

Global and European Gas Separation Membrane Market Outlook 2025–2035

The gas separation membrane market is projected to grow from USD 2.7 billion in 2025 to USD 5.5 billion by 2035, at a CAGR of 7.3%.

NEWARK, DE, UNITED STATES,
November 21, 2025 /

EINPresswire.com/ -- The global [Gas Separation Membrane Market](#) is

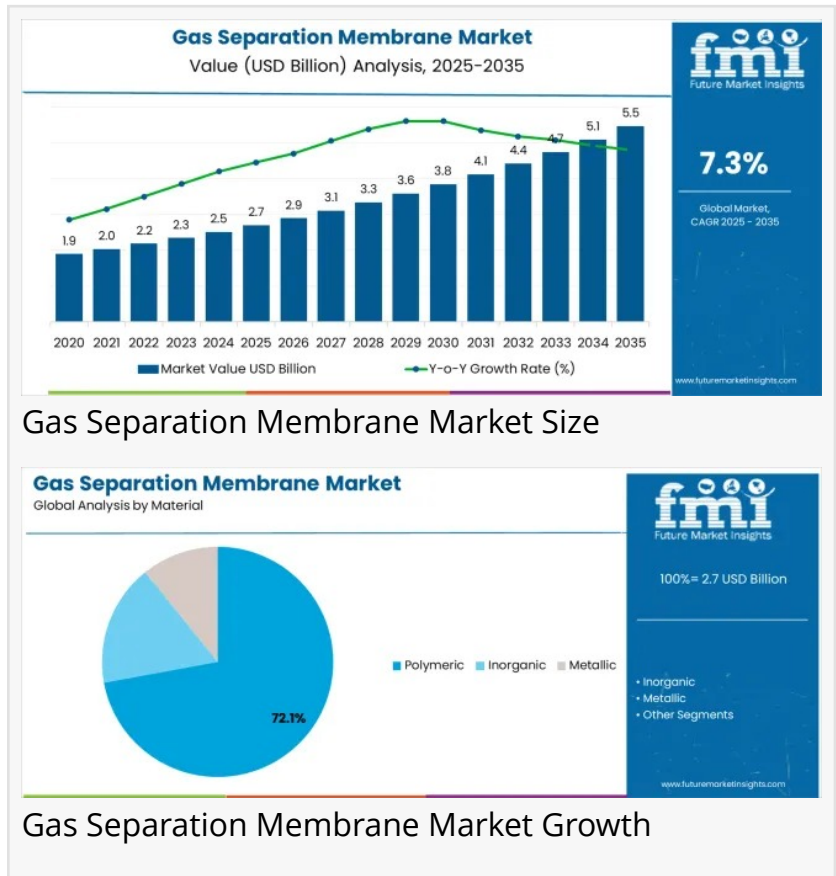
entering a decade of accelerated expansion, projected to surge from USD 2.7 billion in 2025 to USD 5.5 billion by 2035, marking a 103.7% growth and a steady 7.3% CAGR. This growth trajectory highlights rising demand for industrial decarbonization, advanced hydrogen purification, and energy-efficient gas processing technologies across Asia-Pacific (APAC), Europe, the United States, and Saudi Arabia—four regions emerging as the most influential hubs shaping global membrane deployment.

Market Growth Momentum: 2025–2035

Between 2025 and 2030, the market is set to grow from USD 2.7 billion to USD 3.7 billion, contributing USD 1.0 billion to total decade growth. This early expansion is fueled by:

- Accelerated development of clean hydrogen value chains
- Large-scale adoption of carbon capture and CO₂ separation
- Widening biogas upgrading programs
- Increased penetration of polymeric membranes in chemical and petrochemical processing

From 2030 to 2035, the market will add another USD 1.8 billion, driven by the integration of



advanced membrane materials, expansion of manufacturing facilities, and adoption of high-selectivity membranes for emerging industrial applications.

Subscribe for Year-Round Insights □ Stay ahead with quarterly and annual data updates:
<https://www.futuremarketinsights.com/reports/sample/rep-gb-5513>

Segment Leadership: Polymeric & Hollow Fiber Structures Dominate

The industry continues to be shaped by strong preferences for polymeric membranes, which account for 72.1% of global demand. Among these, polyimide membranes (36.0% share) lead due to superior thermal stability, while polysulfone (22.0%) remains preferred for cost-effective hydrogen and nitrogen separation.

Hollow fiber membranes, representing 60.2% market share, dominate due to their high surface-area density, compact modular design, and suitability for large-scale gas separation systems used in refineries, hydrogen recovery units, biogas plants, and petrochemical clusters.

Application Hotspots: CO₂ and Hydrogen Separation Drive Adoption

Global adoption is led by:

CO₂ separation (27.5%) — essential for carbon capture, natural gas sweetening, and biogas upgrading

Hydrogen separation (23%) — propelled by clean fuel production, refinery hydrogen recovery, and green hydrogen programs

Nitrogen (20.8%) and oxygen separation (10.4%) — widely used in food packaging, pharmaceuticals, electronics, and medical oxygen systems

Collectively, nitrogen and oxygen separation represent 31.2% of global membrane applications, with growing demand in distributed onsite gas generation.

