

Airgas Specialty Gases  
 5480 Hamilton Blvd.  
 Theodore, AL 36582  
 (251) 653-2500 Fax: (251) 653-2530  
 www.airgas.com

## Certificate of Analysis EPA Protocol Gas Mixture

Cylinder No:	SG9114181	Reference Number:	47-89286500-002
Cylinder Pressure:	2,013 psig	Expiration Date:	04/15/2007
Certification Date:	04/16/2004	Laboratory:	ASG - Mobile

### Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
Carbon Dioxide	9.065%	±0.1%	TCD	GI
Oxygen	22.38%	±0.1%	PARAMAGNET	GI
Nitrogen	Balance			

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences.

Notes: Airgas PO 110679166 Airgas Lot # 47-040407/2190

Do not use cylinder below 150 psig.

  
 Approved for Release

### Reference Standard Information

Type	Component	Cyl. Number	Concentration
NTRM 82659	Oxygen	SG9163000	20.98 PERCENT
NTRM 81675	Carbon Dioxide	SG9169303	13.84 PERCENT

### Analytical Results

1st Component		Carbon Dioxide					
1st Analysis Date:		04/16/2004					
R	110,130	S	72,122	Z	0.0000	Conc	9.062 %
S	72,111	Z	0.0000	R	110,083	Conc	9.064 %
Z	0.0000	R	110,002	S	72,102	Conc	9.070 %
				AVG:		9.065 %	

2nd Component		Oxygen					
1st Analysis Date:		04/15/2004					
R	20.98	S	22.38	Z	0.0000	Conc	22.38 %
S	22.38	Z	0.0000	R	20.98	Conc	22.38 %
Z	0.0000	R	20.98	S	22.38	Conc	22.38 %
				AVG:		22.38 %	

**Airgas Specialty Gases**  
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 Mobile, AL 36619  
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<http://www.airgas.com>

## Certificate of Analysis: E.P.A. Protocol Gas Mixture

Cylinder No :	<u>CC146246</u>	Order No.	<u>110565516</u>
Cylinder Pressure:	<u>2000 psig</u>	Expiration Date:	<u>1/17/06</u>
Certification Date	<u>1/17/03</u>	Laboratory:	<u>ASG-MOBILE</u>

### Reference Standard Information:

Type	Component	Cyl. Number	Concentration
NTRM 00040408	CARBON DIOXIDE	CC113750	7.061%
NTRM 00040303	OXYGEN	CC111799	20.01%

### Instrumentation:

Instrument/Model/Serial No.	Analytical Principle
SHIMADZU/GC7/65101YS	TCD
SERVOMEX/244/701/742	PARAMAGNETIC

### Certified Concentrations:

Component	Concentration	Accuracy	Procedure
CARBON DIOXIDE	4.506 %	+/-1%	G1
OXYGEN	13.83 %	+/-1%	G1
NITROGEN	BALANCE		

### Analytical Results:

#### 1st Component:

#### CARBON DIOXIDE

1st Analysis Date:	<u>1/17/03</u>						
R	<u>113033</u>	S	<u>71950</u>	Z	<u>0</u>	Conc	<u>4.495 %</u>
S	<u>72230</u>	Z	<u>0</u>	R	<u>113074</u>	Conc	<u>4.510 %</u>
Z	<u>0</u>	R	<u>113104</u>	S	<u>72288</u>	Conc	<u>4.513 %</u>
						AVG:	<u>4.506 %</u>

#### 2nd Component:

#### OXYGEN

1st Analysis Date:	<u>1/13/03</u>						
R	<u>20.010</u>	S	<u>13.830</u>	Z	<u>0.000</u>	Conc	<u>13.83 %</u>
S	<u>13.830</u>	Z	<u>0.000</u>	R	<u>20.010</u>	Conc	<u>13.83 %</u>
Z	<u>0.000</u>	R	<u>20.010</u>	S	<u>13.830</u>	Conc	<u>13.83 %</u>
						AVG:	<u>13.83 %</u>

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.

Do not use cylinder below 150 psig.

