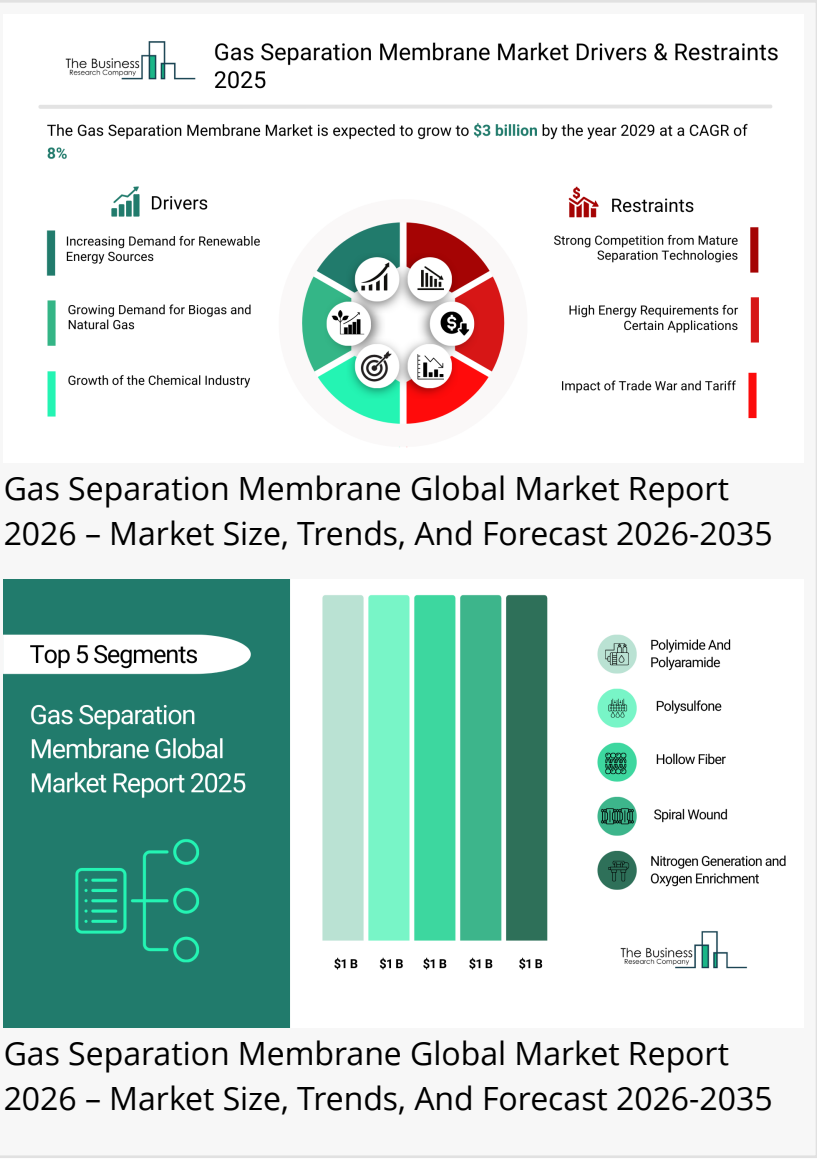
Gas Separation Membrane Market In 2029

The Business Research Company's Gas Separation Membrane Global Market Report 2026 – Market Size, Trends, And Forecast 2026-2035

LONDON, GREATER LONDON, UNITED KINGDOM, January 9, 2026 /EINPresswire.com/ -- Gas Separation Membrane Market to Surpass $3 billion in 2029. Within the broader Utilities industry, which is expected to be $8,842 billion by 2029, the Gas Separation Membrane market is estimated to account for nearly 0.03% of the total market value.



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Which Will Be the Biggest Region in the Gas Separation Membrane Market in 2029

Asia Pacific will be the largest region in the gas separation membrane market in 2029, valued at $1,331 million. The market is expected to grow from $883 million in 2024 at a compound annual growth rate (CAGR) of 9%. The strong growth can be attributed to the growth of the chemical industry and rising demand for renewable energy sources.

Which Will Be The Largest Country In The Global Gas Separation Membrane Market In 2029?

China will be the largest country in the gas separation membrane market in 2029, valued at $640 million. The market is expected to grow from $428 million in 2024 at a compound annual growth rate (CAGR) of 8%. The strong growth can be attributed to the chemical industry and rising demand for renewable energy sources.

