ANALYTICAL GASES SAS
NIT 901.590.589-4
Cr 72 L # 37G - 34 S
Tel: (57) 3104134821
Bogotá - Colombia
edicson.guerrero@analyticalgases.com
www.analyticalgases.com

Remisión
No. 1-64

Señores	CENTRO DE DIAGNOSTICO AUTOMOTOR DEL VALLE LIMITADA		
NIT	890.311.425-0	**Teléfono**	(601) 6644424 - Ext. 000
Dirección	CL 70 N 3 B 81	**Ciudad**	Cali - Colombia

Fecha Elaboración	12/06/2024

Ítem	Descripción	Código	Cantidad	Vr. Total
1	Mezcla Bar baja 300 PPM x 1 M3	10001	3.00	1,999,200.00
2	Mezcla Bar media 1200 PPM x 1 M3	10002	2.00	1,332,800.00
3	Prueba hidrostática	AC527	1.00	214,200.00

Observaciones:
Llenado cilindro propiedad del cliente N°:
FF35559
EA0027199
EA0033107
FF35562
EA0032168

Remision correspondiente al contrato CDAV-060-2024

Total Bruto	2,980,000.00
IVA 19%	566,200.00
Total a Pagar	3,546,200.00

Entregado por: _____

Recibido por: _____

Analytical Gases
Soluciones integrales

AG12564

CERTIFICADO DE ANALISIS/Certificate of Analysis

CLIENTE/Customer: CDA DEL VALLE

CIUDAD/City: Cali

FECHA/Date: Mayo 28 de 2024

PRODUCTO/Product: Mezcla especial

NUMERO DE CILINDRO / Cylinder Number	LOTE No / Lot number	TIPO DE CILINDRO / Cylinders type	CONEXIÓN VALVULA SALIDA / Valve Outlet Connection	PRESION APROX. / Approx.Pressure
EA0027199	20811	32	CGA-350	1700 psig

COMPONENTES Components		ESPECIFICACION Order	ANALISIS Analysis result	UNIDAD Unit
PROPANO / Propane	C3H8	1200	1197	PPM
MONOXIDO DE CARBONO / Carbon monoxide	CO	4	4.12	%
DIOXIDO DE CARBONO / Carbon dioxide	CO2	12	12.05	%
NITROGENO / Nitrogen	N2	Balance	Balance	-

TRAZABLE AL PATRON DE REFERENCIA No / Traceable to reference standard No: EB0115845
METODO ANALITICO/ Analytical method: CROMATOGRAFIA DE GASES
METODO DE PREPARACION / Preparation method: GRAVIMETRICO
INCERTIDUMBRE EXPANDIDA / expanded uncertainty: +/- 2.9 %
NIVEL DE CONFIANZA / Confidence level: 95%; k=2
FECHA DE LLENADO / Filling date: 28/05/2024
FECHA DE ANALISIS / Date of analysis: 28/05/2024
FECHA DE EXPIRACION / Expiration date: 27/05/2027
CONVENCIONES / Conventions: PPM: Partes por millon - Volumen a volumen

Lugar de produccion / Producction site: Planta Boyle.
Lugar de analisis / Analysis place: Laboratorio Planta Boyle. Analytical Gases

Certificado por / certified by

Ing. Jaime Villanueva.
Gases especiales.

hidrotest engineering&supplies

ONAC ACREDITADO

ISO/IEC 17020:2012
17-OIN-038

INFORME DE INSPECCIÓN DE CILINDRO

FC-103
2023-12-15
VERSIÓN 10

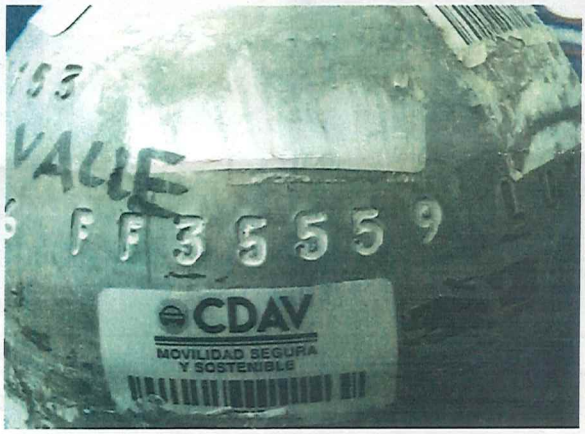
IDENTIFICACIÓN DEL INFORME 159131 **Fecha Recepción** 2024-05-29

