



Fasteners & Metals Interlaboratory Testing Program

Summary Report Cycle 147, 3rd Qtr 2024

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<u>Analysis</u>	<u>Test Group</u>
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Dimensional Tests	
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1001	Dimensional: Outside Diameter of Plain Plug Gage
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Tensile Tests	
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1101	Tensile Strength: Lab-Machined Flat Aluminum
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1102	Yield Strength: Lab-Machined Flat Aluminum
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1103	Elongation: Lab-Machined Flat Aluminum
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1111	Tensile Strength: Pre-Machined Round Steel
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1112	Yield Strength: Pre-Machined Round Steel
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1113	Elongation: Pre-Machined Round Steel
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1121	Tensile Strength: Lab-Machined Round Steel
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1122	Yield Strength: Lab-Machined Round Steel
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1124	Reduction of Area: Lab-Machined Round Steel
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Chemical Analyses	
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1520 - 1528	Chemical Analysis: Titanium-based Alloy
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1600 - 1613	Chemical Analysis: Carbon & Low Alloy 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

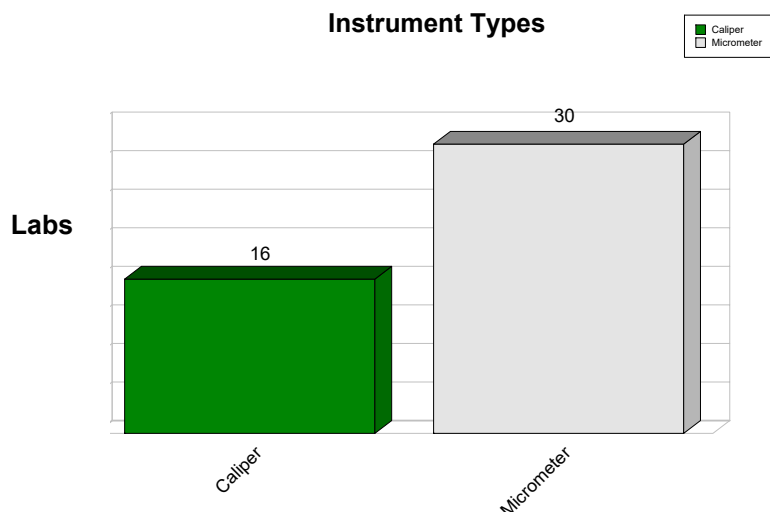
Data Flag Type	Statistically Included/Excluded	ACTION REQUIRED
*	INCLUDED	CAUTION - review testing procedure and monitor future results. Results fall outside the drawn 95% ellipse but within a 99% ellipse that is calculated but not drawn. Labs flagged with an * do not typically receive a specific note 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.



Analysis 1001

Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM

During Cycle 147, CTS conducted the Analysis #1001 - Round Dimensional. For this test all participants received two samples I03 and I04 with nominal diameters; 0.3750 in. and 0.3746 in. Each sample is an English Class X gage pin with 0.00002 in roundness limit made from 52100 bearing steel, hardened to 60-62 Rockwell C. Laboratories were asked to determine the outside diameter of the pins. 46 laboratories that subscribed for this test reported testing results. The graph below shows a breakdown of the types of instruments used.



Analysis of the Results

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

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

Where the assigned value, X_{ref} , is determined in a reference laboratory, U_{ref} is the expanded uncertainty of X_{ref} , and U_{lab} is the **Expanded Uncertainty** of a participant's result, X_{lab} . E_n is not calculated for Labs who did not report their Expanded Uncertainty.

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

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

X_{ref} and U_{ref} were determined by the gage pin manufacturer. The manufacturer is ISO 9001 Certified and an ISO 17025 Accredited company. All master gages used in checking the plug gages are calibrated with standards traceable to NIST.



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

Xref1 = 0.3750 in.

Xref2 = 0.3746 in.

Sample I03

Sample I04

WebCode	Data Flag (if assigned)	Reference Uncertainty (Uref)	Expanded Uncertainty (Ulab)	Lab Mean (Xlab)	Performance Statistic (En1)	Lab Mean (Xlab)	Performance Statistic (En2)	Instrument
27NVPV		0.00004	0.00011	0.37495	-0.39	0.37458	-0.21	Micrometer
28HJ76		0.00004	0.00030	0.37492	-0.26	0.37453	-0.23	Micrometer
2YK37Z		0.00004	0.00030	0.37500	0.00	0.37460	0.00	Caliper
38A49V	X	0.00004	0.00093	0.35800	-18.26	0.37370	-0.97	Caliper
4BQNVB		0.00004	0.00118	0.37480	-0.17	0.37449	-0.09	Caliper
4VEADD	X	0.00004	0.00004	0.37477	-3.87	0.37441	-3.20	Micrometer
74H4KB		0.00004	0.00079	0.37520	0.25	0.37480	0.26	Caliper
7NRYGN	X	0.00004	0.00008	0.37453	-5.35	0.37408	-5.90	Micrometer
8C8CKR		0.00004	0.00040	0.37496	-0.10	0.37454	-0.15	Micrometer
8EUTUZ		0.00004	0.00085	0.37480	-0.24	0.37450	-0.12	Micrometer
9Y2F2P		0.00004	0.00015	0.37490	-0.64	0.37452	-0.52	Micrometer
9ZDD7U		0.00004	0.00018	0.37494	-0.32	0.37450	-0.54	Micrometer
A39KVV		0.00004	0.00002	0.37498	-0.35	0.37459	-0.30	Micrometer
AGZTAQ		0.00004	0.00030	0.37482	-0.59	0.37441	-0.63	Micrometer
AHA3Z3	X	0.00004	0.00022	0.37448	-2.33	0.37418	-1.88	Micrometer
BNTKVQ		0.00004	0.00110	0.37493	-0.06	0.37452	-0.07	Micrometer
CV9NHH		0.00004	0.00210	0.37400	-0.48	0.37390	-0.33	Caliper
D4GHAQ		0.00004	0.07874	0.37487	0.00	0.37442	0.00	Micrometer
DCATKL		0.00004	0.06165	0.37480	0.00	0.37450	0.00	Caliper
DKM2LM		0.00004	0.00059	0.37489	-0.19	0.37447	-0.22	Micrometer
EEBHXE		0.00004	0.00290	0.37436	-0.22	0.37390	-0.24	Caliper
EJ8YEE	X	0.00004	0.00010	0.37480	-1.86	0.37438	-2.04	Micrometer
EYJH9Z		0.00004	0.00017	0.37490	-0.59	0.37450	-0.59	Micrometer
FP9FMY		0.00004	0.00260	0.37480	-0.08	0.37440	-0.08	Caliper
FX3N4J		0.00004	0.00050	0.37500	0.00	0.37500	0.80	Caliper
GPLCKQ		0.00004	0.00300	0.37500	0.00	0.37400	-0.20	Caliper
KJMCJC		0.00004	0.00094	0.37480	-0.21	0.37425	-0.37	Caliper
KKECGN	X	0.00004	0.00020	0.37426	-3.56	0.37378	-3.94	Micrometer
KWPRFF	X	0.00004	0.00014	0.37483	-1.17	0.37442	-1.24	Micrometer
LHMKZB		0.00004	0.00012	0.37498	-0.16	0.37458	-0.16	Micrometer
LXMCT8		0.00004	0.00013	0.37500	0.00	0.37450	-0.76	Micrometer
MFYJJU		0.00004	0.00020	0.37485	-0.75	0.37444	-0.78	Micrometer
MHMQ6C		0.00004	0.00087	0.37480	-0.23	0.37441	-0.22	Caliper



**Fasteners and Metals Interlaboratory Testing Program
Analysis 1001**

**Cycle 147
3rd Qtr 2024**

**Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM**

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

Xref1 = 0.3750 in.

Xref2 = 0.3746 in.

Sample I03

Sample I04

WebCode	Data Flag (if assigned)	Reference Uncertainty (Uref)	Expanded Uncertainty (Ulab)	Lab Mean (Xlab)	Performance Statistic (En1)	Lab Mean (Xlab)	Performance Statistic (En2)	Instrument
MNTNAA	X	0.00004	0.00011	0.37480	-1.63	0.37441	-1.58	Caliper
NGRPGZ		0.00004	0.00040	0.37500	0.00	0.37450	-0.25	Micrometer
PLXMJC		0.00004	<u>Not Reported</u>	0.37495		0.37455		Micrometer
PNL979		0.00004	0.00300	0.37495	-0.02	0.37455	-0.02	Caliper
Q4BPXB		0.00004	0.00005	0.37500	0.00	0.37460	0.00	Micrometer
QDZA4A		0.00004	0.00050	0.37495	-0.10	0.37459	-0.02	Micrometer
QM7ERJ	X	0.00004	0.00142	0.37390	-0.77	0.37310	-1.06	Caliper
TNRRH2		0.00004	0.00028	0.37488	-0.42	0.37445	-0.54	Micrometer
U7PKPK		0.00004	0.00050	0.37510	0.20	0.37450	-0.20	Micrometer
XX3TVN		0.00004	0.00020	0.37498	-0.08	0.37465	0.26	Micrometer
Y234MH		0.00004	0.00011	0.37499	-0.07	0.37460	-0.01	Micrometer
Y6HUQR		0.00004	0.00010	0.37500	0.00	0.37457	-0.28	Micrometer
YCFLWZ		0.00004	0.00116	0.37500	0.00	0.37450	-0.09	Caliper

Summary Statistics

	Sample I03		Sample I04	
Grand Means	0.3749	inch	0.3745	inch
Std Dev Btwn Labs	0.0001	inch	0.0001	inch

Samples I03, I04 : 52100 Steel, 52100 Steel

Statistics based on 39 of 46 reporting participants

Comments on Assigned Data Flags for Test #1001

- 38A49V (X) - En value for sample I03 was low.
- 4VEADD (X) - En value for both samples was low.
- 7NRYGN (X) - En value for both samples was low.
- AHA3Z3 (X) - En value for both samples was low.
- EJ8YEE (X) - En value for both samples was low.
- KKECGN (X) - En value for both samples was low.
- KWPRFF (X) - En value for both samples was low.
- MNTNAA (X) - En value for both samples was low.
- QM7ERJ (X) - En value for sample I04 was low.

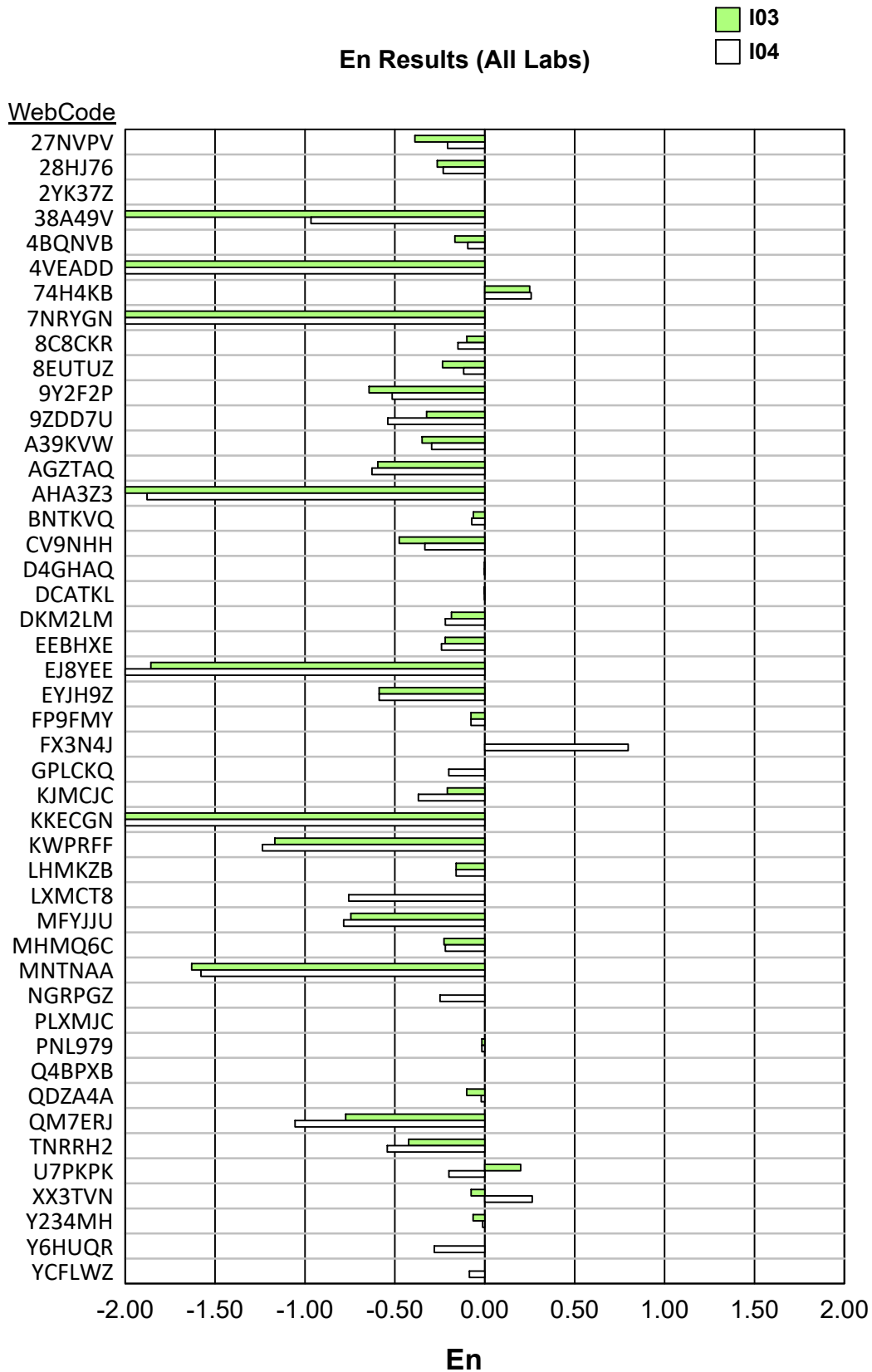


Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1001

Dimensional: Outside Diameter of Plain Plug Gage
ISO GUM





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1101

Tensile Strength: Lab-Machined Flat Aluminum
ASTM B557

WebCode	Data Flag	Sample R03			Sample R04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2JPJUH		49.59	-0.27	-0.51	49.42	-0.16	-0.25
32M9GY		50.50	0.64	1.20	48.90	-0.68	-1.06
3NLHRE	X	45.60	-4.26	-8.02	46.90	-2.68	-4.17
4F2TEX		50.50	0.64	1.20	48.90	-0.68	-1.06
4W9TJK		49.75	-0.12	-0.22	49.60	0.02	0.04
6ADG6M		50.62	0.75	1.42	50.39	0.81	1.26
6TP4QV		50.40	0.54	1.01	50.40	0.82	1.28
6Z37MV		49.90	0.04	0.07	49.80	0.22	0.34
737GYP		49.70	-0.16	-0.31	49.50	-0.08	-0.12
7UTBDK		50.20	0.34	0.63	50.90	1.32	2.06
7WYREW		50.50	0.64	1.20	49.30	-0.28	-0.44
7Y6D9N		49.90	0.04	0.07	49.40	-0.18	-0.28
8CPGMX		49.10	-0.76	-1.44	49.60	0.02	0.03
8KNQMX		50.00	0.14	0.26	49.80	0.22	0.34
8YHFG9		49.66	-0.21	-0.39	49.68	0.10	0.15
97DLMV		49.80	-0.06	-0.12	49.50	-0.08	-0.12
9AJZJ2		49.50	-0.36	-0.68	49.20	-0.38	-0.59
9HD3PJ		50.40	0.54	1.01	50.40	0.82	1.28
9ZMDXV		49.30	-0.56	-1.06	49.10	-0.48	-0.75
A4A49Z		49.50	-0.36	-0.68	49.30	-0.28	-0.44
AJH7JT		50.20	0.34	0.63	50.50	0.92	1.43
AMYNKB		49.20	-0.67	-1.25	49.39	-0.19	-0.30
ATN3TP	*	48.90	-0.96	-1.81	48.00	-1.58	-2.46
AX2UTQ		50.50	0.64	1.20	49.00	-0.58	-0.90
BWK6VW		49.80	-0.06	-0.12	49.60	0.02	0.03
C2P9CH		49.40	-0.46	-0.87	49.40	-0.18	-0.28
CA48UZ		49.66	-0.20	-0.38	49.68	0.10	0.16
CR7RRN	X	43.60	-6.26	-11.78	48.40	-1.18	-1.84
D4VBJY		49.20	-0.67	-1.25	48.95	-0.63	-0.98
DBA7CL		50.30	0.44	0.82	50.30	0.72	1.12
DCNER2		49.40	-0.46	-0.87	49.60	0.02	0.03
EBVP8L		50.80	0.94	1.76	49.00	-0.58	-0.90
ERGBRC		49.43	-0.43	-0.81	49.06	-0.52	-0.81
F7D3R8		50.00	0.14	0.26	49.20	-0.38	-0.59
G6VFPH		49.36	-0.50	-0.95	49.18	-0.40	-0.62
GG4CJK		49.50	-0.36	-0.68	49.00	-0.58	-0.90
GQEE6L		49.50	-0.36	-0.68	50.10	0.52	0.81
GQFC8U		49.50	-0.36	-0.68	49.30	-0.28	-0.44
HWHLEM		50.10	0.24	0.44	50.10	0.52	0.81
JXNKTN		49.52	-0.35	-0.65	49.52	-0.06	-0.10
K8L3JG		50.10	0.24	0.44	49.80	0.22	0.34
KQ2BKG		50.50	0.64	1.20	49.10	-0.48	-0.75
KWPRFF		49.90	0.04	0.07	49.70	0.12	0.19
M2W47D		49.90	0.04	0.07	49.70	0.12	0.19
M86EPT		50.15	0.29	0.54	48.40	-1.18	-1.84
MDACWC	X	53.10	3.24	6.09	52.40	2.82	4.39
MR7LPJ	*	48.46	-1.40	-2.64	49.75	0.17	0.26



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1101

Tensile Strength: Lab-Machined Flat Aluminum
ASTM B557

WebCode	Data Flag	Sample R03			Sample R04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
MZ9G3Q	X	46.10	-3.76	-7.08	47.00	-2.58	-4.02
PRM6XN	*	51.10	1.24	2.33	51.30	1.72	2.68
QDGQX3		50.60	0.74	1.38	51.10	1.52	2.37
QFHNDDB		50.90	1.04	1.95	49.20	-0.38	-0.59
QUJHP7		49.80	-0.06	-0.12	49.90	0.32	0.50
R7EQBT		49.06	-0.80	-1.51	48.82	-0.76	-1.18
U2QZV9		49.80	-0.06	-0.12	49.70	0.12	0.19
UXFVCL		49.60	-0.26	-0.50	49.70	0.12	0.19
V4C447	*	49.70	-0.16	-0.31	51.20	1.62	2.52
WPQBR6		49.79	-0.07	-0.14	49.58	0.00	0.00
XJ4M3T		49.92	0.06	0.11	49.66	0.08	0.12
XL9EU7		49.50	-0.36	-0.68	48.90	-0.68	-1.06
XWJ4D4		50.60	0.74	1.38	49.10	-0.48	-0.75
YGUYZ9		49.77	-0.09	-0.18	49.50	-0.08	-0.12

Summary Statistics

	Sample R03		Sample R04	
Grand Means	49.86	ksi	49.58	ksi
Std Dev Btwn Labs	0.53	ksi	0.64	ksi

Samples R03, R04 : 14G 6061-T6 (A), 16G 6061-T6 (B)

Statistics based on 57 of 61 reporting participants

Comments on Assigned Data Flags for Test #1101

- 3NLHRE (X) - Data for both samples are low.
- CR7RRN (X) - Data for sample R03 are low.
- MDACWC (X) - Data for both samples are high.
- MZ9G3Q (X) - Data for both samples are low.



Analysis 1101

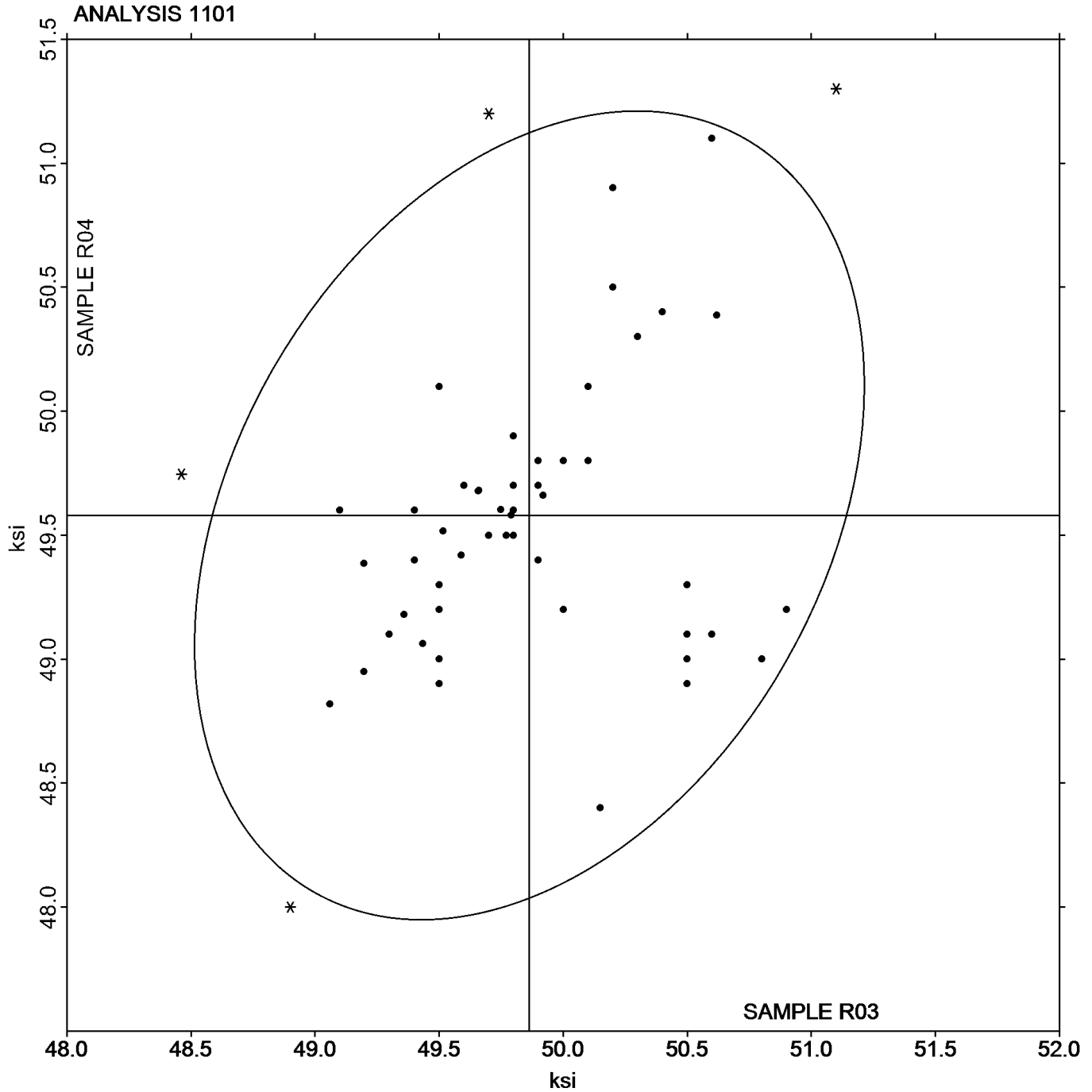
Tensile Strength: Lab-Machined Flat Aluminum
ASTM B557

SAMPLE R03

49.86 ksi

SAMPLE R04

49.58 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1102

Yield Strength: Lab-Machined Flat Aluminum
ASTM B557

WebCode	Data Flag	Sample R03			Sample R04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2JPJUH		43.29	-0.04	-0.07	43.23	0.16	0.28
32M9GY		43.80	0.47	0.80	42.20	-0.87	-1.50
3NLHRE	X	39.10	-4.23	-7.27	40.60	-2.47	-4.28
4F2TEX		43.70	0.37	0.63	42.20	-0.87	-1.50
4W9TJK		43.22	-0.11	-0.19	43.22	0.16	0.27
6ADG6M	X	42.61	-0.72	-1.24	39.84	-3.22	-5.60
6TP4QV		43.50	0.17	0.29	43.50	0.43	0.75
6Z37MV		43.20	-0.13	-0.23	43.10	0.03	0.06
737GYP		43.20	-0.13	-0.23	42.90	-0.17	-0.29
7UTBDK		43.60	0.27	0.46	44.30	1.23	2.14
7WYREW		43.80	0.47	0.80	42.90	-0.17	-0.29
7Y6D9N		43.30	-0.03	-0.06	42.90	-0.17	-0.29
8CPGMX		42.60	-0.73	-1.26	43.20	0.13	0.23
8KNQMX		43.80	0.47	0.80	43.60	0.53	0.93
8YHFG9		42.54	-0.79	-1.36	42.15	-0.92	-1.59
97DLMV		43.50	0.17	0.29	43.40	0.33	0.58
9AJZJ2	X	40.90	-2.43	-4.18	41.60	-1.47	-2.55
9HD3PJ		43.80	0.47	0.80	43.80	0.73	1.27
9ZMDXV		43.10	-0.23	-0.40	42.80	-0.27	-0.46
A4A49Z		42.90	-0.43	-0.74	42.70	-0.37	-0.64
AJH7JT		43.60	0.27	0.46	43.90	0.83	1.45
AMYNKB		42.66	-0.68	-1.16	42.66	-0.41	-0.71
ATN3TP	X	40.60	-2.73	-4.69	40.10	-2.97	-5.15
AX2UTQ		44.00	0.67	1.15	42.50	-0.57	-0.98
BWK6VW		43.20	-0.13	-0.23	43.20	0.13	0.23
C2P9CH		42.70	-0.63	-1.09	42.80	-0.27	-0.46
CA48UZ		42.99	-0.34	-0.59	43.31	0.24	0.42
CR7RRN	X	37.40	-5.93	-10.19	42.10	-0.97	-1.68
D4VBJY		42.64	-0.69	-1.19	42.55	-0.51	-0.89
DBA7CL		43.80	0.47	0.80	43.70	0.63	1.10
DCNER2	*	42.20	-1.13	-1.94	41.60	-1.47	-2.55
EBVP8L		44.20	0.87	1.49	42.50	-0.57	-0.98
ERGBRC		44.43	1.10	1.89	43.18	0.11	0.20
F7D3R8		43.50	0.17	0.29	42.90	-0.17	-0.29
G6VFPH	X	41.61	-1.72	-2.96	40.93	-2.13	-3.70
GG4CJK		42.90	-0.43	-0.74	42.50	-0.57	-0.98
GQEE6L		42.90	-0.43	-0.74	43.50	0.43	0.75
GQFC8U		43.80	0.47	0.80	43.70	0.63	1.10
HWHLEM		43.40	0.07	0.12	43.60	0.53	0.93
JXNKTN		43.32	-0.01	-0.02	43.25	0.18	0.32
K8L3JG		43.20	-0.13	-0.23	43.20	0.13	0.23
KQ2BKG		43.80	0.47	0.80	42.60	-0.47	-0.81
KWPRFF		43.20	-0.13	-0.23	43.10	0.03	0.06
M2W47D		43.30	-0.03	-0.06	43.10	0.03	0.06
M86EPT	*	45.15	1.82	3.12	43.70	0.63	1.10
MDACWC	X	46.30	2.97	5.10	45.60	2.53	4.40
MR7LPJ	*	42.01	-1.32	-2.26	43.32	0.25	0.43



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1102

Yield Strength: Lab-Machined Flat Aluminum
ASTM B557

WebCode	Data Flag	Sample R03			Sample R04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
MZ9G3Q	X	40.60	-2.73	-4.69	40.90	-2.17	-3.76
PRM6XN	X	39.80	-3.53	-6.07	43.60	0.53	0.93
QDGQX3		44.00	0.67	1.15	44.10	1.03	1.79
QFHNDDB		44.20	0.87	1.49	42.80	-0.27	-0.46
QUJHP7		43.30	-0.03	-0.06	43.30	0.23	0.41
R7EQBT		42.63	-0.70	-1.21	42.40	-0.67	-1.16
U2QZV9		43.10	-0.23	-0.40	43.10	0.03	0.06
UXFVCL		43.30	-0.03	-0.06	43.30	0.23	0.41
V4C447	*	43.10	-0.23	-0.40	44.40	1.33	2.32
WPQBR6		43.27	-0.06	-0.11	43.19	0.12	0.21
XJ4M3T		43.51	0.18	0.31	43.29	0.22	0.39
XL9EU7		42.80	-0.53	-0.91	42.40	-0.67	-1.16
XWJ4D4		43.90	0.57	0.98	42.60	-0.47	-0.81
YGUYZ9		42.40	-0.93	-1.60	42.10	-0.97	-1.68

Summary Statistics

	Sample R03		Sample R04	
Grand Means	43.33	ksi	43.07	ksi
Std Dev Btwn Labs	0.58	ksi	0.58	ksi

Samples R03, R04 : 14G 6061-T6 (A), 16G 6061-T6 (B)

Statistics based on 52 of 61 reporting participants

Comments on Assigned Data Flags for Test #1102

- 3NLHRE (X) - Data for both samples are low.
- 6ADG6M (X) - Data for sample R04 are low.
- 9AJZJ2 (X) - Data for sample R03 are low.
- ATN3TP (X) - Data for both samples are low.
- CR7RRN (X) - Data for sample R03 are low.
- G6VFPH (X) - Data for both samples are low.
- MDACWC (X) - Data for both samples are high.
- MZ9G3Q (X) - Data for both samples are low.
- PRM6XN (X) - Data for sample R03 are low.



Analysis 1102

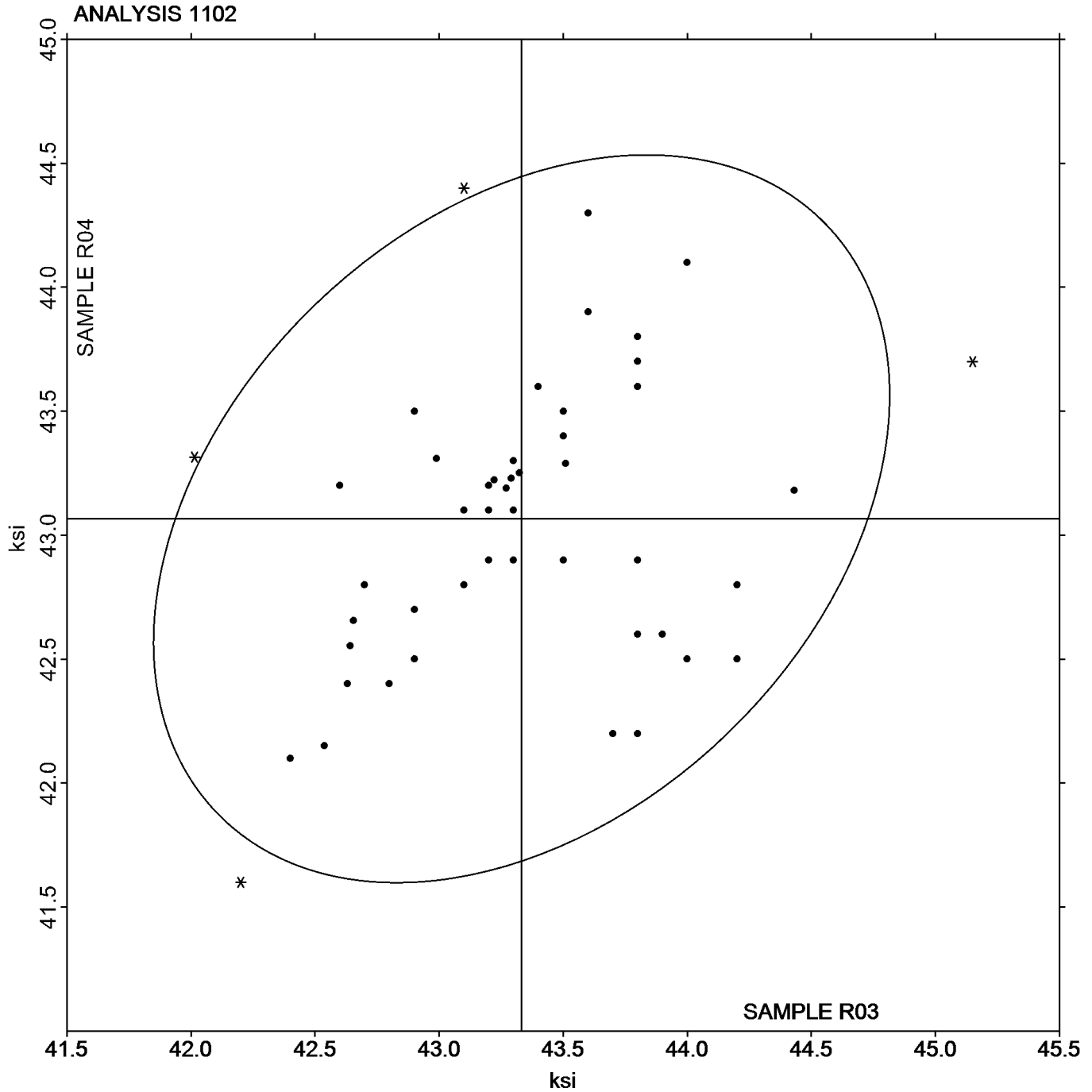
Yield Strength: Lab-Machined Flat Aluminum
ASTM B557

SAMPLE R03

43.33 ksi

SAMPLE R04

43.07 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1103

Elongation: Lab-Machined Flat Aluminum
ASTM B557

WebCode	Data Flag	Sample R03			Sample R04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
2JPJUH		14.20	-0.23	-0.22	13.05	-0.65	-0.65
32M9GY		15.50	1.07	1.03	14.00	0.30	0.30
3NLHRE		13.00	-1.43	-1.38	11.50	-2.20	-2.20
4F2TEX		14.50	0.07	0.07	14.00	0.30	0.30
4W9TJK		13.85	-0.58	-0.56	13.85	0.15	0.15
6ADG6M		14.20	-0.23	-0.22	14.40	0.70	0.70
6TP4QV		16.30	1.87	1.81	14.90	1.20	1.20
6Z37MV		14.50	0.07	0.07	14.00	0.30	0.30
737GYP		14.60	0.17	0.17	13.70	0.00	0.00
7UTBDK		14.90	0.47	0.46	13.00	-0.70	-0.70
7WYREW		13.50	-0.93	-0.90	12.50	-1.20	-1.20
7Y6D9N		13.60	-0.83	-0.80	12.80	-0.90	-0.90
8CPGMX		13.50	-0.93	-0.90	12.50	-1.20	-1.20
8KNQMX		15.00	0.57	0.55	14.00	0.30	0.30
8YHFG9		16.03	1.60	1.55	14.95	1.25	1.26
97DLMV		13.00	-1.43	-1.38	12.30	-1.40	-1.40
9AJZJ2		14.50	0.07	0.07	13.00	-0.70	-0.70
9HD3PJ		14.60	0.17	0.17	14.10	0.40	0.40
9ZMDXV		14.57	0.14	0.14	13.91	0.21	0.21
A4A49Z		14.26	-0.17	-0.16	13.39	-0.31	-0.31
AJH7JT		15.00	0.57	0.55	14.00	0.30	0.30
AMYNKB		13.80	-0.63	-0.61	12.80	-0.90	-0.90
ATN3TP		14.10	-0.33	-0.32	12.80	-0.90	-0.90
AX2UTQ		14.50	0.07	0.07	13.50	-0.20	-0.20
BWK6VW		13.60	-0.83	-0.80	13.00	-0.70	-0.70
C2P9CH		15.70	1.27	1.23	14.60	0.90	0.90
CA48UZ	*	16.80	2.37	2.29	14.80	1.10	1.10
CR7RRN		13.20	-1.23	-1.19	12.50	-1.20	-1.20
D4VBJY		15.00	0.57	0.55	13.00	-0.70	-0.70
DBA7CL		13.80	-0.63	-0.61	13.30	-0.40	-0.40
DCNER2		14.40	-0.03	-0.03	13.80	0.10	0.10
EBVP8L		15.90	1.47	1.42	14.60	0.90	0.90
ERGBRC	X	4.730	-9.70	-9.36	4.440	-9.26	-9.28
F7D3R8		13.30	-1.13	-1.09	12.70	-1.00	-1.00
G6VFPH		13.40	-1.03	-0.99	14.15	0.45	0.45
GG4CJK		15.00	0.57	0.55	14.00	0.30	0.30
GQEE6L		13.50	-0.93	-0.90	13.00	-0.70	-0.70
GQFC8U		16.50	2.07	2.00	15.00	1.30	1.31
HWHLEM		14.50	0.07	0.07	14.50	0.80	0.80
JXNKTN	X	10.70	-3.73	-3.60	11.00	-2.70	-2.70
K8L3JG		15.00	0.57	0.55	14.50	0.80	0.80
KQ2BKG		14.00	-0.43	-0.41	13.50	-0.20	-0.20
KWPRFF		14.50	0.07	0.07	13.50	-0.20	-0.20
M2W47D		14.50	0.07	0.07	14.00	0.30	0.30
M86EPT	*	16.50	2.07	2.00	16.30	2.60	2.61
MDACWC		12.50	-1.93	-1.86	12.60	-1.10	-1.10
MR7LPJ		13.05	-1.38	-1.33	11.60	-2.10	-2.10



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1103

Elongation: Lab-Machined Flat Aluminum
ASTM B557

WebCode	Data Flag	Sample R03			Sample R04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
MZ9G3Q	X	10.00	-4.43	-4.27	11.00	-2.70	-2.70
PRM6XN		13.60	-0.83	-0.80	13.90	0.20	0.20
QDGQX3	*	14.00	-0.43	-0.41	15.00	1.30	1.31
QFHNDDB		13.00	-1.43	-1.38	13.00	-0.70	-0.70
QUJHP7		15.60	1.17	1.13	14.80	1.10	1.10
R7EQBT		15.50	1.08	1.04	15.13	1.43	1.43
U2QZV9		14.50	0.07	0.07	13.50	-0.20	-0.20
UXFVCL		15.50	1.07	1.03	15.20	1.50	1.51
V4C447	*	14.00	-0.43	-0.41	15.00	1.30	1.31
WPQBR6		14.40	-0.03	-0.03	13.70	0.00	0.00
XJ4M3T		12.38	-2.05	-1.98	11.74	-1.96	-1.96
XL9EU7		16.30	1.87	1.81	15.20	1.50	1.51
XWJ4D4		14.00	-0.43	-0.41	13.50	-0.20	-0.20
YGUYZ9		13.88	-0.55	-0.53	12.91	-0.79	-0.79

Summary Statistics

	Sample R03		Sample R04	
Grand Means	14.43	Percent	13.70	Percent
Stnd Dev Btwn Labs	1.04	Percent	1.00	Percent

Samples R03, R04 : 14G 6061-T6 (A), 16G 6061-T6 (B)

Statistics based on 58 of 61 reporting participants

Comments on Assigned Data Flags for Test #1103

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

JXNKTN (X) - Data for sample R03 are low.

MZ9G3Q (X) - Data for sample R03 are low.



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1111

Tensile Strength: Pre-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
23MW9B		139.69	0.36	0.33	138.31	0.11	0.11
29BFVY		139.65	0.31	0.29	138.81	0.61	0.59
2CQ6U3		141.30	1.97	1.81	139.70	1.51	1.45
2FPK6B		138.50	-0.84	-0.77	136.83	-1.37	-1.31
2G4RQT		139.70	0.37	0.34	138.27	0.08	0.08
3DZEHT	*	142.14	2.81	2.58	140.90	2.71	2.60
4C4KXU		139.70	0.37	0.34	138.10	-0.09	-0.09
4U49PT	X	143.15	3.82	3.51	142.65	4.46	4.28
4ZKXY2		137.42	-1.91	-1.76	137.85	-0.34	-0.33
6Z4CRW		139.38	0.05	0.05	138.22	0.03	0.03
74H4KB	*	137.36	-1.97	-1.81	138.19	-0.01	0.00
87662H		139.88	0.54	0.50	139.18	0.98	0.95
8KNQMX		139.00	-0.33	-0.30	137.00	-1.19	-1.15
9R4QHZ	M	No Data Reported			137.20	-0.99	-0.95
9WT76L		138.10	-1.23	-1.13	136.10	-2.09	-2.01
9WU3FH		139.00	-0.33	-0.30	138.00	-0.19	-0.19
A7FLB2	X	142.22	2.89	2.65	141.82	3.63	3.48
APUZTW		138.40	-0.93	-0.86	137.10	-1.09	-1.05
B2E3KM	X	141.10	1.77	1.62	137.40	-0.79	-0.76
CFRLQU		139.74	0.41	0.37	139.88	1.69	1.62
D4VBJY		138.70	-0.63	-0.58	137.73	-0.46	-0.45
DHV2DQ	*	142.41	3.08	2.83	140.69	2.50	2.40
DLFYTU		139.20	-0.13	-0.12	137.90	-0.29	-0.28
DMREMU		138.80	-0.53	-0.49	137.60	-0.59	-0.57
DTYZFX	X	138.00	-1.33	-1.22	140.00	1.81	1.74
E3G4WW		139.09	-0.24	-0.22	137.93	-0.26	-0.25
G44GFQ		140.81	1.48	1.36	138.96	0.77	0.74
G6FZD3		140.36	1.03	0.94	138.43	0.24	0.23
GPLCKQ		140.00	0.67	0.61	138.50	0.31	0.30
GUU44N		140.20	0.87	0.80	139.60	1.41	1.35
H3R3MB		138.80	-0.53	-0.49	137.21	-0.99	-0.95
H6RBRL		138.85	-0.49	-0.45	136.79	-1.41	-1.35
HJBTMA	X	145.33	6.00	5.51	144.37	6.17	5.93
HMAAWJ		138.80	-0.53	-0.49	137.64	-0.55	-0.53
HT2LRF		137.90	-1.43	-1.31	137.20	-0.99	-0.95
HWHLEM		139.00	-0.33	-0.30	138.00	-0.19	-0.19
JQRM7K		137.74	-1.59	-1.46	136.32	-1.87	-1.80
JZZ6RP		139.09	-0.24	-0.22	138.22	0.03	0.03
KDLV98		141.60	2.27	2.08	139.72	1.53	1.47
KWPRFF		139.70	0.37	0.34	138.30	0.11	0.10
LCKNYQ		138.22	-1.11	-1.02	137.21	-0.99	-0.95
LCZYPH		140.00	0.67	0.61	140.00	1.81	1.74
LKVNYT	*	140.90	1.57	1.44	137.90	-0.29	-0.28
MCVXJB	X	133.75	-5.58	-5.12	134.24	-3.96	-3.80
MG9NWH		139.12	-0.21	-0.19	138.58	0.39	0.38
NPGF27		138.50	-0.83	-0.76	137.60	-0.59	-0.57
NUEY2J		137.97	-1.36	-1.25	137.37	-0.82	-0.79



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1111

Tensile Strength: Pre-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
PFNM6Z		138.08	-1.25	-1.15	136.77	-1.42	-1.37
PVLGV9		139.00	-0.33	-0.30	138.00	-0.19	-0.19
Q8T38D		137.50	-1.83	-1.68	137.50	-0.69	-0.67
QGYQDH		140.24	0.91	0.84	138.71	0.52	0.50
QWBA7H		139.24	-0.09	-0.09	138.37	0.17	0.17
RELUTC		140.00	0.67	0.61	140.00	1.81	1.74
TB273X		138.50	-0.83	-0.76	137.90	-0.29	-0.28
TUYBP7		140.10	0.77	0.71	138.60	0.41	0.39
TX28DF		139.00	-0.33	-0.30	138.00	-0.19	-0.19
U9DU28		140.20	0.87	0.80	138.70	0.51	0.49
UD8V2Z		138.60	-0.73	-0.67	137.00	-1.19	-1.15
UURJBV		140.00	0.67	0.61	139.00	0.81	0.78
V8CGT6		139.10	-0.23	-0.21	137.60	-0.59	-0.57
V8P4XC		139.00	-0.33	-0.30	138.00	-0.19	-0.19
VCRUWD		140.69	1.36	1.25	140.63	2.44	2.34
VPBR88		137.86	-1.47	-1.35	136.50	-1.69	-1.63
W7XDF6	X	137.87	-1.46	-1.34	133.02	-5.17	-4.97
X2ND2T		139.00	-0.33	-0.30	138.00	-0.19	-0.19
X3VWH2		140.60	1.27	1.16	137.70	-0.49	-0.47
X79R97		139.00	-0.33	-0.30	139.00	0.81	0.78
X7RL2T		139.72	0.39	0.36	138.31	0.11	0.11
XDQ3L8	X	136.87	-2.46	-2.26	139.16	0.96	0.93
XYWJ23		139.70	0.37	0.34	138.20	0.01	0.01
YARU74		138.08	-1.25	-1.15	137.93	-0.26	-0.25
YQF8JV		139.97	0.63	0.58	137.89	-0.30	-0.29

Summary Statistics

	Sample A03		Sample A04	
Grand Means	139.33	ksi	138.19	ksi
Std Dev Btwn Labs	1.09	ksi	1.04	ksi

Samples A03, A04 : AISI 4340 (S), AISI 4340 (L)

Statistics based on 63 of 72 reporting participants

Comments on Assigned Data Flags for Test #1111

- 4U49PT (X) - Data for both samples are high. Possible Systematic Error.
- 9R4QHZ (M) - Participant did not submit data for sample .
- A7FLB2 (X) - Data for sample A04 are high.
- B2E3KM (X) - Inconsistent in testing between samples.
- DTYZFX (X) - Inconsistent in testing between samples.
- HJBTMA (X) - Data for both samples are high. Possible Systematic Error.
- MCVXJB (X) - Data for both samples are low. Possible Systematic Error.
- W7XDF6 (X) - Data for sample A04 are low.
- XDQ3L8 (X) - Inconsistent in testing between samples.



