

Biological Safety Cabinet Market Assessment, By Class [Class I, Class II, Class III], By End-user [Pharmaceutical and Biotechnology Companies, Diagnostic Laboratories, Research and Academic Institutes], By Region, Opportunities and Forecast, 2017-2031F

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Abstracts

Global biological safety cabinet market is projected to witness a CAGR of 7.78% during the forecast period 2024-2031, growing from USD 251.3 million in 2023 to USD 457.61 million in 2031. The biological safety cabinet market is experiencing significant traction due to the flourishing biopharma industry and growing demand for vaccines and other biotechnological products. The growing risk of pandemics and infectious diseases, along with enhanced microbial research and government initiatives supporting developmental research are anticipated to act as drivers for the biological safety cabinet market. Furthermore, favorable regulations, technological advances in microbiological research, and innovations in biological safety cabinet designs sustain a tendency for continuous market expansion.

The biopharma companies are heavily investing in microbiological research to produce better biopharma products like vaccines. With expanding research and development, the demand for biosafety equipment is also rising. Recent years have seen a notable increase in the need for vaccines due to the expanding population and rising rate of diseases. The general public's increased dread of communicable illnesses following COVID-19 and growing knowledge of vaccines to prevent diseases further drive up demand for vaccination. All these factors are anticipated to increase the demand for biosafety cabinets in upcoming years.

The World Health Organization (WHO) reported in May 2023 that there was a notable rise in vaccination rates from 2019 to 2021. The market for adult vaccinations increased by 15%, while pediatric and adolescent immunizations expanded by 8% and 7%, respectively. Even without taking COVID-19 vaccinations into account, this data shows a notable shift in demand.

Flourishing Biopharma Industry

As the research and development initiatives by biopharma companies are growing at a faster rate to cater to the needs of the growing population and combat the increasing disease burden, the demand for biosafety equipment is also on the rise. Biopharma companies must follow the biosafety protocols set by regulatory bodies, and biological safety cabinets are crucial. With the increasing research environment, growing preclinical evaluations, and demand for biotech products, the future demand for biological safety cabinets is anticipated to expand. Upcoming startups and contract development and manufacturing organizations (CDMO) are also growing the installed bases of biosafety cabinets, further driving the market growth.

In March 2023, as per Fierce Biotech, the emerging biopharma companies accounted for 67% of 2022's research and development pipeline, 63% higher than in 2021. The number of biopharma companies is growing by an average of 4% per year. Such growing statistics positively support the expansion of the biological safety cabinet market.

Increasing Prevalence of Infectious Diseases

Recently, there have been reports of outbreaks of infectious diseases such as COVID-19 and its variants, influenza (H1N1, H1N2, H5N1), monkeypox, Nipah virus, and several others in different regions of the world. Biological research must be carried out for detection, diagnosis, and drug development for such infectious diseases, which requires extensive use of biosafety cabinets to ensure the timely delivery of clinical outcomes, alongside ensuring the safety of the researcher. With the growing prevalence of infectious diseases and frequent reports of disease outbreaks by WHO, numerous opportunities can be anticipated in the biosafety equipment market. As per the report of VaccineWork, climate change risk may aggravate the risk of the outbreak of 58% of infectious diseases affecting humans.

For instance, the Centers for Disease Control and Prevention reported 5 US-based disease outbreaks in 2023, while WHO reported 68 disease outbreaks across different

regions. The most recent disease outbreak news published by WHO is the outbreak of circulating vaccine-derived poliovirus type 2 (cVDPV2) in Indonesia in January 2024.

Government Regulations

To ensure biosafety for users, there are several guidelines from government and regulatory authorities that promote the use of biological safety cabinets, thus positively impacting the market. WHO has issued the “Laboratory Biosafety Manual” and the recent version (4th edition) available was published in 2020. Center for Disease Control and Prevention provided Biosafety in Microbiological and Biomedical Laboratories (BMBL) 6th edition in collaboration with the United States government. Similarly, the Indian government runs a ‘Biosafety Research Program’ to ensure the safety of biotech research. As per the Occupational Safety and Health Administration guidelines, biological safety cabinets must be certified when installed, whenever they are moved, and at least annually. Similar guidelines and regulations forcing the use of biosafety cabinets are further propelling the growth in the market.

