



Department of General Services
Procurement Division
707 Third Street, 2nd Floor
West Sacramento, CA 95605-2811

State of California
CONTRACT NOTIFICATION
****MANDATORY****

CONTRACT NUMBER:	1-08-68-09
DESCRIPTION:	GASES, SPECIALTY AND COMPRESSED
CONTRACTOR(S):	Airgas West, Inc.
CONTRACT TERM:	11/17/2008 through 11/16/2010
DISTRIBUTION LIST:	Posted Electronically on http://www.pd.dgs.ca.gov/contracts/68-09.htm
STATE CONTRACT ADMINISTRATOR:	Carol Loscutoff (916) 375-4540 carol.loscutoff@dgs.ca.gov

Original document signed

Carol Loscutoff, Contract Administrator

Date: **11/12/08**

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1. SCOPE

The State's contract with Airgas West, Inc., (contractor) provides Gases, Specialty and Compressed, at contracted pricing exclusively to the State of California, California Air Resources Board (CARB) in accordance with the requirements of Contract # 1-08-68-09. The contractor shall supply the entire portfolio of products as identified in the contract and will be the primary point of contact for data collection, reporting, and distribution of Gases, Specialty and Compressed, to the State.

The contract term is for two (2) years and contains two (2) extension options for one (1) year or portion thereof. The terms, conditions, and prices for the contract extension option shall be by mutual agreement between the contractor and the State. If a mutual agreement cannot be met the contract may be terminated at the end of the current contract term.

2. CONTRACT USAGE/RULES

- A. The use of this contract is mandatory for exclusive use by California Air Resources Board. Local governmental agencies are not eligible to utilize the contract.
- B. Ordering State departments must adhere to all applicable State laws, regulations, policies, best practices, and purchasing authority requirements, e.g. California Codes, Code of Regulations, State Administrative Manual, Management Memos, and State Contract Manual Volume 2 and 3, as applicable.
- C. Prior to placing orders against this contract, State departments must have been granted purchasing authority by the Department of General Services, Procurement Division (DGS/PD) for the use of the State's statewide contracts. The department's current purchasing authority number must be entered in the appropriate location on each purchase document. Departments that have not been granted purchasing authority by DGS/PD for the use of the State's statewide contracts may access the Purchasing Authority Application at <http://www.pd.dgs.ca.gov/deleg/pamanual.htm> or may contact DGS/PD's Purchasing Authority Management Section by e-mail at pams@dgs.ca.gov.
- D. Ordering departments are required to have a Department of General Services (DGS) agency billing code prior to using this contract. DGS agency billing codes may be obtained by emailing the DGS billing code contact with the following:
 - State Department
 - Contact name
 - Telephone number
 - Mailing address
 - Facsimile number and e-mail address

DGS Billing Code Contacts:

- marilyn.ebert@dgs.ca.gov and
- wilson.lee@dgs.ca.gov

3. DGS ADMINISTRATIVE FEES

The DGS will bill each ordering department an administrative fee for use of this statewide contract. The administrative fee should NOT be included in the order total, nor remitted before an invoice is received from DGS.

For current fees, click on "DGS Price Book" at: <http://www.ofs.dgs.ca.gov/Price+Book/P/Purchasing.htm>.

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4. CONTRACT ADMINISTRATION

Both the State and the contractor(s) have assigned contract administrators as the single points of contact for problem resolution and related contract issues.

State Contract Administrator: Carol Loscutoff
Address: DGS/Procurement Division
707 Third Street, 2nd Floor
West Sacramento, CA 95605
Telephone: (916) 375-4540
Facsimile: (916) 375-4613
E-Mail: carol.loscutoff@dgs.ca.gov

Contractor: Airgas West, Inc.
Contract Administrator: Tony Pham
Address: 4007 Paramount Blvd, Ste 100
Lakewood, CA 90712-4138
Telephone: (818) 253-7483
Facsimile: (310) 835-7629
E-Mail: tony.pham@airgas.com

5. PROBLEM RESOLUTION/SUPPLIER PERFORMANCE

Ordering departments and/or contractors shall inform the State Contract Administrator of any technical or contractual difficulties encountered during contract performance in a timely manner. This includes and is not limited to informal disputes, supplier performance, outstanding deliveries, etc.

For contractor performance issues, ordering departments must submit a completed [Supplier Performance Report](#) via email or facsimile to the State Contract Administrator identified in Article 4. The ordering department should include all relevant information and/or documentation (i.e. Purchase documents).

