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# Industrial Gases: United States

August 2017



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# About This Report

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## Scope & Method

This report forecasts US industrial gas demand and shipments in US dollars at the manufacturers' level to 2021. Total demand is segmented by product in terms of:

- hydrogen and argon
- nitrogen
- fluorocarbons
- carbon dioxide
- oxygen
- other gases such as helium and acetylene.

Stated demand figures include the merchant, packaged, and captive markets for industrial gases. The merchant market refers to products delivered in bulk from supplier to customer via tanker truck or tube trailer, while packaged gases are distributed in cylinders or dewars. Captive consumption encompasses gases supplied by on-site plants and delivered through a pipeline. Re-exports of industrial gases are excluded from demand and trade figures.

To illustrate historical trends, total demand, total shipments, the various segments, and trade are provided in annual series from 2006 to 2016.

This report quantifies trends in various measures of growth and volatility. Growth (or decline) expressed as an average annual growth rate (AAGR) is the least squares growth rate, which takes into account all available datapoints over a period. The volatility of datapoints around a least squares growth trend over time is expressed via the coefficient of determination, or  $r^2$ . The most stable data series relative to the trend carries an  $r^2$  value of 1.0; the most volatile – 0.0. Growth calculated as a compound annual growth rate (CAGR) employs, by definition, only the first and last datapoints over a period. The CAGR is used to describe forecast growth, defined as the expected trend beginning in the base year and ending in the forecast year. Readers are encouraged to consider historical volatility when assessing particular annual values along the forecast trend, including in the forecast year.

Key macroeconomic indicators are also provided with quantified trends. Other various topics, including profiles of pertinent leading suppliers, are covered in this report. A full outline of report items by page is available in the Table of Contents.

## Sources

*Industrial Gases: United States* (FF35029) represents the synthesis and analysis of data from various primary, secondary, macroeconomic, and demographic sources including:

- firms participating in the industry, and their suppliers and customers
- government/public agencies
- national, regional, and international non-governmental organizations
- trade associations and their publications
- the business and trade press
- indicator forecasts by The Freedonia Group
- the findings of other reports and studies by The Freedonia Group.

Specific sources and additional resources are listed in the Resources section of this publication for reference and to facilitate further research.

## Industry Codes

Table 7 | Industry Codes Related to Industrial Gas

NAICS/SCIAN 2007		SIC	
North American Industry Classification System		Standard Industry Codes	
325120	Industrial Gas Manufacturing	2813	Industrial Gases

Source: US Census Bureau

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## Resources

### The Freedonia Group

#### Freedonia Industry Studies

*Global Water Treatment Chemicals Market*, June 2017

*US HVAC Market Forecasts*, June 2017

*Drilling Fluids & Chemical Market in the US*, May 2017

*Oklahoma Oil and Gas Drilling*, May 2017

*Texas Oil & Gas Drilling Outlook*, April 2017

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### Trade Publications

*Chemical & Engineering News*

*IHS Chemical Week*

*Gas World*

*Hydrocarbon Processing*

*Oil & Gas Journal*

### Agencies & Associations

American Hydrogen Association

Compressed Gas Association

Gases and Welding Distributors Association

Intergovernmental Panel on Climate Change

National Fire Protection Association

United States Census Bureau

United States Department of Health and Human Services

United States Food and Drug Administration

United States Department of the Interior

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United States Environmental Protection Agency  
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