Analysis 1111

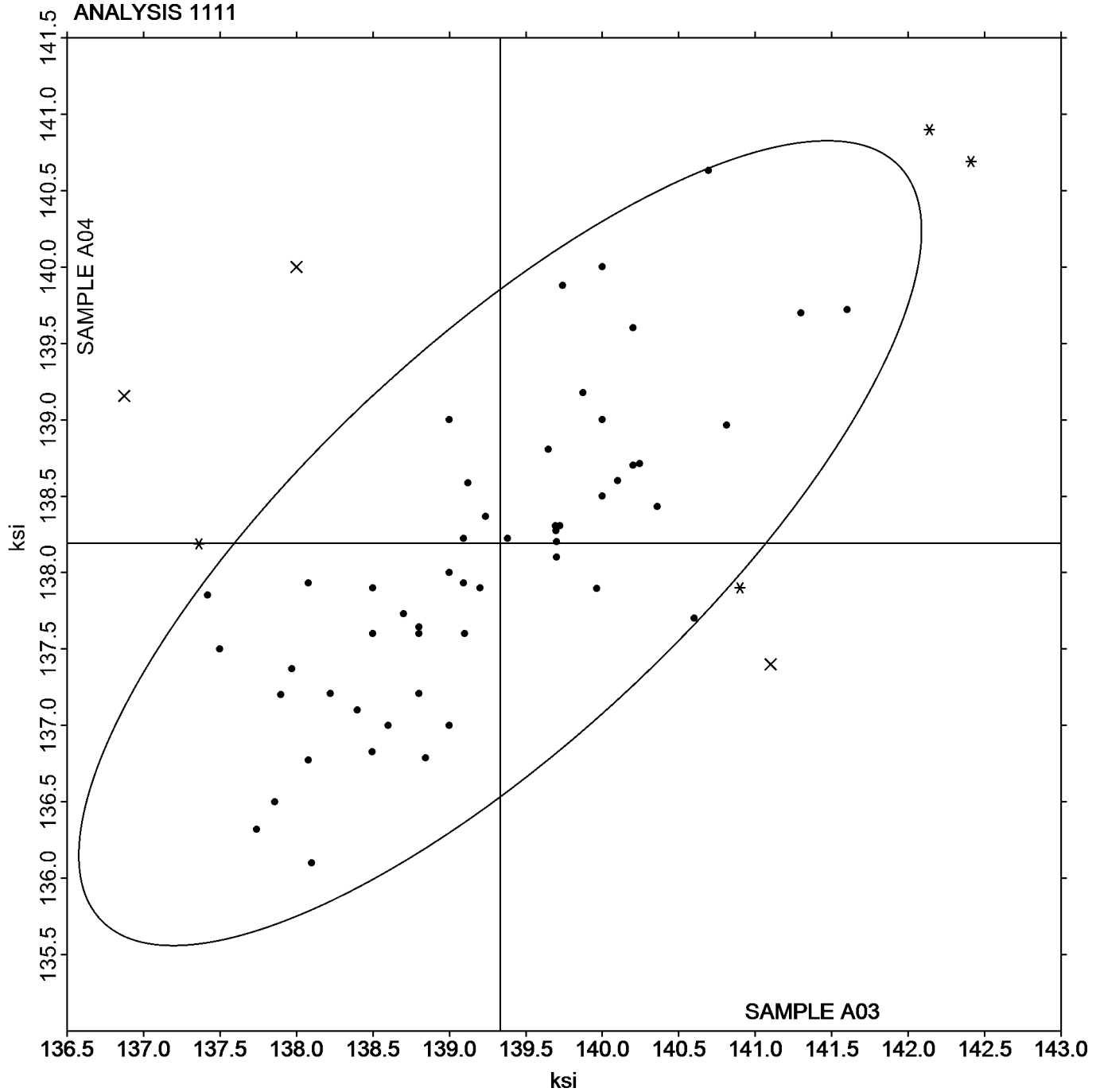
Tensile Strength: Pre-Machined Round Steel
ASTM E8

SAMPLE A03

139.33 ksi

SAMPLE A04

138.19 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1112

Yield Strength: Pre-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
23MW9B		112.27	0.18	0.15	111.08	0.03	0.03
29BFVY		114.13	2.04	1.71	113.56	2.51	2.22
2CQ6U3		113.40	1.31	1.10	111.80	0.75	0.66
2FPK6B	X	112.24	0.15	0.13	106.93	-4.12	-3.65
2G4RQT		112.41	0.31	0.26	111.08	0.02	0.02
3DZEHT	X	118.35	6.25	5.24	117.08	6.03	5.34
4C4KXU		114.00	1.91	1.60	111.30	0.25	0.22
4U49PT		110.59	-1.50	-1.26	110.34	-0.71	-0.63
4ZKXY2		112.66	0.57	0.48	112.48	1.43	1.26
6Z4CRW		112.41	0.31	0.26	110.52	-0.53	-0.47
74H4KB		111.76	-0.33	-0.28	112.46	1.41	1.25
87662H		110.67	-1.42	-1.19	108.57	-2.48	-2.20
8KNQMX	X	116.00	3.91	3.27	110.00	-1.05	-0.93
9R4QHZ	M	No Data Reported			110.50	-0.55	-0.49
9WT76L		111.30	-0.79	-0.66	110.20	-0.85	-0.76
9WU3FH		112.00	-0.09	-0.08	110.00	-1.05	-0.93
A7FLB2		114.34	2.25	1.88	113.91	2.86	2.53
APUZTW		111.40	-0.69	-0.58	110.20	-0.85	-0.76
B2E3KM	X	115.60	3.51	2.94	110.50	-0.55	-0.49
CFRLQU		112.01	-0.08	-0.07	111.16	0.11	0.10
D4VBJY		111.23	-0.86	-0.72	110.29	-0.76	-0.68
DHV2DQ		113.95	1.86	1.56	112.64	1.59	1.41
DLFYTU		111.40	-0.69	-0.58	110.70	-0.35	-0.31
DMREMU		110.40	-1.69	-1.42	109.40	-1.65	-1.46
DTYZFX	M	111.00	-1.09	-0.92	No Data Reported		
E3G4WW	X	112.12	0.02	0.02	115.89	4.83	4.28
G44GFQ	X	126.59	14.50	12.14	124.60	13.55	12.01
G6FZD3		113.22	1.13	0.94	111.33	0.28	0.25
GPLCKQ	*	109.60	-2.49	-2.09	111.00	-0.05	-0.05
GUU44N		112.90	0.81	0.68	112.20	1.15	1.02
H3R3MB		113.57	1.47	1.23	112.12	1.06	0.94
H6RBRL		111.24	-0.85	-0.71	110.23	-0.82	-0.73
HJBTMA	X	119.93	7.84	6.56	119.02	7.97	7.06
HMAAWJ	X	116.61	4.52	3.79	116.18	5.12	4.54
HT2LRF		111.30	-0.79	-0.66	110.90	-0.15	-0.13
HWHLEM		112.00	-0.09	-0.08	111.00	-0.05	-0.05
JQRM7K		110.32	-1.77	-1.49	108.85	-2.20	-1.95
JZZ6RP		111.97	-0.12	-0.10	111.53	0.48	0.43
KDLV98	X	101.50	-10.59	-8.87	79.12	-31.93	-28.30
KWPRFF		112.00	-0.09	-0.08	110.90	-0.15	-0.13
LCKNYQ		111.68	-0.41	-0.35	111.10	0.05	0.04
LCZYPH		114.00	1.91	1.60	112.00	0.95	0.84
LKVNYT		113.60	1.51	1.26	110.70	-0.35	-0.31
MCVXJB	X	107.58	-4.51	-3.78	107.86	-3.19	-2.83
MG9NWH		112.12	0.02	0.02	111.85	0.80	0.71
NPGF27		110.70	-1.39	-1.17	110.40	-0.65	-0.58
NUEY2J	X	111.74	-0.35	-0.30	103.67	-7.38	-6.54



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1112

Yield Strength: Pre-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
PFNM6Z		109.50	-2.59	-2.17	108.78	-2.27	-2.01
PVLGV9		112.00	-0.09	-0.08	111.00	-0.05	-0.05
Q8T38D		110.60	-1.49	-1.25	110.50	-0.55	-0.49
QGYQDH		112.36	0.27	0.23	111.23	0.18	0.16
QWBA7H		111.39	-0.70	-0.59	109.65	-1.40	-1.24
RELUTC		113.00	0.91	0.76	113.00	1.95	1.73
TB273X		112.30	0.21	0.17	111.90	0.85	0.75
TUYBP7		114.10	2.01	1.68	111.30	0.25	0.22
TX28DF		111.00	-1.09	-0.92	110.00	-1.05	-0.93
U9DU28		111.90	-0.19	-0.16	110.50	-0.55	-0.49
UD8V2Z	X	107.00	-5.09	-4.27	110.40	-0.65	-0.58
UURJBV		113.00	0.91	0.76	112.00	0.95	0.84
V8CGT6		112.40	0.31	0.26	111.10	0.05	0.04
V8P4XC		112.00	-0.09	-0.08	111.00	-0.05	-0.05
VCRUWD		112.83	0.74	0.62	113.26	2.21	1.96
VPBR88		110.45	-1.64	-1.38	110.24	-0.81	-0.72
X2ND2T		112.00	-0.09	-0.08	110.00	-1.05	-0.93
X3VWH2		113.80	1.71	1.43	110.60	-0.45	-0.40
X79R97		112.00	-0.09	-0.08	110.00	-1.05	-0.93
X7RL2T		113.53	1.43	1.20	112.51	1.46	1.29
XDQ3L8	X	110.40	-1.69	-1.42	112.67	1.62	1.44
XYWJ23		110.60	-1.49	-1.25	110.60	-0.45	-0.40
YARU74		111.53	-0.56	-0.47	111.39	0.34	0.30
YQF8JV		112.35	0.25	0.21	110.55	-0.50	-0.45

Summary Statistics				
	Sample A03		Sample A04	
Grand Means	112.09	ksi	111.05	ksi
Std Dev Brwn Labs	1.19	ksi	1.13	ksi

Samples A03, A04 : AISI 4340 (S), AISI 4340 (L)

Statistics based on 56 of 71 reporting participants



Analysis 1112

Yield Strength: Pre-Machined Round Steel
ASTM E8

Comments on Assigned Data Flags for Test #1112

- 2FPK6B (X) - Data for sample A04 are low.
- 3DZEHT (X) - Data for both samples are high.
- 8KNQMX (X) - Data for sample A03 are high.
- 9R4QHZ (M) - Participant did not submit data for sample .
- B2E3KM (X) - Data for sample A03 are high.
- DTYZFX (M) - Participant did not submit data for sample .
- E3G4WW (X) - Data for sample A04 are high.
- G44GFQ (X) - Data for both samples are high.
- HJBTMA (X) - Data for both samples are high.
- HMAAWJ (X) - Data for both samples are high.
- KDLV98 (X) - Data for both samples are low.
- MCVXJB (X) - Data for both samples are low.
- NUEY2J (X) - Data for sample A04 are low.
- UD8V2Z (X) - Data for sample A03 are low.
- XDQ3L8 (X) - Inconsistent in testing between samples.



Analysis 1112

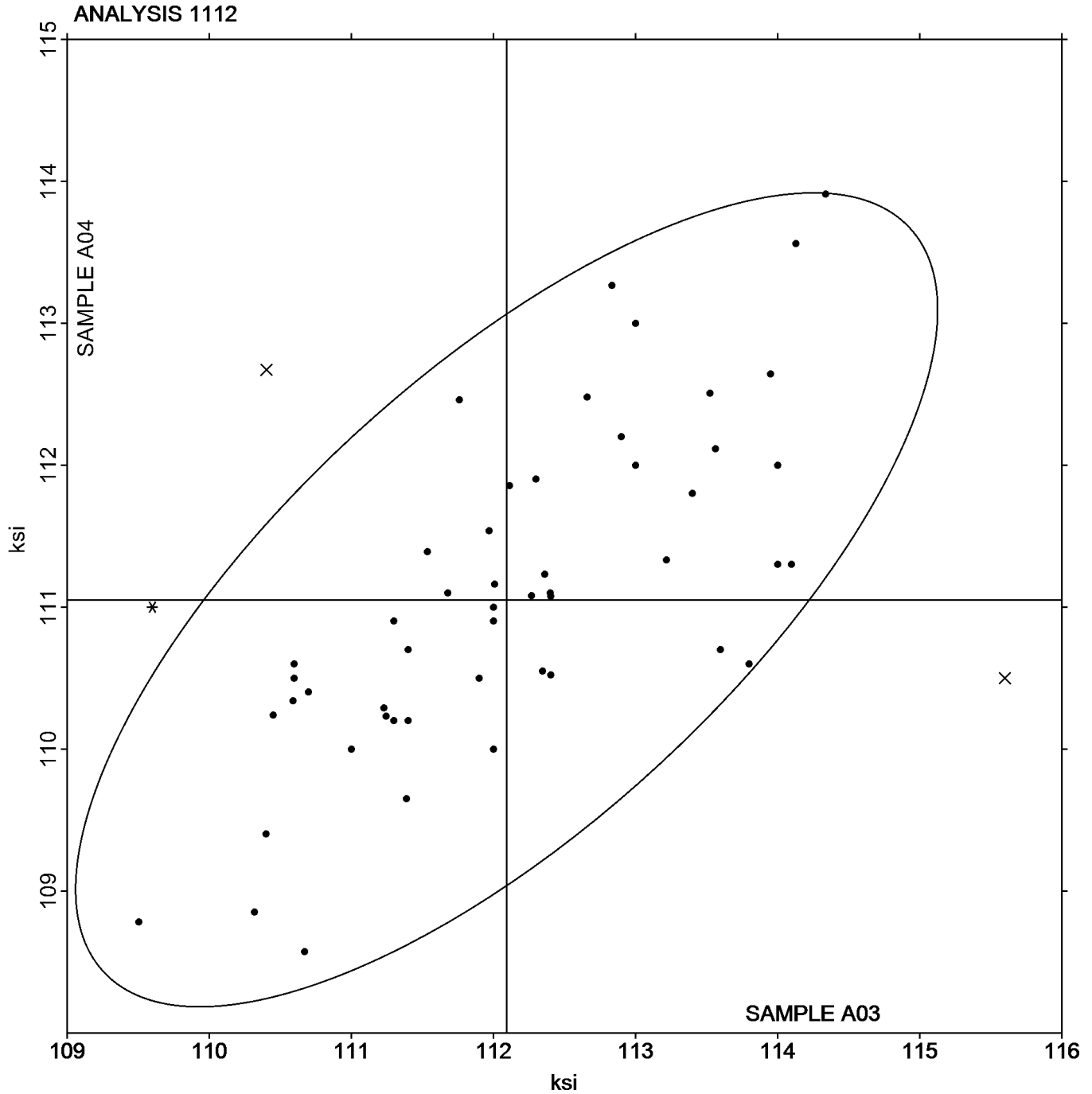
Yield Strength: Pre-Machined Round Steel
ASTM E8

SAMPLE A03

SAMPLE A04

112.09 ksi

111.05 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1113

Elongation: Pre-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
23MW9B		18.00	-0.19	-0.30	17.00	-1.35	-2.00
29BFVY		18.37	0.18	0.27	18.90	0.55	0.82
2CQ6U3		17.40	-0.79	-1.22	18.60	0.25	0.38
2FPK6B		18.38	0.19	0.29	18.65	0.30	0.45
2G4RQT		17.50	-0.69	-1.07	18.00	-0.35	-0.51
3DZEHT		18.24	0.05	0.07	18.74	0.39	0.59
4C4KXU		17.90	-0.29	-0.45	18.00	-0.35	-0.51
4U49PT		18.40	0.21	0.32	18.20	-0.15	-0.22
4ZKXY2		18.99	0.80	1.23	17.50	-0.85	-1.26
6Z4CRW		18.00	-0.19	-0.30	19.00	0.65	0.97
74H4KB		18.96	0.77	1.18	18.26	-0.09	-0.13
87662H		18.30	0.11	0.17	18.27	-0.08	-0.11
8KNQMX		18.00	-0.19	-0.30	18.00	-0.35	-0.51
9R4QHZ	M	No Data Reported			17.00	-1.35	-2.00
9WT76L		17.50	-0.69	-1.07	17.80	-0.55	-0.81
9WU3FH		18.40	0.21	0.32	18.20	-0.15	-0.22
A7FLB2		18.10	-0.09	-0.14	18.65	0.30	0.45
APUZTW		18.00	-0.19	-0.30	19.50	1.15	1.72
B2E3KM		17.50	-0.69	-1.07	18.20	-0.15	-0.22
CFRLQU	*	16.85	-1.34	-2.07	16.48	-1.87	-2.77
D4VBJY		17.60	-0.59	-0.91	18.20	-0.15	-0.22
DHV2DQ		18.85	0.66	1.01	18.82	0.47	0.71
DLFYTU		18.50	0.31	0.47	19.00	0.65	0.97
DMREMU		18.00	-0.19	-0.30	17.90	-0.45	-0.66
DTYZFX		19.00	0.81	1.24	17.75	-0.60	-0.89
E3G4WW		18.20	0.01	0.01	18.40	0.05	0.08
G44GFQ		18.90	0.71	1.09	17.60	-0.75	-1.11
G6FZD3		19.60	1.41	2.17	19.60	1.25	1.87
GPLCKQ		17.05	-1.14	-1.76	18.25	-0.10	-0.14
GUU44N		17.85	-0.34	-0.53	17.60	-0.75	-1.11
H3R3MB	*	16.76	-1.43	-2.21	16.76	-1.59	-2.36
H6RBRL		18.16	-0.03	-0.05	18.92	0.57	0.85
HJBTMA		17.30	-0.89	-1.37	17.50	-0.85	-1.26
HMAAWJ		18.00	-0.19	-0.30	18.70	0.35	0.53
HT2LRF		18.90	0.71	1.09	19.30	0.95	1.42
HWHLEM		18.00	-0.19	-0.30	18.00	-0.35	-0.51
JQRM7K		18.31	0.12	0.18	18.79	0.44	0.66
JZZ6RP		18.10	-0.09	-0.14	18.50	0.15	0.23
KDLV98		17.38	-0.81	-1.25	18.05	-0.30	-0.44
KWPRFF		18.50	0.31	0.47	18.70	0.35	0.53
LCKNYQ		17.00	-1.19	-1.84	18.50	0.15	0.23
LCZYPH		19.40	1.21	1.86	19.00	0.65	0.97
LKVNYT	X	16.30	-1.89	-2.91	16.10	-2.25	-3.34
MCVXJB		18.65	0.46	0.71	18.48	0.13	0.20
MG9NWH		18.30	0.11	0.17	18.60	0.25	0.38
MHMQ6C		18.86	0.67	1.03	18.69	0.34	0.51
NPGF27		18.20	0.01	0.01	18.50	0.15	0.23



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1113

Elongation: Pre-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
NUEY2J		18.05	-0.14	-0.22	18.68	0.33	0.50
PFNM6Z		19.40	1.21	1.86	19.90	1.55	2.31
PVLGV9		19.00	0.81	1.24	19.00	0.65	0.97
Q8T38D		18.40	0.21	0.32	18.70	0.35	0.53
QG2YQDH		18.40	0.21	0.32	18.00	-0.35	-0.51
QWBA7H		18.30	0.11	0.17	18.30	-0.05	-0.07
RELUTC		19.50	1.31	2.01	18.50	0.15	0.23
TB273X		18.30	0.11	0.17	18.60	0.25	0.38
TUYBP7		17.20	-0.99	-1.53	18.10	-0.25	-0.36
TX28DF		18.00	-0.19	-0.30	18.00	-0.35	-0.51
U9DU28	*	19.40	1.21	1.86	20.00	1.65	2.46
UD8V2Z		17.80	-0.39	-0.60	17.80	-0.55	-0.81
UURJBV		17.50	-0.69	-1.07	19.00	0.65	0.97
V8CGT6		17.50	-0.69	-1.07	18.10	-0.25	-0.36
V8P4XC		18.20	0.01	0.01	18.40	0.05	0.08
VCRUWD	*	18.38	0.19	0.29	16.80	-1.55	-2.30
VPBR88		18.64	0.45	0.69	18.85	0.50	0.75
X2ND2T		18.00	-0.19	-0.30	18.00	-0.35	-0.51
X3VWH2		18.00	-0.19	-0.30	19.00	0.65	0.97
X79R97		18.10	-0.09	-0.14	18.20	-0.15	-0.22
X7RL2T	X	15.70	-2.49	-3.84	16.10	-2.25	-3.34
XDQ3L8	*	19.22	1.03	1.58	17.22	-1.13	-1.67
XYWJ23		17.20	-0.99	-1.53	17.80	-0.55	-0.81
YARU74		18.40	0.21	0.32	18.50	0.15	0.23
YQF8JV		18.18	-0.01	-0.02	18.32	-0.03	-0.04

Summary Statistics

	Sample A03		Sample A04	
Grand Means	18.19	Percent	18.35	Percent
Stnd Dev Btwn Labs	0.65	Percent	0.67	Percent

Samples A03, A04 : AISI 4340 (S), AISI 4340 (L)

Statistics based on 69 of 72 reporting participants

Comments on Assigned Data Flags for Test #1113

9R4QHZ (M) - Participant did not submit data for sample .

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

X7RL2T (X) - Data for both samples are low.



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1113

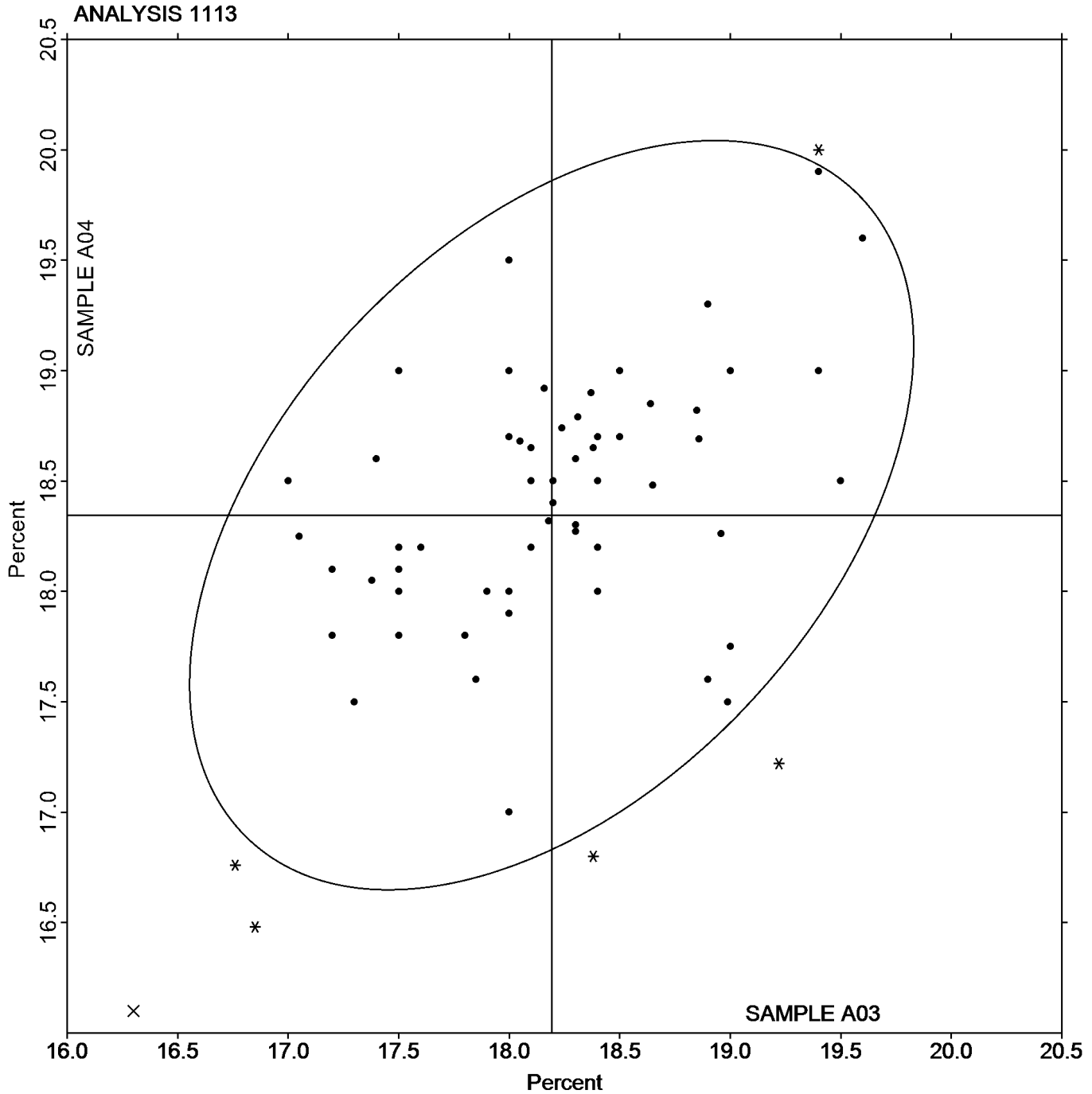
Elongation: Pre-Machined Round Steel
ASTM E8

SAMPLE A03

18.19 Percent

SAMPLE A04

18.35 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1114

Reduction of Area: Pre-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
23MW9B		54.00	-0.30	-0.24	55.00	0.76	0.77
29BFVY		52.98	-1.32	-1.06	54.08	-0.16	-0.16
2CQ6U3		52.50	-1.80	-1.44	55.00	0.76	0.77
2FPK6B		54.85	0.55	0.44	52.97	-1.27	-1.29
2G4RQT		54.00	-0.30	-0.24	55.20	0.96	0.98
3DZEHT		55.94	1.64	1.32	52.03	-2.21	-2.25
4C4KXU		54.80	0.50	0.40	54.20	-0.04	-0.04
4U49PT		55.40	1.10	0.89	51.90	-2.34	-2.38
4ZKXY2	X	55.83	1.53	1.23	50.38	-3.86	-3.92
6Z4CRW		56.00	1.70	1.37	54.00	-0.24	-0.24
74H4KB		56.07	1.78	1.43	53.88	-0.36	-0.37
87662H		52.80	-1.50	-1.20	54.43	0.19	0.19
8KNQMX		54.00	-0.30	-0.24	54.00	-0.24	-0.24
9R4QHZ	M	No Data Reported			52.40	-1.84	-1.87
9WT76L		52.30	-2.00	-1.60	52.70	-1.54	-1.57
9WU3FH		55.40	1.10	0.89	53.90	-0.34	-0.35
A7FLB2		52.78	-1.52	-1.22	53.90	-0.34	-0.35
APUZTW	X	59.00	4.70	3.77	61.00	6.76	6.87
B2E3KM		55.70	1.40	1.13	55.20	0.96	0.98
CFRLQU		55.14	0.84	0.68	52.99	-1.25	-1.27
D4VBJY		52.10	-2.20	-1.76	54.60	0.36	0.37
DHV2DQ		52.30	-2.00	-1.60	54.80	0.56	0.57
DLFYTU		53.60	-0.70	-0.56	54.00	-0.24	-0.24
DMREMU		53.90	-0.40	-0.32	51.90	-2.34	-2.38
DTYZFX		56.00	1.70	1.37	52.50	-1.74	-1.77
E3G4WW		53.80	-0.50	-0.40	54.80	0.56	0.57
G44GFQ	X	49.50	-4.80	-3.85	52.10	-2.14	-2.18
G6FZD3		55.50	1.20	0.97	54.70	0.46	0.47
GPLCKQ		53.80	-0.50	-0.40	54.34	0.10	0.10
GUU44N		55.60	1.30	1.05	53.80	-0.44	-0.45
H6RBRL		53.16	-1.14	-0.91	55.75	1.51	1.53
HJBTMA		53.70	-0.60	-0.48	54.30	0.06	0.06
HMAAWJ		53.00	-1.30	-1.04	55.00	0.76	0.77
HT2LRF		55.60	1.30	1.05	55.40	1.16	1.18
HWHLEM		53.00	-1.30	-1.04	54.00	-0.24	-0.24
JQRM7K		53.20	-1.10	-0.88	55.30	1.06	1.08
JZZ6RP		53.60	-0.70	-0.56	53.70	-0.54	-0.55
KDLV98		54.04	-0.26	-0.21	53.91	-0.33	-0.34
KWPRFF	*	57.50	3.20	2.57	53.30	-0.94	-0.96
LCKNYQ		53.40	-0.90	-0.72	55.20	0.96	0.98
LCZYPH		54.80	0.50	0.40	54.70	0.46	0.47
LKVNYT		53.60	-0.70	-0.56	53.50	-0.74	-0.75
MCVXJB		56.27	1.97	1.58	55.45	1.21	1.23
MG9NWH		53.90	-0.40	-0.32	55.10	0.86	0.87
MHMQ6C	X	52.88	-1.42	-1.14	60.10	5.86	5.95
NPGF27		53.60	-0.70	-0.56	53.40	-0.84	-0.85
NUEY2J		55.87	1.57	1.26	55.02	0.78	0.79



**Fasteners and Metals Interlaboratory Testing Program
Analysis 1114**

**Cycle 147
3rd Qtr 2024**

**Reduction of Area: Pre-Machined Round Steel
ASTM E8**

WebCode	Data Flag	Sample A03			Sample A04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
PFNM6Z		52.90	-1.40	-1.12	55.30	1.06	1.08
Q8T38D		56.30	2.00	1.61	55.10	0.86	0.87
QGYQDH		55.20	0.90	0.73	53.60	-0.64	-0.65
QWBA7H		53.50	-0.80	-0.64	53.60	-0.64	-0.65
RELUTC		55.60	1.30	1.05	54.20	-0.04	-0.04
TB273X		52.80	-1.50	-1.20	55.50	1.26	1.28
TUYBP7		55.60	1.30	1.05	55.30	1.06	1.08
TX28DF		56.00	1.70	1.37	55.00	0.76	0.77
U9DU28		53.80	-0.50	-0.40	54.30	0.06	0.06
UD8V2Z		55.10	0.80	0.65	54.90	0.66	0.67
UURJBV		54.00	-0.30	-0.24	53.60	-0.64	-0.65
V8CGT6		54.10	-0.20	-0.16	55.20	0.96	0.98
V8P4XC		54.20	-0.10	-0.08	53.80	-0.44	-0.45
VCRUWD		54.33	0.04	0.03	52.73	-1.51	-1.53
VPBR88		51.80	-2.50	-2.00	54.90	0.66	0.67
X2ND2T		53.00	-1.30	-1.04	54.00	-0.24	-0.24
X3VWH2		55.30	1.00	0.81	55.20	0.96	0.98
X79R97		54.80	0.50	0.40	54.00	-0.24	-0.24
X7RL2T		54.00	-0.30	-0.24	52.00	-2.24	-2.28
XDQ3L8	X	55.88	1.58	1.27	49.61	-4.63	-4.71
XYWJ23		54.70	0.40	0.32	55.70	1.46	1.48
YARU74		54.20	-0.10	-0.08	55.30	1.06	1.08
YQF8JV		54.19	-0.11	-0.09	54.29	0.05	0.05

Summary Statistics

	Sample A03		Sample A04	
Grand Means	54.30	Percent	54.24	Percent
Stnd Dev Btwn Labs	1.25	Percent	0.98	Percent

Samples A03, A04 : AISI 4340 (S), AISI 4340 (L)

Statistics based on 64 of 70 reporting participants

Comments on Assigned Data Flags for Test #1114

- 4ZKXY2 (X) - Data for sample A04 are low.
- 9R4QHZ (M) - Participant did not submit data for sample .
- APUZTW (X) - Data for both samples are high.
- G44GFQ (X) - Data for sample A03 are low.
- MHM6C (X) - Data for sample A04 are high.
- XDQ3L8 (X) - Data for sample A04 are low.



Analysis 1114

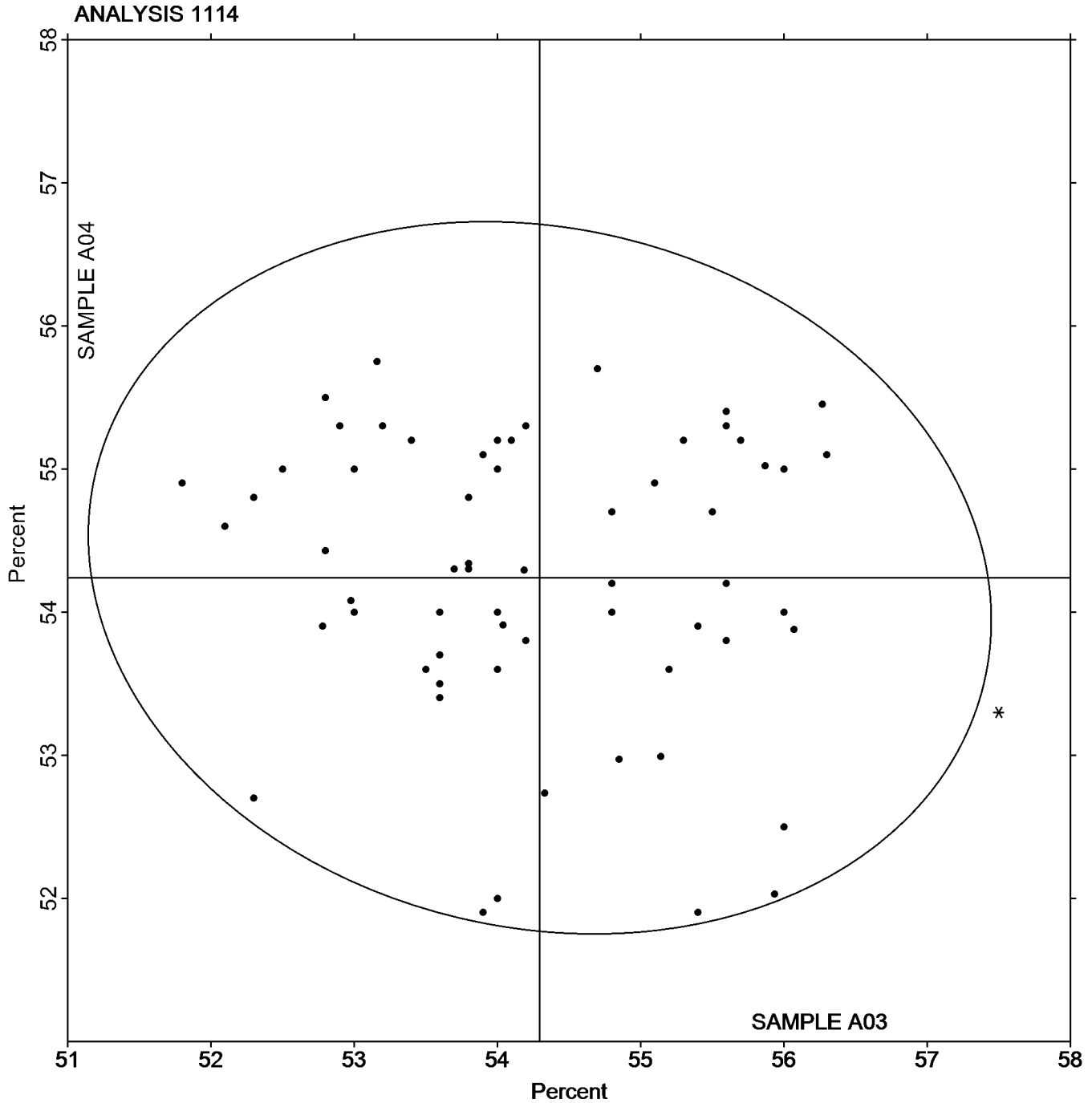
Reduction of Area: Pre-Machined Round Steel
ASTM E8

SAMPLE A03

54.30 Percent

SAMPLE A04

54.24 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1121

Tensile Strength: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27KM9V		140.57	0.78	0.70	139.72	1.34	1.10
2DJ33A		140.15	0.35	0.32	139.09	0.71	0.59
2G4RQT		139.26	-0.54	-0.48	137.46	-0.91	-0.75
2TQ938	*	142.50	2.70	2.42	139.00	0.62	0.51
2V4T29		140.54	0.74	0.66	139.58	1.20	0.99
3M4T4R		138.60	-1.20	-1.07	137.30	-1.08	-0.89
3NLHRE		139.50	-0.30	-0.27	139.10	0.72	0.60
3WDT4U	X	142.86	3.07	2.75	137.06	-1.31	-1.08
3WTECB	X	138.20	-1.60	-1.43	140.00	1.62	1.34
466VJB	X	137.00	-2.80	-2.51	139.20	0.82	0.68
4BQNVB		140.11	0.31	0.28	137.93	-0.44	-0.37
4W8A7H		140.90	1.10	0.99	139.50	1.12	0.93
6PMK9T		139.19	-0.60	-0.54	136.93	-1.44	-1.19
6TQZ2Q		139.90	0.10	0.09	137.30	-1.08	-0.89
73PFZU		138.38	-1.42	-1.27	137.01	-1.37	-1.13
7RL6MD		138.84	-0.95	-0.86	137.90	-0.47	-0.39
7Y6D9N		139.60	-0.20	-0.18	138.30	-0.08	-0.06
7ZJTMP	X	138.00	-1.80	-1.61	133.00	-5.38	-4.43
8AY9JN		139.70	-0.10	-0.09	139.10	0.72	0.60
8LFNV4		140.41	0.62	0.55	139.03	0.65	0.54
8PWBA		139.14	-0.66	-0.59	138.11	-0.27	-0.22
8V9WMM		140.00	0.20	0.18	138.00	-0.38	-0.31
8YHFG9		138.70	-1.10	-0.98	138.21	-0.17	-0.14
932P8L		138.60	-1.20	-1.07	136.60	-1.78	-1.46
99PCYK		138.90	-0.90	-0.80	137.40	-0.98	-0.80
9AJZJ2	*	141.00	1.20	1.08	137.40	-0.98	-0.80
9B8K2Q		138.08	-1.72	-1.54	137.50	-0.88	-0.72
9HD3PJ		138.80	-1.00	-0.89	139.30	0.92	0.76
ADUG6B		137.83	-1.96	-1.76	136.00	-2.37	-1.95
AKXE2U		141.56	1.76	1.58	139.24	0.86	0.71
B9Y3ZZ		140.82	1.02	0.92	139.95	1.58	1.30
BMJFH2		140.40	0.60	0.54	140.30	1.92	1.59
BUWGQJ	X	142.00	2.20	1.97	136.11	-2.27	-1.87
BWPKAH		140.20	0.40	0.36	138.60	0.22	0.18
BXJ72N		139.54	-0.25	-0.23	137.05	-1.33	-1.10
CA48UZ		140.10	0.30	0.27	139.90	1.52	1.26
CBMUQW		139.00	-0.80	-0.71	137.00	-1.38	-1.13
CR7RRN	*	139.27	-0.53	-0.47	135.83	-2.55	-2.10
CTFUHT		138.10	-1.70	-1.52	137.50	-0.88	-0.72
CV9NHH		140.70	0.90	0.81	138.50	0.12	0.10
D4VBJY		138.93	-0.86	-0.77	136.99	-1.39	-1.14
DCMFPT		139.20	-0.60	-0.53	137.43	-0.95	-0.78
DV6MT3		138.84	-0.95	-0.85	138.38	0.01	0.01
DYFRCP		139.36	-0.44	-0.39	136.88	-1.49	-1.23
DZU3FN		139.24	-0.55	-0.49	137.67	-0.70	-0.58
E7XD2M		141.78	1.98	1.78	140.86	2.48	2.04
EJRHJL		137.80	-2.00	-1.79	136.30	-2.08	-1.71



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1121

Tensile Strength: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
EKYXTD		141.10	1.30	1.17	138.80	0.42	0.35
G3UAAC		140.20	0.40	0.36	137.00	-1.38	-1.13
GCJXAL		138.00	-1.80	-1.61	137.00	-1.38	-1.13
GHABBA		140.56	0.76	0.68	138.77	0.40	0.33
GLHXHJ		140.40	0.60	0.54	138.80	0.43	0.35
H6RBRL		139.45	-0.34	-0.31	138.74	0.37	0.30
H7K9ZR		140.67	0.87	0.78	139.44	1.06	0.87
HLFJQ4		139.70	-0.10	-0.09	138.40	0.02	0.02
HXBKLT		140.73	0.94	0.84	140.02	1.64	1.36
HXX6YK		138.40	-1.40	-1.25	138.20	-0.18	-0.14
J37T8E	X	143.59	3.80	3.40	137.19	-1.19	-0.98
KGGQR7		142.40	2.60	2.33	140.50	2.12	1.75
KWPRFF		140.85	1.05	0.95	139.14	0.76	0.63
KZU92Q		138.00	-1.80	-1.61	137.00	-1.38	-1.13
LAD2RD		140.01	0.21	0.19	137.51	-0.86	-0.71
LCKNYQ		140.83	1.04	0.93	140.25	1.88	1.55
LCZYPH	X	143.00	3.20	2.87	143.00	4.62	3.81
M2V7VH		140.00	0.20	0.18	139.70	1.32	1.09
MCXHBK		140.83	1.03	0.93	140.29	1.92	1.58
MLKCT9		139.20	-0.60	-0.53	137.70	-0.68	-0.56
MR7LPJ		138.58	-1.22	-1.09	137.17	-1.20	-0.99
MVQEVK	X	138.20	-1.60	-1.43	133.10	-5.28	-4.35
MZ6UPH		139.20	-0.60	-0.53	138.60	0.22	0.18
MZ9G3Q		141.00	1.20	1.08	140.00	1.62	1.34
NV7XFH		138.58	-1.22	-1.09	137.80	-0.57	-0.47
PCAU2		139.00	-0.80	-0.71	137.00	-1.38	-1.13
QGYQDH		141.17	1.37	1.23	139.57	1.19	0.98
QQR2QY		140.72	0.92	0.83	141.05	2.67	2.20
QVXMN4		140.00	0.20	0.18	140.00	1.62	1.34
QW9QTF	*	140.83	1.04	0.93	136.92	-1.46	-1.20
RELUTC	*	143.00	3.20	2.87	141.00	2.62	2.16
TEGPWZ		140.52	0.72	0.65	137.92	-0.46	-0.38
TTYHMR		139.39	-0.40	-0.36	138.26	-0.12	-0.10
U9DU28		139.90	0.10	0.09	138.70	0.32	0.27
UFTM4P		140.80	1.00	0.90	139.70	1.32	1.09
UZJN87		138.90	-0.90	-0.80	138.70	0.32	0.27
VKJAJV		139.67	-0.12	-0.11	138.80	0.43	0.35
VMADC3		139.20	-0.60	-0.53	137.60	-0.78	-0.64
VV7BY7		142.30	2.50	2.25	140.40	2.02	1.67
W3Y3K6		139.19	-0.61	-0.54	137.80	-0.58	-0.47
WKKLGC		140.00	0.20	0.18	138.00	-0.38	-0.31
WRGLRX		139.00	-0.80	-0.71	137.50	-0.88	-0.72
XFH3WP		138.00	-1.80	-1.61	137.00	-1.38	-1.13
XGFAZ3		140.00	0.20	0.18	139.00	0.62	0.51
XKC28E		139.20	-0.60	-0.53	137.70	-0.68	-0.56
XL9EU7		138.70	-1.10	-0.98	138.20	-0.18	-0.14
Y2V4GM		138.68	-1.11	-1.00	137.29	-1.09	-0.90



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1121

Tensile Strength: Lab-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
YCEFRY		140.34	0.54	0.49	139.07	0.69	0.57
YKLE22		141.00	1.20	1.08	139.00	0.62	0.51
YKV3RV		139.60	-0.20	-0.18	137.30	-1.08	-0.89

Summary Statistics

	Sample P03		Sample P04	
Grand Means	139.80	ksi	138.38	ksi
Std Dev Btwn Labs	1.12	ksi	1.21	ksi

Samples P03, P04 : AISI 4340 (E), AISI 4340 (F)

Statistics based on 89 of 97 reporting participants

Comments on Assigned Data Flags for Test #1121

- 3WDT4U (X) - Inconsistent in testing between samples.
- 3WTECB (X) - Inconsistent in testing between samples.
- 466VJB (X) - Inconsistent in testing between samples.
- 7ZJTMP (X) - Data for sample P04 are low.
- BUWGGQJ (X) - Inconsistent in testing between samples.
- J37T8E (X) - Data for sample P03 are high.
- LCZYPH (X) - Data for both samples are high. Possible Systematic Error.
- MVQEVK (X) - Data for sample P04 are low.



