

# Global Industrial Gases Market Outlook to 2027

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## Abstracts

Industrial gases are gaseous at room temperature and pressure and serve many common purposes in the everyday world. These gases are transported either in cylinders as a bulk liquid or through a pipeline. The industrial gas industry of the world provides essential products to manufacturers, innovators, and services that are essential to the world economy. In addition, many developing countries are expanding their refining capacity to meet the fuel demand that requires industrial gases for crude refining. For decades, industrial gas companies have assisted producers in the petrochemical landscape to ensure they are able to deliver the levels of product quality and operational safety demanded by changing legislation, environmental regulations, and customer requirements.

According to BlueQuark Research & Consulting, the global Industrial gases market is expected to witness a considerable growth rate during the forecast period. An increase in the production and consumption of steel and its products globally is one of the primary market driving factors as oxygen and acetylene are extensively used in the steel industry for cutting, welding, melting, etc. The growing demand for industrial gases in petrochemical refining and testing of gas leakage detectors on offshore drilling platforms is anticipated to boost the market growth in the forecasted period. Furthermore, a rise in environmental degradation has significantly increased the use of agrochemicals to increase the productivity of the limited arable land. High demand for nitrogen and hydrogen in the production of ammonia, which is a key ingredient of agrochemicals, is another major market driving factor.

According to the World Steel Association, global crude steel production reached 1,869.9 million for the year 2019, out of which 70.7% of steel is produced using the basic oxygen process, which uses pure oxygen to convert a charge of liquid blast-furnace iron and scrap into steel. The basic oxygen process uses very high rates of powdered coal and natural gas injections that require around 300 to 1000 tons of oxygen usage per

day in a single furnace. In April 2019, the World Steel Association released forecasts that show continued growth in global steel demand in 2019 and 2020 at a pace of 1.3% and 1%, respectively. The iron and steel industry is one of the largest users of industrial gases and consumes substantial quantities of oxygen, nitrogen, argon, and hydrogen, and a small but growing amount of carbon dioxide. Oxygen and nitrogen represent the largest share among the industrial gases used in steel manufacturing. Oxygen consumption has grown substantially in recent years, while the use of the other gases has remained relatively constant. The growing trend of the construction industry is further increasing the demand and consumption of steel. The construction industry showed a rise of around 2.5% in 2019, with infrastructure work risen by approximately 13%.

Many major companies in the sector have started to adopt various digital innovations and novel technologies such as data analytics, robotics, artificial intelligence, etc., to seek cost cuts in production. The adoption of advanced technology in the industrial gas sector is expected to grow further in the near future. In Peru, which has more than 100 thousand active Covid-19 cases as of 9th July 2020, the president has ordered industrial plants to ramp up production for medical use or buy oxygen from abroad. He allocated about USD 28 million for oxygen tanks and new plants. Similarly, the government of India has granted permission for manufacturers of industrial oxygen to manufacture and sell the gas for medical use as the country is seeing an escalation in coronavirus cases resulting in higher hospital admissions.

The global Industrial Gases market is segmented on the basis of Product and End-User Industry. The End-Use Industry segment is further segmented as Oil & Gas, Metal, Energy, Chemical, Healthcare, Electronics, and Others. Industrial gases such as oxygen, nitrogen, and argon have long been an established aid to medical treatment. Year after year, researchers and technicians continue to discover new, successful applications in the field.

Industrial gases are used for medical conditions such as hemorrhage, trauma, resuscitation, etc. These gases are used for less invasive surgeries like laparoscopy, endoscopy, arthroscopy, and cryotherapy. Increasing cases of respiratory disorders such as COPD, Asthma, and Covid-19 are boosting the market for industrial gases in the healthcare sector. The long-term use of oxygen therapy has significantly improved the survival rate of these patients. In addition, manufacturers are introducing new technologies in the market to improve the quality of care. For instance, hIOTron an Indian technology corporation focused on end-to-end IoT solutions, has come up with an RTMS solution of medical gases which helps to track the location of every tank and

their gas level and volume time-based records. Due to the ongoing Covid-19 pandemic, multiple countries are pushing industrial gas manufacturers to increase the production of gases useful in the healthcare sector.

According to the World Health Organization (WHO), every year, approximately 20 to 50 million people suffer non-fatal injuries. Moreover, more than 18 million people died from cardiovascular diseases in 2018. An increasing number of road injuries and cardiac diseases has also pushed the number of surgeries globally which has boosted the market for medical gases such as oxygen and argon. More than two million people receive medical oxygen per year. According to the National Health Service, around 17.5% of UK hospital patients are receiving oxygen at a given time. Similarly, there is an increase in the consumption of hydrogen gas due to its positive effects on cardiovascular system diseases.