DATOS DEL CLIENTE

Nombre	ANALYTICAL GASES SAS	Ciudad	SOACHA
Dirección	CRA 2 30 139 SUR	Teléfono	3104134821

DATOS DEL CILINDRO

No. Serial	FF35559
Capacidad	2.00 m³
Fecha fabricación	2004-8
Tipo de rosca	1 1/8 -12 UNF
Tipo Gas	MEZCLA PATRON
Diámetro nominal 18.00 ; Longitud nominal 52.00 cm	
Marca	LUXFER GAS CYLINDERS
Norma Fabricación	DOT 3AL
Presión servicio	2216.00 psi
Pres. Mínima Prueba	3693.00 psi
Masa estampada	NO APLICA
Tipo protección	ALUMINIO



Marcación Serial del cilindro

Tipo cilindro Cilindros de Aluminio de alta presión

CONTROLES REALIZADOS

Espesor máximo medido	NO APLICA	Espesor mínimo medido	NO APLICA	Espesor promedio	NO APLICA
Masa media	6.80 kg	Responsable	44	Fecha	2024-05-29

RESULTADOS DE INSPECCIÓN VISUAL EXTERNA

Inspección de estampado	CUMPLE	Presencia abolladuras/abombamiento	NO
Presencia de abrasiones	NO	Presencia de exposición al fuego	NO
Presencia de daños	NO	Presencia de corrosión	NO
Responsable inspección externa	44	Fecha inspección	2024-05-29

Inspeccion realizada de acuerdo con NTC-ISO 18119:2021.

RESULTADOS DE INSPECCIÓN VISUAL INTERNA

Presencia de daños o defectos internos	NO			Presencia de defectos en rosca	NO
Defectos en el cuello	NO	Responsable inspección interna	23	Fecha inspección	2024-05-29

Inspeccion realizada de acuerdo con NTC-ISO 18119:2021.

RESULTADOS PRUEBA HIDROSTÁTICA

Presión de prueba	3700.00 psi	REE	NO APLICA	Temperatura ambiente	18.10 °C
Expansión permanente	0.30 cm³	Expansión elástica	36.20 cm³	Expansión total	36.50 cm³
% expansión permanente	0.82	Responsable	52	Fecha de ensayo	2024-05-30

REFERENTE NORMATIVO DE METODO UTILIZADO NTC 5171:2013 Numeral 5

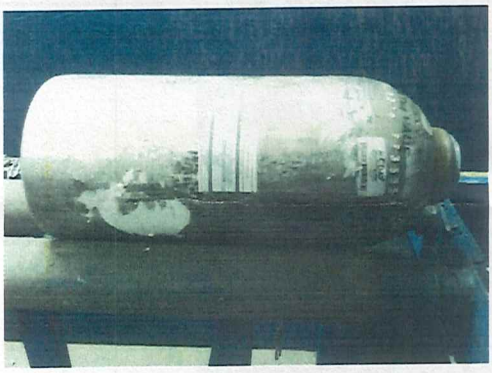
Calle 98 A No. 60 - 90 Interior 1 • PBX: (571) 635 0104 • Fax: (571) 610 1338 • hidrotest@hidrotest.com • Bogotá D.C • Colombia

INFORME DE INSPECCIÓN DE CILINDRO

IDENTIFICACIÓN DEL INFORME 159131

ANEXO FOTOS

Nota Foto 1 Cuerpo del cilindro



Nota Foto 2 Cuerpo del cilindro



DISPOSICIÓN FINAL

RESULTADO DEL PROCESO DE RECALIFICACION REALIZADO AL CILINDRO APROBADO

Nueva marcación 2024-05 Proxíma revisión 5 años Fecha expiración NO APLICA

Nota: Próxima revisión es el plazo máximo obligatorio para realizar una nueva inspección. Se establece a partir de los requisitos legales, las especificaciones del fabricante o la vida útil del cilindro. Diferentes eventos pueden hacer que sea necesario inspeccionar el cilindro antes de esta fecha.