*Beverly Hart*  
 Approved for Release



PMG 8A+B HIGH KATA  
PMG 344  
PSN 415

### Certificate of Analysis: E.P.A. Protocol Gas Mixture

Airgas Specialty Gases  
11711 S. Alameda Street  
Los Angeles, CA 90059-2130  
323.357.6891 fax: 323.567.3686  
www.airgas.com

Cylinder No: CC26666  
Certification Date: 8/9/2004  
Cylinder Pressure: 2000 PSIG

Reference No: 48-05226400-001  
Expiration Date: 8/9/2006  
Lab: ASG- LA

<u>Component</u>	<u>Concentration</u>	<u>Unit of Measure</u>	<u>Accuracy</u>	<u>Procedure</u>	<u>Analytical Principle</u>
Nitric Oxide	24.22	PPM	1%	G-1	CHEMI
Nitrogen	Balance				

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences.

Note: NOx 26.26 PPM

#### Reference Standard Information

<u>Type</u>	<u>Component</u>	<u>Concentration</u>	<u>Unit</u>	<u>Cylinder Number</u>
NTRM 050920	Nitric Oxide	46.94	PPM	SG9198942

#### Analytical Data

1st Component

Nitric Oxide

1st Analysis Date:

8/2/2004

R	<u>46.90</u>	S	<u>24.20</u>	Z	<u>0.00</u>	Conc.	<u>24.22 PPM</u>
S	<u>24.20</u>	Z	<u>0.00</u>	R	<u>46.90</u>	Conc.	<u>24.22 PPM</u>
Z	<u>0.00</u>	R	<u>46.90</u>	S	<u>24.20</u>	Conc.	<u>24.22 PPM</u>
						AVG.	<u>24.22 PPM</u>

2nd Analysis Date:

8/9/2004

R	<u>46.90</u>	S	<u>24.20</u>	Z	<u>0.00</u>	Conc.	<u>24.22 PPM</u>
S	<u>24.20</u>	Z	<u>0.00</u>	R	<u>46.90</u>	Conc.	<u>24.22 PPM</u>
Z	<u>0.00</u>	R	<u>46.90</u>	S	<u>24.20</u>	Conc.	<u>24.22 PPM</u>
						AVG.	<u>24.22 PPM</u>

Approved By: \_\_\_\_\_

PMG 344/PMG 8A+B/PSR 415

MID RATA



# Certificate of Analysis: EPA Protocol Gas Mixture

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Cylinder Number: SG9142482 Reference Number: 47-124018986-29  
Cylinder Pressure: 2013.3 PSIG Expiration Date: 4/19/2006  
Certification Date: 4/19/2004 Laboratory: W04 - 124

## Certified Concentrations

Component	Concentration	Accuracy	Analytical Principle	Procedure
NITRIC OXIDE	12.43 PPM	±1%	CHEMILUM	01
NITROGEN	Balance			

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed. Analytical Methodology does not require correction for analytical interferences.

Notes: Airgas PO 110678732  
Airgas Lot # 47-040407/2167  
NOx-12.55ppm

Do not use cylinder below 150 psig.

Approval Signature Corey Stewart

## Reference Standard Information

Type	Component	Cyl. Number	Concentration
NTRM 51313	NITRIC OXIDE	SG9161229	10.70 PPM

## Analytical Results

### 1st Component

**NITRIC OXIDE**

1st Analysis Date: 04/12/2004

R 10.20	S 11.80	Z 0.0000	Conc 12.38 PPM
S 11.80	Z 0.0000	R 10.20	Conc 12.38 PPM
Z 0.0000	R 10.20	S 11.80	Conc 12.38 PPM
AVG: 12.38 PPM			

2nd Analysis Date: 04/19/2004

R 10.20	S 11.90	Z 0.0000	Conc 12.48 PPM
S 11.90	Z 0.0000	R 10.20	Conc 12.48 PPM
Z 0.0000	R 10.20	S 11.90	Conc 12.48 PPM
AVG: 12.48 PPM			

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## Certificate of Analysis: E.P.A. Protocol Gas Mixture

Cylinder No :	<u>CC160223</u>	Order No.	<u>110593944</u>
Cylinder Pressure:	<u>2000 PSIG</u>	Expiration Date:	<u>5/13/06</u>
Certification Date	<u>5/13/03</u>	Laboratory:	<u>ASG-MOBILE</u>
Part #	<u>E02NI99E15A0630</u>		

### Reference Standard Information:

<u>Type</u>	<u>Component</u>	<u>Cyl. Number</u>	<u>Concentration</u>
NTRM 51013	CARBON MONOXIDE	SG9168780	25.50 ppm

### Instrumentation:

<u>Instrument/Model/Serial No.</u>	<u>Analytical Principle</u>
SIEMENS ULTRAMAT 5E J9-661	NDIR

Analytical Methodology does not require correction for analytical interferences.

