3.551	Percent		3.540	Percent
Std Dev Btwn Labs	0.049	Percent		0.047	Percent

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 29 of 31 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)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		



Comments on Assigned Data Flags for Test #1506

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

U9DCXT (X) - Data for sample J09 are high.



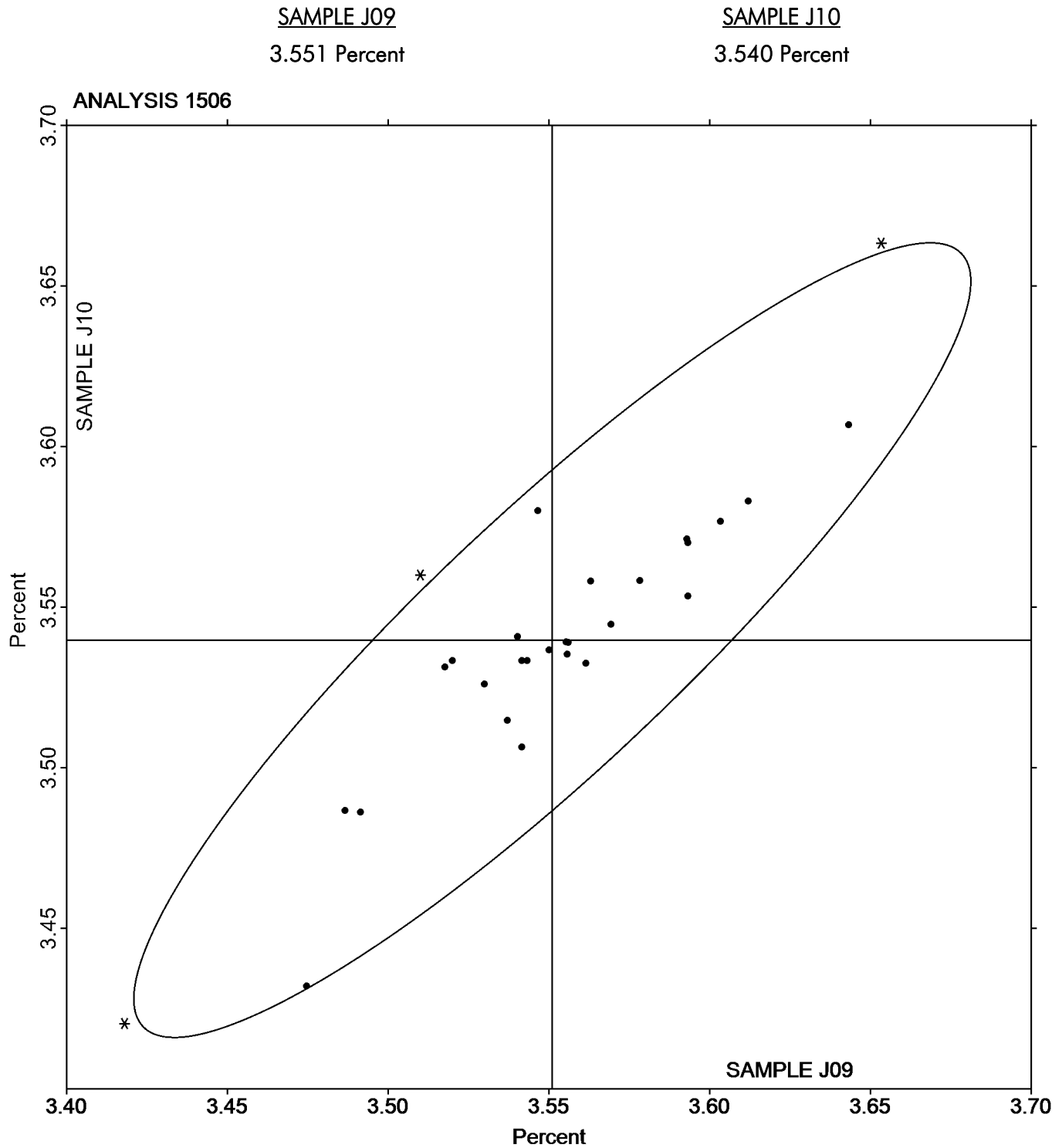
Analysis 1506

2nd Qtr

Nickel-based Alloy, NIOBIUM (Nb)

2025

NIOBIUM (Nb)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1507

Nickel-based Alloy, TITANIUM (Ti)
TITANIUM (Ti)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		0.2469	-0.0053	-0.44	0.2419	-0.0058	-0.51	IC
49EQYG		0.2589	0.0066	0.54	0.2525	0.0048	0.42	IC
66H9QG	*	0.2867	0.0344	2.84	0.2763	0.0286	2.52	OE
783FQ4		0.2540	0.0017	0.14	0.2490	0.0013	0.11	IC
7CF678		0.2490	-0.0033	-0.27	0.2450	-0.0027	-0.24	OE
8W2CYF		0.2590	0.0067	0.55	0.2557	0.0079	0.70	OE
94FHDX		0.2733	0.0211	1.74	0.2680	0.0203	1.79	OE
B2EHVB		0.2537	0.0014	0.12	0.2503	0.0026	0.23	IC
BCXU9A		0.2310	-0.0212	-1.75	0.2274	-0.0204	-1.80	OE
BJEKE2		0.2517	-0.0006	-0.05	0.2493	0.0016	0.14	OE
BTKC2A		0.2550	0.0027	0.22	0.2490	0.0013	0.11	OE
EBUN2P		0.2499	-0.0024	-0.20	0.2461	-0.0016	-0.14	WD
EMNV88	X	0.3733	0.1211	9.98	0.3700	0.1223	10.79	GD
FRGCX7		0.2507	-0.0016	-0.13	0.2470	-0.0007	-0.06	OE
FVEM6Y		0.2533	0.0011	0.09	0.2500	0.0023	0.20	XX
G398QR		0.2400	-0.0123	-1.01	0.2400	-0.0077	-0.68	OE
HBEHA3		0.2667	0.0144	1.19	0.2617	0.0139	1.23	WD
HK9GAN		0.2383	-0.0139	-1.15	0.2340	-0.0137	-1.21	XR
KLYCT3		0.2500	-0.0023	-0.19	0.2460	-0.0017	-0.15	OE
MCZQBT		0.2563	0.0041	0.33	0.2483	0.0006	0.05	WD
MQZDXN	X	0.2058	-0.0465	-3.83	0.1986	-0.0491	-4.34	GD
QVX97D		0.2600	0.0077	0.64	0.2500	0.0023	0.20	OE
RYJ6FP		0.2467	-0.0056	-0.46	0.2453	-0.0024	-0.21	IC
T7T6ZQ		0.2623	0.0100	0.83	0.2589	0.0112	0.99	WD
TBZV3W		0.2644	0.0121	1.00	0.2611	0.0133	1.18	WD
TTKL2W		0.2464	-0.0058	-0.48	0.2417	-0.0060	-0.53	WD
U9DCXT		0.2527	0.0004	0.03	0.2490	0.0013	0.11	OE
VFBEMB		0.2461	-0.0062	-0.51	0.2413	-0.0064	-0.56	WD
W6JMAH		0.2548	0.0026	0.21	0.2502	0.0025	0.22	OE
WC4MKN		0.2613	0.0090	0.74	0.2564	0.0087	0.77	WD
WHT8QP		0.2263	-0.0259	-2.14	0.2210	-0.0267	-2.36	ED
ZT6EAM		0.2390	-0.0133	-1.09	0.2367	-0.0111	-0.98	IC
ZVJ77G		0.2360	-0.0163	-1.34	0.2303	-0.0174	-1.54	WD

Summary Statistics

	Sample J09		Sample J10	
Grand Means	0.2523	Percent	0.2477	Percent
Std Dev Btwn Labs	0.0121	Percent	0.0113	Percent

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 31 of 33 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1507

Nickel-based Alloy, TITANIUM (Ti)
TITANIUM (Ti)

Cycle 150

2nd Qtr
2025

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)	XR	X-Ray Fluorescence - ED or WD not specified
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1507

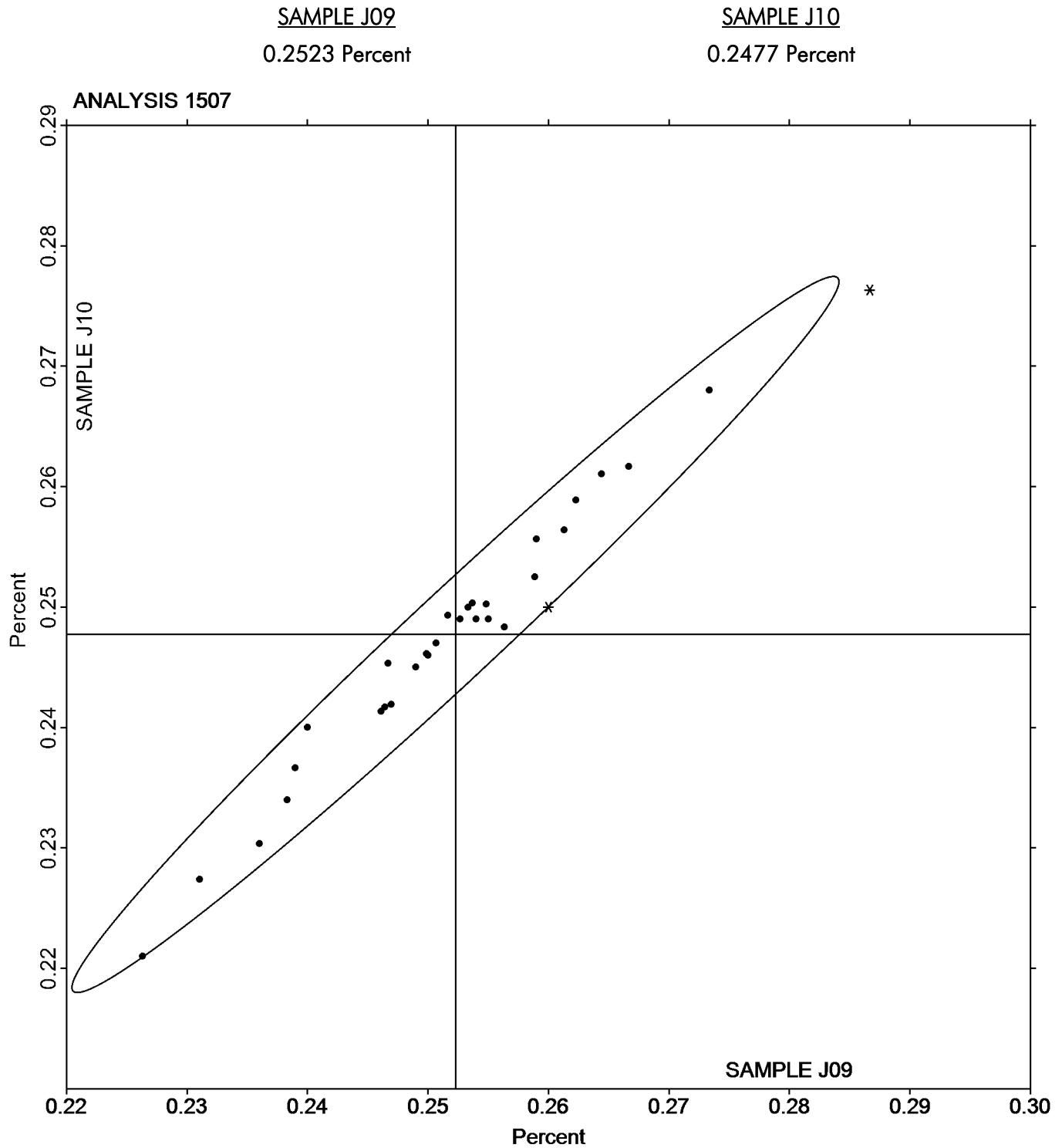
EMNV88 (X) - Data for both samples are high. Possible Systematic Error.

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



Analysis 1507

Nickel-based Alloy, TITANIUM (Ti)
TITANIUM (Ti)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1508

Nickel-based Alloy, COBALT (Co)
COBALT (Co)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		0.0623	-0.0053	-0.41	0.0644	-0.0061	-0.47	IC
49EQYG		0.0632	-0.0044	-0.34	0.0655	-0.0049	-0.38	IC
66H9QG		0.0713	0.0037	0.28	0.0730	0.0025	0.20	OE
783FQ4		0.0640	-0.0036	-0.28	0.0658	-0.0047	-0.36	IC
7CF678		0.0980	0.0304	2.33	0.1000	0.0295	2.29	OE
8W2CYF		0.0630	-0.0046	-0.36	0.0655	-0.0050	-0.39	OE
B2EHVB		0.0624	-0.0052	-0.40	0.0646	-0.0058	-0.45	IC
BCXU9A		0.0728	0.0052	0.40	0.0754	0.0049	0.38	OE
BJEKE2		0.0653	-0.0023	-0.18	0.0690	-0.0015	-0.11	OE
BTKC2A	X	0.2300	0.1624	12.48	0.2390	0.1685	13.05	OE
EBUN2P		0.0684	0.0008	0.06	0.0704	-0.0001	-0.01	WD
EMNV88	X	0.2940	0.2264	17.40	0.2947	0.2242	17.36	GD
FRGCX7		0.0689	0.0013	0.10	0.0708	0.0003	0.03	OE
FVEM6Y		0.0700	0.0024	0.18	0.0700	-0.0005	-0.04	XR
G398QR	*	0.1100	0.0424	3.26	0.1100	0.0395	3.06	OE
HBEHA3		0.0660	-0.0016	-0.13	0.0680	-0.0025	-0.19	WD
HK9GAN		0.0623	-0.0053	-0.41	0.0644	-0.0060	-0.47	XR
KLYCT3		0.0720	0.0044	0.33	0.0750	0.0045	0.35	OE
MCZQBT		0.0597	-0.0080	-0.61	0.0627	-0.0078	-0.60	WD
MQZDXN		0.0886	0.0210	1.61	0.0926	0.0221	1.71	GD
QVX97D	*	0.0683	0.0007	0.05	0.0777	0.0072	0.56	OE
RYJ6FP		0.0603	-0.0073	-0.56	0.0623	-0.0081	-0.63	IC
T7T6ZQ		0.0658	-0.0019	-0.14	0.0680	-0.0024	-0.19	WD
TBZV3W		0.0655	-0.0022	-0.17	0.0675	-0.0030	-0.23	OE
TTKL2W		0.0637	-0.0039	-0.30	0.0656	-0.0049	-0.38	WD
U9DCXT		0.0619	-0.0057	-0.44	0.0702	-0.0003	-0.02	OE
VFBEMB		0.0692	0.0016	0.12	0.0714	0.0009	0.07	WD
W6JMAH		0.0661	-0.0015	-0.12	0.0683	-0.0021	-0.17	OE
WC4MKN		0.0653	-0.0024	-0.18	0.0672	-0.0033	-0.25	WD
WHT8QP	*	0.0319	-0.0357	-2.75	0.0328	-0.0377	-2.92	ED
ZT6EAM		0.0630	-0.0046	-0.36	0.0660	-0.0045	-0.35	IC
ZVJ77G		0.0600	-0.0076	-0.59	0.0700	-0.0005	-0.04	WD

Summary Statistics

	Sample J09		Sample J10	
Grand Means	0.0676	Percent	0.0705	Percent
Std Dev Btwn Labs	0.0130	Percent	0.0129	Percent

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 30 of 32 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)	XR	X-Ray Fluorescence - ED or WD not specified



Fasteners and Metals Interlaboratory Testing Program

Analysis 1508

Nickel-based Alloy, COBALT (Co)
COBALT (Co)

Cycle 150

2nd Qtr
2025

Comments on Assigned Data Flags for Test #1508

BTKC2A (X) - Data for both samples are high. Possible Systematic Error.

EMNV88 (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample J10.



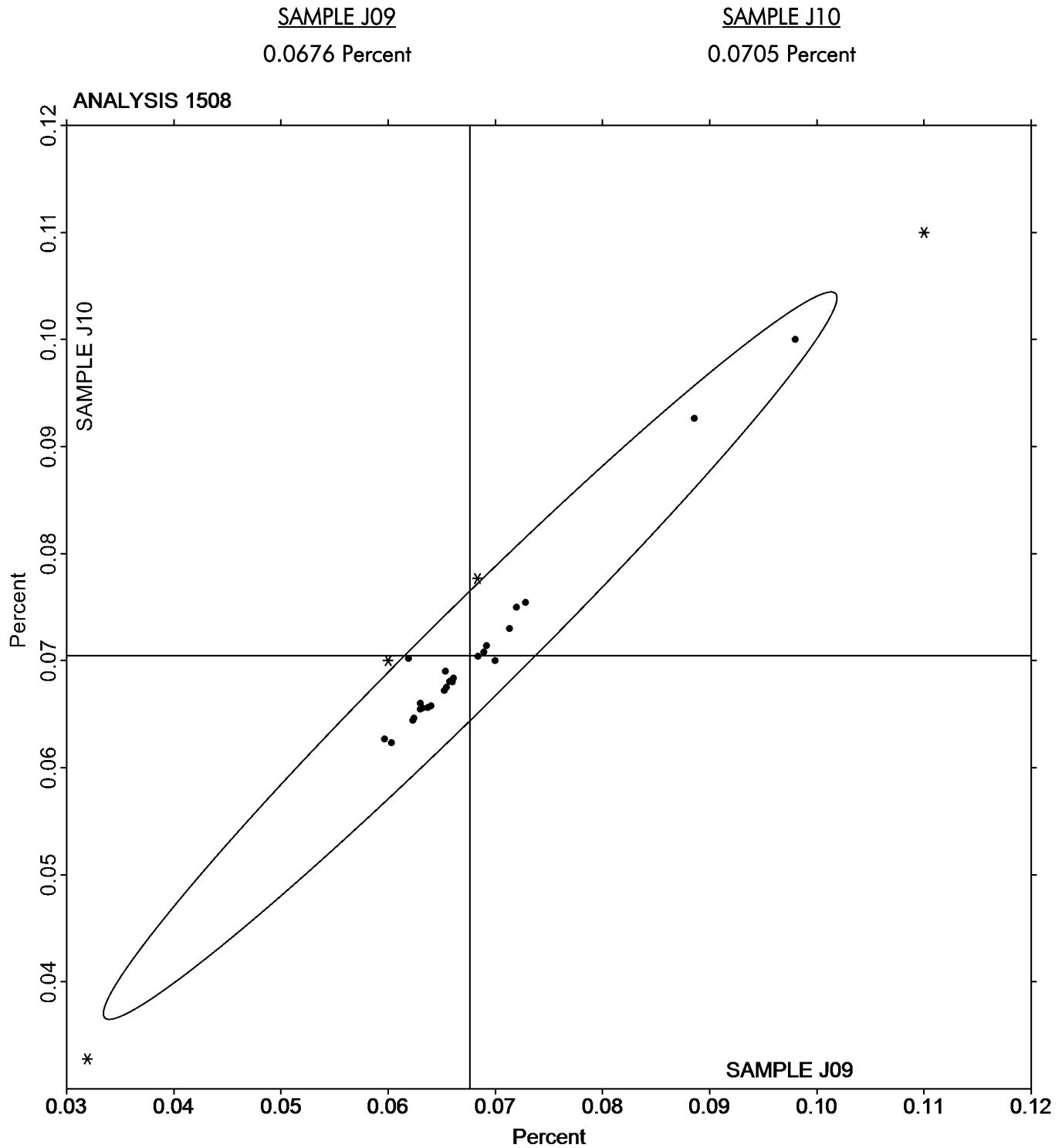
Fasteners and Metals Interlaboratory Testing Program

Analysis 1508

Nickel-based Alloy, COBALT (Co)
COBALT (Co)

Cycle 150

2nd Qtr
2025





Fasteners and Metals Interlaboratory Testing Program

Analysis 1509

Nickel-based Alloy, NICKEL (Ni)
NICKEL (Ni)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample J09			Sample J10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2M94KG		59.81	-0.87	-2.02	60.00	-0.82	-1.93	IC
2WXXQC		60.67	0.00	0.00	60.95	0.13	0.31	OE
49EQYG		60.48	-0.20	-0.46	60.80	-0.02	-0.05	IC
66H9QG		59.75	-0.93	-2.16	59.81	-1.01	-2.38	WD
783FQ4		60.65	-0.02	-0.05	60.68	-0.14	-0.34	IC
7CF678		60.68	0.00	0.01	60.78	-0.04	-0.09	OE
8W2CYF		60.85	0.17	0.41	60.93	0.11	0.26	OE
94FHDH		60.72	0.05	0.11	60.93	0.11	0.25	OE
B2EHVB		60.47	-0.21	-0.48	60.67	-0.15	-0.37	VO
BCXU9A		61.04	0.36	0.85	60.96	0.14	0.33	OE
BJEKE2		60.69	0.01	0.03	60.69	-0.13	-0.31	OE
BTKC2A		60.50	-0.18	-0.41	60.50	-0.32	-0.75	OE
EBUN2P		60.71	0.04	0.08	60.83	0.01	0.03	WD
EMNV88		60.10	-0.58	-1.34	60.23	-0.59	-1.38	GD
FRGCX7		60.37	-0.31	-0.72	60.60	-0.22	-0.52	OE
FVEM6Y	*	61.83	1.15	2.69	62.01	1.19	2.81	XR
G398QR	X	58.83	-1.84	-4.30	58.90	-1.92	-4.52	OE
HBEHA3		60.76	0.08	0.19	60.93	0.11	0.25	WD
HK9GAN		60.91	0.23	0.54	61.04	0.22	0.52	XR
KLYCT3		60.75	0.07	0.17	60.83	0.01	0.02	OE
MCZQBT		61.03	0.36	0.83	61.17	0.35	0.83	BD
MQZDXN		61.21	0.54	1.25	61.26	0.44	1.05	GD
QVX97D		60.37	-0.31	-0.72	60.63	-0.19	-0.44	OE
T7T6ZQ		60.78	0.11	0.25	60.98	0.16	0.38	BD
TBZV3W		60.80	0.12	0.28	60.90	0.08	0.19	WD
TTKL2W		60.48	-0.20	-0.46	60.60	-0.22	-0.52	WD
U9DCXT		60.40	-0.28	-0.64	60.87	0.05	0.11	OE
WC4MKN		61.18	0.51	1.18	61.33	0.51	1.21	WD
WHT8QP		61.30	0.62	1.46	61.44	0.62	1.46	ED
ZVJ77G		60.31	-0.37	-0.86	60.42	-0.40	-0.94	WD

Summary Statistics

Sample J09				Sample J10	
Grand Means	60.68	Percent		60.82	Percent
Std Dev Btwn Labs	0.43	Percent		0.42	Percent

Samples J09, J10 : Alloy 625, Alloy 625

Statistics based on 29 of 30 reporting participants

Key to Method Codes Reported by Participants

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



Fasteners and Metals Interlaboratory Testing Program

Analysis 1509

Nickel-based Alloy, NICKEL (Ni)
NICKEL (Ni)

Cycle 150

2nd Qtr
2025

Comments on Assigned Data Flags for Test #1509

G398QR (X) - Data for both samples are low. Possible Systematic Error.