Analysis 1121

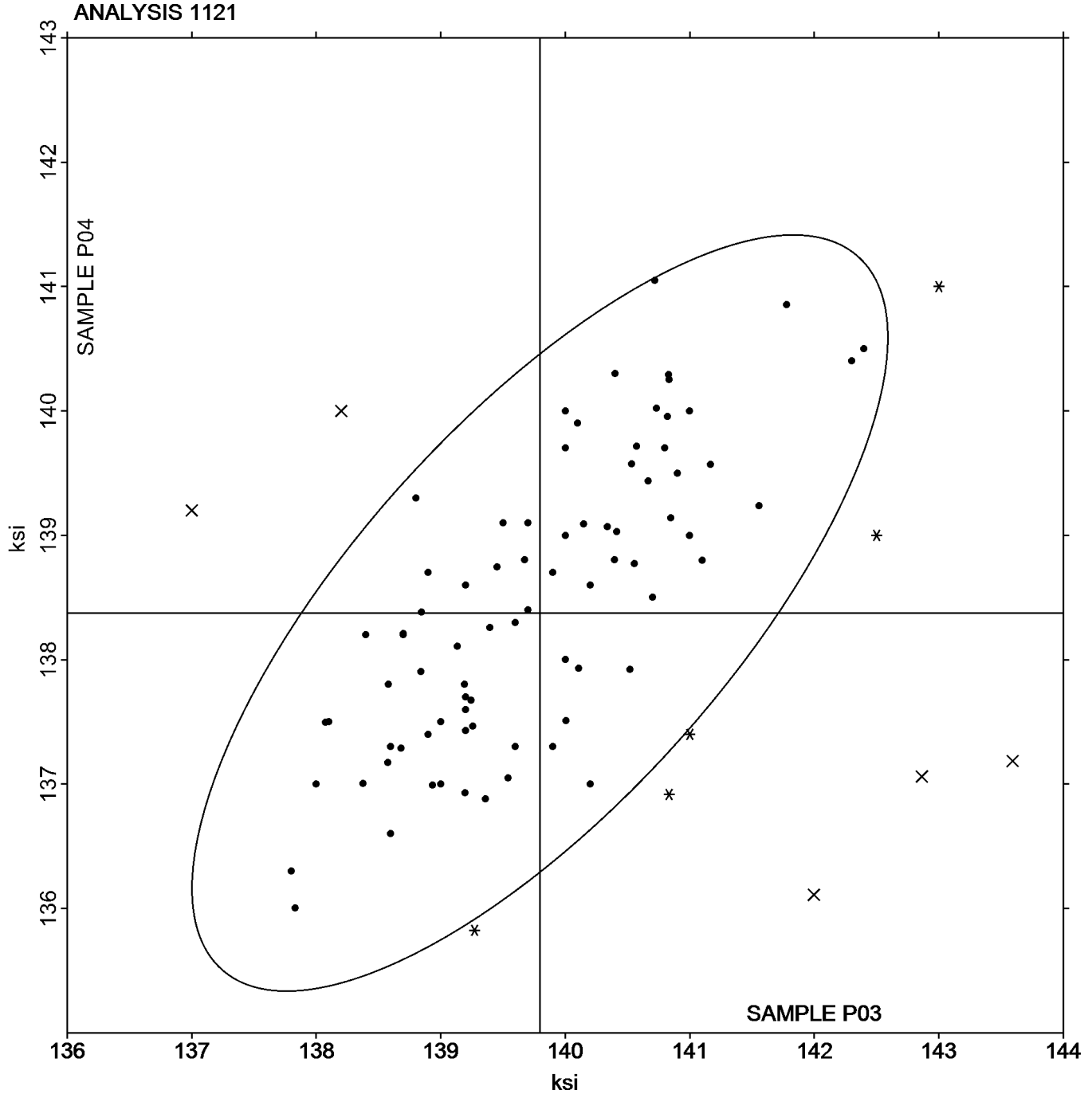
Tensile Strength: Lab-Machined Round Steel
ASTM E8

SAMPLE P03

139.80 ksi

SAMPLE P04

138.38 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1122

Yield Strength: Lab-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27KM9V		112.04	-0.45	-0.38	111.39	0.38	0.29
2DJ33A		112.93	0.44	0.37	111.95	0.95	0.71
2G4RQT		112.19	-0.31	-0.26	110.59	-0.42	-0.31
2TQ938	*	116.10	3.60	3.03	114.00	2.99	2.23
2V4T29		113.34	0.85	0.71	112.25	1.24	0.92
3M4T4R		110.90	-1.60	-1.34	109.80	-1.21	-0.90
3NLHRE		111.60	-0.90	-0.75	112.80	1.79	1.34
3WDT4U	X	115.31	2.81	2.36	109.50	-1.50	-1.12
3WTECB		110.90	-1.60	-1.34	111.50	0.49	0.37
466VJB	*	110.20	-2.30	-1.93	111.80	0.79	0.59
4BQNVB		113.86	1.36	1.14	112.12	1.11	0.83
4W8A7H		113.60	1.10	0.93	112.20	1.19	0.89
6PMK9T		111.69	-0.80	-0.67	109.97	-1.04	-0.78
6TQZ2Q		111.60	-0.90	-0.75	109.90	-1.11	-0.83
73PFZU	X	106.79	-5.71	-4.80	104.92	-6.08	-4.54
7RL6MD	X	107.88	-4.62	-3.88	106.35	-4.66	-3.48
7Y6D9N		113.20	0.70	0.59	111.70	0.69	0.52
7ZJTMP	X	111.00	-1.50	-1.26	105.00	-6.01	-4.48
8AY9JN		115.30	2.80	2.36	112.40	1.39	1.04
8LFNV4		113.27	0.77	0.65	111.69	0.69	0.51
8PWBA		112.59	0.10	0.08	110.91	-0.10	-0.07
8V9WMM		112.00	-0.50	-0.42	110.00	-1.01	-0.75
8YHFG9		111.88	-0.61	-0.51	110.84	-0.17	-0.13
932P8L		111.60	-0.90	-0.75	110.40	-0.61	-0.45
99PCYK		112.30	-0.20	-0.16	110.70	-0.31	-0.23
9AJZJ2		113.00	0.50	0.42	109.30	-1.71	-1.27
9B8K2Q		111.10	-1.40	-1.17	110.37	-0.63	-0.47
9HD3PJ		112.40	-0.10	-0.08	112.90	1.89	1.41
ADUG6B		113.29	0.79	0.67	112.01	1.00	0.75
AKXE2U		112.99	0.49	0.41	111.97	0.96	0.72
B9Y3ZZ		113.56	1.07	0.90	112.51	1.50	1.12
BMJFH2		113.30	0.80	0.68	112.80	1.79	1.34
BUWGQJ	*	113.99	1.50	1.26	108.84	-2.17	-1.62
BWPKAH		112.90	0.40	0.34	110.90	-0.11	-0.08
BXJ72N		112.14	-0.35	-0.30	110.06	-0.95	-0.71
CA48UZ		113.20	0.70	0.59	112.10	1.09	0.82
CBMUQW		111.00	-1.50	-1.26	109.00	-2.01	-1.50
CR7RRN		112.04	-0.45	-0.38	108.34	-2.67	-1.99
CTFUHT		111.30	-1.20	-1.00	110.40	-0.61	-0.45
CV9NHH		112.00	-0.50	-0.42	110.80	-0.21	-0.16
D4VBXY		111.27	-1.22	-1.03	109.75	-1.26	-0.94
DCMFPT		111.14	-1.36	-1.14	110.15	-0.86	-0.64
DV6MT3		111.17	-1.32	-1.11	110.41	-0.60	-0.45
DYFRCP		113.44	0.94	0.79	109.59	-1.42	-1.06
DZU3FN		111.70	-0.80	-0.67	109.84	-1.17	-0.87
E7XD2M		113.99	1.50	1.26	112.36	1.36	1.01
EJRHJL	*	114.50	2.00	1.69	110.00	-1.01	-0.75



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1122

Yield Strength: Lab-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
EKYXTD		112.50	0.00	0.00	110.30	-0.71	-0.53
G3UAAC		112.40	-0.10	-0.08	109.90	-1.11	-0.83
GCJXAL		112.00	-0.50	-0.42	110.00	-1.01	-0.75
GHABBA		111.88	-0.61	-0.52	111.33	0.32	0.24
GLHXHJ		112.70	0.20	0.17	109.65	-1.36	-1.01
H6RBRL		112.41	-0.09	-0.08	111.83	0.82	0.61
H7K9ZR		113.38	0.88	0.74	112.11	1.10	0.82
HLFJQ4	X	116.10	3.60	3.03	109.60	-1.41	-1.05
HXBKLT		113.52	1.03	0.86	112.65	1.64	1.22
HXX6YK		110.80	-1.70	-1.43	110.70	-0.31	-0.23
J37T8E	X	116.82	4.32	3.63	110.60	-0.41	-0.30
KGGQR7		112.70	0.20	0.17	112.10	1.09	0.82
KWPRFF		112.96	0.46	0.39	111.17	0.16	0.12
KZU92Q		111.60	-0.90	-0.75	109.40	-1.61	-1.20
LAD2RD		111.87	-0.63	-0.53	109.90	-1.11	-0.83
LCKNYQ		113.71	1.22	1.02	113.13	2.12	1.58
LCZYPH		115.00	2.50	2.11	113.00	1.99	1.49
M2V7VH	X	133.30	20.80	17.49	112.80	1.79	1.34
MCXHBK		114.62	2.12	1.78	113.88	2.87	2.15
MLKCT9		111.30	-1.20	-1.00	109.80	-1.21	-0.90
MR7LPJ		111.19	-1.30	-1.10	109.28	-1.72	-1.29
MVQEVK	X	110.80	-1.70	-1.43	105.70	-5.31	-3.96
MZ6UPH		110.60	-1.90	-1.59	110.20	-0.81	-0.60
MZ9G3Q		115.00	2.50	2.11	113.00	1.99	1.49
NV7XFH		112.42	-0.07	-0.06	111.59	0.58	0.43
PCAU2		111.00	-1.50	-1.26	108.00	-3.01	-2.25
QGYQDH		114.39	1.89	1.59	111.96	0.95	0.71
QQR2QY	*	113.51	1.01	0.85	114.38	3.37	2.52
QVXMN4		110.00	-2.50	-2.10	110.00	-1.01	-0.75
QW9QTF	*	113.13	0.64	0.53	108.63	-2.37	-1.77
RELUTC	X	122.00	9.50	7.99	114.00	2.99	2.23
TEGPWZ		112.34	-0.16	-0.13	109.59	-1.42	-1.06
TTYHMR		112.81	0.31	0.26	111.50	0.49	0.36
U9DU28		111.10	-1.40	-1.17	110.40	-0.61	-0.45
UFTM4P		113.10	0.60	0.51	111.70	0.69	0.52
UZJN87		112.10	-0.40	-0.33	111.60	0.59	0.44
VKJAJV		111.39	-1.11	-0.93	110.52	-0.49	-0.36
VMADC3		111.80	-0.70	-0.58	110.40	-0.61	-0.45
VV7BY7		114.40	1.90	1.60	112.20	1.19	0.89
W3Y3K6		112.21	-0.29	-0.24	110.72	-0.29	-0.22
WKKLG		113.00	0.50	0.42	109.00	-2.01	-1.50
WRGLRX		111.60	-0.90	-0.75	109.50	-1.51	-1.13
XFH3WP		111.00	-1.50	-1.26	112.00	0.99	0.74
XGFAZ3		113.00	0.50	0.42	113.00	1.99	1.49
XKC28E		112.40	-0.10	-0.08	110.70	-0.31	-0.23
XL9EU7		112.30	-0.20	-0.16	111.90	0.89	0.67
Y2V4GM		111.83	-0.67	-0.56	110.09	-0.92	-0.69



**Fasteners and Metals Interlaboratory Testing Program
Analysis 1122**

**Cycle 147
3rd Qtr 2024**

**Yield Strength: Lab-Machined Round Steel
ASTM E8**

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
YCEFRY		112.60	0.10	0.09	111.51	0.50	0.37
YKLE22		113.00	0.50	0.42	111.00	-0.01	-0.01
YKV3RV		112.50	0.00	0.00	110.20	-0.81	-0.60

Summary Statistics

	Sample P03		Sample P04	
Grand Means	112.50	ksi	111.01	ksi
Stnd Dev Btwn Labs	1.19	ksi	1.34	ksi

Samples P03, P04 : AISI 4340 (E), AISI 4340 (F)

Statistics based on 88 of 97 reporting participants

Comments on Assigned Data Flags for Test #1122

- 3WDT4U (X) - Inconsistent in testing between samples.
- 73PFZU (X) - Data for both samples are low.
- 7RL6MD (X) - Data for both samples are low.
- 7ZJTMP (X) - Data for sample P04 are low.
- HLFJQ4 (X) - Data for sample P03 are high.
- J37T8E (X) - Data for sample P03 are high.
- M2V7VH (X) - Data for sample P03 are high.
- MVQEVK (X) - Data for sample P04 are low.
- RELUTC (X) - Data for sample P03 are high.



Analysis 1122

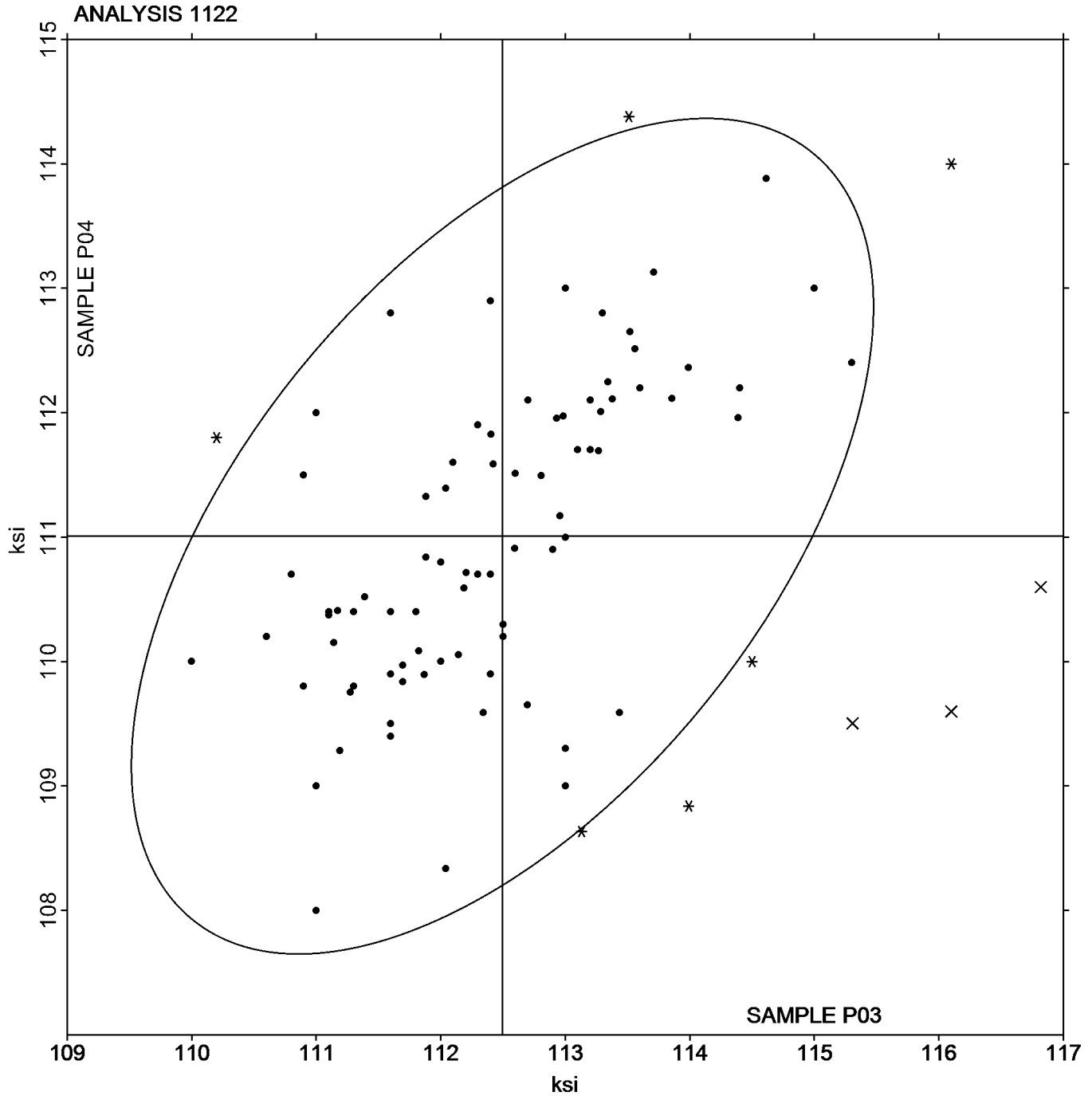
Yield Strength: Lab-Machined Round Steel
ASTM E8

SAMPLE P03

112.50 ksi

SAMPLE P04

111.01 ksi





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1123

Elongation: Lab-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27KM9V		20.00	1.42	1.27	19.80	1.31	1.09
2DJ33A		18.00	-0.58	-0.52	17.50	-0.99	-0.82
2G4RQT		17.50	-1.08	-0.97	17.80	-0.69	-0.57
2TQ938		18.30	-0.28	-0.25	19.10	0.61	0.51
2V4T29		17.50	-1.08	-0.97	17.50	-0.99	-0.82
3M4T4R		19.30	0.72	0.64	19.30	0.81	0.68
3NLHRE		18.00	-0.58	-0.52	18.00	-0.49	-0.40
3WDT4U	X	17.96	-0.62	-0.56	11.17	-7.32	-6.08
3WTECB		17.60	-0.98	-0.88	17.20	-1.29	-1.07
466VJB		19.30	0.72	0.64	18.40	-0.09	-0.07
4BQNVB		17.76	-0.82	-0.74	17.32	-1.17	-0.97
4W8A7H		19.20	0.62	0.55	19.00	0.51	0.43
6PMK9T		20.60	2.02	1.80	20.40	1.91	1.59
6TQZ2Q		17.90	-0.68	-0.61	17.90	-0.59	-0.49
73PFZU		17.80	-0.78	-0.70	19.25	0.76	0.63
7RL6MD		18.07	-0.51	-0.46	19.04	0.55	0.46
7Y6D9N		19.80	1.22	1.09	20.30	1.81	1.51
7ZJTMP		20.00	1.42	1.27	21.00	2.51	2.09
8AY9JN		19.40	0.82	0.73	19.70	1.21	1.01
8LFNV4		17.50	-1.08	-0.97	17.50	-0.99	-0.82
8PWBA		19.20	0.62	0.55	18.90	0.41	0.34
8V9WMM		19.00	0.42	0.37	20.00	1.51	1.26
8YHFG9		19.10	0.52	0.46	19.10	0.61	0.51
932P8L		18.60	0.02	0.02	18.40	-0.09	-0.07
99PCYK		17.60	-0.98	-0.88	18.50	0.01	0.01
9AJZJ2		17.10	-1.48	-1.32	18.60	0.11	0.09
9B8K2Q		20.60	2.02	1.80	20.40	1.91	1.59
9HD3PJ		16.60	-1.98	-1.77	16.50	-1.99	-1.65
ADUG6B		19.20	0.62	0.55	19.40	0.91	0.76
AKXE2U		17.40	-1.18	-1.06	18.00	-0.49	-0.40
B9Y3ZZ		17.50	-1.08	-0.97	17.50	-0.99	-0.82
BMJFH2		19.00	0.42	0.37	17.00	-1.49	-1.23
BUWGQJ		19.70	1.12	1.00	18.50	0.01	0.01
BWPKAH		18.00	-0.58	-0.52	18.00	-0.49	-0.40
BXJ72N		19.70	1.12	1.00	20.10	1.61	1.34
CA48UZ		17.05	-1.53	-1.37	18.60	0.11	0.09
CBMUQW		18.00	-0.58	-0.52	18.00	-0.49	-0.40
CR7RRN		16.70	-1.88	-1.68	17.90	-0.59	-0.49
CTFUHT		18.70	0.12	0.10	18.20	-0.29	-0.24
CV9NHH	X	15.10	-3.48	-3.11	21.20	2.71	2.25
D4VBXY		19.50	0.92	0.82	19.10	0.61	0.51
DCMFPT		18.74	0.16	0.14	18.74	0.25	0.21
DV6MT3		17.50	-1.08	-0.97	17.70	-0.79	-0.65
DYFRCP		18.20	-0.38	-0.34	19.55	1.06	0.88
DZU3FN	X	13.53	-5.06	-4.52	13.77	-4.71	-3.92
E7XD2M		17.80	-0.78	-0.70	18.20	-0.29	-0.24
EJRHL		16.80	-1.78	-1.59	17.20	-1.29	-1.07



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1123

Elongation: Lab-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
EKYXTD		19.80	1.22	1.09	19.70	1.21	1.01
G3UAAC		19.40	0.82	0.73	18.20	-0.29	-0.24
GCJXAL	*	20.40	1.82	1.62	18.30	-0.19	-0.15
GHABBA		19.10	0.52	0.46	17.30	-1.19	-0.98
GLHXHJ		19.00	0.42	0.37	19.00	0.51	0.43
H6RBRL		18.06	-0.52	-0.47	18.23	-0.26	-0.21
H7K9ZR		17.50	-1.08	-0.97	17.50	-0.99	-0.82
HLFJQ4		19.30	0.72	0.64	19.00	0.51	0.43
HXBKLT		17.50	-1.08	-0.97	17.50	-0.99	-0.82
HXX6YK	*	20.00	1.42	1.27	17.50	-0.99	-0.82
J37T8E		20.00	1.42	1.27	20.00	1.51	1.26
KGGQR7		18.90	0.32	0.28	20.20	1.71	1.42
KWPRFF		18.09	-0.49	-0.44	17.26	-1.23	-1.02
KZU92Q		19.00	0.42	0.37	20.00	1.51	1.26
LAD2RD	*	21.60	3.02	2.69	21.20	2.71	2.25
LCKNYQ		18.78	0.20	0.18	18.11	-0.38	-0.31
LCZYPH		18.10	-0.48	-0.43	17.90	-0.59	-0.49
M2V7VH		18.80	0.22	0.19	19.30	0.81	0.68
MCXHBK		17.75	-0.83	-0.74	17.60	-0.89	-0.74
MLKCT9		17.90	-0.68	-0.61	17.90	-0.59	-0.49
MR7LPJ		17.80	-0.78	-0.70	17.90	-0.59	-0.49
MVQEVK	X	19.90	1.32	1.18	22.30	3.81	3.17
MZ6UPH	*	18.00	-0.58	-0.52	16.00	-2.49	-2.06
MZ9G3Q		19.00	0.42	0.37	18.50	0.01	0.01
NV7XFH		17.40	-1.18	-1.06	18.50	0.01	0.01
PCAU2		16.90	-1.68	-1.50	17.50	-0.99	-0.82
QGYQDH		16.80	-1.78	-1.59	16.40	-2.09	-1.73
QQR2QY		18.00	-0.58	-0.52	16.50	-1.99	-1.65
QVXMN4		18.00	-0.58	-0.52	18.00	-0.49	-0.40
QW9QTF		17.56	-1.02	-0.91	18.06	-0.43	-0.35
RELUTC		17.50	-1.08	-0.97	16.90	-1.59	-1.32
TEGPWZ		17.20	-1.38	-1.24	17.28	-1.21	-1.00
TTYHMR		19.00	0.42	0.37	19.00	0.51	0.43
U9DU28		19.40	0.82	0.73	19.60	1.11	0.93
UFTM4P		18.50	-0.08	-0.07	18.00	-0.49	-0.40
UZJN87		21.00	2.42	2.16	20.50	2.01	1.67
VKJAJV	X	20.00	1.42	1.27	23.00	4.51	3.75
VMADC3		18.20	-0.38	-0.34	18.20	-0.29	-0.24
VV7BY7		19.60	1.02	0.91	20.10	1.61	1.34
W3Y3K6		20.45	1.87	1.67	20.40	1.91	1.59
WKKLGC	X	16.00	-2.58	-2.31	14.00	-4.49	-3.73
WRGLRX		19.30	0.72	0.64	17.60	-0.89	-0.74
XFH3WP		20.00	1.42	1.27	20.00	1.51	1.26
XGFAZ3		16.40	-2.18	-1.95	15.70	-2.79	-2.31
XKC28E	*	18.00	-0.58	-0.52	16.00	-2.49	-2.06
XL9EU7		19.80	1.22	1.09	20.30	1.81	1.51
Y2V4GM		20.40	1.82	1.62	20.50	2.01	1.67



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1123

Elongation: Lab-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
YCEFRY		18.06	-0.52	-0.47	17.97	-0.52	-0.43
YKLE22		19.00	0.42	0.37	18.00	-0.49	-0.40
YKV3RV		20.00	1.42	1.27	19.00	0.51	0.43

Summary Statistics

	Sample P03		Sample P04	
Grand Means	18.58	Percent	18.49	Percent
Stnd Dev Btwn Labs	1.12	Percent	1.20	Percent

Samples P03, P04 : AISI 4340 (E), AISI 4340 (F)

Statistics based on 91 of 97 reporting participants

Comments on Assigned Data Flags for Test #1123

- 3WDT4U (X) - Data for sample P04 are low.
- CV9NHH (X) - Data for sample P03 are low.
- DZU3FN (X) - Data for both samples are low. Possible Systematic Error.
- MVQEVK (X) - Data for sample P04 are high.
- VKJAJV (X) - Data for sample P04 are high.
- WKKLGC (X) - Data for sample P04 are low.



Analysis 1123

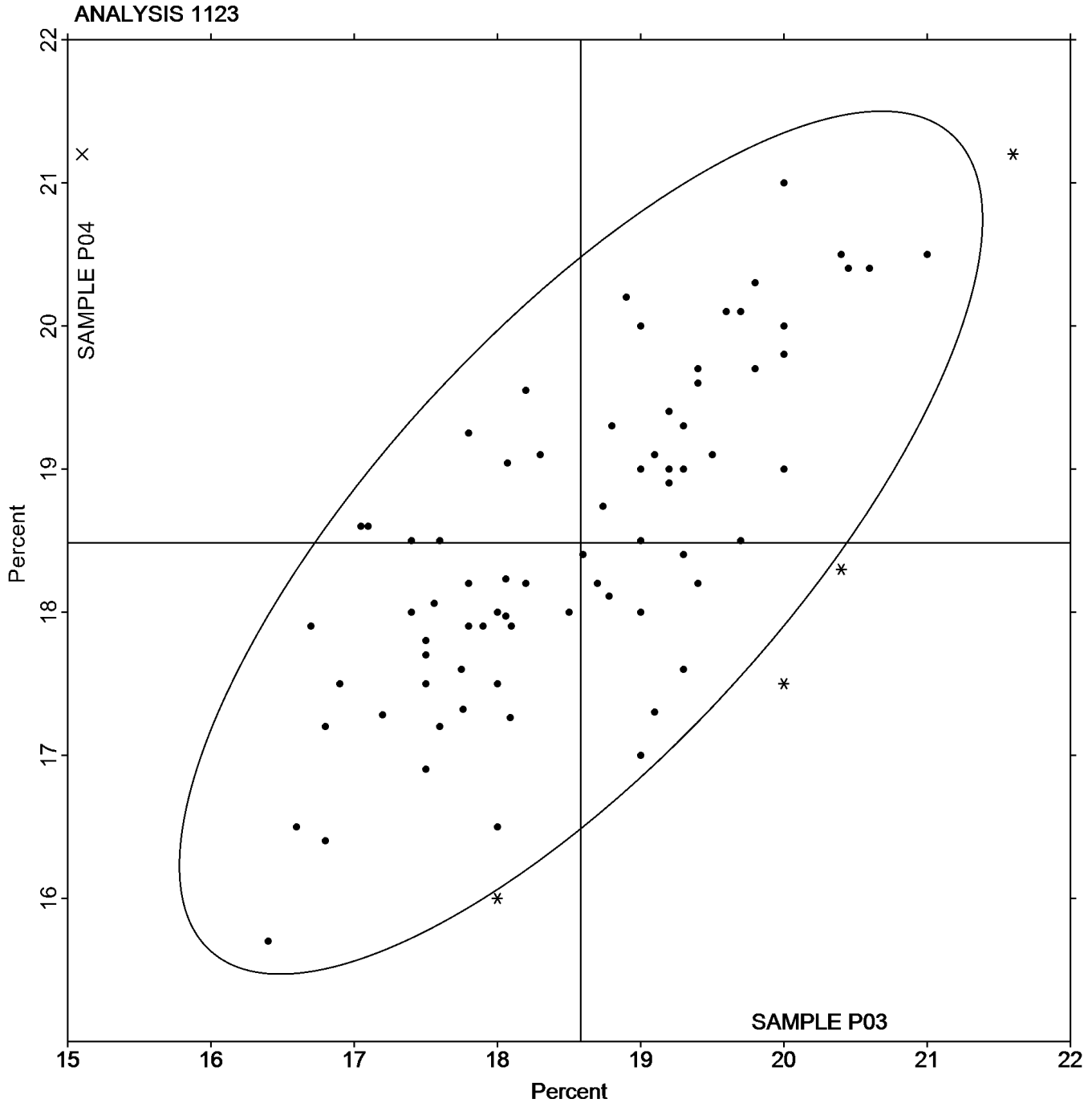
Elongation: Lab-Machined Round Steel
ASTM E8

SAMPLE P03

18.58 Percent

SAMPLE P04

18.49 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1124

Reduction of Area: Lab-Machined Round Steel ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
27KM9V		55.40	0.74	0.69	55.30	0.94	0.77
2DJ33A		54.30	-0.36	-0.34	54.40	0.04	0.03
2G4RQT		53.90	-0.76	-0.72	54.80	0.44	0.36
2TQ938	X	51.10	-3.56	-3.35	55.70	1.34	1.10
2V4T29		55.10	0.44	0.41	54.10	-0.26	-0.22
3NLHRE		54.80	0.14	0.13	52.30	-2.06	-1.70
3WDT4U		52.37	-2.29	-2.16	53.56	-0.80	-0.66
3WTECB	*	54.10	-0.56	-0.53	51.10	-3.26	-2.69
466VJB	X	56.20	1.54	1.45	50.20	-4.16	-3.44
4BQNVB		52.99	-1.67	-1.57	54.52	0.16	0.13
6PMK9T		54.60	-0.06	-0.06	54.70	0.34	0.28
73PFZU		54.30	-0.36	-0.34	55.11	0.75	0.62
7RL6MD		56.10	1.44	1.35	56.10	1.74	1.43
7Y6D9N		56.50	1.84	1.73	55.70	1.34	1.10
7ZJTMP		55.00	0.34	0.32	56.00	1.64	1.35
8AY9JN		55.50	0.84	0.79	55.20	0.84	0.69
8LFNV4		54.60	-0.06	-0.06	54.70	0.34	0.28
8PWBA		54.60	-0.06	-0.06	52.20	-2.16	-1.79
8V9WMM		55.00	0.34	0.32	56.00	1.64	1.35
8YHFG9		54.50	-0.16	-0.15	55.00	0.64	0.52
932P8L		54.70	0.04	0.03	54.40	0.04	0.03
99PCYK	*	52.00	-2.66	-2.51	55.10	0.74	0.61
9AJZJ2	X	55.90	1.24	1.16	46.30	-8.06	-6.65
9B8K2Q		55.90	1.24	1.16	54.80	0.44	0.36
9HD3PJ		53.40	-1.26	-1.19	53.40	-0.96	-0.80
ADUG6B		56.98	2.32	2.18	56.28	1.92	1.58
AKXE2U		53.00	-1.66	-1.57	54.00	-0.36	-0.30
B9Y3ZZ		54.80	0.14	0.13	53.30	-1.06	-0.88
BMJFH2		54.60	-0.06	-0.06	51.60	-2.76	-2.28
BUWGQJ	*	55.38	0.72	0.67	57.49	3.13	2.58
BWPKAH	*	52.00	-2.66	-2.51	54.50	0.14	0.11
BXJ72N		53.60	-1.06	-1.00	54.90	0.54	0.44
CA48UZ		53.33	-1.33	-1.25	52.96	-1.40	-1.16
CBMUQW		55.00	0.34	0.32	53.00	-1.36	-1.13
CR7RRN	X	50.70	-3.96	-3.73	52.80	-1.56	-1.29
CTFUHT		55.70	1.04	0.98	55.50	1.14	0.94
CV9NHH	*	57.40	2.74	2.58	54.50	0.14	0.11
D4VBJY		55.50	0.84	0.79	54.10	-0.26	-0.22
DV6MT3		54.20	-0.46	-0.44	53.50	-0.86	-0.71
DYFRCP		52.80	-1.86	-1.75	53.26	-1.10	-0.91
DZU3FN		55.10	0.43	0.41	54.82	0.45	0.37
E7XD2M		53.84	-0.83	-0.78	54.20	-0.17	-0.14
EJRHJL		55.60	0.94	0.88	55.20	0.84	0.69
EKYXTD	X	68.10	13.44	12.65	68.30	13.94	11.50
G3UAAC		54.30	-0.36	-0.34	55.60	1.24	1.02
GCJXAL		54.00	-0.66	-0.62	53.40	-0.96	-0.80
GHABBA		55.60	0.94	0.88	53.90	-0.46	-0.38



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1124

Reduction of Area: Lab-Machined Round Steel
ASTM E8

WebCode	Data Flag	Sample P03			Sample P04		
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV
GLHXHJ		54.20	-0.46	-0.44	53.90	-0.46	-0.38
H6RBRL		53.91	-0.75	-0.71	54.78	0.42	0.34
H7K9ZR		54.60	-0.06	-0.06	54.70	0.34	0.28
HLFJQ4		55.80	1.14	1.07	54.10	-0.26	-0.22
HXBKLT		53.80	-0.86	-0.81	53.00	-1.36	-1.13
HXX6YK		54.60	-0.06	-0.06	54.10	-0.26	-0.22
J37T8E		55.00	0.34	0.32	57.00	2.64	2.17
KGGQR7		54.90	0.24	0.22	55.70	1.34	1.10
KWPRFF		54.00	-0.66	-0.62	54.00	-0.36	-0.30
KZU92Q		56.40	1.74	1.64	53.00	-1.36	-1.13
LAD2RD		55.30	0.64	0.60	55.70	1.34	1.10
LCKNYQ		56.27	1.61	1.51	56.53	2.17	1.79
LCZYPH		54.70	0.04	0.03	54.00	-0.36	-0.30
M2V7VH		55.10	0.44	0.41	55.60	1.24	1.02
MCXHBK	X	49.79	-4.87	-4.59	54.12	-0.24	-0.20
MR7LPJ		55.40	0.74	0.69	53.80	-0.56	-0.47
MVQEVK		55.70	1.04	0.98	55.60	1.24	1.02
MZ6UPH		55.00	0.34	0.32	54.00	-0.36	-0.30
MZ9G3Q		53.00	-1.66	-1.57	54.00	-0.36	-0.30
NV7XFH		54.25	-0.42	-0.39	54.57	0.21	0.17
PCAU A2		55.00	0.34	0.32	54.20	-0.16	-0.14
QGYQDH		54.10	-0.56	-0.53	51.90	-2.46	-2.03
QQR2QY		54.67	0.01	0.01	52.79	-1.58	-1.30
QVXMN4		54.00	-0.66	-0.62	54.00	-0.36	-0.30
QW9QTF	X	59.16	4.50	4.23	59.16	4.80	3.96
RELUTC		54.60	-0.06	-0.06	52.80	-1.56	-1.29
TEGPWZ		54.91	0.25	0.23	52.60	-1.76	-1.46
TTYHMR		54.00	-0.66	-0.62	55.00	0.64	0.52
U9DU28		55.00	0.34	0.32	55.20	0.84	0.69
UFTM4P		55.00	0.34	0.32	54.70	0.34	0.28
UZJN87		53.60	-1.06	-1.00	55.00	0.64	0.52
VKJAJV	X	50.00	-4.66	-4.39	57.00	2.64	2.17
VMADC3		55.80	1.14	1.07	56.20	1.84	1.51
VV7BY7		53.80	-0.86	-0.81	54.10	-0.26	-0.22
W3Y3K6		53.49	-1.18	-1.11	54.84	0.48	0.39
WKKLG C	X	45.00	-9.66	-9.10	35.00	-19.36	-15.98
XFH3WP		56.00	1.34	1.26	53.00	-1.36	-1.13
XGFAZ3		55.00	0.34	0.32	53.40	-0.96	-0.80
XKC28E	X	55.70	1.04	0.98	49.50	-4.86	-4.01
XL9EU7		55.40	0.74	0.69	54.50	0.14	0.11
YCEFRY		53.16	-1.50	-1.41	53.32	-1.04	-0.86
YKLE22		55.00	0.34	0.32	54.00	-0.36	-0.30
YKV3RV		56.20	1.54	1.45	55.00	0.64	0.52



Analysis 1124

Reduction of Area: Lab-Machined Round Steel
ASTM E8

Summary Statistics

	<u>Sample P03</u>		<u>Sample P04</u>	
Grand Means	54.66	Percent	54.36	Percent
Std Dev Btwn Labs	1.06	Percent	1.21	Percent

Samples P03, P04 : AISI 4340 (E), AISI 4340 (F)

Statistics based on 80 of 90 reporting participants

Comments on Assigned Data Flags for Test #1124

2TQ938 (X) - Data for sample P03 are low.

466VJB (X) - Data for sample P04 are low.

9AJZJ2 (X) - Data for sample P04 are low.

CR7RRN (X) - Data for sample P03 are low.

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

MCXHBK (X) - Data for sample P03 are low.

QW9QTF (X) - Data for both samples are high.

VKJAJV (X) - Data for sample P03 are low.

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

XKC28E (X) - Data for sample P04 are low.



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1124

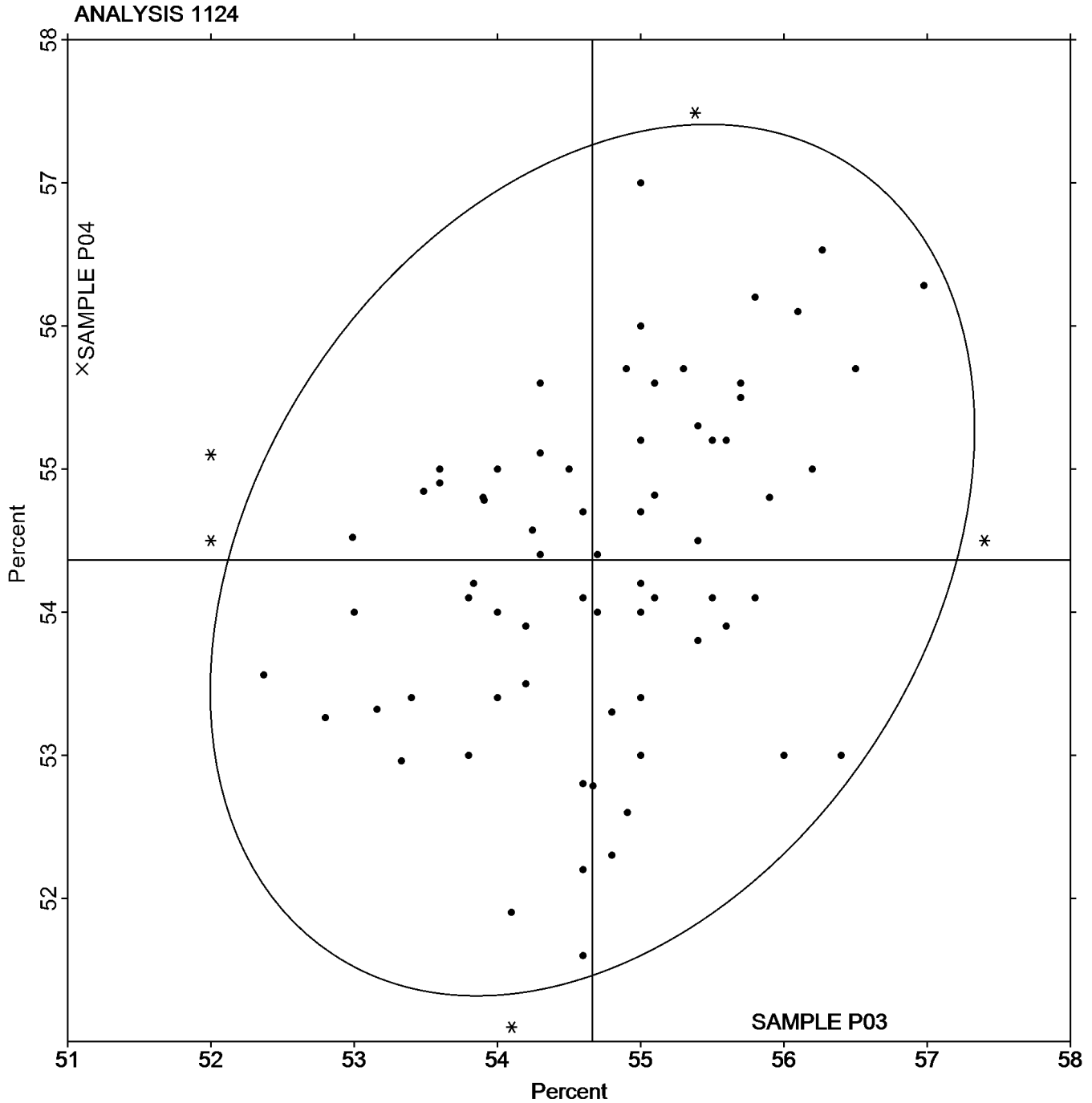
Reduction of Area: Lab-Machined Round Steel
ASTM E8

SAMPLE P03

54.66 Percent

SAMPLE P04

54.36 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1520

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

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6		89.90	0.07	0.10	89.80	0.07	0.10	OE
4BQNVB		89.45	-0.38	-0.55	89.46	-0.27	-0.37	IC
AB6AJT		89.75	-0.08	-0.11	89.63	-0.10	-0.13	OE
DGYHBP		91.03	1.21	1.76	90.87	1.14	1.59	IC
JKLZLW		89.68	-0.15	-0.22	89.67	-0.06	-0.08	IC
KWPRFF		88.92	-0.91	-1.33	88.50	-1.23	-1.71	OE
QW9QTF		89.70	-0.12	-0.18	89.84	0.11	0.15	BD
VPBR88		90.79	0.96	1.40	90.65	0.92	1.29	ED
ZFDAA2		89.23	-0.59	-0.87	89.13	-0.60	-0.83	OE

Summary Statistics				
	Sample T03		Sample T04	
Grand Means	89.83	Percent	89.73	Percent
Stnd Dev Btrwn Labs	0.68	Percent	0.72	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 9 of 9 reporting participants

Key to Method Codes Reported by Participants

- BD By Difference
- ED X-Ray Fluorescence - Energy Dispersive (EDX)
- IC Spectrometry - Inductively Coupled Plasma (ICP)
- OE Spectrometry - Optical Emission (OES)



Analysis 1520

Titanium-based Alloy, TITANIUM (Ti)

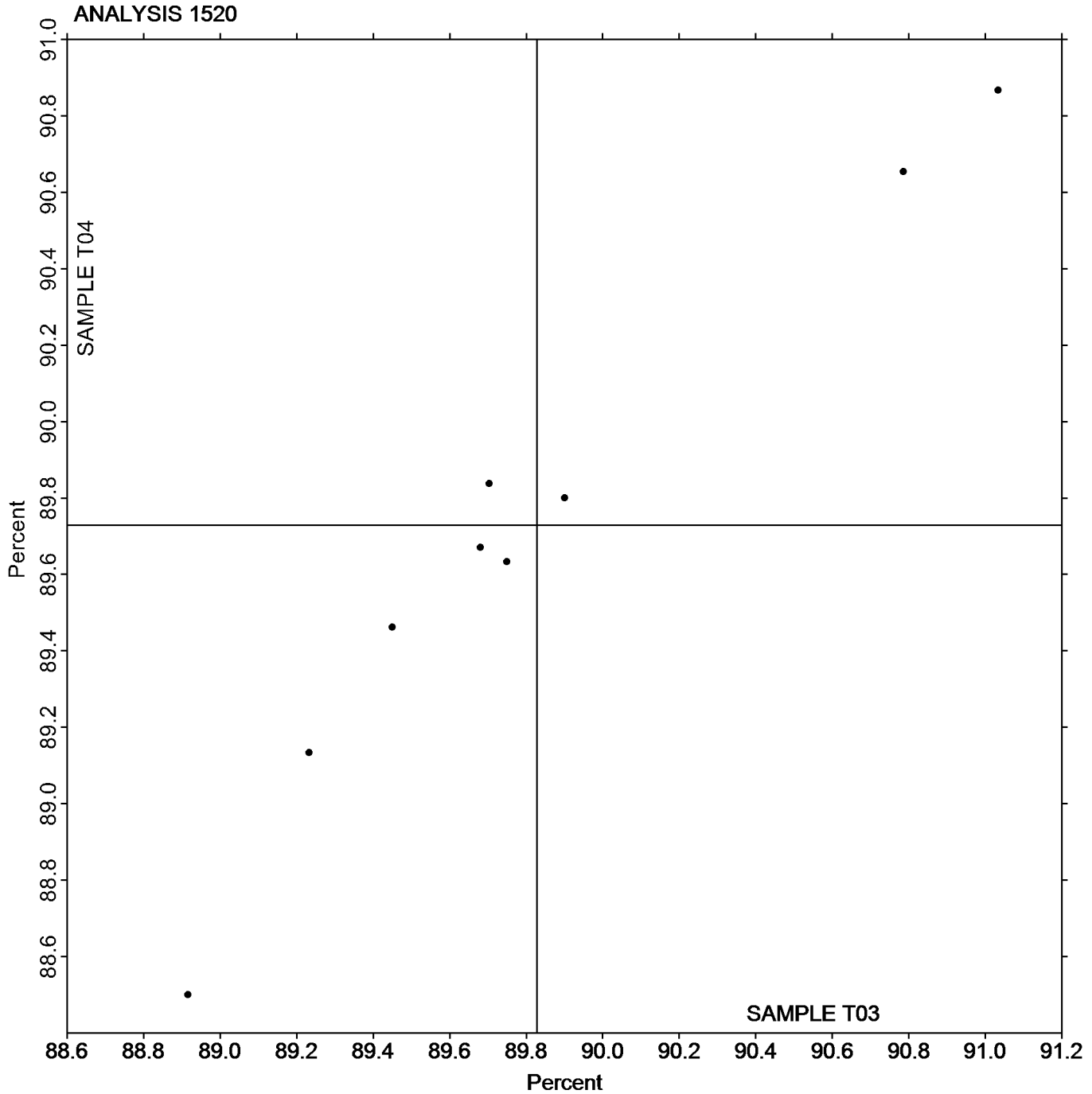
TITANIUM (Ti)

SAMPLE T03

SAMPLE T04

89.83 Percent

89.73 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1521

Titanium-based Alloy, HYDROGEN (H)
HYDROGEN (H)

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6		0.00160	-0.00018	-0.28	0.00186	-0.00055	-0.85	IR
4BQNVB		0.00310	0.00132	2.06	0.00323	0.00082	1.27	CI
7T2HDV		0.00177	-0.00001	-0.02	0.00200	-0.00041	-0.63	IR
AB6AJT		0.00160	-0.00018	-0.28	0.00260	0.00019	0.29	OE
BWPKAH		0.00117	-0.00061	-0.95	0.00223	-0.00018	-0.27	CI
CDRJVQ		0.00306	0.00129	2.01	0.00378	0.00137	2.11	CI
DGYHBP		0.00150	-0.00028	-0.43	0.00270	0.00029	0.45	XX
HEKL2G		0.00137	-0.00041	-0.64	0.00163	-0.00078	-1.20	XX
JLEZE2		0.00130	-0.00048	-0.74	0.00150	-0.00091	-1.40	CI
KQJ7FP		0.00183	0.00006	0.09	0.00193	-0.00048	-0.73	CI
QRH3U2		0.00157	-0.00021	-0.33	0.00246	0.00005	0.07	CI
QW9QTF		0.00211	0.00033	0.51	0.00263	0.00022	0.34	CI
VPBR88		0.00203	0.00026	0.40	0.00310	0.00069	1.06	XX
ZFDAA2		0.000877	-0.00090	-1.40	0.00208	-0.00033	-0.51	IR

Summary Statistics

	Sample T03		Sample T04	
Grand Means	0.00178	Percent	0.00241	Percent
Stnd Dev Btwn Labs	0.00064	Percent	0.00065	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 14 of 14 reporting participants

Key to Method Codes Reported by Participants

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

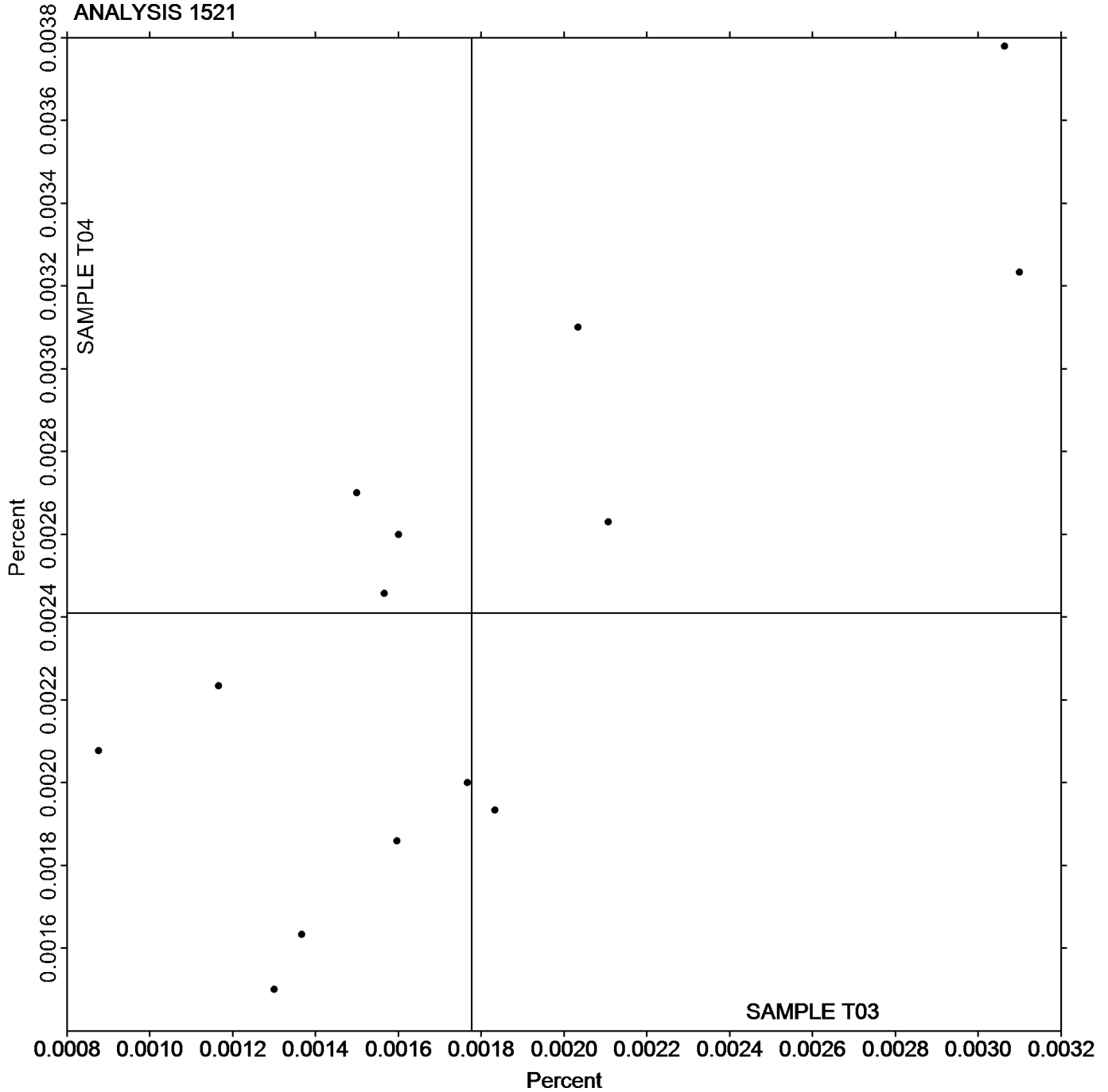


Analysis 1521

Titanium-based Alloy, HYDROGEN (H)
HYDROGEN (H)

SAMPLE T03
0.00178 Percent

SAMPLE T04
0.00241 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1522

Titanium-based Alloy, OXYGEN (O)
OXYGEN (O)

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6		0.1761	0.0019	0.13	0.1882	-0.0017	-0.18	IR
4BQNVB		0.1777	0.0035	0.24	0.1877	-0.0023	-0.24	CI
7T2HDV		0.1980	0.0238	1.64	0.1990	0.0091	0.93	IR
82CYMG		0.1653	-0.0089	-0.61	0.1783	-0.0116	-1.20	CI
AB6AJT		0.1752	0.0010	0.07	0.1812	-0.0087	-0.90	OE
BWPKAH		0.1660	-0.0082	-0.56	0.1887	-0.0013	-0.13	CO
CDRJVQ		0.1893	0.0151	1.05	0.1987	0.0087	0.90	CI
DGYHBP		0.1797	0.0055	0.38	0.1950	0.0051	0.52	IR
JKLZLW		0.1643	-0.0099	-0.68	0.1930	0.0031	0.31	CO
JLEZE2		0.1882	0.0140	0.97	0.2016	0.0117	1.20	CI
KWPRFF		0.1339	-0.0403	-2.78	0.1655	-0.0245	-2.53	OE
QRH3U2		0.1760	0.0018	0.13	0.2023	0.0124	1.28	CI
QW9QTF		0.1786	0.0044	0.30	0.1905	0.0006	0.06	CI
VPBR88		0.1717	-0.0025	-0.17	0.1923	0.0024	0.25	XX
ZFDDAA2		0.1729	-0.0013	-0.09	0.1872	-0.0027	-0.28	IR

Summary Statistics

	Sample T03		Sample T04	
Grand Means	0.1742	Percent	0.1899	Percent
Stnd Dev Btwn Labs	0.0145	Percent	0.0097	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 15 of 15 reporting participants

Key to Method Codes Reported by Participants

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

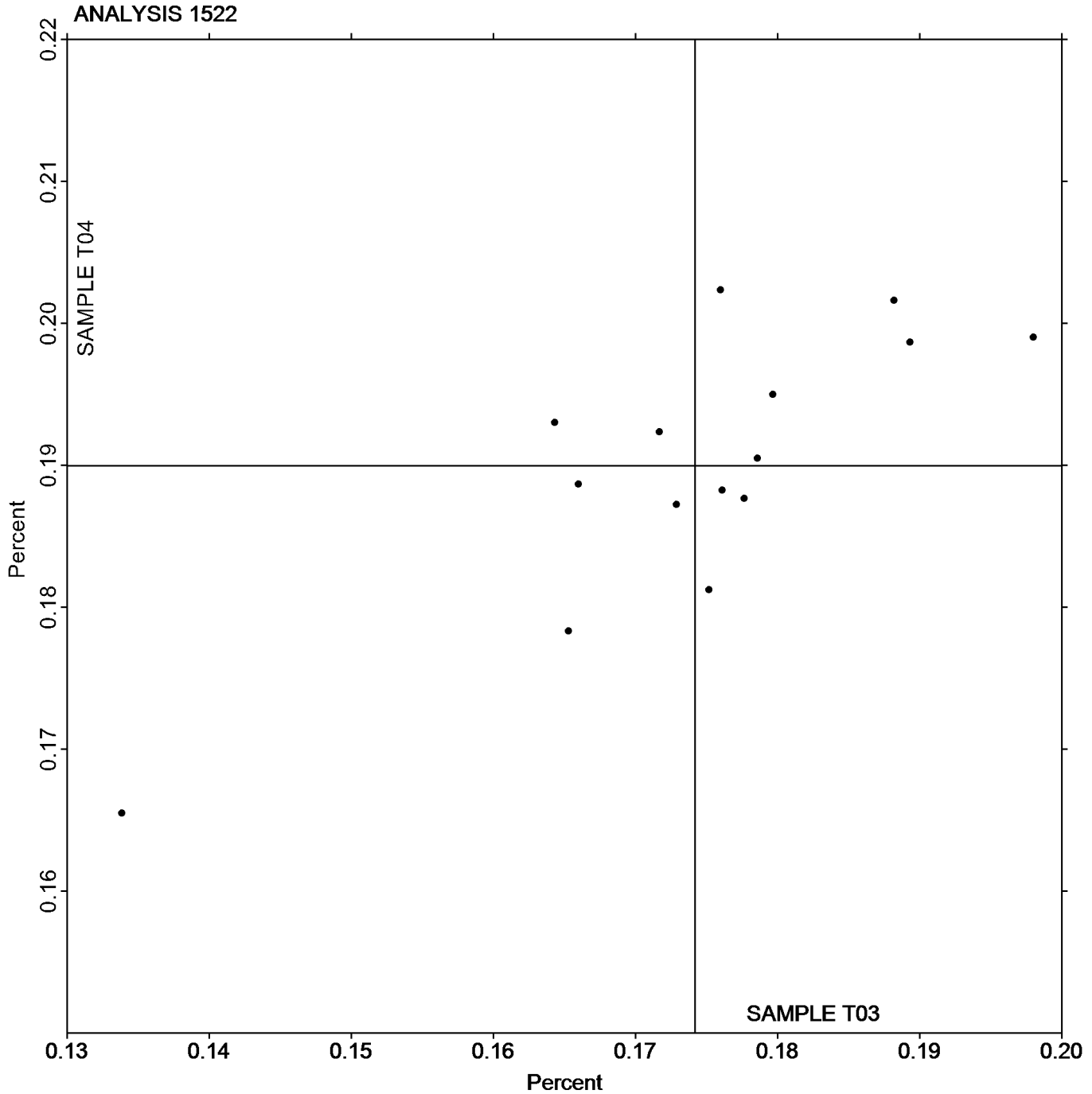


Analysis 1522

Titanium-based Alloy, OXYGEN (O)
OXYGEN (O)

SAMPLE T03
0.1742 Percent

SAMPLE T04
0.1899 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1523

Titanium-based Alloy, NITROGEN (N)
NITROGEN (N)

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6	X	0.0277	0.01779	8.71	0.0305	0.02255	18.03	BD
4BQNVB		0.0115	0.00161	0.79	0.00660	-0.00138	-1.10	CI
82CYMG		0.00990	0.00001	0.01	0.00773	-0.00025	-0.20	IR
AB6AJT		0.00873	-0.00115	-0.56	0.00780	-0.00018	-0.14	OE
BWPKAH		0.0120	0.00215	1.05	0.0108	0.00282	2.25	CO
DGYHBP		0.0102	0.00035	0.17	0.00713	-0.00085	-0.68	XX
JKLZLW		0.00850	-0.00139	-0.68	0.00793	-0.00005	-0.04	CO
JLEZE2		0.0139	0.00401	1.96	0.00843	0.00045	0.36	CO
QRH3U2		0.00682	-0.00307	-1.50	0.00668	-0.00130	-1.04	CI
QW9QTF		0.0105	0.00058	0.28	0.00819	0.00021	0.17	CI
VPBR88		0.00783	-0.00205	-1.01	0.00703	-0.00095	-0.76	XX
ZFDAA2		0.00884	-0.00104	-0.51	0.00944	0.00146	1.17	IR

Summary Statistics

	Sample T03		Sample T04	
Grand Means	0.00989	Percent	0.00798	Percent
Stnd Dev Btwn Labs	0.00204	Percent	0.00125	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 11 of 12 reporting participants

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1523

3U2AN6 (X) - Data for both samples are high.

