CASE STUDY

Global Filter Aids a World-Class Chemical Company in Achieving Heightened Level of Product Purity

REMOVAL OF ENDOTOXINS AND SUB-MICRONIC PARTICULATE FROM POLYVINYLPYRROLIDONE (PVP) EXCEEDS CUSTOMER REQUIREMENTS

When a well-known specialty chemical manufacturer was unable to meet new, higher purity requirements for PVP set by their largest customer, Global Filter was invited to collaborate. By evaluating the process and identifying several areas with potential for improvement, Global Filter was able to help them not only achieve, but exceed, the purity requirements while taking significant cost out of the production process.

GLOBAL FILTER
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CASE STUDY

APPLICATION OVERVIEW

Polyvinylpyrrolidone (PVP) is a versatile, water-soluble polymer used in the manufacturing of cosmetics, personal care items, pharmaceuticals and more. It acts as a binder, a wetting agent or lubricant, and in some combinations, even as a disinfectant or preservative. However, its unique properties and broad spectrum of uses also makes it difficult to produce.

For a chemical manufacturer to produce PVP, they must follow strict regulations set by the FDA and other public health organizations. This necessitates the use of very clean equipment and production areas, strict mixing and packaging procedures, and optimized filtration processes to ensure a safe, consistent product reaches the consumer.

THE CHALLENGE

Poor filtration can significantly impact the quality of products like Polyvinylpyrrolidone, putting your profitability – and your customers – at risk.

When a chemical processing company was experiencing issues meeting their customer's requirements regarding the purity of their PVP, their first thought was to filter the product with multiple passes through their existing filter. The manufacturer was using a standard pleated depth cartridge to remove sub-micronic particulate from the product just prior to packaging, but that was not enough. In addition to the particulate in the product, they were also dealing with the occasional presence of endotoxins, which created a hazard for their customer, but also for consumers. After hitting several dead-ends, they reached out to Global Filter for help.

THE SOLUTION

Overachieving isn't always bad, right?

After identifying that fine particulate and endotoxins were still present in their product no matter how many times it was filtered, they knew it was time for a change. Global Filter's team of filtration specialists made a visit to the facility and partnered with the engineering and production staff to evaluate where the breakdown was occurring and discuss possible options to fix it.

After discussing the process and the required product purity specifications in detail, it was determined that no level of mechanical filtration was going to accomplish the task. The Global Filter team recommended a change to the pleated depth filter that was already being used, as well as the addition of a highly charged, pleated Nylon 6,6 membrane cartridge as a final filter, which had the ability to attract and capture particulate and endotoxins much smaller than can be caught mechanically.

After completing the required evaluations and testing, the changes were implemented into the company's process and tested extensively for several weeks. Much to their delight, they were able to exceed their customer's requirements for every batch that was tested.

THE RESULTS

The Global Filter solution delivered improved particulate and endotoxin removal efficiencies, elevating product quality beyond expectations.

After a thorough review of the facility and the production process, Global Filter's sales and engineering team was able to identify and address several issues contributing to the impurity of the polyvinylpyrrolidone. They understood their customers' goals, offered their expertise, and quickly provided a solution that exceeded expectations while requiring less processing time. In the end, production capacity was increased and processing costs were reduced, adding significant value to the bottom line.

Global Filter is always eager to partner with you to improve your products and the processes that drive your success. Call us today to discuss how we can help.

GLOBAL FILTER
Filtration Group®

Global Filter
7201 Mt. Vernon Road SE
Cedar Rapids, IA 52403

Phone & Fax
Toll Free: +1 877 603 1003
Free: +1 319 743 0110

Online
Email: globalinfo@filtrationgroup.com
Website: www.globalfilter.com