

Agricultural Laboratory
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Office of the Secretary
900 SW Jackson, Room 456
Topeka, Kansas 66612
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Jackie McClaskey, Secretary

Governor Sam Brownback

Expires on: 2/9/2017

Kansas Metrology Laboratory Calibration Report

Report Number: K15234

Submitted by:

Nebraska Department Of Agriculture
Food Safety & Consumer Protection
301 Centennial Mall South
Lincoln, NE 68509

Submitted on: 2/8/2016

Vehicle Number: Area 30

Item(s)		
Tested	Adjusted	Rejected
60	5	1

Quantity	Nominal Mass	Type
20	25 lb	Weight(s)
2	15 lb	Weight(s)
38	2 lb to 0.001 lb 8 oz to 1/16 oz	Weight Kit

The calibration of items is performed according to NISTIR 6969, SOP 8. Tolerances are applied from NISTHB 105-1.

Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance ±	Expanded Uncertainty (U), (k=2), ±	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
25 lb	WM25-132	11340.55 g	1.1 g	0.17 g	11340.55 g	In Tolerance
25 lb	WM25-133	11340.02 g	1.1 g	0.17 g	11340.02 g	In Tolerance
25 lb	WM25-135	11340.87 g	1.1 g	0.17 g	11340.25 g	Adjusted
25 lb	WM25-136	11340.50 g	1.1 g	0.17 g	11340.50 g	In Tolerance
25 lb	WM25-137	11340.48 g	1.1 g	0.17 g	11340.48 g	In Tolerance
25 lb	WM25-138	11340.01 g	1.1 g	0.17 g	11340.01 g	In Tolerance
25 lb	WM25-139	11340.56 g	1.1 g	0.17 g	11340.56 g	In Tolerance
25 lb	WM25-140	11340.92 g	1.1 g	0.17 g	11339.94 g	Adjusted
25 lb	WM25-22	11339.83 g	1.1 g	0.17 g	11339.83 g	In Tolerance
25 lb	WM25-26	11339.57 g	1.1 g	0.17 g	11339.57 g	In Tolerance
25 lb	WM25-31	11339.01 g	1.1 g	0.17 g	11339.01 g	In Tolerance
25 lb	WM25-34	11339.02 g	1.1 g	0.17 g	11339.02 g	In Tolerance
25 lb	WM25-35	11340.86 g	1.1 g	0.17 g	11340.02 g	Adjusted
25 lb	WM25-41	11340.85 g	1.1 g	0.17 g	11340.05 g	Adjusted
25 lb	WM25-54	11339.93 g	1.1 g	0.17 g	11339.93 g	In Tolerance
25 lb	WM25-60	11340.21 g	1.1 g	0.17 g	11340.21 g	In Tolerance
25 lb	WM25-61	11340.09 g	1.1 g	0.17 g	11340.09 g	In Tolerance

The data in the above table of this report only applies to those items specifically listed on this report.

453.59237 g = 1 lb
28.349523125 g = 1 oz

The calibration of items is performed according to NISTIR 6969, SOP 8. Tolerances are applied from NISTHB 105-1.

Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
25 lb	WM25-62	11340.74 g	1.1 g	0.17 g	11340.74 g	In Tolerance
25 lb	WM25-63	11339.77 g	1.1 g	0.17 g	11339.77 g	In Tolerance
25 lb	WM25-64	11340.59 g	1.1 g	0.17 g	11340.59 g	In Tolerance
15 lb	WM15-1	6804.372 g	0.68 g	0.090 g	6804.372 g	In Tolerance
15 lb	WM15-2	6804.362 g	0.68 g	0.090 g	6804.362 g	In Tolerance

The data in the above table of this report only applies to those items specifically listed on this report.

453.59237 g = 1 lb

28.349523125 g = 1 oz

The calibration of items is performed according to NISTIR 6969, SOP 8. Tolerances are applied from NISTHB 105-1.

