Thermal modeling, or CFD, is an engineering simulation that analyzes fluid flow and/or heat transfer in a virtual environment. It identifies physical forces and flow characteristics that are sometimes impossible to measure or gain insight into otherwise. It also allows you to do a comparative analysis between different packaging configurations or temperature profiles in order to choose the best option for your requirements, within a short timeline.

Our team uses ANSYS Fluent, the most powerful computational fluid dynamics (CFD) software tool available in the world. This software is used by research centers, universities, and in virtually all industries worldwide.

**BENEFITS:**

- **Streamline your resources** – Save time and money by avoiding package qualification failure.

- **Reduce overall system cost** – Optimizing each component of the packout allows for savings on materials, labor, and freight down the road.

- **Access to a team of experts** – Team of PhD level engineers with over 10 years of experience in thermal modeling.

**TESTS AVAILABLE:**

**Closed Environment Airflow Analysis**

Analyze the airflow distribution of any closed environment and identify problematic areas before your products are affected.

An airflow analysis performed before a mapping study also reduces the risk of finding deviations during the study.
Temperature Profile Comparative Analysis

Compare an existing packaging solution to your specific shipping lanes temperature profile. Thermal modeling drastically reduces package validation failure rates by virtually exposing the packout to your shipping conditions.

This analysis is also available for custom packaging design to test the packout configuration before starting the testing process in thermal chambers.

Refrigerant or Insulation Comparative Analysis

Test multiple refrigerant & insulation options and configurations to optimize your packaging solution. Available for:

**Refrigerants**
- *Phase Change Material (PCM) Panels* – cube configuration (6, 10 or 12 inch panels)
- *Gel Packs* – layered or surrounding configuration
- *Flexible Blankets* – water based or PCM, layered or payload wrap configuration

**Insulation**
- *Expanded Polystyrene (EPS) Panels* – standard packaging insulation
- *Vacuum Insulated Panels (VIP)* – EPS panels vacuum sealed for increased durability and duration
- *Polyurethane (PUR) panels* – rugged and lightweight insulation panels
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