

Clear Sachet Protects Vitamins and Mineral Supplements

Multilaminate barrier film keeps moisture away from tablets and capsules. It's a hit in Southeast Asia.

An unconventional flexible packaging structure helps protect Pharmanex's (Provo, UT) LifePak supplements from the degrading effects of temperature and moisture.

LifePak is an eight-SKU line of vitamins, minerals, antioxidants, and phytonutrients in sachets containing four to six tablets and/or capsules per sachet.

Because the company markets its dietary supplements worldwide, the tablets and capsules are subject to a broad spectrum of temperature and moisture conditions. The clear sachet's low moisture-vapor transmission rate (MVTR) and strong seal strength and integrity prevent moisture and heat from damaging the product.

NEW FILM

Pharmanex codeveloped the LifePak sachets with Rollprint (Chicago). Working together, the companies developed NutraSeal, an aluminum oxide-coated polyester film coextrusion coated with a blended polyolefin sealant layer.

The aluminum oxide-coated polyester has an MVTR guaranteed to be 0.08 g/100 in.²/day or less. In comparison, some materials become ineffective at high humidity levels.

The extrusion coating was necessary to meet the demands of high-speed tablet-packaging equipment. The tablet-packaging line requires a

"low-slip" or high-coefficient-of-friction (COF) material so that the capsules or tablets can cling to the packaging material during loading. A slight cling prevents extensive tablet movement within the sachet that could interfere with the sealing operation.

While the film clings to the tablets and capsules inside the sachet, it glides smoothly over the equipment. "The material's performance in high-speed

the polyolefin blend results in heat seals so strong that almost anyone can stand on a package without breaking it. Yet, access can easily be gained by tearing across either one of the two opposing serrated edges.

In addition to providing production advantages, extrusion coating is the most cost-effective method available today for manufacturing a clear, high-barrier, high-seal-strength overwrap film, according to Rollprint.

R&D

Since the package was launched in 2002, Pharmanex has received extremely positive feedback—notably from its most demanding market, Southeast Asia, where high humidity levels make it one of the most challenging environments for packaging.

The structure took 18 months to develop. Pharmanex and Rollprint literally built the film one layer at a time. "Each sachet contains multiple

layers of material," says Cerqueira. "Our concept identified the ideal attributes of each layer, then advanced to a second phase to select the best combination of materials to generate product protection."

LifePak sachets had to meet critical performance areas such as machinability, seal strength, seal integrity, opening ease, appearance, and MVTR.

After the sachets were subjected to quality and performance tests through



The low moisture-vapor transmission rate of these sachets protects supplements from moisture degradation. Photo courtesy of Pharmanex/Rollprint.

production ultimately has a significant impact on the cost of goods," points out Luiz Cerqueira, senior vice president of global operations and manufacturing for Pharmanex.

The coex layer is less than 1 mil thick, yielding a total structure thickness of 1.25 mil. The thin gauge is approximately half the thickness of alternative flexible structures used traditionally for dietary supplements.

Apart from high moisture barrier,



The sachet film is compatible with Pharmanex's packaging equipment.

Photo courtesy of Pharmanex/Rollprint.



Distributed worldwide, LifePak's packaging must withstand wide temperature and humidity variations. Photo courtesy of Pharmanex/Rollprint.

the various developmental stages, it was time to subject the package to additional continuous evaluation during the first six months of commercial production.

"We wanted to ensure that everything we had done in the development

phase would be consistently achieved when we went commercial. It was important to make sure that all of the performance areas remained consistent," Cerqueira says.

"When you have a project of this nature, it is key that there is excellent

communication and coordination between the team members every step of the way. In my opinion, it was the relationship we had built with Rollprint that enabled us to be successful with this project," Cerqueira says. ❖

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