6. CONTRACT PRICING

All pricing is listed on Attachment A, Contract Pricing. The contract pricing is categorized under six (6) categories:

Group	Product	Lines
I	Liquid Gases	1-4
II	Pure Gases	5-15
III	Blended Gases	16-19
IV	Zero Gases	20-23
V	Primary Gas Standards	24-40
VI	Additional Services	41-44

All contract items are mandatory, there will be no exceptions.

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7. SPECIFICATIONS

- A. Groups I, II, III, IV: All products offered must conform to the requirements for minimum contamination levels and/or preparation tolerances as stated in the line items.
- B. Group V: All products offered must conform to the attached State of California, Bid Specification titled "Gravimetric Analysis Requirements," dated August 2008.
- C. Cylinder Fittings: All cylinder fittings shall be in accordance with the Compressed Gas Association (CGA) standards. In the event of any modifications by the CGA to these standards, the State shall be notified, in writing, thirty (30) days prior to the delivery of any modified cylinders to allow time to obtain new cylinder regulators.

8. PURCHASE EXECUTION

- A. State departments must use the Purchasing Authority Purchase Order (Std. 65) for purchase execution. An electronic version of the Std. 65 is available at the Office of State Publishing web site: <http://www.dgs.ca.gov/osp> (select Standard Forms).

All Purchasing Authority Purchase Orders (Std. 65) must contain the following:

- Agency Order Number (Purchase Order Number)
- Ordering Agency Name
- Agency Billing Code
- Purchasing Authority Number
- Leveraged Procurement Number (Contract Number)
- Supplier Information (Contact Name, Address, Phone Number, Fax Number, E-mail)
- Line Item number
- Quantity
- Unit of Measure
- Commodity Code Number
- Product Description
- Unit Price
- Extension Price
- Manufacturer Part Number (if available)

- B. All ordering departments will submit a copy of executed purchase documents to:

DGS - Procurement Division (IMS# Z-1)
Attn: Data Entry Unit
707 Third Street, 2nd Floor North
West Sacramento, CA 95605-2811

9. ORDERING PROCEDURE

Ordering departments are to submit appropriate purchase documents directly to the contractor(s) via one of the following ordering methods:

- U.S. Mail
- Facsimile
- Email

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The ordering information for the contractor is listed below:

Company Name: Airgas West, Inc.
Address: 4007 Paramount Blvd, Ste 100
Lakewood, CA 90712-4138
Facsimile: (310) 835-7629
Email: tony.pham@airgas.com

When using any of the ordering methods, all State departments must conform to proper State procedures.

10. ACCOUNT NUMBERS

Separate account numbers shall be assigned to the El Monte, Stockton, and Metropolitan Transit Authority - Los Angeles delivery addresses.

11. MINIMUM ORDER

The minimum order shall be one (1) cylinder.

12. ORDER ACKNOWLEDGEMENT

The contractor will provide the ordering agencies with an order receipt acknowledgement containing a unique order number either via e-mail or facsimile within 48 hours of receipt of order.

The acknowledgement will include:

- Ordering Agency Name
- Agency Order Number (Purchase Order Number)
- Account Number associated with Delivery Location
- Leveraged Procurement Number (Contract Number)
- Line Item Number
- Quantity
- Unit
- Description
- Unit Cost
- Purchase Order Total Cost
- Delivery Completion Date

13. DELIVERY SCHEDULES

Delivery is to be completed in full within ten (10) days after receipt of order (ARO) by the contractor.

Delivery shall be limited to the following locations:

California Air Resources Board 9528 Telstar Avenue El Monte, CA 91731	California Air Resources Board Heavy Duty Vehicle Testing Facility 2769 Tee Pee Drive Stockton, CA 95205	California Air Resources Board c/o Metropolitan Transit Authority 470 Bauchet Street Rebuild Center, Blvd. #3, Bay #23 Los Angeles, CA 90012
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Contractor is requested to make deliveries in Los Angeles County, Orange County, San Bernardino Metropolitan Area, and San Diego Metropolitan Area during off-peak hours. Off-peak hours are Monday through Friday, 10:00 AM to 4:00 PM.

Contractor is requested to make deliveries to the Stockton facility Monday through Thursday, 6:30 AM through 3:30 PM.

