

**BID RESPONSE
IFB #18-056/MB**

AMMONIA, ANHYDROUS, BULK, PURCHASE AND DELIVERY, TERM CONTRACT

ITEM NO.	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT PRICE	TOTAL OFFER
1.	ANHYDROUS AMMONIA, BULK, REFRIGERATION GRADE 99.9% PURITY, AS SPECIFIED HEREIN. MFR NAME OFFERED <u>Airgas Specialty Products</u> MFR MODEL # OFFERED <u>Anhydrous Ammonia</u> (PRODUCT NAME AND NUMBER OFFERED MUST MATCH THE DESCRIPTIVE LITERATURE PROVIDED BY VENDOR)	LB	240,000	\$ <u>0.67</u>	\$ <u>160,800.00</u>

All unit prices bid should be within two (2) decimal points. If bidder's pricing exceeds two (2) decimal points, Purchasing reserves the right to round up or down accordingly.

Acknowledge Qualification of Bidders information is included, per Term #9? YES/INITIAL ✓ ct.

Acknowledge Criminal History Records Check requirement, per Term #10? YES/INITIAL ✓ ct.

Acknowledge Information and Descriptive Literature is attached and that the manufacturer/brand and part/model number offered matches the descriptive literature provided by vendor, per Term #20? YES/INITIAL ✓ ct.

Acknowledge Insurance requirements, per Term #21? YES/INITIAL ✓ ct.

*** PLEASE AFFIX SIGNATURE WHERE INDICATED
(FAILURE TO DO SO SHALL RESULT IN THE REJECTION OF YOUR BID)**

By signature on this document, bidder acknowledges and agrees that its offer includes and accepts all terms, conditions, and specifications of the County's bid solicitation as originally published, without exception, change or alteration of any kind, except as may have been published by the County in official amendments prior to this date of submittal.

Per General Term and Condition #7, if bidder is a Joint Venture for the goods/services described herein, bidder shall, upon request of Palm Beach County, provide a copy of the Joint Venture Agreement signed by all parties.

FIRM NAME: (Enter the entire legal name of the bidding entity)		DATE:
<u>Airgas Specialty Products, Inc.</u>		<u>April 6, 2018</u>
* SIGNATURE: <u>Cynthia Thomas</u>	PRINT NAME: <u>Cynthia Thomas</u>	PRINT TITLE: <u>Manager of Contracts</u>
ADDRESS: <u>2530 Sever Rd, Ste 300</u>		
CITY/STATE: <u>Lawrenceville, GA</u>		ZIP CODE: <u>30043</u>
TELEPHONE # (800) <u>295-2225</u>	E-MAIL: <u>cynthia.thomas@airgas.com</u>	
TOLL FREE # (800) <u>295-2225</u>	FAX #: (877) <u>342-3998</u>	
APPLICABLE LICENSE(S) NUMBER # _____	TYPE: _____	
FEDERAL ID # <u>20-2529374</u>		

April 9, 2018

Marva Brown
Palm Beach Co Purchasing
50 S Military Trail
Suite 110
West Palm Beach, FL 33415-3199

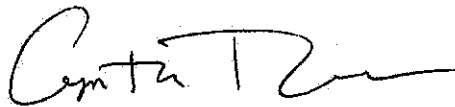
RE: Anhydrous Ammonia #18-056/MB

Ms. Brown,

Enclosed please find our response to your bid. Let us know if you have any questions or concerns.

We look forward to working with you and your team.

Thanks,



Cynthia Thomas
Manager of Contracts & Pricing
Airgas Specialty Products, Inc.
2530 Sever Road, Suite 300
Lawrenceville, GA 30043
678.985.7332
eFax:877.342.3998
cynthia.thomas@airgas.com

**QUALIFICATIONS OF BIDDERS
REFERENCES FOR IFB #18-056/MB**

Bidder shall list references in accordance with the requirements set forth in the Qualifications of Bidders.