Nominal Mass	Serial Number	Conventional Mass as Found	Tolerance \pm	Expanded Uncertainty (U), (k=2), \pm	Conventional Mass as Left	Adjusted/ In Tolerance/ Rejected
2 lb	7A73 1	907.198 g	0.091 g	0.011 g	907.198 g	In Tolerance
2 lb	7A73 2	907.225 g	0.091 g	0.011 g	907.225 g	In Tolerance
2 lb	7A73 3	907.117 g	0.091 g	0.011 g	907.117 g	In Tolerance
2 lb	7A73 4	907.186 g	0.091 g	0.011 g	907.186 g	In Tolerance
2 lb	7A73 5	907.094 g	0.091 g	0.011 g	907.195 g	Adjusted
2 lb	7A73 6	907.140 g	0.091 g	0.011 g	907.140 g	In Tolerance
2 lb	7A73 7	907.211 g	0.091 g	0.011 g	907.211 g	In Tolerance
2 lb	7A73 8	907.232 g	0.091 g	0.011 g	907.232 g	In Tolerance
2 lb	7A73 9	907.109 g	0.091 g	0.011 g	907.109 g	In Tolerance
2 lb	7A73 10	907.259 g	0.091 g	0.011 g	907.259 g	In Tolerance
2 lb	7A73 11	907.256 g	0.091 g	0.011 g	907.256 g	In Tolerance
2 lb	7A73 12	907.164 g	0.091 g	0.011 g	907.164 g	In Tolerance
2 lb	7A73 13	907.225 g	0.091 g	0.011 g	907.225 g	In Tolerance
2 lb	7A73 14	907.105 g	0.091 g	0.011 g	907.105 g	In Tolerance
1 lb	7A73 15	453.5489 g	0.070 g	0.0084 g	453.5489 g	In Tolerance
1 lb	7A73 16	453.5489 g	0.070 g	0.0084 g	453.5489 g	In Tolerance
8 oz	7A73	226.7835 g	0.045 g	0.0053 g	226.7835 g	In Tolerance
8 oz	7A73 WM-30-1	226.7865 g	0.045 g	0.0053 g	226.7865 g	In Tolerance
4 oz	7A73	113.3977 g	0.023 g	0.0028 g	113.3977 g	In Tolerance
2 oz	7A73	56.6994 g	0.011 g	0.0013 g	56.6994 g	In Tolerance
1 oz	7A73	28.34433 g	0.0054 g	0.00065 g	28.34433 g	Rejected
1/2 oz	7A73	14.17595 g	0.0028 g	0.00033 g	14.17595 g	In Tolerance
1/4 oz	7A73	7.08800 g	0.0017 g	0.00020 g	7.08800 g	In Tolerance
1/8 oz	7A73	3.54261 g	0.0013 g	0.00016 g	3.54261 g	In Tolerance
1/16 oz	7A73	1.77148 g	0.0011 g	0.00014 g	1.77148 g	In Tolerance
1/16 oz	7A73 •	1.77267 g	0.0011 g	0.00014 g	1.77267 g	In Tolerance
0.3 lb	9-OPI-5	136.0738 g	0.027 g	0.0032 g	136.0738 g	In Tolerance
0.2 lb	9-OPI-5	90.7096 g	0.018 g	0.0021 g	90.7096 g	In Tolerance
0.1 lb	9-OPI-5	45.3530 g	0.0091 g	0.0011 g	45.3530 g	In Tolerance
0.05 lb	9-OPI-5	22.68227 g	0.0045 g	0.00055 g	22.68227 g	In Tolerance
0.03 lb	9-OPI-5	13.60837 g	0.0027 g	0.00032 g	13.60837 g	In Tolerance
0.02 lb	9-OPI-5	9.07215 g	0.0018 g	0.00022 g	9.07215 g	In Tolerance
0.01 lb	9-OPI-5	4.53564 g	0.0015 g	0.00018 g	4.53564 g	In Tolerance
0.005 lb	9-OPI-5	2.26713 g	0.0012 g	0.00015 g	2.26713 g	In Tolerance
0.003 lb	9-OPI-5	1.36055 g	0.00099 g	0.00012 g	1.36055 g	In Tolerance
0.002 lb	9-OPI-5	0.90756 g	0.00087 g	0.00011 g	0.90756 g	In Tolerance
0.001 lb	9-OPI-5	0.453032 g	0.00070 g	0.000094 g	0.453032 g	In Tolerance
0.001 lb	9-OPI-5 •	0.453642 g	0.00070 g	0.000094 g	0.453642 g	In Tolerance

The data in the above table of this report only applies to those items specifically listed on this report.

