



# Certificate of Analysis

## EPA Protocol

Performed according to EPA-600/R-97/121, Procedure G1

Notice: This Cylinder is not to be used when pressure is under 150 psig.

**Manufactured and certified at:**  
 Linde Gas LLC  
 Maumee Specialty Gas Plant  
 6421 Monclova Road  
 MAUMEE OH 43537  
 419-893-7226

**Produced for customer:**  
 LINDE SANFORD INTERBRANCH  
 103 COMMERCE WAY  
 SANFORD FL 32771  
 USA  
 407-321-4030

<b>Material:</b>	6232	A31	<b>Blend Tolerance:</b>	5 % Relative
EPA NO/N2 2-49 PPM			<b>Blend Type:</b>	EPA Protocol
<b>Production #:</b>	100099224		<b>Cyl. Pressure:</b>	2000 psig
<b>Lot #:</b>	02499D5070SI		<b>Balance Gas:</b>	Nitrogen
<b>Cylinder #:</b>	CC167417		<b>CGA:</b>	60
<b>Expiration Date:</b>	4/20/2007		<b>Analytical Accuracy:</b>	1.00 % Relative
<b>Shelf Life:</b>	24 months		<b>Confidence:</b>	95 %

CAS #	Certified Component	Requested Concentration	Concentration and Uncertainty	Date of Certification
10102-43-9	Nitric Oxide	11.25 to 13.5	11.8 +/- 0.1 ppm	04/20/2005
7727-37-9	Nitrogen		Balance	04/20/2005
CAS #	Analyzed (For Ref Use Only)		Concentration	Analysis Date
N/A	NOx		11.8 ppm	04/20/2005
CAS #	Reference Standard	Cylinder/Standard #	Concentration	Expiry Date
10102-43-9	Nitric Oxide	CC129840 , GMIS	14.72 ppm	11/14/2005
Instrument	Serial #	Analytical Principle	Calibration Date	
Thermo Nicolet AEM	AET0100218	FTIR	02/16/2005	

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Analytical report approved by Roy Yoder

*Roy Yoder*





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<b>Material:</b>	6232		<b>Blend Tolerance:</b>	5 % Relative
EPA NO/N2 2-49 PPM		A31	<b>Blend Type:</b>	EPA Protocol
<b>Production #:</b>	100099225		<b>Cyl. Pressure:</b>	2000 psig
<b>Lot #:</b>	02499D5070SF		<b>Balance Gas:</b>	Nitrogen
<b>Cylinder #:</b>	CC34492		<b>CGA:</b>	660
<b>Expiration Date:</b>	4/19/2007		<b>Analytical Accuracy:</b>	1.00 % Relative
<b>Shelf Life:</b>	24 months		<b>Confidence:</b>	95 %

CAS #	Certified Component	Concentration (ppm)	Concentration and Uncertainty	Date of Certification
10102-43-9	Nitric Oxide	20 to 22.5	21.3 +/- 0.2 ppm	04/19/2005
7727-37-9	Nitrogen		Balance	04/19/2005
CAS #	Analyzed (For Ref Use Only)	Concentration	Concentration	Analysis Date
N/A	NOx		21.3 ppm	04/19/2005
CAS #	Reference Standard	Concentration	Concentration	Expiry Date
10102-43-9	Nitric Oxide	CC41909 , GMIS	49.18 ppm	05/21/2006
Instrument	Serial #	Method	Calibration Date	
Horiba CLA-510SS	568093024	Chemiluminescence	02/17/2005	

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Analytical report approved by Jennifer Carney

**HIQ Analysis  
Certificate**



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<b>Material:</b>	2179	<b>A31</b>	<b>Blend Tolerance:</b>	1 % Relative
<b>MISC 3 COMPONENT EPA</b>			<b>Blend Type:</b>	EPA Protocol
<b>Production #:</b>	100099226		<b>Cyl. Pressure:</b>	2000 psig
<b>Lot #:</b>	02499D5070MJ		<b>Balance Gas:</b>	Nitrogen
<b>Cylinder #:</b>	CC35095		<b>CGA:</b>	590
<b>Expiration Date:</b>	4/12/2008		<b>Analytical Accuracy:</b>	1.00 % Relative
<b>Shelf Life:</b>	36 months		<b>Confidence:</b>	95 %

CAS #	Reference Standard	Concentration Range	Concentration	Expiration Date
7782-44-7	Oxygen	10 to 15	12.5 +/- 0.10 %	04/12/2005
124-38-9	Carbon Dioxide	8 to 12	9.94 +/- 0.10 %	04/12/2005
7727-37-9	Nitrogen		Balance	04/12/2005

CAS #	Reference Standard	Concentration	Expiration Date
124-38-9	Carbon Dioxide	CC59170 , NTRM 13.78 %	10/02/2008
7782-44-7	Oxygen	CC73608 , NTRM 14.84 %	10/02/2008

Instrument	Serial #	Method	Calibration Date
Horiba VIA-510	41522310045	Non-Dispersive Infrared	02/14/2005
Rosemount 755R	1000559	Paramagnetic	02/17/2005

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Analytical report approved by Roy Yoder

