

Filtration Group application example – Desiccant Breathers

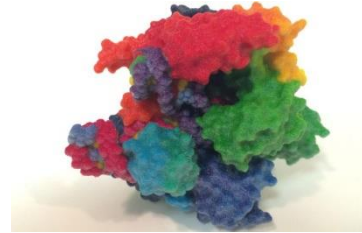
FG Desiccant Breathers in industrial biosciences



Factory Equipment

Initial situation

Enzymes are the invisible stars of the bio-based economy. The biocatalysts enable and control biochemical reactions - without the protein molecules there would be no life. Enzymes can be used as a special tool to convert, degrade or refine biobased products. This makes enzymes indispensable helpers in food production, but the all-rounders also perform key tasks in technical applications in the chemical, pharmaceutical and paper industries. Our customer is an industry leader in the United States that produces industrial grade enzymes in both dry and liquid form. In a 90-day study, the aeration dryers TT-1, TT-3 and TT4 were tested during the enzyme production process.



Solution statement

- At the end of a 90-day test phase, the TTI aeration dryers showed a 20 % longer service life
- By extending the service life, maintenance costs have been reduced and process interruptions minimized
- The aeration dryers provide lower cost, more efficient solution while improving daily operations and maintaining product quality



Customer value

- Reduction of maintenance costs and process interruptions
- The process improvement supports a solid maintenance budget and fixed schedule
- More cost-effective replacement than competitors
- Increasing the operating time in an environment with high humidity



Challenge

The production of enzymes is a highly technical, complex and automated process, and is based on a fermentation process. A small volume of inoculum (bacteria) is immersed in a controlled medium that supports adequate and abundant enzyme growth. A bacterium, such as *Aspergillus niger*, is exposed under specific and controlled conditions (i.e. pH, temperature, oxygen content and additional nutrients) to a carbohydrate-based medium that multiplies enzyme production. Once the enzyme is colonised, it is separated from the "dead cells" and further purified by separation both by centrifugation and by continuous filtration techniques.

Info

As part of routine maintenance, hydraulic oil tanks that feed pumps and gears must be free of moisture contamination. The reduction of moisture contamination is achieved by using ventilation dryers that allow airflow while trapping free moisture.



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