REFERENCE NAME:	City of Melbourne		
ADDRESS:	900 East Strawbridge Ave, Melbourne, 32901		
CONTACT NAME:	Nacey Clark	← This Contact must be informed that they are listed as a reference, and the County may be calling them.	
CONTACT INFORMATION:	PHONE: 321-608-7091 FAX:	CELL PHONE:	EMAIL: nacey.clarke@mlbfl.org
SCOPE OF WORK:	Bulk Ammonia + related FS work		
CONTRACT DATES:	ON-going (multiple years)		

REFERENCE NAME:	Tampa Bay Water		
ADDRESS:	2575 Enterprise Rd, Clearwater, 33765		
CONTACT NAME:	Regina Kavanagh	← This Contact must be informed that they are listed as a reference, and the County may be calling them.	
CONTACT INFORMATION:	PHONE: 727-791-2392 FAX:	CELL PHONE:	EMAIL: rkavanagh@tampabaywater.org
SCOPE OF WORK:	Bulk Ammonia + related FS work		
CONTRACT DATES:	ON-going (multiple years)		

REFERENCE NAME:	Lee County		
ADDRESS:	P.O. Box 398, Ft. Myers, 33902		
CONTACT NAME:	Diana Khan	← This Contact must be informed that they are listed as a reference, and the County may be calling them.	
CONTACT INFORMATION:	PHONE: 239-533-8854 FAX:	CELL PHONE:	EMAIL: dkhan@leegov.com
SCOPE OF WORK:	Bulk Ammonia + related FS work		
CONTRACT DATES:	ON-going (multiple years)		

FIRM NAME: Airgas Specialty Products, Inc.

** No + Applicable **

**CERTIFICATION OF BUSINESS LOCATION
IFB #18-056/MB**

In accordance with the Palm Beach County Local Preference Ordinance, as amended, a preference may be given to: (1) bidders having a permanent place of business in Palm Beach County ("County") or (2) bidders having a permanent place of business in the Glades that are able to provide the goods and/or services to be utilized within the Glades. To receive a local preference, bidders must have a permanent place of business within the County or the Glades, as applicable, prior to the County's issuance of the solicitation. A Business Tax Receipt which is issued by the Palm Beach County Tax Collector, authorizes the bidder to provide the goods/services being solicited by the County, and will be used to verify that the bidder had a permanent place of business prior to the issuance of the solicitation. The bidder must submit this Certification of Business Location ("Certification") along with the required Business Tax Receipt at the time of bid or quote submission. The Business Tax Receipt and this Certification are the sole determinant of local preference eligibility. Errors in the completion of this Certification or failure to submit this completed Certification will cause the bidder to not receive a local preference.

In instances where the bidder is exempt by law from the requirement of obtaining a Business Tax Receipt, the bidder must: (a) provide a citation to the specific statutory exemption; and (b) provide other documentation which clearly establishes that the bidder had a permanent place of business within the County or the Glades prior to the date of issuance of the solicitation. The County hereby retains the right to contact said bidders for additional information related to this requirement after the bid/quote due date.

I. Bidder is a:

Local Business: A local business has a permanent place of business in Palm Beach County.

(Please indicate):

Headquarters located in Palm Beach County
Permanent office or other site located in Palm Beach County from which a vendor will produce a substantial portion of the goods or services.

Glades Business: A Glades business has a permanent place of business in the Glades.

(Please indicate):

Headquarters located in the Glades
Permanent office or other site located in the Glades from which a vendor will produce a substantial portion of the goods or services.

II. The attached copy of bidder's County Business Tax Receipt verifies bidder's permanent place of business.

THIS CERTIFICATION is submitted by Cynthia Thomas, as
(Name of Individual)

Manager of Contracts, of Arcas Specialty Products, Inc.
(Title/Position) (Firm Name of Bidder)

who hereby certifies that the information stated above is true and correct and that the County Business Tax Receipt is a true and correct copy of the original. Further, it is hereby acknowledged that any misrepresentation by the bidder on this Certification will be considered an unethical business practice and be grounds for sanctions against future County business with the bidder.

Cynthia Thomas
(Signature)

4/9/18
(Date)

DRUG-FREE WORKPLACE CERTIFICATION
IFB #18-056/MB

IDENTICAL TIE BIDS/QUOTES - In accordance with Section 287.087, F.S., a preference shall be given to vendors submitting with their bids/quotes the following certification that they have implemented a drug-free workplace program which meets the requirements of Section 287.087; provided, however, that any preference given pursuant to Section 287.087, shall be made in conformity with the requirements pursuant to the Palm Beach County Code, Chapter 2, Article III, Sections 2-80.21 thru 2-80.34. In the event tie bids/quotes are received from vendors who have not submitted with their bids/quotes a completed Drug-Free Workplace Certification form, the award will be made in accordance with Palm Beach County's purchasing procedures pertaining to tie bids/quotes.

