

# Liquid Handling System Market Size to Reach \$6.6 Billion Globally by 2030: Latest Report by Vantage Market Research

*Liquid Handling System Market Size, Share, Industry Trends, Growth, and Opportunities Analysis by 2032.*

GEORGIA AVENUE, WASHINGTON, DC, UNITED STATES, January 9, 2024

[/EINPresswire.com/](https://www.einpresswire.com/) -- Liquid handling

systems are devices and equipment that are used to transfer, measure, mix, and dispense liquids in various applications, such as drug discovery, clinical diagnostics, genomics, proteomics, and biotechnology. Liquid handling systems can range from manual pipettes and micropipettes to automated liquid handlers and dispensers, with different levels of accuracy, precision, throughput, and flexibility. Liquid handling systems are essential tools for scientific research, as they enable the analysis of large volumes of samples and the automation of complex workflows.



According to Vantage Market Research, the global [Liquid Handling System Market](#) was estimated to be worth \$4.2 Billion in 2022 and is poised to reach \$6.6 Billion by 2030, growing at a CAGR of 5.9% from 2024 to 2030.

The Liquid Handling System Market is expected to grow at a significant rate in the coming years, due to the increasing demand for high-throughput screening, the global expansion of pharmaceutical and biotechnology industries, the growing focus on genomics and [proteomics research](#), and the technological advancements related to automated liquid handling systems.

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The increasing burden of diseases, such as cancer, diabetes, and infectious diseases, has

stimulated the need for novel drugs and therapies, which in turn has boosted the research and development activities and clinical trials in the pharmaceutical and biotechnology sectors. Liquid handling systems are widely used in these sectors to perform various tasks, such as sample preparation, compound screening, assay development, drug discovery, and quality control.

High-throughput screening (HTS) is a technique that involves the rapid testing of large numbers of compounds or biomolecules for a specific biological activity or target. HTS is widely used in drug discovery, genomics, proteomics, and other fields of research, as it enables the identification of potential candidates, biomarkers, or interactions in a cost-effective and time-efficient manner. Liquid handling systems are essential for HTS, as they enable the accurate and precise dispensing, mixing, and transferring of small volumes of liquids in microplates or other formats.

Automated liquid handling systems are devices that can perform liquid handling tasks without human intervention, using robotic arms, software, sensors, and other components. Automated liquid handling systems offer several advantages over manual or electronic pipetting systems, such as higher accuracy, precision, reproducibility, speed, throughput, flexibility, and safety. Automated liquid handling systems also enable the integration of various modules, such as heaters, shakers, barcode scanners, and microplate readers, to create customized workflows. Several technological innovations have been made in the field of automated liquid handling systems, such as the development of novel pipetting technologies, the incorporation of artificial intelligence and machine learning, and the miniaturization and portability of devices.

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- Thermo Fisher Scientific Inc. (U.S.)
- Danaher Corp. (U.S.)
- Agilent Technologies (U.S.)
- Gilson Inc. (U.S.)
- PerkinElmer (U.S.)
- Tecan Group Ltd. (Switzerland)
- Hamilton Company (U.S.)
- Eppendorf AG (Germany)

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□ Increasing adoption of microfluidics and lab-on-a-chip technologies: Microfluidics is the science and technology of manipulating fluids at the microscale, using channels, valves, pumps, and other components. Lab-on-a-chip is a device that integrates one or more laboratory functions on

a single chip, using microfluidic principles. Microfluidics and lab-on-a-chip technologies offer several benefits for liquid handling, such as reduced sample and reagent consumption, enhanced sensitivity and specificity, faster reaction times, and parallel processing. Microfluidics and lab-on-a-chip technologies are widely used in various applications, such as point-of-care diagnostics, drug delivery, environmental monitoring, and [synthetic biology](#).

□ Rising demand for liquid handling systems in emerging markets: The liquid handling system market is witnessing a high demand from emerging markets, such as China, India, Brazil, and South Africa, due to the increasing investments in healthcare infrastructure, the growing prevalence of chronic and infectious diseases, the rising awareness and adoption of liquid handling systems, and the favorable government policies and initiatives. For instance, in 2019, the Indian government launched the National Genomics Grid, a network of genomic laboratories to support the diagnosis and treatment of cancer. The emerging markets also offer significant opportunities for the liquid handling system market players, due to the low penetration and high growth potential of these regions.

□ Growing focus on sustainability and green chemistry: Sustainability and green chemistry are the principles and practices of designing and conducting chemical processes and products that minimize the use and generation of hazardous substances and waste, and maximize the efficiency and safety of the processes and products. Sustainability and green chemistry are gaining importance in the liquid handling system market, as they help to reduce the environmental impact, operational costs, and regulatory compliance issues associated with liquid handling. Several strategies are being adopted by the liquid handling system market players to promote sustainability and green chemistry, such as the development of reusable and recyclable pipette tips and consumables, the use of biodegradable and eco-friendly materials, and the optimization of liquid handling protocols and workflows.

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□ By product, the pipette segment accounted for the largest share of the liquid handling system market in 2022, followed by the consumables segment. The pipette segment is further classified into manual pipettes, electronic pipettes, and automated pipettes. The consumables segment is further classified into pipette tips, reagent reservoirs, plates, tubes, and waste.

