Saudi Arabia Medical Gases Market By Type (Pure Gases, Gas Mixtures), By Application (Therapeutic, Diagnostics), By End User (Hospitals & Clinics, Ambulatory Care Centers, Homecare, Others), By Region, Competition, Forecast & Opportunities, 2019-2029F

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Report description:

Saudi Arabia Medical Gases Market was valued at USD 410.60 million in 2023 and is anticipated to witness an impressive growth in the forecast period with a CAGR of 6.92% through 2029. Medical gases are specialized gases that are produced, stored, and administered for various medical purposes. These gases are used in healthcare settings, such as hospitals, clinics, and home care, to support patient care, diagnosis, and treatment. Medical gases are subject to strict quality and safety standards to ensure they meet the specific requirements for medical applications. Oxygen is one of the most vital medical gases. It is used for oxygen therapy to support patients with respiratory conditions, including chronic obstructive pulmonary disease (COPD), asthma, and pneumonia. Oxygen is also used in emergency care, during surgical procedures, and in neonatal intensive care units (NICUs). Nitrous oxide, commonly known as "laughing gas," is used as an anesthetic agent during dental procedures and minor surgeries. It provides pain relief and helps patients relax. Medical air is a purified form of compressed air that is free from contaminants. It is used for breathing assistance, especially in critical care and surgical settings. Medical air is a source of oxygen for patients who need respiratory support. Carbon dioxide is used in medical applications for insufflation in minimally invasive surgical procedures and laparoscopy. It is also used in diagnostic tests to measure blood pH and carbon dioxide levels.
Advances in medical equipment and technology have led to the development of more sophisticated medical devices that rely on medical gases, such as anesthesia machines, ventilators, and diagnostic equipment. Like many countries, Saudi Arabia is experiencing an aging population. Elderly individuals are more prone to chronic illnesses, which require medical gases for management and treatment. Increasingly, specialized gases and gas mixtures are being used for diagnostic testing, laboratory analysis, and research purposes, expanding the market for these products. The rise of telemedicine and home healthcare services has increased the demand for medical gases outside of traditional healthcare settings, as patients may require oxygen therapy

and other treatments in their homes. The COVID-19 pandemic has underscored the importance of medical gases in emergency healthcare situations, prompting healthcare facilities to ensure a stable supply and storage of these gases.

Key Market Drivers

Advancements in Medical Technology

Modern technology has improved the production and purification of medical gases, ensuring that they meet the stringent quality standards required for patient safety. Automation and advanced filtration systems have enhanced the purity of gases like oxygen and nitrous oxide. High-tech monitoring and control systems are used to ensure the accurate and consistent delivery of medical gases in healthcare settings. These systems regulate gas flow, pressure, and concentration, minimizing the risk of errors and ensuring that patients receive the correct gas mixture. Advanced gas blending technology enables the precise mixing of different gases to create specific gas mixtures tailored to different medical applications. This is crucial in procedures like anesthesia, where the exact concentration of gases is essential.

Miniaturization of medical gas equipment, such as portable oxygen concentrators, has enabled greater mobility for patients who require oxygen therapy. These devices are lightweight, more efficient, and have longer battery life. Hospitals and clinics now use integrated gas delivery systems that incorporate advanced safety features. These systems include alarms, redundancy mechanisms, and emergency shut-off valves to ensure patient safety in the event of system failures. Advancements in telemedicine have allowed for remote monitoring of patients using medical gases. Healthcare providers can monitor patients' oxygen levels and adjust gas flow remotely, improving patient care and reducing the need for in-person visits. The design of gas cylinders has evolved to be more ergonomic, lightweight, and user-friendly, making them easier for healthcare professionals to handle and transport. Additionally, safety features like tamper-evident seals and integrated regulators have been incorporated into cylinder design.

The integration of digital health records with medical gas systems helps healthcare providers track and manage gas consumption, reorder supplies more efficiently, and monitor patient gas usage over time. Anesthesia machines have become more sophisticated, with advanced features for precise gas delivery and control. These machines are also equipped with safety measures to prevent gas leaks and ensure patient safety during surgeries. Ongoing research and development efforts have led to the discovery and use of novel gases and gas mixtures for specialized medical applications, such as xenon for neuroprotection and nitric oxide for respiratory therapies. Medical gas suppliers are increasingly adopting environmentally friendly production and distribution practices, such as using alternative energy sources and reducing greenhouse gas emissions. This factor will help in the development of the Saudi Arabia Medical Gases Market.

Rising Geriatric Population

Older adults are more likely to have chronic health conditions such as chronic obstructive pulmonary disease (COPD), heart disease, and diabetes. Many of these conditions may require the use of medical gases like oxygen for therapy and management. Aging is associated with an increased risk of respiratory diseases, including asthma and obstructive sleep apnea. These conditions often necessitate the use of oxygen therapy, continuous positive airway pressure (CPAP), or bilevel positive airway pressure (BiPAP) therapy, which rely on medical gases. Elderly individuals may require surgical interventions, and anesthesia is a crucial component of surgery. Anesthesia typically involves the use of medical gases, such as nitrous oxide and oxygen, which are administered to patients for safe and effective surgery.

