

**Lee County Board Of County Commissioners  
Agenda Item Summary**

**Blue Sheet No. 20051199**

**1. ACTION REQUESTED/PURPOSE:** Approve award of Formal Quotation No. Q-050569 Annual Purchase of Carbon Dioxide for Utilities, to the low quoter meeting specifications, Airgas Carbonic, at a cost of \$139 per ton as listed on the attached Lee County Tabulation Sheet. (Note: The apparent low quoter, Air Liquide, was unable to meet the specified insurance requirements. Please see Attachment # 5.) The initial term of this quote is one year; also request authority to renew this quote for four additional one-year periods, at the same terms and conditions, if in the best interest of Lee County; and to exercise the price escalator clause as per the specifications on an as-needed basis. In the event that the low quoter is unable to establish the effectiveness of their product, request the Purchasing Director be given authority to act on behalf of the Board in the event of vendor non-compliance so that the Purchasing Director can proceed to the next low quoter(s). Funding will be available from the individual department or division's budget whom will be responsible for monitoring their individual expenditures. Utilities estimates expending approximately \$60,000 annually for carbon dioxide.

**2. WHAT ACTION ACCOMPLISHES:** Provides Utilities with a reliable source of carbon dioxide to maintain its facilities throughout Lee County.

**3. MANAGEMENT RECOMMENDATION:** Approve.

<b>4. Departmental Category:</b> 10 <span style="margin-left: 50px;"><b>C10D</b></span>		<b>5. Meeting Date:</b> <b>08-13-2005</b>	
<b>6. Agenda:</b> <input checked="" type="checkbox"/> Consent <input type="checkbox"/> Administrative <input type="checkbox"/> Appeals <input type="checkbox"/> Public <input type="checkbox"/> Walk-On	<b>7. Requirement/Purpose: (specify)</b>		<b>8. Request Initiated:</b> Commissioner Department Division By: <b>Rick Diaz, P.E., Director</b>
	Statute		
	Ordinance		
	<input checked="" type="checkbox"/> Admin. Code	<b>AC-4-1</b>	
	Other		
		Utilities <b>8/25/05</b>	

**9. Background:** On July 12, 2005, the Division of Purchasing received sealed quotations for the annual purchase of carbon dioxide for Utilities. On that date, five responses were received; of which two were no bids. The quotations have been thoroughly reviewed, and a recommendation is being made to award to Airgas Carbonic, as the low quoter meeting all specification requirements.

Funding is available: OD5361848700.505240

Please See Attachments:

- (1) Tabulation Sheet
- (2) Specifications
- (3) Airgas Carbonic Quotation
- (4) Department's Recommendation
- (5) Air Liquide's confirmation of non compliance with the insurance

**10. Review for Scheduling:**

Department Director	Purchasing or Contracts	Human Resources	Other	County Attorney	Budget Services				County Manager/P.W. Director
					Analyst	Risk	Grants	Mgr.	
<i>Jamul</i> 8-25-05		N/A	N/A		<i>P.M. Sp...</i>	<i>US...</i>	<i>8/29/05</i>	<i>8/29/05</i>	<i>Jamul</i> 8-25-05

**11. Commission Action:**

- Approved
- Deferred
- Denied
- Other

8-29-05  
10:50  
COUNTY ADMIN  
FORWARDED TO: *11*  
5/3/05  
*AD...*

Rec. by CoAtty  
Date: 8-29-05  
Time: 8:50  
Forwarded To:  
*Admin 8/29/05*

# ATTACHMENT

<b>FORMAL QUOTATION #Q-050569</b>	<b>LEE COUNTY, FLORIDA TABULATION SHEET</b>		
<b>OPENING DATE: JULY 12, 2005</b>	<b>FOR</b>		
<b>BUYER: JUDY CHEVES</b>	<b>THE ANNUAL PURCHASE OF CARBON DIOXIDE</b>		
<b>VENDORS</b>	AIR LIQUIDE	AIR GAS CARBONIC	BOC GASES
<b>ADDENDA ACKNOWLEDGED</b>	N/A	N/A	N/A
<b>SPECIFY PRODUCT NAME</b>	CARBON DIOXIDE	LIQUID CARBON DIOXIDE	
<b>PRICE PER TON</b>	\$119.50	\$139.00	\$195.00
<b>X 425 TONS (GRAND TOTAL)</b>	\$50,787.50	\$59,075.00	\$82,875.00
<b>MINIMUM ORDER QUANTITY</b>	15 TONS	10 TONS	15 TONS
<b>DELIVER WITH OWN VEHICLE</b>	YES	YES	YES
<b>DELIVERED WITHIN CALENDAR DAYS:</b>	1	2	21
<b>LOCAL VENDOR PREFERENCE:</b>	NO	NO	NO
<b>MODIFICATIONS:</b>	NO	NO	YES *
<b>QUOTE SIGNED</b>	YES	YES	YES
<b>MEETS SPECIFICATIONS:</b>	NO **	YES	NO ***
<b>OCCUPATIONAL LICENSE</b>	N/A	N/A	N/A
<b>THREE COPIES PROVIDED</b>	2 COPIES	2 COPIES	YES
<b>SUBMITTALS</b>	YES	YES	YES
* 26 TON STORAGE VESSEL MUST PASS BOC SAFETY INSPECTION PRIOR TO FIRST DELIVERY. MODIFICATIONS MADE TO INSURANCE REQUIREMENTS			
** COULD NOT MEET INSURANCE REQUIREMENTS			
*** HAD SEVERAL MODIFICATIONS TO THE SPECIFICATIONS			
<b>NO BIDS</b>			
ANTHRAFILTER (U.S.) INC			
NORIT AMERICAS INC			



PROJECT NO.: Q-050569

OPEN DATE: JULY 12, 2005

AND TIME: 2:30 P.M.

PRE-BID DATE: N/A

AND TIME: N/A

LOCATION: LEE COUNTY PURCHASING  
1825 HENDRY ST., 3<sup>RD</sup> FL  
FT. MYERS, FL 33901

# REQUEST FOR QUOTATIONS

## TITLE:

## ANNUAL PURCHASE OF CARBON DIOXIDE

REQUESTER: LEE COUNTY BOARD OF COUNTY COMMISSIONERS  
DIVISION OF PURCHASING

**MAILING ADDRESS**  
P.O. BOX 398  
FORT MYERS, FL 33902-0398

**PHYSICAL ADDRESS**  
1825 Hendry St 3<sup>rd</sup> Floor  
FORT MYERS, FL 33901

BUYER: JUDY CHEVES  
BUYER  
PHONE NO.: (239) 344-5450

**GENERAL CONDITIONS**

Sealed Quotations will be received by the DIVISION OF PURCHASING, until 2:30pm on the date specified on the cover sheet of this "Request for Quotations", and opened immediately thereafter by the Purchasing Director or designee.

Any question regarding this solicitation should be directed to the Buyer listed on the cover page of this solicitation, or by calling the Division of Purchasing at (239) 344-5450.

1. **SUBMISSION OF QUOTE:**

- a. Quotations shall be sealed in an envelope, and the outside of the envelope should be marked with the following information:
  1. Marked with the words "Sealed Quote"
  2. Name of the firm submitting the quotation
  3. Title of the quotation
  4. Quotation number
  
- b. The Quotation shall be submitted in triplicate as follows:
  1. The original consisting of the Lee County quotes forms completed and signed.
  2. A copy of the original quote forms for the Purchasing Director.
  3. A second copy of the original quote forms for use by the requesting department.
  
- c. The following should be submitted along with the quotation in a separate envelope. This envelope should be marked as described above, but instead of marking the envelope as "Sealed Quote", please indicate the contents; i.e., literature, drawings, submittals, etc. This information should be submitted in duplicate.
  1. Any information (either required or in addition to that asked for by the specifications) necessary to analyze your quotation; i.e., required submittals, literature, technical data, financial statements.
  2. Warranties and guarantees against defective materials and workmanship.
  
- d. **ALTERNATE QUOTE:** If the vendor elects to submit more than one quote, then the quotes should be submitted in separate envelopes and marked as indicated above. The second, or alternate quote should be marked as "Alternate".

- e. **QUOTES RECEIVED LATE:** It is the quoter's responsibility to ensure that his quote is received by the Division of Purchasing prior to the opening date and time specified. Any quote received after the opening date and time will be promptly returned to the quoter unopened. Lee County will not be responsible for quotes received late because of delays by a third party delivery service; i.e., U.S. Mail, UPS, Federal Express, etc.
- f. **QUOTE CALCULATION ERRORS:** In the event there is a discrepancy between the total quoted amount or the extended amounts and the unit prices quoted, the unit prices will prevail and the corrected sum will be considered the quoted price.
- g. **PAST PERFORMANCE:** All vendors will be evaluated on their past performance and prior dealings with Lee County (i.e., failure to meet specifications, poor workmanship, late delivery, etc.).
- h. **WITHDRAWAL OF QUOTE:** No quote may be withdrawn for a period of 90 days after the scheduled time for receiving quotes. A quote may be withdrawn prior to the quote-opening date and time. Such a request to withdraw should be made in writing to the Purchasing Director, who will approve or disapprove of the request.
- i. **COUNTY RESERVES THE RIGHT:** The County reserves the right to waive minor informalities in any quote; to reject any or all quotes with or without cause; and/or to accept the quote that in its judgment will be in the best interest of the County of Lee.
- j. **EXECUTION OF QUOTE:** All quotes shall contain the signature of an authorized representative of the quoter in the space provided on the quote proposal form. All quotes shall be typed or printed in ink. The bidder may not use erasable ink. All corrections made to the quote shall be initialed.

2. **ACCEPTANCE**

The materials and/or services delivered under the quote **shall** remain the property of the seller until a physical inspection and actual usage of these materials and/or services is accepted by the County and is to be in compliance with the terms herein, fully in accord with the specifications and of the highest quality. In the event the materials and/or services supplied to the County are found to be defective or do not conform to specifications, the County reserves the right to cancel the order upon written notice to the seller and return such product to the seller at the seller's expense.

3. **SUBSTITUTIONS**

Whenever in these specifications a brand name or make is mentioned, it is the intention of the County only to establish a grade or quality of materials and not to rule out other brands or makes of equality. However, if a product other than that specified is quote, it is the vendor's responsibility to name such product with his quote and to prove to the County that said product is equal to the product specified. Lee County **shall** be the sole judge as to whether a product being offered by the quoter is actually equivalent to the one being specified by the detailed specifications. (Note: This paragraph does not apply when it is determined that the technical requirements of this solicitation require only a specific product as stated in the detailed specifications.)

4. **RULES, REGULATIONS, LAWS, ORDINANCES & LICENSES**

The awarded vendor shall observe and obey all laws, ordinances, rules, and regulations, of the federal, state, and local government, which may be applicable to the supply of this product or service.

- a. Occupational License – Vendor shall submit within 10 calendar days after request.
- b. Specialty License(s) – Vendor shall possess at the time of the opening of the quote all necessary permits and/or license required for the sale of this product and/or service and upon the request of the County provide copies of licenses and/or permits within 10 calendar days after request.

5. **RECYCLED PRODUCTS**

It is the Lee County Board of County Commissioners' stated policy objective to "Ensure all departments are aware of the availability of recycled products..." (Administrative Code #AC-10-4). In an effort to provide the utmost opportunity for the use of recycled products by Lee County, vendors should list on their letterhead, all necessary information regarding any applicable recycled products they have available. Recycled products should meet all other specifications listed and have a minimum of 50%-recycled content. Whenever fiscally feasible, available recycled products will be purchased.

6. **WARRANTY/GUARANTY** (unless otherwise specified)

All materials and/or services furnished under this quote shall be warranted by the vendor to be free from defects and fit for the intended use.

7. **PRE-BID CONFERENCE**

A pre-bid conference will be held at the location, date, and time specified on the cover of this solicitation. Pre-bid conferences are generally non-mandatory, but it is highly recommended that everyone planning to submit a quote attend.

In the event a pre-bid conference is classified as mandatory, it will be so specified on the cover of this solicitation and it will be the responsibility of the quoter to ensure that they are represented at the pre-bid. Only those quoters who attend the pre-bid conference will be allowed to quote on this project.

8. **BIDDERS LIST MAINTENANCE**

A bidder should respond to “Request for Quotations” in order to be kept on the Bidder’s List. Failure to respond to three different “request for quotations” may result in the vendor being removed from the Bidder’s List. A bidder may do one of the following, in order to respond properly to the request:

- a. Submission of a quotation prior to the quote receipt deadline.
- b. Submission of a “no bid” notice prior to the quote receipt deadline.

9. **LEE COUNTY PAYMENT PROCEDURES**

All vendors are requested to mail one original invoice and one invoice copy to:

Lee County Finance Department  
Post Office Box 2238  
Fort Myers, FL 33902-2238

All invoices will be paid as directed by the Lee County payment procedure unless otherwise differently stated in the detailed specification portion of this quote.