453.59237 g = 1 lb

28.349523125 g = 1 oz

Uncertainty Statement:

The combined standard uncertainty includes the standard uncertainty reported for the standard, the standard uncertainty for the measurement process, the standard uncertainty for any uncorrected errors associated with buoyancy corrections (applies to mass values only), the standard uncertainty for any uncorrected errors associated with temperature correction (applies to length and volume values only), and a component of uncertainty to account for any observed deviations from NIST (The National Institute of Standards and Technology) values that are less than surveillance limits. The combined standard uncertainty is multiplied by a coverage factor of 2 to give an expanded uncertainty, which defines an interval having a level of confidence of approximately 95 percent. The expanded uncertainty presented in this report is consistent with the 1993 ISO Guide to the Expression of Uncertainty in Measurement and follows NISTIR 6969, SOP 29. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Traceability Statement:

The Kansas Metrology Laboratory Standards are traceable to the SI through NIST and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only.

Condition of Item(s) Submitted for Testing:

Minor wear.

Treatment of Item(s) before Testing:

Item(s) were tested as found.

Documentary Standards:

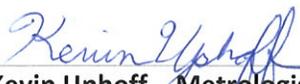
NIST Handbook 105 Series
NISTIR 6969: SOP 8, SOP 4, and/or SOP 7
OR
ASTM E 617-13 or OIML R 111-1 2004(E)

Environmental Conditions:

Temperature:	20.0 °C
Barometric Pressure:	731.06 mmHg
Relative Humidity:	44.6 %

Test Date: 2/10/2016

Due Date: 2/9/2017 -Per state statute K.S.A. 83-304(a).


Kevin Uphoff, Metrologist

2/11/2016



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Jackie McClaskey, Secretary

Governor Sam Brownback

Expires on: 2/9/2017

Kansas Metrology Laboratory Calibration Report

Report Number: K15234-TM

Submitted by:

Nebraska Department Of Agriculture
 Food Safety & Consumer Protection
 P.O. Box 94757
 Lincoln, NE 68509

Submitted on: 2/8/2016

Reference Number: AREA 30

Item(s)		
Tested	Adjusted	Rejected
5	2	0

Quantity	Nominal Volume	Type
3	5 gal	Bottom Drop Test Measure "To Deliver"
2	5 gal	Handheld Test Measure "To Deliver"

The calibration of items is performed according to NISTIR 7383, SOP 19 Volume Transfer. Tolerances are applied from NISTHB 105-3. The volume applies when a 10 second drain is observed for 5 gallon hand held test measures. For 5 gallon bottom drop test measures and provers a 30 second drain applies. The drain time starts when the cessation of the main flow is observed.

Nominal Volume	Serial Number	Material	Cubical Coefficient of Expansion (1/°F)	Volume as Found @ 60 °F	Tolerance ±	Expanded Uncertainty (U), (k=2.02), ±	Volume as Left @ 60 °F	Adjusted/ In Tolerance/ Rejected
5 gal	00-16623-01	Stainless Steel	0.0000265	5.00092 gal	0.00250 gal	0.00087 gal	5.00092 gal	In Tolerance
5 gal	00-16623-02	Stainless Steel	0.0000265	5.00058 gal	0.00250 gal	0.00087 gal	5.00058 gal	In Tolerance
5 gal	00-16623-03	Stainless Steel	0.0000265	4.99997 gal	0.00250 gal	0.00086 gal	4.99997 gal	In Tolerance
5 gal	40702 C	Stainless Steel	0.0000265	4.99538 gal	0.00250 gal	0.00085 gal	5.00058 gal	Adjusted
5 gal	40702 D	Stainless Steel	0.0000265	5.00404 gal	0.00250 gal	0.00085 gal	4.99993 gal	Adjusted

The data in the above table of this report only applies to those items specifically listed on this report.

