



# PERRY JOHNSON LABORATORY ACCREDITATION, INC.

## Certificate of Accreditation

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

### ***Alchemie Gases & Chemicals Pvt. Ltd.***

***T-112, M.I.D.C. Tarapur, Boisar Railway Station Dist., Palghar, Maharashtra, 401506 India***

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

### **ISO/IEC 17025:2017**

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 April 2017):

### ***Chemical Calibration*** ***(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

*Initial Accreditation Date:*

May 20, 2013

*Issue Date:*

September 4, 2019

*Expiration Date:*

September 30, 2021

*Accreditation No.:*

75840

*Certificate No.:*

L19-417

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

*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.pjilabs.com](http://www.pjilabs.com)*



# Certificate of Accreditation: Supplement

## Alchemie Gases & Chemical Pvt. Ltd.

T-112, M.I.D.C. Tarapur, Boisar Railway Station Dist., Palghar,  
Maharashtra, 401506 India

Contact Name: Nipun Bhatt Phone: 976-517-1915

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
Gas Mixture, Natural Gas Mixture Cylinder - Carbon Dioxide <sup>F</sup>	0.05 % mol fraction to 8 % mol fraction	$(0.005\ 95 - 0.000\ 134\ C + 0.000\ 187C^2)$ % mol fraction	Calibration Gas Mixtures in Accordance with ISO6143:2001 using Gas Chromatography with Thermal Conductivity Detector (TCD) & Based on ISO/6974-1:2012 ISO/6974-2:2012 ISO 6974-5:2000/ IS 15130 (Part 5): 2002 ISO6141:2015 SOP 303 Lab GCDn-I, SOP 303 Lab GCDn-II, SOP 331 Lab SMC, SOP 332 Lab SPP, SOP 333 Lab SMDV, SOP 334 Lab Skel, SOP 335 Lab SA, SOP 336 Lab SBL
Gas Mixture, Natural Gas Mixture Cylinder - Ethane <sup>F</sup>	0.1 % mol fraction to 14 % mol fraction	$(0.003\ 6 + 0.000\ 5\ C + 0.000\ 1C^2)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - Iso-Butane <sup>F</sup>	0.01 % mol fraction to 1.2 % mol fraction	$(0.000\ 686 - 0.000\ 277\ C + 0.004\ 54C^2)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - Iso-pentane <sup>F</sup>	0.005 % mol fraction to 0.35 % mol fraction	$(0.000\ 339 + 0.002\ 72C)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - Methane <sup>F</sup>	64 % mol fraction to 100 % mol fraction	$(0.166 - 0.001\ 6C)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - n-Butane <sup>F</sup>	0.01 % mol fraction to 0.7 % mol fraction	0.000 8 % mol fraction	
	0.7 % mol fraction to 1.2 % mol fraction	$(0.0341 - 0.085\ 9\ C + 0.054\ 8C^2)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - n-Hexane <sup>F</sup>	0.005 % mol fraction to 0.22 % mol fraction	0.000 8 % mol fraction	
	0.22 % mol fraction to 0.35 % mol fraction	$(- 0.005\ 37 + 0.028C)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - n-Pentane <sup>F</sup>	0.005 % mol fraction to 0.35 % mol fraction	$(0.000\ 6 + 0.000\ 8C)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - Neo-pentane <sup>F</sup>	0.005 % mol fraction to 0.35 % mol fraction	$(0.003\ 14 - 0.027\ 6\ C + 0.079\ 3C^2)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - Nitrogen <sup>F</sup>	0.1 % mol fraction to 6.5 % mol fraction	0.009 6 % mol fraction	
	6.5 % mol fraction to 12 % mol fraction	$(-0.035\ 9 + 0.007C)$ % mol fraction	
Gas Mixture, Natural Gas Mixture Cylinder - Propane <sup>F</sup>	0.05 % mol fraction to 8 % mol fraction	$(0.000\ 511 + 0.002\ 54C)$ % mol fraction	



# Certificate of Accreditation: Supplement

## Alchemie Gases & Chemical Pvt. Ltd.

T-112, M.I.D.C. Tarapur, Boisar Railway Station Dist., Palghar,  
Maharashtra, 401506 India

