

## **Single-use Bioreactor - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

Market Report | 2025-08-01 | 114 pages | Mordor Intelligence

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### **Report description:**

Single-use Bioreactor Market Analysis

The single-use bioreactor market size generated USD 4.74 billion in 2025 and is on course to reach USD 8.28 billion by 2030, reflecting a 14.99% CAGR. Growth hinges on biopharma's preference for flexible, rapidly deployable facilities, stringent regulatory expectations for sterility, and the surge in advanced therapies that demand smaller batch runs. Capacity additions by leading CDMOs, rising vaccine programs structured around platform technologies, and investors' appetite for modular plants strengthen the revenue outlook. Cost efficiency over stainless-steel systems, lower contamination risk, and shorter turnaround times continue to widen adoption. Sustainability initiatives around bio-based films and circular-economy recycling schemes also influence procurement strategies.

Global Single-use Bioreactor Market Trends and Insights

Growing Biologics Manufacturing Demand

Monoclonal antibody sales surpassed USD 204 billion in 2024, compelling manufacturers to add disposable capacity that handles high-titer, multiproduct portfolios. Fujifilm Diosynth's global USD 8 billion program is installing multiple 20,000 L lines that marry throughput with contamination control. Personalized therapies deepen the need for quick changeovers that single-use formats enable within days instead of weeks, while maintaining GMP sterility. CDMOs seize the opportunity by offering turnkey capacity, which in turn accelerates project timelines for small and mid-sized biotech firms.

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## Cost And Flexibility Advantages of Single-Use Systems

Disposable platforms eliminate reactor cleaning, validation, and capital-intensive piping, trimming project start-up by 12-18 months in greenfield plants. AGC Biologics doubled Copenhagen's output and added 150 drug-product batches per year after migrating to 2,000 L single-use trains. Rentschler's all-disposable facility documented a 40% fixed-cost reduction alongside a 20% capacity lift. Cost advantages remain most compelling during clinical and early commercial phases, but mixed-model hybrid plants keep single-use reactors on line for late-stage campaigns that demand agility.

## High Recurring Consumable Expenditure

Bags, filters, and tubing can exceed stainless-steel operating expenses in high-volume, single-product plants. Economic inflection often appears beyond 20,000 L annual utilization, steering manufacturers toward hybrid or stainless-steel assets for steady commercial runs. Tooling vendors now propose recycling initiatives and re-processable polymers, yet savings remain marginal against the consumable bill of materials. As drug volumes rise, CFOs reevaluate total cost of ownership, occasionally reversing earlier disposable migrations.

Other drivers and restraints analyzed in the detailed report include:

Rising Contract Manufacturing Outsourcing / Accelerated Vaccine Development Timelines / Regulatory Scrutiny of Extractables and Leachables /

For complete list of drivers and restraints, kindly check the Table Of Contents.

## Segment Analysis

Single-use bioreactor systems delivered 41.45% of 2024 revenue, solidifying their status as the backbone of the single-use bioreactor market. Filtration assemblies, however, record the fastest 16.65% CAGR as regulators heighten scrutiny over particulate and viral clearance. This momentum reflects broader integration of upstream and downstream disposables into closed, sterile trains. Media bags post steady gains, enabling ready-made medium formulation that trims lead times by weeks. Sensors migrate from reusable probes to pre-calibrated single-use formats that embed directly in the reactor bag, enhancing automation. Asahi Kasei's Planova FG1 filter, seven-times more permeable than prior versions, underscores that filtration breakthroughs can unlock higher titers without process redesign.

The decade-long expansion shows penetration leaping from roughly 35% in 2020 to a projected 75% by 2030. Thermo Fisher's 5 L DynaDrive reactor lifts productivity 27% and scales linearly to 5,000 L, bridging lab to plant and accelerating tech-transfer cycles. New biobased multilayer films lessen landfill burden while preserving oxygen and CO<sub>2</sub> permeability. Collectively, these innovations guarantee that the single-use bioreactor market will sustain double-digit expansion through the forecast horizon.

Mammalian platforms held 62.34% of 2024 turnover, anchored by Chinese hamster ovary (CHO) production of monoclonal antibodies. Yet yeast cultures are rising at a 15.89% CAGR as glyco-optimized strains match mammalian glycosylation patterns at lower cost. Bacterial fermentation maintains relevance for recombinant enzymes and plasmid supply. Stem-cell processing matures in parallel, supported by closed perfusion formats that safeguard sterility for autologous therapies.

Daewoong Bio's Hwaseong plant adds microbial capacity to diversify beyond CHO and capture biosimilar demand. Recent perfusion runs hit 49 million cells/mL and titers of 5.2 g/L, cementing mammalian output gains. The single-use bioreactor market size attributed to mammalian lines will therefore climb even as niche cell types carve share in emerging modalities.

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The Single Use Bioreactor Market Report is Segmented by Product (Single-Use Bioreactor Systems, and More), Cell Type (Mammalian, and More), Molecule Type (Monoclonal Antibodies, and More), End User (Biopharma & Pharma Manufacturers, and More), Scale (Lab-Scale (<50 L, and More), Bioreactor Design (Stirred-Tank, and More), Geography (North America, and More). The Market Forecasts are Provided in Terms of Value (USD).

## Geography Analysis

North America retained 41.45% of 2024 revenue as CDMOs and pharma majors expanded disposable capacity. Fujifilm Diosynth's USD 1.2 billion North Carolina extension and Novo Nordisk's USD 4.1 billion Clayton site underscore the region's commitment to agile biologics supply. Academic-industry consortia and reliable venture funding round out supportive infrastructure.

Asia-Pacific exhibits the quickest 15.67% CAGR. China's biomanufacturing self-reliance plan funds large-scale single-use lines, while India leverages established formulation expertise to target biosimilar exports. South Korea's Daewoong Bio added GMP microbial suites, reflecting higher regional specialization. Talent development and local reagent supply chains remain priorities to sustain momentum.

Europe advances steadily as sustainability legislation pushes producers toward recyclable bags and bio-based films. Boehringer Ingelheim's USD 811 million Vienna facility integrates end-to-end digital twins and smart sensors, demonstrating adherence to Industry 4.0 paradigms. Germany's Rentschler invests in buffer-media infrastructure to shore up supply resilience, enhancing the appeal of European outsourcing for global drug sponsors.

## List of Companies Covered in this Report:

ABEC / Applikon (Getinge) / Cellexus / Celltainer / Danaher (Cytiva & Pall) / Eppendorf / GE?Healthcare / Lonza Group / Merck / OmniBRx Biotechnologies / Pall / PBS Biotech / Sartorius / Thermo Fisher Scientific / Univercells / Wuxi Biologics /

## Additional Benefits:

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

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