



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

*Perry Johnson Laboratory Accreditation, Inc. has assessed the Laboratory of:*

### **Tier 5 Labs, LLC**

**1505 Frontenac Road, Naperville, IL 60563**

*(Hereinafter called the Organization) and hereby declares that Organization is accredited in accordance with the recognized International Standard:*

### **ISO/IEC 17025:2005**

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (as outlined by the joint ISO-ILAC-IAF Communiqué dated January 2009):

### **Calibration Gas Cylinder (As detailed in the supplement)**

Accreditation claims for such testing and/or calibration services shall only be made from addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation body's duty to observe and comply with the said rules.

For PJLA:

Tracy Szerszen  
President/Operations Manager

Perry Johnson Laboratory  
Accreditation, Inc. (PJLA)  
755 W. Big Beaver, Suite 1325  
Troy, Michigan 48084

*Initial Accreditation Date:*

November 21, 2013

*Issue Date:*

January 14, 2016

*Expiration Date:*

April 30, 2018

*Accreditation No.:*

76514

*Certificate No.:*

L16-18

*The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: [www.pjllabs.com](http://www.pjllabs.com)*



# Certificate of Accreditation: Supplement

## Tier 5 Labs, LLC

1505 Frontenac Road, Naperville, IL 60563  
Tom Badstubner Phone: 630-961-5229

Accreditation is granted to the facility to perform the following calibrations:

### Chemical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE OR NOMINAL DEVICE SIZE AS APPROPRIATE	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY ( $\pm$ )	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Calibration Gas Cylinder Gas mixture Concentration <sup>F</sup>	10 $\mu\text{mol/mol}$ to 499 000 $\mu\text{mol/mol}$	$(1.06 \times 10^{-2} + 1.44 \times 10^{-2}C)$ $\mu\text{mol/mol}$	FTIR EPA Protocol 600/ R-12/531 May 2012
	0.25 $\mu\text{mol/mol}$ to 499 000 $\mu\text{mol/mol}$	$(6.01 \times 10^{-2} + 1.14 \times 10^{-2}C)$ $\mu\text{mol/mol}$	Gas Chromatograph with DID EPA Protocol 600/ R-12/531 May 2012
	1 $\mu\text{mol/mol}$ to 1 000 000 $\mu\text{mol/mol}$	0.3 $\mu\text{mol/mol}$	Gravimetric Balance ISO 6142: 2001

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represent the smallest measurement uncertainties attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is expressed at a confidence level of 95 % using a coverage factor  $k$  (usually equal to 2). The actual measurement uncertainty associated with a specific calibration performed by the laboratory will typically be larger than the CMC for the same calibration since capability and performance of the device being calibrated and the conditions related to the calibration may reasonably be expected to deviate from ideal to some degree.
2. The laboratories range of calibration capability for all disciplines for which they are accredited is the interval from the smallest calibrated standard to the largest calibrated standard used in performing the calibration. The low end of this range must be an attainable value for which the laboratory has or has access to the standard referenced. Verification of an indicated value of zero in the absence of a standard is common practice in the procedure for many calibrations but by its definition it does not constitute calibration of zero capacity.
3. The term C represents concentration in moles or micromoles appropriate to the uncertainty statement.
4. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter at its fixed location. Example: Outside Micrometer<sup>F</sup> would mean that the laboratory performs this calibration at its fixed location.