EMISIÓN INFORME

Nota inspección visual externa

Observaciones

Responsable ALBEIRO DIAZ BELTRAN Director de Operaciones Técnicas

Firma

Fecha emisión informe 2024-05-30

Este informe de resultados solo puede ser reproducido en forma total o parcial con la debida autorización de HIDROTEST ENGINEERING & SUPPLIES S.A.S. La información del presente informe y los valores respectivos obedecen a las actividades realizadas en el momento y las condiciones en que se realizaron las mismas. HIDROTEST no se responsabiliza por los perjuicios ocasionados por el uso indebido del cilindro inspeccionado.

FIN INFORME

Calle 98 A No. 60 - 90 Interior 1 • PBX: (571) 635 0104 • Fax: (571) 610 1338 • hidrotest@hidrotest.com • Bogotá D.C • Colombia

Analytical Gases
Soluciones integrales

AG12571

CERTIFICADO DE ANALISIS/Certificate of Analysis

CLIENTE/Customer: CDA DEL VALLE

CIUDAD/City: Cali

FECHA/Date: Mayo 29 de 2024

PRODUCTO/Product: Mezcla especial

NUMERO DE CILINDRO / Cylinder Number	LOTE No / Lot number	TIPO DE CILINDRO / Cylinders type	CONEXIÓN VALVULA SALIDA / Valve Outlet Connection	PRESION APROX. / Approx.Pressure
FF35562	20812	32	CGA-350	1700 psig

COMPONENTES Components		ESPECIFICACION Order	ANALISIS Analysis result	UNIDAD Unit
PROPANO / Propane	C3H8	300	306	PPM
MONOXIDO DE CARBONO / Carbon monoxide	CO	1	1.06	%
DIOXIDO DE CARBONO / Carbon dioxide	CO2	6	6.04	%
NITROGENO / Nitrogen	N2	Balance	Balance	-

TRAZABLE A PATRON DE REFERENCIA No / Traceable to reference standard No: UM0933
METODO ANALITICO/ Analytical method: CROMATOGRAFIA DE GASES
METODO DE PREPARACION / Preparation method: GRAVIMETRICO
INCERTIDUMBRE EXPANDIDA / expanded uncertainty: +/- 2.9 %
NIVEL DE CONFIANZA / Confidence level: 95%; k=2
FECHA DE LLENADO / Filling date: 29/05/2024
FECHA DE ANALISIS / Date of analysis: 29/05/2024
FECHA DE EXPIRACION / Expiration date: 28/05/2027
CONVENCIONES / Conventions: PPM: Partes por millon - Volumen a volumen

Lugar de produccion / Producction site: Planta Boyle.
Lugar de analisis / Analysis place: Laboratorio Planta Boyle. Analytical Gases

Certificado por / certified by

Ing. Jaime Villanueva.
Gases especiales.

Analytical Gases
Soluciones integrales

AG12566

CERTIFICADO DE ANALISIS/Certificate of Analysis

CLIENTE/Customer: CDA DEL VALLE

CIUDAD/City: Cali

FECHA/Date: Mayo 28 de 2024

PRODUCTO/Product: Mezcla especial

NUMERO DE CILINDRO / Cylinder Number	LOTE No / Lot number	TIPO DE CILINDRO / Cylinders type	CONEXIÓN VALVULA SALIDA / Valve Outlet Connection	PRESION APROX. / Approx.Pressure
EA0033107	20811	32	CGA-350	1700 psig

COMPONENTES Components		ESPECIFICACION Order	ANALISIS Analysis result	UNIDAD Unit
PROPANO / Propane	C3H8	1200	1197	PPM
MONOXIDO DE CARBONO / Carbon monoxide	CO	4	4.12	%
DIOXIDO DE CARBONO / Carbon dioxide	CO2	12	12.05	%
NITROGENO / Nitrogen	N2	Balance	Balance	-