Lee county will not be liable for request of payment deriving from aid, assistance, or help by any individual, vendor, quoter, or bidder for the preparation of these specifications.

Lee County is generally a tax-exempt entity subject to the provisions of the 1987 legislation regarding sales tax on services. Lee County will pay those taxes for which it is obligated, or it will provide a Certificate of Exemption furnished by the Department of Revenue. All contractors or quoters should include in their quote all sales or use taxes, which they will pay when making purchases of material or subcontractor’s services.

10. **LEE COUNTY BID PROTEST PROCEDURE**

Any contractor/vendor/firm that has submitted a formal bid/quote/proposal to Lee County, and who is adversely affected by an intended decision with respect to the award of the formal bid/quote/proposal, shall file with the County's Purchasing Director or Public Works Director a written "Notice of Intent to File a Protest" not later than seventy-two (72) hours (excluding Saturdays, Sundays and Legal Holidays) after receipt of a "Notice of Intended Decision" from the County with respect to the proposed award of the formal bid/quote/proposal.

The "Notice of Intent to File a Protest" is one of two documents necessary to perfect Protest. The second document is the "Formal Written Protest", both documents are described below.

The "Notice of Intent to File a Protest" document shall state all grounds claimed for the Protest, and clearly indicate it as the "Notice of Intent to File a Protest". Failure to clearly indicate the Intent to file the Protest shall constitute a waiver of all rights to seek any further remedies provided for under this Protest Procedure.

The "Notice of Intent to File a Protest" shall be received ("stamped in") by the Purchasing Director or Public Works Director not later than Four o'clock (4:00) PM on the third working day following the day of receipt of the County's Notice of Intended Decision.

The affected party shall then file its Formal Written Protest within ten (10) calendar days after the time for the filing of the Notice of Intent to File a Protest has expired. Except as provided for in the paragraph below, upon filing of the Formal Written Protest, the contractor/vendor/firm shall post a bond, payable to the Lee County Board of County Commissioners in an amount equal to five percent (5%) of the total bid/quote/proposal, or Ten Thousand Dollars (\$10,000.00), whichever is less. Said bond shall be designated and held for payment of any costs that may be levied against the protesting contractor/vendor/firm by the Board of County Commissioners, as the result of a frivolous Protest.

A clean, Irrevocable Letter of Credit or other form of approved security, payable to the County, may be accepted. Failure to submit a bond, letter of credit, or other approved security simultaneously with the Formal Written Protest shall invalidate the protest, at which time the County may continue its procurement process as if the original "Notice of Intent to File a Protest" had never been filed.

Any contractor/vendor/firm submitting the County's standard bond form (CSD: 514), along with the bid/quote/proposal, shall not be required to submit an additional bond with the filing of the Formal Written Protest.

The Formal Written Protest shall contain the following:



- County bid/quote/proposal identification number and title.
- Name and address of the affected party, and the title or position of the person submitting the Protest.
- A statement of disputed issues of material fact. If there are no disputed material facts, the Formal Protest must so indicate.
- A concise statement of the facts alleged, and of the rules, regulations, statues, or constitutional provisions, which entitle the affected party to relief.
- All information, documents, other materials, calculations, and any statutory or case law authority in support of the grounds for the Protest.
- A statement indicating the relief sought by the affected (protesting) party.
- Any other relevant information that the affected party deems to be material to Protest.

Upon receipt of a timely filed "Notice of Intent to File a Protest", the Purchasing Director or Public Works Director (as appropriate) may abate the award of the formal bid/quote/proposal as appropriate, until the Protest is heard pursuant to the informal hearing process as further outlined below, except and unless the County Manager shall find and set forth in writing, particular facts and circumstances that would require an immediate award of the formal bid/quote/proposal for the purpose of avoiding a danger to the public health, safety, or welfare. Upon such written finding by the County Manager, the County Manager may authorize an expedited Protest hearing procedure. The expedited Protest hearing shall be held within ninety-six (96) hours of the action giving rise to the contractor/vendor/firm's Protest, or as soon as may be practicable for all parties. The "Notice of Intent to File a Protest" shall serve as the grounds for the affected party's presentation and the requirements for the submittal of a formal, written Protest under these procedures, to include the requirement for a bond, shall not apply.

The Dispute Committee shall conduct an informal hearing with the protesting contractor/vendor/firm to attempt to resolve the Protest, within seven working days (excluding Saturdays, Sundays and legal holidays) from receipt of the Formal Written Protest. The Chairman of the Dispute Committee shall ensure that all affected parties may make presentations and rebuttals, subject to reasonable time limitations, as appropriate. The purpose of the informal hearing by the Dispute Committee, the protestor and other affected parties is to provide and opportunity: (1) to review the basis of the Protest; (2) to evaluate the facts and merits of the Protest; and (3) to make a determination whether to accept or reject the Protest.

Once a determination is made by the Dispute Committee with respect to the merits of the Protest, the Dispute Committee shall forward to the Board of County Commissioners its recommendations, which shall include relevant background information related to the procurement.

Upon receiving the recommendation from the Dispute Committee, the Board of County Commissioners shall conduct a hearing on the matter at a regularly scheduled meeting. Following presentations by the affected parties, the Board shall render its decision on the merits of the Protest.

If the Board's decision upholds the recommendation by the Dispute Committee regarding the award, and further finds that the Protest was either frivolous and/or lacked merit, the Board, at its discretion, may assess costs, charges, or damages associated with any delay of the award, or any costs incurred with regard to the protest. These costs, charges or damages may be deducted from the security (bond or letter of credit) provided by the contractor/vendor/firm. Any costs, charges or damages assessed by the Board in excess of the security shall be paid by the protesting contractor/vendor/firm within thirty (30) calendar days of the Board's final determination concerning the award.

All formal bid/quote/proposal solicitations shall set forth the following statement:

**“FAILURE TO FOLLOW THE BID PROTEST PROCEDURE REQUIREMENTS WITHIN THE TIMEFRAMES AS PRESCRIBED HEREIN AND ESTABLISHED BY LEE COUNTY BOARD OF COUNTY COMMISSIONERS, FLORIDA, SHALL CONSTITUTE A WAIVER OF YOUR PROTEST AND ANY RESULTING CLAIMS.”**

11. **PUBLIC ENTITY CRIME**

Any person or affiliate as defined by statute who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid or a contract to provide any goods or services to the County; may not submit a bid on a contract with the County for the construction or repair of a public building or a public work; may not submit bids or leases of real property to the County; may not be awarded or perform works as a contractor, supplier, subcontractor, or consultant under a contract with the County, and may not transact business with the County in excess of \$25,000.00 for a period of 36 months from the date of being placed on the convicted vendor list.

12. **QUALIFICATION OF QUOTERS** (unless otherwise noted)

Quotes will be considered only from firms normally engaged in the sale and distribution or provision of the services as specified herein. Quoters shall have adequate organization, facilities, equipment, and personnel to ensure prompt and efficient service to Lee County. The County reserves the right before recommending any award to inspect the facilities and organization; or to take any other action necessary to determine ability to perform is satisfactory, and reserves the right to reject quotes where evidence submitted or investigation and evaluation indicates an inability of the quoter to perform.

13. **MATERIAL SAFETY DATA SHEETS**

In accordance with Chapter 443 of the Florida Statutes, it is the vendor's responsibility to provide Lee County with Materials Safety Data Sheets on quoted materials, as may apply to this procurement.

14. **MISCELLANEOUS**

If a conflict exists between the General Conditions and the detailed specifications, then the detailed specifications shall prevail.

15. **WAIVER OF CLAIMS**

Once this contract expires, or final payment has been requested and made, the awarded contractor shall have no more than 30 days to present or file any claims against the County concerning this contract. After that period, the County will consider the Contractor to have waived any right to claims against the County concerning this agreement.

16. **AUTHORITY TO PIGGYBACK**

It is hereby made a precondition of any quote and a part of these specifications that the submission of any quote in response to this request constitutes a quote made under the same conditions, for the same price, and for the same effective period as this quote, to any other governmental entity.

17. **COUNTY RESERVES THE RIGHT**

a) **State Contract**

If applicable, the County reserves the right to purchase any of the items in this quote from State Contract Vendors if the prices are deemed lower on State Contract than the prices we receive in this quotation.

b) **Any Single Large Project**

The County, in its sole discretion, reserves the right to separately quote any project that is outside the scope of this quote, whether through size, complexity, or dollar value.

c) **Disadvantaged Business Enterprises**

The County, in its sole discretion, reserves the right to purchase any of the items in this quote from Disadvantage Business Enterprise vendor if the prices are determined to be in the best interest of the County, to assist the County in the fulfillment of any of the County's grant commitments to federal or state agencies.

The County further reserves the right to purchase any of the items in this quote from DBE's to fulfill the County's state policy toward DBE's as outlined in County Ordinance 88-45 and 90-04, as amended.

d) **Anti-Discrimination**

The vendor for itself, its successors in interest, and assignees, as part of the consideration there of covenant and agree that:

In the furnishing of services to the County hereunder, no person on the grounds of race, religion, color, age, sex, national origin, handicap or marital status shall be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination.

The vendor will not discriminate against any employee or applicant for employment because of race, religion, color, age, sex, national origin, handicap or marital status. The vendor will make affirmative efforts to insure that applicants are employed and that employees are treated during employment without regard to their race, religion, color, age, sex, national origin, handicap or marital status. Such action shall include, but not be limited to, acts of employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship.

Vendor agrees to post in a conspicuous place, available to employees and applicants for employment, notices setting forth the provisions of this anti-discrimination clause.

Vendor will provide all information and reports required by relevant regulations and/or applicable directives. In addition, the vendor shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the County to be pertinent to

ascertain compliance. The vendor shall maintain and make available relevant data showing the extent to which members of minority groups are beneficiaries under these contracts.

Where any information required of the vendor is in the exclusive possession of another who fails or refuses to furnish this information, the vendor shall so certify to the County its effort made toward obtaining said information. The vendor shall remain obligated under this paragraph until the expiration of three (3) years after the termination of this contract.

In the event of breach of any of the above anti-discrimination covenants, the County shall have the right to impose sanctions as it may determine to be appropriate, including withholding payment to the vendor or canceling, terminating, or suspending this contract, in whole or in part.

Additionally, the vendor may be declared ineligible for further County contracts by rule, regulation or order of the Board of County Commissioners of Lee County, or as otherwise provided by law.

The vendor will send to each union, or representative of workers with which the vendor has a collective bargaining agreement or other contract of understanding, a notice informing the labor union of worker's representative of the vendor's commitments under this assurance, and shall post copies of the notice in conspicuous places available to the employees and the applicants for employment.

The vendor will include the provisions of this section in every subcontract under this contract to insure its provisions will be binding upon each subcontractor. The vendor will take such actions with respect to any subcontractor, as the contracting agency may direct, as a means of enforcing such provisions, including sanctions for non-compliance.

18. **AUDITABLE RECORDS**

The awarded vendor shall maintain auditable records concerning the procurement adequate to account for all receipts and expenditures, and to document compliance with the specifications. These records shall be kept in accordance with generally accepted accounting methods, and Lee County reserves the right to determine the record-keeping method required in the event of non-conformity. These records shall be maintained for two years after completion of the project and shall be readily available to County personnel with reasonable notice, and to other persons in accordance with the Florida Public Disclosure Statues.

19. **DRUG FREE WORKPLACE**

Whenever two or more quotes/proposals, which are equal with respect to price, quality and service, are received for the procurement of commodities or contractual services, a quote/proposal received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall comply with the requirements of Florida Statutes 287.087.

20. **REQUIRED SUBMITTALS**

Any submittals requested should be returned with the quote response. This information may be accepted after opening, but no later than 10 calendar days after request.

21. **TERMINATION**

Any agreement as a result of this quote may be terminated by either party giving thirty (30) calendar days advance written notice. The County reserves the right to accept or not accept a termination notice submitted by the vendor, and no such termination notice submitted by the vendor shall become effective unless and until the vendor is notified in writing by the County of its acceptance.

The Purchasing Director may immediately terminate any agreement as a result of this quote for emergency purposes, as defined by the Lee County Purchasing and Payment Procedure Manual.

Any vendor who has voluntarily withdrawn from a formal quote/proposal without the County's mutual consent during the contract period shall be barred from further County procurement for a period of 180 days. The vendor may apply to the Board of Lee County Commissioners for waiver of this debarment. Such application for waiver of debarment must be coordinated with and processed by Purchasing.

22. **CONFIDENTIALITY**

Vendors should be aware that all submittals (including financial statements) provided with a quote/proposal are subject to public disclosure and will **not** be afforded confidentiality.