Analysis 1509

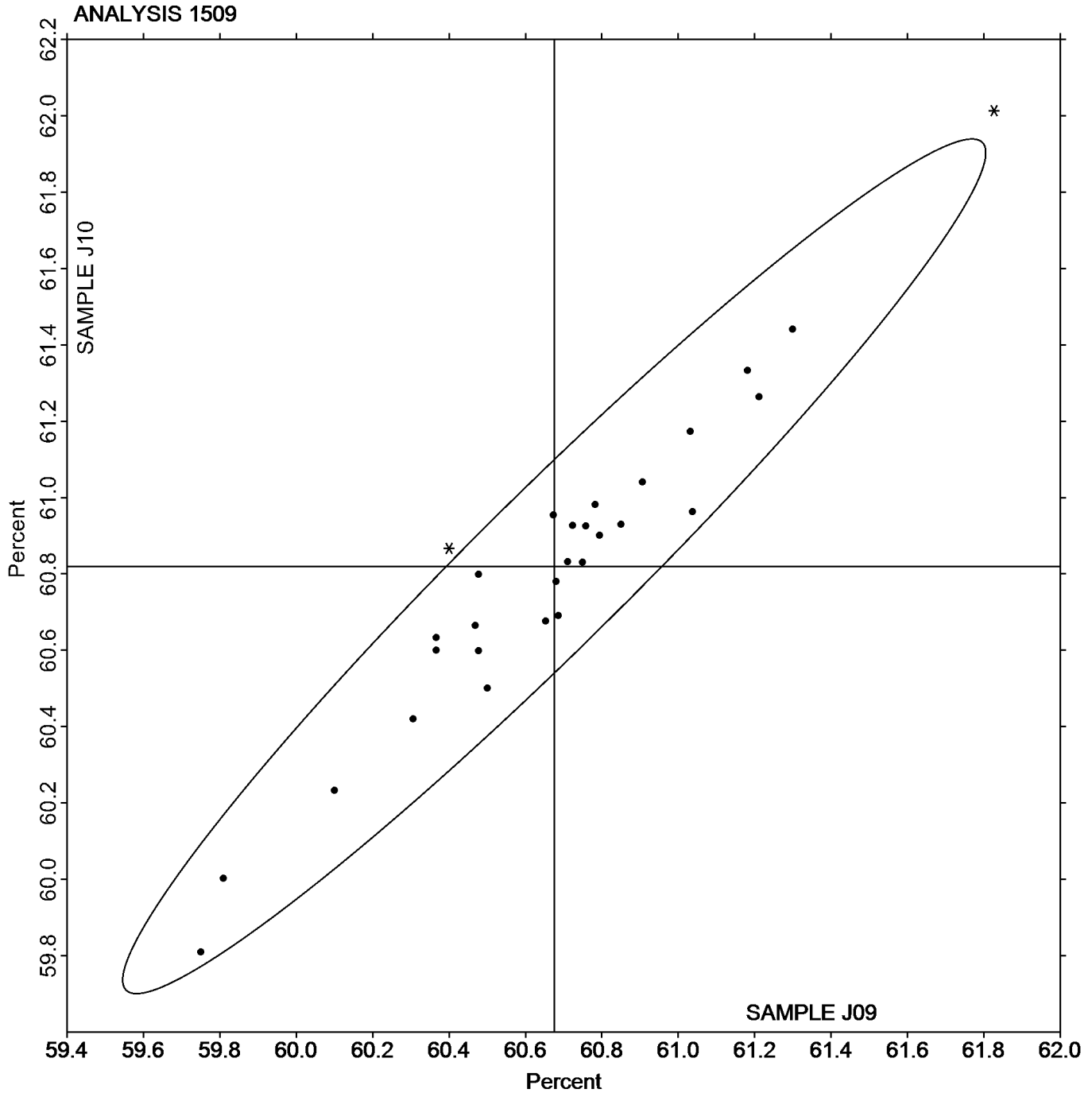
Nickel-based Alloy, NICKEL (Ni)
NICKEL (Ni)

SAMPLE J09

60.68 Percent

SAMPLE J10

60.82 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1540

Aluminum, ZINC (Zn)
ZINC (Zn)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.1044	0.0036	0.38	0.1053	0.0036	0.38	OE
2GKL6J		0.1040	0.0032	0.34	0.1050	0.0033	0.34	OE
334RL8		0.1017	0.0008	0.09	0.1040	0.0023	0.24	OE
33ERBL		0.0962	-0.0047	-0.49	0.0964	-0.0053	-0.55	OE
3BNGNK		0.1000	-0.0008	-0.09	0.1000	-0.0017	-0.18	OE
4TMRA3		0.1030	0.0022	0.23	0.1040	0.0023	0.24	OE
6DRUKD		0.0963	-0.0045	-0.48	0.0980	-0.0037	-0.39	OE
6Z4PDF		0.1027	0.0019	0.20	0.1037	0.0020	0.21	XX
8W2CYF		0.0874	-0.0135	-1.43	0.0870	-0.0147	-1.53	OE
8WBCRF	*	0.0803	-0.0205	-2.17	0.0837	-0.0181	-1.88	IC
AAH9VU		0.1022	0.0014	0.15	0.1041	0.0023	0.24	OE
AKXXUY	*	0.1293	0.0285	3.02	0.1300	0.0283	2.94	XX
BJEKE2		0.1070	0.0062	0.65	0.1117	0.0099	1.03	IC
BTKC2A		0.1017	0.0008	0.09	0.1030	0.0013	0.13	OE
EMNV88		0.0807	-0.0202	-2.13	0.0807	-0.0211	-2.19	GD
FDVVZ9		0.0970	-0.0038	-0.41	0.0974	-0.0044	-0.45	OE
FLAP63	X	0.1097	0.0088	0.94	0.1020	0.0003	0.03	OE
G3DJC3		0.1061	0.0053	0.56	0.1067	0.0050	0.52	OE
GQGGAU		0.0999	-0.0009	-0.10	0.1007	-0.0011	-0.11	OE
K2JCBL		0.1040	0.0032	0.34	0.1050	0.0033	0.34	OE
KEAZPT		0.1037	0.0028	0.30	0.1057	0.0039	0.41	OE
KLYCT3		0.1020	0.0012	0.12	0.1020	0.0003	0.03	OE
LY82Q2		0.1138	0.0129	1.37	0.1168	0.0151	1.56	OE
M7B26X		0.1083	0.0075	0.80	0.1090	0.0073	0.76	OE
PUR9N2		0.1030	0.0022	0.23	0.1023	0.0006	0.06	OE
RQJWKW		0.1062	0.0054	0.57	0.1066	0.0049	0.51	OE
RYZLBH		0.0983	-0.0025	-0.27	0.0988	-0.0030	-0.31	OE
T79LYQ		0.1100	0.0092	0.97	0.1100	0.0083	0.86	OE
TZ6FL9		0.0993	-0.0015	-0.16	0.1000	-0.0017	-0.18	XX
VT27CL		0.1027	0.0018	0.20	0.1020	0.0003	0.03	OE
W6JMAH		0.1046	0.0037	0.40	0.1067	0.0050	0.52	OE
W9M4WD		0.0783	-0.0225	-2.38	0.0787	-0.0231	-2.39	OE
X7ZRVM		0.1020	0.0012	0.12	0.1010	-0.0007	-0.07	XX
XYRKYQ		0.0993	-0.0015	-0.16	0.0990	-0.0027	-0.28	OE
YXYYU7		0.0927	-0.0082	-0.86	0.0937	-0.0081	-0.84	OE

Summary Statistics

	Sample A09		Sample A10	
Grand Means	0.1008	Percent	0.1017	Percent
Std Dev Btwn Labs	0.0094	Percent	0.0096	Percent

Samples A09, A10 : AA6026, AA6026

Statistics based on 34 of 35 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1540

Aluminum, ZINC (Zn)
ZINC (Zn)

Cycle 150

2nd Qtr
2025

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1540

FLAP63 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample A09.

Analysis 1540

Aluminum, ZINC (Zn)
ZINC (Zn)

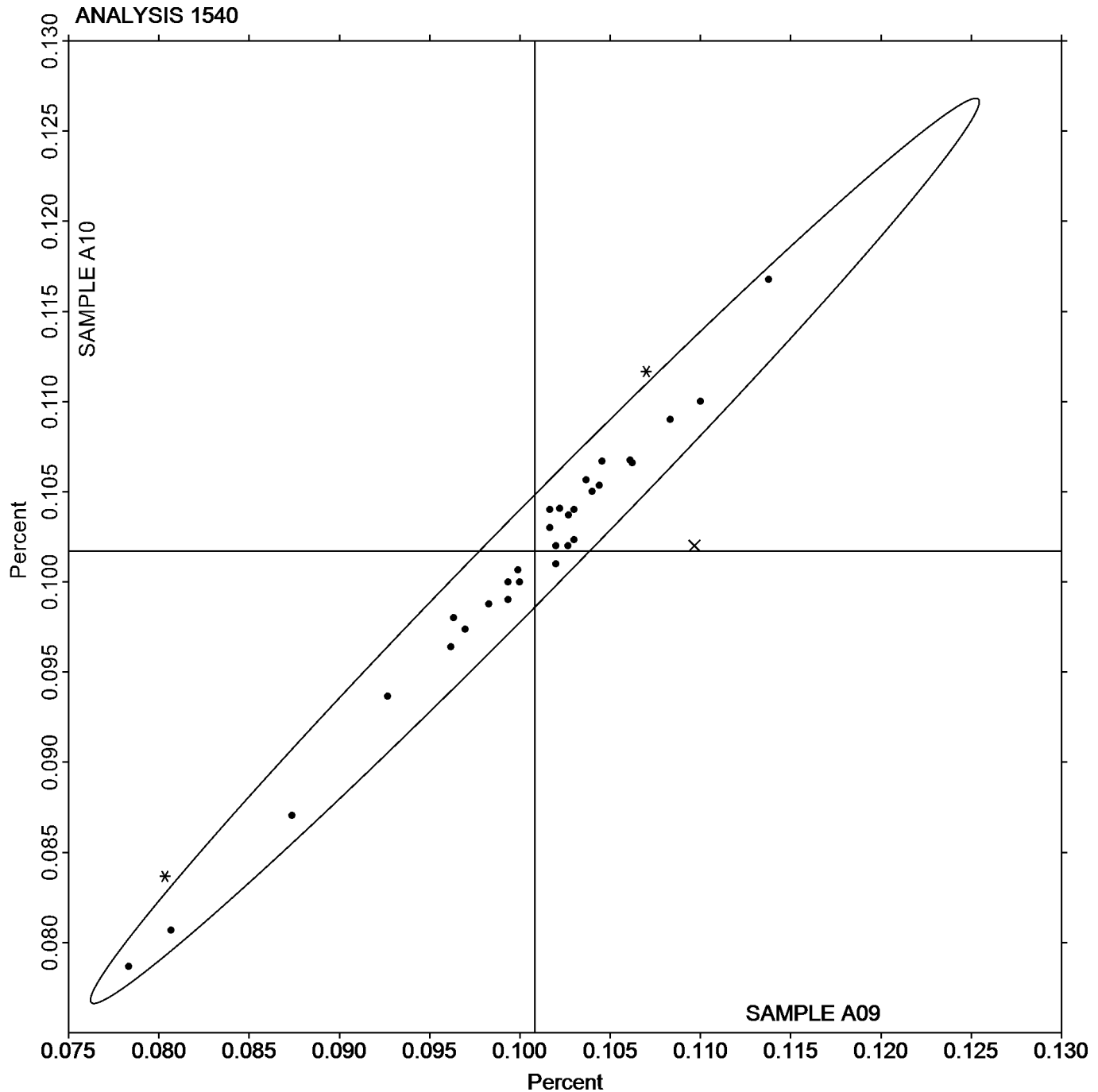
**2nd Qtr
2025**

SAMPLE A09

0.1008 Percent

SAMPLE A10

0.1017 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1541

Aluminum, COPPER (Cu)
COPPER (Cu)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.4770	-0.0006	-0.03	0.4500	0.0027	0.13	OE
2GKL6J		0.4773	-0.0003	-0.01	0.4460	-0.0012	-0.06	OE
334RL8	*	0.4797	0.0020	0.09	0.4647	0.0174	0.80	OE
33ERBL		0.5022	0.0245	1.05	0.4743	0.0270	1.24	OE
3BNGNK	X	0.0988	-0.3788	-16.28	0.0994	-0.3478	-15.90	OE
4TMRA3		0.4860	0.0084	0.36	0.4550	0.0078	0.36	OE
6DRUKD		0.4770	-0.0006	-0.03	0.4493	0.0021	0.10	OE
6Z4PDF		0.5178	0.0401	1.72	0.4857	0.0384	1.76	XX
8W2CYF		0.4870	0.0094	0.40	0.4533	0.0061	0.28	OE
8WBCRF		0.5017	0.0240	1.03	0.4683	0.0211	0.96	IC
AAH9VU	*	0.4064	-0.0712	-3.06	0.3840	-0.0633	-2.89	OE
AKXXUY		0.4730	-0.0046	-0.20	0.4440	-0.0032	-0.15	XX
BJEKE2		0.4540	-0.0236	-1.02	0.4190	-0.0282	-1.29	IC
BTKC2A	X	0.4600	-0.0176	-0.76	0.4500	0.0028	0.13	OE
EMNV88		0.4903	0.0127	0.54	0.4600	0.0128	0.58	GD
FDVVZ9		0.4901	0.0124	0.53	0.4581	0.0109	0.50	OE
FLAP63		0.5123	0.0347	1.49	0.4760	0.0288	1.32	OE
G3DJC3		0.5016	0.0240	1.03	0.4674	0.0201	0.92	OE
GQGGAU		0.4937	0.0160	0.69	0.4590	0.0118	0.54	OE
K2JCBL		0.4880	0.0104	0.44	0.4590	0.0118	0.54	OE
KEAZPT		0.4713	-0.0063	-0.27	0.4460	-0.0012	-0.06	OE
KLYCT3	*	0.5100	0.0324	1.39	0.4470	-0.0002	-0.01	OE
LY82Q2		0.4756	-0.0020	-0.09	0.4468	-0.0004	-0.02	OE
M7B26X		0.4493	-0.0283	-1.22	0.4233	-0.0239	-1.09	OE
PUR9N2		0.4650	-0.0126	-0.54	0.4287	-0.0186	-0.85	OE
RQJWKW		0.4875	0.0098	0.42	0.4571	0.0099	0.45	OE
RYZLBH		0.4567	-0.0210	-0.90	0.4263	-0.0209	-0.96	OE
T79LYQ		0.4310	-0.0466	-2.00	0.4023	-0.0449	-2.05	OE
TZ6FL9		0.4627	-0.0150	-0.64	0.4317	-0.0156	-0.71	XX
VT27CL		0.4897	0.0120	0.52	0.4593	0.0121	0.55	OE
W6JMAH		0.4794	0.0018	0.08	0.4565	0.0093	0.43	OE
W9M4WD		0.4870	0.0094	0.40	0.4530	0.0058	0.26	OE
X7ZRVM		0.4827	0.0050	0.22	0.4527	0.0054	0.25	XX
XYRKYQ		0.4563	-0.0213	-0.92	0.4247	-0.0226	-1.03	OE
YXYYU7	X	0.5430	0.0654	2.81	0.4613	0.0141	0.64	OE

Summary Statistics

	Sample A09		Sample A10	
Grand Means	0.4776	Percent	0.4472	Percent
Std Dev Btwn Labs	0.0233	Percent	0.0219	Percent

Samples A09, A10 : AA6026, AA6026

Statistics based on 30 of 35 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)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1541

- 3BNGNK (X) - Data for both samples are low. Possible Systematic Error.
- BTKC2A (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- YXYU7 (X) - Data for sample A09 are high.



Analysis 1541

2nd Qtr

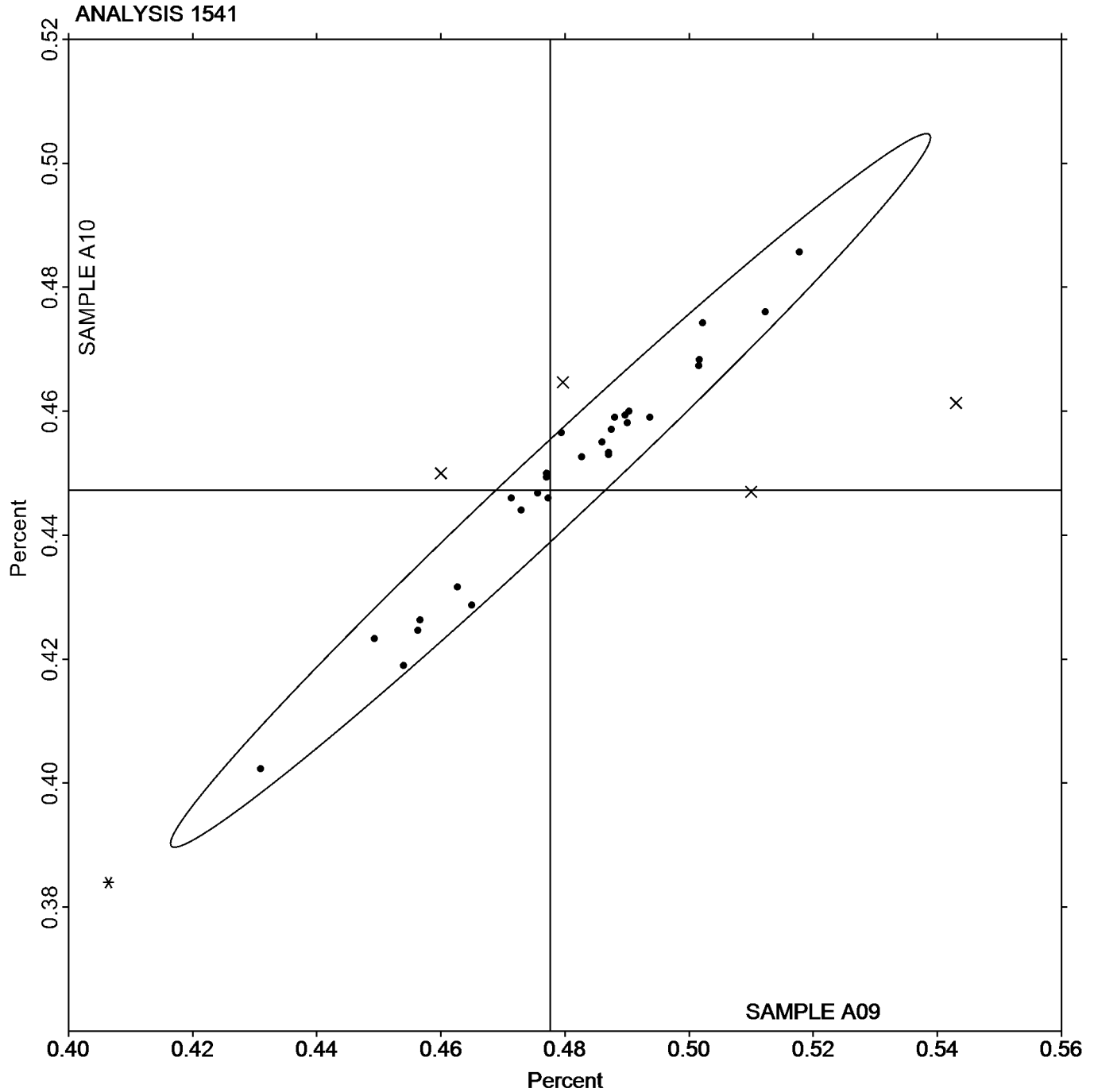
Aluminum, COPPER (Cu)

2025

COPPER (Cu)

SAMPLE A09
0.4776 Percent

SAMPLE A10
0.4472 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1542

Aluminum, IRON (Fe)
IRON (Fe)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.5556	0.0134	0.50	0.5590	0.0141	0.53	OE
2GKL6J		0.5437	0.0014	0.05	0.5483	0.0034	0.13	OE
334RL8		0.5267	-0.0156	-0.58	0.5117	-0.0332	-1.25	OE
33ERBL		0.5742	0.0319	1.19	0.5652	0.0203	0.76	OE
3BNGNK	*	0.5192	-0.0231	-0.86	0.4911	-0.0538	-2.02	OE
4TMRA3		0.5480	0.0058	0.21	0.5550	0.0101	0.38	OE
6DRUKD		0.5190	-0.0232	-0.87	0.5313	-0.0136	-0.51	OE
6Z4PDF		0.5490	0.0068	0.25	0.5529	0.0080	0.30	XX
8W2CYF		0.5270	-0.0152	-0.57	0.5333	-0.0116	-0.43	OE
8WBCRF		0.5627	0.0204	0.76	0.5507	0.0058	0.22	IC
AAH9VU	X	0.4310	-0.1113	-4.14	0.4357	-0.1092	-4.10	OE
AKXXUY		0.5413	-0.0009	-0.03	0.5510	0.0061	0.23	XX
BJEKE2		0.5220	-0.0202	-0.75	0.5277	-0.0172	-0.65	IC
BTKC2A		0.5300	-0.0122	-0.46	0.5333	-0.0116	-0.43	OE
EMNV88		0.5457	0.0034	0.13	0.5483	0.0034	0.13	GD
FDVVZ9		0.5878	0.0455	1.69	0.5754	0.0305	1.14	OE
FLAP63		0.5437	0.0014	0.05	0.5487	0.0038	0.14	OE
G3DJC3		0.5573	0.0151	0.56	0.5647	0.0198	0.74	OE
GQGGAU		0.5433	0.0011	0.04	0.5500	0.0051	0.19	OE
K2JCBL		0.5570	0.0148	0.55	0.5590	0.0141	0.53	OE
KEAZPT		0.5340	-0.0082	-0.31	0.5447	-0.0002	-0.01	OE
KLYCT3		0.5440	0.0018	0.07	0.5440	-0.0009	-0.03	OE
LY82Q2		0.5298	-0.0124	-0.46	0.5296	-0.0153	-0.57	OE
M7B26X		0.5363	-0.0059	-0.22	0.5380	-0.0069	-0.26	OE
PUR9N2		0.5150	-0.0272	-1.01	0.5213	-0.0236	-0.88	OE
RQJWKW		0.5226	-0.0196	-0.73	0.5299	-0.0150	-0.56	OE
RYZLBH	*	0.4632	-0.0790	-2.94	0.4667	-0.0782	-2.94	OE
T79LYQ		0.5087	-0.0336	-1.25	0.5107	-0.0342	-1.28	OE
TZ6FL9		0.5403	-0.0019	-0.07	0.5400	-0.0049	-0.18	XX
VT27CL		0.5213	-0.0209	-0.78	0.5227	-0.0222	-0.83	OE
W6JMAH		0.5448	0.0026	0.10	0.5550	0.0101	0.38	OE
W9M4WD		0.5727	0.0304	1.13	0.5897	0.0448	1.68	OE
X7ZRVM		0.5313	-0.0109	-0.41	0.5293	-0.0156	-0.58	XX
XYRKYQ	*	0.6180	0.0758	2.82	0.6267	0.0818	3.07	OE
YXYYU7		0.5780	0.0358	1.33	0.5680	0.0231	0.87	OE

Summary Statistics

Sample A09				Sample A10	
Grand Means	0.5422	Percent		0.5449	Percent
Std Dev Btwn Labs	0.0269	Percent		0.0266	Percent

Samples A09, A10 : AA6026, AA6026

Statistics based on 33 of 35 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Analysis 1542

Aluminum, IRON (Fe)
IRON (Fe)

Cycle 150

2nd Qtr
2025

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1542

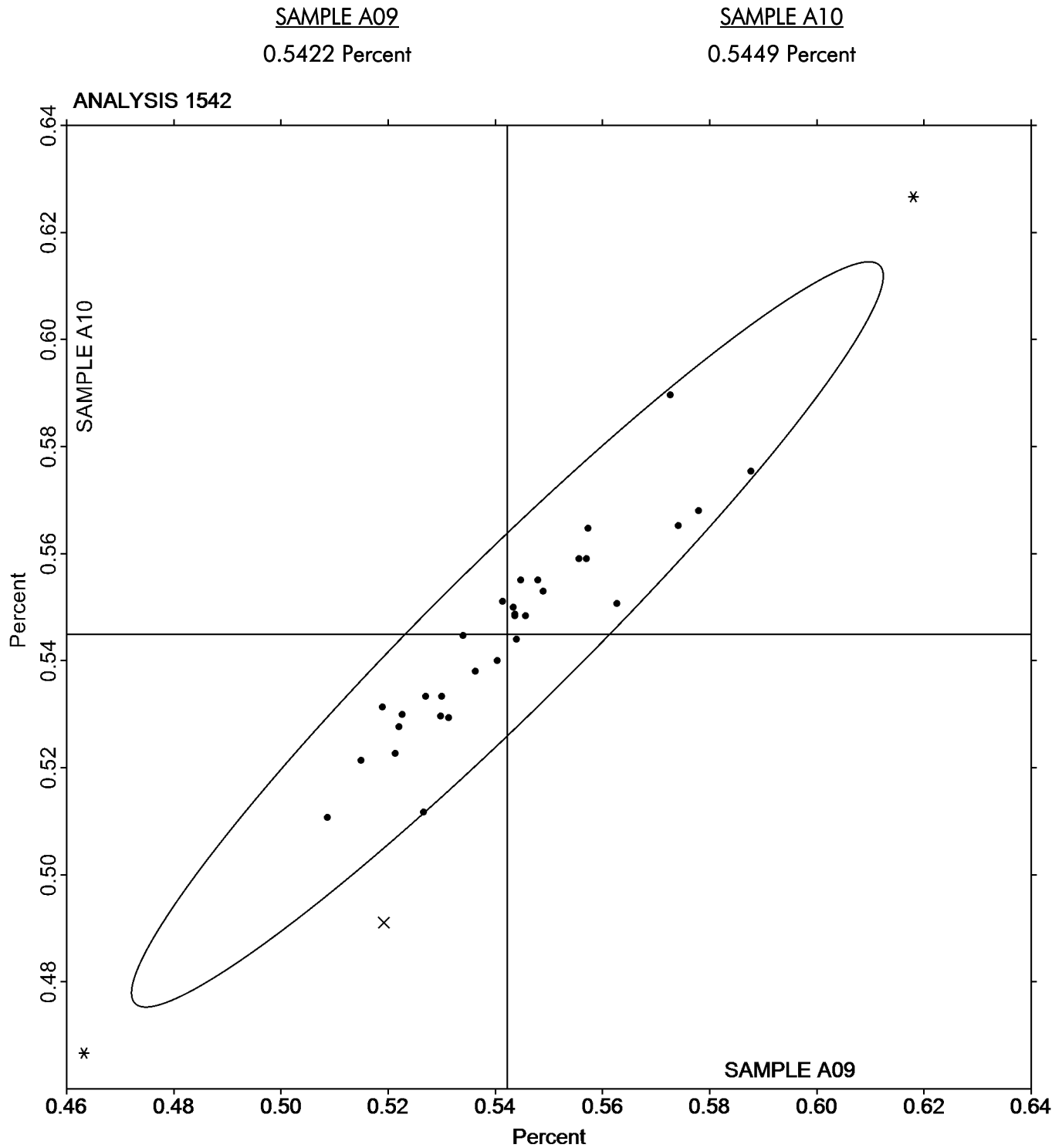
AAH9VU (X) - Data for both samples are low. Possible Systematic Error.



Analysis 1542

Aluminum, IRON (Fe)

IRON (Fe)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1543

Aluminum, SILICON (Si)
SILICON (Si)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		1.076	-0.086	-0.99	1.036	-0.081	-0.96	OE
2GKL6J		1.177	0.015	0.17	1.130	0.013	0.16	OE
334RL8		1.388	0.226	2.61	1.333	0.216	2.56	OE
33ERBL		1.221	0.059	0.68	1.163	0.047	0.55	OE
3BNGNK	X	0.5528	-0.609	-7.04	0.5543	-0.563	-6.68	OE
4TMRA3		1.173	0.011	0.12	1.132	0.015	0.18	OE
6DRUKD		1.116	-0.046	-0.54	1.093	-0.024	-0.28	OE
6Z4PDF		1.211	0.049	0.57	1.162	0.045	0.53	XX
8W2CYF		1.100	-0.062	-0.72	1.057	-0.060	-0.72	OE
8WBCRF		1.190	0.028	0.32	1.164	0.047	0.56	IC
AAH9VU		1.191	0.028	0.33	1.156	0.039	0.47	OE
AKXXUY	*	1.053	-0.109	-1.26	1.083	-0.034	-0.40	XX
BJEKE2		1.188	0.026	0.30	1.113	-0.004	-0.04	IC
BTKC2A		0.9633	-0.199	-2.30	0.9433	-0.174	-2.06	OE
EMNV88		1.140	-0.022	-0.26	1.097	-0.020	-0.24	GD
FDVVZ9		1.224	0.062	0.72	1.166	0.049	0.59	OE
FLAP63		1.147	-0.015	-0.18	1.097	-0.020	-0.24	OE
G3DJC3		1.171	0.008	0.10	1.126	0.009	0.11	OE
GQGGAU		1.110	-0.052	-0.60	1.080	-0.037	-0.44	OE
K2JCBL		1.187	0.025	0.29	1.145	0.028	0.33	OE
KEAZPT		1.188	0.026	0.30	1.155	0.038	0.45	OE
KLYCT3		1.136	-0.026	-0.30	1.106	-0.011	-0.13	OE
LY82Q2		1.214	0.052	0.60	1.175	0.058	0.69	OE
M7B26X		0.9900	-0.172	-1.99	0.9233	-0.194	-2.30	OE
PUR9N2		1.095	-0.067	-0.78	1.060	-0.057	-0.68	OE
RQJWKW		1.226	0.063	0.73	1.166	0.049	0.58	OE
RYZLBH		1.158	-0.005	-0.05	1.115	-0.002	-0.03	XX
T79LYQ	*	0.9483	-0.214	-2.47	0.8813	-0.236	-2.80	OE
TZ6FL9		1.167	0.005	0.06	1.128	0.011	0.13	XX
VT27CL		1.223	0.061	0.71	1.183	0.066	0.79	OE
W6JMAH		1.164	0.002	0.03	1.133	0.016	0.19	OE
W9M4WD	X	0.7360	-0.426	-4.93	0.7103	-0.407	-4.83	OE
X7ZRVM	*	1.280	0.118	1.36	1.190	0.073	0.87	XX
XYRKYQ		1.193	0.031	0.36	1.157	0.040	0.47	OE
YXYYU7		1.232	0.070	0.81	1.176	0.059	0.70	OE

Summary Statistics

	Sample A09		Sample A10	
Grand Means	1.162	Percent	1.117	Percent
Std Dev Btwn Labs	0.086	Percent	0.084	Percent

Samples A09, A10 : AA6026, AA6026

Statistics based on 32 of 35 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1543

2nd Qtr

Aluminum, SILICON (Si)

2025

SILICON (Si)

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1543

3BNGNK (X) - Data for both samples are low. Possible Systematic Error.