1 m³=1 000 L=264.1720 gal

Temperature Corrections

Item	Temperature °F	in ³
Temperature Correction for 5 gal Stainless Steel Test Measure (CCE= 0.0000265/°F)	-20	-2.45
	-15	-2.30
	-10	-2.14
	-5	-1.99
	0	-1.84
	5	-1.68
	10	-1.53
	15	-1.38
	20	-1.22
	25	-1.07
	30	-0.92
	35	-0.77
	40	-0.61
	45	-0.46
	50	-0.31
	55	-0.15
	60	0.00
	65	0.15
	70	0.31
	75	0.46
	80	0.61
85	0.77	
90	0.92	
95	1.07	
100	1.22	
105	1.38	
110	1.53	
115	1.68	
120	1.84	

Item	Temperature °F	in ³
Temperature Correction for 5 gal Low Carbon Steel Test Measure (CCE= 0.0000186/°F)	-20	-1.72
	-15	-1.61
	-10	-1.50
	-5	-1.40
	0	-1.29
	5	-1.18
	10	-1.07
	15	-0.97
	20	-0.86
	25	-0.75
	30	-0.64
	35	-0.54
	40	-0.43
	45	-0.32
	50	-0.21
	55	-0.11
	60	0.00
	65	0.11
	70	0.21
	75	0.32
	80	0.43
85	0.54	
90	0.64	
95	0.75	
100	0.86	
105	0.97	
110	1.07	
115	1.18	
120	1.29	

CCE = Coefficient of Cubical Expansion

Expires on: 2/9/2017

Kansas Metrology Laboratory

Report Number: K15234-TM

Uncertainty Statement:

The combined standard uncertainty includes the standard uncertainty reported for the standards, the standard uncertainty for the measurement process, the standard uncertainty for the water density equation (Metrologia Tanaka, et al), the standard uncertainty for any uncorrected errors associated with temperature correction (applies to length and volume values only), the standard uncertainty for reading the meniscus (when applicable), the standard uncertainty for viscosity, and a component of uncertainty to account for any observed deviations from NIST(The National Institute of Standards and Technology) values that are less than surveillance limits. The combined standard uncertainty is multiplied by the coverage factor (k-value) reported to give an expanded uncertainty, which defines an interval having a level of confidence of 95.45 percent. The k-value reported is based on the effective degrees of freedom as outlined in JCGM 100:2008 section G.4. The expanded uncertainty presented in this report is consistent with the 1993 ISO Guide to the Expression of Uncertainty in Measurement and follows NISTIR 6969, SOP 29. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Traceability Statement:

The Kansas Metrology Laboratory Standards are traceable to the SI through NIST and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only.

Condition of Item(s) Submitted for Testing:

Minor wear.

Treatment of Item(s) before Testing:

Item(s) were tested as found.

Water Temperature at Time of Test:

71.04 °F

Documentary Standards:

-NIST Handbook 105-3 (2010)

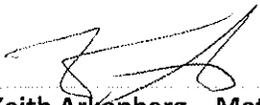
-NISTIR 7383 (2013), SOP 19

Environmental Conditions:

Temperature:	21.56 °C
Barometric Pressure:	730.41 mmHg
Relative Humidity:	23.1 %

Test Date: 2/10/2016

Due Date: 2/9/2017 -Per state statute K.S.A. 83-304(a).


