

m DEPARTMENT OF COMMERCE
WEIGHTS & MEASURES DIVISION

14305 Southcross Drive #150
Burnsville, MN 55306-7008
mn.gov/commerce/
651.539.1555 FAX 952.435.4040
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Receipt Date: February 21, 2018
Cal. Date: March 13, 2018
Report Date: March 13, 2018

Report No.: 338993
Set Serial No.: 14580/1-6
Barcode: 202472

Calibration Certificate

VALLEY STORE SUPPLY
PO BOX 1875
MINOT, ND 58702

Contact: LOREN HATCHARD
Phone: 701-839-3820
PO Number: NONE
Procedure: NIST SOP 8
Technician ID: 09

Item(s) Submitted: 30 lb kit
Manufacturer: TROEMNER
Weight Type: II
Equipment ID: None
Condition: Good
Temperature: 19.1 °C
Pressure: 746.2 mmHg
Relative Humidity: 47.0 %

| Nominal Value | Serial No. | CM Correction (mg) | | NIST HB105-1 Class | | k | U (mg) |
|---------------|------------|--------------------|---------|--------------------|---------|------|--------|
| | | As Found | As Left | As Found | As Left | | |
| 5 lb | 1 | 111.2 | 111.2 | F | F | 2.03 | 5.7 |
| 5 lb | 2 | 116.2 | 116.2 | F | F | 2.03 | 5.7 |
| 5 lb | 3 | 101.2 | 101.2 | F | F | 2.03 | 5.7 |
| 5 lb | 4 | 129.2 | 129.2 | F | F | 2.03 | 5.7 |
| 5 lb | 5 | 106.2 | 106.2 | F | F | 2.03 | 5.7 |
| 5 lb | 6 | 93.2 | 93.2 | F | F | 2.03 | 5.7 |

The resulting tolerance class of the weight is determined by combining the correction of the weight and the uncertainty of the measurement. The corrections given above correlate to a conventional mass scale versus 8.0 g/cm³ density and an air density of 1.2 mg/cm³ at 20 °C. The items listed above have been calibrated using the Standards of the State of Minnesota which are currently in control. These standards are traceable to the SI through NIST. Calibration processes were monitored and found to be in control. All of the tolerances and specifications were evaluated according to NIST Handbook 105-1 (1990). Uncertainty calculations contain the components in NIST SOP 8 and conform to the ISO/IEC Guide to the Expression of Uncertainty in Measurement (2008), including coverage factors (k) calculated at the approximate 95.45 % confidence level. Results apply to items identified in this report only.

Heidi Jones
Heidi Jones
Laboratory Administrator

Reviewed by:
Pete Whebbe
Pete J. Whebbe
Metrologist



United States Department of Commerce

National Institute of Standards and Technology

Certificate of Metrological Traceability For:

Minnesota

This laboratory has demonstrated evidence of an unbroken chain of metrological traceability of its standards to the international system of units (SI), documented measurement uncertainties, uses documented measurement procedures, successfully completed training and proficiency tests, documented calibration intervals, submitted a quality management system, and demonstrated suitable measurement assurance for the Scope listed on this certificate.

The Office of Weights and Measures Program assesses laboratories to NIST Handbook 143 - Program Handbook for State Weights and Measures Laboratories and ISO/IEC 17025:2005.

Scope

| | | |
|------------------------|----------------------------|------------------------------|
| Mass Echelon I | Mass Echelon III | Volume Gravimetric, I |
| 20 kg to 1 mg | 50 kg to 1 mg | 20 L to 10 mL |
| 50 lb to 0.001 lb | 5000 lb to 0.001 lb | 100 gal to 0.25 gal |
| Mass Echelon II | 4 oz to 0.03125 oz | Volume Transfer, II |
| 20 kg to 1 mg | Weight Carts | 1500 gal to 5 gal |
| 1000 lb to 500 lb | 10 000 lb to 2000 lb | 200 gal to 25 gal LPG |
| 50 lb to 0.001 lb | Wheel Load Weighers | |
| 4 oz to 0.03125 oz | 20 000 lb to 2000 lb | |
| | Railroad Test Cars | |
| | 110 000 lb to 80 000 lb | |



2018 to 2019

Douglas A. Olson

Douglas A. Olson, Chief
NIST Office of Weights and Measures

Effective Dates: 2018-01-01 to 2019-12-31