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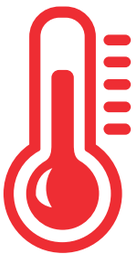
PROCESS & PURPOSE

Four special fill/finish considerations for vaccine production

Vaccine manufacturing is a rigorous and complex process that requires a high level of expertise and regulatory conformity to ensure safety, efficacy, purity, and potency. Manufacturing processes must be continually improved to meet regulatory standards while heeding best practices and utilizing flexible technologies to ensure a successful product launch. Because each type of vaccine presents unique challenges, there are a wide range of strategies to approach manufacturing. However, certain considerations should be taken into account when planning for and executing vaccine production.

Temperature control



To ensure the safety and stability of vaccines, it's important to develop a cold chain management strategy that meets quality standards. Proper temperature regulation throughout the manufacturing, storage, and distribution lifecycle preserves a vaccine's stability, efficacy, and potency. Exposure to temperatures outside an allowable range for the specific vaccine can render the medication useless. Properly safeguarding vaccines with reliable and uniform temperature control preserves potentially life-saving treatments for waiting patients.

Isolator technology

Utilizing isolators in vaccine production provides greater contamination control by separating operators from the environment where the sterile product is being manufactured. These fully isolated systems have an integrated decontamination system that meets Annex 1 regulatory requirements. Additionally, isolators can allow for extended media fills, which can enable longer batch processing times and the scale-up of larger batches, thereby increasing efficiency.

Peristaltic pump

The increasing need for faster, more sensitive, and more cost-effective manufacturing options has led the biopharmaceutical industry to embrace peristaltic pumps over traditional piston pumps. The gentle pumping action, low pressure, and minimal speed of the peristaltic pump protects shear-sensitive products. Peristaltic pumps can produce a wide range of fill volumes with precision through a simple change of the needle diameter, deliver low fill volumes for products with small dose requirements, and limit product waste by reducing overfill.

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Single-use technology

The practical and cost-effective benefits of utilizing single-use technology are contributing to its increasing popularity in vaccine development. Single-use technology significantly improves safety and efficiency by reducing the risk of cross-contamination and eliminating cleaning cycles such as clean in place (CIP) and sterilize in place (SIP)—thus reducing time for setup and validation. It's also customizable, allowing for modifications of the product pathway which result in more flexibility in manufacturing.

The fill/finish process is a critical step in vaccine development and the complexity of aseptic processing continues to increase. With Thermo Fisher Scientific as your vaccine production partner, you can bring your discoveries to market with speed, efficiency, and confidence.

Our fill/finish services are comprehensive, and our standards are high.
Contact us today to learn more.

About us

Thermo Fisher Scientific provides industry-leading pharma services solutions for drug development, clinical trial logistics and commercial manufacturing to customers through our Patheon brand. With more than 65 locations around the world, we provide integrated, end-to-end capabilities across all phases of development, including API, biologics, viral vectors, cGMP plasmids, formulation, clinical trials solutions, logistics services and commercial manufacturing and packaging. Built on a reputation for scientific and technical excellence, we provide pharma and biotech companies of all sizes instant access to a global network of facilities and experts across the Americas, Europe, Asia and Australia. We offer integrated drug development and clinical services tailored to fit your drug development journey through our Quick to Care™ program. Our Quick to Clinic™ programs for large and small molecules help you balance speed and risk during early development so you can file your IND quickly and successfully. Digital innovations such as our mysupply Platform and Pharma 4.0 enablement offer real-time data and a streamlined experience. Together with our customers, we're rapidly turning pharmaceutical possibilities into realities.

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Published 04/22