

Industrial Gases Market - Global Industry Size, Share, Trends, Opportunity & Forecast, Segmented By Product (Oxygen, Nitrogen, Hydrogen, Carbon dioxide, Acetylene, Argon), By Application (Healthcare, Manufacturing, Metallurgy & Glass, Food & Beverages, Retail, Chemicals & Energy, Others), By Distribution Channel (On-site, Bulk (Liquid Gas Transport), Cylinder (Merchant)), By Region, & Competition, 2020-2030F

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Report description:

Market Overview

The Industrial Gases market was valued at USD 116.07 Billion in 2024 and is expected to reach USD 178.14 Billion by 2030 with a CAGR of 7.40%. The Global Industrial Gases Market, though well-established, is undergoing a strategic transformation driven by its indispensable role across core industries such as advanced manufacturing, renewable energy, healthcare technology, precision chemicals, food-grade processing, microelectronics, and metallurgy. Key gases including oxygen, nitrogen, hydrogen, carbon dioxide, and argon are no longer treated as standard consumables; they are increasingly integrated into critical production workflows to optimize process yield, quality control, safety, and emissions compliance.

The industry is shifting away from a volume-based, commodity supply model toward a technology-enabled, service-centric framework. This shift is fueled by mounting demand from sectors undergoing digital automation, decarbonization, and electrification. Industrial gas suppliers are now viewed as strategic collaborators, providing not only gases but also on-site generation systems, remote telemetry, purity analytics, and sustainability solutions.

Industrial gases are becoming mission-critical inputs in areas such as semiconductor etching, hydrogen-based refining, oxygen-enriched combustion, and CO₂ recovery. As industries recalibrate around carbon neutrality, operational resilience, and

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real-time efficiency, the market is poised for robust and durable growth. Companies that proactively invest in low-carbon gas portfolios, digital infrastructure, and custom-engineered delivery models will capture long-term value and secure competitive advantage in this high-performance, innovation-led economy.

Key Market Drivers

Rapid Industrialization and Infrastructure Development

Rapid industrialization and infrastructure development are among the most powerful drivers of growth in the Global Industrial Gases Market, fueling demand across a wide spectrum of sectors including steel, construction, chemicals, energy, electronics, and automotive. As emerging and developed economies expand their manufacturing capacity and invest in large-scale infrastructure projects, the consumption of industrial gases rises significantly both in volume and complexity. As highlighted in the Economic Survey, India's manufacturing sector has consistently led industrial performance, recording an average annual growth rate of 5.2% over the past decade. In FY23, the sector contributed 14.3% to the country's Gross Value Added (GVA) and accounted for 35.2% of total industrial output, underscoring its deep integration across value chains. Industrial gases such as oxygen, nitrogen, acetylene, and argon are integral to Steelmaking (e.g., basic oxygen furnaces, electric arc furnaces), Cutting, welding, and fabrication of metal structures, Cement production and glass manufacturing. Countries undergoing rapid urbanization and industrial development such as India, China, Indonesia, and Vietnam are investing heavily in housing, roads, bridges, railways, and ports. These projects require vast quantities of processed materials, where industrial gases play a critical role in enhancing production speed, efficiency, and product quality.

Emerging markets are positioning themselves as global manufacturing hubs through initiatives like "Make in India", China's Belt and Road Initiative (BRI), Indonesia's industrial corridors, Vietnam's FDI-led export manufacturing model. These strategies have led to the proliferation of manufacturing units in: Automotive, Electronics and semiconductors, Chemicals and plastics, Heavy machinery and industrial equipment. Each of these sectors requires various industrial gases for cooling, inerting, purging, oxidation, annealing, and cleaning processes, driving both bulk and specialty gas demand. As nations invest in power plants, oil refineries, wastewater treatment facilities, and energy transmission networks, industrial gases become vital for Enhanced combustion efficiency (using oxygen-enriched air), Pipeline pressure testing and purging (using nitrogen), Desulfurization and hydrocracking in refineries (using hydrogen), Water purification and sludge treatment (using oxygen and ozone). These projects not only create direct consumption of gases but also support long-term industrial utility needs, strengthening recurring demand across regions.

Governments are promoting industrialization through cluster-based development and the establishment of Special Economic Zones (SEZs) and Industrial Parks, which Attract foreign and domestic investment in high-volume production, Enable the co-location of gas-intensive industries, Justify large-scale on-site gas generation plants or centralized gas distribution networks. Such developments offer cost and logistics advantages for industrial gas suppliers, increasing opportunities for long-term contracts and economies of scale.

Key Market Challenges

High Capital Investment and Operational Costs

The industrial gases sector is highly capital-intensive, requiring substantial upfront investment in: Production facilities (e.g., air separation units, hydrogen plants), On-site generation systems, Cryogenic storage and distribution infrastructure, Specialty gas purification and blending systems.

Additionally, the sector faces ongoing operational expenses, including Energy consumption (particularly for cryogenic processes), Maintenance of pressurized equipment, Skilled labor for plant operation and safety compliance.

New entrants face high barriers to entry, limiting competition and innovation. Small and medium enterprises (SMEs) may struggle to afford tailored gas solutions. Projects with long payback periods deter investments in regions with uncertain industrial policies or weak infrastructure. In volatile energy markets, fluctuating electricity costs can impact production margins, especially for energy-intensive gases like oxygen and nitrogen.

Key Market Trends

Integration of On-Site and Modular Gas Generation Systems

There is a notable shift toward decentralized, on-site gas generation systems, especially in industries with continuous, high-volume gas requirements such as steel, glass, food & beverage, and pharmaceuticals. Instead of relying on traditional bulk

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deliveries, many industrial users are opting for custom-built or skid-mounted generation units that are installed directly at the point of use.

Reduces dependency on cryogenic transportation and cylinder logistics, mitigating delivery delays and supply chain risks. Offers real-time control over gas purity and volume, improving production consistency and minimizing wastage. Enables cost optimization over time, especially in regions with high logistics costs or limited gas infrastructure.

Leading industrial gas players like Linde and Air Liquide are investing heavily in build-own-operate (BOO) models for on-site plants, securing long-term supply contracts while giving clients flexibility and operational control. Additionally, startups and mid-sized companies are entering the market with modular PSA (pressure swing adsorption) or membrane-based solutions, fostering competition and innovation in gas delivery formats.

Key Market Players

- Air Liquide
- Air Products and Chemicals, Inc.
- INOX-Air Products Inc.
- Iwatani Corporation
- Linde PLC
- Messer SE & CO. KGaA
- SOL Group
- Strandmollen
- TAIYO NIPPON SANSO CORPORATION

Report Scope:

In this report, the 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 Product:

- o Oxygen
- o Nitrogen
- o Hydrogen
- o Carbon dioxide
- o Acetylene
- o Argon

-□ Industrial Gases Market, By Application:

- o Healthcare
- o Manufacturing
- o Metallurgy & Glass
- o Food & Beverages
- o Retail
- o Chemicals & Energy
- o Others

-□ Industrial Gases Market, By Distribution Channel:

- o On-site
- o Bulk (Liquid Gas Transport)
- o Cylinder (Merchant)

-□ Industrial Gases Market, By Region:

- o North America
 - ? United States
 - ? Canada
 - ? Mexico
- o Europe

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- ? France
- ? United Kingdom
- ? Italy
- ? Germany
- ? Spain
- o Asia-Pacific
- ? China
- ? India
- ? Japan
- ? Australia
- ? South Korea
- o South America
- ? Brazil
- ? Argentina
- ? Colombia
- o 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:

Global Industrial Gases market report 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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