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Blister packaging, cost-effective for dosage forms

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THE primary objectives of packaging in pharmaceutical sector are to protect the medicinal products manufactured against all adverse external influences that will alter the properties of the medicinal products in such as physical damage, mechanical damage, biological contamination and degradation etc.

In pharmaceutical sector, the conventional materials employed for packaging of medicinal products include various types of materials such as polyethylene terephthalate containers for packaging of liquid and fluid formulations, material of glass silica (SiO₂), which has the properties of near zero thermal expansion,

exceptionally good thermal shock resistance, very good chemical inertness, low dielectric constant and low dielectric loss, and good ultra violet transparency. But, after the invention of blister packaging, the

concept of packaging in pharmaceutical sector has changed enormously mainly due to the numerous benefits of blister packaging.

Packaging also helps to identify the correct medicine and also the correct information of the medicines. In pharmaceutical sector blister packaging is employed to

pack pills, capsules, tablets, granules or lozenge. The blister packaging is unique for

the packaging process. Tablet and capsule lines can generally handle product with relentless consistency, therefore, making or happening defects in normal condition is rare.

A very interesting aspect to the blister package is that although each cavity is separate and it is also dependent. If the seal between two cavities is breached, it does not compromise the sterility or quality of the packaged medicinal products, unless one of the blister cavities has a leak to the outside of the package.

With today's new drug delivery systems, certain drugs are extremely sensitive to the moisture and other environmental factors. In these cases, within minutes of being subjected to normal room temperature and humidity conditions, the drug delivery becomes ineffective and creating too much financial loss to the drug makers.

If there is a leak between two cavities, as the product of one cavity is consumed, the quality of the second cavity is compromised, and the most advantage of blister packaging for the patients is the convenient and very easy removal of tablets or capsules by pressing the blister and forcing the contents to backing the strip.

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New drug formulations driving packaging materials

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There are many other advantages of blister packing, some of the advantages are: Blister packaging is very light weight and consumes very less volume compared to glass which often used for packing medicinal products. These save a significant amount of transportation cost to drug makers. Blister packs provide better sealing to the medicines need to be stored in a dry moisture free environment. Thus it extends the shelf life of the medicinal products which also can be stored for a longer time without damage. Dose accuracy can be easily maintained in blister packing. Blister packaging can be easily automated to maximize the protection of the safety of packaging. Blister packaging provides product integrity, compliance with patient favouring guidelines, protection of products and very low possibility of accidental overdose.

The innovative technology

employed in blister packing is 'thermoforming' - the process of taking a sheet of plastic material and heating it up till it is pliable and forming it to required shape, then trimming and finishing it into a usable product size form. Blister packs are normally seen in paired with product items such as over the counter medicines, cosmetics, other consumables, and many more.

Blister packaging consists of a plastic container for the product mounted on cardboard backing. Blister packs are beneficial in that they allow for high product visibility and less of cost of production. Additionally, blister packs are versatile in terms of



size and shape, and they are easy to stock in stores and it enables drug makers to print specific information on the back of each individual small pack and patients or consumers definitely get benefit from this information.

Blister packaging is a pre-formed pure plastic material packaging that uses a backing card which under normal condition has some featured artwork on it and a clear plastic pocket that is known as the blister. The blister packaging consists of two primary components the first one is the cavity. It is made from either plastic or aluminium foils and the second one

blister packs are mainly employed for packing physician samples of medicinal products, or for over the counter products in the pharmacy. In other parts of the globe, the blister packs are the main packaging type since pharmacy dispensing and re-packaging are not common.

Blister packs also prevent maximum level of illegal production and use of the over the counter medicinal products, and they provide better sealing to the medicinal products, which require to be kept in dry and moisture free condition for enhancing the shelf-life of the medicines

Rapidly increasing new drug formulations and processes are the main driving forces for pharmaceutical packaging materials in India. The new trends and innovations in specialised packing for pharmaceutical products are essential for the growth of the pharmaceutical packaging sector. The sector occupies a considerable part of overall pharmaceutical market in India and is growing more or less steadily with the same pace of the pharmaceutical sector

is the lid which is made from papers, paper boards, plastics or aluminium.

The cavity contains the medicinal products and the lid seals the products in the package. The name derives from the fact that each item packed in blister packing is contained within its own small plastic bubbles or blisters. It is also called as a bubble or push-through-pack. Very clear plastic material is used for packing the items and aluminium foils coated with adhesive bonding are used in the films which are heated together to form a separate sealed package.

Blister packs can provide barrier protection for shelf life requirement of the medical products, and a degree of tamper proof resistance. In the developed nations, the

which also has to be stored for a long time as per the expiry period of the products with efficacy.

Conclusion

Rapidly increasing new drug formulations and processes are the main driving forces for pharmaceutical packaging materials in India. The new trends and innovations in specialised packing for pharmaceutical products are essential for the growth of the pharmaceutical packaging sector. The sector occupies a considerable part of overall pharmaceutical market in India and is growing more or less steadily with the same pace of the pharmaceutical sector. ♦

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