TRAZABLE AL PATRON DE REFERENCIA No / Traceable to reference standard No:	EB0115845
METODO ANALITICO/ Analytical method:	CROMATOGRAFIA DE GASES
METODO DE PREPARACION / Preparation method:	GRAVIMETRICO
INCERTIDUMBRE EXPANDIDA / expanded uncertainty:	+/- 2.9 %
NIVEL DE CONFIANZA / Confidence level:	95%; k=2
FECHA DE LLENADO / Filling date:	28/05/2024
FECHA DE ANALISIS / Date of analysis:	28/05/2024
FECHA DE EXPIRACION / Expiration date:	27/05/2027
CONVENCIONES / Conventions:	PPM: Partes por millon - Volumen a volumen
Lugar de produccion / Producction site:	Planta Boyle.
Lugar de analisis / Analysis place	Laboratorio Planta Boyle. Analytical Gases

Certificado por / certified by

Ing. Jaime Villanueva.
Gases especiales.

CRYOGAS®
Grupo AIR PRODUCTS

Nº 37564

CERTIFICADO DE ANALISIS
GASES ESPECIALES

CLIENTE:	ANALYTICAL GASES S.A.S.	PRODUCTO:	MEZCLA ESPECIAL
FECHA:	MARZO 11 DE 2022	DISTRITO:	BOGOTA

ESPECIFICACION	CONCENTRACION REQUERIDA
METANO	100 PPM
ETILENO	1000 PPM
PROPANO	1200 PPM
MONOXIDO DE CARBONO	4%
DIOXIDO DE CARBONO	12%
NITROGENO	BALANCE
PRESION	1800 PSI
VALVULA	CGA 350
TIPO DE GAS	NO INFLAMABLE/TOXICO

SE CERTIFICA QUE EL CILINDRO No. EB0115845 PRESENTA EL SIGUIENTE ANALISIS

COMPONENTE	CONCENTRACION CERTIFICADA	INCERTIDUMBRE ANALITICA
METANO	101,4 PPM	+/-2%
ETILENO	1001,2 PPM	+/- 2%
PROPANO	1235,0 PPM	+/- 2%
MONOXIDO DE CARBONO	4,00%	+/- 2%
DIOXIDO DE CARBONO	12,05%	+/- 2%
NITROGENO	BALANCE	-

CILINDRO CORRESPONDIENTE AL LOTE No. 3177924
TRAZABLE AL CILINDRO PATRON No. EB0115011, EB0133609, EB0114945, EB0115076, 6548234Y.
METODO ANALITICO: CROMATOGRAFIA DE GASES.
TEMPERATURA RECOMENDADA DE ALMACENAMIENTO Y USO: 0°C A +45°C
METODO DE PREPARACION: GRAVIMETRICO
NIVEL DE CONFIANZA: 95%
PRESION MINIMA DE USO: 3 BAR / 43.5 PSI
FECHA DE LLENADO: 11-03-2022
FECHA DE ANALISIS: 11-03-2022
FECHA DE EXPIRACION: 10-03-2025

SI DESEA MAS INFORMACION SOBRE ESTE PRODUCTO, POR FAVOR LLAMENOS GRATIS A CRYLINEA AL 01 8000-514-300 O AL FAX 01800 -514-003

LUGAR DE PRODUCCION Y ANALISIS: CRYOGAS S.A. - PLANTA GASES ESPECIALES DE SIBATE
CILINDRO CORRESPONDIENTE AL CTN: JD85PCR

FRANK F. TOVAR
CONTROL DE CALIDAD
GASES ESPECIALES

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2005

CERTIFICATE OF ANALY
CERTIFIED STANDAR

Customer:	Cryogas Colombia	Reference#:	092118SY-G
CGA:	350	Certification Date:	09/27/2018
Customer PO#:	3300189851	Expiration Date:	09/27/2022
Cylinder #:	EB0115011	Pressure, psig:	2000

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Carbon Monoxide	100ppm	101ppm	± 5%
Carbon Dioxide	100ppm	101ppm	± 5%
Methane	100ppm	100ppm	± 5%
Nitrogen	Balance	Balance	

Instrument/ Model	Serial Number	Last Date Calibrated	Analytical Method
Micro GC/ MTI M200	170612	9/27/2018	Thermal Conductivity

These mixtures were prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the targ range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determin objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established cha this service.