Contact Name: Nipun Bhatt Phone: 976-517-1915

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	
Calculation of Physical Properties - Carbon Dioxide <sup>F</sup>	< 15 % mol fraction	Gross Calorific Value: 0.1 % mol fraction relative	ISO 6976:2016 IS 14504: 1998 ISO 6974-5:2016 SOP 304 Lab GCC, SOP 329 Lab STC, SOP 335 Lab SA, SOP 334 Lab Skel	
Calculation of Physical Properties – Ethane <sup>F</sup>	< 15 % mol fraction	Relative Density: 0.1 % mol fraction relative		
Calculation of Physical Properties – Methane <sup>F</sup>	No restriction	Wobble Index: 0.1 % mol fraction relative		
Calculation of Physical Properties - Nitrogen <sup>F</sup>	< 30 % mol fraction	Net Calorific Value: 0.1 % mol fraction relative		
Calculation of Physical Properties - Other Components <sup>F</sup>	< 5 % mol fraction	Gas Density: 0.1 % mol fraction relative		
Gas Mixture Cylinder - Carbon Dioxide (CO <sub>2</sub> ) in Nitrogen (N <sub>2</sub> ) <sup>F</sup>	0.05 % mol fraction to 0.5 % mol fraction	(0.000 228 + 0.000 212C) % mol fraction	Chromatograph (FID) (ASTM D7833-14) SOP 306 Lab GCT, SOP 330 Lab SCC	
	0.5 % mol fraction to 5 % mol fraction	-(0.000 97+ 0.003 067C) % mol fraction		Gas Chromatograph (TCD) (ASTM D7833-14) SOP 306 Lab GCT, SOP 330 Lab SCC, SOP 305 Lab GCAS , SOP 329 Lab STC, SOP 312 Lab ACO <sub>2</sub> , SOP 314 Lab AO <sub>2</sub> CO <sub>2</sub>
	0.5 % mol fraction to 19.98 % mol fraction	(0.001 848 + 0.002 407C) % mol fraction		
Gas Mixture Cylinder - Carbon Monoxide (CO) in Nitrogen (N <sub>2</sub> ) <sup>F</sup>	0.05 % mol fraction to 0.5 % mol fraction	(-0.000 23 + 0.0056 24C) % mol fraction	Gas Chromatograph (FID) (ASTM D7833-14) SOP 306 Lab GCT, SOP 330 Lab SCC	
	1.87 % mol fraction to 12 % mol fraction	(-0.000 12 + 0.002 569C) % mol fraction		
Gas Mixture Cylinder - Helium (HE) in Hydrogen (H <sub>2</sub> ) <sup>F</sup>	58 % mol fraction to 62 % mol fraction	(0.347 374 + 0.000 055C) % mol fraction	Gas Chromatograph (TCD) Alchemie SOP #QSP/34 SOP 316 Lab ABG	
Gas Mixture Cylinder - Nitric Oxide (NO) in Nitrogen (N <sub>2</sub> ) <sup>F</sup>	0.0030 % mol fraction to 0.0115% mol fraction	(-0.020 21 + 0.003 557C) % mol fraction	Analyser (Chemiluminious) (ASTM D3824-12) SOP 313 Lab ANOx	
	0.011 5% mol fraction to 0.1 % mol fraction	(-0.940 37 + 0.006 089C) % mol fraction		
	0.1 % mol fraction to 0.4 % mol fraction	(5.477 209 + 0.000 37C) % mol fraction		



# Certificate of Accreditation: Supplement

## Alchemie Gases & Chemical Pvt. Ltd.

T-112, M.I.D.C. Tarapur, Boisar Railway Station Dist., Palghar,  
Maharashtra, 401506 India