23. **ANTI-LOBBYING CLAUSE**

All firms are hereby placed on formal notice that neither the County Commissioners nor candidates for County Commission, nor any employees from the Lee County Government, Lee County staff members, nor any members of the Qualification/Evaluation Review Committee are to be lobbied, either individually

or collectively, concerning this project. Firms and their agents who intend to submit qualifications, or have submitted qualifications, for this project are hereby placed on *formal notice* that they are **not** to contact County personnel for such purposes as holding meetings of introduction, meals, or meetings relating to the selection process outside of those specifically scheduled by the County for negotiations. Any such lobbying activities may cause immediate disqualification for this project.

24. **INSURANCE (AS APPLICABLE)**

Insurance shall be provided, per the attached insurance guide. Upon request, an insurance certificate complying with the attached guide may be required prior to award.

**LEE COUNTY, FLORIDA  
PROPOSAL QUOTE FORM  
FOR THE ANNUAL PURCHASE OF  
CARBON DIOXIDE**

DATE SUBMITTED: \_\_\_\_\_

VENDOR NAME: \_\_\_\_\_

TO: The Board of County Commissioners  
Lee County  
Fort Myers, Florida

Having carefully examined the "General Conditions", and the "Detailed Specifications", all of which are contained herein, the Undersigned proposes to furnish the following which meet these specifications:

The undersigned acknowledges receipt of Addenda numbers:

\_\_\_\_\_

**CARBON DIOXIDE:**

SPECIFY PRODUCT NAME: \_\_\_\_\_

\$ \_\_\_\_\_ PER TON X 425 TONS = \$ \_\_\_\_\_ (GRAND TOTAL)

MINIMUM ORDER QUANTITY: \_\_\_\_\_

WILL YOU DELIVER WITH YOUR OWN VEHICLES AS OPPOSED TO COMMON CARRIER?

YES \_\_\_\_\_ NO \_\_\_\_\_

TO BE STARTED WITHIN \_\_\_\_\_ CALENDAR DAYS AFTER RECEIPT OF AWARD AND PURCHASE ORDER.



Is your firm interested in being considered for the Local Vendor Preference?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, then read the paragraph entitled "Local Vendor Preference" included in these specifications. Also complete the Local Vendor Preference Questionnaire and return with your quotation.

Quoters should carefully read all the terms and conditions of the specifications. Any representation of deviation or modification to the quote may be grounds to reject the quote.

Are there any modifications to the quote or specifications:

Yes \_\_\_\_\_ No \_\_\_\_\_

Failure to clearly identify any modifications in the space below or on a separate page may be grounds for the quoter being declared nonresponsive or to have the award of the quote rescinded by the County.

MODIFICATIONS:

Quoter shall submit his/her quote on the County's Proposal Quote Form, including the firm name and authorized signature. Any blank spaces on the Proposal Quote Form, qualifying notes or exceptions, counter offers, lack of required submittals, or signatures, on County's Form may result in the Quoter/Quote being declared non-responsive by the County.

ANTI-COLLUSION STATEMENT

**THE BELOW SIGNED QUOTER HAS NOT DIVULGED TO, DISCUSSED OR COMPARED HIS QUOTE WITH OTHER QUOTERS AND HAS NOT COLLUDED WITH ANY OTHER QUOTER OR PARTIES TO A QUOTE WHATSOEVER. NOTE: NO PREMIUMS, REBATES OR GRATUITIES TO ANY EMPLOYEE OR AGENT ARE PERMITTED EITHER WITH, PRIOR TO, OR AFTER ANY DELIVERY OF MATERIALS. ANY SUCH VIOLATION WILL RESULT IN THE CANCELLATION AND/OR RETURN OF MATERIAL (AS APPLICABLE) AND THE REMOVAL FROM THE MASTER BIDDERS LIST.**

FIRM NAME \_\_\_\_\_

BY (Printed): \_\_\_\_\_

BY (Signature): \_\_\_\_\_

TITLE: \_\_\_\_\_

FEDERAL ID # OR S.S.# \_\_\_\_\_

ADDRESS: \_\_\_\_\_

PHONE NO.: \_\_\_\_\_

FAX NO.: \_\_\_\_\_

CELLULAR PHONE/PAGER NO.: \_\_\_\_\_

LEE COUNTY OCCUPATIONAL LICENSE NUMBER: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_

REVISED: 7/28/00

**LEE COUNTY, FLORIDA  
DETAILED SPECIFICATIONS  
FOR THE ANNUAL PURCHASE OF  
CARBON DIOXIDE FOR UTILITIES**

SCOPE

The purpose of this quotation is to solicit prospective bidders to furnish and deliver carbon dioxide on an annual basis for use at Lee County Utilities.

TERM OF QUOTE

This quote shall be in effect for one year, or until new quotes are taken and awarded. This quote (or any portion thereof) has the option of being renewed for four additional one-year periods, upon mutual agreement of both parties, under the same terms and conditions.

DELIVERY REQUIREMENTS

Quotes are to be based on firm prices delivered F.O.B., as directed to the locations specified herein, Lee County, Florida.

The County reserves the right to add or delete delivery sites at its discretion at anytime throughout the term of this quote.

Delivery driver must present a photo I.D. upon delivery. The I.D. must show that the driver is an employee of either the trucking company or the awarded vendor. All personnel making deliveries must wear the appropriate personal protective equipment (PPE as required by the MSDS).

Lee County Utilities reserves the right to refuse a delivery if that delivery is not in the proper timeframe; the vendor has improper equipment to offload the delivery; and/or is taking improper safety precautions or has malfunctioning equipment.

BASIS OF AWARD

Lee County reserves the right, at the Purchasing Director's discretion, not to award certain items on the Proposal Quote Form.

The basis of award for this quote will be the low quoter meeting specifications at Lee County's sole discretion, with the lowest **grand total** cost.

Lee County reserves the right to reject unbalanced quotes (a quote where a normally low cost item is priced well out of the normal range).

### SUBMITTALS

Vendor must have written proof of conformance as required in technical specifications.

### NATIONAL RESPONSE CENTER

The bidder shall provide a detailed listing of all accidents, incidents, releases, spills, and National Response Center notifications (“safety incidents”) for all chemicals it delivers or manufacturers for the past five (5) years.

The bidder shall also provide the names of any customers where its contract was terminated early (e.g., debarred) for safety, quality, or service issues for any product it supplies over the past five years. Failure to disclose references, terminations, or safety incidents will result in Bidder being disqualified from bidding on this product.

For purposes of this Bid, the term “Bidder” shall be defined as the vendor submitting the proposal and shall include all subsidiaries, affiliates, and subcontractors. As such, any requested documentation shall apply to all subsidiaries and affiliated companies as well as any subcontractors. In the event that a vendor is using a subcontractor to either manufacture or deliver the product, the requested items (e.g., references, terminations, and safety incidents) shall apply to the subcontractor as well.

### MINIMUM ORDER QUANTITIES

On the Proposal Quote Form vendors must specify the minimum order quantity their firm requires for delivery. If Lee County requires less than the minimum order quantity stated by the awarded vendors on the Proposal Quote Form, Lee County reserves the right to purchase the material elsewhere.

### PRICE ESCALATION

If the awarded vendor(s) experiences a major price increase from suppliers for items in this quotation, the vendor may submit a written request to increase pricing. All information necessary to review and analyze the request must be submitted to Lee County Purchasing. Lee County shall have the right to grant the price increase, or re-quote, at the County’s sole discretion. Should prices decrease, the same procedure shall apply.

### QUANTITY PRICE BREAKS

If your firm can offer quantity price breaks to Lee County on any items listed, specify item(s), quantity breaks and pricing on company letterhead. The prices offered on the Proposal Quote Form will form the basis of award.

SAFETY

The supplier's truck must be equipped to safely handle and unload product/products.

DELIVERY LOCATIONS AND CONTACTS

Corkscrew Water Plant  
16101 Alico Road  
Fort Myers, FL 33913

Phone: (239) 267-8228  
Fax: (239) 267-8268  
Contact Person: John Gibson

DESIGNATED CONTACT

The awarded vendor shall appoint a person or persons to act as a primary contact for all County departments. This person or back-up shall be readily available during normal work hours by phone or in person, and shall be knowledgeable of the terms and procedures involved.

CONTRACT

A purchase order will serve as the contract. If your firm will require Lee County to sign a contract of any type, please include that contract with your quotation.

ADDITIONAL REQUIREMENTS

Vendors must provide MSDS sheets for all products to be provided, prior to startup of this contract.

Vendors agree to conform to any and all State and Federal regulations pertaining to chemicals, and to assist Lee County in doing so (Chapter 442 F.S.).

All Chemicals must be approved by the National Sanitation Foundation as applicable.  
**Please provide written proof with your quote package.**

All products shall be provided exactly as specified. Any variations will not be accepted.

SUMMARY REPORTS

Upon completion of each six-month period of the quote, the awarded vendor(s) shall be responsible for furnishing a summary report to Purchasing. This report shall include the previous six months history, showing at a minimum, the following information:

- 1) Total dollars expended per item,
- 2) Total quantity of each item purchased.

MAJOR BREAKDOWNS/NATURAL DISASTERS

Lee County requires that the awarded vendor provide the name of a contact person and phone number which will afford Lee County access twenty-four hours per day, 365 days per year, of this product or service in the event of major breakdowns or natural disasters.

Lee County reserves the right to purchase the product or service listed in this quotation elsewhere in an emergency situation.

LOCAL BIDDER'S PREFERENCE

Note: In order for your firm to be considered for the local vendor preference, you must complete and return the attached "Local Vendor Preference Questionnaire" with your quotation.

The Lee County Local Bidder's Preference Ordinance No. 00-10 is being included as part of the award process for this project. As such, Lee County at its sole discretion, may choose to award a preference to any qualified "Local Contractor/Vendor" in an amount not to exceed 3 % of the total amount quoted by that firm.

"Local Contractor / Vendor" shall mean: a) any person, firm, partnership, company or corporation whose principal place of business in the sole opinion of the County, is located within the boundaries of Lee County, Florida; or b) any person, firm, partnership, company or corporation that has provided goods or services to Lee County on a regular basis for the preceding consecutive five (5) years, and that has the personnel, equipment and materials located within the boundaries of Lee County sufficient to constitute a present ability to perform the service or provide the goods.

The County reserves the exclusive right to compare, contrast and otherwise evaluate the qualifications, character, responsibility and fitness of all persons, firms, partnerships, companies or corporations submitting formal bids or formal quotes in any procurement for goods or services when making an award in the best interests of the County.

**TECHNICAL SPECIFICATIONS**

**CARBON DIOXIDE**

**A. Description - AWWA B 510-00**

Carbon Dioxide is colorless, non-toxic, non-combustible and chemically inert. It is used in water treatment to lower pH by converting the carbonates and hydroxides back to bicarbonates (Recarbonation). Chemical symbol CO<sub>2</sub>

**B. Physical Properties**

Carbon dioxide is a colorless, odorless, nonflammable gas, weighing 1.977g/L at 0 degrees C and at a pressure of 760 mm of mercury. Carbon dioxide creates a characteristic sensation in the nose when smelled.

**C. Packaging**

Carbon dioxide is shipped and stored as a liquefied compressed gas, in insulated tank trucks. Liquid CO<sub>2</sub> is normally delivered at 0 degrees F under 300 psi.

**D. Delivery Locations**

Corkscrew Water Plant  
16101 Alico Road  
Fort Myers, FL 33913

**E. Amount**

Estimated usage annually – 425 tons

**F. Delivery Time**

Shipments will be FOB Destination, and received between the hours of **8:00 AM and 4:00 PM, Monday through Friday**, within three (3) working days after verbal receipt of the order from Lee County Utilities.

**G. Delivery Amounts/Requirements**

Corkscrew WTP;  
min/max 7-20 tons per delivery  
The capacity of the on site carbon dioxide storage vessel is 26 tons and is owned by Lee County.

**The supplier shall, at his expense, provide the County with technical assistance as described below:**

Each awarded supplier will be required to provide, at no additional cost to the County, two 4-hour training sessions each year, that meet the federal and state safety and right to know training requirements. The education and instruction of the County's operations personnel shall be by a qualified instructor familiar with the safe handling practices associated with the chemical being discussed. Session dates, times

and course outlines should be submitted by the supplier as part of their bid package, and approved by the County. Failure to provide this service will be considered a default of the contract. The awarded vendor(s) shall be required to provide a letter certifying that the course outline meets the requirements listed above. Failure to respond to a request for technical assistance for Carbon Dioxide within thirty (30) working days shall be grounds for contract termination.

The training sessions will be held in one central location in Lee County, which will be determined by Lee County Utilities. The awarded suppliers will be responsible for travel, lodging, meals and training materials costs.



