

## **Membrane Chromatography - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

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### **Report description:**

The Membrane Chromatography Market size is estimated at USD 0.35 billion in 2025, and is expected to reach USD 0.73 billion by 2030, at a CAGR of 16% during the forecast period (2025-2030).

Membrane chromatography is a well-established bioprocessing technology routinely used to capture large particles such as viruses and viral vectors and in polishing steps for removing DNA, host cell protein impurities (HCP), and viruses. The rising demand for biopharmaceuticals and increasing regulatory scrutiny on the cleaning validation of downstream purification processes are the major factors for the growth of this market. For instance, in December 2022, Shimadzu collaborated with the University Medical Center Gottingen, Germany, to develop new clinical laboratory methods using liquid chromatography-mass spectrometry for therapeutic drug monitoring (TDM) analysis. Thus, such collaborations are expected to fuel market growth during the forecast period.

Also, the pharmaceutical industry's growing research and development spending to develop advanced membrane chromatography systems and the adoption of such products across the pharmaceutical and biopharmaceutical industries is anticipated to increase, propelling market growth. For instance, Merck & Co. invested USD 30.5 billion in R&D during FY 2023, representing 50.8% of the total revenue. Notably, a significant portion of the funding is dedicated to partnerships and acquisitions, highlighting a focus on collaboration and accelerating drug development. Hence, rising R&D spending by pharma companies creates a surge in complex research, driving demand for membrane chromatography during the manufacturing process of drugs during the forecast period.

Moreover, the increase in R&D spending in the biopharmaceutical industry aided in the growth of the market. For example, according to the Pharmaceutical Industry and Global Health Facts and Figures 2022 report, the biopharmaceutical industry's

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annual research and development spending was 8.1 times greater than other industries. According to the same source, over USD 202 billion is estimated to be spent worldwide on biopharmaceutical research and development in 2024. Thus, with high R&D spending, the development of new drugs will increase, ultimately fueling the adoption of membrane chromatography systems and consumables across biopharmaceutical industries boosting market growth.

Thus, the demand for membrane chromatography technologies is propelled by the development of new drugs, a growing need for high purity, technological advancements, and an emphasis on efficient upstream processing across the biopharmaceutical industry. However, the limited use of membrane chromatography in large-scale manufacturing is expected to restrain the growth of the market during the forecast period.

## Membrane Chromatography Market Trends

### Ion Exchange Membrane Chromatography is Expected to Hold a Significant Share of the Market

Ion exchange chromatography (IC) is a process that separates ions and polar molecules based on their affinity for the ion exchanger. It works on almost any charged molecule, including large proteins, small nucleotides, and amino acids.

The segment is anticipated to witness significant growth during the forecast period owing to increasing new drug approvals and new product launches by the key players.

The rising new drug approvals, including biologics, for the treatment of various chronic diseases are anticipated to fuel the adoption of ion-exchange chromatography systems to purify proteins and other biomolecules. For instance, as per data published by the Center for Drug Evaluation and Research (CDER) in January 2024, about 55 new drugs were approved in 2023, marking a nearly 50% increase compared to 2022. Each new drug candidate requires a robust purification process to ensure its safety and efficacy. With more drugs being approved, the demand for efficient and scalable purification techniques like ion exchange membrane chromatography will rise, boosting the segment growth.

Ion exchange membrane chromatography has wide applications in antibody polishing and virus purification owing to its advantages, including scalability, robustness, disposable nature, high throughput, and rapid processing. Thus, the advantages offered by ion exchange chromatography are anticipated to fuel its adoption across the biopharmaceutical industry, propelling segment growth.

Also, the growing number of new product launches supporting wide applications in drug development and purification is another factor bolstering the market growth. For instance, in December 2022, CD Bioparticles launched a range of ion exchange chromatography resins with enhanced loading capacity, ultra-high resolution, and mechanical solid strengths, suitable for the purification of small molecular weight molecules, covering small proteins, polypeptides, nucleic acids, and antibiotics.

Moreover, the membrane chromatography market is receiving a significant boost from a surge in R&D expenditure in the United States. For instance, the National Science Foundation (NSF) data published in January 2024 showed a notable surge in the United States research and development (R&D) expenditure, boosting the development of the membrane chromatography market. This is expected to drive the demand for ion exchange membrane chromatography systems and consumables, augmenting segment growth.

Thus, the segment is expected to grow during the forecast period due to increasing drug approvals, product launches, and R&D expenditures.

### North America is Expected to Hold a Significant Market Share of the Membrane Chromatography Market

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North America is expected to witness significant growth during the forecast period, owing to the rising burden of chronic diseases boosting the demand for novel drugs in the market and the presence of well-structured and developed healthcare systems. This region also promotes pharmaceutical research and development and has high healthcare expenditures. As a result of these policies, many companies are encouraged to operate in this region.

The rising number of clinical trials conducted by the biopharmaceutical and pharmaceutical companies is expected to fuel the adoption of membrane chromatography, bolstering the market growth. For instance, a report by the National Library of Medicine (NLM) indicates that there were 20,465 clinical trials actively recruiting participants across the United States in 2023. As promising drug candidates advance through the clinical phase, the demand for membrane chromatography systems and consumables for reliable and scalable purification propels market growth.

Additionally, investment in biopharmaceuticals will create a strong demand for efficient and reliable purification technologies like membrane chromatography over the coming years. For instance, Johnson & Johnson (J&J) increased its investment in R&D for 2023, allocating USD 15.09 billion. Notably, the United States boasts the most conducive environment for pharmaceutical research, development, and commercialization, characterized by minimal market barriers.

Moreover, the incidence of diseases such as cancer, cardiovascular diseases, and diabetes is increasing, further boosting the demand for novel drugs in the market. For instance, as per the Canadian Cancer Statistics released in November 2023, an estimated 239,100 Canadians were diagnosed with cancer in 2023. The report further highlighted the fact that roughly 1 in 4 Canadians are expected to succumb to the disease. The rising incidence of diseases like cancer and cardiovascular diseases fuels the demand for new biopharmaceuticals, propelling the adoption of membrane chromatography as a critical tool for the purification of drugs.

Moreover, the rising launches of innovative membrane chromatography systems and consumables contribute significantly to the market growth. For instance, in May 2024, AGC Biologics' research and development team made a significant breakthrough in the field of monoclonal antibody (mAb) purification. The focus is on single-use membrane chromatography, a revolutionary technology poised to disrupt the traditional protein A purification process. This creates substantial cost savings and helps bring therapies to the market, thereby driving the market's growth.

Thus, factors such as increasing research and development (R&D) by pharmaceuticals, demand for drug approvals, and product innovation by key players are contributing to the faster growth of the membrane chromatography market and are expected to boost the market during the forecast period.

Membrane Chromatography Industry Overview

The membrane chromatography market is moderately consolidated in nature due to the majority of the global key players. Market leaders with more funds for research and better distribution systems have established their position in the market. Moreover, Asia-Pacific is witnessing the emergence of some small players due to the rise of awareness. This has also helped the market grow. Some key market players are 3M, Thermo Fisher Scientific Inc., Merck KGaA, Danaher Corporation, and Sartorius AG.

Additional Benefits:

- <li> The market estimate (ME) sheet in Excel format </li>
- <li> 3 months of analyst support </li>

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