



# CERTIFICATE OF ANALYSIS / EPA PROTOCOL GAS

**Customer & Order Information**

PRAXAIR PKG SLATERSVILLE RI HPS  
21 STEEL ST  
SLATERSVILLE RI 02875

Certificate Issuance Date: 03/21/2019  
Praxair Order Number: 70902127  
Part Number: NI CD11CO15E-AS

Fill Date: 03/16/2019  
Lot Number: 304322075906  
Cylinder Style & Outlet: AS CGA 590  
Cylinder Pressure and Volume: 2000 psig 140 ft3

**Certified Concentration**

Expiration Date:	03/20/2027	NIST Traceable
Cylinder Number:	SA12867	Expanded Uncertainty
4964 ppm	Carbon monoxide	± 0.3 %
10.96 %	Carbon dioxide	± 0.7 %
10.95 %	Oxygen	± 0.2 %
Balance	Nitrogen	

**ProSpec EZ Cert**



**Certification Information:**

Certification Date: 03/20/2019      Term: 96 Months      Expiration Date: 03/20/2027

This cylinder was certified according to the 2012 EPA Traceability Protocol, Document #EPA-800/R-12/531, using Procedure G1.  
Do Not Use this Standard if Pressure is less than 100 PSIG.

**Analytical Data:**

(R=Reference Standard, Z=Zero Gas, C=Gas Candidate)

**1. Component: Carbon monoxide**

Requested Concentration: 5000 ppm  
Certified Concentration: 4964 ppm  
Instrument Used: HORIBA VIA-3000  
Analytical Method: NDIR  
Last Multipoint Calibration: 02/25/2019

First Analysis Data:		Date	
Z: 0	R: 3006	C: 4966	Conc: 4966
R: 3006	Z: 0	C: 4962	Conc: 4962
Z: 0	C: 4964	R: 3006	Conc: 4964
UOM: ppm		Mean Test Assay: 4964 ppm	

**Reference Standard:** Type / Cylinder #: GMIS / CC103954  
Concentration / Uncertainty: 3006 ppm ±0.233%  
Expiration Date: 10/17/2025

**Traceable to:** SRM # / Sample # / Cylinder #: 2638a / 55-F-05 / FF30623  
SRM Concentration / Uncertainty: 4935 PPM / ±11 ppm  
SRM Expiration Date: 04/07/2018

Second Analysis Data:		Date	
Z: 0	R: 0	C: 0	Conc: 0
R: 0	Z: 0	C: 0	Conc: 0
Z: 0	C: 0	R: 0	Conc: 0
UOM: ppm		Mean Test Assay: ppm	

**2. Component: Carbon dioxide**

Requested Concentration: 11 %  
Certified Concentration: 10.96 %  
Instrument Used: HORIBA VIA-510  
Analytical Method: NDIR  
Last Multipoint Calibration: 02/25/2019

First Analysis Data:		Date	
Z: 0	R: 15.23	C: 10.95	Conc: 10.95
R: 15.23	Z: 0	C: 10.96	Conc: 10.96
Z: 0	C: 10.96	R: 15.23	Conc: 10.96
UOM: %		Mean Test Assay: 10.96 %	

**Reference Standard:** Type / Cylinder #: GMIS / SA6799  
Concentration / Uncertainty: 15.23 % ±0.25%  
Expiration Date: 03/30/2023

**Traceable to:** SRM # / Sample # / Cylinder #: 2745 / 9-C-34 / CAL016129  
SRM Concentration / Uncertainty: 15.633% / ±0.037 %  
SRM Expiration Date: 02/07/2025

Second Analysis Data:		Date	
Z: 0	R: 0	C: 0	Conc: 0
R: 0	Z: 0	C: 0	Conc: 0
Z: 0	C: 0	R: 0	Conc: 0
UOM: %		Mean Test Assay: %	

**3. Component: Oxygen**

Requested Concentration: 11 %  
Certified Concentration: 10.95 %  
Instrument Used: SIEMENS OXYMAT 5F  
Analytical Method: Paramagnetic  
Last Multipoint Calibration: 02/25/2019

First Analysis Data:		Date	
Z: 0	R: 11.9	C: 10.96	Conc: 10.95
R: 11.9	Z: 0	C: 10.96	Conc: 10.95
Z: 0	C: 10.96	R: 11.9	Conc: 10.95
UOM: %		Mean Test Assay: 10.95 %	

**Reference Standard:** Type / Cylinder #: GMIS / CC102021  
Concentration / Uncertainty: 11.89 % ±0.128%  
Expiration Date: 12/02/2024

**Traceable to:** SRM # / Sample # / Cylinder #: 2659a / 71-E-24 / FF18300  
SRM Concentration / Uncertainty: 20.863% / ±0.021 %  
SRM Expiration Date: 09/23/2021

Second Analysis Data:		Date	
Z: 0	R: 0	C: 0	Conc: 0
R: 0	Z: 0	C: 0	Conc: 0
Z: 0	C: 0	R: 0	Conc: 0
UOM: %		Mean Test Assay: %	

Analyzed By

Remzy Jemal

Certified By

Megha Patel