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2005

Produced by:
Global Calibration Gases LLC.
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA
PGVP Vendor ID.: N22018

Principal Analyst: Keith Wilson
Date: 09/27/2018

Principal Reviewer: Jennifer Honey
Date: 09/27/2018

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2017

CERTIFICATE OF ANALYSIS
CERTIFIED STANDARD

Customer:	Cryogas	Reference#:	042220SY-C
CGA:	350	Certification Date:	04/24/2020
Customer PO#:	4504914994/01	Expiration Date:	04/24/2024
Cylinder #:	EB0133609	Pressure, psig:	2000

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Neon	0.5%	0.50%	± 2%
Ethylene	1000ppm	1003ppm	± 2%
Ethane	1000ppm	1000ppm	± 2%
Nitrogen	Balance	Balance	-

Instrument/ Model	Serial Number	Last Date Calibrated	Analytical Method
Micro GC/ Inficon	70082698	4/24/2020	Thermal Conductivity

These mixtures were prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target mass range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

Produced by:
Global Calibration Gases LLC.
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA
PGVP Vendor ID.: N22020

Principal Analyst: Kurtis Williams
Date: 04/24/2020

Principal Reviewer: Jennifer Homey
Date: 04/24/2020

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2005

CERTIFICATE OF ANALYSIS

CERTIFIED STANDARD

Customer:	Cryogas Colombia	Reference#:	092418SY-E
CGA:	350	Certification Date:	09/27/2018
Customer PO#:	3300189851	Expiration Date:	09/27/2022
Cylinder #:	EB0114945	Pressure, psig:	2000

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Neon	5%	5.02%	± 2%
Propylene	1000ppm	1005ppm	± 2%
Propane	1000ppm	1005ppm	± 2%
Hydrogen	100ppm	100ppm	± 5%
Nitrogen	Balance	Balance	-

Instrument/ Model	Serial Number	Last Date Calibrated	Analytical Method
Micro GC/ MTI M200	170612	9/27/2018	Thermal Conductivity

These mixtures were prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2005

Produced by:
Global Calibration Gases LLC.
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA
PGVP Vendor ID.: N22018

Principal Analyst: _____
Date: 09/27/2018

Principal Reviewer: _____
Date: 09/27/2018

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Global Calibration Gases, LLC

1090 Commerce Blvd. North, Sarasota, FL 34243

(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:

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
March 01, 2011	March 24, 2021	June 30, 2023

Accreditation No.:	*Certificate No.:*
69191	L21-193

Tracy Szerszen
President

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.pjlabs.com

Certificate of Accreditation: Supplement

Global Calibration Gases, LLC
1090 Commerce Blvd. North, Sarasota, FL 34243
Contact Name: Dale Hyler Phone: 941-722-7203

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

Chemical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Calibration Gas Cylinder [F]	0.000 01 % mol fraction to 0.05 % mol fraction	0.000 002 1 % mol fraction	Trace Moisture Concentration Electrolytic Hygrometer
	0.000 001 % mol fraction to 1 % mol fraction	0.000 012 % mol fraction	Trace Oxygen Concentration Electrochemical Oxygen Analyzer
	0.01 % mol fraction to 100 % mol fraction	0.023 % mol fraction	Gas Mixture Concentration (GC and TCD)
	0.1 % mol fraction to 25 % mol fraction	0.023 % mol fraction	Percent Oxygen Concentration (Paramagnetic Oxygen Analyzer)
	0.000 01 % mol fraction to 0.1 % mol fraction	0.000 012 % mol fraction	Trace Hydrogen Sulfide Concentration (Electrochemical Analyzer)
	0.000 01 % mol fraction to 0.1 % mol fraction	0.000 012 % mol fraction	Percent Sulfur Dioxide Concentration (Non-Dispersive Infrared Analyzer)
	0.000 01 % mol fraction to 0.2 % mol fraction	0.000 012 % mol fraction	Percent Nitric Oxide Concentration (Chemicailuminescence Analyzer)
	0.000 01 % mol fraction to 0.1 % mol fraction	0.000 012 % mol fraction	Percent Nitrogen Dioxide Concentration (Chemicailuminescence Analyzer)
Gravimetric Balance [F]	0.000 01% mol fraction to 100 % mol fraction	0.000 031 % mol fraction	Gas Mixture Concentration

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.

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.

