



Mitigating Risk While Moving Life-Saving Treatments Across The Globe

Simulation software, real-time monitoring, and innovative temperature-sensitive packaging solutions from CSafe enabled humanitarian organization Direct Relief to deliver life-saving COVID-19 antibody treatments to underserved countries and regions across the world.

Working in close collaboration, Direct Relief and CSafe employed SmartCAE simulation software to define and assess new shipping lanes for the emergency response shipments. By establishing a completely new Egyptian shipping lane, and utilizing innovative pallet-in-pallet shippers created by CSafe, Direct Relief has been able to expand its cold chain deliveries to additional countries including Indonesia, Ukraine, and Zambia, all without experiencing detrimental temperature excursions.

The Opportunity

Direct Relief faced the extraordinary challenge of transporting temperature sensitive antibody treatments in bulk – accurately, efficiently, and quickly – to people around the world amidst the COVID-19 pandemic. Time, temperature, and previously uncharted global shipping lanes were a few of the complexities facing this extraordinary humanitarian effort.

To help solve their unique shipping challenges, Direct Relief turned to CSafe.

Using data from SmartCAE simulation software, CSafe's technical consultants and support team analyzed every aspect of the cold chain. Opportunities and risks were assessed, and optimal lanes of shipping were determined. Through these analyses, the team settled on delivering pallets through a completely new lane to Cairo. But the work was far from over.

To successfully deliver COVID-19 antibodies to Egypt, the team needed to understand and anticipate the varying conditions through which the medication would travel during its five day transit period. They took into account every touchpoint in the transport, storage, and loading process – all the way from Los Angeles International Airport (LAX) to Cairo International Airport (CAI). This information was then paired with ambient temperature profiles pulled from available weather data and carefully evaluated.

The Breakthrough

Based on the internal dimensions of CSafe's pallet-in-pallet design, Direct Relief was able to fit exactly one pallet of product into the CSafe shipper. This precise fit allowed Direct Relief to load its own pallets and ship quickly while ensuring product stability and virtually eliminating temperature excursion. To further ensure success, Direct Relief mimicked conditions along anticipated transportation lanes, performing in-house live testing of the shipper's performance in order to identify appropriate pack-out times. Because they maximized space for the shipments and maintained product temperature stability for the bulk loads for up to 120 hours, CSafe pallet shippers were an ideal choice for Direct Relief. Additionally, these shippers are relatively lightweight in design, and the portable pallets enable quick and efficient movement. This keeps product excursions at bay while dramatically reducing labor handling requirements.



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180,000+
monoclonal
antibody
treatments



+2°C to +8°C
temperature
range



SmartCAE
simulation software
mitigated risks for
first-time lane shipment

The Pay-Off

The shipment to Cairo International Airport was a success, resulting in zero temperature excursions and allowing Direct Relief to expand their efforts and reach even more countries.

Following the Cairo delivery, Direct Relief proceeded to send antibodies to Indonesia, the Ukraine, and Zambia. They were all new lanes and first-time cold chain shipments.

In each case, shipments experienced zero excursions.

According to Direct Relief, for the Indonesia shipment, the team knew the temperature profile would be on the lower end of the +2°C to +8°C requirements. Therefore, they instructed the Forwarder to have the airline not place the shippers in cold storage at LAX before departure (roughly 18 hours of storage time). Using a cloud-based supply chain visibility solution, they observed - in real time - the shipment's ambient temperature drop dramatically below +8°C upon arrival at LAX, indicating the medications were in refrigerated storage. Direct Relief immediately notified the Forwarder, who instructed the airline's ground handler to remove all pallets from refrigerated storage. They were able to do so within an hour, preventing the shipment from going below +2°C and possibly freezing.

With its 25+ years of technical expertise and a global reputation for solving difficult shipping challenges, CSafe is utilizing scientific, technical, and data-driven insights to help Direct Relief deliver life-saving medications to a growing number of the world's underserved and hard-to-reach regions. CSafe's ongoing commitment to developing innovative products while incorporating simulation software and real-time monitoring solutions is improving critical supply chain operations when the world needs it most.



“Distributing life-saving antibodies across borders to the most vulnerable communities is a deeply complex undertaking with enormous human impact. CSafe’s pallet-in-pallet solution, paired with SmartCAE simulation software, eliminated the guesswork and reduced failure risks by creating a rich understanding of the shipper’s thermal behavior for cold chain performance – ultimately allowing us to reach people in need around the world”

Direct Relief Cold Chain Specialist Mike Wooten

Contact us at sales@csafeglobal.com

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At the heart of your cold chain™