Dominance of Class II Cabinets

Class II biological safety cabinets hold a major share of the biological safety cabinets market. Class II cabinets offer the safety of user, environment, and the product under monitoring. Class II cabinets are highly popular as they offer moderate safety at a relatively lower price. Class III cabinets offer very high safety but are practically required only in case of pathogens and radio nuclear components. Class III cabinets come at a higher cost than Class II cabinets. Similarly, Class I cabinets offer limited safety and are cheaper. Thus, optimum safety offerings and better pricing make the Class II cabinets more popular.

For instance, in June 2023, Esco Lifesciences launched the new NSF-certified Labculture G4 Class II Type A2 Biological Safety Cabinet (LA2 G4). Labculture G4 Class II Type A2 biological safety cabinet offers features like a Centurion Touchscreen controller, 3D BSC diagram, modern connectivity like USB port, BMS connectivity, integrated Remote Modbus, and several more to enhance the user experience and ensure biosafety.

Pharmaceutical and Biotechnology Companies are Major End-users

Pharmaceutical and biotechnology companies perform extensive research for product development and install highly sophisticated biosafety equipment to ensure zero

contamination. To maintain a high level of biosafety at various steps of drug development, biopharma companies invest a wholesome amount of cash. Owing to this fact, the pharmaceutical and biotechnology segment is anticipated to dominate the end-user category in the biological safety cabinet market. The cabinet manufacturers are dedicated to developing the ideal size of cabinets to meet the requirements of biopharma companies. For instance, in January 2024, Thermo Fisher Scientific offered new sizes to the biological safety cabinet product line. After the adjustments, 1500 Series BSC will now be available in two sizes (4ft and 6ft), suitable as per users' requirements and space availability.

North America Stands as the Leading Region

North America holds the major value share in the biological safety cabinets market. The region is anticipated to hold the leading position throughout the assessment period. High investment in research infrastructure and substantial growth in demand for biotechnological products in the region drive the market. The high rate of technology adoption and attempts made by organizations like the CDC and NIH are further promoting the demand for biosafety equipment. Regulatory certifications for United States-based manufacturers also contribute to the region's dominance in the market.

In September 2023, The Air Science AS-AHA-193 Purair BIO Biological Safety Cabinet (BSC) models were added to the list of NSF/ANSI 49 Certified models. This brings the number of NSF-listed models to four. In accordance with NSF/ANSI 49, a US and international standard that confirms that Class II, Type A2 laminar flow cabinets meet specifications for airflow patterns and air exchange ratios to provide operator and product protection, the design of these BSCs is derived for safety and performance.

Future Market Scenario (2024 – 2031F)

Growing biopharma companies and increasing demand for biotechnological products like vaccines are majorly driving the biological safety cabinet market growth.

Rising prevalence of infectious diseases and increasing risks of disease outbreaks are drastically contributing to the biological safety cabinet market.

Class II cabinet segment is leading the biological safety cabinet market due to the optimum pricing range and high level of safety offering to users.

Biological safety cabinet market is anticipated to grow significantly under favorable government policies and regulatory compliances.

Key Players Landscape and Outlook

Key participants in the biological safety cabinet market include Thermo Fisher Scientific Inc., Labconco Corporation, NuAire, Inc., The Baker Company, Inc., and Azbil Telstar. The market also has numerous small players besides these renowned global players. The manufacturers benefit from stringent regulations for setting up biosafety units in the research sector. Emerging players are trying to collaborate and grow bigger through mergers and acquisitions. Maintaining safety standards and optimizing the price point simultaneously is still one of the challenges manufacturers face.

In September 2023, Tecniplast Group acquired Labosystem S.r.l. and KW S.r.l. to expand its laboratory offerings and establish TECNILABO Division. Labosystem S.r.l. is a laboratory furnishing company with expertise in planning, making, and distributing safety cabinets, workstations, chemical hoods, sensory analysis stations, and laboratory seating while KW S.r.l. specializes in manufacturing equipment with controlled temperature capabilities.

In May 2023, the Scientific Safety Alliance (SSA) announced the acquisition of CSI Testing. SSA is a scientific safety provider for medical device, clinical, pharmaceutical, and academic research facilities across the United States, while CSI Testing is a controlled environment certification provider based in the Midwest with over 500 customers. CSI provides testing and certification of biosafety cabinets, HEPA-filtered devices, cleanrooms, and other equipment.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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