14. EMERGENCY DELIVERY

Deliveries requested outside the regular working hours/days shall be considered an emergency. Emergency deliveries shall be F.O.B. Destination and must be delivered within twenty-four (24) hours after notification.

Supplier contact for the 24-hour Emergency Delivery:

Contact Name: Tony Pham
Telephone Number: (818) 253-7483
Facsimile Number: (310) 835-7629
Email Address: tony.pham@airgas.com

Refer to Attachment A, line item 41 for the cost associated with this service. Agencies shall keep Emergency deliveries to a minimum and maintain records justifying usage.

15. EMERGENCY SERVICES

Supplier must have Emergency Services available on a twenty-four (24) hour basis to service, repair, or replace contractor-owned units. Service must be available within a four (4) hour response time after State notification.

Supplier contact for the 24-hour Emergency Services:

Contact Name: Tony Pham
Telephone Number: (818) 253-7483
Facsimile Number: (310) 835-7629
Email Address: tony.pham@airgas.com

Refer to Attachment A, line item 42 for the cost associated with this service.

16. CYLINDER PICKUP

Cylinder pickup shall be provided by the contractor at no additional cost to the State, F.O.B. department location, at the time of next delivery date or within seven (7) days of the CARB's written notification to the contractor Contract Manager.

17. PICK UP DELIVERY DOCUMENTATION

It shall be the responsibility of the contractor to provide the following:

- Document/track each cylinder/dewar and rental charges for each pickup/delivery.
- Obtain signature of delivery driver for each pickup/delivery.
- Obtain department personnel's signature confirming each pickup/delivery.

Any pickup/delivery documentation not reflecting both the contractor and agency personnel's signatures may not be used to substantiate any unreturned cylinders/dewars or unpaid rental charges. It shall be the

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contractor's responsibility to substantiate any claims for unreturned cylinders, dewars, or unpaid rental charges by providing documentation.

18. CYLINDER RENTAL

Gases are to be shipped in "No Deposit" cylinders with a guaranteed thirty (30) days free rental for each cylinder or dewar.

Once the free thirty (30) days have been exhausted, the State will pay a month-end rate, per month, for cylinders and dewars. The State will pay these rates in arrears rather than peak balance. The contractor may charge at per diem rate for partial month rentals; a full month's fee cannot be applied to a partial month.

Rent shall cease to accrue the day of written notice to pickup cylinders/dewars. Any State-owned cylinders/dewars shall be exempt from the monthly rental charges.

Refer to Attachment A, line items 43 and 44 for the costs associated with this service.

19. CYLINDER/DEWAR LABELING & IDENTIFICATION

All cylinders/dewars shall be affixed with a label identifying supplier's name/logo and address to insure the correct cylinders are returned to the contractor. Each cylinder/dewar must list contents and grade. Labels must be affixed to each cylinder/dewar. (String or wire attached tags will not be acceptable.) All cylinders/dewars shall be marked, labeled, and shipped in accordance with the nationally recognized standards and in accordance with all parts of the Code of Federal Regulations – D.O.T. Hazardous Materials Regulations 49 CFR, Parts 171-185, (6/2002) and NFPA Pamphlet 58, Liquefied Petroleum Gas Code, 2008.

20. CERTIFICATE OF ANALYSIS

The contractor shall provide, at no cost to the State, a "Certificate of Analysis" (COA) and/or a batch analysis for all gases being delivered under this contract. Any delivery without a COA and/or batch analysis may be deemed unacceptable and non-compliant to the terms of the contract and may be returned at the contractor's expense.

21. QUALITY CONTROL

If quality problems are suspected, a technical representative shall be available within 48 hours of written notification by the ordering department. In addition, the using department may request an analysis by an independent laboratory, all at no additional cost to the State. Any damages due to non-compliant gases (i.e., contamination from improper gas formulations, mislabeled, or defective cylinders) shall be the responsibility of the contractor.

Contractor contact for the technical representative:

Contact Name: Tony Pham
Telephone Number: (818) 253-7483
Facsimile Number: (310) 835-7629
Email Address: tony.pham@airgas.com

22. MATERIAL SAFETY DATA SHEET

Contractor shall provide a Material Safety Data Sheet for each applicable product to each CARB location to which the product is delivered.

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23. PACKAGING

Exterior packaging is to show the contents and the order number. All packaging is to conform to the applicable freight classifications, Surface Transportation Board and/or Postal regulations, is to be of a quality to assure final delivery without damage to the contents.