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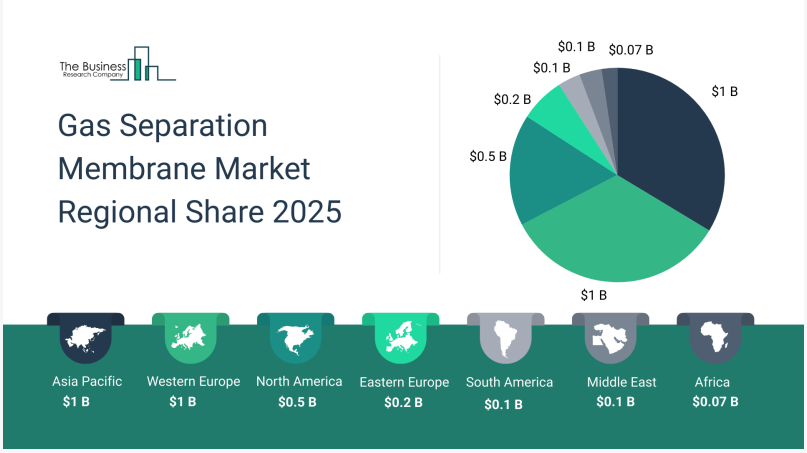

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What will be Largest Segment in the Gas Separation Membrane Market in 2029?

The gas separation membrane market is segmented by product type into polyimide and polyaramide, polysulfone, cellulose acetate and other products. The polyimide and polyaramide market will be the largest segment of the gas separation membrane market segmented by product type, accounting for 44% or $1,312 million of the total in 2029. The polyimide and polyaramide market will be supported by their high thermal and chemical stability, excellent gas selectivity and permeability, widespread use in high-temperature and harsh industrial environments, growing adoption in natural gas processing and hydrogen recovery applications, increasing demand for lightweight and durable membrane materials, advancements in polymer engineering enhancing membrane performance, and rising investments in clean energy and carbon capture technologies.

The gas separation membrane market is segmented by module into hollow fiber, spiral wound, plate and frame and other modules. The hollow fiber market will be the largest segment of the gas separation membrane market segmented by module, accounting for 58% or $1,740 million of the total in 2029. The hollow fiber market will be supported by its high surface area-to-volume ratio enabling efficient gas transfer, compact design suitable for large-scale industrial operations, widespread use in nitrogen generation and air dehydration applications, advancements in polymer materials enhancing permeability and mechanical strength, ease of module fabrication and scalability, low maintenance and energy requirements, and growing adoption in oil & gas, chemical, and food processing industries.

The gas separation membrane market is segmented by application into nitrogen generation and oxygen enrichment, hydrogen recovery, carbon dioxide removal, vapor/gas separation, vapor/vapor separation, air dehydration and other applications. The nitrogen generation and oxygen enrichment market will be the largest segment of the gas separation membrane market segmented by application, accounting for 31% or $941 million of the total in 2029. The nitrogen generation and oxygen enrichment market will be supported by increasing demand for on-site gas generation systems across industrial and medical sectors, rising need for high-purity nitrogen and oxygen in food packaging, metal fabrication, and healthcare applications, cost savings and operational efficiency offered by membrane-based systems, growing adoption of compact and energy-efficient membrane modules, technological advancements improving selectivity and throughput, expanding use in aerospace and electronics manufacturing, and

shifting preference toward sustainable and maintenance-free gas separation solutions.

The gas separation membrane market is segmented by end use industry into chemical, oil and gas industry, electric power, food and beverages and other end use industry. The oil and gas industry market will be the largest segment of the gas separation membrane market segmented by end use industry, accounting for 38% or $1,140 million of the total in 2029. The oil and gas industry market will be supported by growing need for efficient natural gas sweetening and CO removal, rising adoption of membrane technologies for hydrogen recovery and nitrogen rejection, increasing emphasis on energy-efficient and compact gas treatment systems, advancements in high-pressure and high-temperature membrane designs, expanding use in offshore and remote installations, and stringent environmental regulations driving demand for low-emission gas processing solutions.

What is the expected CAGR for the Gas Separation Membrane Market leading up to 2029?
The expected CAGR for the gas separation membrane market leading up to 2029 is 8%.