**INSURANCE REQUIREMENTS**

NOTE : Your certificate of insurance must meet the following requirements:

Requirement #1 :

The Lee County Board of County Commissioners shall be added as an additional insured on the comprehensive general liability policy.

Requirement #2 :

Certificate holder shall be listed as follows :

Lee County Board of County Commissioners  
C /O Lee County Purchasing  
P.O. Box 398  
Fort Myers, FL 33902

Requirement #3 :

Each policy shall provide a 30 day notification clause in the event of cancellation, non-renewal or adverse change.

1. **Insurance Requirements: These are minimum requirements, which are subject to modification in response to operations involving a higher level of loss exposure.**

a. **Workers' Compensation** - Statutory benefits as defined by FS 440 encompassing all operations contemplated by this contract or agreement to apply to all owners, officers, and employees regardless of the number of employees. Individual employees may be exempted per State Law. Employers' liability will have minimum limits of:

\$500,000 per accident  
\$500,000 disease limit  
\$500,000 disease limit per employee

b. **Commercial General Liability** - Coverage shall apply to premises and/or operations, products and/or completed operations, independent contractors, contractual liability, and broad form property damage exposures with minimum limits of:

\$500,000 bodily injury per person (BI)  
\$1,000,000 bodily injury per occurrence (BI)  
\$500,000 property damage (PD) or  
\$1,000,000 combined single limit (CSL) of BI and PD

- c. Business Auto Liability - The following Automobile Liability will be required and coverage shall apply to all owned, hired and non-owned vehicles use with minimum limits of:

\$500,000 bodily injury per person (BI)  
\$1,000,000 bodily injury per occurrence (BI)  
\$100,000 property damage (PD) or  
\$1,000,000 combined single limit (CSL) of BI and PD

***\*The required limit of liability shown in Standard Contract: 1.a; 1.b; 1.c; may be provided in the form of "Excess Insurance" or "Commercial Umbrella Policies." In which case, a "Following Form Endorsement" will be required on the "Excess Insurance Policy" or "Commercial Umbrella Policy."***

2. Verification of Coverage:

- a. Ten (10) days prior to the commencement of any work under this contract a certificate of insurance will be provided to the Risk Manager for review and approval. The certificate shall provide for the following:

1. ***"Lee County, a political subdivision and Charter County of the State of Florida, its agents, employees, and public officials@ will be named as an "Additional Insured" on the General Liability policy.***
2. Lee County will be given thirty (30) days notice prior to cancellation or modification of any stipulated insurance. Such notification will be in writing by registered mail, return receipt requested and addressed to the Risk Manager (P.O. BOX 398 Ft. Myers, FL 33902).

3. Special Requirements:

- a. An appropriate "Indemnification" clause shall be made a provision of the contract.
- b. It is the responsibility of the general contractor to insure that all subcontractors comply with all insurance requirements.

To the fullest extent permitted by applicable law, Contractor shall protect, defend, indemnify, save and hold the County, the Board of County Commissioners, its agents, officials, and employees harmless from and against any and all claims, demands, fines, loss or destruction of property, liabilities, damages, for claims based on the negligence, misconduct, or omissions of the Contractor resulting from the Contractor's work as further described in this contract, which may arise in favor of any person or persons resulting from the Contractor's performance or non-performance of its obligations under this contract except any damages arising out of personal injury or property claims from third parties caused solely by the negligence, omission(s) or willful misconduct of the County, its officials, commissions, employees or agents, subject to the limitations as set out in Florida general law, Section 768.28, Florida Statutes, as amended. Further, Contractor hereby agrees to indemnify the County for all reasonable expenses and attorney's fees incurred by or imposed upon the County in connection therewith for any loss, damage, injury or other casualty. Contractor additionally agrees that the County may employ an attorney of the County's own selection to appear and defend any such action, on behalf of the County, at the expense of the Contractor. The Contractor further agrees to pay all reasonable expenses and attorney's fees incurred by the County in establishing the right to indemnity.

ATTACHMENT A  
LOCAL VENDOR PREFERENCE QUESTIONNAIRE  
(LEE COUNTY ORDINANCE NO. 00-10)

Instructions: Please complete either Part A or B whichever is applicable to your firm

**PART A: VENDOR'S PRINCIPAL PLACE OF BUSINESS IS LOCATED  
WITHIN LEE COUNTY (Only complete Part A if your principal place of  
business is located within the boundaries of Lee County)**

1. What is the physical location of your principal place of business that is located within the boundaries of Lee County, Florida?

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2. What is the size of this facility (i.e. sales area size, warehouse, storage yard, etc.)

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**PART B: VENDOR'S PRINCIPAL PLACE OF BUSINESS IS NOT LOCATED  
WITHIN LEE COUNTY OR DOES NOT HAVE A PHYSICAL  
LOCATION WITHIN LEE COUNTY (Please complete this section.)**

1. How many employees are available to service this contract? \_\_\_\_\_

2. Describe the types and amount of equipment you have available to service this contract.

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3. Describe the types and amount of material stock that you have available to service this contract.

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4. Have you provided goods or services to Lee County on a regular basis for the preceding, consecutive five years?

Yes \_\_\_\_\_ No \_\_\_\_\_

If yes, please provide your contractual history with Lee County for the past five, consecutive years. Attach additional pages if necessary.

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LEE COUNTY PURCHASING - BIDDERS CHECK LIST

**IMPORTANT:** Please read carefully and return with your bid proposal.  
Please check off each of the following items as the necessary action is completed:

- \_\_\_ 1. The Quote has been signed.
- \_\_\_ 2. The Quote prices offered have been reviewed.
- \_\_\_ 3. The price extensions and totals have been checked.
- \_\_\_ 4. The original (must be manually signed) and 2 copies of the quote have been submitted.
- \_\_\_ 5. Three (3) identical sets of descriptive literature, brochures and/or data (if required) have been submitted under separate cover.
- \_\_\_ 6. All modifications have been acknowledged in the space provided.
- \_\_\_ 7. All addendums issued, if any, have been acknowledged in the space provided.
- \_\_\_ 8. Erasures or other changes made to the quote document have been initialed by the person signing the quote.
- \_\_\_ 9. Bid Bond and/or certified Check, (if required) have been submitted with the quote in amounts indicated.
- \_\_\_ 10. Any Delivery information required is included.

- \_\_\_ 11. The mailing envelope has been addressed to:
 

<b>MAILING ADDRESS</b>	<b>PHYSICAL ADDRESS</b>
Lee County Purchasing	Lee County Purchasing
P.O. Box 398                      or	1825 HENDRY STREET, 3 <sup>RD</sup> FLOOR
Ft. Myers, FL 33902-0398	Ft. Myers, FL 33901

- \_\_\_ 12. The mailing envelope **MUST** be sealed and marked with:  
Quote Number  
Opening Date and/or Receiving Date

- \_\_\_ 13. The quote will be mailed or delivered in time to be received no later than the specified opening date and time. (Otherwise quote cannot be considered or accepted.)

- \_\_\_ 14. If submitting a "NO BID" please write quote number here \_\_\_\_\_  
and check one of the following:  
 \_\_\_ Do not offer this product      \_\_\_ Insufficient time to respond.  
 \_\_\_ Unable to meet specifications (why)  
 \_\_\_ Unable to meet bond or insurance requirement.  
 Other: \_\_\_\_\_

Company Name and Address:  
 \_\_\_\_\_  
 \_\_\_\_\_

**LEE COUNTY, FLORIDA  
PROPOSAL QUOTE FORM  
FOR THE ANNUAL PURCHASE OF  
CARBON DIOXIDE**

DATE SUBMITTED:   JULY 11, 2005  

VENDOR NAME:   AIRGAS CARBONIC  

TO: The Board of County Commissioners  
Lee County  
Fort Myers, Florida

Having carefully examined the "General Conditions", and the "Detailed Specifications", all of which are contained herein, the Undersigned proposes to furnish the following which meet these specifications:

The undersigned acknowledges receipt of Addenda numbers:  
\_\_\_\_\_

**CARBON DIOXIDE:**

SPECIFY PRODUCT NAME:   CARBON DIOXIDE  

  \$ 139.00   PER TON X   425 TONS   =   \$ 59,075.00   (GRAND TOTAL)

MINIMUM ORDER QUANTITY:   10 TONS  

WILL YOU DELIVER WITH YOUR OWN VEHICLES AS OPPOSED TO COMMON CARRIER?

YES   XXX   NO           

TO BE STARTED WITHIN   2   CALENDAR DAYS AFTER RECEIPT OF AWARD AND PURCHASE ORDER.

Is your firm interested in being considered for the Local Vendor Preference?

Yes \_\_\_\_\_ No XX \_\_\_\_\_

If yes, then read the paragraph entitled "Local Vendor Preference" included in these specifications. Also complete the Local Vendor Preference Questionnaire and return with your quotation.

Quoters should carefully read all the terms and conditions of the specifications. Any representation of deviation or modification to the quote may be grounds to reject the quote.

Are there any modifications to the quote or specifications:

Yes \_\_\_\_\_ No XX \_\_\_\_\_

Failure to clearly identify any modifications in the space below or on a separate page may be grounds for the quoter being declared nonresponsive or to have the award of the quote rescinded by the County.

**MODIFICATIONS:**

Quoter shall submit his/her quote on the County's Proposal Quote Form, including the firm name and authorized signature. Any blank spaces on the Proposal Quote Form, qualifying notes or exceptions, counter offers, lack of required submittals, or signatures, on County's Form may result in the Quoter/Quote being declared non-responsive by the County.



ANTI-COLLUSION STATEMENT

**THE BELOW SIGNED QUOTER HAS NOT DIVULGED TO, DISCUSSED OR COMPARED HIS QUOTE WITH OTHER QUOTERS AND HAS NOT COLLUDED WITH ANY OTHER QUOTER OR PARTIES TO A QUOTE WHATSOEVER. NOTE: NO PREMIUMS, REBATES OR GRATUITIES TO ANY EMPLOYEE OR AGENT ARE PERMITTED EITHER WITH, PRIOR TO, OR AFTER ANY DELIVERY OF MATERIALS. ANY SUCH VIOLATION WILL RESULT IN THE CANCELLATION AND/OR RETURN OF MATERIAL (AS APPLICABLE) AND THE REMOVAL FROM THE MASTER BIDDERS LIST.**

FIRM NAME AIRGAS CARBONIC

BY (Printed): JERRY STANLEY

BY (Signature): *Jerry Stanley*

TITLE: REGIONAL SALES MANAGER

FEDERAL ID # OR S.S.# 58-2298979

ADDRESS: P.O. BOX 17144

TAMPA, FLORIDA 33682

PHONE NO.: 800-241-5882 EXT. 204  
813-933-0663

FAX NO.: 813-935-1434

CELLULAR PHONE/PAGER NO.: 813-220-8881

LEE COUNTY OCCUPATIONAL LICENSE NUMBER: \_\_\_\_\_

E-MAIL ADDRESS: Jerry.Stanley@Airgas.com

REVISED: 7/28/00

**Jerry Stanley**

Region Sales Manager

**Airgas Carbonic**

P.O. Box 17144

Tampa, Florida 33682

800-241-5882 ext. 204

Fax 813-935-1434

Jerry.Stanley@airgas.com

July 20, 2005

Lee County Southwest Florida  
Corkscrew Water Plant  
16101 Alico Road  
Fort Myers, FL 33913

Dear Purchasing Management

Airgas Carbonic will provide the Lee County Corkscrew Water Treatment Plant operations management with technical assistance and education for the handling and delivery of Liquid Carbon Dioxide. The CO<sub>2</sub> storage tank is owned by Lee County but Airgas will provide educational support with the assistance of TOMCO Equipment Company. We will provide an overview of the tank filling procedure on our first fill date as the new supply vendor for Lee County.