24. RECALL PROCEDURES

The contractor shall provide recall notification, regardless of level, in writing to the State Contract Administrator and each ordering department through the most expedient method possible. The notices, at a minimum, shall include a complete product description and/or identification, contract number, delivery order number, and disposition instructions. The contractor shall issue replacement of product or credit for any product removed or recalled. Each ordering agency shall have the option of accepting either replacement product or credit in exchange for recalled/removed products.

25. QUALITY ASSURANCE

Products not meeting all specified requirements will be deemed non-compliant to specifications and will be returned at contractor's expense. Contractor shall replace all rejected non-compliant products with fully compliant new stock at no cost to the State within seven (7) days of written notice of non-conformance by the State.

26. FREE ON BOARD (F.O.B.) DESTINATION

All prices are F.O.B. destination; freight prepaid by the contractor, to the ordering organization's receiving point. Responsibility and liability for loss or damage for all orders will remain with the contractor until final inspection and acceptance, when all responsibility will pass to the ordering organization, except the responsibility for latent defects, fraud, and the warranty obligations.

27. SHIPPED ORDERS

All shipments must comply with General Provisions, Paragraph 12 entitled "Packing and Shipment". The General Provisions are available at: <http://www.documents.dgs.ca.gov/pd/modellang/GPIT0407.pdf>

28. INVOICING

Ordering agencies may require separate invoicing, as specified by each ordering organization. Invoices will contain the following information:

- Contractor's name, address and telephone number
- Leveraged Procurement Number (Contract Number)
- Agency Order Number (Purchase Order Number)
- Item and commodity code number
- Quantity purchased
- Contract price and extension
- State sales and/or use tax
- Prompt payment discounts/cash discounts, if applicable
- Totals for each order

Separate invoices shall be submitted if a single delivery included items ordered under separate purchase orders. Cylinder/dewar rental fees shall be invoiced separately from contract gases.

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Invoices shall be billed according to the unit of measure and the unit price as indicated in the awarded contract. Deviations/substitutions will not be permitted. Only charges listed in the awarded contract shall be approved for payment. No other fees can be charged to the State. It is the responsibility of the Departments to verify that the prices invoiced match the contract list price.

The State's obligation to make payment pursuant to the contract is subject to availability of appropriation funds. Receipt of a Purchasing Authority Purchase Order (STD. 65) under this contract is proof of funds for that order.

Invoices shall be submitted to:

El Monte and MTA-Los Angeles	Stockton
Donna Barragan California Air Resources Board 9528 Telstar Avenue El Monte, CA 91731	Lauri Brunkhorst, Accounts Payable Administrative Services Division California Air Resources Board 1001 "I" Street PO Box 2815 Sacramento, CA 95812

29. PAYMENT

Payment terms for this contract are net forty-five (45) days. Payment will be made in accordance with the provisions of the California Prompt Payment Act, Government Code Section 927, et seq. Unless expressly exempted by statute, the Act requires State departments to pay properly submitted, undisputed invoices not more than forty- five (45) days after the date of acceptance of goods, performance of services, or receipt of an undisputed invoice, whichever is later.

30. PAYEE DATA RECORD

Each State accounting office must have a copy of the Payee Data Record (Std. 204) in order to process payments. State departments should forward a copy of the Std. 204 to their accounting office(s). Without the Std. 204, payment may be unnecessarily delayed. Ordering departments should contact the contractor for copies of the Payee Data Record.

31. CALIFORNIA SELLER'S PERMIT

The California seller permit number for the contractor(s) is listed below. Ordering departments can verify that permits are currently valid at the following website: www.boe.ca.gov. State departments must adhere to the file documentation required identified in the State Contract Manual Volume 2 and Volume 3, as applicable.

Contractor Name	Seller Permit #
Airgas West, Inc.	SRYAB 25-602078

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32. RECYCLED CONTENT

There is no recycled content for this contract.

33. SMALL BUSINESS/DISABLED VETERAN BUSINESS ENTERPRISE PARTICIPATION

There is no small business (SB) or disabled veteran business enterprise (DVBE) participation for this contract.