□ By type, the automated liquid handling system segment accounted for the largest share of the liquid handling system market in 2022, followed by the electronic liquid handling system segment and the manual liquid handling system segment. The automated liquid handling system segment is also expected to grow at the highest CAGR during the forecast period, due to the increasing demand for automation, precision, and high-throughput in liquid handling.

□ By application, the drug discovery segment accounted for the largest share of the liquid handling system market in 2022, followed by the clinical diagnostics segment and the genomics segment. The drug discovery segment is also expected to grow at the highest CAGR during the forecast period, due to the increasing R&D activities and clinical trials in the pharmaceutical and biotechnology sectors.

□ By end user, the research institutes segment accounted for the largest share of the liquid handling system market in 2022, followed by the pharmaceutical and biotechnology companies segment and the hospitals and diagnostic centers segment. The research institutes segment is also expected to grow at the highest CAGR during the forecast period, due to the increasing funding and grants for life sciences research and development.

□ By region, North America accounted for the largest share of the liquid handling system market in 2022, followed by Europe and Asia-Pacific. North America is also expected to grow at the highest CAGR during the forecast period, due to the presence of a large number of liquid handling system manufacturers, the high adoption of advanced technologies, the rising burden of diseases, and the high R&D expenditure in the region.

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□ High cost and complexity of liquid handling systems: Liquid handling systems, especially automated liquid handlers and dispensers, are expensive and complex devices that require high initial investment, maintenance, and operational costs. The cost of liquid handling systems can vary depending on the type, size, capacity, features, and accessories of the devices. The cost of liquid handling systems can also be influenced by the availability and pricing of consumables, such as pipette tips, reagent reservoirs, plates, and tubes. The complexity of liquid handling systems can pose challenges in terms of installation, calibration, validation, troubleshooting, and training. The high cost and complexity of liquid handling systems can limit their adoption and affordability, especially in low-resource settings and emerging markets.

□ Lack of skilled labor in developing countries: Liquid handling systems, especially automated liquid handlers and dispensers, require skilled and trained personnel to operate and maintain them, as they involve sophisticated software, hardware, and robotic components. However, in developing countries, there is a lack of skilled labor with the technical know-how and experience to handle liquid handling systems, which can affect the quality and efficiency of liquid handling tasks. Moreover, the training and education of liquid handling personnel can be time-consuming and costly, which can hamper the productivity and profitability of liquid handling systems. Therefore, the lack of skilled labor in developing countries can pose a major challenge for the liquid handling system market.

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The challenges, however, pale in comparison to the vast opportunities this market presents. The growing demand for personalized medicine and point-of-care diagnostics, coupled with increasing investments in genomics and proteomics research, will continue to fuel the need for advanced liquid handling solutions. The integration of AI, microfluidics, and smart data management opens doors to groundbreaking applications in drug discovery, disease diagnosis, and even personalized drug manufacturing.

The rise of contract research organizations (CROs) and the expansion of collaborative research networks create a promising market for flexible and scalable liquid handling systems. Companies that can cater to these evolving needs and address the existing challenges stand to reap significant rewards in the years to come.

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- Q. What are the current market size, growth rate, and future projections for the liquid handling system market?
- Q. Which segments (by type, application, end user) are driving market growth, and what are their respective growth trajectories?
- Q. Who are the major players in the market, and what are their competitive strategies?
- Q. What are the emerging trends and technologies shaping the future of liquid handling systems?
- Q. What are the key challenges faced by the market, and how can they be overcome?
- Q. What are the regulatory considerations for liquid handling systems in different regions?
- Q. What are the investment opportunities in the liquid handling system market?

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Europe: A symphony of regulations and innovation, Europe holds a steady 25% market share. Stringent regulations, similar to North America, drive demand for high-accuracy systems, while a thriving medical device industry fosters advancements in miniaturization and automation. Germany and the UK lead the charge, with France and Switzerland emerging as promising hotspots. However, fragmentation and economic disparities across the continent pose challenges.

Asia Pacific: A rising dragon, Asia Pacific exhibits the fastest growth, projected to reach a 22% market share by 2030. China, fueled by government initiatives and a burgeoning pharmaceutical industry, takes center stage. Japan, with its established research infrastructure, maintains a strong presence. South Korea and India, with their cost-competitive manufacturing prowess, are

attracting attention. However, intellectual property concerns and infrastructure gaps require attention.

Latin America: A budding tango, Latin America holds immense potential due to its growing healthcare sector and rising disposable incomes. Brazil leads the way, followed by Mexico and Argentina. The focus lies on affordable solutions for diagnostics and point-of-care applications. However, challenges remain in terms of fragmented markets, limited research funding, and inadequate infrastructure.

Rest of the World: A wildcard in the global game, the Rest of the World presents a diverse landscape with pockets of potential. The Middle East, fueled by oil wealth, invests in healthcare infrastructure, driving demand for liquid handling systems. Africa, with its burgeoning healthcare needs, offers opportunities for cost-effective and portable solutions. However, political instability and limited resources pose significant hurdles.

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