CASE STUDY

Cold Chain Resilience in Prolonged Ocean Freight

Context

The life sciences and healthcare industry rely on temperature-controlled solutions to ensure their product arrives to its destination in compliance. Any deviation outside of the specified temperature ranges can render products ineffective, resulting in millions of dollars in lost product and typically runs tens of thousands of dollars to conduct the necessary investigation. In this highly regulated sector, ensuring compliance with strict temperature standards is a priority for pharmaceutical companies.

Problem

A Multinational Pharmaceutical recently encountered a logistical problem via ocean freight with a scheduled 40-day shipment from Europe to APAC through the Suez Canal. Unforeseeable events required the rerouting of the shipment, adding almost a month to the planned journey, and many challenges to their shipment. This posed a significant risk to their product as prolonged shipping times can lead to temperature excursions, jeopardizing the product itself. The pharmaceutical company needed to ensure that their temperature sensitive product kept its temperature compliance.

Challenge Overview

The increase in shipping time resulted from several global factors, such as supply chain disruptions, port congestion, power outages, among other issues. These are examples of things that can happen and are often unforeseen. The challenges faced by this shipment include:

- Ships being rerouted outside of the Suez Canal due to attacks in the region
- Geopolitical climate in region
- 12-hour power outage in transit
- APAC Destination Port congestion
- Refrigerated Shipping Container unplugged at port overnight with outside air temperatures reaching 40˚C
- Realtime device signal interference with traditional thermal covers

Solution

To address the problem, the company turned to the CCT 7C Enshield pallet cover. The 7C Enshield is an advanced phase change material (PCM) powered pallet cover offering protection to ensure temperature compliance. The 7C Enshield provides the user with a unique solution that recharges itself in transit, by using the containers 5C set point, and deploys its thermal protection automatically. The solution can withstand thermal variances in ambient temperatures during transit. At times of known temperature control, such as a plugged in sea freight container, the Enshield will recondition itself, ready to protect from the risk of any future excursion. This benefits pallet loads that see short spans of ambient temperature excursions. The company had moved away from traditional thermal covers due to inadequate thermal protection, real time logging signal interference, and their single use nature. The Enshield solved these issues for them while being a cost effective and sustainable, reusable, solution.

Outcome

- With the implementation of CCT Enshield, the company successfully kept temperature compliance during the journey, even with an additional month of delays. This allowed the company to preserve the integrity of its temperature-sensitive product, avoiding the costly risks of product spoilage and ensuring that patients received high-quality medicines.

Key Benefits of the outcome include

- **Temperature stability:**
  CCT Enshield ensured the companies products remained within the proper temperature range for the entire shipping duration, which was critical for regulatory compliance and product efficacy.
- **Cost-effectiveness:**
  By preventing product loss, CCT Enshield provided significant savings compared to the potential costs associated with spoiled goods or non-compliance penalties.
- **Operational efficiency:**
  The solution's seamless integration with the companies existing logistics infrastructure allowed for a smooth transition without adding operational complexity or delays.
- **Reusability:**
  The CCT Enshield line of products offers a unique advantage over the single use thermal covers by being a robust, reusable solution that is sustainable.

Key Lessons

- **Even in the face of extended shipping delays,** keeping strict temperature control is essential to ensuring the safety and effectiveness of medical products.
- **Innovative solutions can address modern logistical challenges:**
  The use of CCT Enshield allowed the company to adapt to the new reality of longer shipping times, providing a reliable and scalable solution for temperature-sensitive goods.
- **Collaboration with technology providers is key:**
  The companies partnership with CCT highlights the importance of collaborating with specialized solution providers to address complex supply chain issues in the life sciences industry.

Conclusion

The dramatic increase in shipping times presented a major challenge for the company, but through the implementation of CCT Enshield, the company was able to:

- Maintain temperature compliance
- Protect the integrity of its product
- Advance sustainability goals
- Successfully deliver life-saving products to patients around the world

This case study highlights the importance of using innovative cold chain solutions, like the Enshield, to overcome the risks of modern supply chains, ensure compliance, and safeguard product quality in the healthcare industry.