W9M4WD (X) - Data for both samples are low. Possible Systematic Error.



Analysis 1543

2nd Qtr
2025

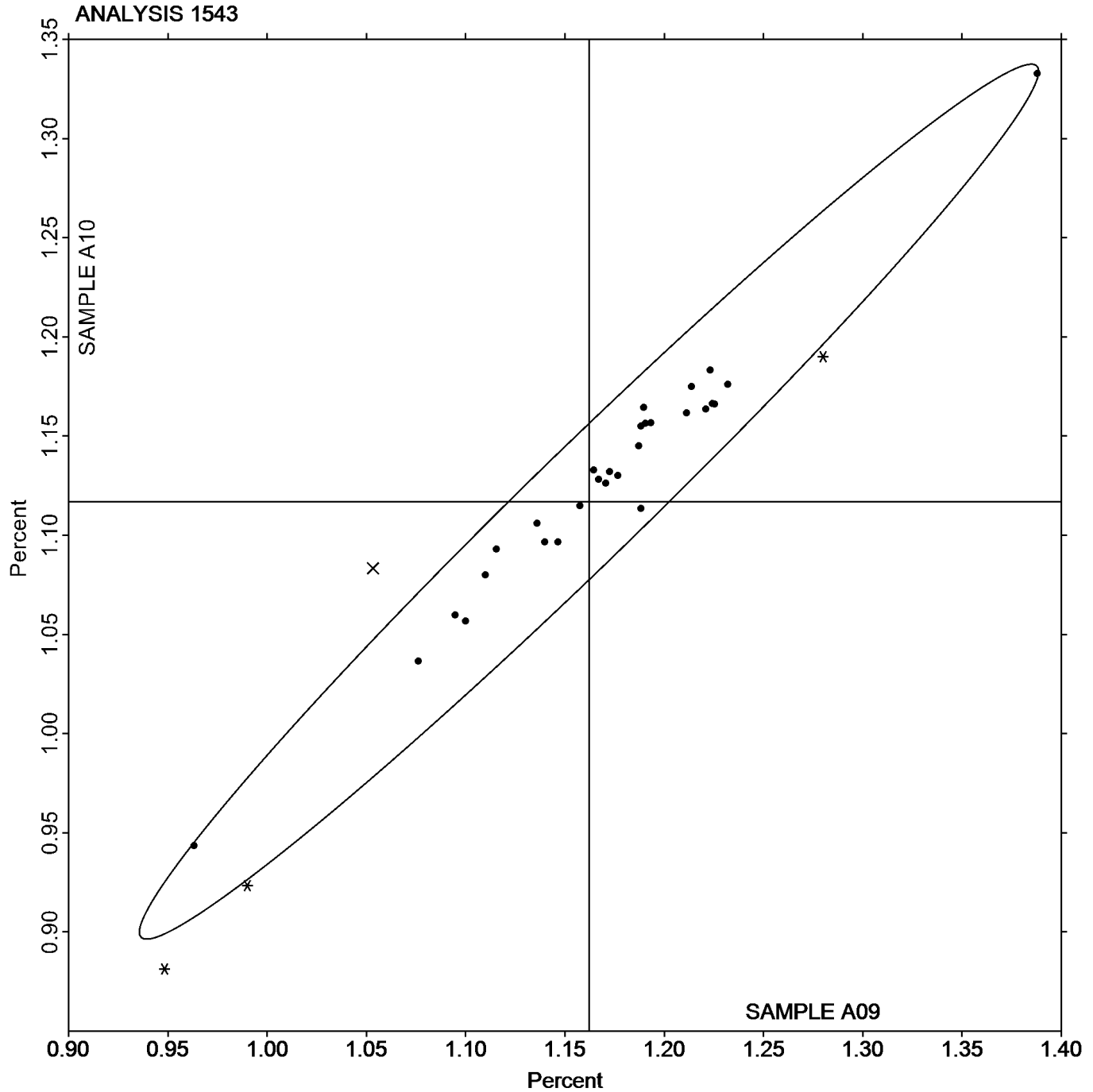
Aluminum, SILICON (Si)
SILICON (Si)

SAMPLE A09

1.162 Percent

SAMPLE A10

1.117 Percent



**Fasteners and Metals Interlaboratory Testing Program****Cycle 150****Analysis 1544****2nd Qtr****Aluminum, MANGANESE (Mn)****2025****MANGANESE (Mn)**

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.6727	0.0059	0.16	0.6762	0.0044	0.12	OE
2GKL6J		0.6647	-0.0021	-0.05	0.6727	0.0008	0.02	OE
334RL8		0.6580	-0.0087	-0.23	0.6553	-0.0165	-0.44	OE
33ERBL		0.7327	0.0659	1.73	0.7321	0.0602	1.62	OE
3BNGNK	X	0.9727	0.3060	8.03	0.9389	0.2670	7.20	OE
4TMRA3		0.6590	-0.0077	-0.20	0.6710	-0.0008	-0.02	OE
6DRUKD		0.7037	0.0369	0.97	0.6993	0.0275	0.74	OE
6Z4PDF	*	0.5421	-0.1246	-3.27	0.5514	-0.1204	-3.25	XX
8W2CYF		0.7217	0.0549	1.44	0.7290	0.0572	1.54	OE
8WBCRF		0.6850	0.0183	0.48	0.6847	0.0128	0.35	IC
AAH9VU		0.6878	0.0211	0.55	0.6941	0.0222	0.60	OE
AKXXUY		0.6410	-0.0257	-0.68	0.6413	-0.0305	-0.82	XX
BJEKE2		0.6477	-0.0191	-0.50	0.6597	-0.0122	-0.33	IC
BTKC2A		0.6533	-0.0134	-0.35	0.6633	-0.0085	-0.23	OE
EMNV88		0.7080	0.0413	1.08	0.7117	0.0398	1.07	GD
FDVVZ9		0.7177	0.0510	1.34	0.7230	0.0512	1.38	OE
FLAP63		0.6650	-0.0017	-0.05	0.6740	0.0022	0.06	OE
G3DJC3		0.6742	0.0075	0.20	0.6784	0.0065	0.18	OE
GQGGAU		0.6400	-0.0267	-0.70	0.6463	-0.0255	-0.69	OE
K2JCBL		0.6543	-0.0124	-0.33	0.6567	-0.0152	-0.41	OE
KEAZPT		0.6587	-0.0081	-0.21	0.6703	-0.0015	-0.04	OE
KLYCT3		0.6580	-0.0087	-0.23	0.6540	-0.0178	-0.48	OE
LY82Q2		0.6542	-0.0126	-0.33	0.6621	-0.0098	-0.26	OE
M7B26X		0.6217	-0.0451	-1.18	0.6280	-0.0438	-1.18	OE
PUR9N2		0.6510	-0.0157	-0.41	0.6543	-0.0175	-0.47	OE
RQJWKW		0.7325	0.0657	1.72	0.7375	0.0657	1.77	OE
RYZLBH		0.6751	0.0083	0.22	0.6810	0.0092	0.25	OE
T79LYQ		0.5997	-0.0671	-1.76	0.6053	-0.0665	-1.79	OE
TZ6FL9		0.6587	-0.0081	-0.21	0.6603	-0.0115	-0.31	XX
VT27CL		0.7140	0.0473	1.24	0.7137	0.0418	1.13	OE
W6JMAH		0.6662	-0.0005	-0.01	0.6807	0.0089	0.24	OE
W9M4WD		0.6857	0.0189	0.50	0.6957	0.0238	0.64	OE
X7ZRVM		0.6430	-0.0237	-0.62	0.6530	-0.0188	-0.51	XX
XYRKYQ	X	0.7640	0.0973	2.55	0.7857	0.1138	3.07	OE
YXYYU7		0.6553	-0.0114	-0.30	0.6543	-0.0175	-0.47	OE

Summary Statistics

	Sample A09		Sample A10	
Grand Means	0.6667	Percent	0.6718	Percent
Std Dev Btwn Labs	0.0381	Percent	0.0371	Percent

Samples A09, A10 : AA6026, AA6026

Statistics based on 33 of 35 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1544

2nd Qtr

Aluminum, MANGANESE (Mn)

2025

MANGANESE (Mn)

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1544

3BNGNK (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample A10.

XYRKYQ (X) - Data for sample A10 are high.



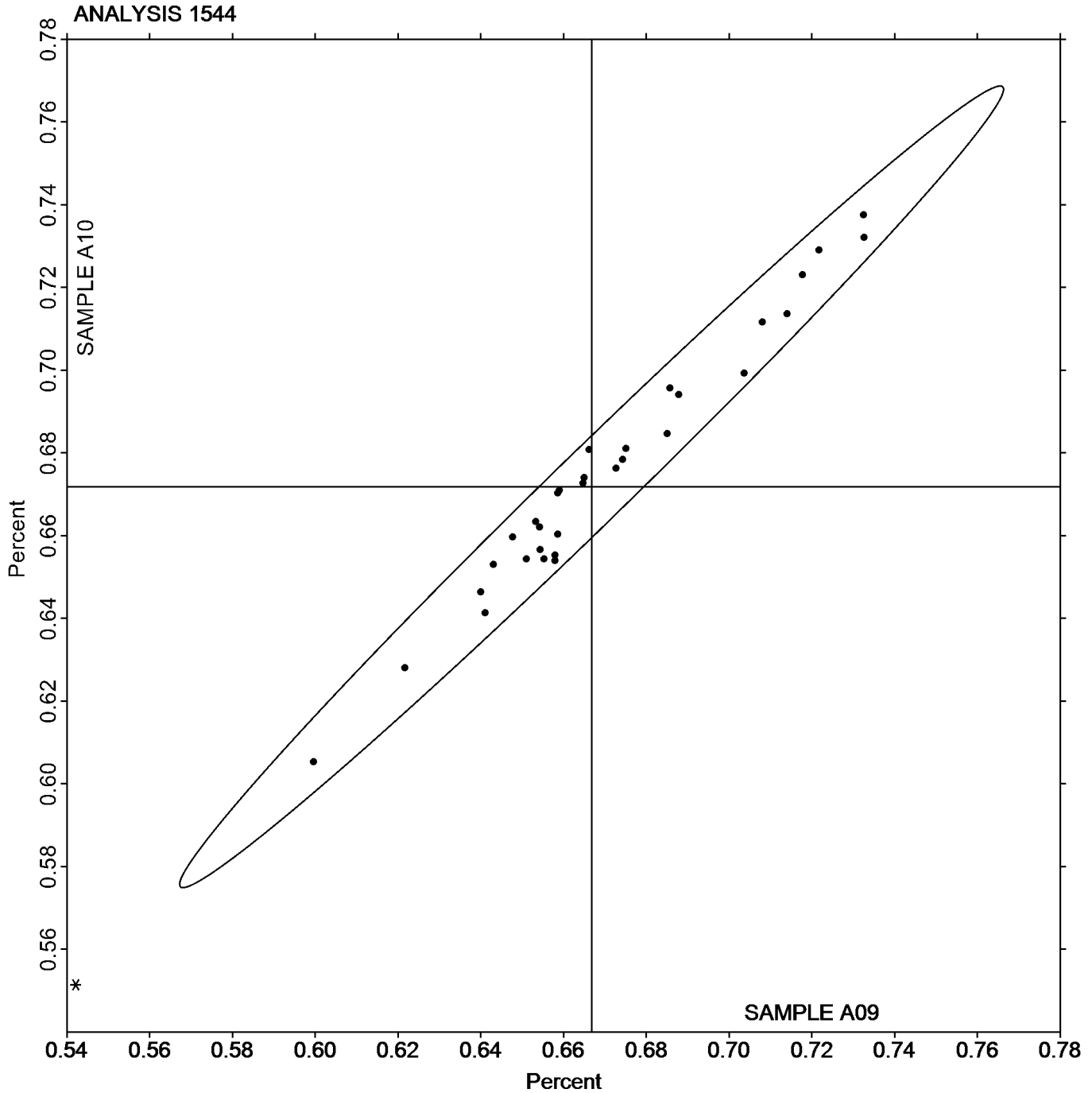
Analysis 1544

2nd Qtr
2025

Aluminum, MANGANESE (Mn)
MANGANESE (Mn)

SAMPLE A09
0.6667 Percent

SAMPLE A10
0.6718 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1545

Aluminum, MAGNESIUM (Mg)
MAGNESIUM (Mg)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.6851	0.0224	0.61	0.7090	0.0167	0.46	OE
2GKL6J		0.6560	-0.0067	-0.18	0.6860	-0.0064	-0.17	OE
334RL8		0.6813	0.0186	0.50	0.6993	0.0070	0.19	OE
33ERBL		0.7313	0.0686	1.86	0.7561	0.0638	1.74	OE
3BNGNK		0.6750	0.0122	0.33	0.6821	-0.0102	-0.28	OE
4TMRA3		0.6610	-0.0017	-0.05	0.7010	0.0086	0.24	OE
6DRUKD		0.6327	-0.0300	-0.81	0.6700	-0.0224	-0.61	OE
6Z4PDF		0.6135	-0.0492	-1.33	0.6425	-0.0498	-1.36	XX
8W2CYF		0.6603	-0.0024	-0.06	0.6907	-0.0017	-0.05	OE
8WBCRF		0.6267	-0.0360	-0.98	0.6480	-0.0444	-1.21	IC
AAH9VU		0.6546	-0.0081	-0.22	0.6849	-0.0074	-0.20	OE
AKXXUY		0.6460	-0.0167	-0.45	0.6697	-0.0227	-0.62	XX
BJEKE2		0.5723	-0.0904	-2.45	0.6067	-0.0857	-2.34	IC
BTKC2A		0.6200	-0.0427	-1.16	0.6533	-0.0390	-1.07	OE
EMNV88		0.6683	0.0056	0.15	0.6937	0.0013	0.04	GD
FDVVZ9		0.7463	0.0836	2.26	0.7787	0.0863	2.36	OE
FLAP63		0.6813	0.0186	0.50	0.7070	0.0146	0.40	OE
G3DJC3		0.7064	0.0437	1.18	0.7388	0.0465	1.27	OE
GQGGAU		0.6213	-0.0414	-1.12	0.6513	-0.0410	-1.12	OE
K2JCBL		0.6510	-0.0117	-0.32	0.6837	-0.0087	-0.24	OE
KEAZPT		0.6953	0.0326	0.88	0.7343	0.0420	1.15	OE
KLYCT3		0.6960	0.0333	0.90	0.7410	0.0486	1.33	OE
LY82Q2		0.6743	0.0116	0.31	0.7006	0.0082	0.22	OE
M7B26X		0.6940	0.0313	0.85	0.7177	0.0253	0.69	OE
PUR9N2		0.6037	-0.0590	-1.60	0.6343	-0.0580	-1.59	OE
RQJWKW		0.6448	-0.0179	-0.48	0.6740	-0.0183	-0.50	OE
RYZLBH		0.6639	0.0012	0.03	0.6979	0.0056	0.15	OE
T79LYQ		0.6860	0.0233	0.63	0.7117	0.0193	0.53	OE
TZ6FL9		0.6453	-0.0174	-0.47	0.6833	-0.0090	-0.25	XX
VT27CL		0.6347	-0.0280	-0.76	0.6687	-0.0237	-0.65	OE
W6JMAH		0.6253	-0.0374	-1.01	0.6598	-0.0325	-0.89	OE
W9M4WD		0.6997	0.0370	1.00	0.7307	0.0383	1.05	OE
X7ZRVM		0.7007	0.0380	1.03	0.7297	0.0373	1.02	XX
XYRKYQ		0.6780	0.0153	0.41	0.7040	0.0116	0.32	OE
YXYYU7	X	0.7200	0.0573	1.55	0.7823	0.0900	2.46	OE

Summary Statistics

	Sample A09		Sample A10	
Grand Means	0.6627	Percent	0.6924	Percent
Std Dev Btwn Labs	0.0369	Percent	0.0366	Percent

Samples A09, A10 : AA6026, AA6026

Statistics based on 34 of 35 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1545

2nd Qtr

Aluminum, MAGNESIUM (Mg)

2025

MAGNESIUM (Mg)

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1545

YXYYU7 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample A09.



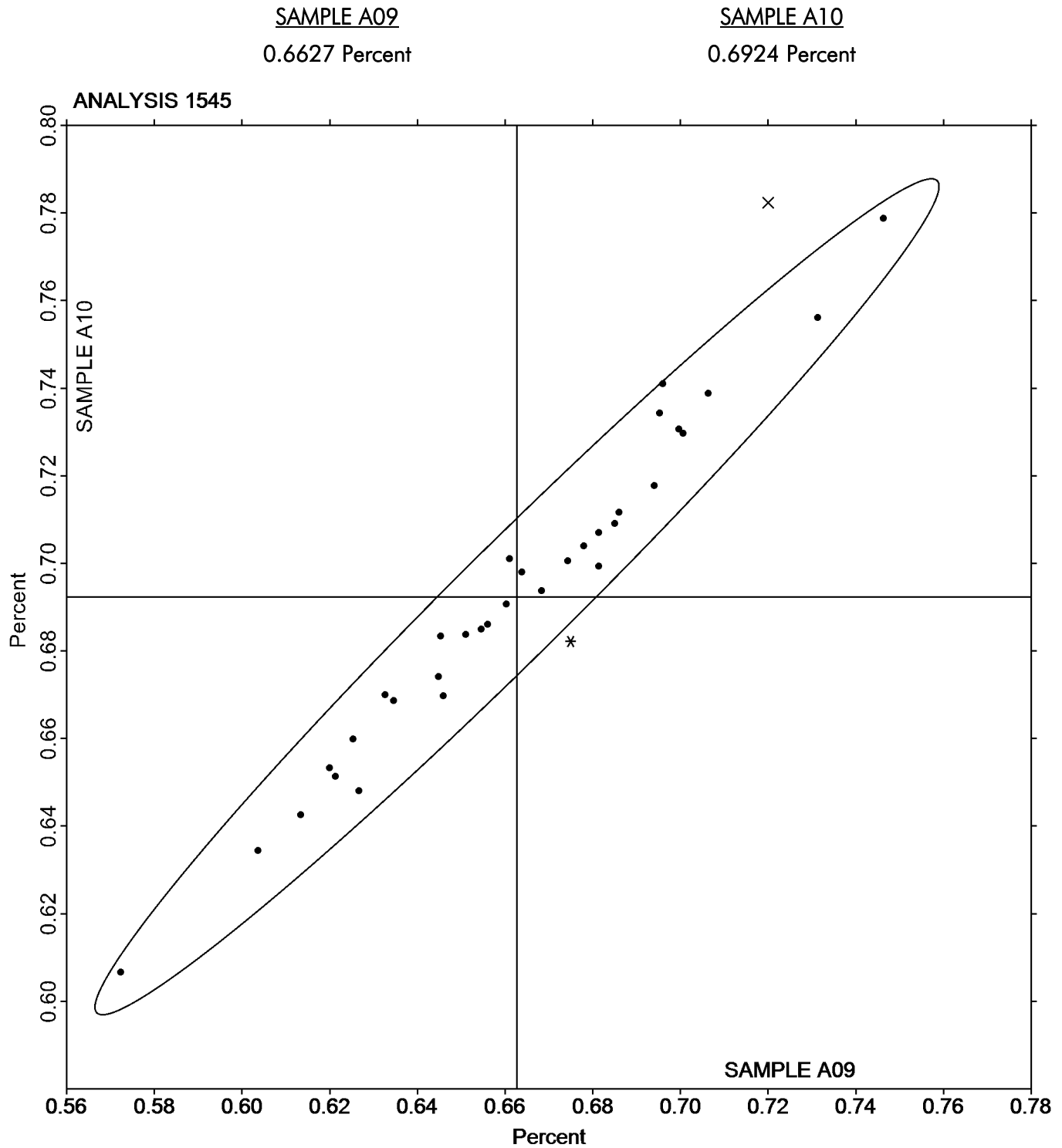
Fasteners and Metals Interlaboratory Testing Program

Analysis 1545

Aluminum, MAGNESIUM (Mg)
MAGNESIUM (Mg)

Cycle 150

2nd Qtr
2025





Fasteners and Metals Interlaboratory Testing Program

Analysis 1546

Aluminum, CHROMIUM (Cr)
CHROMIUM (Cr)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.0771	0.0018	0.43	0.0639	0.0015	0.48	OE
2GKL6J		0.0757	0.0004	0.10	0.0628	0.0003	0.11	OE
334RL8		0.0730	-0.0023	-0.56	0.0603	-0.0021	-0.69	OE
33ERBL		0.0820	0.0067	1.64	0.0678	0.0053	1.73	OE
3BNGNK	X	0.5471	0.4718	114.89	0.5752	0.5128	166.39	OE
4TMRA3		0.0767	0.0014	0.35	0.0630	0.0005	0.16	OE
6DRUKD		0.0673	-0.0080	-1.94	0.0573	-0.0051	-1.66	OE
6Z4PDF		0.0719	-0.0034	-0.82	0.0585	-0.0039	-1.27	XX
8W2CYF		0.0737	-0.0016	-0.39	0.0612	-0.0013	-0.42	OE
AAH9VU		0.0788	0.0035	0.85	0.0660	0.0035	1.14	OE
AKXXUY		0.0759	0.0006	0.15	0.0630	0.0005	0.17	XX
BJEKE2		0.0743	-0.0010	-0.23	0.0623	-0.0001	-0.04	IC
BTKC2A		0.0700	-0.0053	-1.29	0.0600	-0.0025	-0.80	OE
EMNV88		0.0850	0.0097	2.37	0.0683	0.0059	1.91	GD
FDVVZ9		0.0803	0.0050	1.21	0.0664	0.0039	1.26	OE
FLAP63		0.0742	-0.0011	-0.26	0.0620	-0.0005	-0.16	XX
G3DJC3		0.0770	0.0017	0.41	0.0639	0.0015	0.48	OE
GQGGAU		0.0737	-0.0016	-0.39	0.0610	-0.0015	-0.47	OE
K2JCBL		0.0740	-0.0013	-0.31	0.0620	-0.0005	-0.15	OE
KEAZPT		0.0740	-0.0013	-0.31	0.0617	-0.0008	-0.26	OE
KLYCT3		0.0760	0.0007	0.17	0.0620	-0.0005	-0.15	OE
LY82Q2		0.0707	-0.0046	-1.11	0.0577	-0.0047	-1.54	OE
M7B26X	X	0.7480	0.6727	163.82	0.6247	0.5622	182.43	OE
PUR9N2		0.0717	-0.0036	-0.88	0.0603	-0.0021	-0.69	OE
RQJWKW		0.0763	0.0010	0.24	0.0638	0.0013	0.42	OE
RYZLBH		0.0754	0.0001	0.04	0.0625	0.0000	0.01	OE
T79LYQ		0.0710	-0.0043	-1.04	0.0587	-0.0038	-1.23	OE
TZ6FL9		0.0727	-0.0026	-0.64	0.0593	-0.0031	-1.02	XX
VT27CL		0.0743	-0.0010	-0.23	0.0627	0.0002	0.07	OE
W6JMAH		0.0718	-0.0035	-0.85	0.0598	-0.0027	-0.86	OE
W9M4WD		0.0757	0.0004	0.09	0.0633	0.0009	0.28	OE
X7ZRVM	*	0.0864	0.0111	2.72	0.0708	0.0083	2.69	XX
XYRKYQ	X	0.0950	0.0197	4.80	0.0797	0.0172	5.58	OE
YXYYU7		0.0773	0.0020	0.50	0.0640	0.0015	0.50	OE

Summary Statistics

Sample A09			Sample A10		
Grand Means	0.0753	Percent	0.0625	Percent	
Std Dev Btwn Labs	0.0041	Percent	0.0031	Percent	

Samples A09, A10 : AA6026, AA6026

Statistics based on 31 of 34 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)	XX	Please Indicate Method Used for Current Element



Comments on Assigned Data Flags for Test #1546

3BNGNK (X) - Extreme data.

M7B26X (X) - Extreme data. Data appear to be off by a factor of ten.

