

50 years of blister packaging

Pharma industry celebrates half century of blister packs

— *The blister pack celebrates its 50th anniversary in 2012 and it is hard to imagine a world where unit dose pharmaceuticals are not presented in this user-friendly format. Yet it was only a combination of several unlikely factors which brought about the birth of this style of packaging.*

Until the 1960s pills were usually provided in bottles, jars or paper based strip packs (such as the famous Aspro). However when Schering (today Bayer) developed the first birth control pill it needed a pack to aid patient compliance and make it simple to control administered doses over a set time period.

This coincided with the development of PVC and later copolymer, which had good forming capabilities, suitable for creating deep cavities. In fact the first thermoform machines were not developed for pharmaceuticals but food containers. The idea to develop a blister pack for birth control pills came from Hassia, a leading manufacturer of packaging lines, at the beginning of the 1960s.

What to the success was the development of tempered alufol as a lidding material for the 'push through' pack; rigid enough to meet these pack requirements, whilst maintaining good adhesion by coating it with special lacquers. Alufol used up until this time for most packaging was too soft to be used for this new application. Initially this rigid foil was called Springfol on account of the pills 'springing' or 'jumping' out of the blister when being pushed through.

The final piece of the puzzle was a machine to produce blisters in the quantity and quality required.



Schering's Anovlar® was the first preparation for hormonal contraception to be offered in Europe. The first packs utilized an alufol strip. This was followed by the launch of Anovlar® 21, the first drug to be offered in a modern type calendar pack.



Hassia, in conjunction with German materials' suppliers, including Aluminium Wälzwerke Singen (today Amcor Flexibles) and Kalle, created the first blister machine capable of forming, filling and sealing the pack on line. Today German and Italian manufacturers such as Bosch, Uhlmann, Romaco, IMA and Marchesini lead the way in blister pack machine technology.

The first machines were quite slow but quickly were able to produce over 400 blisters per minute. However many modern machines can run at up to

1,200 per minute. Alufol's tensile strength, high sealing integrity and excellent adhesion has enabled these speeds to be achieved.

Other benefits of the new blister pack were soon recognised. In particular it saved more than 60% in materials compared with traditional packs. The flat packs are also easier to store and take up less space for both storage and on the dispensary shelf. While these features were initially recognised for cost savings rather than as sustainability issues they certainly score highly today in that respect. //

Push-through packs

The most common form of pill pack is the combination of a plastic thermoformed sheet used to make the cavity and, for 'push-through' blisters, a sheet of 20µm rigid aluminium foil laminate providing the lidding layer.

The fastest period of growth in Europe for the pharmaceutical blister pack was the



1980s. Original pack dispensing (OPD) was advocated as the best way of delivering products to patients. Over time the advantages of OPD became well recognised: they largely eliminated the risk of damage, product tampering, contamination or dispensing errors.

But the obvious advantage for the end-user is that it is always clear how many tablets have been used. In addition the packs can carry printing on the alufol lid to depict the dosing schedule or other important information.

As demands for more child resistant blister packs grew new alufol laminates have been invented to make the format even safer. //