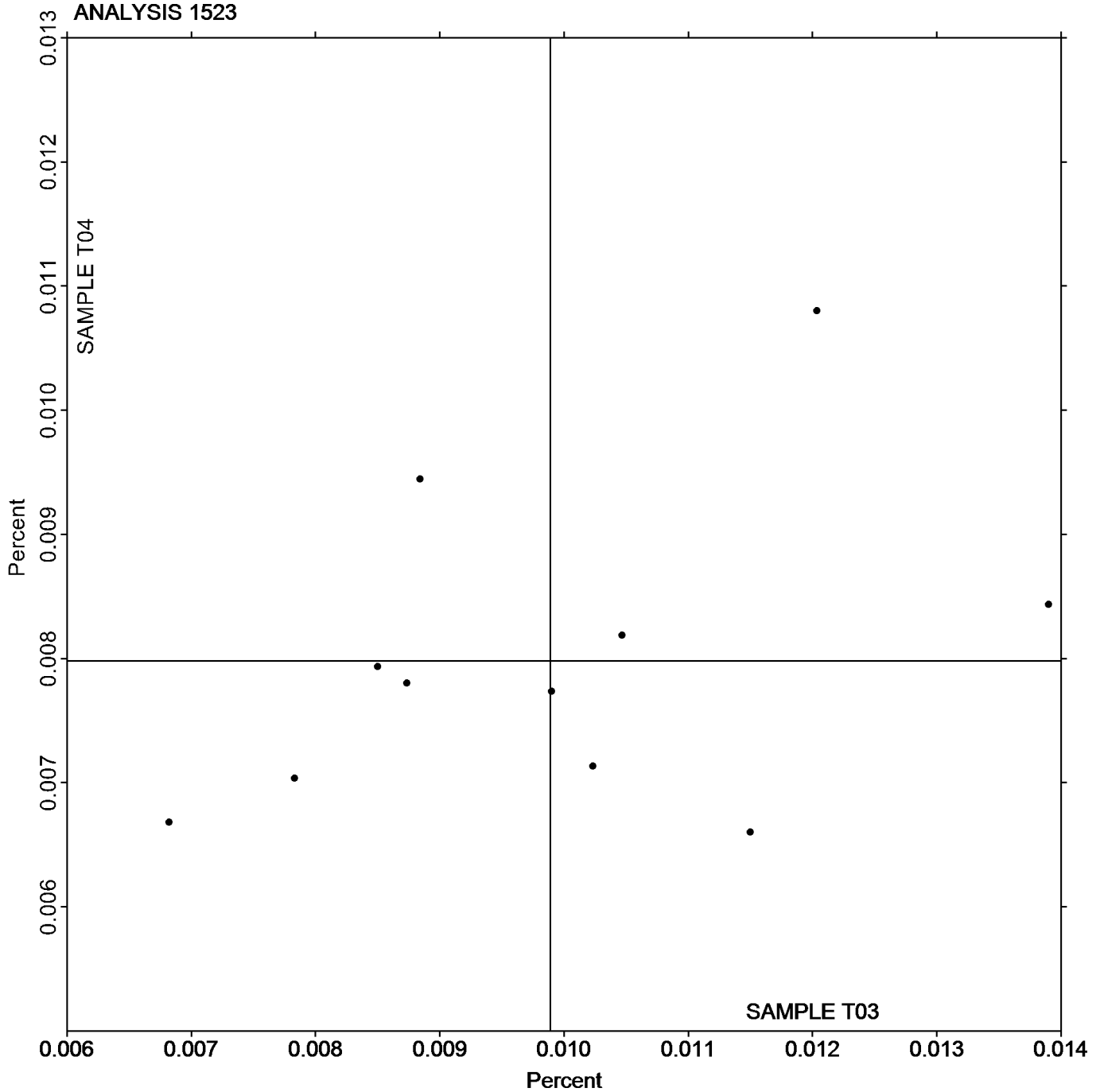


Analysis 1523

Titanium-based Alloy, NITROGEN (N)
NITROGEN (N)

SAMPLE T03
0.00989 Percent

SAMPLE T04
0.00798 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1524

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

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6		5.933	-0.165	-2.03	6.023	-0.111	-1.11	OE
4BQNVB		6.094	-0.005	-0.06	6.084	-0.051	-0.51	IC
82CYMG		6.220	0.122	1.50	6.237	0.103	1.03	IC
AB6AJT		6.104	0.006	0.07	6.144	0.009	0.10	OE
BWPKAH		5.987	-0.112	-1.37	6.137	0.002	0.02	OE
DGYHBP		6.183	0.085	1.05	6.210	0.076	0.76	IC
JKLZLW		6.097	-0.002	-0.02	6.123	-0.011	-0.11	IC
JLEZE2		6.058	-0.041	-0.50	6.298	0.163	1.64	IC
KWPRFF		6.172	0.073	0.90	6.124	-0.010	-0.10	OE
QGYQDH		6.107	0.008	0.10	6.180	0.046	0.46	OE
QHRLY7		6.146	0.047	0.58	6.189	0.055	0.55	OE
QW9QTF		6.010	-0.088	-1.09	5.983	-0.151	-1.52	IC
VPBR88	X	4.936	-1.162	-14.31	4.986	-1.148	-11.53	ED
YH7XUH		6.087	-0.012	-0.14	5.941	-0.194	-1.94	IC
ZFDAA2		6.180	0.082	1.01	6.207	0.072	0.73	OE

Summary Statistics						
	Sample T03			Sample T04		
Grand Means	6.098	Percent		6.134	Percent	
Std Dev Btwn Labs	0.081	Percent		0.100	Percent	

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 14 of 15 reporting participants

Key to Method Codes Reported by Participants

- ED X-Ray Fluorescence - Energy Dispersive (EDX)
- IC Spectrometry - Inductively Coupled Plasma (ICP)
- OE Spectrometry - Optical Emission (OES)

Comments on Assigned Data Flags for Test #1524

VPBR88 (X) - Data for both samples are low.



Analysis 1524

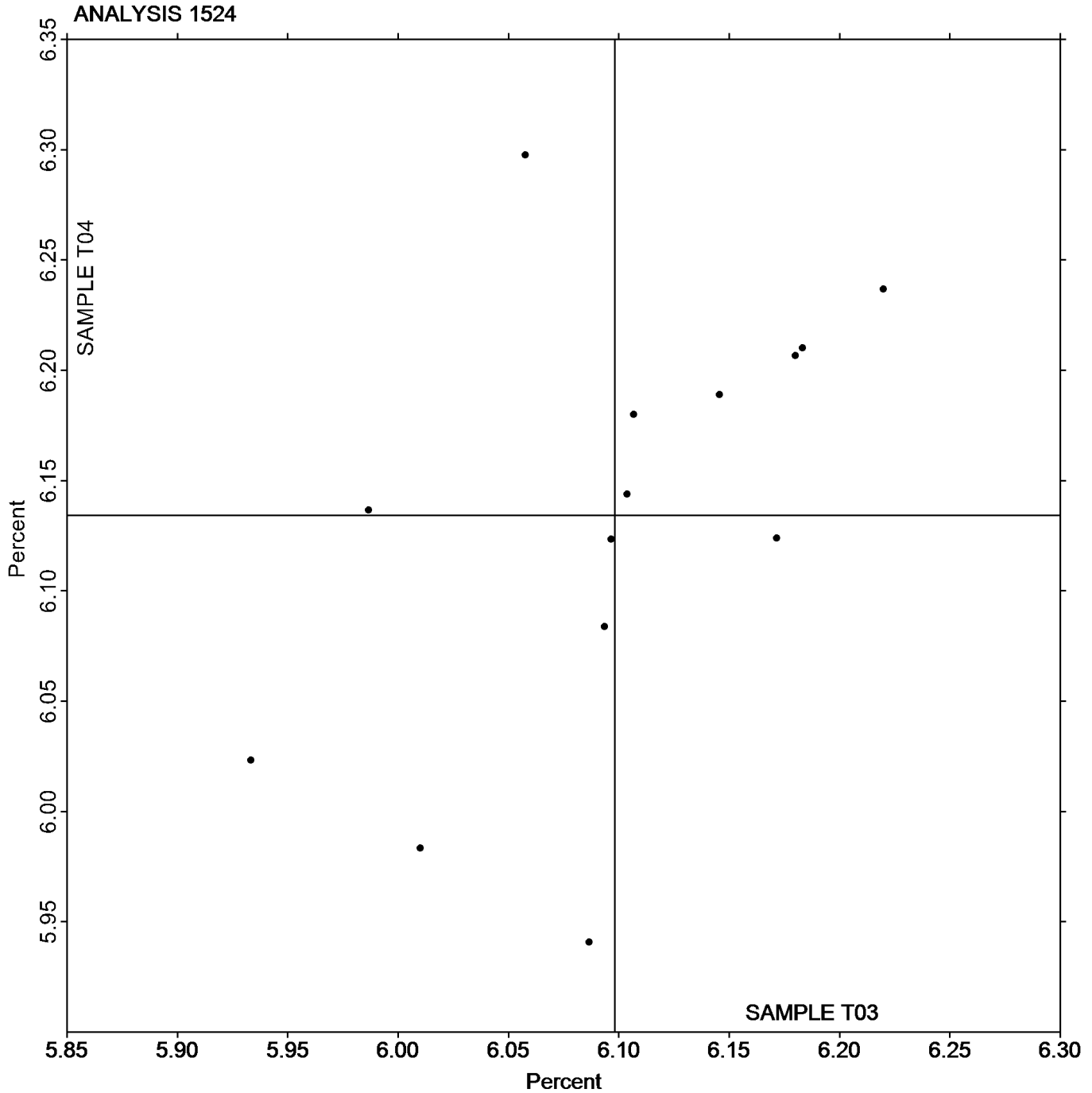
Titanium-based Alloy, ALUMINUM (Al)
ALUMINUM (Al)

SAMPLE T03

6.098 Percent

SAMPLE T04

6.134 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1525

Titanium-based Alloy, VANADIUM (V)
VANADIUM (V)

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6		3.957	0.087	0.69	4.017	0.071	0.95	OE
4BQNVB		4.001	0.131	1.04	3.988	0.043	0.58	IC
82CYMG		3.799	-0.071	-0.57	3.895	-0.050	-0.67	IC
AB6AJT		3.817	-0.053	-0.42	3.934	-0.011	-0.15	OE
BWPKAH		3.848	-0.022	-0.17	3.947	0.001	0.02	OE
DGYHBP		3.810	-0.060	-0.48	3.940	-0.005	-0.07	IC
JKLZLW		3.913	0.043	0.34	3.983	0.038	0.51	IC
JLEZE2		3.710	-0.160	-1.27	3.941	-0.005	-0.06	IC
KWPRFF		3.899	0.029	0.23	4.026	0.080	1.08	OE
QGYQDH		3.850	-0.020	-0.16	3.930	-0.015	-0.21	XX
QHRLY7		3.898	0.028	0.23	3.923	-0.022	-0.30	OE
QW9QTF		4.027	0.157	1.25	3.963	0.018	0.24	IC
VPBR88	*	3.591	-0.279	-2.22	3.711	-0.235	-3.14	ED
YH7XUH		4.096	0.226	1.80	3.997	0.051	0.69	IC
ZFDAA2		3.833	-0.037	-0.29	3.987	0.041	0.55	OE

Summary Statistics

	Sample T03		Sample T04	
Grand Means	3.870	Percent	3.945	Percent
Stnd Dev Btwn Labs	0.126	Percent	0.075	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 15 of 15 reporting participants

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	XX	Please Indicate Method Used for Current Element



Analysis 1525

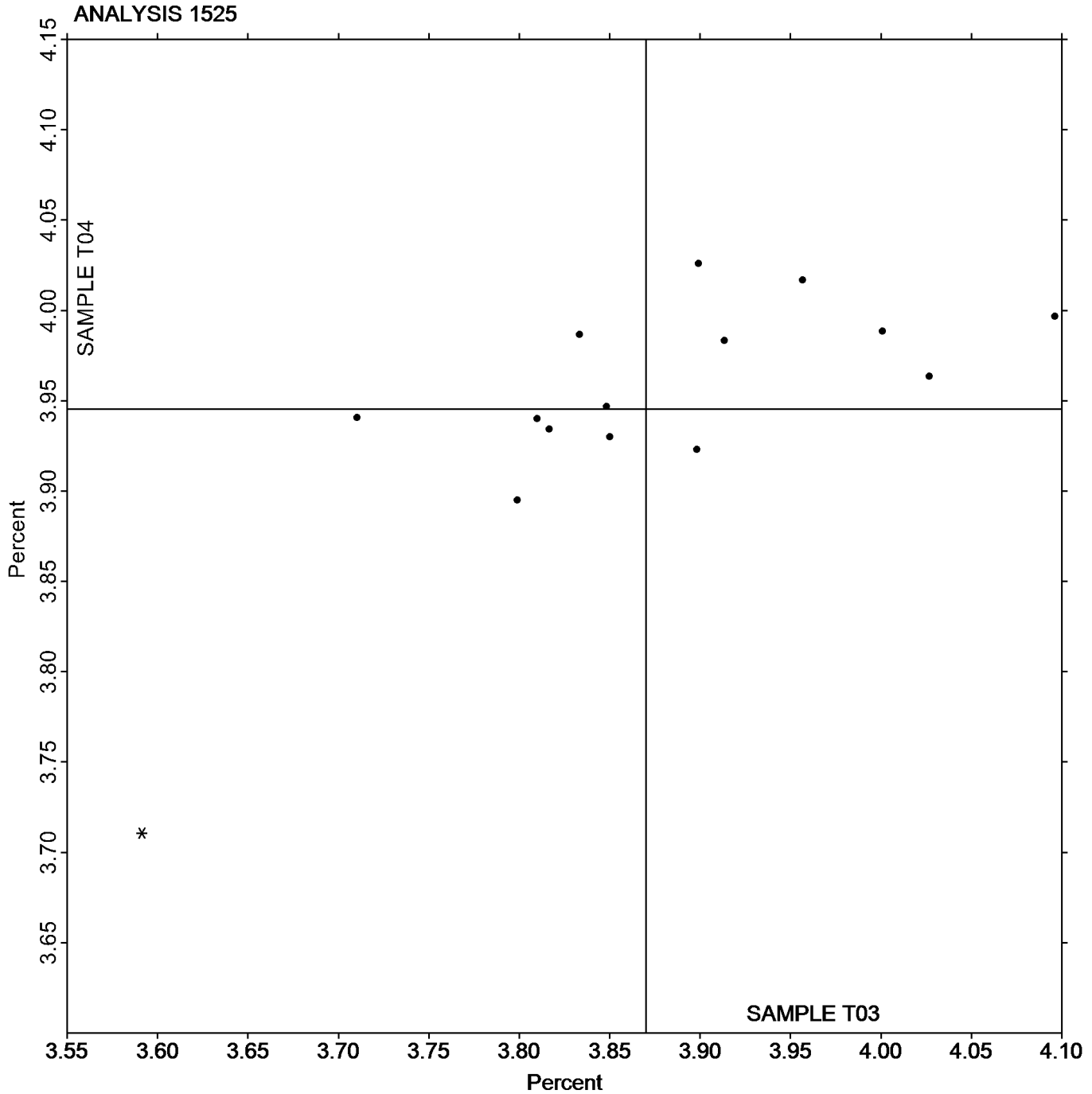
Titanium-based Alloy, VANADIUM (V)
VANADIUM (V)

SAMPLE T03

SAMPLE T04

3.870 Percent

3.945 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1526

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

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6	*	0.1120	-0.0225	-1.85	0.1050	-0.0315	-2.82	OE
4BQNVB		0.1390	0.0045	0.37	0.1433	0.0068	0.61	IC
82CYMG		0.1245	-0.0100	-0.82	0.1285	-0.0081	-0.72	IC
AB6AJT		0.1256	-0.0089	-0.73	0.1373	0.0008	0.07	OE
BWPKAH		0.1307	-0.0038	-0.32	0.1327	-0.0039	-0.35	OE
DGYHBP		0.1200	-0.0145	-1.19	0.1300	-0.0065	-0.58	IC
JKLZLW		0.1500	0.0155	1.27	0.1517	0.0151	1.35	IC
JLEZE2		0.1309	-0.0036	-0.30	0.1401	0.0036	0.32	IC
KWPRFF		0.1359	0.0014	0.12	0.1374	0.0008	0.07	OE
QGYQDH		0.1340	-0.0005	-0.04	0.1363	-0.0002	-0.02	XX
QHRLY7		0.1417	0.0072	0.59	0.1460	0.0095	0.85	OE
QW9QTF		0.1477	0.0132	1.08	0.1330	-0.0035	-0.32	IC
VPBR88		0.1363	0.0018	0.15	0.1423	0.0058	0.52	ED
YH7XUH		0.1597	0.0252	2.07	0.1507	0.0141	1.26	IC
ZFDAA2		0.1297	-0.0048	-0.40	0.1337	-0.0029	-0.26	OE

Summary Statistics

	Sample T03		Sample T04	
Grand Means	0.1345	Percent	0.1365	Percent
Std Dev Btwn Labs	0.0122	Percent	0.0112	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 15 of 15 reporting participants

Key to Method Codes Reported by Participants

ED	X-Ray Fluorescence - Energy Dispersive (EDX)	IC	Spectrometry - Inductively Coupled Plasma (ICP)
OE	Spectrometry - Optical Emission (OES)	XX	Please Indicate Method Used for Current Element

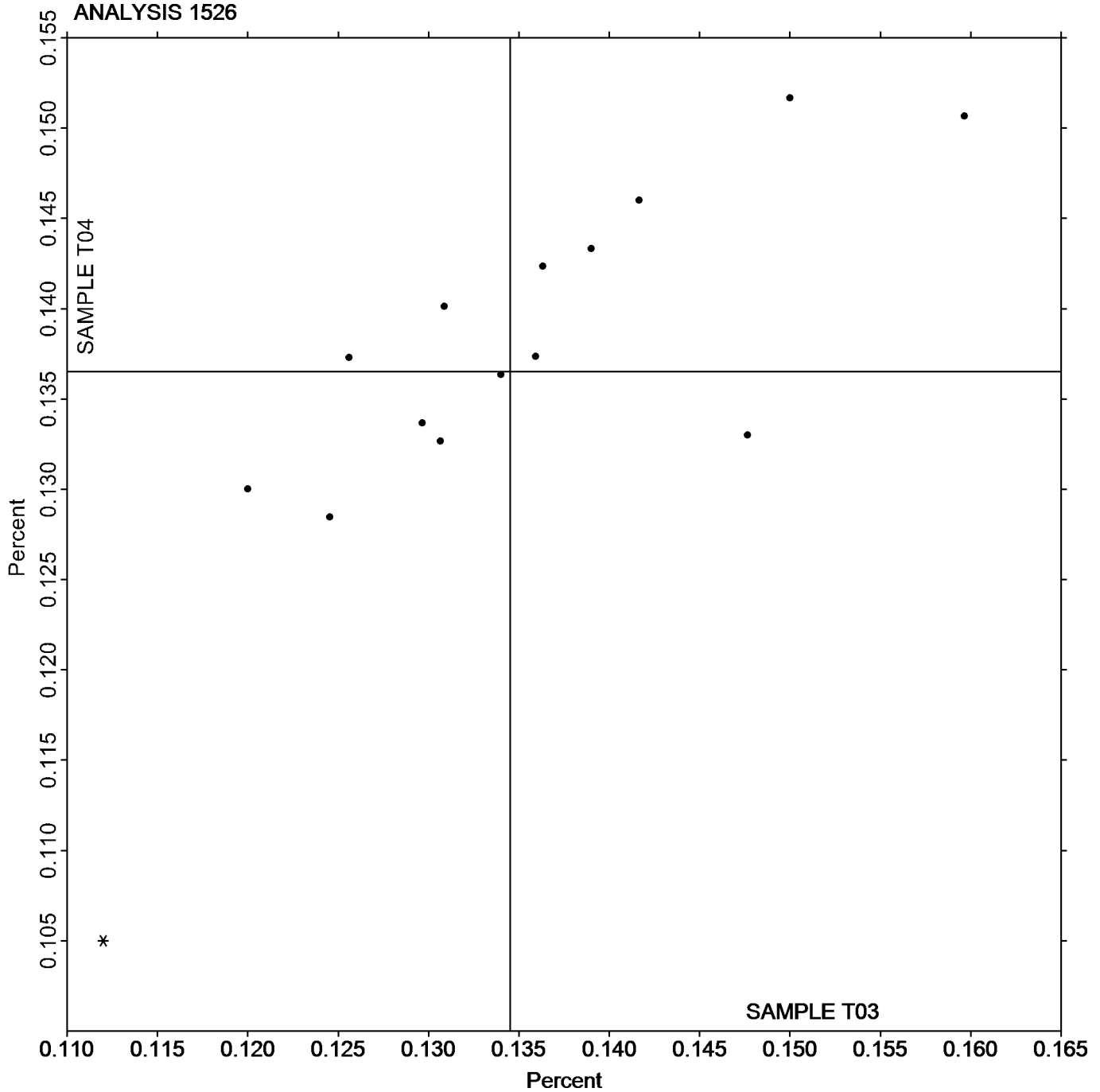


Analysis 1526

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

SAMPLE T03
0.1345 Percent

SAMPLE T04
0.1365 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1527

Titanium-based Alloy, CARBON (C)
CARBON (C)

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6		0.0126	0.0016	0.42	0.0117	0.00184	0.53	CI
4BQNVB		0.0130	0.0020	0.52	0.0107	0.00084	0.24	CI
82CYMG		0.0110	0.0000	-0.01	0.00750	-0.00233	-0.67	CI
AB6AJT		0.00953	-0.0015	-0.40	0.00767	-0.00216	-0.62	OE
BWPKAH		0.00917	-0.0019	-0.49	0.00803	-0.00179	-0.52	CO
DGYHBP		0.00800	-0.0030	-0.80	0.00700	-0.00283	-0.82	CI
JKLZLW		0.0219	0.0109	2.88	0.0190	0.00921	2.66	CO
JLEZE2		0.00970	-0.0013	-0.35	0.00763	-0.00219	-0.63	CI
QRH3U2		0.0104	-0.0007	-0.18	0.00843	-0.00139	-0.40	CI
QW9QTF		0.00919	-0.0018	-0.49	0.00701	-0.00282	-0.82	CI
VPBR88		0.0102	-0.0008	-0.22	0.0119	0.00207	0.60	CI
ZFDAA2		0.00770	-0.0033	-0.88	0.0114	0.00154	0.45	CO

Summary Statistics

	<u>Sample T03</u>		<u>Sample T04</u>	
Grand Means	0.0110	Percent	0.00983	Percent
Stnd Dev Btwn Labs	0.0038	Percent	0.00346	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 12 of 12 reporting participants

Key to Method Codes Reported by Participants

- CI Combustion / IR
- CO Combustion
- OE Spectrometry - Optical Emission (OES)

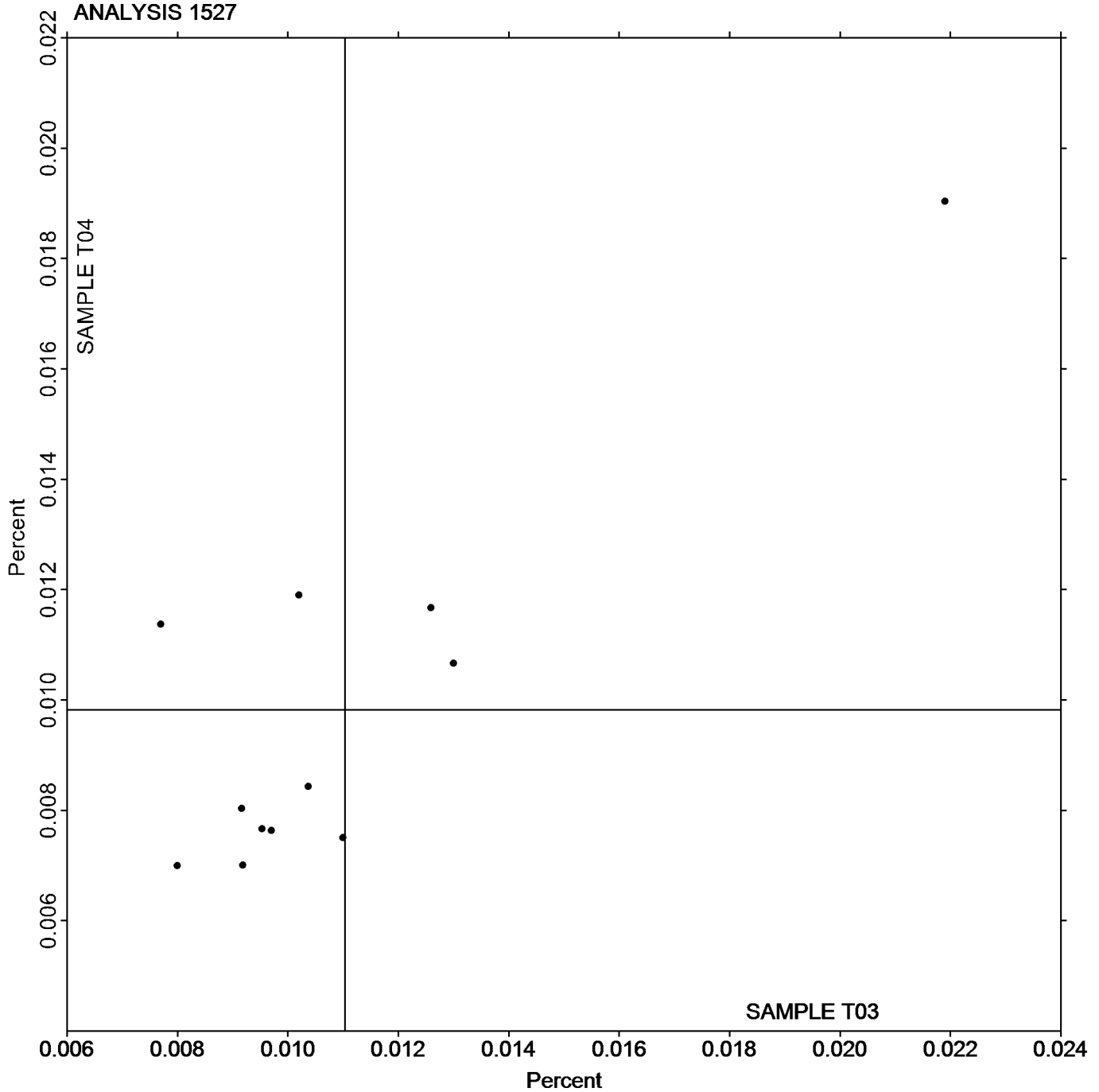


Analysis 1527

Titanium-based Alloy, CARBON (C)
CARBON (C)

SAMPLE T03
0.0110 Percent

SAMPLE T04
0.00983 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1528

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

WebCode	Data Flag	Sample T03			Sample T04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
3U2AN6		0.0110	0.00166	0.77	0.0160	0.0022	0.75	OE
4BQNVB		0.0110	0.00166	0.77	0.0147	0.0009	0.30	IC
82CYMG		0.00883	-0.00051	-0.23	0.0134	-0.0003	-0.12	IC
AB6AJT		0.0122	0.00289	1.33	0.0171	0.0034	1.14	OE
DGYHBP		0.00700	-0.00234	-1.08	0.0100	-0.0038	-1.28	IC
JKLZLW		0.00800	-0.00134	-0.62	0.0150	0.0012	0.41	IC
JLEZE2		0.00853	-0.00081	-0.37	0.0133	-0.0005	-0.16	IC
KWPRFF		0.0106	0.00126	0.58	0.0150	0.0012	0.41	OE
QW9QTF		0.00532	-0.00403	-1.86	0.00748	-0.0063	-2.14	IC
VPBR88	X	0.0409	0.03156	14.56	0.0450	0.0312	10.59	ED
ZFDDAA2		0.0109	0.00156	0.72	0.0158	0.0020	0.67	OE

Summary Statistics

	Sample T03		Sample T04	
Grand Means	0.00934	Percent	0.0138	Percent
Stnd Dev Btwn Labs	0.00217	Percent	0.0029	Percent

Samples T03, T04 : Ti 6-4 (Gr. 5), Ti 6-4 (Gr. 5)

Statistics based on 10 of 11 reporting participants

Key to Method Codes Reported by Participants

- ED X-Ray Fluorescence - Energy Dispersive (EDX)
- IC Spectrometry - Inductively Coupled Plasma (ICP)
- OE Spectrometry - Optical Emission (OES)

Comments on Assigned Data Flags for Test #1528

VPBR88 (X) - Data for both samples are high.

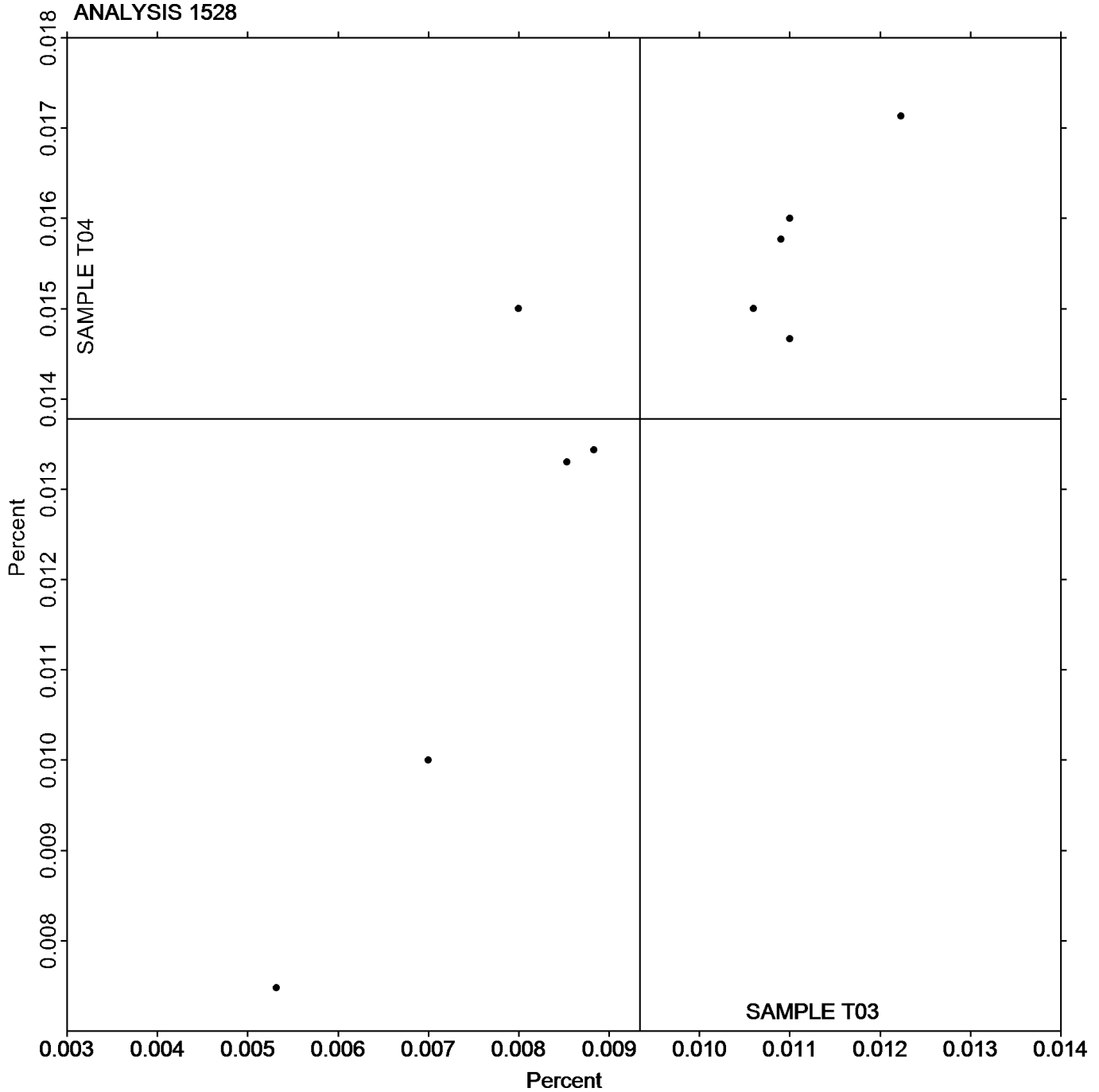


Analysis 1528

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

SAMPLE T03
0.00934 Percent

SAMPLE T04
0.0138 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1600

Carbon & Low Alloy Steel, CARBON (C)
CARBON (C)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B	X	0.2010	-0.0189	-3.21	0.2170	-0.0067	-1.14	OE
27NVPV		0.2110	-0.0090	-1.52	0.2217	-0.0020	-0.34	OE
2CQ6U3		0.2227	0.0027	0.46	0.2177	-0.0060	-1.03	OE
2G4RQT		0.2205	0.0006	0.10	0.2354	0.0117	2.01	OE
2TQ938		0.2100	-0.0099	-1.69	0.2233	-0.0003	-0.06	OE
3AEN74		0.2141	-0.0058	-0.99	0.2224	-0.0013	-0.22	OE
3R2ZYX		0.2167	-0.0033	-0.56	0.2220	-0.0017	-0.29	OE
3VXNBX		0.2256	0.0057	0.96	0.2301	0.0065	1.11	OE
4BQNVB		0.2223	0.0024	0.40	0.2223	-0.0013	-0.23	OE
4L6Ytz		0.2147	-0.0053	-0.90	0.2190	-0.0047	-0.80	GD
4Q36X7		0.2140	-0.0059	-1.01	0.2217	-0.0020	-0.34	OE
4T7A4Y		0.2229	0.0029	0.50	0.2259	0.0023	0.39	OE
66X9E3		0.2147	-0.0053	-0.90	0.2210	-0.0027	-0.46	OE
683U9U		0.2333	0.0134	2.27	0.2367	0.0130	2.24	GD
6GNZ2R		0.2170	-0.0029	-0.50	0.2110	-0.0127	-2.18	OE
6L3FU6		0.2218	0.0019	0.32	0.2296	0.0059	1.02	OE
6V9DJT		0.2237	0.0037	0.63	0.2250	0.0013	0.23	CI
6W6Q8L		0.2087	-0.0112	-1.91	0.2165	-0.0072	-1.23	OE
74H4KB		0.2220	0.0021	0.35	0.2219	-0.0017	-0.30	OE
7J97YT		0.2281	0.0082	1.39	0.2285	0.0048	0.83	OE
7MRBMQ		0.2203	0.0004	0.07	0.2233	-0.0003	-0.06	CO
7RL6MD		0.2210	0.0011	0.18	0.2249	0.0012	0.21	OE
7T3AAH		0.2220	0.0021	0.35	0.2253	0.0017	0.29	CI
82CYMG		0.2176	-0.0023	-0.40	0.2216	-0.0020	-0.35	CI
837PTV		0.2220	0.0021	0.35	0.2250	0.0013	0.23	OE
8THTF		0.2244	0.0044	0.75	0.2373	0.0136	2.35	OE
9AJZJ2		0.2263	0.0064	1.08	0.2187	-0.0050	-0.86	GD
9CL8BR		0.2146	-0.0054	-0.91	0.2186	-0.0051	-0.87	CI
9J3PNZ		0.2120	-0.0079	-1.35	0.2187	-0.0050	-0.86	CO
9VGQD7		0.2157	-0.0043	-0.73	0.2147	-0.0090	-1.55	OE
9WT76L		0.2223	0.0024	0.40	0.2210	-0.0027	-0.46	CI
9Y2F2P		0.2275	0.0076	1.28	0.2323	0.0086	1.49	OE
A4DN3U		0.2160	-0.0039	-0.67	0.2193	-0.0043	-0.74	CI
AB6AJT		0.2174	-0.0026	-0.44	0.2203	-0.0034	-0.58	OE
AKXE2U		0.2157	-0.0043	-0.73	0.2203	-0.0033	-0.57	IR
ALPCAZ		0.2184	-0.0016	-0.27	0.2180	-0.0056	-0.97	OE
ARCCDU		0.2286	0.0087	1.47	0.2382	0.0146	2.51	OE
B4JTQ3		0.2157	-0.0043	-0.73	0.2177	-0.0060	-1.03	OE
B9G7ER		0.2237	0.0037	0.63	0.2288	0.0051	0.88	OE
BH3DBW		0.2200	0.0001	0.01	0.2300	0.0063	1.09	OE
BJXVCX		0.2227	0.0027	0.46	0.2293	0.0057	0.98	OE
BMJFH2		0.2183	-0.0016	-0.27	0.2187	-0.0050	-0.86	OE
BP3NCU	X	0.1954	-0.0245	-4.16	0.1981	-0.0255	-4.39	OE
BQBX6R		0.2286	0.0086	1.46	0.2296	0.0059	1.02	OE
BWPKAH		0.2213	0.0014	0.24	0.2187	-0.0050	-0.86	CO
CA48UZ		0.2077	-0.0123	-2.08	0.2187	-0.0050	-0.86	GD
CBMUQW		0.2113	-0.0086	-1.46	0.2233	-0.0003	-0.06	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1600

Carbon & Low Alloy Steel, CARBON (C)
CARBON (C)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
CQ9QHQ	X	0.2470	0.0270	4.58	0.2477	0.0240	4.13	OE
D3468E		0.2248	0.0049	0.83	0.2296	0.0060	1.03	XX
DAJZXG		0.2200	0.0001	0.01	0.2222	-0.0015	-0.26	OE
DCNER2		0.2180	-0.0019	-0.33	0.2153	-0.0083	-1.43	AE
DF94FL		0.2280	0.0081	1.37	0.2300	0.0063	1.09	CO
DFMXRE		0.2217	0.0017	0.29	0.2223	-0.0013	-0.23	CI
DGYHBP		0.2200	0.0001	0.01	0.2200	-0.0037	-0.63	CI
DLFYTU		0.2233	0.0034	0.57	0.2320	0.0083	1.43	OE
DMREMU		0.2270	0.0071	1.20	0.2320	0.0083	1.43	OE
DTCGMK		0.2147	-0.0053	-0.90	0.2153	-0.0083	-1.43	CI
DTYZFX		0.2300	0.0101	1.70	0.2300	0.0063	1.09	OE
DUVD3Q		0.2069	-0.0131	-2.22	0.2213	-0.0024	-0.41	OE
DV6MT3		0.2253	0.0054	0.91	0.2303	0.0067	1.15	OE
DYFRCP		0.2260	0.0061	1.03	0.2273	0.0037	0.63	OE
E3G4WW		0.2218	0.0018	0.31	0.2255	0.0018	0.32	CI
E7XD2M		0.2150	-0.0049	-0.84	0.2167	-0.0070	-1.20	OE
E9MKM6		0.2220	0.0021	0.35	0.2283	0.0047	0.80	XX
EDHBUG		0.2170	-0.0029	-0.50	0.2203	-0.0033	-0.57	CI
EG2GFJ		0.2233	0.0034	0.57	0.2260	0.0023	0.40	XX
EHTBF9		0.2240	0.0041	0.69	0.2230	-0.0007	-0.11	CO
ETWPYL	X	0.2153	-0.0046	-0.78	0.2070	-0.0167	-2.86	OE
FB67PR		0.2207	0.0007	0.12	0.2163	-0.0073	-1.26	OE
FDQ6ML		0.2208	0.0009	0.15	0.2255	0.0018	0.31	GD
FZA2PR		0.2183	-0.0016	-0.27	0.2203	-0.0033	-0.57	CI
G44GFQ		0.2113	-0.0086	-1.46	0.2163	-0.0073	-1.26	OE
GCGDFQ		0.2310	0.0111	1.87	0.2290	0.0053	0.92	OE
GPLCKQ		0.2180	-0.0019	-0.33	0.2160	-0.0077	-1.32	CO
HD74WP		0.2154	-0.0045	-0.77	0.2200	-0.0037	-0.63	OE
HT2LRF		0.2150	-0.0049	-0.84	0.2180	-0.0057	-0.97	OE
HUUADV		0.2243	0.0044	0.74	0.2263	0.0027	0.46	CI
J4D44H		0.2159	-0.0041	-0.69	0.2174	-0.0062	-1.07	CI
J4V2BN		0.2188	-0.0011	-0.19	0.2239	0.0002	0.04	CI
JCTKXD		0.2253	0.0054	0.91	0.2247	0.0010	0.17	CO
JHXQAA		0.2097	-0.0103	-1.74	0.2117	-0.0120	-2.06	OE
JZZ6RP		0.2077	-0.0123	-2.08	0.2130	-0.0107	-1.83	XX
K276A2	X	0.2411	0.0212	3.59	0.2240	0.0004	0.06	OE
KKHRWA		0.2162	-0.0038	-0.64	0.2222	-0.0015	-0.25	OE
KKUN8F		0.2279	0.0080	1.35	0.2319	0.0082	1.41	OE
KVZGNM		0.2205	0.0006	0.10	0.2260	0.0023	0.40	CI
KWPRFF		0.2113	-0.0086	-1.46	0.2267	0.0030	0.52	OE
LAD2RD		0.2188	-0.0012	-0.20	0.2237	0.0001	0.01	CI
LCKNYQ		0.2165	-0.0034	-0.58	0.2222	-0.0015	-0.25	XX
LKVNYT		0.2133	-0.0066	-1.12	0.2083	-0.0153	-2.63	OE
M6F6D7		0.2227	0.0027	0.46	0.2247	0.0010	0.17	XX
M86EPT		0.2253	0.0054	0.91	0.2277	0.0040	0.69	OE
M9YXVZ		0.2107	-0.0093	-1.57	0.2180	-0.0057	-0.97	XX
MP3LXY		0.2200	0.0001	0.01	0.2200	-0.0037	-0.63	CI



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1600

Carbon & Low Alloy Steel, CARBON (C)
CARBON (C)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
MT863M		0.2174	-0.0026	-0.44	0.2207	-0.0029	-0.50	OE
MZ9G3Q		0.2165	-0.0035	-0.59	0.2211	-0.0026	-0.44	CO
NPGF27		0.2290	0.0091	1.53	0.2310	0.0073	1.26	OE
NV7XFH		0.2110	-0.0090	-1.52	0.2157	-0.0080	-1.37	CI
P32DBF		0.2220	0.0021	0.35	0.2240	0.0003	0.06	OE
PM9MKD		0.2147	-0.0052	-0.88	0.2224	-0.0012	-0.21	OE
PVLMUU		0.2320	0.0121	2.04	0.2290	0.0053	0.92	CO
Q4BPXB		0.2210	0.0011	0.18	0.2277	0.0040	0.69	GD
QGYQDH		0.2157	-0.0043	-0.73	0.2230	-0.0007	-0.11	OE
QNEKZE		0.2200	0.0001	0.01	0.2220	-0.0017	-0.29	CI
QNFHBA		0.2227	0.0028	0.47	0.2270	0.0033	0.57	IR
QNUZCU		0.2217	0.0018	0.30	0.2336	0.0100	1.71	OE
QNY2FG		0.2247	0.0048	0.81	0.2237	0.0001	0.01	OE
QVXMN4		0.2195	-0.0005	-0.08	0.2295	0.0059	1.01	CO
QWBA7H		0.2232	0.0033	0.56	0.2261	0.0024	0.42	OE
RPQQ2A		0.2233	0.0034	0.57	0.2267	0.0030	0.52	OE
RVGZFD		0.2171	-0.0028	-0.48	0.2225	-0.0011	-0.19	OE
T3BC6F		0.2230	0.0031	0.52	0.2293	0.0057	0.98	OE
T9F6HJ		0.2176	-0.0023	-0.39	0.2209	-0.0027	-0.47	OE
TB273X		0.2170	-0.0029	-0.50	0.2190	-0.0047	-0.80	OE
TGU6GT		0.2150	-0.0049	-0.84	0.2216	-0.0020	-0.35	OE
TJGPLW		0.2223	0.0024	0.40	0.2320	0.0083	1.43	AE
TX28DF		0.2120	-0.0079	-1.35	0.2190	-0.0047	-0.80	OE
U4KUMB		0.2200	0.0001	0.01	0.2307	0.0070	1.20	OE
U8YJX8		0.2180	-0.0019	-0.33	0.2197	-0.0040	-0.69	CI
UBV8B9		0.2203	0.0004	0.07	0.2247	0.0010	0.17	OE
UD8V2Z		0.2213	0.0014	0.24	0.2217	-0.0020	-0.34	CI
URLAQC		0.2253	0.0054	0.91	0.2270	0.0033	0.57	GD
UURJBV		0.2073	-0.0126	-2.14	0.2111	-0.0126	-2.16	OE
UYRTJC		0.2227	0.0027	0.46	0.2150	-0.0087	-1.49	OE
V4D8J3		0.2248	0.0049	0.83	0.2211	-0.0026	-0.45	OE
VAM7CG		0.2340	0.0141	2.38	0.2323	0.0087	1.49	OE
VKJAJV		0.2197	-0.0003	-0.05	0.2240	0.0003	0.06	OE
VZC4QF		0.2277	0.0077	1.31	0.2250	0.0013	0.23	OE
W6LN8Z	X	0.1957	-0.0243	-4.12	0.1867	-0.0370	-6.36	OE
WZTNT6		0.2277	0.0077	1.31	0.2310	0.0073	1.26	CI
X4QFN9		0.2162	-0.0037	-0.64	0.2300	0.0063	1.09	GD
XL9EU7		0.2320	0.0121	2.04	0.2297	0.0060	1.03	OE
XQHM84		0.2204	0.0004	0.07	0.2231	-0.0005	-0.09	OE
XXP26T		0.2319	0.0120	2.03	0.2346	0.0109	1.88	OE
XYWJ23		0.2150	-0.0049	-0.84	0.2167	-0.0070	-1.20	CI
Y3CDB9	X	0.2040	-0.0159	-2.70	0.2033	-0.0203	-3.49	OE
Y83NMR		0.2117	-0.0083	-1.40	0.2157	-0.0080	-1.37	OE
YCYAEV		0.2153	-0.0046	-0.78	0.2247	0.0010	0.17	XX
YE6NV9		0.2243	0.0044	0.74	0.2287	0.0050	0.86	OE
YELZFY		0.2253	0.0054	0.91	0.2307	0.0070	1.20	OE
YH7XUH		0.2170	-0.0029	-0.50	0.2160	-0.0077	-1.32	CO



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1600

Carbon & Low Alloy Steel, CARBON (C)
CARBON (C)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YMCKF7		0.2184	-0.0016	-0.27	0.2240	0.0003	0.05	XX
YUH7T3		0.2317	0.0117	1.99	0.2297	0.0060	1.03	XX
YYRL4C		0.2100	-0.0099	-1.69	0.2200	-0.0037	-0.63	CO
ZFDAA2		0.2203	0.0004	0.07	0.2303	0.0067	1.15	OE
ZN96DQ		0.2167	-0.0032	-0.55	0.2227	-0.0009	-0.16	CI

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.2199	Percent	0.2237	Percent
Std Dev Btwn Labs	0.0059	Percent	0.0058	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 139 of 146 reporting participants

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1600

- 23MW9B (X) - Data for sample L03 are low.
- BP3NCU (X) - Data for both samples are low.
- CQ9QHQ (X) - Data for both samples are high.
- ETWPYL (X) - Data for sample L04 are low.
- K276A2 (X) - Data for sample L03 are high.
- W6LN8Z (X) - Data for both samples are low.
- Y3CDB9 (X) - Data for sample L04 are low.