This Drug-Free Workplace Certification form must be executed and returned with the attached bid/quote, and received on or before the published bid/quote submission deadline to be considered. The failure to execute and/or return this certification shall not cause any bid/quote to be deemed non-responsive.

Whenever two (2) or more bids/quotes which are equal with respect to price, quality, and service are received by Palm Beach County for the procurement of commodities or contractual services, a bid/quote 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:

- (1) Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
- (2) Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
- (3) Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in number (1).
- (4) In the statement specified in number (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893, Florida Statutes, or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.
- (5) Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.
- (6) Make a good faith effort to continue to maintain a drug-free workplace through implementation Section 287.087, Florida Statutes.

THIS CERTIFICATION is submitted by Cynthia Thomas the
 (Individual's Name)

Manager of Contracts of Aurigas Specialty Products Inc.
 (Title/Position with Company/Vendor) (Name of Company/Vendor)

who does hereby certify that said Company/Vendor has implemented a drug-free workplace program which meets the requirements of Section 287.087, Florida Statutes, which are identified in numbers (1) through (6) above.


 Signature

4/9/18
 Date

* Not Applicable *

**SCHEDULE 1
LIST OF PROPOSED SBE-M/WBE PRIME AND/OR SUBCONTRACTOR PARTICIPATION**

PROJECT NAME OR BID NAME: IFB 18-056/MB PROJECT NO. OR BID NO.: _____
 NAME OF PRIME BIDDER: Avera Specialty Products, Inc. ADDRESS: _____
 CONTACT PERSON: Cynthia Thomas PHONE NO.: _____ FAX NO.: _____
 BID OPENING DATE: 4/12/18 USER DEPARTMENT: _____

THIS DOCUMENT IS TO BE COMPLETED BY THE PRIME CONTRACTOR AND SUBMITTED WITH BID PACKET. PLEASE LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY ALL SBE -M/WBE SUBCONTRACTORS ON THIS PROJECT. IF THE PRIME IS AN SBE-M/WBE, PLEASE ALSO LIST THE NAME, CONTACT INFORMATION AND DOLLAR AMOUNT AND/OR PERCENTAGE OF WORK TO BE COMPLETED BY THE PRIME ON THIS PROJECT. THE PRIME AFFIRMS THAT IT WILL MONITOR THE SBES LISTED TO ENSURE THE SBES PERFORM THE WORK WITH ITS OWN FORCES.

Name, Address and Phone Number	(Check one or both Categories)		DOLLAR AMOUNT OR PERCENTAGE OF WORK				
	M/WBE Minority Business	SBE Small Business	Black	Hispanic	Women	Caucasian	Other (Please Specify)
1.	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
2.	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
3.	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
4.	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____
5.	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	_____	_____	_____

(Please use additional sheets if necessary)

Total _____

Total Bid Price \$ _____

Total SBE-M/WBE Participation Dollar Amount or Percentage of Work _____

I hereby certify that the above information is accurate to the best of my knowledge:

Signature

Title

- Note:
1. The amount listed on this form for a subcontractor must be supported by price or percentage listed on the signed Schedule 2 or signed proposal in order to be counted toward goal attainment.
 2. Firms may be certified by Palm Beach County as an SBE and/or an M/WBE. If firms are certified as both an SBE and M/WBE, please indicate the dollar amount and/or percentage under the appropriate category.
 3. M/WBE information is being collected for tracking purposes only.

* Not Applicable *

OSBA SCHEDULE 2
LETTER OF INTENT TO PERFORM AS AN SBE-M/WBE SUBCONTRACTOR

This document must be completed by the SBE-M/WBE Subcontractor and submitted with bid packet. Specify in detail, the particular work items to be performed and the dollar amount and/or percentage for each work item. SBE credit will only be given for items which the SBE-M/WBE Subcontractor are SBE certified to perform. Failure to properly complete Schedule 2 may result in your SBE participation not being counted.

