

Next Generation Active Solutions for Probiotic Stick Packs



Maintain Potency and Efficacy of Stick Pack Probiotic Products



Active Packaging Solutions to Extend Shelf Life and Enhance Stability & Efficacy of Stick Pack Probiotic Products

Probiotics packaged in stick packs face unique challenges when it comes to maintaining potency to meet end of shelf life label claims. The small format doesn't allow for a traditional "drop-in" desiccant solution, like a sachet or canister, to protect the contents. However, Aptar Active Material Science's proprietary 3-Phase Activ-Polymer™ technology, deployed as Activ-Film™ material, can be seamlessly integrated into probiotic stick packs to adsorb moisture, effectively controlling water activity throughout shelf life to help maintain strain viability.

About Activ-Film™ Technology

Activ-Film™ technology provides customized active protection for stick pack probiotics in a small, easy-to-integrate format. Adsorption capacity can be increased or decreased to meet specific probiotic product needs. The Activ-Film™ material is affixed to the foil using our patented heat staking process via a Film Application Module (FAM), which can be integrated onto current stick pack and sachet manufacturing lines (Figure 1).

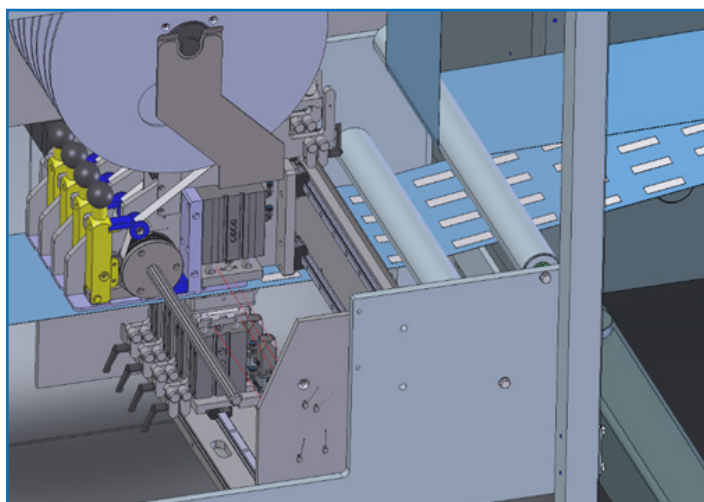


Figure 1: Four-Lane FAM applies Activ-Film™ material to foil before slicing and pouching

Data Review

As shown in the graph below, probiotics packaged in stick packs with Activ-Film™ material maintained reduced Water Activity (A_w) throughout the duration of the study relative to stick packs without the Activ-Polymer™ film. (Figure 2).

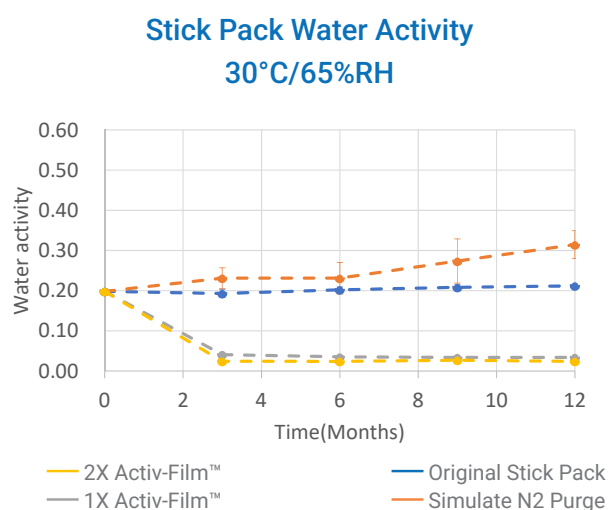


Figure 2: Water Activity in Stick Packs Over Time, With and Without Activ-Film™ Material

Benefits

- **Enhanced viability of cultures = reduced overage & higher margins:** Maintains viability of cultures and enables brands to reduce overage levels typically required to meet end-of-shelf-life label claims
- **Extend shelf life, enhance stability and efficacy:** Extend shelf life performance over traditional packaging options
- **Expanded formulation development opportunities:** Enables unique combinations of ingredients that aren't feasible in solutions that provide less protection
- **Versatile Implementation:** Film Application Module is designed to be compatible across a wide range of stick pack equipment designs and scalable to accommodate single or multi-lane formats
- **No impact to manufacturing line speeds:** Compact Film Application Module enables seamless integration of Activ-Film™ material without slowing production lines

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