NEBRASKA

Good Life. Great Roots.

Nebraska Standards Laboratory 3721 West Cuming St. Lincoln, NE 68524 (402)-471-2087

#### DEPARTMENT OF AGRICULTURE

Calibration Certificate of Mas
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			1						
Calibration Date:	August 14, 2024			Certificate Numbe	er: 2	024-104-4			
Artifact(s) Owner:	FSCP Area 30			Submitted by: State of Nebraska					
	3721 West Cuming St.			Point of Contact: N	DA-Weights and	Measures			
	Lincoln, NE 68524			Pl	n. 402-471-3422				
				<u>email:</u> ag	gr.wam@nebraska	1.gov			
Test Item(s):	Precision metric weight ki	t	Artifact(s) Description	<u>.</u> Dat	te Received: 8	/5/2024			
Serial Number(s):	WM-G89-2			ID / As	set Number: A	rea 30			
Condition	Excellent (little wear)			Class S	pecification: A	STM 4			
Material	Stainless Steel			٨	Manufacture: ⊤	roemner			
Reference Standards	Used:		Procedure Used:		<u>Equipmer</u>	nt Used:			
NSL & /Den Metric		Ν	IST HB 6969, SOP 8 (201	9) Sartor	ius CC10000S	Sartorius CCE6			
Voland-1707			Metrologist:	Sarto	orius CC 1201				
			JPL	Me	ttler XPR 205				
Environmental Cond.	<b>Temp:</b> 21.51 °C	Pressure:	729.49 mmHg	Relative Humidity:	49.98 %				
			Pertinent Information						

• The artifact(s) listed in this document have been found and/or left within the maximum permissible error for the specification stated above, except as noted. An artifact is considered in-compliance when the correction plus the measurement uncertainty is equal to or less than the maximum permissible error. RED print indicates an out-of-compliance reading. It is the decision of the Laboratory to adjust the artifact(s) when the sum of the correction and the uncertainty exceed 95% of the maximum permissible error. All of the tolerances and design specifications (except density, hardness and magnetism) were evaluated according to ASTM E617 (2023) and/or NIST HB 105-1 (2019) for the artifacts designated class.

• All corrections stated in this report correlate to a "Conventional Mass" (CM), also known as "apparent mass", scale verses 8.0 g/cm<sup>3</sup> reference mass density and an air density of 1.2 mg/cm<sup>3</sup> at 20 °C.

• The Artifacts in "red" do not meet ASTM 4 tolerances but do meet ASTM 5 tolerances and should be evaluated before use.

• It is the end user's responsibility to verify that the weights meet the accuracy requirements outlined in NIST Handbook 44 (2020), Appendix A Fundamental Considerations, when using the weights for calibration of commercial (Legal for Trade) scales.

#### **Traceability Statement**

The artifact(s) described in this certificate have been compared to the Standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (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 calibration number for this certificate is the only unique calibration number to be used in referencing measurement traceability for the artifact(s) described in this certificate.

#### **Uncertainty Statement**

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors associated with air buoyance corrections. The combined standard uncertainty is multiplied by a coverage factor (*k*), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the *Guide to the Expression of Uncertainty in Measurement (2008, revised 2012)*. Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken. Magnetic testing has not been performed, therefore, there are no components for the effects of it in the uncertainty budget.



#### Nebraska Standards Laboratory 3721 West Cuming St.

Lincoln, NE 68524 (402)-471-2087 Director of Agriculture Sherry Vinton P.O. Box 94947 Lincoln, NE 68509-4947 (402) 471-2341 www.nda.nebraska.gov

Good Life. Great Roots.