Topics to cover:

Tank filling and safety precautions

Tank and delivery truck pressure readings

LCO<sub>2</sub> metering from our truck to your tank

LCO<sub>2</sub> and tank gage reading

Hurricane Emergency service plan

Educational Video: *Carbon Dioxide in Action*

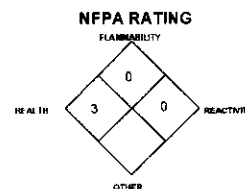
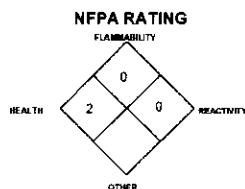
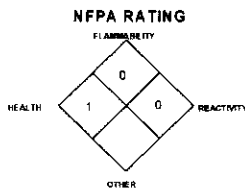
Contact Information



CARBON DIOXIDE GAS

CARBON DIOXIDE SOLID

CARBON DIOXIDE LIQUEFIED



# MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

## PART I *What is the material and what do I need to know in an emergency?*

### 1. PRODUCT IDENTIFICATION

**CHEMICAL NAME; CLASS:** CARBON DIOXIDE - CO<sub>2</sub>, GASEOUS  
 CARBON DIOXIDE - CO<sub>2</sub>, CRYOGENIC  
 CARBON DIOXIDE - CO<sub>2</sub>, SOLID  
 Document Number: 001013

**PRODUCT USE:** For general analytical/synthetic chemical uses.

**SUPPLIER/MANUFACTURER'S NAME:** AIRGAS INC.  
**ADDRESS:** 259 N. Radnor Chester Road  
 Suite 100  
 Radnor, PA 19087-5283

**BUSINESS PHONE:** 1-610-687-5253  
**EMERGENCY PHONE:** CHEMTREC: 1-800-424-9300  
 International: 703-527-3887 (Call Collect)

**DATE OF PREPARATION:** May 20, 1996  
**FOURTH REVISION:** January 22, 1999

### 2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA		IDLH ppm	OTHER ppm
			TLV ppm	STEL ppm	PEL ppm	STEL ppm		
Carbon Dioxide	124-38-9	> 99.8	5000	30,000	5000 10,000 (Vacated 1989 PEL)	30,000 (Vacated 1989 PEL)	40,000	DFG-MAK: 5000 NIOSH REL TWA: 5000 ST: 30000 ppm
Maximum Impurities		< 0.2	None of the trace impurities in this mixture contribute significantly to the hazards associated with the product. All hazard information pertinent to this product has been provided in this Material Safety Data Sheet, per the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and State equivalent standards.					

NE = Not Established

C = Ceiling Limit.

See Section 16 for Definitions of Terms Used.



NOTE: All WHMIS required information is included. It is located in appropriate sections based on the ANSI Z400.1-1993 format.

### 3. HAZARD IDENTIFICATION



#### Carbon Dioxide Gas and Cryogenic Liquid

**EMERGENCY OVERVIEW:** Carbon Dioxide is a colorless gas, or a colorless, cryogenic liquid. At low concentrations, both the gas and the liquid are odorless. At higher concentrations Carbon Dioxide will have a sharp, acidic odor. The liquid boils rapidly at standard temperatures and pressures. At concentrations between 2 and 10%, Carbon Dioxide can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. If the gas concentration reaches 10% or more, suffocation and death can occur within minutes. Contact with the cold gas can cause freezing of exposed tissue. Moisture in the air could lead to the formation of carbonic acid which can be irritating to the eyes. All forms of Carbon Dioxide are non-combustible. Carbon Dioxide is heavier than air and should not be allowed to accumulate in low lying areas.

#### CARBON DIOXIDE GAS

HAZARDOUS MATERIAL INFORMATION SYSTEM			
<b>HEALTH</b>	(BLUE)	1	
<b>FLAMMABILITY</b>	(RED)	0	
<b>REACTIVITY</b>	(YELLOW)	0	
<b>PROTECTIVE EQUIPMENT</b>		B	
EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8
For routine industrial applications			

#### CARBON DIOXIDE LIQUEFIED

HAZARDOUS MATERIAL INFORMATION SYSTEM			
<b>HEALTH</b>	(BLUE)	3	
<b>FLAMMABILITY</b>	(RED)	0	
<b>REACTIVITY</b>	(YELLOW)	0	
<b>PROTECTIVE EQUIPMENT</b>		X	
EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8
For routine industrial applications			

See Section 16 for Definition of Ratings

**SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE:** The most significant route of overexposure for this gas is by inhalation. The following paragraphs describe symptoms of exposure by route of exposure.

**INHALATION:** Carbon Dioxide is an asphyxiant and a powerful cerebral vasodilator. If the concentration of Carbon Dioxide reaches 10% or more, suffocation can occur rapidly. Inhalation of concentrations between 2 and 10% can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. Carbon Dioxide initially stimulates respiration and then causes respiratory depression. Inhalation of low concentrations (3-5%) have no known permanent harmful effects. Symptoms in humans at various levels of concentration are as follows:

<u>CONCENTRATION</u>	<u>SYMPTOMS OF EXPOSURE</u>
1%:	Slight increase in breathing rate.
2%:	Breathing rate increases to 50% above normal; exposure cause headache, tiredness.
3%:	Breathing increases to twice normal rate and becomes labored. Weak narcotic effect. Impaired hearing, headache, increase in blood pressure and pulse rate.
4-5%:	Breathing increases to approximately four times normal rate, symptoms of intoxication become evident and slight choking may be felt.
5-10%:	Characteristic sharp odor noticeable. Very labored breathing, headache, visual impairment and ringing in the ears. Judgment may be impaired, followed by loss of consciousness.
50-100%:	Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high concentrations may eventually result in death from asphyxiation.

High concentrations of this gas can also cause an oxygen-deficient environment. However, the asphyxiating properties of Carbon Dioxide will be reached before oxygen-deficiency is a factor.

### 3. HAZARD IDENTIFICATION (Continued)

**OTHER POTENTIAL HEALTH EFFECTS:** Contact of the cold gas with the skin can lead to frostbite or dermatitis (red, cracked, irritated skin), depending upon concentration and duration of exposure. Contact of the cold gas with the eyes can cause pain, redness, burns, and severe exposure could cause blindness. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with cold gas can quickly subside. Moisture in the air could lead to the formation of carbonic acid, which can be irritating to the eyes.

**HEALTH EFFECTS OR RISKS FROM EXPOSURE:** An Explanation in **Lay Terms**. Overexposure to Carbon Dioxide may cause the following health effects:

**ACUTE:** Inhaling high concentrations of Carbon Dioxide can lead to coma or death. At low concentrations, inhalation of Carbon Dioxide can cause nausea, dizziness, visual disturbances, shaking, headache, mental confusion, sweating, increased heartbeat, and elevated blood pressure and respiratory rate. High concentrations of the gas in air may cause eye irritation or damage.

**CHRONIC:** Reversible effects on the acid-base balance in the blood, blood pressure, and circulatory system may occur after prolonged exposure to elevated Carbon Dioxide levels.

**TARGET ORGANS:** Respiratory system, cardiovascular system, eyes.



#### Carbon Dioxide Solid

**EMERGENCY OVERVIEW:** Solid Carbon Dioxide (dry ice), is a white, opaque solid which releases colorless, gas. This solid sublimates to gas quickly at standard temperatures and pressures, forming a fog in air. As a result, the main hazards associated with Carbon Dioxide are related to Carbon Dioxide gas formation and the cold temperature of the solid and evolved gas. At concentrations between 2 and 10%, Carbon Dioxide can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. If the gas concentration reaches 10% or more, suffocation and death can occur within minutes. Contact with the solid can cause freezing of exposed tissue. Moisture in the air could lead to the formation of carbonic acid which can be irritating to the eyes. Carbon Dioxide is heavier than air and should not be allowed to accumulate in low lying areas.

**SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE:** The most significant routes of overexposure for Carbon Dioxide are by inhalation of Carbon Dioxide gas, and skin or eye contact with the solid or gas. Symptoms of such exposure are as follows:

**INHALATION:** Carbon Dioxide is an asphyxiant and a powerful cerebral vasodilator. If the concentration of Carbon Dioxide reaches 10% or more, suffocation can occur rapidly. Inhalation of concentrations between 2 and 10% can cause nausea, dizziness, headache, mental confusion, increased blood pressure and respiratory rate. Carbon Dioxide initially stimulates respiration and then causes respiratory depression. Inhalation of low concentrations (3-5%) have no known permanent harmful effects. Symptoms in humans at various levels of concentration are as follows:

CONCENTRATION	SYMPTOMS OF EXPOSURE
1%:	Slight increase in breathing rate.
2%:	Breathing rate increases to 50% above normal; exposure causes headache, tiredness.
3%:	Breathing increases to twice normal rate and becomes labored. Weak narcotic effect. Impaired hearing, headache, increase in blood pressure and pulse rate.
4-5%:	Breathing increases to approximately four times normal rate, symptoms of intoxication become evident; slight choking may be felt.
5-10%:	Labored breathing, headache, visual impairment, ringing in the ears, impaired judgment, followed by loss of consciousness.
50-100%:	Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high concentrations may eventually result in death from asphyxiation.

CARBON DIOXIDE SOLID			
HAZARDOUS MATERIAL INFORMATION SYSTEM			
HEALTH		(BLUE)	2
FLAMMABILITY		(RED)	0
REACTIVITY		(YELLOW)	0
PROTECTIVE EQUIPMENT			B
EYES	RESPIRATORY	HANDS	BODY
	See Section 8		See Section 8
For routine industrial applications			

**See Section 16 for Definition of Ratings**

### 3. HAZARD IDENTIFICATION (Continued)

**INHALATION (Continued):** High concentrations of this gas can also cause an oxygen-deficient environment. However, the asphyxiating properties of Carbon Dioxide will be reached before oxygen-deficiency is a factor.

**OTHER POTENTIAL HEALTH EFFECTS:** Contact with solid Carbon Dioxide can cause frostbite to skin, eyes, and other exposed tissue. Contact of the cold gas generated from the solid with the skin can lead to frostbite or dermatitis (red, cracked, irritated skin), depending upon concentration and duration of exposure. Contact of the cold gas with the eyes can cause pain, redness, burns, and severe exposure could cause blindness. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain after contact with cold gas or solid can quickly subside. Moisture in the air could lead to the formation of carbonic acid, which can be irritating to the eyes.

**HEALTH EFFECTS OR RISKS FROM EXPOSURE:** An Explanation in **Lay Terms**. Overexposure to Carbon Dioxide may cause the following health effects:

**ACUTE:** Contact with solid Carbon Dioxide or cold gas can cause frostbite to skin, eyes, and other exposed tissue. Carbon Dioxide gas evolved from the sublimation of the solid is an asphyxiant and a powerful cerebral vasodilator. Inhaling high concentrations of Carbon Dioxide can lead to coma or death. At low concentrations, inhalation of Carbon Dioxide can cause nausea, dizziness, visual disturbances, shaking, headache, mental confusion, sweating, increased heartbeat, and elevated blood pressure and respiratory rate. High concentrations of the gas in air may cause eye irritation or damage.

**CHRONIC:** There are currently no known adverse health effects associated with chronic exposure to solid Carbon Dioxide or the gas which is generated by sublimation.

**TARGET ORGANS:** Respiratory system, cardiovascular system, eyes.

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## PART III *How can I prevent hazardous situations from occurring?*

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### 4. FIRST-AID MEASURES

**RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS PRODUCT WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus Personal Protective equipment should be worn.**

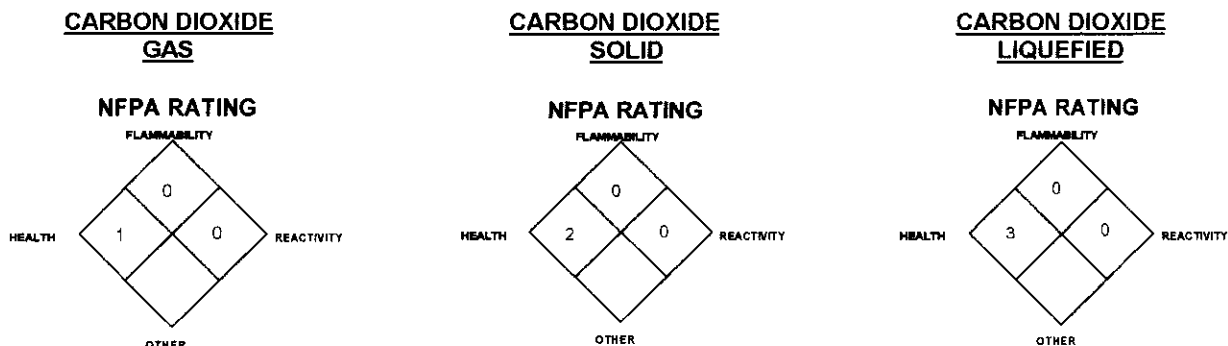
Remove victim(s) to fresh air, as quickly as possible. Trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary. Only trained personnel should administer supplemental oxygen.

In case of frostbite, place the frostbitten part in warm water. DO NOT USE HOT WATER. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area in the armpit. Encourage victim to gently exercise the affected part while being warmed. Seek immediate medical attention.

Victim(s) must be taken for medical attention. Rescuers should be taken for medical attention, if necessary. Take copy of label and MSDS to physician or other health professional with victim(s).