PROJECT NUMBER: 18-054MB PROJECT NAME: Ammonia

TO: Airgas Specialty Products, Inc.
(Name of Prime Bidder)

The undersigned is certified by Palm Beach County as a - (check one or more, as applicable):

Small Business Enterprise _____ Minority Business Enterprise _____
Black _____ Hispanic _____ Women _____ Caucasian _____ Other (Please Specify) _____

Date of Palm Beach County Certification: _____

The undersigned is prepared to perform the following described work in connection with the above project. Additional Sheets May Be Used As Necessary

Line Item/ Lot No.	Item Description	Qty/Units	Unit Price	Total Price/ Percentage
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

at the following price or percentage

(Subcontractor's quote)

and will enter into a formal agreement for work with you conditioned upon your execution of a contract with Palm Beach County.

If undersigned intends to subcontract any portion of this job to a certified SBE or a non-SBE subcontractor, please list the name of the subcontractor and the amount below.

Price or Percentage _____ / _____
(Name of Subcontractor)

The Prime affirms that it will monitor the SBE's listed to ensure the SBE's perform the work with its own forces. The undersigned subcontractor affirms that it has the resources necessary to perform the work listed without subcontracting to non-certified SBE or any other certified SBE subcontractors except as noted above.

The undersigned subcontractor understands that the provision of this form to Prime Bidder does not prevent Subcontractor from providing quotations to other bidders.

(Print name of SBE-M/WBE Subcontractor)

By: _____
(Signature)

(Print name/title of person executing on behalf of SBE-M/WBE Subcontractor)

* Not Applicable *

**OSBA SCHEDULE 3
SBE-M/WBE ACTIVITY FORM**

SBE-M/WBE ACTIVITY FOR MONTH ENDING _____ PROJECT#: 18-056/MB
 PROJECT NAME Ammonia
 PRIME CONTRACTOR NAME AerGas Specialty Products, Inc.
 PROJECT SUPERVISOR _____

Schedule 3 is used to show the monthly payment activity for work performed by each SBE-M/WBE Subcontractor on the project and in conformity with the SBE-M/WBE's submitted on schedule 2. It also shows approved change orders as they impact the SBE-M/WBE Subcontractors. Schedule 3 is to be submitted by the Prime with each payment request to Palm Beach County. In the SBE-M/WBE Subcontracting Information section, list the name(s) of each SBE-M/WBE Subcontractor on the project and the total contracted amount for each SBE-M/WBE Subcontractor on the project. As the project proceeds, please complete each column under the SBE-M/WBE Subcontracting Information section accordingly. In the SBE-M/WBE Category, please check the appropriate category that represents each SBE-M/WBE Subcontractor.

SBE-M/WBE SUBCONTRACTING INFORMATION								SBE-M/WBE Category (check all applicable)						
Name of SBE-M/WBE Subcontractor	SBE-M/WBE Total Contract Amount	Approved Change Orders	Revised SBE-M/WBE Contract Amount	Amount drawn for SBE-M/WBE Sub This Period	Amount drawn for SBE-M/WBE Sub to Date	Amount Paid to Date for SBE-M/WBE Subcontractor	Actual Starting Date	Minority Business (✓)	Small Business (✓)	Black	Hispanic	Women	Caucasian	Other (Please Specify)

I hereby certify that the above information is true to the best of my knowledge _____
 (Signature and Title)

Return to: Palm Beach County

Additional Sheets May Be Used As Necessary

NOTE: Firms may be certified as an SBE and/or an M/WBE. If firms are certified as both an SBE and M/WBE, the dollar amount will not be counted twice.

Revised 9/7/2011

** Not Applicable **

OSBA SCHEDULE 4 - SBE-M/WBE PAYMENT CERTIFICATION

The Prime Contractor is to submit Schedule 4 with its Monthly Payment Request to Palm Beach County to reflect actual payments made to the SBE-M/WBE Subcontractor. The Prime Contractor is not to request signature from an SBE-M/WBE Subcontractor unless it has made a payment to the SBE-M/WBE Subcontractor. The SBE-M/WBE Subcontractor is not to complete and sign this form unless it has received a payment from the Prime Contractor for services actually performed by the SBE-M/WBE Subcontractor. A separate Schedule 4 is required for each SBE-M/WBE Subcontractor payment.