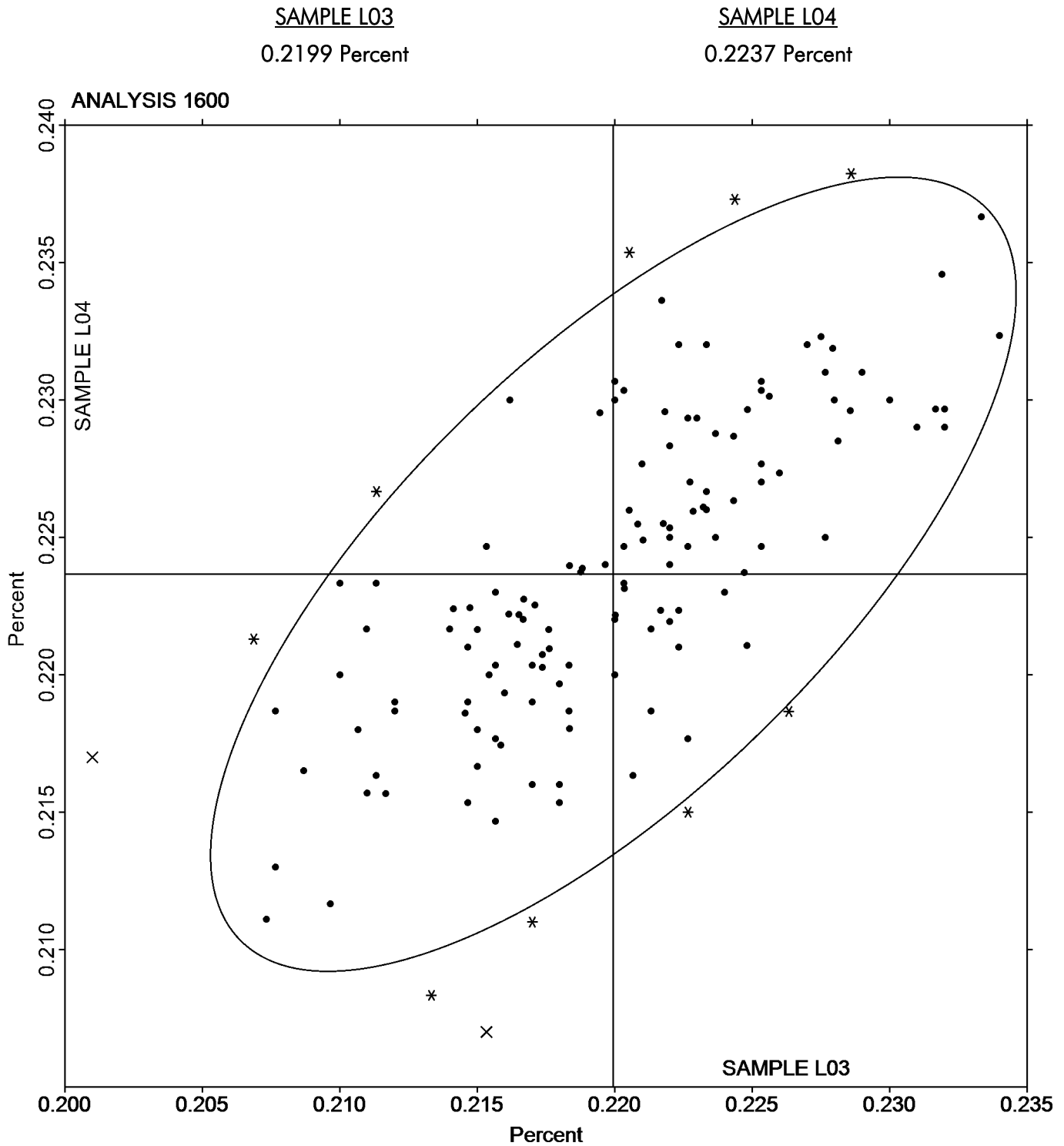


Fasteners and Metals Interlaboratory Testing Program

Analysis 1600

Carbon & Low Alloy Steel, CARBON (C)
CARBON (C)

Cycle 147
3rd Qtr 2024





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1601

Carbon & Low Alloy Steel, MANGANESE (Mn)
MANGANESE (Mn)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B	*	0.8470	-0.0094	-0.82	0.8157	0.0129	1.12	OE
27NVPV		0.8384	-0.0181	-1.57	0.7923	-0.0105	-0.91	OE
2CQ6U3		0.8463	-0.0101	-0.88	0.7813	-0.0215	-1.86	OE
2G4RQT		0.8533	-0.0031	-0.27	0.8107	0.0079	0.69	OE
2GZC8Z		0.8541	-0.0023	-0.20	0.8023	-0.0005	-0.05	IC
2TQ938	X	0.8533	-0.0031	-0.27	0.8200	0.0172	1.49	OE
3AEN74		0.8441	-0.0123	-1.07	0.7936	-0.0092	-0.79	OE
3R2ZYX		0.8567	0.0003	0.02	0.8000	-0.0028	-0.24	OE
3VXNBX		0.8661	0.0097	0.85	0.8172	0.0144	1.25	OE
4BQNVB		0.8647	0.0083	0.72	0.8027	-0.0001	-0.01	OE
4L6Ytz		0.8533	-0.0031	-0.27	0.7967	-0.0061	-0.53	GD
4Q36X7		0.8603	0.0039	0.34	0.8063	0.0035	0.31	OE
4T7A4Y		0.8510	-0.0054	-0.47	0.7923	-0.0105	-0.91	OE
66X9E3	*	0.8627	0.0063	0.54	0.8240	0.0212	1.84	OE
683U9U		0.8367	-0.0197	-1.72	0.7733	-0.0295	-2.55	GD
6GNZ2R		0.8713	0.0149	1.30	0.8073	0.0045	0.39	OE
6L3FU6		0.8692	0.0128	1.12	0.8135	0.0107	0.93	OE
6V9DJT		0.8570	0.0006	0.05	0.8050	0.0022	0.19	IC
6W6Q8L		0.8872	0.0308	2.68	0.8255	0.0227	1.96	OE
74H4KB		0.8738	0.0174	1.51	0.8177	0.0149	1.29	OE
7J97YT		0.8749	0.0185	1.61	0.8177	0.0149	1.29	OE
7MRBMQ		0.8627	0.0063	0.54	0.8137	0.0109	0.94	GD
7RL6MD		0.8502	-0.0063	-0.54	0.7904	-0.0124	-1.08	OE
7T3AAH		0.8570	0.0006	0.05	0.7907	-0.0121	-1.05	OE
82CYMG		0.8512	-0.0052	-0.46	0.8064	0.0036	0.31	OE
837PTV		0.8650	0.0086	0.75	0.8110	0.0082	0.71	OE
8FAATY		0.8637	0.0073	0.63	0.8090	0.0062	0.54	WD
8THTF		0.8616	0.0052	0.45	0.8126	0.0098	0.85	OE
9AJZJ2	X	0.8630	0.0066	0.57	0.8333	0.0305	2.65	GD
9CL8BR		0.8496	-0.0068	-0.59	0.8003	-0.0025	-0.22	WD
9VGQD7		0.8423	-0.0141	-1.22	0.7870	-0.0158	-1.37	OE
9Y2F2P		0.8748	0.0184	1.60	0.8169	0.0141	1.22	OE
A4DN3U		0.8520	-0.0044	-0.38	0.7953	-0.0075	-0.65	OE
AB6AJT		0.8471	-0.0093	-0.81	0.7962	-0.0066	-0.57	OE
AKXE2U		0.8683	0.0119	1.04	0.8077	0.0049	0.42	OE
ALPCAZ		0.8601	0.0037	0.32	0.8020	-0.0008	-0.07	OE
ARCCDU		0.8498	-0.0066	-0.57	0.7983	-0.0045	-0.39	OE
B4JTQ3		0.8656	0.0092	0.80	0.8041	0.0013	0.11	OE
B9G7ER		0.8583	0.0019	0.16	0.8028	0.0000	0.00	OE
BH3DBW		0.8400	-0.0164	-1.43	0.7967	-0.0061	-0.53	OE
BJXVCX		0.8593	0.0029	0.25	0.8140	0.0112	0.97	OE
BMJFH2		0.8687	0.0123	1.07	0.8080	0.0052	0.45	OE
BP3NCU		0.8479	-0.0085	-0.74	0.7989	-0.0039	-0.33	OE
BQBX6R		0.8685	0.0121	1.05	0.8126	0.0098	0.85	OE
BWPKAH		0.8557	-0.0007	-0.06	0.8003	-0.0025	-0.21	IC
CA48UZ		0.8750	0.0186	1.62	0.8270	0.0242	2.10	GD
CBMUQW		0.8433	-0.0131	-1.14	0.7967	-0.0061	-0.53	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1601

Carbon & Low Alloy Steel, MANGANESE (Mn)
MANGANESE (Mn)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
CQ9QHJ		0.8405	-0.0159	-1.38	0.7855	-0.0173	-1.50	OE
D3468E		0.8581	0.0017	0.15	0.8073	0.0045	0.39	XX
DAJZXG		0.8670	0.0106	0.92	0.8077	0.0049	0.42	OE
DCNER2		0.8427	-0.0137	-1.20	0.7843	-0.0185	-1.60	AE
DF94FL		0.8650	0.0086	0.75	0.8070	0.0042	0.36	OE
DFMXRE		0.8577	0.0013	0.11	0.8097	0.0069	0.60	IC
DGYHBP		0.8600	0.0036	0.31	0.8000	-0.0028	-0.24	IC
DLFYTU		0.8573	0.0009	0.08	0.8047	0.0019	0.16	OE
DMREMU		0.8503	-0.0061	-0.53	0.7990	-0.0038	-0.33	OE
DTCGMK		0.8623	0.0059	0.52	0.8103	0.0075	0.65	IC
DTYZFX		0.8667	0.0103	0.89	0.8067	0.0039	0.34	OE
DUVD3Q	*	0.8393	-0.0171	-1.49	0.8077	0.0049	0.43	OE
DV6MT3		0.8443	-0.0121	-1.05	0.7917	-0.0111	-0.96	OE
DYFRCP	X	0.8323	-0.0241	-2.09	0.8167	0.0139	1.20	OE
E3G4WW		0.8633	0.0069	0.60	0.8133	0.0105	0.91	IC
E7XD2M		0.8683	0.0119	1.04	0.8087	0.0059	0.51	OE
E9MKM6		0.8620	0.0056	0.49	0.8160	0.0132	1.14	XX
EDHBUG		0.8420	-0.0144	-1.25	0.8023	-0.0005	-0.04	IC
EG2GFJ		0.8620	0.0056	0.49	0.8130	0.0102	0.88	XX
EHTBF9		0.8490	-0.0074	-0.64	0.7900	-0.0128	-1.11	OE
ETWPYL		0.8447	-0.0117	-1.02	0.7800	-0.0228	-1.97	OE
FB67PR		0.8457	-0.0107	-0.93	0.7947	-0.0081	-0.70	OE
FDQ6ML		0.8265	-0.0299	-2.60	0.7741	-0.0287	-2.49	GD
FZA2PR		0.8557	-0.0007	-0.06	0.8017	-0.0011	-0.10	IC
G44GFQ		0.8420	-0.0144	-1.25	0.7933	-0.0095	-0.82	OE
GCGDFQ		0.8440	-0.0124	-1.08	0.7880	-0.0148	-1.28	OE
GPLCKQ		0.8400	-0.0164	-1.43	0.7917	-0.0111	-0.96	OE
HD74WP		0.8443	-0.0121	-1.06	0.7898	-0.0130	-1.13	OE
HT2LRF		0.8523	-0.0041	-0.35	0.7960	-0.0068	-0.59	OE
HUUADV		0.8669	0.0105	0.91	0.8088	0.0060	0.52	OE
J4D44H		0.8518	-0.0046	-0.40	0.7971	-0.0057	-0.50	WD
J4V2BN		0.8507	-0.0057	-0.50	0.8009	-0.0019	-0.16	IC
JCTKXD		0.8663	0.0099	0.86	0.8103	0.0075	0.65	OE
JHXQAA	X	0.7637	-0.0927	-8.07	0.7047	-0.0981	-8.50	OE
JZZ6RP		0.8450	-0.0114	-0.99	0.7980	-0.0048	-0.42	XX
K276A2	X	0.8713	0.0149	1.29	0.7991	-0.0037	-0.32	OE
KKHRWA		0.8563	-0.0001	-0.01	0.8046	0.0018	0.15	OE
KKUN8F		0.8793	0.0229	1.99	0.8302	0.0274	2.37	OE
KVZGNM		0.8584	0.0020	0.18	0.8025	-0.0003	-0.03	WD
KWPRFF		0.8423	-0.0141	-1.22	0.7950	-0.0078	-0.68	OE
LAD2RD		0.8517	-0.0047	-0.41	0.8041	0.0013	0.11	OE
LCKNYQ		0.8571	0.0007	0.06	0.8024	-0.0004	-0.03	XX
LKVNYT		0.8513	-0.0051	-0.44	0.7940	-0.0088	-0.76	OE
M6F6D7	*	0.8900	0.0336	2.92	0.8347	0.0319	2.76	XX
M86EPT		0.8743	0.0179	1.56	0.8183	0.0155	1.35	OE
M9YXVZ		0.8483	-0.0081	-0.70	0.7927	-0.0101	-0.88	XX
MP3LXY	X	0.8040	-0.0524	-4.56	0.7563	-0.0465	-4.03	IC



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1601

Carbon & Low Alloy Steel, MANGANESE (Mn)
MANGANESE (Mn)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
MT863M		0.8386	-0.0178	-1.55	0.7878	-0.0150	-1.30	OE
MVQEVK	X	0.8137	-0.0427	-3.72	0.8160	0.0132	1.14	GD
MZ9G3Q		0.8492	-0.0072	-0.63	0.7952	-0.0076	-0.65	OE
NPGF27		0.8453	-0.0111	-0.96	0.7940	-0.0088	-0.76	OE
NV7XFH		0.8506	-0.0058	-0.51	0.7957	-0.0070	-0.61	OE
P32DBF		0.8583	0.0019	0.17	0.8043	0.0015	0.13	OE
PM9MKD		0.8571	0.0007	0.06	0.8054	0.0026	0.23	OE
PVLMUU		0.8717	0.0153	1.33	0.8070	0.0042	0.36	IC
Q4BPXB		0.8713	0.0149	1.30	0.8183	0.0155	1.35	GD
QGYQDH		0.8597	0.0033	0.28	0.8047	0.0019	0.16	OE
QNEKZE		0.8640	0.0076	0.66	0.8073	0.0045	0.39	IC
QNFHBA		0.8597	0.0033	0.29	0.8087	0.0059	0.51	IC
QNUZCU		0.8690	0.0126	1.10	0.8187	0.0159	1.38	OE
QNY2FG		0.8428	-0.0136	-1.19	0.7945	-0.0083	-0.72	OE
QVXMN4		0.8600	0.0036	0.31	0.8070	0.0042	0.36	WD
QWBA7H		0.8488	-0.0076	-0.66	0.7920	-0.0108	-0.94	OE
RPQQ2A		0.8532	-0.0032	-0.28	0.7990	-0.0038	-0.33	OE
RVGZFD		0.8639	0.0075	0.65	0.8143	0.0115	1.00	OE
T3BC6F		0.8450	-0.0114	-0.99	0.7983	-0.0045	-0.39	OE
T9F6HJ		0.8642	0.0078	0.68	0.8066	0.0038	0.33	OE
TB273X		0.8567	0.0003	0.02	0.8007	-0.0021	-0.18	OE
TGU6GT		0.8553	-0.0011	-0.10	0.8038	0.0010	0.08	OE
TJGPLW		0.8557	-0.0007	-0.06	0.7900	-0.0128	-1.11	AE
TX28DF		0.8480	-0.0084	-0.73	0.7980	-0.0048	-0.42	OE
U4KUMB		0.8620	0.0056	0.49	0.8147	0.0119	1.03	OE
U8YJX8		0.8523	-0.0041	-0.35	0.7973	-0.0055	-0.47	IC
UBV8B9		0.8663	0.0099	0.86	0.8113	0.0085	0.74	OE
UD8V2Z		0.8853	0.0289	2.52	0.8300	0.0272	2.36	OE
URLAQC		0.8700	0.0136	1.18	0.8260	0.0232	2.01	GD
UURJBV		0.8436	-0.0128	-1.12	0.7865	-0.0163	-1.41	OE
UYRTJC		0.8600	0.0036	0.31	0.7967	-0.0061	-0.53	OE
V4D8J3		0.8648	0.0084	0.73	0.8115	0.0087	0.75	OE
VAM7CG		0.8470	-0.0094	-0.82	0.7927	-0.0101	-0.88	OE
VKJAJV		0.8453	-0.0111	-0.96	0.7890	-0.0138	-1.19	OE
VZC4QF		0.8590	0.0026	0.23	0.7973	-0.0055	-0.47	OE
W6LN8Z		0.8597	0.0033	0.28	0.8147	0.0119	1.03	OE
WZTNT6		0.8537	-0.0027	-0.24	0.7973	-0.0055	-0.47	IC
X4QFN9		0.8617	0.0053	0.46	0.8050	0.0022	0.19	GD
XL9EU7		0.8570	0.0006	0.05	0.8010	-0.0018	-0.16	OE
XQHM84		0.8570	0.0006	0.05	0.8083	0.0055	0.48	OE
XXP26T		0.8839	0.0275	2.39	0.8312	0.0284	2.46	OE
XYWJ23		0.8560	-0.0004	-0.04	0.7997	-0.0031	-0.27	OE
Y3CDB9		0.8367	-0.0197	-1.72	0.7967	-0.0061	-0.53	OE
Y83NMR		0.8720	0.0156	1.36	0.8267	0.0239	2.07	OE
YCYAEV		0.8367	-0.0197	-1.72	0.7867	-0.0161	-1.40	XX
YE6NV9	X	0.8187	-0.0377	-3.28	0.7687	-0.0341	-2.96	OE
YELZFY		0.8537	-0.0027	-0.24	0.8020	-0.0008	-0.07	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1601

Carbon & Low Alloy Steel, MANGANESE (Mn)
MANGANESE (Mn)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YH7XUH		0.8610	0.0046	0.40	0.7957	-0.0071	-0.62	OE
YMCKF7		0.8571	0.0007	0.06	0.8054	0.0026	0.23	XX
YUH7T3		0.8477	-0.0087	-0.76	0.8003	-0.0025	-0.21	XX
YYRL4C		0.8300	-0.0264	-2.30	0.7800	-0.0228	-1.97	OE
ZFDDA2		0.8547	-0.0017	-0.15	0.7987	-0.0041	-0.36	OE
ZN96DQ		0.8433	-0.0131	-1.14	0.7912	-0.0116	-1.00	IC

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.8564	Percent	0.8028	Percent
Std Dev Btwn Labs	0.0115	Percent	0.0115	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 137 of 147 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	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 #1601

- 2TQ938 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L03.
- 9AJZJ2 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L03.
- DYFRCP (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- JHXQAA (X) - Data for both samples are low. Possible Systematic Error.
- K276A2 (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L04.
- MP3LXY (X) - Data for both samples are low. Possible Systematic Error.
- MVQEVK (X) - Data for sample L03 are low.
- YE6NV9 (X) - Data for both samples are low. Possible Systematic Error.



Fasteners and Metals Interlaboratory Testing Program

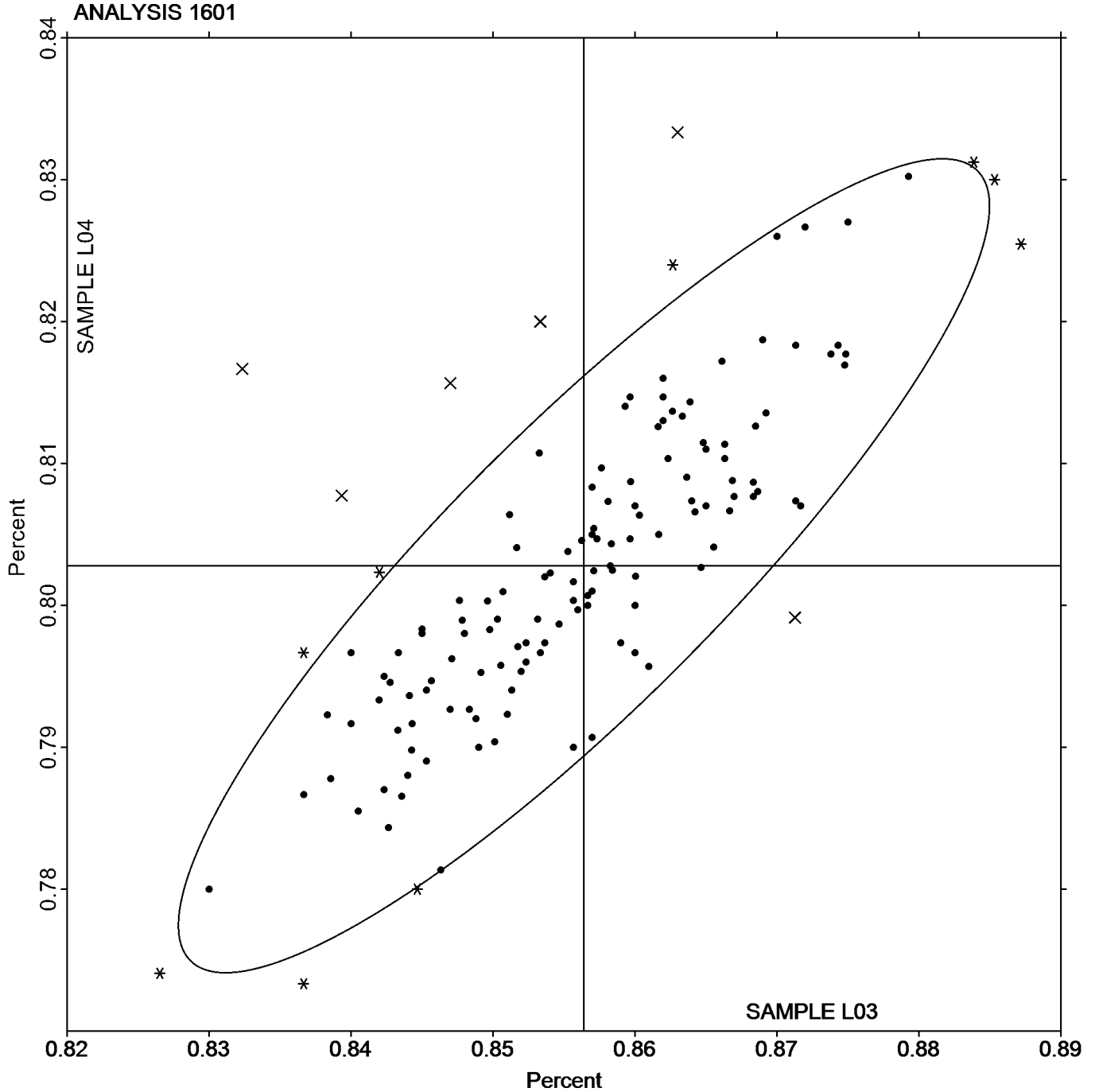
Cycle 147
3rd Qtr 2024

Analysis 1601

Carbon & Low Alloy Steel, MANGANESE (Mn)
MANGANESE (Mn)

SAMPLE L03
0.8564 Percent

SAMPLE L04
0.8028 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1602

Carbon & Low Alloy Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B		0.0120	0.00204	1.94	0.0118	0.00238	2.26	OE
27NVPV		0.0100	0.00009	0.08	0.00950	0.00005	0.04	OE
2CQ6U3		0.0114	0.00141	1.34	0.0102	0.00075	0.71	OE
2G4RQT		0.00913	-0.00082	-0.78	0.00897	-0.00049	-0.46	OE
2GZC8Z		0.0101	0.00011	0.10	0.00923	-0.00022	-0.21	IC
2TQ938		0.00933	-0.00062	-0.59	0.00900	-0.00045	-0.43	XX
3AEN74		0.00977	-0.00019	-0.18	0.00940	-0.00005	-0.05	OE
3R2ZYX	X	0.0330	0.02304	21.86	0.0303	0.02088	19.85	OE
3VXNBX		0.00943	-0.00052	-0.50	0.00900	-0.00045	-0.43	OE
4BQNVB		0.0110	0.00104	0.99	0.0100	0.00055	0.52	OE
4L6Ytz		0.0107	0.00078	0.74	0.0109	0.00141	1.34	GD
4T7A4Y		0.00910	-0.00086	-0.81	0.00837	-0.00109	-1.03	OE
66X9E3	*	0.00987	-0.00009	-0.09	0.0112	0.00178	1.69	OE
683U9U		0.00933	-0.00062	-0.59	0.00900	-0.00045	-0.43	GD
6GNZ2R		0.00900	-0.00096	-0.91	0.00767	-0.00179	-1.70	OE
6L3FU6		0.00970	-0.00026	-0.24	0.00947	0.00001	0.01	OE
6V9DJT		0.00900	-0.00096	-0.91	0.00760	-0.00185	-1.76	IC
6W6Q8L		0.0105	0.00059	0.56	0.00990	0.00045	0.42	OE
74H4KB		0.0113	0.00138	1.31	0.0101	0.00065	0.62	OE
7J97YT		0.00923	-0.00072	-0.69	0.00857	-0.00089	-0.84	OE
7MRBMQ		0.00973	-0.00022	-0.21	0.00930	-0.00015	-0.15	GD
7RL6MD		0.0101	0.00014	0.13	0.00967	0.00021	0.20	OE
7T3AAH		0.0105	0.00054	0.51	0.00980	0.00035	0.33	OE
82CYMG		0.00953	-0.00042	-0.40	0.00883	-0.00062	-0.59	IC
837PTV		0.00933	-0.00062	-0.59	0.00867	-0.00079	-0.75	OE
8FAATY		0.00987	-0.00009	-0.09	0.00960	0.00015	0.14	WD
8THTF		0.00997	0.00001	0.01	0.00953	0.00008	0.07	OE
9AJZJ2	X	0.0125	0.00254	2.41	0.0140	0.00455	4.32	GD
9CL8BR		0.0105	0.00054	0.51	0.0100	0.00058	0.55	OE
9VGQD7		0.0117	0.00178	1.68	0.0113	0.00181	1.72	OE
9Y2F2P		0.00940	-0.00056	-0.53	0.00870	-0.00075	-0.72	OE
A4DN3U		0.00930	-0.00066	-0.62	0.00850	-0.00095	-0.91	OE
AB6AJT		0.00963	-0.00032	-0.31	0.00893	-0.00052	-0.50	OE
AKXE2U		0.00987	-0.00009	-0.09	0.00923	-0.00022	-0.21	OE
ARCCDU		0.00970	-0.00026	-0.24	0.00893	-0.00052	-0.50	OE
B4JtQ3		0.0101	0.00011	0.10	0.00950	0.00005	0.04	OE
B9G7ER		0.00953	-0.00042	-0.40	0.00897	-0.00049	-0.46	OE
BH3DBW		0.00933	-0.00062	-0.59	0.00900	-0.00045	-0.43	OE
BJXVCX		0.0104	0.00044	0.42	0.0103	0.00088	0.84	OE
BMJFH2		0.00850	-0.00146	-1.38	0.00790	-0.00155	-1.48	OE
BP3NCU	X	0.1070	0.09704	92.05	0.00917	-0.00029	-0.27	OE
BQBx6R		0.00908	-0.00087	-0.83	0.00855	-0.00091	-0.86	OE
BWPKAH		0.0103	0.00034	0.32	0.0103	0.00085	0.80	IC
CA48UZ		0.00973	-0.00023	-0.22	0.00969	0.00023	0.22	GD
CBMUQW		0.0104	0.00044	0.42	0.0103	0.00088	0.84	OE
CQ9QHq		0.00943	-0.00052	-0.50	0.00860	-0.00085	-0.81	OE
D3468E		0.0101	0.00011	0.10	0.00950	0.00005	0.04	XX



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1602

Carbon & Low Alloy Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DAJZXG		0.0112	0.00124	1.18	0.0106	0.00115	1.09	OE
DCNER2		0.0110	0.00104	0.99	0.0100	0.00055	0.52	AA
DF94FL		0.0102	0.00024	0.23	0.00907	-0.00039	-0.37	OE
DGYHBP		0.00900	-0.00096	-0.91	0.00833	-0.00112	-1.07	IC
DLFYTU		0.00973	-0.00022	-0.21	0.00897	-0.00049	-0.46	OE
DMREMU		0.00963	-0.00032	-0.31	0.00893	-0.00052	-0.50	OE
DTCGMK		0.0111	0.00111	1.05	0.0105	0.00108	1.03	IC
DTYZFX		0.0105	0.00058	0.55	0.00993	0.00048	0.46	OE
DUVD3Q		0.00893	-0.00102	-0.97	0.00900	-0.00045	-0.43	OE
DV6MT3		0.00717	-0.00279	-2.65	0.00700	-0.00245	-2.33	OE
DYFRCP		0.0110	0.00104	0.99	0.0110	0.00155	1.47	OE
E3G4VWV		0.00967	-0.00029	-0.28	0.00867	-0.00079	-0.75	IC
E7XD2M		0.0117	0.00171	1.62	0.0107	0.00121	1.15	OE
E9MKM6		0.00963	-0.00032	-0.31	0.00930	-0.00015	-0.15	XX
EDHBUG		0.00867	-0.00129	-1.22	0.00900	-0.00045	-0.43	IC
EG2GFJ		0.0101	0.00014	0.13	0.00957	0.00011	0.11	XX
EHTBF9		0.0102	0.00024	0.23	0.00910	-0.00035	-0.34	OE
ETWPYL	*	0.0109	0.00094	0.89	0.00923	-0.00022	-0.21	OE
FB67PR		0.0104	0.00041	0.39	0.00987	0.00041	0.39	OE
FDQ6ML		0.00880	-0.00116	-1.10	0.00827	-0.00119	-1.13	GD
FZA2PR		0.00917	-0.00079	-0.75	0.00867	-0.00079	-0.75	XX
G44GFQ		0.0106	0.00064	0.61	0.0103	0.00081	0.77	OE
GCGDFQ		0.00970	-0.00026	-0.24	0.00920	-0.00025	-0.24	OE
GPLCKQ		0.0110	0.00104	0.99	0.0110	0.00155	1.47	OE
HD74WP		0.00967	-0.00029	-0.28	0.00919	-0.00026	-0.25	OE
HT2LRF		0.00980	-0.00016	-0.15	0.00993	0.00048	0.46	OE
HUUADV		0.0111	0.00118	1.12	0.0105	0.00108	1.03	OE
J4D44H		0.0117	0.00178	1.68	0.0109	0.00145	1.37	OE
J4V2BN		0.00937	-0.00059	-0.56	0.00864	-0.00081	-0.77	XX
JCTKXD		0.00900	-0.00096	-0.91	0.00867	-0.00079	-0.75	OE
JHXQAA		0.00867	-0.00129	-1.22	0.00843	-0.00102	-0.97	OE
JZZ6RP		0.0103	0.00038	0.36	0.0100	0.00055	0.52	XX
K276A2		0.0122	0.00221	2.10	0.0108	0.00135	1.28	OE
KKHRWA		0.0105	0.00054	0.51	0.0103	0.00080	0.76	OE
KKUN8F		0.00860	-0.00136	-1.29	0.00853	-0.00092	-0.88	OE
KVZGNM		0.0103	0.00034	0.32	0.0101	0.00061	0.58	WD
KWPRFF		0.00877	-0.00119	-1.13	0.00877	-0.00069	-0.65	OE
LAD2RD		0.0106	0.00064	0.61	0.00993	0.00048	0.46	OE
LCKNYQ		0.00877	-0.00119	-1.13	0.00805	-0.00140	-1.33	XX
LKVNYT		0.0109	0.00098	0.93	0.0103	0.00081	0.77	OE
M6F6D7		0.0120	0.00204	1.94	0.0113	0.00188	1.79	XX
M86EPT		0.00760	-0.00236	-2.24	0.00707	-0.00239	-2.27	OE
M9YXVZ		0.0117	0.00171	1.62	0.0117	0.00221	2.10	XX
MP3LXY		0.00767	-0.00229	-2.17	0.00700	-0.00245	-2.33	IC
MVQEVK	X	0.0107	0.00078	0.74	0.0126	0.00315	2.99	GD
MZ9G3Q		0.0103	0.00030	0.28	0.00972	0.00026	0.25	XX
NPGF27		0.00973	-0.00022	-0.21	0.00900	-0.00045	-0.43	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
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Analysis 1602

Carbon & Low Alloy Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
NV7XFH		0.0120	0.00203	1.93	0.0107	0.00126	1.20	XX
P32DBF		0.00943	-0.00052	-0.50	0.00883	-0.00062	-0.59	OE
PM9MKD		0.0102	0.00021	0.20	0.00963	0.00018	0.17	OE
PVLMUU		0.00907	-0.00089	-0.85	0.00900	-0.00045	-0.43	IC
Q4BPXB		0.00973	-0.00022	-0.21	0.00940	-0.00005	-0.05	GD
QGYQDH		0.0106	0.00064	0.61	0.0101	0.00065	0.61	OE
QNEKZE		0.00923	-0.00072	-0.69	0.00850	-0.00095	-0.91	IC
QNFHBA		0.00920	-0.00076	-0.72	0.00887	-0.00059	-0.56	IC
QNUZCU		0.00901	-0.00095	-0.90	0.00804	-0.00142	-1.35	OE
QNY2FG		0.00926	-0.00070	-0.67	0.00924	-0.00021	-0.20	XX
QVXMN4		0.0110	0.00104	0.99	0.00967	0.00021	0.20	WD
QWBA7H		0.00927	-0.00069	-0.66	0.00870	-0.00075	-0.72	OE
RPQQ2A		0.00923	-0.00072	-0.69	0.00890	-0.00055	-0.53	OE
RVGZFD		0.00893	-0.00102	-0.97	0.00860	-0.00085	-0.81	OE
T3BC6F		0.00983	-0.00012	-0.12	0.00943	-0.00002	-0.02	OE
T9F6HJ		0.0108	0.00081	0.77	0.0102	0.00078	0.74	OE
TB273X		0.00900	-0.00096	-0.91	0.00843	-0.00102	-0.97	OE
TGU6GT		0.0105	0.00054	0.51	0.00967	0.00021	0.20	OE
TJGPLW		0.0127	0.00271	2.57	0.0123	0.00288	2.74	AE
TX28DF		0.0104	0.00044	0.42	0.0101	0.00065	0.61	OE
U4KUMB		0.00933	-0.00062	-0.59	0.00900	-0.00045	-0.43	OE
U8YJX8		0.0100	0.00004	0.04	0.0100	0.00055	0.52	IC
UBV8B9		0.00903	-0.00092	-0.88	0.00847	-0.00099	-0.94	OE
UD8V2Z		0.00883	-0.00112	-1.07	0.00823	-0.00122	-1.16	OE
URLAQC		0.0100	0.00004	0.04	0.0100	0.00055	0.52	GD
UURJBV		0.00847	-0.00149	-1.41	0.00770	-0.00175	-1.67	OE
UYRTJC		0.00933	-0.00062	-0.59	0.00933	-0.00012	-0.12	OE
V4D8J3		0.00969	-0.00027	-0.26	0.00914	-0.00031	-0.30	OE
VAM7CG		0.00967	-0.00029	-0.28	0.00900	-0.00045	-0.43	OE
VKJAJV		0.00967	-0.00029	-0.28	0.00940	-0.00005	-0.05	OE
VZC4QF		0.0100	0.00004	0.04	0.00933	-0.00012	-0.12	OE
W6LN8Z		0.0120	0.00204	1.94	0.0117	0.00221	2.10	OE
WZTNT6		0.00777	-0.00219	-2.08	0.00747	-0.00199	-1.89	IC
X4QFN9	*	0.0100	0.00004	0.04	0.0108	0.00135	1.28	GD
XL9EU7	*	0.0129	0.00291	2.76	0.0124	0.00295	2.80	OE
XQHM84		0.00970	-0.00026	-0.24	0.00937	-0.00009	-0.08	OE
XXP26T		0.0104	0.00048	0.45	0.00983	0.00038	0.36	OE
XYWJ23		0.00973	-0.00022	-0.21	0.00940	-0.00005	-0.05	OE
Y3CDB9	X	0.0231	0.01314	12.47	0.0277	0.01821	17.31	OE
Y83NMR	X	0.00600	-0.00396	-3.75	0.00433	-0.00512	-4.87	OE
YCYAEV		0.0120	0.00204	1.94	0.0120	0.00255	2.42	XX
YE6NV9	*	0.0131	0.00311	2.95	0.0123	0.00285	2.70	OE
YELZFY		0.0103	0.00038	0.36	0.0100	0.00055	0.52	OE
YH7XUH		0.0106	0.00064	0.61	0.0101	0.00065	0.61	OE
YMCKF7		0.0103	0.00031	0.29	0.00967	0.00021	0.20	XX
YUH7T3		0.00967	-0.00029	-0.28	0.00900	-0.00045	-0.43	XX
YYRL4C		0.00933	-0.00062	-0.59	0.00933	-0.00012	-0.12	OE



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1602

Carbon & Low Alloy Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
ZFDAA2		0.0106	0.00064	0.61	0.0102	0.00071	0.68	OE
ZN96DQ		0.00823	-0.00172	-1.64	0.00820	-0.00125	-1.19	IC

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.00996	Percent	0.00945	Percent
Stnd Dev Btwn Labs	0.00105	Percent	0.00105	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 134 of 143 reporting participants

Key to Method Codes Reported by Participants

- AA Spectrometry - Atomic Absorption (AAS)
- AE Spectrometry - Atomic Emission (AES)
- 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 #1602

- 3R2ZYX (X) - Extreme data.
- 9AJZJ2 (X) - Data for sample L04 are high.
- BP3NCU (X) - Data for sample L03 are extreme.
- MVQEVK (X) - Data for sample L04 are high.
- Y3CDB9 (X) - Extreme data.
- Y83NMR (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.