34. ATTACHMENTS

Attachment A – Contract Pricing

Attachment B – Gravimetric Analysis Requirements, dated August 2008

CONTRACT PRICING

Line Item	Unit	Description	UNSPSC Code	Manufacturer Part Number	Cylinder Size	Unit Price
Group I Liquid Gases						
1	CYL	NITROGEN LIQUID Dewar With High Pressure Ports	12140000	NI 160LT230	160 Liter	\$42.11
2	CYL	NITROGEN LIQUID Dewar 35 PSI Relief Valve	12140000	NI 160LT35	160 Liter	\$42.11
3	CYL	ARGON LIQUID Industrial Grade, 99.998% Purity. 230 PSI Pressure Relief Valve	12140000	AR 160LT230	160 Liter	\$184.96
4	CYL	CARBON DIOXIDE, LIQUID SFC/SFE Grade, No Helium Head Full Dip Tube With Scale Indicator Cylinder Fitting: CGA-320	12140000	CD SFX15AS	44 LBS	\$288.55
Group II Pure Gases						
5	CYL	HYDROGEN 99.995% PURE Gas Chromatographic Carrier Grade Cylinder Fitting: CGA-580	12140000	HY HP200	197 cu ft	\$26.99
6	CYL	HYDROGEN 99.999% PURITY Cylinder Fitting: CGA-580	12140000	HY UHP200	197 cu ft	\$41.17
7	CYL	HELIUM 99.9999% CHROMATOGRAPHIC PURE Gas Chromatographic Carrier Grade Less Than 20 PPB Water Cylinder Fitting: CGA-580	12140000	HE BIP300, Chrom	292 cu ft	\$99.98
8	CYL	HELIUM 99.995% PURITY Cylinder Fitting: CGA-580 Steel Cylinder	12140000	HE HP200	219 cu ft	\$79.50
9	CYL	HELIUM 99.9999% CHROMATOGRAPHIC PURE (may have built-in purifier) Less Than 20 PPB Water Cylinder Fitting: CGA-580 Steel Cylinder	12140000	HE BIP300	292 cu ft	\$99.86
10	CYL	LIQUID PROPANE (C3H8) 99.5% Pure Instrument Grade Cylinder Fitting: CGA 510 Steel Cylinder	12140000	PR I200	352 cu ft	\$154.88
11	CYL	OXYGEN (AS DESCRIBED) 99.98% Pure Cylinder Fitting: CGA-540 Steel Cylinder	12140000	OX UHP200	282 cu ft	\$79.81

Line Item	Unit	Description	UNSPSC Code	Manufacturer Part Number	Cylinder Size	Unit Price
12	CYL	OXYGEN (AS DESCRIBED) Research Grade Oxygen 99.999% Ultra Pure • Less Than 0.1 PPM NOx • Less Than 1 PPM Water Cylinder Fitting: CGA-540 Steel Cylinder	12140000	OX R200	282 cu ft	\$129.72
13	CYL	ARGON 99.999% PURE Ultra High Purity (UHP Grade) • Less Than 1.0 PPM Oxygen • Less Than 1.0 PPM Water • Less Than .5 PPM Hydrocarbons • Less Than 1.0 PPM CO + CO2 • Less Than 5.0 PPM Nitrogen Cylinder Fitting: CGA-580	12140000	AR UHP200	251 cu ft	\$41.92
14	CYL	ARGON 99.999% PURITY • Less Than 1.0 PPM Oxygen • Less Than 1.0 PPM Water • Less Than 0.5 PPM Total Hydrocarbons (As Methane) • Less Than 1.0 PPM CO + CO2 • Less Than 5.0 PPM Nitrogen Cylinder Fitting: CGA-580	12140000	AR UHP200	251 cu ft	\$41.92
15	CYL	ARGON 99.999% PURITY • Less Than 1.0 PPM Oxygen • Less Than 1.0 PPM Water • Less Than 0.5 PPM Total Hydrocarbons (As Methane) • Less Than 1.0 PPM CO + CO2 • Less Than 5.0 PPM Nitrogen Cylinder Fitting : CGA-580	12140000	AR UHP300	336 cu ft	\$47.71
Group III Blended Gases						
16	CYL	HYDROGEN IN HELIUM 40%-60% 99.995% Purity of both gases. Less Than 0.5 PPM Hydrocarbons. Cylinder Fitting: CGA-350 Preparation Tolerance is to be plus or minus 5% of the Component Hydrogen, (i.e., The acceptable Hydrogen concentration range is 38 to 42 Percent.)	12140000	X02 HE60C200310 8	200 cu ft	\$58.80
17	CYL	HYDROGEN IN HELIUM 40%-60% 99.995% Purity of both gases Less Than 0.05 PPM Hydrocarbons Cylinder Fitting : CGA-350 Preparation Tolerance is to be plus or minus 2.5% of the component Hydrogen, (i.e., The acceptable Hydrogen concentration range is 39 to 41 Percent.)	12140000	X02 HE60a15AC2A 7	140 cu ft	\$189.00

