

# **Chromatography Resin Market by type (Natural, Synthetic, Inorganic Media), Technique (Ion Exchange, Affinity, Hydrophobic Interaction, Size Exclusion, Mixed Mode), Application (Pharmaceutical & Biotechnology, FnB), Region - Global Forecasts to 2028**

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## **Abstracts**

The chromatography resin market is estimated to grow to USD 4.1 billion by 2028 from USD 2.8 billion in 2023, at a CAGR of 8.2%. Chromatography has emerged as a prominent analytical technique for assessing the quality of processed food products and diverse beverages. According to the World Health Organization, the issue of food contamination has gained significant global attention, with the consumption of contaminated food contributing to over 200 different diseases annually. To ensure precise analysis of food products, methods such as liquid chromatography/mass spectrometry/mass spectrometry (LC/MS/MS) and gas chromatography/mass spectrometry (GC/MS) are gaining widespread recognition. This increasing recognition of accurate analytical methods is a key driver behind the growth of the chromatography resin market.

“Synthetic resins are estimated to be the fastest growing chromatography resin type of chromatography resin market during the forecast period. ”

Various types of synthetic or manmade polymers, including polyacrylamide, polymethacrylate, and polystyrene, serve as essential media in diverse chromatography applications. Additionally, synthetic copolymers like polystyrene divinylbenzene and methacrylate copolymers are commonly employed as base matrices in chromatography. These resins possess favorable attributes such as high mechanical stability and

resistance to a wide pH range, making them well-suited for laboratory and analytical-scale experiments. These compelling characteristics contribute to the growing demand and market expansion for synthetic resins in chromatography applications. In fact, recent market data indicates a significant rise in the adoption of synthetic resins due to their advantageous properties, further bolstering their prominence in the field of chromatography.

“Mixed mode is projected to be the fastest growing chromatography technique, in terms of value.”

Mixed-mode chromatography is an advanced chromatographic technique that incorporates multiple types of interactions between ligands and molecules within an analyte. Its widespread application is observed in the purification of mammalian antibodies and recombinant proteins, making it highly valuable in the biopharmaceutical industry. This technique has garnered significant attention due to its ability to achieve enhanced purification compared to single interaction-based chromatography methods. With mixed-mode chromatography, ligands with different functionalities are combined, allowing for simultaneous interactions such as hydrophobic interactions, ion exchange, and affinity interactions. These multiple interaction modes enable a more comprehensive and precise purification process, leading to higher purity and yield of the target molecules.

“Pharmaceutical & Biotechnology is estimated to be the largest application in chromatography resin market, in terms of value, in 2022.”

Chromatography resins play a vital role in the pharmaceutical industry, with pharmaceutical manufacturers and related testing service providers being key end-users of these resins. The utilization of analytical instrumentation powered by chromatography is widespread across multiple stages of drug discovery, development, pharmacokinetics, toxicology, clinical studies, and manufacturing processes. It finds application in tasks such as drug stability testing, qualitative and quantitative pharmaceutical analysis, and the quantification of chemical components in drugs. Chromatography is crucial for analyzing solvents used in pharmaceutical manufacturing, ensuring their quality and purity. The industry's increasing focus on research and development, particularly within biotechnology companies, is anticipated to drive the demand for chromatography, consequently boosting the market for chromatography resin. The growing expenditure on R&D activities is expected to lead to expanded utilization of chromatography techniques, as they contribute to accurate analysis, quality control, and regulatory compliance in the pharmaceutical sector.

“Europe is projected to be the second-largest chromatography resin market, in terms of value, in 2022.”

In terms of value, Europe emerged as the second-largest market for chromatography resin in 2022. Germany holds a prominent position as the key market for chromatography resins within Europe. Additionally, countries like Austria and Switzerland also exhibit considerable market significance in the region. The presence of numerous pharmaceutical manufacturers and research organizations in these countries has a notable influence on the growth of the chromatography resin market in Europe. The demand for chromatography resins is driven by the requirements of these industries, as they rely on advanced separation and purification techniques for their analytical and manufacturing processes.