DEPARTMENT OF AGRICULTURE Calibration Date: August 14, 2024

Calibrati	on Date: Au	ıgust 14, 2024			Certificat	e Number:	2024-104-4				
	Calibration Results										
Nominal Mass	Serial Number / ID	As Found Conventional Mass Correction (g)	Adjusted (Y/N)	As Left Conventional Mass Correction (g)	Uncertainty ± (g)	(k) factor	ASTM 4 MPE ± (g)	Assumed Density (g/cm³)			
4 kg	6	-0.009	n	-0.009	0.012	2	0.1	7.84			
300 g		0.00281	n	0.00281	0.00085	2.002	0.006	7.84			
200 g		0.00079	n	0.00079	0.00066	2.004	0.004	7.84			
100 g		0.00150	n	0.00150	0.00025	2.003	0.002	7.84			
50 g		0.00031	n	0.00031	0.00015	2.005	0.0012	7.84			
30 g		0.00061	n	0.00061	0.00012	2.004	0.0009	7.84			
20 g		0.000285	n	0.000285	0.000087	2.004	0.0007	7.84			
10 g		0.000433	n	0.000433	0.000071	2.009	0.0005	7.84			
5 g		0.000202	n	0.000202	0.000045	2.002	0.00036	7.84			
3 g		0.000031	n	0.000031	0.000038	2.002	0.0003	7.84			
2 g		0.000066	n	0.000066	0.000032	2.003	0.00026	7.84			
1 g		0.000014	n	0.000014	0.000025	2.004	0.0002	7.84			

#### **Conversion Factors**

1 ounce (avoirdupois) (oz) = 28.349 52 g

1 pound (avoirdupois) (lb) = 453.592 37 g exactly

fore P. 3

Joel P. Lavicky Metrologist

8/20/2024 Date of Issue

The results in this certificate only applies to those item specifically listed in this certificate. This certificate cannot be considered complete unless it contains <u>all</u> pages. This document may not be reproduced except in <u>full</u>, without the written consent of the Nebraska Standards Laboratory.

NEBRAS	KA	Nebraska Standards Labora	torv	Director of Agriculture Sherry Vinton
		3721 West Cuming St.		P.O. Box 94947
Good Life. Great F	Roots.	Lincoln, NE 68524		Lincoln, NE 68509-4947
DEPARTMENT OF AGRIC	CULTURE	(402)-471-2087		(402) 471-2341 www.nda.nebraska.gov
	Cal	ibration Certificate	of Mass	
Calibration Date:	August 6, 2024		Certificate Number:	2024-104-1
<u>Artifact(s) Owner</u>			Submitted by: State of Nebra	
	3721 West Cuming St.		Point of Contact: NDA-Weights a	
	Lincoln, NE 68524		Ph. 402-471-3 <u>email:</u> agr.wam@neb	
				-
	: 22-cast weights			ed: August 5, 2024
ID / Asset Number Manufacture		Artifact(s) Description:		s): See next page
	: Cast Iron		Class Specificatio	
Material			Conditio	on: Good (some wear)
Reference Standards I	Jsed:	Procedure Used:	<u>Equip</u>	ment Used:
NSL lb standards		NIST HB 6969, SOP 8 (2019)	Mettler XPR320	003
		<u>Metrologist:</u> JPL		
		51 2		
Environmental Cond.	<b>Temp:</b> 23.9 °C	Pressure: 733.9 mmHg R Pertinent Information	elative Humidity: 46.2 %	
except as noted. An art permissible error. RED correction and the u hardness and ma	ifact is considered in-con print indicates an out-of- incertainty exceed 95% of gnetism) were evaluated ted in this report correlat	e been found and/or left within the maxin npliance when the correction plus the me compliance reading. It is the decision of t f the maximum permissible error. All of according to ASTM E617 (2023) and/or NI te to a "Conventional Mass" (CM), also kn	asurement uncertainty is equal to the Laboratory to adjust the artif- the tolerances and design specific ST HB 105-1 (2019) for the artifac own as "apparent mass", scale ve	o or less than the maximum act(s) when the sum of the cations (except density, cts designated class.
	responsibility to verify th	nass density and an air density of 1.2 mg/ at the weights meet the accuracy require	ments outlined in NIST Handbook	44 (2022),
Appendix A Fundamenta	at Considerations, when u	sing the weights for calibration of comme Traceability Statement	rcial (Legal for Trade) scales.	
are traceable to t comprehensive mea	he International System c surement assurance progr tory. The calibration num	e been compared to the Standards of the of Units (SI) through the National Institute ram for ensuring continued accuracy and in ober for this certificate is the only unique ceability for the artifact(s) described in t	e of Standards and Technology (N measurement traceability within calibration number to be used in	IST) and are part of a the level of uncertainty
uncertainties for a uncorrected errors ass expanded uncertaint consistent with the evaluated through	ny observed deviations fr ociated with air buoyance y, which defines an inter <i>Guide to the Expression o</i> a Type A evaluation, or t	<u>Uncertainty Statement</u> uncertainties reported for the standard, om reference values which are less than s e corrections. The combined standard unce val with a 95.45 percent level of confider of Uncertainty in Measurement (2008, rev the method of evaluation of uncertainty to een performed, therefore, there are no c	surveillance limits and the standa certainty is multiplied by a covera- nce. The expanded uncertainty pr rised 2012). Some components o by the statistical analysis (standar	rd uncertainty for any age factor $(k)$ , to give the resented in this report is f the calibration can be rd deviation) from the