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



Analysis 1546

2nd Qtr

Aluminum, CHROMIUM (Cr)

2025

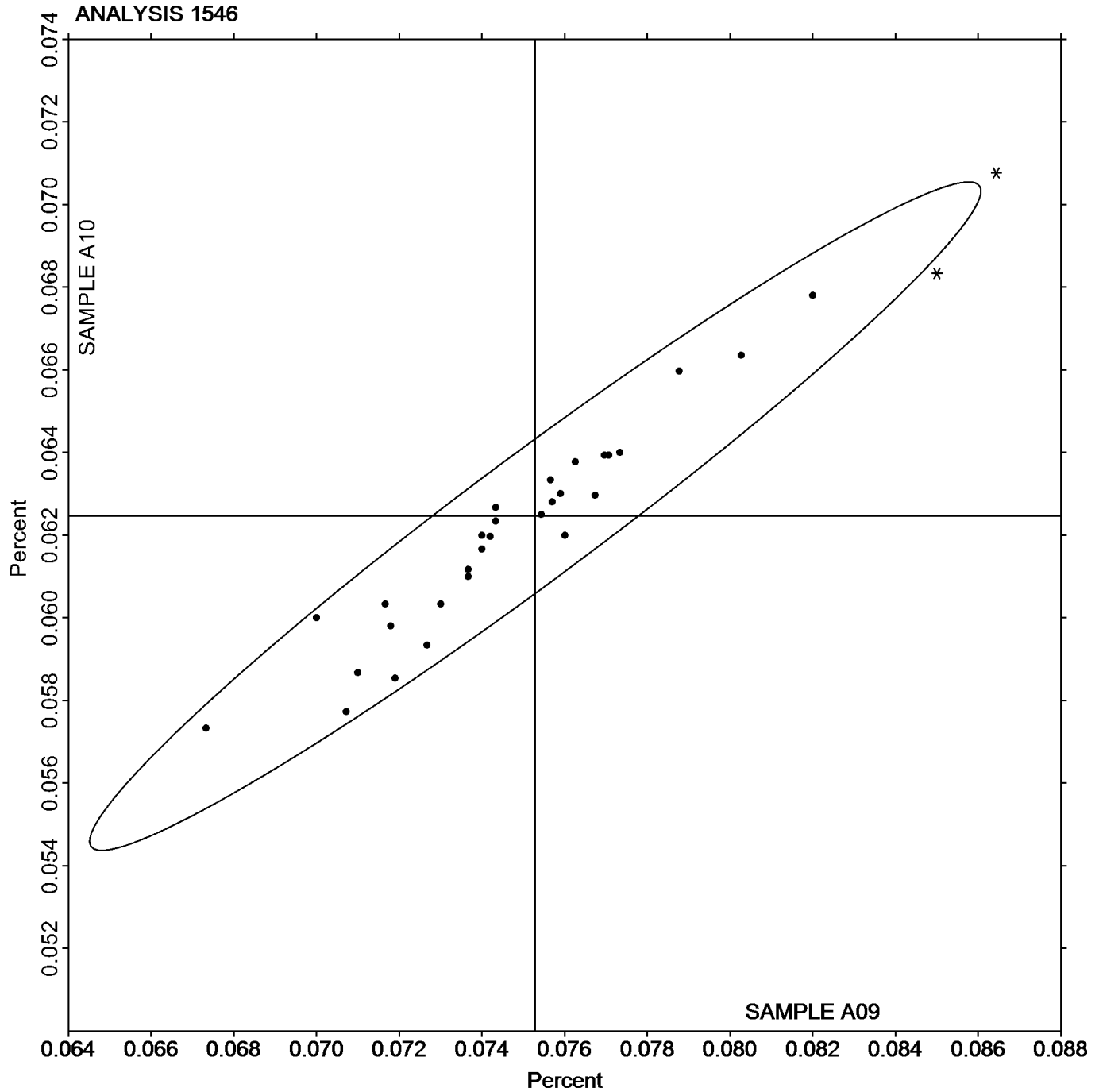
CHROMIUM (Cr)

SAMPLE A09

SAMPLE A10

0.0753 Percent

0.0625 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1547

Aluminum, TITANIUM (Ti)
TITANIUM (Ti)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.0451	0.0032	1.70	0.0466	0.0033	1.66	OE
2GKL6J		0.0413	-0.0006	-0.32	0.0437	0.0004	0.22	OE
334RL8		0.0373	-0.0045	-2.40	0.0383	-0.0049	-2.43	OE
33ERBL		0.0434	0.0015	0.80	0.0456	0.0024	1.19	OE
3BNGNK	X	0.0794	0.0375	19.86	0.0658	0.0226	11.20	OE
4TMRA3		0.0421	0.0003	0.14	0.0427	-0.0006	-0.28	OE
6DRUKD		0.0413	-0.0005	-0.28	0.0420	-0.0012	-0.61	OE
6Z4PDF		0.0402	-0.0016	-0.86	0.0409	-0.0023	-1.14	XX
8W2CYF		0.0388	-0.0031	-1.64	0.0406	-0.0026	-1.30	OE
8WBCRF	*	0.0463	0.0045	2.37	0.0470	0.0038	1.87	IC
AAH9VU		0.0425	0.0006	0.32	0.0435	0.0002	0.12	OE
AKXXUY		0.0412	-0.0007	-0.37	0.0423	-0.0009	-0.44	XX
BJEKE2		0.0410	-0.0009	-0.46	0.0420	-0.0012	-0.61	IC
BTKC2A		0.0400	-0.0019	-0.99	0.0400	-0.0032	-1.60	OE
EMNV88		0.0440	0.0021	1.13	0.0452	0.0019	0.96	GD
FDVVZ9		0.0414	-0.0004	-0.23	0.0445	0.0012	0.61	OE
FLAP63		0.0414	-0.0004	-0.23	0.0429	-0.0003	-0.15	OE
G3DJC3		0.0418	-0.0001	-0.05	0.0427	-0.0006	-0.28	OE
GQGGAU		0.0412	-0.0007	-0.37	0.0432	-0.0001	-0.03	OE
K2JCBL		0.0420	0.0001	0.07	0.0440	0.0008	0.38	OE
KEAZPT		0.0419	0.0001	0.04	0.0433	0.0001	0.05	OE
KLYCT3		0.0398	-0.0021	-1.09	0.0414	-0.0018	-0.91	OE
LY82Q2		0.0447	0.0028	1.51	0.0469	0.0037	1.83	OE
M7B26X		0.0430	0.0011	0.60	0.0437	0.0004	0.22	OE
PUR9N2		0.0403	-0.0015	-0.81	0.0427	-0.0006	-0.28	OE
RQJWKW		0.0436	0.0017	0.90	0.0452	0.0020	0.97	OE
RYZLBH		0.0405	-0.0014	-0.72	0.0424	-0.0009	-0.43	OE
T79LYQ		0.0437	0.0018	0.95	0.0450	0.0018	0.88	OE
TZ6FL9		0.0430	0.0011	0.60	0.0443	0.0011	0.55	XX
VT27CL		0.0441	0.0022	1.17	0.0455	0.0023	1.13	OE
W6JMAH		0.0391	-0.0028	-1.48	0.0404	-0.0028	-1.40	OE
W9M4WD		0.0408	-0.0011	-0.56	0.0414	-0.0019	-0.92	OE
X7ZRVM		0.0417	-0.0001	-0.07	0.0425	-0.0007	-0.36	XX
XYRKYQ		0.0433	0.0015	0.78	0.0447	0.0014	0.71	OE
YXYU7		0.0416	-0.0003	-0.16	0.0428	-0.0004	-0.20	OE

Summary Statistics

Sample A09				Sample A10			
Grand Means		0.0419	Percent	0.0432		Percent	
Std Dev Btwn Labs		0.0019	Percent	0.0020		Percent	

Samples A09, A10 : AA6026, AA6026

Statistics based on 34 of 35 reporting participants



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1547

2nd Qtr

Aluminum, TITANIUM (Ti)

2025

TITANIUM (Ti)

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1547

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



Analysis 1547

2nd Qtr

Aluminum, TITANIUM (Ti)

2025

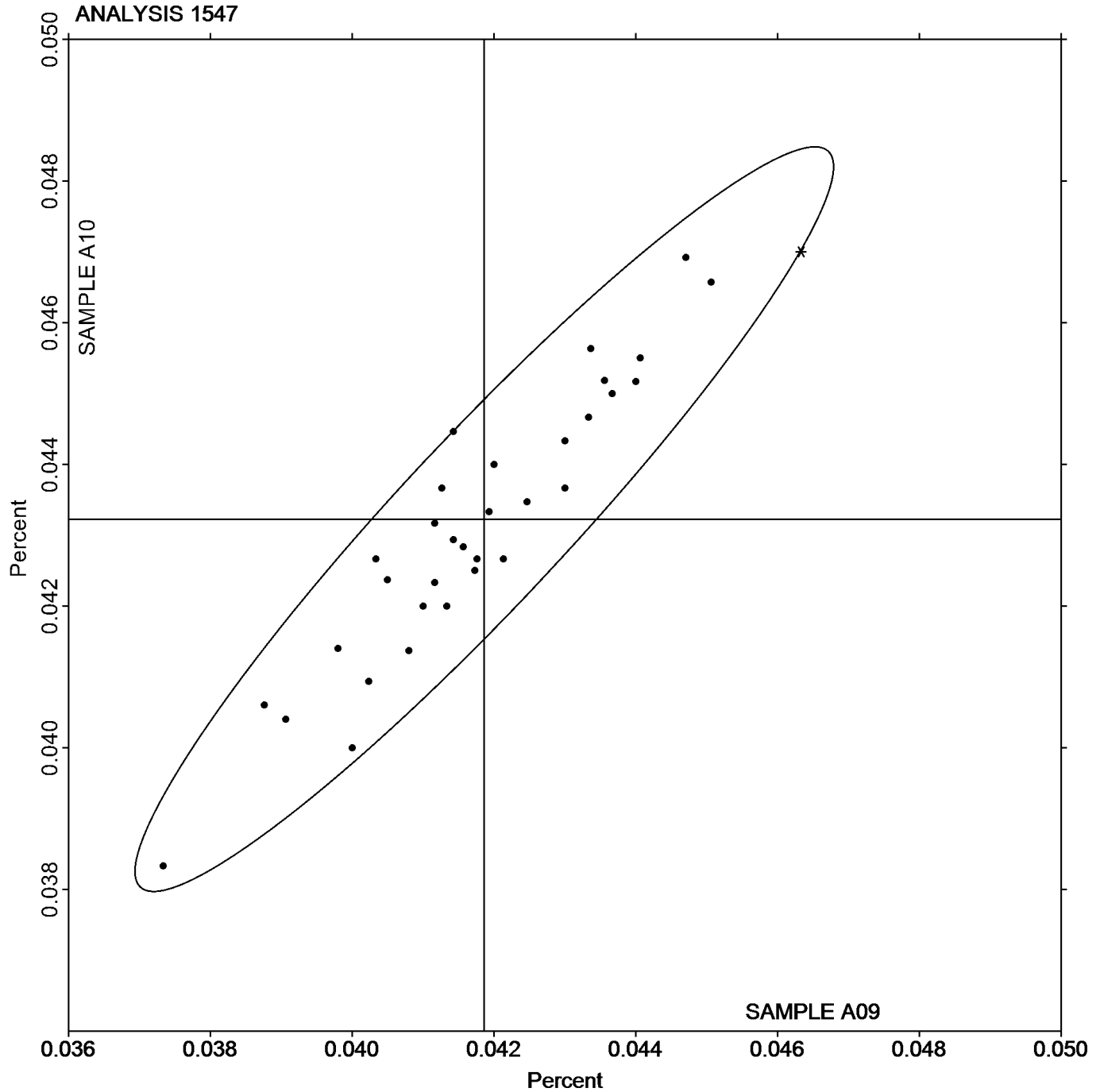
TITANIUM (Ti)

SAMPLE A09

SAMPLE A10

0.0419 Percent

0.0432 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1548

Aluminum, BISMUTH (Bi)
BISMUTH (Bi)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.5021	0.0141	0.24	0.4997	0.0004	0.01	OE
2GKL6J		0.4703	-0.0177	-0.30	0.4803	-0.0190	-0.29	OE
3BNGNK	X	0.0471	-0.4409	-7.48	0.0480	-0.4514	-6.90	OE
4TMRA3		0.4750	-0.0130	-0.22	0.4990	-0.0003	-0.01	OE
6DRUKD		0.5367	0.0486	0.82	0.5463	0.0470	0.72	OE
6Z4PDF		0.5111	0.0231	0.39	0.5384	0.0391	0.60	XX
AAH9VU		0.4536	-0.0344	-0.58	0.4590	-0.0403	-0.62	OE
AKXXUY	*	0.3057	-0.1824	-3.09	0.2890	-0.2103	-3.22	XX
BJEKE2		0.5283	0.0403	0.68	0.5460	0.0467	0.71	IC
BTKC2A		0.4700	-0.0180	-0.31	0.5100	0.0107	0.16	OE
EMNV88		0.5773	0.0893	1.51	0.5757	0.0763	1.17	GD
FDVVZ9		0.5819	0.0939	1.59	0.6011	0.1018	1.56	OE
FLAP63		0.4930	0.0050	0.08	0.5013	0.0020	0.03	OE
K2JCBL		0.4837	-0.0044	-0.07	0.4913	-0.0080	-0.12	OE
LY82Q2		0.4572	-0.0308	-0.52	0.4540	-0.0454	-0.69	OE
PUR9N2	X	0.6000	0.1120	1.90	0.7333	0.2340	3.58	ED
RQJWKW		0.4505	-0.0375	-0.64	0.4568	-0.0426	-0.65	OE
RYZLBH		0.4311	-0.0570	-0.97	0.4461	-0.0532	-0.81	OE
T79LYQ		0.4467	-0.0414	-0.70	0.4600	-0.0393	-0.60	OE
VT27CL		0.5520	0.0640	1.08	0.5837	0.0843	1.29	OE
W6JMAH		0.5093	0.0213	0.36	0.5179	0.0186	0.28	OE
W9M4WD		0.4723	-0.0157	-0.27	0.4797	-0.0197	-0.30	OE
X7ZRVM		0.4777	-0.0104	-0.18	0.4807	-0.0187	-0.29	XX
XYRKYQ		0.5513	0.0633	1.07	0.5693	0.0700	1.07	OE

Summary Statistics

Sample A09				Sample A10			
Grand Means		0.4880	Percent	0.4993		Percent	
Std Dev Brwn Labs		0.0590	Percent	0.0654		Percent	

Samples A09, A10 : AA6026, AA6026

Statistics based on 22 of 24 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)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1548

3BNGNK (X) - Data for both samples are low. Possible Systematic Error.

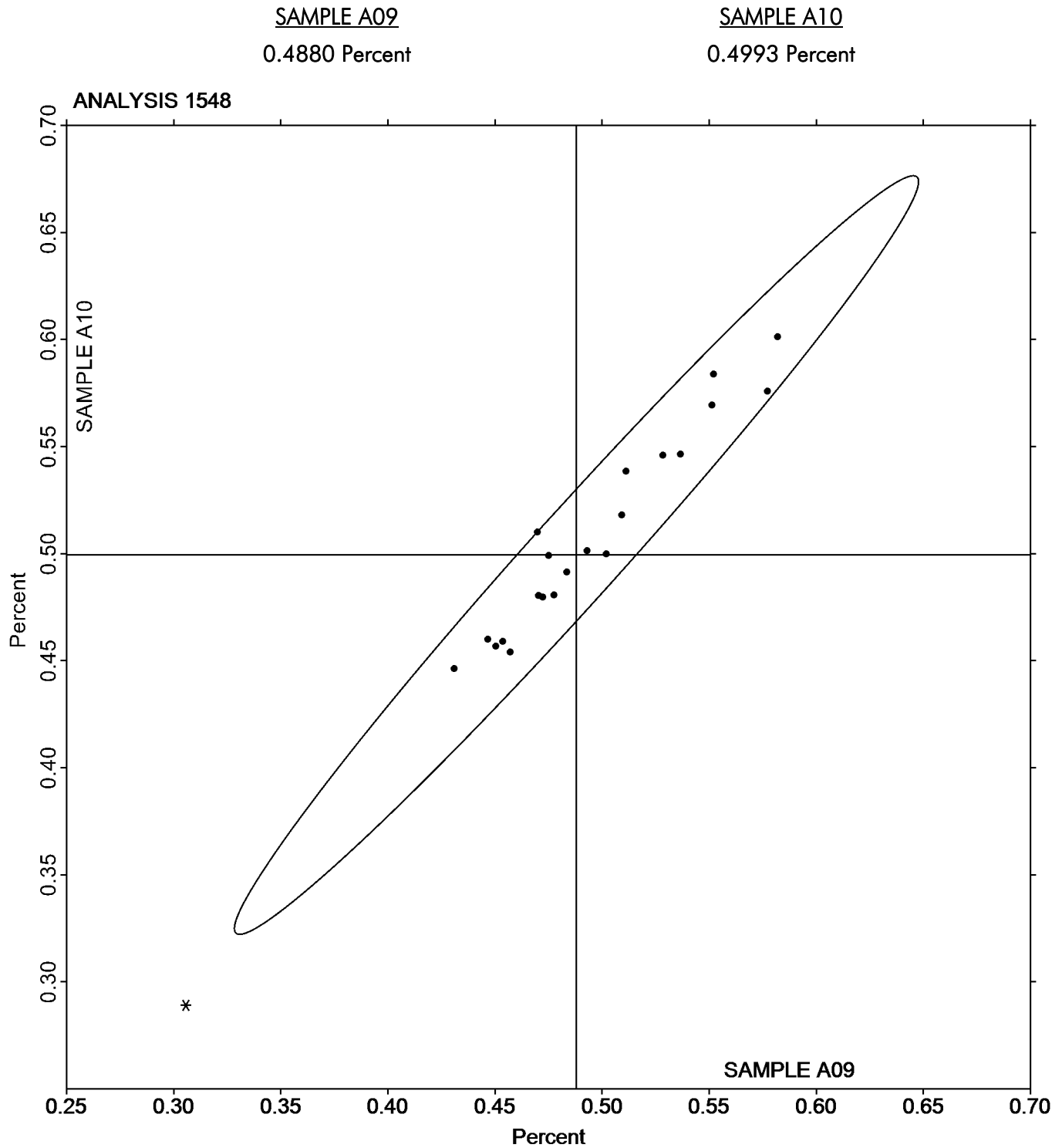
PUR9N2 (X) - Data for sample A10 are high. Inconsistent within the determinations of both samples.



Analysis 1548

2nd Qtr
2025

Aluminum, BISMUTH (Bi)
BISMUTH (Bi)





Fasteners and Metals Interlaboratory Testing Program

Analysis 1549

Aluminum, LEAD (Pb)
LEAD (Pb)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample A09			Sample A10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
27NBZJ		0.3401	0.0018	0.03	0.3193	-0.0055	-0.11	XX
2GKL6J		0.3350	-0.0033	-0.06	0.3167	-0.0081	-0.16	OE
334RL8		0.3813	0.0430	0.82	0.3637	0.0389	0.75	OE
3BNGNK	X	0.4554	0.1171	2.22	0.4701	0.1453	2.82	OE
4TMRA3		0.3650	0.0267	0.51	0.3580	0.0332	0.64	OE
6DRUKD		0.3560	0.0177	0.34	0.3453	0.0205	0.40	OE
6Z4PDF		0.3565	0.0182	0.35	0.3456	0.0208	0.40	XX
8WBCRF		0.3370	-0.0013	-0.02	0.3140	-0.0108	-0.21	IC
AAH9VU		0.3440	0.0057	0.11	0.3258	0.0010	0.02	OE
AKXXUY		0.3080	-0.0303	-0.57	0.2883	-0.0365	-0.71	XX
BJEKE2		0.4143	0.0760	1.44	0.4013	0.0765	1.48	IC
BTKC2A		0.3333	-0.0050	-0.09	0.3233	-0.0015	-0.03	OE
EMNV88		0.4257	0.0874	1.66	0.4100	0.0852	1.65	GD
FDVVZ9		0.2937	-0.0446	-0.85	0.2840	-0.0408	-0.79	OE
FLAP63		0.3353	-0.0030	-0.06	0.3160	-0.0088	-0.17	OE
G3DJC3	*	0.1849	-0.1534	-2.91	0.1784	-0.1464	-2.84	OE
GQGGAU	X	0.3833	0.0450	0.85	0.3343	0.0095	0.19	OE
K2JCBL		0.3567	0.0184	0.35	0.3383	0.0135	0.26	OE
KLYCT3		0.3940	0.0557	1.06	0.3920	0.0672	1.30	OE
LY82Q2		0.3896	0.0513	0.97	0.3794	0.0546	1.06	OE
PUR9N2		0.3567	0.0184	0.35	0.3430	0.0182	0.35	OE
RQJWKW		0.3927	0.0544	1.03	0.3746	0.0498	0.97	OE
RYZLBH		0.3759	0.0376	0.71	0.3629	0.0381	0.74	OE
T79LYQ		0.3033	-0.0350	-0.66	0.2933	-0.0315	-0.61	OE
VT27CL		0.3087	-0.0296	-0.56	0.3013	-0.0235	-0.45	OE
W6JMAH		0.3302	-0.0081	-0.15	0.3114	-0.0134	-0.26	OE
W9M4WD		0.2590	-0.0793	-1.50	0.2493	-0.0755	-1.46	OE
X7ZRVM		0.3147	-0.0236	-0.45	0.2967	-0.0281	-0.55	XX
XYRKYQ		0.2420	-0.0963	-1.83	0.2373	-0.0875	-1.70	OE

Summary Statistics

Sample A09			Sample A10		
Grand Means	0.3383	Percent	0.3248	Percent	
Std Dev Btwn Labs	0.0527	Percent	0.0516	Percent	

Samples A09, A10 : AA6026, AA6026

Statistics based on 27 of 29 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)	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1549

3BNGNK (X) - Data for sample A10 are high.

GQGGAU (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample A09.



Analysis 1549

2nd Qtr

Aluminum, LEAD (Pb)

2025

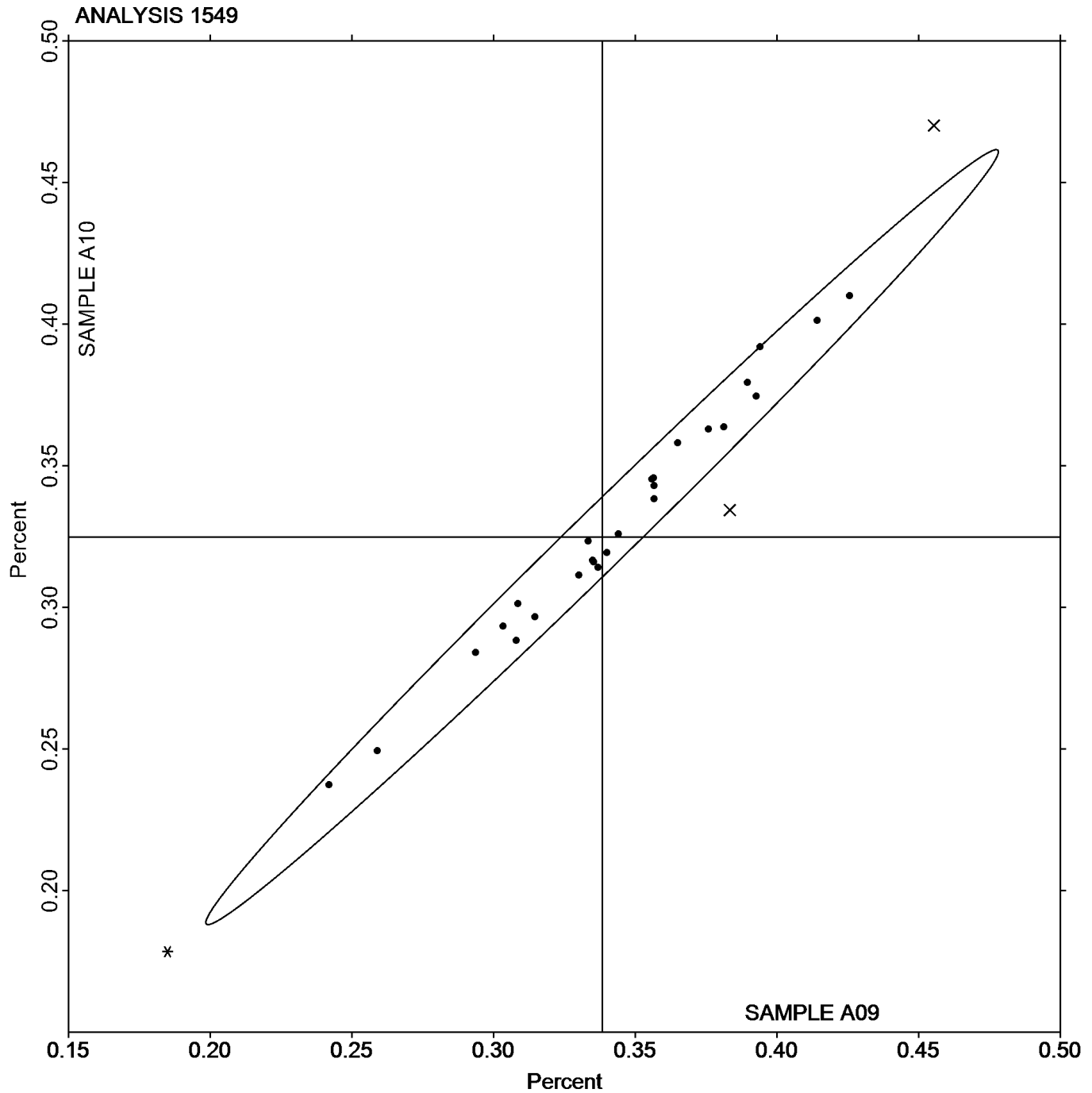
LEAD (Pb)

