

Pharma Company Replaces Polystyrene Cooler with Biobased Alternative



Sandoz, Inc. (Princeton, New Jersey, USA) and KTM Industries, Inc. (Lansing, Michigan, USA) are pleased to announce the launch of the Green Cell Cooler Box - the first 100% biobased and completely compostable/recyclable thermal cooler to protect pharmaceutical products during shipment. The Green Cell Cooler Box is a standard corrugate box outer lined with panels of cornstarch-based Green Cell Foam, manufactured by KTM. Green Cell Foam meets ASTM D6400 and ISO 1708 specifications for biodegradability under composting conditions.

Led by Mark Kuhl, Packaging Development Manager for Sandoz, the project was in response to a new way of thinking at Sandoz where sustainability has become a top priority. This was a perfect opportunity to shift the paradigm and find a packaging solution that utilizes bio-renewable resources and offers an environmentally responsible end-of-life option.

The typical pharmaceutical insulated shipper is constructed with polystyrene and is used for 24-72 hours before it is discarded. Non-renewable polystyrene is recyclable but the facilities to enable this are limited and cost prohibitive, thus relegating it to landfills. Sandoz' mission was to find an effective sustainable alternative to polystyrene based on biofeedstocks that would assimilate back into nature after its use. The mission was accomplished with Green Cell Foam which is compostable and can be recycled in the paper recycling stream along with the outer box, thereby affording the end user with flexibility in the end-of-life disposal process.

Mr. Kuhl set out to design, test and validate a cost effective 'green' cooler that met the rigorous cold-chain shipping requirements for protecting sensitive pharmaceutical products. During his tests he discovered Green Cell Foam not only insulates as well as polystyrene but it also absorbs excess condensation that would potentially damage the contents of the package. Green Cell's ability to wick out ambient moisture presents a cleaner package for the customer by eliminating any pooling of water due to condensation.

Green Cell Foam also provides significantly improved protection against shock and vibration damage when compared to traditional shipping coolers. Polystyrene coolers are somewhat brittle and have the propensity to crack under stress – even from a single impact. A break in the foam can compromise the integrity of the cooler by providing a channel for outside air to flow inside.



Sandoz products before placing in the Green Cell Cooler

Green Cell Foam can absorb multiple hits without cracking or breaking, providing a more stable thermal barrier while also providing improved impact protection to the contents. This adds value to the overall package while reducing damage claims.

Sustainability was a key driver to this project. Sandoz wanted to see the environmental effects of switching from polystyrene to Green Cell Foam. KTM turned to Dr. Ramani Narayan of Michigan State University for the answer. Dr. Narayan provided life cycle assessment data which demonstrated a significant improvement in all but one of the LCA indices (eutrophication is slightly higher with Green Cell). The key metrics from the LCA comparison are an 80% reduction in greenhouse gases and a 70% decrease in energy requirements.

In June 2009, refreshed graphics will grace the outside of the coolers (right) which will help customers recognize and understand the benefits of the Green Cell Cooler. Mr. Kuhl is now designing additional sizes of Green Cell Coolers for use within Sandoz' North American operations.

It's a real win-win situation for Sandoz and their customers: improved performance, improved convenience and a big improvement for the environment.