## NEBRASKA

#### Nebraska Standards Laboratory

3721 West Cuming St. Lincoln, NE 68524 (402)-471-2087 Director of Agriculture Sherry Vinton P.O. Box 94947 Lincoln, NE 68509-4947 (402) 471-2341 www.nda.nebraska.gov

Good Life. Great Roots.

#### DEPARTMENT OF AGRICULTURE

Calibrat	ion Date: Au	igust 6, 2024		Certificat	e Numbe	r: 2024-104-	·1	
			Ca	libration Resul	ts			
Nominal Mass	Serial Number / ID	As Found Conventional Mass Correction (g)	Adjusted (Y/N)	As Left Conventional Mass Correction (g)	Uncertainty ± (g)		NIST Class F MPE ± (g)	Assumed Density (g/cm <sup>3</sup> )
15 lb	WM15-1	0.175	N	0.175	0.085	2.01	0.68	7.2
15 lb	WM15-2	0.493	Ν	0.493	0.085	2.01	0.68	7.2
25 lb	NE-81	0.10	N	0.10	0.14	2.01	1.1	7.2
25 lb	NE-82	-0.05	N	-0.05	0.14	2.01	1.1	7.2
25 lb	NE-83	-0.07	N	-0.07	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-84</u>	0.55	N	0.55	0.14	2.01	1.1	7.2
<u>25 lb</u>	NE-85	0.78	N	0.78	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-86</u>	0.50	N	0.50	0.14	2.01	1.1	7.2
<u>25 lb</u>	NE-87	0.70	N	0.70	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-88</u>	0.85	N	0.85	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-89</u>	0.74	N	0.74	0.14	2.01	1.1	7.2
<u>25 lb</u>	<u>NE-90</u>	0.59	N	0.59	0.14	2.01	1.1	7.2
25 lb	<u>NE-91</u>	0.51	N	0.51	0.14	2.01	1.1	7.2
25 lb	<u>NE-92</u>	0.07	N	0.07	0.14	2.01	1.1	7.2
25 lb	<u>NE-93</u>	0.19	<u>N</u>	0.19	0.14	2.01	1.1	7.2
25 lb	<u>NE-94</u>	0.55	N	0.55	0.14	2.01	1.1	7.2
25 lb	NE-95	0.27	N	0.27	0.14	2.01	1.1	7.2
25 lb	<u>NE-96</u>	0.57	N	0.57	0.14	2.01	1.1	7.2
25 lb	NE-97	0.46	N	0.46	0.14	2.01	1.1	7.2
25 lb	<u>NE-98</u>	0.29	N	0.29	0.14	2.01	1.1	7.2
25 lb	NE-99	0.24	N	0.24	0.14	2.01	1.1	7.2
25 lb	NE-100	0.79	IN IN	0.79	0.14	2.01	1.1	7.2

**Conversion Factors** 

1 ounce (avoirdupois) (oz) = 28.349 52 g

1 pound (avoirdupois) (lb) = 453.592 37 g exactly

fore P.3 Joel P. Lavicky Metrologist

8/20/2024

Date of Issue

The results in this certificate only applies to those item specifically listed in this certificate. This certificate cannot be considered complete unless it contains <u>all</u> pages. This document may not be reproduced except in <u>full</u>, without the written consent of the Nebraska Standards Laboratory.