What Will Be The Growth Driving Factors In The Global Gas Separation Membrane Market In The Forecast Period?
The rapid growth of the global gas separation membrane market leading up to 2029 will be driven by the following key factors that are expected to reshape gas purification efficiency, membrane performance standards, and next-generation manufacturing workflows worldwide.

Increasing Demand For Renewable Energy Sources - The increasing demand for renewable energy sources will become a key driver of growth in the gas separation membrane market by 2029. As nations intensify efforts to decarbonize their energy systems, demand is growing for technologies that enable efficient gas purification, recovery, and conversion within renewable energy processes. Gas separation membranes are crucial in applications such as biogas upgrading, hydrogen production, and carbon capture, all key components of sustainable energy generation. Their capability to selectively separate gases with low energy use and minimal environmental impact makes them highly suitable for renewable energy initiatives. Moreover, the modular and scalable design of membrane systems supports flexible implementation in both distributed and small-scale renewable energy installations. As a result, the increasing demand for renewable energy sources is anticipated to contributing to a 1.5% annual growth in the market.

Growing Demand For Biogas And Natural Gas - The growing demand for biogas and natural gas will emerge as a major factor driving the expansion of the gas separation membrane market by 2029. Membrane technology plays a vital role in upgrading raw biogas into biomethane by efficiently removing carbon dioxide and other impurities, enabling its use in natural gas grids or as a vehicle fuel. Likewise, in natural gas processing, membranes are employed to separate hydrogen, carbon dioxide, and hydrocarbons, thereby improving fuel quality and overall efficiency. As industries and utilities continue to adopt cleaner energy sources to achieve emission reduction targets, the need for reliable and energy-efficient gas separation solutions is

anticipated to grow significantly. Consequently, the growing demand for biogas and natural gas capabilities is projected to contributing to a 1.0% annual growth in the market.

Growth Of The Chemical Industry - The growth of the chemical industry will serve as a key growth catalyst for the gas separation membrane market by 2029. Membrane technologies are integral for the separation and recovery of gases such as hydrogen, nitrogen, oxygen, and carbon dioxide—key components in synthesis, polymerization, and refining processes. As the chemical sector focuses on enhancing process efficiency and sustainability, gas separation membranes will become increasingly important for minimizing waste, optimizing gas recovery, and reducing energy use. Their versatility under diverse process conditions also enables chemical manufacturers to replace or supplement conventional separation systems with more energy-efficient and cost-effective solutions. Therefore, this growth of the chemical industry is projected to supporting to a 0.8% annual growth in the market.

Environmental Consciousness In Manufacturing - The environmental consciousness in manufacturing will become a significant driver contributing to the growth of the gas separation membrane market by 2029. Companies across various industries are facing increasing pressure to cut emissions, reduce waste, and implement sustainable production methods. Gas separation membranes support these objectives by providing energy-efficient solutions for gas purification, recycling, and emission control. Unlike traditional separation technologies, membrane systems operate without hazardous solvents and consume less energy, resulting in reduced carbon emissions. Consequently, they are becoming the preferred option for manufacturers striving to meet stringent environmental regulations and achieve corporate sustainability goals. Consequently, the environmental consciousness in manufacturing strategies is projected to contributing to a 0.5% annual growth in the market.

Access the detailed Gas Separation Membrane Market report here: https://www.thebusinessresearchcompany.com/report/gas-separation-membrane-global-market-report

What Are The Key Growth Opportunities In The Gas Separation Membrane Market in 2029?
The most significant growth opportunities are anticipated in the hollow fiber gas separation membrane market, polyimide and polyaramide gas separation membrane market, oil and gas separation membrane market and nitrogen generation, oxygen enrichment and gas separation membrane market. Collectively, these segments are projected to contribute over $2 billion in market value by 2029, driven by rising demand for energy-efficient gas processing, advancements in membrane durability and selectivity, and expanding applications across industrial gas purification, petrochemical processing, and environmental management. This surge reflects the accelerating adoption of next-generation membrane technologies that enable cost-effective, high-performance gas separation, fuelling transformative growth within the broader gas separation membrane industry.

The hollow fiber gas separation membrane market is projected to grow by $564 million, the

polyimide and polyaramide gas separation membrane market by $445 million, the oil and gas separation membrane market by $346 million and the nitrogen generation, oxygen enrichment and gas separation membrane market by $284 million over the next five years from 2024 to 2029.

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