

# **Industrial Gases Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, 2018-2028F Segmented By Type (Nitrogen, Oxygen, Argon, Hydrogen, Carbon Dioxide, and Others), By End User (Metal Production & Fabrication, Automotive, Chemical & Petrochemical, Healthcare & Pharmaceuticals, Food & Beverages, and Others), By Distribution (On-site, Bulk, Cylinder, and Other), By Region, and Competition**

<https://marketpublishers.com/r/ICA2AD0E3176EN.html>

Date: July 2023

Pages: 112

Price: US\$ 4,900.00 (Single User License)

ID: ICA2AD0E3176EN

## **Abstracts**

Global Industrial Gases market is anticipated to grow appreciably in forecast period of 2028 due to increasing demand for industrial gases in emerging economies, growing healthcare and food processing industries, and rising investments in the development of new applications for industrial gases. According to a report by the World Health Organization (WHO), an estimated 80% of COVID-19 patients require oxygen therapy, and some countries have reported shortages of oxygen in their hospitals during the pandemic. The WHO has called for increased investment in oxygen supply systems to ensure that hospitals have sufficient oxygen supplies to meet future demands.

The global industrial gases market is a rapidly growing industry that provides a variety of gases, including oxygen, nitrogen, hydrogen, argon, and carbon dioxide, for use in various industries such as healthcare, manufacturing, energy, and chemicals. These gases are used for a wide range of applications, such as welding and cutting, food processing, medical treatment, and refrigeration.

The healthcare and pharmaceuticals industry and the industrial gases market are two

distinct industries with their own unique characteristics and market dynamics. The major players in the global industrial gases market, like Air Liquide, Linde plc, Air Products and Chemicals, Inc., and Messer Group GmbH, are investing heavily in research and development activities to develop new applications for industrial gases and expanding their product portfolio to meet the growing demand from various end-use industries. All these factors are expected to increase the demand for global industrial gases worldwide in the forecasted period.

### Growing Demand from Healthcare and Pharmaceuticals is Driving the Market Growth

The pharmaceutical industry relies on industrial gases in various stages of drug development and manufacturing. In recent years, there has been increasing interest in the use of industrial gases in the healthcare industry for medical applications such as cryotherapy, which involves the use of extreme cold temperatures to treat various medical conditions. This has led to collaborations between companies in the healthcare and industrial gases industries to develop new products and therapies. Therefore, while the healthcare and pharmaceuticals industry and the industrial gases market are distinct industries, there are some areas of overlap and potential for collaboration in the development of new products and therapies. This development led to an increase in the demand for industrial gases from the healthcare and pharmaceuticals sector, driving the global industrial gas market growth.

Industrial gases such as oxygen, nitrogen, and carbon dioxide play a crucial role in the healthcare and pharmaceutical industries. Different industrial gases are used in the healthcare sector for the treatment process. For example, oxygen is used in hospitals to treat patients with respiratory issues. It is also used during surgical procedures as a component of anesthesia. In the pharmaceutical industry, oxygen is used in various stages of drug development and manufacturing, including fermentation and cell culture. For example, a hospital with 200 beds may use approximately 1,000 cubic meters of oxygen per day. Nitrogen is used in hospitals for cryotherapy, a medical treatment that involves the use of extremely cold temperatures to treat various medical conditions, such as skin lesions and cancer. Nitrogen is used in the pharmaceutical industry for various purposes, such as freezing and storing biological samples and stabilizing drugs. Carbon dioxide is used in hospitals as a component of respiratory therapy and as a coolant in surgical procedures. In the pharmaceutical industry, carbon dioxide is used in various stages of drug development and manufacturing, such as for the purification of active ingredients. For example, a hospital with 200 beds may use approximately 10 cubic meters of carbon dioxide per day. Helium is used in hospitals to cool MRI machines and also as a component of respiratory therapy. In the pharmaceutical

industry, helium is used in the development of drug delivery systems, such as inhalers. A hospital with an MRI machine may use approximately 50 cubic meters of helium per day. Additionally, industrial gases are also used in the production and testing of medical devices, such as pacemakers and stents. Overall, industrial gases play a critical role in the healthcare and pharmaceutical industries, and their uses are diverse and far-reaching. Hence, the global industrial gas market is expected to rise significantly in the forecasted period.

