

ARE COLD CHAIN LOGISTICS READY FOR A HYBRID?

A Softbox whitepaper on the future of reusable shippers



Introduction

At some point in our lives, many of us will have the need to ship items from one destination to another. It could be for business, it could be for pleasure. But whether you are travelling along with your goods or simply sending them to a specified address, you will be given options on what type of shipping container or case you feel is appropriate to use.

I have to put my hand up here. Whenever I travel with my beloved bicycle, I always reuse the cardboard shipping carton it was shipped in, from the original manufacturer to the shop. And why wouldn't I? In this day and age we are conditioned to recycle, it's 'the right thing to do'. What's more, these cartons seem perfect as transport cases: they provide more than adequate protection and they don't cost a cent (the bike shop people always seem more than happy to recycle them, or rather, let me take them off their hands).

All well and good. So far.

But what happens when the stakes are higher? What happens when your package is fragile? Or lightweight? Or just plain old expensive? And what do you do if you're shipping temperature sensitive goods that require a controlled temperature environment? In short, what becomes of the recycling tradition when a package needs some serious protection?

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Choosing your package type

In its broadest terms, the temperature control packaging market appears pretty clear cut. As a customer, you can choose to send your goods in a package that is disposable and designed for one-time usage. Or alternatively you may favour a reusable or multi-use version.

Historically, single-use packaging is manufactured from cost-effective thermal insulation materials such as expanded polystyrene and polyurethane. These are then coupled with phase change materials like water or water-gel compositions.

Reusable temperature control packaging on the other hand, has always been designed with more robustness in mind, along with increased thermal protection. These packaging systems are commonly composed of progressive insulation materials such as vacuum insulation panels, as well as advanced phase change materials. When combined, these packaging components result in a high-performance and reusable packaging system that, not surprisingly, also comes with increased cost to the end user.

Caution versus risk?

What we have seen over the years is a blurring between single-use and reusable temperature control packaging, where customers either take risks or over-compensate on the level of protection that is required.

It isn't hard to envision the first scenario. There are plenty of instances where customers regenerate single-use packaging systems with the aim of decreasing their total cost of use. A measured approach is needed in such instances.

With a packaging system being asked to perform beyond its original design capability, a customer will often have to select specific shipping lanes, giving them a degree of control over both the 'ship from' and 'ship to' operations. This is most prevalent when making site-to-site shipments within the same organisation.

Should this approach be managed correctly and adhere to strict standard operating procedures specified by the packaging system manufacturer, it can surprisingly be as effective as it is lucrative.

On the flip side, more cautious customers have been known to use reusable packaging just once, simply because they value the increased thermal robustness that this type of packaging provides. In the eyes of such a customer, the extra costs involved are negated by the security and peace of mind that comes with the method.

Room for a hybrid

As temperature control packaging systems continue to evolve, we may well be moving closer to a future where a package can be utilised either once or multiple times, but within the confines of the same shipping system. The benefits promise to be far-reaching.

Not only could this be done cost-effectively, but from an operational point of view it would no longer be necessary to keep an inventory of either the reusable, high-performance shipping system, or its one-time counterpart.

The next generation of multi-use packaging systems will need to amalgamate proven technologies. When specified procedures are followed, the cost-effective multi-use packaging system materials can be combined with higher-performance phase change materials to administer a quality of output that is currently found only in the traditional reusable shipping cases. Ultimately, it is not inconceivable that we could soon see the dawn of packaging systems with exterior components that can be used up to five or six times. These would replace the current external installation panels which can be subject to damage during shipment.

Manufacturers could combine the new components with phase change materials that are housed in reusable encapsulation vessels (like HDPE blow-moulded bottles). These elements would also allow a higher reusability rate than the exterior installation shell of a packaging system, and could feasibly be employed for regeneration anywhere between 20 and 50 turns – without any degradation in thermal performance.

Such a hybrid model in multi-use systems would deliver on what the modern-day shipping economy is asking for – cost savings and increased compliance for those making temperature control shipments around the world.



In fact, at Softbox, it is the continued investment and innovation in product design that now allow us to offer a total range of temperature control packaging systems

Delivering the future

As a temperature control packaging manufacturer ourselves, we are continually listening to what our customers are saying and evaluating what can be done to deliver against demand. The voices of clients who are calling for both increased compliance and a drive to reduce packaging spend wherever possible, seem to grow louder and louder.

It is my belief that by creating the hybrid multi-use shipping systems that we have discussed here, we can provide solutions that will do both jobs – ultimately delivering the affordable, fit-for-purpose, temperature control packaging solution.

About the author

Richard Wood is Director of Digital Connected Technologies at Softbox and has been designing and engineering innovative temperature control packaging systems for the past fourteen years. Richard has been involved in hundreds of global cold chain development projects working with a broad cross-section of the pharmaceutical and life science industries.

To see the full range of packaging options that are available to you, go to www.softboxsystems.com



A hybrid, multi-use shipping system could ultimately deliver the affordable, fit-for-purpose temperature control packaging system.

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