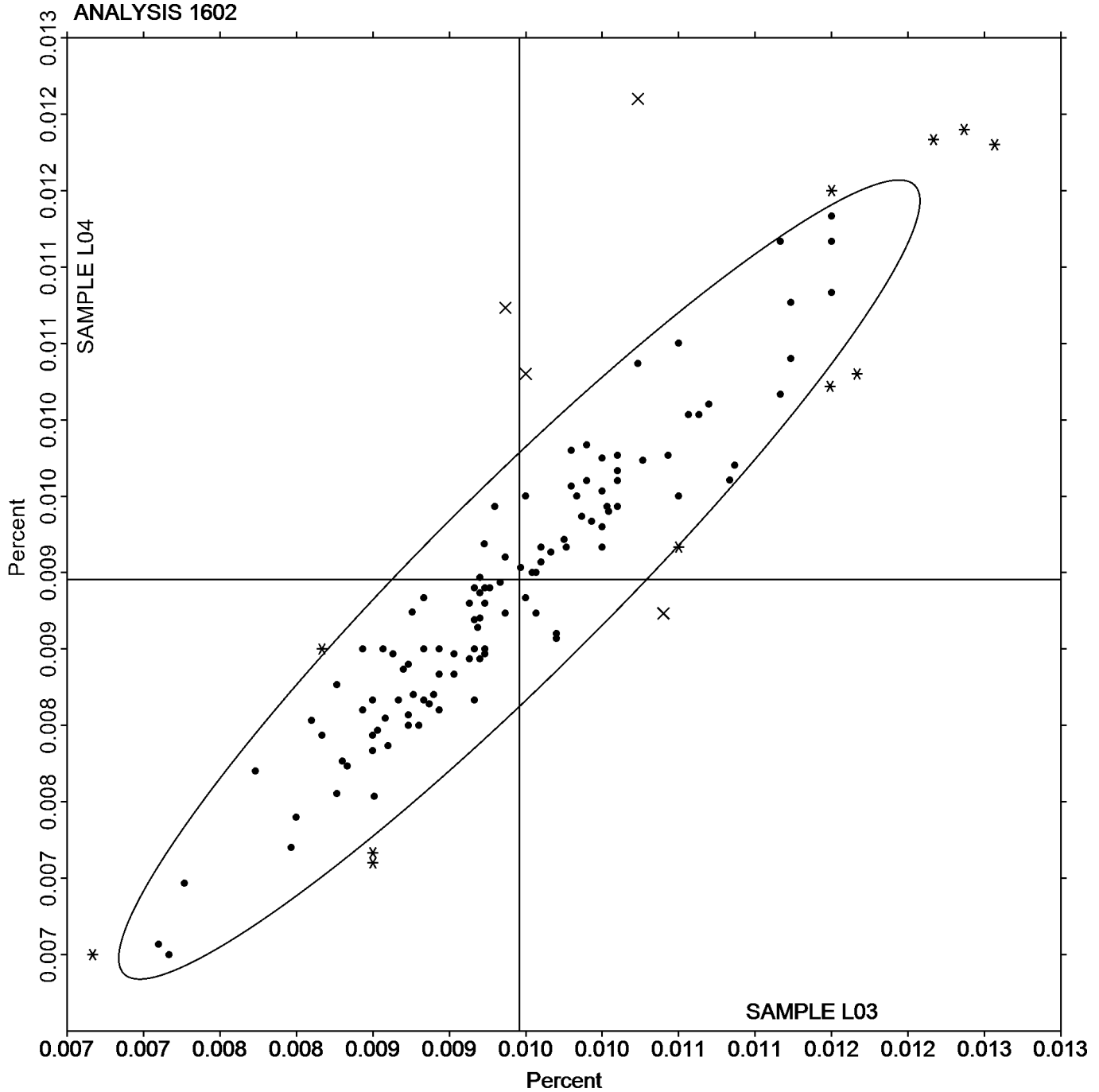


Analysis 1602

Carbon & Low Alloy Steel, PHOSPHORUS (P)
PHOSPHORUS (P)

SAMPLE L03
0.00996 Percent

SAMPLE L04
0.00945 Percent





Fasteners and Metals Interlaboratory Testing Program

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Analysis 1603

Carbon & Low Alloy Steel, SULFUR (S)
SULFUR (S)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B		0.0224	-0.0010	-0.61	0.0175	-0.0007	-0.51	OE
27NVPV		0.0226	-0.0009	-0.53	0.0181	-0.0001	-0.10	OE
2CQ6U3	X	0.0280	0.0046	2.84	0.0186	0.0004	0.30	OE
2G4RQT		0.0245	0.0011	0.66	0.0195	0.0013	0.98	OE
2TQ938		0.0233	-0.0001	-0.05	0.0187	0.0005	0.34	OE
3AEN74		0.0232	-0.0002	-0.15	0.0188	0.0006	0.42	OE
3R2ZYX	X	0.0387	0.0153	9.51	0.0302	0.0120	8.79	OE
3VXNBX		0.0238	0.0004	0.22	0.0187	0.0005	0.34	OE
4BQNVB		0.0250	0.0016	0.99	0.0197	0.0015	1.08	OE
4L6YTZ		0.0203	-0.0031	-1.94	0.0163	-0.0019	-1.37	GD
4Q36X7		0.0230	-0.0004	-0.26	0.0190	0.0008	0.59	OE
66X9E3	X	0.0168	-0.0066	-4.14	0.0108	-0.0074	-5.46	OE
683U9U		0.0240	0.0006	0.37	0.0183	0.0001	0.10	GD
6GNZ2R		0.0220	-0.0014	-0.88	0.0170	-0.0012	-0.88	OE
6L3FU6		0.0244	0.0010	0.64	0.0180	-0.0002	-0.17	OE
6V9DJT		0.0245	0.0011	0.70	0.0179	-0.0003	-0.22	CI
74H4KB	*	0.0276	0.0042	2.61	0.0182	0.0000	0.03	OE
7J97YT		0.0246	0.0012	0.72	0.0187	0.0005	0.37	OE
7MRBMQ		0.0233	-0.0001	-0.05	0.0179	-0.0003	-0.22	CO
7RL6MD		0.0215	-0.0019	-1.19	0.0165	-0.0017	-1.25	OE
7T3AAH		0.0223	-0.0011	-0.67	0.0179	-0.0003	-0.22	CI
82CYMG		0.0207	-0.0027	-1.67	0.0160	-0.0022	-1.59	CI
837PTV		0.0250	0.0016	0.99	0.0200	0.0018	1.32	OE
8THTF		0.0195	-0.0039	-2.44	0.0157	-0.0025	-1.81	OE
9AJZJ2		0.0219	-0.0015	-0.94	0.0169	-0.0013	-0.95	GD
9CL8BR		0.0230	-0.0004	-0.26	0.0176	-0.0006	-0.41	CI
9VGQD7		0.0266	0.0032	1.97	0.0211	0.0029	2.16	OE
9WT76L		0.0213	-0.0021	-1.34	0.0188	0.0006	0.42	CI
9Y2F2P		0.0241	0.0007	0.43	0.0189	0.0007	0.52	OE
A4DN3U		0.0223	-0.0011	-0.69	0.0169	-0.0013	-0.98	CI
AB6AJT		0.0206	-0.0028	-1.73	0.0161	-0.0021	-1.54	OE
AKXE2U		0.0231	-0.0003	-0.19	0.0182	0.0000	0.00	IR
ALPCAZ		0.0253	0.0019	1.18	0.0187	0.0005	0.39	OE
ARCCDU		0.0260	0.0026	1.59	0.0195	0.0013	0.98	OE
B4JTQ3		0.0229	-0.0005	-0.32	0.0175	-0.0007	-0.51	OE
B9G7ER		0.0235	0.0001	0.08	0.0181	-0.0001	-0.05	OE
BH3DBW	*	0.0210	-0.0024	-1.50	0.0193	0.0011	0.83	OE
BJXVCX		0.0237	0.0003	0.16	0.0187	0.0005	0.37	OE
BMJFH2		0.0233	-0.0001	-0.09	0.0170	-0.0012	-0.88	OE
BP3NCU	X	0.0182	-0.0052	-3.25	0.0144	-0.0038	-2.76	OE
BQBX6R		0.0257	0.0022	1.40	0.0200	0.0018	1.29	OE
BWPKAH		0.0248	0.0014	0.89	0.0178	-0.0004	-0.27	CO
CA48UZ		0.0224	-0.0010	-0.63	0.0173	-0.0009	-0.68	GD
CBMUQW		0.0238	0.0004	0.26	0.0192	0.0010	0.76	OE
CQ9QHQ		0.0241	0.0007	0.41	0.0198	0.0016	1.15	OE
D3468E		0.0230	-0.0004	-0.24	0.0177	-0.0005	-0.37	XX
DAJZXG		0.0252	0.0018	1.09	0.0213	0.0031	2.28	OE



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1603

Carbon & Low Alloy Steel, SULFUR (S)
SULFUR (S)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DCNER2		0.0243	0.0009	0.57	0.0183	0.0001	0.10	AE
DF94FL		0.0246	0.0012	0.72	0.0188	0.0006	0.44	CO
DFMXRE		0.0240	0.0006	0.37	0.0187	0.0005	0.39	CI
DGYHBP		0.0220	-0.0014	-0.88	0.0173	-0.0009	-0.63	CI
DLFYTU		0.0233	-0.0001	-0.07	0.0172	-0.0010	-0.73	OE
DMREMU		0.0240	0.0006	0.39	0.0183	0.0001	0.10	OE
DTCGMK		0.0225	-0.0009	-0.59	0.0174	-0.0008	-0.56	CI
DTYZFX	X	0.0287	0.0053	3.28	0.0224	0.0042	3.11	OE
DUVD3Q		0.0201	-0.0033	-2.07	0.0170	-0.0012	-0.88	OE
DV6MT3		0.0236	0.0002	0.12	0.0181	-0.0001	-0.07	OE
DYFRCP		0.0223	-0.0011	-0.67	0.0160	-0.0022	-1.61	OE
E3G4WW		0.0239	0.0005	0.33	0.0195	0.0013	0.96	CI
E7XD2M		0.0250	0.0016	0.99	0.0173	-0.0009	-0.63	OE
E9MKM6		0.0214	-0.0020	-1.23	0.0167	-0.0015	-1.08	XX
EDHBUG		0.0200	-0.0034	-2.11	0.0151	-0.0031	-2.25	CI
EG2GFJ		0.0225	-0.0009	-0.57	0.0170	-0.0012	-0.86	XX
EHTBF9		0.0230	-0.0004	-0.26	0.0174	-0.0008	-0.59	CO
ETWPYL		0.0243	0.0009	0.57	0.0186	0.0004	0.30	OE
FB67PR		0.0248	0.0014	0.89	0.0197	0.0015	1.08	OE
FDQ6ML		0.0230	-0.0004	-0.24	0.0177	-0.0005	-0.39	GD
FZA2PR		0.0232	-0.0002	-0.11	0.0181	-0.0001	-0.05	CI
G44GFQ	X	0.0277	0.0043	2.70	0.0229	0.0047	3.43	OE
GCGDFQ	X	0.0355	0.0121	7.54	0.0230	0.0048	3.53	OE
GPLCKQ		0.0233	-0.0001	-0.07	0.0176	-0.0006	-0.41	CO
HD74WP		0.0223	-0.0012	-0.72	0.0170	-0.0012	-0.91	OE
HT2LRF		0.0228	-0.0006	-0.36	0.0189	0.0007	0.52	OE
HUUADV		0.0211	-0.0023	-1.46	0.0166	-0.0016	-1.17	CI
J4D44H		0.0224	-0.0010	-0.63	0.0177	-0.0005	-0.37	CI
J4V2BN		0.0230	-0.0005	-0.29	0.0182	0.0000	0.00	CI
JCTKXD		0.0227	-0.0007	-0.46	0.0180	-0.0002	-0.15	OE
JHXQAA		0.0204	-0.0030	-1.86	0.0160	-0.0022	-1.64	OE
JZZ6RP		0.0227	-0.0007	-0.46	0.0190	0.0008	0.59	XX
K276A2		0.0214	-0.0020	-1.28	0.0152	-0.0030	-2.20	OE
KKHRWA		0.0237	0.0003	0.18	0.0188	0.0006	0.47	OE
KKUN8F		0.0225	-0.0009	-0.55	0.0177	-0.0005	-0.34	OE
KVZGNM		0.0235	0.0000	0.02	0.0185	0.0003	0.20	CI
KWPRFF		0.0230	-0.0004	-0.26	0.0177	-0.0005	-0.39	OE
LAD2RD		0.0234	0.0000	-0.01	0.0187	0.0005	0.34	CI
LCKNYQ		0.0218	-0.0016	-1.01	0.0176	-0.0006	-0.47	XX
LKVNYT		0.0228	-0.0006	-0.40	0.0171	-0.0011	-0.78	OE
M6F6D7		0.0263	0.0029	1.82	0.0213	0.0031	2.30	XX
M86EPT	X	0.0351	0.0117	7.29	0.0277	0.0095	6.95	OE
M9YXVZ		0.0250	0.0016	0.99	0.0203	0.0021	1.57	XX
MP3LXY	X	0.0147	-0.0087	-5.45	0.0137	-0.0045	-3.33	IC
MZ9G3Q		0.0246	0.0012	0.76	0.0195	0.0013	0.93	CO
NPGF27		0.0241	0.0007	0.43	0.0185	0.0003	0.22	OE
NV7XFH		0.0252	0.0018	1.12	0.0176	-0.0006	-0.47	XX



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1603

Carbon & Low Alloy Steel, SULFUR (S)
SULFUR (S)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P32DBF		0.0233	-0.0001	-0.05	0.0178	-0.0004	-0.32	OE
PM9MKD		0.0246	0.0012	0.72	0.0180	-0.0002	-0.15	OE
PVLMUU		0.0218	-0.0016	-1.03	0.0165	-0.0017	-1.27	CO
Q4BPXB		0.0224	-0.0010	-0.61	0.0177	-0.0005	-0.39	GD
QGYQDH		0.0238	0.0004	0.22	0.0207	0.0025	1.81	OE
QNEKZE		0.0232	-0.0002	-0.11	0.0183	0.0001	0.10	CI
QNFHBA		0.0232	-0.0002	-0.15	0.0181	-0.0001	-0.10	IR
QNUZCU		0.0240	0.0006	0.38	0.0171	-0.0011	-0.78	OE
QNY2FG		0.0230	-0.0004	-0.27	0.0184	0.0002	0.17	XX
QVXMN4		0.0260	0.0026	1.61	0.0190	0.0008	0.59	WD
QWBA7H		0.0267	0.0033	2.05	0.0189	0.0007	0.49	OE
RPQQ2A		0.0245	0.0011	0.68	0.0185	0.0003	0.22	OE
RVGZFD		0.0239	0.0005	0.30	0.0179	-0.0003	-0.24	OE
T3BC6F		0.0231	-0.0003	-0.19	0.0184	0.0002	0.12	OE
T9F6HJ		0.0235	0.0001	0.03	0.0179	-0.0003	-0.22	OE
TB273X		0.0222	-0.0012	-0.74	0.0171	-0.0011	-0.78	OE
TGU6GT		0.0235	0.0001	0.05	0.0175	-0.0007	-0.49	OE
TJGPLW	X	0.0300	0.0066	4.11	0.0233	0.0051	3.77	XX
TX28DF		0.0236	0.0002	0.12	0.0193	0.0011	0.81	OE
U4KUMB		0.0217	-0.0017	-1.09	0.0167	-0.0015	-1.12	OE
U8YJX8		0.0227	-0.0007	-0.46	0.0170	-0.0012	-0.88	CI
UBV8B9		0.0244	0.0010	0.60	0.0195	0.0013	0.98	OE
UD8V2Z		0.0277	0.0043	2.65	0.0215	0.0033	2.40	CI
URLAQC		0.0230	-0.0004	-0.26	0.0187	0.0005	0.34	GD
UURJBV		0.0214	-0.0020	-1.23	0.0174	-0.0008	-0.59	OE
UYRTJC		0.0230	-0.0004	-0.26	0.0173	-0.0009	-0.63	OE
V4D8J3		0.0238	0.0004	0.27	0.0191	0.0009	0.64	OE
VAM7CG	*	0.0280	0.0046	2.86	0.0207	0.0025	1.81	OE
VKJAJV		0.0230	-0.0004	-0.28	0.0186	0.0004	0.27	OE
VZC4QF		0.0260	0.0026	1.61	0.0203	0.0021	1.57	OE
W6LN8Z	X	0.0193	-0.0041	-2.54	0.0173	-0.0009	-0.63	OE
WZTNT6		0.0220	-0.0014	-0.86	0.0165	-0.0017	-1.25	CI
X4QFN9		0.0200	-0.0034	-2.13	0.0150	-0.0032	-2.35	GD
XL9EU7		0.0232	-0.0002	-0.15	0.0187	0.0005	0.37	OE
XQHM84		0.0234	0.0000	-0.01	0.0189	0.0007	0.52	OE
XXP26T		0.0226	-0.0008	-0.51	0.0170	-0.0012	-0.86	OE
XYWJ23		0.0239	0.0005	0.28	0.0180	-0.0002	-0.12	CI
Y3CDB9	X	0.0279	0.0045	2.78	0.0273	0.0091	6.71	OE
Y83NMR	*	0.0260	0.0026	1.61	0.0220	0.0038	2.79	OE
YCYAEV		0.0260	0.0026	1.61	0.0217	0.0035	2.55	XX
YE6NV9	*	0.0282	0.0048	3.01	0.0212	0.0030	2.18	OE
YELZFY		0.0243	0.0009	0.57	0.0193	0.0011	0.83	OE
YH7XUH		0.0234	0.0000	-0.01	0.0183	0.0001	0.07	CO
YMCKF7		0.0249	0.0015	0.95	0.0184	0.0002	0.17	XX
YUH7T3	X	0.0167	-0.0067	-4.21	0.0233	0.0051	3.77	XX
YYRL4C	X	0.0310	0.0076	4.73	0.0230	0.0048	3.53	CO
ZFDAA2		0.0218	-0.0016	-0.98	0.0175	-0.0007	-0.54	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1603

Carbon & Low Alloy Steel, SULFUR (S)
SULFUR (S)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
ZN96DQ		0.0229	-0.0005	-0.34	0.0175	-0.0007	-0.51	CI

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.0234	Percent	0.0182	Percent
Std Dev Btrwn Labs	0.0016	Percent	0.0014	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 126 of 142 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	CI	Combustion / IR
CO	Combustion	GD	Spectrometry - Glow Discharge (GDS)
IC	Spectrometry - Inductively Coupled Plasma (ICP)	IR	IR (Absorption / Detection)
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 #1603

- 2CQ6U3 (X) - Data for sample L03 are high.
- 3R2ZYX (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L04.
- 66X9E3 (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of both samples.
- BP3NCU (X) - Data for sample L03 are low.
- DTYZFX (X) - Data for both samples are high. Possible Systematic Error.
- G44GFQ (X) - Data for sample L04 are high.
- GCGDFQ (X) - Data for both samples are high. Possible Systematic Error.
- M86EPT (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L03.
- MP3LXY (X) - Data for both samples are low. Possible Systematic Error. Inconsistent within the determinations of sample L03.
- TJGPLW (X) - Data for both samples are high. Possible Systematic Error.
- W6LN8Z (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L04.
- Y3CDB9 (X) - Data for both samples are high. Possible Systematic Error.
- YUH7T3 (X) - Data for sample L03 are low and data for sample L04 are high. Inconsistent in testing between samples. Inconsistent within the determinations of sample L04.
- YYRL4C (X) - Data for both samples are high. Possible Systematic Error.

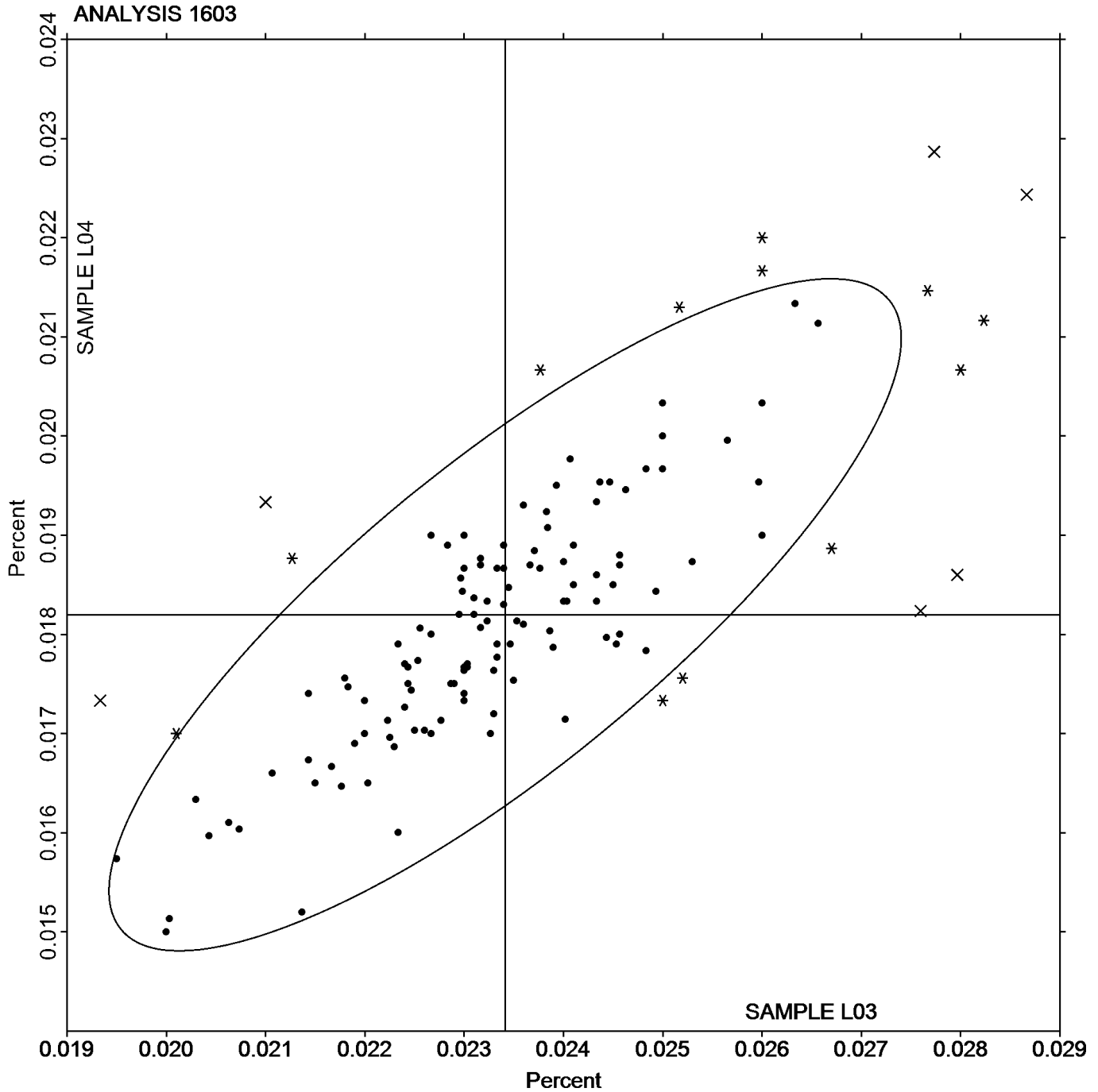


Analysis 1603

Carbon & Low Alloy Steel, SULFUR (S)
SULFUR (S)

SAMPLE L03
0.0234 Percent

SAMPLE L04
0.0182 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1604

Carbon & Low Alloy Steel, SILICON (Si)
SILICON (Si)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B	X	0.2273	0.0158	3.18	0.3117	0.0286	5.03	OE
27NVPV		0.2071	-0.0045	-0.91	0.2748	-0.0083	-1.45	OE
2CQ6U3		0.2107	-0.0009	-0.18	0.2783	-0.0047	-0.83	OE
2G4RQT		0.2115	-0.0001	-0.01	0.2912	0.0082	1.44	OE
2GZC8Z		0.2116	0.0000	0.00	0.2861	0.0031	0.54	IC
2TQ938	*	0.2167	0.0051	1.03	0.2800	-0.0030	-0.53	OE
3AEN74		0.2081	-0.0034	-0.69	0.2791	-0.0039	-0.69	OE
3R2ZYX		0.2103	-0.0012	-0.25	0.2827	-0.0004	-0.06	OE
3VXNBX		0.2177	0.0061	1.24	0.2864	0.0034	0.60	OE
4BQNVB		0.2127	0.0011	0.22	0.2840	0.0010	0.17	OE
4L6Ytz		0.2110	-0.0006	-0.12	0.2907	0.0076	1.34	GD
4Q36X7		0.2103	-0.0012	-0.25	0.2847	0.0016	0.29	OE
4T7A4Y		0.2096	-0.0020	-0.41	0.2800	-0.0030	-0.53	OE
66X9E3	*	0.1987	-0.0129	-2.61	0.2670	-0.0160	-2.82	XX
683U9U		0.2167	0.0051	1.03	0.2900	0.0070	1.22	GD
6GNZ2R		0.2187	0.0071	1.43	0.2887	0.0056	0.99	OE
6L3FU6		0.2055	-0.0061	-1.23	0.2766	-0.0065	-1.14	OE
6V9DJT		0.2077	-0.0039	-0.79	0.2780	-0.0050	-0.89	IC
74H4KB		0.2136	0.0020	0.41	0.2865	0.0035	0.62	OE
7J97YT		0.2097	-0.0019	-0.38	0.2790	-0.0040	-0.71	OE
7MRBMQ	*	0.1983	-0.0132	-2.67	0.2817	-0.0014	-0.24	GD
7RL6MD		0.2103	-0.0013	-0.26	0.2807	-0.0023	-0.41	OE
7T3AAH		0.2133	0.0018	0.36	0.2823	-0.0007	-0.12	OE
82CYMG		0.2090	-0.0026	-0.52	0.2809	-0.0021	-0.38	OE
837PTV		0.2177	0.0061	1.23	0.2920	0.0090	1.58	XX
8FAATY		0.2117	0.0001	0.02	0.2870	0.0040	0.70	WD
8THTTF	*	0.2183	0.0067	1.35	0.2770	-0.0061	-1.07	OE
9AJZJ2		0.2113	-0.0002	-0.05	0.2893	0.0063	1.11	GD
9CL8BR		0.2123	0.0007	0.14	0.2833	0.0002	0.04	WD
9VGQD7		0.2150	0.0034	0.69	0.2857	0.0026	0.46	OE
9Y2F2P		0.2183	0.0067	1.36	0.2865	0.0035	0.61	OE
A4DN3U		0.2130	0.0014	0.29	0.2833	0.0003	0.05	OE
AB6AJT		0.2066	-0.0049	-1.00	0.2797	-0.0033	-0.58	OE
AKXE2U		0.2077	-0.0039	-0.79	0.2777	-0.0054	-0.94	OE
ALPCAZ		0.2051	-0.0064	-1.30	0.2755	-0.0075	-1.32	OE
ARCCDU		0.2174	0.0058	1.18	0.2887	0.0057	1.00	OE
B4JtQ3		0.2144	0.0028	0.56	0.2826	-0.0004	-0.07	OE
B9G7ER		0.2126	0.0011	0.21	0.2856	0.0025	0.44	OE
BH3DBW	*	0.2200	0.0084	1.70	0.2800	-0.0030	-0.53	OE
BJXVCX		0.2140	0.0024	0.49	0.2867	0.0036	0.64	OE
BMJFH2		0.2173	0.0058	1.16	0.2903	0.0073	1.28	OE
BP3NCU		0.2002	-0.0114	-2.30	0.2703	-0.0127	-2.24	OE
BQBx6R		0.2060	-0.0055	-1.12	0.2753	-0.0077	-1.36	OE
BWPKAH		0.2130	0.0014	0.29	0.2817	-0.0014	-0.24	IC
CA48UZ		0.2037	-0.0079	-1.60	0.2773	-0.0057	-1.00	GD
CBMUQW		0.2070	-0.0046	-0.92	0.2797	-0.0034	-0.59	OE
CQ9QHq		0.2118	0.0003	0.05	0.2794	-0.0036	-0.63	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1604

Carbon & Low Alloy Steel, SILICON (Si)
SILICON (Si)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
D3468E		0.2104	-0.0012	-0.24	0.2828	-0.0003	-0.05	XX
DAJZXG		0.2197	0.0081	1.64	0.2917	0.0086	1.52	OE
DCNER2	*	0.2117	0.0001	0.02	0.2907	0.0076	1.34	AE
DF94FL		0.2140	0.0024	0.49	0.2840	0.0010	0.17	OE
DFMXRE		0.2150	0.0034	0.69	0.2830	0.0000	-0.01	IC
DGYHBP		0.2100	-0.0016	-0.32	0.2800	-0.0030	-0.53	IC
DLFYTU		0.2117	0.0001	0.02	0.2847	0.0016	0.29	OE
DMREMU		0.2097	-0.0019	-0.38	0.2823	-0.0007	-0.12	OE
DTCGMK		0.2077	-0.0039	-0.79	0.2787	-0.0044	-0.77	IC
DTYZFX	*	0.2100	-0.0016	-0.32	0.2933	0.0103	1.81	OE
DUVD3Q		0.2084	-0.0032	-0.65	0.2847	0.0017	0.30	OE
DV6MT3		0.2180	0.0064	1.30	0.2913	0.0083	1.46	OE
DYFRCP	X	0.2113	-0.0002	-0.05	0.2610	-0.0220	-3.87	OE
E3G4WW		0.2213	0.0098	1.97	0.2857	0.0026	0.46	IC
E7XD2M		0.2160	0.0044	0.89	0.2867	0.0036	0.64	OE
E9MKM6		0.2037	-0.0079	-1.60	0.2757	-0.0074	-1.30	XX
EDHBUG	*	0.1987	-0.0129	-2.61	0.2783	-0.0047	-0.83	IC
EG2GFJ		0.2080	-0.0036	-0.72	0.2830	0.0000	-0.01	XX
EHTBF9		0.2170	0.0054	1.10	0.2900	0.0070	1.22	OE
ETWPYL		0.2057	-0.0059	-1.19	0.2753	-0.0077	-1.35	OE
FB67PR		0.2117	0.0001	0.02	0.2860	0.0030	0.52	OE
FDQ6ML		0.2164	0.0048	0.98	0.2854	0.0024	0.42	GD
FZA2PR		0.2203	0.0088	1.77	0.2900	0.0070	1.22	XX
G44GFQ		0.2127	0.0011	0.22	0.2877	0.0046	0.81	OE
GCGDFQ		0.2170	0.0054	1.10	0.2920	0.0090	1.58	OE
GPLCKQ		0.2060	-0.0056	-1.13	0.2820	-0.0010	-0.18	OE
HD74WP		0.2129	0.0013	0.27	0.2858	0.0028	0.49	OE
HT2LRF		0.2087	-0.0029	-0.59	0.2840	0.0010	0.17	OE
HUUADV		0.2099	-0.0017	-0.34	0.2788	-0.0042	-0.74	OE
J4D44H		0.2003	-0.0112	-2.27	0.2730	-0.0100	-1.76	OE
J4V2BN		0.2102	-0.0013	-0.27	0.2786	-0.0045	-0.79	GR
JCTKXD		0.2110	-0.0006	-0.12	0.2810	-0.0020	-0.36	OE
JHXQAA		0.2000	-0.0116	-2.34	0.2713	-0.0117	-2.06	OE
JZZ6RP	*	0.2077	-0.0039	-0.79	0.2927	0.0096	1.69	XX
K276A2		0.2152	0.0036	0.73	0.2938	0.0107	1.89	OE
KKHRWA		0.2141	0.0025	0.50	0.2831	0.0000	0.01	OE
KKUN8F		0.2213	0.0098	1.97	0.2941	0.0111	1.95	OE
KVZGNM		0.2114	-0.0001	-0.03	0.2838	0.0008	0.13	WD
KWPRFF		0.2023	-0.0092	-1.87	0.2783	-0.0047	-0.83	OE
LAD2RD		0.2059	-0.0057	-1.15	0.2796	-0.0035	-0.61	OE
LCKNYQ		0.2085	-0.0031	-0.62	0.2785	-0.0045	-0.79	XX
LKVNYT		0.2053	-0.0062	-1.26	0.2737	-0.0094	-1.65	OE
M6F6D7		0.2070	-0.0046	-0.92	0.2787	-0.0044	-0.77	XX
M86EPT		0.2247	0.0131	2.64	0.2987	0.0156	2.75	OE
M9YXVZ		0.2120	0.0004	0.09	0.2833	0.0003	0.05	XX
MP3LXY	X	0.1720	-0.0396	-7.99	0.2327	-0.0504	-8.85	IC
MT863M		0.2026	-0.0090	-1.81	0.2767	-0.0063	-1.11	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1604

Carbon & Low Alloy Steel, SILICON (Si)
SILICON (Si)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
MVQEVK	X	0.4180	0.2064	41.70	0.4567	0.1736	30.52	GD
MZ9G3Q		0.2174	0.0059	1.19	0.2891	0.0061	1.07	OE
NPGF27		0.2083	-0.0032	-0.65	0.2800	-0.0030	-0.53	OE
NV7XFH		0.2099	-0.0017	-0.35	0.2821	-0.0009	-0.16	XX
P32DBF		0.2120	0.0004	0.09	0.2793	-0.0037	-0.65	OE
PM9MKD		0.2121	0.0005	0.10	0.2844	0.0014	0.24	OE
PVLMUU		0.2173	0.0058	1.16	0.2850	0.0020	0.35	IC
Q4BPXB		0.2067	-0.0049	-0.99	0.2740	-0.0090	-1.59	GD
QGYQDH		0.2153	0.0038	0.76	0.2890	0.0060	1.05	XX
QNEKZE		0.2143	0.0028	0.56	0.2837	0.0006	0.11	IC
QNFHBA		0.2125	0.0009	0.19	0.2865	0.0034	0.60	IC
QNUZCU		0.2102	-0.0014	-0.28	0.2799	-0.0031	-0.55	OE
QNY2FG		0.2118	0.0002	0.04	0.2846	0.0016	0.28	OE
QVXMN4		0.2050	-0.0066	-1.33	0.2710	-0.0120	-2.12	WD
QWBA7H		0.2086	-0.0030	-0.60	0.2758	-0.0072	-1.27	OE
RPQQ2A		0.2070	-0.0046	-0.92	0.2770	-0.0060	-1.06	OE
RVGZFD		0.2179	0.0063	1.27	0.2893	0.0063	1.10	OE
T3BC6F		0.2110	-0.0006	-0.12	0.2787	-0.0044	-0.77	OE
T9F6HJ		0.2139	0.0024	0.48	0.2803	-0.0028	-0.49	OE
TB273X		0.2113	-0.0002	-0.05	0.2857	0.0026	0.46	OE
TGU6GT		0.2167	0.0051	1.03	0.2942	0.0112	1.97	OE
TJGPLW		0.2177	0.0061	1.23	0.2873	0.0043	0.76	AE
TX28DF		0.2100	-0.0016	-0.32	0.2800	-0.0030	-0.53	OE
U4KUMB		0.2063	-0.0052	-1.06	0.2813	-0.0017	-0.30	OE
U8YJX8		0.2107	-0.0009	-0.18	0.2790	-0.0040	-0.71	IC
UBV8B9		0.2123	0.0008	0.15	0.2860	0.0030	0.52	OE
UD8V2Z		0.2087	-0.0029	-0.59	0.2810	-0.0020	-0.36	OE
URLAQC		0.2143	0.0028	0.56	0.2893	0.0063	1.11	GD
UURJBV	X	0.2305	0.0189	3.82	0.2968	0.0138	2.43	OE
UYRTJC		0.2130	0.0014	0.29	0.2853	0.0023	0.40	OE
V4D8J3		0.2221	0.0106	2.13	0.2944	0.0114	2.00	OE
VAM7CG		0.2063	-0.0052	-1.06	0.2770	-0.0060	-1.06	OE
VKJAJV		0.2087	-0.0029	-0.59	0.2760	-0.0070	-1.24	OE
VZC4QF		0.2070	-0.0046	-0.92	0.2747	-0.0084	-1.47	OE
W6LN8Z	X	0.2057	-0.0059	-1.19	0.2627	-0.0204	-3.58	OE
WZTNT6		0.2137	0.0021	0.42	0.2850	0.0020	0.35	IC
X4QFN9	X	0.2008	-0.0108	-2.18	0.0150	-0.2680	-47.12	GD
XL9EU7		0.2183	0.0068	1.37	0.2913	0.0083	1.46	OE
XQHM84		0.2203	0.0088	1.77	0.2887	0.0056	0.99	OE
XXP26T		0.2071	-0.0044	-0.90	0.2841	0.0011	0.19	OE
XYWJ23		0.2127	0.0011	0.22	0.2820	-0.0010	-0.18	OE
Y3CDB9		0.2160	0.0044	0.89	0.2870	0.0040	0.70	OE
Y83NMR		0.2217	0.0101	2.04	0.2890	0.0060	1.05	OE
YCYAEV		0.2113	-0.0002	-0.05	0.2830	0.0000	-0.01	XX
YE6NV9	X	0.2460	0.0344	6.95	0.2560	-0.0270	-4.75	OE
YELZFY		0.2133	0.0018	0.36	0.2863	0.0033	0.58	OE
YH7XUH		0.2103	-0.0012	-0.25	0.2837	0.0006	0.11	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1604

Carbon & Low Alloy Steel, SILICON (Si)
SILICON (Si)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
YMCKF7		0.2129	0.0013	0.27	0.2845	0.0015	0.26	XX
YUH7T3		0.2150	0.0034	0.69	0.2847	0.0016	0.29	XX
YYRL4C		0.2100	-0.0016	-0.32	0.2800	-0.0030	-0.53	OE
ZFDAA2		0.2053	-0.0062	-1.26	0.2740	-0.0090	-1.59	OE
ZN96DQ	*	0.2166	0.0050	1.02	0.2768	-0.0062	-1.09	IC

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.2116	Percent	0.2830	Percent
Std Dev Btw Labs	0.0050	Percent	0.0057	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 131 of 146 reporting participants

Key to Method Codes Reported by Participants

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

Comments on Assigned Data Flags for Test #1604

- 23MW9B (X) - Data for both samples are high. Possible Systematic Error. Inconsistent within the determinations of sample L03.
- DYFRCP (X) - Data for sample L04 are low. Inconsistent within the determinations of sample L03.
- MP3LXY (X) - Data for both samples are low. Possible Systematic Error.
- MVQEVK (X) - Extreme data.
- UURJBV (X) - Data for sample L03 are high.
- W6LN8Z (X) - Data for sample L04 are low.
- X4QFN9 (X) - Data for sample L04 are extreme.
- YE6NV9 (X) - Data for sample L03 are high and data for sample L04 are low. Inconsistent in testing between samples. Inconsistent within the determinations of sample L03.

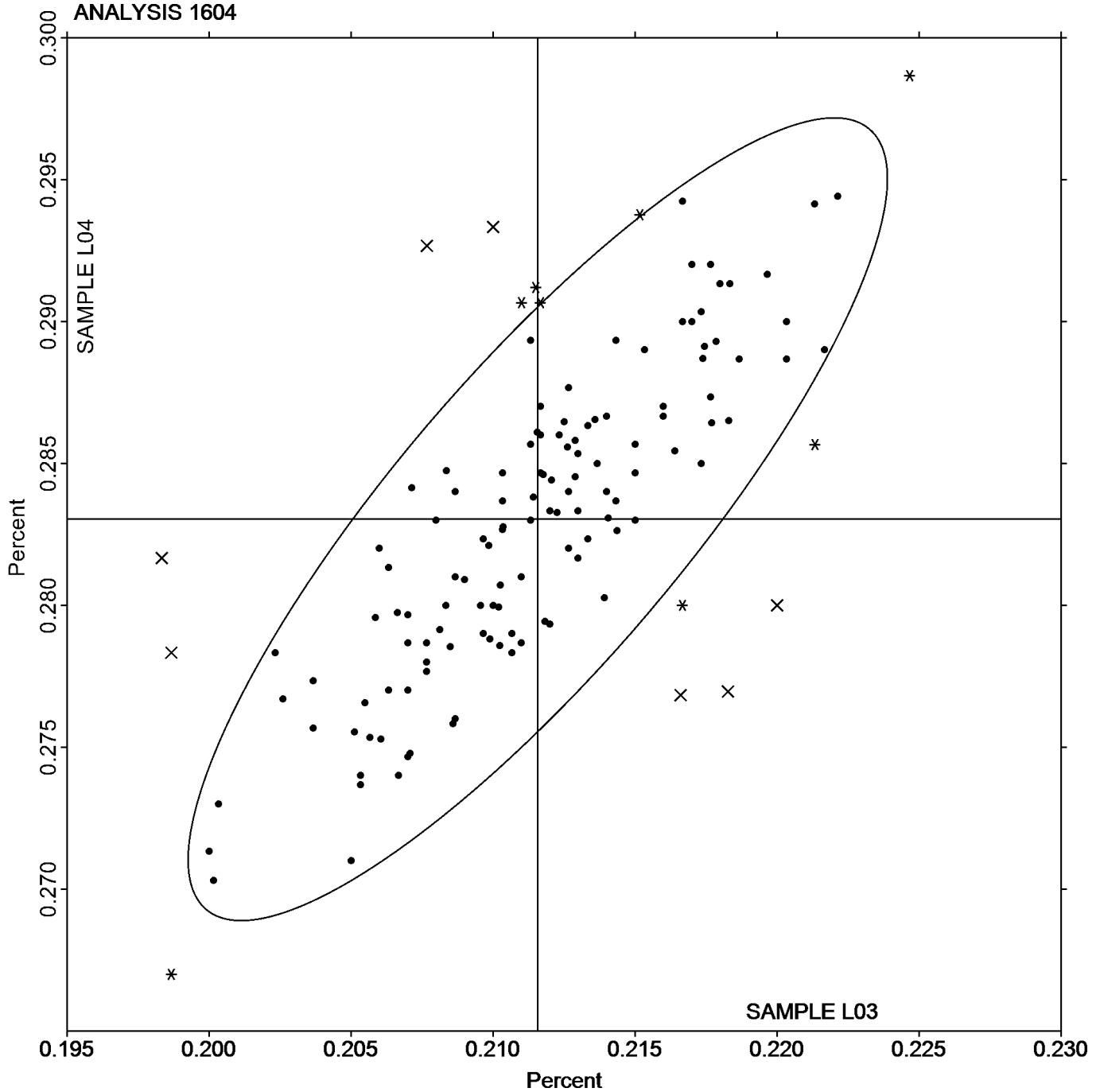


Analysis 1604

Carbon & Low Alloy Steel, SILICON (Si)
SILICON (Si)

SAMPLE L03
0.2116 Percent

SAMPLE L04
0.2830 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1605

Carbon & Low Alloy Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B	*	0.1523	-0.0029	-0.96	0.1713	0.0052	1.68	OE
27NVPV		0.1515	-0.0037	-1.26	0.1616	-0.0046	-1.48	OE
2CQ6U3	*	0.1613	0.0061	2.05	0.1620	-0.0042	-1.35	OE
2G4RQT		0.1511	-0.0041	-1.39	0.1638	-0.0023	-0.76	OE
2GZC8Z		0.1566	0.0014	0.46	0.1675	0.0013	0.43	IC
2TQ938		0.1567	0.0015	0.49	0.1667	0.0005	0.16	OE
3AEN74		0.1505	-0.0047	-1.59	0.1643	-0.0019	-0.62	OE
3R2ZYX		0.1600	0.0048	1.60	0.1700	0.0038	1.24	OE
3VXNBX		0.1583	0.0031	1.05	0.1702	0.0040	1.30	OE
4BQNVB		0.1583	0.0031	1.05	0.1677	0.0015	0.49	OE
4Q36X7		0.1585	0.0033	1.09	0.1709	0.0047	1.54	OE
4T7A4Y		0.1544	-0.0008	-0.26	0.1653	-0.0008	-0.27	OE
66X9E3	X	0.1887	0.0335	11.21	0.2107	0.0445	14.46	OE
683U9U		0.1500	-0.0052	-1.75	0.1600	-0.0062	-2.00	GD
6GNZ2R		0.1537	-0.0015	-0.52	0.1627	-0.0035	-1.14	OE
6L3FU6		0.1567	0.0015	0.49	0.1685	0.0024	0.77	OE
6V9DJT		0.1569	0.0017	0.57	0.1678	0.0017	0.54	IC
6W6Q8L		0.1600	0.0048	1.60	0.1717	0.0055	1.79	OE
74H4KB		0.1600	0.0048	1.59	0.1702	0.0040	1.30	OE
7J97YT		0.1616	0.0064	2.13	0.1711	0.0049	1.60	OE
7MRBMQ		0.1567	0.0015	0.49	0.1677	0.0015	0.49	GD
7RL6MD		0.1564	0.0012	0.41	0.1659	-0.0002	-0.08	OE
7T3AAH		0.1557	0.0005	0.15	0.1653	-0.0008	-0.27	OE
82CYMG		0.1548	-0.0004	-0.13	0.1650	-0.0012	-0.38	IC
837PTV		0.1563	0.0011	0.38	0.1637	-0.0025	-0.81	XX
8FAATY		0.1567	0.0015	0.49	0.1667	0.0005	0.16	WD
8THTTF		0.1554	0.0002	0.06	0.1673	0.0012	0.38	OE
9AJZJ2		0.1570	0.0018	0.60	0.1663	0.0002	0.05	GD
9CL8BR		0.1551	-0.0001	-0.03	0.1655	-0.0006	-0.21	WD
9VGQD7		0.1553	0.0001	0.04	0.1660	-0.0002	-0.05	OE
9Y2F2P		0.1553	0.0001	0.03	0.1658	-0.0004	-0.12	OE
A4DN3U		0.1573	0.0021	0.71	0.1660	-0.0002	-0.05	OE
AB6AJT		0.1539	-0.0013	-0.45	0.1630	-0.0032	-1.03	OE
AKXE2U		0.1558	0.0006	0.20	0.1667	0.0005	0.16	OE
ALPCAZ	X	0.1632	0.0080	2.69	0.1766	0.0104	3.38	OE
ARCCDU		0.1524	-0.0028	-0.93	0.1650	-0.0012	-0.39	OE
B4JQT3		0.1555	0.0003	0.11	0.1640	-0.0022	-0.72	OE
B9G7ER		0.1576	0.0024	0.81	0.1673	0.0012	0.38	OE
BH3DBW	*	0.1500	-0.0052	-1.75	0.1700	0.0038	1.24	OE
BJXVCX		0.1560	0.0008	0.26	0.1677	0.0015	0.49	OE
BMJFH2		0.1533	-0.0019	-0.63	0.1637	-0.0025	-0.81	OE
BP3NCU		0.1581	0.0029	0.97	0.1704	0.0043	1.39	OE
BQBX6R		0.1502	-0.0050	-1.67	0.1605	-0.0057	-1.85	OE
BWPKAH		0.1540	-0.0012	-0.41	0.1647	-0.0015	-0.49	IC
CA48UZ		0.1557	0.0005	0.15	0.1677	0.0015	0.49	GD
CBMUQW		0.1533	-0.0019	-0.63	0.1670	0.0008	0.27	OE
CQ9QHQ		0.1584	0.0032	1.07	0.1677	0.0015	0.49	OE



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1605

Carbon & Low Alloy Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
D3468E		0.1569	0.0017	0.55	0.1678	0.0016	0.53	XX
DAJZXG		0.1560	0.0008	0.26	0.1653	-0.0008	-0.27	OE
DCNER2		0.1600	0.0048	1.60	0.1690	0.0028	0.92	AE
DF94FL		0.1550	-0.0002	-0.07	0.1650	-0.0012	-0.38	OE
DFMXRE		0.1547	-0.0005	-0.18	0.1650	-0.0012	-0.38	IC
DGYHBP	*	0.1500	-0.0052	-1.75	0.1700	0.0038	1.24	IC
DLFYTU		0.1577	0.0025	0.82	0.1680	0.0018	0.60	OE
DMREMU		0.1567	0.0015	0.49	0.1670	0.0008	0.27	OE
DTCGMK		0.1553	0.0001	0.04	0.1663	0.0002	0.05	IC
DTYZFX		0.1600	0.0048	1.60	0.1700	0.0038	1.24	OE
DUVD3Q		0.1519	-0.0033	-1.12	0.1662	0.0000	0.00	OE
DV6MT3		0.1577	0.0025	0.82	0.1673	0.0012	0.38	OE
DYFRCP		0.1527	-0.0025	-0.85	0.1627	-0.0035	-1.14	OE
E3G4WW		0.1537	-0.0015	-0.52	0.1617	-0.0045	-1.46	IC
E7XD2M		0.1503	-0.0049	-1.63	0.1597	-0.0065	-2.11	OE
E9MKM6		0.1587	0.0035	1.16	0.1717	0.0055	1.79	XX
EDHBUG	X	0.1273	-0.0279	-9.34	0.2237	0.0575	18.68	IC
EG2GFJ		0.1530	-0.0022	-0.74	0.1620	-0.0042	-1.35	XX
EHTBF9		0.1540	-0.0012	-0.41	0.1640	-0.0022	-0.70	OE
ETWPYL		0.1600	0.0048	1.60	0.1723	0.0062	2.00	OE
FB67PR		0.1610	0.0058	1.94	0.1733	0.0072	2.33	OE
FDQ6ML		0.1486	-0.0066	-2.20	0.1615	-0.0047	-1.53	GD
FZA2PR		0.1560	0.0008	0.26	0.1660	-0.0002	-0.05	IC
G44GFQ		0.1553	0.0001	0.04	0.1680	0.0018	0.60	OE
GCGDFQ		0.1590	0.0038	1.27	0.1710	0.0048	1.57	OE
GPLCKQ	X	0.1430	-0.0122	-4.09	0.1557	-0.0105	-3.41	OE
HD74WP		0.1562	0.0010	0.33	0.1672	0.0010	0.32	OE
HT2LRF		0.1507	-0.0045	-1.52	0.1643	-0.0018	-0.60	OE
HUUADV		0.1542	-0.0010	-0.33	0.1651	-0.0011	-0.36	OE
J4D44H		0.1543	-0.0009	-0.29	0.1673	0.0012	0.38	OE
J4V2BN		0.1543	-0.0009	-0.31	0.1671	0.0009	0.30	IC
JCTKXD		0.1533	-0.0019	-0.63	0.1640	-0.0022	-0.70	OE
JHXQAA	X	0.1490	-0.0062	-2.08	0.1560	-0.0102	-3.30	OE
JZZ6RP		0.1543	-0.0009	-0.29	0.1643	-0.0018	-0.60	XX
K276A2	*	0.1622	0.0070	2.33	0.1667	0.0006	0.18	OE
KKHRWA		0.1574	0.0022	0.73	0.1688	0.0027	0.87	OE
KKUN8F		0.1531	-0.0021	-0.71	0.1672	0.0010	0.34	OE
KVZGNM		0.1585	0.0033	1.11	0.1697	0.0036	1.16	WD
KWPRFF	*	0.1463	-0.0089	-2.98	0.1590	-0.0072	-2.33	OE
LAD2RD		0.1522	-0.0030	-1.02	0.1634	-0.0027	-0.89	OE
LCKNYQ		0.1562	0.0010	0.33	0.1666	0.0004	0.13	XX
LKVNYT	X	0.1451	-0.0101	-3.38	0.1543	-0.0119	-3.86	OE
M6F6D7	*	0.1533	-0.0019	-0.63	0.1597	-0.0065	-2.11	XX
M86EPT	X	0.1880	0.0328	10.99	0.1987	0.0325	10.56	OE
M9YXVZ	X	0.1477	-0.0075	-2.53	0.1560	-0.0102	-3.30	XX
MP3LXY	X	0.1293	-0.0259	-8.67	0.1417	-0.0245	-7.96	IC
MZ9G3Q		0.1491	-0.0061	-2.03	0.1587	-0.0074	-2.41	OE



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Analysis 1605

Carbon & Low Alloy Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
NPGF27		0.1560	0.0008	0.26	0.1663	0.0002	0.05	OE
NV7XFH		0.1536	-0.0016	-0.52	0.1630	-0.0032	-1.02	XX
P32DBF		0.1533	-0.0019	-0.63	0.1670	0.0008	0.27	OE
PM9MKD		0.1536	-0.0016	-0.54	0.1649	-0.0012	-0.40	OE
PVLMUU		0.1510	-0.0042	-1.41	0.1620	-0.0042	-1.35	IC
Q4BPXB		0.1557	0.0005	0.15	0.1680	0.0018	0.60	GD
QGYQDH		0.1533	-0.0019	-0.63	0.1677	0.0015	0.49	OE
QNEKZE		0.1537	-0.0015	-0.52	0.1657	-0.0005	-0.16	IC
QNFHBA		0.1545	-0.0007	-0.24	0.1681	0.0019	0.62	IC
QNUZCU		0.1508	-0.0044	-1.47	0.1634	-0.0028	-0.90	OE
QNY2FG		0.1524	-0.0028	-0.95	0.1660	-0.0002	-0.06	OE
QVXMN4		0.1580	0.0028	0.93	0.1690	0.0028	0.92	WD
QWBA7H		0.1572	0.0020	0.67	0.1668	0.0007	0.22	OE
RPQQ2A		0.1525	-0.0027	-0.91	0.1675	0.0013	0.43	OE
RVGZFD		0.1545	-0.0007	-0.25	0.1659	-0.0003	-0.10	OE
T3BC6F		0.1573	0.0021	0.71	0.1700	0.0038	1.24	OE
T9F6HJ		0.1505	-0.0047	-1.59	0.1608	-0.0054	-1.76	OE
TB273X		0.1560	0.0008	0.26	0.1667	0.0005	0.16	OE
TGU6GT		0.1490	-0.0062	-2.08	0.1606	-0.0055	-1.80	OE
TJGPLW		0.1557	0.0005	0.15	0.1683	0.0022	0.70	AE
TX28DF		0.1540	-0.0012	-0.41	0.1660	-0.0002	-0.05	OE
U4KUMB		0.1567	0.0015	0.49	0.1680	0.0018	0.60	OE
U8YJX8		0.1567	0.0015	0.49	0.1670	0.0008	0.27	IC
UBV8B9		0.1567	0.0015	0.49	0.1683	0.0022	0.70	OE
UD8V2Z		0.1523	-0.0029	-0.96	0.1633	-0.0028	-0.92	OE
URLAQC		0.1580	0.0028	0.93	0.1703	0.0042	1.35	GD
UURJBV		0.1572	0.0020	0.65	0.1672	0.0010	0.34	OE
UYRTJC		0.1520	-0.0032	-1.08	0.1593	-0.0068	-2.22	OE
VAM7CG		0.1550	-0.0002	-0.07	0.1650	-0.0012	-0.38	OE
VKJAJV	*	0.1480	-0.0072	-2.42	0.1573	-0.0088	-2.87	OE
VZC4QF		0.1547	-0.0005	-0.18	0.1640	-0.0022	-0.70	OE
W6LN8Z		0.1550	-0.0002	-0.07	0.1657	-0.0005	-0.16	OE
WZTNT6		0.1557	0.0005	0.15	0.1660	-0.0002	-0.05	IC
X4QFN9		0.1532	-0.0020	-0.67	0.1675	0.0013	0.43	GD
XL9EU7		0.1597	0.0045	1.49	0.1703	0.0042	1.35	OE
XXP26T		0.1562	0.0010	0.32	0.1665	0.0003	0.10	OE
XYWJ23		0.1570	0.0018	0.60	0.1673	0.0012	0.38	OE
Y3CDB9	X	0.1350	-0.0202	-6.77	0.1430	-0.0232	-7.53	OE
Y83NMR		0.1573	0.0021	0.71	0.1683	0.0022	0.70	OE
YCYAEV	X	0.1263	-0.0289	-9.68	0.1353	-0.0308	-10.02	XX
YE6NV9	X	0.1667	0.0115	3.84	0.1787	0.0125	4.06	OE
YELZFY		0.1523	-0.0029	-0.96	0.1627	-0.0035	-1.14	OE
YH7XUH		0.1577	0.0025	0.82	0.1683	0.0022	0.70	OE
YMCKF7		0.1544	-0.0008	-0.27	0.1649	-0.0012	-0.40	XX
YUH7T3		0.1617	0.0065	2.16	0.1703	0.0042	1.35	XX
YYRL4C		0.1567	0.0015	0.49	0.1700	0.0038	1.24	OE
ZFDAA2		0.1610	0.0058	1.94	0.1700	0.0038	1.24	OE



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1605

Carbon & Low Alloy Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
ZN96DQ		0.1536	-0.0016	-0.55	0.1635	-0.0026	-0.86	IC

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.1552	Percent	0.1662	Percent
Std Dev Btrwn Labs	0.0030	Percent	0.0031	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 124 of 142 reporting participants

Key to Method Codes Reported by Participants

- AE Spectrometry - Atomic Emission (AES)
- 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 #1605

- 66X9E3 (X) - Data for both samples are high. Possible Systematic Error.
- ALPCAZ (X) - Data for sample L04 are high.
- EDHBUG (X) - Data for sample L03 are low and data for sample L04 are high. Inconsistent in testing between samples. Inconsistent within the determinations of both samples.
- GPLCKQ (X) - Data for both samples are low. Possible Systematic Error.
- JHXQAA (X) - Data for sample L04 are low. Inconsistent within the determinations of sample L04.
- LKVNYT (X) - Data for both samples are low. Possible Systematic Error.
- M86EPT (X) - Data for both samples are high. Possible Systematic Error.
- M9YXVZ (X) - Data for sample L04 are low.
- MP3LXY (X) - Data for both samples are low. Possible Systematic Error.
- Y3CDB9 (X) - Data for both samples are low. Possible Systematic Error.
- YCYAEV (X) - Data for both samples are low. Possible Systematic Error.
- YE6NV9 (X) - Data for both samples are high. Possible Systematic Error.

