



Calibration Certificate 14555

Certificate Expires

October 2017

Missouri Department of Agriculture

Weights, Measures & Consumer Protection Division, Metrology Laboratory

Lab Location: 1616 Missouri Blvd., Jefferson City, MO 65109

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FarmChem Corporation; 616 Madison St; Floyd, IA; 50435; Phone:

Submission Date: 10/14/15 Customer Number: 708 Calibration Date: 10/19/15

Rev(10/15)



Test Item(s) Description

(1 - weight set; Material Type: stainless steel; Tolerance: NIST Class F; Manufacturer: Rice Lake; Serial: ACSN; Condition: fair; Weight Range: 10 lb - 1 oz)

Method and Traceability

The SI unit for mass is the kilogram (kg) 1 lb = 0.45359237 kg

National Institute of Standards and Technology (NIST) modified substitution standard operating procedure (SOP) 8 compares a standard and an unknown weight once to determine the difference. The Missouri metrology laboratory has demonstrated measurement proficiency through training and interlaboratory comparisons compliant to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories (ISO/IEC 17025:2010): Laboratory standards used for comparison are traceable to the international system of units (SI) through NIST.

Uncertainty Information

[Student's t distribution](#)

[Link NIST SOPs](#)

The reported uncertainty is the root sum square of the uncertainty of the standard, the standard deviation of the process (obtained using a check standard which characterizes balance performance), a component for balance sensitivity and drift, and an uncorrected systematic error for lack of buoyancy corrections, multiplied by a coverage factor (k)¹ from the Student's t distribution according to the measurement degrees of freedom² associated with a 95.45 % confidence interval [two tailed probability 0.0455, TINV(0.0455,df-1)]. Magnetism was not included in the uncertainty evaluation.

Conditions During Test: Temperature 20.0 °C) Barometric Pressure 750.0 mmHg) Relative Humidity 39 %)

Calibrating Metrologist: Tom Hughes

Lab Manager: *Kevin Hanson*

Date Calibrated: 10/19/15

Weights are not checked for magnetism or material hardness with this procedure. The weight surface finish was visually inspected with a Flexbar surface finish comparator and the finish is considered adequate for the tolerance class listed unless otherwise noted in the "Remarks" section. This document shall not be reproduced except in full or used to claim product endorsement by this laboratory without written approval from the Missouri Metrology Lab. The results listed in this report only apply to the items calibrated.

Please follow this link and fill out our online survey.

[Metrology-Customer-Survey](#)

Nominal Value	Units	Standard Serial/ID	As Found Value	Value If Adjusted	± Tolerance NIST Class F	± Measurement Uncertainty	¹ t Table k factor	² Degrees of Freedom
10 lb			162 mg		450 mg	54 mg	2.02	109
5 lb		A	80 mg		230 mg	28 mg	2.02	109
5 lb			66 mg		230 mg	28 mg	2.02	109
5 lb		...	44 mg		230 mg	28 mg	2.02	109
5 lb		42 mg		230 mg	28 mg	2.02	109
2 lb			39 mg		91 mg	11 mg	2.02	109
1 lb			30.5 mg		70 mg	8.3 mg	2.02	109
1 lb			24.6 mg		70 mg	8.3 mg	2.02	109
8 oz			17.1 mg		45 mg	5.4 mg	2.02	109
4 oz			8.3 mg		23 mg	2.1 mg	2.02	109
2 oz			4.1 mg		11 mg	1.1 mg	2.02	109
1 oz			2.1 mg		5.4 mg	0.54 mg	2.02	109