Good Life. Gr	EBRASKA       Nebraska Standards Laboratory         3721 West Cuming St.       3721 West Cuming St.         Lincoln, NE 68524       (402) 471-2087								
Calibratio		8/6/2024			cate of Calibratio olume Transfer	n	Certif	icate Number:	www.nda.nebraska.gov 2024-104-5
	Quantity	Nominal Volume	Items Submit	ted:	Туре	Submitted By:	3721 West Cumin	-	
	2	5 gal	Seranhin Test Measure 4" Neck			Lincoln, NE 68524			
402-471-3422 agr.wam@nebraska.gov Test Results									
	Nominal Volume	Serial Number	Material	Cubical Coefficient of Expansion (/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	( <i>k</i> )	
	5 gal	40702 D	SS	0.0000265	4.9983 gal	4.9983 gal	0.0012 gal	2.01	
	5 gal	40702 C	SS	0.0000265	4.9989 gal	4.9989 gal	0.0012 gal	2.01	]

The data in this report only applies to those items specifically listed on this report.

Volume delivered at 60°F after a 30 second pour and 10 second drain for test measures. For provers a 30 second drain time would apply.

## **Conversion Factors:**

1 gal = 231 in<sup>3</sup> 1 gal = 3.785 412 E-03 m<sup>3</sup>

## **Traceability Statement:**

The artifact(s) described in this report have been compared to the Standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (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 calibration number for this report is the only unique calibration number to be used in referencing measurement traceability for the artifact(s) described in this report.

## **Uncertainty Statement:**

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors. The combined standard uncertainty is multiplied by a coverage factor (k), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the Guide to the Expression of Uncertainty in Measurement (2008, revised 2012). Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken.

## **Pertinent Information:**

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<u>Condition of Item(s) Submitted for Calibration:</u> Cleaned and ready for calibration

Treatment of Item(s) before Calibration:

Laboratory Reference Standard Used; 5 gal SP NE 1586

Procedure Used: NISTIR 7383 SOP 19 (2019)

lested as Found		NISTIR 7383, SOP 19 (2019)
Environmental conditions at time of calib	ration:	Water temperature at time of calibration:
Temp °C 23.9	Humidity % 47.0	76.35 °F
Pressure mmHg 734.00		
Date Submitted: 8/5/2024		
gove P. 3		8/21/2022
Joel P. Lavicky, Metrologist		Issue Date:
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OOD LIFE. Gr	eat Roots.		Nebraska Standards Laboratory 3721 West Cuming St. Lincoln, NE 68524 (402) 471-2087						Director of Agriculture Sherry Vinton P.O. Box 94947 Lincoln, NE 68509-4947 (402) 471-2341 www.nda.nebraska.gov
Calibratio	on Date:	8/8/2024			icate of Calibratio olume Transfer	on	Certi	ficate Number:	2024-104-6
			Items Submit			Submitted By:			
	Quantity	Nominal Volume	Manufacturer		Туре	3721 West Cuming St. Lincoln, NE 68524		-	
	3	5 gal	Seraphin "Special" J Prove			POC: NDA-Weights and Measures			
				То	st Results		402-471-3422 agr.wam@nebras	ka.gov	
	Nominal Volume	Serial Number	Material	Cubical Coefficient of Expansion (/°F)	As Found Volume Delivered @ 60 °F	As left Volume Delivered @ 60 °F	Uncertainty (U)	( <i>k</i> )	
	5 gal	16623-01	SS	0.0000265	4.9992 gal	4.9992 gal	0.0010 gal	2.01	
	5 gal	16623-02	SS	0.0000265	4.9987 gal	4.9987 gal	0.0010 gal	2.01	

I ne data in this report only applies to those items specifically listed on this report.