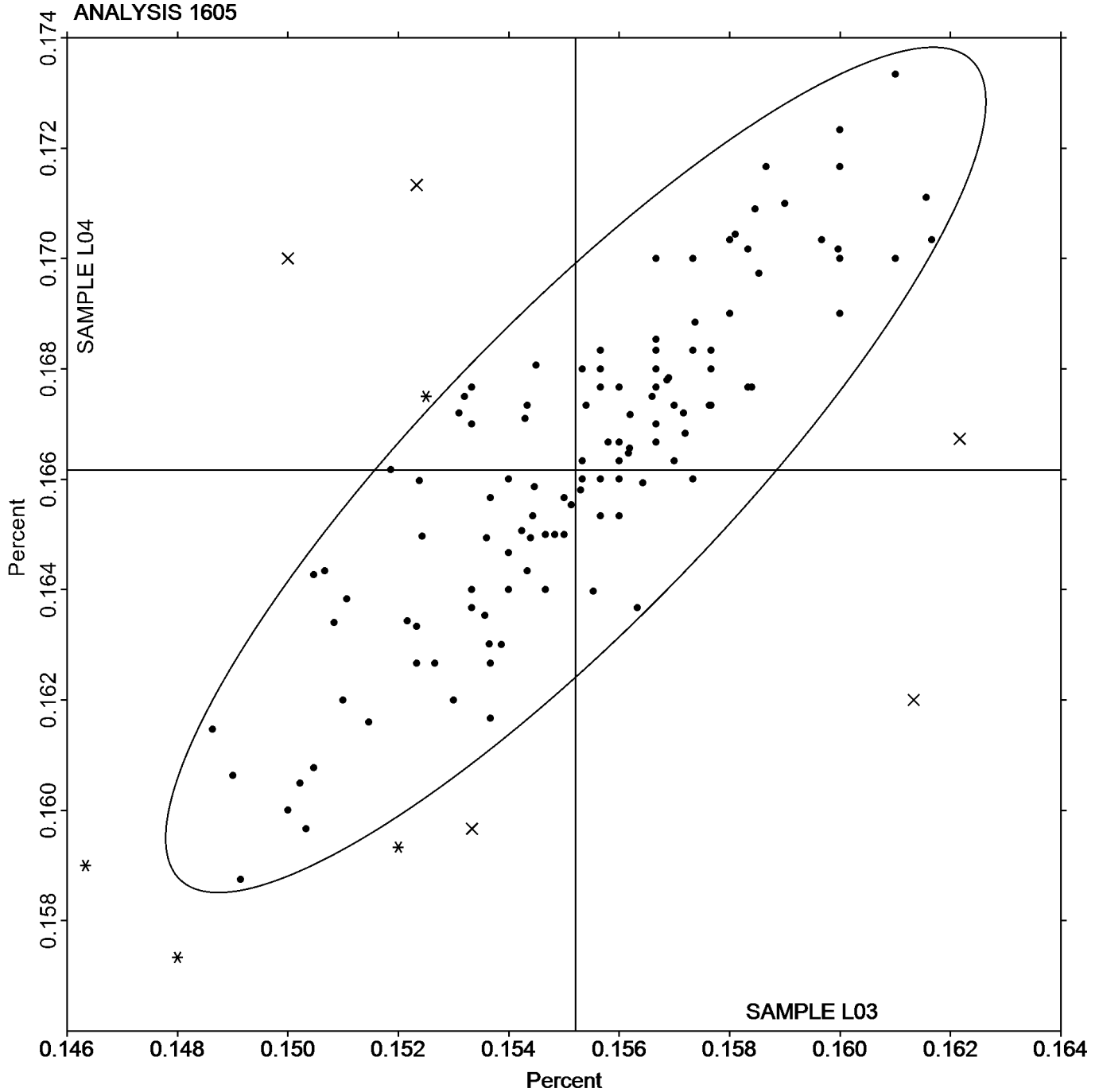


Analysis 1605

Carbon & Low Alloy Steel, MOLYBDENUM (Mo)
MOLYBDENUM (Mo)

SAMPLE L03
0.1552 Percent

SAMPLE L04
0.1662 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1606

Carbon & Low Alloy Steel, NICKEL (Ni)
NICKEL (Ni)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B	X	0.4270	-0.0055	-0.94	0.4820	0.0108	1.43	OE
27NVPV		0.4206	-0.0120	-2.03	0.4622	-0.0090	-1.20	OE
2CQ6U3		0.4280	-0.0045	-0.77	0.4580	-0.0132	-1.75	OE
2G4RQT		0.4384	0.0059	0.99	0.4836	0.0124	1.64	OE
2GZC8Z		0.4258	-0.0067	-1.14	0.4629	-0.0084	-1.11	IC
2TQ938		0.4433	0.0108	1.83	0.4833	0.0121	1.60	OE
3AEN74		0.4296	-0.0030	-0.50	0.4741	0.0029	0.38	OE
3R2ZYX		0.4333	0.0008	0.13	0.4767	0.0054	0.72	OE
3VXNBX		0.4307	-0.0018	-0.31	0.4733	0.0021	0.27	OE
4BQNVB		0.4343	0.0018	0.30	0.4737	0.0024	0.32	OE
4T7A4Y		0.4204	-0.0121	-2.05	0.4553	-0.0159	-2.10	OE
66X9E3	X	0.4073	-0.0252	-4.27	0.4570	-0.0142	-1.88	OE
683U9U		0.4433	0.0108	1.83	0.4833	0.0121	1.60	GD
6GNZ2R		0.4380	0.0055	0.93	0.4700	-0.0012	-0.16	OE
6L3FU6		0.4236	-0.0089	-1.52	0.4583	-0.0130	-1.72	OE
6V9DJT		0.4343	0.0018	0.30	0.4713	0.0001	0.01	IC
6W6Q8L		0.4241	-0.0085	-1.44	0.4580	-0.0132	-1.75	OE
74H4KB		0.4250	-0.0075	-1.27	0.4573	-0.0139	-1.84	OE
7J97YT		0.4404	0.0078	1.33	0.4755	0.0043	0.57	OE
7MRBMQ		0.4343	0.0018	0.30	0.4763	0.0051	0.68	GD
7RL6MD		0.4422	0.0097	1.64	0.4810	0.0098	1.30	OE
7T3AAH		0.4323	-0.0002	-0.04	0.4597	-0.0116	-1.53	OE
82CYMG		0.4363	0.0038	0.64	0.4748	0.0036	0.48	IC
837PTV		0.4380	0.0055	0.93	0.4770	0.0058	0.76	XX
8FAATY		0.4277	-0.0049	-0.83	0.4660	-0.0052	-0.69	WD
8THTTF		0.4403	0.0078	1.32	0.4791	0.0078	1.04	OE
9AJZJ2		0.4420	0.0095	1.60	0.4800	0.0088	1.16	GD
9CL8BR		0.4312	-0.0014	-0.23	0.4677	-0.0036	-0.47	OE
9VGQD7		0.4173	-0.0152	-2.58	0.4507	-0.0206	-2.72	OE
9Y2F2P		0.4321	-0.0004	-0.07	0.4684	-0.0028	-0.37	OE
A4DN3U		0.4283	-0.0042	-0.71	0.4617	-0.0096	-1.27	OE
AB6AJT		0.4326	0.0000	0.00	0.4707	-0.0006	-0.07	OE
AKXE2U		0.4353	0.0028	0.47	0.4710	-0.0002	-0.03	OE
ARCCDU		0.4415	0.0089	1.51	0.4844	0.0132	1.74	OE
B4JTB3		0.4285	-0.0040	-0.68	0.4671	-0.0041	-0.54	OE
B9G7ER		0.4275	-0.0050	-0.85	0.4649	-0.0064	-0.84	OE
BH3DBW		0.4300	-0.0025	-0.43	0.4700	-0.0012	-0.16	OE
BJXVCX		0.4370	0.0045	0.76	0.4813	0.0101	1.34	OE
BMJFH2		0.4363	0.0038	0.64	0.4770	0.0058	0.76	XX
BP3NCU		0.4218	-0.0107	-1.82	0.4654	-0.0059	-0.78	OE
BQBX6R		0.4385	0.0059	1.00	0.4819	0.0107	1.42	OE
BWPKAH		0.4220	-0.0105	-1.79	0.4567	-0.0146	-1.93	IC
CA48UZ		0.4323	-0.0002	-0.04	0.4730	0.0018	0.23	GD
CBMUQW		0.4247	-0.0079	-1.33	0.4653	-0.0059	-0.78	OE
CQ9QHQ	X	0.4097	-0.0229	-3.88	0.4433	-0.0279	-3.69	OE
D3468E		0.4343	0.0017	0.29	0.4726	0.0014	0.19	XX
DAJZXG		0.4395	0.0070	1.19	0.4853	0.0140	1.86	OE



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1606

Carbon & Low Alloy Steel, NICKEL (Ni)
NICKEL (Ni)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DCNER2		0.4307	-0.0019	-0.32	0.4657	-0.0056	-0.74	AE
DF94FL		0.4390	0.0065	1.09	0.4730	0.0018	0.23	OE
DFMXRE		0.4353	0.0028	0.47	0.4743	0.0031	0.41	IC
DGYHBP		0.4300	-0.0025	-0.43	0.4700	-0.0012	-0.16	IC
DLFYTU		0.4350	0.0025	0.42	0.4697	-0.0016	-0.21	OE
DMREMU		0.4370	0.0045	0.76	0.4730	0.0018	0.23	OE
DTCGMK		0.4333	0.0008	0.13	0.4727	0.0014	0.19	IC
DTYZFX	X	0.4533	0.0208	3.52	0.4900	0.0188	2.49	OE
DUVD3Q	X	0.4122	-0.0203	-3.44	0.4521	-0.0191	-2.53	OE
DV6MT3		0.4260	-0.0065	-1.11	0.4650	-0.0062	-0.82	OE
DYFRCP		0.4330	0.0005	0.08	0.4723	0.0011	0.15	OE
E3G4WW		0.4317	-0.0009	-0.15	0.4700	-0.0012	-0.16	IC
E7XD2M		0.4347	0.0021	0.36	0.4740	0.0028	0.37	OE
E9MKM6		0.4363	0.0038	0.64	0.4807	0.0094	1.25	XX
EDHBUG	X	0.4370	0.0045	0.76	0.4917	0.0204	2.71	IC
EG2GFJ		0.4307	-0.0019	-0.32	0.4713	0.0001	0.01	XX
EHTBF9		0.4390	0.0065	1.09	0.4740	0.0028	0.37	OE
ETWPYL		0.4347	0.0021	0.36	0.4670	-0.0042	-0.56	OE
FB67PR	X	0.4667	0.0341	5.78	0.5133	0.0421	5.57	OE
FDQ6ML		0.4254	-0.0071	-1.20	0.4632	-0.0080	-1.06	GD
FZA2PR		0.4297	-0.0029	-0.49	0.4667	-0.0046	-0.60	IC
G44GFQ		0.4383	0.0058	0.98	0.4760	0.0048	0.63	OE
GCGDFQ		0.4220	-0.0105	-1.79	0.4630	-0.0082	-1.09	OE
GPLCKQ		0.4373	0.0048	0.81	0.4770	0.0058	0.76	OE
HD74WP		0.4270	-0.0055	-0.93	0.4693	-0.0020	-0.26	OE
HT2LRF		0.4323	-0.0002	-0.04	0.4723	0.0011	0.15	OE
HUUADV		0.4331	0.0005	0.09	0.4720	0.0007	0.10	OE
J4D44H		0.4310	-0.0015	-0.26	0.4703	-0.0009	-0.12	WD
J4V2BN		0.4288	-0.0038	-0.64	0.4726	0.0013	0.18	IC
JCTKXD		0.4317	-0.0009	-0.15	0.4707	-0.0006	-0.07	OE
JHXQAA		0.4223	-0.0102	-1.73	0.4567	-0.0146	-1.93	OE
JZZ6RP		0.4280	-0.0045	-0.77	0.4737	0.0024	0.32	XX
K276A2	X	0.4501	0.0175	2.97	0.4838	0.0126	1.66	OE
KKHRWA		0.4356	0.0030	0.51	0.4760	0.0048	0.63	OE
KVZGNM		0.4298	-0.0027	-0.46	0.4685	-0.0028	-0.37	WD
KWPRFF		0.4280	-0.0045	-0.77	0.4683	-0.0029	-0.38	OE
LAD2RD		0.4334	0.0009	0.15	0.4709	-0.0003	-0.04	OE
LCKNYQ		0.4297	-0.0028	-0.47	0.4651	-0.0061	-0.81	XX
LKVNYT		0.4327	0.0001	0.02	0.4687	-0.0026	-0.34	OE
M6F6D7		0.4370	0.0045	0.76	0.4743	0.0031	0.41	XX
M86EPT	X	0.4523	0.0198	3.35	0.4863	0.0151	2.00	OE
M9YXVZ		0.4227	-0.0099	-1.67	0.4587	-0.0126	-1.66	XX
MP3LXY	X	0.3680	-0.0645	-10.94	0.4053	-0.0659	-8.72	IC
MVQEVK	X	0.4700	0.0375	6.35	0.5020	0.0308	4.07	GD
MZ9G3Q		0.4305	-0.0020	-0.35	0.4669	-0.0044	-0.58	OE
NPGF27		0.4367	0.0041	0.70	0.4730	0.0018	0.23	OE
NV7XFH		0.4343	0.0017	0.29	0.4687	-0.0025	-0.33	XX



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1606

Carbon & Low Alloy Steel, NICKEL (Ni)
NICKEL (Ni)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
P32DBF		0.4370	0.0045	0.76	0.4797	0.0084	1.12	OE
PM9MKD		0.4328	0.0003	0.04	0.4662	-0.0050	-0.67	OE
PVLMUU		0.4393	0.0068	1.15	0.4767	0.0054	0.72	IC
Q4BPXB		0.4367	0.0041	0.70	0.4830	0.0118	1.56	GD
QGYQDH		0.4323	-0.0002	-0.04	0.4727	0.0014	0.19	OE
QNEKZE		0.4400	0.0075	1.26	0.4810	0.0098	1.29	IC
QNFHBA		0.4354	0.0028	0.48	0.4798	0.0085	1.13	IC
QNUZCU		0.4351	0.0026	0.43	0.4846	0.0134	1.77	OE
QNY2FG		0.4300	-0.0026	-0.43	0.4725	0.0013	0.17	OE
QVXMN4		0.4280	-0.0045	-0.77	0.4663	-0.0049	-0.65	WD
QWBA7H		0.4331	0.0006	0.10	0.4698	-0.0015	-0.19	OE
RPQQ2A		0.4380	0.0055	0.93	0.4783	0.0071	0.94	OE
RVGZFD		0.4254	-0.0071	-1.21	0.4649	-0.0063	-0.84	OE
T3BC6F		0.4393	0.0068	1.15	0.4843	0.0131	1.74	OE
T9F6HJ		0.4369	0.0044	0.74	0.4802	0.0089	1.18	OE
TB273X		0.4260	-0.0065	-1.11	0.4677	-0.0036	-0.47	OE
TGU6GT		0.4310	-0.0015	-0.26	0.4700	-0.0013	-0.17	OE
TJGPLW		0.4407	0.0081	1.38	0.4773	0.0061	0.81	AE
TX28DF		0.4440	0.0115	1.94	0.4870	0.0158	2.09	OE
U4KUMB		0.4373	0.0048	0.81	0.4793	0.0081	1.07	OE
U8YJX8		0.4320	-0.0005	-0.09	0.4673	-0.0039	-0.52	IC
UBV8B9		0.4347	0.0021	0.36	0.4770	0.0058	0.76	OE
UD8V2Z		0.4300	-0.0025	-0.43	0.4700	-0.0012	-0.16	OE
URLAQC		0.4260	-0.0065	-1.11	0.4730	0.0018	0.23	GD
UURJBV		0.4233	-0.0092	-1.57	0.4605	-0.0107	-1.42	OE
UYRTJC	*	0.4400	0.0075	1.26	0.4700	-0.0012	-0.16	OE
VAM7CG		0.4447	0.0121	2.06	0.4850	0.0138	1.82	OE
VKJAJV	X	0.4343	0.0018	0.30	0.7853	0.3141	41.58	OE
VZC4QF		0.4340	0.0015	0.25	0.4697	-0.0016	-0.21	OE
W6LN8Z	X	0.4493	0.0168	2.85	0.4180	-0.0532	-7.05	OE
WZTNT6		0.4250	-0.0075	-1.28	0.4607	-0.0106	-1.40	IC
X4QFN9		0.4298	-0.0027	-0.46	0.4700	-0.0012	-0.16	GD
XL9EU7		0.4330	0.0005	0.08	0.4707	-0.0006	-0.07	OE
XXP26T		0.4346	0.0021	0.35	0.4728	0.0016	0.21	OE
XYWJ23		0.4347	0.0021	0.36	0.4743	0.0031	0.41	OE
Y3CDB9	X	0.4767	0.0441	7.48	0.5267	0.0554	7.34	OE
Y83NMR		0.4227	-0.0099	-1.67	0.4540	-0.0172	-2.28	OE
YCYAEV		0.4313	-0.0012	-0.20	0.4757	0.0044	0.59	XX
YE6NV9		0.4240	-0.0085	-1.45	0.4610	-0.0102	-1.35	OE
YELZFY		0.4327	0.0001	0.02	0.4710	-0.0002	-0.03	OE
YH7XUH		0.4407	0.0081	1.38	0.4790	0.0078	1.03	OE
YMCKF7		0.4333	0.0008	0.13	0.4662	-0.0050	-0.67	XX
YUH7T3		0.4397	0.0071	1.21	0.4783	0.0071	0.94	XX
YYRL4C		0.4433	0.0108	1.83	0.4800	0.0088	1.16	OE
ZFDAA2		0.4237	-0.0089	-1.50	0.4623	-0.0089	-1.18	OE
ZN96DQ		0.4280	-0.0045	-0.77	0.4639	-0.0073	-0.97	IC



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1606

Carbon & Low Alloy Steel, NICKEL (Ni)
NICKEL (Ni)

Summary Statistics

	<u>Sample L03</u>		<u>Sample L04</u>	
Grand Means	0.4325	Percent	0.4712	Percent
Std Dev Btwn Labs	0.0059	Percent	0.0076	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 126 of 140 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	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 #1606

23MW9B (X) - Inconsistent in testing between samples. Inconsistent within the determinations of both samples.

66X9E3 (X) - Data for sample L03 are low.

CQ9QHQ (X) - Data for both samples are low.

DTYZFX (X) - Data for sample L03 are high.

DUVD3Q (X) - Data for sample L03 are low.

EDHBUG (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L04.

FB67PR (X) - Data for both samples are high.

K276A2 (X) - Data for sample L03 are high.

M86EPT (X) - Data for sample L03 are high.

MP3LXY (X) - Data for both samples are low.

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

VKJAJV (X) - Data for sample L04 are extreme.

W6LN8Z (X) - Data for sample L03 are high and data for sample L04 are low. Inconsistent within the determinations of both samples.

Y3CDB9 (X) - Data for both samples are high.



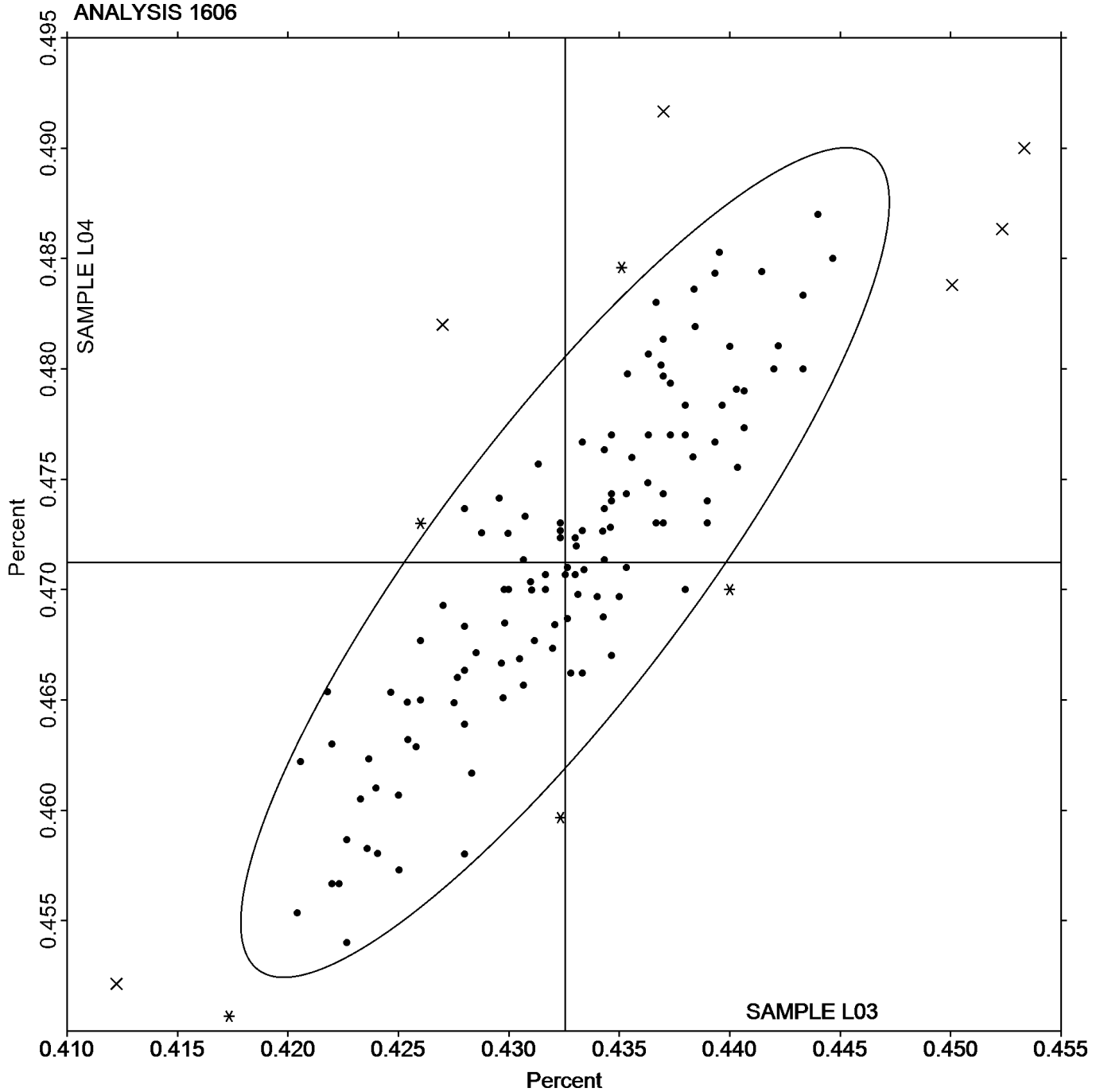
Analysis 1606

Carbon & Low Alloy Steel, NICKEL (Ni)

NICKEL (Ni)

SAMPLE L03
0.4325 Percent

SAMPLE L04
0.4712 Percent





Fasteners and Metals Interlaboratory Testing Program

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Analysis 1607

Carbon & Low Alloy Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B		0.4553	-0.0065	-0.89	0.4257	-0.0029	-0.41	OE
27NVPV		0.4651	0.0032	0.44	0.4339	0.0054	0.77	OE
2CQ6U3		0.4537	-0.0082	-1.12	0.4173	-0.0112	-1.59	OE
2G4RQT		0.4576	-0.0042	-0.58	0.4275	-0.0011	-0.15	OE
2GZC8Z		0.4637	0.0018	0.24	0.4309	0.0023	0.33	IC
2TQ938	X	0.4700	0.0081	1.10	0.4533	0.0248	3.53	OE
3AEN74		0.4605	-0.0014	-0.19	0.4322	0.0036	0.52	OE
3R2ZYX		0.4733	0.0115	1.56	0.4400	0.0115	1.63	OE
3VXNBX		0.4644	0.0025	0.34	0.4321	0.0036	0.51	OE
4BQNVB		0.4743	0.0125	1.69	0.4333	0.0048	0.68	OE
4T7A4Y		0.4581	-0.0038	-0.52	0.4224	-0.0061	-0.86	OE
66X9E3		0.4547	-0.0072	-0.98	0.4227	-0.0059	-0.83	OE
683U9U		0.4467	-0.0152	-2.07	0.4100	-0.0185	-2.63	GD
6GNZ2R		0.4657	0.0038	0.52	0.4287	0.0001	0.02	OE
6L3FU6		0.4569	-0.0050	-0.68	0.4285	-0.0001	-0.01	OE
6V9DJT		0.4703	0.0085	1.15	0.4347	0.0061	0.87	IC
6W6Q8L		0.4764	0.0145	1.97	0.4441	0.0156	2.22	OE
74H4KB	*	0.4770	0.0152	2.06	0.4279	-0.0006	-0.09	OE
7J97YT		0.4550	-0.0069	-0.94	0.4200	-0.0086	-1.21	OE
7MRBMQ		0.4707	0.0088	1.19	0.4370	0.0085	1.21	GD
7RL6MD		0.4755	0.0136	1.85	0.4379	0.0094	1.34	OE
7T3AAH		0.4613	-0.0005	-0.07	0.4227	-0.0059	-0.83	OE
82CYMG		0.4586	-0.0033	-0.45	0.4267	-0.0019	-0.26	OE
837PTV		0.4600	-0.0019	-0.25	0.4253	-0.0032	-0.45	XX
8FAATY		0.4627	0.0008	0.11	0.4290	0.0005	0.07	WD
8THTTF		0.4599	-0.0020	-0.27	0.4267	-0.0019	-0.26	OE
9AJZJ2	*	0.4800	0.0181	2.46	0.4473	0.0188	2.67	GD
9CL8BR		0.4640	0.0021	0.28	0.4323	0.0038	0.54	WD
9VGQD7		0.4583	-0.0035	-0.48	0.4207	-0.0079	-1.12	OE
9Y2F2P		0.4714	0.0095	1.29	0.4355	0.0070	0.99	OE
A4DN3U		0.4690	0.0071	0.97	0.4310	0.0025	0.35	OE
AB6AJT		0.4563	-0.0056	-0.76	0.4229	-0.0057	-0.80	OE
AKXE2U		0.4623	0.0005	0.06	0.4267	-0.0019	-0.26	OE
ARCCDU		0.4556	-0.0063	-0.85	0.4243	-0.0042	-0.59	OE
B4JQT3		0.4629	0.0010	0.14	0.4271	-0.0014	-0.20	OE
B9G7ER		0.4596	-0.0023	-0.31	0.4240	-0.0046	-0.65	OE
BH3DBW		0.4600	-0.0019	-0.25	0.4300	0.0015	0.21	OE
BJXVCX		0.4647	0.0028	0.38	0.4327	0.0041	0.59	OE
BMJFH2		0.4593	-0.0025	-0.35	0.4253	-0.0032	-0.45	XX
BP3NCU		0.4776	0.0158	2.14	0.4474	0.0188	2.68	OE
BQBX6R		0.4680	0.0061	0.83	0.4363	0.0078	1.10	OE
BWPKAH		0.4627	0.0008	0.11	0.4290	0.0005	0.07	IC
CA48UZ		0.4703	0.0085	1.15	0.4407	0.0121	1.73	GD
CBMUQW		0.4607	-0.0012	-0.16	0.4293	0.0008	0.12	OE
CQ9QHQ		0.4606	-0.0013	-0.18	0.4246	-0.0039	-0.55	OE
D3468E		0.4601	-0.0017	-0.24	0.4275	-0.0010	-0.14	XX
DAJZXG		0.4714	0.0095	1.29	0.4330	0.0044	0.63	OE



Fasteners and Metals Interlaboratory Testing Program

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3rd Qtr 2024

Analysis 1607

Carbon & Low Alloy Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DCNER2		0.4733	0.0115	1.56	0.4380	0.0095	1.35	AE
DF94FL		0.4620	0.0001	0.02	0.4290	0.0005	0.07	OE
DFMXRE		0.4663	0.0045	0.61	0.4263	-0.0022	-0.31	IC
DGYHBP		0.4600	-0.0019	-0.25	0.4300	0.0015	0.21	IC
DLFYTU		0.4617	-0.0002	-0.03	0.4287	0.0001	0.02	OE
DMREMU		0.4617	-0.0002	-0.03	0.4283	-0.0002	-0.03	OE
DTCGMK		0.4693	0.0075	1.01	0.4327	0.0041	0.59	IC
DTYZFX		0.4500	-0.0119	-1.61	0.4200	-0.0085	-1.21	OE
DUVD3Q		0.4511	-0.0108	-1.46	0.4246	-0.0040	-0.56	OE
DV6MT3		0.4667	0.0048	0.65	0.4340	0.0055	0.78	OE
DYFRCP		0.4610	-0.0009	-0.12	0.4307	0.0021	0.31	OE
E3G4WW		0.4620	0.0001	0.02	0.4283	-0.0002	-0.03	IC
E7XD2M		0.4723	0.0105	1.42	0.4413	0.0128	1.82	OE
E9MKM6		0.4633	0.0015	0.20	0.4360	0.0075	1.06	XX
EDHBUG		0.4703	0.0085	1.15	0.4420	0.0135	1.92	IC
EG2GFJ		0.4567	-0.0052	-0.71	0.4230	-0.0055	-0.78	XX
EHTBF9		0.4520	-0.0099	-1.34	0.4180	-0.0105	-1.49	OE
ETWPYL	X	0.4343	-0.0275	-3.74	0.4017	-0.0269	-3.82	OE
FB67PR	X	0.5083	0.0465	6.31	0.4740	0.0455	6.46	OE
FDQ6ML		0.4544	-0.0075	-1.02	0.4203	-0.0082	-1.17	GD
FZA2PR		0.4613	-0.0005	-0.07	0.4263	-0.0022	-0.31	IC
G44GFQ		0.4637	0.0018	0.24	0.4323	0.0038	0.54	OE
GCGDFQ		0.4510	-0.0109	-1.48	0.4180	-0.0105	-1.49	OE
GPLCKQ	*	0.4707	0.0088	1.19	0.4453	0.0168	2.39	OE
HD74WP		0.4607	-0.0012	-0.16	0.4309	0.0024	0.34	OE
HT2LRF		0.4587	-0.0032	-0.44	0.4207	-0.0079	-1.12	OE
HUUADV		0.4504	-0.0115	-1.56	0.4162	-0.0123	-1.75	OE
J4D44H		0.4543	-0.0075	-1.02	0.4213	-0.0072	-1.02	WD
J4V2BN		0.4637	0.0019	0.25	0.4322	0.0037	0.53	IC
JCTKXD		0.4647	0.0028	0.38	0.4327	0.0041	0.59	OE
JHXQAA		0.4627	0.0008	0.11	0.4270	-0.0015	-0.22	OE
JZZ6RP		0.4607	-0.0012	-0.16	0.4280	-0.0005	-0.07	XX
K276A2		0.4570	-0.0049	-0.67	0.4257	-0.0028	-0.40	OE
KKHRWA		0.4607	-0.0012	-0.16	0.4279	-0.0007	-0.09	OE
KKUN8F		0.4467	-0.0152	-2.07	0.4191	-0.0095	-1.34	OE
KVZGNM		0.4614	-0.0004	-0.06	0.4265	-0.0020	-0.29	WD
KWPRFF		0.4637	0.0018	0.24	0.4337	0.0051	0.73	OE
LAD2RD		0.4576	-0.0042	-0.58	0.4267	-0.0018	-0.25	OE
LCKNYQ		0.4605	-0.0014	-0.19	0.4254	-0.0031	-0.45	XX
LKVNYT		0.4530	-0.0089	-1.21	0.4187	-0.0099	-1.40	OE
M6F6D7		0.4590	-0.0029	-0.39	0.4267	-0.0019	-0.26	XX
M86EPT		0.4703	0.0085	1.15	0.4340	0.0055	0.78	OE
M9YXVZ	X	0.4217	-0.0402	-5.46	0.3887	-0.0399	-5.66	XX
MP3LXY	X	0.4090	-0.0529	-7.18	0.3850	-0.0435	-6.18	IC
MVQEVK	X	0.4400	-0.0219	-2.97	0.3400	-0.0885	-12.58	GD
MZ9G3Q		0.4671	0.0052	0.71	0.4355	0.0070	1.00	OE
NPGF27		0.4640	0.0021	0.29	0.4297	0.0011	0.16	OE



Fasteners and Metals Interlaboratory Testing Program

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Analysis 1607

Carbon & Low Alloy Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
NV7XFH		0.4600	-0.0018	-0.25	0.4263	-0.0022	-0.32	XX
P32DBF		0.4643	0.0025	0.33	0.4337	0.0051	0.73	OE
PM9MKD		0.4592	-0.0027	-0.37	0.4266	-0.0019	-0.27	OE
PVLMUU		0.4680	0.0061	0.83	0.4353	0.0068	0.97	IC
Q4BPXB		0.4703	0.0085	1.15	0.4340	0.0055	0.78	GD
QGYQDH		0.4697	0.0078	1.06	0.4320	0.0035	0.49	OE
QNEKZE		0.4673	0.0055	0.74	0.4347	0.0061	0.87	IC
QNFHBA		0.4643	0.0024	0.33	0.4336	0.0051	0.72	IC
QNUZCU		0.4715	0.0096	1.31	0.4397	0.0112	1.59	OE
QNY2FG		0.4531	-0.0088	-1.19	0.4217	-0.0069	-0.97	XX
QVXMN4		0.4597	-0.0022	-0.30	0.4263	-0.0022	-0.31	WD
QWBA7H		0.4563	-0.0055	-0.75	0.4211	-0.0075	-1.06	OE
RPQQ2A		0.4767	0.0148	2.01	0.4393	0.0108	1.54	OE
RVGZFD		0.4642	0.0023	0.32	0.4308	0.0023	0.32	OE
T3BC6F		0.4587	-0.0032	-0.44	0.4293	0.0008	0.12	OE
T9F6HJ		0.4703	0.0085	1.15	0.4339	0.0054	0.77	OE
TB273X		0.4590	-0.0029	-0.39	0.4233	-0.0052	-0.74	OE
TGU6GT		0.4627	0.0009	0.12	0.4314	0.0029	0.41	OE
TJGPLW		0.4767	0.0148	2.01	0.4373	0.0088	1.25	AE
TX28DF		0.4550	-0.0069	-0.93	0.4210	-0.0075	-1.07	OE
U4KUMB		0.4653	0.0035	0.47	0.4350	0.0065	0.92	OE
U8YJX8		0.4603	-0.0015	-0.21	0.4297	0.0011	0.16	IC
UBV8B9		0.4667	0.0048	0.65	0.4347	0.0061	0.87	OE
UD8V2Z		0.4523	-0.0095	-1.30	0.4167	-0.0119	-1.68	OE
URLAQC		0.4430	-0.0189	-2.56	0.4123	-0.0162	-2.30	GD
UURJBV		0.4720	0.0102	1.38	0.4356	0.0071	1.01	OE
UYRTJC		0.4533	-0.0085	-1.16	0.4200	-0.0085	-1.21	OE
VAM7CG		0.4647	0.0028	0.38	0.4300	0.0015	0.21	OE
VKJAJV	X	0.4327	-0.0292	-3.97	0.3970	-0.0315	-4.48	OE
VZC4QF		0.4603	-0.0015	-0.21	0.4237	-0.0049	-0.69	OE
W6LN8Z		0.4577	-0.0042	-0.57	0.4260	-0.0025	-0.36	OE
WZTNT6		0.4690	0.0071	0.97	0.4330	0.0045	0.64	IC
X4QFN9		0.4653	0.0034	0.47	0.4273	-0.0012	-0.17	GD
XL9EU7		0.4493	-0.0125	-1.70	0.4127	-0.0159	-2.25	OE
XXP26T		0.4649	0.0030	0.41	0.4311	0.0025	0.36	OE
XYWJ23		0.4500	-0.0119	-1.61	0.4220	-0.0065	-0.93	OE
Y3CDB9		0.4567	-0.0052	-0.71	0.4300	0.0015	0.21	OE
Y83NMR		0.4530	-0.0089	-1.21	0.4200	-0.0085	-1.21	OE
YCYAEV		0.4597	-0.0022	-0.30	0.4263	-0.0022	-0.31	XX
YE6NV9	X	0.5117	0.0498	6.77	0.4693	0.0408	5.80	OE
YELZFY		0.4673	0.0055	0.74	0.4337	0.0051	0.73	OE
YH7XUH		0.4647	0.0028	0.38	0.4287	0.0001	0.02	OE
YMCKF7		0.4603	-0.0015	-0.21	0.4266	-0.0019	-0.27	XX
YUH7T3	X	0.4397	-0.0222	-3.02	0.3710	-0.0575	-8.17	XX
YYRL4C	*	0.4400	-0.0219	-2.97	0.4100	-0.0185	-2.63	OE
ZFDAA2		0.4693	0.0075	1.01	0.4297	0.0011	0.16	OE
ZN96DQ		0.4495	-0.0124	-1.68	0.4181	-0.0104	-1.48	IC



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1607

Carbon & Low Alloy Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

Summary Statistics

	<u>Sample L03</u>		<u>Sample L04</u>	
Grand Means	0.4619	Percent	0.4285	Percent
Std Dev Btwn Labs	0.0074	Percent	0.0070	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 130 of 141 reporting participants

Key to Method Codes Reported by Participants

- | | | | |
|-----------|--|-----------|---|
| AE | Spectrometry - Atomic Emission (AES) | 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 #1607

- 2TQ938 (X) - Data for sample L04 are high. Inconsistent within the determinations of sample L03.
- ETWPYL (X) - Data for both samples are low. Possible Systematic Error.
- FB67PR (X) - Data for both samples are high. Possible Systematic Error.
- M9YXVZ (X) - Data for both samples are low. Possible Systematic Error.
- MP3LXY (X) - Data for both samples are low. Possible Systematic Error.
- MVQEVK (X) - Data for both samples are low. Possible Systematic Error.
- VKJAJV (X) - Data for both samples are low. Possible Systematic Error.
- YE6NV9 (X) - Data for both samples are high. Possible Systematic Error.
- YUH7T3 (X) - Data for both samples are low. Possible Systematic Error.



