



# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## GULF CRYO SAUDI FOR INDUSTRIAL & MEDICAL GASES COMPANY

P.O.BOX 30917, 31952 2ND INDUSTRIAL CITY  
DAMMAM, AL-KHOBAR, EASTERN PROVINCE  
KINGDOM OF SAUDI ARABIA

TESTING LABORATORY TL-654

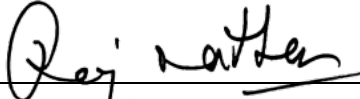
has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation maintained on the IAS website ([www.iasonline.org](http://www.iasonline.org)).

*This certificate is valid up to January 1, 2022.*



*This accreditation certificate supersedes any IAS accreditation bearing an earlier effective date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See [www.iasonline.org](http://www.iasonline.org) for current accreditation information, or contact IAS at 562-364-8201.*



  
Raj Nathan  
President



## SCOPE OF ACCREDITATION

IAS Accreditation Number	TL-654
Company Name	Gulf Cyro Saudi for Industrial & Medical Gases Company
Address	P.O. Box 30917, 31952 2 <sup>nd</sup> Industrial City Dammam, Al-Khobar, Eastern Province Kingdom of Saudi Arabia
Contact Name	Eng, Ahmed Bashir, QC Officer
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Effective Date of Scope	December 17, 2019
Accreditation Standard	ISO/IEC 17025:2017

### Chemical

CGA G-4.3	Determination of Oxygen Gas Purity using Paramagnetic Oxygen Analyzer (0-100%)
CGA G-4.3-2007	Oxygen Purity (%) (by Paramagnetic Cell Method Analyzer) (0-100%)
CGA G-6.2	Determination of Carbon Dioxide (CO <sub>2</sub> ) Percentage (%) (0.25-100%)
CGA G-6.2-2011	CO <sub>2</sub> (%) (by Single Wavelength Infrared Analyzer) (0.25-100%)
CGA G-10.1	Determination of Traces of O <sub>2</sub> , CO <sub>2</sub> , CO, CH <sub>4</sub> in Nitrogen (0-200 ppm)
CGA G-11.1	Determination of Traces of O <sub>2</sub> , CO <sub>2</sub> , CO, CH <sub>4</sub> and N <sub>2</sub> in Argon (0-200 ppm)
CGA G-10.1-2008 CGA G-11.1-2004	Traces of O <sub>2</sub> , CO, CO <sub>2</sub> , CH <sub>4</sub> and N <sub>2</sub> in ARGON, Nitrogen and Helium (by Gas Chromatography with Plasma Cell Detector) (0-200 ppm)
CGA G-6.2 CGA G-10.1 CGA G-11.1	Determination of Oxygen Traces (0-210,000 ppm)
CGA G-6.2-2011 CGA G-10.1-2008 CGA G-11.1-2004	Oxygen Traces (ppm) (by Zirconia Cell Method Analyzer) (0-210,000 ppm)
CGA G-6.2 CGA G-10.1 CGA G-11.1	Determination of Trace Moisture Concentration (0-6000 ppm)



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CGA G-6.2-2011  
CGA G-10.1-2008  
CGA G-11.1-2004

Trace Moisture Concentration (by Hygrometry –  
Capacitance Analyzer) (0-6000 ppm)

EIGA 70/17 § 10  
ISBT 2010 Bulk Carbon Dioxide  
Quality Guidelines (Method 9.0)

CO<sub>2</sub> Gas Purity (by CO<sub>2</sub> Absorption ZAHM NAGER Tester)  
(99.00% - 100%)

EIGA 70/17 § 10  
ISBT 2010 Bulk Carbon Dioxide  
Quality Guidelines (Method 9.0)

Traces of Methanol (by Gas Chromatography with Flame  
Ionization Detection Cell) (0-10 ppm)

EIGA 70/17 § 10  
ISBT 2010 Bulk Carbon Dioxide  
Quality Guidelines (Method 10.0)

Total Hydrocarbons as Methane (THC) (by Flame  
Ionization Analyzer) (0-10 ppm)

EIGA 70/17 § 10  
ISBT 2010 Bulk Carbon Dioxide  
Quality Guidelines (Method 11.0)

Traces of Acetaldehyde (by Gas Chromatography with  
Flame Ionization Detection Cell) (0-1.0 ppm)

EIGA 70/17 § 10  
ISBT 2010 Bulk Carbon Dioxide  
Quality Guidelines (Method 12.0)

Traces of Benzene (by Gas Chromatography with Flame  
Ionization Detection Cell) (0-0.1 ppm)

EIGA 70/17 § 10  
ISBT 2010 Bulk Carbon Dioxide  
Quality Guidelines (Method 13.0)

Total Sulfur (TS) (by UV Fluorescence Detector) (0-200  
ppb)

ISBT 2010 Bulk Carbon Dioxide Quality Guidelines (Method 2.0)

Determination of Carbon Dioxide (CO<sub>2</sub>) % Purity (by  
Caustic Absorption Analyzers) (99.90% - 99.99%)

ISBT 2010 Bulk Carbon Dioxide Quality Guidelines (Method 9.0)

Methanol (MeOH) by Gas Chromatography and Other  
Selective Analyzers (0-10 ppm)

ISBT 2010 Bulk Carbon Dioxide Quality Guidelines (Method 10.0)

Total Volatile Hydrocarbon (THC) (by THC Analyzer) (0-10  
ppm)

ISBT 2010 Bulk Carbon Dioxide Quality Guidelines (Method 11.0)

Acetaldehyde (AA) by Gas Chromatography and Other  
Selective Analyzers (THC) (by THC Analyzer) (0-1 ppm)

ISBT 2010 Bulk Carbon Dioxide Quality Guidelines (Method 12.0)

Aromatic Hydrocarbon Content (AHC) by Gas  
Chromatography and Other Selective Analyzers (0-100  
ppb)

ISBT 2010 Bulk Carbon Dioxide Quality Guidelines (Method 13.0)



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	Total Sulfur Content (TSC) (by TS Analyzer) (0-200 ppb)
SGF-LSOP-01	Determination of Concentration of C1-C6 Hydrocarbons & Permanent Gases in Gas Mixtures (by Gas Chromatography-TCD & FID) [(H-C) 100 ppm to 50%] (Permanent Gases 0.1% to 50%)
SGF-LSOP-02	Determination of Concentration of Sulfur Components in Gas Mixtures (by Gas Chromatography-PFPD) (0.1 ppm to 100 ppm)
SGF-LSOP-03	Determination of Concentration of C1-C6 Hydrocarbons in Gas Mixtures (by Gas Chromatography-FID) (1.0 ppm to 50%)
SGF-LSOP-04	Determination of Concentration of Permanent Gases in Gas Mixtures (by Gas Chromatography-PDHID) (1.0 ppm to 100 ppm)
SGF-LSOP-07	Determination of Concentration of Nitric Oxide in Gas Mixtures (by UV spectroscopy) (100 – 2000 ppm)
SGF-LSOP-07	Determination of Concentration of Sulfur Dioxide in Gas Mixtures (by UV spectroscopy) (100 – 500 ppm)
SGF-LSOP-08	Determination of Concentration of Oxygen in Gas Mixtures (by Zirconia) (1.0 ppm to 25%)

*CGA: Compressed Gas Association*

*EIGA: European Industrial Gases Association*

*ISBT: International Society of Beverage Technologists*