



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 Testing ***(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:

L19-418

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.pjllabs.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 testing:

FIELD OF TEST	ITEMS, MATERIALS OR PRODUCTS TESTED	SPECIFIC TESTS OR PROPERTIES MEASURED	SPECIFICATION, STANDARD METHOD OR TECHNIQUE USED	RANGE (WHERE APPROPRIATE) AND DETECTION LIMIT AND MATHEMATICAL EXPRESSIONS IN PARENTHESES ARE UNCERTAINTIES
Chemical ^F	Gas Mixture, Natural Gas, Mixture Cylinder	Carbon Dioxide	Based on ISO/6974-1:2012 ISO/6974-2:2012 ISO 6974-5:2000/ IS 15130 (Part 5): 2002 (Gas Chromatograph (TCD) ISO6141:2015	0.05 % mol fraction to 8 % mol fraction (0.005 95 – 0.000 134C + 0.000 187C ²) % mol fraction
		Ethane		0.1 % mol fraction to 14 % mol fraction (0.003 6 + 0.000 5C + 0.000 1C ²) % mol fraction
		Iso-Butane		0.01 % mol fraction to 1.2 % mol fraction (0.000 686 – 0.000 277C + 0.004 54C ²) % mol fraction
		Iso-pentane		0.005 % mol fraction to 0.35 % mol fraction (0.000 339 + 0.002 72C) % mol fraction
		Methane		64 % mol fraction to 100 % mol fraction (0.166 – 0.001 6C) % mol fraction
		n-Butane		0.01 % mol fraction to 0.7 % mol fraction (0.000 8 % mol fraction)
		n-Hexane		0.7 % mol fraction to 1.2 % mol fraction (0.0341 – 0.085 9C + 0.054 8C ²) % mol fraction
				0.005 % mol fraction to 0.22 % mol fraction (0.000 8 % mol fraction)
		n-Pentane		0.22 % mol fraction to 0.35 % mol fraction (-0.005 37 + 0.028C) % mol fraction
		Neo-pentane		0.005 % mol fraction to 0.35 % mol fraction (0.006 + 0.000 8C) % mol fraction
		Nitrogen		0.005 % mol fraction to 0.35 % mol fraction (0.003 14 – 0.027 6C + 0.079 3C ²) % mol fraction
			0.1 % mol fraction to 6.5 % mol fraction (0.009 6 % mol fraction)	
Propane	6.5% mol fraction to 12.0% mol fraction (-0.035 9 + 0.007) % mol fraction			
	0.05 % mol fraction to 8 % mol fraction (0.000 511 + 0.002 54C) % mol fraction			



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Chemical ^F	Gas Mixture, Natural Gas Mixture Cylinder	n-Hexane	Based on ISO6974-1:2012 ISO6974-2:2012 ISO6974-5:2000/ IS15130 (Part 5):2002 (Gas Chromatograph TCD ISO6141:2015	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 + 0.028 C) % mol fraction
		N- Hexane	ISO 23874:2006 ISO6141:2015	0.000 1% mol fraction to 0.50 % mol fraction
				0.001 1 % mol fraction @ 0.041 1 % mol fraction
		Benzene		0.000 1 % mol fraction to 0.10 % mol fraction
				0.000 1 % mol fraction @ 0.002 1 % mol fraction
		N- Heptane		0.000 1 % mol fraction to 0.10 % mol fraction
				0.000 1 % mol fraction @ 0.003 1 % mol fraction
		Toluene		0.000 1 % mol fraction to 0.10 % mol fraction
				0.000 1 % mol fraction @ 0.001 % mol fraction
		N-Octane		0.000 1 % mol fraction to 0.05 % mol fraction
				0.000 1 % mol fraction @ 0.001 2 % mol fraction
		N-Nonane		0.000 1 % mol fraction to 0.02 % mol fraction
				0.000 1 % mol fraction @ 0.002 1 % mol fraction
		N-Decane		0.000 1 % mol fraction to 0.01 % mol fraction
				0.000 1% mol fraction @ 0.001 4 % mol fraction
		Net Calorific Value	ISO6976:2016 IS14504:1998	Carbon Dioxide: D.L. = < 15 % mol fraction
Gross Calorific Value	Calculation of Physical Properties ISO6141:2015	Ethane: D.L. = < 15 % mol fraction		
Relative Density		No restriction		
Gas Density		Nitrogen: D.L. = < 30 % mol fraction		
Wobbe Index		Other Components: D.L. = < 5 % mol fraction		



