



HOW MUCH GEL ICE?

The optimal number and size of gel packs to keep products refrigerated or protect against freezing depends on several factors, including the product mass, the internal volume/capacity of the insulated shipping container, the type and thickness of the insulation, and the ambient external temperature. The number and size of gel packs used will vary according to the external ambient environment and the duration of the shipment. Providence Packaging strongly recommends testing and evaluation of all packaging designs to confirm performance characteristics.

Many companies monitor temperature forecasts to establish packing protocols seasonally and, even, daily. <http://www.ncdc.noaa.gov/oa/ncdc.html>

For companies requiring large quantities of frozen gel ice packs, contact Providence Packaging to locate a nearby freezer facility. Providence Packaging has the capability to deliver frozen gel ice packs on a Just-In-Time (JIT) basis.

HOW MUCH DRY ICE?

The optimal amount of dry ice to keep product frozen depends on several factors, including the product mass, the internal volume/capacity of the insulated shipping container, the type and thickness of the insulation, and the ambient external temperature. Frozen products being shipped in a 1.5" Wall Molded EPS Foam container with a maximum internal capacity of 4725 cubic inches should be packed with 10 lbs. of dry ice for a 24 hour shipment. This recommendation will change based on variables, including the ambient external temperature and the time in transit. Providence Packaging strongly recommends testing and evaluation of all packaging designs to confirm performance characteristics.

TESTING vs. VALIDATION

Providence Packaging recommends testing and evaluation for all packaging designs prior to implementation. However, certain applications may require validation of package performance. Providence Packaging provides a referral service to certified Testing Laboratories with the capability to provide independent package testing and packing protocol development. It is important to remember, validations are specific to a particular product, packaging model, packing protocol, and environmental model. Variations to any of these criteria, while potentially relevant to another application, will render the validation invalid when using the revised criteria.