

SUCCESS STORY

Polishing Performance:

How Filter Optimization Improved Sodium Hypochlorite Production

Chemical Manufacturer Achieves Quality Control Breakthrough with Global Filter's WCPES Solution

A leading U.S.-based chemical manufacturer specializing in Sodium Hypochlorite production significantly enhanced product clarity and operational efficiency by optimizing its filtration process with Global Filter solutions. By integrating a Pleated Polypropylene filter for prefiltration and adopting the WaterClear Polyethersulfone membrane cartridge for final polishing, the company eliminated recurring quality issues, reduced rework, and improved batch consistency. Despite the higher cost per filter, the combined solution delivered measurable returns through increased throughput, lower labor demands, and more reliable production cycles—making the investment both strategically and financially sound.



GLOBAL FILTER
Filtration Group®



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THE CUSTOMER

A U.S.-based chemical manufacturer specializing in Sodium Hypochlorite sought to enhance consistency and efficiency in their production process. The facility faced ongoing challenges in maintaining product clarity and meeting internal quality control standards despite multiple filtration stages..

THE CHALLENGE

INCUMBENT FILTERS - Microstream Posiflow Pleated PP

Inconsistent Product Quality:

Despite utilizing multiple filtration steps, the manufacturer was still experiencing frequent issues with particulate contamination that affected the clarity of the final product. This inconsistency often led to failed internal inspections and delays in product release.

Operational Inefficiency:

The filtration system in place required frequent intervention. Filters needed to be changed out regularly, yet performance remained unreliable. This led to significant downtime, rework, and a backlog in production—a growing concern as the facility aimed to scale output.

Cost of Rework:

Beyond the visible inefficiencies, the operation suffered from hidden costs. Reprocessing, increased labor hours, and diverted equipment usage all chipped away at margins. While not immediately apparent in unit cost, the cumulative impact was weighing down the plant's productivity and profitability.

THE SOLUTION

Prefiltration:
0.45µm Pleated Polypropylene

Final Polish:
0.2µm WaterClear Polyethersulfone

Prefiltration Optimization:

Global Filter's technical team along with our distribution partner, assessed the process and identified an opportunity to optimize the prefiltration step. By integrating an Absolute Rated 0.45µm Pleated Polypropylene Filter Cartridge (PP0.45A) filter at this stage, they significantly reduced the initial particulate load, allowing the downstream filtration to function more efficiently and effectively.

Final Filter Replacement:

To achieve high clarity in the final product, the team implemented an Absolute Rated 0.2µm WaterClear Polyethersulfone Filter Cartridge (WCPES0.2A) for the polishing step. Designed for high-precision retention, these filters provided consistent results across batches, enhancing both the quality and reliability of the final output.

Trial & Integration:

The transition wasn't rushed. Several filter ratings and combinations were trialed to determine the most effective configuration. Once the optimal pairing was validated, the solution was fully implemented into the production line with minimal disruption—delivering immediate improvements.

THE RESULT

Performance:

With the optimized PP0.45A prefiltration and WCPES0.2A final polishing combination, the facility consistently achieved product clarity and QC pass rates in a single filtration pass. The upgraded system enhanced process reliability, allowing for smoother batch transitions and fewer disruptions during production.

Cost Efficiency:

Though the WCPES filters carried a higher upfront cost, the long-term gains were substantial. The reduction in rework, improved throughput, and ability to reallocate staff and equipment toward higher-priority tasks led to a measurable increase in productivity. As one operations leader stated, "The additional unit cost was EASILY justified!"

CONCLUSION

By embracing Global Filter's tailored two-stage solution—utilizing PP0.45A for effective prefiltration and WCPES0.2A for high-clarity final polishing—this chemical manufacturer transformed its Sodium Hypochlorite production process. The result was a more efficient, consistent, and scalable operation that delivered better product quality while supporting long-term operational excellence and profitability.

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