Single-Use Bioprocessing Probes And Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Single-Use Bioprocessing Probes And Sensors Market size is estimated at USD 3.84 billion in 2025, and is expected to reach USD 6.52 billion by 2030, at a CAGR of 11.2% during the forecast period (2025-2030).

The COVID-19 pandemic has significantly benefited the market in terms of adoption and revenue growth. The pandemic accelerated the application of single-use solutions, including sensors, to meet the technology demand for therapeutics and vaccine manufacturing. For instance, according to data published by the American Pharmaceutical Review in April 2023, there was a surge in demand for single-use bioprocessing systems during the pandemic for the production of biologics and vaccines around the world. It was also observed that the adoption of commercial-scale single-use bioprocessing systems grew appreciably during COVID-19, increasing from 32.5% in 2019 to 43% in 2022. The increase was partly due to the demand for flexibility and rapid deployment of bioproduction during the pandemic crisis. Thus, the increased adoption of single-use bioprocessing systems during the pandemic significantly improved the market growth.

Factors such as commercial advantages over stainless steel bioprocessing products and rising investment for single-use bioprocessing facility expansion are expected to drive market growth over the forecast period.

Significant investments by companies in the expansion of single-use bioprocessing facilities is a major factor driving the market growth. For instance, in February 2022, Thermo Fisher Scientific invested USD 40 million to expand its single-use bioprocessing technology manufacturing facility in Millersburg, Pennsylvania, United States. The expansion was part of a USD 650 million multi-year investment to enhance the company's ability to provide flexible, scalable, and reliable single-use bioprocessing production capacity. Thus, significant investments in the expansion of single-use bioprocessing facilities are expected to increase the usage of single-use bioprocessing probes and sensors, thus driving market growth over the study period.

Furthermore, market players are undertaking various strategic initiatives such as acquisitions and collaborations to increase the market share, which is expected to boost the market growth over the study period. For instance, in March 2021, Mettler Toledo acquired PendoTECH, one of the major suppliers of single-use sensors, to enhance its market presence in the single-use bioprocess probes and sensors market. This integration of both companies aimed at improving customers' experience through comprehensive sensor offerings available for the bioprocessing industry. Thus, the above-mentioned factors, such as new investments for the expansion of single-use bioprocessing facilities and market player strategies, are anticipated to drive market growth during the forecast period.

However, environmental and technical challenges are likely to restrain the market growth over the forecast period.

Single-Use Bioprocessing Probes And Sensors Market Trends

The pH Sensor Segment is Expected to have Major Share in the Market Over the Forecast Period

Single-use pH sensors are factory-calibrated and gamma-sterilizable sensors for integration into single-use processes for the measurement of pH in biopharmaceutical manufacturing. The pH sensor segment is expected to account for a significant share during the forecast period owing to the highest penetration of the product in terms of usage and availability.

The rising technological advancements in single-use pH sensors are further anticipated to increase the demand for these sensors, thereby driving market growth. For instance, according to an article published on single-use pH sensors in Biopharmaceutical Applications in October 2021, advancements in single-use pH sensors have improved quality, reliability, and the level of supplier support. Therefore, the advancements have led pH sensors to provide quality and accuracy for bioprocess single-use applications.

Furthermore, according to a study published in the Pharmaceutical Bioprocessing Journal in January 2023, a pH probe is among the most often used electrochemical sensors for bioprocess monitoring and control. Therefore, the high propensity of usage of pH sensors in the bioreactors is anticipated to drive the market growth over the forecast period.

North America is Expected to Have Largest Share in the Market Over the Forecast Period

The United States represents a significant share of the single-use bioprocessing probes and sensors market due to its well-established biopharmaceutical sector and widespread availability of single-use assemblies supplied by regional market leaders. Furthermore, an increase in investment by the US government to support the bioprocessing industry and a rise in the adoption of bioprocessing probes and sensors are further expected to promote market growth over the forecast period.

The rise in investment in the biopharma field in the United States is further expected to drive market growth over the forecast period. For instance, as per the fact sheet released in September 2022 by the Department of Health and Human Services, the government planned to invest USD 40 million to expand the role of biomanufacturing for active pharmaceutical ingredients (APIs), antibiotics, and the key starting materials needed to produce essential medications. Hence, such investment activities in the United States are likely to positively impact the growth of the single-use bioprocessing probes and sensors market.

Moreover, in November 2022, Cardinal Health expanded its single-use device reprocessing facility in Riverview, Florida, with a capacity of 100,000 square feet. Thus, owing to such strategic expansions by market players, the demand for reprocessing of single-use probes and sensors is likely to rise, thereby fueling the market growth over the forecast period.

Single-Use Bioprocessing Probes And Sensors Industry Overview

The single-use bioprocessing probes and sensors market is fragmented in nature, with several large to small and medium-sized players. Some companies currently dominating the market are Thermo Fisher Scientific Inc., Sartorius AG, Danaher Corporation (Cytiva), PreSens Precision Sensing GmbH, METTLER TOLEDO (PendoTECH), Hamilton Company, and others.

Additional Benefits:

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

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