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Chemical ^F	Gas Mixture Cylinder	Carbon Dioxide (CO ₂) in Nitrogen (N ₂)	Gas Chromatograph (FID) (ASTM D7833-14)	0.05 % mol fraction to 0.5 % mol fraction (0.000 228 + 0.000 212C) % mol fraction
			Gas Chromatograph (TCD) (ASTM D7833-14)	0.5 % mol fraction to 5 % mol fraction (-0.000 97+ 0.003 067C) % mol fraction
				0.5 % mol fraction to 19.98 % mol fraction (0.001 848 + 0.002 407C) % mol fraction
		Carbon Monoxide (CO) in Nitrogen (N ₂)	Gas Chromatograph (FID) (ASTM D7833-14)	0.05 % mol fraction to 0.5 % mol fraction (-0.000 23 + 0.005 624C) % mol fraction
			Gas Chromatograph (TCD) (ASTM D7833-14)	1.87 % mol fraction to 12 % mol fraction (-0.000 12 + 0.002 569C) % mol fraction
		Helium (HE) in Hydrogen (H ₂)	Gas Chromatograph (TCD) (In-house Method)	58.0% mol fraction to 62.0% mol fraction (0.347 374 + 0.000 055C) % mol fraction
		Nitric Oxide (NO) in Nitrogen (N ₂)	Analyser (Chemiluminous) (ASTM D3824-12)	0.003 % mol fraction to 0.011 5 % mol fraction (-0.020 21 + 0.003 557C) % mol fraction
				0.1 % mol fraction to 0.4 % mol fraction (5.477 209 + 0.000 37C) % mol fraction
		Propane (C ₃ H ₈) in Nitrogen (N ₂)/Air	Gas Chromatograph (FID) (ASTM D7833-14)	0.005 % mol fraction to 0.1 % mol fraction (2.8 x 10 ⁻⁵ + 0.002 295C) % mol fraction
				0.1 % mol fraction to 1.75 % mol fraction (0.000 144 + 0.003 174C) % mol fraction
		Gas Mixture – Methane (CH ₄) In Nitrogen/Air	Gas Chromatograph (FID) (ASTM D7833-14)	0.002 5 % mol fraction to 0.5 % mol fraction (1.67 x 10 ⁻⁵ + 0.000 971C) % mol fraction
				0.5 % mol fraction to 2.45 % mol fraction (-0.000 71 + 0.003 102C) % mol fraction



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Chemical ^F	Gas Mixture Cylinder	Gas Mixture Cylinder Oxygen (O ₂) in Nitrogen (N ₂)	Gas Chromatograph (TCD) (ASTM D7833-14)	1 % mol fraction to 6% mol fraction (-0.002 29 + 0.003 274C) % mol fraction
		Gas Mixture Cylinder Ammonia (NH ₃) in Nitrogen (N ₂)	Analyser (NDIR)	6% mol fraction to 25 % mol fraction (0.013 194 + 0.000 13C) % mol fraction
		Gas Mixture Cylinder Sulphur dioxide (SO ₂) in Nitrogen (N ₂)		0% mol fraction to 0.1% mol fraction (1.391 45 + 0.006 044C) % mol fraction
		Gas Mixture Cylinder Nitrogen Dioxide (NO ₂) in Nitrogen (N ₂)	Electrochemical cell	0 % mol fraction to 0.1 % mol fraction (1.988 68 + 0.000 089 8C) % mol fraction
		Gas Mixture Cylinder Hydrogen Sulphide (H ₂ S) in Nitrogen (N ₂)	Electrochemical cell (ASTM D4490-16)	0.000 1 % mol fraction to 0.02 % mol fraction (1.024 87 + 0.000 047 1C) % mol fraction

1. The presence of a superscript F means that the laboratory performs testing of the indicated parameter at its fixed location. Example: Outside Micrometer^F would mean that the laboratory performs this testing at its fixed location.
2. "C" represents concentration of the component in % mol fraction