Based on geography, the global Industrial Gases Market is segmented into Asia Pacific, North America, South America, Europe, and Middle East & Africa. Asia-Pacific continues to hold dominance in the global Industrial Gases Market during the forecast period. China's economy shrank by 6.8% in the first quarter of 2020 after the coronavirus shutdown but gained pace in Q2 with an increase of 3.2%. Industrial gases have wide-ranging downstream applications and impact the overall market and hence play an important role in China's national economy. Industrial gases are widely used in metallurgy, petroleum, petrochemicals, chemicals, mechanical, electronics, and aerospace and are of great importance to the country's national defense, construction and healthcare sectors. China is the world's largest importer of industrial gases from the US due to growing demand in the area. China's gas demand is expected to grow by 60% by 2023 due to the policies aimed at reducing local air pollution by switching from coal to gas.

According to International Energy Agency, in recent years, China has shown strong demand growth of industrial gases and has led to the rising supplies from the US, which is expected to push the demand in the coming years. Industrial gases are largely used in steel production; global steel consumption growth picked up by 4.9% in 2018, out of which the largest increase was in China at a growth rate of 7.9%. Domestic demand for steel has increased due to steadily rising disposable incomes and infrastructure investment. Linde, Air Liquide, Air Products, and Praxair makeup almost half of the market for gas outsourcing in the country and operates more than 50 factories. Large domestic companies and MNCs like Taiyo Nippon and Yingde acquire around a quarter of the market share. China is the manufacturing hub of electronics, and its export volumes have grown substantially alongside China's economy. Industrial gases are

indispensable raw materials used in manufacturing electronics such as semiconductors, flat-panel displays, solar cells, and LED lighting. The electronics end market relies heavily on the use of specialty gases in various processes, including etching, film-forming, doping, and ion injection, and crystalline production.

China is the largest consumer and manufacturer of nitrogen fertilizers in the world. With 8% of the total arable land in the world, China accounts for 32% of the world's total consumption of chemical fertilizers. From 2000 through 2017, the efficiency of nitrogen fertilizer use in China increased from 27% to 38%. Industrial gases such as oxygen, hydrogen, and carbon monoxide are essential molecules required as reaction agents for various process steps in the chemical production chain. Nitrogen is used for inerting, purging, cooling, and other specific applications. Several industries in the country have been deeply affected by the outbreak of Covid-19. The high infection rate, city shutdowns, and transportation halts across the nation had a negative impact on the chemical industry that has decreased industrial gas demand in the sector, but the demand in the healthcare sector has increased. Covid-19 has also impacted the oil prices due to flight cancellations and industrial lockdowns, leading to lower demand for refined products, which has impacted the consumption of industrial gases. Refineries in China have slashed operating rates by 20 percentage points.

The market for industrial coatings is consolidated. Some of the key players in the global market are The Linde Group, Air Liquide S.A., Air Products and Chemicals, Inc., Praxair Inc, Advanced Specialty Gases Inc., among others.

In Jul 2020, Air Liquide and NLMK, a leading steel producer in Russia, have entered into a new long-term partnership. Under the agreement, Air Liquide will invest around 100 million euros in the flagship site of NLMK in Lipetsk.

In Jul 2020, Air Liquide has signed a long-term agreement with Steel Dynamics, Inc., to supply gaseous oxygen, nitrogen, and argon to the company's new Electric Arc Furnace (EAF) steel mill in Sinton, Texas.

In Feb 2020, Air Liquide and BASF, have recently signed three new long-term contracts in the Antwerp basin (Belgium). Air Liquide has been supplying BASF with gas for over 50 years in this major industrial basin.

Our Global Industrial Gases Market report provides deep insight into the current and future state of the Industrial Gases market across various regions. Also, the study comprehensively analyzes the Industrial Gases market by segments based on the

product (Oxygen, Nitrogen, Argon, Carbon Dioxide, Acetylene, Hydrogen, Helium and Others (Specialty Gases, etc.)) and by end-user industry (Oil & Gas, Metal, Energy, Chemical, Healthcare, Electronics and Others (Food & Beverage, Aerospace, etc.)), and by Geography (Asia Pacific, North America, Europe, South America, and Middle-East and Africa). The report examines the market drivers and restraints, along with the impact of Covid-19 are influencing the market growth in detail. The study covers & includes emerging market trends, market developments, market opportunities, market size, market analysis, market dynamics, and challenges in the industry. This report also covers extensively researched competitive landscape sections with profiles of major companies including their market share and projects.

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