SAMPLE A09

SAMPLE A10

0.3383 Percent

0.3248 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1640

Corrosion Resistant Steel, CARBON (C)
CARBON (C)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A	*	0.0567	0.0070	2.66	0.0547	0.0069	2.95	OE
2WXXQC	X	0.0167	-0.0330	-12.48	0.0173	-0.0305	-13.12	OE
334RL8		0.0484	-0.0012	-0.45	0.0464	-0.0014	-0.62	OE
6DRUKD		0.0487	-0.0010	-0.37	0.0477	-0.0001	-0.06	OE
6GBPH4		0.0507	0.0010	0.39	0.0480	0.0002	0.08	OE
6HKQEA		0.0480	-0.0016	-0.62	0.0477	-0.0001	-0.06	CO
7CF678		0.0497	0.0001	0.02	0.0466	-0.0012	-0.52	OE
87J6ZA		0.0510	0.0014	0.52	0.0500	0.0022	0.94	OE
8W2CYF	X	0.0329	-0.0167	-6.32	0.0328	-0.0150	-6.45	OE
94FHDX		0.0527	0.0030	1.15	0.0500	0.0022	0.94	OE
98DZ96		0.0478	-0.0019	-0.71	0.0466	-0.0012	-0.53	OE
AEMY89	*	0.0567	0.0070	2.66	0.0533	0.0055	2.38	OE
AKXXUY		0.0513	0.0017	0.64	0.0498	0.0020	0.84	XX
AV9LDW	*	0.0428	-0.0069	-2.60	0.0501	0.0023	1.00	OE
B2EHVB		0.0501	0.0005	0.19	0.0479	0.0001	0.04	XX
BJEKE2		0.0479	-0.0017	-0.64	0.0469	-0.0009	-0.41	CI
BTKC2A		0.0507	0.0010	0.39	0.0484	0.0006	0.25	CO
CQCKGZ		0.0496	0.0000	-0.01	0.0474	-0.0004	-0.16	CI
DPJYJ3		0.0528	0.0032	1.20	0.0481	0.0003	0.13	XX
ERJF6C		0.0525	0.0028	1.07	0.0511	0.0033	1.40	OE
FRGCX7	*	0.0519	0.0022	0.84	0.0534	0.0056	2.42	OE
FVEM6Y		0.0507	0.0010	0.39	0.0500	0.0022	0.94	CO
G398QR		0.0443	-0.0053	-2.01	0.0430	-0.0048	-2.07	OE
HBEHA3		0.0490	-0.0006	-0.24	0.0470	-0.0008	-0.35	CI
HNBDX		0.0508	0.0012	0.44	0.0493	0.0015	0.63	CO
HUVKBW		0.0488	-0.0009	-0.33	0.0489	0.0011	0.48	CI
KC79GT	*	0.0436	-0.0061	-2.30	0.0413	-0.0065	-2.82	OE
KLYCT3		0.0510	0.0014	0.52	0.0476	-0.0002	-0.09	OE
L8UF7U		0.0503	0.0007	0.26	0.0490	0.0012	0.51	CI
LKV8RY		0.0470	-0.0027	-1.01	0.0447	-0.0031	-1.34	OE
MCZQBT		0.0514	0.0018	0.68	0.0472	-0.0006	-0.25	CI
N7AG2V		0.0503	0.0007	0.26	0.0487	0.0009	0.37	CI
NPE9TV		0.0480	-0.0016	-0.62	0.0488	0.0010	0.41	OE
NUR76N		0.0491	-0.0006	-0.22	0.0480	0.0002	0.08	CO
QM8MZF		0.0465	-0.0031	-1.19	0.0446	-0.0032	-1.38	OE
RYJ6FP		0.0517	0.0020	0.77	0.0493	0.0015	0.64	OE
TB3FWR		0.0471	-0.0025	-0.95	0.0463	-0.0015	-0.65	OE
U9DCXT	X	0.4817	0.4320	163.56	0.0478	0.0000	0.00	OE
VFBE MB		0.0492	-0.0004	-0.16	0.0473	-0.0005	-0.23	CI
W6JMAH		0.0503	0.0007	0.26	0.0481	0.0003	0.14	OE
WC4MKN		0.0484	-0.0012	-0.46	0.0467	-0.0011	-0.46	CI
WLB96A		0.0457	-0.0039	-1.48	0.0457	-0.0021	-0.92	XX
X7ZRVM		0.0497	0.0001	0.04	0.0478	0.0000	0.00	XX
YAM6KF		0.0470	-0.0026	-1.00	0.0460	-0.0018	-0.78	CO
YRC7MD		0.0520	0.0024	0.90	0.0480	0.0002	0.08	CI
YXYYU7		0.0510	0.0014	0.52	0.0492	0.0014	0.60	CI
ZD7DTF		0.0470	-0.0026	-0.98	0.0465	-0.0013	-0.56	XX



Fasteners and Metals Interlaboratory Testing Program

Analysis 1640

Corrosion Resistant Steel, CARBON (C)
CARBON (C)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
ZGQKW9		0.0470	-0.0027	-1.01	0.0452	-0.0026	-1.11	OE
ZT6EAM		0.0518	0.0022	0.82	0.0490	0.0012	0.51	CO

Summary Statistics

Sample M09				Sample M10	
Grand Means	0.0496	Percent		0.0478	Percent
Stnd Dev Btwn Labs	0.0026	Percent		0.0023	Percent

Samples M09, M10 : AISI 310, AISI 310

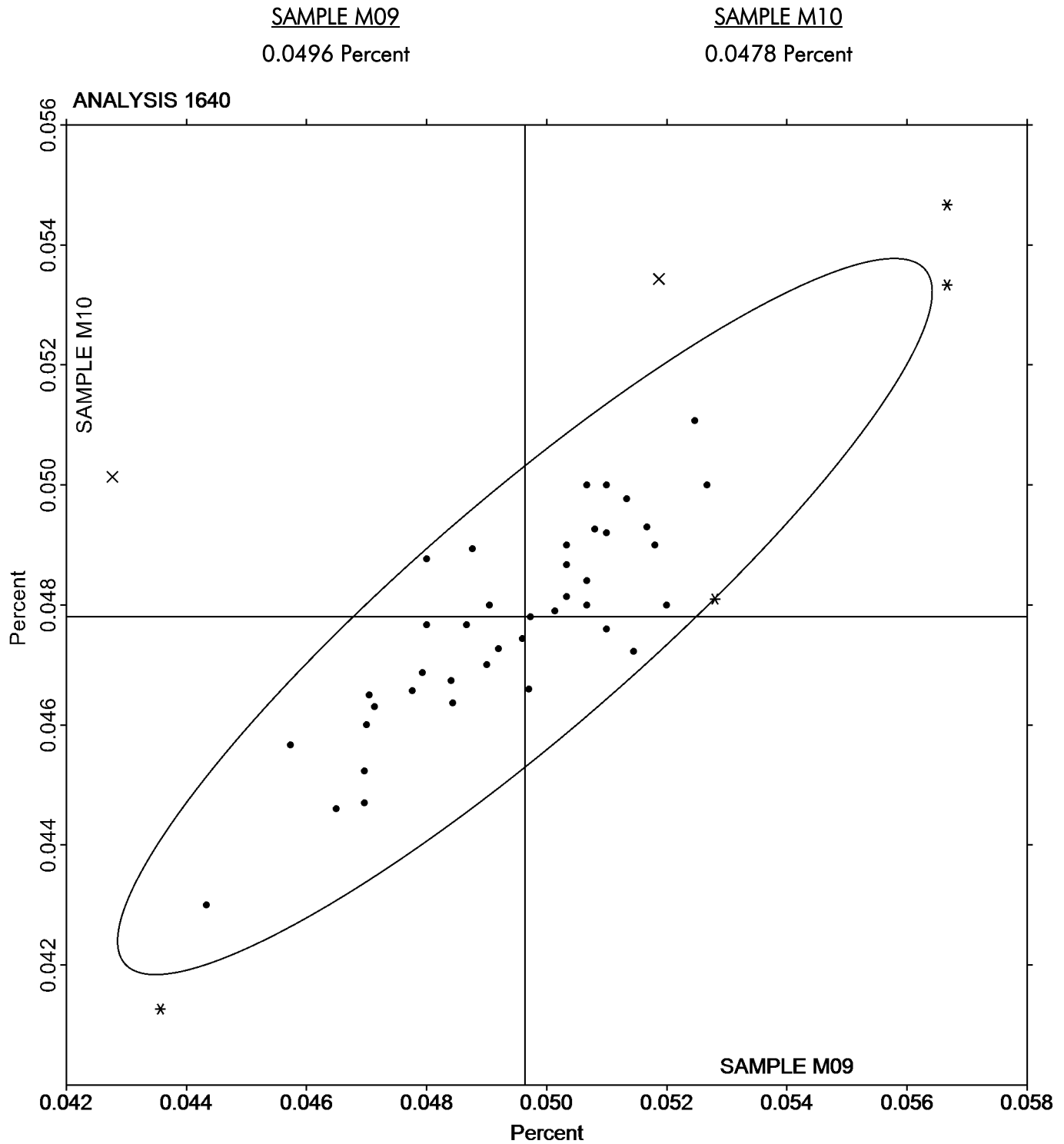
Statistics based on 44 of 49 reporting participants

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 #1640

- 2WXXQC (X) - Data for both samples are low. Possible Systematic Error.
8W2CYF (X) - Data for both samples are low. Possible Systematic Error.
U9DCXT (X) - Data for sample M09 are extreme. They appear to be off by a factor of ten.



**Fasteners and Metals Interlaboratory Testing Program****Cycle 150****Analysis 1641****2nd Qtr****Corrosion Resistant Steel, MANGANESE (Mn)
MANGANESE (Mn)****2025**

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		1.613	0.023	0.83	1.170	0.005	0.23	OE
2WXXQC	X	1.927	0.337	12.10	1.353	0.188	9.02	OE
334RL8		1.618	0.027	0.98	1.157	-0.008	-0.41	OE
6DRUKD		1.632	0.041	1.48	1.191	0.026	1.23	OE
6GBPH4		1.602	0.011	0.41	1.159	-0.006	-0.30	OE
7CF678		1.571	-0.019	-0.69	1.151	-0.014	-0.68	OE
87J6ZA		1.563	-0.027	-0.97	1.153	-0.012	-0.57	OE
8W2CYF		1.577	-0.014	-0.49	1.143	-0.022	-1.05	OE
94FHDX		1.607	0.016	0.59	1.170	0.005	0.23	OE
98DZ96		1.581	-0.009	-0.33	1.162	-0.003	-0.16	WD
AEMY89		1.588	-0.002	-0.07	1.181	0.016	0.75	OE
AKXXUY		1.593	0.003	0.11	1.153	-0.012	-0.57	XX
AV9LDW		1.640	0.050	1.78	1.173	0.008	0.39	OE
B2EHVB		1.589	-0.002	-0.06	1.174	0.009	0.41	XX
BJEKE2		1.592	0.001	0.05	1.146	-0.019	-0.91	IC
BTKC2A	X	1.577	-0.014	-0.49	1.100	-0.065	-3.13	OE
CQCKGZ		1.589	-0.002	-0.06	1.165	0.000	-0.02	WD
DPJYJ3		1.579	-0.011	-0.41	1.155	-0.010	-0.47	XX
ERJF6C		1.578	-0.012	-0.44	1.147	-0.018	-0.85	OE
FRGCX7		1.537	-0.054	-1.93	1.170	0.005	0.23	OE
FVEM6Y		1.583	-0.007	-0.25	1.164	-0.001	-0.07	XR
G398QR	X	1.780	0.190	6.81	1.357	0.192	9.21	OE
HBEHA3		1.589	-0.002	-0.06	1.170	0.005	0.22	IC
HUVKBW		1.571	-0.020	-0.71	1.180	0.015	0.71	OE
KC79GT	*	1.507	-0.083	-2.99	1.103	-0.062	-2.99	OE
KLYCT3		1.589	-0.001	-0.05	1.167	0.002	0.09	OE
L8UF7U		1.590	0.000	-0.01	1.177	0.012	0.55	WD
LKV8RY		1.640	0.050	1.79	1.196	0.031	1.48	OE
MCZQBT		1.561	-0.029	-1.04	1.149	-0.016	-0.79	WD
N7AG2V		1.580	-0.011	-0.38	1.155	-0.010	-0.47	WD
NPE9TV		1.615	0.025	0.89	1.191	0.026	1.26	WD
NUR76N		1.590	0.000	-0.01	1.130	-0.035	-1.69	OE
QM8MZF		1.607	0.016	0.59	1.173	0.008	0.39	OE
RYJ6FP		1.595	0.005	0.17	1.170	0.005	0.25	OE
TB3FWR		1.640	0.050	1.78	1.200	0.035	1.68	OE
U9DCXT	X	1.687	0.096	3.46	1.270	0.105	5.04	OE
VFBEMB		1.565	-0.026	-0.92	1.149	-0.016	-0.79	WD
W6JMAH		1.601	0.010	0.37	1.172	0.007	0.35	OE
WC4MKN		1.581	-0.009	-0.33	1.157	-0.008	-0.41	XX
WLB96A		1.555	-0.035	-1.26	1.155	-0.010	-0.50	XX
X7ZRVM		1.610	0.020	0.71	1.220	0.055	2.64	XX
YRC7MD		1.586	-0.005	-0.17	1.154	-0.011	-0.52	WD
YXYU7		1.596	0.006	0.20	1.179	0.014	0.67	OE
ZD7DTF		1.561	-0.030	-1.06	1.141	-0.024	-1.16	XX
ZGQKW9		1.646	0.055	1.99	1.199	0.034	1.63	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1641

2nd Qtr

Corrosion Resistant Steel, MANGANESE (Mn)
MANGANESE (Mn)

2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	1.590	Percent	1.165	Percent
Stnd Dev Btwn Labs	0.028	Percent	0.021	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 41 of 45 reporting participants

Key to Method Codes Reported by Participants

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

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

BTKC2A (X) - Data for sample M10 are low.

G398QR (X) - Data for both samples are high.

U9DCXT (X) - Data for both samples are high.



Analysis 1641

Corrosion Resistant Steel, MANGANESE (Mn)

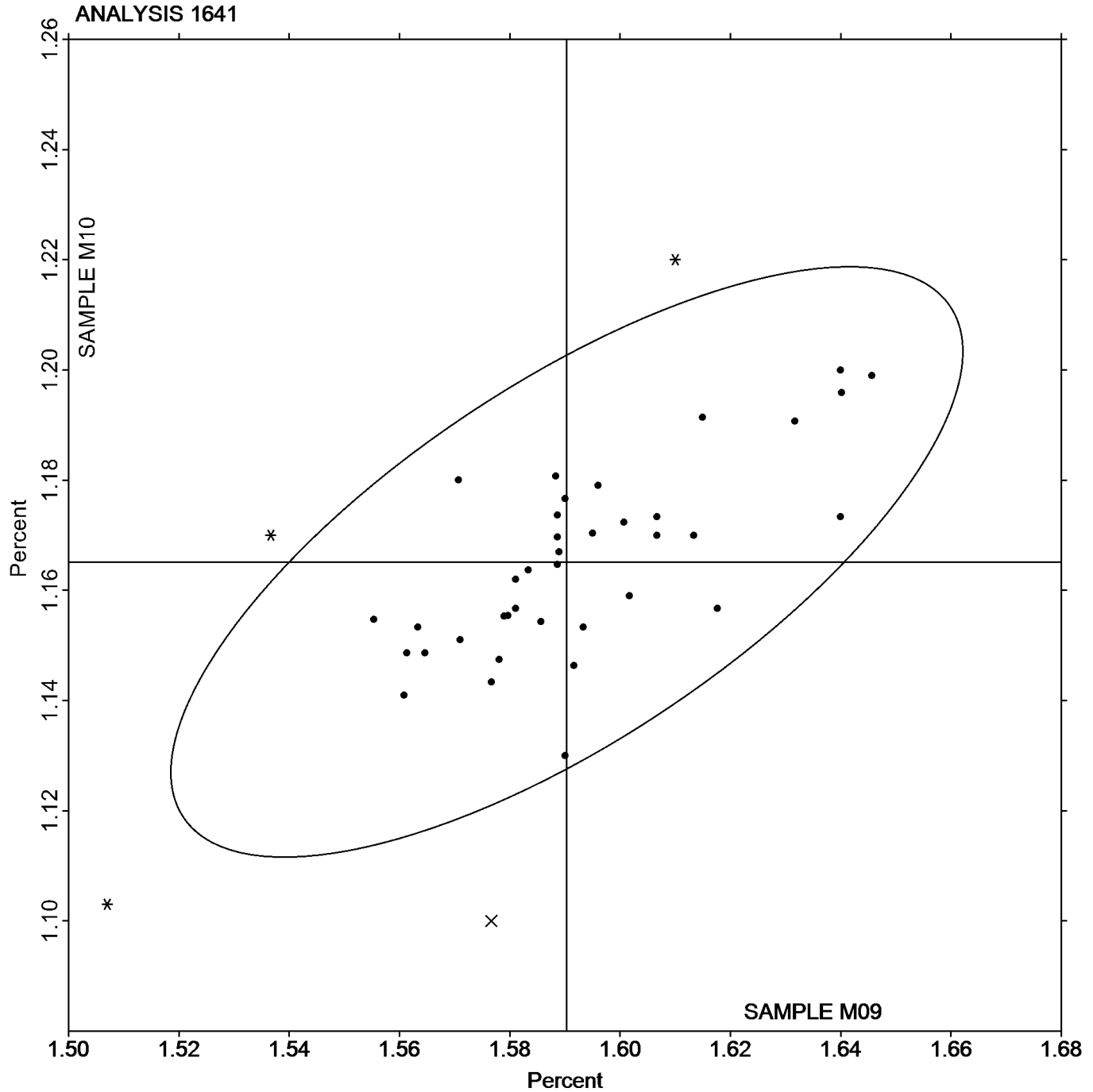
MANGANESE (Mn)

SAMPLE M09

SAMPLE M10

1.590 Percent

1.165 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1642

Corrosion Resistant Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		0.0263	0.0000	-0.02	0.0230	0.0007	0.46	OE
2WXXQC	X	0.0327	0.0063	4.58	0.0293	0.0070	4.82	OE
334RL8	*	0.0305	0.0041	3.01	0.0254	0.0031	2.13	XX
6DRUKD		0.0247	-0.0017	-1.23	0.0220	-0.0003	-0.23	OE
6GBPH4		0.0267	0.0003	0.23	0.0220	-0.0003	-0.23	OE
7CF678		0.0259	-0.0005	-0.33	0.0222	-0.0001	-0.10	OE
87J6ZA		0.0265	0.0001	0.10	0.0242	0.0018	1.26	OE
8W2CYF		0.0247	-0.0017	-1.20	0.0197	-0.0026	-1.82	OE
94FHDH		0.0257	-0.0007	-0.50	0.0220	-0.0003	-0.23	OE
98DZ96		0.0263	-0.0001	-0.04	0.0221	-0.0003	-0.19	WD
AEMY89		0.0270	0.0006	0.47	0.0230	0.0007	0.46	OE
AKXXUY		0.0254	-0.0010	-0.72	0.0214	-0.0010	-0.67	XX
AV9LDW		0.0248	-0.0016	-1.15	0.0197	-0.0026	-1.82	OE
B2EHVB		0.0288	0.0024	1.75	0.0237	0.0014	0.94	IC
BJEKE2		0.0257	-0.0007	-0.50	0.0220	-0.0003	-0.23	IC
BTKC2A		0.0267	0.0003	0.23	0.0240	0.0017	1.14	OE
CQCKGZ		0.0259	-0.0005	-0.33	0.0227	0.0004	0.27	WD
DPJYJ3		0.0251	-0.0013	-0.94	0.0214	-0.0009	-0.65	XX
ERJF6C		0.0271	0.0007	0.54	0.0232	0.0009	0.59	XX
FRGCX7		0.0250	-0.0014	-1.01	0.0215	-0.0008	-0.55	OE
FVEM6Y		0.0263	0.0000	-0.02	0.0230	0.0007	0.46	XR
G398QR	X	0.0310	0.0046	3.37	0.0287	0.0063	4.36	OE
HBEHA3		0.0277	0.0013	0.95	0.0220	-0.0003	-0.23	IC
HUVKBW		0.0257	-0.0007	-0.48	0.0215	-0.0008	-0.55	OE
KC79GT		0.0271	0.0007	0.52	0.0244	0.0021	1.42	OE
KLYCT3		0.0265	0.0001	0.10	0.0222	-0.0001	-0.10	OE
L8UF7U		0.0260	-0.0004	-0.26	0.0220	-0.0003	-0.23	WD
LKV8RY		0.0274	0.0011	0.78	0.0229	0.0006	0.39	OE
MCZQBT		0.0280	0.0016	1.19	0.0230	0.0007	0.46	WD
N7AG2V		0.0269	0.0006	0.42	0.0221	-0.0003	-0.19	WD
NPE9TV		0.0252	-0.0012	-0.84	0.0209	-0.0014	-0.97	WD
QM8MZF		0.0274	0.0010	0.76	0.0234	0.0011	0.75	OE
RYJ6FP		0.0261	-0.0003	-0.21	0.0221	-0.0002	-0.16	OE
TB3FWR		0.0248	-0.0015	-1.11	0.0219	-0.0004	-0.30	OE
U9DCXT		0.0246	-0.0017	-1.25	0.0191	-0.0033	-2.25	OE
VFBEMB		0.0254	-0.0010	-0.72	0.0221	-0.0002	-0.16	WD
W6JMAH		0.0265	0.0001	0.10	0.0224	0.0000	0.02	OE
WC4MKN		0.0271	0.0007	0.54	0.0231	0.0007	0.50	XX
WLB96A		0.0231	-0.0033	-2.37	0.0198	-0.0026	-1.77	XX
X7ZRVM		0.0279	0.0015	1.12	0.0239	0.0016	1.10	XX
YRC7MD		0.0263	-0.0001	-0.04	0.0225	0.0002	0.11	OE
YXYU7		0.0291	0.0028	2.02	0.0246	0.0023	1.58	OE
ZD7DTF		0.0263	-0.0001	-0.06	0.0229	0.0006	0.42	XX
ZGQKW9		0.0281	0.0018	1.29	0.0246	0.0022	1.53	OE
ZT6EAM		0.0253	-0.0011	-0.79	0.0190	-0.0034	-2.32	IC



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1642

2nd Qtr

Corrosion Resistant Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	0.0264	Percent	0.0223	Percent
Stnd Dev Btwn Labs	0.0014	Percent	0.0015	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 43 of 45 reporting participants

Key to Method Codes Reported by Participants

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

2WXXQC (X) - Data for both samples are high. Possible Systematic Error.

G398QR (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of both samples.

Analysis 1642

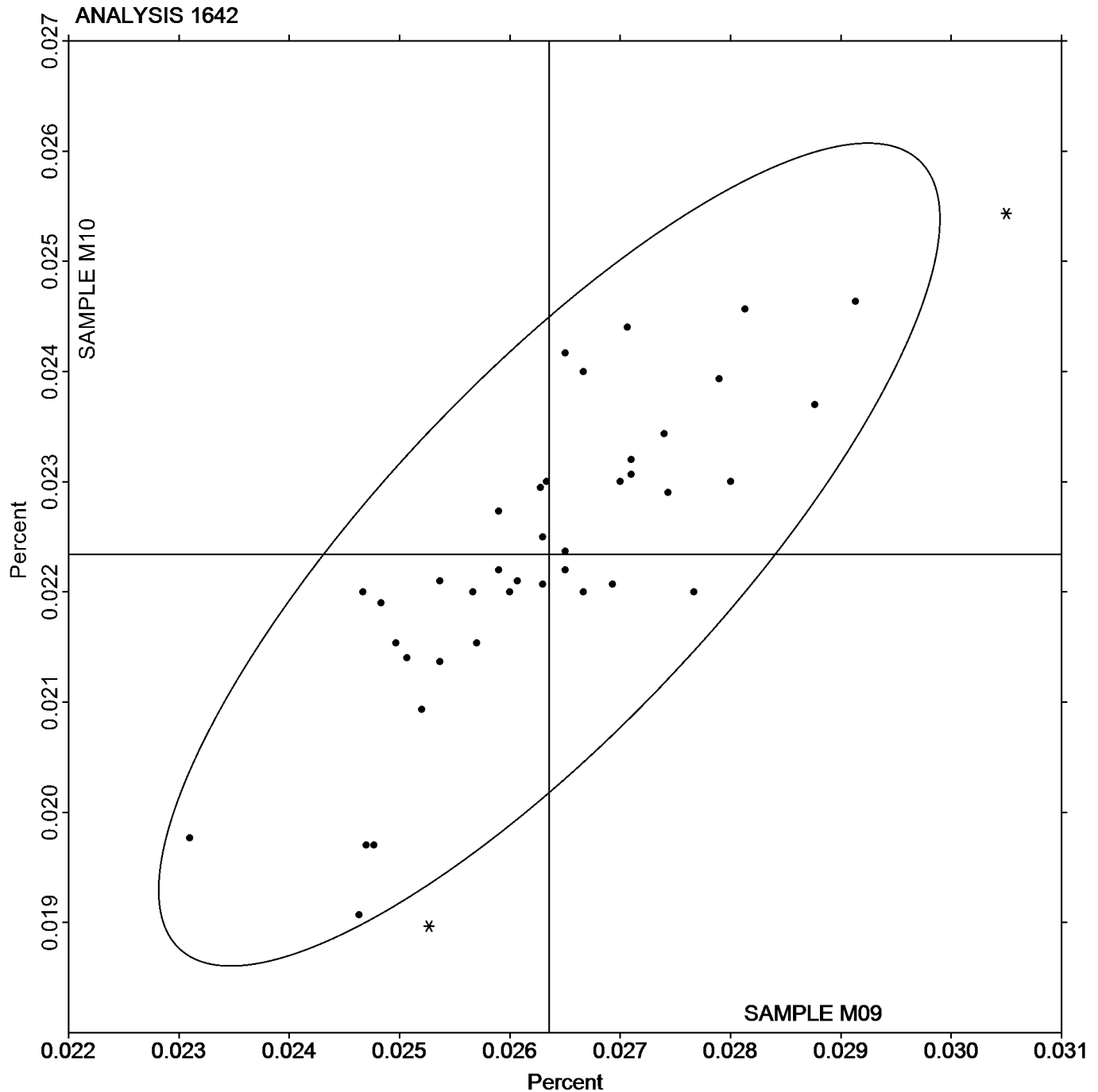
**Corrosion Resistant Steel, PHOSPHORUS (P)
PHOSPHORUS (P)**