Line Item	Unit	Description	UNSPSC Code	Manufacturer Part Number	Cylinder Size	Unit Price
18	CYL	AMMONIA 10 - 2000 PPM Title V Gas Standard Balance: NITROGEN Cylinder Pressure: 2000 PSIG Valve Connection: 705 or 660	12140000	10-2000 ppm Amm/N2	140 cu ft	\$144.90
19	CYL	AMMONIA 10% Balance: NITROGEN Cylinder Pressure: 2000 PSIG Valve Connection: 705 or 660	12140000	10% Amm/N2	140 cu ft	\$92.96
Group IV Zero Gases						
20	CYL	AIR ZERO Zero Air Must Meet The Following Criteria: <ul style="list-style-type: none"> • Less Than 0.1 PPM Total Hydrocarbons • Less Than 0.1 PPM Methane (CH4) • Less Than 0.1 PPM Carbon Monoxide (CO) • Less Than 0.1 PPM Carbon Dioxide (CO2) • Less Than 0.1 PPM (NOx) • Less Than 1 PPM H2O • 20.0% - 22.0% Oxygen Cylinder Fitting: CGA-590	12140000	Air, Zero; Al CZ200	238 cu ft	\$79.97
21	CYL	AIR ZERO Zero Air Must Meet The Following Criteria: <ul style="list-style-type: none"> • Less Than 0.1 PPM Total Hydrocarbons (As Methane) • Less Than 0.1 PPM Methane (CH4) • Less Than 0.1 PPM Carbon Monoxide (CO) • Less Than 0.1 PPM Carbon Dioxide (CO2) • Less Than 0.1 PPM Oxides Of Nitrogen (NOx) • Less Than 1.0 PPM Water (H2O) • 20.0 To 22.0 Percent Oxygen Cylinder Fitting : CGA-590	12140000	Air, Zero; Al CZ300	238 cu ft	\$70.92
22	CYL	ULTRA PURE ZERO AIR Ultra Pure Zero Air Must Meet The Following Criteria: <ul style="list-style-type: none"> • Less Than 0.01 PPM Total Hydrocarbons (As Methane) • Less Than 0.01 PPM Carbon Monoxide (CO) • Less Than 0.01 PPM Oxides Of Nitrogen (NOx) • Less Than 0.001 PPM Sulfur Dioxide (SO2) • Less Than 0.001 PPM Carbon Dioxide (CO2) Cylinder Fitting: CGA-590	12140000	Air, Zero;	140 cu ft	\$84.98

Line Item	Unit	Description	UNSPSC Code	Manufacturer Part Number	Cylinder Size	Unit Price
23	CYL	NITROGEN 99.999% ULTRA PURE Nitrogen Ultra Pure Must Meet The Following Criteria: • Less Than 2.0 PPM Oxygen • Less Than 0.05 PPM Total Hydrocarbons • Less Than 0.05 PPM Methane (CH4) • Less Than 0.1 PPM Carbon Monoxide (CO) • Less Than 0.3 PPM Carbon Dioxide (CO2) • Less Than 0.1 PPM (NOx) • Less Than 2.0 PPM Water (H2O) Cylinder Fitting: CGA-580 Steel Cylinder	1214000	NI BIP300	304 cu ft	\$29.97
Group V Primary Gas Standards						
24	CYL	PROPANE (C3H8) IN AIR Propane In Air 0.5 - 6000 PPM Gravimetric Blend To 1% Certification Cylinder Fitting : CGA-590 140 cu ft Treated/Internally Sterilized Aluminum Cylinder Estimated Concentration Usage Breakdown (For Information Only) 0.5 > 5 PPM (15) 5 > 10 PPM (15) 10 > 100 PPM (20) 100 > 1000 PPM (70) 1000 + (20) Total 140 MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	1-6000ppm Prop/Air, Prim	140 cu ft	\$134.96
25	CYL	METHANE (AS DESCRIBED) Carbon Monoxide (CO) In Nitrogen (N2) Methane In Air 1.0 - 6000 PPM Gravimetric Blend To 1% Certification Cylinder Fitting : CGA-590 140 cu ft Treated/Internally Sterilized Aluminum Cylinder Estimated Concentration Usage Breakdown (For Information Only) 0.5 > 5 PPM (16) 5 > 50 PPM (110) 50 > 500 PPM (34) 500 > 1000 PPM (50) Total 210 MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	1-6000ppm CH4/Air, Prim	140 cu ft	\$134.96

