CONVECTION BASED TEMPERATURE ASSURED PACKAGING SYSTEM

Cross Reference to Related Applications

This application is a continuation-in-part application of United States Patent Application No. 13/752,894 filed on January 29, 2013 and claiming priority from United States Provisional Application No. 61/705,995 filed on September 26, 2012.

Field of the Invention

This invention relates to a packaging system for shipping temperature sensitive products. More particularly, this invention relates to a packaging system for shipping temperature sensitive products that reduces or eliminates the need for side refrigerant components and improves thermal performance.

Description of the Related Art

Current pallet shippers for use with temperature sensitive products use side refrigerant components in addition to top and bottom refrigerant components to surround the products on six sides. These types of pallet shippers generally are assembled by loading the products into the shipper and then inserting refrigerants around the products.

This six-sided configuration is inefficient in terms of packing out the product and the refrigerants. For example, refrigerants inserted along the sides of the product shipper between the products and the outer container can fall over and otherwise change position within the shipper. The use of side refrigerants also results in increased weight and shipping cost.

Yet eliminating side refrigerants can result in the products getting too warm. For temperature sensitive products, such as those which must be maintained at a temperature not exceeding 15C (59F), eliminating the side refrigerants has heretofore been an