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### 5. FIRE-FIGHTING MEASURES



**See Section 16 for Definition of Ratings**

**FLASH POINT:** Not Applicable.

**AUTOIGNITION TEMPERATURE:** Not Applicable.

**FLAMMABLE LIMITS (in air by volume, %):** Lower: Not Applicable.  
Upper: Not Applicable.

## 5. FIRE-FIGHTING MEASURES (Continued)

**FIRE EXTINGUISHING MATERIALS:** Carbon Dioxide is commonly used as an extinguishing agent, and therefore, should not present a problem when trying to control a blaze. Use extinguishing media appropriate for surrounding fire.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** Carbon Dioxide does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire. Dusts of various reactive metals (e.g.: magnesium, zircon, titanium alloys), are readily ignited and explode in the presence of Carbon Dioxide. Mixtures of solid Carbon Dioxide with sodium and potassium alloys are impact sensitive and explode violently. In the presence of moisture, cesium oxide ignites on contact with Carbon Dioxide. Metal acetylides or hydrides will also ignite or explode.

**Explosion Sensitivity to Mechanical Impact:** Not sensitive, except as noted above.

**Explosion Sensitivity to Static Discharge:** Not Sensitive.

**SPECIAL FIRE-FIGHTING PROCEDURES:** Structural fire-fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move fire-exposed cylinders if it can be done without risk to firefighters. Otherwise, cool containers with hose stream and protect personnel. Withdraw immediately in case of rising sounds from venting safety device or any discoloration of tanks due to the fire.

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## 6. ACCIDENTAL RELEASE MEASURES

**SPILL AND LEAK RESPONSE:** Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people. Minimum Personal Protective Equipment should be **Level B: protective clothing, mechanically-resistant gloves and Self-Contained Breathing Apparatus**. Locate and seal the source of the leaking gas.

Allow the gas, which is heavier than air, to dissipate. Monitor the surrounding area for Carbon Dioxide and oxygen levels. Colorimetric tubes are available for Carbon Dioxide. The levels of Carbon Dioxide must be below those listed in Section 2 (Composition and Information on Ingredients) and the atmosphere must have at least 19.5 percent oxygen before personnel can be allowed in the area without Self-Contained Breathing Apparatus. Attempt to close the main source valve prior to entering the area. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there.

**RESPONSE TO CRYOGENIC RELEASE:** Clear the affected area and allow the liquid to evaporate and the gas to dissipate. After the gas is formed, follow the instructions provided in the previous paragraph. If the area must be entered by emergency personnel, SCBA, Kevlar gloves, and appropriate foot and leg protection must be worn.

**RESPONSE TO SOLID RELEASE:** Pick-up and immediately place solid pieces of dry ice in an appropriate, thermally-insulated, vented container. Alternatively, allow the solid to sublime and the gas which is generated to dissipate.

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## PART III *How can I prevent hazardous situations from occurring?*

### 7. HANDLING and STORAGE

**WORK PRACTICES AND HYGIENE PRACTICES:** As with all chemicals, avoid getting Carbon Dioxide IN YOU. Do not eat or drink while handling chemicals. Be aware of any signs of dizziness, fatigue, or any exposure symptom described in Section 3 (Hazard Identification); exposures to fatal concentrations of Carbon Dioxide could occur without any significant warning symptoms.

**STORAGE AND HANDLING PRACTICES:** Cylinders should be stored in dry, well-ventilated areas away from sources of heat. Containers of Carbon Dioxide can present significant safety hazards. Store containers away from heavily trafficked areas and emergency exits. Store containers away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Containers should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Protect containers against physical damage. Isolate from other non-compatible chemicals (refer to Section 10, Stability and Reactivity).

**SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS:** Protect cylinders against physical damage. Store in cool, dry, well-ventilated, fireproof area, away from flammable materials and corrosive atmospheres. Store away from heat and ignition sources and out of direct sunlight. Do not store near elevators, corridors or loading docks. Do not allow area where cylinders are stored to exceed 52°C (125°F). Use only storage containers and equipment (pipes, valves, fittings to relieve pressure, etc.) designed for the storage of Solid, Gaseous or Liquefied Carbon Dioxide. Do not store containers where they can come into contact with moisture.

## 7. HANDLING and STORAGE (Continued)

**SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS (Continued):** Cylinders should be stored upright and be firmly secured to prevent falling or being knocked over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Never tamper with pressure relief devices in valves and cylinders. Liquefied Carbon Dioxide must be stored and handled under positive pressure or in a closed system to prevent the infiltration and solidification of air or other gases. The following rules are applicable to situations in which cylinders are being used:

**Before Use:** Move cylinders with a suitable hand-truck. Do not drag, slide or roll cylinders. Do not drop cylinders or permit them to strike each other. Secure cylinders firmly. Leave the valve protection cap in-place (where provided) until cylinder is ready for use.

**During Use:** Use designated CGA fittings and other support equipment. Do not use adapters. Do not heat cylinder by any means to increase the discharge rate of the product from the cylinder. Use check valve or trap in discharge line to prevent hazardous backflow into the cylinder. Do not use oils or grease on gas-handling fittings or equipment.

**After Use:** Close main cylinder valve. Replace valve protection cap (where provided). Mark empty cylinders "EMPTY".

**NOTE:** Use only DOT or ASME code containers. In the event of an electrical discharge, Carbon Dioxide gas will produce carbon monoxide and oxygen. Close valve after each use and when empty. Cylinders must not be recharged except by or with the consent of owner.

**SPECIAL PRECAUTIONS FOR HANDLING PRESSURIZED CONTAINERS OF LIQUID CARBON DIOXIDE:** Cold liquids can present significant safety hazards. Never allow any unprotected part of the body to touch uninsulated pipes or vessels which contain cold fluids. The extremely cold metal of the container will cause moist flesh to stick fast and tear when one attempts to withdraw from it. The following rules are applicable to work situations in which liquid containers are being used.

Check all hoses and transfer equipment before filling them with the liquid. Replace any worn or cut hoses prior to use. Liquid Carbon Dioxide is extremely cold and is under pressure. A leak will result in the formation of "Dry Ice" particles which will be forcibly ejected from the system, possibly injuring the operator. A complete hose failure can result in a large release of Carbon Dioxide and violent movement of the hose and associated equipment, which may cause severe injury or death. Special care must be taken when depressurizing and disconnecting hoses. Releasing the contents of a liquid-filled line to atmospheric pressure may result in the formation of a solid dry ice plug in the line. This plug will prevent further removal of the liquid behind the plug, resulting in either an unexpected, rapid release of Carbon Dioxide as the line warms, or the catastrophic failure of the line as the liquid warms behind the plug. Sufficient vapor pressure must be applied and maintained behind the liquid before opening a discharge valve. This action will prevent the depressurization of the liquid to the point of solid formation before it exits the line.

High-pressure containers for liquid product are equipped with pressure relief devices to control internal pressure. Under normal conditions, these containers will periodically vent small amounts of product. Some metals such as carbon steel may become brittle at low temperatures and will easily fracture. Prevent entrapment of liquid in closed systems or piping without pressure relief devices.

**SPECIAL PRECAUTIONS FOR HANDLING OF SOLID CARBON DIOXIDE:** Do not handle solid Carbon Dioxide with bare hands. Use heavy gloves or dry ice tongs. Handle blocks of dry ice carefully, as injuries can occur if one is accidentally dropped on the feet. Never store dry ice in a standard refrigerator, cooler, or freezer designed for food storage. Containers of solid Carbon Dioxide should be stored upright and be firmly secured to prevent falling or being knocked-over. Containers should be vented, to prevent the build-up of Carbon Dioxide gas. Carbon Dioxide sublimates at  $-78.5^{\circ}\text{C}$  ( $-109.3^{\circ}\text{F}$ ); containers should be thermally insulated and kept at the lowest possible temperature to maintain the solid and avoid generation of Carbon Dioxide gas. Storage containers and equipment used with Carbon Dioxide should not be located in sub-surface or enclosed areas, unless engineered to maintain a concentration of Carbon dioxide below the TLV (TLV = 5000 ppm in the event of a release. Solid consignment of dry ice in a gas-tight vessel can lead to catastrophic failure of the vessel by over-pressurization. Storage of dry ice should never occur in a gas-tight container.

**PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT:** Follow practices indicated in Section 6 (Accidental Release Measures). Make certain application equipment is locked and tagged-out safely. Purge gas handling equipment with inert gas (e.g., Nitrogen) before attempting repairs.



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## 8. EXPOSURE CONTROLS - PERSONAL PROTECTION

**VENTILATION AND ENGINEERING CONTROLS:** Use with adequate ventilation. Carbon Dioxide accumulates in low-lying areas with limited air movement. Natural or mechanical ventilation should be available in the worker's breathing zone to prevent levels of Carbon Dioxide above exposure limits (see Section 2, Composition and Information on Ingredients). Local exhaust ventilation is preferred, because it prevents dispersion of this gas into the work place by eliminating it at its source. Areas of Carbon Dioxide use should be engineered to remove vapor from the lowest possible level and exhaust vapor to a well-ventilated area or to the outside. Carbon Dioxide levels should be monitored to assure levels are maintained below the TLV. If appropriate, install automatic monitoring equipment to detect the levels of Carbon Dioxide and of oxygen.

**RESPIRATORY PROTECTION:** Maintain Carbon Dioxide levels below those listed in Section 2 (Composition and Information on Ingredients) and oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if Carbon Dioxide levels are above the IDLH (40,000 ppm) or during emergency response to a release of this product. If respiratory protection is required, follow the requirements of the Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), or equivalent State standards. Respiratory selection guidelines from NIOSH for Carbon Dioxide are provided on the following page for further information on respiratory protection.

### CONCENTRATION

UP TO 40,000 ppm:

### RESPIRATORY EQUIPMENT

Supplied Air Respirator (SAR); or full-facepiece Self-Contained Breathing Apparatus (SCBA).

**EMERGENCY OR PLANNED ENTRY INTO UNKNOWN CONCENTRATIONS OR IDLH CONDITIONS:** Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.

**ESCAPE:**

Escape-type SCBA.

**NOTE:**

The IDLH concentration for Carbon Dioxide is 40,000 ppm.

**EYE PROTECTION:** Splash goggles, face-shields or safety glasses. Face-shields must be worn when using cryogenic Carbon Dioxide.

**HAND PROTECTION:** Wear mechanically-resistant gloves when handling cylinders of Carbon Dioxide. Recommended use of low-temperature protective gloves (e.g. insulated polyvinyl chloride or insulated nitrile) when working with containers of Liquefied Carbon Dioxide.

**BODY PROTECTION:** Use body protection appropriate for task. Transfer of large quantities under pressure may require protective equipment appropriate to protect employees from splashes of liquefied product, as well provide sufficient insulation from extreme cold.

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## 9. PHYSICAL and CHEMICAL PROPERTIES

**GAS DENSITY @ 21°C (70°F) and 1 atm:** 0.1144 lb/ft<sup>3</sup> (1.833 kg/m<sup>3</sup>)

**LIQUID DENSITY @ 21.1°C (70°F) and 838 psig (5778 kPa):** 47.35 lb/ft<sup>3</sup> (761.3 kg/m<sup>3</sup>)

**SOLID DENSITY @ -78.5°C (-109.3°F):** 97.59 lb/ft<sup>3</sup> (1569 kg/m<sup>3</sup>)

**SPECIFIC GRAVITY (gas) @ 21°C (70°F):** 1.52

**EVAPORATION RATE (nBuAc = 1):** Not applicable

**SPECIFIC GRAVITY (solid) @ 0°C (32°F):** 1.54

**FREEZING POINT:** -56.6°C (-69.9°F)

**VAPOR PRESSURE (psia):** 844.7

**SPECIFIC VOLUME (ft<sup>3</sup>/lb):** 8.8

**SOLUBILITY IN WATER @ 20°C (68°F):** 0.90%

**pH @ 1 atm:** 3.7 (carbonic acid)

**ODOR THRESHOLD:** Not applicable.

**TRIPLE POINT @ 60.4 psig (416 kPa):** -56.6°C (-69.9°F)

**EXPANSION RATIO:** Not applicable.

**BOILING POINT @ 1 atm (sublimation point):** -78.5°C (-109.3°F)

**COEFFICIENT WATER/OIL DISTRIBUTION:** Not applicable.

**APPEARANCE AND COLOR:** Carbon dioxide is a colorless to opaque, white solid; a colorless gas; or a colorless cryogenic liquid. All forms of Carbon Dioxide are odorless at low concentrations. At high concentrations, Carbon Dioxide will have a sharp, acidic odor.

**HOW TO DETECT THIS SUBSTANCE (warning properties):** The odor is not a good warning property, as the asphyxiation properties of Carbon Dioxide may present a hazard before the odor at high concentrations is readily detectable. In terms of leak detection for the gas, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation. In conditions of high humidity, the solid form of Carbon Dioxide may release visible vapors.

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## 10. STABILITY and REACTIVITY

**STABILITY:** Normally stable.

**DECOMPOSITION PRODUCTS:** Carbon Dioxide gas in an electrical discharge yields carbon monoxide and oxygen. In the presence of moisture, Carbon Dioxide will form carbonic acid.