This is to certify that _____ received
(SBE or M/WBE Subcontractor Name)

(Monthly) or (Final) payment of \$

00000000.00

On _____ from _____
MM DD YYYY (Prime Contractor Name)

For labor and/or materials used on _____ / _____
(Project Name) (Work Order)

DEPT.: _____ PROJECT NO.: _____

PRIME CONTRACTOR VENDOR CODE: _____

SBE OR M/WBE SUBCONTRACTOR VENDOR CODE: _____

=====
If the SBE Subcontractor intends to disburse any funds associated with this payment to any Subcontractor for labor and/or material provided on this project, please provide the following information:

*Subcontractor Name: _____ Amount to be paid: _____

*Note: If the subcontractor listed in this section is an SBE or M/WBE a separate schedule 4 is required to verify payment.
=====

By: _____
(Signature of Subcontractor) (Print Name & Title of Person executing on behalf of Subcontractor)

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 20_____

By: _____

Notary Public, State of Florida

Print, Type or Stamp Commissioned Name of Notary

Personally Known _____ OR Produced Identification _____ Type of Identification _____
Rev. 5 Last updated: 11/18/11



SPECIALTY PRODUCTS

Product Specification

ANHYDROUS AMMONIA PREMIUM GRADE

General Information

This material shall be a clear, colorless liquid or gas, free from visible impurities.

Purity Requirements*

Ammonia Content	99.995% Minimum
Water	33 ppm Maximum
Oil	2 ppm Maximum
(as soluble in petroleum ether)	

*Equals or exceeds specifications for refrigeration and metallurgical grades. An Airgas Specialty Products typical analysis is 99.999%. Exceeds federal specification O-A-445B.



The Public Health and Safety Organization

NSF Product and Service Listings

These NSF Official Listings are current as of **Monday, March 19, 2018** at 12:15 a.m. Eastern Time. Please [contact NSF International](#) to confirm the status of any Listing, report errors, or make suggestions.

Alert: NSF is concerned about fraudulent downloading and manipulation of website text. Always confirm this information by clicking on the below link for the most accurate information:

<http://info.nsf.org/Certified/PwsChemicals/Listings.asp?CompanyName=airgas+specialty+products&>

NSF/ANSI 60 Drinking Water Treatment Chemicals - Health Effects

Airgas Specialty Products Inc.

2530 Sever Road
Suite 300
Lawrenceville, GA 30043
United States
800-295-2225
770-717-2210

Facility : Dixon, CA

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Riverside, CA

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Stockton, CA

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Greeley, CO

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Davenport, FL

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5 mg/L

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
--------------------------	-------------------------	----------------

Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark are NSF Certified.

Facility : Columbus, GA

Ammonia, Anhydrous		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L
Ammonium Hydroxide		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Granite City, IL

Ammonia, Anhydrous		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L
Ammonium Hydroxide		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Riverdale, IL

Ammonia, Anhydrous		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Jeffersonville, IN**Ammonia, Anhydrous**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Kansas City, KS**Ammonia, Anhydrous**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5 mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : South St. Paul, MN**Ammonia, Anhydrous**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Moss Point, MS**Ammonia, Anhydrous**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Lyons, NY**Ammonia, Anhydrous**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Concord, NC

Ammonia, Anhydrous

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5 mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10 mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Delphos, OH**Ammonium Hydroxide**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Donora, PA**Ammonia, Anhydrous**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5 mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10 mg/L
Aqua Ammonia	Chloramination	10 mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Palmerton, PA

Ammonia, Anhydrous

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5 mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10 mg/L
Aqua Ammonia	Chloramination	10 mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Memphis, TN**Ammonia, Anhydrous**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

Ammonium Hydroxide

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Baytown, TX**Ammonium Hydroxide**

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Waxahachie, TX

Ammonia, Anhydrous		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5 mg/L

Ammonium Hydroxide		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10 mg/L
Aqua Ammonia	Chloramination	10 mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Facility : Suffolk, VA

Ammonia, Anhydrous		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonia, Anhydrous	Chloramination	5mg/L

Ammonium Hydroxide		
<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
Ammonium Hydroxide	Chloramination	10mg/L
Aqua Ammonia	Chloramination	10mg/L

NOTE: Only products bearing the NSF Mark on the product, product packaging, and/or documentation shipped with the product are Certified.