Volume delivered at 60°F after a 30 second pour and 10 second drain for test measures. For provers a 30 second drain time would apply.

## **Conversion Factors:**

 $1 \text{ gal} = 231 \text{ in}^3$ 1 gal = 3.785 412 E-03 m<sup>3</sup>

## **Traceability Statement:**

The artifact(s) described in this report have been compared to the Standards of the State of Nebraska. The Standards of the State of Nebraska are traceable to the International System of Units (SI) through the National Institute of Standards and Technology (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 calibration number for this report is the only unique calibration number to be used in referencing measurement traceability for the artifact(s) described in this report.

## **Uncertainty Statement:**

The combined standard uncertainty includes uncertainties reported for the standard, uncertainties associated with the measurement process, uncertainties for any observed deviations from reference values which are less than surveillance limits and the standard uncertainty for any uncorrected errors. The combined standard uncertainty is multiplied by a coverage factor (k), to give the expanded uncertainty, which defines an interval with a 95.45 percent level of confidence. The expanded uncertainty presented in this report is consistent with the Guide to the Expression of Uncertainty in Measurement (2008, revised 2012). Some components of the calibration can be evaluated through a Type A evaluation, or the method of evaluation of uncertainty by the statistical analysis (standard deviation) from the observations taken.

## **Pertinent Information:**

The artifact(s) listed above have been found and/or left within the maximum permissible error for the specification stated above, except as noted. An artifact is considered in-compliance when the correction plus the measurement uncertainty is equal to or less than the maximum permissible error. It is the decision of the Laboratory to adjust the artifact(s) when the sum of the correction and uncertainty exceed 95% of the maximum permissible error. All of the tolerances and specifications were evaluated according to NIST HB 105-3 (2010).

Condition of Item(s) Submitted for Calibration: Cleaned and ready for calibration

Laboratory Reference Standard Used; 5 gal SP NE 1586

Treatment of Item(s) before Calibration: Tested as Found	Procedure Used: NISTIR 7383, SOP 19 (2019)
Environmental conditions at time of calibration:Temp °C23.1Humidity %54.1Pressure mmHg732.60Date Submitted:8/5/2024	Water temperature at time of calibration: 72.82 °F
Jone P 3 Joel P. Lavicky, Metrologist	<b>8/21/2022</b> Issue Date: aska, the Nebraska Standards Laboratory or NIST. This document may not be reproduced, except in <u>full</u> , without the
	ermission of the Nebraska Standards Laboratory