## 10. STABILITY and REACTIVITY (Continued)

**MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE:** Carbon Dioxide will ignite and explode when heated with powdered aluminum, beryllium, cerium alloys, chromium, magnesium-aluminum alloys, manganese, thorium, titanium, and zirconium. In the presence of moisture, Carbon Dioxide will ignite with cesium oxide. Metal acetylides will also ignite and explode on contact with Carbon Dioxide.

**HAZARDOUS POLYMERIZATION:** Will not occur, however Carbon Dioxide acts to catalyze the polymerization of acryldehyde and aziridine.

**CONDITIONS TO AVOID:** Avoid exposing cylinders of Carbon Dioxide to extremely high temperatures, which could cause the cylinders to rupture or burst. Do not store the solid form of Carbon Dioxide in gas-tight containers, which could also cause over-pressurization and rupture of the container.

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## PART IV *Is there any other useful information about this material?*

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### 11. TOXICOLOGICAL INFORMATION

**TOXICITY DATA:** Carbon Dioxide is an asphyxiant gas, which has physiological effects at high concentrations. The following toxicological data are available for Carbon Dioxide.

LCLo (inhalation, human) = 9 pph/5 minutes.

LCLo (inhalation, mammal) = 90000 ppm/5 minutes.

TCLo (inhalation, rat) = 6 pph/24 hours; reproductive and teratogenic effects.

**SUSPECTED CANCER AGENT:** Carbon Dioxide is not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, IARC, and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

**IRRITANCY OF PRODUCT:** Contact with rapidly expanding gases can cause frostbite and damage to exposed skin and eyes. Due to the formation of carbonic acid, this gas mixture can be slightly irritating to contaminated eyes.

**SENSITIZATION OF PRODUCT:** Carbon Dioxide is not a sensitizer after prolonged or repeated exposures.

**REPRODUCTIVE TOXICITY INFORMATION:** Listed below is information concerning the effects of Carbon Dioxide on the human reproductive system.

**Mutagenicity:** Carbon Dioxide is not expected to cause mutagenic effects in humans.

**Embryotoxicity:** Carbon Dioxide has not been reported to cause embryotoxic effects; see next paragraph for information.

**Teratogenicity:** Carbon Dioxide is not expected to cause teratogenic effects in humans. Clinical studies involving test animals exposed to high concentrations of Carbon Dioxide indicate teratogenic effects (e.g., cardiac and skeletal malformations, stillbirths).

**Reproductive Toxicity:** Carbon Dioxide is not expected to cause adverse reproductive effects in humans. Studies involving test animals exposed to high concentrations of Carbon Dioxide indicate reproductive effects (e.g. changes in testes).

*A **mutagen** is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An **embryotoxin** is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance which interferes in any way with the reproductive process.*

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Disorders involving the "Target Organs" (see Section 3, Hazard Information) may be aggravated by Carbon Dioxide overexposure.

**RECOMMENDATIONS TO PHYSICIANS:** Treat symptoms and reduce overexposure.

**BIOLOGICAL EXPOSURE INDICES (BEIs):** Currently, Biological Exposure Indices (BEIs) are not applicable for Carbon Dioxide.

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### 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL STABILITY:** Carbon Dioxide occurs naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to Carbon Dioxide.

**CARBON DIOXIDE:** Food chain concentration potential: None. Biological Oxygen Demand: None

**EFFECT OF MATERIAL ON PLANTS or ANIMALS:** Any adverse effect on animals would be related to Carbon Dioxide overexposure and oxygen-deficient environments. No adverse effect is anticipated to occur to plant-life, except for frost produced in the presence of rapidly expanding gases.

**EFFECT OF CHEMICAL ON AQUATIC LIFE:** The following aquatic toxicity data are available for Carbon Dioxide.

**CARBON DIOXIDE:**

Aquatic toxicity: 100-200 mg/l/no time specified/various organisms/fresh water.

Waterfowl toxicity: Inhalation 5-8%, no effect.

### 13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Return cylinders with any residual product to Airgas Inc. Do not dispose of locally.

### 14. TRANSPORTATION INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

#### **For Carbon Dioxide Gas:**

PROPER SHIPPING NAME: Carbon dioxide  
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)  
UN IDENTIFICATION NUMBER: UN 1013  
PACKING GROUP: Not applicable.  
DOT LABEL(S) REQUIRED: Non-Flammable Gas  
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 120

#### **For Carbon Dioxide Liquefied:**

PROPER SHIPPING NAME: Carbon dioxide, refrigerated liquid  
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)  
UN IDENTIFICATION NUMBER: UN 2187  
PACKING GROUP: Not applicable.  
DOT LABEL(S) REQUIRED: Non-Flammable Gas  
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 120

#### **For Carbon Dioxide, Solid:**

PROPER SHIPPING NAME: Carbon dioxide, solid or Dry ice  
HAZARD CLASS NUMBER and DESCRIPTION: 9 (Miscellaneous Dangerous Goods)  
UN IDENTIFICATION NUMBER: UN 1845  
PACKING GROUP: III  
DOT LABEL(S) REQUIRED: None  
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (1996): 120

MARINE POLLUTANT: Carbon Dioxide is not classified by the DOT as a Marine Pollutant (as defined by 49 CFR 172.101, Appendix B).

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: THIS MATERIAL IS CONSIDERED AS DANGEROUS GOODS. Use the above information for the preparation of Canadian Shipments.

### 15. REGULATORY INFORMATION

U.S. SARA REPORTING REQUIREMENTS: Carbon Dioxide is not subject to the reporting requirements of Sections 302, 304 and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for Carbon Dioxide (solid, gaseous or liquid form). The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.

CANADIAN DSL/NDL INVENTORY STATUS: Carbon Dioxide is listed on the DSL Inventory.

U.S. TSCA INVENTORY STATUS: Carbon Dioxide is on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

U.S. STATE REGULATORY INFORMATION: Carbon Dioxide is covered under the following specific State regulations:

**Alaska - Designated Toxic and Hazardous Substances:** Carbon Dioxide.

**California - Permissible Exposure Limits for Chemical Contaminants:** Carbon Dioxide.

**Florida - Substance List:** Carbon Dioxide.

**Illinois - Toxic Substance List:** Carbon Dioxide.

**Kansas - Section 302/313 List:** No.

**Massachusetts - Substance List:** Carbon Dioxide.

**Michigan - Critical Material Register:** No.

**Minnesota - List of Hazardous Substances:** Carbon Dioxide.

**Missouri - Employer Information/Toxic Substance List:** Carbon Dioxide.

**New Jersey - Right to Know Hazardous Substance List:** Carbon Dioxide.

**North Dakota - List of Hazardous Chemicals, Reportable Quantities:** No.

**Pennsylvania - Hazardous Substance List:** Carbon Dioxide.

**Rhode Island - Hazardous Substance List:** Carbon Dioxide.

**Texas - Hazardous Substance List:** No.

**West Virginia - Hazardous Substance List:** Carbon Dioxide.

**Wisconsin - Toxic and Hazardous Substances:** Carbon Dioxide.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Carbon Dioxide is not on the California Proposition 65 lists.

## 15. REGULATORY INFORMATION (Continued)

### LABELING:

#### CARBON DIOXIDE GAS:

#### **CAUTION:**

LIQUID AND GAS UNDER PRESSURE.  
CAN CAUSE RAPID SUFFOCATION.  
CAN INCREASE RESPIRATION AND HEART RATE.  
MAY CAUSE FROSTBITE.

Avoid breathing gas.  
Store and use with adequate ventilation.  
Do not get liquid in eyes, on skin or clothing.  
Cylinder temperature should not exceed 125°F (52°C).  
Use equipment rated for cylinder pressure.  
Close valve after each use and when empty.  
Use in accordance with the Material Safety Data Sheet.  
**NOTE:** Suck-back into cylinder may cause rupture.  
Always use a back flow preventative device in piping.

#### **FIRST-AID:**

**IF INHALED**, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.  
**IN CASE OF FROSTBITE**, obtain immediate medical attention.  
DO NOT REMOVE THIS PRODUCT LABEL.

#### CARBON DIOXIDE, LIQUEFIED:

#### **WARNING:**

**ALWAYS KEEP CONTAINER IN UPRIGHT POSITION.**  
COLD LIQUID AND GAS UNDER PRESSURE.  
CAN INCREASE RESPIRATION AND HEART RATE.  
MAY CAUSE FROSTBITE.

Avoid breathing gas.  
Store and use with adequate ventilation.  
Do not get liquid in eyes, on skin or clothing.  
For liquid withdrawal, wear face shield and gloves.  
Do not drop. Use hand truck for container movement.  
Close valve after each use and when empty.  
Use in accordance with the Material Safety Data Sheet.

#### **FIRST-AID:**

**IF INHALED**, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.  
**IN CASE OF FROSTBITE**, obtain medical treatment immediately.  
DO NOT REMOVE THIS PRODUCT LABEL.

#### CARBON DIOXIDE, SOLID:

#### **WARNING:**

**ALWAYS KEEP CONTAINER IN UPRIGHT POSITION.**  
EXTREMELY COLD SOLID WHICH SUBLIMATES TO GAS RAPIDLY.  
GAS CAN INCREASE RESPIRATION AND HEART RATE.  
GAS CAN CAUSE RAPID SUFFOCATION.  
CAN CAUSE FROSTBITE.

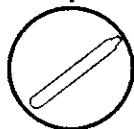
Avoid breathing gas.  
Store and use with adequate ventilation.  
Do not get solid in eyes, on skin or clothing.  
For handling solid, wear face shield and gloves.  
Use in accordance with the Material Safety Data Sheet.

#### **FIRST-AID:**

**IF INHALED**, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.  
**IN CASE OF FROSTBITE**, obtain medical treatment immediately.  
DO NOT REMOVE THIS PRODUCT LABEL.

### CANADIAN WHMIS SYMBOLS:

**Class A: Compressed Gas**



## 16. OTHER INFORMATION

PREPARED BY:

CHEMICAL SAFETY ASSOCIATES, Inc.  
9163 Chesapeake Drive, San Diego, CA 92123-1002  
619/565-0302

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. AIRGAS, Inc. assumes no responsibility for injury to the vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, AIRGAS, Inc. assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

### DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

**CAS #:** This is the Chemical Abstract Service Number which uniquely identifies each constituent. It is used for computer-related searching.

#### EXPOSURE LIMITS IN AIR:

**ACGIH** - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. **TLV** - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (**TWA**), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (**C**). Skin absorption effects must also be considered.

**OSHA** - U.S. Occupational Safety and Health Administration. **PEL** - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order.

**IDLH** - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

**The DFG - MAK** is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called Recommended Exposure Levels (**RELs**). When no exposure guidelines are established, an entry of **NE** is made for reference.

#### HAZARD RATINGS:

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:** Health Hazard: 0 (minimal acute or chronic exposure hazard); 1 (slight acute or chronic exposure hazard); 2 (moderate acute or significant chronic exposure hazard); 3 (severe acute exposure hazard; onetime overexposure can result in permanent injury and may be fatal); 4 (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: 0 (minimal hazard); 1 (materials that require substantial pre-heating before burning); 2 (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); 3 (Class IB and IC flammable liquids with flash points below 38°C [100°F]); 4 (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]). Reactivity Hazard: 0 (normally stable); 1 (material that can become unstable at elevated temperatures or which can react slightly with water); 2 (materials that are unstable but do not detonate or which can react violently with water); 3 (materials that can detonate when initiated or which can react explosively with water); 4 (materials that can detonate at normal temperatures or pressures).

**NATIONAL FIRE PROTECTION ASSOCIATION:** Health Hazard: 0 (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); 1 (materials that on exposure under fire conditions could cause irritation or minor residual injury); 2 (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); 3 (materials that can on short exposure could cause serious temporary or residual injury); 4 (materials that under very short exposure causes death or major residual injury).

#### NATIONAL FIRE PROTECTION ASSOCIATION (Continued):

Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

#### FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

#### TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD<sub>50</sub>** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC<sub>50</sub>** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m<sup>3</sup>** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Data from several sources are used to evaluate the cancer-causing potential of the material. The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological information: **EC** is the effect concentration in water.

#### REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations.



OFFICIAL LISTING

NSF International Certifies that the products appearing on this Listing conform to the requirements
NSF/ANSI Standard 60 - Drinking Water Treatment Chemicals - Health Effects

This is the Official Listing recorded on August 5, 2003.

AIRGAS CARBONIC
6340 SUGARLOAF PARKWAY
SUITE 300
DULUTH, GA 30097-4329
770-717-2200

Plant At: AUGUSTA, GA

Table with 3 columns: Chemical/Trade Designation, Function, Max Use. Row 1: Carbon Dioxide, pH Adjustment, 100 mg/L.