Line Item	Unit	Description	UNSPSC Code	Manufacturer Part Number	Cylinder Size	Unit Price
26	CYL	CARBON MONOXIDE IN ZERO NITROGEN 5-999 PPM Gravimetric Blend To 1% Certification Cylinder Fitting : CGA-350 Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	5-999 ppm CO/N2	140 cu ft	\$134.96
27	CYL	CARBON MONOXIDE IN ZERO NITROGEN 1000-5000 PPM Gravimetric Blend To 1% Certification Cylinder Fitting : CGA-350 Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	1000-5000 ppm CO/N2, Prim	140 cu ft	\$134.96
28	CYL	CARBON MONOXIDE IN ZERO NITROGEN 0.5 -10% Cylinder Fitting: CGA-350 Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	.5%-10% CO/N2, Prim	140 cu ft	\$134.96
29	CYL	CARBON DIOXIDE IN ZERO NITROGEN 0.10 - 30% Carbon Dioxide (CO2) In Nitrogen (N2) Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-580 Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	.10-30% CO2/N2, Prim	140 cu ft	\$134.96
30	CYL	HELIUM (AS DESCRIBED) Helium With 0.5 - 5% Methane Helium Purity 99.9995% Methane Purity 99.97% Less Than 1.0 PPM H2O Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-350 Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	.5-5% CH4/HE, Prim	140 cu ft	\$134.96
31	CYL	HELIUM (AS DESCRIBED) Helium With 0.5 - 10.0% Oxygen. Helium Purity 99.9995% or better Oxygen Purity 99.994% or better Less Than 1.0 PPM H2O Gravimetric Blend To 1% Certification Cylinder Fitting: CGA - 580 (Per CGA, The Oxygen limits in Inert Gas of less than or equal to 5% specifies CGA - 580 fittings) Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	.5-10% O2/HE, Prim	140 cu ft	\$134.96

Line Item	Unit	Description	UNSPSC Code	Manufacturer Part Number	Cylinder Size	Unit Price
32	CYL	HELIUM (AS DESCRIBED) Helium With 5% Carbon Dioxide Helium Purity 99.9995% Less Than 1.0 PPM Water Gravimetric Blend To 1.0% Certification Cylinder Fitting: CGA - 580. Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	5% CO2/HE, Prim	140 cu ft	\$134.96
33	CYL	NITRIC OXIDE (AS DESCRIBED) Nitric Oxide (NO) In Nitrogen (N2) Nitric Oxide 0.5 - 5000 PPM Less Than 1.0 PPM Water Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-660 Treated/Internally Sterilized Aluminum Cylinder Estimated Concentration Usage Breakdown (For Information Only). 0.5 > 10 PPM (6) 10 > 30 PPM (15) 30 > 100 PPM (166) 100 > 999 PPM (60) 1000 - 5000 PPM (80) Total 327 MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS)	12140000	.5-5000 ppm NO/N2, Prim	140 cu ft	\$134.96
34	CYL	NITRIC OXIDE IN ZERO NITROGEN 1000-5000 PPM Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-660 Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	1000-5000 ppm NO/N2, Prim	140 cu ft	\$134.96
35	CYL	OXYGEN 21% NITROGEN 79% Less Than 1.0 PPM Water Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-590 Aluminum Cylinder MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	21% O2/N2, Prim	140 cu ft	\$124.99
36	CYL	ETHANE 40 PPM Ethane (C2H6) In Ultra Pure Air Gravimetric Blend To 1% Certification Cylinder Fitting : CGA-590 Steel Cylinder 40 PPM ± 1%, Primary Standard MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	Ethane 40 ppm/Air	140 cu ft	\$144.90

