

RATA Class™ Certificate of Accuracy

Every cylinder containing a SCOTT™ RATA Class or Compliance Class™ EPA protocol mixture is shipped with a Certificate of Accuracy. This Certificate of Accuracy can be affixed to the cylinder itself, mailed, faxed or electronically transmitted to you. Certificates of Accuracy are available online via SHOP@airliquide™. Information varies by product class.

This certificate exceeds EPA minimum requirements. Additionally, a label is attached to the EPA protocol gas cylinder that includes data required by EPA (items 1 to 9).

Certificate of Accuracy Data

- 1 Cylinder ID number (serial number)
- 2 Certified concentration of the standard (ppm or % mole basis)
- 3 Balance gas in the standard mixture
- 4 Cylinder pressure at certification time
- 5 Assay/certification date
- 6 Certification expiration date
- 7 Reference standard identification (standard number, cylinder number and concentration)
- 8 Statement that the assay/certification conforms to EPA protocol guidelines
- 9 Analytical method used
- 10 Laboratory identification
- 11 Record of previous EPA protocol gas certification
- 12 Analytical accuracy of the mixture
- 13 Statement that certification was corrected for interferences, if applicable
- 14 Gas analyzer identification (make, model, serial number, measurement principle and last multipoint calibration date)
- 15 All triad analyzer readings and calculations used to obtain the certified value
- 16 Inclusion of a correlation coefficient that is a measure of the quality and accuracy of the calibration curve used in the EPA protocol gas certification
- 17 Expiration dates of reference standards that further validate the analysis of EPA protocol gases
- 18 Total oxides of nitrogen reported for nitric oxide protocol gases

RATA CLASS
 Dual-Analyzed Calibration Standard

6141 Easton Road, P.O. Box 310, Plumsteadville, PA 18949-0310 (215) 766-8860 (800) 217-2688 FAX: (215) 766-0320

CERTIFICATE OF ACCURACY: Interference-Free™ Multi-Component EPA Protocol Gas

10 Assay Laboratory
 Air Liquide America Specialty Gases
 6141 Easton Road Bldg 1
 Plumsteadville PA 18949

11 Customer
 XYZ Corporation
 1244 Highland Road
 Knoxville TN 12345

4 P.O. No.: STOCK
 Project No.: 01-0000-000
 Item No.: 55867530930AL

5 Certification Date: 13Jan2009
6 Previous Certification Dates: None
 Exp Date: 13Jan2011

8 This certification was performed according to EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards, Procedure G-1, September 1997.

Component Name	Concentration (Mole)	Accuracy* (±%)	Traceability
Carbon Dioxide	17.65%	1.0	Direct NIST
Nitric Oxide	447ppm	1.0	Direct NIST
Sulfur Dioxide	1111%	1.0	Direct NIST
Nitrogen-Oxygen Free	balance	1.0	Direct NIST
18 Total Oxides of Nitrogen	447ppm		Reference Value Only

*Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.
 **Do not use when cylinder pressure is below 150 psig.

7 REFERENCE STANDARD

Type/SRM No.	Expiration Date	Cylinder Number	Concentration	Component
NTRM 1800	01Mar2009	K004320	17.87%	Carbon Dioxide
NTRM 1686	15Sep2012	KAL004346	490.8 ppm	Nitric Oxide
NTRM 2690	15May2010	KAL003173	975.0 ppm	Sulfur Dioxide

14 INSTRUMENTATION

Instrument Model/Serial#	Date Last Calibrated	Analytical Procedure
FTIR//000928781	20Dec2008	FTIR
FTIR//000928781	24Dec2008	FTIR
FTIR//000928781	08Jan2009	FTIR

15 ANALYZER READINGS

FIRST TRIAD ANALYSIS			SECOND TRIAD ANALYSIS			CALIBRATION CURVE		
Carbon Dioxide			Carbon Dioxide			Carbon Dioxide		
Date: 06Jan2009 Response Unit: %			Date: 06Jan2009 Response Unit: %			Concentration = A + Bx + Cx2 + Dx3 + Ex4		
Z1 = 0.00232	R1 = 17.83408	T1 = 17.60468	Z1 = 0.00000	R1 = 0.00000	T1 = 0.00000	r = 9.99999E-1		
R2 = 17.84356	Z2 = 0.00963	T2 = 17.62386	R2 = 0.00000	Z2 = 0.00000	T2 = 0.00000	Constants: A = 0.00000E+0		
Z3 = 0.01121	T3 = 17.63228	R3 = 17.85038	Z3 = 0.00000	T3 = 0.00000	R3 = 0.00000	B = 9.52789E-1 C = 1.32570E-2		
Avg. Concentration: 17.65%			Avg. Concentration: 17.65%			D = 0.00000E+0 E = 0.00000E+0		
Nitric Oxide			Nitric Oxide			Nitric Oxide		
Date: 06Jan2009 Response Unit: ppm			Date: 13Jan2009 Response Unit: ppm			Concentration = A + Bx + Cx2 + Dx3 + Ex4		
Z1 = 0.01192	R1 = 490.5973	T1 = 447.6637	Z1 = 0.08823	R1 = 490.8759	T1 = 446.9677	r = 9.99999E-1		
R2 = 491.4475	Z2 = 0.06742	T2 = 447.7400	R2 = 491.0290	Z2 = 0.24821	T2 = 447.0860	Constants: A = 0.00000E+0		
Z3 = 0.23608	T3 = 448.1997	R3 = 491.8114	Z3 = 0.35413	T3 = 447.1983	R3 = 491.2220	B = 9.96407E-1 C = 3.60000E-6		
Avg. Concentration: 447.4 ppm			Avg. Concentration: 446.8 ppm			D = 0.00000E+0 E = 0.00000E+0		
Sulfur Dioxide			Sulfur Dioxide			Sulfur Dioxide		
Date: 06Jan2009 Response Unit: ppm			Date: 13Jan2009 Response Unit: ppm			Concentration = A + Bx + Cx2 + Dx3 + Ex4		
Z1 = 0.13402	R1 = 978.1843	T1 = 1114.934	Z1 = 0.27726	R1 = 978.0623	T1 = 1112.257	r = 9.99999E-1		
R2 = 978.2311	Z2 = 0.01899	T2 = 1115.11	R2 = 977.2268	Z2 = 0.55561	T2 = 1113.796	Constants: A = 0.00000E+0		
Z3 = 0.04552	T3 = 1115.473	R3 = 978.4597	Z3 = 0.61956	T3 = 1113.81	R3 = 977.4472	B = 9.96407E-1 C = 4.00000E-6		
Avg. Concentration: 1111 ppm			Avg. Concentration: 1111 ppm			D = 0.00000E+0 E = 0.00000E+0		

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

13 Special Notes: Not applicable.

Approved By: Luci Martens Date: 1-13-09

Air Liquide America Specialty Gases LLC

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