

Facilitating transformation in packaging

Increasingly, packaging companies are incorporating innovative design features and utilising more advanced technologies, to produce and manage pioneering products and ever more sophisticated systems, which help eliminate excursions in temperature in cold chain. As temperature sensitive pharmaceutical products are increasingly being shipped globally to more remote regions there is an even greater demand for innovative solutions being placed on the temperature control packaging industry.

In an exclusive interview with **Surya Kannoth**, **Pluss Advanced Technologies'** managing director **Samit Jain** reveals what is really fuelling growth for the packaging industry in the pharmaceutical sector and how Phase Change Materials are improving efficiency of thermal packaging.

What is your view on the current landscape of the packaging industry for the Indian pharma sector and the potential impact of global trends?

The tertiary packaging industry is not a completely organised setup. When it comes to temperature controlled packaging, it is only in the last 2-3 years that established players are beginning to make an entry. This is a good sign, as it will lead to validated and standardised temperature controlled packaging solutions being adopted. Globally, pharma transport is a high tech area – with great care as well as regulations governing it. In India the last mile delivery of pharma products just does not happen in controlled temperature environments. An increased awareness at consumer level will also lead to improved packaging.

How are regulatory changes driving packaging innovation in the pharma industry?

Regulatory changes in the labelling and tampering area have driven several innovations; however on the temperature control side, in India except for vaccines, there are no stringent guidelines laid down by the government. The pharma companies ensure that the products leave their premises at the right temperature but in the last mile, this is not ensured. The broken cold chain in India

and other low and middle income countries is a big concern.

How are Phase Change Materials (PCM) impacting efficiency and productivity of thermal packaging?

Use of ice or “gel packs” has been the basis of most thermal packaging solutions thus far. Ice being at 0 deg C, if not correctly used (thawed before use) can lead to temperature dips below the recommended 2 deg C min temperature. Phase Change materials which melt at 3 deg C or higher, ensure that the temperature will never dip below 2 deg C. Moreover, for controlled room temperature, cold water packs are used. PCMs at 22 deg C ensure have a higher thermal storage capacity than water; this allows lower amount of PCM to be used to maintain temperatures. Moreover combinations of chilled water and ice need not be used. This therefore could impact the efficiency of temperature maintenance as well as weight of the product in a positive way.

Can you elaborate on the products you have in store for the pharma sector?

Celsure® is a temperature control packaging solution for Pharmaceuticals which uses the savE® Advanced Phase

Change Material Technology to provide precise temperature control for as long as 120 hours. Currently there are about 5 different variants in terms of duration of temperature maintenance and size under the Celsure range. We are looking at introducing several other sizes as well as looking at improved insulation technologies. We are working with several Indian as well as Multinational companies in India to validate and customise Celsure for their individual requirements. We are also working with logistics companies who provide temperature controlled packaging as a service to pharma clients.

Are your clients demanding further innovations?

Yes. Our clients are extremely satisfied with the reduced packaging time as well as the precise temperature control. They would like reduced weight of the package and even a 7-10 day backup. We are looking at innovative insulation techniques and materials to create such products.

