

Optimizing single-use manufacturing through associate training

How a new training room at Avantor Fluid Handling is ensuring the reliability and quality of your single-use systems.



The rapid acceptance of single-use systems, comprised of single-use technology, has introduced efficiencies into manufacturing workflows but also a new set of challenges to overcome. Today, most therapeutics use some degree of single-use technology in their processes—whether in development or commercialization phases—and single-use manufacturers must expand their global footprints to meet global demand. However, even with redundancy of suppliers and facilities, manufacturers—and, by extension, their customers—face substantial risks if manufacturing errors disrupt workflows or yield product that does not meet standards. Avantor’s training program for associates working in cleanrooms is helping to reduce manufacturing errors and increase the reliability of our single-use supply chain.

In order to maximize throughput for customers by reducing contamination risks and limiting changeover times, as well as by enabling scale-up, single-use technology manufacturers must maintain a reliable supply chain while ensuring that single-use systems meet rigorous quality standards for component qualification, manufacturing operations, in-process testing and final product release.

As the only open-architecture single-use provider to offer complete, end-to-end support for every stage of the biomanufacturing process, Avantor® has become a trusted supplier of some of the world’s largest biopharmaceutical companies. We distribute single-use technology from best-in-class manufacturers through our channel brand, VWR®, and produce our own single-use products in ISO-certified facilities across the Americas, Europe and Asia. These sites follow cGMP best practices to ensure the safety, reliability, and quality of the single-use products we produce. Avantor is adept at managing risk across our global network by adhering carefully to regulatory and quality compliance through quality documentation, lot release testing, sterility validation, and cleanroom management.

Single-use manufacturing is still largely a manual process with little automation. For this reason, the process is highly susceptible to disruption by human error. The high standards that single-use products to produce pharmaceuticals must meet, however, leave little room for error. A simple mistake could mean that the entire process must start fresh to ensure that the final product meets our standards before we allow it to reach our customers.

In the pursuit of the highest quality processes and continual improvement, Avantor Fluid Handling (AFH) at our Devens, Massachusetts, site created a training program for associates that centers on a training room. This training room mimics the production line in a controlled environment and often uses rejected, returned, or non-cGMP-compliant materials that would otherwise be considered waste. In this way, associates can receive immersive, applicable training without any risk to customer product or disruption of the production line and without potentially wasting valuable supplies.

As part of the training program, associates receive standardized, immersive training that supports Avantor’s goal of maintaining an agile, reliable supply chain of high-quality products for our customers. New associates—or current associates experiencing difficulties—receive instruction based on carefully developed curricula from a trainer like Luis Quiles, who has been with Avantor for more than six years.

“When our team at Devens organized and created the Training Center, we had these ideas of how and what we would do to support the team,” Quiles said. “I could not help but imagine being able to take an associate and guide them through the single-use assembly manufacturing process from start to finish with all the same tools they would use inside an actual cleanroom.”

As a trainer, Quiles uses a standardized curriculum to build a sturdy foundation of knowledge among manufacturing associates at Devens. He trains new associates, who may have little or no cleanroom experience, and supports current associates who may be struggling with a particular task or process. Quiles firmly believes in the value of an immersive, hands-on training process, stating that it not only supports production but also provides value through “dedication and continuous attentiveness to all the associates’ needs.”

By making sure that all associates operate from the same knowledge base, the training room at Devens is working to further standardize production. This results not only in a happier workforce with higher retention rates but also in a reduction of manufacturing errors. If a problem does arise on the production line, well-trained associates are primed to identify it quickly, reducing the impact on production.

The training program offers basic instruction to new and current associates, but it also offers in-house certifications such as forklift licensures and cleanroom inspector qualifications. This has resulted in a more developed workforce with the expertise to perform a variety of necessary tasks to a high standard.

In addition to supporting associates in manufacturing single-use assemblies that meet Avantor's exacting standards, the training room provides support to departments such as IT, sales, engineering, and product management. When a customer requests product samples, the training room can fulfil these requests without requiring engineers to enter the cleanrooms, preventing disruption to the production line.

Many companies produce SUT without using a training room to educate manufacturing associates, but AFH Devens has proved that this robust piece of the workplace development process has a significant impact on final products and the ability to best serve customers.

We are committed to using our resources to increase efficiency and to reduce manufacturing errors to maximize reliability, flexibility and quality.

Single-use systems help biopharmaceutical manufacturers achieve the speed, efficiency, and consistency needed for innovation. A reliable supply of single-use products is critical for achieving these goals, which is why Avantor has developed a global supply chain that meets rigorous regulatory and quality standards. In 2021, alone, we tripled our manufacturing footprint, reducing lead times for our customers around the world. The training room at AFH Devens is just one of many ways Avantor has committed resources to guaranteeing high quality single-use products to remove bottlenecks in single-use technology production and allow our customers to focus on getting therapies to the patients who need them.



LEARN MORE ABOUT SINGLE-USE TECHNOLOGIES AT AVANTOR:

- ➔ Single-Use Hub
- ➔ Managing risk and minimizing the complexity of your global single-use supply chain
- ➔ Advancing gene therapy by solving challenges in scale-up & manufacturing
- ➔ How single-use technology will be critical to the commercialization of cell and gene therapies

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