Keith Arkenberg , Metrologist

2/11/2016



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Jackie McClaskey, Secretary

Governor Sam Brownback

Test Date: 2/9/2016

Test No.: K15234-1.1

Kansas Metrology Laboratory Certificate of Calibration



**Nebraska Department Of Agriculture
 Food Safety & Consumer Protection
 301 Centennial Mall South
 Lincoln NE 68509**

Manufacturer: Troemner
 S/N: WM-G89-2
 Number of Pieces: 11 of 23 total

Nominal Mass	Weight's Markings	Assumed Density (g/cm ³)	Conventional Mass As Found (g)	Conventional Mass As Left (g)	Expanded Uncertainty ± (mg)	In Tolerance Adjusted Rejected
300 g	300g	7.84	300.002788	300.002788	0.098	In Tolerance
200 g	200g	7.84	200.000659	200.000659	0.093	In Tolerance
100 g	100g	7.84	100.001451	100.001451	0.018	In Tolerance
50 g	50g	7.84	50.000211	50.000211	0.011	In Tolerance
30 g	30g	7.84	30.0005572	30.0005572	0.0064	In Tolerance
20 g	20	7.84	20.0002368	20.0002368	0.0055	In Tolerance
10 g	10	7.84	10.0003998	10.0003998	0.0050	In Tolerance
5 g	5	7.84	5.0001889	5.0001889	0.0024	In Tolerance
3 g	3	7.84	3.0000192	3.0000192	0.0031	In Tolerance
2 g	2	7.84	2.0000521	2.0000521	0.0024	In Tolerance
1 g	1	7.84	1.0000147	1.0000147	0.0013	In Tolerance

This document certifies the above mentioned artifacts were compared to the Standards of the State of Kansas which are traceable to the National Institute of Standards and Technology. The conventional mass is the weight in normal air (1.2 mg/cm³) at 20 °C versus the reference density of 8.0 g/cm³. Calibration of listed items was performed according to NISTIR 6969, SOP 4 (Double Substitution) and/or NISTIR 5672, SOP 5 (3-1).

Tolerances were evaluated to ASTM Class 4. Surface finish and magnetism were not evaluated as it is assumed to be done by the manufacturer.

Uncertainty Statement:

The combined standard uncertainty includes the standard uncertainty reported for the standards, tare weights, the standard uncertainty for the measurement process, the standard uncertainty for air buoyancy corrections as stated in OIML R111-1 [2004E] eq. C.6.3-1, and a component of uncertainty to account for any observed deviations (Bias) from NIST (National Institute of Standards and Technology) values that are less than surveillance limits. Factors not considered in the evaluation: magnetism, weights are considered to meet magnetism specifications unless measurement aberrations are noted, balance eccentricity and linearity, these factors are considered as a part of the measurement assurance process when using a check standard with adequate degrees of freedom. The combined uncertainty is multiplied by the coverage factor (*k*-value) reported to give an expanded uncertainty, which defines an interval having a level of confidence of 95.45 percent. The coverage factor reported is based on the effective degrees of freedom as outlined in JCGM 100:2008 section G.4. The expanded uncertainty presented in this report is also consistent with and follows NISTIR 6969, SOP 29. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Uncertainty Analysis:

Nominal	S_p	$U_S (k=1)$	$U_{tare} (k=1)$	$U_{Air Buoyancy Eq.}$	P_{air}	Procedure
300 g	0.0408	0.0172	No Tare	-0.00304	1.16540	SOP 5
200 g	0.0408	0.0121	No Tare	-0.00208	1.16672	SOP 5
100 g	0.00151	0.00907	No Tare	-0.00104	1.16687	SOP 5
50 g	0.00238	0.00470	No Tare	-0.000471	1.16714	SOP 5
30 g	0.00109	0.00302	No Tare	-0.000286	1.16775	SOP 5
20 g	0.00158	0.00222	No Tare	-0.000189	1.16734	SOP 5
10 g	0.00160	0.00183	No Tare	-0.0000924	1.16632	SOP 5
5 g	0.000695	0.000970	No Tare	-0.0000433	1.16633	SOP 5
3 g	0.00125	0.000650	No Tare	-0.0000266	1.16711	SOP 5
2 g	0.00102	0.000495	No Tare	-0.0000179	1.16756	SOP 5
1 g	0.000459	0.000455	No Tare	-0.00000889	1.16722	SOP 5

All values listed as a component of the overall uncertainty are in units of milligrams (mg) or (mg/cm³).

Traceability Statement:

The Kansas Metrology Laboratory Standards are traceable to the SI through NIST and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only.