Certificate of Accreditation: Supplement

Global Calibration Gases, LLC
1090 Commerce Blvd. North, Sarasota, FL 34243
Contact Name: Dale Hyler Phone: 941-722-7203

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

3. The presence of a superscript F means that the laboratory performs calibration of the indicated parameter at its fixed location. Example: Outside Micrometer ^{F} would mean that the laboratory performs this calibration at its fixed location.

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

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

Global Calibration Gases, LLC

1090 Commerce Blvd. North, Sarasota, FL 34243

(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:

Initial Accreditation Date:	*Issue Date:*	*Expiration Date:*
March 01, 2011	March 24, 2021	June 30, 2023

Accreditation No.:	*Certificate No.:*
69191	L21-193

Tracy Szerszen
President

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.pjlabs.com

Certificate of Accreditation: Supplement

Global Calibration Gases, LLC
1090 Commerce Blvd. North, Sarasota, FL 34243
Contact Name: Dale Hyler Phone: 941-722-7203

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

Chemical

MEASURED INSTRUMENT, QUANTITY OR GAUGE	RANGE (AND SPECIFICATION WHERE APPROPRIATE)	CALIBRATION AND MEASUREMENT CAPABILITY EXPRESSED AS AN UNCERTAINTY (±)	CALIBRATION EQUIPMENT AND REFERENCE STANDARDS USED
Calibration Gas Cylinder [F]	0.000 01 % mol fraction to 0.05 % mol fraction	0.000 002 1 % mol fraction	Trace Moisture Concentration Electrolytic Hygrometer
	0.000 001 % mol fraction to 1 % mol fraction	0.000 012 % mol fraction	Trace Oxygen Concentration Electrochemical Oxygen Analyzer
	0.01 % mol fraction to 100 % mol fraction	0.023 % mol fraction	Gas Mixture Concentration (GC and TCD)
	0.1 % mol fraction to 25 % mol fraction	0.023 % mol fraction	Percent Oxygen Concentration (Paramagnetic Oxygen Analyzer)
	0.000 01 % mol fraction to 0.1 % mol fraction	0.000 012 % mol fraction	Trace Hydrogen Sulfide Concentration (Electrochemical Analyzer)
	0.000 01 % mol fraction to 0.1 % mol fraction	0.000 012 % mol fraction	Percent Sulfur Dioxide Concentration (Non-Dispersive Infrared Analyzer)
	0.000 01 % mol fraction to 0.2 % mol fraction	0.000 012 % mol fraction	Percent Nitric Oxide Concentration (Chemicailuminescence Analyzer)
	0.000 01 % mol fraction to 0.1 % mol fraction	0.000 012 % mol fraction	Percent Nitrogen Dioxide Concentration (Chemicailuminescence Analyzer)
Gravimetric Balance [F]	0.000 01% mol fraction to 100 % mol fraction	0.000 031 % mol fraction	Gas Mixture Concentration

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.

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.

Analytical Gases
Soluciones integrales

AG12641

CERTIFICADO DE ANALISIS/Certificate of Analysis

CLIENTE/Customer: CDA DEL VALLE

CIUDAD/City: Cali

FECHA/Date: Junio 11 de 2024

PRODUCTO/Product: Mezcla especial

NUMERO DE CILINDRO / Cylinder Number	LOTE No / Lot number	TIPO DE CILINDRO / Cylinders type	CONEXIÓN VALVULA SALIDA / Valve Outlet Connection	PRESION APROX. / Approx.Pressure
FF35559	20828	32	CGA-350	1700 psig

COMPONENTES Components		ESPECIFICACION Order	ANALISIS Analysis result	UNIDAD Unit
PROPANO / Propane	C3H8	300	303	PPM
MONOXIDO DE CARBONO / Carbon monoxide	CO	1	1.06	%
DIOXIDO DE CARBONO / Carbon dioxide	CO2	6	6.04	%
NITROGENO / Nitrogen	N2	Balance	Balance	-

