

Honeywell Aclar® Films



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**Addressing Complex Needs of
Pharmaceutical Stakeholders via
Ultra-High-Barrier Thermoformed
Packaging**

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Addressing Complex Needs of Pharmaceutical Stakeholders via Ultra-High-Barrier Thermoformed Packaging

Launching a drug in today's pharmaceutical environment is more demanding than ever before. The pathway to a successful launch has become more difficult as pharmaceutical companies face a variety of internal and external pressures. Beyond safety and efficacy Pharma companies have to demonstrate treatment effectiveness and improved outcomes of newly launched medicines versus next best alternatives already marketed. At the same time growing external cost pressures are adding to creating a much leaner Pharma-internal environment geared to streamlining processes at the boundaries of Drug Discovery, Pharmaceutical Development and Pharmaceutical Operations. "Doing it right the first time!" and "Doing more with less!" have become the name of the game in many companies. In this context, packaging solutions that address multi-stakeholder needs holistically have gained growing importance. This holds true in particular for the packaging of oral solids – still the most preferred dosage form. The high global prevalence of blister packs as observed today is based on a unique combination of value creating features such as flexibility in pack design and processing.

A Global Perspective

In today's globalized Pharma environment there are a host of challenges for brand owners around reaching the right patient groups with the right product offering that meets both the regional regulatory requirements but still matches with users' needs in a cultural context. With globalization, supply chains are getting longer and more complex and logistic costs – both internally and externally – are growing. At the same time there is a dramatic growth of product site transfers with involvement of countries located in hot and dry or hot and humid regions. Last – but not least – formulations such as Modified Release or solid dispersions are getting more sophisticated and complex and at the same time, dosage sizes are getting bigger. As a result more and more Pharma companies are looking for processing platforms that help to meet users needs and reduce complexity (costs) whilst maintaining flexibility at all stages – internally and externally from a pack design perspective.

Probably this explains why thermoformed blister packs have become the preferred choice even for products that need high and ultra-high moisture barrier protection.

Globally, thermoform blister packaging has become the most prevalent packaging process, as it addresses many of the complexities inherent in worldwide product launches. As a result of highly efficient thermoform processes there are significant gains in "*Space productivity*" realized both internally and externally.

These involve reducing:

- The need for multiple packaging lines, thereby delaying the need for additional manufacturing space.
- Total packaging volume and pallet number resulting in savings of storage space, logistic costs and energy.
- The need of additional storage and shelf space at wholesalers and pharmacies.

Globalization is also driving the need for better shelf life. More sophisticated drug formulations such as Modified Release and Solid Dispersions require high levels of moisture barrier protection. To address the key challenges as mentioned earlier there is a growing adoption of high and ultra-high thermoformable moisture barrier films such as Honeywell's Aclar® films. The use of these high-barrier thermoforming films increase the likelihood

of achieving sufficient shelf life, even in the most severe climatic zones, allowing the pharmaceutical company to market its product globally on a thermoform platform. Additional global marketing needs, such as user-friendly packs that differentiate the brand, can also be addressed with the use of high barrier films. Proper color coding of the outer carton in combination with clear blister packaging films has proven to be helpful in the effort to prevent medication errors within and across brands.

Keep It Simple

In parallel with the previously mentioned trends is a movement toward smaller blister pack sizes. To further promote patient compliance, many pharmaceutical companies are looking at reducing the size of blister packs to match patients' lifestyles without sacrificing product protection. Smaller pack sizes simplify life for patients; they can be concealed in a pocket or handbag and easily taken while on the go. The portability and discretion of a small pack improves the user's experience, resulting in better patient compliance and more successful therapies.

Furthermore, reducing the size of blister packs can simplify pharmaceutical companies' internal processes. There is no need to purchase new thermoforming equipment; minor machine adjustments allow the manufacturer to use existing thermoforming processes. By using high barrier thermoforming films, they can achieve a small blister footprint—even with big tablet and capsule sizes. In fact, for very large tablets and capsules, thermoforming can reduce a blister footprint up to 65% versus other blistering materials such as cold formed foil (CFF). Other benefits of smaller thermoformed packs include reduction in material and energy use and productivity gains.

To further simplify the pharmaceutical value chain, pharmaceutical developers need to streamline primary packaging selection, adopting one ultra-high barrier thermoform film as a standard for all applications. This can reduce the need to test multiple thermoform packaging materials (analyzing test results for multiple

packaging materials can be a bottleneck for pharmaceutical companies) for each product to find the optimum solution.

Alternatives to high-barrier thermoforming films include aluminum pouch overwraps, alu/alu pouch overwraps, or alu/alu (CFF) blisters. Amber glass bottles with metal-screw caps as well as single- or multi-layer HDPE or PP bottles with CR screw caps also meet high moisture, oxygen and light barrier protection requirements.

Conclusion

Today's pharmaceutical manufacturers must reconcile a wide range of disparate needs to successfully launch a drug. Globalization brings with it the need for better shelf life, simplified supply chains, and greater productivity. The emphasis on the drug formulation pipeline plus the physical and chemical nature of new APIs is also driving the need to optimize packaging choices holistically. At the same time, there are ongoing efforts to develop slimmer packs with smaller footprints that better match users' lifestyles.

These trends result in more restrictive conditions that can impede the introduction of new products. To counteract these constraints, pharmaceutical companies are turning to ultra-high barrier thermoform films, such as Honeywell Aclar® Films, that address multiple stakeholder needs. A thermoform platform increases the likelihood of passing stability tests and simplifies patients' lives as well as the entire pharmaceutical value chain.

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