Number of matching Manufacturers is 1
 Number of matching Products is 55
 Processing time was 1 seconds

SAFETY DATA SHEET

Airgas
an Air Liquide company

Ammonia

Section 1. Identification

GHS product identifier : Ammonia
Chemical name : ammonia
Other means of identification : ammonia; anhydrous ammonia
Product type : Gas.
Product use : Synthetic/Analytical chemistry.
Synonym : ammonia; anhydrous ammonia
SDS # : 001003
Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

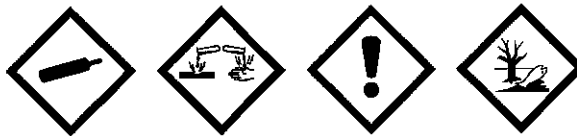
24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : FLAMMABLE GASES - Category 2
GASES UNDER PRESSURE - Liquefied gas
ACUTE TOXICITY (inhalation) - Category 4
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1
AQUATIC HAZARD (ACUTE) - Category 1

GHS label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

Flammable gas.
May form explosive mixtures with air.
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
Harmful if inhaled.
Causes severe skin burns and eye damage.
Very toxic to aquatic life.

Precautionary statements

General :

Read and follow all Safety Data Sheets (SDS'S) before use. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention :

Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing gas. Wash hands thoroughly after handling.

Section 2. Hazards identification

- Response** : Collect spillage. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
- Storage** : Store locked up. Protect from sunlight. Store in a well-ventilated place.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Hazards not otherwise classified** : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

- Substance/mixture** : Substance
- Chemical name** : ammonia
- Other means of identification** : ammonia; anhydrous ammonia
- Product code** : 001003

CAS number/other identifiers

- CAS number** : 7664-41-7

Ingredient name	%	CAS number
ammonia	100	7664-41-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Causes severe burns.
- Frostbite** : Try to warm up the frozen tissues and seek medical attention.
- Ingestion** : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:; pain, watering, redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:; pain or irritation, redness, blistering may occur
- Ingestion** : Adverse symptoms may include the following:; stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

- Small spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.
- Large spill** : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Do not breathe gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Refer to ANSI/CGA G-2.1, Section 5.13 for electrical classification of anhydrous ammonia storage and handling areas. Where anhydrous ammonia is stored indoors, use electrical (ventilating, lighting and material handling) equipment with the appropriate electrical classification rating and use only non-sparking tools.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
ammonia	<p>California PEL for Chemical Contaminants (Table AC-1) (United States). PEL: 25 ppm 8 hours. STEL: 35 ppm 15 minutes.</p> <p>ACGIH TLV (United States, 3/2017). TWA: 25 ppm 8 hours. TWA: 17 mg/m³ 8 hours. STEL: 35 ppm 15 minutes. STEL: 24 mg/m³ 15 minutes.</p> <p>OSHA PEL 1989 (United States, 3/1989). STEL: 35 ppm 15 minutes. STEL: 27 mg/m³ 15 minutes.</p> <p>NIOSH REL (United States, 10/2016). TWA: 25 ppm 10 hours. TWA: 18 mg/m³ 10 hours. STEL: 35 ppm 15 minutes. STEL: 27 mg/m³ 15 minutes.</p> <p>OSHA PEL (United States, 6/2016). TWA: 50 ppm 8 hours. TWA: 35 mg/m³ 8 hours.</p>

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-

Section 8. Exposure controls/personal protection

- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Gas. [Compressed gas.]
- Color** : Colorless.
- Odor** : Pungent.
- Odor threshold** : Not available.
- pH** : Approx. 11.6
- Melting point** : -77.7°C (-107.9°F)
- Boiling point** : -33°C (-27.4°F)
- Critical temperature** : 132.85°C (271.1°F)
- Flash point** : Not available.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Extremely flammable in the presence of the following materials or conditions: oxidizing materials.
- Lower and upper explosive (flammable) limits** : Lower: 16%
Upper: 25%
- Vapor pressure** : 114.1 (psig)
- Vapor density** : 0.59 (Air = 1)
- Specific Volume (ft³/lb)** : 20.79
- Gas Density (lb/ft³)** : 0.0481 (32°C / 89.6 to °F)
- Relative density** : SPECIFIC GRAVITY (AIR=1): @ 70°F (21.1°C) = 0.59
- Solubility** : Soluble in water. Soluble in alcohol and ether.
- Solubility in water** : 540 g/l
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : 651°C (1203.8°F)
- Decomposition temperature** : Not available.
- Viscosity** : Not applicable.
- Flow time (ISO 2431)** : Not available.
- Molecular weight** : 17.03 g/mole
- Aerosol product**
- Heat of combustion** : -18589392 J/kg

Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Incompatible materials : Oxidizers and Yellow Metals (brass & copper)

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
ammonia	LC50 Inhalation Gas.	Rat	7338 ppm	1 hours

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled.