Condition of Item(s) Submitted for Testing: Minor wear.
Treatment of Item(s) before Testing: Item(s) were tested as found.
Documentary Standards: NIST Handbook 105 Series, NISTIR 6969, SOP 4, NISTIR 5672, SOP 5, & ASTM E 617-13 or OIML R111-1

Item(s) Received on: 2/8/2016
Item(s) Acclimated: 2/8/2016 4:25:00 PM

Environmental Conditions:	Temperature	Barometric Pressure	Relative Humidity
	20.2 °C	734.29 mmHg	43.8 %

Values are averages recorded over the duration of testing



2/11/2016

Keith Arkenberg, Metrologist

Date

KML Software Version: 8.3

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Jackie McClaskey, Secretary

Governor Sam Brownback

Test Date: 2/10/2016

Kansas Metrology Laboratory Certificate of Calibration

Test No.: K15234-1.2



**Nebraska Department Of Agriculture
 Food Safety & Consumer Protection
 P.O. Box 94757
 Lincoln NE 68509**

Manufacturer: Troemner
 S/N: WM-G89-2
 Number of Pieces: 12 of 23 total

Nominal Mass	Weight's Markings	Conventional Mass As Found / As Left (g)	Expanded Uncertainty ± (mg)	Assumed Density (g/cm ³)	k-value	Tolerance (mg)	In Tolerance Adjusted Rejected
500 mg	500 mg	0.4999801	0.0012	7.84	2.06	0.16	In Tolerance
200 mg	200 mg	0.19998703	0.00066	7.84	2.04	0.12	In Tolerance
200 mg	200 mg ●	0.19997978	0.00066	7.84	2.04	0.12	In Tolerance
100 mg	100 mg	0.09992576	0.00073	7.84	2.04	0.1	In Tolerance
50 mg	50	0.04999166	0.00042	7.84	2.08	0.085	In Tolerance
20 mg	20	0.02000654	0.00028	2.7	2.04	0.07	In Tolerance
20 mg	20 ●	0.02002417	0.00028	2.7	2.04	0.07	In Tolerance
10 mg	10	0.00999226	0.00039	2.7	2.04	0.06	In Tolerance
5 mg	5	0.00499953	0.00034	2.7	2.14	0.055	In Tolerance
2 mg	2	0.00200428	0.00031	2.7	2.08	0.05	In Tolerance
2 mg	2 ●	0.00201439	0.00031	2.7	2.08	0.05	In Tolerance
1 mg	1	0.00099663	0.00039	2.7	2.08	0.05	In Tolerance

This document certifies the above mentioned artifacts were compared to the Standards of the State of Kansas which are traceable to the National Institute of Standards and Technology. The conventional mass is the weight in normal air (1.2 mg/cm³) at 20 °C versus the reference density of 8.0 g/cm³. Calibration of listed items was performed according to NISTIR 6969, SOP 4 (Double Substitution) and/or NISTIR 5672, SOP 5 (3-1).

Tolerances were evaluated to ASTM Class 4. Surface finish and magnetism were not evaluated as it is assumed to be done by the manufacture.

Uncertainty Statement:

The combined standard uncertainty includes the standard uncertainty reported for the standards, tare weights, the standard uncertainty for the measurement process, the standard uncertainty for air buoyancy corrections as stated in OIML R111-1 [2004E] eq. C.6.3-1, and a component of uncertainty to account for any observed deviations (Bias) from NIST (National Institute of Standards and Technology) values that are less than surveillance limits. Factors not considered in the evaluation: magnetism, weights are considered to meet magnetism specifications unless measurement aberrations are noted, balance eccentricity and linearity, these factors are considered as a part of the measurement assurance process when using a check standard with adequate degrees of freedom. The combined uncertainty is multiplied by the coverage factor (*k*-value) reported to give an expanded uncertainty, which defines an interval having a level of confidence of 95.45 percent. The coverage factor reported is based on the effective degrees of freedom as outlined in JCGM 100:2008 section G.4. The expanded uncertainty presented in this report is also consistent with and follows NISTIR 6969, SOP 29. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

Uncertainty Analysis:

Nominal	S_p	$u_S (k=1)$	$u_{tare} (k=1)$	$u_{Air\ Buoyancy}$	ρ_{air}	Procedure
500 mg	0.000503	0.000255	No Tare	0.0000206	1.15965	SOP 5
200 mg	0.000284	0.000150	No Tare	0.00000826	1.15942	SOP 5
200 mg	0.000284	0.000150	No Tare	0.00000826	1.15948	SOP 5
100 mg	0.000324	0.000150	No Tare	0.00000414	1.15829	SOP 5
50 mg	0.000180	0.0000950	No Tare	0.00000207	1.15784	SOP 5
20 mg	0.000117	0.0000650	No Tare	0.0000218	1.15890	SOP 5
20 mg	0.000117	0.0000650	No Tare	0.0000218	1.15782	SOP 5
10 mg	0.000179	0.0000700	No Tare	0.0000109	1.15798	SOP 5
5 mg	0.000149	0.0000550	No Tare	0.00000548	1.15874	SOP 5
2 mg	0.000140	0.0000550	No Tare	0.00000220	1.15721	SOP 5
2 mg	0.000140	0.0000550	No Tare	0.00000220	1.15713	SOP 5
1 mg	0.000177	0.0000650	No Tare	0.00000109	1.15770	SOP 5

All values listed as a component of the overall uncertainty are in units of milligrams (mg) or (mg/cm³).

Traceability Statement:

The Kansas Metrology Laboratory Standards are traceable to the SI through NIST and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory test number identified above is the unique report number to be used in referencing measurement traceability for artifacts identified in this report only.

Condition of Item(s) Submitted for Testing: Minor wear.
Treatment of Item(s) before Testing: Item(s) were tested as found.
Documentary Standards: NIST Handbook 105 Series, NISTIR 6969, SOP 4, NISTIR 5672, SOP 5, & ASTM 204-13 or OIML R111-1
Item(s) Received on: 2/8/2016
Item(s) Acclimated: 2/8/2016 4:25:00 PM

Environmental Conditions:	Temperature	Barometric Pressure	Relative Humidity
	20.1 °C	734.36 mmHg	42.6 %

Values are averages recorded over the duration of testing



2/11/2016

Keith Arkenberg, Metrologist

Date

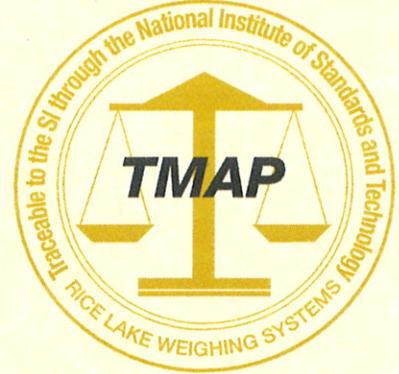
KML Software Version: 8.3

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Traceable Report Number: 2403877B
Contractor: STATE OF NEBRASKA
 PO BOX 94757
 LINCOLN, NE 68509-0757

Purchase Order Number: 4024165256
Client: STATE OF NEBRASKA
 PO BOX 94757
 LINCOLN, NE 68509-0757

Date Received: 22 Feb 2016
Date Calibrated: 25 Feb 2016
Contractor Requested Recall Date: 1 year
Temperature Range: 20.12 °C
Pressure Range: 735.17 mmHg
Relative Humidity Range: 57.84 %
Air Density Range: 1.1586 mg/cm3
NIST Certificate Number: 684/286541-15,684/284451-14
 Although there are two NIST numbers, one or both may apply.
Tested By: 22
Procedure: Modified Substitution (WI05-0023)
Description of Weights: 1 oz Satin Finish Weight, NIST Class F, S/N 6GTQ..



Conventional Mass Corr.

Nominal Value	ID	As Found (mg)	As Found In Tol	As Left (mg)	As Left In Tol	Unc. (mg)	k	Tol.* (mg)	Balance Used	Standard Set Used	Assumed Density (g/cm3)
1 oz	6GTQ..	1.73	Y	1.73	Y	0.67	2	5.4	1221Q	D564Q	7.84

This report contains data not covered by the NVLAP Accreditation if the box is checked.

Check with your local state agency for certification of compliance on Legal for Trade items.
 The weight tolerance class is referenced in the Description of Weights. Unless otherwise noted, weights tested meet the requirements of the class.
 *The specifications for the weight classes can be found in NIST Handbook 105-1, ASTM E-617 or OIML R111.

Prepared By:
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 An ISO 9001 registered company

Dated 26 Feb 2016

Dan Demers
 Dan Demers, Metrologist