SAMPLE M09

0.0264 Percent

SAMPLE M10

0.0223 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1643

Corrosion Resistant Steel, SULFUR (S)
SULFUR (S)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A	*	0.00300	-0.00268	-3.03	0.00100	-0.00022	-0.46	OE
2WXXQC	X	0.00100	-0.00468	-5.29	0.00100	-0.00022	-0.46	OE
334RL8		0.00737	0.00168	1.90	0.00213	0.00091	1.92	OE
6DRUKD		0.00767	0.00198	2.24	0.000633	-0.00059	-1.24	OE
6GBPH4		0.00493	-0.00075	-0.85	0.00160	0.00038	0.80	OE
6HKQEA		0.00550	-0.00018	-0.21	0.000800	-0.00042	-0.89	CO
7CF678		0.00590	0.00022	0.25	0.00240	0.00118	2.48	OE
87J6ZA	X	0.0106	0.00495	5.59	0.00773	0.00651	13.72	OE
8W2CYF		0.00563	-0.00005	-0.06	0.00147	0.00025	0.52	OE
94FHDX	X	0.00967	0.00398	4.50	0.000400	-0.00082	-1.73	OE
98DZ96		0.00510	-0.00058	-0.66	0.00100	-0.00022	-0.46	OE
AEMY89		0.00500	-0.00068	-0.77	0.00200	0.00078	1.64	OE
AKXXUY		0.00550	-0.00018	-0.21	0.00117	-0.00005	-0.11	XX
AV9LDW	X	0.0128	0.00715	8.08	0.00247	0.00125	2.62	OE
B2EHVB		0.00600	0.00032	0.36	0.00107	-0.00015	-0.32	XX
BJEKE2		0.00623	0.00055	0.62	0.00143	0.00021	0.45	CI
BTKC2A		0.00687	0.00118	1.34	0.00243	0.00121	2.55	CO
CQCKGZ		0.00627	0.00058	0.66	0.000933	-0.00029	-0.61	CI
DPJYJ3		0.00550	-0.00018	-0.21	0.00100	-0.00022	-0.46	XX
ERJF6C		0.00600	0.00032	0.36	0.00117	-0.00005	-0.11	OE
FRGCX7	X	0.00813	0.00245	2.77	0.00483	0.00361	7.61	OE
FVEM6Y		0.00573	0.00005	0.06	0.000700	-0.00052	-1.10	CO
G398QR		0.00500	-0.00068	-0.77	0.00100	-0.00022	-0.46	OE
HBEHA3		0.00583	0.00015	0.17	0.000853	-0.00037	-0.77	CI
HNBDX		0.00484	-0.00084	-0.95	0.000738	-0.00048	-1.02	CO
HUVKBW	M	0.00533	-0.00035	-0.39	No Data Reported			CI
KC79GT	X	0.0151	0.00942	10.64	0.00865	0.00743	15.64	OE
KLYCT3		0.00620	0.00052	0.58	0.00100	-0.00022	-0.46	OE
L8UF7U		0.00443	-0.00125	-1.41	0.00160	0.00038	0.80	WD
LKV8RY	M	0.00423	-0.00145	-1.64	No Data Reported			OE
MCZQBT		0.00594	0.00026	0.30	0.000943	-0.00028	-0.58	CI
N7AG2V		0.00520	-0.00048	-0.55	0.000633	-0.00059	-1.24	CI
NPE9TV		0.00527	-0.00042	-0.47	0.000900	-0.00032	-0.68	WD
QM8MZF		0.00777	0.00208	2.36	0.00177	0.00055	1.15	OE
RYJ6FP		0.00550	-0.00018	-0.21	0.00163	0.00041	0.87	OE
TB3FWR	X	0.00583	0.00015	0.17	0.00323	0.00201	4.24	OE
U9DCXT	X	0.0116	0.00588	6.65	0.00533	0.00411	8.66	OE
VFBEMB		0.00533	-0.00035	-0.39	0.000767	-0.00045	-0.96	CI
W6JMAH		0.00517	-0.00052	-0.58	0.00100	-0.00022	-0.46	OE
WC4MKN		0.00517	-0.00052	-0.58	0.000890	-0.00033	-0.70	CI
WLB96A	M	0.00521	-0.00047	-0.53	No Data Reported			XX
X7ZRVM	X	0.00387	-0.00182	-2.05	0.00313	0.00191	4.03	XX
YAM6KF		0.00580	0.00012	0.13	0.000967	-0.00025	-0.53	CO
YRC7MD		0.00590	0.00022	0.25	0.00130	0.00008	0.17	CI
YXYU7		0.00620	0.00052	0.58	0.00137	0.00015	0.31	CI
ZD7DTF		0.00550	-0.00018	-0.21	0.00117	-0.00005	-0.11	XX
ZGQKW9	X	0.0104	0.00472	5.33	0.00503	0.00381	8.03	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1643

Corrosion Resistant Steel, SULFUR (S)
SULFUR (S)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
ZT6EAM		0.00563	-0.00005	-0.06	0.00127	0.00005	0.10	CO

Summary Statistics

Sample M09			Sample M10		
Grand Means	0.00568	Percent	0.00122	Percent	
Std Dev Btwn Labs	0.00088	Percent	0.00047	Percent	

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 35 of 48 reporting participants

Key to Method Codes Reported by Participants

CI	Combustion / IR	CO	Combustion
OE	Spectrometry - Optical Emission (OES)	WD	X-Ray Fluorescence - Wavelength Dispersive (WDX)
XX	Please Indicate Method Used for Current Element		

Comments on Assigned Data Flags for Test #1643

- 2WXXQC (X) - Data for sample M09 are low.
- 87J6ZA (X) - Data for both samples are high.
- 94FHDX (X) - Data for sample M09 are high.
- AV9LDW (X) - Data for sample M09 are high. Inconsistent within the determinations of sample M10.
- FRGCX7 (X) - Data for both samples are high.
- HUVKBW (M) - Participant did not submit data for sample M10.
- KC79GT (X) - Data for both samples are high. Inconsistent within the determinations of sample M10.
- LKV8RY (M) - Participant did not submit data for sample M10.
- TB3FWR (X) - Data for sample M10 are high.
- U9DCXT (X) - Data for both samples are high. Inconsistent within the determinations of sample M10.
- WLB96A (M) - Participant did not submit data for sample M10.
- X7ZRVM (X) - Data for sample M10 are high. Inconsistent within the determinations of sample M10.
- ZGQKW9 (X) - Data for both samples are high. Inconsistent within the determinations of sample M09.

Analysis 1643

Corrosion Resistant Steel, SULFUR (S)
SULFUR (S)

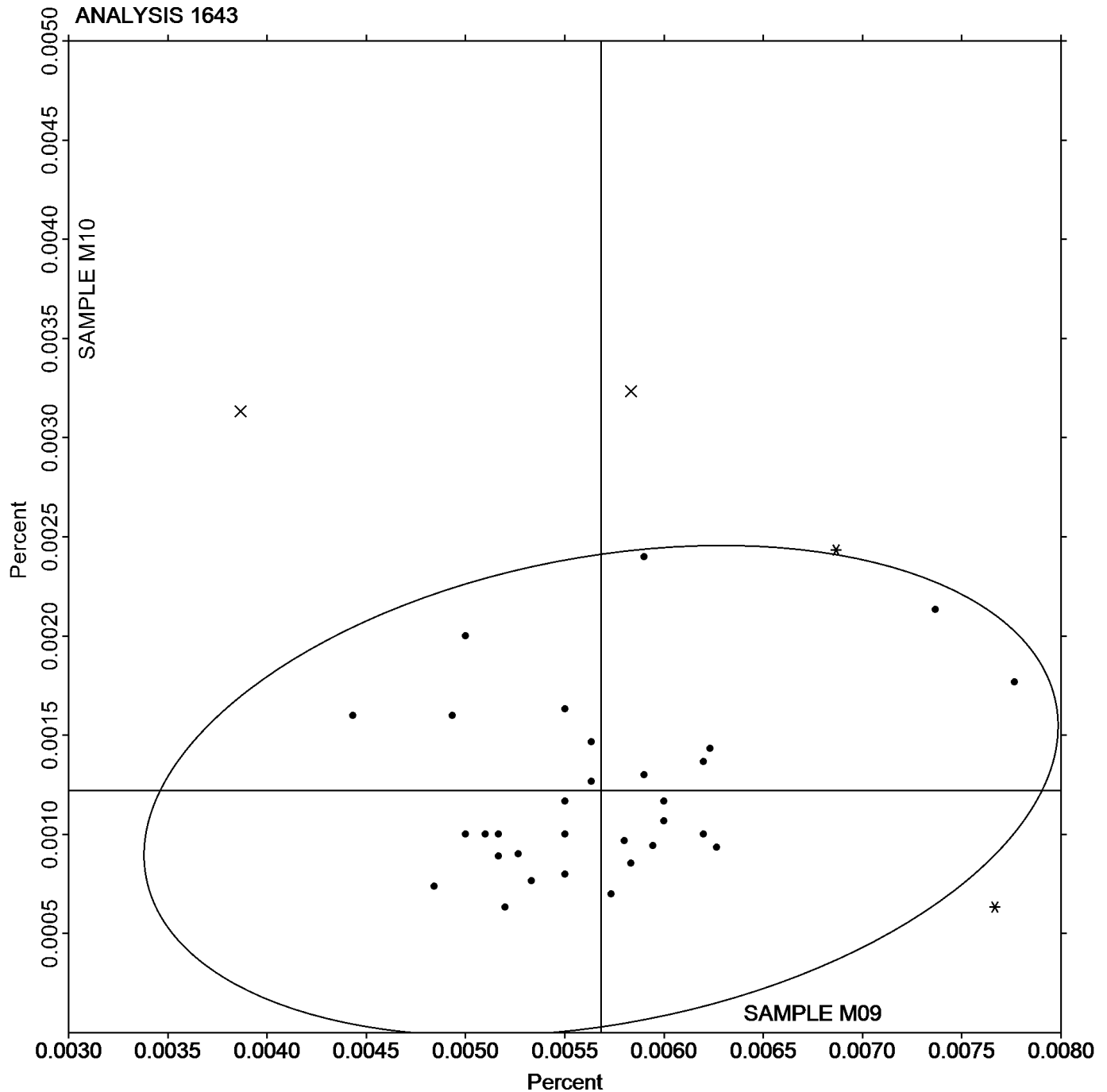
**2nd Qtr
2025**

SAMPLE M09

0.00568 Percent

SAMPLE M10

0.00122 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1644

Corrosion Resistant Steel, SILICON (Si)
SILICON (Si)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		0.4680	-0.0159	-0.71	0.3993	-0.0090	-0.43	OE
2WXXQC		0.4633	-0.0206	-0.92	0.4063	-0.0020	-0.10	OE
334RL8		0.5270	0.0431	1.93	0.4573	0.0490	2.35	OE
6DRUKD		0.4427	-0.0412	-1.85	0.3633	-0.0450	-2.16	OE
6GBPH4		0.4703	-0.0136	-0.61	0.3997	-0.0087	-0.42	OE
7CF678		0.4750	-0.0089	-0.40	0.4000	-0.0083	-0.40	OE
87J6ZA		0.4860	0.0021	0.09	0.4057	-0.0027	-0.13	OE
8W2CYF		0.4753	-0.0086	-0.38	0.3923	-0.0160	-0.77	OE
94FHDH		0.4967	0.0128	0.57	0.4200	0.0117	0.56	OE
98DZ96		0.4839	0.0000	0.00	0.4068	-0.0016	-0.08	WD
AEMY89		0.4783	-0.0056	-0.25	0.3960	-0.0123	-0.59	OE
AKXXUY		0.4803	-0.0036	-0.16	0.4077	-0.0007	-0.03	XX
AV9LDW	X	0.5507	0.0668	2.99	0.4467	0.0383	1.84	OE
B2EHVB		0.5047	0.0208	0.93	0.4270	0.0187	0.90	IC
BJEKE2		0.4710	-0.0129	-0.58	0.4027	-0.0057	-0.27	GR
BTKC2A	*	0.4663	-0.0176	-0.79	0.3683	-0.0400	-1.92	OE
CQCKGZ		0.4780	-0.0059	-0.26	0.3970	-0.0114	-0.55	WD
DPJYJ3		0.4900	0.0061	0.27	0.4127	0.0043	0.21	XX
ERJF6C		0.4749	-0.0090	-0.40	0.3980	-0.0104	-0.50	OE
FRGCX7		0.4773	-0.0066	-0.29	0.4097	0.0013	0.06	OE
FVEM6Y		0.4737	-0.0102	-0.46	0.3960	-0.0123	-0.59	XR
G398QR		0.4367	-0.0472	-2.12	0.3700	-0.0383	-1.84	OE
HBEHA3		0.4793	-0.0046	-0.20	0.4040	-0.0043	-0.21	IC
HUVKBW		0.4817	-0.0022	-0.10	0.4123	0.0040	0.19	OE
KC79GT		0.5337	0.0498	2.23	0.4612	0.0529	2.54	OE
KLYCT3		0.4640	-0.0199	-0.89	0.3930	-0.0153	-0.74	OE
L8UF7U		0.4700	-0.0139	-0.62	0.4000	-0.0083	-0.40	WD
LKV8RY		0.5012	0.0173	0.77	0.4285	0.0202	0.97	OE
MCZQBT		0.4937	0.0098	0.44	0.4070	-0.0013	-0.06	WD
N7AG2V		0.4646	-0.0193	-0.86	0.3855	-0.0228	-1.10	WD
NPE9TV		0.4803	-0.0036	-0.16	0.4040	-0.0043	-0.21	WD
NUR76N		0.5153	0.0314	1.41	0.4480	0.0397	1.90	OE
QM8MZF		0.4850	0.0011	0.05	0.4027	-0.0057	-0.27	OE
RYJ6FP		0.4580	-0.0259	-1.16	0.3847	-0.0237	-1.14	XX
TB3FWR		0.4870	0.0031	0.14	0.4123	0.0040	0.19	OE
U9DCXT	*	0.5410	0.0571	2.56	0.4543	0.0460	2.21	OE
VFBEMB		0.4913	0.0074	0.33	0.4147	0.0063	0.30	WD
W6JMAH		0.4811	-0.0028	-0.13	0.4075	-0.0008	-0.04	OE
WC4MKN		0.4788	-0.0051	-0.23	0.3995	-0.0089	-0.43	WD
WLB96A		0.4900	0.0061	0.27	0.4197	0.0113	0.54	XX
X7ZRVM		0.4830	-0.0009	-0.04	0.4047	-0.0037	-0.18	XX
YRC7MD		0.4730	-0.0109	-0.49	0.3980	-0.0103	-0.50	OE
YXYU7		0.4557	-0.0282	-1.26	0.3837	-0.0247	-1.18	OE
ZGQKW9		0.5277	0.0438	1.96	0.4427	0.0343	1.65	OE
ZT6EAM		0.5193	0.0354	1.59	0.4233	0.0150	0.72	IC



Fasteners and Metals Interlaboratory Testing Program

Analysis 1644

Corrosion Resistant Steel, SILICON (Si)
SILICON (Si)

Cycle 150

2nd Qtr
2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	0.4839	Percent	0.4083	Percent
Std Dev Btwn Labs	0.0223	Percent	0.0208	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 43 of 45 reporting participants

Key to Method Codes Reported by Participants

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	XX	Please Indicate Method Used for Current Element

Comments on Assigned Data Flags for Test #1644

AV9LDW (X) - Data for sample M09 are high.



Analysis 1644

Corrosion Resistant Steel, SILICON (Si)

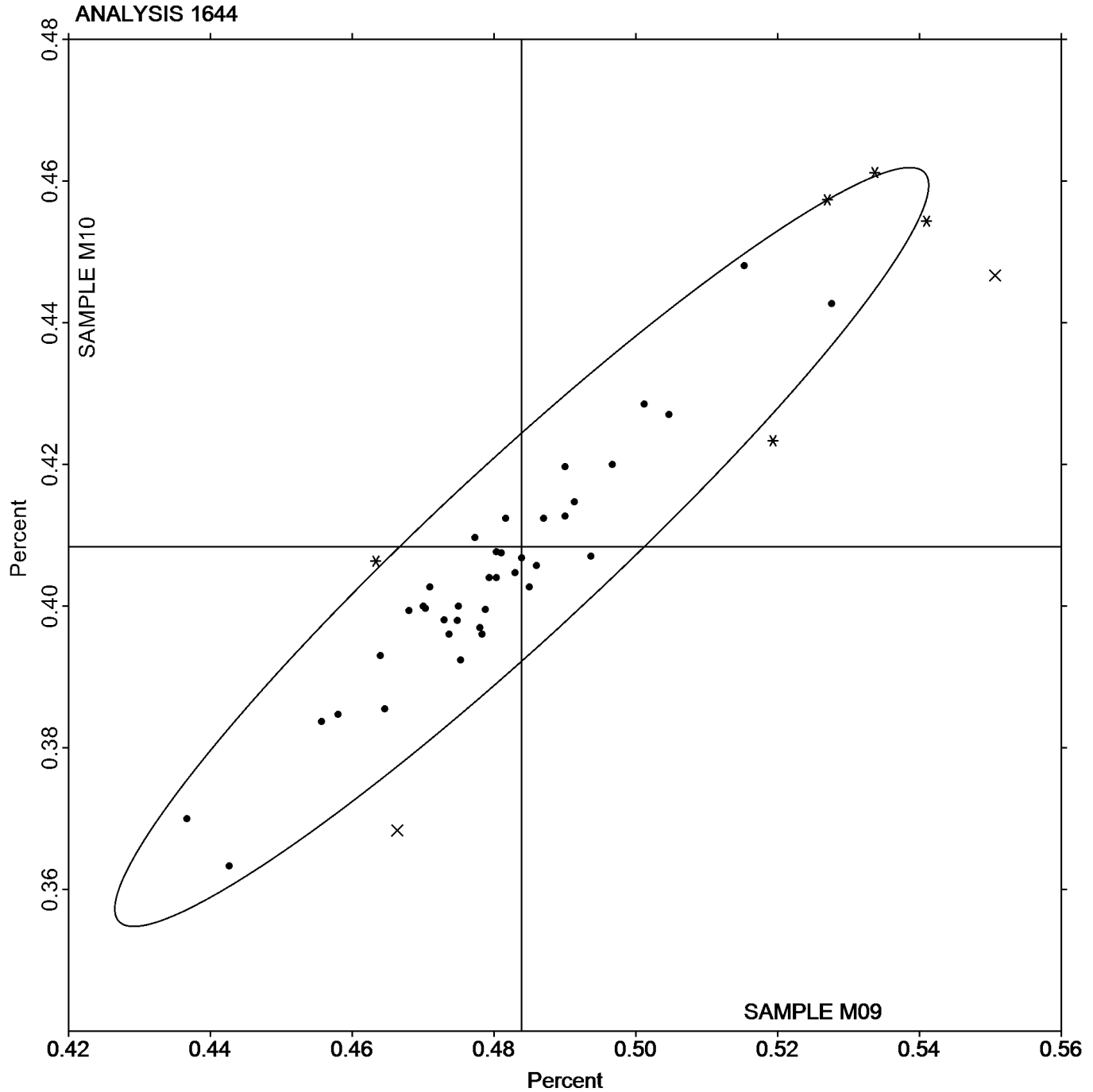
SILICON (Si)

SAMPLE M09

SAMPLE M10

0.4839 Percent

0.4083 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1645****Corrosion Resistant Steel, COBALT (Co)
COBALT (Co)****Cycle 150****2nd Qtr
2025**

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		0.2557	-0.0167	-1.47	0.1177	-0.0072	-1.47	OE
334RL8		0.2810	0.0087	0.76	0.1257	0.0008	0.17	OE
6DRUKD		0.2687	-0.0037	-0.32	0.1190	-0.0058	-1.19	OE
6GBPH4		0.2755	0.0032	0.28	0.1262	0.0013	0.27	OE
7CF678		0.2700	-0.0023	-0.21	0.1230	-0.0018	-0.38	OE
87J6ZA		0.2617	-0.0107	-0.94	0.1263	0.0015	0.30	OE
8W2CYF		0.2737	0.0013	0.12	0.1297	0.0048	0.98	OE
98DZ96		0.2762	0.0039	0.34	0.1208	-0.0041	-0.83	WD
AEMY89		0.2850	0.0127	1.11	0.1270	0.0022	0.44	OE
AKXXUY		0.2730	0.0007	0.06	0.1250	0.0002	0.03	XX
AV9LDW		0.2847	0.0123	1.08	0.1250	0.0002	0.03	OE
B2EHVB		0.2760	0.0037	0.32	0.1260	0.0012	0.24	IC
BJEKE2	X	0.1233	-0.1490	-13.10	0.2707	0.1458	29.78	IC
BTKC2A		0.2927	0.0203	1.79	0.1360	0.0112	2.28	OE
CQCKGZ		0.2827	0.0104	0.91	0.1289	0.0040	0.82	IC
DPJYJ3		0.2787	0.0063	0.56	0.1280	0.0032	0.64	XX
ERJF6C		0.2903	0.0180	1.58	0.1282	0.0034	0.69	OE
FRGCX7		0.2703	-0.0020	-0.18	0.1220	-0.0028	-0.58	OE
FVEM6Y		0.2773	0.0050	0.44	0.1267	0.0018	0.37	XR
G398QR		0.2800	0.0077	0.67	0.1300	0.0052	1.05	OE
HBEHA3		0.2790	0.0067	0.58	0.1327	0.0078	1.60	IC
HUVKBW		0.2970	0.0247	2.17	0.1350	0.0102	2.07	OE
KC79GT		0.2533	-0.0190	-1.67	0.1133	-0.0116	-2.37	OE
KLYCT3		0.2670	-0.0053	-0.47	0.1230	-0.0018	-0.38	OE
L8UF7U		0.2597	-0.0127	-1.11	0.1260	0.0012	0.24	WD
LKV8RY		0.2538	-0.0185	-1.63	0.1173	-0.0076	-1.55	OE
MCZQBT		0.2783	0.0060	0.53	0.1263	0.0015	0.30	WD
N7AG2V		0.2721	-0.0002	-0.02	0.1222	-0.0026	-0.53	WD
NPE9TV		0.2730	0.0007	0.06	0.1263	0.0015	0.30	WD
NUR76N		0.2650	-0.0073	-0.65	0.1207	-0.0042	-0.85	OE
QM8MZF		0.2477	-0.0247	-2.17	0.1210	-0.0038	-0.79	OE
RYJ6FP	*	0.2583	-0.0140	-1.23	0.1377	0.0128	2.62	OE
TB3FWR		0.2823	0.0100	0.88	0.1243	-0.0005	-0.11	OE
U9DCXT	*	0.2760	0.0037	0.32	0.1143	-0.0105	-2.15	OE
VFBEMB		0.2530	-0.0193	-1.70	0.1230	-0.0018	-0.38	WD
W6JMAH		0.2795	0.0071	0.63	0.1299	0.0051	1.04	OE
WC4MKN		0.2701	-0.0022	-0.19	0.1252	0.0003	0.06	WD
WLB96A		0.2663	-0.0060	-0.53	0.1210	-0.0038	-0.79	XX
X7ZRVM		0.2563	-0.0160	-1.41	0.1287	0.0038	0.78	XX
YRC7MD		0.2740	0.0017	0.15	0.1263	0.0015	0.30	WD
YXYU7		0.2583	-0.0140	-1.23	0.1200	-0.0048	-0.99	OE
ZD7DTF		0.2701	-0.0023	-0.20	0.1226	-0.0023	-0.47	XX
ZT6EAM		0.2813	0.0090	0.79	0.1287	0.0038	0.78	IC



Fasteners and Metals Interlaboratory Testing Program

Cycle 150

Analysis 1645

2nd Qtr

Corrosion Resistant Steel, COBALT (Co)
COBALT (Co)

2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	0.2723	Percent	0.1248	Percent
Std Dev Btwn Labs	0.0114	Percent	0.0049	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 41 of 43 reporting participants

Key to Method Codes Reported by Participants

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

BJEKE2 (X) - Data appear to be transposed between samples.