*Roy Yoder*



# AIR LIQUIDE

## CERTIFICATION OF ANALYSIS

### EPA Protocol Gases

Number: 148551 Expiry Date: 06/03 Lower: LIQUIDE ANDO, FL	Cyl. Pressure: 2000PSIG	Lot Number: SFS62435	<b>COMPONENT</b> Carbon Dioxide	<b>REQUESTED</b> Concentration: 18.20 %	<b>ASSAY</b> Concentration: 18.1 ± 0.2 %
	Expiration Date: 02/20/06	Document Number: 11354037	Oxygen	22.5 %	22.5 ± 0.3 %
	P.O. Number: STOCK	Raw Number:	Nitrogen	Balance	Balance

Pressure is valid only to 150 psig

Protocol: EPA Method No. 2.2, Procedure: G-1

REFERENCE STANDARD EMPLOYED FOR ANALYSIS		Cyl. No.	Batch	Exp. Date	Sample No	Type
Concentration: 22.06 ± 0.21 %	Component: Carbon Dioxide	CC-65368	82746x	10/02/03	95080107	NTRM
22.41 ± 0.18 %	Oxygen	CC-62655	82658x	08/01/06	98080615	NTRM

Analyst: Eric Barron  
Reviewed by: Thuan Tran

<b>GAS ANALYZER EMPLOYED</b> Manufacturer: Hewlett Packard Model Number: 5890A Serial Number: 3336A54620 Last Calibrated: 01/24/03 Analytical Principle: FID & TCD	<b>GAS ANALYZER EMPLOYED</b> Manufacturer: Hewlett Packard Model Number: 5890A Serial Number: 3336A54620 MFR Last Calibrated: 02/12/03 Analytical Principle: FID & TCD
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### ANALYSIS SUMMARY

	02/20/03 Tried 1	02/20/03 Tried 2	02/20/03 Tried 3	Carbon Dioxide Units
Zero	0	0	0	Area
Reference	1298106	1298608	1298563	Area
Candidate	1062536	1063033	1063144	Area
Result	18.08	18.06	18.08	%
Evaluation	VALID	VALID	VALID	
<b>MEAN ANALYTICAL RESULT:</b>				18.06 %

	02/20/03 Tried 1	02/20/03 Tried 2	02/20/03 Tried 3	Oxygen Units
Zero	0	0	0	Area
Reference	1062148	1060467	1063120	Area
Candidate	1064073	1064989	1066159	Area
Result	22.45	22.51	22.47	%
Evaluation	VALID	VALID	VALID	
<b>MEAN ANALYTICAL RESULT:</b>				22.48 %

Analyzed by: <i>Eric Barron</i>	Approved by: <i>Muammar</i>
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CERTIFIED ISO-9002





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<b>Material:</b>	6132		<b>Blend Tolerance:</b>	5 % Relative
EPA CO/N2 3-9.9 PPM		A31	<b>Blend Type:</b>	EPA Protocol
<b>Production #:</b>	100091537		<b>Cyl. Pressure:</b>	2000 psig
<b>Lot #:</b>	02499L4130ZA		<b>Balance Gas:</b>	Nitrogen
<b>Cylinder #:</b>	CC3813		<b>CGA:</b>	350
<b>Expiration Date:</b>	11/24/2007		<b>Analytical Accuracy:</b>	1.00 % Relative
<b>Shelf Life:</b>	36 months		<b>Confidence:</b>	95 %

CAS #	Component	Concentration	Uncertainty	Date of Certification
630-08-0	Carbon Monoxide	6	6.35 +/- 0.06 ppm	11/24/2004
7727-37-9	Nitrogen		Balance	11/24/2004
CAS #	Component	Reference	Concentration	Expiry Date
630-08-0	Carbon Monoxide	FF20036 , SRM 1677C	9.98 ppm	02/03/2009
Instrument	Serial Number	Method	Calibration Date	
Thermo Nicolet AEM	AET0100218	FTIR	09/17/2004	

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*Roy Yoder*





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<b>Material:</b>	6154	A31	<b>Blend Tolerance:</b>	5 % Relative
EPA CO/N2 10-99 PPM			<b>Blend Type:</b>	EPA Protocol
<b>Production #:</b>	100085825		<b>Cyl. Pressure:</b>	2000 psig
<b>Lot #:</b>	02499F4180YG		<b>Balance Gas:</b>	Nitrogen
<b>Cylinder #:</b>	CC185142		<b>CGA:</b>	350
<b>Expiration Date:</b>	7/6/2007		<b>Analytical Accuracy:</b>	1.00 % Relative
<b>Shelf Life:</b>	36 months		<b>Confidence:</b>	95 %

Sample ID	Component	Concentration	Units	Method	Calibration Date
630-08-0	Carbon Monoxide	12	12.5 +/- 0.12 ppm		07/06/2004
7727-37-9	Nitrogen		Balance		07/06/2004
630-08-0	Carbon Monoxide	FF20036 , SRM 1677C	9.98 ppm		02/03/2009
630-08-0	Carbon Monoxide	FF30374 , SRM 2635A	24.08 ppm		02/03/2009
Thermo Nicolet AEM		AET0100218	FTIR		05/13/2004

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