Regional Market Dynamics

APAC: Fastest-Growing Global Market (China 8.2% CAGR, India 7.8%)

APAC leads global momentum, driven by rapid industrialization, energy transition policies, and accelerating hydrogen strategies in China, India, South Korea, and Japan. China's dual-carbon targets and India's National Green Hydrogen Mission are particularly influential, positioning the region as the largest deployment hub for membrane-based hydrogen and CO₂ separation systems.

Europe: Strong Adoption for Emissions Reduction (6.5% CAGR)

Europe maintains a leading position in biogas upgrading, renewable gas integration, and membrane-based CO₂ capture.

Germany (29% share of Europe) drives deployment through its biogas upgrading ecosystem and hydrogen strategy.

France, the UK, Italy, and Spain continue to scale carbon capture and renewable gas projects aligned with EU Fit-for-55 mandates.

United States: Regulatory & Hydrogen Infrastructure Expansion (7.5% CAGR)

Federal and state-level policies supporting methane reduction, CO₂ capture, and hydrogen infrastructure are accelerating membrane adoption in natural gas processing, refinery decarbonization, and industrial emissions control. DOE-funded hydrogen hubs are creating new opportunities for membrane-based hydrogen purification.

Saudi Arabia: Vision 2030 Accelerates Blue & Green Hydrogen (7.0% CAGR)

Saudi Arabia's massive investments in energy diversification, petrochemical expansion, and clean hydrogen export capacity are driving rapid adoption of advanced membrane systems. Industrial cities including Jubail, Yanbu, and Ras Al-Khair are integrating membrane technologies into refining, synthetic gas processing, and CO₂ capture networks.

Key Growth Pathways (Opportunity Map 2025–2035)

Polymeric dominance (USD 3.8–4.2 billion opportunity) supported by next-generation polymer innovations

Hollow fiber leadership (USD 3.2–3.6 billion) for high-capacity industrial systems

CO₂ separation (USD 1.4–1.7 billion) as carbon neutrality commitments intensify globally

Hydrogen separation (USD 1.2–1.5 billion) supported by clean energy transition programs

High-growth APAC expansion (USD 1.8–2.3 billion) led by China and India

Advanced materials innovation (USD 0.8–1.2 billion) driven by mixed-matrix and ceramic-polymer hybrid technology

Nitrogen & oxygen separation (USD 1.6–2.0 billion) for industrial and medical applications

Industry Challenges and Technology Shift

The market faces operational complexities, including:

Variations in environmental regulations for membrane cleaning chemicals

Cross-functional conflicts between process, environmental, and energy management teams

Need for advanced training in membrane operations, polymer chemistry, and pressure differential systems

Despite these hurdles, innovation in hybrid membranes, nano-composites, and ceramic technologies continues to enhance durability, selectivity, and high-temperature performance.

Gain complete access to the report for extensive coverage of market forecasts, competitive benchmarking, and evolving industry trends!

<https://www.futuremarketinsights.com/checkout/5513>

Competitive Landscape

Global leadership is anchored by:

Air Products and Chemicals Inc.

Air Liquide Advanced Separations LLC

Honeywell UOP Separex

Membrane Technology and Research Inc. (MTR)

UBE Industries Ltd.

Evonik Industries AG

Parker-Hannifin Corporation

Fujifilm Manufacturing Europe B.V.

DIC Corporation

Schlumberger Ltd.

These companies are strengthening portfolios through advanced polymer development, modular system design, and integration with refinery and hydrogen processing infrastructure.

Exploring Insights Across Emerging Global Markets:

Tricalcium Citrate Market: <https://www.futuremarketinsights.com/reports/tricalcium-citrate-market>

Chemical Detector Market: <https://www.futuremarketinsights.com/reports/chemical-detector-market>

Perchloroethylene Market: <https://www.futuremarketinsights.com/reports/global-perchloroethylene-market>

Leak Detection Dyes Market: <https://www.futuremarketinsights.com/reports/leak-detection-dyes-market>

About Future Market Insights (FMI)

Future Market Insights, Inc. (FMI) is an ESOMAR-certified, ISO 9001:2015 market research and consulting organization, trusted by Fortune 500 clients and global enterprises. With operations in

the U.S., UK, India, and Dubai, FMI provides data-backed insights and strategic intelligence across 30+ industries and 1200 markets worldwide.

Why Choose FMI: Empowering Decisions that Drive Real-World Outcomes:

<https://www.futuremarketinsights.com/why-fmi>

Sudip Saha

Future Market Insights Inc.

+18455795705 ext.

[email us here](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/869135431>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2025 Newsmatics Inc. All Right Reserved.