Contact Name: Nipun Bhatt Phone: 976-517-1915

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
Gas Mixture Cylinder - Propane (C <sub>3</sub> H <sub>8</sub> ) in Nitrogen (N <sub>2</sub> )/Air <sup>F</sup>	0.005 0 % mol fraction to 0.1 % mol fraction	(2.8 x 10 <sup>-5</sup> + 0.002 295C) % mol fraction	Gas Chromatograph (FID) (ASTM D7833-14) SOP 306 Lab GCT, SOP 330 Lab SCC, SOP 308 Lab GCHH, SOP 329 Lab STC
	0.1 % mol fraction to 1.75 % mol fraction	(0.000 144 + 0.003 174C) % mol fraction	
Gas Mixture – Methane (CH <sub>4</sub> ) In Nitrogen/Air <sup>F</sup>	0.002 5 % mol fraction to 0.5 % mol fraction	(1.67 x 10 <sup>-5</sup> + 0.000 971C) % mol fraction	Gas Chromatograph (FID) (ASTM D7833-14) SOP 306 Lab GCT, SOP 330 Lab SCC, SOP 308 Lab GCHH, SOP 329 Lab STC
	0.5 % mol fraction to 2.5 % mol fraction	(-0.000 71 + 0.003 102C) % mol fraction	
Gas Mixture Cylinder Oxygen (O <sub>2</sub> ) in Nitrogen (N <sub>2</sub> ) <sup>F</sup>	1 % mol fraction to 6 % mol fraction	(-0.002 29 + 0.003 274C) % mol fraction	Gas Chromatograph (TCD) (ASTM D7833-14) SOP 305 Lab GCAS, SOP 329 Lab STC, SOP 314 Lab AO <sub>2</sub> CO <sub>2</sub>
	6 % mol fraction to 25 % mol fraction	(0.013 194 + 0.000 13C) % mol fraction	
Gas Mixture Cylinder Ammonia (NH <sub>3</sub> ) in Nitrogen (N <sub>2</sub> ) <sup>F</sup>	0 % mol fraction to 0.1 % mol fraction	(1.391 45 + 0.006 044C) % mol fraction	Analyser (NDIR) SOP 315 Lab ASN
Gas Mixture Cylinder Sulphur dioxide (SO <sub>2</sub> ) in Nitrogen (N <sub>2</sub> ) <sup>F</sup>	0 % mol fraction to 0.1 % mol fraction	(1.988 68+0.000 089 8C) % mol fraction	
Natural Gas Mixture – N-Hexane	0.000 1 % mol fraction to 0.50 % mol fraction	0.001 1 % mol fraction @ 0.041 1% mol fraction	ISO 23874:2006 ISO6141:2015 ISO 6974-5:2016 SOP 304 Lab GCC, SOP 329 Lab STC, SOP 335 Lab SA, SOP 334 Lab Skel
Natural Gas Mixture – Benzene	0.000 1 % mol fraction to 0.10% mol fraction	0.000 1 % mol fraction @ 0.002 1 % mol fraction	
Natural Gas Mixture – N-Heptane	0.000 1 % mol fraction to 0.10 % mol fraction	0.000 1 % mol fraction @ 0.003 1 % mol fraction	
Natural Gas Mixture – Toluene	0.000 1 % mol fraction to 0.10 % mol fraction	0.000 1 % mol fraction @ 0.001 0 % mol fraction	
Natural Gas Mixture – N-Octane	0.000 1 % mol fraction to 0.05 % mol fraction	0.000 1 % mol fraction @ 0.001 2 % mol fraction	
Natural Gas Mixture – N-Nonane	0.000 1 % mol fraction to 0.02 % mol fraction	0.000 1 % mol fraction @ 0.002 1 % mol fraction	
Natural Gas Mixture – N-Decane	0.000 1 % mol fraction to 0.01 % mol fraction	0.000 1 % mol fraction @ 0.001 4 % mol fraction	



## Certificate of Accreditation: Supplement

### **Alchemie Gases & Chemical Pvt. Ltd.**

T-112, M.I.D.C. Tarapur, Boisar Railway Station Dist., Palghar,  
Maharashtra, 401506 India

Contact Name: Nipun Bhatt Phone: 976-517-1915

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

1. The CMC (Calibration and Measurement Capability) stated for calibrations included on this scope of accreditation represents the smallest measurement uncertainty attainable by the laboratory when performing a more or less routine calibration of a nearly ideal device under nearly ideal conditions. It is typically 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.
1. 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.
2. 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.
3. "C" represents concentration of the component in % mol fraction

