

# BULK GAS SUPPLY

## Airgas Bulk Storage Specifications

### Nitrogen, Oxygen and Argon

Bulk nitrogen, oxygen and argon are stored as cryogenic liquids in a vacuum insulated vessel at the customer's site. The nominal vessel working pressure is 250 psig. The stored liquid can be vaporized into gas as required for use by the customer. For liquid hydrogen, higher pressures, horizontal vessels, smaller and larger size vessels or other special application requirements, please contact your local Airgas associate.

Nominal Size (gal)	Diameter (inches)	Height (inches)
525	66	102
900	66	134
1500	66	188
3000	86	228
6000	86	382
9000	114	347
11000	114	406
13000	114	465

### Carbon Dioxide

Bulk carbon dioxide is stored as a liquid in a refrigerated vessel or vacuum insulated vessel at the customer's site. The vessel maximum allowable working pressure is 350 psig. The stored liquid can be vaporized into gas as required for use by the customer. For higher pressures, horizontal vessels, smaller and larger size vessels or other special application requirements, please contact your local Airgas associate.

Nominal Size (tons)	Diameter (inches)	Height (inches)
6	68	188
14	86	228
30	114	287
50	114	406

### Hydrogen and Helium

Bulk hydrogen and helium is generally stored as a gas in pressure vessels at the customer site. The pressure vessels can be sized to meet your needs from 500 to greater than 100,000 standard cubic feet in capacity. For liquid storage options and other bulk gases in gaseous form (such as nitrogen, air, mixed gases, etc.), please contact your local Airgas associate.

## Proven delivery systems for every application and location.

Airgas offers a flexible range of bulk gas designs and capacities to accommodate space, equipment demands and operating requirements. Expert technical assistance accompanies every system to verify proper sizing of tanks, interconnecting piping layout, gas applications and related factors.

### Vertical Customer Stations

- Capacities range from 215–13,000 gallons depending on actual requirements
- Custom designed and installed
- Also available in state-of-the-art, stainless steel portable tanks with a per tank capacity of 240 liters

### Non-Cryogenic Gas Generation Systems

- Nitrogen-Membrane
- Oxygen-PSA
- Ask your Airgas representative for more details on nitrogen and oxygen

### Conventional and Jumbo Tube Trailers

- Our fleet of tube trailers is available in capacities from 45,000 cf to 180,000 cf and serves the needs of users with high-pressure gas applications
- Less common gases such as liquid hydrocarbons (C2 to C10) can also be supplied in tube trailers and tailored to individual supply needs

### MicroBulk Systems

- Newest cylinder alternative that provides reliable, uninterrupted gas supply
- Sized between liquid cylinders and bulk, this distribution solution fulfills the previously unmet needs of customers with volumes that make using cylinders or bulk gas systems inefficient
- Less loss than from liquid or high-pressure cylinders results in product savings
- No cylinder handling and moving presents opportunity for labor savings
- Safer than high-pressure cylinders

The right location. The right product. The right expertise.

For more information visit us on the web at [www.airgas.com](http://www.airgas.com), or call 800-255-2165.

**Airgas**  
You'll find it with us.

259 N. Radnor-Chester Road, Suite 100, Radnor, PA 19087-5283

The right product. The right price.  
The right expertise to support you wherever you are.



Buying power and customer service that add up to a powerful combination.  
You'll find it with Airgas.

We've combined supply chain efficiency with the widest variety of products and impressive technical and customer support. The Airgas approach makes bulk gas easier and more cost effective to buy and manage than ever before. As the nation's largest customer for bulk gas, we deal with most of the major gas producers. This gives Airgas unrivaled leverage in maintaining product availability at consistent, cost-effective prices. Plus, our 900 locations and national distribution system means reliable, efficient delivery backed by our locally responsive network of knowledgeable support people.