Skin contact : Causes severe burns.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: pain, watering, redness

Inhalation : No specific data.

Section 11. Toxicological information

Ingestion : Adverse symptoms may include the following:, stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information : IDLH : 300 ppm

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
ammonia	Acute EC50 29.2 mg/l Marine water	Algae - Ulva fasciata - Zoea	96 hours
	Acute LC50 2080 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 0.53 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 300 µg/l Fresh water	Fish - Hypophthalmichthys nobilis	96 hours
	Chronic NOEC 0.204 mg/l Marine water	Fish - Dicentrarchus labrax	62 days

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil


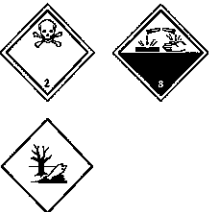

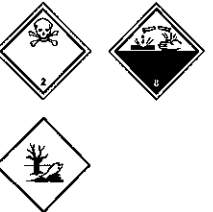

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1005	UN1005	UN1005	UN1005	UN1005
UN proper shipping name	AMMONIA, ANHYDROUS	AMMONIA, ANHYDROUS; OR ANHYDROUS AMMONIA	AMMONIA, ANHYDROUS	AMMONIA, ANHYDROUS	AMMONIA, ANHYDROUS
Transport hazard class(es)	2.2 	2.3 (8) 	2.3 (8) 	2.3 (8) 	2.3 (8) 
Packing group	-	-	-	-	-
Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Additional information

DOT Classification

: Inhalation hazard
 This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.
Reportable quantity 100 lbs / 45.4 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Quantity limitation Passenger aircraft/rail: Forbidden. Cargo aircraft: Forbidden.
Special provisions 13,T50

TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2), 2.40-2.42 (Class 8), 2.7 (Marine pollutant mark).
 The marine pollutant mark is not required when transported by road or rail.
Explosive Limit and Limited Quantity Index 0
ERAP Index 3000
 Dangerous Goods Ship Index Forbidden

Section 14. Transport information

Special provisions

- Mexico Classification** : Toxic Inhalation Hazard Zone D
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
- Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Cargo Aircraft Only: Forbidden. Limited Quantities - Passenger Aircraft: Forbidden.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
Clean Water Act (CWA) 311: ammonia

Clean Air Act (CAA) 112 regulated toxic substances: ammonia

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
ammonia	100	Yes.	500	-	100	-

SARA 304 RQ : 100 lbs / 45.4 kg

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	ammonia	7664-41-7	100
Supplier notification	ammonia	7664-41-7	100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Section 15. Regulatory information

- New York : This material is listed.
 New Jersey : This material is listed.
 Pennsylvania : This material is listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

- Australia : This material is listed or exempted.
 Canada : This material is listed or exempted.
 China : This material is listed or exempted.
 Europe : This material is listed or exempted.
 Japan : **Japan inventory (ENCS):** This material is listed or exempted.
 Japan inventory (ISHL): This material is listed or exempted.
 Malaysia : This material is listed or exempted.
 New Zealand : This material is listed or exempted.
 Philippines : This material is listed or exempted.
 Republic of Korea : This material is listed or exempted.
 Taiwan : This material is listed or exempted.
 Thailand : Not determined.
 Turkey : This material is listed or exempted.
 United States : This material is listed or exempted.
 Viet Nam : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	/	3
Flammability		1
Physical hazards		2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Section 16. Other information



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 2	Expert judgment
GASES UNDER PRESSURE - Liquefied gas	Expert judgment
ACUTE TOXICITY (inhalation) - Category 4	Expert judgment
SKIN CORROSION - Category 1	Expert judgment
SERIOUS EYE DAMAGE - Category 1	Expert judgment
AQUATIC HAZARD (ACUTE) - Category 1	Expert judgment

History

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Date of issue/Date of revision : 2/15/2018

Date of previous issue : 2/15/2018

Version : 1.04

Key to abbreviations : ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

References : Not available.

Notice to reader

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