Older adults may need long-term care, either in hospitals, nursing homes, or home healthcare settings. In these settings, the use of medical gases for patient comfort, pain management, and treatment is common. End-of-life care often involves palliative measures to manage pain and improve the quality of life for elderly patients. Medical gases, including oxygen and nitrous oxide, can be used to provide relief from distressing symptoms. The elderly population is more susceptible to emergencies, including heart attacks, strokes, and respiratory distress. Quick access to medical gases in emergency care situations is essential for stabilizing older patients. Aging is associated with degenerative conditions such as osteoporosis and arthritis, which can lead to fractures and the need for surgical interventions. Medical gases are used in anesthesia and postsurgical care.

Older adults often require diagnostic tests such as blood gas analysis to monitor their respiratory and metabolic health. This requires the use of medical gases for accurate test results. As individuals age, lung function tends to decline. This may result in lower oxygen levels in the blood, leading to the need for oxygen therapy to maintain proper oxygen saturation levels. The presence of geriatric care facilities, such as nursing homes and assisted living centers, contributes to the demand for medical

gases as these facilities provide comprehensive healthcare services to the elderly. This factor will pace up the demand of the Saudi Arabia Medical Gases Market.

Increasing Specialized Gases and Applications

Certain medical procedures and therapies require the use of specialized gases. For example, the use of nitrous oxide in dental procedures for sedation and pain management is a specialized application. Medical gases are used in diagnostic laboratories for various tests and analyses. Specialized gases are required for accurate measurements in tests like blood gas analysis and gas chromatography. Specialized medical gases, such as heliox (a mixture of helium and oxygen), are used for the management of specific respiratory conditions, including severe asthma and chronic obstructive pulmonary disease (COPD). Hyperbaric oxygen therapy (HBOT) is a specialized treatment that involves the administration of 100% oxygen at increased atmospheric pressure. It is used to treat conditions like decompression sickness, non-healing wounds, and certain infections.

Premature infants and newborns with respiratory distress may require specialized gases and precise gas mixtures for respiratory support in neonatal intensive care units (NICUs). During cardiac surgeries, medical gases like carbon dioxide are used in cardiopulmonary bypass procedures to maintain adequate oxygenation and carbon dioxide removal while the heart is temporarily stopped. Specialized gases are used in pulmonary function testing to assess lung capacity and function in patients with respiratory conditions or for preoperative assessments. Xenon is a specialized medical gas used for neuroprotection during certain medical procedures, such as cardiac surgery and neurosurgery, to reduce the risk of brain injury. Nitric oxide is used in the treatment of pulmonary conditions like persistent pulmonary hypertension of the newborn (PPHN) and acute respiratory distress syndrome (ARDS).

Certain specialized gases are used in radiology and imaging procedures to enhance image quality or aid in specific diagnostic techniques. Specialized inhaled anesthetics are used during surgery to induce and maintain anesthesia safely. These anesthetics are tailored to the patient's specific needs. Hyperbaric oxygen therapy and specialized gas mixtures may be used in wound care for non-healing wounds, diabetic foot ulcers, and other complex wound conditions. Specialized gases are used not only in human medicine but also in veterinary medicine for procedures and therapies specific to animals. This factor will accelerate the demand of the Saudi Arabia Medical Gases Market.

Key Market Challenges

Supply Chain Disruptions

The medical gases market often relies on a global supply chain for the production and distribution of gases and equipment. Disruptions in the supply chains of raw materials, manufacturing, and distribution, which can occur due to various factors such as geopolitical issues, natural disasters, and trade disputes, can lead to shortages and delays. Transportation is a critical component of the medical gases supply chain. Interruptions in transportation networks, whether due to regulatory restrictions, labor strikes, or disruptions like the COVID-19 pandemic, can lead to logistical problems and delays in the delivery of medical gases. Factors such as equipment failures, maintenance issues, and quality control problems can disrupt the production and manufacturing processes of medical gases, leading to reduced supply availability. Compliance with stringent regulations related to the production, storage, and transportation of medical gases is essential. Any deviations from these regulations, whether related to safety, labeling, or quality standards, can disrupt the supply chain.

Quality Control and Safety

The medical gases industry is subject to strict regulations and quality standards to ensure patient safety. Complying with these regulations requires continuous monitoring, testing, and adherence to good manufacturing practices, which can be resource intensive. Maintaining consistent quality throughout the entire supply chain, from production to delivery to the end-user, is challenging. Variations in the supply chain can result in quality discrepancies and safety concerns. Ensuring the production of high-purity medical gases and gas mixtures, with minimal impurities, is essential. Any deviations in production processes can compromise the quality of the gases. Medical gases must be handled, stored, and transported safely. Mishandling, improper storage conditions, or equipment failures can lead to safety risks, including leaks, fires, and explosions. The integrity of gas cylinders is crucial for safety. Cylinders must be inspected, maintained, and tested regularly to prevent potential leaks and accidents.

