



## Accredited Laboratory

A2LA has accredited

**TOBY'S INSTRUMENT SHOP, INC.**

*Saline, MI*

for technical competence in the field of

### Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).



Presented this 1<sup>st</sup> day of August, 2017.

A handwritten signature in black ink, written over a horizontal line.

President and CEO  
For the Accreditation Council  
Certificate Number 1586.01  
Valid to July 31, 2019

*For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.*



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

TOBY'S INSTRUMENT SHOP, INC.  
1382 Industrial Dr. Suite 6  
Saline, MI 48176  
Scott C. Kureth Phone: 734 944 1510

CALIBRATION

Valid until: July 31, 2019

Certificate Number: 1586.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1</sup>:

I. Chemical Quantities

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
pH Meters <sup>3</sup>	(4.01, 7.01, & 10.01) pH	0.04 pH	Standard buffer solutions

II. Dimensional

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Microscope Eyepieces <sup>3</sup> – Magnification	4x to 100x	66 μin	Stage micrometer

III. Mechanical

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Scales & Balances <sup>3</sup>	1 mg to 5 g (6 to 200) g (201 to 1200) g 1201 g to 5 kg (6 to 100) kg	6.9 µg 0.012 mg 1.5 mg 0.022 g 0.16 g	Verification with ASTM Class 1 & NIST Class F weights
Rotational Speed <sup>3</sup> (Centrifuge)	(5 to 90 000) rpm	1.0 rpm	Optical tachometer

IV. Thermodynamics

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Temperature <sup>3</sup> – Measure	(-40 to 95) °C (96 to 400) °C	0.067 °C (0.12 °F) 0.67 °C (1.2 °F)	Comparison to digital thermometer with probe
	(401 to 1200) °C	0.67 °C (1.2 °F)	Fluke 52 II with thermocouple wire
Thermometers <sup>3</sup> (Partial Immersion)	Ambient to 95 °C	0.94 °C (1.7 °F)	Water bath & digital thermometer with probe

<sup>1</sup> This laboratory offers commercial field calibration service.

<sup>2</sup> Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of  $k = 2$ . The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

<sup>3</sup> Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