### Rising Demand from the Chemical and Petrochemical Industries are Market Driving Factors

The industrial gases market includes companies involved in the production and distribution of gases such as oxygen, nitrogen, and helium, which are used in a wide range of industrial applications such as metal fabrication, chemical production, and healthcare. This industry is driven by factors such as economic growth, industrial production, and environmental regulations. Approximately 14.8 million metric tons of nitrogen gas and 9.2 million metric tons of oxygen gas were produced in the United States in 2020. The chemical and petrochemical industries are heavy users of industrial gases, which play a critical role in their production processes. Industrial gases in chemical and petrochemical industries are used for different purposes. For example, nitrogen is used in the chemical and petrochemical industries for various applications, such as blanketing and purging of storage tanks and pipelines, inerting of reactors, and cooling of process streams. Oxygen is used in the chemical and petrochemical industries for various applications, such as oxidation reactions and combustion processes. It is also used in wastewater treatment to enhance the efficiency of biological treatment systems. Hydrogenation reactions, desulfurization of crude oil and natural gas, and as a fuel for power generation are among various applications of chemical and petrochemical industries where hydrogen is needed. Carbon dioxide is used in the chemical and petrochemical industries for various applications, like a feedstock to produce chemicals, such as urea and methanol, and as a cooling agent. Apart from these, other industrial gases such as helium and argon are also used in the chemical and petrochemical industries for various applications, such as cooling and purging. Therefore, industrial gases are essential for the chemical and petrochemical industries, and their use is critical for efficient and safe production processes, thereby propelling the demand for industrial gases worldwide.

### Favorable Government Policies as a Key Supporting Factor for the Industrial Gases Market Growth

Government policies on industrial gases vary by country and region, but its main aim is to ensure the safe handling, transportation, storage, and use of industrial gases while also minimizing their impact on the environment and public health. Governments may offer subsidies or tax incentives to promote the production and use of industrial gases that either have environmental benefits or support specific industries. For example, the US government offers tax credits for the production and use of hydrogen fuel cells, which are powered by hydrogen gas. These factors led to an increase in the production and demand of industrial gases globally in the upcoming period.

### Increasing Technological Advancements Driving the Innovation and Increasing the Market Demand

Technological advancements have played a significant role in the industrial gas industry by driving innovation, improving efficiency, and creating new applications. Some examples are:

**Gas Separation Technologies:** Advances in gas separation technologies have enabled the production of ultra-pure industrial gases with high levels of purity and reliability. This has been particularly important for the electronics and semiconductor industries, which require high-purity gases for their manufacturing processes.

**Cryogenic Technologies:** Cryogenic technologies have enabled the production and storage of industrial gases at very low temperatures, which has opened new applications in areas such as medical and scientific research, food freezing, and rocket propulsion.

**Gasification Technologies:** Gasification technologies have enabled the conversion of coal, biomass, and other feedstocks into gases such as hydrogen and syngas, which can be used for power generation, chemical production, and other applications.

**Process Control and Automation:** Process control and automation technologies have improved the efficiency and safety of industrial gas production and distribution, reduced costs, and improved product quality.

**Digitalization and Data Analytics:** Digitalization and data analytics technologies have enabled the collection and analysis of data from industrial gas production and distribution processes, allowing companies to optimize their operations and improve their products and services.

## Market Segmentation

Global industrial gas market is segmented based on type, end-user, distribution, and region. Based on type, the market is segmented into nitrogen, oxygen, argon, hydrogen, carbon dioxide, and others. Based on end users, the market is categorized into metal production & fabrication, automotive, chemical & petrochemical, healthcare & pharmaceuticals, food & beverages, and others. Based on distribution, the market is fragmented into on-site, bulk, cylinder, and others. Based on region, the market is divided into North America, Europe, Asia Pacific, South America, Middle East & Africa.

## Company Profiles

Air Liquide SA, Air Products and Chemicals Inc., Asia Technical Gas Co Pte Ltd., BASF SE, Bhuruka Gases Limited, Ellenbarrie Industrial Gases Ltd., Sapio Life Srl, IBO INDUSTRIA BRESCIANA OSSIGENO Srl, Iwatani Corporation, Linde PLC, Messer Group Inc., Aneka Gas Industries PT are some of the key players of global industrial gases market.

## Report Scope:

In this report, global Industrial gases market has been segmented into the following categories, in addition to the industry trends, which have also been detailed below:

### Industrial Gases Market, By Type:

Nitrogen

Oxygen

Argon

Hydrogen

Carbon Dioxide

Others

### Industrial Gases Market, End User:

Metal Production & Fabrication

Automotive

Chemical & Petrochemical

Healthcare & Pharmaceuticals

Food & Beverages

Others

Industrial Gases Market, By Distribution:

On-site

Bulk

Cylinder

Others

Industrial Gases Market, By Region:

North America

United States

Mexico

Canada

Europe

France

Germany

United Kingdom

Spain

Italy

Asia-Pacific

China

India

South Korea

Japan

Australia

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive landscape

Company Profiles: Detailed analysis of the major companies present in the global Industrial Gases market.

### Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

#### Company Information

Detailed analysis and profiling of additional market players (up to five).



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