TRAZABLE A PATRON DE REFERENCIA No / Traceable to reference standard No: UM0933
METODO ANALITICO/ Analytical method: CROMATOGRAFIA DE GASES
METODO DE PREPARACION / Preparation method: GRAVIMETRICO
INCERTIDUMBRE EXPANDIDA / expanded uncertainty: +/- 2.9 %
NIVEL DE CONFIANZA / Confidence level: 95%; k=2
FECHA DE LLENADO / Filling date: 11/06/2024
FECHA DE ANALISIS / Date of analysis: 11/06/2024
FECHA DE EXPIRACION / Expiration date: 10/06/2027
CONVENCIONES / Conventions: PPM: Partes por millon - Volumen a volumen

Lugar de produccion / Producction site: Planta Boyle.
Lugar de analisis / Analysis place: Laboratorio Planta Boyle. Analytical Gases

Certificado por / certified by

Ing. Jaime Villanueva.
Gases especiales.

Analytical Gases
Soluciones integrales

AG12574

CERTIFICADO DE ANALISIS/Certificate of Analysis

CLIENTE/Customer: CDA DEL VALLE

CIUDAD/City: Cali

FECHA/Date: Mayo 29 de 2024

PRODUCTO/Product: Mezcla especial

NUMERO DE CILINDRO / Cylinder Number	LOTE No / Lot number	TIPO DE CILINDRO / Cylinders type	CONEXIÓN VALVULA SALIDA / Valve Outlet Connection	PRESION APROX. / Approx.Pressure
EA0032168	20812	32	CGA-350	1700 psig

COMPONENTES Components		ESPECIFICACION Order	ANALISIS Analysis result	UNIDAD Unit
PROPANO / Propane	C3H8	300	306	PPM
MONOXIDO DE CARBONO / Carbon monoxide	CO	1	1.06	%
DIOXIDO DE CARBONO / Carbon dioxide	CO2	6	6.04	%
NITROGENO / Nitrogen	N2	Balance	Balance	-

TRAZABLE A PATRON DE REFERENCIA No / Traceable to reference standard No: UM0933
METODO ANALITICO/ Analytical method: CROMATOGRAFIA DE GASES
METODO DE PREPARACION / Preparation method: GRAVIMETRICO
INCERTIDUMBRE EXPANDIDA / expanded uncertainty: +/- 2.9 %
NIVEL DE CONFIANZA / Confidence level: 95%; k=2
FECHA DE LLENADO / Filling date: 29/05/2024
FECHA DE ANALISIS / Date of analysis: 29/05/2024
FECHA DE EXPIRACION / Expiration date: 28/05/2027
CONVENCIONES / Conventions: PPM: Partes por millon - Volumen a volumen

Lugar de produccion / Producction site: Planta Boyle.
Lugar de analisis / Analysis place: Laboratorio Planta Boyle. Analytical Gases

Certificado por / certified by

Ing. Jaime Villanueva.
Gases especiales.

GLOBAL CALIBRATION GASES LLC
ISO/IEC 17025:2017

CERTIFICATE OF ANALYSIS

CERTIFIED STANDARD

Customer:	Analytical Gases S.A.S	Reference #:	013123WZ-4
CGA:	350	Certification Date:	02/08/2023
Customer PO #:	10006	Expiration Date:	02/08/2027
Cylinder #:	UM0933	Pressure, psig:	2000
Cylinder Size:	AL30		

Components	Requested Concentration	Certified Concentration	Analytical Accuracy
Propane	300ppm	303ppm	± 5%
Carbon Monoxide	1%	1.01%	± 2%
Carbon Dioxide	6%	6.24%	± 2%
Nitrogen	Balance	Balance	-

Instrument/ Model	Serial Number	Last Date Calibrated	Analytical Method
Micro GC/ Inficon	70082698	2/8/2023	Thermal Conductivity
Micro GC/ Agilent	US020002031	2/8/2023	Thermal Conductivity

This mixture was prepared gravimetrically using a high load high sensitivity electronic scale. Prior to filling the scale is verified for accuracy throughout the target mass range against applicable NIST traceable weights.

This report states accurately the results of the investigation made upon the material submitted to the analytical laboratory. Every effort has been made to determine objectively the information requested. However, in connection with this report, Global Calibration Gases LLC shall have no liability in excess of the established charge for this service.

Produced by:
Global Calibration Gases LLC.
1090 Commerce Blvd N.
Sarasota, Florida 34243 USA

Analyst: Signature on file

Approved for release: 02/08/2023