Line Item	Unit	Description	UNSPSC Code	Manufacturer Part Number	Cylinder Size	Unit Price
37	CYL	ETHANOL 20 PPM Ethanol (C ₂ H ₅ OH) In Ultra Pure Air Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-590 Steel Cylinder 20 PPM ± 1 %. Primary Standard MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	20 ppm Ethanol/Air	140 cu ft	\$259.98
38	CYL	ETHANOL 125 PPM Ethanol (C ₂ H ₅ OH) In Ultra Pure Air Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-590 Steel Cylinder 125 PPM ± 1 %, Primary Standard MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	125 ppm Ethanol/Air	140 cu ft	\$259.98
39	CYL	METHANOL 43 PPM Methanol (CH ₃ OH) In Ultra Pure Air Gravimetric Blend To 1% Certification Cylinder Fitting : CGA-590 Steel Cylinder 43 PPM ± 1%, Primary Standard MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	43 ppm Methanol/Air	140 cu ft	\$259.98
40	CYL	METHANOL 250 PPM Methanol (CH ₃ OH) In Ultra Pure Air Gravimetric Blend To 1% Certification Cylinder Fitting: CGA-590 Steel Cylinder 250 PPM ± 1%, Primary Standard MUST BE COMPLIANT TO THE ATTACHED GRAVIMETRIC ANALYSIS REQUIREMENTS	12140000	250 ppm Methanol/Air	140 cu ft	\$259.98
Group VI Services						
41	EA	EMERGENCY DELIVERY FEE, PER DELIVERY				\$100.00
42	EA	EMERGENCY SERVICE FEE, BY THE HOUR				\$0.00
43	EA	CYLINDER RENTAL FEE, MONTHLY				\$5.40
44	EA	DEWAR RENTAL FEE, MONTHLY				\$15.00

Gravimetric Analysis Requirements for CARB Primary Gas Standards

Scope

The purpose of this procedure is to define the requirements for California Air Resources Board (CARB) primary gas standards. Gravimetric certification for CARB purposes is defined as adding a carefully measured weight of component gas to an evacuated cylinder, followed by the addition of a carefully measured weight of balance gas. The two weights are converted by appropriate calculations into molar volumes and then ratioed to give the component gas concentration in units of parts-per-million (ppm). A sample example is as follows.

Example: Component Gas: 2000 ppm CO; Balance Gas: N₂

1. Establish tare weight of cylinder (within ± 0.05 grams).
2. Added weight of CO (component gas) = 13.573 g (within ± 0.05 grams).
3. Added wt. of N₂ (balance gas) = 6617.10 g.
4. Calculated molar quantities.

$$\frac{13.573 \text{ g-CO}}{28.01 \text{ g/mole}} = 0.4846 \text{ moles for CO}$$

$$\frac{6617.10 \text{ g-N}_2}{28.01 \text{ g/mole}} = 236.241 \text{ moles for N}_2$$

$$\text{Total Moles} = 0.4846 + 236.241 = 236.73 \text{ moles}$$

5. Calculated Concentration (ppm) based on molar quantities.

$$\frac{0.4846 \text{ moles CO} \times 10^6}{236.73 \text{ moles (Total)}} = 2051.2 \text{ ppm CO (mole/mole)}$$

Accuracy (\pm %)

$$\frac{100 \times (\text{twice total weighing error})}{(\text{weight of component gas})} = \frac{100 \times 2 \times 0.05}{13.573} = \pm 0.74\%$$

Gravimetric Analysis Requirements

For CARB Primary Gas Standards
(continued)

Mixture Accuracy

The accuracy of the mixture shall be within $\pm 1\%$ of the calculated value including all weighing tolerances.

Scale Capacity and Accuracy

The scale used to measure the gaseous components and the treated aluminum and steel cylinders shall be capable of weighing to within ± 0.05 grams, including all hysteresis and readability errors.

Accuracy of the scale must be traceable to the U.S. National Institute of Science and Technology (NIST). The date of the last certification must be included in the data submitted. Also the actual accuracy must be included with the analysis.

Balance Gases

The balance gas shall be high purity nitrogen or high purity air (less than 0.1 ppm hydrocarbon content equivalent to CH_4). The balance gas must meet these criteria:

- Total Hydrocarbons less than 0.1 ppmC,
- CO less than 0.5 ppm,
- CO_2 less than 1.0 ppm,
- NO_x less than 0.1 ppm, and
- H_2O less than 2.0 ppm.

Component Gas

Component gas purity shall be stated in the analysis. In order to guarantee a 1% mixture accuracy it will be necessary to use a diluted component gas in the preparation of gas mixtures below approximately 2000 ppm. If the component gas is a diluted mixture it must also have a traceable gravimetric analysis consistent with this procedure. The final delivered product shall be accompanied by a certified analysis of the contents.

Certification

All gravimetric mixtures to be analyzed against an existing gravimetric mixture prior to certification.