Plant At: STAR, MS

Table with 3 columns: Chemical/Trade Designation, Function, Max Use. Row 1: Carbon Dioxide, pH Adjustment, 100 mg/L.

Note: Additions shall not be made to this document without prior evaluation and acceptance by NSF Inter



July 21, 2005

To Whom It May Concern:

Airgas Carbonic/Dry Ice has not had a transportation incident or chemical spill/release in the 11 years since I have been employed. We comply with all regulations in the 49CFR, Dept. of Transportation and the Federal Motor Carrier Safety Administration. Airgas is also a member of the Compressed Gas Association.

Thanks

Randy Moore  
East Safety Manger  
1407 Columbia Nitrogen Rd.  
Augusta, Ga. 30901  
706-724-1001



**CERTIFICATE OF COMPLIANCE**

The solid carbon dioxide produced at our plant meets and/or exceeds the specification limits set by the Compressed Gas Association G-6.2-2000, Quality Verification Level J. It is produced from liquid carbon dioxide, which meets and/or exceeds the specification limits set by the Compressed Gas Association G-6.2-2000, Quality Verification Level H, which exceeds the specifications of both the United States Pharmacopoeia and the Food Chemicals Codex. Airgas Carbonic FDA Registration Number is 2320514 with a Labeler Code of 063917.

COMPONENT	CGA QVL-J	TYPICAL RESULTS	DETECTION LIMITS
Carbon Dioxide		99.97%-99.99%	0.01%
Water		15 ppm	1 ppm
Oxygen		5 ppm	1 ppm
Carbon Monoxide		<1ppm	1 ppm
Nitric Oxide		<0.1ppm	0.1ppm
Nitrogen Dioxide		<0.1ppm	0.1ppm
Total Sulfur		<0.1ppm	0.1ppm
Ammonia		<0.5 ppm	0.5ppm
Benzene		<0.01ppm	0.01ppm
Non-Condensable Hydrocarbons		10 ppm	1ppm
Nonvolatile Residues (wt/wt)	<500ppm	<500ppm	10ppm
Odor	No foreign odor	No foreign odor	NA
Color	White Opaque	White Opaque	White Opaque

Specification limit in ppm (v/v) maximum allowable unless otherwise stated.  
 N/A: Not Applicable.

Approved by:

Effective Date: 22.August.2003

Matthew C. Erwin  
 Manager of Quality Assurance  
 Airgas Carbonic & Dry Ice



# Airgas<sup>TM</sup>

**To:** Lee County Purchasing

**From :** Matt Erwin @ Airgas Carbonic

**Re:** Public Health Security and Bioterrorism  
Preparedness and Response Act of  
2002 (PL107-188)

**Date:** July 20, 2005

**Airgas Carbonic & Dry Ice has officially registered a total of 63 (sixty three) forms for Food Facility registration, using Federal Form 3537.**

**The forms register all Airgas Liquid and Solid (Dry Ice) Carbon Dioxide facilities and their appropriate distribution entities, per the “Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (PL107-188)”.**

**If there are any questions, please do not hesitate to contact me.**

**Thanks, Matt**



**Matt Erwin**

*Airgas Carbonic & Dry Ice*

Manager of Quality Assurance  
(256) 508-6620 Cell  
(770) 717-2210 Ext 105 – Duluth, GA  
[matt.erwin@airgas.com](mailto:matt.erwin@airgas.com)

## BULK LCO2 STORAGE

THE HIGER THE PRESSURE THE HIGER THE TEMPERTURE

THE LOWER THE PRESSURE THE LOWER THE TEMPERTURE

PRESSURE CHANGES, THE TEMPERTURE CHANGES

VAPORIZER, THE WEIGHT OF LIQUID PUSHES THE LCO2 THUR THE VAPORIZER. A PRESSURE SWITH CUTS ON AND OFF THE VAPORIZER PENDING PRESSURE.

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# WATER TREATMENT WITH CO<sub>2</sub>

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## CO<sub>2</sub> lowers pH

CO<sub>2</sub> diffused into a water solution forms carbonic acid that reacts with alkaline constituents in the solution. CO<sub>2</sub> can effectively reduce solutions to a pH of 5 depending on the concentration of salts and buffers in the solution.

## Typical applications for water treatment with CO<sub>2</sub>

- Comply with local municipal mandates to control pH of industrial effluent
- Re-carbonate water that has been lime softened
- Reduce the formation of scale
- Process pH control to enhance a chemical process
- Water well remediation
- Sulfide removal

## CO<sub>2</sub> water treatment advantages over acid (i.e. H<sub>2</sub>SO<sub>4</sub>, HCl, etc.)

- Tighter pH control
- No “hot spots” in the water
- Safer to handle and store
- No containment basin required
- Does not corrode pumps, piping, and equipment
- Does not destroy alkalinity
- Most cases requires less CO<sub>2</sub> than acid to treat water

## Common CO<sub>2</sub> water treatment systems

- Basin/tank sparging – CO<sub>2</sub> vapor is diffused through a bank of fine-bubble diffusers submerged at the bottom of a basin or tank. In order to obtain optimal CO<sub>2</sub> consumption the diffusers (spargers) should be submerged to a depth of at least 8 feet. However small depths can be used but will require substantially more spargers diffusing CO<sub>2</sub> at lower pressures to reduce bubble size. This is the simplest system to control and generally employs on/off control to maintain pH levels within tight limits.
- Process pipeline injection – CO<sub>2</sub> is injected/diffused into an existing, flooded pipeline. The water flow velocity and retention time in the pipe will determine whether a fine-bubble diffuser is required. These systems generally require proportional control with interlocks to process pumps. Additionally, some tank capacitance is required at the pipe discharge to provide tight control.
- Re-circulation pipe injection – This system is similar to pipeline injection except the piped flow is sized and installed for the sole purpose of injecting CO<sub>2</sub>. A pump and piping loop are installed to pump a portion of the water from the discharge end of the basin/tank back to the inlet with diffusing CO<sub>2</sub> along the way. This system is preferred when basins are shallow and no adequate pipeline flow exists. This method is also provides the ability to inject large volumes of CO<sub>2</sub> while still providing tight pH control.



6340 Sugarloaf Parkway Suite 300  
Duluth, GA 30097  
PH: (770) 717-2200  
FAX: (770) 717-2222  
<http://www.airgas.com>

## AIRGAS SUPPLIER INFORMATION

**NAME:** Airgas Dry Ice and Airgas Carbonic

**Division/Subsidiary of:** Airgas, Inc.  
6340 Sugarloaf Parkway – Suite 300  
Duluth, GA 30096-5583  
Ph: (770) 717-2200 or Toll Free (800) 241-5882  
Fax: (770) 717-2222

**President:** Phil Filer

**Remittance Address:** Airgas (Dry Ice or Carbonic)  
P.O. Box 120001 – Dept. 822  
Dallas, TX 75312-0822  
Ph: (800) 530-2662

**E-Mail:** [jerry.stanley@airgas.com](mailto:jerry.stanley@airgas.com)

**Federal ID:** 58-2298979      **Corporation**      **Large Business, Manufacturer**

**SIC #:** 2813, 5088, 7359      **DUNS #:** 041138371      **Corporate DUNS #:** 024492860

**Cage Code:** 1E9U7

**Products:** Dry Ice and Supplies, Carbon Dioxide and Related Equipment

**EDI, EFT, CREDIT CARD CAPABLE**

---

**SIGNATURE CERTIFIES THAT THE ABOVE INFORMATION IS CORRECT.**

**Jerry L. Stanley**  
Toll Free (800) 295-2225, Ext. 204  
(813) 933-0663 Fax (813) 935-1434

**Jerry Stanley**  
Regional Sales Manager  
**Airgas Carbonic**  
P.O. Box 17144  
Tampa, Florida 33682  
800-241-5882 ext. 204  
Fax 813-935-1434  
jerry.stanley@airgas.com

## ***CONTACT LIST***

***FOR CO2 PRODUCT DELIVERY CONTACT:  
THOMAS GARDNER – MANAGER  
CALL 1-877-524-7427 CELL 863-698-6424***

***FOR EQUIPMENT REPAIR SERVICE  
REG RITTER SERVICE MANAGER  
CALL 800- 554-4606 WEEKEND CELL 678-360-8024***

***REGIONAL SALES MANAGER  
JERRY STANLEY CALL 800-241-5882 EXT. 204  
HOME OFFICE 813-933-0663 / FAX 813-935-1434  
CELL 813-220-8881 E-MAIL [Jerry.Stanley@airgas.com](mailto:Jerry.Stanley@airgas.com)***

**Robert Franceschini - Re: quick comment on q-050569 - carbon dioxide...**

**ATTACHMENT** # 4

**From:** Rick Diaz  
**To:** Franceschini, Robert  
**Date:** 8/10/2005 1:44 PM  
**Subject:** Re: quick comment on q-050569 - carbon dioxide...  
**CC:** Barroso, Henry; Carbone, Cheryl; Cheves, Judy; Figueroa, Orlando; Hill, Thomas

---

10-4, lets go with \$60,000.00 Thanks, Rick.

>>> Robert Franceschini 08/10/05 11:23AM >>>  
8/10

rick...

thanks for your note to judy regarding recommendation of award for the carbon dioxide. when she showed it to me and i saw the annual expenditure of \$40K i was puzzled as to why i/we would have processed it as a formal. when i looked back at the tab sheet (copy attached); i noted that at our estimated annual usage of 425 tons, we're looking at \$59,075 annually.

if you have no objections, we'll put an annual expenditure amount of \$60K on the blue sheet so that things line up with the tab sheet.

thanks again for your assistance.

bob

Robert D. Franceschini, C.P.M, CPPB  
Purchasing Manager  
Division of Purchasing  
[rfranceschini@leegov.com](mailto:rfranceschini@leegov.com)  
Phone: 239-344-5450  
Fax: 239-344-5460

**Judy Cheves - Re: Q-050569 - annual purchase of carbon dioxide**

---

**From:** Rick Diaz  
**To:** Barroso, Henry; Cheves, Judy  
**Date:** 8/10/2005 10:04 AM  
**Subject:** Re: Q-050569 - annual purchase of carbon dioxide  
**CC:** Figueroa, Orlando; Hill, Thomas

---

Thank you Hank, Judy lets increase the amount to \$40,000 just in case. Thank you all. Rick.

>>> Henry Barroso 08/10/05 09:14AM >>>

Good morning Judy,

On behalf of Tom Hill, we have decided to go with the second lowest bidder (Air Gas Carbonic) for the annual purchase of carbon dioxide due to the first lowest bidder (Air Liquide) was not able to meet the insurance requirements. Our estimated expenditures for next year will be approximately \$25,000.00. If there is any additional information you need, please feel free to contact me.

Thank you

Henry Barroso  
Lee County Utilities  
South Water Treatment Manager  
[hbarroso@leegov.com](mailto:hbarroso@leegov.com)  
Phone: (239) 267-8228  
Fax: (239) 267-8268

## Robert Franceschini - Re: friendly reminder...

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**From:** Cheryl Carbone  
**To:** Franceschini, Robert  
**Date:** 8/12/2005 8:23 AM  
**Subject:** Re: friendly reminder...  
**CC:** Cheves, Judy

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So Sorry I thought I did send this. OD5361848700.505240

Thank you!!

Cheryl Carbone  
Fiscal Officer  
Lee County Utilities  
[Carboncl@leegov.com](mailto:Carboncl@leegov.com)  
(239) 479-8134 (Phone)  
(239) 479-8708 (FAX)

>>> Robert Franceschini 08/12/05 08:09AM >>>  
8/12

cheryl...

good morning.

when you have a moment, would you please provide me with an account string for use on the annual quote for carbon dioxide...

thx.

bob

Robert D. Franceschini, C.P.M, CPPB  
Purchasing Manager  
Division of Purchasing  
[rfranceschini@leegov.com](mailto:rfranceschini@leegov.com)  
Phone: 239-344-5450  
Fax: 239-344-5460



**Judy Cheves - Carbon Dioxide Quote Q-050569**

**ATTACHMENT** 125

**From:** "Fiore, Jim" <Jim.Fiore@Airliquide.com>  
**To:** "jcheves@leegov.com" <jcheves@leegov.com>  
**Date:** 7/20/2005 6:00 AM  
**Subject:** Carbon Dioxide Quote Q-050569

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Judy,  
Because of the wording in your bid request, reference Section 3. Special Requirements: "Indemnification" and your requirement: Insurance Requirements requiring Air Liquide Industrial name Lee County as additional insured we are unable to move forward with the carbon dioxide award.

Our legal department will not accept the Indemnification.  
Thank you for your valued business in the past.

Jim Fiore  
Account Manager  
Air Liquide Industrial US LP