

Next Generation Active Solutions for Pharma Stick Packs



**Extend Shelf-Life and Maintain Stability of
Powders, Mini-Tablets, and Granulate Drug
Products Packaged in Stick Packs**

Premium drug product protection,
simple implementation.

Active Packaging Solutions to Extend Shelf Life, Maintain Stability

Advanced protection for powders, mini-tablets and granulates packaged in stick packs

Pharmaceutical powders, mini-tablets, and granulate products packaged in stick packs face unique challenges when it comes to maintaining shelf life. The small format leaves little room for a traditional desiccant solution 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 these packaging formats to create a precise microclimate inside the package that extends API shelf life and ensures product stability and efficacy.

About Activ-Film™ Technology

Aptar Active Material Science's 3-Phase Activ-Polymer™ platform technology enables a new class of highly-engineered polymer compounds incorporating active chemistries to provide moisture control, gas scavenging, microbial pathogen reduction, and aroma reduction or emission. Activ-Film™ provides this customized active protection in a small, easy-to-integrate format. Available as a continuous roll of film, it can be formulated to adsorb residual moisture, scavenge oxygen, nitrosamines, or other Volatile Organic Compounds (VOCs), or deliver a combination of active protection.

From R&D to Commercialization

Aptar Active Material Science partnered with Merz Verpackungsmaschinen GmbH, a leader in stick-pack innovation, and Ivers-Lee, a CMO, to enable simple adoption of Activ-Film™ technology. Merz successfully integrated a Film Applicator Module (Figure 1) in a vertically operating, fully-automatic forming, filling, and sealing machine for stick pack production, delivering up to 40 stick packs per minute per filling line with weighing control. The Activ-Film™ material is heat staked to the foil without adhesives before stick pack forming (Figure 2).

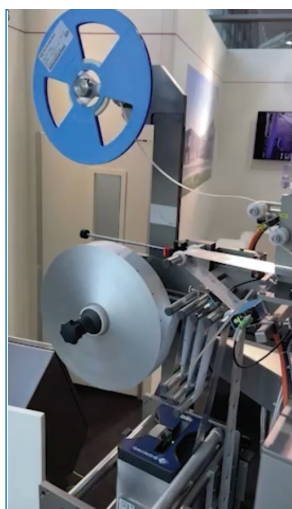


Figure 1: Integrated Film Application Module

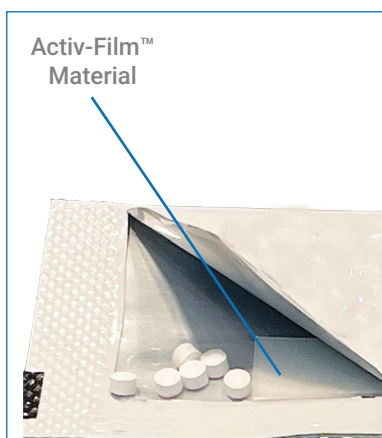


Figure 2: Activ-Film™ Material Heatstaked to Foil StickPack

Data Review

As shown in the graph below, Water Activity (A_w) of lactose packaged in Activ-StickPack decreases during storage (Figure 3). StickPack samples were identified and stored for three months at room temperature before being introduced into a climatic chamber at 30°C and 65% RH (Zone IV ICH conditions). Water activity was measured with Awmeter LabTouch-aw Advanced (NOVOSINA) with measurements taken at T0 and every 4 weeks afterward.

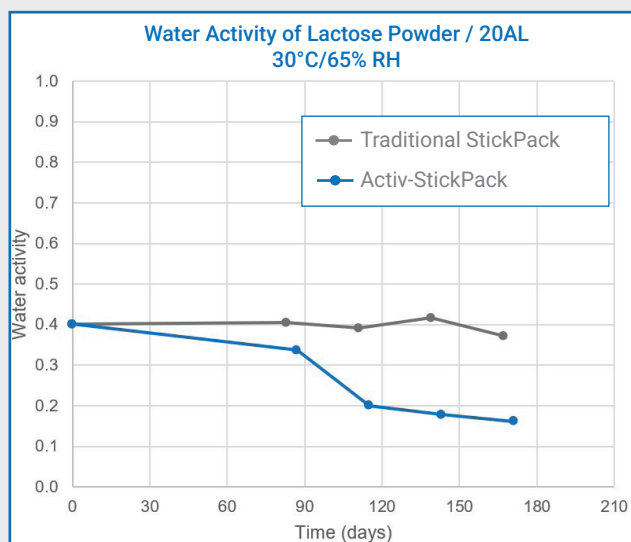


Figure 3: Water Activity in Traditional StickPack vs. Activ-StickPack

Benefits

- **Extend shelf life, enhance stability and efficacy:** Extend shelf life performance over traditional packaging options.
- **Flexible options:** Customized active protection, size, and capacity. Activ-Film's adsorption capacity can be increased or decreased to meet product needs. Child resistant packaging and gas flushing options are also available.
- **Speed-to-market:** A machine is available at Ivers-Lee to support pre-stability and proof of concept samples. Collaboration between Aptar Active Material Science, Merz, and Ivers-Lee delivers expert guidance and support from R&D through commercialization to expedite time to market.



Aptar
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