**Airgas**  
You'll find it with us.™

## Products as diverse as the industries we serve.

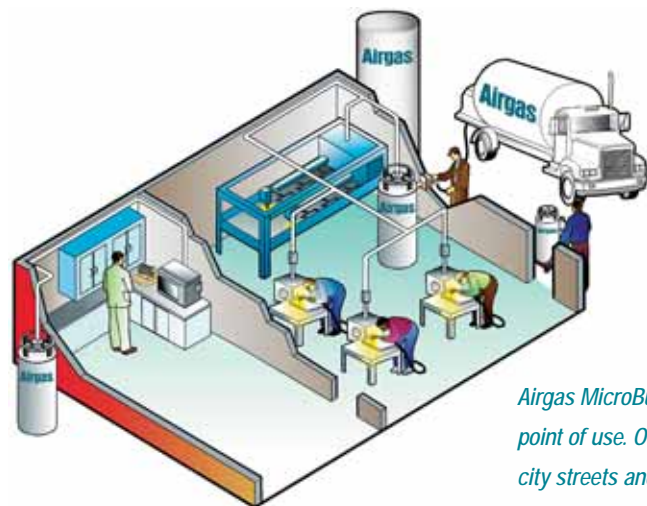
With Airgas, you get economies of scale across a wide variety of gases. Along with standard atmospheric gases, we offer hard-to-find specialized products, such as Nitrous Oxide and FDA-approved Carbon Dioxide. We also provide high quality storage systems designed to meet or exceed industry standards, and these can be customized to meet customer requirements..

### Bulk gases.

Argon	Hydrogen
Carbon Dioxide	Nitrogen
Helium	Nitrous Oxide
Oxygen	

### Bulk gas services.

- Delivery and installation of bulk tanks (cryogenic storage vessels) on customer site
- Bulk gas delivery in tanker trucks
- Delivery and installation of storage tubes (pressure vessels)
- Bulk gas delivery in tube trailers
- Delivery and installation of MicroBulk tanks (Perma-Cyls™)
- MicroBulk delivery
- Telemetry remote monitoring of tank volume for more efficient inventory management



*Airgas MicroBulk is a cost-effective way to deliver gas to every point of use. Our MicroBulk vehicles easily negotiate confined city streets and make deliveries to hard-to-access areas.*

## Customer support that puts our expertise at your service.

Airgas fields the largest customer care team in the industry, with the goal of making your business more efficient and profitable. It starts with an in-depth understanding of how you use gas, how you manage it and how we can apply the Airgas expertise in customer applications, installation of Bulk and MicroBulk storage and delivery systems, and better cost efficiencies for your business.

The analysis begins by looking at the scope and diversity of your needs, details of applications, similarities of operations and how products can be used more efficiently. Working with your team, we develop a customized supply system plan that will meet current and future production requirements. This is followed by a complete overview of installation, including design specifications, equipment and piping. A time line that can support seamless integration and eliminate downtime is created. After implementation, Airgas provides a report itemizing efficiency and cost effectiveness of the new bulk gas supply system.

## The purchasing power of a national network. The service and attention of a local specialist.

With a presence in nearly 900 locations nationwide Airgas is the largest distributor of industrial, specialty and medical gases and related equipment. This well-connected, integrated network enables Airgas to provide on-demand local delivery and personalized service and support.

Each customer's situation is unique and we treat it as such. Recommendations are developed to offer complete solutions that contribute to overall business efficiency. A well-constructed plan may include opportunities to improve bulk supply management, minimize gas usage costs, reduce vendor bases and share best demonstrated practices across your organization.

## As Customers' Needs Change, Airgas Offers A Range of Supply Modes...

### CYLINDERS\*



228 SCF / 304 SCF

### DEWARs\*



180 / 230 Liter  
48 / 61 Gallon  
4,428 / 5,658 SCF

### MICROBULK\*



230 / 450 / 1,000 / 1,500 / 2,000 Liter  
61 / 119 / 264 / 396 / 528 Gallon  
5,658 / 11,070 / 24,600 / 36,900 / 47,847 SCF

TT 45,100 / 181,155 SCF  
Bulk 500 - 13,000 Gallon  
46,500 - 1.2 mm SCF

### Additional benefits of Mode Change.

- Continuous, uninterrupted supply of gas and no down time changing cylinders.
- Fewer deliveries and fewer invoices to process, saving administrative costs.
- Eliminates cylinder management costs (moving, tracking, storing, renting)
- Reduces the possibility of contaminants entering your gas stream.

### TUBES, BULK\*



You'll find it with us.™

**Airgas**

\*Approximate volumes based on nitrogen supply.