NEBRAS				Director of Agricultur
NUDIANS	Nebra	ska Standards Labo	oratory	Sherry Vinton
Good Life. Great I	Roots	3721 West Cuming St. Lincoln, NE 68524		P.O. Box 9494 Lincoln, NE 68509-494
oood Elic, orcari	10013.	(402)-471-2087		(402) 471-234
DEPARTMENT OF AGRI	CULTURE	(102) 171 2007		www.nda.nebraska.go
	Calibra	tion Certificat	e of Mass	
Calibration Date:	August 7, 2024		Certificate Number:	2024-104-2
Artifact(s) Owner:	-SCP Area 30		Submitted by: State of Neb	oraska
	3721 West Cuming St.	Pe	pint of Contact: NDA-Weight	
	_incoln, NE 68524	—	Ph. 402-471	
			email: agr.wam@nebr	aska.gov
Test Item(s): l	b weight kit		Date Received	: August 5, 2024
Serial Number(s): 1	NE-WM-18-1	Artifact(s) Description:	ID / Asset Number	: Area-30
Condition:	Excellent (little wear)		Class Specification	: NIST Class F
Material: S	Stainless steel & Aluminum		Manufacture	: Rice Lake
Reference Standard	s Used:	Procedure Used:	Equip	ment Used:
NSL lb standards		NIST HB 6969, SOP 8 (2019)	Sartorius MCM500	
		Metrologist:	Sartorius CC 120	1
		JPL		
		JIL		
invironmental Cond.	Temp: 21.37 °C Press		elative Humidity: 51.86 %	
except as noted. An a maximum permissible when the sum of th	rtifact is considered in-compl e error. RED print indicates ar he correction and the uncerta	<b>Bure:</b> 728.71 mmHg <b>R</b> <b>Pertinent Information</b> bund and/or left within the max- iance when the correction plus n out-of-compliance reading. It inty exceed 95% of the maximu- tism) were evaluated according	elative Humidity: 51.86 % kimum permissible error for the the measurement uncertainty is is the decision of the Laboratory im permissible error. All of the g to ASTM E617 (2023) and/or NIS	equal to or less than the to adjust the artifact(s) tolerances and design
<ul> <li>The artifact(s) listed is except as noted. An a maximum permissible when the sum of the specifications (except)</li> </ul>	in this document have been for rtifact is considered in-completerror. RED print indicates ar the correction and the uncertater density, hardness and magnet cated in this report correlate t	sure: 728.71 mmHg R <u>Pertinent Information</u> bund and/or left within the maximum iance when the correction plus n out-of-compliance reading. It inty exceed 95% of the maximum tism) were evaluated according artifacts designated class to a "Conventional Mass" (CM),	kimum permissible error for the the measurement uncertainty is is the decision of the Laboratory im permissible error. All of the g to ASTM E617 (2023) and/or NIS also known as "apparent mass",	equal to or less than the v to adjust the artifact(s) tolerances and design ST HB 105-1 (2019) for the
<ul> <li>The artifact(s) listed is except as noted. An a maximum permissible when the sum of the specifications (except</li> <li>All corrections st</li> <li>It is the end user's rest</li> </ul>	in this document have been for rtifact is considered in-completerror. RED print indicates ar the correction and the uncertater density, hardness and magnet cated in this report correlate to reference mas sponsibility to verify that the	sure: 728.71 mmHg R Pertinent Information bund and/or left within the max- iance when the correction plus n out-of-compliance reading. It inty exceed 95% of the maximu- tism) were evaluated according artifacts designated class to a "Conventional Mass" (CM), s density and an air density of weights meet the accuracy req	kimum permissible error for the the measurement uncertainty is is the decision of the Laboratory im permissible error. All of the g to ASTM E617 (2023) and/or NIS also known as "apparent mass",	equal to or less than the v to adjust the artifact(s) tolerances and design ST HB 105-1 (2019) for the scale verses 8.0 g/cm <sup>3</sup> book 44 (2020), Appendix
<ul> <li>The artifact(s) listed is except as noted. An a maximum permissible when the sum of the specifications (except</li> <li>All corrections st</li> <li>It is the end user's rest</li> </ul>	in this document have been for rtifact is considered in-completerror. RED print indicates ar the correction and the uncertater density, hardness and magnet cated in this report correlate to reference mas sponsibility to verify that the	sure: 728.71 mmHg R Pertinent Information bund and/or left within the max- iance when the correction plus n out-of-compliance reading. It inty exceed 95% of the maximu- tism) were evaluated according artifacts designated class to a "Conventional Mass" (CM), s density and an air density of weights meet the accuracy req	kimum permissible error for the the measurement uncertainty is is the decision of the Laboratory im permissible error. All of the g to ASTM E617 (2023) and/or NIS also known as "apparent mass", 1.2 mg/cm <sup>3</sup> at 20 °C. uirements outlined in NIST Hand	s equal to or less than the v to adjust the artifact(s) tolerances and design ST HB 105-1 (2019) for the scale verses 8.0 g/cm <sup>3</sup> book 44 (2020), Appendix
<ul> <li>The artifact(s) listed is except as noted. An a maximum permissible when the sum of the specifications (except</li> <li>All corrections st</li> <li>It is the end user's rearing Funda</li> <li>The artifact(s) describution</li> </ul>	in this document have been for rtifact is considered in-completeror. RED print indicates are the correction and the uncertated density, hardness and magnet cated in this report correlated reference mass sponsibility to verify that the mental Considerations, when ibed in this certificate have b to the International System of measurement assurance proged by this laboratory. The cali	sure: 728.71 mmHg R <u>Pertinent Information</u> bund and/or left within the max- iance when the correction plus n out-of-compliance reading. It inty exceed 95% of the maximu- tism) were evaluated according artifacts designated class to a "Conventional Mass" (CM), s density and an air density of weights meet the accuracy req- using the weights for calibration <u>Traceability Statement</u> een compared to the Standards f Units (SI) through the Nationar ram for ensuring continued according	kimum permissible error for the the measurement uncertainty is is the decision of the Laboratory im permissible error. All of the g to ASTM E617 (2023) and/or NIS also known as "apparent mass", 1.2 mg/cm <sup>3</sup> at 20 °C. uirements outlined in NIST Hand on of commercial (Legal for Trad s of the State of Nebraska. The S al Institute of Standards and Tec curacy and measurement traceab ate is the only unique calibration	equal to or less than the v to adjust the artifact(s) tolerances and design ST HB 105-1 (2019) for the scale verses 8.0 g/cm <sup>3</sup> book 44 (2020), Appendix e) scales. tandards of the State of hnology (NIST) and are par bility within the level of
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# NEBRASKA