### Certified Concentrations:

<u>Component</u>	<u>Concentration</u>	<u>Accuracy</u>	<u>Procedure</u>
CARBON MONOXIDE	5.655 PPM	+/-1%	G1
NITROGEN	Balance		

### Analytical Results:

#### 1st Component:

#### CARBON MONOXIDE

1st Analysis Date: 5/5/03

R	<u>25.50</u>	S	<u>5.640</u>	Z	<u>0.000</u>	Conc	<u>5.640 ppm</u>
S	<u>5.640</u>	Z	<u>0.000</u>	R	<u>25.50</u>	Conc	<u>5.640 ppm</u>
Z	<u>0.000</u>	R	<u>25.50</u>	S	<u>5.640</u>	Conc	<u>5.640 ppm</u>
						AVG:	<u>5.640 ppm</u>

2nd Analysis Date: 5/12/03

R	<u>25.50</u>	S	<u>5.670</u>	Z	<u>0.000</u>	Conc	<u>5.670 ppm</u>
S	<u>5.670</u>	Z	<u>0.000</u>	R	<u>25.50</u>	Conc	<u>5.670 ppm</u>
Z	<u>0.000</u>	R	<u>25.50</u>	S	<u>5.670</u>	Conc	<u>5.670 ppm</u>
						AVG:	<u>5.670 ppm</u>

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.

Do not use cylinder below 150 psig.

Coral Stewart  
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CO MID RANGE  
0-10 SCALE

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### Certificate of Analysis: E.P.A. Protocol Gas Mixture

Cylinder No :	<u>CC127359</u>	Order No.	<u>110593944</u>
Cylinder Pressure:	<u>2000 PSIG</u>	Expiration Date:	<u>5/13/06</u>
Certification Date	<u>5/13/03</u>	Laboratory:	<u>ASG-MOBILE</u>
Part #	<u>E02NI99E15A0629</u>		

#### Reference Standard Information:

<u>Type</u>	<u>Component</u>	<u>Cyl. Number</u>	<u>Concentration</u>
NTRM 51013	CARBON MONOXIDE	SG9168780	25.50 ppm

#### Instrumentation:

<u>Instrument/Model/Serial No.</u>	<u>Analytical Principle</u>
SIEMENS ULTRAMAT 5E J9-661	NDIR

Analytical Methodology does not require correction for analytical interferences.

#### Certified Concentrations:

<u>Component</u>	<u>Concentration</u>	<u>Accuracy</u>	<u>Procedure</u>
CARBON MONOXIDE	2.950 PPM	+/-1%	G1
NITROGEN	Balance		

#### Analytical Results:

##### 1st Component:

##### CARBON MONOXIDE

1st Analysis Date: 5/5/03

R	<u>25.50</u>	S	<u>2.940</u>	Z	<u>0.000</u>	Conc	<u>2.940</u> ppm
S	<u>2.940</u>	Z	<u>0.000</u>	R	<u>25.50</u>	Conc	<u>2.940</u> ppm
Z	<u>0.000</u>	R	<u>25.50</u>	S	<u>2.940</u>	Conc	<u>2.940</u> ppm
						AVG:	<u>2.940</u> ppm

2nd Analysis Date: 5/12/03

R	<u>25.50</u>	S	<u>2.960</u>	Z	<u>0.000</u>	Conc	<u>2.960</u> ppm
S	<u>2.960</u>	Z	<u>0.000</u>	R	<u>25.50</u>	Conc	<u>2.960</u> ppm
Z	<u>0.000</u>	R	<u>25.50</u>	S	<u>2.960</u>	Conc	<u>2.960</u> ppm
						AVG:	<u>2.960</u> ppm

Certification performed in accordance with "EPA Traceability Protocol (Sept. 1997)" using the assay procedures listed.

Do not use cylinder below 150 psig.

Carol Stewart  
Approved for Release