Fasteners and Metals Interlaboratory Testing Program

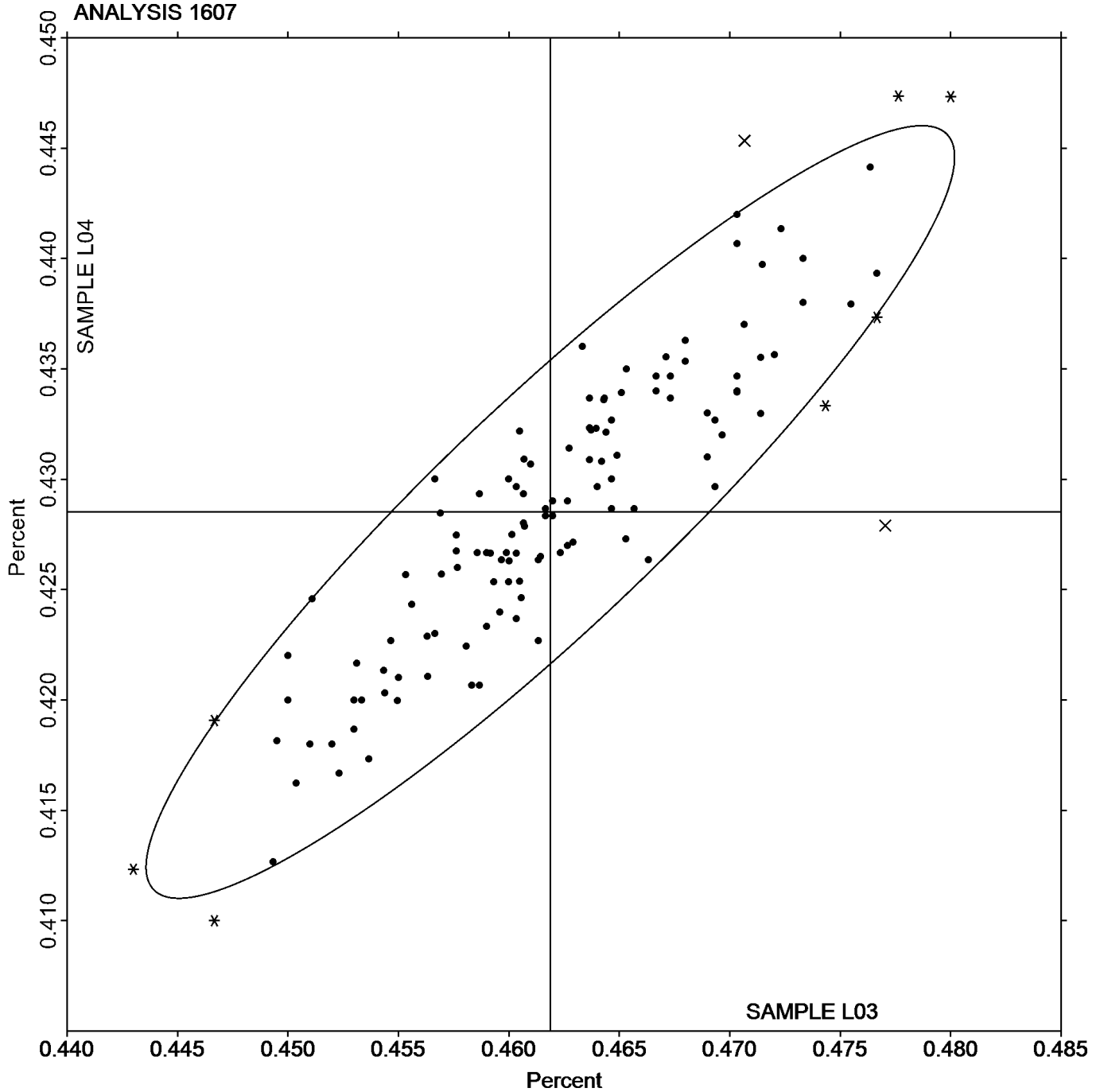
Cycle 147
3rd Qtr 2024

Analysis 1607

Carbon & Low Alloy Steel, CHROMIUM (Cr)
CHROMIUM (Cr)

SAMPLE L03
0.4619 Percent

SAMPLE L04
0.4285 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1608

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B	X	0.1407	-0.0089	-3.65	0.2663	0.0063	1.17	OE
27NVPV		0.1481	-0.0014	-0.58	0.2585	-0.0015	-0.29	OE
2CQ6U3		0.1493	-0.0002	-0.08	0.2527	-0.0074	-1.37	OE
2G4RQT		0.1519	0.0023	0.97	0.2722	0.0122	2.26	OE
2GZC8Z		0.1495	-0.0001	-0.02	0.2585	-0.0015	-0.29	IC
2TQ938		0.1500	0.0005	0.20	0.2600	0.0000	-0.01	OE
3AEN74		0.1480	-0.0015	-0.61	0.2616	0.0016	0.29	OE
3R2ZYX		0.1500	0.0005	0.20	0.2633	0.0033	0.61	OE
3VXNBX		0.1479	-0.0016	-0.67	0.2615	0.0015	0.27	OE
4BQNVB		0.1483	-0.0012	-0.49	0.2583	-0.0017	-0.32	OE
4Q36X7		0.1530	0.0034	1.42	0.2556	-0.0044	-0.82	OE
4T7A4Y		0.1504	0.0009	0.36	0.2624	0.0023	0.43	OE
66X9E3	X	0.1620	0.0125	5.14	0.2747	0.0146	2.71	XX
683U9U		0.1500	0.0005	0.20	0.2567	-0.0034	-0.63	GD
6GNZ2R		0.1467	-0.0029	-1.18	0.2470	-0.0130	-2.42	OE
6L3FU6		0.1520	0.0025	1.03	0.2656	0.0056	1.04	OE
6V9DJT		0.1497	0.0001	0.06	0.2610	0.0010	0.18	IC
74H4KB		0.1506	0.0011	0.44	0.2631	0.0030	0.57	OE
7J97YT		0.1501	0.0006	0.25	0.2593	-0.0007	-0.13	OE
7MRBMQ	X	0.1423	-0.0072	-2.96	0.2600	0.0000	-0.01	GD
7RL6MD		0.1486	-0.0009	-0.37	0.2526	-0.0074	-1.38	OE
7T3AAH		0.1483	-0.0012	-0.49	0.2563	-0.0037	-0.69	OE
82CYMG		0.1536	0.0041	1.68	0.2568	-0.0033	-0.61	IC
8FAATY		0.1483	-0.0012	-0.49	0.2603	0.0003	0.05	WD
8THTTF		0.1477	-0.0018	-0.75	0.2545	-0.0055	-1.03	OE
9AJZJ2		0.1517	0.0021	0.88	0.2670	0.0070	1.29	GD
9CL8BR		0.1469	-0.0026	-1.08	0.2582	-0.0018	-0.34	WD
9VGQD7		0.1433	-0.0062	-2.55	0.2460	-0.0140	-2.61	OE
9Y2F2P		0.1496	0.0001	0.03	0.2553	-0.0047	-0.88	OE
A4DN3U		0.1543	0.0048	1.98	0.2680	0.0080	1.48	OE
AB6AJT		0.1502	0.0006	0.26	0.2567	-0.0033	-0.62	OE
AKXE2U		0.1517	0.0021	0.88	0.2613	0.0013	0.24	OE
ALPCAZ		0.1500	0.0005	0.21	0.2544	-0.0056	-1.05	OE
ARCCDU		0.1502	0.0006	0.26	0.2597	-0.0003	-0.06	OE
B4JTQ3		0.1501	0.0005	0.22	0.2662	0.0062	1.15	OE
B9G7ER		0.1516	0.0021	0.86	0.2662	0.0062	1.14	OE
BH3DBW		0.1500	0.0005	0.20	0.2667	0.0066	1.23	OE
BJXVCX		0.1490	-0.0005	-0.22	0.2543	-0.0057	-1.06	OE
BMJFH2		0.1453	-0.0042	-1.73	0.2593	-0.0007	-0.13	XX
BP3NCU		0.1488	-0.0007	-0.30	0.2601	0.0000	0.00	OE
BQBX6R		0.1530	0.0035	1.45	0.2683	0.0082	1.53	OE
BWPKAH		0.1473	-0.0022	-0.90	0.2610	0.0010	0.18	IC
CA48UZ		0.1470	-0.0025	-1.04	0.2580	-0.0020	-0.38	GD
CBMUQW		0.1483	-0.0012	-0.49	0.2593	-0.0007	-0.13	OE
CQ9QHQ		0.1490	-0.0005	-0.20	0.2533	-0.0067	-1.25	OE
D3468E		0.1510	0.0015	0.62	0.2621	0.0021	0.39	XX
DAJZXG		0.1500	0.0005	0.20	0.2603	0.0003	0.05	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1608

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DCNER2		0.1537	0.0041	1.71	0.2633	0.0033	0.61	AE
DF94FL		0.1500	0.0005	0.20	0.2500	-0.0100	-1.87	OE
DFMXRE		0.1480	-0.0015	-0.63	0.2540	-0.0060	-1.12	IC
DGYHBP		0.1500	0.0005	0.20	0.2600	0.0000	-0.01	IC
DLFYTU		0.1513	0.0018	0.75	0.2680	0.0080	1.48	OE
DMREMU		0.1483	-0.0012	-0.49	0.2617	0.0016	0.30	OE
DTCGMK		0.1527	0.0031	1.29	0.2687	0.0086	1.60	IC
DTYZFX	X	0.1600	0.0105	4.32	0.2733	0.0133	2.47	OE
DUVD3Q		0.1524	0.0028	1.17	0.2709	0.0109	2.02	OE
DV6MT3		0.1483	-0.0012	-0.49	0.2563	-0.0037	-0.69	OE
DYFRCP		0.1513	0.0018	0.75	0.2630	0.0030	0.55	OE
E3G4VWV		0.1537	0.0041	1.71	0.2657	0.0056	1.04	IC
E7XD2M		0.1490	-0.0005	-0.22	0.2587	-0.0014	-0.26	OE
E9MKM6	X	0.1393	-0.0102	-4.20	0.2547	-0.0054	-1.00	XX
EDHBUG	X	0.1370	-0.0125	-5.16	0.2550	-0.0050	-0.94	IC
EG2GFJ		0.1447	-0.0049	-2.00	0.2553	-0.0047	-0.88	XX
EHTBF9		0.1550	0.0055	2.26	0.2680	0.0080	1.48	OE
ETWPYL		0.1497	0.0001	0.06	0.2483	-0.0117	-2.17	OE
FB67PR		0.1497	0.0001	0.06	0.2610	0.0010	0.18	OE
FDQ6ML		0.1451	-0.0044	-1.81	0.2520	-0.0081	-1.50	GD
FZA2PR		0.1480	-0.0015	-0.63	0.2587	-0.0014	-0.26	IC
G44GFQ	*	0.1540	0.0045	1.84	0.2757	0.0156	2.90	OE
GCGDFQ		0.1470	-0.0025	-1.04	0.2620	0.0020	0.36	OE
GPLCKQ		0.1457	-0.0039	-1.59	0.2483	-0.0117	-2.17	OE
HD74WP		0.1496	0.0001	0.05	0.2585	-0.0015	-0.29	OE
HT2LRF		0.1493	-0.0002	-0.08	0.2593	-0.0007	-0.13	OE
HUUADV		0.1513	0.0018	0.73	0.2624	0.0024	0.44	OE
J4D44H	X	0.1472	-0.0024	-0.97	0.2818	0.0218	4.04	OE
J4V2BN		0.1486	-0.0009	-0.38	0.2598	-0.0002	-0.05	IC
JCTKXD		0.1517	0.0021	0.88	0.2637	0.0036	0.67	OE
JHXQAA		0.1473	-0.0022	-0.90	0.2563	-0.0037	-0.69	OE
JZZ6RP		0.1477	-0.0019	-0.77	0.2570	-0.0030	-0.57	XX
K276A2	X	0.1472	-0.0023	-0.94	0.2021	-0.0579	-10.76	OE
KKHRWA		0.1505	0.0010	0.42	0.2605	0.0005	0.09	OE
KKUN8F	*	0.1565	0.0069	2.86	0.2689	0.0089	1.64	OE
KVZGNM		0.1488	-0.0007	-0.28	0.2564	-0.0037	-0.68	WD
KWPRFF		0.1473	-0.0022	-0.90	0.2567	-0.0034	-0.63	OE
LAD2RD		0.1492	-0.0004	-0.15	0.2578	-0.0023	-0.42	OE
LCKNYQ		0.1478	-0.0017	-0.72	0.2628	0.0027	0.51	XX
LKVNYT		0.1480	-0.0015	-0.63	0.2560	-0.0040	-0.75	OE
M6F6D7		0.1473	-0.0022	-0.90	0.2540	-0.0060	-1.12	XX
M86EPT	X	0.1840	0.0345	14.20	0.2740	0.0140	2.59	OE
M9YXVZ		0.1447	-0.0049	-2.00	0.2473	-0.0127	-2.36	XX
MP3LXY	X	0.1377	-0.0119	-4.88	0.2437	-0.0164	-3.04	IC
MT863M	*	0.1560	0.0064	2.65	0.2583	-0.0017	-0.32	OE
MVQEVK	X	0.1193	-0.0302	-12.44	0.1200	-0.1400	-26.00	GD
MZ9G3Q		0.1464	-0.0031	-1.28	0.2484	-0.0116	-2.16	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1608

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
NPGF27		0.1453	-0.0042	-1.73	0.2577	-0.0024	-0.44	OE
NV7XFH		0.1479	-0.0016	-0.66	0.2582	-0.0019	-0.35	XX
P32DBF		0.1517	0.0021	0.88	0.2633	0.0033	0.61	OE
PM9MKD		0.1486	-0.0010	-0.39	0.2617	0.0017	0.31	OE
PVLMUU		0.1470	-0.0025	-1.04	0.2547	-0.0054	-1.00	IC
Q4BPXB		0.1530	0.0035	1.43	0.2673	0.0073	1.35	GD
QGYQDH		0.1490	-0.0005	-0.22	0.2637	0.0036	0.67	OE
QNEKZE		0.1490	-0.0005	-0.22	0.2600	0.0000	-0.01	IC
QNFHBA		0.1497	0.0002	0.07	0.2627	0.0027	0.49	IC
QNUZCU		0.1525	0.0030	1.24	0.2707	0.0107	1.98	OE
QNY2FG	X	0.1453	-0.0042	-1.73	0.2717	0.0116	2.15	OE
QVXMN4		0.1520	0.0025	1.02	0.2593	-0.0007	-0.13	WD
QWBA7H		0.1472	-0.0024	-0.97	0.2602	0.0002	0.03	OE
RPQQ2A		0.1490	-0.0005	-0.22	0.2610	0.0010	0.18	OE
RVGZFD		0.1508	0.0012	0.51	0.2637	0.0037	0.68	OE
T3BC6F		0.1500	0.0005	0.20	0.2657	0.0056	1.04	OE
TB273X		0.1490	-0.0005	-0.22	0.2597	-0.0004	-0.07	OE
TGU6GT		0.1531	0.0036	1.47	0.2672	0.0072	1.33	OE
TJGPLW		0.1527	0.0031	1.29	0.2657	0.0056	1.04	AE
TX28DF		0.1500	0.0005	0.20	0.2630	0.0030	0.55	OE
U4KUMB		0.1513	0.0018	0.75	0.2660	0.0060	1.11	OE
U8YJX8		0.1480	-0.0015	-0.63	0.2580	-0.0020	-0.38	IC
UBV8B9		0.1470	-0.0025	-1.04	0.2567	-0.0034	-0.63	OE
UD8V2Z		0.1510	0.0015	0.61	0.2637	0.0036	0.67	OE
URLAQC		0.1493	-0.0002	-0.08	0.2540	-0.0060	-1.12	GD
UURJBV		0.1505	0.0010	0.40	0.2660	0.0060	1.11	OE
UYRTJC		0.1493	-0.0002	-0.08	0.2597	-0.0004	-0.07	OE
VAM7CG		0.1503	0.0008	0.33	0.2650	0.0050	0.92	OE
VKJAJV		0.1520	0.0025	1.02	0.2610	0.0010	0.18	OE
VZC4QF		0.1500	0.0005	0.20	0.2600	0.0000	-0.01	OE
W6LN8Z		0.1540	0.0045	1.84	0.2623	0.0023	0.42	OE
WZTNT6		0.1470	-0.0025	-1.04	0.2563	-0.0037	-0.69	IC
X4QFN9	X	0.1588	0.0093	3.82	0.2645	0.0045	0.83	GD
XL9EU7		0.1487	-0.0009	-0.35	0.2597	-0.0004	-0.07	OE
XXP26T		0.1461	-0.0034	-1.41	0.2607	0.0006	0.11	OE
XYWJ23		0.1470	-0.0025	-1.04	0.2590	-0.0010	-0.19	OE
Y3CDB9		0.1480	-0.0015	-0.63	0.2570	-0.0030	-0.57	OE
Y83NMR	*	0.1440	-0.0055	-2.28	0.2580	-0.0020	-0.38	OE
YCYAEV	X	0.1500	0.0005	0.20	0.2357	-0.0244	-4.53	XX
YE6NV9		0.1540	0.0045	1.84	0.2670	0.0070	1.29	OE
YELZFY		0.1500	0.0005	0.20	0.2600	0.0000	-0.01	OE
YH7XUH	X	0.1630	0.0135	5.55	0.2877	0.0276	5.13	OE
YMCKF7		0.1486	-0.0010	-0.39	0.2617	0.0017	0.31	XX
YUH7T3	X	0.1480	-0.0015	-0.63	0.2133	-0.0467	-8.67	XX
YYRL4C		0.1500	0.0005	0.20	0.2600	0.0000	-0.01	OE
ZFDAA2		0.1517	0.0021	0.88	0.2607	0.0006	0.11	OE
ZN96DQ		0.1456	-0.0040	-1.63	0.2527	-0.0073	-1.36	IC



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1608

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

Summary Statistics

	<u>Sample L03</u>		<u>Sample L04</u>	
Grand Means	0.1495	Percent	0.2600	Percent
Std Dev Btwn Labs	0.0024	Percent	0.0054	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 124 of 141 reporting participants

Key to Method Codes Reported by Participants

AE	Spectrometry - Atomic Emission (AES)	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 #1608

- 23MW9B (X) - Data for sample L03 are low.
- 66X9E3 (X) - Data for both samples are high. Inconsistent within the determinations of both samples.
- 7MRBMQ (X) - Data for sample L03 are low.
- DTYZFX (X) - Data for sample L03 are high. Inconsistent within the determinations of sample L04.
- E9MKM6 (X) - Data for sample L03 are low. Inconsistent within the determinations of sample L03.
- EDHBUG (X) - Data for sample L03 are low.
- J4D44H (X) - Data for sample L04 are high.
- K276A2 (X) - Data for sample L04 are low.
- M86EPT (X) - Data for sample L03 are high.
- MP3LXY (X) - Data for both samples are low.
- MVQEVK (X) - Extreme data.
- QNY2FG (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L04.
- X4QFN9 (X) - Data for sample L03 are high.
- YCYAEV (X) - Data for sample L04 are low.
- YH7XUH (X) - Data for both samples are high.
- YUH7T3 (X) - Data for sample L04 are low. Inconsistent within the determinations of sample L04.



Fasteners and Metals Interlaboratory Testing Program

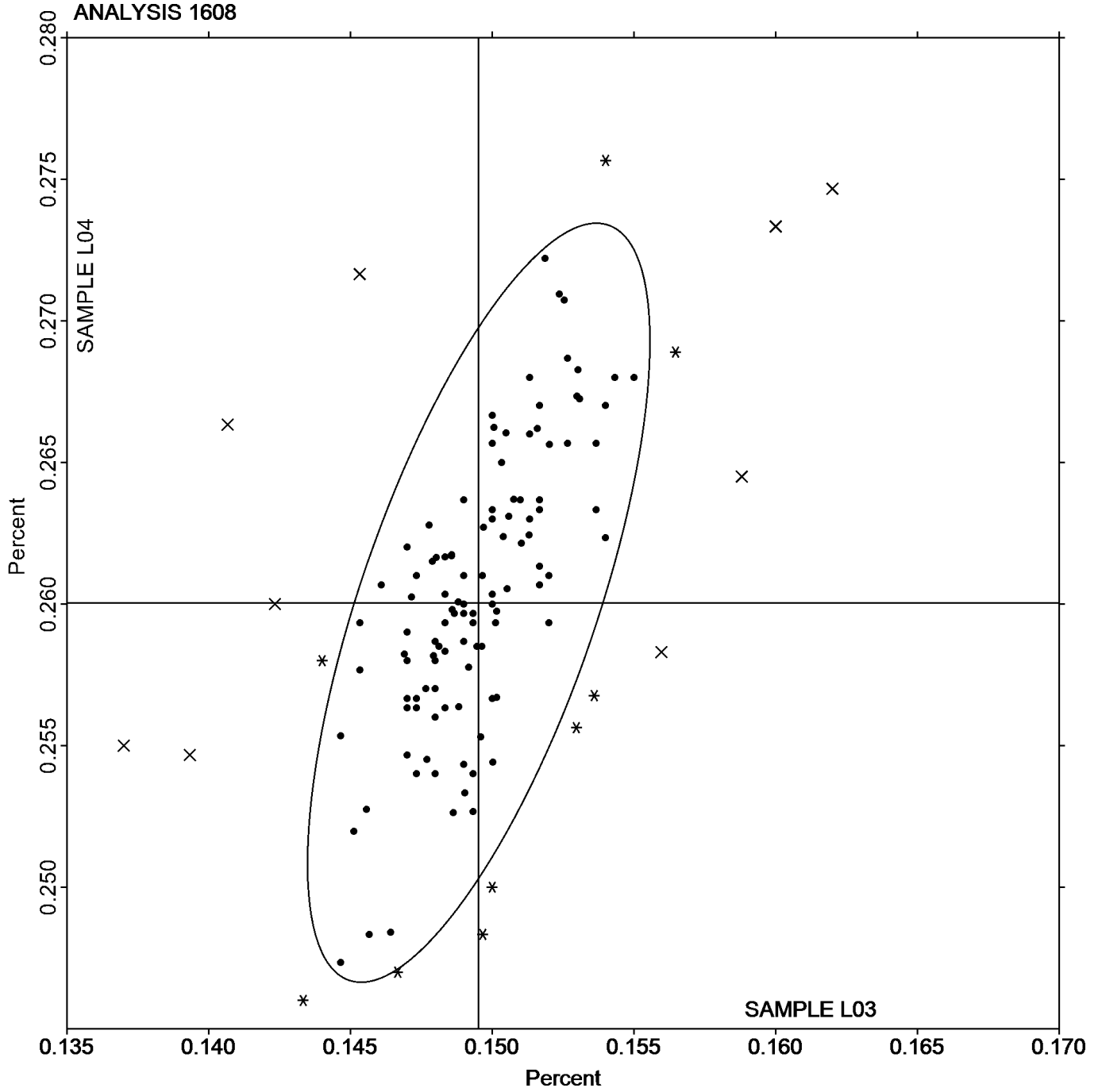
Cycle 147
3rd Qtr 2024

Analysis 1608

Carbon & Low Alloy Steel, COPPER (Cu)
COPPER (Cu)

SAMPLE L03
0.1495 Percent

SAMPLE L04
0.2600 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1612

Carbon & Low Alloy Steel, NITROGEN (N)
NITROGEN (N)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
2G4RQT	*	0.00660	-0.00128	-1.85	0.00960	-0.0027	-3.05	OE
3AEN74		0.00657	-0.00132	-1.90	0.0121	-0.0002	-0.21	OE
3VXNBX		0.00787	-0.00002	-0.03	0.0123	0.0000	-0.02	OE
4BQNVB	X	0.00610	-0.00178	-2.57	0.00830	-0.0040	-4.53	CI
4T7A4Y		0.00667	-0.00122	-1.75	0.0105	-0.0018	-2.07	OE
6L3FU6		0.00697	-0.00092	-1.32	0.0112	-0.0011	-1.23	CI
6V9DJT		0.00820	0.00032	0.45	0.0127	0.0004	0.51	XX
7RL6MD	X	0.00727	-0.00062	-0.89	0.00790	-0.0044	-4.98	OE
7T3AAH		0.00820	0.00032	0.45	0.0131	0.0008	0.96	CO
82CYMG		0.00827	0.00038	0.55	0.0114	-0.0009	-0.97	OE
9CL8BR		0.00813	0.00025	0.36	0.0124	0.0001	0.09	CO
9WT76L	X	0.00883	0.00095	1.37	0.00840	-0.0039	-4.41	CI
A4DN3U		0.00803	0.00015	0.21	0.0122	-0.0001	-0.10	CO
AKXE2U		0.00910	0.00122	1.75	0.0122	-0.0001	-0.10	OE
ALPCAZ		0.00717	-0.00072	-1.03	0.0111	-0.0012	-1.35	CI
ARCCDU		0.00787	-0.00001	-0.02	0.0122	-0.0001	-0.13	XX
B9G7ER		0.00817	0.00028	0.41	0.0132	0.0009	1.08	OE
BH3DBW		0.00807	0.00018	0.26	0.0127	0.0004	0.43	XX
BJXVCX		0.00900	0.00112	1.61	0.0119	-0.0004	-0.48	OE
BMJFH2		0.00833	0.00045	0.65	0.0139	0.0016	1.83	XX
BWPKAH		0.00740	-0.00048	-0.70	0.0115	-0.0008	-0.89	CO
CBMUQW		0.00737	-0.00052	-0.75	0.0117	-0.0006	-0.66	OE
D3468E		0.00790	0.00002	0.02	0.0123	0.0000	0.02	XX
DF94FL		0.00790	0.00002	0.02	0.0126	0.0003	0.36	IR
DFMXRE		0.00823	0.00035	0.50	0.0124	0.0001	0.13	XX
DGYHBP		0.00787	-0.00002	-0.03	0.0120	-0.0003	-0.32	XX
DLFYTU		0.00793	0.00005	0.07	0.0130	0.0007	0.81	OE
DMREMU		0.00803	0.00015	0.21	0.0134	0.0011	1.27	OE
DTYZFX		0.00823	0.00035	0.50	0.0127	0.0004	0.43	OE
DUVD3Q		0.00680	-0.00108	-1.56	0.0120	-0.0003	-0.36	OE
DV6MT3		0.00923	0.00135	1.94	0.0134	0.0011	1.30	OE
E3G4WW		0.00777	-0.00012	-0.17	0.0125	0.0002	0.28	CI
E7XD2M	X	0.00433	-0.00355	-5.11	0.00533	-0.0070	-7.90	OE
E9MKM6		0.00630	-0.00158	-2.28	0.0102	-0.0021	-2.37	XX
EDHBUG		0.00950	0.00162	2.33	0.0137	0.0014	1.65	CO
EHTBF9		0.00820	0.00032	0.45	0.0127	0.0004	0.47	CO
ETWPYL	X	0.00880	0.00092	1.32	0.0165	0.0042	4.75	OE
FDQ6ML	X	0.0388	0.03095	44.56	0.0429	0.0306	34.82	GD
FZA2PR		0.00803	0.00015	0.21	0.0120	-0.0003	-0.29	XX
HT2LRF	X	0.0108	0.00292	4.20	0.0132	0.0009	1.08	OE
J4D44H		0.00830	0.00042	0.60	0.0135	0.0012	1.38	CO
J4V2BN		0.00792	0.00004	0.06	0.0124	0.0002	0.18	XX
JCTKXD		0.00787	-0.00002	-0.03	0.0130	0.0007	0.85	CO
JZZ6RP		0.00933	0.00145	2.09	0.0133	0.0010	1.19	XX
K276A2	*	0.00660	-0.00128	-1.85	0.0145	0.0022	2.55	OE
KKHRWA		0.00840	0.00052	0.74	0.0127	0.0004	0.43	CI
LAD2RD		0.00800	0.00012	0.17	0.0126	0.0003	0.36	CO



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1612

Carbon & Low Alloy Steel, NITROGEN (N)
NITROGEN (N)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
LCKNYQ		0.00820	0.00032	0.45	0.0133	0.0010	1.13	XX
LKVNYT	X	0.00620	-0.00168	-2.43	0.0196	0.0073	8.27	OE
M86EPT	*	0.00750	-0.00038	-0.55	0.0103	-0.0020	-2.26	OE
MP3LXY		0.00800	0.00012	0.17	0.0120	-0.0003	-0.32	XX
MT863M		0.00747	-0.00042	-0.60	0.0128	0.0005	0.55	CI
NPGF27		0.00823	0.00035	0.50	0.0138	0.0015	1.68	OE
NV7XFH		0.00821	0.00033	0.47	0.0125	0.0002	0.20	XX
PVLMUU		0.00737	-0.00052	-0.75	0.0122	-0.0001	-0.10	XX
QGYQDH		0.00770	-0.00018	-0.27	0.0118	-0.0005	-0.55	OE
QNEKZE		0.00787	-0.00002	-0.03	0.0122	-0.0001	-0.10	CO
QNFHBA		0.00783	-0.00005	-0.07	0.0122	-0.0001	-0.13	XX
QNY2FG		0.00825	0.00037	0.53	0.0127	0.0004	0.47	OE
QWBA7H		0.00790	0.00002	0.02	0.0121	-0.0002	-0.25	OE
TX28DF		0.00700	-0.00088	-1.27	0.0117	-0.0006	-0.66	OE
U4KUMB		0.00750	-0.00038	-0.55	0.0121	-0.0002	-0.21	OE
U8YJX8		0.00800	0.00012	0.17	0.0123	0.0000	0.05	XX
UBV8B9		0.00827	0.00038	0.55	0.0126	0.0003	0.40	XX
UD8V2Z		0.00890	0.00102	1.46	0.0133	0.0010	1.12	CI
UYRTJC	X	0.0113	0.00345	4.97	0.0117	-0.0006	-0.70	OE
VKJAJV		0.00643	-0.00145	-2.09	0.0115	-0.0008	-0.85	OE
WZTNT6		0.00840	0.00052	0.74	0.0129	0.0006	0.74	XX
XXP26T		0.00703	-0.00085	-1.23	0.0109	-0.0014	-1.57	OE
YE6NV9		0.00733	-0.00055	-0.79	0.0109	-0.0014	-1.57	OE
YELZFY		0.00710	-0.00078	-1.13	0.0124	0.0001	0.09	OE
YUH7T3	X	0.0187	0.01078	15.53	0.0263	0.0140	15.96	XX
YYRL4C		0.00900	0.00112	1.61	0.0130	0.0007	0.81	CO
ZFDAA2	X	0.000350	-0.00753	-10.85	0.00100	-0.0113	-12.82	OE
ZN96DQ		0.00750	-0.00038	-0.55	0.0122	-0.0001	-0.10	CI

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.00788	Percent	0.0123	Percent
Std Dev Btw Labs	0.00069	Percent	0.0009	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 63 of 75 reporting participants

Key to Method Codes Reported by Participants

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



Analysis 1612

Carbon & Low Alloy Steel, NITROGEN (N)
NITROGEN (N)

Comments on Assigned Data Flags for Test #1612

- 4BQNVB (X) - Data for sample L04 are low.
- 7RL6MD (X) - Data for sample L04 are low.
- 9WT76L (X) - Data for sample L04 are low.
- E7XD2M (X) - Data for both samples are low. Inconsistent within the determinations of sample L04.
- ETWPYL (X) - Data for sample L04 are high.
- FDQ6ML (X) - Extreme data.
- HT2LRF (X) - Data for sample L03 are high.
- LKVNYT (X) - Data for sample L04 are high. Inconsistent within the determinations of sample L04.
- UYRTJC (X) - Data for sample L03 are high. Inconsistent within the determinations of sample L03.
- YUH7T3 (X) - Extreme data.
- ZFDA2 (X) - Data for both samples are low. Inconsistent within the determinations of sample L04.

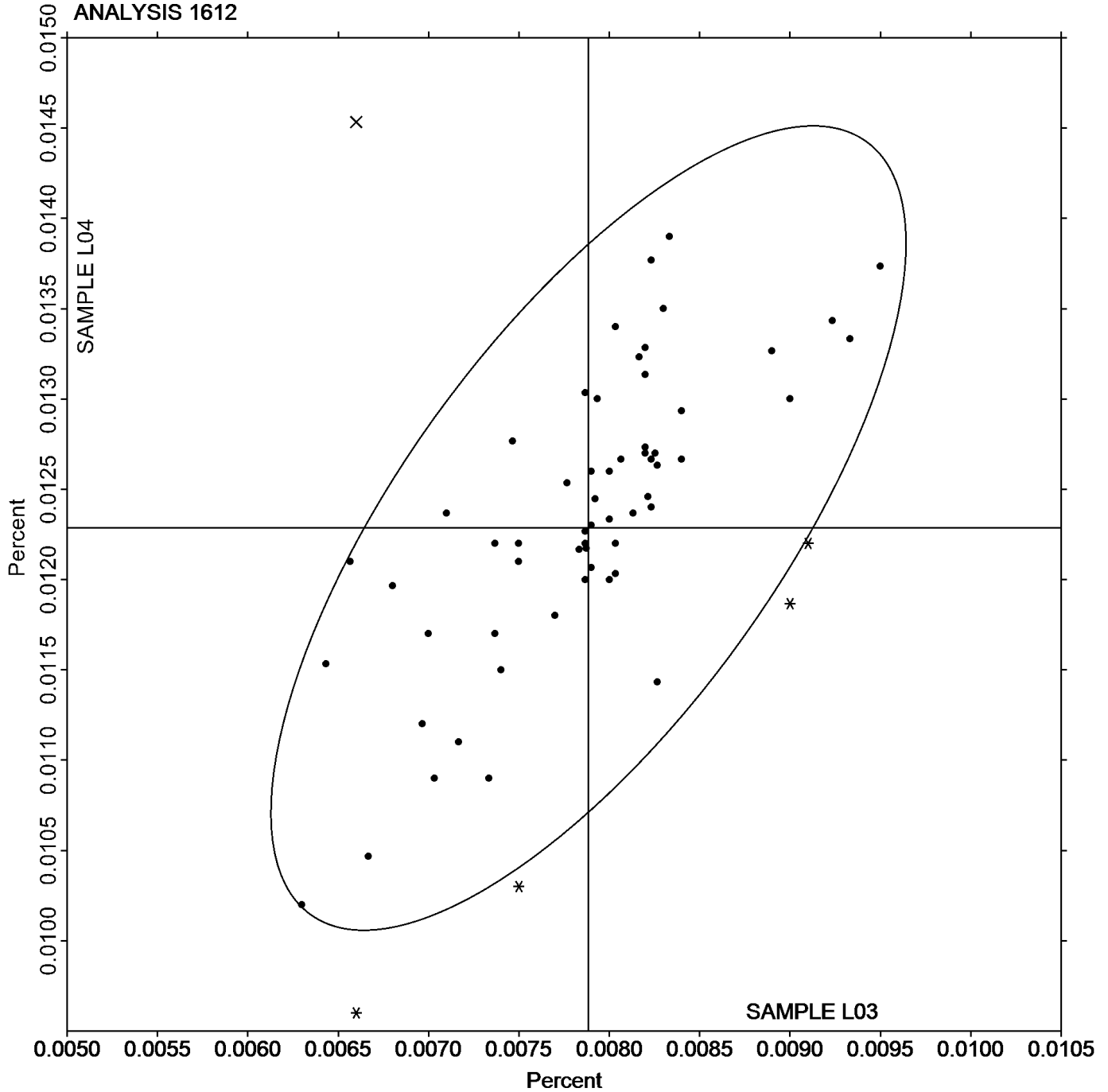


Analysis 1612

Carbon & Low Alloy Steel, NITROGEN (N)
NITROGEN (N)

SAMPLE L03
0.00788 Percent

SAMPLE L04
0.0123 Percent





Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1613

Carbon & Low Alloy Steel, ALUMINUM (AI)
ALUMINUM (AI)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
23MW9B		0.0195	-0.0007	-0.52	0.0353	0.0014	0.92	OE
27NVPV		0.0166	-0.0036	-2.68	0.0314	-0.0024	-1.55	OE
2CQ6U3		0.0202	0.0000	0.00	0.0340	0.0001	0.09	OE
2G4RQT		0.0218	0.0016	1.22	0.0341	0.0003	0.19	OE
2GZC8Z		0.0193	-0.0009	-0.65	0.0330	-0.0008	-0.53	IC
2TQ938		0.0183	-0.0018	-1.37	0.0313	-0.0025	-1.59	OE
3AEN74		0.0195	-0.0007	-0.50	0.0331	-0.0007	-0.44	OE
3R2ZYX		0.0199	-0.0002	-0.18	0.0333	-0.0005	-0.32	OE
3VXNBX		0.0205	0.0004	0.27	0.0343	0.0004	0.28	OE
4BQNVB		0.0203	0.0002	0.12	0.0347	0.0008	0.53	OE
4Q36X7		0.0200	-0.0002	-0.13	0.0330	-0.0008	-0.53	OE
4T7A4Y		0.0220	0.0018	1.34	0.0369	0.0030	1.94	OE
66X9E3		0.0182	-0.0020	-1.47	0.0320	-0.0018	-1.15	OE
683U9U		0.0200	-0.0002	-0.13	0.0340	0.0002	0.11	GD
6GNZ2R		0.0190	-0.0012	-0.87	0.0320	-0.0018	-1.17	OE
6L3FU6		0.0193	-0.0008	-0.62	0.0323	-0.0015	-0.95	OE
6V9DJT	*	0.0190	-0.0012	-0.87	0.0376	0.0037	2.38	IC
74H4KB	X	0.0200	-0.0002	-0.12	0.0388	0.0050	3.19	OE
7J97YT		0.0203	0.0002	0.12	0.0342	0.0003	0.21	OE
7MRBMQ		0.0194	-0.0008	-0.60	0.0321	-0.0017	-1.10	GD
7RL6MD		0.0206	0.0004	0.32	0.0331	-0.0007	-0.47	OE
7T3AAH		0.0207	0.0005	0.37	0.0357	0.0018	1.17	OE
82CYMG		0.0213	0.0011	0.82	0.0354	0.0015	0.98	OE
8FAATY		0.0203	0.0001	0.07	0.0350	0.0011	0.72	OE
8THTTF		0.0186	-0.0016	-1.20	0.0339	0.0000	0.02	OE
9CL8BR		0.0187	-0.0014	-1.07	0.0328	-0.0010	-0.66	OE
9Y2F2P		0.0234	0.0032	2.42	0.0372	0.0034	2.15	OE
A4DN3U		0.0208	0.0007	0.50	0.0356	0.0018	1.13	OE
AB6AJT		0.0204	0.0002	0.15	0.0340	0.0002	0.13	OE
AKXE2U		0.0211	0.0009	0.70	0.0350	0.0011	0.72	OE
ALPCAZ		0.0189	-0.0013	-0.97	0.0316	-0.0022	-1.40	OE
ARCCDU		0.0216	0.0014	1.07	0.0333	-0.0005	-0.32	OE
B9G7ER		0.0209	0.0007	0.55	0.0351	0.0012	0.79	OE
BH3DBW		0.0220	0.0018	1.37	0.0360	0.0022	1.38	OE
BJXVCX		0.0235	0.0033	2.49	0.0380	0.0042	2.68	OE
BMJFH2		0.0200	-0.0002	-0.13	0.0332	-0.0006	-0.38	OE
BP3NCU		0.0219	0.0017	1.27	0.0359	0.0021	1.32	OE
BQBX6R		0.0206	0.0005	0.36	0.0354	0.0015	0.97	OE
BWPKAH		0.0198	-0.0003	-0.25	0.0335	-0.0004	-0.23	IC
CA48UZ		0.0189	-0.0013	-0.95	0.0318	-0.0020	-1.27	GD
CBMUQW	*	0.0211	0.0009	0.67	0.0315	-0.0023	-1.46	OE
D3468E		0.0201	-0.0001	-0.05	0.0335	-0.0003	-0.19	XX
DAJZXG	*	0.0240	0.0039	2.89	0.0367	0.0029	1.83	OE
DCNER2		0.0207	0.0005	0.37	0.0350	0.0012	0.75	AE
DF94FL		0.0208	0.0006	0.47	0.0337	-0.0002	-0.10	OE
DFMXRE		0.0194	-0.0007	-0.55	0.0330	-0.0008	-0.51	IC
DGYHBP		0.0200	-0.0002	-0.13	0.0340	0.0002	0.11	IC



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1613

Carbon & Low Alloy Steel, ALUMINUM (AI)
ALUMINUM (AI)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
DLFYTU		0.0200	-0.0002	-0.13	0.0331	-0.0007	-0.44	OE
DMREMU		0.0197	-0.0004	-0.32	0.0330	-0.0009	-0.55	OE
DTCGMK		0.0212	0.0010	0.77	0.0353	0.0015	0.94	IC
DTYZFX		0.0183	-0.0018	-1.37	0.0328	-0.0010	-0.66	OE
DUVD3Q		0.0221	0.0019	1.42	0.0370	0.0032	2.04	OE
DV6MT3		0.0188	-0.0013	-1.00	0.0323	-0.0015	-0.95	OE
DYFRCP		0.0193	-0.0008	-0.62	0.0323	-0.0015	-0.95	OE
E3G4WW	X	0.0240	0.0038	2.86	0.0393	0.0055	3.51	IC
E7XD2M		0.0213	0.0012	0.87	0.0333	-0.0005	-0.32	OE
E9MKM6		0.0200	-0.0002	-0.13	0.0338	-0.0001	-0.04	XX
EG2GFJ		0.0218	0.0016	1.22	0.0355	0.0017	1.06	XX
EHTBF9		0.0189	-0.0013	-0.95	0.0325	-0.0013	-0.85	OE
ETWPYL		0.0200	-0.0002	-0.13	0.0331	-0.0007	-0.44	OE
FB67PR	*	0.0206	0.0004	0.30	0.0315	-0.0024	-1.51	OE
FDQ6ML		0.0171	-0.0031	-2.32	0.0310	-0.0029	-1.83	GD
FZA2PR		0.0188	-0.0014	-1.02	0.0337	-0.0002	-0.10	IC
G44GFQ		0.0177	-0.0025	-1.84	0.0325	-0.0013	-0.85	OE
GCGDFQ	X	0.0319	0.0117	8.77	0.0444	0.0106	6.74	OE
GPLCKQ		0.0220	0.0018	1.37	0.0350	0.0012	0.75	OE
HD74WP		0.0205	0.0003	0.25	0.0342	0.0004	0.25	OE
HT2LRF		0.0205	0.0004	0.27	0.0333	-0.0006	-0.36	OE
HUUADV		0.0222	0.0020	1.52	0.0352	0.0014	0.87	OE
J4D44H		0.0175	-0.0026	-1.97	0.0320	-0.0018	-1.17	OE
J4V2BN		0.0210	0.0008	0.60	0.0359	0.0020	1.30	AA
JCTKXD		0.0207	0.0005	0.37	0.0340	0.0002	0.11	OE
JZZ6RP	X	0.0230	0.0028	2.12	0.0327	-0.0012	-0.74	XX
K276A2		0.0199	-0.0003	-0.22	0.0333	-0.0005	-0.34	OE
KKHRWA		0.0206	0.0004	0.31	0.0338	0.0000	-0.01	OE
KKUN8F	*	0.0242	0.0041	3.04	0.0381	0.0043	2.72	OE
KVZGNM		0.0213	0.0012	0.87	0.0337	-0.0001	-0.08	WD
KWPRFF		0.0200	-0.0002	-0.13	0.0333	-0.0005	-0.32	OE
LAD2RD		0.0204	0.0003	0.20	0.0343	0.0004	0.28	IC
LCKNYQ		0.0195	-0.0007	-0.53	0.0344	0.0005	0.34	XX
LKVNYT	X	0.00670	-0.0135	-10.07	0.0115	-0.0223	-14.23	OE
M6F6D7		0.0200	-0.0002	-0.13	0.0347	0.0008	0.53	XX
M86EPT	X	0.1520	0.1318	98.54	0.0252	-0.0086	-5.48	XX
M9YXVZ		0.0217	0.0015	1.12	0.0343	0.0005	0.32	XX
MP3LXY	X	0.0160	-0.0042	-3.12	0.0280	-0.0058	-3.72	IC
MT863M		0.0201	0.0000	-0.03	0.0334	-0.0004	-0.25	OE
MZ9G3Q		0.0223	0.0021	1.60	0.0360	0.0022	1.39	OE
NPGF27		0.0195	-0.0006	-0.47	0.0326	-0.0012	-0.78	OE
NV7XFH		0.0212	0.0011	0.79	0.0344	0.0006	0.36	XX
P32DBF		0.0204	0.0003	0.20	0.0342	0.0004	0.26	OE
PM9MKD		0.0211	0.0009	0.67	0.0350	0.0011	0.72	OE
PVLMUU	X	0.0235	0.0033	2.49	0.0347	0.0009	0.55	IC
Q4BPXB		0.0194	-0.0008	-0.57	0.0344	0.0006	0.36	GD
QGYQDH		0.0171	-0.0030	-2.27	0.0312	-0.0026	-1.68	OE



Fasteners and Metals Interlaboratory Testing Program

Cycle 147
3rd Qtr 2024

Analysis 1613

Carbon & Low Alloy Steel, ALUMINUM (AI)
ALUMINUM (AI)

WebCode	Data Flag	Sample L03			Sample L04			Method
		Lab Mean	Diff. from Grand Mean	CPV	Lab Mean	Diff. from Grand Mean	CPV	
QNEKZE		0.0201	-0.0001	-0.05	0.0345	0.0007	0.45	IC
QNFHBA		0.0197	-0.0004	-0.32	0.0338	0.0000	0.00	IC
QNUZCU		0.0214	0.0012	0.91	0.0344	0.0005	0.34	OE
QNY2FG		0.0208	0.0006	0.46	0.0366	0.0028	1.77	OE
QWBA7H		0.0189	-0.0013	-0.95	0.0305	-0.0034	-2.14	OE
RPQQ2A		0.0200	-0.0002	-0.13	0.0330	-0.0008	-0.53	OE
RVGZFD		0.0219	0.0017	1.27	0.0376	0.0038	2.40	OE
T3BC6F		0.0214	0.0012	0.90	0.0349	0.0010	0.66	OE
TGU6GT		0.0200	-0.0002	-0.15	0.0330	-0.0008	-0.51	OE
TJGPLW		0.0200	-0.0002	-0.13	0.0347	0.0008	0.53	AE
TX28DF		0.0206	0.0004	0.32	0.0340	0.0002	0.11	OE
U4KUMB		0.0193	-0.0008	-0.62	0.0330	-0.0008	-0.53	OE
U8YJX8		0.0197	-0.0005	-0.37	0.0330	-0.0008	-0.53	IC
UBV8B9		0.0196	-0.0006	-0.42	0.0329	-0.0009	-0.57	OE
UD8V2Z		0.0204	0.0003	0.20	0.0345	0.0007	0.45	OE
URLAQC		0.0180	-0.0022	-1.62	0.0333	-0.0005	-0.32	GD
UURJBV		0.0194	-0.0008	-0.60	0.0321	-0.0017	-1.08	OE
UYRTJC		0.0207	0.0005	0.37	0.0340	0.0002	0.11	OE
VAM7CG		0.0187	-0.0015	-1.12	0.0310	-0.0028	-1.80	OE
VKJAJV	X	0.0273	0.0071	5.33	0.0443	0.0105	6.67	OE
VZC4QF		0.0190	-0.0012	-0.87	0.0317	-0.0022	-1.38	OE
W6LN8Z	X	0.0173	-0.0028	-2.12	0.0210	-0.0128	-8.18	OE
WZTNT6		0.0196	-0.0006	-0.45	0.0342	0.0004	0.24	IC
X4QFN9		0.0202	0.0000	0.02	0.0342	0.0004	0.24	GD
XL9EU7		0.0189	-0.0013	-0.97	0.0308	-0.0030	-1.91	OE
XXP26T		0.0207	0.0005	0.40	0.0343	0.0005	0.30	OE
XYWJ23		0.0194	-0.0008	-0.60	0.0317	-0.0022	-1.38	OE
Y3CDB9	X	0.1860	0.1658	123.96	0.2833	0.2495	159.03	OE
Y83NMR	X	0.0220	0.0018	1.37	0.0307	-0.0032	-2.02	OE
YCYAEV	X	0.0140	-0.0062	-4.61	0.0300	-0.0038	-2.44	XX
YE6NV9		0.0197	-0.0005	-0.37	0.0335	-0.0004	-0.23	OE
YELZFY		0.0210	0.0008	0.62	0.0353	0.0015	0.96	OE
YH7XUH	X	0.0388	0.0186	13.93	0.0670	0.0332	21.14	OE
YMCKF7		0.0211	0.0009	0.67	0.0350	0.0011	0.72	XX
YUH7T3		0.0190	-0.0012	-0.87	0.0330	-0.0008	-0.53	XX
YYRL4C		0.0200	-0.0002	-0.13	0.0323	-0.0015	-0.95	OE
ZFDDA2	X	0.0105	-0.0097	-7.25	0.0233	-0.0106	-6.73	OE
ZN96DQ		0.0184	-0.0017	-1.30	0.0319	-0.0020	-1.25	IC

Summary Statistics

	Sample L03		Sample L04	
Grand Means	0.0202	Percent	0.0338	Percent
Stnd Dev Btwn Labs	0.0013	Percent	0.0016	Percent

Samples L03, L04 : AISI 8620, AISI 8620

Statistics based on 115 of 132 reporting participants



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Key to Method Codes Reported by Participants

AA	Spectrometry - Atomic Absorption (AAS)	AE	Spectrometry - Atomic Emission (AES)
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 #1613

74H4KB (X) - Data for sample L04 are high.

E3G4WW (X) - Data for both samples are high. Inconsistent within the determinations of both samples.

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

JZZ6RP (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L04.

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

M86EPT (X) - Data for sample L03 are extreme and data for sample L04 are low.

MP3LXY (X) - Data for both samples are low.

PVLMUU (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L03.

VKJAJV (X) - Data for both samples are high. Inconsistent within the determinations of sample L03.

W6LN8Z (X) - Data for sample L04 are low.

Y3CDB9 (X) - Extreme data.

Y83NMR (X) - Inconsistent in testing between samples. Inconsistent within the determinations of sample L03.

YCYAEV (X) - Data for sample L03 are low.

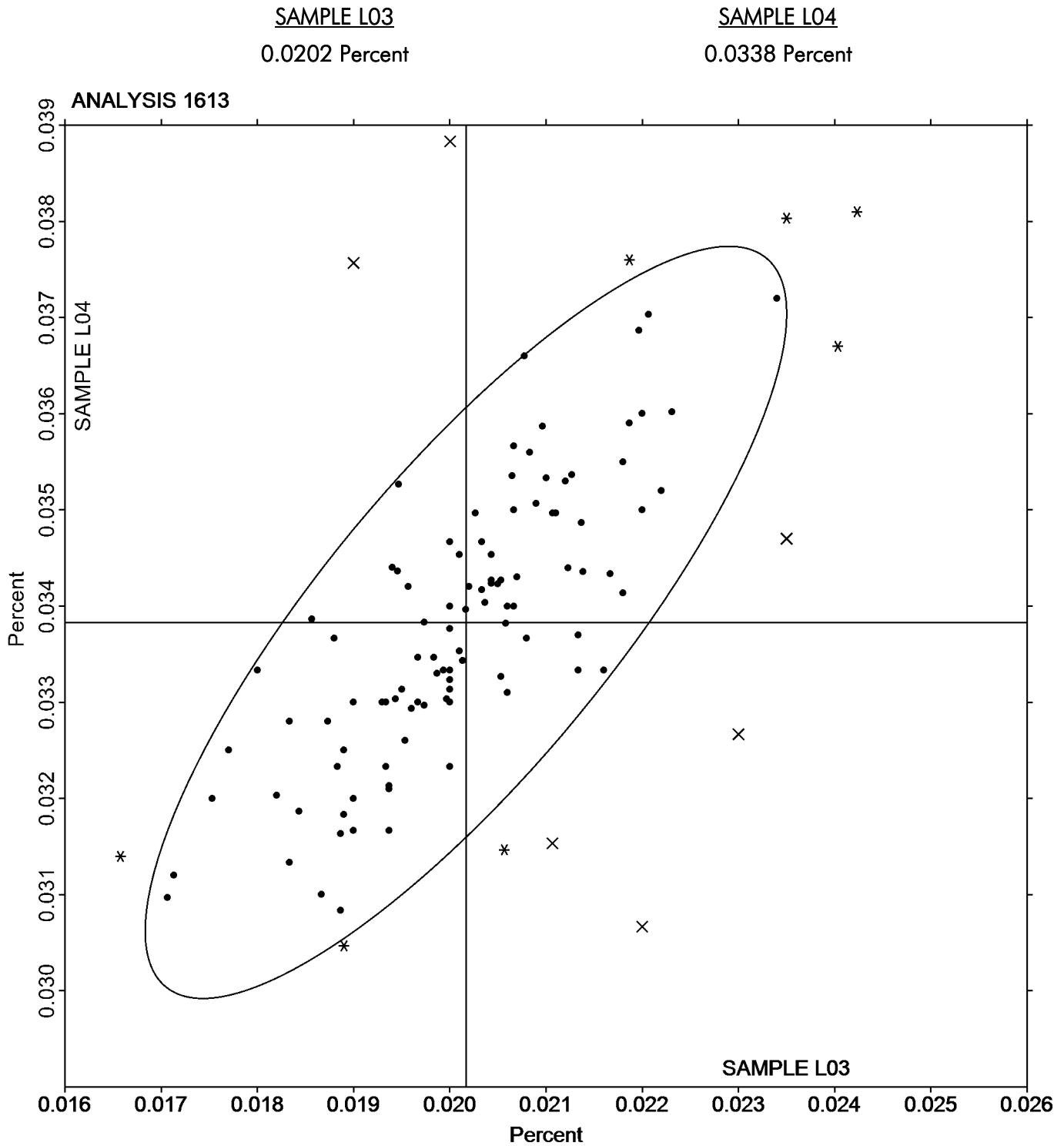
YH7XUH (X) - Extreme data.

ZFDAA2 (X) - Data for both samples are low.



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-End of Report-