



PXL Filter Media for Effective High Solids Filtration

Dual Layer Depth Filtration with P200 Upstream Layer

Executive Summary

- PXL Filter Media and Lenticular Housing Benefits:
 - Are designed for cosmetics and fibrous fermentations that readily foul the surfaces of depth filter media
 - Combine filtration media to significantly improve throughput
 - Increase contaminant retention in high solids loading processes
- Our customers saw:
 - Improvements in throughput
 - Reduced rate of operating pressure buildup
 - Full usage of the final filter media



Customer #1 Challenges:

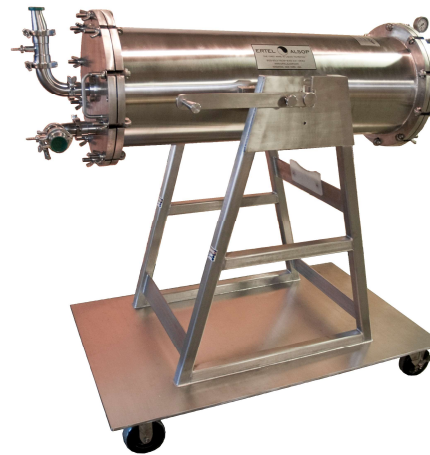
- Customer#1 is producing an industrial API utilizing Streptomyces (SP) to produce desired enzymes they harvest.
- Generating ~ 1% cell mass debris as solids that slime the surface of standard depth media.
- Filtration with standard depth media resulted in the use of (12-16) 16 inch diameter lenticular cartridges for their batch.
- Lack of a cost-effective mechanism for separating solids and contaminants in a high solids environment

ErtelAlsop Solution and Results:

- Increase the ability of the filter media to contain rated particulate
- Two layer PXL Media and Depth Media in one lenticular cartridge
 - The P-200 primary layer reduces tendency of the solids to compact and blind the initial surface of the filter by holding material in a high loft matrix media
- PXL provided an economical and efficient alternative to traditional single layer depth filtration media
 - Significant reduction in batch processing times
 - Reduced costs –batch requires (4) 16 inch diameter-10 cell cartridges
 - Retained product quality requirements

Equipment and Media Used

- 16AY4HFOST6 Pak® Lenticular "Flipping" Housing
- 16POY6M40310P2 Zeta Pak®



Customer #2 - Summary and background

- PXL was the first choice for the soft particulate, high cell count/low viability applications that readily foul the surfaces of other depth filter media.
- Customer #2 used the filtration process to manufacture an anticoagulant like antithrombin
- It is made from the milk of goats that have been genetically modified to produce human antithrombin, a plasma protein with anticoagulant properties.
- **Typical throughput improvements average 3-4x**
- **Reduced rate of operating pressure buildup**



Customer #2 Challenges:

- The process of extracting this plasma protein from the goat milk causes the milk to thicken to the point where it's of similar consistency to yogurt
- They needed to significantly reduce the rate of filter fouling **to extend the life of the filter media**



ErtelAlsop Solution and Results:

Solution

- PXL was the first filtration product that was able to provide the most economical and efficient alternative to traditional depth filtration mediums

Results

- The P2 layer as a prefilter is there to prevent the “yogurt” from blinding off the M-403P layer.
- It resulted in **significant reduction in batch processing times and costs while not sacrificing product quality requirements.**
- The use of this combination **increased the yield by over 30%** more than any other process tried.

Equipment and Media Used

- 16PY1VDOST6 Pak® Lenticular Housing
- 16POY6M403P06P2 Zeta Pak®