## Nebraska Standards Laboratory

Good Life. Great Roots.

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DEPARTMENT OF AGRICULTURE

Calibra	Calibration Date: August 7, 2024				Certific	ate Numl	ber: 2024	-104-2
			Ca	alibration Resul	ts			
Nominal Mass	Serial Number / ID	As Found Conventional Mass Correction (g)	Adjusted (Y/N)	As Left Conventional Mass Correction (g)	Uncertainty ± (g)	(k) factor	NIST Class F MPE ± (g)	Assumed Density (g/cm <sup>3</sup> )
5 lb	1	0.027	n	0.027	0.028	2	0.23	7.84
5 lb	2	0.037	n	0.037	0.028	2	0.23	7.84
5 lb	3	0.070	n	0.070	0.028	2	0.23	7.84
5 lb	4	0.081	n	0.081	0.028	2	0.23	7.84
5 lb	5	0.053	n	0.053	0.028	2	0.23	7.84
1 lb	6	0.0287	n	0.0287	0.0083	2	0.07	7.84
1 lb	7	0.0185	n	0.0185	0.0083	2	0.07	7.84
1 lb	8	0.0110	n	0.0110	0.0083	2	0.07	7.84
1 lb	9	0.0245	n	0.0245	0.0083	2	0.07	7.84
1 lb	10	0.0127	n	0.0127	0.0083	2	0.07	7.84
0.5 lb	11	0.0118	n	0.0118	0.0054	2.002	0.045	7.84
0.2 lb		0.0071	n	0.0071	0.0022	2.002	0.018	7.84
0.2 lb	*	0.0064	n	0.0064	0.0022	2.002	0.018	7.84
0.1 lb		0.0066	n	0.0066	0.0011	2.002	0.0091	7.84
0.05 lb		0.00120	n	0.00120	0.00054	2.002	0.0045	7.84
0.02 lb		0.00072	n	0.00072	0.00021	2.002	0.0018	7.84
0.02 lb	*	0.00089	n	0.00089	0.00021	2.002	0.0018	7.84
0.01 lb		0.00056	n	0.00056	0.00018	2.002	0.0015	7.84
0.005 lb		0.00105	n	0.00105	0.00015	2.002	0.0012	2.7
0.002 lb		0.00064	n	0.00064	0.00011	2.002	0.00087	2.7
0.001 lb		0.000445	n	0.000445	0.000084	2.002	0.0007	2.7

#### Conversion Factors

1 ounce (avoirdupois) (oz) = 28.349 52 g

1 pound (avoirdupois) (lb) = 453.592 37 g exactly

P.3

Joel P. Lavicky Metrologist

8/20/2024 Date of Issue

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