By Company Type: Tier 1 - 30%, Tier 2 - 43%, and Tier 3 - 27%

By Designation: Director Level - 37%, C-Level - 23%, and Others - 40%

By Region: North America - 32%, Europe - 28%, Asia Pacific -21%, South America - 12%, Middle East & Africa - 7%

The key players profiled in the report include Bio-Rad Laboratories Inc. (US), Merck KGaA (Germany), Danaher Corporation (US), Tosoh Corporation (Japan), Bio-Works Technologies AB (Sweden), Avantor Performance Materials, Inc. (US), Mitsubishi Chemical Corporation (Japan), among others.

## Research Coverage

This report segments the market for chromatography resin based on type, technique, application, and region and provides estimations for the overall market size across various regions. A detailed analysis of key industry players has been conducted to provide insights into their business overviews, products & services, and key strategies associated with the market for chromatography resin.

## Reasons to Buy this Report

This research report is focused on various levels of analysis — industry analysis (industry trends), market share analysis of top players, and company profiles, which

together provide an overall view of the competitive landscape, emerging and high-growth segments of the chromatography resin market; high-growth regions; and market drivers, restraints, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Increasing pharmaceutical & biopharmaceutical R&D events, Growing demand for therapeutic antibodies, Rising demand for biosimilars, Rising concern for food safety, Collective use of liquid chromatography-mass spectrometry in analytics & research), restraints (Deficiency of adequate skilled professionals), opportunities (Growth of contract manufacturing organizations (CMOs) and contract research organizations (CROs) in the pharmaceutical industry, Rising demand for disposable pre-packed columns, Increasing demand of chromatography in drug development & omics research, Use of chromatography in proteomicsthe is growing) prompting the growth of the chromatography resins market

**Market Penetration:** Comprehensive information on chromatography resin offered by top players in the global market

**Market Development:** Comprehensive information about lucrative emerging markets — the report analyzes the markets for chromatography resin across regions.

**Market Diversification:** Exhaustive information about new products, untapped regions, and recent developments in the global chromatography resin market

**Competitive Assessment:** In-depth assessment of market shares, strategies, products, and manufacturing capabilities of leading players in the chromatography resin market

**Impact of Recession on the chromatography resins market.**

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\*Details on Business Overview, Products offered, Recent Developments, Product launches, Deals, MnM view, Key strengths, Strategic choices, Weakness and competitive threats might not be captured in case of unlisted companies

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## About

The report “Chromatography Resin Market by Application (Pharmaceutical, Food, Water & Environmental Analysis, Drug Discovery, Diagnostics), by Techniques (IEC, Affinity, HIC, SEC & Mixed) & by Type (Natural & Synthetic) — Trends & Forecast to 2018.”, defines and segments the global chromatography resins market with analysis and forecasting of the global revenue and consumption.

The global chromatography resin market will grow from 1.2 billion in 2012 to 1.9 billion by 2018, at a CAGR of 7.2% from 2013 to 2018.

These resins are used in separation and purification of proteins and other biomolecules in pharmaceutical and biotechnology, food production, and water and environmental analysis. In industrial scale, pharmaceutical and biotechnology is the largest consumer of chromatography resins followed by food production.

The top companies in the chromatography resin business includes:

GE Healthcare Life Sciences (U.S.)

Bio-Rad Laboratories Inc. (U.S.)

Merck KGaA (U.S.)

Tosoh Corporation (Japan)

Pall Corporation (U.S.)

Life Technologies Corporation (U.S.). Etc...

North America has the highest market share of chromatography resins in terms of both consumption and revenue followed by Europe. The revenue from sales of resins in food production industry in North America is expected to record highest CAGR in the next five years. However, in Asia-Pacific the chromatography resin consumption shows huge



potential to grow in the pharmaceutical sector. The growing biosimilars market in emerging economies such as South Korea, India and China is expected to drive the chromatography resins market in the coming decade. Chromatography resins industry is highly consolidated and organic expansion was the preferred growth strategy adopted by the leading players.

The report also identifies different types of resins and their market shares based on the technique they are used in. Ion exchange resins are the highest consumed chromatography resins. However, in terms of revenue, affinity chromatography resins occupy the major market share; this can be attributed to the high costs of affinity resins, protein A resins in particular. The report also focuses on market share analysis, and market metrics such as drivers, restraints, opportunities, and winning imperatives.

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