

New membrane filtration solution innovatively combines proven technologies to significantly increase a dairy manufacturer's capacity

Dairy manufacturers can now also increase their dryer throughput capacity by combining the technologies of spiral membrane filtration and plate & frame membrane filtration. Products that could benefit from this include milk protein concentrates, micellar casein concentrate, milk protein isolates, and more. Many of these high value powders are utilized in sport, infant, and senior formulations.

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The plate & frame membrane filtration technology is not new technology. In fact, it was the first membrane technology introduced in the dairy industry decades ago, later supplemented by spiral wound membranes which is the most used membrane technology in the dairy industry today. In recent years, the plate & frame technology has primarily been used for highly viscous products such as cream cheese and fermented products like skyr, tvog, and labneh.

Spiral wound membranes were developed to maximize the membrane area in a given footprint and to maximize energy usage per square meter of membrane area. Spiral wound membranes currently make up the largest installed base for dairy membrane applications in the world.

Opening new doors

Membrane filtration technology is continuously being developed and tested for new

applications and process areas as well as for improved functionalities, to reduce effluents, save more energy and water, increase capacity, and to exploit raw materials even further.

Utilizing Tetra Pak spiral wound membrane filtration combined with plate & frame membrane systems, dairies can increase their drying capacity with existing drying facilities. It does this by increasing the total solids, prior to the drying process of milk protein concentrates, micellar casein concentrate, and milk protein isolates, and ensures that the final composition is within specifications.

This technology can both be utilized for concentrating milk protein as well as microfiltration retentate from the whey protein isolate process (pro-cream). The process can be done in a cold configuration or a hot configuration to achieve the maximum solids levels on these products. Tetra Pak has optimized the best solutions for each of these situations and can help support the best way for dairies to feed these high viscosity products to a dryer.

Increased capacity throughput

By installing this filtration solution in front of existing dryers, dairies can increase capacity throughput on their existing dryers, as the product now contains less water to be removed. These membrane systems can be configured as a stand-alone new system in front of a dryer or as an add-on expansion to an existing filtration system. It is a cost-effective solution for water removal and in some cases gets rid of capacity constraints if limited with existing dryer throughput.

A large proportion of the products produced with this membrane filtration system configuration are high quality nutritional products such as dried powders utilized in sport, infant, and senior formulations as well as in protein bars. ●

ABOUT US

Tetra Pak Filtration Solutions, which has locations in Silkeborg, Denmark, and Champlin, MN, US, is an integrated part of the global Tetra Pak group, a world leading food processing and packaging solutions company. Working closely with our customers and suppliers, we provide safe, innovative, and environmentally sound products that each day meet the needs of hundreds of millions of people in more than 160 countries.

With more than 25,000 employees around the world, we believe in responsible industry leadership and a sustainable approach to business. Our promise – PROTECTS WHAT'S GOOD™ – reflects our vision to commit to making food safe and available, everywhere.

www.tetrapak.com/membrane-filtration



Tetra Pak test customer requirements for new filtration solutions by using pilot plants in our Product Development Centers around the world – e.g. this plate and frame pilot plant – and at customers sites.



Let's innovate together to grow your product offering

Tetra Pak's membrane filtration test facilities around the world and rental pilot plants provide you the flexibility to innovate when and where it suits you.

Combined with decades of expertise, you'll have countless, advanced possibilities to expand your plant based, milk, and whey based product portfolio.



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