Analysis 1645

Corrosion Resistant Steel, COBALT (Co)

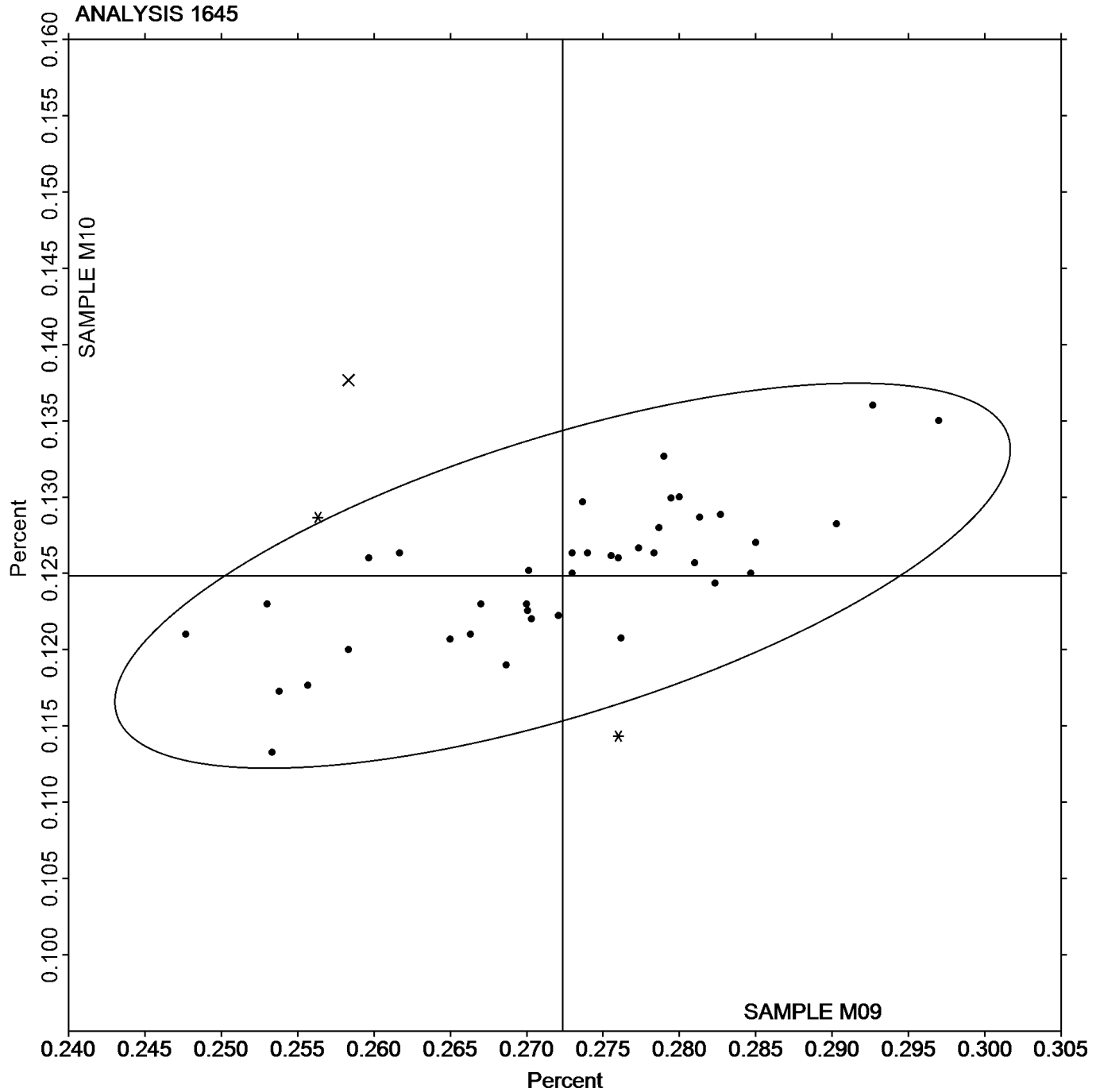
COBALT (Co)

SAMPLE M09

SAMPLE M10

0.2723 Percent

0.1248 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1646

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

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		20.24	-0.05	-0.32	20.08	0.04	0.33	OE
2WXXQC		20.56	0.26	1.52	20.02	-0.02	-0.17	OE
334RL8	*	19.86	-0.44	-2.61	19.66	-0.38	-3.14	OE
6DRUKD	*	19.99	-0.31	-1.84	20.09	0.05	0.41	OE
6GBPH4		20.50	0.20	1.17	20.22	0.18	1.52	OE
7CF678		20.42	0.12	0.72	20.07	0.03	0.27	OE
87J6ZA		20.27	-0.03	-0.17	20.08	0.04	0.36	OE
8W2CYF		20.25	-0.04	-0.27	20.05	0.01	0.08	OE
94FHDX		20.26	-0.03	-0.21	19.93	-0.11	-0.89	OE
98DZ96		20.37	0.07	0.42	20.12	0.09	0.72	XX
AEMY89		20.31	0.01	0.07	20.13	0.09	0.74	OE
AKXXUY		20.22	-0.07	-0.44	20.01	-0.03	-0.23	XX
AV9LDW		20.74	0.44	2.59	20.20	0.17	1.38	OE
B2EHVB		20.54	0.24	1.40	20.25	0.21	1.75	IC
BJEKE2		20.27	-0.03	-0.17	20.01	-0.03	-0.23	GR
BTKC2A		20.37	0.07	0.42	20.02	-0.02	-0.14	OE
CQCKGZ		20.27	-0.03	-0.19	20.00	-0.04	-0.30	WD
DPJYJ3		20.28	-0.02	-0.13	20.05	0.01	0.11	XX
ERJF6C		20.38	0.09	0.51	20.03	-0.01	-0.05	OE
FRGCX7		20.19	-0.10	-0.62	20.00	-0.04	-0.31	OE
FVEM6Y	X	23.30	3.00	17.69	20.06	0.02	0.17	XR
G398QR	X	21.57	1.27	7.50	21.32	1.28	10.67	OE
HBEHA3		20.28	-0.02	-0.11	20.09	0.05	0.44	IC
HUVKBW		20.25	-0.05	-0.30	19.96	-0.08	-0.64	OE
KC79GT		20.73	0.43	2.53	20.12	0.09	0.72	OE
KLYCT3		20.15	-0.15	-0.88	19.84	-0.20	-1.64	OE
L8UF7U		20.36	0.06	0.36	19.97	-0.07	-0.59	WD
LKV8RY		20.14	-0.16	-0.94	19.94	-0.10	-0.80	OE
MCZQBT		20.42	0.12	0.72	20.20	0.16	1.31	WD
N7AG2V		20.35	0.05	0.29	20.09	0.06	0.47	WD
NPE9TV		20.38	0.08	0.48	20.13	0.09	0.75	WD
QM8MZF		20.24	-0.06	-0.34	20.00	-0.03	-0.28	OE
RYJ6FP		20.31	0.02	0.09	20.13	0.09	0.77	OE
TB3FWR		20.19	-0.10	-0.62	20.02	-0.02	-0.17	OE
U9DCXT		20.40	0.10	0.60	20.08	0.04	0.36	OE
VFBE MB		20.24	-0.06	-0.35	20.06	0.02	0.15	WD
W6JMAH		20.21	-0.09	-0.52	19.98	-0.06	-0.48	OE
WC4MKN		20.42	0.12	0.72	20.18	0.14	1.16	WD
WLB96A		20.13	-0.17	-0.99	19.81	-0.22	-1.86	XX
X7ZRVM	*	19.92	-0.37	-2.21	19.70	-0.34	-2.83	XX
YRC7MD		20.27	-0.03	-0.17	20.07	0.04	0.30	WD
YXYYU7		20.36	0.06	0.36	20.14	0.11	0.88	OE
ZD7DTF		20.35	0.05	0.29	20.05	0.02	0.14	XX
ZGQKW9		20.25	-0.05	-0.29	20.02	-0.01	-0.11	OE
ZT6EAM	*	20.35	0.05	0.29	19.72	-0.31	-2.61	IC
ZYT38D		20.20	-0.10	-0.58	20.00	-0.04	-0.29	WC



Fasteners and Metals Interlaboratory Testing Program

Analysis 1646

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

Cycle 150

2nd Qtr
2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	20.30	Percent	20.04	Percent
Stnd Dev Btwn Labs	0.17	Percent	0.12	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 43 of 46 reporting participants

Key to Method Codes Reported by Participants

GR	Gravimetry	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

FVEM6Y (X) - Data for sample M09 are high. Inconsistent within the determinations of sample M09.

G398QR (X) - Data for both samples are high.



Analysis 1646

Corrosion Resistant Steel, NICKEL (Ni)

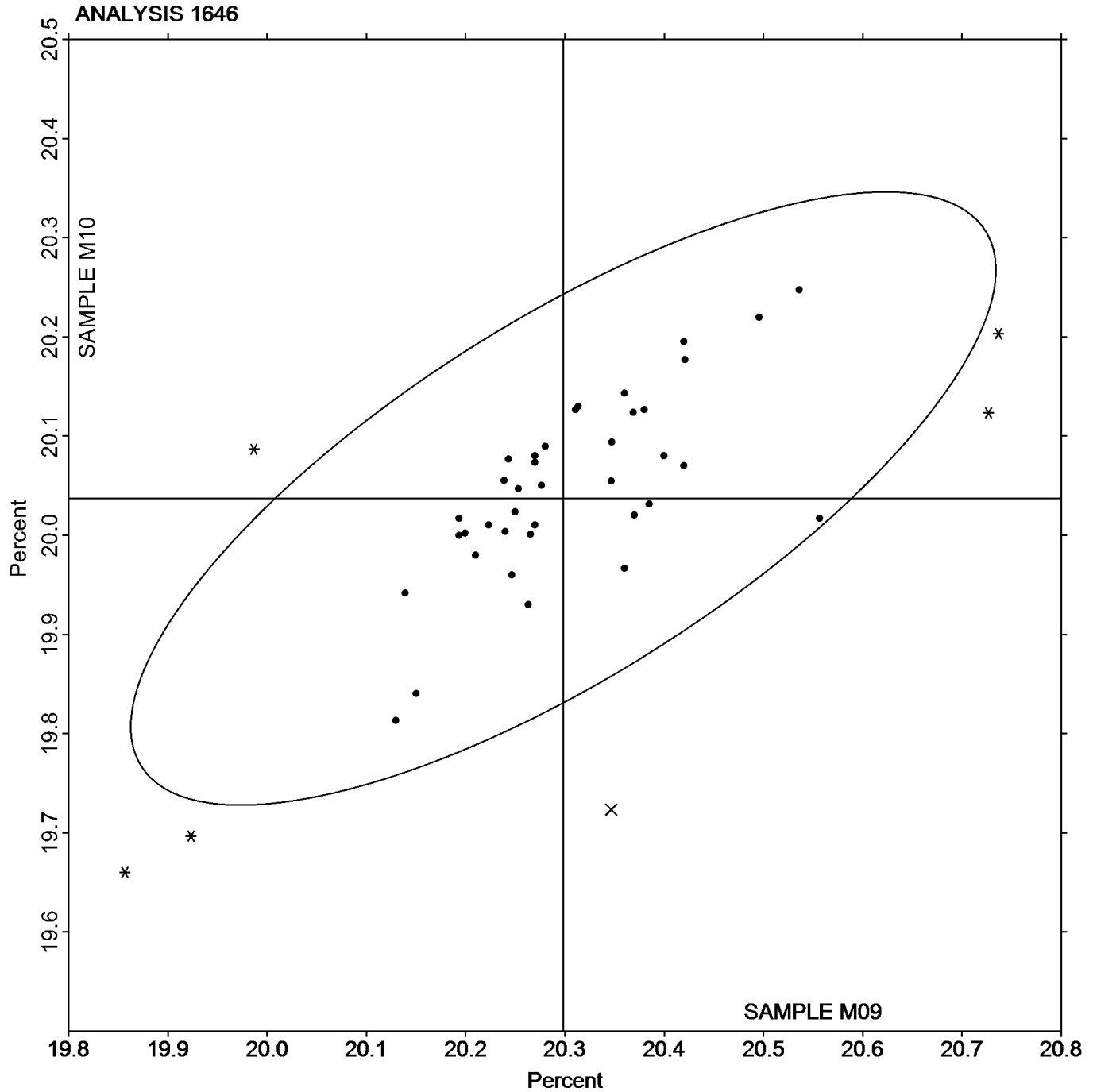
NICKEL (Ni)

SAMPLE M09

SAMPLE M10

20.30 Percent

20.04 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1647

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

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		24.85	0.10	0.71	24.26	-0.03	-0.23	OE
2WXXQC	X	24.00	-0.75	-5.46	23.54	-0.75	-6.06	OE
334RL8		24.75	0.00	0.03	24.17	-0.12	-0.97	OE
6DRUKD		25.08	0.33	2.42	24.53	0.24	1.91	OE
6GBPH4		24.79	0.05	0.33	24.29	0.00	-0.01	OE
7CF678		24.66	-0.09	-0.65	24.41	0.12	0.98	OE
87J6ZA		24.61	-0.14	-1.04	24.12	-0.17	-1.40	OE
8W2CYF		24.71	-0.04	-0.26	24.32	0.03	0.20	OE
94FHDX		24.86	0.11	0.84	24.38	0.09	0.74	OE
98DZ96		24.56	-0.19	-1.40	24.17	-0.12	-0.97	WD
AEMY89		24.76	0.01	0.07	24.21	-0.08	-0.62	OE
AKXXUY		24.79	0.04	0.27	24.36	0.07	0.58	XX
AV9LDW	X	24.33	-0.42	-3.09	24.26	-0.03	-0.23	OE
B2EHVB		24.76	0.01	0.08	24.28	-0.02	-0.13	IC
BJEKE2		24.76	0.01	0.05	24.27	-0.02	-0.17	TI
BTKC2A	X	24.69	-0.06	-0.43	23.92	-0.37	-2.98	OE
CQCKGZ		24.73	-0.02	-0.12	24.27	-0.03	-0.20	WD
DPJYJ3		24.71	-0.04	-0.29	24.15	-0.14	-1.11	XX
ERJF6C		24.57	-0.18	-1.29	24.15	-0.14	-1.14	OE
FRGCX7		24.97	0.22	1.59	24.42	0.13	1.00	OE
FVEM6Y		24.77	0.02	0.18	24.32	0.03	0.23	XR
G398QR		24.83	0.08	0.62	24.38	0.09	0.74	OE
HBEHA3		24.84	0.10	0.70	24.40	0.11	0.85	IC
HUVKBW		24.49	-0.26	-1.87	24.11	-0.18	-1.46	OE
KC79GT		24.49	-0.26	-1.90	24.25	-0.04	-0.33	OE
KLYCT3		25.04	0.29	2.13	24.45	0.16	1.27	OE
L8UF7U		24.64	-0.11	-0.77	24.23	-0.06	-0.47	WD
LKV8RY		24.71	-0.04	-0.29	24.24	-0.05	-0.42	OE
MCZQBT		24.70	-0.05	-0.37	24.24	-0.05	-0.39	WD
N7AG2V		24.68	-0.07	-0.49	24.21	-0.08	-0.62	WD
NPE9TV		24.47	-0.28	-2.07	23.99	-0.30	-2.42	WD
QM8MZF		24.74	-0.01	-0.07	24.32	0.03	0.20	OE
RYJ6FP		24.77	0.02	0.18	24.20	-0.09	-0.73	OE
TB3FWR		24.66	-0.09	-0.65	24.28	-0.01	-0.12	OE
U9DCXT	X	23.47	-1.28	-9.38	23.25	-1.04	-8.36	OE
VFBEMB		24.85	0.10	0.76	24.51	0.22	1.75	WD
W6JMAH		24.65	-0.09	-0.69	24.06	-0.23	-1.84	OE
WC4MKN		24.93	0.18	1.35	24.47	0.18	1.43	WD
WLB96A		24.83	0.08	0.57	24.46	0.17	1.38	XX
X7ZRVM		24.89	0.14	1.05	24.37	0.08	0.60	XX
YRC7MD		24.70	-0.05	-0.38	24.41	0.12	0.98	WD
YXYU7		24.88	0.13	0.93	24.42	0.13	1.06	OE
ZD7DTF		24.69	-0.06	-0.46	24.24	-0.05	-0.38	XX
ZT6EAM	X	25.02	0.27	1.98	24.05	-0.24	-1.94	IC
ZYT38D		24.78	0.03	0.21	24.32	0.03	0.24	WC



Fasteners and Metals Interlaboratory Testing Program

Analysis 1647

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

Cycle 150

2nd Qtr
2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	24.75	Percent	24.29	Percent
Std Dev Btwn Labs	0.14	Percent	0.12	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 40 of 45 reporting participants

Key to Method Codes Reported by Participants

IC	Spectrometry - Inductively Coupled Plasma (ICP)	OE	Spectrometry - Optical Emission (OES)
TI	Titrimetry	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 #1647

- 2WXXQC (X) - Data for both samples are low. Possible Systematic Error.
AV9LDW (X) - Data for sample M09 are low.
BTKC2A (X) - Data for sample M10 are low.
U9DCXT (X) - Data for both samples are low. Possible Systematic Error.
ZT6EAM (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.



Analysis 1647

Corrosion Resistant Steel, CHROMIUM (Cr)

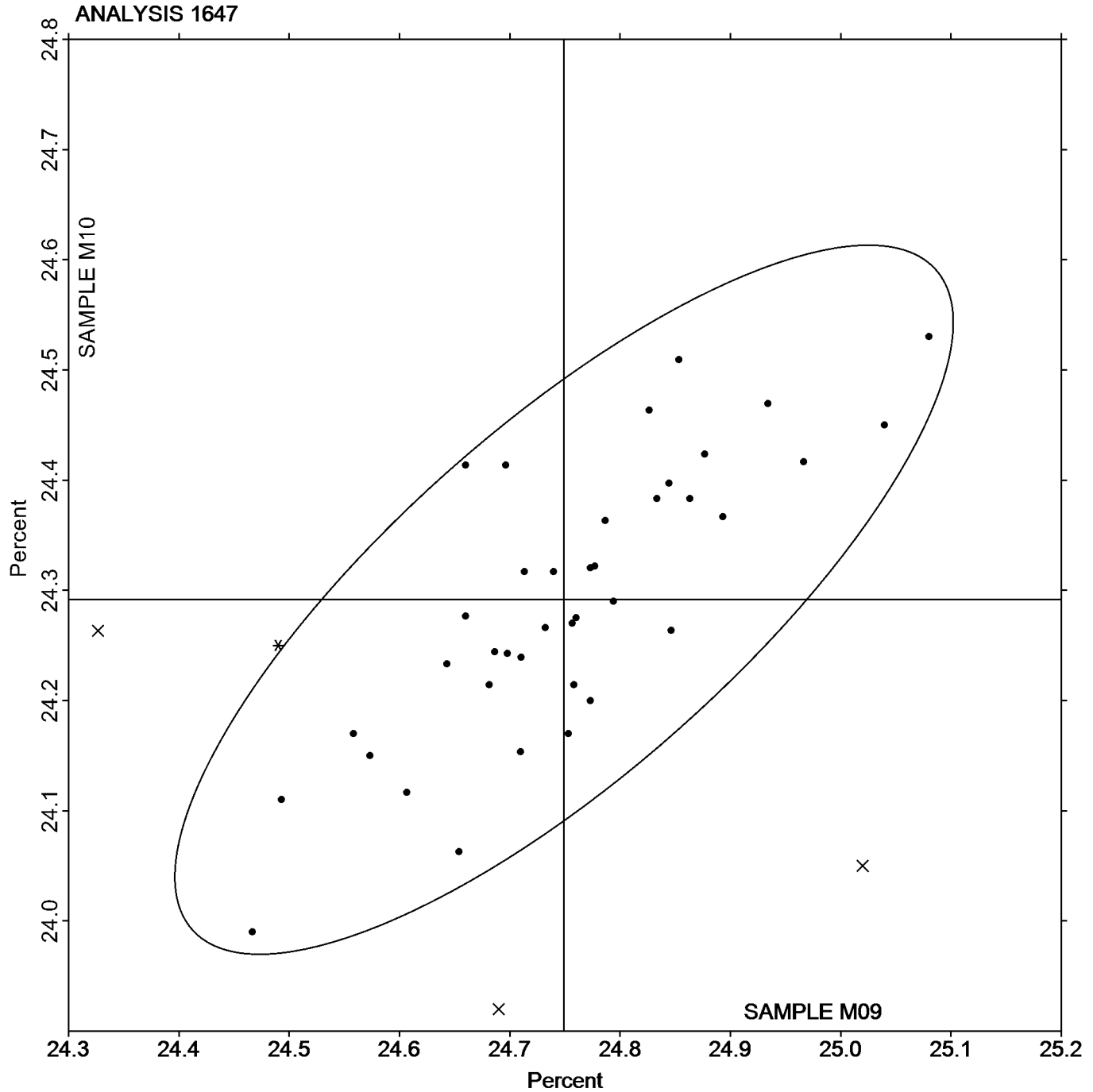
CHROMIUM (Cr)

SAMPLE M09

SAMPLE M10

24.75 Percent

24.29 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1648

Corrosion Resistant Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		0.3577	-0.0061	-0.57	0.2253	0.0014	0.13	OE
334RL8		0.3427	-0.0211	-1.96	0.2133	-0.0106	-0.99	OE
6DRUKD	X	0.4630	0.0992	9.20	0.2650	0.0411	3.82	OE
6GBPH4		0.3584	-0.0054	-0.50	0.2197	-0.0043	-0.40	OE
7CF678		0.3630	-0.0008	-0.08	0.2250	0.0011	0.10	OE
87J6ZA		0.3770	0.0132	1.22	0.2137	-0.0103	-0.95	OE
8W2CYF		0.3633	-0.0005	-0.04	0.2200	-0.0039	-0.37	OE
98DZ96		0.3635	-0.0003	-0.03	0.2196	-0.0043	-0.40	WD
AEMY89	X	0.4297	0.0659	6.11	0.2107	-0.0133	-1.23	XX
AKXXUY		0.3647	0.0009	0.08	0.2200	-0.0039	-0.37	XX
AV9LDW		0.3580	-0.0058	-0.54	0.2320	0.0081	0.75	OE
B2EHVB		0.3720	0.0082	0.76	0.2257	0.0017	0.16	IC
BJEKE2		0.3653	0.0015	0.14	0.2217	-0.0023	-0.21	IC
BTKC2A	X	0.3360	-0.0278	-2.58	0.3700	0.1461	13.59	OE
CQCKGZ		0.3653	0.0015	0.14	0.2203	-0.0036	-0.33	WD
DPJYJ3		0.3660	0.0022	0.20	0.2233	-0.0006	-0.06	XX
ERJF6C		0.3742	0.0104	0.96	0.2177	-0.0062	-0.58	XX
FRGCX7		0.3507	-0.0131	-1.22	0.2183	-0.0056	-0.52	OE
FVEM6Y		0.3607	-0.0031	-0.29	0.2180	-0.0059	-0.55	XR
G398QR		0.3900	0.0262	2.43	0.2500	0.0261	2.43	OE
HBEHA3		0.3650	0.0012	0.11	0.2243	0.0004	0.04	IC
HUVKBW		0.3570	-0.0068	-0.63	0.2197	-0.0043	-0.40	OE
KC79GT		0.3471	-0.0167	-1.55	0.2132	-0.0107	-1.00	OE
KLYCT3		0.3570	-0.0068	-0.63	0.2200	-0.0039	-0.37	OE
L8UF7U		0.3600	-0.0038	-0.35	0.2200	-0.0039	-0.37	WD
LKV8RY	X	0.3999	0.0361	3.34	0.2601	0.0362	3.36	OE
MCZQBT		0.3643	0.0005	0.05	0.2240	0.0001	0.01	WD
N7AG2V		0.3568	-0.0070	-0.65	0.2109	-0.0130	-1.21	WD
NPE9TV		0.3667	0.0029	0.26	0.2227	-0.0013	-0.12	WD
NUR76N		0.3700	0.0062	0.57	0.2500	0.0261	2.43	OE
QM8MZF		0.3647	0.0009	0.08	0.2520	0.0281	2.61	OE
RYJ6FP		0.3583	-0.0055	-0.51	0.2193	-0.0046	-0.43	OE
TB3FWR	*	0.3547	-0.0091	-0.85	0.2537	0.0297	2.77	OE
U9DCXT		0.3913	0.0275	2.55	0.2303	0.0064	0.60	OE
VFBEMB		0.3697	0.0059	0.54	0.2257	0.0017	0.16	WD
W6JMAH		0.3690	0.0052	0.48	0.2389	0.0149	1.39	OE
WC4MKN		0.3626	-0.0012	-0.12	0.2209	-0.0030	-0.28	WD
WLB96A		0.3650	0.0012	0.11	0.2087	-0.0153	-1.42	XX
X7ZRVM		0.3417	-0.0221	-2.05	0.2193	-0.0046	-0.43	XX
YRC7MD		0.3590	-0.0048	-0.45	0.2227	-0.0013	-0.12	WD
YXYU7		0.3573	-0.0065	-0.60	0.2170	-0.0069	-0.64	OE
ZD7DTF		0.3591	-0.0048	-0.44	0.2227	-0.0012	-0.11	XX
ZGQKW9		0.3891	0.0253	2.35	0.2172	-0.0067	-0.62	OE
ZT6EAM		0.3747	0.0109	1.01	0.2203	-0.0036	-0.33	IC



Fasteners and Metals Interlaboratory Testing Program

Analysis 1648

Corrosion Resistant Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

Cycle 150

2nd Qtr
2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	0.3638	Percent	0.2239	Percent
Std Dev Btwn Labs	0.0108	Percent	0.0108	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 40 of 44 reporting participants

Key to Method Codes Reported by Participants

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

6DRUKD (X) - Data for both samples are high. Inconsistent within the determinations of sample M09.
AEMY89 (X) - Data for sample M09 are high.
BTKC2A (X) - Data for sample M10 are high.
LKV8RY (X) - Data for both samples are high.



Analysis 1648

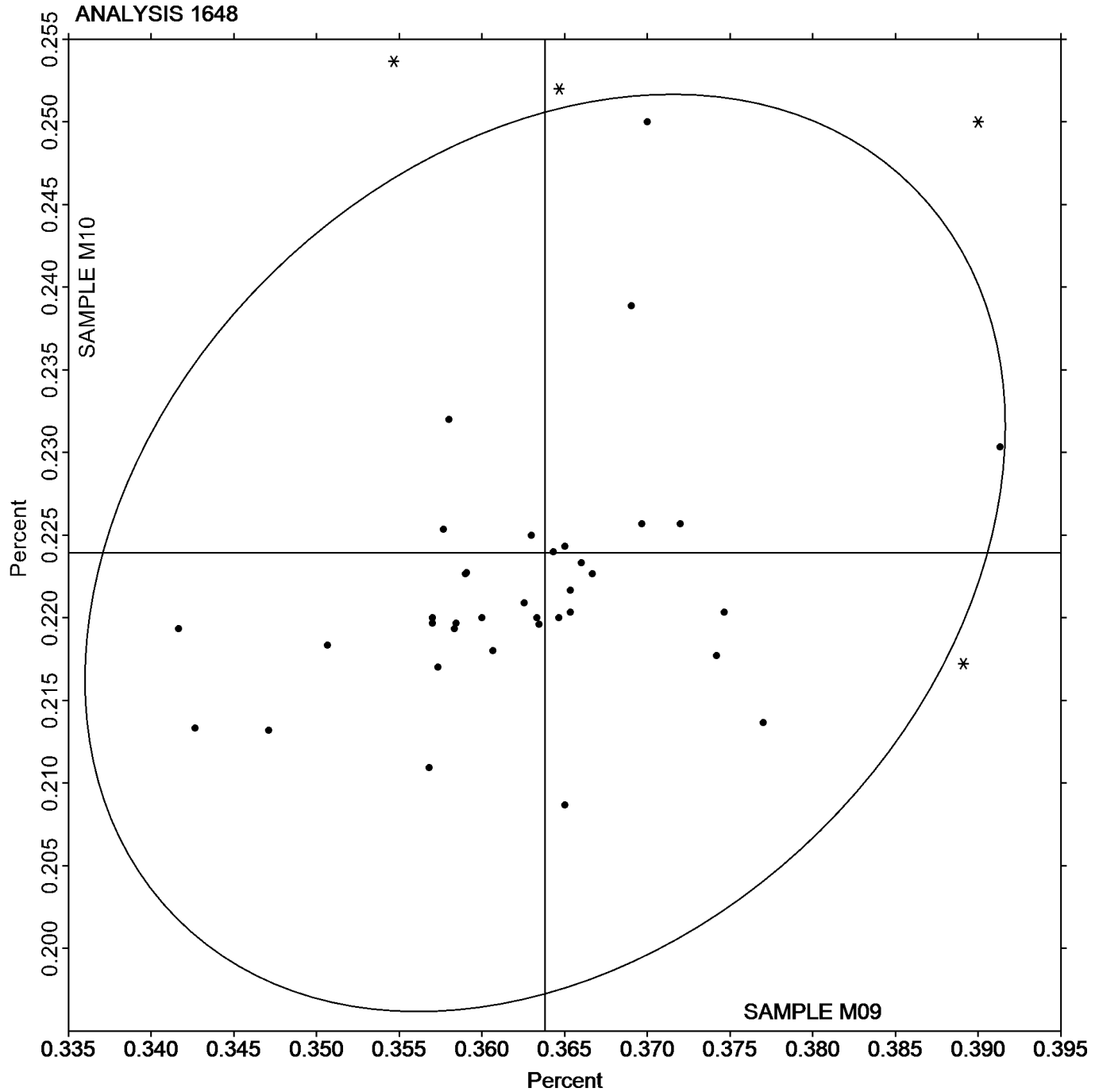
2nd Qtr

2025

Corrosion Resistant Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

SAMPLE M09
0.3638 Percent

SAMPLE M10
0.2239 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1649****Corrosion Resistant Steel, COPPER (Cu)
COPPER (Cu)****Cycle 150****2nd Qtr
2025**