Key Market Trends

Environmental Concerns

The production and transportation of medical gases can generate greenhouse gas emissions, which contribute to climate change. Medical gas manufacturers are increasingly looking for ways to reduce these emissions by adopting more environmentally friendly production processes and transportation methods. Medical gas production facilities are exploring energy-efficient technologies and renewable energy sources to reduce their carbon footprint. This includes using energy-efficient equipment and incorporating solar or wind power into their operations. Some medical gas suppliers are adopting sustainability initiatives that aim to minimize waste, reduce energy consumption, and lower their environmental impact. This may include waste reduction programs and recycling efforts. Medical gas packaging, such as cylinders and containers, often results in waste. Efforts are being made to minimize packaging waste through reusable containers and recycling programs. Researchers are working on developing more environmentally friendly medical gases and gas mixtures that have a reduced impact on the environment. For example, there is growing interest in gases like xenon, which have a lower global warming potential. Efforts to reduce emissions in the transportation of medical gases are also a growing trend. Companies are exploring cleaner transportation options, such as electric and hybrid vehicles, to deliver medical gases more sustainably.

Segmental Insights

Type Insights

In 2023, the Saudi Arabia Medical Gases Market largest share was held by Gas Mixtures segment and is predicted to continue expanding over the coming years. Gas mixtures are used in various specialized medical applications that require specific gas combinations. These applications include respiratory therapy, diagnostic testing, and certain medical procedures. Gas mixtures may be tailored to meet the precise needs of these applications, making them essential in specific medical settings. Gas mixtures are commonly used in medical laboratories for diagnostic purposes. They may be used in gas chromatography, mass spectrometry, and other analytical techniques. Laboratories are crucial for medical research and diagnostic testing, contributing to the demand for gas mixtures. Gas mixtures are employed in various medical tests and analyses. For instance, they are used in blood gas analysis to measure the levels of oxygen and carbon dioxide in the blood. These tests are essential for assessing a patient's respiratory and metabolic health. Certain medical equipment, such as anaesthesia machines and ventilators, may require specific gas mixtures for their operation. These machines are commonly found in hospitals and clinics, and they rely on precisely blended gas mixtures for patient care.

End-User Insights

In 2023, the Saudi Arabia Medical Gases Market largest share was held by Hospitals & Clinics segment in the forecast period and is predicted to continue expanding over the coming years. Hospitals and clinics are the primary healthcare institutions in Saudi Arabia, especially in major cities like Riyadh and Jeddah. These institutions have a significant presence and are equipped to provide a wide range of medical services, including surgeries, emergency care, and specialized treatments. As a result, they have a higher demand for medical gases. Hospitals provide inpatient care to many patients. This often involves the use of medical gases for various purposes, such as anaesthesia, respiratory support, and surgical procedures. The inpatient nature of hospitals leads to a consistent and substantial need for medical gases. Hospitals house a variety of specialized medical equipment that requires medical gases for their operation. For example, anaesthesia machines, ventilators, and surgical equipment rely on a steady supply of medical gases, contributing to a higher demand. Hospitals are primary centres for emergency medical care. They must be prepared to handle critical cases, which often involve the immediate administration of medical gases, such as oxygen for patients with respiratory distress.

Regional Insights

The Northern & Central region dominated the Saudi Arabia Medical Gases Market in 2023. The Northern and Central regions of Saudi Arabia are home to major cities such as Riyadh and Jeddah, which are the country's healthcare hubs. These cities have a higher concentration of hospitals, clinics, and healthcare institutions compared to other regions. This concentration of healthcare facilities drives the demand for medical gases in these areas. The Northern and Central regions are more urbanized and densely populated than other areas in the country. Urban areas typically have higher healthcare needs and greater access to medical services, resulting in increased demand for medical gases. These regions are also economic centres with thriving commercial activities. Strong economies in these areas often correlate with better healthcare infrastructure and greater demand for medical gases. The Saudi government has made significant investments in healthcare infrastructure, particularly in major cities like Riyadh and Jeddah. This investment has led to the expansion and modernization of healthcare facilities, further boosting the demand for

medical gases.
Key Market Players
Saudi Industrial Gas Co.(Linde)
Air Products Middle East
Gulf Cryo Saudi for Industrial & Medical Gases
VitalAire Arabia
Southern Gas Company
Jubail Gas Plant Co, Ltd.
Jacko Gases Company
Abdullah Hashim Industrial Gases & Equipment Co. Ltd.
Aldakheel Industrial Gases Plant (DIGAS)
Al-Barrak Group Company
Report Scope:
In this report, the Saudi Arabia Medical Gases Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:
Saudi Arabia Medical Gases Market, By Type:
- Pure Gases
- Gas Mixtures

Saudi Arabia Medical Gases Market, By Application:
- Therapeutic
- Diagnostics

Saudi Arabia Medical Gases Market, By End-User:
- Hospitals & Clinics
- Ambulatory Care Centers
- Homecare
- Others

Saudi Arabia Medical Gases Market, By region:
- Eastern
- Western
- Northern & Central
- Southern

Competitive Landscape
Company Profiles: Detailed analysis of the major companies presents in the Saudi Arabia Medical Gases Market.
Available Customizations:
Saudi Arabia Medical 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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