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		0.2767	-0.0049	-0.31	0.3003	-0.0051	-0.32	OE
334RL8		0.2970	0.0155	1.00	0.3240	0.0186	1.19	OE
6DRUKD		0.2763	-0.0052	-0.34	0.3003	-0.0051	-0.32	OE
6GBPH4		0.3010	0.0195	1.26	0.3286	0.0232	1.49	OE
7CF678		0.2720	-0.0095	-0.62	0.3010	-0.0044	-0.28	OE
87J6ZA		0.2803	-0.0012	-0.08	0.3020	-0.0034	-0.22	OE
8W2CYF		0.2900	0.0085	0.55	0.3130	0.0076	0.49	OE
98DZ96		0.2843	0.0028	0.18	0.3096	0.0042	0.27	WD
AEMY89	*	0.3247	0.0431	2.79	0.3513	0.0459	2.94	OE
AKXXUY		0.2783	-0.0032	-0.21	0.3010	-0.0044	-0.28	XX
AV9LDW		0.2817	0.0001	0.01	0.2930	-0.0124	-0.79	OE
B2EHVB		0.2760	-0.0055	-0.36	0.2950	-0.0104	-0.66	IC
BJEKE2		0.2777	-0.0039	-0.25	0.3077	0.0023	0.15	IC
BTKC2A		0.2800	-0.0015	-0.10	0.2960	-0.0094	-0.60	OE
CQCKGZ		0.2760	-0.0055	-0.36	0.2990	-0.0064	-0.41	WD
DPJYJ3		0.2797	-0.0019	-0.12	0.3027	-0.0027	-0.17	XX
ERJF6C		0.2898	0.0082	0.53	0.3148	0.0094	0.60	OE
FRGCX7		0.2653	-0.0162	-1.05	0.2937	-0.0117	-0.75	OE
FVEM6Y		0.2803	-0.0012	-0.08	0.3050	-0.0004	-0.02	XR
G398QR		0.2900	0.0085	0.55	0.3167	0.0113	0.72	OE
HBEHA3		0.2783	-0.0032	-0.21	0.3030	-0.0024	-0.15	IC
HUVKBW		0.2643	-0.0172	-1.11	0.2930	-0.0124	-0.79	OE
KC79GT		0.2808	-0.0008	-0.05	0.3088	0.0034	0.22	OE
KLYCT3		0.2870	0.0055	0.35	0.3130	0.0076	0.49	OE
L8UF7U		0.2547	-0.0269	-1.74	0.2803	-0.0251	-1.60	WD
LKV8RY		0.2626	-0.0190	-1.23	0.2864	-0.0190	-1.22	OE
MCZQBT		0.2920	0.0105	0.68	0.3120	0.0066	0.42	WD
N7AG2V		0.2923	0.0107	0.69	0.3169	0.0115	0.73	WD
NPE9TV		0.2780	-0.0035	-0.23	0.3013	-0.0041	-0.26	WD
NUR76N	*	0.2363	-0.0452	-2.92	0.2637	-0.0417	-2.67	OE
QM8MZF		0.2800	-0.0015	-0.10	0.3010	-0.0044	-0.28	OE
RYJ6FP		0.2760	-0.0055	-0.36	0.3040	-0.0014	-0.09	OE
TB3FWR		0.2960	0.0145	0.93	0.3190	0.0136	0.87	OE
U9DCXT	X	0.2763	-0.0052	-0.34	0.2847	-0.0207	-1.32	OE
VFBEMB		0.2793	-0.0022	-0.14	0.3047	-0.0007	-0.05	WD
W6JMAH		0.2677	-0.0138	-0.89	0.2901	-0.0153	-0.97	OE
WC4MKN		0.2790	-0.0025	-0.16	0.3037	-0.0017	-0.11	WD
WLB96A		0.2833	0.0018	0.12	0.3067	0.0013	0.08	XX
X7ZRVM		0.2977	0.0161	1.04	0.3170	0.0116	0.74	XX
YRC7MD		0.2707	-0.0109	-0.70	0.2980	-0.0074	-0.47	OE
YXYU7		0.2720	-0.0095	-0.62	0.2943	-0.0111	-0.71	OE
ZD7DTF		0.2939	0.0124	0.80	0.3162	0.0108	0.69	XX
ZGQKW9	*	0.3273	0.0458	2.96	0.3517	0.0463	2.96	OE
ZT6EAM		0.2797	-0.0019	-0.12	0.2920	-0.0134	-0.86	IC



Fasteners and Metals Interlaboratory Testing Program

Analysis 1649

Corrosion Resistant Steel, COPPER (Cu)
COPPER (Cu)

Cycle 150

2nd Qtr
2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	0.2815	Percent	0.3054	Percent
Std Dev Btwn Labs	0.0155	Percent	0.0156	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 43 of 44 reporting participants

Key to Method Codes Reported by Participants

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 #1649

U9DCXT (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.



Fasteners and Metals Interlaboratory Testing Program

Analysis 1649

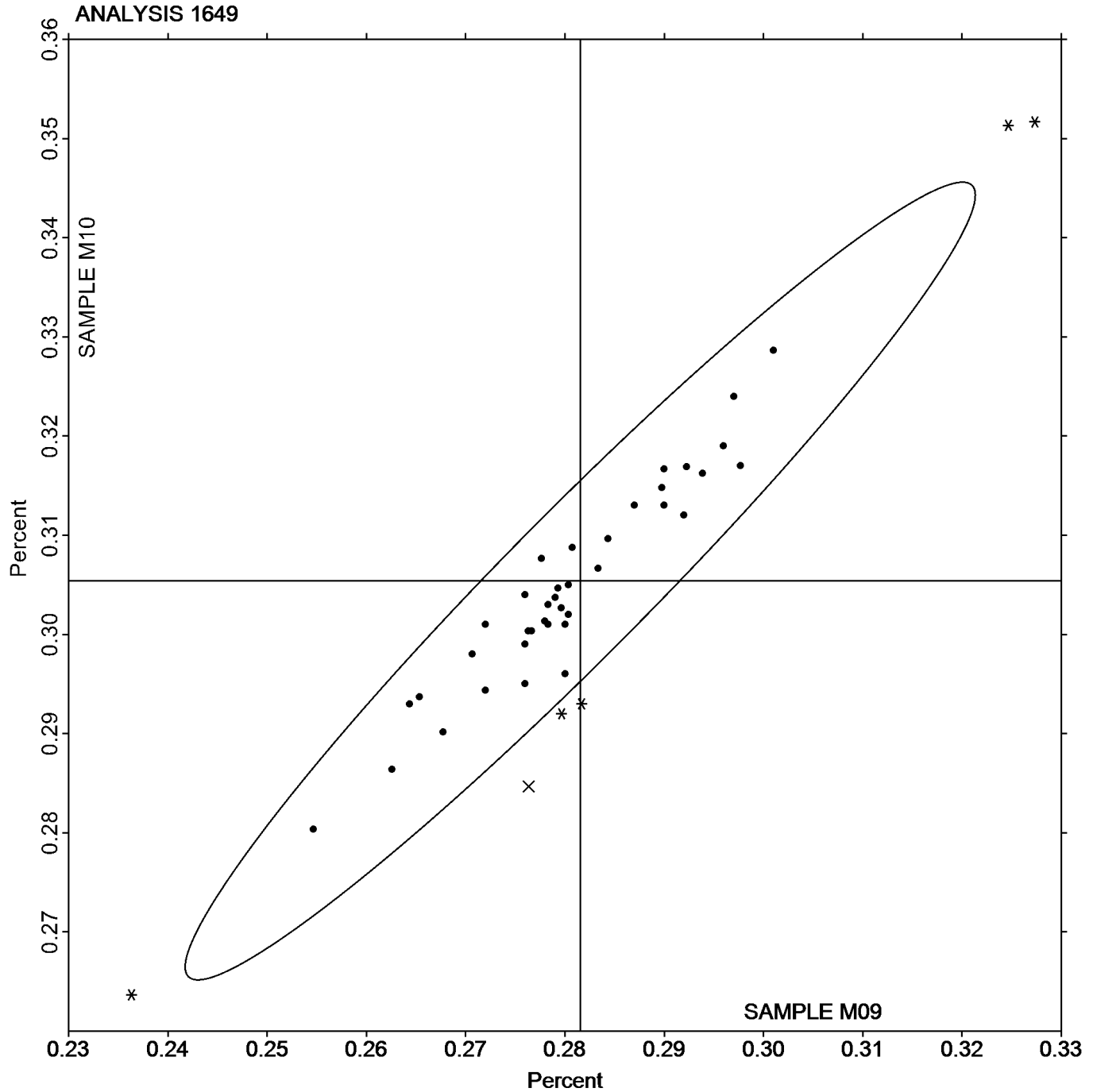
Corrosion Resistant Steel, COPPER (Cu)
COPPER (Cu)

Cycle 150

2nd Qtr
2025

SAMPLE M09
0.2815 Percent

SAMPLE M10
0.3054 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1650

Corrosion Resistant Steel, NITROGEN (N)
NITROGEN (N)

Cycle 150

2nd Qtr
2025

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A	X	0.0850	0.0090	2.03	0.0673	0.0177	6.41	OE
334RL8	*	0.0663	-0.0096	-2.16	0.0423	-0.0073	-2.66	OE
6DRUKD	X	0.0317	-0.0443	-9.95	0.0167	-0.0330	-11.98	OE
6GBPH4	X	0.0471	-0.0289	-6.49	0.0363	-0.0134	-4.85	OE
6HKQEA		0.0797	0.0037	0.83	0.0520	0.0023	0.85	CO
7CF678		0.0790	0.0030	0.68	0.0520	0.0023	0.85	OE
87J6ZA		0.0730	-0.0030	-0.66	0.0470	-0.0027	-0.97	OE
8W2CYF		0.0763	0.0003	0.07	0.0468	-0.0029	-1.04	OE
98DZ96		0.0778	0.0018	0.41	0.0481	-0.0016	-0.57	OE
AKXXUY		0.0782	0.0023	0.51	0.0493	-0.0004	-0.13	XX
AV9LDW	X	0.0613	-0.0147	-3.29	0.0320	-0.0176	-6.40	OE
B2EHVB		0.0760	0.0000	0.01	0.0496	0.0000	-0.01	XX
BJEKE2		0.0769	0.0009	0.21	0.0457	-0.0039	-1.43	CI
CQCKGZ		0.0773	0.0013	0.30	0.0505	0.0008	0.30	CO
DPJYJ3		0.0772	0.0013	0.29	0.0473	-0.0023	-0.85	XX
FRGCX7		0.0719	-0.0040	-0.90	0.0538	0.0041	1.49	OE
FVEM6Y		0.0807	0.0047	1.06	0.0510	0.0013	0.48	CO
G398QR	X	0.4100	0.3340	75.08	0.4100	0.3603	130.78	OE
HBEHA3		0.0780	0.0020	0.46	0.0520	0.0023	0.85	XX
HNBXXX		0.0778	0.0018	0.41	0.0514	0.0018	0.64	CI
HUVKBW		0.0793	0.0034	0.76	0.0514	0.0017	0.63	XX
KLYCT3		0.0780	0.0020	0.46	0.0520	0.0023	0.85	OE
LKV8RY		0.0693	-0.0067	-1.50	0.0463	-0.0033	-1.21	OE
MCZQBT		0.0804	0.0045	1.00	0.0513	0.0016	0.59	CO
N7AG2V		0.0781	0.0021	0.47	0.0507	0.0010	0.36	CI
NPE9TV		0.0813	0.0054	1.21	0.0517	0.0020	0.72	OE
QM8MZF		0.0748	-0.0011	-0.25	0.0502	0.0005	0.19	OE
RYJ6FP		0.0727	-0.0033	-0.74	0.0471	-0.0025	-0.92	OE
TB3FWR	*	0.0641	-0.0118	-2.66	0.0443	-0.0054	-1.96	OE
U9DCXT	X	0.0345	-0.0415	-9.32	0.0248	-0.0249	-9.03	OE
VFBEMB		0.0797	0.0038	0.85	0.0522	0.0025	0.91	CO
W6JMAH		0.0688	-0.0072	-1.61	0.0483	-0.0014	-0.51	OE
WC4MKN		0.0801	0.0041	0.92	0.0521	0.0024	0.87	XX
WLB96A	X	0.0487	-0.0272	-6.12	0.0343	-0.0154	-5.59	XX
X7ZRVM	*	0.0700	-0.0059	-1.33	0.0528	0.0031	1.14	XX
YRC7MD		0.0783	0.0023	0.53	0.0499	0.0003	0.09	CO
ZD7DTF		0.0776	0.0017	0.38	0.0510	0.0013	0.48	XX

Summary Statistics

		Sample M09		Sample M10	
Grand Means		0.0760	Percent	0.0497	Percent
Std Dev Btwn Labs		0.0044	Percent	0.0028	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 30 of 37 reporting participants



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

2G3K9A (X) - Data for sample M10 are high. Inconsistent within the determinations of both samples.

6DRUKD (X) - Data for both samples are low. Inconsistent within the determinations of both samples.

6GBPH4 (X) - Data for both samples are low. Inconsistent within the determinations of sample M10.

AV9LDW (X) - Data for both samples are low.

G398QR (X) - Extreme data.

U9DCXT (X) - Data for both samples are low.

WLB96A (X) - Data for both samples are low. Inconsistent within the determinations of both samples.



Analysis 1650

Corrosion Resistant Steel, NITROGEN (N)

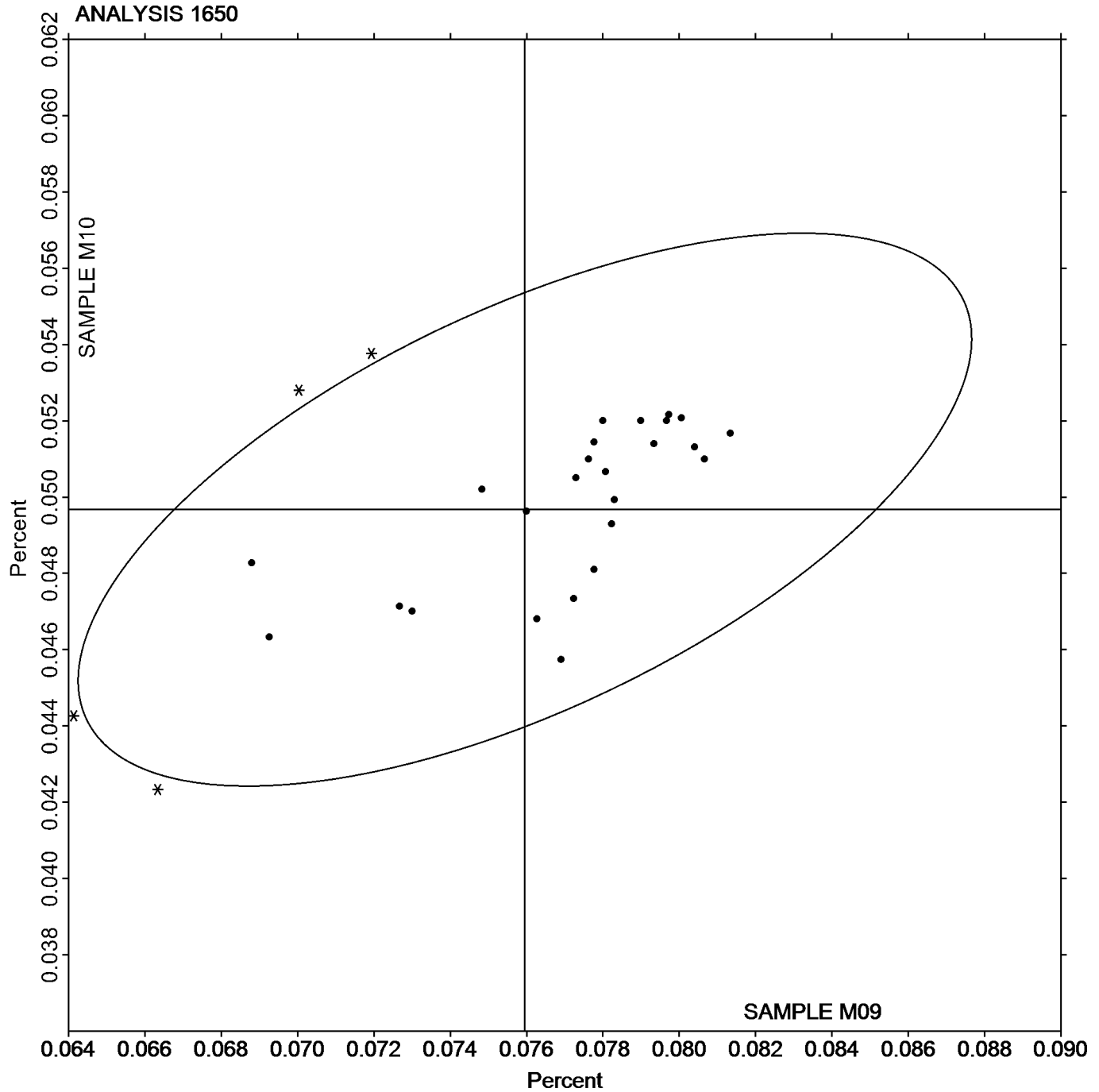
NITROGEN (N)

SAMPLE M09

SAMPLE M10

0.0760 Percent

0.0497 Percent



**Fasteners and Metals Interlaboratory Testing Program****Analysis 1652****Corrosion Resistant Steel, VANADIUM (V)
VANADIUM (V)****Cycle 150****2nd Qtr
2025**

WebCode	Data Flag	Sample M09			Sample M10			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G3K9A		0.0817	0.0087	2.51	0.0823	0.0067	2.08	OE
334RL8		0.0713	-0.0016	-0.46	0.0743	-0.0013	-0.41	OE
6DRUKD		0.0663	-0.0066	-1.90	0.0673	-0.0083	-2.60	OE
6GBPH4		0.0699	-0.0030	-0.87	0.0732	-0.0025	-0.78	OE
7CF678		0.0760	0.0031	0.88	0.0790	0.0033	1.04	OE
87J6ZA		0.0773	0.0044	1.26	0.0797	0.0040	1.25	OE
8W2CYF		0.0732	0.0002	0.06	0.0762	0.0005	0.16	OE
98DZ96		0.0675	-0.0054	-1.56	0.0700	-0.0057	-1.77	OE
AEMY89		0.0723	-0.0006	-0.18	0.0747	-0.0010	-0.31	OE
AKXXUY		0.0720	-0.0009	-0.26	0.0748	-0.0008	-0.26	XX
AV9LDW	X	0.0902	0.0172	4.96	0.0806	0.0049	1.53	OE
B2EHVB		0.0736	0.0007	0.19	0.0756	-0.0001	-0.03	IC
BJEKE2		0.0710	-0.0019	-0.56	0.0753	-0.0003	-0.10	IC
BTKC2A	*	0.0710	-0.0019	-0.56	0.0810	0.0053	1.67	OE
CQCKGZ		0.0715	-0.0014	-0.42	0.0761	0.0004	0.13	WD
DPJYJ3		0.0670	-0.0059	-1.71	0.0705	-0.0052	-1.61	XX
ERJF6C		0.0742	0.0012	0.35	0.0775	0.0018	0.57	OE
FRGCX7		0.0701	-0.0028	-0.81	0.0731	-0.0025	-0.79	OE
FVEM6Y		0.0730	0.0001	0.02	0.0770	0.0013	0.42	XR
G398QR		0.0730	0.0001	0.02	0.0743	-0.0013	-0.41	OE
HBEHA3		0.0740	0.0011	0.30	0.0770	0.0013	0.42	IC
HUVKBW		0.0737	0.0007	0.21	0.0753	-0.0003	-0.10	OE
KC79GT		0.0763	0.0033	0.96	0.0798	0.0041	1.28	OE
KLYCT3		0.0730	0.0001	0.02	0.0760	0.0003	0.11	OE
L8UF7U		0.0710	-0.0019	-0.56	0.0713	-0.0043	-1.35	WD
LKV8RY		0.0751	0.0021	0.61	0.0781	0.0024	0.76	OE
MCZQBT		0.0720	-0.0009	-0.27	0.0767	0.0010	0.31	WD
N7AG2V		0.0718	-0.0011	-0.32	0.0746	-0.0011	-0.33	WD
NPE9TV		0.0690	-0.0039	-1.14	0.0727	-0.0030	-0.93	WD
NUR76N		0.0748	0.0019	0.54	0.0764	0.0007	0.22	OE
QM8MZF		0.0744	0.0014	0.41	0.0761	0.0004	0.13	OE
RYJ6FP	X	0.0503	-0.0226	-6.52	0.0523	-0.0233	-7.28	OE
TB3FWR		0.0760	0.0030	0.87	0.0763	0.0007	0.21	OE
U9DCXT	X	0.0874	0.0145	4.17	0.0883	0.0126	3.94	OE
VFBEMB		0.0713	-0.0016	-0.46	0.0757	0.0000	0.00	WD
W6JMAH		0.0748	0.0019	0.54	0.0777	0.0020	0.64	OE
WC4MKN		0.0741	0.0012	0.33	0.0774	0.0017	0.53	WD
WLB96A		0.0695	-0.0034	-0.99	0.0723	-0.0034	-1.06	XX
X7ZRVM	*	0.0831	0.0102	2.93	0.0835	0.0079	2.46	XX
YRC7MD		0.0710	-0.0019	-0.56	0.0760	0.0003	0.11	OE
YXYYU7	X	0.0527	-0.0203	-5.84	0.0543	-0.0213	-6.65	OE



Fasteners and Metals Interlaboratory Testing Program

Analysis 1652

Corrosion Resistant Steel, VANADIUM (V)
VANADIUM (V)

Cycle 150

2nd Qtr
2025

Summary Statistics

	<u>Sample M09</u>		<u>Sample M10</u>	
Grand Means	0.0729	Percent	0.0757	Percent
Std Dev Btwn Labs	0.0035	Percent	0.0032	Percent

Samples M09, M10 : AISI 310, AISI 310

Statistics based on 36 of 41 reporting participants

Key to Method Codes Reported by Participants

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 #1652

AV9LDW (X) - Data for sample M09 are high.
RYJ6FP (X) - Data for both samples are low. Possible Systematic Error.
U9DCXT (X) - Data for both samples are high. Possible Systematic Error.
YXYYU7 (X) - Data for both samples are low. Possible Systematic Error.



Analysis 1652

Corrosion Resistant Steel, VANADIUM (V)

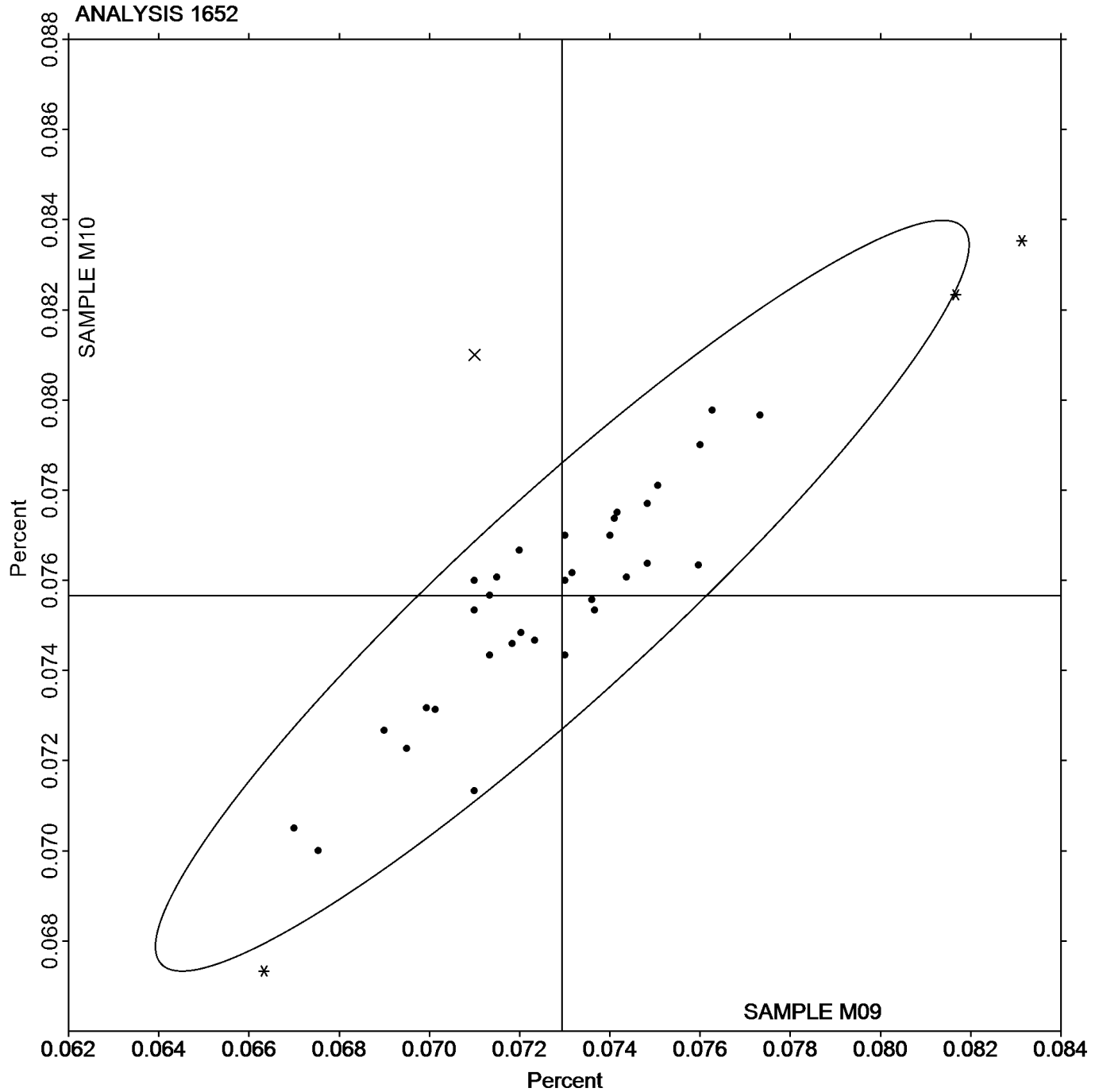
VANADIUM (V)

SAMPLE M09

SAMPLE M10

0.0729 Percent

0.0757 Percent





Fasteners and Metals Interlaboratory Testing Program

Analysis 1652

Corrosion Resistant Steel, VANADIUM (V)
VANADIUM (V)

Cycle 150

**2nd Qtr
2025**

-End of Report-